## Table of Contents

Namespace: "http://www.spase-group.org/data/schema"  ........................................................................................................................................  7

Main schema spase-2_2_4.xsd .................................................................................................................................................................................................  7

<table>
<thead>
<tr>
<th>Element</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Element spase:Spase</td>
<td>7</td>
</tr>
<tr>
<td>Element spase:Spase / spase:Version</td>
<td>9</td>
</tr>
<tr>
<td>Element spase:Spase / spase:Catalog</td>
<td>9</td>
</tr>
<tr>
<td>Element spase:Catalog / spase:ResourceId</td>
<td>10</td>
</tr>
<tr>
<td>Element spase:Catalog / spase:ResourceHeader</td>
<td>10</td>
</tr>
<tr>
<td>Element spase:ResourceHeader / spase:AlternateName</td>
<td>11</td>
</tr>
<tr>
<td>Element spase:ResourceHeader / spase:ReleaseDate</td>
<td>12</td>
</tr>
<tr>
<td>Element spase:ResourceHeader / spase:ExpirationDate</td>
<td>12</td>
</tr>
<tr>
<td>Element spase:ResourceHeader / spase:Description</td>
<td>12</td>
</tr>
<tr>
<td>Element spase:ResourceHeader / spase:Acknowledgement</td>
<td>13</td>
</tr>
<tr>
<td>Element spase:ResourceHeader / spase:Contact</td>
<td>13</td>
</tr>
<tr>
<td>Element spase:Contact / spase:PersonID</td>
<td>13</td>
</tr>
<tr>
<td>Element spase:Contact / spase:Role</td>
<td>13</td>
</tr>
<tr>
<td>Element spase:ResourceHeader / spase:InformationURL</td>
<td>14</td>
</tr>
<tr>
<td>Element spase:InformationURL / spase:Name</td>
<td>15</td>
</tr>
<tr>
<td>Element spase:InformationURL / spase:URL</td>
<td>15</td>
</tr>
<tr>
<td>Element spase:InformationURL / spase:Description</td>
<td>15</td>
</tr>
<tr>
<td>Element spase:InformationURL / spase:Language</td>
<td>16</td>
</tr>
<tr>
<td>Element spase:Association / spase:AssociationID</td>
<td>16</td>
</tr>
<tr>
<td>Element spase:Association / spase:AssociationType</td>
<td>16</td>
</tr>
<tr>
<td>Element spase:Association / spase:Note</td>
<td>17</td>
</tr>
<tr>
<td>Element spase:ResourceHeader / spase:PriorID</td>
<td>17</td>
</tr>
<tr>
<td>Element spase:Catalog / spase:AccessInformation</td>
<td>17</td>
</tr>
<tr>
<td>Element spase:AccessInformation / spase:RepositoryID</td>
<td>18</td>
</tr>
<tr>
<td>Element spase:AccessInformation / spase:Availability</td>
<td>18</td>
</tr>
<tr>
<td>Element spase:AccessURL / spase:Name</td>
<td>20</td>
</tr>
<tr>
<td>Element spase:AccessURL / spase:URL</td>
<td>20</td>
</tr>
<tr>
<td>Element spase:AccessURL / spase:ProductKey</td>
<td>20</td>
</tr>
<tr>
<td>Element spase:AccessURL / spase:Description</td>
<td>20</td>
</tr>
<tr>
<td>Element spase:AccessURL / spase:Language</td>
<td>21</td>
</tr>
<tr>
<td>Element spase:AccessInformation / spase:Format</td>
<td>21</td>
</tr>
<tr>
<td>Element spase:AccessInformation / spase:Encoding</td>
<td>23</td>
</tr>
<tr>
<td>Element spase:AccessInformation / spase:DataExtent</td>
<td>24</td>
</tr>
<tr>
<td>Element spase:DataExtent / spase:Quantity</td>
<td>24</td>
</tr>
<tr>
<td>Element spase:DataExtent / spase:Units</td>
<td>25</td>
</tr>
<tr>
<td>Element spase:DataExtent / spase:Per</td>
<td>25</td>
</tr>
<tr>
<td>Element spase:AccessInformation / spase:Acknowledgement</td>
<td>25</td>
</tr>
<tr>
<td>Element spase:Catalog / spase:ProviderResourceName</td>
<td>25</td>
</tr>
<tr>
<td>Element spase:Catalog / spase:ProviderVersion</td>
<td>26</td>
</tr>
<tr>
<td>Element spase:Catalog / spase:InstrumentID</td>
<td>26</td>
</tr>
<tr>
<td>Element spase:Catalog / spase:PhenomenonType</td>
<td>26</td>
</tr>
<tr>
<td>Element spase:Catalog / spase:TimeSpan</td>
<td>28</td>
</tr>
<tr>
<td>Element spase:TimeSpan / spase:StartDate</td>
<td>28</td>
</tr>
<tr>
<td>Element spase:TimeSpan / spase:StopDate</td>
<td>28</td>
</tr>
<tr>
<td>Element spase:TimeSpan / spase:RelativeStopDate</td>
<td>29</td>
</tr>
<tr>
<td>Element spase:TimeSpan / spase:Note</td>
<td>29</td>
</tr>
<tr>
<td>Element spase:Catalog / spase:Caveats</td>
<td>29</td>
</tr>
<tr>
<td>Element spase:Catalog / spase:Keyword</td>
<td>29</td>
</tr>
<tr>
<td>Element spase:Catalog / spase:InputResourceID</td>
<td>30</td>
</tr>
<tr>
<td>Element spase:Catalog / spase:Parameter</td>
<td>30</td>
</tr>
<tr>
<td>Element spase:Parameter / spase:Name</td>
<td>32</td>
</tr>
<tr>
<td>Element spase:Parameter / spase:Set</td>
<td>32</td>
</tr>
<tr>
<td>Element spase:Parameter / spase:ParameterKey</td>
<td>32</td>
</tr>
<tr>
<td>Element spase:Parameter / spase:Description</td>
<td>33</td>
</tr>
<tr>
<td>Element spase:Parameter / spase:Caveats</td>
<td>33</td>
</tr>
</tbody>
</table>
Element spase:Parameter / spase:Cadence ................................................................. 33
Element spase:Parameter / spase:Units ................................................................. 33
Element spase:Parameter / spase:UnitsConversion .............................................. 34
Element spase:Parameter / spase:CoordinateSystem ........................................... 34
Element spase:CoordinateSystem / spase:CoordinateSystemName .............. 35
Element spase:Parameter / spase:RenderingHints ...................................... 39
Element spase:RenderingHints / spase:DisplayType ........................................ 39
Element spase:RenderingHints / spase:AxisLabel ......................................... 40
Element spase:RenderingHints / spase:RenderingAxis .................................... 40
Element spase:RenderingHints / spase:Index .................................................. 40
Element spase:RenderingHints / spase:ValueFormat ....................................... 41
Element spase:RenderingHints / spase:ScaleMin ........................................... 41
Element spase:RenderingHints / spase:ScaleMax ........................................... 41
Element spase:RenderingHints / spase:ScaleType .......................................... 41
Element spase:Parameter / spase:Structure ...................................................... 42
Element spase:Structure / spase:Size ................................................................. 42
Element spase:Structure / spase:Description ................................................. 43
Element spase:Structure / spase:Element ......................................................... 43
Element spase:Element / spase:Name ................................................................. 44
Element spase:Element / spase:Qualifier ......................................................... 44
Element spase:Element / spase:Index ................................................................. 47
Element spase:Element / spase:ParameterKey .................................................. 47
Element spase:Element / spase:Units ................................................................. 47
Element spase:Element / spase:UnitsConversion .......................................... 48
Element spase:Element / spase:ValidMin ......................................................... 48
Element spase:Element / spase:ValidMax ......................................................... 48
Element spase:Element / spase:FillValue ......................................................... 50
Element spase:Element / spase:Field ................................................................. 50
Element spase:Field / spase:Qualifier .............................................................. 51
Element spase:Field / spase:FieldQuantity ..................................................... 54
Element spase:Field / spase:FrequencyRange ............................................... 54
Element spase:FrequencyRange / spase:SpectralRange .................................. 55
Element spase:FrequencyRange / spase:Low ................................................. 56
Element spase:FrequencyRange / spase:High .................................................. 56
Element spase:FrequencyRange / spase:Units ................................................. 57
Element spase:FrequencyRange / spase:Bin ..................................................... 57
Element spase:Bin / spase:BandName ................................................................. 57
Element spase:Bin / spase:Low .......................................................................... 57
Element spase:Bin / spase:High ......................................................................... 58
Element spase:Parameter / spase:Particle ......................................................... 58
Element spase:Particle / spase:ParticleType .................................................... 59
Element spase:Particle / spase:Qualifier .......................................................... 59
Element spase:Particle / spase:ParticleQuantity .......................................... 62
Element spase:Particle / spase:AtomicNumber ................................................. 64
Element spase:Particle / spase:EnergyRange .................................................... 64
Element spase:EnergyRange / spase:Low .......................................................... 64
Element spase:EnergyRange / spase:High .......................................................... 65
Element spase:EnergyRange / spase:Units ....................................................... 65
Element spase:EnergyRange / spase:Bin ............................................................ 65
Element spase:Particle / spase:AzimuthalAngleRange ...................................... 66
Element spase:AzimuthalAngleRange / spase:Low ........................................... 66
Element spase:AzimuthalAngleRange / spase:High .......................................... 66
Element spase:AzimuthalAngleRange / spase:Units ........................................... 67
Element spase:AzimuthalAngleRange / spase:Bin ............................................ 67
Element spase:Particle / spase:PolarAngleRange ........................................... 67
Element spase:PolarAngleRange / spase:Low ................................................... 68
Element spase:PolarAngleRange / spase:High .................................................. 68
Element spase:PolarAngleRange / spase:Units .................................................. 68
Element spase:PolarAngleRange / spase:Bin ..................................................... 68
Element spase:Parameter / spase:Wave ............................................................... 69
Element spase:Wave / spase:WaveType .............................................................. 70
Element spase:Wave / spase:Qualifier ............................................................... 70
Element spase:Wave / spase:WaveQuantity ....................................................... 73
Element spase:Wave / spase:EnergyRange ......................................................... 74
Element spase:EnergyRange / spase:FrequencyRange ..................................... 75
Element spase:Wave / spase:WavelengthRange .................................................. 75
Element spase:WavelengthRange / spase:SpectralRange .................................. 76
Element `spase:WavelengthRange` / `spase:Low` .................................................. 77
Element `spase:WavelengthRange` / `spase:High` .................................................. 77
Element `spase:WavelengthRange` / `spase:Units` .................................................. 78
Element `spase:WavelengthRange` / `spase:Bin` .................................................. 78
Element `spase:Parameter` / `spase:Mixed` ......................................................... 79
Element `spase:Mixed` / `spase:ParticleType` ...................................................... 79
Element `spase:Mixed` / `spase:Qualifier` ........................................................... 80
Element `spase:Parameter` / `spase:Support` ...................................................... 83
Element `spase:Support` / `spase:Qualifier` ........................................................ 83
Element `spase:Support` / `spase:SupportQuantity` ............................................. 87
Element `spase:Catalog` / `spase:Extension` ....................................................... 87
Element `spase:DisplayData` / `spase:DisplayData` ........................................... 87
Element `spase:DisplayData` / `spase:ResourceId` ................................................ 89
Element `spase:DisplayData` / `spase:ResourceId` ................................................ 89
Element `spase:DisplayData` / `spase:ProcessingLevel` ...................................... 91
Element `spase:DisplayData` / `spase:ProviderResourceName`.............................. 91
Element `spase:DisplayData` / `spase:ProviderProcessingLevel` ......................... 92
Element `spase:DisplayData` / `spase:ProviderVersion` ....................................... 92
Element `spase:DisplayData` / `spase:InstrumentID` ........................................... 92
Element `spase:DisplayData` / `spase:MeasurementType` ..................................... 92
Element `spase:DisplayData` / `spase:TemporalDescription` ................................ 94
Element `spase:TemporalDescription` / `spase:TimeSpan` ................................... 94
Element `spase:TemporalDescription` / `spase:Cadence` ..................................... 95
Element `spase:TemporalDescription` / `spase:Duration` ..................................... 95
Element `spase:TemporalDescription` / `spase:Exposure` ..................................... 95
Element `spase:DisplayData` / `spase:DisplayCadence` ....................................... 96
Element `spase:DisplayData` / `spase:ObservedRegion` ....................................... 96
Element `spase:DisplayData` / `spase:Caveats` .................................................. 99
Element `spase:DisplayData` / `spase:Keyword` .................................................. 99
Element `spase:DisplayData` / `spase:InputResourceId` ....................................... 99
Element `spase:DisplayData` / `spase:Parameter` ............................................... 100
Element `spase:DisplayData` / `spase:Extension` .............................................. 101
Element `spase:Spase` / `spase:Spase` ............................................................... 101
Element `spase:Spase` / `spase:ResourceId` ....................................................... 103
Element `spase:Spase` / `spase:ResourceId` ....................................................... 103
Element `spase:Spase` / `spase:ProcessingLevel` .............................................. 105
Element `spase:Spase` / `spase:ProviderResourceName` ..................................... 105
Element `spase:Spase` / `spase:ProviderProcessingLevel` .................................. 105
Element `spase:Spase` / `spase:ProviderVersion` ............................................... 105
Element `spase:Spase` / `spase:InstrumentID` .................................................... 106
Element `spase:Spase` / `spase:MeasurementType` ............................................. 106
Element `spase:Spase` / `spase:TemporalDescription` ....................................... 108
Element `spase:Spase` / `spase:SpectralRange` .................................................. 108
Element `spase:Spase` / `spase:ObservedRegion` ............................................... 109
Element `spase:Spase` / `spase:Caveats` ........................................................... 112
Element `spase:Spase` / `spase:Keyword` ........................................................... 112
Element `spase:Spase` / `spase:InputResourceId` ............................................... 112
Element `spase:Spase` / `spase:Parameter` ........................................................ 112
Element `spase:Spase` / `spase:Extension` ........................................................ 114
Element `spase:Spase` / `spase:Document` .......................................................... 114
Element `spase:Spase` / `spase:ResourceId` ........................................................ 115
Element `spase:Spase` / `spase:ResourceId` ........................................................ 115
Element `spase:Spase` / `spase:AccessInformation` ........................................... 116
Element `spase:Spase` / `spase:Keyword` ........................................................... 117
Element `spase:Spase` / `spase:DocumentType` ................................................... 117
Element `spase:Spase` / `spase:MINETYPE` ........................................................ 117
Element `spase:Spase` / `spase:InputResourceId` ............................................... 118
Element `spase:Spase` / `spase:Granule` ............................................................. 118
Element `spase:Spase` / `spase:ResourceId` ........................................................ 119
Element `spase:Spase` / `spase:ResourceId` ........................................................ 119
Element `spase:Spase` / `spase:ReleaseDate` ..................................................... 119
Element `spase:Spase` / `spase:ExpirationDate` ............................................... 119
Element `spase:Spase` / `spase:ParentID` ........................................................... 119
Element `spase:Spase` / `spase:PriorID` ............................................................. 120
Element `spase:Spase` / `spase:StartDate` ......................................................... 120
Element `spase:Spase` / `spase:StopDate` ........................................................... 120
Element `spase:Spase` / `spase:Source` .............................................................. 120
Element `spase:Spase` / `spase:Source` .............................................................. 120
Element `spase:Spase` / `spase:MirrorURL` ....................................................... 122
Element `spase:Spase` / `spase:MirrorURL` ....................................................... 122

3
Element spase:Source / spase:Checksum.......................................................... 122
Element spase:Checksum / spase:HashValue.................................................. 122
Element spase:Checksum / spase:HashFunction............................................ 123
Element spase:Source / spase:DataExtent................................................... 123
Element spase:Source / spase:Instrument................................................... 124
Element spase:Source / spase:ResourceId................................................... 124
Element spase:Instrument / spase:ResourceId............................................ 124
Element spase:Instrument / spase:ResourceHeader..................................... 124
Element spase:Instrument / spase:InstrumentType..................................... 125
Element spase:Instrument / spase:InvestigationName................................. 128
Element spase:Instrument / spase:Location............................................... 128
Element spase:Instrument / spase:StartDate............................................ 129
Element spase:Instrument / spase:StopDate.............................................. 129
Element spase:Instrument / spase:Note.................................................... 129
Element spase:Instrument / spase:ObservatoryID....................................... 130
Element spase:Instrument / spase:SpaseCaveats........................................ 130
Element spase:Instrument / spase:Extension............................................ 130
Element spase:Spase / spase:Observatory................................................ 130
Element spase:Observatory / spase:ResourceId......................................... 131
Element spase:Observatory / spase:ObservatoryGroupID.............................. 132
Element spase:Observatory / spase:Location............................................ 133
Element spase:Location / spase:ObservatoryRegion.................................... 133
Element spase:Location / spase:CoordinateSystemName.............................. 136
Element spase:Location / spase:Latitude................................................ 140
Element spase:Location / spase:Longitude............................................... 140
Element spase:Location / spase:Elevation.............................................. 140
Element spase:Observatory / spase:OperatingSpan.................................... 140
Element spase:Observatory / spase:Extension.......................................... 140
Element spase:Spase / spase:Person....................................................... 141
Element spase:Person / spase:ResourceId............................................... 142
Element spase:Person / spase:PersonName............................................... 143
Element spase:Person / spase:OrganizationName...................................... 143
Element spase:Person / spase:Address................................................... 143
Element spase:Person / spase:Email....................................................... 144
Element spase:Person / spase:PhoneNumber............................................ 144
Element spase:Person / spase:FaxNumber............................................... 144
Element spase:Person / spase:Note....................................................... 144
Element spase:Person / spase:Extension................................................ 145
Element spase:Spase / spase:Registry.................................................... 145
Element spase:Registry / spase:ResourceId............................................ 145
Element spase:Registry / spase:ResourceHeader...................................... 146
Element spase:Registry / spase:AccessURL............................................. 146
Element spase:Registry / spase:Extension............................................. 147
Element spase:Spase / spase:Repository................................................. 147
Element spase:Repository / spase:ResourceId......................................... 148
Element spase:Repository / spase:ResourceHeader.................................... 148
Element spase:Repository / spase:AccessURL.......................................... 149
Element spase:Repository / spase:Extension.......................................... 150
Element spase:Spase / spase:Service..................................................... 150
Element spase:Service / spase:ResourceId............................................. 151
Element spase:Service / spase:ResourceHeader....................................... 151
Element spase:Service / spase:AccessURL............................................. 152
Element spase:Service / spase:Extension............................................. 153
Element spase:Spase / spase:Annotation............................................... 153
Element spase:Annotation / spase:ResourceId......................................... 154
Element spase:Annotation / spase:ResourceHeader.................................... 155
Element spase:Annotation / spase:ImageURL........................................... 155
Element spase:Annotation / spase:AnnotationType................................... 156
Element spase:Annotation / spase:PhenomenonType.................................. 156
Element spase:Annotation / spase:ClassificationMethod............................ 158
Element spase:Annotation / spase:ConfidenceRating................................ 158
Element spase:Annotation / spase:TimeSpan.......................................... 158
Element spase:Annotation / spase:ObservationExtent............................... 159
Element spase:ObservationExtent / spase:ObservedRegion.......................... 160
Element spase:ObservationExtent / spase:StartLocation............................ 162
Element spase:ObservationExtent / spase:StopLocation............................... 162
Element spase:ObservationExtent / spase:Note........................................ 163
Element spase:Annotation / spase:Extension........................................... 163

Complex Type(s).................................................................................. 163
Complex Type spase:Spase........................................................................ 163
Complex Type spase:Catalog...................................................................... 165
Simple Type spase:ProviderVersion
Simple Type spase:InstrumentID
Simple Type spase:PhenomenonType
Simple Type spase:StartDate
Simple Type spase:StopDate
Simple Type spase:RelativeStopDate
Simple Type spase:Caveats
Simple Type spase:Keyword
Simple Type spase:InputResourceID
Simple Type spase:Set
Simple Type spase:ParameterKey
Simple Type spase:Cadence
Simple Type spase:UnitsConversion
Simple Type spase:CoordinateRepresentation
Simple Type spase:CoordinateSystemName
Simple Type spase:DisplayType
Simple Type spase:AxisLabel
Simple Type spase:RenderingAxis
Simple Type spase:Index
Simple Type spase:typeSequence
Simple Type spase:ValueFormat
Simple Type spase:ScaleMin
Simple Type spase:ScaleMax
Simple Type spase:ScaleType
Simple Type spase:Size
Simple Type spase:Qualifier
Simple Type spase:ValidMin
Simple Type spase:ValidMax
Simple Type spase:FillValue
Simple Type spase:FieldQuantity
Simple Type spase:SpectralRange
Simple Type spase:Low
Simple Type spase:High
Simple Type spase:BandName
Simple Type spase:ParticleType
Simple Type spase:ParticleQuantity
Simple Type spase:AtomicNumber
Simple Type spase:WaveType
Simple Type spase:MixedQuantity
Simple Type spase:SupportQuantity
Simple Type spase:ProcessingLevel
Simple Type spase:ProviderProcessingLevel
Simple Type spase:MeasurementType
Simple Type spase:Exposure
Simple Type spase:DisplayCadence
Simple Type spase:Region
Simple Type spase:DocumentType
Simple Type spase:METEType
Simple Type spase:ParentID
Simple Type spase:SourceType
Simple Type spase:MirrorURL
Simple Type spase:HashValue
Simple Type spase:InstrumentType
Simple Type spase:InvestigationName
Simple Type spase:ObservatoryID
Simple Type spase:ObservatoryGroupID
Simple Type spase:Latitude
Simple Type spase:Longitude
Simple Type spase:Elevation
Simple Type spase:PersonName
Simple Type spase:OrganizationName
Simple Type spase:Address
Simple Type spase:Email
Simple Type spase:PhoneNumber
Simple Type spase:FaxNumber
Simple Type spase:ImageURL
Simple Type spase:AnnotationType
Simple Type spase:ClassificationMethod
Simple Type spase:ConfidenceRating
Simple Type spase:StartLocation
Namespace: "http://www.spase-group.org/data/schema"

Schema(s)

Main schema spase-2_2_4.xsd

<table>
<thead>
<tr>
<th>Properties</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Namespace</td>
<td><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></td>
</tr>
<tr>
<td>Attribute(s)</td>
<td></td>
</tr>
<tr>
<td>attribute form default:</td>
<td>unqualified</td>
</tr>
<tr>
<td>element form default:</td>
<td>qualified</td>
</tr>
<tr>
<td>version:</td>
<td>2.2.4</td>
</tr>
<tr>
<td>Schema location</td>
<td>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
</tbody>
</table>

Element(s)

Element spase:Spase

<table>
<thead>
<tr>
<th>Properties</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Namespace</td>
<td><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></td>
</tr>
</tbody>
</table>
Schema documentation for spase-2_2_4.xsd

Diagram

Type

Model


Children


Instance

<spase:Spase lang="en" xmlns:spase="http://www.spase-group.org/data/schema">
  <spase:Version>{1,1}</spase:Version>
  <spase:Catalog>{1,1}</spase:Catalog>
  <spase:DisplayData>{1,1}</spase:DisplayData>
  <spase:NumericalData>{1,1}</spase:NumericalData>
  <spase:Document>{1,1}</spase:Document>
  <spase:Granule>{1,1}</spase:Granule>
  <spase:Instrument>{1,1}</spase:Instrument>
  <spase:Observatory>{1,1}</spase:Observatory>
  <spase:Person>{1,1}</spase:Person>
  <spase:Registry>{1,1}</spase:Registry>
  <spase:Repository>{1,1}</spase:Repository>
  <spase:Service>{1,1}</spase:Service>
  <spase:Annotation>{1,1}</spase:Annotation>
</spase:Spase>

Attributes

<table>
<thead>
<tr>
<th>QName</th>
<th>Type</th>
<th>Default</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>lang</td>
<td>xsd:string</td>
<td>en</td>
<td>optional</td>
</tr>
</tbody>
</table>

Source

<xsd:element name="spase" type="spase:Spase"/>
### Element `spase:Spase / spase:Version`

**Namespace** http://www.spase-group.org/data/schema

**Diagram**

<table>
<thead>
<tr>
<th>Type</th>
<th>spase:Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties</td>
<td></td>
</tr>
<tr>
<td>content</td>
<td>simple</td>
</tr>
<tr>
<td>minOccurs</td>
<td>1</td>
</tr>
<tr>
<td>maxOccurs</td>
<td>1</td>
</tr>
<tr>
<td>Facets</td>
<td>enumeration</td>
</tr>
<tr>
<td>Source</td>
<td><code>&lt;xsd:element name=&quot;Version&quot; type=&quot;spase:Version&quot; minOccurs=&quot;1&quot; maxOccurs=&quot;1&quot;/&gt;</code></td>
</tr>
<tr>
<td>Schema</td>
<td>file://C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
</tbody>
</table>

### Element `spase:Spase / spase:Catalog`

**Namespace** http://www.spase-group.org/data/schema

**Diagram**

<table>
<thead>
<tr>
<th>Type</th>
<th>spase:Catalog</th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties</td>
<td></td>
</tr>
<tr>
<td>content</td>
<td>complex</td>
</tr>
</tbody>
</table>

---

9
Children


Instance

<spase:Catalog xmlns:spase= "http://www.spase-group.org/data/schema">
  <spase:ResourceID> {1,1} </spase:ResourceID>
  <spase:ResourceHeader> {1,1} </spase:ResourceHeader>
  <spase:AccessInformation> {1,unbounded} </spase:AccessInformation>
  <spase:ProviderResourceName> {0,1} </spase:ProviderResourceName>
  <spase:ProviderVersion> {0,1} </spase:ProviderVersion>
  <spase:InstrumentID> {0,unbounded} </spase:InstrumentID>
  <spase:PhenomenonType> {1,unbounded} </spase:PhenomenonType>
  <spase:TimeSpan> {0,1} </spase:TimeSpan>
  <spase:Caveats> {0,1} </spase:Caveats>
  <spase:Keyword> {0,unbounded} </spase:Keyword>
  <spase:InputResourceID> {0,unbounded} </spase:InputResourceID>
  <spase:Parameter> {0,unbounded} </spase:Parameter>
  <spase:Extension> {0,unbounded} </spase:Extension>
</spase:Catalog>

Source

<xsd:element name="Catalog" type="spase:Catalog"/>

Schema location

file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

Element spase:Catalog / spase:ResourceId

Namespace

http://www.spase-group.org/data/schema

Diagram

```
Type

<table>
<thead>
<tr>
<th>content:</th>
<th>simple</th>
</tr>
</thead>
<tbody>
<tr>
<td>minOccurs:</td>
<td>1</td>
</tr>
<tr>
<td>maxOccurs:</td>
<td>1</td>
</tr>
</tbody>
</table>
```

Source

<xsd:element name="ResourceId" type="spase:ResourceId" minOccurs="1" maxOccurs="1"/>

Schema location

file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

Element spase:Catalog / spase:ResourceHeader

Namespace

http://www.spase-group.org/data/schema
Schema documentation for spase-2_2_4.xsd

### Diagram

**Type**: `spase:ResourceHeader`

**Properties**
- `content`: `complex`
- `minOccurs`: 1
- `maxOccurs`: 1

**Model**
- `spase:ResourceName`, `spase:AlternateName*`, `spase:ReleaseDate`, `spase:ExpirationDate{0,1}`, `spase:Description`, `spase:Acknowledgement{0,1}`, `spase:Contact+`, `spase:InformationURL*`, `spase:Association*`, `spase:PriorID*`

**Children**
- `spase:Acknowledgement`, `spase:AlternateName`, `spase:Association`, `spase:Contact`, `spase:Description`, `spase:ExpirationDate`, `spase:InformationURL`, `spase:PriorID`, `spase:ReleaseDate`, `spase:ResourceName`

**Instance**

```xml
<spase:ResourceHeader xmlns:spase= "http://www.spase-group.org/data/schema">
  <spase:ResourceName>{1,1}</spase:ResourceName>
  <spase:AlternateName>0,unbounded</spase:AlternateName>
  <spase:ReleaseDate>{1,1}</spase:ReleaseDate>
  <spase:ExpirationDate>0,1</spase:ExpirationDate>
  <spase:Description>{1,1}</spase:Description>
  <spase:Acknowledgement>0,1</spase:Acknowledgement>
  <spase:Contact>1,unbounded</spase:Contact>
  <spase:InformationURL>0,unbounded</spase:InformationURL>
  <spase:Association>0,unbounded</spase:Association>
</spase:ResourceHeader>
```

**Source**

```
<xsd:element name="ResourceHeader" type="spase:ResourceHeader" minOccurs="1" maxOccurs="1"/>
```

### Element `spase:ResourceHeader` / `spase:ResourceName`

**Namespace**

http://www.spase-group.org/data/schema

**Diagram**

```
ResourceName
  Type spase:ResourceName
```

**Type**: `spase:ResourceName`

**Properties**
- `content`: `simple`
- `minOccurs`: 1
- `maxOccurs`: 1

**Source**

```
<xsd:element name="ResourceName" type="spase:ResourceName" minOccurs="1" maxOccurs="1"/>
```
### Element `spase:ResourceHeader / spase:AlternateName`  
**Namespace**  
http://www.spase-group.org/data/schema  
**Diagram**  
```
<table>
<thead>
<tr>
<th>AlternateName</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type spase:AlternateName</td>
</tr>
</tbody>
</table>
```
**Type**  
spase:AlternateName  
**Properties**  
- content: simple  
- minOccurs: 0  
- maxOccurs: unbounded  
**Source**  
```xml
<xsd:element name="AlternateName" type="spase:AlternateName" minOccurs="0" maxOccurs="unbounded"/>
```  
**Schema location**  
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### Element `spase:ResourceHeader / spase:ReleaseDate`  
**Namespace**  
http://www.spase-group.org/data/schema  
**Diagram**  
```
<table>
<thead>
<tr>
<th>ReleaseDate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type spase:ReleaseDate</td>
</tr>
</tbody>
</table>
```
**Type**  
spase:ReleaseDate  
**Properties**  
- content: simple  
- minOccurs: 1  
- maxOccurs: 1  
**Source**  
```xml
<xsd:element name="ReleaseDate" type="spase:ReleaseDate" minOccurs="1" maxOccurs="1"/>
```  
**Schema location**  
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### Element `spase:ResourceHeader / spase:ExpirationDate`  
**Namespace**  
http://www.spase-group.org/data/schema  
**Diagram**  
```
<table>
<thead>
<tr>
<th>ExpirationDate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type spase:ExpirationDate</td>
</tr>
</tbody>
</table>
```
**Type**  
spase:ExpirationDate  
**Properties**  
- content: simple  
- minOccurs: 0  
- maxOccurs: 1  
**Source**  
```xml
<xsd:element name="ExpirationDate" type="spase:ExpirationDate" minOccurs="0" maxOccurs="1"/>
```  
**Schema location**  
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### Element `spase:ResourceHeader / spase:Description`  
**Namespace**  
http://www.spase-group.org/data/schema  
**Diagram**  
```
<table>
<thead>
<tr>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type spase:Description</td>
</tr>
</tbody>
</table>
```
**Type**  
spase:Description  
**Properties**  
- content: simple  
- minOccurs: 1  
- maxOccurs: 1  
**Source**  
```xml
<xsd:element name="Description" type="spase:Description" minOccurs="1" maxOccurs="1"/>
```  
**Schema location**  
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd
### Element `spase:ResourceHeader / spase:Acknowledgement`

<table>
<thead>
<tr>
<th>Schema location</th>
<th>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</th>
</tr>
</thead>
</table>

#### Namespace
http://www.spase-group.org/data/schema

#### Diagram

```
Acknowledgement

Type: spase:Acknowledgement
```

#### Type
spase:Acknowledgement

#### Properties
- **content:** simple
- **minOccurs:** 0
- **maxOccurs:** 1

#### Source
```xml
<xsd:element name="Acknowledgement" type="spase:Acknowledgement" minOccurs="0" maxOccurs="1"/>
```

### Element `spase:ResourceHeader / spase:Contact`

<table>
<thead>
<tr>
<th>Schema location</th>
<th>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</th>
</tr>
</thead>
</table>

#### Namespace
http://www.spase-group.org/data/schema

#### Diagram

```
Contact

Type: spase:Contact
```

#### Type
spase:Contact

#### Properties
- **content:** complex
- **minOccurs:** 1
- **maxOccurs:** unbounded

#### Model
spase:PersonID, spase:Role+

#### Children
spase:PersonID, spase:Role

#### Instance
```xml
<spase:Contact xmlns:spase= "http://www.spase-group.org/data/schema">
  <spase:PersonID>{1,1}</spase:PersonID>
  <spase:Role>{1,unbounded}</spase:Role>
</spase:Contact>
```

#### Source
```xml
<xsd:element name="Contact" type="spase:Contact" minOccurs="1" maxOccurs="unbounded"/>
```

### Element `spase:Contact / spase:PersonID`

<table>
<thead>
<tr>
<th>Schema location</th>
<th>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</th>
</tr>
</thead>
</table>

#### Namespace
http://www.spase-group.org/data/schema

#### Diagram

```
PersonID

Type: spase:PersonID
```

#### Type
spase:PersonID

#### Properties
- **content:** simple
- **minOccurs:** 1
- **maxOccurs:** 1

#### Source
```xml
<xsd:element name="PersonID" type="spase:PersonID" minOccurs="1" maxOccurs="1"/>
```

### Element `spase:Contact / spase:Role`

<table>
<thead>
<tr>
<th>Schema location</th>
<th>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</th>
</tr>
</thead>
</table>

#### Namespace
http://www.spase-group.org/data/schema
### spase:Role

<table>
<thead>
<tr>
<th>Type</th>
<th>spase:Role</th>
</tr>
</thead>
</table>

#### Properties

- **content:** simple  
- **minOccurs:** 1  
- **maxOccurs:** unbounded

#### Facets

- **ArchiveSpecialist**  
  An individual who is an expert on a collection of resources and may also be knowledgeable of the phenomenon and related physics represented by the resources. This includes librarians, curators, archive scientists and other experts.

- **CoInvestigator**

- **Contributor**  
  An entity responsible for making contributions to the content of the resource.

- **DataProducer**  
  An individual who generated the resource and is familiar with its provenance.

- **DeputyPI**

- **FormerPI**

- **GeneralContact**  
  An individual who can provide information on a range of subjects or who can direct you to a domain expert.

- **MetadataContact**  
  An individual who can affect a change in the metadata describing a resource.

- **PrincipalInvestigator**  
  An individual who is the administrative and scientific lead for an investigation.

- **ProjectScientist**  
  An individual who is an expert in the phenomenon and related physics explored by the project. A project scientist may also have a managerial role within the project.

- **Publisher**  
  An individual, organization, institution or government department responsible for the production and dissemination of a document.

- **Scientist**  
  An individual who is an expert in the phenomenon and related physics represented by the resource.

- **TeamLeader**  
  An individual who is the designated leader of an investigation.

- **TeamMember**  
  An individual who is a major participant in an investigation.

- **TechnicalContact**  
  An individual who can provide specific information with regard to the resource or supporting software.

#### Source

```xml
type="spase:Role" minoccurs="1" maxoccurs="unbounded"/>
```

#### Schema location

file:///C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

### spase:ResourceHeader / spase:InformationURL

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
</table>

#### Diagram

![Diagram](image)

<table>
<thead>
<tr>
<th>Type</th>
<th>spase:InformationURL</th>
</tr>
</thead>
</table>
Properties

| content: complex | minOccurs: 0 | maxOccurs: unbounded |

Model

spase:Name{0,1}, spase:URL, spase:Description{0,1}, spase:Language{0,1}

Children

spase:Description, spase:Language, spase:Name, spase:URL

Instance

```xml
<spase:InformationURL xmlns:spase="http://www.spase-group.org/data/schema">
  <spase:Name>{0,1}</spase:Name>
  <spase:URL>{1,1}</spase:URL>
  <spase:Description>{0,1}</spase:Description>
  <spase:Language>{0,1}</spase:Language>
</spase:InformationURL>
```

Source

file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

**Element spase:InformationURL / spase:Name**

Namespace

http://www.spase-group.org/data/schema

Diagram

Type

spase:Name

Properties

- content: simple
- minOccurs: 0
- maxOccurs: 1

Source

file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

**Element spase:InformationURL / spase:URL**

Namespace

http://www.spase-group.org/data/schema

Diagram

Type

spase:URL

Properties

- content: simple
- minOccurs: 1
- maxOccurs: 1

Source

file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

**Element spase:InformationURL / spase:Description**

Namespace

http://www.spase-group.org/data/schema

Diagram

Type

spase:Description

Properties

- content: simple
- minOccurs: 0
- maxOccurs: 1

Source

file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd
**Element spase:InformationURL / spase:Language**

Namespace: http://www.spase-group.org/data/schema

Diagram:

Type: spase:Language

Properties:
- content: simple
- minOccurs: 0
- maxOccurs: 1

Source:
```xml
<xsd:element name="Language" type="spase:Language" minOccurs="0" maxOccurs="1"/>
```

Schema location: file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

**Element spase:ResourceHeader / spase:Association**

Namespace: http://www.spase-group.org/data/schema

Diagram:

Type: spase:Association

Properties:
- content: complex
- minOccurs: 0
- maxOccurs: unbounded

Model:
- spase:AssociationID
- spase:AssociationType
- spase:Note[0,1]

Children:
- spase:AssociationID
- spase:AssociationType
- spase:Note

Instance:
```xml
<spase:Association xmlns:spase= "http://www.spase-group.org/data/schema">
  <spase:AssociationID>{1,1}</spase:AssociationID>
  <spase:AssociationType>{1,1}</spase:AssociationType>
  <spase:Note>{0,1}</spase:Note>
</spase:Association>
```

Source:
```xml
<xsd:element name="Association" type="spase:Association" minOccurs="0" maxOccurs="unbounded"/>
```

Schema location: file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

**Element spase:Association / spase:AssociationID**

Namespace: http://www.spase-group.org/data/schema

Diagram:

Type: spase:AssociationID

Properties:
- content: simple
- minOccurs: 1
- maxOccurs: 1

Source:
```xml
<xsd:element name="AssociationID" type="spase:AssociationID" minOccurs="1" maxOccurs="1"/>
```

Schema location: file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

**Element spase:Association / spase:AssociationType**

Namespace: http://www.spase-group.org/data/schema
### Element `spase:AssociationType` / `spase:Association` / `spase:Note`

<table>
<thead>
<tr>
<th>Diagram</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Diagram" /></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type</th>
<th><code>spase:AssociationType</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties</td>
<td></td>
</tr>
<tr>
<td></td>
<td><code>content: simple</code></td>
</tr>
<tr>
<td></td>
<td><code>minOccurs: 1</code></td>
</tr>
<tr>
<td></td>
<td><code>maxOccurs: 1</code></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Facets</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><code>enumeration ChildEventOf</code></td>
<td>A descendant or caused by another resource.</td>
</tr>
<tr>
<td><code>enumeration DerivedFrom</code></td>
<td>A transformed or altered version of a resource instance.</td>
</tr>
<tr>
<td><code>enumeration ObservedBy</code></td>
<td>Detected or originating from another resource.</td>
</tr>
<tr>
<td><code>enumeration Other</code></td>
<td>Not classified with more specific terms. The context of its usage may be described in related text.</td>
</tr>
<tr>
<td><code>enumeration PartOf</code></td>
<td>A portion of a larger resource.</td>
</tr>
<tr>
<td><code>enumeration RevisionOf</code></td>
<td>A modified version of a resource instance.</td>
</tr>
</tbody>
</table>

Source: `<xsd:element name="AssociationType" type="spase:AssociationType" minOccurs="1" maxOccurs="1"/>`

Schema location: `file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd`

### Element `spase:ResourceHeader` / `spase:ResourceHeader` / `spase:PriorID`

<table>
<thead>
<tr>
<th>Diagram</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image2.png" alt="Diagram" /></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type</th>
<th><code>spase:PriorID</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties</td>
<td></td>
</tr>
<tr>
<td></td>
<td><code>content: simple</code></td>
</tr>
<tr>
<td></td>
<td><code>minOccurs: 0</code></td>
</tr>
<tr>
<td></td>
<td><code>maxOccurs: unbounded</code></td>
</tr>
</tbody>
</table>

Source: `<xsd:element name="PriorID" type="spase:PriorID" minOccurs="0" maxOccurs="unbounded"/>`

Schema location: `file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd`

### Element `spase:Catalog` / `spase:Catalog` / `spase:AccessInformation`

<table>
<thead>
<tr>
<th>Diagram</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image3.png" alt="Diagram" /></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type</th>
<th><code>spase:AccessInformation</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties</td>
<td></td>
</tr>
</tbody>
</table>

Source: `<xsd:element name="AccessInformation" type="spase:AccessInformation" minOccurs="0" maxOccurs="0"/>`

Schema location: `file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd`
Diagram

Type: `spase:AccessInformation`

Properties:
- content: complex
- minOccurs: 1
- maxOccurs: unbounded

Model:
- `spase:RepositoryID`
- `spase:Availability`
- `spase:AccessRights`
- `spase:AccessURL`
- `spase:Format`
- `spase:Encoding`
- `spase:DataExtent`
- `spase:Acknowledgement`

Children:
- `spase:AccessRights`
- `spase:AccessURL`
- `spase:Acknowledgement`
- `spase:Availability`
- `spase:DataExtent`
- `spase:Encoding`
- `spase:Format`
- `spase:RepositoryID`

Instance:
```
<spase:AccessInformation
    xmlns:spase= "http://www.spase-group.org/data/schema">
  <spase:RepositoryID> {1,1} </spase:RepositoryID>
  <spase:Availability> {0,1} </spase:Availability>
  <spase:AccessRights> {0,1} </spase:AccessRights>
  <spase:AccessURL> {1,unbounded} </spase:AccessURL>
  <spase:Format> {1,1} </spase:Format>
  <spase:Encoding> {0,1} </spase:Encoding>
  <spase:DataExtent> {0,1} </spase:DataExtent>
  <spase:Acknowledgement> {0,1} </spase:Acknowledgement>
</spase:AccessInformation>
```

Source:
```
<xsd:element name="AccessInformation" type="spase:AccessInformation" minOccurs= "1" maxOccurs= "unbounded"/>
```

Schema location: file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

**Element spase:AccessInformation / spase:RepositoryID**

Namespace: http://www.spase-group.org/data/schema

Diagram

Type: `spase:RepositoryID`

Properties:
- content: simple
- minOccurs: 1
- maxOccurs: 1

Source:
```
<xsd:element name="RepositoryID" type="spase:RepositoryID" minOccurs= "1" maxOccurs= "1"/>
```

Schema location: file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

**Element spase:AccessInformation / spase:Availability**

Namespace: http://www.spase-group.org/data/schema
### spase:Availability

**Diagram**

```
Availability
  +------------------+
  | Type: spase:Availability |
  | content: simple |
  | minOccurs: 0 |
  | maxOccurs: 1 |
```

**Type**

`spase:Availability`

**Properties**

- content: `simple`
- minOccurs: 0
- maxOccurs: 1

**Facets**

- enumeration `Online`
  - Directly accessible electronically.
- enumeration `Offline`
  - Not directly accessible electronically. This includes resources which may to be moved to an on-line status in response to a given request.

**Source**

```
<xsd:element name="Availability" type="spase:Availability" minOccurs="0" maxOccurs="1"/>
```

**Schema location**

`file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd`

### spase:AccessRights

**Diagram**

```
AccessRights
  +------------------+
  | Type: spase:AccessRights |
  | content: simple |
  | minOccurs: 0 |
  | maxOccurs: 1 |
```

**Type**

`spase:AccessRights`

**Properties**

- content: `simple`
- minOccurs: 0
- maxOccurs: 1

**Facets**

- enumeration `Open`
  - Access is granted to everyone.
- enumeration `Restricted`
  - Access to the product is regulated and requires some form of identification.

**Source**

```
<xsd:element name="AccessRights" type="spase:AccessRights" minOccurs="0" maxOccurs="1"/>
```

**Schema location**

`file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd`

### spase:AccessURL

**Diagram**

```
AccessURL
  +------------------+
  | Type: spase:AccessURL |
  | content: complex |
  | minOccurs: 1 |
  | maxOccurs: unbounded |
```

**Type**

`spase:AccessURL`

**Properties**

- content: `complex`
- minOccurs: 1
- maxOccurs: unbounded

**Model**

- `spase:Name(0,1)`, `spase:URL`, `spase:ProductKey*`, `spase:Description{0,1}`, `spase:Language{0,1}`

**Children**

- `spase:Description`, `spase:Language`, `spase:Name`, `spase:ProductKey`, `spase:URL`

**Instance**

```
  <spase:Name> {0,1} </spase:Name>
</spase:AccessURL>
```
<table>
<thead>
<tr>
<th>Element</th>
<th>Namespace</th>
<th>Diagram</th>
<th>Type</th>
<th>Properties</th>
<th>Source</th>
<th>Schema location</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>spase:AccessURL</code></td>
<td><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></td>
<td><img src="image1" alt="Diagram" /></td>
<td><code>spase:Name</code></td>
<td>content: <code>simple</code> &lt;br&gt; minOccurs: 0 &lt;br&gt; maxOccurs: 1</td>
<td><code>&lt;xsd:element name=&quot;Name&quot; type=&quot;spase:Name&quot; minOccurs=&quot;0&quot; maxOccurs=&quot;1&quot;/&gt;</code></td>
<td>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
<tr>
<td><code>spase:AccessURL</code></td>
<td><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></td>
<td><img src="image2" alt="Diagram" /></td>
<td><code>spase:URL</code></td>
<td>content: <code>simple</code> &lt;br&gt; minOccurs: 1 &lt;br&gt; maxOccurs: 1</td>
<td><code>&lt;xsd:element name=&quot;URL&quot; type=&quot;spase:URL&quot; minOccurs=&quot;1&quot; maxOccurs=&quot;1&quot;/&gt;</code></td>
<td>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
<tr>
<td><code>spase:AccessURL</code></td>
<td><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></td>
<td><img src="image3" alt="Diagram" /></td>
<td><code>spase:ProductKey</code></td>
<td>content: <code>simple</code> &lt;br&gt; minOccurs: 0 &lt;br&gt; maxOccurs: unbounded</td>
<td><code>&lt;xsd:element name=&quot;ProductKey&quot; type=&quot;spase:ProductKey&quot; minOccurs=&quot;0&quot; maxOccurs=&quot;unbounded&quot;/&gt;</code></td>
<td>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
<tr>
<td><code>spase:AccessURL</code></td>
<td><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></td>
<td><img src="image4" alt="Diagram" /></td>
<td><code>spase:Description</code></td>
<td>content: <code>simple</code> &lt;br&gt; minOccurs: 0</td>
<td><code>&lt;xsd:element name=&quot;Description&quot; type=&quot;spase:Description&quot; minOccurs=&quot;0&quot;/&gt;</code></td>
<td>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
</tbody>
</table>
maxOccurs: 1

Source
```xml
<xs:element name="Description" type="spase:Description" minOccurs="0" maxOccurs="1"/>
```

<table>
<thead>
<tr>
<th>Schema location</th>
</tr>
</thead>
<tbody>
<tr>
<td>file://C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
</tbody>
</table>

### Element `spase:AccessURL / spase:Language`

#### Namespace
- http://www.spase-group.org/data/schema

#### Diagram

#### Type `spase:Language`

#### Properties
- content: `simple`
- minOccurs: 0
- maxOccurs: 1

Source
```xml
<xs:element name="Language" type="spase:Language" minOccurs="0" maxOccurs="1"/>
```

<table>
<thead>
<tr>
<th>Schema location</th>
</tr>
</thead>
<tbody>
<tr>
<td>file://C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
</tbody>
</table>

### Element `spase:AccessInformation / spase:Format`

#### Namespace
- http://www.spase-group.org/data/schema

#### Diagram

#### Type `spase:Format`

#### Properties
- content: `simple`
- minOccurs: 1
- maxOccurs: 1

#### Facets
- **enumeration AVI**: Audio Video Interleave (AVI) a digital format for movies that conforms to the Microsoft Windows Resource Interchange File Format (RIFF).
- **enumeration Binary**: A direct representation of the bits which may be stored in memory on a computer.
- **enumeration CDF**: Common Data Format (CDF). A binary storage format developed at Goddard Space Flight Center (GSFC).
- **enumeration CEF**: Cluster Exchange Format (CEF) is a self-documenting ASCII format designed for the exchange of data. There are two versions of CEF which are not totally compatible.
- **enumeration CEF1**: Cluster Exchange Format (CEF), version 1, is a self-documenting ASCII format designed for the exchange of data. The metadata contains information compatible with the ISTP recommendations for CDF.
- **enumeration CEF2**: Cluster Exchange Format (CEF), version 2, is a self-documenting ASCII format designed for the exchange of data and introduced for Cluster Active Archive. Compared to version 1, the metadata description of vectors and tensors is different.
- **enumeration Excel**: A Microsoft spreadsheet format used to hold a variety of data in tables which can include calculations.
- **enumeration FITS**: Flexible Image Transport System (FITS) is a digital format primarily designed to store scientific data sets consisting of multi-dimensional arrays (1-D spectra, 2-D images or 3-D data cubes) and 2-dimensional tables containing rows and columns of data.
- **enumeration GIF**: Graphic Interchange Format (GIF) first introduced
<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDF</td>
<td>Hierarchical Data Format</td>
</tr>
<tr>
<td>HDF4</td>
<td>Hierarchical Data Format, Version 4</td>
</tr>
<tr>
<td>HDF5</td>
<td>Hierarchical Data Format, Version 5</td>
</tr>
<tr>
<td>HTML</td>
<td>A text file containing structured information represented in the HyperText Mark-up Language (HTML). See <a href="http://www.w3.org/MarkUp/">http://www.w3.org/MarkUp/</a></td>
</tr>
<tr>
<td>Hardcopy</td>
<td>A permanent reproduction, or copy in the form of a physical object, of any media suitable for direct use by a person.</td>
</tr>
<tr>
<td>Hardcopy.Film</td>
<td>An image recording medium on which usually a &quot;negative&quot; analog image is registered. A &quot;positive&quot; image can be recovered or reproduced from film, which is usually made of flexible materials for ease of storage and transportation.</td>
</tr>
<tr>
<td>Hardcopy.Microfiche</td>
<td>A sheet of microfilm on which many pages of material have been photographed; a magnification system is used to read the material.</td>
</tr>
<tr>
<td>Hardcopy.Microfilm</td>
<td>Film rolls on which materials are photographed at greatly reduced size; a magnification system is used to read the material.</td>
</tr>
<tr>
<td>Hardcopy.Photograph</td>
<td>An image (positive or negative) registered on a piece of photo-sensitive paper</td>
</tr>
<tr>
<td>Hardcopy.PhotographicPlate</td>
<td>A rigid (typically glass) medium that functions like film. Its rigidity is for guarding against image distortion due to medium deformation (caused by heat and humidity). Photographic plates are often used for astronomical photography.</td>
</tr>
<tr>
<td>Hardcopy.Print</td>
<td>A sheet of any written or printed material which may include notes or graphics. Multiple printed pages may be bound into a manuscript or book.</td>
</tr>
<tr>
<td>IDFS</td>
<td>Instrument Data File Set (IDFS) is a set of files written in a prescribed format which contain data, timing data, and meta-data. IDFS was developed at Southwest Research Institute (SwRI).</td>
</tr>
<tr>
<td>IDL</td>
<td>Interactive Data Language (IDL) save set. IDL is a proprietary format.</td>
</tr>
<tr>
<td>JPEG</td>
<td>A binary format for still images defined by the Joint Photographic Experts Group</td>
</tr>
<tr>
<td>MATLAB_4</td>
<td>MATLAB Workspace save set, version 4. MAT-files are double-precision, binary, MATLAB format files. MATLAB is a proprietary product of The MathWorks.</td>
</tr>
<tr>
<td>MATLAB_6</td>
<td>MATLAB Workspace save set, version 6. MAT-files are double-precision, binary, MATLAB format files. MATLAB is a proprietary product of The MathWorks.</td>
</tr>
<tr>
<td>MATLAB_7</td>
<td>MATLAB Workspace save set, version 7. MAT-files are double-precision, binary, MATLAB format files. Version 7 includes data compression and Unicode encoding. MATLAB is a proprietary product of The MathWorks.</td>
</tr>
<tr>
<td>MPEG</td>
<td>A digital format for movies defined by the Motion Picture Experts Group</td>
</tr>
<tr>
<td>NCAR</td>
<td>The National Center for Atmospheric Research (NCAR) format. A complete description of this standard is given in appendix C of the &quot;Report on Establishment &amp; Operation of the Incoherent-Scatter Data Base&quot;, dated August 23, 1984, obtainable from NCAR, P.O. Box 3000 Boulder, Colorado 80307-3000.</td>
</tr>
<tr>
<td>NetCDF</td>
<td>Unidata Program Center's Network Common Data Form (NetCDF). A self-describing portable data format for array-oriented data access. See <a href="http://my.unidata.ucar.edu/content/software/netcdf">http://my.unidata.ucar.edu/content/software/netcdf</a></td>
</tr>
<tr>
<td>Enumeration</td>
<td>Description</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td>PDF</td>
<td>A document expressed in the Portable Document Format (PDF) as defined by Adobe.</td>
</tr>
<tr>
<td>PNG</td>
<td>A digital format for still images. Portable Network Graphics (PNG)</td>
</tr>
<tr>
<td>Postscript</td>
<td>A page description programming language created by Adobe Systems Inc. that is a device-independent industry standard for representing text and graphics.</td>
</tr>
<tr>
<td>QuickTime</td>
<td>A format for digital movies, as defined by Apple Computer. See <a href="http://developer.apple.com/quicktime/">http://developer.apple.com/quicktime/</a></td>
</tr>
<tr>
<td>TIFF</td>
<td>A binary format for still pictures. Tagged Image Format File (TIFF). Originally developed by Aldus and now controlled by Adobe.</td>
</tr>
<tr>
<td>Text</td>
<td>A sequence of characters which may have an imposed structure or organization.</td>
</tr>
<tr>
<td>Text.ASCII</td>
<td>A sequence of characters that adheres to American Standard Code for Information Interchange (ASCII) which is a 7-bit character-coding scheme.</td>
</tr>
<tr>
<td>Text.Unicode</td>
<td>Text in multi-byte Unicode format.</td>
</tr>
<tr>
<td>VOTable</td>
<td>A proposed IVOA standard designed as a flexible storage and exchange format for tabular data.</td>
</tr>
<tr>
<td>XML</td>
<td>eXtensible Mark-up Language (XML). A structured format for representing information. See <a href="http://www.w3.org/XML/">http://www.w3.org/XML/</a></td>
</tr>
</tbody>
</table>

**Source**
```
<xsd:element name="Format" type="spase:Format" minOccurs="1" maxOccurs="1"/>
```

**Schema location**
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### Element `spase:AccessInformation` / `spase:Encoding`

**Namespace**
http://www.spase-group.org/data/schema

**Diagram**
```
<Encoding type="spase:Encoding">
  <spase:Encoding/>
</Encoding>
```

**Type**
spase:Encoding

**Properties**
- content: simple
- minOccurs: 0
- maxOccurs: 1

**Facets**
- enumeration ASCII: A sequence of characters that adheres to American Standard Code for Information Interchange (ASCII) which is a 7-bit character-coding scheme.
- enumeration Base64: A data encoding scheme whereby binary-encoded data is converted to printable ASCII characters. It is defined as a MIME content transfer encoding for use in Internet e-mail. The only characters used are the upper- and lower-case Roman alphabet characters (A-Z, a-z), the numerals (0-9), and the "+" and "/" symbols, with the "=" symbol as a special suffix (padding) code.
- enumeration None: A lack or absence of anything.
- enumeration S3_BUCKET: A container of objects that comply with the
Amazon Simple Storage Service (S3) specifications.
A bucket has a unique, user-assigned key (name).
A bucket can contain any number of objects with an aggregate size of 5 gigabytes. A bucket may be accompanied by up to 2 kilobytes of metadata.

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAR</td>
<td>A file format used to collate collections of files into one larger file, for distribution or archiving, while preserving file system information such as user and group permissions, dates, and directory structures. The format was standardized by POSIX.1-1988 and later POSIX.1-2001.</td>
</tr>
<tr>
<td>Unicode</td>
<td>Text in multi-byte Unicode format.</td>
</tr>
<tr>
<td>ZIP</td>
<td>An open standard for compression which is a variation of the LZW method and was originally used in the PKZIP utility.</td>
</tr>
</tbody>
</table>

Source: 
<xs:element name="Encoding" type="spase:Encoding" minOccurs="0" maxOccurs="1"/>

Schema location: file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

**Element spase:AccessInformation / spase:DataExtent**

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagram</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>Type</td>
<td>spase:DataExtent</td>
</tr>
<tr>
<td>Properties</td>
<td>content: complex</td>
</tr>
<tr>
<td></td>
<td>minOccurs: 0</td>
</tr>
<tr>
<td></td>
<td>maxOccurs: 1</td>
</tr>
<tr>
<td>Model</td>
<td>spase:Quantity , spase:Units{0,1} , spase:Per{0,1}</td>
</tr>
<tr>
<td>Children</td>
<td>spase:Per , spase:Quantity , spase:Units</td>
</tr>
</tbody>
</table>
| Instance  | <spase:DataExtent xmlns:spase= "http://www.spase-group.org/data/schema">
|           | <spase:Quantity>{1,1}</spase:Quantity>
|           | <spase:Units>{0,1}</spase:Units>
|           | <spase:Per>{0,1}</spase:Per>
|           | </spase:DataExtent>                    |
| Source    | <xs:element name="DataExtent" type="spase:DataExtent" minOccurs="0" maxOccurs="1"/> |
| Schema location | file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd |

**Element spase:DataExtent / spase:Quantity**

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagram</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>Type</td>
<td>spase:Quantity</td>
</tr>
<tr>
<td>Properties</td>
<td>content: simple</td>
</tr>
<tr>
<td></td>
<td>minOccurs: 1</td>
</tr>
<tr>
<td></td>
<td>maxOccurs: 1</td>
</tr>
<tr>
<td>Source</td>
<td>&lt;xs:element name=&quot;Quantity&quot; type=&quot;spase:Quantity&quot; minOccurs=&quot;1&quot; maxOccurs=&quot;1&quot;/&gt;</td>
</tr>
<tr>
<td>Schema location</td>
<td>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
</tbody>
</table>
**Element spase:DataExtent / spase:Units**

Namespace | http://www.spase-group.org/data/schema
---|---
Diagram | ![Diagram](Diagram1.png)
Type | spase:Units
Properties | content: simple
| minOccurs: 0
| maxOccurs: 1
Source | `<xsd:element name="Units" type="spase:Units" minOccurs="0" maxOccurs="1"/>

**Element spase:DataExtent / spase:Per**

Namespace | http://www.spase-group.org/data/schema
---|---
Diagram | ![Diagram](Diagram2.png)
Type | spase:Per
Properties | content: simple
| minOccurs: 0
| maxOccurs: 1
Source | `<xsd:element name="Per" type="spase:Per" minOccurs="0" maxOccurs="1"/>

**Element spase:AccessInformation / spase:Acknowledgement**

Namespace | http://www.spase-group.org/data/schema
---|---
Diagram | ![Diagram](Diagram3.png)
Type | spase:Acknowledgement
Properties | content: simple
| minOccurs: 0
| maxOccurs: 1
Source | `<xsd:element name="Acknowledgement" type="spase:Acknowledgement" minOccurs="0" maxOccurs="1"/>

**Element spase:Catalog / spase:ProviderResourceName**

Namespace | http://www.spase-group.org/data/schema
---|---
Diagram | ![Diagram](Diagram4.png)
Type | spase:ProviderResourceName
Properties | content: simple
| minOccurs: 0
| maxOccurs: 1
Source | `<xsd:element name="ProviderResourceName" type="spase:ProviderResourceName" minOccurs="0" maxOccurs="1"/>

**Source**

Schema location | file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd
Element `spase:Catalog / spase:ProviderVersion`  
**Namespace**  http://www.spase-group.org/data/schema  
**Diagram**  
```
ProviderVersion
  Type  spase:ProviderVersion
```
**Type**  `spase:ProviderVersion`  
**Properties**  
- **content:** `simple`
- **minOccurs:** `0`
- **maxOccurs:** `1`
**Source**  
```
<xsd:element name="ProviderVersion" type="spase:ProviderVersion" minOccurs="0" maxOccurs="1"/>
```

Element `spase:Catalog / spase:InstrumentID`  
**Namespace**  http://www.spase-group.org/data/schema  
**Diagram**  
```
InstrumentID
  Type  spase:InstrumentID
```
**Type**  `spase:InstrumentID`  
**Properties**  
- **content:** `simple`
- **minOccurs:** `0`
- **maxOccurs:** `unbounded`
**Source**  
```
<xsd:element name="InstrumentID" type="spase:InstrumentID" minOccurs="0" maxOccurs="unbounded"/>
```

Element `spase:Catalog / spase:PhenomenonType`  
**Namespace**  http://www.spase-group.org/data/schema  
**Diagram**  
```
PhenomenonType
  Type  spase:PhenomenonType
```
**Type**  `spase:PhenomenonType`  
**Properties**  
- **content:** `simple`
- **minOccurs:** `1`
- **maxOccurs:** `unbounded`
**Facets**  
- **enumeration** `ActiveRegion`  
  A localized, transient volume of the solar atmosphere in which PLAGEs, SUNSPOTS, FACULAE, FLAREs, etc. may be observed.
- **enumeration** `Aurora`  
  An atmospheric phenomenon consisting of bands of light caused by charged solar particles following the earth's magnetic lines of force.
- **enumeration** `BowShockCrossing`  
  A crossing of the boundary between the undisturbed (except for foreshock effects) solar wind and the shocked, decelerated solar wind of the magnetosheath.
- **enumeration** `CoronalHole`  
  An extended region of the corona, exceptionally low in density and associated with unipolar photospheric regions. A coronal hole can be an "open" magnetic field in the corona and (perhaps) inner heliosphere which has a faster than average outflow (wind); A region of lower than "quiet" ion and electron density in the corona; or a region of lower peak electron temperature in the corona than in the "quiet" corona.
- **enumeration** `CoronalMassEjection`  
  A solar event (CME) that involves a burst of plasma ejected into the interplanetary medium. CME's may be observed remotely relatively near the sun or in situ in the interplanetary medium. The latter type of observations are
<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EITWave</td>
<td>Wave in the corona of the Sun which produces shock waves on the Sun's chromosphere. EIT Waves are produced by large solar flares and expand outward at about 1,000 km/s. It usually appears as a slowly moving diffuse arc of brightening in H-alpha, and may travel for several hundred thousand km.</td>
<td></td>
</tr>
<tr>
<td>EnergeticSolarParticleEvent</td>
<td>Enhancement of interplanetary fluxes of energetic ions accelerated by interplanetary shocks and/or solar flares.</td>
<td></td>
</tr>
<tr>
<td>ForbushDecrease</td>
<td>A rapid decrease in the observed galactic cosmic ray intensity following the passage of an outwardly convecting interplanetary magnetic field disturbance, such as those associated with large CME's, that sweep some galactic cosmic rays away from Earth.</td>
<td></td>
</tr>
<tr>
<td>GeomagneticStorm</td>
<td>Magnetospheric disturbance typically defined by variations in the horizontal component of the Earth's surface magnetic field. The variation typically starts with a field enhancement associated with a solar wind pressure pulse and continues with a field depression associated with an enhancement of the diamagnetic magnetospheric ring current.</td>
<td></td>
</tr>
<tr>
<td>InterplanetaryShock</td>
<td>A shock propagating generally anti-sunward through the slower solar wind, often seen in front of CME-associated plasma clouds.</td>
<td></td>
</tr>
<tr>
<td>MagneticCloud</td>
<td>A transient event observed in the solar wind characterized as a region of enhanced magnetic field strength, smooth rotation of the magnetic field vector and low proton density and temperature.</td>
<td></td>
</tr>
<tr>
<td>MagnetopauseCrossing</td>
<td>A crossing of the interface between the shocked solar wind in the magnetosheath and the magnetic field and plasma in the magnetosphere.</td>
<td></td>
</tr>
<tr>
<td>RadioBurst</td>
<td>Emissions of the sun in radio wavelengths from centimeters to dekameters, under both quiet and disturbed conditions. Radio Bursts can be &quot;Type I&quot; consisting of many short, narrow-band bursts in the metric range (300 - 50 MHz); &quot;Type II&quot; consisting of narrow-band emission that begins in the meter range (300 MHz) and sweeps slowly (tens of minutes) toward dekameter wavelengths (10 MHz); &quot;Type III&quot; consisting of narrow-band bursts that sweep rapidly (seconds) from decimeter to dekameter wavelengths (500 - 5.5 MHz); and &quot;Type IV&quot; consisting of a smooth continuum of broad-band bursts primarily in the meter range (300 - 30 MHz).</td>
<td></td>
</tr>
<tr>
<td>SectorBoundaryCrossing</td>
<td>A sector boundary crossing is a transit by a spacecraft across the heliospheric current sheet separating the dominantly outward (away-from-the-sun) interplanetary magnetic field of one hemisphere of the heliosphere from the dominantly inward (toward-the-sun) polarity of the other hemisphere. Such crossings have multi-day intervals of opposite IMF dominant polarities on either side.</td>
<td></td>
</tr>
<tr>
<td>SolarFlare</td>
<td>An explosive event in the Sun's atmosphere which produces electromagnetic radiation across the electromagnetic spectrum at multiple wavelengths from long-wave radio to the shortest wavelength gamma rays.</td>
<td></td>
</tr>
<tr>
<td>SolarWindExtreme</td>
<td>Intervals of unusually large or small values of solar wind attributes such as flow speed and ion density.</td>
<td></td>
</tr>
<tr>
<td>StreamInteractionRegion</td>
<td>The region (SIR) where two solar wind streams, typically having differing characteristics</td>
<td></td>
</tr>
</tbody>
</table>
and solar sources, abut up against (and possibly partially interpenetrate) each other.

**Substorm**

A process by which plasma in the magnetotail becomes energized at a fast rate.

**Source**

```xml
<xs:element name="PhenomenonType" type="spase:PhenomenonType" minOccurs="1" maxOccurs="unbounded"/>
```

**Schema location**

file:///C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

**Element** `spase:Catalog / spase:TimeSpan`

**Namespace**

http://www.spase-group.org/data/schema

**Diagram**

```
Type spase:TimeSpan
Properties
  content: complex
  minOccurs: 0
  maxOccurs: 1
Model spase:StartDate, (spase:StopDate | spase:RelativeStopDate), spase:Note*
Children spase:Note, spase:RelativeStopDate, spase:StartDate, spase:StopDate
```

**Instance**

```xml
<spase:TimeSpan xmlns:spase= "http://www.spase-group.org/data/schema">
  <spase:StartDate> {1,1} </spase:StartDate>
  <spase:StopDate> {1,1} </spase:StopDate>
  <spase:RelativeStopDate> {1,1} </spase:RelativeStopDate>
  <spase:Note> {0,unbounded} </spase:Note>
</spase:TimeSpan>
```

**Source**

```xml
<xs:element name="TimeSpan" type="spase:TimeSpan" minOccurs="0" maxOccurs="1"/>
```

**Schema location**

file:///C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

**Element** `spase:TimeSpan / spase:StartDate`

**Namespace**

http://www.spase-group.org/data/schema

**Diagram**

```
Type spase:StartDate
Properties
  content: simple
  minOccurs: 1
  maxOccurs: 1
Model spase:StartDate
Source
<xs:element name="StartDate" type="spase:StartDate" minOccurs="1" maxOccurs="1"/>
```

**Schema location**

file:///C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

**Element** `spase:TimeSpan / spase:StopDate`

**Namespace**

http://www.spase-group.org/data/schema

**Diagram**

```
```

**Source**

```xml
<xs:element name="StopDate" type="spase:StopDate" minOccurs="1" maxOccurs="1"/>
```

**Schema location**

file:///C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---
<table>
<thead>
<tr>
<th>Type</th>
<th>spase:StopDate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties</td>
<td>content: simple</td>
</tr>
<tr>
<td>Source</td>
<td><code>&lt;xsd:element name=&quot;StopDate&quot; type=&quot;spase:StopDate&quot;/&gt;</code></td>
</tr>
<tr>
<td>Schema location</td>
<td>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
</tbody>
</table>

**Element spase:TimeSpan / spase:RelativeStopDate**

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagram</td>
<td><a href="#">Diagram</a></td>
</tr>
<tr>
<td>Type</td>
<td>spase:RelativeStopDate</td>
</tr>
<tr>
<td>Properties</td>
<td>content: simple</td>
</tr>
<tr>
<td>Source</td>
<td><code>&lt;xsd:element name=&quot;RelativeStopDate&quot; type=&quot;spase:RelativeStopDate&quot;/&gt;</code></td>
</tr>
<tr>
<td>Schema location</td>
<td>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
</tbody>
</table>

**Element spase:TimeSpan / spase:Note**

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagram</td>
<td><a href="#">Diagram</a></td>
</tr>
<tr>
<td>Type</td>
<td>spase:Note</td>
</tr>
<tr>
<td>Properties</td>
<td>content: simple</td>
</tr>
<tr>
<td></td>
<td>minOccurs: 0</td>
</tr>
<tr>
<td></td>
<td>maxOccurs: unbounded</td>
</tr>
<tr>
<td>Source</td>
<td><code>&lt;xsd:element name=&quot;Note&quot; type=&quot;spase:Note&quot; minOccurs=&quot;0&quot; maxOccurs=&quot;unbounded&quot;/&gt;</code></td>
</tr>
<tr>
<td>Schema location</td>
<td>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
</tbody>
</table>

**Element spase:Catalog / spase:Caveats**

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagram</td>
<td><a href="#">Diagram</a></td>
</tr>
<tr>
<td>Type</td>
<td>spase:Caveats</td>
</tr>
<tr>
<td>Properties</td>
<td>content: simple</td>
</tr>
<tr>
<td></td>
<td>minOccurs: 0</td>
</tr>
<tr>
<td></td>
<td>maxOccurs: 1</td>
</tr>
<tr>
<td>Source</td>
<td><code>&lt;xsd:element name=&quot;Caveats&quot; type=&quot;spase:Caveats&quot; minOccurs=&quot;0&quot; maxOccurs=&quot;1&quot;/&gt;</code></td>
</tr>
<tr>
<td>Schema location</td>
<td>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
</tbody>
</table>

**Element spase:Catalog / spase:Keyword**

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagram</td>
<td><a href="#">Diagram</a></td>
</tr>
<tr>
<td>Type</td>
<td>spase:Keyword</td>
</tr>
<tr>
<td>Properties</td>
<td>content: simple</td>
</tr>
</tbody>
</table>
### Element `spase:Catalog` / `spase:InputResourceID`

**Namespace**  
http://www.spase-group.org/data/schema

**Diagram**

![Diagram](image)

**Type**  
`spase:InputResourceID`

**Properties**

- **content:** simple
- **minOccurs:** 0
- **maxOccurs:** unbounded

**Source**

```xml
<xsd:element name="InputResourceID" type="spase:InputResourceID" minOccurs="0" maxOccurs="unbounded"/>
```

**Schema location**

file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### Element `spase:Catalog` / `spase:Parameter`

**Namespace**  
http://www.spase-group.org/data/schema
Schema documentation for spase-2_2_4.xsd

Diagram

Type
spase:Parameter

Properties

<table>
<thead>
<tr>
<th>content</th>
<th>complex</th>
</tr>
</thead>
<tbody>
<tr>
<td>minOccurs</td>
<td>0</td>
</tr>
<tr>
<td>maxOccurs</td>
<td>unbounded</td>
</tr>
</tbody>
</table>

Model

spase:Name
spase:Set*
spase:ParameterKey{0,1}
spase:Description{0,1}
spase:Caveats{0,1}
spase:Cadence{0,1}
spase:Units{0,1}
spase:UnitsConversion{0,1}
spase:CoordinateSystem{0,1}
spase:RenderingHints*
spase:Structure{0,1}
spase:ValidMin{0,1}
spase:ValidMax{0,1}
spase:FillValue{0,1}
(spase:Field | spase:Particle | spase:Wave | spase:Mixed | spase:Support)

Children

spase:Cadence
spase:Caveats
spase:CoordinateSystem
spase:Description
spase:Field
spase:FillValue
spase:Mixed
spase:Name
spase:ParameterKey
spase:Particle
spase:RenderingHints
spase:Set
spase:Structure
spase:Support
spase:Units
spase:UnitsConversion
spase:ValidMax
spase:ValidMin
spase:Wave

Instance

<spase:Parameter xmlns:spase="http://www.spase-group.org/data/schema">
  <spase:Name>{1,1}</spase:Name>
</spase:Parameter>
### Element `spase:Parameter / spase:Description`

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagram</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>Type</td>
<td><code>spase:Description</code></td>
</tr>
<tr>
<td>Properties</td>
<td></td>
</tr>
<tr>
<td>content</td>
<td><code>simple</code></td>
</tr>
<tr>
<td>minOccurs</td>
<td>0</td>
</tr>
<tr>
<td>maxOccurs</td>
<td>1</td>
</tr>
<tr>
<td>Source</td>
<td><code>&lt;xsd:element name=&quot;Description&quot; type=&quot;spase:Description&quot; minOccurs=&quot;0&quot; maxOccurs=&quot;1&quot;/&gt;</code></td>
</tr>
<tr>
<td>Schema location</td>
<td>file://C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
</tbody>
</table>

### Element `spase:Parameter / spase:Caveats`

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagram</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>Type</td>
<td><code>spase:Caveats</code></td>
</tr>
<tr>
<td>Properties</td>
<td></td>
</tr>
<tr>
<td>content</td>
<td><code>simple</code></td>
</tr>
<tr>
<td>minOccurs</td>
<td>0</td>
</tr>
<tr>
<td>maxOccurs</td>
<td>1</td>
</tr>
<tr>
<td>Source</td>
<td><code>&lt;xsd:element name=&quot;Caveats&quot; type=&quot;spase:Caveats&quot; minOccurs=&quot;0&quot; maxOccurs=&quot;1&quot;/&gt;</code></td>
</tr>
<tr>
<td>Schema location</td>
<td>file://C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
</tbody>
</table>

### Element `spase:Parameter / spase:Cadence`

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagram</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>Type</td>
<td><code>spase:Cadence</code></td>
</tr>
<tr>
<td>Properties</td>
<td></td>
</tr>
<tr>
<td>content</td>
<td><code>simple</code></td>
</tr>
<tr>
<td>minOccurs</td>
<td>0</td>
</tr>
<tr>
<td>maxOccurs</td>
<td>1</td>
</tr>
<tr>
<td>Source</td>
<td><code>&lt;xsd:element name=&quot;Cadence&quot; type=&quot;spase:Cadence&quot; minOccurs=&quot;0&quot; maxOccurs=&quot;1&quot;/&gt;</code></td>
</tr>
<tr>
<td>Schema location</td>
<td>file://C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
</tbody>
</table>

### Element `spase:Parameter / spase:Units`

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagram</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>Type</td>
<td><code>spase:Units</code></td>
</tr>
<tr>
<td>Properties</td>
<td></td>
</tr>
<tr>
<td>content</td>
<td><code>simple</code></td>
</tr>
<tr>
<td>minOccurs</td>
<td>0</td>
</tr>
<tr>
<td>maxOccurs</td>
<td>1</td>
</tr>
<tr>
<td>Source</td>
<td><code>&lt;xsd:element name=&quot;Units&quot; type=&quot;spase:Units&quot; minOccurs=&quot;0&quot; maxOccurs=&quot;1&quot;/&gt;</code></td>
</tr>
<tr>
<td>Schema location</td>
<td>file://C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
</tbody>
</table>
Element `spase:Parameter / spase:UnitsConversion`

**Namespace**  
http://www.spase-group.org/data/schema

**Diagram**

`UnitsConversion`  
Type: `spase:UnitsConversion`

**Type**  
`spase:UnitsConversion`

**Properties**

- content: `simple`
- minOccurs: 0
- maxOccurs: 1

**Source**

```xml
<xsd:element name="UnitsConversion" type="spase:UnitsConversion" minOccurs="0" maxOccurs="1"/>
```

**Schema location**

file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Element `spase:Parameter / spase:CoordinateSystem`

**Namespace**  
http://www.spase-group.org/data/schema

**Diagram**

`CoordinateSystem`  
Type: `spase:CoordinateSystem`

**Type**  
`spase:CoordinateSystem`

**Properties**

- content: `complex`
- minOccurs: 0
- maxOccurs: 1

**Model**

`spase:CoordinateRepresentation`, `spase:CoordinateSystemName`

**Children**

`spase:CoordinateRepresentation`, `spase:CoordinateSystemName`

**Instance**

```xml
<spase:CoordinateSystem xmlns:spase= "http://www.spase-group.org/data/schema">
  <spase:CoordinateRepresentation>{1,1}</spase:CoordinateRepresentation>
  <spase:CoordinateSystemName>{1,1}</spase:CoordinateSystemName>
</spase:CoordinateSystem>
```

**Source**

```xml
<xsd:element name="CoordinateSystem" type="spase:CoordinateSystem" minOccurs="0" maxOccurs="1"/>
```

**Schema location**

file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Element `spase:CoordinateSystem / spase:CoordinateRepresentation`

**Namespace**  
http://www.spase-group.org/data/schema

**Diagram**

`CoordinateRepresentation`  
Type: `spase:CoordinateRepresentation`

**Type**  
`spase:CoordinateRepresentation`

**Properties**

- content: `simple`
- minOccurs: 1
- maxOccurs: 1

**Facets**

- `enumeration`  
  - `Cartesian`  
  - `Cylindrical`  
  - `Spherical`

- A representation in which a position vector or a measured vector (e.g., field or flow) is specified by its components along the base axes of the coordinate system.

- A coordinate representation of a position vector or measured vector (field or flow) by its k-component, the magnitude of its projection into the i-j plane, and the azimuthal angle of the i-j plane projection.

- A coordinate representation of a position vector or of a measured vector by its magnitude and two direction angles. The angles are relative.
to the base axes of the coordinate system used. Typically the angles are phi [azimuth angle, \(=\arctan(j/i)\)] and theta, where theta may be a polar angle, \(=\arctan((\sqrt{i^2+j^2})/k)\), or an elevation angle, \(=\arctan (k/\sqrt{i^2+j^2})\).

Source
<xs:element name="CoordinateRepresentation" type="spase:CoordinateRepresentation" minOccurs="1" maxOccurs="1" />

Schema location file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### Element `spase:CoordinateSystem` / `spase:CoordinateSystemName`

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
</table>

| Diagram | [Diagram of `spase:CoordinateSystemName`]
|---------|---------------------------------------|

<table>
<thead>
<tr>
<th>Type</th>
<th>spase:CoordinateSystemName</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Properties</th>
<th>Content: simple</th>
<th>minOccurs: 1</th>
<th>maxOccurs: 1</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Facets</th>
<th>content: simple</th>
<th>minOccurs: 1</th>
<th>maxOccurs: 1</th>
</tr>
</thead>
</table>

**Facet `enumeration`**

- **CGM** (Corrected Geomagnetic)
  - A coordinate system from a spatial point with GEO radial distance and geomagnetic latitude and longitude, follow the epoch-appropriate IGRF/DGRF model field vector through to the point where the field line crosses the geomagnetic dipole equatorial plane. Then trace the dipole magnetic field vector Earthward from that point on the equatorial plane, in the same hemisphere as the original point, until the initial radial distance is reached. Designate the dipole latitude and longitude at that point as the CGM latitude and longitude of the original point. See [http://nssdc.gsfc.nasa.gov/space/cgm/cgmm_des.html](http://nssdc.gsfc.nasa.gov/space/cgm/cgmm_des.html)

- **Carrington**
  - A coordinate system which is centered at the Sun and is "fixed" with respect to the synodic rotation rate; the mean synodic value is about 27.2753 days. The Astronomical Almanac gives a value for Carrington longitude of 349.03 degrees at 0000 UT on 1 January 1995.

- **DM** (Dipole Meridian)
  - A coordinate system centered at the observation point. Z axis is parallel to the Earth’s dipole axis, positive northward. X is in the plane defined by Z and the line linking the observation point with the Earth's center. Y is positive eastward. See [http://cdpp.cnes.fr/00428.pdf](http://cdpp.cnes.fr/00428.pdf)

- **ECEF** (Earth-Centered, Earth-Fixed)
  - The Earth-Centered, Earth-Fixed (ECEF) coordinate system has point (0,0,0) defined as the center of mass of the Earth. Its axes are aligned with the International Reference Pole (IRP) and International Reference Meridian (IRM). The x-axis intersects the sphere of the Earth at 0 degree latitude (Equator) and 0 degree longitude (Greenwich). The z-axis points north. The y-axis completes the right handed coordinate system.

- **ENP** (also called PEN)
  - The F vector component points northward, perpendicular to orbit plane which for a zero degree inclination orbit is parallel to Earth's spin axis. The E vector component is perpendicular to F and N and points earthward. The N component is perpendicular to F and E and is positive eastward.

- **GEI** (Geocentric Equatorial Inertial)
  - A coordinate system where the Z axis is along Earth's spin vector, positive northward. X axis points towards the first point of Aries (from the Earth towards the Sun at the vernal equinox). See Russell, 1971. When the X axis is the direction of the mean vernal equinox of J2000,
the coordinate system is also called GCI. Then the Z axis is also defined as being normal to the mean Earth equator of J2000.

enumeration GEO
Geographic - geocentric corotating - A coordinate system where the Z axis is along Earth's spin vector, positive northward. X axis lies in Greenwich meridian, positive towards Greenwich. See Russell, 1971.

enumeration GSE
Geocentric Solar Ecliptic - A coordinate system where the X axis is from Earth to Sun. Z axis is normal to the ecliptic, positive northward. See Russell, 1971.

enumeration GSEQ
Geocentric Solar Equatorial - A coordinate system where the X axis is from Earth to Sun. Y axis is parallel to solar equatorial plane. Z axis is positive northward. See Russell, 1971.

enumeration GSM
Geocentric Solar Magnetospheric - A coordinate system where the X axis is from Earth to Sun. Z axis is northward in a plane containing the X axis and the geomagnetic dipole axis. See Russell, 1971.

enumeration HAE
Heliocentric Aries Ecliptic - A coordinate system where the Z axis is normal to the ecliptic plane, positive northward. X axis is positive towards the first point of Aries (from Earth to Sun at vernal equinox). Same as SE below. See Hapgood, 1992.

enumeration HCC
Heliocentric Cartesian - A 3-D orthonormal coordinate system that is primarily intended to specify with two dimensions a point on the solar disk. The Z axis points toward the observer. The Y axis lies in the plane defined by the solar spin vector and the Z axis, positive northward. The X axis is perpendicular to the Y and Z axes, positive toward solar west. Standard representation for this system is via the point's x and y values, expressed either as physical distances or as fractions of the solar disk radius.

enumeration HCI
Heliographic Carrington Inertial.

enumeration HCR
Heliocentric Radial - A 3-D orthonormal coordinate system that is primarily intended to specify with two dimensions a point on the solar disk. The Z axis points toward the observer. The Y axis lies in the plane defined by the solar spin vector and the Z axis, positive northward. The X axis is perpendicular to the Y and Z axes, positive toward solar west. Standard representation for this system is via the point's distance rho from the Z axis \[\text{Rho} = \sqrt{x^2 + y^2}\] and its phase angle psi measured counterclockwise from the +Y axis \[\psi = \arctan \left(-\frac{y}{x}\right)\]

enumeration HEE
Heliocentric Earth Ecliptic - A coordinate system where the Z axis is normal to the ecliptic plane, positive northward. X axis points from Sun to Earth. See Hapgood, 1992.

enumeration HEEQ
Heliocentric Earth Equatorial - A coordinate system where the Z axis is normal to the solar equatorial plane, positive northward. X axis is generally Earthward in the plane defined by the Z axis and the Sun-Earth direction. See Hapgood, 1992.

enumeration HG
Heliographic - A heliocentric rotating coordinate system where the Z axis is normal to the solar equatorial plane, positive northward. X, Y axes rotate with a 25.38 day period. The zero longitude (X axis) is defined as the longitude that passed through the ascending node of the solar equator on the ecliptic plane on 1 January, 1854 at 12 UT. See <http://nssdc.gsfc.nasa.gov/space/helios/coor_des.html>

enumeration HGI
Heliographic Inertial - A heliocentric coordinate system where the Z axis is normal to the solar
equatorial plane, positive northward. X axis is along the intersection line between solar equatorial and ecliptic planes. The X axis was positive at SE longitude of 74.367 deg on Jan 1, 1900. (See SE below.) See http://nssdc.gsfc.nasa.gov/space/helios/coor_des.html

**enumeration** HPC

Helioprojective Cartesian = A 3-D orthonormal (left-handed) coordinate system that is primarily intended to specify with two dimensions a point on the solar disk. The Z axis points from the observer to the center of the solar disk. The Y axis lies in the plane defined by the solar spin vector and the Z axis, positive northward. The X axis is perpendicular to the Y and Z axes, positive toward solar west. Given as the distance between the observer and the center of the solar disk, the standard representation of an (x,y) point on the solar disk is via the point's longitude angle \[ \text{arctan} \left( \frac{x}{d} \right) \] and latitude angle \[ \text{arctan} \left( \frac{y}{d} \right) \].

**enumeration** HPR

Helioprojective Radial = A 3-D orthonormal (left-handed) coordinate system that is primarily intended to specify with two dimensions a point on the solar disk. The Z axis points from the observer to the center of the solar disk. The Y axis lies in the plane defined by the solar spin vector and the Z axis, positive northward. The X axis is perpendicular to the Y and Z axes, positive toward solar west. Given as the distance between the observer and the center of the solar disk, the standard representation for this system of an (x,y) point on the solar disk is via the point's latitude angle \[ \text{arctan} \left( \sqrt{x^2 + y^2} \right) / d \] or equivalent declination parameter \[ \delta \] (= theta - 90 deg), and its phase angle \[ \psi \] as measured counter-clockwise from the +Y axis \[ \psi = \text{arctan} \left( -y/x \right) \].

**enumeration** J2000

An astronomical coordinate system which uses the mean equator and equinox of Julian date 2451545.0 TT (Terrestrial Time), or January 1, 2000, noon TT. (aka J2000) to define a celestial reference frame.

**enumeration** JSM

Jovian Solar Magnetospheric = A coordinate system related to Jupiter where the X axis is from Jupiter to Sun, Z axis is northward in a plane containing the X axis and the Jovian dipole axis.

**enumeration** JSO

Jovian Solar Orbital = A coordinate system related to Jupiter where X anti-sunward, Y along the orbital velocity direction.

**enumeration** KSM

Kronian Solar Magnetospheric = A coordinate system related to Saturn where the X axis is anti-sunward, Z axis is northward in a plane containing the X axis and the Kronian dipole axis.

**enumeration** KSO

Kronian Solar Orbital = A coordinate system related to Saturn where X is anti-sunward, Y along the orbital velocity direction.

**enumeration** LGM

Local Geomagnetic = A coordinate system used mainly for Earth surface or near Earth surface magnetic field data. X axis northward from observation point in a geographic meridian. Z axis downward towards Earth's center. In this system, \[ H \] (total horizontal component) = \[ \sqrt{B_x^2 + B_y^2} \] and \( D \) (declination angle) =\[ \text{arctan} \left( B_y/B_x \right) \].

**enumeration** MAG

Geomagnetic = geocentric. Z axis is parallel to the geomagnetic dipole axis, positive north. X is in the plane defined by the Z axis and the Earth's rotation axis. If N is a unit vector from the Earth's center to the north geographic pole, the signs of the X and Y axes are given by \( Y = H \times Z, X = Y \times Z \). See Russell, 1971, and http://cdpp.cnes.fr/00428.pdf

**enumeration** MFA

Magnetic Field Aligned = A coordinate system
spacecraft-centered system with Z in the direction of the ambient magnetic field vector. X is in the plane defined by Z and the spacecraft-Sun line, positive sunward. See <http://cdpp.cnes.fr/00428.pdf>

**enumeration** MSO

Mars/Mercury Solar Orbital A coordinate system related to Mars or Mercury. A coordinate system where, depending on the body (Mars or Mercury), X is anti-sunward, Y along the orbital velocity direction.

**enumeration** RTN

Radial Tangential Normal. Typically centered at a spacecraft. Used for IMF and plasma V vectors. R (radial) axis is radially away from the Sun, T (tangential) axis is normal to the plane formed by R and the Sun’s spin vector, positive in the direction of planetary motion. N (normal) is R x T.

**enumeration** SC

Spacecraft - A coordinate system defined by the spacecraft geometry and/or spin. Often has Z axis parallel to spacecraft spin vector. X and Y axes may or may not corotate with the spacecraft. See SR and SR2 below.

**enumeration** SE

Solar Ecliptic - A heliocentric coordinate system where the Z axis is normal to the ecliptic plane, positive northward. X axis is positive towards the first point of Aries (from Earth to Sun at vernal equinox). Same as HAE above. See <http://nasdc.gsfc.nasa.gov/space/helios/coor_des.html>

**enumeration** SM

Solar Magnetic - A geocentric coordinate system where the Z axis is northward along Earth’s dipole axis, X axis is in plane of Z axis and Earth-Sun line, positive sunward. See Russell, 1971.

**enumeration** SR

Spin Reference - A special case of a Spacecraft (SC) coordinate system for a spinning spacecraft. Z is parallel to the spacecraft spin vector. X and Y rotate with the spacecraft. See <http://cdpp.cnes.fr/00428.pdf>

**enumeration** SR2

Spin Reference 2 - A special case of a Spacecraft (SC) coordinate system for a spinning spacecraft. Z is parallel to the spacecraft spin vector. X is in the plane defined by Z and the spacecraft-Sun line, positive sunward. See <http://cdpp.cnes.fr/00428.pdf>

**enumeration** SSE

Spacecraft Solar Ecliptic - A coordinate system used for deep space spacecraft, for example Helios. - X axis from spacecraft to Sun, Z axis normal to ecliptic plane, positive northward. Note: Angle between normals to ecliptic and to Helios orbit plane ~ 0.25 deg.

**enumeration** SSE_L

Selenocentric Solar Ecliptic. The X axis points from the center of the Earth’s moon to the sun, the Z axis is normal to the ecliptic plane, positive northward. And the Y axis completes the right-handed set of axes.

**enumeration** SpacecraftOrbitPlane

A coordinate system where X lies in the plane normal to and in the direction of motion of the spacecraft, Z is normal to this plane and Y completes the triad in a right-handed coordinate system.

**enumeration** VSO

Venus Solar Orbital - A coordinate system related to Venus where X is anti-sunward, Y along the orbital velocity direction.

**enumeration** WGS84

The World Geodetic System (WGS) defines a reference frame for the earth, for use in geodesy and navigation. The WGS84 uses the zero meridian as defined by the Bureau International de l'Heure.

Source

```xml
<xs:element name="CoordinateSystemName" type="spase:CoordinateSystemName" minOccurs="1" maxOccurs="1"/>
```
Schema documentation for spase-2.2.4.xsd

Element `spase:Parameter / spase:RenderingHints`

Namespace `http://www.spase-group.org/data/schema`

Diagram

<table>
<thead>
<tr>
<th>Type</th>
<th><code>spase:RenderingHints</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties</td>
<td></td>
</tr>
<tr>
<td>content</td>
<td>complex</td>
</tr>
<tr>
<td>minOccurs</td>
<td>0</td>
</tr>
<tr>
<td>maxOccurs</td>
<td>unbounded</td>
</tr>
</tbody>
</table>

Model

`spase:DisplayType{0,1}, spase:AxisLabel{0,1}, spase:RenderingAxis{0,1}, spase:Index{0,1}, spase:ValueFormat{0,1}, spase:ScaleMin{0,1}, spase:ScaleMax{0,1}, spase:ScaleType{0,1}`

Children

`spase:AxisLabel, spase:DisplayType, spase:Index, spase:RenderingAxis, spase:ScaleMax, spase:ScaleMin, spase:ScaleType, spase:ValueFormat`

Instance

```xml
<spase:RenderingHints xmlns:spase="http://www.spase-group.org/data/schema">
  <spase:DisplayType>0,1</spase:DisplayType>
  <spase:AxisLabel>0,1</spase:AxisLabel>
  <spase:RenderingAxis>0,1</spase:RenderingAxis>
  <spase:Index>0,1</spase:Index>
  <spase:ValueFormat>0,1</spase:ValueFormat>
  <spase:ScaleMin>0,1</spase:ScaleMin>
  <spase:ScaleMax>0,1</spase:ScaleMax>
  <spase:ScaleType>0,1</spase:ScaleType>
</spase:RenderingHints>
```

Source

```xml
<xsd:element name="RenderingHints" type="spase:RenderingHints" minOccurs="0" maxOccurs="unbounded"/>
```

```
Element `spase:RenderingHints / spase:DisplayType`

Namespace `http://www.spase-group.org/data/schema`

Diagram

<table>
<thead>
<tr>
<th>Type</th>
<th><code>spase:DisplayType</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties</td>
<td></td>
</tr>
<tr>
<td>content</td>
<td>simple</td>
</tr>
<tr>
<td>minOccurs</td>
<td>0</td>
</tr>
<tr>
<td>maxOccurs</td>
<td>1</td>
</tr>
</tbody>
</table>

Facets

<table>
<thead>
<tr>
<th>enumeration</th>
<th>Image</th>
<th>A two-dimensional representation of data with values at each element of the array related</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enumeration</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>-------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Plasmagram</td>
<td>The characterization of signal strengths in active sounding measurements as a function of virtual range or signal delay time and sounding frequency. A Plasmagram is also referred to as an Ionogram.</td>
<td></td>
</tr>
<tr>
<td>Spectrogram</td>
<td>The characterization of signal strengths as a function of frequency (or energy) and time.</td>
<td></td>
</tr>
<tr>
<td>StackPlot</td>
<td>A representation of data showing multiple sets of observations on a single plot, possibly offsetting each plot by some uniform amount.</td>
<td></td>
</tr>
<tr>
<td>TimeSeries</td>
<td>A representation of data showing a set of observations taken at different points in time and charted as a time series.</td>
<td></td>
</tr>
<tr>
<td>WaveForm</td>
<td>Spatial or temporal variations of wave amplitude over wave-period timescales.</td>
<td></td>
</tr>
</tbody>
</table>

**Source**

```xml
<xsd:element name="DisplayType" type="spase:DisplayType" minOccurs="0" maxOccurs="1"/>
```

**Schema location**

file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

**Element spase:RenderingHints / spase:AxisLabel**

**Namespace**

http://www.spase-group.org/data/schema

**Diagram**

![Diagram of spase:AxisLabel](image)

**Type**

spase:AxisLabel

**Properties**

- **content**: simple
- **minOccurs**: 0
- **maxOccurs**: 1

**Source**

```xml
<xsd:element name="AxisLabel" type="spase:AxisLabel" minOccurs="0" maxOccurs="1"/>
```

**Schema location**

file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

**Element spase:RenderingHints / spase:RenderingAxis**

**Namespace**

http://www.spase-group.org/data/schema

**Diagram**

![Diagram of spase:RenderingAxis](image)

**Type**

spase:RenderingAxis

**Properties**

- **content**: simple
- **minOccurs**: 0
- **maxOccurs**: 1

**Facets**

- **enumeration** ColorBar: A spectrum or set of colors used to represent data values.
- **enumeration** Horizontal: Parallel to or in the plane of the horizon or a base line.
- **enumeration** Vertical: Perpendicular to the plane of the horizon or a base line.

**Source**

```xml
<xsd:element name="RenderingAxis" type="spase:RenderingAxis" minOccurs="0" maxOccurs="1"/>
```

**Schema location**

file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

**Element spase:RenderingHints / spase:Index**

**Namespace**

http://www.spase-group.org/data/schema

**Diagram**

![Diagram of spase:Index](image)

**Type**

spase:Index
### Type hierarchy
- `xsd:integer`
- `spase:typeSequence`
- `spase:Index`

### Properties
- **content**: `simple`
- **minOccurs**: 0
- **maxOccurs**: 1

### Source
```
<xs:element name="Index" type="spase:Index" minOccurs="0" maxOccurs="1"/>
```

### Element `spase:RenderingHints / spase:ValueFormat`
- **Namespace**: `http://www.spase-group.org/data/schema`
- **Diagram**
  ![Diagram](#)
- **Type**: `spase:ValueFormat`
- **Properties**
  - **content**: `simple`
  - **minOccurs**: 0
  - **maxOccurs**: 1
- **Source**
  ```
  <xs:element name="ValueFormat" type="spase:ValueFormat" minOccurs="0" maxOccurs="1"/>
  ```

### Element `spase:RenderingHints / spase:ScaleMin`
- **Namespace**: `http://www.spase-group.org/data/schema`
- **Diagram**
  ![Diagram](#)
- **Type**: `spase:ScaleMin`
- **Properties**
  - **content**: `simple`
  - **minOccurs**: 0
  - **maxOccurs**: 1
- **Source**
  ```
  <xs:element name="ScaleMin" type="spase:ScaleMin" minOccurs="0" maxOccurs="1"/>
  ```

### Element `spase:RenderingHints / spase:ScaleMax`
- **Namespace**: `http://www.spase-group.org/data/schema`
- **Diagram**
  ![Diagram](#)
- **Type**: `spase:ScaleMax`
- **Properties**
  - **content**: `simple`
  - **minOccurs**: 0
  - **maxOccurs**: 1
- **Source**
  ```
  <xs:element name="ScaleMax" type="spase:ScaleMax" minOccurs="0" maxOccurs="1"/>
  ```

### Element `spase:RenderingHints / spase:ScaleType`
- **Namespace**: `http://www.spase-group.org/data/schema`
Diagram documentation for spase-2_2_4.xsd

**Type**

**spase:ScaleType**

**Properties**

- **content**: simple
- **minOccurs**: 0
- **maxOccurs**: 1

**Facets**

- **enumeration**: LinearScale
  Intervals which are equally spaced.
- **enumeration**: LogScale
  Intervals which are spaced proportionally to the logarithms of the values being represented.

**Source**

```xml
<xsd:element name="ScaleType" type="spase:ScaleType" minOccurs="0" maxOccurs="1"/>
```

**Element**

**spase:Parameter** / **spase:Structure**

**Namespace**

http://www.spase-group.org/data/schema

**Diagram**

```
<spase:Structure xmlns:spase= "http://www.spase-group.org/data/schema">
  <spase:Size > {1,1} </spase:Size>
  <spase:Description > {0,1} </spase:Description>
  <spase:Element > {0,unbounded} </spase:Element>
</spase:Structure>
```

**Type**

**spase:Structure**

**Properties**

- **content**: complex
- **minOccurs**: 0
- **maxOccurs**: 1

**Model**

spase:Size, spase:Description(0,1), spase:Element*

**Children**

spase:Description, spase:Element, spase:Size

**Instance**

```xml
<spase:Structure xmlns:spase= "http://www.spase-group.org/data/schema">
  <spase:Size>1,1</spase:Size>
  <spase:Description>0,1</spase:Description>
  <spase:Element>0,unbounded</spase:Element>
</spase:Structure>
```

**Source**

```xml
<xsd:element name="Structure" type="spase:Structure" minOccurs="0" maxOccurs="1"/>
```

**Element**

**spase:Structure** / **spase:Size**

**Namespace**

http://www.spase-group.org/data/schema

**Diagram**

```
<spase:Size xmlns:spase= "http://www.spase-group.org/data/schema">
  <spase:Size>
    <spase:Size>
      <spase:Size>
        <spase:Size>
          <spase:Size/>
        </spase:Size>
      </spase:Size>
    </spase:Size>
  </spase:Size>
</spase:Size>
```

**Type**

**spase:Size**

**Type hierarchy**

- xsd:integer
- spase:typeSequence
- spase:Size

**Properties**

- **content**: simple
- **minOccurs**: 1
- **maxOccurs**: 1

**Source**

```xml
<xsd:element name="Size" type="spase:Size" minOccurs="1" maxOccurs="1"/>
```
**Element spase:Structure / spase:Description**

Namespace  | http://www.spase-group.org/data/schema
---|---
Diagram  | ![Diagram](Diagram.png)
Type  | spase:Description
Properties  | content: simple
minOccurs: 0
maxOccurs: 1
Source  | `<xsd:element name="Description" type="spase:Description" minOccurs="0" maxOccurs="1"/>

**Element spase:Structure / spase:Element**

Namespace  | http://www.spase-group.org/data/schema
---|---
Diagram  | ![Diagram](Diagram.png)
Type  | spase:Element
Properties  | content: complex
minOccurs: 0
maxOccurs: unbounded
Model  | spase:Name, spase:Qualifier*, spase:Index, spase:ParameterKey{0,1}, spase:Units{0,1}, spase:UnitsConversion{0,1}, spase:ValidMin{0,1}, spase:ValidMax{0,1}, spase:FillValue{0,1}, spase:RenderingHints{0,1}
Children  | spase:FillValue, spase:Index, spase:Name, spase:ParameterKey, spase:Qualifier, spase:RenderingHints, spase:Units, spase:UnitsConversion, spase:ValidMax, spase:ValidMin
Instance  | `<spase:Element xmlns:spase="http://www.spase-group.org/data/schema">  
  <spase:Name>(1,1)</spase:Name>  
  <spase:Qualifier>(0,unbounded)</spase:Qualifier>  
  <spase:Index>(1,1)</spase:Index>  
  <spase:ParameterKey>(0,1)</spase:ParameterKey>  
  <spase:Units>(0,1)</spase:Units>  
  <spase:UnitsConversion>(0,1)</spase:UnitsConversion>`
<spase:ValidMin>{0,1}</spase:ValidMin>
<spase:ValidMax>{0,1}</spase:ValidMax>
<spase:FillValue>{0,1}</spase:FillValue>
<spase:RenderingHints>{0,1}</spase:RenderingHints>
</spase:Element>

Source
<xsdelement name="Element" type="spase:Element" minOccurs="0" maxOccurs="unbounded"/>

Schema location
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Element spase:Element / spase:Name

Namespace
http://www.spase-group.org/data/schema

Diagram

Type
spase:Name

Properties
content: simple
minOccurs: 1
maxOccurs: 1

Source
<xsdelement name="Name" type="spase:Name" minOccurs="1" maxOccurs="1"/>

Schema location
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Element spase:Element / spase:Qualifier

Namespace
http://www.spase-group.org/data/schema

Diagram

Type
spase:Qualifier

Properties
content: simple
minOccurs: 0
maxOccurs: unbounded

Facets
dictionary

enumeration Anisotropy Direction-dependent property.

enumeration Array A sequence of values corresponding to the elements in a rectilinear, n-dimensional matrix. Each value can be referenced by a unique index.

enumeration Average The statistical mean; the sum of a set of values divided by the number of values in the set.

enumeration Characteristic A quantity which can be easily identified and measured in a given environment.

enumeration Circular Relative to polarization, right-hand circularly polarized light is defined such that the electric field is rotating clockwise as seen by an observer towards whom the wave is moving. Left-hand circularly polarized light is defined such that the electric field is rotating counterclockwise as seen by an observer towards whom the wave is moving. The polarization of magnetohydrodynamic waves is specified with respect to the ambient mean magnetic field: right-hand polarized waves have a transverse electric field component which turns in a right-handed sense (that of the gyrating electrons) around the magnetic field.

enumeration Column A two-dimensional measure of a quantity. The column is the area over which the quantity is measured.

enumeration Component Projection of a vector along one of the base axes of a coordinate system.

enumeration Component.I Projection of a vector along the first named axis of a coordinate system. Typically the X axis, but could be the R axis for an RTN.
<table>
<thead>
<tr>
<th>terminology</th>
<th>definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Component.J</td>
<td>Projection of a vector along the second named axis of a coordinate system. Typically the Y axis, but could be the T axis for an RTN coordinate system.</td>
</tr>
<tr>
<td>Component.K</td>
<td>Projection of a vector along the third named axis of a coordinate system. Typically the Z axis, but could be the N axis for an RTN coordinate system.</td>
</tr>
<tr>
<td>Core</td>
<td>The central or main part of an object or calculated distribution. For example, the part of a distribution of particles at low energies that is a thermal (Maxwellian) population.</td>
</tr>
<tr>
<td>CrossSpectrum</td>
<td>The Fourier transform of the cross correlation of two physical or empirical observations.</td>
</tr>
<tr>
<td>Deviation</td>
<td>The difference between an observed value and the expected value of a quantity.</td>
</tr>
<tr>
<td>Differential</td>
<td>A measurement within a narrow range of energy and/or solid angle.</td>
</tr>
<tr>
<td>Direction</td>
<td>The spatial relation between an object and another object, the orientation of the object or the course along which the object points or moves.</td>
</tr>
<tr>
<td>DirectionAngle</td>
<td>The angle between a position vector or measured vector (or one of its projections onto a plane) and one of the base axes of the coordinate system.</td>
</tr>
<tr>
<td>DirectionAngle.AzimuthAngle</td>
<td>The angle between the projection into the i-j plane of a position or measured vector and the i-axis of the coordinate system. Mathematically defined as $\arctan(\frac{j}{i})$. This term could be also applied to angles measured in different planes, for example the IMF clock angle defined as $\arctan(\frac{</td>
</tr>
<tr>
<td>DirectionAngle.ElevationAngle</td>
<td>The angle between the position or measured vector and the i-j plane of the coordinate system. Mathematically defined as $\arctan(\frac{k}{\sqrt{i^2+j^2}})$.</td>
</tr>
<tr>
<td>DirectionAngle.PolarAngle</td>
<td>The angle between the position or measured vector and the k-axis of the coordinate system. Mathematically defined as $\arctan(\frac{\sqrt{i^2+j^2}}{k})$. This term could be also applied to angles between the vector and other components, for example the IMF cone angle defined as $\arccos(\frac{B_x}{B_t})$.</td>
</tr>
<tr>
<td>Directional</td>
<td>A measurement within a narrow range of solid angle.</td>
</tr>
<tr>
<td>FieldAligned</td>
<td></td>
</tr>
</tbody>
</table>
of Doppler velocity and magnetic field in magnetograms, where only the component of the vector field directed along the line of sight is measured.

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linear</td>
<td>Polarization where the E-field vector is confined to a given plane</td>
</tr>
<tr>
<td>Magnitude</td>
<td>A measure of the strength of a vector quantity or length of its representational vector.</td>
</tr>
<tr>
<td>Maximum</td>
<td>The largest value of a batch or sample or the upper bound of a probability distribution.</td>
</tr>
<tr>
<td>Median</td>
<td>The measure of central tendency of a set of n. values computed by ordering the values and taking the value at position (n. + 1) / 2 when n. is odd or the arithmetic mean of the values at positions n. / 2 and (n. / 2) + 1 when n. is even.</td>
</tr>
<tr>
<td>Minimum</td>
<td>The smallest value of a batch or sample or the lower bound of a probability distribution.</td>
</tr>
<tr>
<td>Moment</td>
<td>Parameters determined by integration over a distribution function convolved with a power of velocity.</td>
</tr>
<tr>
<td>Parallel</td>
<td>Having the same direction as a given direction</td>
</tr>
<tr>
<td>Peak</td>
<td>The maximum value for the quantity in question, over a period of time which is usually equal to the cadence.</td>
</tr>
<tr>
<td>Perpendicular</td>
<td>At right angles to a given direction.</td>
</tr>
<tr>
<td>Perturbation</td>
<td>Variations in the state of a system.</td>
</tr>
<tr>
<td>Phase</td>
<td>A point or portion in a recurring series of changes.</td>
</tr>
<tr>
<td>PhaseAngle</td>
<td>Phase difference between two or more waves, normally expressed in degrees.</td>
</tr>
<tr>
<td>Projection</td>
<td>A measure of the length of a position or measured vector as projected into a plane of the coordinate system.</td>
</tr>
<tr>
<td>Projection.IJ</td>
<td>A measure of the length of a position or measured vector projected into the i-j (typically X-Y) plane of the coordinate system.</td>
</tr>
<tr>
<td>Projection.IK</td>
<td>A measure of the length of a position or measured vector projected into the i-k (typically X-Z) plane of the coordinate system.</td>
</tr>
<tr>
<td>Projection.JK</td>
<td>A measure of the length of a position or measured vector projected into the j-k (typically Y-Z) plane of the coordinate system.</td>
</tr>
<tr>
<td>Pseudo</td>
<td>Similar to or having the appearance of something else. Can be used to indicate an estimation or approximation of a particular quantity.</td>
</tr>
<tr>
<td>Ratio</td>
<td>The relative magnitudes of two quantities.</td>
</tr>
<tr>
<td>Scalar</td>
<td>A quantity that is completely specified by its magnitude and has no direction.</td>
</tr>
<tr>
<td>Spectral</td>
<td>Characterized as a range or continuum of frequencies</td>
</tr>
<tr>
<td>StandardDeviation</td>
<td>The square root of the average of the squares of deviations about the mean of a set of data. Standard deviation is a statistical measure of spread or variability.</td>
</tr>
<tr>
<td>StokesParameters</td>
<td></td>
</tr>
<tr>
<td>Strahl</td>
<td>A distribution of particles concentrated in a narrow energy band. The band may be may be aligned with a secondary feature. For example, it may occur in a narrow cone aligned with the mean magnetic field direction.</td>
</tr>
<tr>
<td>Superhalo</td>
<td>The part of an object or distribution surrounding some central body or distribution evident in a second break in the distribution function (e.g., a different power law). It consists of a population at a higher energies than for a halo.</td>
</tr>
</tbody>
</table>
Schema documentation for spase-2_2_4.xsd

<table>
<thead>
<tr>
<th>Schema Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>enumeration</td>
<td>Symmetric</td>
</tr>
<tr>
<td>enumeration</td>
<td>Tensor</td>
</tr>
<tr>
<td>enumeration</td>
<td>Total</td>
</tr>
<tr>
<td>enumeration</td>
<td>Trace</td>
</tr>
<tr>
<td>enumeration</td>
<td>Uncertainty</td>
</tr>
<tr>
<td>enumeration</td>
<td>Variance</td>
</tr>
<tr>
<td>enumeration</td>
<td>Vector</td>
</tr>
</tbody>
</table>

Source: 
```xml
<xs:element name="Qualifier" type="spase:Qualifier" minOccurs="0" maxOccurs="unbounded"/>
```

Element `spase:Element` / `spase:Index`

Namespace: `http://www.spase-group.org/data/schema`

Diagram: 
```
<Diagram>
  <Type spase:Index/>
  <spase:Index/>
</Diagram>
```

Type `spase:Index`

Type hierarchy: 
- `xsd:integer`
- `spase:typeSequence`
- `spase:Index`

Properties:
- content: `simple`
- minOccurs: `1`
- maxOccurs: `1`

Source: 
```xml
<xs:element name="Index" type="spase:Index" minOccurs="1" maxOccurs="1"/>
```

Element `spase:Element` / `spase:ParameterKey`

Namespace: `http://www.spase-group.org/data/schema`

Diagram: 
```
<Diagram>
  <Type spase:ParameterKey/>
  <spase:ParameterKey/>
</Diagram>
```

Type `spase:ParameterKey`

Properties:
- content: `simple`
- minOccurs: `0`
- maxOccurs: `1`

Source: 
```xml
<xs:element name="ParameterKey" type="spase:ParameterKey" minOccurs="0" maxOccurs="1"/>
```

Element `spase:Element` / `spase:Units`

Namespace: `http://www.spase-group.org/data/schema`
| **Diagram** | UnitsConversion  
| --- | ---  
| **Type** | spase:Units  
| **Properties** | content: simple  
| | minOccurs: 0  
| | maxOccurs: 1  
| **Source** | <xsd:element name="Units" type="spase:Units" minOccurs="0" maxOccurs="1"/>  
| **Schema location** | file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd  

**Element spase:Element / spase:UnitsConversion**

| **Namespace** | http://www.spase-group.org/data/schema  
| **Diagram** | UnitsConversion  
| **Type** | spase:UnitsConversion  
| **Properties** | content: simple  
| | minOccurs: 0  
| | maxOccurs: 1  
| **Source** | <xsd:element name="UnitsConversion" type="spase:UnitsConversion" minOccurs="0" maxOccurs="1"/>  
| **Schema location** | file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd  

**Element spase:Element / spase:ValidMin**

| **Namespace** | http://www.spase-group.org/data/schema  
| **Diagram** | ValidMin  
| **Type** | spase:ValidMin  
| **Properties** | content: simple  
| | minOccurs: 0  
| | maxOccurs: 1  
| **Source** | <xsd:element name="ValidMin" type="spase:ValidMin" minOccurs="0" maxOccurs="1"/>  
| **Schema location** | file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd  

**Element spase:Element / spase:ValidMax**

| **Namespace** | http://www.spase-group.org/data/schema  
| **Diagram** | ValidMax  
| **Type** | spase:ValidMax  
| **Properties** | content: simple  
| | minOccurs: 0  
| | maxOccurs: 1  
| **Source** | <xsd:element name="ValidMax" type="spase:ValidMax" minOccurs="0" maxOccurs="1"/>  
| **Schema location** | file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd  

**Element spase:Element / spase:FillValue**

| **Namespace** | http://www.spase-group.org/data/schema  
| **Diagram** | FillValue  
| **Type** | spase:FillValue  
| **Properties** | content: simple  
| | minOccurs: 0  
| | maxOccurs: 1  
| **Source** | <xsd:element name="FillValue" type="spase:FillValue" minOccurs="0" maxOccurs="1"/>  
| **Schema location** | file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd  

48
**Element spase:Parameter / spase:ValidMin**

**Namespace**
http://www.spase-group.org/data/schema

**Diagram**

```
<spase:ValidMin xmlns:spase= "http://www.spase-group.org/data/schema">
  <spase:DisplayType>[0,1]</spase:DisplayType>
  <spase:AxisLabel>[0,1]</spase:AxisLabel>
  <spase:RenderingAxis>[0,1]</spase:RenderingAxis>
  <spase:Index>[0,1]</spase:Index>
  <spase:ValueFormat>[0,1]</spase:ValueFormat>
  <spase:ScaleMin>[0,1]</spase:ScaleMin>
  <spase:ScaleMax>[0,1]</spase:ScaleMax>
  <spase:ScaleType>[0,1]</spase:ScaleType>
</spase:ValidMin>
```

**Properties**
- content: **complex**
- minOccurs: 0
- maxOccurs: 1

**Model**
- spase:DisplayType[0,1]
- spase:AxisLabel[0,1]
- spase:RenderingAxis[0,1]
- spase:Index[0,1]
- spase:ValueFormat[0,1]
- spase:ScaleMin[0,1]
- spase:ScaleMax[0,1]
- spase:ScaleType[0,1]

**Children**
- spase:AxisLabel
- spase:DisplayType
- spase:Index
- spase:RenderingAxis
- spase:ScaleMax
- spase:ScaleMin
- spase:ScaleType
- spase:ValueFormat

**Source**
file://C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd
Schema documentation for spase-2_2_4.xsd

**Element spase:Parameter / spase:ValidMin**

- **Namespace**: http://www.spase-group.org/data/schema
- **Diagram**
- **Type**: spase:ValidMin
- **Properties**
  - `content`: simple
  - `minOccurs`: 0
  - `maxOccurs`: 1
- **Source**
  ```xml
  <xsd:element name="ValidMin" type="spase:ValidMin" minOccurs="0" maxOccurs="1" />
  ```

**Element spase:Parameter / spase:ValidMax**

- **Namespace**: http://www.spase-group.org/data/schema
- **Diagram**
- **Type**: spase:ValidMax
- **Properties**
  - `content`: simple
  - `minOccurs`: 0
  - `maxOccurs`: 1
- **Source**
  ```xml
  <xsd:element name="ValidMax" type="spase:ValidMax" minOccurs="0" maxOccurs="1" />
  ```

**Element spase:Parameter / spase:FillValue**

- **Namespace**: http://www.spase-group.org/data/schema
- **Diagram**
- **Type**: spase:FillValue
- **Properties**
  - `content`: simple
  - `minOccurs`: 0
  - `maxOccurs`: 1
- **Source**
  ```xml
  <xsd:element name="FillValue" type="spase:FillValue" minOccurs="0" maxOccurs="1" />
  ```

**Element spase:Parameter / spase:Field**

- **Namespace**: http://www.spase-group.org/data/schema
- **Diagram**
- **Type**: spase:Field
- **Properties**
  - `content`: complex
- **Model**
  - `spase:Qualifier*`, `spase:FieldQuantity`, `spase:FrequencyRange{0,1}`
- **Children**
  - `spase:FieldQuantity`, `spase:FrequencyRange`, `spase:Qualifier`
- **Instance**
  ```xml
  <spase:Field xmlns:spase= "http://www.spase-group.org/data/schema">
    <spase:Qualifier> {0,unbounded} </spase:Qualifier>
    <spase:FieldQuantity> {1,1} </spase:FieldQuantity>
  </spase:Field>
  ```
Schema documentation for spase-2_2_4.xsd

Source  
<xs:element name="Field" type="spase:Field"/>

Schema location  
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

Element **spase:Field / spase:Qualifier**

<table>
<thead>
<tr>
<th>Properties</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>content:</td>
<td>simple</td>
</tr>
<tr>
<td>minOccurs:</td>
<td>0</td>
</tr>
<tr>
<td>maxOccurs:</td>
<td>unbounded</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Facets</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>enumeration</td>
<td>Anisotropy</td>
</tr>
<tr>
<td>enumeration</td>
<td>Array</td>
</tr>
<tr>
<td>enumeration</td>
<td>Average</td>
</tr>
<tr>
<td>enumeration</td>
<td>Characteristic</td>
</tr>
<tr>
<td>enumeration</td>
<td>Circular</td>
</tr>
<tr>
<td>enumeration</td>
<td>Column</td>
</tr>
<tr>
<td>enumeration</td>
<td>Component</td>
</tr>
<tr>
<td>enumeration</td>
<td>Component.I</td>
</tr>
<tr>
<td>enumeration</td>
<td>Component.J</td>
</tr>
<tr>
<td>enumeration</td>
<td>Component.K</td>
</tr>
<tr>
<td>enumeration</td>
<td>Core</td>
</tr>
<tr>
<td>enumeration</td>
<td>CrossSpectrum</td>
</tr>
<tr>
<td>enumeration</td>
<td>Deviation</td>
</tr>
<tr>
<td>enumeration</td>
<td>Differential</td>
</tr>
</tbody>
</table>
and/or solid angle.

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direction</td>
<td>The spatial relation</td>
<td>between an object and another object, the orientation of the object or the</td>
</tr>
<tr>
<td></td>
<td></td>
<td>course along which the object points or moves.</td>
</tr>
<tr>
<td>DirectionAngle</td>
<td>The angle between a</td>
<td>position vector or measured vector (or one of its projections onto a plane)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>and one of the base axes of the coordinate system.</td>
</tr>
<tr>
<td>DirectionAngle.AzimuthAngle</td>
<td>The angle between the projection into the i-j plane of a position or measured vector and the i-axis of the coordinate system. Mathematically defined as ( \arctan(j/i) ). This term could also be applied to angles measured in different planes, for example the IMF clock angle defined as ( \arctan(</td>
<td>By</td>
</tr>
<tr>
<td>DirectionAngle.ElevationAngle</td>
<td>The angle between the position or measured vector and the i-j plane of the coordinate system. Mathematically defined as ( \arctan(k/\sqrt{i^2+j^2}) ).</td>
<td></td>
</tr>
<tr>
<td>DirectionAngle.PolarAngle</td>
<td>The angle between the position or measured vector and the k-axis of the coordinate system. Mathematically defined as ( \arctan(\sqrt{i^2+j^2}/k) ). This term could be also applied to angles between the vector and other components, for example the IMF cone angle defined as ( \arccos(Bx/Bt) ).</td>
<td></td>
</tr>
<tr>
<td>Directional</td>
<td>A measurement within</td>
<td>a narrow range of solid angle.</td>
</tr>
<tr>
<td>Fit</td>
<td>Values that make a</td>
<td>model agree with the data.</td>
</tr>
<tr>
<td>Group</td>
<td>An assemblage of</td>
<td>values that a certain relation or common characteristic.</td>
</tr>
<tr>
<td>Halo</td>
<td>The part of an object</td>
<td>or distribution surrounding some central body or distribution. For example,</td>
</tr>
<tr>
<td></td>
<td>or distribution</td>
<td>the particles above the core energies that show enhancements above the</td>
</tr>
<tr>
<td></td>
<td>surrounding some</td>
<td>thermal population. Typically, a &quot;power law tail&quot; shows a break from</td>
</tr>
<tr>
<td></td>
<td>central body or</td>
<td>the core Maxwellian at a particular energy.</td>
</tr>
<tr>
<td></td>
<td>distribution.</td>
<td></td>
</tr>
<tr>
<td>Integral</td>
<td>A flux measurement</td>
<td>in a broad range of energy and solid angle.</td>
</tr>
<tr>
<td>Integral.Area</td>
<td>Integration over the</td>
<td>extent of a planar region, or of the surface of a solid.</td>
</tr>
<tr>
<td>Integral.Bandwidth</td>
<td>Integration over the</td>
<td>width a frequency band.</td>
</tr>
<tr>
<td>Integral.SolidAngle</td>
<td>Integration over the</td>
<td>angle in three-dimensional space that an object subtends at a point.</td>
</tr>
<tr>
<td>LineOfSight</td>
<td>The line of sight is</td>
<td>the line that connects the observer with the observed object. This</td>
</tr>
<tr>
<td></td>
<td>the line that</td>
<td>expression is often used with measurements of Doppler velocity and magnetic</td>
</tr>
<tr>
<td></td>
<td>connects the</td>
<td>field in magnetograms, where only the component of the vector field</td>
</tr>
<tr>
<td></td>
<td>observer with the</td>
<td>directed along the line of sight is measured.</td>
</tr>
<tr>
<td>Linear</td>
<td>Polarization where</td>
<td>the E-field vector is confined to a given plane.</td>
</tr>
<tr>
<td>Magnitude</td>
<td>A measure of the</td>
<td>strength of a vector quantity or length of its representational vector.</td>
</tr>
<tr>
<td>Maximum</td>
<td>The largest value of</td>
<td>a batch or sample or the upper bound of a probability distribution.</td>
</tr>
<tr>
<td>Median</td>
<td>The measure of</td>
<td>central tendency of a set of n. values computed by ordering the values and</td>
</tr>
<tr>
<td></td>
<td>central tendency of</td>
<td>taking the value at position ((n. + 1) / 2) when n. is odd or the</td>
</tr>
<tr>
<td></td>
<td>a set of n. values</td>
<td>arithmetic mean of the values at positions (n. / 2) and ((n. / 2) + 1)</td>
</tr>
<tr>
<td></td>
<td>computed by ordering</td>
<td>when n. is even.</td>
</tr>
<tr>
<td>Minimum</td>
<td>The smallest value of</td>
<td>a batch or sample or the lower bound of a probability distribution.</td>
</tr>
<tr>
<td>Moment</td>
<td>Parameters determined</td>
<td>by integration over a distribution function convolved with a power</td>
</tr>
<tr>
<td>Enumeration</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>-------------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td>Parallel</td>
<td>Having the same direction as a given direction</td>
<td></td>
</tr>
<tr>
<td>Peak</td>
<td>The maximum value for the quantity in question, over a period of time which is usually equal to the cadence.</td>
<td></td>
</tr>
<tr>
<td>Perpendicular</td>
<td>At right angles to a given direction.</td>
<td></td>
</tr>
<tr>
<td>Perturbation</td>
<td>Variations in the state of a system.</td>
<td></td>
</tr>
<tr>
<td>Phase</td>
<td>A point or portion in a recurring series of changes.</td>
<td></td>
</tr>
<tr>
<td>PhaseAngle</td>
<td>Phase difference between two or more waves, normally expressed in degrees.</td>
<td></td>
</tr>
<tr>
<td>Projection</td>
<td>A measure of the length of a position or measured vector as projected into a plane of the coordinate system.</td>
<td></td>
</tr>
<tr>
<td>Projection.IJ</td>
<td>A measure of the length of a position or measured vector projected into the i-j (typically X-Y) plane of the coordinate system.</td>
<td></td>
</tr>
<tr>
<td>Projection.IK</td>
<td>A measure of the length of a position or measured vector projected into the i-k (typically X-Z) plane of the coordinate system.</td>
<td></td>
</tr>
<tr>
<td>Projection.JK</td>
<td>A measure of the length of a position or measured vector projected into the j-k (typically Y-Z) plane of the coordinate system.</td>
<td></td>
</tr>
<tr>
<td>Pseudo</td>
<td>Similar to or having the appearance of something else. Can be used to indicate an estimation or approximation of a particular quantity.</td>
<td></td>
</tr>
<tr>
<td>Ratio</td>
<td>The relative magnitudes of two quantities.</td>
<td></td>
</tr>
<tr>
<td>Scalar</td>
<td>A quantity that is completely specified by its magnitude and has no direction.</td>
<td></td>
</tr>
<tr>
<td>Spectral</td>
<td>Characterized as a range or continuum of frequencies.</td>
<td></td>
</tr>
<tr>
<td>StandardDeviation</td>
<td>The square root of the average of the squares of deviations about the mean of a set of data. Standard deviation is a statistical measure of spread or variability.</td>
<td></td>
</tr>
<tr>
<td>StokesParameters</td>
<td>A distribution of particles concentrated in a narrow energy band. The band may be may be aligned with a secondary feature. For example, it may occur in a narrow cone aligned with the mean magnetic field direction.</td>
<td></td>
</tr>
<tr>
<td>Superhalo</td>
<td>The part of an object or distribution surrounding some central body or distribution evident in a second break in the distribution function (e.g., a different power law). It consists of a population at a higher energies than for a halo.</td>
<td></td>
</tr>
<tr>
<td>Symmetric</td>
<td>Equal distribution about one or more axes.</td>
<td></td>
</tr>
<tr>
<td>Tensor</td>
<td>A generalized linear &quot;quantity&quot; or &quot;geometrical entity&quot; that can be expressed as a multi-dimensional array relative to a choice of basis of the particular space on which it is defined.</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>The summation of quantities over all possible species.</td>
<td></td>
</tr>
<tr>
<td>Trace</td>
<td>The sum of the elements on the main diagonal (the diagonal from the upper left to the lower right) of a square matrix.</td>
<td></td>
</tr>
<tr>
<td>Uncertainty</td>
<td>A statistically defined discrepancy between a measured quantity and the true value of that quantity that cannot be corrected by calculation or calibration.</td>
<td></td>
</tr>
<tr>
<td>Variance</td>
<td>A measure of dispersion of a set of data points around their mean value. The expectation value of the squared deviations from the mean.</td>
<td></td>
</tr>
<tr>
<td>Vector</td>
<td>A set of parameter values each along some independent variable (e.g., components of velocity).</td>
<td></td>
</tr>
</tbody>
</table>
Element `spase:Field` / `spase:FieldQuantity`

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagram</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>Type</td>
<td><code>spase:FieldQuantity</code></td>
</tr>
<tr>
<td>Properties</td>
<td></td>
</tr>
<tr>
<td>content:</td>
<td><code>simple</code></td>
</tr>
<tr>
<td>minOccurs:</td>
<td><code>1</code></td>
</tr>
<tr>
<td>maxOccurs:</td>
<td><code>1</code></td>
</tr>
<tr>
<td>Facets</td>
<td></td>
</tr>
<tr>
<td>enumeration Current</td>
<td>The flow of electrons through a conductor caused by a potential difference.</td>
</tr>
<tr>
<td>enumeration Electric</td>
<td>The physical attribute that exerts an electrical force.</td>
</tr>
<tr>
<td>enumeration Electromagnetic</td>
<td>Electric and magnetic field variations in time and space that propagate through a medium or a vacuum with the wave’s propagation, electric field, and magnetic field vectors forming an orthogonal triad. Waves in this category are detected by having their field quantities measured.</td>
</tr>
<tr>
<td>enumeration Gyrofrequency</td>
<td>The number of gyrations around a magnetic guiding center (field line) a charged particle makes per unit time due to the Lorentz force.</td>
</tr>
<tr>
<td>enumeration Magnetic</td>
<td>The physical attribute attributed to a magnet or its equivalent.</td>
</tr>
<tr>
<td>enumeration PlasmaFrequency</td>
<td>A number-density-dependent characteristic frequency of a plasma.</td>
</tr>
<tr>
<td>enumeration Potential</td>
<td>The work required per unit charge to move a charge from a reference point to a point at infinity (electric potential is defined to be zero). The electric potential of a spacecraft is often referred to as the &quot;spacecraft potential&quot;. The spacecraft potential is the electric potential of the spacecraft relative to the potential of the nearby plasma. The spacecraft potential is non-zero because the spacecraft charges to the level that the emitted photoelectron flux going to infinity is balanced by the plasma electron flux to the spacecraft.</td>
</tr>
<tr>
<td>enumeration PoyntingFlux</td>
<td>Electromagnetic energy flux transported by a wave characterized as the rate of energy transport per unit area per steradian.</td>
</tr>
</tbody>
</table>

Source

```xml
<xsd:element name="Qualifier" type="spase:Qualifier" minOccurs="0" maxOccurs="unbounded"/>
```

Schema location

`file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd`

---

Element `spase:Field` / `spase:FrequencyRange`

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
</table>

---

54
**Type**

| spase:FrequencyRange

**Properties**

| content: complex
| minOccurs: 0
| maxOccurs: 1

**Model**

| spase:SpectralRange[0,1], spase:Low, spase:High, spase:Units, spase:Bin*

**Children**

| spase:Bin, spase:High, spase:Low, spase:SpectralRange, spase:Units

**Instance**

```xml
<spase:FrequencyRange xmlns:spase= "http://www.spase-group.org/data/schema">
  <spase:SpectralRange > {0,1} </spase:SpectralRange>
  <spase:Low > {1,1} </spase:Low>
  <spase:High > {1,1} </spase:High>
  <spase:Units >{1,1} </spase:Units>
  <spase:Bin >{0,unbounded} </spase:Bin>
</spase:FrequencyRange>
```

**Source**

```xml
<xsd:element  name="FrequencyRange"  type="spase:FrequencyRange"  minOccurs= "0"  maxOccurs= "1"/>
```

**Schema location**

file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### Element `spase:FrequencyRange` / `spase:SpectralRange`

**Namespace**

http://www.spase-group.org/data/schema

**Diagram**

```
Diagram
type: spase:SpectralRange
```

**Type**

| spase:SpectralRange

**Properties**

| content: simple
| minOccurs: 0
| maxOccurs: 1

**Facets**

| enumeration: CaK
| A spectrum with a wavelength of range centered near 393.5 nm. VSO nickname: Ca-K image with a range of 391.9 nm to 395.2 nm.

| enumeration: ExtremeUltraviolet
| A spectrum with a wavelength range of 10.0 nm to 125.0 nm. VSO nickname: EUV image with a range of 10.0 nm to 125.0 nm.

| enumeration: FarUltraviolet
| A spectrum with a wavelength range of 122 nm to 200.0 nm. VSO nickname: FUV image with a range of 122.0 nm to 200 nm.

| enumeration: GammaRays
| Photons with a wavelength range: 0.00001 to 0.001 nm.

| enumeration: Halpha
| A spectrum with a wavelength range centered at 656.3 nm. VSO nickname: H-alpha image with a range of 655.8 nm to 656.8 nm.

| enumeration: HardXrays
| Photons with a wavelength range: 0.001 to 0.1 nm and an energy range of 12 keV to 120 keV.

| enumeration: He10830
| A spectrum with a wavelength range centered at 1082.9 nm. VSO nickname: He 10830 image with a range of 1082.5 nm to 1083.3 nm.

| enumeration: He304
| A spectrum centered around the resonance line.
of ionised helium at 304 Angstrom (30.4 nm).

### Infrared
- **Photons with a wavelength range:** 760 to 1.00x10^6 nm

### K7699
- **A spectrum with a wavelength range centered at:** 769.9 nm. VSO nickname: K-7699 dopplergram with a range of 769.8 nm to 770.0 nm.

### LBHBand
- **Lyman-Birge-Hopfield band in the far ultraviolet range with wavelength range:** 140nm to 170 nm.

### Microwave
- **Photons with a wavelength range:** 1.00x10^6 to 1.50x10^7 nm

### NaD
- **A spectrum with a wavelength range of centered at:** 589.3 nm. VSO nickname: Na-D image with a range of 588.8 nm to 589.8 nm.

### Ni6768
- **A spectrum with a wavelength range centered at:** 676.8 nm. VSO nickname: Ni-6768 dopplergram with a range of of 676.7 nm to 676.9 nm.

### Optical
- **Photons with a wavelength range:** 380 to 760 nm

### RadioFrequency
- **Photons with a wavelength range:** 100,000 to 1.00x10^11 nm

### SoftXRays
- **X-Rays with an energy range of:** 0.12 keV to 12 keV.

### Ultraviolet
- **Photons with a wavelength range:** 10 to 400 nm.

### WhiteLight
- **Photons with a wavelength in the visible range for humans.

### X Rays
- **Photons with a wavelength range:** 0.001 <= x < 10 nm
Element `spase:FrequencyRange` / `spase:Units`

Namespace: `http://www.spase-group.org/data/schema`

Diagram:

Type: `spase:Units`

Properties:
- content: simple
- minOccurs: 1
- maxOccurs: 1

Source:

```xml
<xsd:element name="Units" type="spase:Units" minOccurs="1" maxOccurs="1"/>
```

Schema location:

`file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd`

Element `spase:FrequencyRange` / `spase:Bin`

Namespace: `http://www.spase-group.org/data/schema`

Diagram:

Type: `spase:Bin`

Properties:
- content: complex
- minOccurs: 0
- maxOccurs: unbounded

Model: `spase:BandName{0,1}, spase:Low, spase:High`

Children: `spase:BandName, spase:Low, spase:High`

Instance:

```xml
<spase:Bin xmlns:spase= "http://www.spase-group.org/data/schema">
    <spase:BandName> {0,1} </spase:BandName>
    <spase:Low> {1,1} </spase:Low>
    <spase:High> {1,1} </spase:High>
</spase:Bin>
```

Source:

```xml
<xsd:element name="Bin" type="spase:Bin" minOccurs="0" maxOccurs="unbounded"/>
```

Schema location:

`file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd`

Element `spase:Bin` / `spase:BandName`

Namespace: `http://www.spase-group.org/data/schema`

Diagram:

Type: `spase:BandName`

Properties:
- content: simple
- minOccurs: 0
- maxOccurs: 1

Source:

```xml
<xsd:element name="BandName" type="spase:BandName" minOccurs="0" maxOccurs="1"/>
```

Schema location:

`file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd`

Element `spase:Bin` / `spase:Low`

Namespace: `http://www.spase-group.org/data/schema`
Schema documentation for spase-2_2_4.xsd

Diagram

<table>
<thead>
<tr>
<th>Type</th>
<th>spase:Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties</td>
<td></td>
</tr>
<tr>
<td>content:</td>
<td>simple</td>
</tr>
<tr>
<td>minOccurs:</td>
<td>1</td>
</tr>
<tr>
<td>maxOccurs:</td>
<td>1</td>
</tr>
<tr>
<td>Source</td>
<td></td>
</tr>
</tbody>
</table>
| <xsd:element name="Low" type="spase:Low" minOccurs="1" maxOccurs="1"/>
| Schema location |
| file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd |

Element spase:Bin / spase:High

Namespace
http://www.spase-group.org/data/schema

Diagram

<table>
<thead>
<tr>
<th>Type</th>
<th>spase:High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties</td>
<td></td>
</tr>
<tr>
<td>content:</td>
<td>simple</td>
</tr>
<tr>
<td>minOccurs:</td>
<td>1</td>
</tr>
<tr>
<td>maxOccurs:</td>
<td>1</td>
</tr>
<tr>
<td>Source</td>
<td></td>
</tr>
</tbody>
</table>
| <xsd:element name="High" type="spase:High" minOccurs="1" maxOccurs="1"/>
| Schema location |
| file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd |

Element spase:Parameter / spase:Particle

Namespace
http://www.spase-group.org/data/schema

Diagram

<table>
<thead>
<tr>
<th>Type</th>
<th>spase:Particle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties</td>
<td></td>
</tr>
<tr>
<td>content:</td>
<td>complex</td>
</tr>
<tr>
<td>Model</td>
<td></td>
</tr>
<tr>
<td>spase:ParticleType+ , spase:Qualifier* , spase:ParticleQuantity , spase:AtomicNumber+ , spase:EnergyRange{0,1} , spase:AzimuthalAngleRange{0,1} , spase:PolarAngleRange{0,1}</td>
<td></td>
</tr>
<tr>
<td>Children</td>
<td></td>
</tr>
<tr>
<td>Instance</td>
<td></td>
</tr>
</tbody>
</table>
| <spase:Particle xmlns:spase= "http://www.spase-group.org/data/schema">
| <spase:ParticleType>[1, unbounded]"/spase:ParticleType>
| <spase:Qualifier>[0, unbounded]"/spase:Qualifier>
| <spase:ParticleQuantity>[1,1]"/spase:ParticleQuantity>
| <spase:AtomicNumber>[0, unbounded]"/spase:AtomicNumber>
| <spase:EnergyRange>[0,1]"/spase:EnergyRange>
| <spase:AzimuthalAngleRange>[0,1]"/spase:AzimuthalAngleRange> |
### Element `spase:Particle` / `spase:ParticleType`

**Namespace**  
http://www.spase-group.org/data/schema

**Diagram**

<table>
<thead>
<tr>
<th>Type</th>
<th>Properties</th>
<th>Facets</th>
</tr>
</thead>
</table>
| `spase:Particle` / `spase:ParticleType` | content: `simple`  
minOccurs: 1  
maxOccurs: unbounded | enumeration `Aerosol`  
A suspension of fine solid or liquid particles in a gas.  

enumeration `AlphaParticle`  
A positively charged nuclear particle that consists of two protons and two neutrons.  

enumeration `Atom`  
Matter consisting of a nucleus surrounded by electrons which has no net charge.  

enumeration `Dust`  
Free microscopic particles of solid material.  

enumeration `Electron`  
An elementary particle consisting of a charge of negative electricity equal to about 1.602 x 10^-19 Coulomb and having a mass when at rest of about 9.109534 x 10^-28 gram.  

enumeration `Ion`  
An atom that has acquired a net electric charge by gaining or losing one or more electrons.(Note: Z>2)  

enumeration `Molecule`  
A group of atoms so united and combined by chemical affinity that they form a complete, integrated whole, being the smallest portion of any particular compound that can exist in a free state  

enumeration `Neutron`  
An elementary particle that has no net charge and is a constituent of atomic nuclei, and that has a mass slightly larger than a proton (1.673 x 10^-24 gram.)  

enumeration `Proton`  
An elementary particle that is a constituent of all atomic nuclei, that carries a positive charge numerically equal to the charge of an electron, and that has a mass of 1.673 x 10^-24 gram.

**Source**  
<xsd:element name="Particle" type="spase:Particle"/>

**Schema location**
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

### Element `spase:Qualifier`

**Namespace**  
http://www.spase-group.org/data/schema

**Diagram**

<table>
<thead>
<tr>
<th>Type</th>
<th>Properties</th>
<th>Facets</th>
</tr>
</thead>
</table>
| `spase:Qualifier` | content: `simple`  
minOccurs: 0  
maxOccurs: unbounded | enumeration `Anisotropy`  
Direction-dependent property.  

enumeration `Array`  
A sequence of values corresponding to the elements in a rectilinear, n-dimension matrix. Each value can be referenced by a unique index.  

enumeration `Average`  
The statistical mean; the sum of a set of

**Source**  
<xsd:element name="Qualifier" type="spase:Qualifier" minOccurs="0" maxOccurs="unbounded"/>

**Schema location**
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd
values divided by the number of values in the set.

<table>
<thead>
<tr>
<th>enumeration</th>
<th>Characteristic</th>
<th>A quantity which can be easily identified and measured in a given environment.</th>
</tr>
</thead>
<tbody>
<tr>
<td>enumeration</td>
<td>Circular</td>
<td>Relative to polarization, right-hand circularly polarized light is defined such that the electric field is rotating clockwise as seen by an observer towards whom the wave is moving. Left-hand circularly polarized light is defined such that the electric field is rotating counterclockwise as seen by an observer towards whom the wave is moving. The polarization of magnetohydrodynamic waves is specified with respect to the ambient mean magnetic field: right-hand polarized waves have a transverse electric field component which turns in a right-handed sense (that of the gyrating electrons) around the magnetic field.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Column</td>
<td>A two-dimensional measure of a quantity. The column is the area over which the quantity is measured.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Component</td>
<td>Projection of a vector along one of the base axes of a coordinate system.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Component.I</td>
<td>Projection of a vector along the first named axis of a coordinate system. Typically the X axis, but could be the R axis for an RTN coordinate system.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Component.J</td>
<td>Projection of a vector along the second named axis of a coordinate system. Typically the Y axis, but could be the T axis for an RTN coordinate system.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Component.K</td>
<td>Projection of a vector along the third named axis of a coordinate system. Typically the Z axis, but could be the N axis for an RTN coordinate system.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Core</td>
<td>The central or main part of an object or calculated distribution. For example, the part of a distribution of particles at low energies that is a thermal (Maxwellian) population.</td>
</tr>
<tr>
<td>enumeration</td>
<td>CrossSpectrum</td>
<td>The Fourier transform of the cross correlation of two physical or empirical observations.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Deviation</td>
<td>The difference between an observed value and the expected value of a quantity.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Differential</td>
<td>A measurement within a narrow range of energy and/or solid angle.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Direction</td>
<td>The spatial relation between an object and another object, the orientation of the object or the course along which the object points or moves.</td>
</tr>
<tr>
<td>enumeration</td>
<td>DirectionAngle</td>
<td>The angle between a position vector or measured vector (or one of its projections onto a plane) and one of the base axes of the coordinate system.</td>
</tr>
<tr>
<td>enumeration</td>
<td>DirectionAngle.AzimuthAngle</td>
<td>The angle between the projection into the i-j plane of a position or measured vector and the i-axis of the coordinate system. Mathematically defined as arctan(j/i). This term could be also applied to angles measured in different planes, for example the IMF clock angle defined as arctan(</td>
</tr>
<tr>
<td>enumeration</td>
<td>DirectionAngle.ElevationAngle</td>
<td>The angle between the position or measured vector and the i-j plane of the coordinate system. Mathematically defined as arctan(k/\sqrt(i^2+j^2)).</td>
</tr>
<tr>
<td>enumeration</td>
<td>DirectionAngle.PolarAngle</td>
<td>The angle between the position or measured vector and the k-axis of the coordinate system. Mathematically defined as arctan(</td>
</tr>
<tr>
<td>Enumeration</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Directional</td>
<td>A measurement within a narrow range of solid angle.</td>
<td></td>
</tr>
<tr>
<td>FieldAligned</td>
<td>Values that make a model agree with the data.</td>
<td></td>
</tr>
<tr>
<td>Fit</td>
<td>An assemblage of values that a certain relation or common characteristic.</td>
<td></td>
</tr>
<tr>
<td>Halo</td>
<td>The part of an object or distribution surrounding some central body or distribution. For example, the particles above the core energies that show enhancements above the thermal population. Typically, a &quot;power law tail&quot; shows a break from the core Maxwellian at a particular energy.</td>
<td></td>
</tr>
<tr>
<td>Integral</td>
<td>A flux measurement in a broad range of energy and solid angle.</td>
<td></td>
</tr>
<tr>
<td>Integral.Area</td>
<td>Integration over the extent of a planar region, or of the surface of a solid.</td>
<td></td>
</tr>
<tr>
<td>Integral.Bandwidth</td>
<td>Integration over the width a frequency band.</td>
<td></td>
</tr>
<tr>
<td>Integral.SolidAngle</td>
<td>Integration over the angle in three-dimensional space that an object subtends at a point.</td>
<td></td>
</tr>
<tr>
<td>LineOfSight</td>
<td>The line of sight is the line that connects the observer with the observed object. This expression is often used with measurements of Doppler velocity and magnetic field in magnetograms, where only the component of the vector field directed along the line of sight is measured.</td>
<td></td>
</tr>
<tr>
<td>Linear</td>
<td>Polarization where the E-field vector is confined to a given plane</td>
<td></td>
</tr>
<tr>
<td>Magnitude</td>
<td>A measure of the strength of a vector quantity or length of its representational vector.</td>
<td></td>
</tr>
<tr>
<td>Maximum</td>
<td>The largest value of a batch or sample or the upper bound of a probability distribution.</td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td>The measure of central tendency of a set of n. values computed by ordering the values and taking the value at position ((n. + 1) / 2) when (n.) is odd or the arithmetic mean of the values at positions ((n. / 2)) and ((n. / 2) + 1) when (n.) is even.</td>
<td></td>
</tr>
<tr>
<td>Minimum</td>
<td>The smallest value of a batch or sample or the lower bound of a probability distribution.</td>
<td></td>
</tr>
<tr>
<td>Moment</td>
<td>Parameters determined by integration over a distribution function convolved with a power of velocity.</td>
<td></td>
</tr>
<tr>
<td>Parallel</td>
<td>Having the same direction as a given direction</td>
<td></td>
</tr>
<tr>
<td>Peak</td>
<td>The maximum value for the quantity in question, over a period of time which is usually equal to the cadence.</td>
<td></td>
</tr>
<tr>
<td>Perpendicular</td>
<td>At right angles to a given direction.</td>
<td></td>
</tr>
<tr>
<td>Perturbation</td>
<td>Variations in the state of a system.</td>
<td></td>
</tr>
<tr>
<td>Phase</td>
<td>A point or portion in a recurring series of changes.</td>
<td></td>
</tr>
<tr>
<td>PhaseAngle</td>
<td>Phase difference between two or more waves, normally expressed in degrees.</td>
<td></td>
</tr>
<tr>
<td>Projection</td>
<td>A measure of the length of a position or measured vector as projected into a plane of the coordinate system.</td>
<td></td>
</tr>
<tr>
<td>Projection.IJ</td>
<td>A measure of the length of a position or measured vector projected into the i-j (typically X-Y) plane of the coordinate system.</td>
<td></td>
</tr>
<tr>
<td>Projection.IK</td>
<td>A measure of the length of a position or measured vector projected into the i-k (typically X-Z) plane of the coordinate system.</td>
<td></td>
</tr>
<tr>
<td>Projection.JK</td>
<td>A measure of the length of a position or measured vector projected into the j-k (typically Y-Z) plane of the coordinate system.</td>
<td></td>
</tr>
<tr>
<td>Enumeration</td>
<td>Definition</td>
<td></td>
</tr>
<tr>
<td>----------------</td>
<td>---------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Pseudo</td>
<td>Similar to or having the appearance of something else. Can be used to indicate an estimation or approximation of a particular quantity.</td>
<td></td>
</tr>
<tr>
<td>Ratio</td>
<td>The relative magnitudes of two quantities.</td>
<td></td>
</tr>
<tr>
<td>Scalar</td>
<td>A quantity that is completely specified by its magnitude and has no direction.</td>
<td></td>
</tr>
<tr>
<td>Spectral</td>
<td>Characterized as a range or continuum of frequencies</td>
<td></td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>The square root of the average of the squares of deviations about the mean of a set of data. Standard deviation is a statistical measure of spread or variability.</td>
<td></td>
</tr>
<tr>
<td>Stokes Parameters</td>
<td>A distribution of particles concentrated in a narrow energy band. The band may be may be aligned with a secondary feature. For example, it may occur in a narrow cone aligned with the mean magnetic field direction.</td>
<td></td>
</tr>
<tr>
<td>Strahl</td>
<td>A distribution of particles concentrated in a narrow energy band. The band may be may be aligned with a secondary feature. For example, it may occur in a narrow cone aligned with the mean magnetic field direction.</td>
<td></td>
</tr>
<tr>
<td>Superhalo</td>
<td>The part of an object or distribution surrounding some central body or distribution evident in a second break in the distribution function (e.g., a different power law). It consists of a population at a higher energies than for a halo.</td>
<td></td>
</tr>
<tr>
<td>Symmetric</td>
<td>Equal distribution about one or more axes.</td>
<td></td>
</tr>
<tr>
<td>Tensor</td>
<td>A generalized linear “quantity” or “geometrical entity” that can be expressed as a multi-dimensional array relative to a choice of basis of the particular space on which it is defined.</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>The summation of quantities over all possible species.</td>
<td></td>
</tr>
<tr>
<td>Trace</td>
<td>The sum of the elements on the main diagonal (the diagonal from the upper left to the lower right) of a square matrix.</td>
<td></td>
</tr>
<tr>
<td>Uncertainty</td>
<td>A statistically defined discrepancy between a measured quantity and the true value of that quantity that cannot be corrected by calculation or calibration.</td>
<td></td>
</tr>
<tr>
<td>Variance</td>
<td>A measure of dispersion of a set of data points around their mean value. The expectation value of the squared deviations from the mean.</td>
<td></td>
</tr>
<tr>
<td>Vector</td>
<td>A set of parameter values each along some independent variable (e.g., components of a field in three orthogonal spatial directions; atmospheric temperature values at several altitudes, or at a given latitude and longitude).</td>
<td></td>
</tr>
</tbody>
</table>

Source: `<xsd:element name="Qualifier" type="spase:Qualifier" minOccurs="0" maxOccurs="unbounded"/>

```
<xs:element name="Qualifier" type="spase:Qualifier" minOccurs="0" maxOccurs="unbounded"/>
```

**Element spase:Particle / spase:ParticleQuantity**

**Namespace**
http://www.spase-group.org/data/schema

**Diagram**

```
ParticleQuantity
  +------------------+
  | spase:ParticleQuantity |
  +------------------+
```

**Type**
spase:ParticleQuantity

**Properties**
- content: simple
- minOccurs: 1
- maxOccurs: 1

**Facets**
- enumeration ArrivalDirection
  - An angular measure of the direction from which an energetic particle or photon was incident on a detector. The angles may be measured in any coordinate system.
<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AtomicNumberDetected</td>
<td>The number of protons in the nucleus of an atom as determined by a detector.</td>
</tr>
<tr>
<td>AverageChargeState</td>
<td>A measure of the composite deficit (positive) or excess (negative) of electrons with respect to protons.</td>
</tr>
<tr>
<td>ChargeState</td>
<td>Charge of a fully or partially stripped ion, in units of the charge of a proton. Charge state of a bare proton = 1.</td>
</tr>
<tr>
<td>CountRate</td>
<td>The number of events per unit time.</td>
</tr>
<tr>
<td>Counts</td>
<td>The number of detection events occurring in a detector over the detector accumulation time.</td>
</tr>
<tr>
<td>Energy</td>
<td>The capacity for doing work as measured by the capability of doing work (potential energy) or the conversion of this capability to motion (kinetic energy).</td>
</tr>
<tr>
<td>EnergyDensity</td>
<td>The amount of energy per unit volume.</td>
</tr>
<tr>
<td>EnergyFlux</td>
<td>The amount of energy passing through a unit area in a unit time.</td>
</tr>
<tr>
<td>FlowSpeed</td>
<td>The rate at which particles or energy is passing through a unit area in a unit time.</td>
</tr>
<tr>
<td>FlowVelocity</td>
<td>The volume of matter passing through a unit area perpendicular to the direction of flow in a unit of time.</td>
</tr>
<tr>
<td>Fluoence</td>
<td>The time integral of a flux. A fluence does not have any &quot;per unit time&quot; in its units.</td>
</tr>
<tr>
<td>Gyrofrequency</td>
<td>The number of gyrations around a magnetic guiding center (field line) a charged particle makes per unit time due to the Lorentz force.</td>
</tr>
<tr>
<td>HeatFlux</td>
<td>Flow of thermal energy through a gas or plasma; typically computed as third moment of a distribution function.</td>
</tr>
<tr>
<td>Mass</td>
<td>The measure of inertia (mass) of individual objects (e.g., aerosols).</td>
</tr>
<tr>
<td>MassDensity</td>
<td>The mass of particles per unit volume.</td>
</tr>
<tr>
<td>MassNumber</td>
<td>The total number of protons and neutrons (together known as nucleons) in an atomic nucleus.</td>
</tr>
<tr>
<td>NumberDensity</td>
<td>The number of particles per unit volume.</td>
</tr>
<tr>
<td>NumberFlux</td>
<td>The number of particles passing a unit area in unit time, possibly also per unit energy (or equivalent) and/or per unit look direction.</td>
</tr>
<tr>
<td>ParticleRadius</td>
<td>The mean radius for a Gaussian distribution of particles with an axial ratio of 2 and a distribution width that varies as 0.5 radius. A value of zero means no cloud was detected.</td>
</tr>
<tr>
<td>PhaseSpaceDensity</td>
<td></td>
</tr>
<tr>
<td>PlasmaFrequency</td>
<td>A number-density-dependent characteristic frequency of a plasma.</td>
</tr>
<tr>
<td>Pressure</td>
<td>The force per unit area exerted by a particle distribution or field.</td>
</tr>
<tr>
<td>SonicMachNumber</td>
<td>The ratio of the bulk flow speed to the speed of sound in the medium.</td>
</tr>
<tr>
<td>SoundSpeed</td>
<td>The speed at which sound travels through a medium.</td>
</tr>
<tr>
<td>Temperature</td>
<td>A measure of the kinetic energy of random motion with respect to the average. Temperature is properly defined only for an equilibrium particle distribution (Maxwellian distribution).</td>
</tr>
<tr>
<td>ThermalSpeed</td>
<td>For a Maxwellian distribution, the difference between the mean speed and the speed within which ~69% (one sigma) of all the members of the speed distribution occur.</td>
</tr>
<tr>
<td>Velocity</td>
<td>Rate of change of position. Also used for the average velocity of a collection of particles,</td>
</tr>
</tbody>
</table>
also referred to as "bulk velocity".

**Element spase:Particle / spase:AtomicNumber**

**Namespace**  |  http://www.spase-group.org/data/schema
---|---
**Diagram**  |  ![Diagram](image)
**Type**  |  spase:AtomicNumber
**Properties**  |  content: simple  
  minOccurs: 0  
  maxOccurs: unbounded

**Source**  |  `<xsd:element name="AtomicNumber" type="spase:AtomicNumber" minOccurs="0" maxOccurs="unbounded"/>

**Schema location**  |  file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

**Element spase:Particle / spase:EnergyRange**

**Namespace**  |  http://www.spase-group.org/data/schema
---|---
**Diagram**  |  ![Diagram](image)
**Type**  |  spase:EnergyRange
**Properties**  |  content: complex  
  minOccurs: 0  
  maxOccurs: 1  
  Model  |  spase:Low , spase:High , spase:Units , spase:Bin*
  Children  |  spase:Bin , spase:High , spase:Low , spase:Units

**Instance**  |  `<spase:EnergyRange xmlns:spase= "http://www.spase-group.org/data/schema"
  <spase:Low>{1,1}</spase:Low>
  <spase:High>{1,1}</spase:High>
  <spase:Units>{1,1}</spase:Units>
  <spase:Bin>{0,unbounded}</spase:Bin>
</spase:EnergyRange>

**Source**  |  `<xsd:element name="EnergyRange" type="spase:EnergyRange" minOccurs="0" maxOccurs="1"/>

**Schema location**  |  file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

**Element spase:EnergyRange / spase:Low**

**Namespace**  |  http://www.spase-group.org/data/schema
---|---
**Diagram**  |  ![Diagram](image)
**Type**  |  spase:Low
**Properties**  |  content: simple  
  minOccurs: 1
### Element `spase:EnergyRange` / `spase:High`  

**Namespace**  
http://www.spase-group.org/data/schema  

**Diagram**  
![Diagram for `spase:High`]

**Type**  
`spase:High`  

**Properties**  
- content: `simple`  
- minOccurs: `1`  
- maxOccurs: `1`  

**Source**  
`<xsd:element name="High" type="spase:High" minOccurs="1" maxOccurs="1"/>`

**Schema location**  
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### Element `spase:EnergyRange` / `spase:Units`  

**Namespace**  
http://www.spase-group.org/data/schema  

**Diagram**  
![Diagram for `spase:Units`]

**Type**  
`spase:Units`  

**Properties**  
- content: `simple`  
- minOccurs: `1`  
- maxOccurs: `1`  

**Source**  
`<xsd:element name="Units" type="spase:Units" minOccurs="1" maxOccurs="1"/>`

**Schema location**  
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### Element `spase:EnergyRange` / `spase:Bin`  

**Namespace**  
http://www.spase-group.org/data/schema  

**Diagram**  
![Diagram for `spase:Bin`]

**Type**  
`spase:Bin`  

**Properties**  
- content: `complex`  
- minOccurs: `0`  
- maxOccurs: `unbounded`  

**Model**  
`spase:BandName{0,1}, spase:Low, spase:High`

**Children**  
`spase:BandName, spase:High, spase:Low`

**Instance**  
```xml  
<spase:Bin xmlns:spase="http://www.spase-group.org/data/schema">
  <spase:BandName>{0,1}</spase:BandName>
  <spase:Low>{1,1}</spase:Low>
  <spase:High>{1,1}</spase:High>
</spase:Bin>
```

**Source**  
`<xsd:element name="Bin" type="spase:Bin" minOccurs="0" maxOccurs="unbounded"/>`
**Element spase:Particle / spase:AzimuthalAngleRange**

Namespace: http://www.spase-group.org/data/schema

- **Type**: spase:AzimuthalAngleRange
- **Properties**:
  - `content`: complex
  - `minOccurs`: 0
  - `maxOccurs`: 1
- **Model**: spase:Low, spase:High, spase:Units, spase:Bin*
- **Children**: spase:Bin, spase:High, spase:Low, spase:Units

**Instance**

```xml
<spase:AzimuthalAngleRange xmlns:spase="http://www.spase-group.org/data/schema">
  <spase:Low>1,1</spase:Low>
  <spase:High>1,1</spase:High>
  <spase:Units>1,1</spase:Units>
  <spase:Bin>0,unbounded</spase:Bin>
</spase:AzimuthalAngleRange>
```

**Source**

```xml
<xsd:element name="AzimuthalAngleRange" type="spase:AzimuthalAngleRange" minOccurs="0" maxOccurs="1"/>
```

---

**Element spase:AzimuthalAngleRange / spase:Low**

Namespace: http://www.spase-group.org/data/schema

- **Type**: spase:Low
- **Properties**:
  - `content`: simple
  - `minOccurs`: 1
  - `maxOccurs`: 1

**Source**

```xml
<xsd:element name="Low" type="spase:Low" minOccurs="1" maxOccurs="1"/>
```

---

**Element spase:AzimuthalAngleRange / spase:High**

Namespace: http://www.spase-group.org/data/schema

- **Type**: spase:High
- **Properties**:
  - `content`: simple
  - `minOccurs`: 1
  - `maxOccurs`: 1

**Source**

```xml
<xsd:element name="High" type="spase:High" minOccurs="1" maxOccurs="1"/>
```
**Element spase:AzimuthalAngleRange / spase:Units**

Namespace: http://www.spase-group.org/data/schema

Diagram:

Type: spase:Units

Properties:
- content: simple
- minOccurs: 1
- maxOccurs: 1

Source:
```xml
<xsd:element name="Units" type="spase:Units" minOccurs="1" maxOccurs="1"/>
```

Schema location: file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

**Element spase:AzimuthalAngleRange / spase:Bin**

Namespace: http://www.spase-group.org/data/schema

Diagram:

Type: spase:Bin

Properties:
- content: complex
- minOccurs: 0
- maxOccurs: unbounded

Model:
- spase:BandName[0,1]
- spase:Low
- spase:High

Children:
- spase:BandName
- spase:High
- spase:Low

Instance:
```xml
<spase:Bin xmlns:spase= "http://www.spase-group.org/data/schema">
  <spase:BandName> {0,1} </spase:BandName>
  <spase:Low> {1,1} </spase:Low>
  <spase:High> {1,1} </spase:High>
</spase:Bin>
```

Source:
```xml
<xsd:element name="Bin" type="spase:Bin" minOccurs="0" maxOccurs="unbounded"/>
```

Schema location: file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

**Element spase:Particle / spase:PolarAngleRange**

Namespace: http://www.spase-group.org/data/schema

Diagram:

---
Type  | spase:PolarAngleRange
---|---
Properties  | content: complex
             | minOccurs: 0
             | maxOccurs: 1
Model  | spase:Low, spase:High, spase:Units, spase:Bin*
Children  | spase:Bin, spase:High, spase:Low, spase:Units

Instance

```
<spase:PolarAngleRange xmlns:spase="http://www.spase-group.org/data/schema">
  <spase:Low> {1,1} </spase:Low>
  <spase:High> {1,1} </spase:High>
  <spase:Units> {1,1} </spase:Units>
  <spase:Bin> {0,unbounded} </spase:Bin>
</spase:PolarAngleRange>
```

Source

```
<xsd:element name="PolarAngleRange" type="spase:PolarAngleRange" minOccurs="0" maxOccurs="1" />
```

Schema location

file://C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

Element spase:PolarAngleRange / spase:Low

Namespace  | http://www.spase-group.org/data/schema
Diagram  | ![Diagram of spase:Low]
Type  | spase:Low
Properties  | content: simple
             | minOccurs: 1
             | maxOccurs: 1
Source

```
<xsd:element name="Low" type="spase:Low" minOccurs="1" maxOccurs="1" />
```

Schema location

file://C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

Element spase:PolarAngleRange / spase:High

Namespace  | http://www.spase-group.org/data/schema
Diagram  | ![Diagram of spase:High]
Type  | spase:High
Properties  | content: simple
             | minOccurs: 1
             | maxOccurs: 1
Source

```
<xsd:element name="High" type="spase:High" minOccurs="1" maxOccurs="1" />
```

Schema location

file://C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

Element spase:PolarAngleRange / spase:Units

Namespace  | http://www.spase-group.org/data/schema
Diagram  | ![Diagram of spase:Units]
Type  | spase:Units
Properties  | content: simple
             | minOccurs: 1
             | maxOccurs: 1
Source

```
<xsd:element name="Units" type="spase:Units" minOccurs="1" maxOccurs="1" />
```

Schema location

file://C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd
**Element** spase:PolarAngleRange / spase:Bin

**Namespace** http://www.spase-group.org/data/schema

**Diagram**

- **Type**: spase:Bin
- **Properties**
  - content: complex
  - minOccurs: 0
  - maxOccurs: unbounded
- **Model**
  - spase:BandName[0,1], spase:Low, spase:High
- **Children**
  - spase:BandName, spase:High, spase:Low

**Instance**

```xml
<spase:Bin xmlns:spase= "http://www.spase-group.org/data/schema">
  <spase:BandName>{0,1}</spase:BandName>
  <spase:Low>{1,1}</spase:Low>
  <spase:High>{1,1}</spase:High>
</spase:Bin>
```

**Source**

<xs:element name="Bin" type="spase:Bin" minOccurs="0" maxOccurs="unbounded"/>

---

**Element** spase:Parameter / spase:Wave

**Namespace** http://www.spase-group.org/data/schema

**Diagram**

- **Type**: spase:Wave
- **Properties**
  - content: complex
- **Model**
  - spase:WaveType, spase:Qualifier*, spase:WaveQuantity, spase:EnergyRange[0,1], spase:FrequencyRange[0,1], spase:WavelengthRange[0,1]
- **Children**

**Instance**

```xml
<spase:Wave xmlns:spase= "http://www.spase-group.org/data/schema">
  <spase:WaveType>{1,1}</spase:WaveType>
  <spase:Qualifier>{0,unbounded}</spase:Qualifier>
  <spase:WaveQuantity>{1,1}</spase:WaveQuantity>
  <spase:EnergyRange>{0,1}</spase:EnergyRange>
  <spase:FrequencyRange>{0,1}</spase:FrequencyRange>
  <spase:WavelengthRange>{0,1}</spase:WavelengthRange>
</spase:Wave>
```

**Source**

<xs:element name="Wave" type="spase:Wave"/>
Schema documentation for spase-2_2_4.xsd

Element `spase:Wave` / `spase:WaveType`

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagram</td>
<td><img src="image1" alt="Diagram" /></td>
</tr>
<tr>
<td>Type</td>
<td><code>spase:WaveType</code></td>
</tr>
<tr>
<td>Properties</td>
<td>content: <code>simple</code></td>
</tr>
<tr>
<td></td>
<td>minOccurs: 1</td>
</tr>
<tr>
<td></td>
<td>maxOccurs: 1</td>
</tr>
<tr>
<td>Facets</td>
<td>enumeration <code>Electromagnetic</code></td>
</tr>
<tr>
<td></td>
<td>Electric and magnetic field variations in time and space that propagate through a medium or a vacuum with the wave's propagation, electric field, and magnetic field vectors forming an orthogonal triad. Waves in this category are detected by having their field quantities measured.</td>
</tr>
<tr>
<td></td>
<td>enumeration <code>Electrostatic</code></td>
</tr>
<tr>
<td></td>
<td>Collective longitudinal electric-field and plasma oscillations trapped within a body of plasma.</td>
</tr>
<tr>
<td></td>
<td>enumeration <code>Hydrodynamic</code></td>
</tr>
<tr>
<td></td>
<td>Periodic or quasi-periodic oscillations of fluid quantities.</td>
</tr>
<tr>
<td></td>
<td>enumeration <code>MHD</code></td>
</tr>
<tr>
<td></td>
<td>Hydrodynamic waves in a magnetized plasma in which the background magnetic field plays a key role in controlling the wave propagation characteristics.</td>
</tr>
<tr>
<td></td>
<td>enumeration <code>Photon</code></td>
</tr>
<tr>
<td></td>
<td>Electromagnetic waves detected by techniques that utilize their corpuscular character (e.g., CCD, CMOS, photomultipliers).</td>
</tr>
<tr>
<td></td>
<td>enumeration <code>PlasmaWaves</code></td>
</tr>
<tr>
<td></td>
<td>Self-consistent collective oscillations of particles and fields (electric and magnetic) in a plasma.</td>
</tr>
</tbody>
</table>

Source

```xml
<xs:element name="WaveType" type="spase:WaveType" minOccurs="1" maxOccurs="1"/>
```

Element `spase:Wave` / `spase:Qualifier`

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagram</td>
<td><img src="image2" alt="Diagram" /></td>
</tr>
<tr>
<td>Type</td>
<td><code>spase:Qualifier</code></td>
</tr>
<tr>
<td>Properties</td>
<td>content: <code>simple</code></td>
</tr>
<tr>
<td></td>
<td>minOccurs: 0</td>
</tr>
<tr>
<td></td>
<td>maxOccurs: unbounded</td>
</tr>
<tr>
<td>Facets</td>
<td>enumeration <code>Anisotropy</code></td>
</tr>
<tr>
<td></td>
<td>Direction-dependent property.</td>
</tr>
<tr>
<td></td>
<td>enumeration <code>Array</code></td>
</tr>
<tr>
<td></td>
<td>A sequence of values corresponding to the elements in a rectilinear, n-dimension matrix. Each value can be referenced by a unique index.</td>
</tr>
<tr>
<td></td>
<td>enumeration <code>Average</code></td>
</tr>
<tr>
<td></td>
<td>The statistical mean; the sum of a set of values divided by the number of values in the set.</td>
</tr>
<tr>
<td></td>
<td>enumeration <code>Characteristic</code></td>
</tr>
<tr>
<td></td>
<td>A quantity which can be easily identified and measured in a given environment.</td>
</tr>
<tr>
<td></td>
<td>enumeration <code>Circular</code></td>
</tr>
<tr>
<td></td>
<td>Relative to polarization, right-hand circularly polarized light is defined such that the electric field is rotating clockwise as seen by an observer towards whom the wave is moving. Left-hand circularly polarized light is defined such that the electric field is rotating counterclockwise.</td>
</tr>
</tbody>
</table>

70
as seen by an observer towards whom the wave is moving. The polarization of magnetohydrodynamic waves is specified with respect to the ambient mean magnetic field: right-hand polarized waves have a transverse electric field component which turns in a right-handed sense (that of the gyrating electrons) around the magnetic field.

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Column</th>
<th>A two-dimensional measure of a quantity. The column is the area over which the quantity is measured.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enumeration</td>
<td>Component</td>
<td>Projection of a vector along one of the base axes of a coordinate system.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>Component.I</td>
<td>Projection of a vector along the first named axis of a coordinate system. Typically the X axis, but could be the R axis for an RTN coordinate system.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>Component.J</td>
<td>Projection of a vector along the second named axis of a coordinate system. Typically the Y axis, but could be the T axis for an RTN coordinate system.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>Component.K</td>
<td>Projection of a vector along the third named axis of a coordinate system. Typically the Z axis, but could be the N axis for an RTN coordinate system.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>Core</td>
<td>The central or main part of an object or calculated distribution. For example, the part of a distribution of particles at low energies that is a thermal (Maxwellian) population.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>CrossSpectrum</td>
<td>The Fourier transform of the cross correlation of two physical or empirical observations.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>Deviation</td>
<td>The difference between an observed value and the expected value of a quantity.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>Differential</td>
<td>A measurement within a narrow range of energy and/or solid angle.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>Direction</td>
<td>The spatial relation between an object and another object, the orientation of the object or the course along which the object points or moves.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>DirectionAngle</td>
<td>The angle between a position vector or measured vector (or one of its projections onto a plane) and one of the base axes of the coordinate system.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>DirectionAngle.AzimuthAngle</td>
<td>The angle between the projection into the i-j plane of a position or measured vector and the i-axis of the coordinate system. Mathematically defined as ( \arctan(j/i) ). This term could be also applied to angles measured in different planes, for example the IMF clock angle defined as ( \arctan(</td>
</tr>
<tr>
<td>Enumeration</td>
<td>DirectionAngle.ElevationAngle</td>
<td>The angle between the position or measured vector and the i-j plane of the coordinate system. Mathematically defined as ( \arctan(k/\sqrt{i^2+j^2}) ).</td>
</tr>
<tr>
<td>Enumeration</td>
<td>DirectionAngle.PolarAngle</td>
<td>The angle between the position or measured vector and the k-axis of the coordinate system. Mathematically defined as ( \arctan(\sqrt{i^2+j^2}/k) ). This term could be also applied to angles between the vector and other components, for example the IMF cone angle defined as ( \arccos(Bx/Bt) ).</td>
</tr>
<tr>
<td>Enumeration</td>
<td>Directional</td>
<td>A measurement within a narrow range of solid angle.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>FieldAligned</td>
<td></td>
</tr>
<tr>
<td>Enumeration</td>
<td>Fit</td>
<td>Values that make a model agree with the data.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>Group</td>
<td>An assemblage of values that a certain relation or common characteristic.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>-----------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>enumeration</td>
<td>Halo</td>
<td>The part of an object or distribution surrounding some central body or distribution. For example, the particles above the core energies that show enhancements above the thermal population. Typically, a &quot;power law tail&quot; shows a break from the core Maxwellian at a particular energy.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Integral</td>
<td>A flux measurement in a broad range of energy and solid angle.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Integral.Area</td>
<td>Integration over the extent of a planar region, or of the surface of a solid.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Integral.Bandwidth</td>
<td>Integration over the width a frequency band.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Integral.SolidAngle</td>
<td>Integration over the angle in three-dimensional space that an object subtends at a point.</td>
</tr>
<tr>
<td>enumeration</td>
<td>LineOfSight</td>
<td>The line of sight is the line that connects the observer with the observed object. This expression is often used with measurements of Doppler velocity and magnetic field in magnetograms, where only the component of the vector field directed along the line of sight is measured.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Linear</td>
<td>Polarization where the E-field vector is confined to a given plane</td>
</tr>
<tr>
<td>enumeration</td>
<td>Magnitude</td>
<td>A measure of the strength of a vector quantity or length of its representational vector.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Maximum</td>
<td>The largest value of a batch or sample or the upper bound of a probability distribution.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Median</td>
<td>The measure of central tendency of a set of n. values computed by ordering the values and taking the value at position (n. + 1) / 2 when n. is odd or the arithmetic mean of the values at positions n. / 2 and (n. / 2) + 1 when n. is even.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Minimum</td>
<td>The smallest value of a batch or sample or the lower bound of a probability distribution.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Moment</td>
<td>Parameters determined by integration over a distribution function convoluted with a power of velocity.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Parallel</td>
<td>Having the same direction as a given direction</td>
</tr>
<tr>
<td>enumeration</td>
<td>Peak</td>
<td>The maximum value for the quantity in question, over a period of time which is usually equal to the cadence.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Perpendicular</td>
<td>At right angles to a given direction.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Perturbation</td>
<td>Variations in the state of a system.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Phase</td>
<td>A point or portion in a recurring series of changes.</td>
</tr>
<tr>
<td>enumeration</td>
<td>PhaseAngle</td>
<td>Phase difference between two or more waves, normally expressed in degrees.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Projection</td>
<td>A measure of the length of a position or measured vector as projected into a plane of the coordinate system.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Projection.IJ</td>
<td>A measure of the length of a position or measured vector projected into the i-j (typically X-Y) plane of the coordinate system.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Projection.IK</td>
<td>A measure of the length of a position or measured vector projected into the i-k (typically X-Z) plane of the coordinate system.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Projection.JK</td>
<td>A measure of the length of a position or measured vector projected into the j-k (typically Y-Z) plane of the coordinate system.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Pseudo</td>
<td>Similar to or having the appearance of something else. Can be used to indicate an estimation or approximation of a particular quantity.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Ratio</td>
<td>The relative magnitudes of two quantities.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Scalar</td>
<td>A quantity that is completely specified by its magnitude and has no direction.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Spectral</td>
<td>Characterized as a range or continuum of frequencies.</td>
</tr>
</tbody>
</table>
enumeration StandardDeviation
The square root of the average of the squares of deviations about the mean of a set of data. Standard deviation is a statistical measure of spread or variability.

enumeration StokesParameters
A distribution of particles concentrated in a narrow energy band. The band may be may be aligned with a secondary feature. For example, it may occur in a narrow cone aligned with the mean magnetic field direction.

enumeration Strahl
A distribution of particles concentrated in a narrow energy band. The band may be may be aligned with a secondary feature. For example, it may occur in a narrow cone aligned with the mean magnetic field direction.

enumeration Superhalo
The part of an object or distribution surrounding some central body or distribution evident in a second break in the distribution function (e.g., a different power law). It consists of a population at a higher energies than for a halo.

enumeration Symmetric
Equal distribution about one or more axes.

enumeration Tensor
A generalized linear "quantity" or "geometrical entity" that can be expressed as a multi-dimensional array relative to a choice of basis of the particular space on which it is defined.

enumeration Total
The summation of quantities over all possible species.

enumeration Trace
The sum of the elements on the main diagonal (the diagonal from the upper left to the lower right) of a square matrix.

enumeration Uncertainty
A statistically defined discrepancy between a measured quantity and the true value of that quantity that cannot be corrected by calculation or calibration.

enumeration Variance
A measure of dispersion of a set of data points around their mean value. The expectation value of the squared deviations from the mean.

enumeration Vector
A set of parameter values each along some independent variable (e.g., components of a field in three orthogonal spatial directions; atmospheric temperature values at several altitudes, or at a given latitude and longitude).

Source
<xs:element name="Qualifier" type="spase:Qualifier" minOccurs="0" maxOccurs="unbounded"/>

Schema location
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Element spase:Wave / spase:WaveQuantity

Namespace
http://www.spase-group.org/data/schema

Diagram

Type
spase:WaveQuantity

Properties
content: simple
minOccurs: 1
maxOccurs: 1

Facets
enumeration ACElectricField
Alternating electric field component of a wave.
enumeration ACMagneticField
Alternating magnetic field component of a wave.
enumeration Absorption
Decrease of radiant energy (relative to the background continuum spectrum).
enumeration Albedo
The ratio of reflected radiation from the surface to incident radiation upon it.
enumeration DopplerFrequency
Change in the frequency of a propagating wave due to motion of the source, the observer, the reflector, or the propagation medium.
enumeration Emissivity
The energy emitted spontaneously per unit bandwidth (typically frequency) per unit time.
<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EnergyFlux</td>
<td>The amount of energy passing through a unit area in a unit time.</td>
</tr>
<tr>
<td>EquivalentWidth</td>
<td>The spectral width of a total absorption line having the amount of absorbed radiant energy being equivalent to that in an observed absorption line.</td>
</tr>
<tr>
<td>Frequency</td>
<td>The number of occurrences of a repeating event per unit time.</td>
</tr>
<tr>
<td>Gyrofrequency</td>
<td>The number of gyrations around a magnetic guiding center (field line) a charged particle makes per unit time due to the Lorentz force.</td>
</tr>
<tr>
<td>Intensity</td>
<td>The measurement of radiant or wave energy per unit detector area per unit bandwidth per unit solid angle per unit time.</td>
</tr>
<tr>
<td>LineDepth</td>
<td>The measure of the amount of absorption below the continuum (depth) in a particular wavelength or frequency in an absorption spectrum.</td>
</tr>
<tr>
<td>MagneticField</td>
<td>A region of space near a magnetized body where magnetic forces can be detected (as measured by methods such as Zeeman splitting, etc.).</td>
</tr>
<tr>
<td>ModeAmplitude</td>
<td>In helioseismology the magnitude of oscillation of waves of a particular geometry.</td>
</tr>
<tr>
<td>PlasmaFrequency</td>
<td>A number-density-dependent characteristic frequency of a plasma.</td>
</tr>
<tr>
<td>Polarization</td>
<td>Direction of the electric vector of an electromagnetic wave. The wave can be linearly polarized in any direction perpendicular to the direction of travel, circularly polarized (clockwise or counterclockwise), unpolarized, or mixtures of the above.</td>
</tr>
<tr>
<td>PoyntingFlux</td>
<td>Electromagnetic energy flux transported by a wave characterized as the rate of energy transport per unit area per steradian.</td>
</tr>
<tr>
<td>PropagationTime</td>
<td>Time difference between transmission and reception of a wave in an active wave experiment.</td>
</tr>
<tr>
<td>StokesParameters</td>
<td>Rate of change of position. Also used for the average velocity of a collection of particles, also referred to as &quot;bulk velocity&quot;.</td>
</tr>
<tr>
<td>Wavelength</td>
<td>The peak-to-peak distance over one wave period.</td>
</tr>
</tbody>
</table>

Source: `<xsd:element name="WaveQuantity" type="spase:WaveQuantity" minOccurs="1" maxOccurs="1"/>` 
Schema location: `file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd`

**Element spase:Wave / spase:EnergyRange**

Namespace: `http://www.spase-group.org/data/schema`

Diagram: ![EnergyRange Diagram](image)

Type: `spase:EnergyRange`
### Element `spase:Wave` / `spase:FrequencyRange`

**Namespace**
http://www.spase-group.org/data/schema

**Diagram**

```
<spase:FrequencyRange xmlns:spase="http://www.spase-group.org/data/schema">
  <spase:SpectralRange>{0,1}</spase:SpectralRange>
  <spase:Low>{1,1}</spase:Low>
  <spase:High>{1,1}</spase:High>
  <spase:Units>{1,1}</spase:Units>
  <spase:Bin>{0,unbounded}</spase:Bin>
</spase:FrequencyRange>
```

### Element `spase:Wave` / `spase:WavelengthRange`

**Namespace**
http://www.spase-group.org/data/schema
**Element spase:WavelengthRange / spase:SpectralRange**

**Namespace**
http://www.spase-group.org/data/schema

**Diagram**

**Type** spase:WavelengthRange

**Properties**
- content: complex
- minOccurs: 0
- maxOccurs: 1

**Model**
spase:SpectralRange[0,1], spase:Low, spase:High, spase:Units, spase:Bin*

**Children**
spase:Bin, spase:High, spase:Low, spase:SpectralRange, spase:Units

**Instance**
```xml
<spase:WavelengthRange xmlns:spase= "http://www.spase-group.org/data/schema">
  <spase:SpectralRange>{0,1}</spase:SpectralRange>
  <spase:Low>{1,1}</spase:Low>
  <spase:High>{1,1}</spase:High>
  <spase:Units>{1,1}</spase:Units>
  <spase:Bin>{0,unbounded}</spase:Bin>
</spase:WavelengthRange>
```

**Source**
```xml
<xsd:element name="WavelengthRange" type="spase:WavelengthRange" minOccurs="0" maxOccurs="1"/>
```

**Schema location**
file://C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

**Facets**
- **enumeration CaK**
  A spectrum with a wavelength range centered near 393.5 nm. VSO nickname: Ca-K image with a range of 391.9 nm to 395.2 nm.

- **enumeration ExtremeUltraviolet**
  A spectrum with a wavelength range of 10.0 nm to 125.0 nm. VSO nickname: EUV image with a range of 10.0 nm to 125.0 nm.

- **enumeration FarUltraviolet**
  A spectrum with a wavelength range of 122 nm to 200.0 nm. VSO nickname: FUV image with a range of 122.0 nm to 200 nm.

- **enumeration GammaRays**
  Photons with a wavelength range: 0.00001 to 0.001 nm.

- **enumeration Halpha**
  A spectrum with a wavelength range centered at 656.3 nm. VSO nickname: H-alpha image with a wavelength range of 655.8 nm to 656.8 nm.

- **enumeration HardXrays**
  Photons with a wavelength range: 0.001 to 0.1 nm and an energy range of 12 keV to 120 keV.

- **enumeration He10830**
  A spectrum with a wavelength range centered at 1082.9 nm. VSO nickname: He 10830 image with a range of 1082.5 nm to 1083.3 nm.

- **enumeration He304**
  A spectrum centered around the resonance line.
of ionised helium at 304 Angstrom (30.4 nm).

**Infrared**

Photons with a wavelength range: 760 to 1.00x10^6 nm

**K7699**

A spectrum with a wavelength range centred at 769.9 nm. VSO nickname: K-7699 dopplergram with a range of 769.8 nm to 770.0 nm.

**LBHBand**

Lyman-Birge-Hopfield band in the far ultraviolet range with wavelength range of 140nm to 170 nm.

**Microwave**

Photons with a wavelength range: 1.08x10^6 to 1.50x10^7 nm

**NaD**

A spectrum with a wavelength range of centered at 589.3 nm. VSO nickname: Na-D image with a range of 588.8 nm to 589.8 nm.

**Ni6768**

A spectrum with a wavelength range centered at 676.8 nm. VSO nickname: Ni-6768 dopplergram with a range of of 676.7 nm to 676.9 nm.

**Optical**

Photons with a wavelength range: 380 to 760 nm

**RadioFrequency**

Photons with a wavelength range: 100,000 to 1.00x10^11 nm

**SoftX Rays**

X-Rays with an energy range of 0.12 keV to 12 keV.

**Ultraviolet**

Photons with a wavelength range: 10 to 400 nm.

**WhiteLight**

Photons with a wavelength in the visible range for humans.

**X Rays**

Photons with a wavelength range: 0.001 <= x < 10 nm

---

### Element `spase:WavelengthRange` / `spase:Low`

**Namespace**  
http://www.spase-group.org/data/schema

**Diagram**  
![Diagram of `spase:Low`]

**Type**  
`spase:Low`

**Properties**  
- `content`: simple
  - minOccurs: 1
  - maxOccurs: 1

**Source**  
<xs:element name="Low" type="spase:Low" minOccurs="1" maxOccurs="1"/>

**Schema location**  
file://C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### Element `spase:WavelengthRange` / `spase:High`

**Namespace**  
http://www.spase-group.org/data/schema

**Diagram**  
![Diagram of `spase:High`]

**Type**  
`spase:High`

**Properties**  
- `content`: simple
  - minOccurs: 1
  - maxOccurs: 1

**Source**  
<xs:element name="High" type="spase:High" minOccurs="1" maxOccurs="1"/>

**Schema location**  
file://C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd
Element spase:WavelengthRange / spase:Units

- **Namespace**: http://www.spase-group.org/data/schema
- **Type**: spase:Units
- **Properties**:
  - content: simple
  - minOccurs: 1
  - maxOccurs: 1
- **Source**:
  ```xml
  <xsd:element name="Units" type="spase:Units" minOccurs="1" maxOccurs="1"/>
  ```
- **Schema location**: file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Element spase:WavelengthRange / spase:Bin

- **Namespace**: http://www.spase-group.org/data/schema
- **Type**: spase:Bin
- **Properties**:
  - content: complex
  - minOccurs: 0
  - maxOccurs: unbounded
- **Model**:
  - spase:BandName{0,1}, spase:Low, spase:High
- **Children**:
  - spase:BandName
  - spase:High
  - spase:Low
- **Instance**:
  ```xml
  <spase:Bin xmlns:spase= "http://www.spase-group.org/data/schema">
    <spase:BandName> {0,1} </spase:BandName>
    <spase:Low> {1,1} </spase:Low>
    <spase:High> {1,1} </spase:High>
  </spase:Bin>
  ```
- **Source**:
  ```xml
  <xsd:element name="Bin" type="spase:Bin" minOccurs="0" maxOccurs="unbounded"/>
  ```
- **Schema location**: file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Element spase:Parameter / spase:Mixed

- **Namespace**: http://www.spase-group.org/data/schema
- **Type**: spase:Mixed
- **Properties**:
  - content: complex
- **Model**:
  - spase:MixedQuantity, spase:ParticleType*, spase:Qualifier*
- **Children**:
  - spase:MixedQuantity
  - spase:ParticleType
  - spase:Qualifier
- **Instance**:
  ```xml
  <spase:Mixed xmlns:spase= "http://www.spase-group.org/data/schema">
    <spase:MixedQuantity> </spase:MixedQuantity>
    <spase:ParticleType> </spase:ParticleType>
    <spase:Qualifier> </spase:Qualifier>
  </spase:Mixed>
  ```
<spase:MixedQuantity>1,1</spase:MixedQuantity>
<spase:ParticleType>0,unbounded</spase:ParticleType>
<spase:Qualifier>0,unbounded</spase:Qualifier>
</spase:Mixed>

Source
<xs:element name="Mixed" type="spase:Mixed"/>

Schema
location
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Element spase:Mixed / spase:MixedQuantity

Namespace
http://www.spase-group.org/data/schema

Diagram

Type
spase:MixedQuantity

Properties
content: simple
minOccurs: 1
maxOccurs: 1

Facets
enumeration AkasofuEpsilon
A measure of the magnetopause energy flux and an indicator of the solar wind power available for subsequent magnetospheric energization. Defined as: \( V^2B^2/2\sin(\theta/2)^4 \) where \( B \) is the IMF, \( l \) is an empirical scaling parameter equal to 7 RE, and \( \theta = \tan(BY/BZ)^{-1} \) the IMF clock angle.

enumeration AlfvenMachNumber
The ratio of the bulk flow speed to the Alfven speed.

enumeration AlfvenVelocity
Phase velocity of the Alfven wave; in SI units it is the velocity of the magnetic field divided by the square root of the mass density times the permeability of free space (\( \mu_0 \)).

enumeration FrequencyToGyrofrequencyRatio
The ratio of the characteristic frequency of a medium to gyrofrequency of a particle.

enumeration IMFClockAngle
The clockwise angle of the direction of interplanetary magnetic field (IMF) measured in the plane of the body pole perpendicular to the line between the body and the Sun.

enumeration MagnetosonicMachNumber
The ratio of the velocity of fast mode waves to the Alfven velocity.

enumeration Other
Not classified with more specific terms. The context of its usage may be described in related text.

enumeration PlasmaBeta
The ratio of the plasma pressure (\( nkT \)) to the magnetic pressure (\( B^2/2\mu_0 \)) of the SUM(nkT)/(B^2/2\mu_0).

enumeration SolarUVFlux
The amount of ultraviolet energy originating from the Sun passing through a unit area in a unit time.

enumeration TotalPressure
In an MHD fluid it is the number density (\( N \)) times Boltzmann constant times the temperature in Kelvin.

enumeration VCrossB
The cross product of the charge velocity (\( V \)) and the magnetic field (\( B \)). It is the electric field exerted on a point charge by a magnetic field.

Source
<xs:element name="MixedQuantity" type="spase:MixedQuantity" minOccurs="1" maxOccurs="1"/>

Schema
location
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Element spase:Mixed / spase:ParticleType

Namespace
http://www.spase-group.org/data/schema

Diagram

Type spase:ParticleType

Facets

Source
<xs:element name="ParticleType" type="spase:ParticleType"/>

Schema
location
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd
Type: spase:ParticleType

Properties:
- content: simple
- minOccurs: 0
- maxOccurs: unbounded

Facets:
- enumeration: Aerosol
  A suspension of fine solid or liquid particles in a gas.
- enumeration: AlphaParticle
  A positively charged nuclear particle that consists of two protons and two neutrons.
- enumeration: Atom
  Matter consisting of a nucleus surrounded by electrons which has no net charge.
- enumeration: Dust
  Free microscopic particles of solid material.
- enumeration: Electron
  An elementary particle consisting of a charge of negative electricity equal to about 1.602 x 10^-19 Coulomb and having a mass when at rest of about 9.109534 x 10^-28 gram.
- enumeration: Ion
  An atom that has acquired a net electric charge by gaining or losing one or more electrons. (Note: Z>2)
- enumeration: Molecule
  A group of atoms so united and combined by chemical affinity that they form a complete, integrated whole, being the smallest portion of any particular compound that can exist in a free state.
- enumeration: Neutron
  An elementary particle that has no net charge and is a constituent of atomic nuclei, and that has a mass slightly larger than a proton (1.673 x 10^-24 gram.)
- enumeration: Proton
  An elementary particle that is a constituent of all atomic nuclei, that carries a positive charge numerically equal to the charge of an electron, and that has a mass of 1.673 x 10^-24 gram.

Source: 
<xsd:element name="ParticleType" type="spase:ParticleType" minOccurs="0" maxOccurs="unbounded"/>

Schema documentation for spase-2_2_4.xsd

Element spase:Mixed / spase:Qualifier

Namespace: http://www.spase-group.org/data/schema

Properties:
- content: simple
- minOccurs: 0
- maxOccurs: unbounded

Facets:
- enumeration: Anisotropy
  Direction-dependent property.
- enumeration: Array
  A sequence of values corresponding to the elements in a rectilinear, n-dimension matrix. Each value can be referenced by a unique index.
- enumeration: Average
  The statistical mean; the sum of a set of values divided by the number of values in the set.
- enumeration: Characteristic
  A quantity which can be easily identified and measured in a given environment.
- enumeration: Circular
  Relative to polarization, right-hand circularly polarized light is defined such that the electric field is rotating clockwise as seen by an observer towards whom the wave is moving. Left-hand circularly polarized light is defined such that the electric field is rotating counterclockwise as seen by an observer towards whom the wave is moving. The polarization of magnetohydrodynamic
waves is specified with respect to the ambient mean magnetic field: right-hand polarized waves have a transverse electric field component which turns in a right-handed sense (that of the gyrating electrons) around the magnetic field.

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Column</td>
<td>A two-dimensional measure of a quantity. The column is the area over which the quantity is measured.</td>
</tr>
<tr>
<td>Component</td>
<td>Projection of a vector along one of the base axes of a coordinate system.</td>
</tr>
<tr>
<td>Component.I</td>
<td>Projection of a vector along the first named axis of a coordinate system. Typically the X axis, but could be the R axis for an RTN coordinate system.</td>
</tr>
<tr>
<td>Component.J</td>
<td>Projection of a vector along the second named axis of a coordinate system. Typically the Y axis, but could be the T axis for an RTN coordinate system.</td>
</tr>
<tr>
<td>Component.K</td>
<td>Projection of a vector along the third named axis of a coordinate system. Typically the Z axis, but could be the N axis for an RTN coordinate system.</td>
</tr>
<tr>
<td>Core</td>
<td>The central or main part of an object or calculated distribution. For example, the part of a distribution of particles at low energies that is a thermal (Maxwellian) population.</td>
</tr>
<tr>
<td>CrossSpectrum</td>
<td>The Fourier transform of the cross correlation of two physical or empirical observations.</td>
</tr>
<tr>
<td>Deviation</td>
<td>The difference between an observed value and the expected value of a quantity.</td>
</tr>
<tr>
<td>Differential</td>
<td>A measurement within a narrow range of energy and/or solid angle.</td>
</tr>
<tr>
<td>Direction</td>
<td>The spatial relation between an object and another object, the orientation of the object or the course along which the object points or moves.</td>
</tr>
<tr>
<td>DirectionAngle</td>
<td>The angle between a position vector or measured vector (or one of its projections onto a plane) and one of the base axes of the coordinate system.</td>
</tr>
<tr>
<td>DirectionAngle.AzimuthAngle</td>
<td>The angle between the projection into the i-j plane of a position or measured vector and the i-axis of the coordinate system. Mathematically defined as arctan(j/i). This term could also be applied to angles measured in different planes, for example the IMF clock angle defined as arctan(</td>
</tr>
<tr>
<td>DirectionAngle.ElevationAngle</td>
<td>The angle between the position or measured vector and the i-j plane of the coordinate system. Mathematically defined as arctan(k/\sqrt{i^2+j^2}).</td>
</tr>
<tr>
<td>DirectionAngle.PolarAngle</td>
<td>The angle between the position or measured vector and the k-axis of the coordinate system. Mathematically defined as arctan(</td>
</tr>
<tr>
<td>Directional</td>
<td>A measurement within a narrow range of solid angle.</td>
</tr>
<tr>
<td>FieldAligned</td>
<td>Values that make an model agree with the data.</td>
</tr>
<tr>
<td>Group</td>
<td>An assemblage of values that a certain relation or common characteristic.</td>
</tr>
<tr>
<td>Halo</td>
<td>The part of an object or distribution surrounding some central body or distribution. For example, the particles above the core energies that...</td>
</tr>
</tbody>
</table>
show enhancements above the thermal population. Typically, a "power law tail" shows a break from the core Maxwellian at a particular energy.

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integral</td>
<td>A flux measurement in a broad range of energy and solid angle.</td>
</tr>
<tr>
<td>Integral.Area</td>
<td>Integration over the extent of a planar region, or of the surface of a solid.</td>
</tr>
<tr>
<td>Integral.Bandwidth</td>
<td>Integration over the width a frequency band.</td>
</tr>
<tr>
<td>Integral.SolidAngle</td>
<td>Integration over the angle in three-dimensional space that an object subtends at a point.</td>
</tr>
<tr>
<td>LineOfSight</td>
<td>The line of sight is the line that connects the observer with the observed object. This expression is often used with measurements of Doppler velocity and magnetic field in magnetograms, where only the component of the vector field directed along the line of sight is measured.</td>
</tr>
<tr>
<td>Linear</td>
<td>Polarization where the E-field vector is confined to a given plane</td>
</tr>
<tr>
<td>Magnitude</td>
<td>A measure of the strength of a vector quantity or length of its representational vector.</td>
</tr>
<tr>
<td>Maximum</td>
<td>The largest value of a batch or sample or the upper bound of a probability distribution.</td>
</tr>
<tr>
<td>Median</td>
<td>The measure of central tendency of a set of n. values computed by ordering the values and taking the value at position (n. + 1) / 2 when n. is odd or the arithmetic mean of the values at positions n. / 2 and (n. / 2) + 1 when n. is even.</td>
</tr>
<tr>
<td>Minimum</td>
<td>The smallest value of a batch or sample or the lower bound of a probability distribution.</td>
</tr>
<tr>
<td>Moment</td>
<td>Parameters determined by integration over a distribution function convolved with a power of velocity.</td>
</tr>
<tr>
<td>Parallel</td>
<td>Having the same direction as a given direction.</td>
</tr>
<tr>
<td>Peak</td>
<td>The maximum value for the quantity in question, over a period of time which is usually equal to the cadence.</td>
</tr>
<tr>
<td>Perpendicular</td>
<td>At right angles to a given direction.</td>
</tr>
<tr>
<td>Perturbation</td>
<td>Variations in the state of a system.</td>
</tr>
<tr>
<td>Phase</td>
<td>A point or portion in a recurring series of changes.</td>
</tr>
<tr>
<td>PhaseAngle</td>
<td>Phase difference between two or more waves, normally expressed in degrees.</td>
</tr>
<tr>
<td>Projection</td>
<td>A measure of the length of a position or measured vector as projected into a plane of the coordinate system.</td>
</tr>
<tr>
<td>Projection.IJ</td>
<td>A measure of the length of a position or measured vector projected into the i-j (typically X-Y) plane of the coordinate system.</td>
</tr>
<tr>
<td>Projection.IK</td>
<td>A measure of the length of a position or measured vector projected into the i-k (typically X-Z) plane of the coordinate system.</td>
</tr>
<tr>
<td>Projection.JK</td>
<td>A measure of the length of a position or measured vector projected into the j-k (typically Y-Z) plane of the coordinate system.</td>
</tr>
<tr>
<td>Pseudo</td>
<td>Similar to or having the appearance of something else. Can be used to indicate an estimation or approximation of a particular quantity.</td>
</tr>
<tr>
<td>Ratio</td>
<td>The relative magnitudes of two quantities.</td>
</tr>
<tr>
<td>Scalar</td>
<td>A quantity that is completely specified by its magnitude and has no direction.</td>
</tr>
<tr>
<td>Spectral</td>
<td>Characterized as a range or continuum of frequencies</td>
</tr>
<tr>
<td>StandardDeviation</td>
<td>The square root of the average of the squares of deviations about the mean of a set of data. Standard deviation is a statistical measure</td>
</tr>
</tbody>
</table>
of spread or variability.

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>StokesParameters</td>
<td>A distribution of particles concentrated in a narrow energy band. The band may be may be aligned with a secondary feature. For example, it may occur in a narrow cone aligned with the mean magnetic field direction.</td>
</tr>
<tr>
<td>Strahl</td>
<td>The part of an object or distribution surrounding some central body or distribution evident in a second break in the distribution function (e.g., a different power law). It consists of a population at a higher energies than for a halo.</td>
</tr>
<tr>
<td>Superhalo</td>
<td>A distribution of particles concentrated in a narrow energy band. The band may be may be aligned with a secondary feature. For example, it may occur in a narrow cone aligned with the mean magnetic field direction.</td>
</tr>
<tr>
<td>Symmetric</td>
<td>Equal distribution about one or more axes.</td>
</tr>
<tr>
<td>Tensor</td>
<td>A generalized linear &quot;quantity&quot; or &quot;geometrical entity&quot; that can be expressed as a multi-dimensional array relative to a choice of basis of the particular space on which it is defined.</td>
</tr>
<tr>
<td>Total</td>
<td>The summation of quantities over all possible species.</td>
</tr>
<tr>
<td>Trace</td>
<td>The sum of the elements on the main diagonal (the diagonal from the upper left to the lower right) of a square matrix.</td>
</tr>
<tr>
<td>Uncertainty</td>
<td>A statistically defined discrepancy between a measured quantity and the true value of that quantity that cannot be corrected by calculation or calibration.</td>
</tr>
<tr>
<td>Variance</td>
<td>A measure of dispersion of a set of data points around their mean value. The expectation value of the squared deviations from the mean.</td>
</tr>
<tr>
<td>Vector</td>
<td>A set of parameter values each along some independent variable (e.g., components of a field in three orthogonal spatial directions; atmospheric temperature values at several altitudes, or at a given latitude and longitude).</td>
</tr>
</tbody>
</table>

Source: `<xsd:element name="Qualifier" type="spase:Qualifier" minOccurs="0" maxOccurs="unbounded"/>`
### Type

**spase:Qualifier**

### Properties

- **content**: simple
- **minOccurs**: 0
- **maxOccurs**: unbounded

### Facets

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>enumeration</td>
<td>Anisotropy</td>
<td>Direction-dependent property.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Array</td>
<td>A sequence of values corresponding to the elements in a rectilinear, n-dimension matrix. Each value can be referenced by a unique index.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Average</td>
<td>The statistical mean; the sum of a set of values divided by the number of values in the set.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Characteristic</td>
<td>A quantity which can be easily identified and measured in a given environment.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Circular</td>
<td>Relative to polarization, right-hand circularly polarized light is defined such that the electric field is rotating clockwise as seen by an observer towards whom the wave is moving. Left-hand circularly polarized light is defined such that the electric field is rotating counterclockwise as seen by an observer towards whom the wave is moving. The polarization of magnetohydrodynamic waves is specified with respect to the ambient mean magnetic field: right-hand polarized waves have a transverse electric field component which turns in a right-handed sense (that of the gyrating electrons) around the magnetic field.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Column</td>
<td>A two-dimensional measure of a quantity. The column is the area over which the quantity is measured.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Component</td>
<td>Projection of a vector along one of the base axes of a coordinate system.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Component.I</td>
<td>Projection of a vector along the first named axis of a coordinate system. Typically the X axis, but could be the R axis for an RTN coordinate system.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Component.J</td>
<td>Projection of a vector along the second named axis of a coordinate system. Typically the Y axis, but could be the T axis for an RTN coordinate system.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Component.K</td>
<td>Projection of a vector along the third named axis of a coordinate system. Typically the Z axis, but could be the N axis for an RTN coordinate system.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Core</td>
<td>The central or main part of an object or calculated distribution. For example, the part of a distribution of particles at low energies that is a thermal (Maxwellian) population.</td>
</tr>
<tr>
<td>enumeration</td>
<td>CrossSpectrum</td>
<td>The Fourier transform of the cross correlation of two physical or empirical observations.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Deviation</td>
<td>The difference between an observed value and the expected value of a quantity.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Differential</td>
<td>A measurement within a narrow range of energy and/or solid angle.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Direction</td>
<td>The spatial relation between an object and another object, the orientation of the object or the course along which the object points or moves.</td>
</tr>
<tr>
<td>enumeration</td>
<td>DirectionAngle</td>
<td>The angle between a position vector or measured vector (or one of its projections onto a plane) and one of the base axes of the coordinate system.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td><strong>DirectionAngle</strong></td>
<td><strong>AzimuthAngle</strong> The angle between the projection into the i-j plane of a position or measured vector and the i-axis of the coordinate system. Mathematically defined as $\arctan(j/i)$. This term could be also applied to angles measured in different planes, for example the IMF clock angle defined as $\arctan(</td>
<td>By</td>
</tr>
<tr>
<td><strong>ElevationAngle</strong></td>
<td>The angle between the position or measured vector and the i-j plane of the coordinate system. Mathematically defined as $\arctan(k/\sqrt{i^2+j^2})$. This term could be also applied to angles between the vector and other components, for example the IMF cone angle defined as $\arccos(B_x/B_t)$.</td>
<td></td>
</tr>
<tr>
<td><strong>PolarAngle</strong></td>
<td>The angle between the position or measured vector and the k-axis of the coordinate system. Mathematically defined as $\arctan(\sqrt{i^2+j^2})/k$.</td>
<td></td>
</tr>
<tr>
<td><strong>Directional</strong></td>
<td>A measurement within a narrow range of solid angle.</td>
<td></td>
</tr>
<tr>
<td><strong>FieldAligned</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fit</strong></td>
<td>Values that make a model agree with the data.</td>
<td></td>
</tr>
<tr>
<td><strong>Group</strong></td>
<td>An assemblage of values that a certain relation or common characteristic.</td>
<td></td>
</tr>
<tr>
<td><strong>Halo</strong></td>
<td>The part of an object or distribution surrounding some central body or distribution. For example, the particles above the core energies that show enhancements above the thermal population. Typically, a &quot;power law tail&quot; shows a break from the core Maxwellian at a particular energy.</td>
<td></td>
</tr>
<tr>
<td><strong>Integral</strong></td>
<td>A flux measurement in a broad range of energy and solid angle.</td>
<td></td>
</tr>
<tr>
<td><strong>Integral.Area</strong></td>
<td>Integration over the extent of a planar region, or of the surface of a solid.</td>
<td></td>
</tr>
<tr>
<td><strong>Integral.Bandwidth</strong></td>
<td>Integration over the width a frequency band.</td>
<td></td>
</tr>
<tr>
<td><strong>Integral.SolidAngle</strong></td>
<td>Integration over the angle in three-dimensional space that an object subtends at a point.</td>
<td></td>
</tr>
<tr>
<td><strong>LineOfSight</strong></td>
<td>The line of sight is the line that connects the observer with the observed object. This expression is often used with measurements of Doppler velocity and magnetic field in magnetograms, where only the component of the vector field directed along the line of sight is measured.</td>
<td></td>
</tr>
<tr>
<td><strong>Linear</strong></td>
<td>Polarization where the E-field vector is confined to a given plane.</td>
<td></td>
</tr>
<tr>
<td><strong>Magnitude</strong></td>
<td>A measure of the strength of a vector quantity or length of its representational vector.</td>
<td></td>
</tr>
<tr>
<td><strong>Maximum</strong></td>
<td>The largest value of a batch or sample or the upper bound of a probability distribution.</td>
<td></td>
</tr>
<tr>
<td><strong>Median</strong></td>
<td>The measure of central tendency of a set of $n$ values computed by ordering the values and taking the value at position $(n + 1) / 2$ when $n$ is odd or the arithmetic mean of the values at positions $n / 2$ and $(n / 2) + 1$ when $n$ is even.</td>
<td></td>
</tr>
<tr>
<td><strong>Minimum</strong></td>
<td>The smallest value of a batch or sample or the lower bound of a probability distribution.</td>
<td></td>
</tr>
<tr>
<td><strong>Moment</strong></td>
<td>Parameters determined by integration over a distribution function convolved with a power of velocity.</td>
<td></td>
</tr>
<tr>
<td><strong>Parallel</strong></td>
<td>Having the same direction as a given direction.</td>
<td></td>
</tr>
<tr>
<td><strong>Peak</strong></td>
<td>The maximum value for the quantity in question, over a period of time which is usually equal to the cadence.</td>
<td></td>
</tr>
<tr>
<td><strong>Perpendicular</strong></td>
<td>At right angles to a given direction.</td>
<td></td>
</tr>
<tr>
<td><strong>Perturbation</strong></td>
<td>Variations in the state of a system.</td>
<td></td>
</tr>
<tr>
<td>Enumeration</td>
<td>Definition</td>
<td></td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Phase</td>
<td>A point or portion in a recurring series of changes.</td>
<td></td>
</tr>
<tr>
<td>PhaseAngle</td>
<td>Phase difference between two or more waves, normally expressed in degrees.</td>
<td></td>
</tr>
<tr>
<td>Projection</td>
<td>A measure of the length of a position or measured vector as projected into a plane of the coordinate system.</td>
<td></td>
</tr>
<tr>
<td>Projection.IJ</td>
<td>A measure of the length of a position or measured vector projected into the i-j (typically X-Y) plane of the coordinate system.</td>
<td></td>
</tr>
<tr>
<td>Projection.IK</td>
<td>A measure of the length of a position or measured vector projected into the i-k (typically X-Z) plane of the coordinate system.</td>
<td></td>
</tr>
<tr>
<td>Projection.JK</td>
<td>A measure of the length of a position or measured vector projected into the j-k (typically Y-Z) plane of the coordinate system.</td>
<td></td>
</tr>
<tr>
<td>Pseudo</td>
<td>Similar to or having the appearance of something else. Can be used to indicate an estimation or approximation of a particular quantity.</td>
<td></td>
</tr>
<tr>
<td>Ratio</td>
<td>The relative magnitudes of two quantities.</td>
<td></td>
</tr>
<tr>
<td>Scalar</td>
<td>A quantity that is completely specified by its magnitude and has no direction.</td>
<td></td>
</tr>
<tr>
<td>Spectral</td>
<td>Characterized as a range or continuum of frequencies</td>
<td></td>
</tr>
<tr>
<td>StandardDeviation</td>
<td>The square root of the average of the squares of deviations about the mean of a set of data. Standard deviation is a statistical measure of spread or variability.</td>
<td></td>
</tr>
<tr>
<td>StokesParameters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strahl</td>
<td>A distribution of particles concentrated in a narrow energy band. The band may be may be aligned with a secondary feature. For example, it may occur in a narrow cone aligned with the mean magnetic field direction.</td>
<td></td>
</tr>
<tr>
<td>Superhalo</td>
<td>The part of an object or distribution surrounding some central body or distribution evident in a second break in the distribution function (e.g., a different power law). It consists of a population at a higher energies than for a halo.</td>
<td></td>
</tr>
<tr>
<td>Symmetric</td>
<td>Equal distribution about one or more axes.</td>
<td></td>
</tr>
<tr>
<td>Tensor</td>
<td>A generalized linear &quot;quantity&quot; or &quot;geometrical entity&quot; that can be expressed as a multi-dimensional array relative to a choice of basis of the particular space on which it is defined.</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>The summation of quantities over all possible species.</td>
<td></td>
</tr>
<tr>
<td>Trace</td>
<td>The sum of the elements on the main diagonal (the diagonal from the upper left to the lower right) of a square matrix.</td>
<td></td>
</tr>
<tr>
<td>Uncertainty</td>
<td>A statistically defined discrepancy between a measured quantity and the true value of that quantity that cannot be corrected by calculation or calibration.</td>
<td></td>
</tr>
<tr>
<td>Variance</td>
<td>A measure of dispersion of a set of data points around their mean value. The expectation value of the squared deviations from the mean.</td>
<td></td>
</tr>
<tr>
<td>Vector</td>
<td>A set of parameter values each along some independent variable (e.g., components of a field in three orthogonal spatial directions; atmospheric temperature values at several altitudes, or at a given latitude and longitude).</td>
<td></td>
</tr>
</tbody>
</table>

Source: `<xsd:element name="Qualifier" type="spase:Qualifier" minOccurs="0" maxOccurs="unbounded"/>

Schema location: file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd`
**Schema documentation for spase-2_2_4.xsd**

### Element `spase:Support / spase:SupportQuantity`

**Namespace**  
http://www.spase-group.org/data/schema

**Diagram**

```
  +-----------------+   +-----------------+   +-----------------+
  | SupportQuantity |   | spase:SupportQuantity |   | spase:SupportQuantity |
  +-----------------+   +-----------------+   +-----------------+
```

**Type**  
`spase:SupportQuantity`

**Properties**

- **content:** `simple`
- **minOccurs:** 1
- **maxOccurs:** 1

**Facets**

- **enumeration**  
  - **InstrumentMode**  
    - An indication of a state (mode) in which the instrument is operating. How a mode influences the interpretation and representation of data is described in instrument related documentation.
  - **Other**  
    - Not classified with more specific terms. The context of its usage may be described in related text.
  - **Positional**  
    - The specification of the location of an object or measurement within a reference coordinate system. The position is usually expressed as a set of values corresponding to the location along a set of orthogonal axes together with the date/time of the observation.
  - **Temporal**  
    - Pertaining to time.
  - **Velocity**  
    - Rate of change of position. Also used for the average velocity of a collection of particles, also referred to as "bulk velocity".

**Source**

```xml
<xsd:element name="SupportQuantity" type="spase:SupportQuantity" minOccurs="1" maxOccurs="1"/>
```

**Schema location**  
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### Element `spase:Catalog / spase:Extension`

**Namespace**  
http://www.spase-group.org/data/schema

**Diagram**

```
  +-----------------+   +-----------------+   +-----------------+
  | Extension       |   | spase:Extension |   | spase:Extension |
  +-----------------+   +-----------------+   +-----------------+
```

**Type**  
`spase:Extension`

**Properties**

- **content:** `complex`
- **minOccurs:** 0
- **maxOccurs:** unbounded

**Model**  
ANY element from ANY namespace

**Source**

```xml
<xsd:element name="Extension" type="spase:Extension" minOccurs="0" maxOccurs="unbounded"/>
```

**Schema location**  
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### Element `spase:Spase / spase:DisplayData`

**Namespace**  
http://www.spase-group.org/data/schema
Diagram

Schema documentation for spase-2_2_4.xsd

Type

spase:DisplayData

Properties

c CONTENT

Model

spase:ResourceID , spase:ResourceHeader , spase:AccessInformation+, spase:ProcessingLevel{0,1} ,
spase:ProviderResourceName{0,1} , spase:ProviderProcessingLevel{0,1} , spase:ProviderVersion{0,1} , spase:InstrumentID*
, spase:MeasurementType+, spase:TemporalDescription{0,1} , spase:SpectralRange* , spase:DisplayCadence{0,1} ,
spase:ObservedRegion* , spase:Caveats{0,1} , spase:Keyword* , spase:InputResourceID* , spase:Parameter*, spase:Extension*

Children

spase:Keyword , spase:MeasurementType , spase:ObservedRegion , spase:Parameter , spase:ProcessingLevel,
spase:ProviderProcessingLevel , spase:ProviderResourceName , spase:ProviderVersion , spase:ResourceHeader , spase:ResourceID,
spase:SpectralRange , spase:TemporalDescription

Instance

<spase:DisplayData xmlns:spase=http://www.spase-group.org/data/schema>
<spase:ResourceID>[1,1]</spase:ResourceID>
<spase:ResourceHeader>[1,1]</spase:ResourceHeader>
<spase:AccessInformation>[1,unbounded]</spase:AccessInformation>
<spase:ProcessingLevel>[0,1]</spase:ProcessingLevel>
<spase:ProviderResourceName>[0,1]</spase:ProviderResourceName>
<spase:ProviderProcessingLevel>[0,1]</spase:ProviderProcessingLevel>
<spase:ProviderVersion>[0,1]</spase:ProviderVersion>
<spase:ResourceID>[1,1]</spase:ResourceID>
<spase:InstrumentID>[0,1]</spase:InstrumentID>
<spase:MeasurementType>[1,unbounded]</spase:MeasurementType>
<spase:SpectralRange>[0,1]</spase:SpectralRange>
<spase:DisplayCadence>[0,1]</spase:DisplayCadence>
<spase:ObservedRegion>[0,1]</spase:ObservedRegion>
<spase:Caveats>[0,1]</spase:Caveats>
<spase:Keyword>[0,1]</spase:Keyword>
<spase:InputResourceID>[0,1]</spase:InputResourceID>
<spase:Parameter>[0,1]</spase:Parameter>
<spase:Extension>[0,1]</spase:Extension>
<spase:ProviderVersion>({0,1})</spase:ProviderVersion>
<spase:InstrumentID>({0,unbounded})</spase:InstrumentID>
<spase:MeasurementType>({1,unbounded})</spase:MeasurementType>
<spase:TemporalDescription>({0,1})</spase:TemporalDescription>
<spase:SpectralRange>({0,unbounded})</spase:SpectralRange>
<spase:DisplayCadence>({0,1})</spase:DisplayCadence>
<spase:ObservedRegion>({0,unbounded})</spase:ObservedRegion>
<spase:Caveats>({0,unbounded})</spase:Caveats>
<spase:Keyword>({0,unbounded})</spase:Keyword>
<spase:InputResourceID>({0,unbounded})</spase:InputResourceID>
<spase:Parameter>({0,unbounded})</spase:Parameter>
<spase:Extension>({0,unbounded})</spase:Extension>
</spase:DisplayData>

Source: <xsd:element name="DisplayData" type="spase:DisplayData"/>

Schema location: file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Element spase:DisplayData / spase:ResourceID

Namespace: http://www.spase-group.org/data/schema

Diagram:

Type: spase:ResourceID

Properties:
- content: simple
- minOccurs: 1
- maxOccurs: 1

Source: <xsd:element name="ResourceID" type="spase:ResourceID" minOccurs="1" maxOccurs="1"/>

Schema location: file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Element spase:DisplayData / spase:ResourceHeader

Namespace: http://www.spase-group.org/data/schema

Diagram:

Type: spase:ResourceHeader

Properties:
- content: complex
**Element spase:DisplayData / spase:AccessInformation**

**Namespace**
http://www.spase-group.org/data/schema

**Diagram**

![Diagram of spase:DisplayData / spase:AccessInformation](image)

**Type**
spase:AccessInformation

**Properties**
- content: complex
  - minOccurs: 1
  - maxOccurs: unbounded

**Model**
- spase:RepositoryID
  - spase:Availability
  - spase:AccessRights
  - spase:AccessURL
  - spase:Format
  - spase:Encoding
  - spase:DataExtent

**Children**
- spase:AccessRights
- spase:AccessURL
- spase:Acknowledgement
- spase:Availability
- spase:DataExtent

**Instance**

```xml
  <spase:RepositoryID>{1,1}</spase:RepositoryID>
  <spase:Availability>[0,1]</spase:Availability>
  <spase:AccessRights>[0,1]</spase:AccessRights>
  <spase:Format>[1,1]</spase:Format>
  <spase:Encoding>[0,1]</spase:Encoding>
  <spase:DataExtent>[0,1]</spase:DataExtent>
  <spase:Acknowledgement>[0,1]</spase:Acknowledgement>
</spase:AccessInformation>
```
## Schema documentation for spase-2_2_4.xsd

### Source
```
<xs:element name="AccessInformation" type="spase:AccessInformation" minOccurs="1" maxOccurs="unbounded"/>
```

### Schema location
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### Element spase:DisplayData / spase:ProcessingLevel

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagram</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>Type</td>
<td>spase:ProcessingLevel</td>
</tr>
<tr>
<td>Properties</td>
<td>content: simple</td>
</tr>
<tr>
<td></td>
<td>minOccurs: 0</td>
</tr>
<tr>
<td></td>
<td>maxOccurs: 1</td>
</tr>
<tr>
<td>Facets</td>
<td><strong>enumeration</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Calibrated</strong></td>
</tr>
<tr>
<td></td>
<td>Data wherein sensor outputs have been convolved with instrument response function, often irreversibly, to yield data in physical units.</td>
</tr>
<tr>
<td></td>
<td><strong>Raw</strong></td>
</tr>
<tr>
<td></td>
<td>Data in its original state with no processing to account for calibration!!!</td>
</tr>
<tr>
<td></td>
<td><strong>Uncalibrated</strong></td>
</tr>
<tr>
<td></td>
<td>Duplicate data are removed from the data stream and data are time ordered. Values are not adjusted for any potential biases or external factors.</td>
</tr>
</tbody>
</table>

### Source
```
<xs:element name="ProcessingLevel" type="spase:ProcessingLevel" minOccurs="0" maxOccurs="1"/>
```

### Schema location
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### Element spase:DisplayData / spase:ProviderResourceName

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagram</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>Type</td>
<td>spase:ProviderResourceName</td>
</tr>
<tr>
<td>Properties</td>
<td>content: simple</td>
</tr>
<tr>
<td></td>
<td>minOccurs: 0</td>
</tr>
<tr>
<td></td>
<td>maxOccurs: 1</td>
</tr>
</tbody>
</table>

### Source
```
<xs:element name="ProviderResourceName" type="spase:ProviderResourceName" minOccurs="0" maxOccurs="1"/>
```

### Schema location
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### Element spase:DisplayData / spase:ProviderProcessingLevel

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagram</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>Type</td>
<td>spase:ProviderProcessingLevel</td>
</tr>
<tr>
<td>Properties</td>
<td>content: simple</td>
</tr>
<tr>
<td></td>
<td>minOccurs: 0</td>
</tr>
<tr>
<td></td>
<td>maxOccurs: 1</td>
</tr>
</tbody>
</table>

### Source
```
<xs:element name="ProviderProcessingLevel" type="spase:ProviderProcessingLevel" minOccurs="0" maxOccurs="1"/>
```

### Schema location
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd
Schema documentation for spase-2_2_4.xsd

**Element spase:DisplayData / spase:ProviderVersion**

- **Namespace**: http://www.spase-group.org/data/schema
- **Diagram**: [Diagram of ProviderVersion]
- **Type**: spase:ProviderVersion
- **Properties**:
  - `content`: simple
  - `minOccurs`: 0
  - `maxOccurs`: 1
- **Source**:
  ```xml
  <xsd:element name="ProviderVersion" type="spase:ProviderVersion" minOccurs="0" maxOccurs="1" />  
  ```
- **Schema location**:
  `file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd`

**Element spase:DisplayData / spase:InstrumentID**

- **Namespace**: http://www.spase-group.org/data/schema
- **Diagram**: [Diagram of InstrumentID]
- **Type**: spase:InstrumentID
- **Properties**:
  - `content`: simple
  - `minOccurs`: 0
  - `maxOccurs`: unbounded
- **Source**:
  ```xml
  <xsd:element name="InstrumentID" type="spase:InstrumentID" minOccurs="0" maxOccurs="unbounded" />  
  ```
- **Schema location**:
  `file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd`

**Element spase:DisplayData / spase:MeasurementType**

- **Namespace**: http://www.spase-group.org/data/schema
- **Diagram**: [Diagram of MeasurementType]
- **Type**: spase:MeasurementType
- **Properties**:
  - `content`: simple
  - `minOccurs`: 1
  - `maxOccurs`: unbounded
- **Facets**:
  - `activityIndex`: An indication, derived from one or more measurements, of the level of activity of an object or region, such as sunspot number, F10.7 flux, Dst, or the Polar Cap Indices.
  - `Dopplergram`: A map or image depicting the spatial distribution of line-of-sight velocities of the observed object.
  - `Dust`: Free microscopic particles of solid material.
  - `ElectricField`: A region of space around a charged particle, or between two voltages within which a force is exerted on charged objects in its vicinity. An electric field is the electric force per unit charge.
  - `EnergeticParticles`: Pieces of matter that are moving very fast. Energetic particles include protons, electrons, neutrons, neutrinos, the nuclei of atoms, and other sub-atomic particles.
  - `Ephemeris`: The spatial coordinates of a body as a function of time. When used as an Instrument Type it represents the process or methods used to generate spatial coordinates.
  - `ImageIntensity`: Measurements of the two-dimensional distribution of the intensity of photons from some region.
<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>InstrumentStatus</td>
<td>A quantity directly related to the operation or function of an instrument.</td>
</tr>
<tr>
<td>IonComposition</td>
<td>In situ measurements of the relative flux or density of electrically charged particles in the space environment. May give simple fluxes, but full distribution functions are sometimes measured.</td>
</tr>
<tr>
<td>Irradiance</td>
<td>Irradiance - A radiometric term for the power of electromagnetic radiation at a surface, per unit area. &quot;Irradiance&quot; is used when the electromagnetic radiation is incident on the surface. Irradiance data may be reported in any units (i.e. counts/s) due to, for example, being at a particular wavelength, or to being a not-fully-calibrated relative measurement.</td>
</tr>
<tr>
<td>MagneticField</td>
<td>A region of space near a magnetized body where magnetic forces can be detected (as measured by methods such as Zeeman splitting, etc.).</td>
</tr>
<tr>
<td>Magnetogram</td>
<td>Measurements of the vector or line-of-sight magnetic field determined from remote sensing measurements of the detailed structure of spectral lines, including their splitting and polarization. (&quot;Magnetogram.&quot;)</td>
</tr>
<tr>
<td>NeutralAtomImages</td>
<td>Measurements of neutral atom fluxes as a function of look direction; often related to remote energetic charged particles that lose their charge through charge-exchange and then reach the detector on a line-of-sight trajectory.</td>
</tr>
<tr>
<td>NeutralGas</td>
<td>Measurements of neutral atomic and molecular components of a gas.</td>
</tr>
<tr>
<td>Profile</td>
<td>Measurements of a quantity as a function of height above an object such as the limb of a body.</td>
</tr>
<tr>
<td>Radiance</td>
<td>A radiometric measurement that describes the amount of electromagnetic radiation that passes through or is emitted from a particular area, and falls within a given solid angle in a specified direction. They are used to characterize both emission from diffuse sources and reflection from diffuse surfaces.</td>
</tr>
<tr>
<td>Spectrum</td>
<td>The distribution of a characteristic of a physical system or phenomenon, such as the energy emitted by a radiant source, arranged in the order of wavelengths.</td>
</tr>
<tr>
<td>ThermalPlasma</td>
<td>Measurements of the plasma in the energy regime where the most of the plasma occurs. May be the basic fluxes in the form of distribution functions or the derived bulk parameters (density, flow velocity, etc.).</td>
</tr>
<tr>
<td>Waves</td>
<td>Data resulting from observations of wave experiments and natural wave phenomena. Wave experiments are typically active and natural wave phenomena are passive. Examples of wave experiments include coherent/incoherent scatter radars, radio soundings, VLF propagation studies, ionospheric scintillation of beacon satellite signals, etc. Examples of natural wave phenomena include micropulsations, mesospheric gravity waves, auroral/plasmaspheric hiss, Langmuir waves, AKR, Jovian decametric radiation, solar radio bursts, etc.</td>
</tr>
<tr>
<td>Waves.Active</td>
<td>Exerting an influence or producing a change or effect. An active measurement is one which produces a transmission or excitation as a part of the measurement cycle.</td>
</tr>
<tr>
<td>Waves.Passive</td>
<td>Movement or effect produced by outside influence. A passive measurement is one which does not produce a transmission or excitation as a part of the measurement cycle.</td>
</tr>
</tbody>
</table>
Element **spase:DisplayData / spase:TemporalDescription**

Namespace http://www.spase-group.org/data/schema

**Diagram**

Type spase:TemporalDescription

Properties

- content: complex
- minOccurs: 0
- maxOccurs: 1

Model spase:TimeSpan, spase:Cadence{0,1}, spase:Exposure{0,1}

Children spase:Cadence, spase:Exposure, spase:TimeSpan

Instance

```
<spase:TemporalDescription xmlns:spase="http://www.spase-group.org/data/schema">
  <spase:TimeSpan>{1,1}</spase:TimeSpan>
  <spase:Cadence>{0,1}</spase:Cadence>
  <spase:Exposure>{0,1}</spase:Exposure>
</spase:TemporalDescription>
```

Source

```
<xsd:element name="TemporalDescription" type="spase:TemporalDescription" minOccurs="0" maxOccurs="1"/>
```

Schema location file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

Element **spase:TemporalDescription / spase:TimeSpan**

Namespace http://www.spase-group.org/data/schema

**Diagram**

Type spase:TimeSpan

Properties

- content: complex
- minOccurs: 1
- maxOccurs: 1

Model spase:StartDate, (spase:StopDate | spase:RelativeStopDate), spase:Note*

Children spase:Note, spase:RelativeStopDate, spase:StartDate, spase:StopDate

Instance

```
<spase:TimeSpan xmlns:spase="http://www.spase-group.org/data/schema">
  <spase:StartDate>{1,1}</spase:StartDate>
  <spase:StopDate>{1,1}</spase:StopDate>
  <spase:RelativeStopDate>{1,1}</spase:RelativeStopDate>
  <spase:Note>{0,unbounded}</spase:Note>
</spase:TimeSpan>
```

Source

```
<xsd:element name="TemporalDescription" type="spase:TemporalDescription" minOccurs="0" maxOccurs="1"/>
```

Schema location file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

**Source**

```xml
<xsd:element name="MeasurementType" type="spase:MeasurementType" minOccurs="1" maxOccurs="unbounded"/>
```

**Schema location** file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd
### Source
```
<xs:element name="TimeSpan" type="spase:TimeSpan" minOccurs="1" maxOccurs="1"/>
```

### Schema location
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### Element `spase:TemporalDescription / spase:Cadence`
- **Namespace**: http://www.spase-group.org/data/schema
- **Diagram**
- **Type**: `spase:Cadence`
- **Properties**
  - content: simple
  - minOccurs: 0
  - maxOccurs: 1
- **Source**
  ```
  <xs:element name="Cadence" type="spase:Cadence" minOccurs="0" maxOccurs="1"/>
  ```
  - **Schema location**: file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### Element `spase:TemporalDescription / spase:Exposure`
- **Namespace**: http://www.spase-group.org/data/schema
- **Diagram**
- **Type**: `spase:Exposure`
- **Properties**
  - content: simple
  - minOccurs: 0
  - maxOccurs: 1
- **Source**
  ```
  <xs:element name="Exposure" type="spase:Exposure" minOccurs="0" maxOccurs="1"/>
  ```
  - **Schema location**: file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### Element `spase:DisplayData / spase:SpectralRange`
- **Namespace**: http://www.spase-group.org/data/schema
- **Diagram**
- **Type**: `spase:SpectralRange`
- **Properties**
  - content: simple
  - minOccurs: 0
  - maxOccurs: unbounded
- **Facets**
  - **enumeration**
    - **CaK**: A spectrum with a wavelength of range centered near 393.5 nm. VSO nickname: Ca-K image with range of 391.9 nm to 395.2 nm.
  - **ExtremeUltraviolet**: A spectrum with a wavelength range of 10.0 nm to 125.0 nm. VSO nickname: EUV image with a range of of 10.0 nm to 125.0 nm
  - **FarUltraviolet**: A spectrum with a wavelength range of 122 nm to 200.0 nm. VSO nickname: FUV image with a range of 122.0 nm to 200 nm
  - **GammaRays**: Photons with a wavelength range: 0.00001 to 0.001 nm
  - **Halpha**: A spectrum with a wavelength range centered at 656.3 nm. VSO nickname: H-alpha image with a spectrum range of of 655.8 nm to 656.8 nm.
  - **HardXrays**: Photons with a wavelength range: 0.001 to 0.1 nm and an energy range of 12 keV to 120 keV
  - **He10830**: A spectrum with a wavelength range centered at 1082.9 nm. VSO nickname: He 10830 image
A spectrum centered around the resonance line of ionised helium at 304 Angstrom (30.4 nm).

Photons with a wavelength range: 760 to 1.00x10^-6 nm

A spectrum with a wavelength range centred at 769.9 nm. VSO nickname: K-7699 dopplergram with a range of 769.8 nm to 770.0 nm.

Lyman-Birge-Hopfield band in the far ultraviolet range with wavelength range of 140nm to 170 nm.

Photons with a wavelength range: 1.00x10^-6 to 1.50x10^-7 nm

A spectrum with a wavelength range of centered at 589.3 nm. VSO nickname: Na-D image with a range of 588.8 nm to 589.8 nm.

A spectrum with a wavelength range centered at 676.8 nm. VSO nickname: Ni-6768 dopplergram with a range of of 676.7 nm to 676.9 nm.

Photons with a wavelength range: 380 to 760 nm

Photons with a wavelength range: 100,000 to 1.00x10^11 nm

X-Rays with an energy range of 0.12 keV to 12 keV.

Photons with a wavelength range: 10 to 400 nm.

Photons with a wavelength in the visible range for humans.

Photons with a wavelength range: 0.001 <= x < 10 nm

A small extraterrestrial body consisting mostly of rock and metal that is in orbit around the sun.
**enumerate** Comet  
A relatively small extraterrestrial body consisting of a frozen mass that travels around the sun in a highly elliptical orbit.

**enumerate** Earth  
The third planet from the sun in our solar system.

**enumerate** Earth.Magnetosheath  
The region between the bow shock and the magnetopause, characterized by very turbulent plasma.

**enumerate** Earth.Magnetosphere  
The region of space above the atmosphere or surface of the planet, and bounded by the magnetopause, that is under the direct influence of the planet's magnetic field.

**enumerate** Earth.Magnetosphere.Magnetotail  
The region on the night side of the body where the magnetic field is stretched backwards by the force of the solar wind. For Earth, the magnetotail begins at a night-side radial distance of 10 Re (N > -10Re).

**enumerate** Earth.Magnetosphere.Main  
The region of the magnetosphere where the magnetic field lines are closed, but does not include the gaseous region gravitationally bound to the body.

**enumerate** Earth.Magnetosphere.Polar  
The region near the pole of a body. For a magnetosphere the polar region is the area where magnetic field lines are open and includes the auroral zone.

**enumerate** Earth.Magnetosphere.RadiationBelt  
The region within a magnetosphere where high-energy particles could potentially be trapped in a magnetic field.

**enumerate** Earth.Moon  
The only natural satellite of the Earth.

**enumerate** Earth.NearSurface  
The gaseous and possibly ionized environment of a body extending from the surface to some specified altitude. For the Earth, this altitude is 2000 km.

**enumerate** Earth.NearSurface.Atmosphere  
The neutral gases surrounding a body that extends from the surface and is bound to the body by virtue of the gravitational attraction.

**enumerate** Earth.NearSurface.AuroralRegion  
The region in the atmospheric where electrically-charged particles bombarding the upper atmosphere of a planet in the presence of a magnetic field produce an optical phenomenon.

**enumerate** Earth.NearSurface.EquatorialRegion  
The region centered on the equator and limited in latitude by approximately 23 degrees north and south of the equator.

**enumerate** Earth.NearSurface.Ionosphere.DRegion  
The layer of the ionosphere that exists approximately 50 to 95 km above the surface of the Earth. One of several layers in the ionosphere.

**enumerate** Earth.NearSurface.Ionosphere.ERegion  
The layer contains ionized gases at a height of around 150–800 km above sea level, placing it in the thermosphere. The F region has the highest concentration of free electrons and ions anywhere in the atmosphere. It may be thought of as comprising two layers, the F1-and F2-layers. One of several layers in the ionosphere. Also known as the Appleton layer.

**enumerate** Earth.NearSurface.Ionosphere.FRegion  
The layer that contains ionized gases at a height of around 80–150km above the ground. One of several layers in the ionosphere. Also called the The Kennelly-Heaviside layer.

**enumerate** Earth.NearSurface.Ionosphere.ionosphere.Region  
The ionosphere that exists at the uppermost areas of the ionosphere.

**enumerate** Earth.NearSurface.Ionosphere.Topside  
The layer of the atmosphere that extends from the Stratosphere to a range of 80 km to 85 km, temperature decreasing with height.
<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Earth.NearSurface.Plasmasphere</strong></td>
<td>A region of the magnetosphere consisting of low energy (cool) plasma. It is located above the ionosphere. The outer boundary of the plasmasphere is known as the plasmapause, which is defined by an order of magnitude drop in plasma density.</td>
</tr>
<tr>
<td><strong>Earth.NearSurface.PolarCap</strong></td>
<td>The areas of the globe surrounding the poles and consisting of the region north of 60 degrees north latitude and the region south of 60 degrees south latitude.</td>
</tr>
<tr>
<td><strong>Earth.NearSurface.SouthAtlanticAnomalyRegion</strong></td>
<td>The region where the Earth's inner van Allen radiation belt makes its closest approach to the planet's surface. The result is that, for a given altitude, the radiation intensity is higher over this region than elsewhere.</td>
</tr>
<tr>
<td><strong>Earth.NearSurface.Stratosphere</strong></td>
<td>The layer of the atmosphere that extends from the troposphere to about 30 km, temperature increases with height. The stratosphere contains the ozone layer.</td>
</tr>
<tr>
<td><strong>Earth.NearSurface.Thermosphere</strong></td>
<td>The layer of the atmosphere that extends from the Mesosphere to 640+ km, temperature increasing with height.</td>
</tr>
<tr>
<td><strong>Earth.NearSurface.Troposphere</strong></td>
<td>The lowest layer of the atmosphere which begins at the surface and extends to between 7 km (4.4 mi) at the poles and 17 km (10.6 mi) at the equator, with some variation due to weather factors.</td>
</tr>
<tr>
<td><strong>Earth.Surface</strong></td>
<td>The outermost area of a solid object.</td>
</tr>
<tr>
<td><strong>Heliosphere</strong></td>
<td>The solar atmosphere extending roughly from the outer corona to the edge of the solar plasma at the heliopause separating primarily solar plasma from interstellar plasma.</td>
</tr>
<tr>
<td><strong>Heliosphere.Heliosheath</strong></td>
<td>The region extending radially outward from the heliospheric termination shock and in which the decelerated solar wind plasma is still significant.</td>
</tr>
<tr>
<td><strong>Heliosphere.Inner</strong></td>
<td>The region of the heliosphere extending radially outward from the solar coronal base to just inside 1 AU.</td>
</tr>
<tr>
<td><strong>Heliosphere.NearEarth</strong></td>
<td>The heliospheric region near the Earth which extends to and includes the area near the L1 and L2 Lagrange point.</td>
</tr>
<tr>
<td><strong>Heliosphere.Outer</strong></td>
<td>The region of the heliosphere extending radially outward from just outside 1 AU to the heliospheric termination shock.</td>
</tr>
<tr>
<td><strong>Heliosphere.Remote1AU</strong></td>
<td>A roughly toroidal region that includes the Earth's orbit, but exclusive of the region near the Earth.</td>
</tr>
<tr>
<td><strong>Interstellar</strong></td>
<td>The region between stars outside of the star's heliopause.</td>
</tr>
<tr>
<td><strong>Jupiter</strong></td>
<td>The fifth planet from the sun in our solar system.</td>
</tr>
<tr>
<td><strong>Mars</strong></td>
<td>The forth planet from the sun in our solar system.</td>
</tr>
<tr>
<td><strong>Mercury</strong></td>
<td>The first planet from the sun in our solar system.</td>
</tr>
<tr>
<td><strong>Neptune</strong></td>
<td>The seventh planet from the sun in our solar system.</td>
</tr>
<tr>
<td><strong>Pluto</strong></td>
<td>The ninth (sub)planet from the sun in our solar system.</td>
</tr>
<tr>
<td><strong>Saturn</strong></td>
<td>The sixth planet from the sun in our solar system.</td>
</tr>
<tr>
<td><strong>Sun</strong></td>
<td>The star upon which our solar system is centered.</td>
</tr>
<tr>
<td><strong>Sun.Chromosphere</strong></td>
<td>The region of the Sun's (or a star's) atmosphere above the temperature minimum and below the Transition Region. The solar chromosphere is approximately 400 km to 2100 km above the photosphere, and characterized by temperatures from 4500 - 28000 K.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>Description</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Sun.Corona</td>
<td>The outermost atmospheric region of the Sun or a star, characterized by ionization temperatures above 10^5 K. The solar corona starts at about 2100 km above the photosphere; there is no generally defined upper limit.</td>
</tr>
<tr>
<td>Sun.Interior</td>
<td>The region inside the body which is not visible from outside the body.</td>
</tr>
<tr>
<td>Sun.Photosphere</td>
<td>The atmospheric layer of the Sun or a star from which continuum radiation, especially optical, is emitted to space. For the Sun, the photosphere is about 500 km thick.</td>
</tr>
<tr>
<td>Sun.TransitionRegion</td>
<td>A very narrow (&lt;100 km) layer between the chromosphere and the corona where the temperature rises abruptly from about 8000 to about 500,000 K.</td>
</tr>
<tr>
<td>Uranus</td>
<td>The eighth planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Venus</td>
<td>The second planet from the sun in our solar system.</td>
</tr>
</tbody>
</table>
Element `spase:DisplayData / spase:Parameter`

Namespace | http://www.spase-group.org/data/schema
---|---
Diagram | ![Diagram of spase:DisplayData / spase:Parameter]

Type | `spase:Parameter`

Properties

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
</table>
| content | `complex`
| minOccurs | `0`
| maxOccurs | `unbounded`
Model

| spase:Name  , spase:Set  , spase:ParameterKey{0,1}  , spase:Description{0,1}  , spase:Caveats{0,1}  , spase:Cadence{0,1}  , spase:Units{0,1}  , spase:UnitsConversion{0,1}  , spase:CoordinateSystem{0,1}  , spase:RenderingHints{0,1}  , spase:Structure{0,1}  , spase:ValidMin{0,1}  , spase:ValidMax{0,1}  , spase:FillValue{0,1}  , (spase:Field | spase:Particle | spase:Wave | spase:Mixed | spase:Support) |

Children


Instance

<spase:Parameter xmlns:spase= "http://www.spase-group.org/data/schema" >
  <spase:Name > {1,1} </spase:Name>
  <spase:Set > {0,unbounded} </spase:Set>
  <spase:ParameterKey > {0,1} </spase:ParameterKey>
  <spase:Description > {0,1} </spase:Description>
  <spase:Caveats > {0,1} </spase:Caveats>
  <spase:Cadence > {0,1} </spase:Cadence>
  <spase:Units > {0,1} </spase:Units>
  <spase:UnitsConversion > {0,1} </spase:UnitsConversion>
  <spase:CoordinateSystem > {0,1} </spase:CoordinateSystem>
  <spase:Structure > {0,1} </spase:Structure>
  <spase:ValidMin > {0,1} </spase:ValidMin>
  <spase:ValidMax > {0,1} </spase:ValidMax>
  <spase:FillValue > {0,1} </spase:FillValue>
  <spase:Field > {1,1} </spase:Field>
  <spase:Particle > {1,1} </spase:Particle>
  <spase:Wave > {1,1} </spase:Wave>
  <spase:Mixed > {1,1} </spase:Mixed>
  <spase:Support > {1,1} </spase:Support>
</spase:Parameter>

Source

<xs:element name="Parameter" type="spase:Parameter" minOccurs="0" maxOccurs="unbounded" />

Schema location

file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Element spase:DisplayData / spase:Extension

Namespace http://www.spase-group.org/data/schema

Diagram

Type spase:Extension

Properties

- content: complex
- minOccurs: 0
- maxOccurs: unbounded

Model ANY element from ANY namespace

Source <xs:element name="Extension" type="spase:Extension" minOccurs="0" maxOccurs="unbounded" />

Schema location

file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Element spase:Spase / spase:NumericalData

Namespace http://www.spase-group.org/data/schema
Schema documentation for spase-2_2_4.xsd

Diagram

Type

spase:NumericalData

Properties

content: complex

Model

spase:ResourceID, spase:ResourceHeader, spase:AccessInformation+, spase:ProcessingLevel[0,1], spase:ProviderResourceName[0,1], spase:ProviderProcessingLevel[0,1], spase:ProviderVersion[0,1], spase:InstrumentID*, spase:MeasurementType+, spase:TemporalDescription[0,1], spase:SpectralRange*, spase:ObservedRegion*, spase:Caveats[0,1], spase:Keyword*, spase:InputResourceID*, spase:Parameter*, spase:Extension*

Children


Instance

<spase:NumericalData xmlns:spase= "http://www.spase-group.org/data/schema">
  <spase:ResourceID>{1,1}</spase:ResourceID>
  <spase:ResourceHeader>{1,1}</spase:ResourceHeader>
  <spase:AccessInformation>{1,unbounded}</spase:AccessInformation>
  <spase:ProcessingLevel>{0,1}</spase:ProcessingLevel>
  <spase:ProviderResourceName>{0,1}</spase:ProviderResourceName>
  <spase:ProviderProcessingLevel>{0,1}</spase:ProviderProcessingLevel>
  <spase:ProviderVersion>{0,1}</spase:ProviderVersion>
  <spase:InstrumentID>{0,unbounded}</spase:InstrumentID>
  <spase:SpectralRange>{0,unbounded}</spase:SpectralRange>
  <spase:ObservedRegion>{0,unbounded}</spase:ObservedRegion>
  <spase:Caveats>{0,1}</spase:Caveats>
  <spase:Keyword>{0,unbounded}</spase:Keyword>
  <spase:InputResourceID>{0,unbounded}</spase:InputResourceID>
  <spase:Parameter>{0,unbounded}</spase:Parameter>
  <spase:Extension>{0,unbounded}</spase:Extension>
  <spase:TemporalDescription>{0,unbounded}</spase:TemporalDescription>
  <spase:MeasurementType>{1,unbounded}</spase:MeasurementType>
</spase:NumericalData>
### Element `spase:NumericalData` / `spase:ResourceID`

<table>
<thead>
<tr>
<th>Source</th>
<th><code>&lt;xsd:element name=&quot;NumericalData&quot; type=&quot;spase:NumericalData&quot;/&gt;</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>Schema location</td>
<td><code>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</code></td>
</tr>
</tbody>
</table>

#### Properties
- **content**: `simple`
- **minOccurs**: 1
- **maxOccurs**: 1

<table>
<thead>
<tr>
<th>Source</th>
<th><code>&lt;xsd:element name=&quot;ResourceID&quot; type=&quot;spase:ResourceID&quot; minOccurs=&quot;1&quot; maxOccurs=&quot;1&quot;/&gt;</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>Schema location</td>
<td><code>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</code></td>
</tr>
</tbody>
</table>

### Element `spase:NumericalData` / `spase:ResourceHeader`

<table>
<thead>
<tr>
<th>Source</th>
<th><code>&lt;xsd:element name=&quot;ResourceHeader&quot; type=&quot;spase:ResourceHeader&quot;/&gt;</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>Schema location</td>
<td><code>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</code></td>
</tr>
</tbody>
</table>

#### Properties
- **content**: `complex`
- **minOccurs**: 1
- **maxOccurs**: 1
Model

spase:ResourceName, spase:AlternateName*, spase:ReleaseDate, spase:ExpirationDate{0,1}, spase:Description, spase:Acknowledgement{0,1}, spase:Contact+, spase:InformationURL*, spase:Association*, spase:PriorID*

Children

spase:Acknowledgement, spase:AlternateName, spase:Association, spase:Contact, spase:Description, spase:ExpirationDate, spase:InformationURL, spase:PriorID, spase:ReleaseDate, spase:ResourceName

Instance

```
<spase:ResourceHeader xmlns:spase= "http://www.spase-group.org/data/schema">
  <spase:ResourceName> {1,1} </spase:ResourceName>
  <spase:AlternateName> {0,unbounded} </spase:AlternateName>
  <spase:ReleaseDate> {1,1} </spase:ReleaseDate>
  <spase:ExpirationDate> {0,1} </spase:ExpirationDate>
  <spase:Description> {1,1} </spase:Description>
  <spase:Acknowledgement> {0,1} </spase:Acknowledgement>
  <spase:Contact> {1,unbounded} </spase:Contact>
  <spase:InformationURL> {0,unbounded} </spase:InformationURL>
  <spase:Association> {0,unbounded} </spase:Association>
  <spase:PriorID> {0,unbounded} </spase:PriorID>
</spase:ResourceHeader>
```

Source

&lt;xsd:element name="ResourceHeader" type="spase:ResourceHeader" minOccurs="1" maxOccurs="1"/>

Schema location

file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Element spase:NumericalData / spase:AccessInformation

Namespace

http://www.spase-group.org/data/schema

Diagram

```
  <spase:RepositoryID> {1,1} </spase:RepositoryID>
  <spase:Availability> {0,1} </spase:Availability>
  <spase:AccessRights> {0,1} </spase:AccessRights>
  <spase:AccessURL> {1,unbounded} </spase:AccessURL>
  <spase:Format> {1,1} </spase:Format>
  <spase:Encoding> {0,1} </spase:Encoding>
  <spase:DataExtent> {0,1} </spase:DataExtent>
  <spase:Acknowledgement> {0,1} </spase:Acknowledgement>
</spase:AccessInformation>
```

Source

&lt;xsd:element name="AccessInformation" type="spase:AccessInformation" minOccurs="1" maxOccurs="unbounded"/>
Element `spase:NumericalData / spase:ProcessingLevel`

Namespace: http://www.spase-group.org/data/schema

Diagram: [Diagram](#)

Type: `spase:ProcessingLevel`

Properties:
- **content**: `simple`
- **minOccurs**: 0
- **maxOccurs**: 1

Facets:
- **enumeration Calibrated**: Data wherein sensor outputs have been convolved with instrument response function, often irreversibly, to yield data in physical units.
- **enumeration Raw**: Data in its original state with no processing to account for calibration!!!
- **enumeration Uncalibrated**: Duplicate data are removed from the data stream and data are time ordered. Values are not adjusted for any potential biases or external factors.

Source:
```xml
<xsd:element name="ProcessingLevel" type="spase:ProcessingLevel" minOccurs="0" maxOccurs="1"/>
```

Schema location: file:/C:/projects/spase/java/model-tools/build/bin/spase-2.2.4.xsd

Element `spase:NumericalData / spase:ProviderResourceName`

Namespace: http://www.spase-group.org/data/schema

Diagram: [Diagram](#)

Type: `spase:ProviderResourceName`

Properties:
- **content**: `simple`
- **minOccurs**: 0
- **maxOccurs**: 1

Source:
```xml
<xsd:element name="ProviderResourceName" type="spase:ProviderResourceName" minOccurs="0" maxOccurs="1"/>
```

Schema location: file:/C:/projects/spase/java/model-tools/build/bin/spase-2.2.4.xsd

Element `spase:NumericalData / spase:ProviderProcessingLevel`

Namespace: http://www.spase-group.org/data/schema

Diagram: [Diagram](#)

Type: `spase:ProviderProcessingLevel`

Properties:
- **content**: `simple`
- **minOccurs**: 0
- **maxOccurs**: 1

Source:
```xml
<xsd:element name="ProviderProcessingLevel" type="spase:ProviderProcessingLevel" minOccurs="0" maxOccurs="1"/>
```

Schema location: file:/C:/projects/spase/java/model-tools/build/bin/spase-2.2.4.xsd

Element `spase:NumericalData / spase:ProviderVersion`
### Element `spase:ProviderVersion`

<table>
<thead>
<tr>
<th>Properties</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>content: <code>simple</code></td>
<td></td>
</tr>
<tr>
<td>minOccurs: <code>0</code></td>
<td></td>
</tr>
<tr>
<td>maxOccurs: <code>1</code></td>
<td></td>
</tr>
</tbody>
</table>

Source:
```
<xsd:element name="ProviderVersion" type="spase:ProviderVersion" minOccurs="0" maxOccurs="1"/>
```

#### Source Location
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

### Element `spase:InstrumentID`

<table>
<thead>
<tr>
<th>Properties</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>content: <code>simple</code></td>
<td></td>
</tr>
<tr>
<td>minOccurs: <code>0</code></td>
<td></td>
</tr>
<tr>
<td>maxOccurs: <code>unbounded</code></td>
<td></td>
</tr>
</tbody>
</table>

Source:
```
<xsd:element name="InstrumentID" type="spase:InstrumentID" minOccurs="0" maxOccurs="unbounded"/>
```

#### Source Location
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

### Element `spase:MeasurementType`

<table>
<thead>
<tr>
<th>Facets</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>enumeration <code>ActivityIndex</code></td>
<td>An indication, derived from one or more measurements, of the level of activity of an object or region, such as sunspot number, F10.7 flux, Dst, or the Polar Cap Indices.</td>
</tr>
<tr>
<td>enumeration <code>Dopplergram</code></td>
<td>A map or image depicting the spatial distribution of line-of-sight velocities of the observed object.</td>
</tr>
<tr>
<td>enumeration <code>Dust</code></td>
<td>Free microscopic particles of solid material.</td>
</tr>
<tr>
<td>enumeration <code>ElectricField</code></td>
<td>A region of space around a charged particle, or between two voltages within which a force is exerted on charged objects in its vicinity. An electric field is the electric force per unit charge.</td>
</tr>
<tr>
<td>enumeration <code>EnergeticParticles</code></td>
<td>Pieces of matter that are moving very fast. Energetic particles include protons, electrons, neutrons, neutrinos, the nuclei of atoms, and other sub-atomic particles.</td>
</tr>
<tr>
<td>enumeration <code>Ephemeris</code></td>
<td>The spatial coordinates of a body as a function of time. When used as an Instrument Type it represents the process or methods used to generate spatial coordinates.</td>
</tr>
<tr>
<td>enumeration <code>ImageIntensity</code></td>
<td>Measurements of the two-dimensional distribution of the intensity of photons from some region or object such as the Sun or the polar auroral regions; can be in any wavelength band, and polarized, etc.</td>
</tr>
</tbody>
</table>

#### Source Location
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd
<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>InstrumentStatus</td>
<td>A quantity directly related to the operation or function of an instrument.</td>
</tr>
<tr>
<td>IonComposition</td>
<td>In situ measurements of the relative flux or density of electrically charged particles in the space environment. May give simple fluxes, but full distribution functions are sometimes measured.</td>
</tr>
<tr>
<td>Irradiance</td>
<td>Irradiance - A radiometric term for the power of electromagnetic radiation at a surface, per unit area. &quot;Irradiance&quot; is used when the electromagnetic radiation is incident on the surface. Irradiance data may be reported in any units (i.e. counts/s) due to, for example, being at a particular wavelength, or to being a not-fully-calibrated relative measurement.</td>
</tr>
<tr>
<td>MagneticField</td>
<td>A region of space near a magnetized body where magnetic forces can be detected (as measured by methods such as Zeeman splitting, etc.).</td>
</tr>
<tr>
<td>Magnetogram</td>
<td>Measurements of the vector or line-of-sight magnetic field determined from remote sensing measurements of the detailed structure of spectral lines, including their splitting and polarization. (&quot;Magnetogram.&quot;)</td>
</tr>
<tr>
<td>NeutralAtomImages</td>
<td>Measurements of neutral atom fluxes as a function of look direction; often related to remote energetic charged particles that lose their charge through charge-exchange and then reach the detector on a line-of-sight trajectory.</td>
</tr>
<tr>
<td>NeutralGas</td>
<td>Measurements of neutral atomic and molecular components of a gas.</td>
</tr>
<tr>
<td>Profile</td>
<td>Measurements of a quantity as a function of height above an object such as the limb of a body.</td>
</tr>
<tr>
<td>Radiance</td>
<td>A radiometric measurement that describes the amount of electromagnetic radiation that passes through or is emitted from a particular area, and falls within a given solid angle in a specified direction. They are used to characterize both emission from diffuse sources and reflection from diffuse surfaces.</td>
</tr>
<tr>
<td>Spectrum</td>
<td>The distribution of a characteristic of a physical system or phenomenon, such as the energy emitted by a radiant source, arranged in the order of wavelengths.</td>
</tr>
<tr>
<td>Thermal Plasma</td>
<td>Measurements of the plasma in the energy regime where the most of the plasma occurs. May be the basic fluxes in the form of distribution functions or the derived bulk parameters (density, flow velocity, etc.).</td>
</tr>
<tr>
<td>Waves</td>
<td>Data resulting from observations of wave experiments and natural wave phenomena. Wave experiments are typically active and natural wave phenomena are passive. Examples of wave experiments include coherent/incoherent scatter radars, radio soundings, VLF propagation studies, ionospheric scintillation of beacon satellite signals, etc. Examples of natural wave phenomena include micropulsations, mesospheric gravity waves, auroral/plasmaspheric hiss, Langmuir waves, AKR, Jovian decametric radiation, solar radio bursts, etc.</td>
</tr>
<tr>
<td>Waves.Active</td>
<td>Exerting an influence or producing a change or effect. An active measurement is one which produces a transmission or excitation as a part of the measurement cycle.</td>
</tr>
<tr>
<td>Waves.Passive</td>
<td>Movement or effect produced by outside influence. A passive measurement is one which does not produce a transmission or excitation as a part of the measurement cycle.</td>
</tr>
</tbody>
</table>

Source: `<xsd:element name="MeasurementType" type="spase:MeasurementType" minOccurs="1" maxOccurs="unbounded"/>`
**Schema documentation for spase-2_2_4.xsd**

**Element spase:NumericalData / spase:TemporalDescription**

**Namespace** http://www.spase-group.org/data/schema

**Diagram**

```
<spase:TemporalDescription xmlns:spase="http://www.spase-group.org/data/schema">
  <spase:TimeSpan>{1,1}</spase:TimeSpan>
  <spase:Cadence>{0,1}</spase:Cadence>
  <spase:Exposure>{0,1}</spase:Exposure>
</spase:TemporalDescription>
```

**Type** spase:TemporalDescription

**Properties**
- content: complex
- minOccurs: 0
- maxOccurs: 1

**Model** spase:TimeSpan, spase:Cadence{0,1}, spase:Exposure{0,1}

**Children** spase:Cadence, spase:Exposure, spase:TimeSpan

**Instance**

```
<xsd:element name="TemporalDescription" type="spase:TemporalDescription" minOccurs="0" maxOccurs="1" />
```

**Source**

file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

**Element spase:NumericalData / spase:SpectralRange**

**Namespace** http://www.spase-group.org/data/schema

**Diagram**

```
<spase:SpectralRange xmlns:spase="http://www.spase-group.org/data/schema">
  <spase:CaK></spase:CaK>
  <spase:ExtremeUltraviolet></spase:ExtremeUltraviolet>
  <spase:FarUltraviolet></spase:FarUltraviolet>
  <spase:GammaRays></spase:GammaRays>
  <spase:Halpha></spase:Halpha>
  <spase:HardXrays></spase:HardXrays>
  <spase:He10830></spase:He10830>
  <spase:He304></spase:He304>
</spase:SpectralRange>
```

**Type** spase:SpectralRange

**Properties**
- content: simple
- minOccurs: 0
- maxOccurs: unbounded

**Facets**

- **enumeration CaK**
  A spectrum with a wavelength of range centered near 393.5 nm. VSO nickname: Ca-K image with a range of 391.9 nm to 395.2 nm.

- **enumeration ExtremeUltraviolet**
  A spectrum with a wavelength range of 10.0 nm to 125.0 nm. VSO nickname: EUV image with a range of 10.0 nm to 125.0 nm.

- **enumeration FarUltraviolet**
  A spectrum with a wavelength range of 122 nm to 200.0 nm. VSO nickname: FUV image with a range of 122.0 nm to 200 nm.

- **enumeration GammaRays**
  Photons with a wavelength range: 0.00001 to 0.001 nm

- **enumeration Halpha**
  A spectrum with a wavelength range centered at 656.3 nm. VSO nickname: H-alpha image with a spectrum range of of 655.8 nm to 656.8 nm.

- **enumeration HardXrays**
  Photons with a wavelength range: 0.001 to 0.1 nm and an energy range of 12 keV to 120 keV.

- **enumeration He10830**
  A spectrum with a wavelength range centered at 1082.9 nm. VSO nickname: He 10830 image with a range of 1082.5 nm to 1083.3 nm.

- **enumeration He304**
  A spectrum centered around the resonance line.
<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Infrared</strong></td>
<td>Photons with a wavelength range: 760 to 1.00x10^-6 nm</td>
</tr>
<tr>
<td><strong>K7699</strong></td>
<td>A spectrum with a wavelength range centered at 769.9 nm. VSO nickname: K-7699 dopplergram with a range of 768.8 nm to 770.0 nm.</td>
</tr>
<tr>
<td><strong>LBHBand</strong></td>
<td>Lyman-Birge-Hopfield band in the far ultraviolet range with wavelength range of 140nm to 170 nm.</td>
</tr>
<tr>
<td><strong>Microwave</strong></td>
<td>Photons with a wavelength range: 1.00x10^-6 to 1.50x10^7 nm</td>
</tr>
<tr>
<td><strong>NaD</strong></td>
<td>A spectrum with a wavelength range centered at 589.3 nm. VSO nickname: Na-D image with a range of 588.8 nm to 589.8 nm.</td>
</tr>
<tr>
<td><strong>Ni6768</strong></td>
<td>A spectrum with a wavelength range centered at 676.8 nm. VSO nickname: Ni-6768 dopplergram with a range of 676.7 nm to 676.9 nm.</td>
</tr>
<tr>
<td><strong>Optical</strong></td>
<td>Photons with a wavelength range: 380 to 760 nm</td>
</tr>
<tr>
<td><strong>RadioFrequency</strong></td>
<td>Photons with a wavelength range: 100,000 to 1.00x10^11 nm</td>
</tr>
<tr>
<td><strong>SoftXRays</strong></td>
<td>X-Rays with an energy range of 0.12 keV to 12 keV.</td>
</tr>
<tr>
<td><strong>Ultraviolet</strong></td>
<td>Photons with a wavelength range: 10 to 400 nm.</td>
</tr>
<tr>
<td><strong>WhiteLight</strong></td>
<td>Photons with a wavelength in the visible range for humans.</td>
</tr>
<tr>
<td><strong>Xrays</strong></td>
<td>Photons with a wavelength range: 0.001 &lt;= x &lt; 10 nm</td>
</tr>
</tbody>
</table>

**Element spase:NumericalData / spase:ObservedRegion**

- **Namespace**: http://www.spase-group.org/data/schema
- **Diagram type**: spase:Region
- **Properties**
  - content: simple
  - minOccurs: 0
  - maxOccurs: unbounded
- **Facets**
  - **Asteroid**: A small extraterrestrial body consisting mostly of rock and metal that is in orbit around the sun.
  - **Comet**: A relatively small extraterrestrial body consisting of a frozen mass that travels around the sun in a highly elliptical orbit.
  - **Earth**: The third planet from the sun in our solar system.
  - **Earth.Magnetosheath**: The region between the bow shock and the magnetopause, characterized by very turbulent plasma.
  - **Earth.Magnetosphere**: The region of space above the atmosphere or surface of the planet, and bounded by the magnetopause, that is under the direct influence of the planet's magnetic field.
  - **Earth.Magnetosphere.Magnetotail**: A region on the night side of the body where the magnetic field is stretched backwards by the force of the solar wind. For Earth, the magnetotail begins at a night-side radial distance of 10 Re (X > -10Re).
not include the gaseous region gravitationally bound to the body.

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earth.Magnetosphere.Polar</td>
<td>The region near the pole of a body. For a magnetosphere the polar region is the area where magnetic field lines are open and includes the auroral zone.</td>
</tr>
<tr>
<td>Earth.Magnetosphere.RadiationBelt</td>
<td>Region within a magnetosphere where high-energy particles could potentially be trapped in a magnetic field.</td>
</tr>
<tr>
<td>Earth.Moon</td>
<td>The only natural satellite of the Earth.</td>
</tr>
<tr>
<td>Earth.NearSurface</td>
<td>The gaseous and possibly ionized environment of a body extending from the surface to some specified altitude. For the Earth, this altitude is 2000 km.</td>
</tr>
<tr>
<td>Earth.NearSurface.Atmosphere</td>
<td>The neutral gases surrounding a body that extends from the surface and is bound to the body by virtue of the gravitational attraction.</td>
</tr>
<tr>
<td>Earth.NearSurface.AuroralRegion</td>
<td>Region in the atmospheric where electrically-charged particles bombarding the upper atmosphere of a planet in the presence of a magnetic field produce an optical phenomenon.</td>
</tr>
<tr>
<td>Earth.NearSurface.EquatorialRegion</td>
<td>Centered on the equator and limited in latitude by approximately 23 degrees north and south of the equator.</td>
</tr>
<tr>
<td>Earth.NearSurface.Ionosphere</td>
<td>Charged or ionized gases surrounding a body that are nominally bound to the body by virtue of the gravitational attraction.</td>
</tr>
<tr>
<td>Earth.NearSurface.Ionosphere.DRegion</td>
<td>The layer of the ionosphere that exists approximately 50 to 95 km above the surface of the Earth. One of several layers in the ionosphere.</td>
</tr>
<tr>
<td>Earth.NearSurface.Ionosphere.ERegion</td>
<td>Ionized gas occurring at 90-150km above the ground. One of several layers in the ionosphere. Also called the The Kennelly-Heaviside layer.</td>
</tr>
<tr>
<td>Earth.NearSurface.Ionosphere.FRegion</td>
<td>Layer that contains ionized gases at a height of around 150-800 km above sea level, placing it in the thermosphere. The F region has the highest concentration of free electrons and ions anywhere in the atmosphere. It may be thought of as comprising two layers, the F1-and F2-layers. One of several layers in the ionosphere. Also known as the Appleton layer.</td>
</tr>
<tr>
<td>Earth.NearSurface.Ionosphere.Topside</td>
<td>The region at the upper most areas of the ionosphere.</td>
</tr>
<tr>
<td>Earth.NearSurface.Mesosphere</td>
<td>The layer of the atmosphere that extends from the stratosphere to a range of 80 km to 85 km, temperature decreasing with height.</td>
</tr>
<tr>
<td>Earth.NearSurface.Plasmasphere</td>
<td>Region of the magnetosphere consisting of low energy (cool) plasma. It is located above the ionosphere. The outer boundary of the plasmasphere is known as the plasmapause, which is defined by an order of magnitude drop in plasma density.</td>
</tr>
<tr>
<td>Earth.NearSurface.PolarCap</td>
<td>The areas of the globe surrounding the poles and consisting of the region north of 60 degrees north latitude an the region south of 60 degrees south latitude.</td>
</tr>
<tr>
<td>Earth.NearSurface.SouthAtlanticAnomalyRegion</td>
<td>Earth's inner van Allen radiation belt makes its closest approach to the planet's surface. The result is that, for a given altitude, the radiation intensity is higher over this region than elsewhere.</td>
</tr>
<tr>
<td>Earth.NearSurface.Stratosphere</td>
<td>Layer of the atmosphere that extends from the troposphere to about 30 km, temperature increases with height. The stratosphere contains the ozone layer.</td>
</tr>
<tr>
<td>Earth.NearSurface.Thermosphere</td>
<td>Layer of the atmosphere that extends from the Mesosphere to 640+ km, temperature increasing...</td>
</tr>
<tr>
<td>Enumeration</td>
<td>Description</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Earth.NearSurface.Troposphere</td>
<td>The lowest layer of the atmosphere which begins at the surface and extends to between 7 km (4.4 mi) at the poles and 17 km (10.6 mi) at the equator, with some variation due to weather factors.</td>
</tr>
<tr>
<td>Earth.Surface</td>
<td>The outermost area of a solid object.</td>
</tr>
<tr>
<td>Heliosphere</td>
<td>The solar atmosphere extending roughly from the outer corona to the edge of the solar plasma at the heliopause separating primarily solar plasma from interstellar plasma.</td>
</tr>
<tr>
<td>Heliosphere.Heliosheath</td>
<td>The region extending radially outward from the heliospheric termination shock and in which the decelerated solar wind plasma is still significant.</td>
</tr>
<tr>
<td>Heliosphere.Inner</td>
<td>The region of the heliosphere extending radially outward from the solar coronal base to just inside 1 AU.</td>
</tr>
<tr>
<td>Heliosphere.NearEarth</td>
<td>The heliospheric region near the Earth which extends to and includes the area near the L1 and L2 Lagrange point.</td>
</tr>
<tr>
<td>Heliosphere.Outer</td>
<td>The region of the heliosphere extending radially outward from just outside 1 AU to the heliospheric termination shock.</td>
</tr>
<tr>
<td>Heliosphere.Remote1AU</td>
<td>A roughly toroidal region that includes the Earth's orbit, but exclusive of the region near the Earth.</td>
</tr>
<tr>
<td>Interstellar</td>
<td>The region between stars outside of the star's heliopause.</td>
</tr>
<tr>
<td>Jupiter</td>
<td>The fifth planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Mars</td>
<td>The forth planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Mercury</td>
<td>The first planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Neptune</td>
<td>The seventh planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Pluto</td>
<td>The ninth (sub)planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Saturn</td>
<td>The sixth planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Sun</td>
<td>The star upon which our solar system is centered.</td>
</tr>
<tr>
<td>Sun.Chromosphere</td>
<td>The region of the Sun's (or a star's) atmosphere above the temperature minimum and below the Transition Region. The solar chromosphere is approximately 400 km to 2100 km above the photosphere, and characterized by temperatures from 4500 – 28000 K.</td>
</tr>
<tr>
<td>Sun.Corona</td>
<td>The outermost atmospheric region of the Sun or a star, characterized by ionization temperatures above 10^5 K. The solar corona starts at about 2100 km above the photosphere; there is no generally defined upper limit.</td>
</tr>
<tr>
<td>Sun.Interior</td>
<td>The region inside the body which is not visible from outside the body.</td>
</tr>
<tr>
<td>Sun.Photosphere</td>
<td>The atmospheric layer of the Sun or a star from which continuum radiation, especially optical, is emitted to space. For the Sun, the photosphere is about 500 km thick.</td>
</tr>
<tr>
<td>Sun.TransitionRegion</td>
<td>A very narrow (&lt;100 km) layer between the chromosphere and the corona where the temperature rises abruptly from about 8000 to about 500,000 K.</td>
</tr>
<tr>
<td>Uranus</td>
<td>The eighth planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Venus</td>
<td>The second planet from the sun in our solar system.</td>
</tr>
</tbody>
</table>
Source | `<xsd:element name="ObservedRegion" type="spase:Region" minOccurs="0" maxOccurs="unbounded"/>

Schema location | file:/C:/projects/spase/java/model-tools/build/bin/spase-2.2.4.xsd

**Element spase:NumericalData / spase:Caveats**

Namespace | http://www.spase-group.org/data/schema

Diagram | ![Diagram of Caveats](Diagram)

Type | spase:Caveats

Properties | content: simple
minOccurs: 0
maxOccurs: 1

Source | `<xsd:element name="Caveats" type="spase:Caveats" minOccurs="0" maxOccurs="1"/>

Schema location | file:/C:/projects/spase/java/model-tools/build/bin/spase-2.2.4.xsd

**Element spase:NumericalData / spase:Keyword**

Namespace | http://www.spase-group.org/data/schema

Diagram | ![Diagram of Keyword](Diagram)

Type | spase:Keyword

Properties | content: simple
minOccurs: 0
maxOccurs: unbounded

Source | `<xsd:element name="Keyword" type="spase:Keyword" minOccurs="0" maxOccurs="unbounded"/>

Schema location | file:/C:/projects/spase/java/model-tools/build/bin/spase-2.2.4.xsd

**Element spase:NumericalData / spase:InputResourceID**

Namespace | http://www.spase-group.org/data/schema

Diagram | ![Diagram of InputResourceID](Diagram)

Type | spase:InputResourceID

Properties | content: simple
minOccurs: 0
maxOccurs: unbounded

Source | `<xsd:element name="InputResourceID" type="spase:InputResourceID" minOccurs="0" maxOccurs="unbounded"/>

Schema location | file:/C:/projects/spase/java/model-tools/build/bin/spase-2.2.4.xsd

**Element spase:NumericalData / spase:Parameter**

Namespace | http://www.spase-group.org/data/schema
Schema documentation for spase-2_2_4.xsd

Diagram

Type

spase:Parameter

Properties

- content: complex
- minOccurs: 0
- maxOccurs: unbounded

Model

- spase:Name
- spase:Set* (spase:ParameterKey 0,1)
- spase:Description 0,1
- spase:Caveats 0,1
- spase:Cadence 0,1
- spase:Units 0,1
- spase:UnitsConversion 0,1
- spase:CoordinateSystem 0,1
- spase:RenderingHints* (spase:Structure 0,1)
- spase:ValidMin 0,1
- spase:ValidMax 0,1
- spase:FillValue 0,1

Children

- spase:Cadence
- spase:Caveats
- spase:CoordinateSystem
- spase:Description
- spase:Field
- spase:FillValue
- spase:Mixed
- spase:Name
- spase:ParameterKey
- spase:Particle
- spase:RenderingHints
- spase:Set
- spase:Structure
- spase:Support
- spase:Units
- spase:UnitsConversion
- spase:ValidMax
- spase:ValidMin
- spase:Wave

Instance

```xml
<spase:Parameter xmlns:spase="http://www.spase-group.org/data/schema">
  <spase:Name>(1,1)</spase:Name>
</spase:Parameter>
```
<spase:Set>{0,unbounded}</spase:Set>
<spase:ParameterKey>{0,1}</spase:ParameterKey>
<spase:Description>{0,1}</spase:Description>
<spase:Caveats>{0,1}</spase:Caveats>
<spase:Cadence>{0,1}</spase:Cadence>
<spase:Units>{0,1}</spase:Units>
<spase:UnitsConversion>{0,1}</spase:UnitsConversion>
<spase:CoordinateSystem>{0,1}</spase:CoordinateSystem>
<spase:RenderingHints>{0,unbounded}</spase:RenderingHints>
<spase:Structure>{0,1}</spase:Structure>
<spase:ValidMin>{0,1}</spase:ValidMin>
<spase:ValidMax>{0,1}</spase:ValidMax>
<spase:FillValue>{0,1}</spase:FillValue>
<spase:Field>(1,1)</spase:Field>
<spase:Particle>{1,1}</spase:Particle>
<spase:Mixed>{1,1}</spase:Mixed>
<spase:Support>{1,1}</spase:Support>
</spase:Parameter>

Source
<xsd:element name="Parameter" type="spase:Parameter" minOccurs="0" maxOccurs="unbounded"/>

Schema location file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Element spase:NumericalData / spase:Extension

Namespace http://www.spase-group.org/data/schema

Diagram

Type spase:Extension

Properties
content: complex
minOccurs: 0
maxOccurs: unbounded

Model ANY element from ANY namespace

Source
<xsd:element name="Extension" type="spase:Extension" minOccurs="0" maxOccurs="unbounded"/>

Schema location file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Element spase:Spase / spase:Document

Namespace http://www.spase-group.org/data/schema

Diagram

Type spase:Document

Properties
content: complex
Model


Children


Instance

```xml
  <spase:ResourceID> {1,1} </spase:ResourceID>
  <spase:ResourceHeader> {1,1} </spase:ResourceHeader>
  <spase:AccessInformation> {1,unbounded} </spase:AccessInformation>
  <spase:Keyword> {0,unbounded} </spase:Keyword>
  <spase:DocumentType> {1,1} </spase:DocumentType>
  <spase:MIMEType> {1,1} </spase:MIMEType>
  <spase:InputResourceID> {0,unbounded} </spase:InputResourceID>
</spase:Document>
```

Source

```xml
<xsd:element name="Document" type="spase:Document"/>
```

Schema location

file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

**Element spase:Document / spase:ResourceID**

Namespace

http://www.spase-group.org/data/schema

Diagram

```
ResourceID
  Type: spase:ResourceID
  content: simple
  minOccurs: 1
  maxOccurs: 1
```

Type

spase:ResourceID

Properties

content: simple
minOccurs: 1
maxOccurs: 1

Source

```xml
<xsd:element name="ResourceID" type="spase:ResourceID" minOccurs="1" maxOccurs="1"/>
```

Schema location

file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

**Element spase:Document / spase:ResourceHeader**

Namespace

http://www.spase-group.org/data/schema

Diagram

```
ResourceHeader
  Type: spase:ResourceHeader
  content: simple
  minOccurs: 1
  maxOccurs: 1
```

Type

spase:ResourceHeader
<spase:Acknowledgement>(0,1)</spase:Acknowledgement>

Source
<xs:element name="AccessInformation" type="spase:AccessInformation" minOccurs="1" maxOccurs="unbounded"/>

Schema location
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Element spase:Document / spase:Keyword

Namespace
http://www.spase-group.org/data/schema

Diagram

Type
spase:Keyword

Properties
content: simple
minOccurs: 0
maxOccurs: unbounded

Source
<xs:element name="Keyword" type="spase:Keyword" minOccurs="0" maxOccurs="unbounded"/>

Schema location
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Element spase:Document / spase:DocumentType

Namespace
http://www.spase-group.org/data/schema

Diagram

Type
spase:DocumentType

Properties
content: simple
minOccurs: 1
maxOccurs: 1

Facets
- enumeration Other: Not classified with more specific terms. The context of its usage may be described in related text.
- enumeration Poster: A set of information arranged on a single page or sheet, typically in a large format.
- enumeration Presentation: A set of information that is used when communicating to an audience.
- enumeration Report: A document which describes the findings of some individual or group.
- enumeration Specification: A detailed description of the requirements and other aspects of an object or component that may be used to develop an implementation.
- enumeration TechnicalNote: A document summarizing the performance and other technical characteristics of a product, machine, component, subsystem or software in sufficient detail to be used by an engineer or researcher.
- enumeration WhitePaper: An authoritative report giving information or proposals on an issue.

Source
<xs:element name="DocumentType" type="spase:DocumentType" minOccurs="1" maxOccurs="1"/>

Schema location
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Element spase:Document / spase:MIMEType

Namespace
http://www.spase-group.org/data/schema

Diagram


Schema documentation for spase-2_2_4.xsd

<table>
<thead>
<tr>
<th>Type</th>
<th>spase:MIMEType</th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties</td>
<td>content: simple</td>
</tr>
<tr>
<td></td>
<td>minOccurs: 1</td>
</tr>
<tr>
<td></td>
<td>maxOccurs: 1</td>
</tr>
<tr>
<td>Source</td>
<td>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
</tbody>
</table>

**Element spase:Document / spase:InputResourceID**

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagram</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>Type</td>
<td>spase:InputResourceID</td>
</tr>
<tr>
<td>Properties</td>
<td>content: simple</td>
</tr>
<tr>
<td></td>
<td>minOccurs: 0</td>
</tr>
<tr>
<td></td>
<td>maxOccurs: unbounded</td>
</tr>
<tr>
<td>Source</td>
<td>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
</tbody>
</table>

**Element spase:Spase / spase:Granule**

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagram</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>Type</td>
<td>spase:Granule</td>
</tr>
<tr>
<td>Properties</td>
<td>content: complex</td>
</tr>
<tr>
<td>Model</td>
<td>spase:ResourceID, spase:ReleaseDate, spase:ExpirationDate[0,1], spase:ParentID, spase:PriorID*, spase:StartDate, spase:StopDate</td>
</tr>
<tr>
<td>Children</td>
<td>spase:ExpirationDate, spase:ParentID, spase:PriorID, spase:ReleaseDate, spase:ResourceId, spase:Source, spase:StartDate, spase:StopDate</td>
</tr>
</tbody>
</table>
| Instance          | `<spase:Granule xmlns:spase="http://www.spase-group.org/data/schema">
    <spase:ResourceID>[1,1]</spase:ResourceID>
    <spase:ReleaseDate>[1,1]</spase:ReleaseDate>
    <spase:ExpirationDate>[0,1]</spase:ExpirationDate>
    <spase:ParentID>[1,1]</spase:ParentID>
</spase:Granule>` |
<spase:PriorID> {0, unbounded} </spase:PriorID>
<spase:StartDate> {1,1} </spase:StartDate>
<spase:StopDate> {1,1} </spase:StopDate>
<spase:Source> {1, unbounded} </spase:Source>
</spase:Granule>

Source
<xsd:element name="Granule" type="spase:Granule"/>

Schema location
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

**Element spase:Granule / spase:ResourceID**

Namespace http://www.spase-group.org/data/schema

Diagram

Type spase:ResourceID

Properties
- content: simple
- minOccurs: 1
- maxOccurs: 1

Source
<xsd:element name="ResourceID" type="spase:ResourceID" minOccurs="1" maxOccurs="1"/>

Schema location
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

**Element spase:Granule / spase:ReleaseDate**

Namespace http://www.spase-group.org/data/schema

Diagram

Type spase:ReleaseDate

Properties
- content: simple
- minOccurs: 1
- maxOccurs: 1

Source
<xsd:element name="ReleaseDate" type="spase:ReleaseDate" minOccurs="1" maxOccurs="1"/>

Schema location
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

**Element spase:Granule / spase:ExpirationDate**

Namespace http://www.spase-group.org/data/schema

Diagram

Type spase:ExpirationDate

Properties
- content: simple
- minOccurs: 0
- maxOccurs: 1

Source
<xsd:element name="ExpirationDate" type="spase:ExpirationDate" minOccurs="0" maxOccurs="1"/>

Schema location
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

**Element spase:Granule / spase:ParentID**

Namespace http://www.spase-group.org/data/schema

Diagram

---
## Schema documentation for spase-2_2_4.xsd

<table>
<thead>
<tr>
<th>Type</th>
<th>spase:ParentID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties</td>
<td></td>
</tr>
<tr>
<td>content:</td>
<td>simple</td>
</tr>
<tr>
<td>minOccurs:</td>
<td>1</td>
</tr>
<tr>
<td>maxOccurs:</td>
<td>1</td>
</tr>
<tr>
<td>Source</td>
<td><code>&lt;xsd:element name=&quot;ParentID&quot; type=&quot;spase:ParentID&quot; minOccurs=&quot;1&quot; maxOccurs=&quot;1&quot;/&gt;</code></td>
</tr>
<tr>
<td>Schema location</td>
<td>file://C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
</tbody>
</table>

### Element spase:Granule / spase:PriorID

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagram</td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>spase:PriorID</td>
</tr>
<tr>
<td>Properties</td>
<td></td>
</tr>
<tr>
<td>content:</td>
<td>simple</td>
</tr>
<tr>
<td>minOccurs:</td>
<td>0</td>
</tr>
<tr>
<td>maxOccurs:</td>
<td>unbounded</td>
</tr>
<tr>
<td>Source</td>
<td><code>&lt;xsd:element name=&quot;PriorID&quot; type=&quot;spase:PriorID&quot; minOccurs=&quot;0&quot; maxOccurs=&quot;unbounded&quot;/&gt;</code></td>
</tr>
<tr>
<td>Schema location</td>
<td>file://C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
</tbody>
</table>

### Element spase:Granule / spase:StartDate

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagram</td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>spase:StartDate</td>
</tr>
<tr>
<td>Properties</td>
<td></td>
</tr>
<tr>
<td>content:</td>
<td>simple</td>
</tr>
<tr>
<td>minOccurs:</td>
<td>1</td>
</tr>
<tr>
<td>maxOccurs:</td>
<td>1</td>
</tr>
<tr>
<td>Source</td>
<td><code>&lt;xsd:element name=&quot;StartDate&quot; type=&quot;spase:StartDate&quot; minOccurs=&quot;1&quot; maxOccurs=&quot;1&quot;/&gt;</code></td>
</tr>
<tr>
<td>Schema location</td>
<td>file://C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
</tbody>
</table>

### Element spase:Granule / spase:StopDate

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagram</td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>spase:StopDate</td>
</tr>
<tr>
<td>Properties</td>
<td></td>
</tr>
<tr>
<td>content:</td>
<td>simple</td>
</tr>
<tr>
<td>minOccurs:</td>
<td>1</td>
</tr>
<tr>
<td>maxOccurs:</td>
<td>1</td>
</tr>
<tr>
<td>Source</td>
<td><code>&lt;xsd:element name=&quot;StopDate&quot; type=&quot;spase:StopDate&quot; minOccurs=&quot;1&quot; maxOccurs=&quot;1&quot;/&gt;</code></td>
</tr>
<tr>
<td>Schema location</td>
<td>file://C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
</tbody>
</table>

### Element spase:Granule / spase:Source

| Namespace | http://www.spase-group.org/data/schema |
Type: spase:Source

Properties:
- content: complex
  - minOccurs: 1
  - maxOccurs: unbounded

Model:
- spase:SourceType, spase:URL, spase:MirrorURL*, spase:Checksum{0,1}, spase:DataExtent{0,1}

Children:
- spase:Checksum, spase:DataExtent, spase:MirrorURL, spase:SourceType, spase:URL

Instance:
```xml
<spase:Source xmlns:spase= "http://www.spase-group.org/data/schema">
    <spase:SourceType> {1,1} </spase:SourceType>
    <spase:URL> {1,1} </spase:URL>
    <spase:MirrorURL> {0,unbounded} </spase:MirrorURL>
    <spase:Checksum> {0,1} </spase:Checksum>
    <spase:DataExtent> {0,1} </spase:DataExtent>
</spase:Source>
```

Source:
```xml
<xsd:element name="Source" type="spase:Source" minOccurs="1" maxOccurs="unbounded"/>
```

Schema location:
file://C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

Element spase:SourceType / spase:Source

Namespace: http://www.spase-group.org/data/schema

Type: spase:SourceType

Properties:
- content: simple
  - minOccurs: 1
  - maxOccurs: 1

Facets:
- enumeration: Ancillary
  A complementory item which can be subordinate, subsidiary, auxiliary, supplementary to the primary item.

- enumeration: Browse
  A representation of an image which is suitable to reveal most or all of the details of the image.

- enumeration: Data
  A collection of organized information, usually the results of experience, observation or experiment, or a set of premises. This may consist of numbers, words, or images, particularly as measurements or observations of a set of variables.

- enumeration: Layout
  The structured arrangement of items in a collection.

- enumeration: Thumbnail
  A small representation of an image which is suitable to infer what the full-sized imaged is like.

Source:
```xml
<xsd:element name="SourceType" type="spase:SourceType" minOccurs="1" maxOccurs="1"/>
```

Schema location:
file://C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd
Element spase:Source / spase:URL

Namespace: http://www.spase-group.org/data/schema

Diagram:

Type: spase:URL

Properties:
- content: simple
- minOccurs: 1
- maxOccurs: 1

Source:
```xml
<xsd:element name="URL" type="spase:URL" minOccurs="1" maxOccurs="1"/>
```

Schema location:
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Element spase:Source / spase:MirrorURL

Namespace: http://www.spase-group.org/data/schema

Diagram:

Type: spase:MirrorURL

Properties:
- content: simple
- minOccurs: 0
- maxOccurs: unbounded

Source:
```xml
<xsd:element name="MirrorURL" type="spase:MirrorURL" minOccurs="0" maxOccurs="unbounded"/>
```

Schema location:
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Element spase:Source / spase:Checksum

Namespace: http://www.spase-group.org/data/schema

Diagram:

Type: spase:Checksum

Properties:
- content: complex
- minOccurs: 0
- maxOccurs: 1

Model:
- spase:HashValue , spase:HashFunction

Children:
- spase:HashFunction , spase:HashValue

Instance:
```xml
<spase:Checksum xmlns:spase= "http://www.spase-group.org/data/schema">
    <spase:HashValue > {1,1} </spase:HashValue>
    <spase:HashFunction > {1,1} </spase:HashFunction>
</spase:Checksum>
```

Source:
```xml
<xsd:element name="Checksum" type="spase:Checksum" minOccurs="0" maxOccurs="1"/>
```

Schema location:
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Element spase:Checksum / spase:HashValue
### Element `spase:Checksum / spase:HashFunction`

<table>
<thead>
<tr>
<th>Type</th>
<th><code>spase:HashValue</code></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Properties</strong></td>
<td></td>
</tr>
<tr>
<td>content:</td>
<td><code>simple</code></td>
</tr>
<tr>
<td>minOccurs:</td>
<td><code>1</code></td>
</tr>
<tr>
<td>maxOccurs:</td>
<td><code>1</code></td>
</tr>
</tbody>
</table>

**Source**
```xml
<xs:element name="HashValue" type="spase:HashValue" minOccurs="1" maxOccurs="1"/>
```

**Schema location**
`file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd`

### Element `spase:Source / spase:DataExtent`

<table>
<thead>
<tr>
<th>Type</th>
<th><code>spase:DataExtent</code></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Properties</strong></td>
<td></td>
</tr>
<tr>
<td>content:</td>
<td><code>complex</code></td>
</tr>
<tr>
<td>minOccurs:</td>
<td><code>0</code></td>
</tr>
<tr>
<td>maxOccurs:</td>
<td><code>1</code></td>
</tr>
</tbody>
</table>

**Model**
- `spase:Quantity`, `spase:Units{0,1}`, `spase:Per{0,1}`

**Children**
- `spase:Per`, `spase:Quantity`, `spase:Units`

**Instance**
```xml
<spase:DataExtent xmlns:spase= "http://www.spase-group.org/data/schema">
  <spase:Quantity>{1,1}</spase:Quantity>
  <spase:Units>{0,1}</spase:Units>
  <spase:Per>{0,1}</spase:Per>
</spase:DataExtent>
```

**Source**
```xml
<xs:element name="DataExtent" type="spase:DataExtent" minOccurs="0" maxOccurs="1"/>
```

**Schema location**
`file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd`
### Element `spase:Spase / spase:Instrument`

**Namespace**  
http://www.spase-group.org/data/schema

**Diagram**

![Diagram of spase:Spase / spase:Instrument]

**Type**  
`spase:Instrument`

**Properties**  
content: complex

**Model**

- `spase:ResourceId`, `spase:ResourceHeader`, `spase:InstrumentType+`, `spase:InvestigationName+`, `spase:OperatingSpan[0,1]`, `spase:ObservatoryID`, `spase:Caveats[0,1]`, `spase:Extension*`

**Children**


**Instance**

```xml
  <spase:ResourceId> {1,1} </spase:ResourceId>
  <spase:ResourceHeader> {1,1} </spase:ResourceHeader>
  <spase:InstrumentType> {1,unbounded} </spase:InstrumentType>
  <spase:InvestigationName> {1,unbounded} </spase:InvestigationName>
  <spase:OperatingSpan> {0,1} </spase:OperatingSpan>
  <spase:ObservatoryID> {1,1} </spase:ObservatoryID>
  <spase:Caveats> {0,1} </spase:Caveats>
  <spase:Extension> {0,unbounded} </spase:Extension>
</spase:Instrument>
```

**Source**

```xml
<xsd:element name="Instrument" type="spase:Instrument"/>
```

**Schema location**

file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### Element `spase:ResourceId`

**Namespace**  
http://www.spase-group.org/data/schema

**Diagram**

![Diagram of spase:ResourceId]

**Type**  
`spase:ResourceId`

**Properties**  
content: simple  
minOccurs: 1  
maxOccurs: 1

**Source**

```xml
<xsd:element name="ResourceId" type="spase:ResourceId" minOccurs="1" maxOccurs="1"/>
```

**Schema location**

file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### Element `spase:ResourceHeader`

**Namespace**  
http://www.spase-group.org/data/schema
**Type**
spase:ResourceHeader

**Properties**
- content: complex
  - minOccurs: 1
  - maxOccurs: 1

**Model**
- spase:ResourceName, spase:AlternateName*, spase:ReleaseDate, spase:ExpirationDate{0,1}, spase:Description, spase:Acknowledgement{0,1}, spase:Contact+, spase:InformationURL*, spase:Association*, spase:PriorID*

**Children**
- spase:Acknowledgement, spase:AlternateName, spase:Association, spase:Contact, spase:Description, spase:ExpirationDate, spase:InformationURL, spase:PriorID, spase:ReleaseDate, spase:ResourceName

**Instance**
```
<spase:ResourceHeader xmlns:spase= "http://www.spase-group.org/data/schema">
  <spase:ResourceName>[1,1]</spase:ResourceName>
  <spase:AlternateName>[0,unbounded]</spase:AlternateName>
  <spase:ReleaseDate>[1,1]</spase:ReleaseDate>
  <spase:ExpirationDate>[0,1]</spase:ExpirationDate>
  <spase:Description>[1,1]</spase:Description>
  <spase:Acknowledgement>[0,1]</spase:Acknowledgement>
  <spase:Contact>[1,unbounded]</spase:Contact>
  <spase:InformationURL>[0,unbounded]</spase:InformationURL>
  <spase:Association>[0,unbounded]</spase:Association>
  <spase:PriorID>[0,unbounded]</spase:PriorID>
</spase:ResourceHeader>
```

**Source**
```
<xsd:element  name= "ResourceHeader"  type= "spase:ResourceHeader"  minOccurs= "1"  maxOccurs= "1"/>
```

**Element spase:Instrument / spase:InstrumentType**

**Namespace**
http://www.spase-group.org/data/schema

**Diagram**

**Type**
spase:InstrumentType

**Properties**
- content: simple
  - minOccurs: 1
  - maxOccurs: unbounded

**Facets**
- enumeration
  - Antenna: A sensor used to measure electric potential.
<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Instrument Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Channeltron</td>
<td>An instrument that detects electrons, ions, and UV-radiation, according to the principle of a secondary emission multiplier. It is typically used in electron spectroscopy and mass spectrometry.</td>
</tr>
<tr>
<td>Coronograph</td>
<td>An instrument which can image things very close to the Sun by using a disk to block the Sun's bright surface which reveals the faint solar corona and other celestial objects.</td>
</tr>
<tr>
<td>DoubleSphere</td>
<td>A dipole antenna of which the active (sensor) elements are small spheres located at the ends of two wires deployed in the equatorial plane, on opposite sides of a spinning spacecraft.</td>
</tr>
<tr>
<td>DustDetector</td>
<td>An instrument which determines the mass and speed of ambient dust particles.</td>
</tr>
<tr>
<td>ElectronDriftInstrument</td>
<td>An active experiment to measure the electron drift velocity based on sensing the displacement of a weak beam of electrons after one gyration in the ambient magnetic field.</td>
</tr>
<tr>
<td>ElectrostaticAnalyser</td>
<td>An instrument which uses charged plates to analyze the mass, charge and kinetic energies of charged particles which enter the instrument.</td>
</tr>
<tr>
<td>EnergeticParticleInstrument</td>
<td>An instrument that measures fluxes of charged particles as a function of time, direction of motion, mass, charge and/or species.</td>
</tr>
<tr>
<td>FaradayCup</td>
<td>An instrument consisting of an electrode from which electrical current is measured while a charged particle beam (electrons or ions) impinges on it. Used to determine energy spectrum and sometimes ion composition of the impinging particles.</td>
</tr>
<tr>
<td>FluxFeedback</td>
<td>A search coil whose bandwidth and signal/noise ratio are increased by the application of negative feedback at the sensor (flux) level by driving a colocated coil with a signal from the preamplifier.</td>
</tr>
<tr>
<td>FourierTransformSpectrograph</td>
<td>An instrument that determines the spectra of a radiative source, using time-domain measurements and a Fourier transform.</td>
</tr>
<tr>
<td>GeigerMuellerTube</td>
<td></td>
</tr>
<tr>
<td>Imager</td>
<td>An instrument which samples the radiation from an area at one or more spectral ranges emitted or reflected by an object.</td>
</tr>
<tr>
<td>ImagingSpectrometer</td>
<td>An instrument which is a multispectral scanner with a very large number of channels (64-256 channels) with very narrow band widths.</td>
</tr>
<tr>
<td>Interferometer</td>
<td>An instrument to study the properties of two or more waves from the pattern of interference created by their superposition.</td>
</tr>
<tr>
<td>IonChamber</td>
<td>A device in which the collected electrical charge from ionization in a gas-filled cavity is taken to be the proportion to some parameter (e.g. dose or exposure) of radiation field</td>
</tr>
<tr>
<td>IonDrift</td>
<td>A device which measures the current produced by the displacement of ambient ions on a grid, thereby allowing the determination of the ion trajectory and velocity.</td>
</tr>
<tr>
<td>LangmuirProbe</td>
<td>A monopole antenna associated with an instrument. The instrument applies a potential to the antenna which is swept to determine the voltage/current characteristic. This provides information about the plasma surrounding the probe and spacecraft.</td>
</tr>
<tr>
<td>LongWire</td>
<td>A dipole antenna whose active (sensor) elements are two wires deployed in the equatorial plane on opposite sides of a spinning spacecraft, and whose length is several times greater than the spacecraft diameter.</td>
</tr>
<tr>
<td>Magnetograph</td>
<td>A special type of magnetometer that records a time plot of the local magnetic field near...</td>
</tr>
</tbody>
</table>
the instrument; or a telescope capable of determining the magnetic field strength and/or direction on a distant object such as the Sun, using the Zeeman splitting or other spectral signatures of magnetization.

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Instrument</th>
</tr>
</thead>
<tbody>
<tr>
<td>enumeration</td>
<td>Magnetometer</td>
</tr>
<tr>
<td></td>
<td>An instrument which measures the ambient magnetic field.</td>
</tr>
<tr>
<td>enumeration</td>
<td>MassSpectrometer</td>
</tr>
<tr>
<td></td>
<td>An instrument which distinguishes chemical species in terms of their different isotopic masses.</td>
</tr>
<tr>
<td>enumeration</td>
<td>MicrochannelPlate</td>
</tr>
<tr>
<td></td>
<td>An instrument used for the detection of elementary particles, ions, ultraviolet rays and soft X-rays constructed from very thin conductive glass capillaries.</td>
</tr>
<tr>
<td>enumeration</td>
<td>MultispectralImager</td>
</tr>
<tr>
<td></td>
<td>An instrument which captures images at multiple spectral ranges.</td>
</tr>
<tr>
<td>enumeration</td>
<td>NeutralAtomImager</td>
</tr>
<tr>
<td></td>
<td>An instrument which measures the quantity and properties of neutral particles over a range of angles. Measured properties can include mass and energy.</td>
</tr>
<tr>
<td>enumeration</td>
<td>NeutralParticleDetector</td>
</tr>
<tr>
<td></td>
<td>An instrument which measures the quantity and properties of neutral particles. Measured properties can include mass and plasma bulk densities.</td>
</tr>
<tr>
<td>enumeration</td>
<td>ParticleCorrelator</td>
</tr>
<tr>
<td></td>
<td>An instrument which correlates particle flux to help identify wave/particle interactions.</td>
</tr>
<tr>
<td>enumeration</td>
<td>ParticleDetector</td>
</tr>
<tr>
<td></td>
<td>An instrument which detects particle flux!!!</td>
</tr>
<tr>
<td>enumeration</td>
<td>Photometer</td>
</tr>
<tr>
<td></td>
<td>An instrument which measures the strength of electromagnetic radiation within a spectral band which can range from ultraviolet to infrared and includes the visible spectrum.</td>
</tr>
<tr>
<td>enumeration</td>
<td>PhotomultiplierTube</td>
</tr>
<tr>
<td></td>
<td>A vacuum phototube that is an extremely sensitive detector of light in the ultraviolet, visible, and near-infrared ranges of the electromagnetic spectrum.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Photopolarimeter</td>
</tr>
<tr>
<td></td>
<td>An instrument which measures the intensity and polarization or radiant energy. A photopolarimeter is a combination of a photometer and a polarimeter.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Platform</td>
</tr>
<tr>
<td></td>
<td>A collection of components which can be positioned and oriented as a single unit. A platform may contain other platforms. For example, a spacecraft is a platform which may have components that can be articulated and are also considered platforms.</td>
</tr>
<tr>
<td>enumeration</td>
<td>ProportionalCounter</td>
</tr>
<tr>
<td></td>
<td>An instrument which measures energy of ionization radiation based on interactions with a gas.</td>
</tr>
<tr>
<td>enumeration</td>
<td>QuadrisphericalAnalyser</td>
</tr>
<tr>
<td></td>
<td>An instrument used for the 3-D detection of plasma, energetic electrons and ions, and for positive-ion composition measurements.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Radar</td>
</tr>
<tr>
<td></td>
<td>An instrument that uses directional properties of returned power to infer spatial and/or other characteristics of a remote object.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Radiometer</td>
</tr>
<tr>
<td></td>
<td>An instrument for detecting or measuring radiant energy. Radiometers are commonly limited to infrared radiation.</td>
</tr>
<tr>
<td>enumeration</td>
<td>ResonanceSounder</td>
</tr>
<tr>
<td></td>
<td>A combination of a radio receiver and a pulsed transmitter used to study the plasma surrounding a spacecraft by identifying resonances or cut-offs (of the wave dispersion relation), whose frequencies are related to the ambient plasma density and magnetic field. When the transmitter is off it is essentially a high frequency-resolution spectral power receiver.</td>
</tr>
<tr>
<td>enumeration</td>
<td>RetardingPotentialAnalyser</td>
</tr>
<tr>
<td></td>
<td>An instrument which measures ion temperatures and ion concentrations using a planar ion trap.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Riometer</td>
</tr>
<tr>
<td></td>
<td>An instrument which measures the signal strength in various directions of the galactic radio.</td>
</tr>
</tbody>
</table>
signals. Variations in these signals are influenced by solar flare activity and geomagnetic storm and substorm processes.

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ScintillationDetector</td>
<td>An instrument which detects fluorescence of a material which is excited by high energy (ionizing) electromagnetic or charged particle radiation.</td>
</tr>
<tr>
<td>SearchCoil</td>
<td>An instrument which measures the time variation of the magnetic flux threading a loop by measurement of the electric potential difference induced between the ends of the wire.</td>
</tr>
<tr>
<td>SolidStateDetector</td>
<td>A detector of the charge carriers (electrons and holes) generated in semiconductors by energy deposited by gamma ray photons. Also known as a &quot;semiconductor detector&quot;.</td>
</tr>
<tr>
<td>Sounder</td>
<td>An instrument which measures the radiiances from an object. A sounder may measure radiances at multiple spectral ranges.</td>
</tr>
<tr>
<td>SpacecraftPotentialControl</td>
<td>An instrument to control the electric potential of a spacecraft with respect to the ambient plasma by emitting a variable current of positive ions.</td>
</tr>
<tr>
<td>SpectralPowerReceiver</td>
<td>A radio receiver which determines the power spectral density of the electric or magnetic field, or both, at one or more frequencies.</td>
</tr>
<tr>
<td>Spectrometer</td>
<td>An instrument that measures the component wavelengths of light (or other electromagnetic radiation) by splitting the light up into its component wavelengths.</td>
</tr>
<tr>
<td>TimeOfFlight</td>
<td>An instrument which measures the time it takes for a particle to travel between two detectors.</td>
</tr>
<tr>
<td>Unspecified</td>
<td>A value which is not provided.</td>
</tr>
<tr>
<td>WaveformReceiver</td>
<td>A radio receiver which outputs the value of one or more components of the electric and/or magnetic field as a function of time.</td>
</tr>
</tbody>
</table>

Source

```
xsd:element name="InstrumentType" type="spase:InstrumentType" minOccurs="1" maxOccurs="unbounded"/>
```

Schema location file://C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### Element spase:Instrument / spase:InvestigationName

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagram</td>
<td><img src="image" alt="Diagagram" /></td>
</tr>
<tr>
<td>Type</td>
<td>spase:InvestigationName</td>
</tr>
<tr>
<td>Properties</td>
<td>content: simple</td>
</tr>
<tr>
<td></td>
<td>minOccurs: 1</td>
</tr>
<tr>
<td></td>
<td>maxOccurs: unbounded</td>
</tr>
</tbody>
</table>

Source

```
xsd:element name="InvestigationName" type="spase:InvestigationName" minOccurs="1" maxOccurs="unbounded"/>
```

Schema location file://C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### Element spase:Instrument / spase:OperatingSpan

| Namespace | http://www.spase-group.org/data/schema |
| Diagram | 
|---|---|
| **Schema documentation for spase-2_2_4.xsd** |  |

<table>
<thead>
<tr>
<th>Type</th>
<th>spase:OperatingSpan</th>
</tr>
</thead>
</table>
| Properties | content: complex  
minOccurs: 0  
maxOccurs: 1 |
| Model | spase:StartDate, spase:StopDate[0,1], spase:Note* |
| Children | spase:Note, spase:StartDate, spase:StopDate |

| Instance |  
|---|---|
| `<spase:OperatingSpan xmlns:spase= "http://www.spase-group.org/data/schema" >  
`<spase:StartDate > {1,1} </spase:StartDate>  
`<spase:StopDate > {0,1} </spase:StopDate>  
`<spase:Note > {0,unbounded} </spase:Note>  
`</spase:OperatingSpan>` |

| Source | `<xsd:element name= "OperatingSpan" type= "spase:OperatingSpan" minOccurs= "0" maxOccurs= "1" />`  
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Schema location</td>
<td>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
</tbody>
</table>

### Element spase:OperatingSpan / spase:StartDate

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagram</td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>spase:StartDate</td>
</tr>
</tbody>
</table>
| Properties | content: simple  
minOccurs: 1  
maxOccurs: 1 |
| Source | `<xsd:element name= "StartDate" type= "spase:StartDate" minOccurs= "1" maxOccurs= "1" />`  
| Schema location | file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd |

### Element spase:OperatingSpan / spase:StopDate

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagram</td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>spase:StopDate</td>
</tr>
</tbody>
</table>
| Properties | content: simple  
minOccurs: 0  
maxOccurs: 1 |
| Source | `<xsd:element name= "StopDate" type= "spase:StopDate" minOccurs= "0" maxOccurs= "1" />`  
| Schema location | file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd |

### Element spase:OperatingSpan / spase:Note

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagram</td>
<td></td>
</tr>
</tbody>
</table>
| Source | `<xsd:element name= "Note" type= "spase:Note" />`  
| Schema location | file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd |
### Type `spase:Note`

<table>
<thead>
<tr>
<th>Properties</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>content</td>
<td><code>simple</code></td>
</tr>
<tr>
<td>minOccurs</td>
<td>0</td>
</tr>
<tr>
<td>maxOccurs</td>
<td><code>unbounded</code></td>
</tr>
</tbody>
</table>

**Source**

```xml
<xsd:element name="Note" type="spase:Note" minOccurs="0" maxOccurs="unbounded"/>
```

**Schema location**

`file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd`

### Element `spase:Instrument / spase:ObservatoryID`

**Namespace**

http://www.spase-group.org/data/schema

**Diagram**

![Diagram](image1.png)

**Type** `spase:ObservatoryID`

<table>
<thead>
<tr>
<th>Properties</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>content</td>
<td><code>simple</code></td>
</tr>
<tr>
<td>minOccurs</td>
<td>1</td>
</tr>
<tr>
<td>maxOccurs</td>
<td>1</td>
</tr>
</tbody>
</table>

**Source**

```xml
<xsd:element name="ObservatoryID" type="spase:ObservatoryID" minOccurs="1" maxOccurs="1"/>
```

**Schema location**

`file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd`

### Element `spase:Instrument / spase:Caveats`

**Namespace**

http://www.spase-group.org/data/schema

**Diagram**

![Diagram](image2.png)

**Type** `spase:Caveats`

<table>
<thead>
<tr>
<th>Properties</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>content</td>
<td><code>simple</code></td>
</tr>
<tr>
<td>minOccurs</td>
<td>0</td>
</tr>
<tr>
<td>maxOccurs</td>
<td>1</td>
</tr>
</tbody>
</table>

**Source**

```xml
<xsd:element name="Caveats" type="spase:Caveats" minOccurs="0" maxOccurs="1"/>
```

**Schema location**

`file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd`

### Element `spase:Instrument / spase:Extension`

**Namespace**

http://www.spase-group.org/data/schema

**Diagram**

![Diagram](image3.png)

**Type** `spase:Extension`

<table>
<thead>
<tr>
<th>Properties</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>content</td>
<td><code>complex</code></td>
</tr>
<tr>
<td>minOccurs</td>
<td>0</td>
</tr>
<tr>
<td>maxOccurs</td>
<td><code>unbounded</code></td>
</tr>
</tbody>
</table>

**Model**

ANY element from ANY namespace

**Source**

```xml
<xsd:element name="Extension" type="spase:Extension" minOccurs="0" maxOccurs="unbounded"/>
```

**Schema location**

`file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd`

### Element `spase:Spase / spase:Observatory`

**Namespace**

http://www.spase-group.org/data/schema
Diagram

<table>
<thead>
<tr>
<th>Type</th>
<th>spase:Observatory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties</td>
<td>content: complex</td>
</tr>
<tr>
<td>Model</td>
<td>spase:ResourceID, spase:ResourceHeader, spase:ObservatoryGroupID*, spase:Location, spase:OperatingSpan{0,1}, spase:Extension*</td>
</tr>
</tbody>
</table>

Instance

```xml
<spase:Observatory xmlns:spase= "http://www.spase-group.org/data/schema">
  <spase:ResourceID> {1,1} </spase:ResourceID>
  <spase:ResourceHeader> {1,1} </spase:ResourceHeader>
  <spase:ObservatoryGroupID> {0,unbounded} </spase:ObservatoryGroupID>
  <spase:Location> {1,1} </spase:Location>
  <spase:OperatingSpan> {0,1} </spase:OperatingSpan>
  <spase:Extension> {0,unbounded} </spase:Extension>
</spase:Observatory>
```

Source

```xml
<xsd:element name="Observatory" type="spase:Observatory"/>
```

Schema location

file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

Element spase:Observatory / spase:ResourceID

Namespace | http://www.spase-group.org/data/schema

Diagram

<table>
<thead>
<tr>
<th>Type</th>
<th>spase:ResourceID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties</td>
<td>content: simple</td>
</tr>
<tr>
<td>minOccurs:</td>
<td>1</td>
</tr>
<tr>
<td>maxOccurs:</td>
<td>1</td>
</tr>
</tbody>
</table>

Source

```xml
<xsd:element name="ResourceID" type="spase:ResourceID" minOccurs="1" maxOccurs="1"/>
```

Schema location

file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

Element spase:Observatory / spase:ResourceHeader
### Element `spase:ResourceHeader`

**Namespace**
```
http://www.spase-group.org/data/schema
```

**Diagram**
![Diagram of `spase:ResourceHeader`]

**Type** `spase:ResourceHeader`

**Properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Type</th>
<th>minOccurs</th>
<th>maxOccurs</th>
</tr>
</thead>
<tbody>
<tr>
<td>content</td>
<td>complex</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

**Model**
```
spase:ResourceName  , spase:AlternateName*  , spase:ReleaseDate  , spase:ExpirationDate{0,1}  , spase:Description  , spase:Acknowledgement{0,1}  , spase:Contact+  , spase:InformationURL*  , spase:Association*  , spase:PriorID*
```

**Children**
```
spase:Acknowledgement  , spase:AlternateName  , spase:Association  , spase:Contact  , spase:Description  , spase:ExpirationDate  , spase:InformationURL  , spase:PriorID  , spase:ReleaseDate  , spase:ResourceName
```

**Instance**
```
<spase:ResourceHeader xmlns:spase= "http://www.spase-group.org/data/schema">
  <spase:ResourceName>[1,1]</spase:ResourceName>
  <spase:AlternateName>[0,unbounded]</spase:AlternateName>
  <spase:ReleaseDate>[1,1]</spase:ReleaseDate>
  <spase:ExpirationDate>[0,1]</spase:ExpirationDate>
  <spase:Description>[1,1]</spase:Description>
  <spase:Acknowledgement>[0,1]</spase:Acknowledgement>
  <spase:Contact>[1,unbounded]</spase:Contact>
  <spase:InformationURL>[0,unbounded]</spase:InformationURL>
  <spase:Association>[0,unbounded]</spase:Association>
  <spase:PriorID>[0,unbounded]</spase:PriorID>
</spase:ResourceHeader>
```

**Source**
```
<xsd:element name= "ResourceHeader" type= "spase:ResourceHeader" minOccurs= "1" maxOccurs= "1"/>
```

**Schema location**
```
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd
```
Schema documentation for spase-2_2_4.xsd

Source
<xsd:element name="ObservatoryGroupID" type="spase:ObservatoryGroupID" minOccurs="0" maxOccurs="unbounded"/>

Schema location
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Element spase:Observatory / spase:Location

Namespace http://www.spase-group.org/data/schema

Diagram

Type spase:Location

Properties
<table>
<thead>
<tr>
<th>content:</th>
<th>complex</th>
</tr>
</thead>
<tbody>
<tr>
<td>minOccurs:</td>
<td>1</td>
</tr>
<tr>
<td>maxOccurs:</td>
<td>1</td>
</tr>
</tbody>
</table>

Model
spase:ObservatoryRegion+, spase:CoordinateSystemName{0,1}, spase:Latitude{0,1}, spase:Longitude{0,1}, spase:Elevation(0,1)

Children
spase:CoordinateSystemName, spase:Elevation, spase:Longitude, spase:Latitude, spase:ObservatoryRegion

Instance
<spase:Location xmlns:spase="http://www.spase-group.org/data/schema">
  <spase:ObservatoryRegion> {1,unbounded} </spase:ObservatoryRegion>
  <spase:CoordinateSystemName> {0,1} </spase:CoordinateSystemName>
  <spase:Latitude> {0,1} </spase:Latitude>
  <spase:Longitude> {0,1} </spase:Longitude>
  <spase:Elevation> {0,1} </spase:Elevation>
</spase:Location>

Source
<xsd:element name="Location" type="spase:Location" minOccurs="1" maxOccurs="1"/>

Schema location
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Element spase:Location / spase:ObservatoryRegion

Namespace http://www.spase-group.org/data/schema

Diagram

Type spase:Region

Properties
<table>
<thead>
<tr>
<th>content:</th>
<th>simple</th>
</tr>
</thead>
<tbody>
<tr>
<td>minOccurs:</td>
<td>1</td>
</tr>
<tr>
<td>maxOccurs:</td>
<td>unbounded</td>
</tr>
</tbody>
</table>

Facets
<table>
<thead>
<tr>
<th>enumeration</th>
<th>Asteroid</th>
</tr>
</thead>
<tbody>
<tr>
<td>description</td>
<td>A small extraterrestrial body consisting mostly of rock and metal that is in orbit around the sun.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>enumeration</th>
<th>Comet</th>
</tr>
</thead>
<tbody>
<tr>
<td>description</td>
<td>A relatively small extraterrestrial body consisting of a frozen mass that travels around the sun in a highly elliptical orbit.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>enumeration</th>
<th>Earth</th>
</tr>
</thead>
<tbody>
<tr>
<td>description</td>
<td>The third planet from the sun in our solar system.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>enumeration</th>
<th>Earth.Magnetosheath</th>
</tr>
</thead>
<tbody>
<tr>
<td>description</td>
<td>The region between the bow shock and the magnetopause, characterized by very turbulent plasma.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>Definition</td>
</tr>
<tr>
<td>-------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Earth.Magnetosphere</td>
<td>The region of space above the atmosphere or surface of the planet, and bounded by the magnetopause, that is under the direct influence of the planet's magnetic field.</td>
</tr>
<tr>
<td>Earth.Magnetosphere.Magnetotail</td>
<td>The region on the night side of the body where the magnetic field is stretched backwards by the force of the solar wind. For Earth, the magnetotail begins at a night-side radial distance of 10 Re (X &gt; -10Re).</td>
</tr>
<tr>
<td>Earth.Magnetosphere.Main</td>
<td>The region of the magnetosphere where the magnetic field lines are closed, but does not include the gaseous region gravitationally bound to the body.</td>
</tr>
<tr>
<td>Earth.Magnetosphere.Polar</td>
<td>The region near the pole of a body. For a magnetosphere the polar region is the area where magnetic field lines are open and includes the auroral zone.</td>
</tr>
<tr>
<td>Earth.Magnetosphere.RadiationBelt</td>
<td>The region within a magnetosphere where high-energy particles could potentially be trapped in a magnetic field.</td>
</tr>
<tr>
<td>Earth.Moon</td>
<td>The only natural satellite of the Earth.</td>
</tr>
<tr>
<td>Earth.NearSurface</td>
<td>The gaseous and possibly ionized environment of a body extending from the surface to some specified altitude. For the Earth, this altitude is 2000 km.</td>
</tr>
<tr>
<td>Earth.NearSurface.Atmosphere</td>
<td>Neutral gases surrounding a body that extends from the surface and is bound to the body by virtue of the gravitational attraction.</td>
</tr>
<tr>
<td>Earth.NearSurface.AuroralRegion</td>
<td>A region in the atmospheric where electrically-charged particles bombarding the upper atmosphere of a planet in the presence of a magnetic field produce an optical phenomenon.</td>
</tr>
<tr>
<td>Earth.NearSurface.EquatorialRegion</td>
<td>A region centered on the equator and limited in latitude by approximately 23 degrees north and south of the equator.</td>
</tr>
<tr>
<td>Earth.NearSurface.Ionosphere</td>
<td>Charged or ionized gases surrounding a body that are nominally bound to the body by virtue of the gravitational attraction.</td>
</tr>
<tr>
<td>Earth.NearSurface.Ionosphere.DRegion</td>
<td>The layer of the ionosphere that exists approximately 50 to 95 km above the surface of the Earth. One of several layers in the ionosphere.</td>
</tr>
<tr>
<td>Earth.NearSurface.Ionosphere.FRegion</td>
<td>Ionised gas occurring at 90-150km above the ground. One of several layers in the ionosphere. Also called the The Kennelly-Heaviside layer.</td>
</tr>
<tr>
<td>Earth.NearSurface.Ionosphere.FRegion.Sortie</td>
<td>Contains ionized gases at a height of around 150-800 km above sea level, placing it in the thermosphere. The F region has the highest concentration of free electrons and ions anywhere in the atmosphere. It may be thought of as comprising two layers, the Fl-and F2-layers. One of several layers in the ionosphere. Also known as the Appleton layer.</td>
</tr>
<tr>
<td>Earth.NearSurface.Ionosphere.Topside</td>
<td>The region at the upper most areas of the ionosphere.</td>
</tr>
<tr>
<td>Earth.NearSurface.Mesosphere</td>
<td>The layer of the atmosphere that extends from the Stratosphere to a range of 80 km to 85 km, temperature decreasing with height.</td>
</tr>
<tr>
<td>Earth.NearSurface.Plasmasphere</td>
<td>A region of the magnetosphere consisting of low energy (cool) plasma. It is located above the ionosphere. The outer boundary of the plasmasphere is known as the plasmapause, which is defined by an order of magnitude drop in plasma density.</td>
</tr>
<tr>
<td>Earth.NearSurface.PolarCap</td>
<td>The areas of the globe surrounding the poles and consisting of the region north of 60 degrees north latitude an the region south of 60 degrees south latitude.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>Description</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Earth.NearSurface.SouthAtlanticAnomalyRegion</td>
<td>The region where the Earth's inner van Allen radiation belt makes its closest approach to the planet's surface. The result is that, for a given altitude, the radiation intensity is higher over this region than elsewhere.</td>
</tr>
<tr>
<td>Earth.NearSurface.Stratosphere</td>
<td>The layer of the atmosphere that extends from the troposphere to about 30 km, temperature increases with height. The stratosphere contains the ozone layer.</td>
</tr>
<tr>
<td>Earth.NearSurface.Thermosphere</td>
<td>The lowest layer of the atmosphere which begins at the surface and extends to between 7 km (4.4 mi) at the poles and 17 km (10.6 mi) at the equator, with some variation due to weather factors.</td>
</tr>
<tr>
<td>Earth.Surface</td>
<td>The outermost area of a solid object.</td>
</tr>
<tr>
<td>Heliosphere</td>
<td>The solar atmosphere extending roughly from the outer corona to the edge of the solar plasma at the heliopause separating primarily solar plasma from interstellar plasma.</td>
</tr>
<tr>
<td>Heliosphere.Heliosheath</td>
<td>The region extending radially outward from the heliospheric termination shock and in which the decelerated solar wind plasma is still significant.</td>
</tr>
<tr>
<td>Heliosphere.Inner</td>
<td>The region of the heliosphere extending radially outward from the solar coronal base to just inside 1 AU.</td>
</tr>
<tr>
<td>Heliosphere.NearEarth</td>
<td>The heliospheric region near the Earth which extends to and includes the area near the L1 and L2 Lagrange point.</td>
</tr>
<tr>
<td>Heliosphere.Outer</td>
<td>The region of the heliosphere extending radially outward from just outside 1 AU to the heliospheric termination shock.</td>
</tr>
<tr>
<td>Heliosphere.Remote1AU</td>
<td>A roughly toroidal region that includes the Earth's orbit, but exclusive of the region near the Earth.</td>
</tr>
<tr>
<td>Interstellar</td>
<td>The region between stars outside of the star's heliopause.</td>
</tr>
<tr>
<td>Jupiter</td>
<td>The fifth planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Mars</td>
<td>The forth planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Mercury</td>
<td>The first planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Neptune</td>
<td>The seventh planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Pluto</td>
<td>The ninth (sub)planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Saturn</td>
<td>The sixth planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Sun</td>
<td>The star upon which our solar system is centered.</td>
</tr>
<tr>
<td>Sun.Chromosphere</td>
<td>The region of the Sun's (or a star's) atmosphere above the temperature minimum and below the Transition Region. The solar chromosphere is approximately 400 km to 2100 km above the photosphere, and characterized by temperatures from 4500 - 28000 K.</td>
</tr>
<tr>
<td>Sun.Corona</td>
<td>The outermost atmospheric region of the Sun or a star, characterized by ionization temperatures above 10^5 K. The solar corona starts at about 2100 km above the photosphere; there is no generally defined upper limit.</td>
</tr>
<tr>
<td>Sun.Interior</td>
<td>The region inside the body which is not visible from outside the body.</td>
</tr>
<tr>
<td>Sun.Photosphere</td>
<td>The atmospheric layer of the Sun or a star from which continuum radiation, especially</td>
</tr>
</tbody>
</table>
optical, is emitted to space. For the Sun, the photosphere is about 500 km thick.

**Enumeration**

- **Sun.TransitionRegion**
  A very narrow (<100 km) layer between the chromosphere and the corona where the temperature rises abruptly from about 8000 to about 500,000 K.

- **Uranus**
  The eighth planet from the sun in our solar system.

- **Venus**
  The second planet from the sun in our solar system.

**Source**

```
<xsd:element name="ObservatoryRegion" type="spase:Region" minOccurs="1" maxOccurs="unbounded"/>
```

**Schema location**

file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### Element `spase:Location` / `spase:CoordinateSystemName`

**Namespace**

http://www.spase-group.org/data/schema

**Diagram**

![Diagram](Diagram.png)

**Type**

`spase:CoordinateSystemName`

**Properties**

- **content:** simple
- **minOccurs:** 0
- **maxOccurs:** 1

**Facets**

- **CGM**
  Corrected Geomagnetic - A coordinate system from a spatial point with GEO radial distance and geomagnetic latitude and longitude, follow the epoch-appropriate IGRF/DGRF model field vector through to the point where the field line crosses the geomagnetic dipole equatorial plane. Then trace the dipole magnetic field vector Earthward from that point on the equatorial plane, in the same hemisphere as the original point, until the initial radial distance is reached. Designate the dipole latitude and longitude at that point as the CGM latitude and longitude of the original point. See [http://nssdc.gsfc.nasa.gov/space/cgm/cgmm_des.html](http://nssdc.gsfc.nasa.gov/space/cgm/cgmm_des.html)

- **Carrington**
  A coordinate system which is centered at the Sun and is "fixed" with respect to the synodic rotation rate; the mean synodic value is about 27.2753 days. The Astronomical Almanac gives a value for Carrington longitude of 349.03 degrees at 0000 UT on 1 January 1995.

- **DM**
  Dipole Meridian - A coordinate system centered at the observation point. Z axis is parallel to the Earth’s dipole axis, positive northward. X is in the plane defined by Z and the line linking the observation point with the Earth’s center. Y is positive eastward. See [http://cdpp.cnes.fr/00428.pdf](http://cdpp.cnes.fr/00428.pdf)

- **ECEF**
  The Earth-Centered, Earth-Fixed (ECEF) coordinate system has point (0,0,0) defined as the center of mass of the Earth. Its axes are aligned with the International Reference Pole (IRP) and International Reference Meridian (IRM). The x-axis intersects the sphere of the Earth at 0 degree latitude (Equator) and 0 degree longitude (Greenwich). The z-axis points north. The y-axis completes the right handed coordinate system.

- **ENP**
  ENP (also called FEN) - The F vector component points northward, perpendicular to orbit plane which for a zero degree inclination orbit is parallel to Earth’s spin axis. The E vector component is perpendicular to P and N and points earthward. The N component is perpendicular to P and E and is positive eastward.

- **GEI**
  GEI Geocentric Equatorial Inertial - A coordinate
**Schema documentation for spase-2_2_4.xsd**

<table>
<thead>
<tr>
<th>System</th>
<th>Description</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>137</td>
<td>System where the Z axis is along Earth’s spin vector, positive northward. X axis points</td>
<td></td>
</tr>
<tr>
<td>system where the Z axis is along Earth's</td>
<td>towards the first point of Aries (from the Earth towards the Sun at the vernal equinox).</td>
<td></td>
</tr>
<tr>
<td>spin vector, positive northward. X axis</td>
<td>See Russell, 1971. When the X axis is the direction of the mean vernal equinox of J2000,</td>
<td></td>
</tr>
<tr>
<td>points towards the first point of Aries</td>
<td>the coordinate system is also called GCI. Then the Z axis is also defined as being normal</td>
<td></td>
</tr>
<tr>
<td>(from the Earth towards the Sun at the</td>
<td>to the mean Earth equator of J2000.</td>
<td></td>
</tr>
<tr>
<td><strong>enumeration GEO</strong></td>
<td>Geographic - geocentric corotating – A coordinate system where the Z axis is along Earth's</td>
<td></td>
</tr>
<tr>
<td>system where the Z axis is along Earth's</td>
<td>spin vector, positive northward. X axis lies in Greenwich meridian, positive towards</td>
<td></td>
</tr>
<tr>
<td>lies in Greenwich meridian, positive</td>
<td>towards Greenwich.</td>
<td></td>
</tr>
<tr>
<td><strong>enumeration GSE</strong></td>
<td>Geocentric Solar Ecliptic – A coordinate system where the X axis is from Earth to Sun. Z</td>
<td></td>
</tr>
<tr>
<td>system where the X axis is from Earth to</td>
<td>axis is normal to the ecliptic, positive northward. See Russell, 1971.</td>
<td></td>
</tr>
<tr>
<td>Sun. Z axis is normal to the ecliptic,</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>enumeration GSEQ</strong></td>
<td>Geocentric Solar Equatorial – A coordinate system where the X axis is from Earth to Sun. Y</td>
<td></td>
</tr>
<tr>
<td>system where the X axis is from Earth to</td>
<td>axis is parallel to solar equatorial plane. Z axis is positive northward. See Russell,</td>
<td></td>
</tr>
<tr>
<td>Sun. Y axis is parallel to solar equatorial</td>
<td>1971.</td>
<td></td>
</tr>
<tr>
<td>plane. Z axis is positive northward. See</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>enumeration GSM</strong></td>
<td>Geocentric Solar Magnetospheric – A coordinate system where the X axis is from Earth to Sun,</td>
<td></td>
</tr>
<tr>
<td>system where the X axis is from Earth to</td>
<td>Z axis is northward in a plane containing the X axis and the geomagnetic dipole axis.</td>
<td></td>
</tr>
<tr>
<td>Sun, Z axis is northward in a plane</td>
<td>See Russell, 1971.</td>
<td></td>
</tr>
<tr>
<td>containing the X axis and the geomagnetic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>dipole axis.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>enumeration HAE</strong></td>
<td>Heliocentric Aries Ecliptic – A coordinate system where the Z axis is normal to the ecliptic</td>
<td></td>
</tr>
<tr>
<td>system where the Z axis is normal to the</td>
<td>plane, positive northward. X axis is positive towards the first point of Aries (from Earth</td>
<td></td>
</tr>
<tr>
<td>is positive towards the first point of</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aries (from Earth to Sun at vernal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>equinox). Same as SE below. See Hapgood,</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>enumeration HCC</strong></td>
<td>Heliocentric Cartesian – A 3-D orthonormal coordinate system that is primarily intended to</td>
<td></td>
</tr>
<tr>
<td>system that is primarily intended to</td>
<td>specify with two dimensions a point on the solar disk. The Z axis points toward the</td>
<td></td>
</tr>
<tr>
<td>specify with two dimensions a point on the</td>
<td>observer. The Y axis lies in the plane defined by the solar spin vector and the Z axis,</td>
<td></td>
</tr>
<tr>
<td>solar disk.</td>
<td>positive northward. The X axis is perpendicular to the Y and Z axes, positive toward solar</td>
<td></td>
</tr>
<tr>
<td>system that is primarily intended to</td>
<td>west. Standard representation for this system is via the point's x and y values, expressed</td>
<td></td>
</tr>
<tr>
<td>specify with two dimensions a point on the</td>
<td>either as physical distances or as fractions of the solar disk radius.</td>
<td></td>
</tr>
<tr>
<td>solar disk.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>enumeration HCI</strong></td>
<td>Heliographic Carrington Inertial.</td>
<td></td>
</tr>
<tr>
<td><strong>enumeration HCR</strong></td>
<td>Heliocentric Radial – A 3-D orthonormal coordinate system that is primarily intended to</td>
<td></td>
</tr>
<tr>
<td>system that is primarily intended to</td>
<td>specify with two dimensions a point on the solar disk. The Z axis points toward the</td>
<td></td>
</tr>
<tr>
<td>specify with two dimensions a point on the</td>
<td>observer. The Y axis lies in the plane defined by the solar spin vector and the Z axis,</td>
<td></td>
</tr>
<tr>
<td>solar disk.</td>
<td>positive northward. The X axis is perpendicular to the Y and Z axes, positive toward solar</td>
<td></td>
</tr>
<tr>
<td>system that is primarily intended to</td>
<td>west. Standard representation for this system is via the point's distance rho from the Z</td>
<td></td>
</tr>
<tr>
<td>specify with two dimensions a point on the</td>
<td>axis [Rho = SQRT(x<strong>2 + y</strong>2)] and its phase angle psi measured counterclockwise from the</td>
<td></td>
</tr>
<tr>
<td>solar disk.</td>
<td>+Y axis [psi = arctan (-y/x)].</td>
<td></td>
</tr>
<tr>
<td><strong>enumeration HEE</strong></td>
<td>Heliocentric Earth Ecliptic – A coordinate system where the Z axis is normal to the ecliptic</td>
<td></td>
</tr>
<tr>
<td>system where the Z axis is normal to the</td>
<td>plane, positive northward. X axis points from Sun to Earth. See Hapgood, 1992.</td>
<td></td>
</tr>
<tr>
<td>ecliptic plane, positive northward. X axis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>points from Sun to Earth. See Hapgood,</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>enumeration HEEQ</strong></td>
<td>Heliocentric Earth Equatorial – A coordinate system where the Z axis is normal to the solar</td>
<td></td>
</tr>
<tr>
<td>system where the Z axis is normal to the</td>
<td>equatorial plane, positive northward. X axis is generally Earthward in the plane defined</td>
<td></td>
</tr>
<tr>
<td>X axis is generally Earthward in the plane</td>
<td></td>
<td></td>
</tr>
<tr>
<td>defined by the Z axis and the Sun-Earth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>direction.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>enumeration HG</strong></td>
<td>Heliographic – A heliocentric rotating coordinate system where the Z axis is normal to the</td>
<td></td>
</tr>
<tr>
<td>system where the Z axis is normal to the</td>
<td>solar equatorial plane, positive northward. X, Y axes rotate with a 25.38 day period. The</td>
<td></td>
</tr>
<tr>
<td>solar equatorial plane, positive northward.</td>
<td>zero longitude (X axis) is defined as the longitude that passed through the ascending node</td>
<td></td>
</tr>
<tr>
<td>X, Y axes rotate with a 25.38 day period.</td>
<td>of the Sun.</td>
<td></td>
</tr>
<tr>
<td>The zero longitude (X axis) is defined as</td>
<td></td>
<td></td>
</tr>
<tr>
<td>the longitude that passed through the</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ascending node of the Sun.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enumeration</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>-------------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td>HGI</td>
<td>Heliographic Inertial - A heliocentric coordinate system where the Z axis is normal to the solar equatorial coordinate plane, positive northward. X axis is along the intersection line between solar equatorial and ecliptic planes. The X axis was positive at SE longitude of 74.367 deg on Jan 1, 1900. (See SE below.) See <a href="http://nssdc.gsfc.nasa.gov/space/helios/coor_des.html">http://nssdc.gsfc.nasa.gov/space/helios/coor_des.html</a></td>
<td></td>
</tr>
<tr>
<td>HPC</td>
<td>Helioprojective Cartesian = A 3-D orthonormal (left-handed) coordinate system that is primarily intended to specify with two dimensions a point on the solar disk. The Y axis lies in the plane defined by the solar spin vector and the Z axis, positive northward. The X axis is perpendicular to the Y and Z axes, positive toward solar west. Given as the distance between the observer and the center of the solar disk, the standard representation of an (x,y) point on the solar disk is via the point's longitude angle [ \text{arctan}(x/d) ] and latitude angle [ \text{arctan}(y/d) ].</td>
<td></td>
</tr>
<tr>
<td>HPR</td>
<td>Helioprojective Radial - A 3-D orthonormal (left-handed) coordinate system that is primarily intended to specify with two dimensions a point on the solar disk. The Z axis points from the observer to the center of the solar disk. The Y axis lies in the plane defined by the solar spin vector and the Z axis, positive northward. The X axis is perpendicular to the Y and Z axes, positive toward solar west. Given as the distance between the observer and the center of the solar disk, the standard representation for this system of an (x,y) point on the solar disk is via the point's latitude angle [ \theta = \text{arctan}(\sqrt{y^2 + z^2})/d ] or equivalent declination parameter [ \delta = (\theta - 90 \text{ deg}) ], and its phase angle [ \psi = \text{arctan}(-y/x) ].</td>
<td></td>
</tr>
<tr>
<td>J2000</td>
<td>An astronomical coordinate system which uses the mean equator and equinox of Julian date 2451545.0 TT (Terrestrial Time), or January 1, 2000, noon TT. (aka J2000) to define a celestial reference frame.</td>
<td></td>
</tr>
<tr>
<td>JSM</td>
<td>Jovian Solar Magnetospheric - A coordinate system related to Jupiter where the X axis is from Jupiter to Sun, Z axis is northward in a plane containing the X axis and the Jovian dipole axis.</td>
<td></td>
</tr>
<tr>
<td>JSO</td>
<td>Jovian Solar Orbital - A coordinate system related to Jupiter where X anti-sunward, Y along the orbital velocity direction.</td>
<td></td>
</tr>
<tr>
<td>KSM</td>
<td>Kronian Solar Magnetospheric - A coordinate system related to Saturn where the X axis is anti-sunward, Z axis is northward in a plane containing the X axis and the Kronian dipole axis.</td>
<td></td>
</tr>
<tr>
<td>KSO</td>
<td>Kronian Solar Orbital - A coordinate system related to Saturn where X is anti-sunward, Y along the orbital velocity direction.</td>
<td></td>
</tr>
<tr>
<td>LGM</td>
<td>Local Geomagnetic - A coordinate system used mainly for Earth surface or near Earth surface magnetic field data. X axis northward from observation point in a geographic meridian. Z axis downward toward Earth's center. In this system, ( H ) (total horizontal component) = ( \sqrt{B_x^2 + B_y^2} ) and ( D ) (declination angle) = ( \text{arctan}(B_y/B_x) ).</td>
<td></td>
</tr>
<tr>
<td>MAG</td>
<td>Geomagnetic - geocentric. Z axis is parallel to the geomagnetic dipole axis, positive north. X is in the plane defined by the Z axis and the Earth's rotation axis. If ( N ) is a unit vector from the Earth's center to the north</td>
<td></td>
</tr>
<tr>
<td>enumeration</td>
<td>MFA</td>
<td>Magnetic Field Aligned - A coordinate system spacecraft-centered system with Z in the direction of the ambient magnetic field vector. X is in the plane defined by Z and the spacecraft-Sun line, positive sunward. See <a href="http://cdpp.cnes.fr/00428.pdf">http://cdpp.cnes.fr/00428.pdf</a></td>
</tr>
<tr>
<td>enumeration</td>
<td>MSO</td>
<td>Mars/Mercury Solar Orbital A coordinate system related to Mars or Mercury. A coordinate system where, depending on the body (Mars or Mercury), X is anti-sunward, Y along the orbital velocity direction.</td>
</tr>
<tr>
<td>enumeration</td>
<td>RTN</td>
<td>Radial Tangential Normal. Typically centered at a spacecraft. Used for IMF and plasma V vectors. X (radial) axis is radially away from the Sun, Y (tangential) axis is normal to the plane formed by X and the Sun's spin vector, positive in the direction of planetary motion. N (normal) is X x Y.</td>
</tr>
<tr>
<td>enumeration</td>
<td>SC</td>
<td>Spacecraft - A coordinate system defined by the spacecraft geometry and/or spin. Often has Z axis parallel to spacecraft spin vector. X and Y axes may or may not corotate with the spacecraft. See SR and SR2 below.</td>
</tr>
<tr>
<td>enumeration</td>
<td>SE</td>
<td>Solar Ecliptic - A heliocentric coordinate system where the Z axis is normal to the ecliptic plane, positive northward. X axis is positive towards the first point of Aries (from Earth to Sun at vernal equinox). Same as HAE above. See <a href="http://nssdc.gsfc.nasa.gov/space/helios/coor_des.html">http://nssdc.gsfc.nasa.gov/space/helios/coor_des.html</a></td>
</tr>
<tr>
<td>enumeration</td>
<td>SM</td>
<td>Solar Magnetic - A geocentric coordinate system where the Z axis is northward along Earth's dipole axis, X axis is in plane of Z axis and Earth-Sun line, positive sunward. See Russell, 1971.</td>
</tr>
<tr>
<td>enumeration</td>
<td>SR</td>
<td>Spin Reference - A special case of a Spacecraft (SC) coordinate system for a spinning spacecraft. Z is parallel to the spacecraft spin vector. X and Y rotate with the spacecraft. See <a href="http://cdpp.cnes.fr/00428.pdf">http://cdpp.cnes.fr/00428.pdf</a></td>
</tr>
<tr>
<td>enumeration</td>
<td>SR2</td>
<td>Spin Reference 2 - A special case of a Spacecraft (SC) coordinate system for a spinning spacecraft. Z is parallel to the spacecraft spin vector. X is in the plane defined by Z and the spacecraft-Sun line, positive sunward. See <a href="http://cdpp.cnes.fr/00428.pdf">http://cdpp.cnes.fr/00428.pdf</a></td>
</tr>
<tr>
<td>enumeration</td>
<td>SSE</td>
<td>Spacecraft Solar Ecliptic - A coordinate system used for deep space spacecraft, for example Helios. - X axis from spacecraft to Sun. Z axis normal to ecliptic plane, positive northward. Note: Angle between normals to ecliptic and to Helios orbit plane ~ 0.25 deg.</td>
</tr>
<tr>
<td>enumeration</td>
<td>SSE_L</td>
<td>Selenocentric Solar Ecliptic. The X axis points from the center of the Earth's moon to the sun, the Z axis is normal to the ecliptic plane, positive northward. And the Y axis completes the right-handed set of axes.</td>
</tr>
<tr>
<td>enumeration</td>
<td>SpacecraftOrbitPlane</td>
<td>A coordinate system where X lies in the plane normal to and in the direction of motion of the spacecraft, Z is normal to this plane and Y completes the triad in a right-handed coordinate system.</td>
</tr>
<tr>
<td>enumeration</td>
<td>VSO</td>
<td>Venus Solar Orbital - A coordinate system related to Venus where X is anti-sunward, Y along the orbital velocity direction.</td>
</tr>
<tr>
<td>enumeration</td>
<td>WGS84</td>
<td>The World Geodetic System (WGS) defines a reference frame for the earth, for use in geodesy and navigation. The WGS84 uses the geographic pole, the signs of the X and Y axes are given by ( Y = N \times Z, X = Y \times Z ). See Russell, 1971; and <a href="http://cdpp.cnes.fr/00428.pdf">http://cdpp.cnes.fr/00428.pdf</a></td>
</tr>
</tbody>
</table>
zero meridian as defined by the Bureau International de l'Heure.

Source
<xs:element name="CoordinateSystemName" type="spase:CoordinateSystemName" minOccurs="0" maxOccurs="1"/>

Schema location
file://C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Element spase:Location / spase:Latitude

Namespace
http://www.spase-group.org/data/schema

Diagram
(spase:Latitude)

Type
spase:Latitude

Properties
- content: simple
- minOccurs: 0
- maxOccurs: 1

Source
<xs:element name="Latitude" type="spase:Latitude" minOccurs="0" maxOccurs="1"/>

Schema location
file://C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Element spase:Location / spase:Longitude

Namespace
http://www.spase-group.org/data/schema

Diagram
(spase:Longitude)

Type
spase:Longitude

Properties
- content: simple
- minOccurs: 0
- maxOccurs: 1

Source
<xs:element name="Longitude" type="spase:Longitude" minOccurs="0" maxOccurs="1"/>

Schema location
file://C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Element spase:Location / spase:Elevation

Namespace
http://www.spase-group.org/data/schema

Diagram
(spase:Elevation)

Type
spase:Elevation

Properties
- content: simple
- minOccurs: 0
- maxOccurs: 1

Source
<xs:element name="Elevation" type="spase:Elevation" minOccurs="0" maxOccurs="1"/>

Schema location
file://C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Element spase:Observatory / spase:OperatingSpan

Namespace
http://www.spase-group.org/data/schema
**Schema documentation for spase-2_2_4.xsd**

### spase:OperatingSpan

**Diagram**

```
  OperatingSpan
    Type: spase:OperatingSpan
```

**Type**

spase:OperatingSpan

**Properties**

- **content:** complex
- **minOccurs:** 0
- **maxOccurs:** 1

**Model**

spase:StartDate, spase:StopDate[0,1], spase:Note*

**Children**

spase:Note, spase:StartDate, spase:StopDate

**Instance**

```
<spase:OperatingSpan xmlns:spase= "http://www.spase-group.org/data/schema">
  <spase:StartDate />{1,1}</spase:StartDate>
  <spase:StopDate />{0,1}</spase:StopDate>
  <spase:Note />{0,unbounded}</spase:Note>
</spase:OperatingSpan>
```

**Source**

```
<xsd:element name="OperatingSpan" type="spase:OperatingSpan" minOccurs="0" maxOccurs="1" />
```

**Schema location**

file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### spase:Extension

**Diagram**

```
  Extension
    Type: spase:Extension
```

**Type**

spase:Extension

**Properties**

- **content:** complex
- **minOccurs:** 0
- **maxOccurs:** unbounded

**Model**

ANY element from ANY namespace

**Source**

```
<xsd:element name="Extension" type="spase:Extension" minOccurs="0" maxOccurs="unbounded" />
```

**Schema location**

file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### spase:Spase / spase:Person

**Namespace**

http://www.spase-group.org/data/schema
Schema documentation for spase-2_2_4.xsd

### Diagram

```
Diagram

Type

spase:Person

Properties

content: complex

Model

spase:ResourceID  , spase:ReleaseDate{0,1}  , spase:PersonName{0,1}  , spase:OrganizationName  , spase:Address{0,1}  ,
spase:Email*, spase:PhoneNumber*, spase:FaxNumber{0,1}  , spase:Note{0,1}  , spase:Extension*

Children

spase:Address , spase:Email , spase:Extension , spase:FaxNumber , spase:Note , spase:OrganizationName , spase:PersonName ,
spase:PhoneNumber , spase:ReleaseDate , spase:ResourceID

Instance

<spase:Person  xmlns:spase= "http://www.spase-group.org/data/schema" >
  <spase:ResourceID > {1,1} </spase:ResourceID>
  <spase:ReleaseDate > {0,1} </spase:ReleaseDate>
  <spase:PersonName > {0,1} </spase:PersonName>
  <spase:OrganizationName > {1,1} </spase:OrganizationName>
  <spase:Address > {0,1} </spase:Address>
  <spase:Email > {0,unbounded} </spase:Email>
  <spase:PhoneNumber > {0,unbounded} </spase:PhoneNumber>
  <spase:FaxNumber > {0,1} </spase:FaxNumber>
  <spase:Note > {0,1} </spase:Note>
  <spase:Extension > {0,unbounded} </spase:Extension>
</spase:Person>

Source

<xsd:element  name= "Person"  type= "spase:Person" />

Schema

location

file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### Element spase:Person / spase:ResourceID

Namespace

http://www.spase-group.org/data/schema

Diagram

```
Diagram

Type

spase:ResourceID

Properties

content: simple

minOccurs: 1

maxOccurs: 1

Source

<xsd:element name="ResourceID" type="spase:ResourceID" minOccurs="1" maxOccurs="1"/>

Schema

location

file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

142
### Element `spase:Person / spase:ReleaseDate`

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagram</td>
<td><img src="image1" alt="Diagram" /></td>
</tr>
<tr>
<td>Type</td>
<td><code>spase:ReleaseDate</code></td>
</tr>
<tr>
<td>Properties</td>
<td></td>
</tr>
<tr>
<td>content:</td>
<td><code>simple</code></td>
</tr>
<tr>
<td>minOccurs:</td>
<td>0</td>
</tr>
<tr>
<td>maxOccurs:</td>
<td>1</td>
</tr>
<tr>
<td>Source</td>
<td><code>&lt;xsd:element name=&quot;ReleaseDate&quot; type=&quot;spase:ReleaseDate&quot; minOccurs=&quot;0&quot; maxOccurs=&quot;1&quot;/&gt;</code></td>
</tr>
<tr>
<td>Schema location</td>
<td>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
</tbody>
</table>

### Element `spase:Person / spase:PersonName`

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagram</td>
<td><img src="image2" alt="Diagram" /></td>
</tr>
<tr>
<td>Type</td>
<td><code>spase:PersonName</code></td>
</tr>
<tr>
<td>Properties</td>
<td></td>
</tr>
<tr>
<td>content:</td>
<td><code>simple</code></td>
</tr>
<tr>
<td>minOccurs:</td>
<td>0</td>
</tr>
<tr>
<td>maxOccurs:</td>
<td>1</td>
</tr>
<tr>
<td>Source</td>
<td><code>&lt;xsd:element name=&quot;PersonName&quot; type=&quot;spase:PersonName&quot; minOccurs=&quot;0&quot; maxOccurs=&quot;1&quot;/&gt;</code></td>
</tr>
<tr>
<td>Schema location</td>
<td>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
</tbody>
</table>

### Element `spase:Person / spase:OrganizationName`

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagram</td>
<td><img src="image3" alt="Diagram" /></td>
</tr>
<tr>
<td>Type</td>
<td><code>spase:OrganizationName</code></td>
</tr>
<tr>
<td>Properties</td>
<td></td>
</tr>
<tr>
<td>content:</td>
<td><code>simple</code></td>
</tr>
<tr>
<td>minOccurs:</td>
<td>1</td>
</tr>
<tr>
<td>maxOccurs:</td>
<td>1</td>
</tr>
<tr>
<td>Source</td>
<td><code>&lt;xsd:element name=&quot;OrganizationName&quot; type=&quot;spase:OrganizationName&quot; minOccurs=&quot;1&quot; maxOccurs=&quot;1&quot;/&gt;</code></td>
</tr>
<tr>
<td>Schema location</td>
<td>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
</tbody>
</table>

### Element `spase:Person / spase:Address`

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagram</td>
<td><img src="image4" alt="Diagram" /></td>
</tr>
<tr>
<td>Type</td>
<td><code>spase:Address</code></td>
</tr>
<tr>
<td>Properties</td>
<td></td>
</tr>
<tr>
<td>content:</td>
<td><code>simple</code></td>
</tr>
<tr>
<td>minOccurs:</td>
<td>0</td>
</tr>
<tr>
<td>maxOccurs:</td>
<td>1</td>
</tr>
<tr>
<td>Source</td>
<td><code>&lt;xsd:element name=&quot;Address&quot; type=&quot;spase:Address&quot; minOccurs=&quot;0&quot; maxOccurs=&quot;1&quot;/&gt;</code></td>
</tr>
<tr>
<td>Schema location</td>
<td>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
</tbody>
</table>
### Element `spase:Person / spase:Email`

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Diagram</strong></td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td><code>spase:Email</code></td>
</tr>
<tr>
<td><strong>Properties</strong></td>
<td></td>
</tr>
<tr>
<td>content</td>
<td><code>simple</code></td>
</tr>
<tr>
<td>minOccurs</td>
<td><code>0</code></td>
</tr>
<tr>
<td>maxOccurs</td>
<td><code>unbounded</code></td>
</tr>
<tr>
<td><strong>Source</strong></td>
<td><code>&lt;xsd:element name=&quot;Email&quot; type=&quot;spase:Email&quot; minOccurs=&quot;0&quot; maxOccurs=&quot;unbounded&quot;/&gt;</code></td>
</tr>
<tr>
<td><strong>Schema location</strong></td>
<td><code>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</code></td>
</tr>
</tbody>
</table>

### Element `spase:Person / spase:PhoneNumber`

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Diagram</strong></td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td><code>spase:PhoneNumber</code></td>
</tr>
<tr>
<td><strong>Properties</strong></td>
<td></td>
</tr>
<tr>
<td>content</td>
<td><code>simple</code></td>
</tr>
<tr>
<td>minOccurs</td>
<td><code>0</code></td>
</tr>
<tr>
<td>maxOccurs</td>
<td><code>unbounded</code></td>
</tr>
<tr>
<td><strong>Source</strong></td>
<td><code>&lt;xsd:element name=&quot;PhoneNumber&quot; type=&quot;spase:PhoneNumber&quot; minOccurs=&quot;0&quot; maxOccurs=&quot;unbounded&quot;/&gt;</code></td>
</tr>
<tr>
<td><strong>Schema location</strong></td>
<td><code>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</code></td>
</tr>
</tbody>
</table>

### Element `spase:Person / spase:FaxNumber`

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Diagram</strong></td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td><code>spase:FaxNumber</code></td>
</tr>
<tr>
<td><strong>Properties</strong></td>
<td></td>
</tr>
<tr>
<td>content</td>
<td><code>simple</code></td>
</tr>
<tr>
<td>minOccurs</td>
<td><code>0</code></td>
</tr>
<tr>
<td>maxOccurs</td>
<td><code>1</code></td>
</tr>
<tr>
<td><strong>Source</strong></td>
<td><code>&lt;xsd:element name=&quot;FaxNumber&quot; type=&quot;spase:FaxNumber&quot; minOccurs=&quot;0&quot; maxOccurs=&quot;1&quot;/&gt;</code></td>
</tr>
<tr>
<td><strong>Schema location</strong></td>
<td><code>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</code></td>
</tr>
</tbody>
</table>

### Element `spase:Person / spase:Note`

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Diagram</strong></td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td><code>spase:Note</code></td>
</tr>
<tr>
<td><strong>Properties</strong></td>
<td></td>
</tr>
<tr>
<td>content</td>
<td><code>simple</code></td>
</tr>
<tr>
<td>minOccurs</td>
<td><code>0</code></td>
</tr>
<tr>
<td>maxOccurs</td>
<td><code>1</code></td>
</tr>
<tr>
<td><strong>Source</strong></td>
<td><code>&lt;xsd:element name=&quot;Note&quot; type=&quot;spase:Note&quot; minOccurs=&quot;0&quot; maxOccurs=&quot;1&quot;/&gt;</code></td>
</tr>
<tr>
<td><strong>Schema location</strong></td>
<td><code>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</code></td>
</tr>
</tbody>
</table>
Element `spase:Person / spase:Extension`  

<table>
<thead>
<tr>
<th><strong>Namespace</strong></th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Diagram</strong></td>
<td><img src="image1" alt="Diagram" /></td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td><code>spase:Extension</code></td>
</tr>
<tr>
<td><strong>Properties</strong></td>
<td><code>content: complex</code></td>
</tr>
<tr>
<td></td>
<td><code>minOccurs: 0</code></td>
</tr>
<tr>
<td></td>
<td><code>maxOccurs: unbounded</code></td>
</tr>
<tr>
<td><strong>Model</strong></td>
<td>ANY element from ANY namespace</td>
</tr>
<tr>
<td><strong>Source</strong></td>
<td><code>&lt;!--xsd:element name=&quot;Extension&quot; type=&quot;spase:Extension&quot; minOccurs=&quot;0&quot; maxOccurs=&quot;unbounded&quot;/&gt;</code></td>
</tr>
<tr>
<td><strong>Schema location</strong></td>
<td>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
</tbody>
</table>

Element `spase:Spase / spase:Registry`  

<table>
<thead>
<tr>
<th><strong>Namespace</strong></th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Diagram</strong></td>
<td><img src="image2" alt="Diagram" /></td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td><code>spase:Registry</code></td>
</tr>
<tr>
<td><strong>Properties</strong></td>
<td><code>content: complex</code></td>
</tr>
<tr>
<td><strong>Model</strong></td>
<td><code>spase:ResourceID</code> , <code>spase:ResourceHeader</code> , <code>spase:AccessURL</code> , <code>spase:Extension*</code></td>
</tr>
<tr>
<td><strong>Children</strong></td>
<td><code>spase:AccessURL</code>, <code>spase:Extension</code>, <code>spase:ResourceHeader</code>, <code>spase:ResourceID</code></td>
</tr>
<tr>
<td><strong>Instance</strong></td>
<td><code>&lt;spase:Registry xmlns:spase= &quot;http://www.spase-group.org/data/schema&quot;&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;spase:ResourceID&gt; {1,1} &lt;/spase:ResourceID&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;spase:ResourceHeader&gt; {1,1} &lt;/spase:ResourceHeader&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;spase:AccessURL&gt; {1,1} &lt;/spase:AccessURL&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;spase:Extension&gt; {0,unbounded} &lt;/spase:Extension&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;/spase:Registry&gt;</code></td>
</tr>
<tr>
<td><strong>Source</strong></td>
<td><code>&lt;!--xsd:element name=&quot;Registry&quot; type=&quot;spase:Registry&quot;/&gt;</code></td>
</tr>
<tr>
<td><strong>Schema location</strong></td>
<td>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
</tbody>
</table>

Element `spase:Registry / spase:ResourceID`  

<table>
<thead>
<tr>
<th><strong>Namespace</strong></th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Diagram</strong></td>
<td><img src="image3" alt="Diagram" /></td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td><code>spase:ResourceID</code></td>
</tr>
<tr>
<td><strong>Properties</strong></td>
<td><code>content: simple</code></td>
</tr>
<tr>
<td></td>
<td><code>minOccurs: 1</code></td>
</tr>
<tr>
<td></td>
<td><code>maxOccurs: 1</code></td>
</tr>
<tr>
<td><strong>Source</strong></td>
<td><code>&lt;!--xsd:element name=&quot;ResourceID&quot; type=&quot;spase:ResourceID&quot; minOccurs=&quot;1&quot; maxOccurs=&quot;1&quot;/&gt;</code></td>
</tr>
</tbody>
</table>

145
## Schema documentation for spase-2_2_4.xsd

### Element spase:Registry / spase:ResourceHeader

**Namespace**
http://www.spase-group.org/data/schema

**Diagram**

```
<spase:ResourceHeader xmlns:spase= "http://www.spase-group.org/data/schema"
  <spase:ResourceName > {1,1} </spase:ResourceName>
<spase:AlternateName > {0,unbounded} </spase:AlternateName>
<spase:ReleaseDate > {1,1} </spase:ReleaseDate>
<spase:ExpirationDate > {0,1} </spase:ExpirationDate>
<spase:Description > {1,1} </spase:Description>
<spase:Acknowledgement > {0,1} </spase:Acknowledgement>
<spase:Contact > {1,unbounded} </spase:Contact>
<spase:InformationURL > {0,unbounded} </spase:InformationURL>
<spase:Association > {0,unbounded} </spase:Association>
<spase:PriorID > {0,unbounded} </spase:PriorID>
</spase:ResourceHeader>
```

**Type**
spase:ResourceHeader

**Properties**
- `content: complex`
  - minOccurs: 1
  - maxOccurs: 1

**Model**
- spase:ResourceName , spase:AlternateName* , spase:ReleaseDate , spase:ExpirationDate{0,1} , spase:Description , spase:Acknowledgement{0,1} , spase:Contact+ , spase:InformationURL* , spase:Association* , spase:PriorID*

**Children**
- spase:Acknowledgement, spase:AlternateName, spase:Association, spase:Contact, spase:Description, spase:ExpirationDate, spase:InformationURL, spase:PriorID, spase:ReleaseDate, spase:ResourceName

**Source**
```
<xsd:element  name= "ResourceHeader"  type= "spase:ResourceHeader"  minOccurs= "1"  maxOccurs= "1"/>
```

### Element spase:Registry / spase:AccessURL

**Namespace**
http://www.spase-group.org/data/schema
Schema documentation for spase-2_2_4.xsd

**Diagram**

```
<table>
<thead>
<tr>
<th>AccessURL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type: spase:AccessURL</td>
</tr>
<tr>
<td>Properties:</td>
</tr>
<tr>
<td>content: complex</td>
</tr>
<tr>
<td>minOccurs: 1</td>
</tr>
<tr>
<td>maxOccurs: 1</td>
</tr>
<tr>
<td>Model: spase:Name{0,1}, spase:URL, spase:ProductKey*, spase:Description{0,1}, spase:Language{0,1}</td>
</tr>
<tr>
<td>Children: spase:Description, spase:Language, spase:Name, spase:ProductKey, spase:URL</td>
</tr>
<tr>
<td>Instance:</td>
</tr>
</tbody>
</table>
| <spase:Name>{0,1}</spase:Name>
| <spase:URL>{1,1}</spase:URL>
| <spase:ProductKey>{0,unbounded}</spase:ProductKey>
| <spase:Description>{0,1}</spase:Description>
| <spase:Language>{0,1}</spase:Language>
| </spase:AccessURL> |
| Source: |
| <xsd:element name="AccessURL" type="spase:AccessURL" minOccurs="1" maxOccurs="1"/> |
| Schema location: file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd |
```

**Element spase:Registry / spase:Extension**

```
<table>
<thead>
<tr>
<th>Extension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type: spase:Extension</td>
</tr>
<tr>
<td>Properties:</td>
</tr>
<tr>
<td>content: complex</td>
</tr>
<tr>
<td>minOccurs: 0</td>
</tr>
<tr>
<td>maxOccurs: unbounded</td>
</tr>
<tr>
<td>Model: ANY element from ANY namespace</td>
</tr>
<tr>
<td>Source:</td>
</tr>
<tr>
<td>&lt;xsd:element name=&quot;Extension&quot; type=&quot;spase:Extension&quot; minOccurs=&quot;0&quot; maxOccurs=&quot;unbounded&quot;/&gt;</td>
</tr>
<tr>
<td>Schema location: file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
</tbody>
</table>

**Element spase:Spase / spase:Repository**

```
<table>
<thead>
<tr>
<th>Repository</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type: spase:Spase</td>
</tr>
<tr>
<td>Properties:</td>
</tr>
<tr>
<td>content: complex</td>
</tr>
<tr>
<td>minOccurs: 0</td>
</tr>
<tr>
<td>maxOccurs: unbounded</td>
</tr>
<tr>
<td>Model: ANY element from ANY namespace</td>
</tr>
<tr>
<td>Source:</td>
</tr>
<tr>
<td>&lt;xsd:element name=&quot;Repository&quot; type=&quot;spase:Repository&quot; minOccurs=&quot;0&quot; maxOccurs=&quot;unbounded&quot;/&gt;</td>
</tr>
<tr>
<td>Schema location: file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
</tbody>
</table>
```

147
Schema documentation for spase-2_2_4.xsd

Diagram

<table>
<thead>
<tr>
<th>Type</th>
<th>spase:Repository</th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties</td>
<td>content: complex</td>
</tr>
<tr>
<td>Model</td>
<td>spase:ResourceId, spase:ResourceHeader, spase:AccessURL, spase:Extension*</td>
</tr>
<tr>
<td>Children</td>
<td>spase:AccessURL, spase:Extension, spase:ResourceHeader, spase:ResourceId</td>
</tr>
<tr>
<td>Instance</td>
<td><code>&lt;spase:Repository xmlns:spase= &quot;http://www.spase-group.org/data/schema&quot;</code></td>
</tr>
<tr>
<td>Source</td>
<td><code>&lt;xsd:element name=&quot;Repository&quot; type=&quot;spase:Repository&quot;/&gt;</code></td>
</tr>
<tr>
<td>Schema location</td>
<td>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
</tbody>
</table>

**Element spase:Repository / spase:ResourceId**

Diagram

<table>
<thead>
<tr>
<th>Type</th>
<th>spase:ResourceId</th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties</td>
<td>content: simple</td>
</tr>
<tr>
<td>minOccurs</td>
<td>1</td>
</tr>
<tr>
<td>maxOccurs</td>
<td>1</td>
</tr>
<tr>
<td>Source</td>
<td><code>&lt;xsd:element name=&quot;ResourceId&quot; type=&quot;spase:ResourceId&quot; minOccurs=&quot;1&quot; maxOccurs=&quot;1&quot;/&gt;</code></td>
</tr>
<tr>
<td>Schema location</td>
<td>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
</tbody>
</table>

**Element spase:Repository / spase:ResourceManager**

Diagram

<table>
<thead>
<tr>
<th>Type</th>
<th>spase:ResourceManager</th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties</td>
<td>content:</td>
</tr>
<tr>
<td></td>
<td>minOccurs: 1</td>
</tr>
<tr>
<td></td>
<td>maxOccurs: 1</td>
</tr>
<tr>
<td>Source</td>
<td><code>&lt;xsd:element name=&quot;ResourceManager&quot; type=&quot;spase:ResourceManager&quot; minOccurs=&quot;1&quot; maxOccurs=&quot;1&quot;/&gt;</code></td>
</tr>
<tr>
<td>Schema location</td>
<td>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
</tbody>
</table>

148
**Schema documentation for spase-2_2_4.xsd**

### Diagram

![Diagram of ResourceHeader](image)

### Type

**spase:ResourceHeader**

### Properties

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>minOccurs</th>
<th>maxOccurs</th>
</tr>
</thead>
<tbody>
<tr>
<td>content</td>
<td>complex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>minOccurs</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>maxOccurs</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Model


### Children


### Instance

```xml
<spase:ResourceHeader xmlns:spase= "http://www.spase-group.org/data/schema">
  <spase:ResourceName>[1,1]</spase:ResourceName>
  <spase:AlternateName>[0,unbounded]</spase:AlternateName>
  <spase:ReleaseDate>[1,1]</spase:ReleaseDate>
  <spase:ExpirationDate>[0,1]</spase:ExpirationDate>
  <spase:Description>[1,1]</spase:Description>
  <spase:Acknowledgement>[0,1]</spase:Acknowledgement>
  <spase:Contact>[1,unbounded]</spase:Contact>
  <spase:InformationURL>[0,unbounded]</spase:InformationURL>
  <spase:Association>[0,unbounded]</spase:Association>
  <spase:PriorID>[0,unbounded]</spase:PriorID>
</spase:ResourceHeader>
```

### Source

```xml
<xsd:element name="ResourceHeader" type="spase:ResourceHeader" minOccurs="1" maxOccurs="1"/>
```

### Schema location

`file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd`

---

**Element** `spase:Repository / spase:AccessURL`

### Namespace

http://www.spase-group.org/data/schema
Schema documentation for spase-2_2_4.xsd

**Element spase:AccessURL**

**Namespace**
http://www.spase-group.org/data/schema

**Diagram**

```
Diagram

Type
spase:AccessURL

Properties
content: complex
minOccurs: 1
maxOccurs: 1

Model
spase:Name{0,1}, spase:URL, spase:ProductKey*, spase:Description{0,1}, spase:Language{0,1}

Children
spase:Description, spase:Language, spase:Name, spase:ProductKey, spase:URL

Instance
  <spase:Name>{0,1}</spase:Name>
  <spase:URL>{1,1}</spase:URL>
  <spase:ProductKey>{0,unbounded}</spase:ProductKey>
  <spase:Description>{0,1}</spase:Description>
  <spase:Language>{0,1}</spase:Language>
</spase:AccessURL>

Source
<xsd:element name="AccessURL" type="spase:AccessURL" minOccurs="1" maxOccurs="1" />

Schema location
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd
```

**Element spase:Repository / spase:Extension**

**Namespace**
http://www.spase-group.org/data/schema

**Diagram**

```
Diagram

Type
spase:Extension

Properties
content: complex
minOccurs: 0
maxOccurs: unbounded

Model
ANY element from ANY namespace

Source
<xsd:element name="Extension" type="spase:Extension" minOccurs="0" maxOccurs="unbounded"/>

Schema location
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd
```

**Element spase:Spase / spase:Service**

**Namespace**
http://www.spase-group.org/data/schema
Diagram

Type spase:Service

Properties content: complex

Model spase:ResourceID, spase:ResourceHeader, spase:AccessURL, spase:Extension*


Instance

```xml
<spase:Service xmlns:spase= "http://www.spase-group.org/data/schema">
  <spase:ResourceID >{1,1} </spase:ResourceID>
  <spase:ResourceHeader >{1,1} </spase:ResourceHeader>
  <spase:AccessURL >{1,1} </spase:AccessURL>
  <spase:Extension >{0,unbounded} </spase:Extension>
</spase:Service>
```

Source

```xml
<xsd:element  name= "Service"  type= "spase:Service" />
```

Schema location file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Element spase:Service / spase:ResourceID

Namespace http://www.spase-group.org/data/schema

Diagram

Type spase:ResourceID

Properties content: simple

minOccurs: 1

maxOccurs: 1

Source

```xml
<xsd:element name="ResourceID" type="spase:ResourceID" minOccurs="1" maxOccurs="1"/>
```

Schema location file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Element spase:Service / spase:ResourceHeader
Diagram

<table>
<thead>
<tr>
<th>Type</th>
<th>spase:ResourceHeader</th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties</td>
<td>content: complex</td>
</tr>
<tr>
<td></td>
<td>minOccurs: 1</td>
</tr>
<tr>
<td></td>
<td>maxOccurs: 1</td>
</tr>
<tr>
<td>Model</td>
<td>spase:ResourceName, spase:AlternateName*, spase:ReleaseDate, spase:ExpirationDate{0,1}, spase:Description, spase:Acknowledgement{0,1}, spase:Contact+, spase:InformationURL*, spase:Association*, spase:PriorID*</td>
</tr>
<tr>
<td>Children</td>
<td>spase:Acknowledgement, spase:AlternateName, spase:Association, spase:Contact, spase:Description, spase:ExpirationDate, spase:InformationURL, spase:PriorID, spase:ReleaseDate, spase:ResourceName</td>
</tr>
</tbody>
</table>
| Instance      | `<spase:ResourceHeader xmlns:spase= "http://www.spase-group.org/data/schema">
<spase:ResourceName>[1,1]</spase:ResourceName>
<spase:AlternateName>[0,unbounded]</spase:AlternateName>
<spase:ReleaseDate>[1,1]</spase:ReleaseDate>
<spase:ExpirationDate>[0,1]</spase:ExpirationDate>
<spase:Description>[1,1]</spase:Description>
<spase:Acknowledgement>[0,1]</spase:Acknowledgement>
<spase:Contact>[1,unbounded]</spase:Contact>
<spase:InformationURL>[0,unbounded]</spase:InformationURL>
<spase:Association>[0,unbounded]</spase:Association>
<spase:PriorID>[0,unbounded]</spase:PriorID>
</spase:ResourceHeader>` |
| Source        | `<xsd:element name= "ResourceHeader" type= "spase:ResourceHeader" minOccurs= "1" maxOccurs= "1"/>` |
| Schema location | file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd |

**Element spase:Service / spase:AccessURL**

| Namespace          | http://www.spase-group.org/data/schema |
Schema documentation for spase-2.2.4.xsd

### Type: spase:AccessURL

**Properties**
- **content:** complex
- **minOccurs:** 1
- **maxOccurs:** 1

**Model**
- spase:Name{0,1}
- spase:URL
- spase:ProductKey*
- spase:Description{0,1}
- spase:Language{0,1}

**Children**
- spase:Description
- spase:Language
- spase:Name
- spase:ProductKey
- spase:URL

**Instance**
```xml
  <spase:Name>{0,1}</spase:Name>
  <spase:URL>{1,1}</spase:URL>
  <spase:ProductKey>{0,unbounded}</spase:ProductKey>
  <spase:Description>{0,1}</spase:Description>
  <spase:Language>{0,1}</spase:Language>
</spase:AccessURL>
```

**Source**
```xml
<xsd:element name="AccessURL" type="spase:AccessURL" minOccurs="1" maxOccurs="1"/>
```

**Schema location**
`file://C:/projects/spase/java/model-tools/build/bin/spase-2.2.4.xsd`

---

### Element: spase:Service / spase:Extension

**Namespace**
`http://www.spase-group.org/data/schema`

**Diagram**

**Type**
- spase:Extension

**Properties**
- **content:** complex
- **minOccurs:** 0
- **maxOccurs:** unbounded

**Model**
- ANY element from ANY namespace

**Source**
```xml
<xsd:element name="Extension" type="spase:Extension" minOccurs="0" maxOccurs="unbounded"/>
```

**Schema location**
`file://C:/projects/spase/java/model-tools/build/bin/spase-2.2.4.xsd`

---

### Element: spase:Spase / spase:Annotation

**Namespace**
`http://www.spase-group.org/data/schema`
Paragraphs of textual content extracted from the image:

**Diagram**

```
Annotation
  Type: spase:Annotation

  ResourceID
    Type: spase:ResourceID

  ResourceHeader
    Type: spase:ResourceHeader

  ImageURL
    Type: spase:ImageURL

  AnnotationType
    Type: spase:AnnotationType

  PhenomenonType
    Type: spase:PhenomenonType

  ClassificationMethod
    Type: spase:ClassificationMethod

  ConfidenceRating
    Type: spase:ConfidenceRating

  TimeSpan
    Type: spase:TimeSpan

  ObservationExtent
    Type: spase:ObservationExtent

  Extension
    Type: spase:Extension
```

**Type**

- spase:Annotation

**Properties**

- content: complex

**Model**

- spase:ResourceID, spase:ResourceHeader, spase:ImageURL\{0,1\}, spase:AnnotationType, spase:PhenomenonType\{0,1\}, spase:ClassificationMethod\{0,1\}, spase:ConfidenceRating\{0,1\}, spase:TimeSpan*, spase:ObservationExtent*, spase:Extension*

**Children**


**Instance**

```
<spase:Annotation xmlns:spase="http://www.spase-group.org/data/schema">
  <spase:ResourceID>{1,1}</spase:ResourceID>
  <spase:ResourceHeader>{1,1}</spase:ResourceHeader>
  <spase:ImageURL>{0,1}</spase:ImageURL>
  <spase:AnnotationType>{1,1}</spase:AnnotationType>
  <spase:PhenomenonType>{0,1}</spase:PhenomenonType>
  <spase:ClassificationMethod>{0,1}</spase:ClassificationMethod>
  <spase:ConfidenceRating>{0,1}</spase:ConfidenceRating>
  <spase:TimeSpan>{0,unbounded}</spase:TimeSpan>
  <spase:ObservationExtent>{0,unbounded}</spase:ObservationExtent>
  <spase:Extension>{0,unbounded}</spase:Extension>
</spase:Annotation>
```

**Source**

- `<xsd:element name="Annotation" type="spase:Annotation"/>
  <xsd:element name="ResourceID" type="spase:ResourceID" minOccurs="1" maxOccurs="1"/>

**Schema location**

- file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

**Element spase:Annotation / spase:ResourceID**

**Namespace**

- http://www.spase-group.org/data/schema

**Diagram**

```
ResourceID
  Type: spase:ResourceID
```

**Type**

- spase:ResourceID

**Properties**

- content: simple
- minOccurs: 1
- maxOccurs: 1

**Source**

- `<xsd:element name="ResourceID" type="spase:ResourceID" minOccurs="1" maxOccurs="1"/>`
Element `spase:Annotation / spase:ResourceHeader`

Namespace: http://www.spase-group.org/data/schema

**Diagram**

```
spase:ResourceHeader
  |       |
  v       v
ResourceName
  |       |
  v       v
AlternateName
  |       |
  v       v
ReleaseDate
  |       |
  v       v
ExpirationDate
  |       |
  v       v
Description
```

**Type**

`spase:ResourceHeader`

**Properties**

- **content:** complex
- **minOccurs:** 1
- **maxOccurs:** 1

**Model**

`spase:ResourceName`, `spase:AlternateName`, `spase:ReleaseDate`, `spase:ExpirationDate`, `spase:Description`, `spase:Acknowledgement`, `spase:Contact`, `spase:InformationURL`, `spase:Association`, `spase:PriorID`

**Children**

`spase:Acknowledgement`, `spase:AlternateName`, `spase:Association`, `spase:Contact`, `spase:Description`, `spase:ExpirationDate`, `spase:InformationURL`, `spase:PriorID`, `spase:ReleaseDate`, `spase:ResourceName`

**Instance**

```
<spase:ResourceHeader xmlns:spase= "http://www.spase-group.org/data/schema">
  <spase:ResourceName>[1,1]</spase:ResourceName>
  <spase:AlternateName>[0,unbounded]</spase:AlternateName>
  <spase:ReleaseDate>[1,1]</spase:ReleaseDate>
  <spase:ExpirationDate>[0,1]</spase:ExpirationDate>
  <spase:Description>[1,1]</spase:Description>
  <spase:Acknowledgement>[0,1]</spase:Acknowledgement>
  <spase:Contact>[1,unbounded]</spase:Contact>
  <spase:InformationURL>[0,unbounded]</spase:InformationURL>
  <spase:Association>[0,unbounded]</spase:Association>
  <spase:PriorID>[0,unbounded]</spase:PriorID>
</spase:ResourceHeader>
```

**Source**

```
<xsd:element name="ResourceHeader" type="spase:ResourceHeader" minOccurs="1" maxOccurs="1"/>
```

**Schema location**

file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

Element `spase:Annotation / spase:ImageURL`

Namespace: http://www.spase-group.org/data/schema

**Diagram**

```
spase:ImageURL
```

**Type**

`spase:ImageURL`

**Properties**

- **content:** simple
- **minOccurs:** 0
### Element `spase:Annotation / spase:AnnotationType`

**Namespace** http://www.spase-group.org/data/schema

![Diagram](Diagram)

**Type** `spase:AnnotationType`

**Properties**
- **content:** `simple`
- **minOccurs:** 1
- **maxOccurs:** 1

**Facets**
- **enumeration** `Anomaly`  
  An interval where measurements or observations may be adversely affected.
- **enumeration** `Event`  
  An action or observation which occurs at a point in time.
- **enumeration** `Feature`  
  A prominent or distinctive characteristic that occurs at a location or persists over a period of time.

**Source**
```xml
<xs:element name="AnnotationType" type="spase:AnnotationType" minOccurs="1" maxOccurs="1"/>
```

### Element `spase:Annotation / spase:PhenomenonType`

**Namespace** http://www.spase-group.org/data/schema

![Diagram](Diagram)

**Type** `spase:PhenomenonType`

**Properties**
- **content:** `simple`
- **minOccurs:** 0
- **maxOccurs:** 1

**Facets**
- **enumeration** `ActiveRegion`  
  A localized, transient volume of the solar atmosphere in which PLAGEs, SUNSPOTS, FACULAEs, FLAREs, etc. may be observed.
- **enumeration** `Aurora`  
  An atmospheric phenomenon consisting of bands of light caused by charged solar particles following the earth's magnetic lines of force.
- **enumeration** `BowShockCrossing`  
  A crossing of the boundary between the undisturbed (except for foreshock effects) solar wind and the shocked, decelerated solar wind of the magnetosheath.
- **enumeration** `CoronalHole`  
  An extended region of the corona, exceptionally low in density and associated with unipolar photospheric regions. A coronal hole can be an "open" magnetic field in the corona and (perhaps) inner heliosphere which has a faster than average outflow (wind); A region of lower than "quiet" ion and electron density in the corona; or a region of lower peak electron temperature in the corona than in the "quiet" corona.
- **enumeration** `CoronalMassEjection`  
  A solar event (CME) that involves a burst of plasma ejected into the interplanetary medium. CME's may be observed remotely relatively near the sun or in situ in the interplanetary medium. The latter type of observations are often referred to as Interplanetary CME's (ICME's).
- **enumeration** `EITWave`  
  A wave in the corona of the Sun which produce
<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EnergeticSolarParticleEvent</td>
<td>An enhancement of interplanetary fluxes of energetic ions accelerated by interplanetary shocks and/or solar flares.</td>
</tr>
<tr>
<td>ForbushDecrease</td>
<td>A rapid decrease in the observed galactic cosmic ray intensity following the passage of an outwardly convecting interplanetary magnetic field disturbance, such as those associated with large CME’s, that sweep some galactic cosmic rays away from Earth.</td>
</tr>
<tr>
<td>GeomagneticStorm</td>
<td>A magnetospheric disturbance typically defined by variations in the horizontal component of the Earth’s surface magnetic field. The variation typically starts with a field enhancement associated with a solar wind pressure pulse and continues with a field depression associated with an enhancement of the diamagnetic magnetospheric ring current.</td>
</tr>
<tr>
<td>InterplanetaryShock</td>
<td>A shock propagating generally anti-sunward through the slower solar wind, often seen in front of CME-associated plasma clouds.</td>
</tr>
<tr>
<td>MagneticCloud</td>
<td>A transient event observed in the solar wind characterized as a region of enhanced magnetic field strength, smooth rotation of the magnetic field vector and low proton density and temperature.</td>
</tr>
<tr>
<td>MagnetopauseCrossing</td>
<td>A crossing of the interface between the shocked solar wind in the magnetosheath and the magnetic field and plasma in the magnetosphere.</td>
</tr>
<tr>
<td>RadioBurst</td>
<td>Emissions of the sun in radio wavelengths from centimeters to dekameters, under both quiet and disturbed conditions. Radio Bursts can be &quot;Type I&quot; consisting of many short, narrow-band bursts in the metric range (300 - 50 MHz); &quot;Type II&quot; consisting of narrow-band emission that begins in the meter range (300 MHz) and sweeps slowly (tens of minutes) toward dekameter wavelengths (10 MHz); &quot;Type III&quot; consisting of narrow-band bursts that sweep rapidly (seconds) from decimeter to dekameter wavelengths (500 - 0.5 MHz); and &quot;Type IV&quot; consisting of a smooth continuum of broad-band bursts primarily in the meter range (300 - 30 MHz).</td>
</tr>
<tr>
<td>SectorBoundaryCrossing</td>
<td>A sector boundary crossing is a transit by a spacecraft across the heliospheric current sheet separating the dominantly outward (away-from-the-sun) interplanetary magnetic field of one hemisphere of the heliosphere from the dominantly inward (toward-the-sun) polarity of the other hemisphere. Such crossings have multi-day intervals of opposite IMF dominant polarities on either side.</td>
</tr>
<tr>
<td>SolarFlare</td>
<td>An explosive event in the Sun's atmosphere which produces electromagnetic radiation across the electromagnetic spectrum at multiple wavelengths from long-wave radio to the shortest wavelength gamma rays.</td>
</tr>
<tr>
<td>SolarWindExtreme</td>
<td>Intervals of unusually large or small values of solar wind attributes such as flow speed and ion density.</td>
</tr>
<tr>
<td>StreamInteractionRegion</td>
<td>The region (SIR) where two solar wind streams, typically having differing characteristics and solar sources, abut up against (and possibly partially interpenetrate) each other.</td>
</tr>
<tr>
<td>Substorm</td>
<td>A process by which plasma in the magnetotail...</td>
</tr>
</tbody>
</table>
becomes energized at a fast rate.

Element `spase:Annotation / spase:ClassificationMethod`

- **Namespace**: http://www.spase-group.org/data/schema
- **Diagram**: ![Diagram of `spase:ClassificationMethod`]
- **Type**: `spase:ClassificationMethod`
- **Properties**:
  - `content`: simple
  - `minOccurs`: 0
  - `maxOccurs`: 1
- **Facets**:
  - `enumeration` Automatic
    - Determined by the analysis or assessment performed by a program or server.
  - `enumeration` Inferred
    - Determined by the analysis of other information or resources.
  - `enumeration` Inspection
    - Determined by the analysis or assessment performed by a person.

Element `spase:Annotation / spase:ConfidenceRating`

- **Namespace**: http://www.spase-group.org/data/schema
- **Diagram**: ![Diagram of `spase:ConfidenceRating`]
- **Type**: `spase:ConfidenceRating`
- **Properties**:
  - `content`: simple
  - `minOccurs`: 0
  - `maxOccurs`: 1
- **Facets**:
  - `enumeration` Probable
    - Likely given the available evidence. Considered in the range of 4-7 on a scale of 0-10.
  - `enumeration` Strong
    - Highly likely given the available evidence. Considered in the range of 7-10 on a scale of 0-10.
  - `enumeration` Unlikely
    - Not likely given the available evidence. Considered in the range of 0 on a scale of 0-10.
  - `enumeration` Weak
    - Slightly likely given the available evidence. Considered in the range of 1-4 on a scale of 0-10.

Element `spase:Annotation / spase:TimeSpan`
Schema documentation for spase-2_2_4.xsd

Diagram

Type

spase:TimeSpan

Properties

<table>
<thead>
<tr>
<th>content</th>
<th>complex</th>
</tr>
</thead>
<tbody>
<tr>
<td>minOccurs</td>
<td>0</td>
</tr>
<tr>
<td>maxOccurs</td>
<td>unbounded</td>
</tr>
</tbody>
</table>

Model

spase:StartDate, (spase:StopDate | spase:RelativeStopDate), spase:Note*

Children

spase:Note, spase:RelativeStopDate, spase:StartDate, spase:StopDate

Instance

<spase:TimeSpan xmlns:spase= "http://www.spase-group.org/data/schema"
    <spase:StartDate>{1,1}</spase:StartDate>
    <spase:StopDate>{1,1}</spase:StopDate>
    <spase:RelativeStopDate>{1,1}</spase:RelativeStopDate>
    <spase:Note>{0,unbounded}</spase:Note>
    </spase:TimeSpan>

Source

<xsd:element name="TimeSpan" types="spase:TimeSpan" minOccurs="0" maxOccurs="unbounded" />

Schema location

file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Element spase:Annotation / spase:ObservationExtent

Namespace

http://www.spase-group.org/data/schema

Diagram

Type

spase:ObservationExtent

Properties

<table>
<thead>
<tr>
<th>content</th>
<th>complex</th>
</tr>
</thead>
<tbody>
<tr>
<td>minOccurs</td>
<td>0</td>
</tr>
<tr>
<td>maxOccurs</td>
<td>unbounded</td>
</tr>
</tbody>
</table>

Model

spase:ObservedRegion{0,1}, spase:StartLocation, spase:StopLocation, spase:Note*

Children

spase:Note, spase:ObservedRegion, spase:StartLocation, spase:StopLocation

Instance

<spase:ObservationExtent xmlns:spase= "http://www.spase-group.org/data/schema"
    <spase:ObservedRegion>{0,1}</spase:ObservedRegion>
    <spase:StartLocation>{1,1}</spase:StartLocation>
    <spase:StopLocation>{1,1}</spase:StopLocation>
    <spase:Note>{0,unbounded}</spase:Note>
    </spase:ObservationExtent>

Source

<xsd:element name="ObservationExtent" types="spase:ObservationExtent" minOccurs="0" maxOccurs="unbounded" />

Schema location

file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd
### Element `spase:ObservationExtent` / `spase:ObservedRegion`

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td><code>spase:Region</code></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Properties</th>
<th>content:</th>
<th>simple</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>minOccurs:</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>maxOccurs:</td>
<td>1</td>
</tr>
</tbody>
</table>

### Facets

<table>
<thead>
<tr>
<th>Facets</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>enumeration</code> Asteroid</td>
<td>A small extraterrestrial body consisting mostly of rock and metal that is in orbit around the sun.</td>
</tr>
<tr>
<td><code>enumeration</code> Comet</td>
<td>A relatively small extraterrestrial body consisting of a frozen mass that travels around the sun in a highly elliptical orbit.</td>
</tr>
<tr>
<td><code>enumeration</code> Earth</td>
<td>The third planet from the sun in our solar system.</td>
</tr>
<tr>
<td><code>enumeration</code> Earth.Magnetosheath</td>
<td>The region between the bow shock and the magnetopause, characterized by very turbulent plasma.</td>
</tr>
<tr>
<td><code>enumeration</code> Earth.Magnetosphere</td>
<td>The region of space above the atmosphere or surface of the planet, and bounded by the magnetopause, that is under the direct influence of the planet's magnetic field.</td>
</tr>
<tr>
<td><code>enumeration</code> Earth.Magnetosphere.Magnetotail</td>
<td>The region on the night side of the body where the magnetic field is stretched backwards by the force of the solar wind. For Earth, the magnetotail begins at a night-side radial distance of 10 Re (X &gt; -10Re).</td>
</tr>
<tr>
<td><code>enumeration</code> Earth.Magnetosphere.Main</td>
<td>The region of the magnetosphere where the magnetic field lines are closed, but does not include the gaseous region gravitationally bound to the body.</td>
</tr>
<tr>
<td><code>enumeration</code> Earth.Magnetosphere.Polar</td>
<td>The region near the pole of a body. For a magnetosphere the polar region is the area where magnetic field lines are open and includes the auroral zone.</td>
</tr>
<tr>
<td><code>enumeration</code> Earth.Magnetosphere.RadiationBelt</td>
<td>The region within a magnetosphere where high-energy particles could potentially be trapped in a magnetic field.</td>
</tr>
<tr>
<td><code>enumeration</code> Earth.Moon</td>
<td>The only natural satellite of the Earth.</td>
</tr>
<tr>
<td><code>enumeration</code> Earth.NearSurface</td>
<td>The gaseous and possibly ionized environment of a body extending from the surface to some specified altitude. For the Earth, this altitude is 2000 km.</td>
</tr>
<tr>
<td><code>enumeration</code> Earth.NearSurface.Atmosphere</td>
<td>The neutral gases surrounding a body that extends from the surface and is bound to the body by virtue of the gravitational attraction.</td>
</tr>
<tr>
<td><code>enumeration</code> Earth.NearSurface.AuroralRegion</td>
<td>A region in the atmospheric where electrically-charged particles bombarding the upper atmosphere of a planet in the presence of a magnetic field produce an optical phenomenon.</td>
</tr>
<tr>
<td><code>enumeration</code> Earth.NearSurface.EquatorialRegion</td>
<td>A region centered on the equator and limited in latitude by approximately 23 degrees north and south of the equator.</td>
</tr>
<tr>
<td><code>enumeration</code> Earth.NearSurface.Ionosphere</td>
<td>Charged or ionized gases surrounding a body that are nominally bound to the body by virtue of the gravitational attraction.</td>
</tr>
<tr>
<td><code>enumeration</code> Earth.NearSurface.Ionosphere.IRegion</td>
<td>The ionosphere that exists approximately 50 to 95 km above the surface of the Earth. One of several layers in the ionosphere.</td>
</tr>
<tr>
<td><code>enumeration</code> Earth.NearSurface.Ionosphere.MRegion</td>
<td>Ionised gas occurring at 90-150km above the ground. One of several layers in the ionosphere.</td>
</tr>
</tbody>
</table>
### Earth.NearSurface.Ionosphere.FRegion
A layer that contains ionized gases at a height of around 150–800 km above sea level, placing it in the thermosphere. The F region has the highest concentration of free electrons and ions anywhere in the atmosphere. It may be thought of as comprising two layers, the F1-and F2-layers. One of several layers in the ionosphere. Also known as the Appleton layer.

### Earth.NearSurface.Ionosphere.Topside
A layer at the upper most areas of the ionosphere.

### Earth.NearSurface.Mesosphere
A layer of the atmosphere that extends from the Stratosphere to about 30 km, temperature decreasing with height.

### Earth.NearSurface.Plasmapause
Region of the magnetosphere consisting of low energy (cool) plasma. It is located above the ionosphere. The outer boundary of the plasmasphere is known as the plasmapause, which is defined by an order of magnitude drop in plasma density.

### Earth.NearSurface.PolarCap
The areas of the globe surrounding the poles and consisting of the region north of 60 degrees north latitude or the region south of 60 degrees south latitude.

### Earth.NearSurface.Stratosphere
The layer of the atmosphere that extends from the troposphere to about 30 km, temperature increases with height. The stratosphere contains the ozone layer.

### Earth.NearSurface.Thermosphere
The layer of the atmosphere that extends from the Mesosphere to 640+ km, temperature increasing with height.

### Earth.NearSurface.Troposphere
The lowest layer of the atmosphere which begins at the surface and extends to between 7 km (4.4 mi) at the poles and 17 km (10.6 mi) at the equator, with some variation due to weather factors.

### Earth.Surface
The outermost area of a solid object.

### Heliosphere
The solar atmosphere extending roughly from the outer corona to the edge of the solar plasma at the heliopause separating primarily solar plasma from interstellar plasma.

### Heliosphere.Heliosheath
The region extending radially outward from the heliospheric termination shock and in which the decelerated solar wind plasma is still significant.

### Heliosphere.Inner
The region of the heliosphere extending radially outward from the solar coronal base to just inside 1 AU.

### Heliosphere.NearEarth
The heliospheric region near the Earth which extends to and includes the area near the L1 and L2 Lagrange point.

### Heliosphere.Outer
The region of the heliosphere extending radially outward from just outside 1 AU to the heliospheric termination shock.

### Heliosphere.Remote1AU
A roughly toroidal region that includes the Earth’s orbit, but exclusive of the region near the Earth.

### Interstellar
The region between stars outside of the star’s heliopause.

### Jupiter
The fifth planet from the sun in our solar system.

### Mars
The forth planet from the sun in our solar system.
<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mercury</td>
<td>The first planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Neptune</td>
<td>The seventh planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Pluto</td>
<td>The ninth (sub)planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Saturn</td>
<td>The sixth planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Sun</td>
<td>The star upon which our solar system is centered.</td>
</tr>
<tr>
<td>Sun.Chromosphere</td>
<td>The region of the Sun's (or a star's) atmosphere above the temperature minimum and below the Transition Region. The solar chromosphere is approximately 400 km to 2100 km above the photosphere, and characterized by temperatures from 4500 - 28000 K.</td>
</tr>
<tr>
<td>Sun.C冠军ura</td>
<td>The outermost atmospheric region of the Sun or a star, characterized by ionization temperatures above 10⁵ K. The solar corona starts at about 2100 km above the photosphere; there is no generally defined upper limit.</td>
</tr>
<tr>
<td>Sun.Interior</td>
<td>The region inside the body which is not visible from outside the body.</td>
</tr>
<tr>
<td>Sun.Photosphere</td>
<td>The atmospheric layer of the Sun or a star from which continuum radiation, especially optical, is emitted to space. For the Sun, the photosphere is about 500 km thick.</td>
</tr>
<tr>
<td>Sun.TransitionRegion</td>
<td>A very narrow (&lt;100 km) layer between the chromosphere and the corona where the temperature rises abruptly from about 8000 to about 500,000 K.</td>
</tr>
<tr>
<td>Uranus</td>
<td>The eighth planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Venus</td>
<td>The second planet from the sun in our solar system.</td>
</tr>
</tbody>
</table>

Source: `<xsd:element name="ObservedRegion" type="spase:Region" minOccurs="0" maxOccurs="1"/>

Schema location: file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

**Element spase:ObservationExtent / spase:StartLocation**

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Namespace</td>
<td><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></td>
</tr>
<tr>
<td>Diagram</td>
<td><img src="StartLocation" alt="Diagram" /></td>
</tr>
<tr>
<td>Type</td>
<td>spase:StartLocation</td>
</tr>
<tr>
<td>Properties</td>
<td>content: simple</td>
</tr>
<tr>
<td></td>
<td>minOccurs: 1</td>
</tr>
<tr>
<td></td>
<td>maxOccurs: 1</td>
</tr>
</tbody>
</table>

Source: `<xsd:element name="StartLocation" type="spase:StartLocation" minOccurs="1" maxOccurs="1"/>

Schema location: file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

**Element spase:ObservationExtent / spase:StopLocation**

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Namespace</td>
<td><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></td>
</tr>
<tr>
<td>Diagram</td>
<td><img src="StopLocation" alt="Diagram" /></td>
</tr>
<tr>
<td>Type</td>
<td>spase:StopLocation</td>
</tr>
<tr>
<td>Properties</td>
<td>content: simple</td>
</tr>
<tr>
<td></td>
<td>minOccurs: 1</td>
</tr>
<tr>
<td></td>
<td>maxOccurs: 1</td>
</tr>
</tbody>
</table>
**Element spase:ObservationExtent / spase:Note**

*Namespace* | http://www.spase-group.org/data/schema  
---|---  
*Diagram*  
---  
*Type* | spase:Note  
---  
*Properties*  
---  
*content:* | simple  
*minOccurs:* | 0  
*maxOccurs:* | unbounded  
---  
*Source*  
---  
<xsd:element name="Note" type="spase:Note" minOccurs="0" maxOccurs="unbounded"/>

**Element spase:Annotation / spase:Extension**

*Namespace* | http://www.spase-group.org/data/schema  
---|---  
*Diagram*  
---  
*Type* | spase:Extension  
---  
*Properties*  
---  
*content:* | complex  
*minOccurs:* | 0  
*maxOccurs:* | unbounded  
---  
*Model* | ANY element from ANY namespace  
---  
*Source*  
---  
<xsd:element name="Extension" type="spase:Extension" minOccurs="0" maxOccurs="unbounded"/>

**Complex Type(s)**

**Complex Type spase:Spase**

*Namespace* | http://www.spase-group.org/data/schema  
---|---  
*Annotations*  
---  
Space Physics Archive Search and Extract (SPASE). The outermost container or envelope for SPASE metadata. This indicates the start of the SPASE metadata.
Schema documentation for spase-2_2_4.xsd

Diagram

Used by | Element | spase:Spase
---|---|---
Attributes | QName | Type | Default | Use
---|---|---|---|---
lang | xsd:string | en | optional | optional
Complex Type spase:Catalog

Namespace http://www.spase-group.org/data/schema

Annotations A tabular listing of events or observational notes, especially those that have utility in aiding a user in locating data. Catalogs include lists of events, files in a product, and data availability. A Catalog resource is a type of "data product" which is a set of data that is uniformly processed and formatted, from one or more instruments, typically spanning the full duration of the observations of the relevant instrument(s). A data product may consist of a collection of granules of successive time spans, but may be a single high-level entity.
in a product, and data availability. A Catalog resource is a type of "data product" which is a set of data that is uniformly processed and formatted, from one or more instruments, typically spanning the full duration of the observations of the relevant instrument(s). A data product may consist of a collection of granules of successive time spans, but may be a single high-level entity.

Complex Type spase:ResourceHeader

Namespace http://www.spase-group.org/data/schema

Annotations Attributes of a resource which pertain to the provider of the resource and descriptive information about the resource.

Diagram

Used by

Elements


Model

spase:ResourceName, spase:AlternateName*, spase:ReleaseDate, spase:ExpirationDate[0,1], spase:Description, spase:Aknowledgement[0,1], spase:Contact*, spase:InformationURL*, spase:Association*, spase:PriorID*

Children

spase:Acknowledgement, spase:AlternateName, spase:Association, spase:Contact, spase:Description, spase:ExpirationDate, spase:InformationURL, spase:PriorID, spase:ReleaseDate, spase:ResourceName
Source

```xml
<xsd:complexType name="ResourceHeader">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Attributes of a resource which pertain to the provider of the resource and descriptive information about the resource.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="ResourceName" type="spase:ResourceName" minOccurs="1" maxOccurs="1"/>
    <xsd:element name="AlternateName" type="spase:AlternateName" minOccurs="0" maxOccurs="unbounded"/>
    <xsd:element name="ReleaseDate" type="spase:ReleaseDate" minOccurs="1" maxOccurs="1"/>
    <xsd:element name="ExpirationDate" type="spase:ExpirationDate" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="Description" type="spase:Description" minOccurs="1" maxOccurs="1"/>
    <xsd:element name="Acknowledgement" type="spase:Acknowledgement" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="Contact" type="spase:Contact" minOccurs="1" maxOccurs="unbounded"/>
    <xsd:element name="InformationURL" type="spase:InformationURL" minOccurs="0" maxOccurs="unbounded"/>
    <xsd:element name="Association" type="spase:Association" minOccurs="0" maxOccurs="unbounded"/>
    <xsd:element name="PriorID" type="spase:PriorID" minOccurs="0" maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>
```

Complex Type `spase:Contact`

**Namespace**
http://www.spase-group.org/data/schema

**Annotations**
The person or organization who may be able to provide special assistance or serve as a channel for communication for additional information about a resource.

**Diagram**

```
  Contact
    +--- PersonID
     |    Type spase:PersonID
    +---- Role
     |    Type spase:Role
```

**Used by**
Element `spase:ResourceHeader/spase:Contact`

**Model**
`spase:PersonID , spase:Role`

**Children**
`spase:PersonID , spase:Role`

**Source**

```xml
<xsd:complexType name="Contact">
  <xsd:documentation xml:lang="en">The person or organization who may be able to provide special assistance or serve as a channel for communication for additional information about a resource.</xsd:documentation>
  <xsd:sequence>
    <xsd:element name="PersonID" type="spase:PersonID" minOccurs="1" maxOccurs="1"/>
    <xsd:element name="Role" type="spase:Role" minOccurs="1" maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>
```

Complex Type `spase:InformationURL`

**Namespace**
http://www.spase-group.org/data/schema

**Annotations**
Attributes of the method of acquiring additional information.

**Diagram**

```
  InformationURL
    +--- Name
     |    Type spase:Name
    +---- URL
     |    Type spase:URL
    
    Description
    |    Type spase:Description
    Language
    |    Type spase:Language
```

Schema location
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd
## Complex Type `spase:InformationURL`

**Namespace**  
http://www.spase-group.org/data/schema

**Annotations**  
Attributes of the method of acquiring additional information.

**Diagram**

![Diagram](image)

**Used by**  
Element `spase:ResourceHeader/spase:InformationURL`

**Model**  
`spase:Name{0,1}` , `spase:URL` , `spase:Description{0,1}` , `spase:Language{0,1}`

**Children**  
`spase:Description` , `spase:Language` , `spase:Name` , `spase:URL`

**Source**

```xml
<xsd:complexType name="InformationURL">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Attributes of the method of acquiring additional information.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="Name" type="spase:Name" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="URL" type="spase:URL" minOccurs="1" maxOccurs="1"/>
    <xsd:element name="Description" type="spase:Description" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="Language" type="spase:Language" minOccurs="0" maxOccurs="1"/>
  </xsd:sequence>
</xsd:complexType>
```

**Schema location**

file:C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

## Complex Type `spase:Association`

**Namespace**  
http://www.spase-group.org/data/schema

**Annotations**  
Attributes of a relationship a resource has with another resource.

**Diagram**

![Diagram](image)

**Used by**  
Element `spase:ResourceHeader/spase:Association`

**Model**  
`spase:AssociationID` , `spase:AssociationType` , `spase:Note{0,1}`

**Children**  
`spase:AssociationID` , `spase:AssociationType` , `spase:Note`

**Source**

```xml
<xsd:complexType name="Association">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Attributes of a relationship a resource has with another resource.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="AssociationID" type="spase:AssociationID" minOccurs="1" maxOccurs="1"/>
    <xsd:element name="AssociationType" type="spase:AssociationType" minOccurs="1" maxOccurs="1"/>
    <xsd:element name="Note" type="spase:Note" minOccurs="0" maxOccurs="1"/>
  </xsd:sequence>
</xsd:complexType>
```

**Schema location**

file:C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

## Complex Type `spase:AccessInformation`

**Namespace**  
http://www.spase-group.org/data/schema

**Annotations**  
Attributes of the resource which pertain to how to accessing the resource, availability and storage format.
**Diagram**

Used by

- `spase:Catalog/spase:AccessInformation`
- `spase:DisplayData/spase:AccessInformation`
- `spase:Document/spase:AccessInformation`
- `spase:NumericalData/spase:AccessInformation`

Model

- `spase:RepositoryID`
- `spase:Availability{0,1}`
- `spase:AccessRights{0,1}`
- `spase:AccessURL+`
- `spase:Format`
- `spase:Encoding{0,1}`
- `spase:DataExtent{0,1}`
- `spase:Acknowledgement{0,1}`

Children

- `spase:AccessRights`
- `spase:AccessURL`
- `spase:Acknowledgement`
- `spase:Availability`
- `spase:DataExtent`
- `spase:Encoding`
- `spase:Format`
- `spase:RepositoryID`

Source

```xml
<xsd:complexType name="AccessInformation">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Attributes of the resource which pertain to how to accessing
the resource, availability and storage format.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="RepositoryID" type="spase:RepositoryID" minOccurs="1" maxOccurs="1"/>
    <xsd:element name="Availability" type="spase:Availability" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="AccessRights" type="spase:AccessRights" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="AccessURL" type="spase:AccessURL" minOccurs="1" maxOccurs="unbounded"/>
    <xsd:element name="Format" type="spase:Format" minOccurs="1" maxOccurs="1"/>
    <xsd:element name="Encoding" type="spase:Encoding" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="DataExtent" type="spase:DataExtent" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="Acknowledgement" type="spase:Acknowledgement" minOccurs="0" maxOccurs="1"/>
  </xsd:sequence>
</xsd:complexType>
```

**Complex Type spase:AccessURL**

Namespace

http://www.spase-group.org/data/schema

Annotations

Attributes of the method for accessing a resource including a URL, name and description.

Diagram

Used by

- `spase:AccessInformation/spase:AccessURL`
- `spase:Registry/spase:AccessURL`
- `spase:Repository/spase:AccessURL`
- `spase:AccessURL`
- `spase:Service/spase:AccessURL`
Schema documentation for spase-2_2_4.xsd

Model

| spase:Name{0,1} | spase:URL | spase:ProductKey* | spase:Description{0,1} | spase:Language{0,1} |

Children

| spase:Description | spase:Language | spase:Name | spase:ProductKey | spase:URL |

Source

```xml
<xsd:complexType name="AccessURL">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Attributes of the method for accessing a resource including a URL, name and description.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="Name" type="spase:Name" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="URL" type="spase:URL" minOccurs="1" maxOccurs="1"/>
    <xsd:element name="ProductKey" type="spase:ProductKey" minOccurs="0" maxOccurs="unbounded"/>
    <xsd:element name="Description" type="spase:Description" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="Language" type="spase:Language" minOccurs="0" maxOccurs="1"/>
  </xsd:sequence>
</xsd:complexType>
```

Complex Type spase:DataExtent

Namespace

http://www.spase-group.org/data/schema

Annotations

The area of storage in a file system required to store the contents of a resource. The default units for data extent is bytes.

Diagram

```
<complexType name="DataExtent">
  <annotation>
    <documentation xml:lang="en">The area of storage in a file system required to store the contents of a resource. The default units for data extent is bytes.</documentation>
  </annotation>
  <sequence>
    <element name="Quantity" type="spase:Quantity" minOccurs="1" maxOccurs="1"/>
    <element name="Units" type="spase:Units" minOccurs="0" maxOccurs="1"/>
    <element name="Per" type="spase:Per" minOccurs="0" maxOccurs="1"/>
  </sequence>
</complexType>
```

Complex Type spase:TimeSpan

Namespace

http://www.spase-group.org/data/schema

Annotations

The duration of an interval in time.

Diagram

```
<complexType name="TimeSpan">
  <sequence>
    <element name="StartDateTime" type="spase:DateTime"/>
    <element name="StopDateTime" type="spase:StopDateTime"/>
    <element name="RelativeStopDateTime" type="spase:RelativeStopDateTime"/>
  </sequence>
</complexType>
```

Used by Elements

- spase:Annotation/spase:TimeSpan
- spase:Catalog/spase:TimeSpan
- spase:TemporalDescription/spase:TimeSpan
| Model | spase:StartDate , (spase:StopDate | spase:RelativeStopDate) , spase:Note* |
|-------|---------------------------------|
| Children | spase:Note, spase:RelativeStopDate, spase:StartDate, spase:StopDate |

| Source | `<xsd:complexType name="TimeSpan">` `<xsd:annotation> `<xsd:documentation xml:lang="en">The duration of an interval in time.</xsd:documentation>` </xsd:annotation>` `<xsd:sequence>` `<xsd:element name="StartDate" type="spase:StartDate" minOccurs="1" maxOccurs="1"/>` `<xsd:choice minOccurs="1" maxOccurs="1"> `<xsd:element name="StopDate" type="spase:StopDate"/>` `<xsd:element name="RelativeStopDate" type="spase:RelativeStopDate"/>` </xsd:choice>` `<xsd:element name="Note" type="spase:Note" minOccurs="0" maxOccurs="unbounded"/>` </xsd:sequence>` </xsd:complexType>` |

| Schema location | file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd |

**Complex Type spase:Parameter**

| Namespace | http://www.spase-group.org/data/schema |
| Annotations | A container of information regarding a parameter whose values are part of the product. Every product contains or can be related to one or more parameters. |
Diagram

```
<xs:complexType name="Parameter">
  <xs:annotation>
    <xs:documentation xml:lang="en">A container of information regarding a parameter whose values are part of the product. Every product contains or can be related to one or more parameters.</xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element name="Name" type="spase:Name" minOccurs="1" maxOccurs="1"/>
    <xs:element name="Set" type="spase:Set" minOccurs="0" maxOccurs="1"/>
    <xs:element name="ParameterKey" type="spase:ParameterKey" minOccurs="0" maxOccurs="1"/>
    <xs:element name="Description" type="spase:Description" minOccurs="0" maxOccurs="1"/>
    <xs:element name="Caveats" type="spase:Caveats" minOccurs="0" maxOccurs="1"/>
    <xs:element name="Cadence" type="spase:Cadence" minOccurs="0" maxOccurs="1"/>
    <xs:element name="Units" type="spase:Units" minOccurs="0" maxOccurs="1"/>
    <xs:element name="UnitsConversion" type="spase:UnitsConversion" minOccurs="0" maxOccurs="1"/>
    <xs:element name="CoordinateSystem" type="spase:CoordinateSystem" minOccurs="0" maxOccurs="1"/>
    <xs:element name="RenderingHints" type="spase:RenderingHints" minOccurs="0" maxOccurs="1"/>
    <xs:element name="Structure" type="spase:Structure" minOccurs="0" maxOccurs="1"/>
    <xs:element name="ValidMin" type="spase:ValidMin" minOccurs="0" maxOccurs="1"/>
    <xs:element name="ValidMax" type="spase:ValidMax" minOccurs="0" maxOccurs="1"/>
    <xs:element name="FillValue" type="spase:FillValue" minOccurs="0" maxOccurs="1"/>
    <xs:element name="Field" type="spase:Field" minOccurs="0" maxOccurs="1"/>
    <xs:element name="Particle" type="spase:Particle" minOccurs="0" maxOccurs="1"/>
    <xs:element name="Wave" type="spase:Wave" minOccurs="0" maxOccurs="1"/>
    <xs:element name="Mixed" type="spase:Mixed" minOccurs="0" maxOccurs="1"/>
    <xs:element name="Support" type="spase:Support" minOccurs="0" maxOccurs="1"/>
  </xs:sequence>
</xs:complexType>
```

**Used by**
- spase:Catalog/spase:Parameter
- spase:DisplayData/spase:Parameter
- spase:NumericalData/spase:Parameter

**Model**
- spase:Name
- spase:Set
- spase:ParameterKey
- spase:Description
- spase:Caveats
- spase:Cadence
- spase:Units
- spase:UnitsConversion
- spase:CoordinateSystem
- spase:RenderingHints
- spase:Structure
- spase:ValidMin
- spase:ValidMax
- spase:FillValue
- spase:Field
- spase:Particle
- spase:Wave
- spase:Mixed
- spase:Support

**Children**
- spase:Name
- spase:Set
- spase:ParameterKey
- spase:Description
- spase:Caveats
- spase:Cadence
- spase:Units
- spase:UnitsConversion
- spase:Structure
- spase:ValidMin
- spase:ValidMax
- spase:FillValue
- spase:Field
- spase:Particle
- spase:Wave
- spase:Mixed
- spase:Support

**Source**
```
<xsd:complexType name="Parameter">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A container of information regarding a parameter whose values are part of the product. Every product contains or can be related to one or more parameters.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="Name" type="spase:Name" minOccurs="1" maxOccurs="1"/>
    <xsd:element name="Set" type="spase:Set" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="ParameterKey" type="spase:ParameterKey" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="Description" type="spase:Description" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="Caveats" type="spase:Caveats" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="Cadence" type="spase:Cadence" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="Units" type="spase:Units" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="UnitsConversion" type="spase:UnitsConversion" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="CoordinateSystem" type="spase:CoordinateSystem" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="RenderingHints" type="spase:RenderingHints" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="Structure" type="spase:Structure" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="ValidMin" type="spase:ValidMin" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="ValidMax" type="spase:ValidMax" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="FillValue" type="spase:FillValue" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="Field" type="spase:Field" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="Particle" type="spase:Particle" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="Wave" type="spase:Wave" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="Mixed" type="spase:Mixed" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="Support" type="spase:Support" minOccurs="0" maxOccurs="1"/>
  </xsd:sequence>
</xs:complexType>
```
### Complex Type `spase:CoordinateSystem`

**Namespace**  
http://www.spase-group.org/data/schema

**Annotations**  
The specification of the orientation of a set of (typically) orthogonal base axes.

**Diagram**  
![Diagram of CoordinateSystem]

**Used by**  
Element  
- `spase:Parameter/spase:CoordinateSystem`

**Model**  
- `spase:CoordinateRepresentation`  
- `spase:CoordinateSystemName`

**Children**  
- `spase:CoordinateRepresentation`  
- `spase:CoordinateSystemName`

**Source**  
```xml
<xsd:complexType name="CoordinateSystem">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The specification of the orientation of a set of (typically) orthogonal base axes.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="CoordinateRepresentation" type="spase:CoordinateRepresentation" minOccurs="1" maxOccurs="1/>
    <xsd:element name="CoordinateSystemName" type="spase:CoordinateSystemName" minOccurs="1" maxOccurs="1"/>
  </xsd:sequence>
</xsd:complexType>
```

**Schema location**  
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### Complex Type `spase:RenderingHints`

**Namespace**  
http://www.spase-group.org/data/schema

**Annotations**  
Attributes to aid in the rendering of parameter.

**Source**  
```xml
<xsd:element name="RenderingHints" type="spase:RenderingHints" minOccurs="0" maxOccurs="unbounded"/>
```

**Schema location**  
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd
Diagram

Used by
Elements  
spase:Element/spase:RenderingHints, spase:Parameter/spase:RenderingHints

Model
spase:DisplayType{0,1}, spase:AxisLabel{0,1}, spase:RenderingAxis{0,1}, spase:Index{0,1}, spase:ValueFormat{0,1}, 
spase:ScaleMin{0,1}, spase:ScaleMax{0,1}, spase:ScaleType{0,1}

Children
spase:AxisLabel, spase:DisplayType, spase:Index, spase:RenderingAxis, spase:ScaleMax, spase:ScaleMin, spase:ScaleType, 
spase:ValueFormat

Source
<xsd:complexType name="RenderingHints">
  <xsd:documentation xml:lang="en">Attributes to aid in the rendering of parameter.</xsd:documentation>
  <xsd:sequence>
    <xsd:element name="DisplayType" type="spase:DisplayType" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="AxisLabel" type="spase:AxisLabel" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="RenderingAxis" type="spase:RenderingAxis" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="Index" type="spase:Index" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="ValueFormat" type="spase:ValueFormat" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="ScaleMin" type="spase:ScaleMin" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="ScaleMax" type="spase:ScaleMax" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="ScaleType" type="spase:ScaleType" minOccurs="0" maxOccurs="1"/>
  </xsd:sequence>
</xsd:complexType>

Schema documentation for spase-2_2_4.xsd

Complex Type spase:Structure

Namespace  
http://www.spase-group.org/data/schema

Annotations
The organization and relationship of individual values within a quantity.

Diagram

Used by
Element  
spase:Parameter/spase:Structure

Model
spase:Size, spase:Description{0,1}, spase:Element*

Children
spase:Description, spase:Element, spase:Size

Source
<xsd:complexType name="Structure">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The organization and relationship of individual values within a quantity.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
  </xsd:sequence>
Complex Type **spase:Element**

**Namespace**
http://www.spase-group.org/data/schema

**Annotations**
A component or individual unit of a multiple value quantity such as an array or vector.

**Diagram**

```
Element
  +--- Type spase:Name
  |     +--- Qualifier
  |          +--- Index
  |          +--- ParameterKey
  |            +--- Units
  |            +--- UnitsConversion
  |               +--- ValidMin
  |               +--- ValidMax
  |               +--- FillValue
  |               +--- RenderingHints
  +--- Type spase:Qualifier
```

**Used by**
Element
spase:Structure/spase:Element

**Model**
spase:Name , spase:Qualifier* , spase:Index , spase:ParameterKey{0,1} , spase:Units{0,1} , spase:UnitsConversion{0,1} ,
spase:ValidMin{0,1} , spase:ValidMax{0,1} , spase:FillValue{0,1} , spase:RenderingHints{0,1}

**Children**
spase:FillValue , spase:Index , spase:Name , spase:ParameterKey , spase:Qualifier , spase:RenderingHints , spase:Units,
spase:UnitsConversion , spase:ValidMax , spase:ValidMin

**Source**

```
<xsd:complexType name="Element">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A component or individual unit of a multiple value quantity such as an array or vector.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="Name" type="spase:Name" minOccurs="1" maxOccurs="1"/>
    <xsd:element name="Qualifier" type="spase:Qualifier" minOccurs="0" maxOccurs="unbounded"/>
    <xsd:element name="Index" type="spase:Index" minOccurs="1" maxOccurs="1"/>
    <xsd:element name="ParameterKey" type="spase:ParameterKey" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="Units" type="spase:Units" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="UnitsConversion" type="spase:UnitsConversion" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="ValidMin" type="spase:ValidMin" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="ValidMax" type="spase:ValidMax" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="FillValue" type="spase:FillValue" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="RenderingHints" type="spase:RenderingHints" minOccurs="0" maxOccurs="1"/>
  </xsd:sequence>
</xsd:complexType>
```
Annotations
The space around a radiating body within which its electromagnetic attributes can exert force on another similar body that is not in direct contact.

Diagram

Used by
Element
spase:Parameter/spase:Field

Model
spase:Qualifier*, spase:FieldQuantity, spase:FrequencyRange{0,1}

Children
spase:FieldQuantity, spase:FrequencyRange, spase:Qualifier

Source
<xsd:complexType name="Field">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The space around a radiating body within which its electromagnetic attributes can exert force on another similar body that is not in direct contact.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="Qualifier" type="spase:Qualifier" minOccurs="0" maxOccurs="unbounded" />
    <xsd:element name="FieldQuantity" type="spase:FieldQuantity" minOccurs="1" maxOccurs="1" />
    <xsd:element name="FrequencyRange" type="spase:FrequencyRange" minOccurs="0" maxOccurs="1" />
  </xsd:sequence>
</xsd:complexType>

Complex Type spase:FrequencyRange

Namespace
http://www.spase-group.org/data/schema

Annotations
The range of possible values for the observed frequency.

Diagram

Used by
Elements

Model
spase:SpectralRange{0,1}, spase:Low, spase:High, spase:Units, spase:Bin*

Children
spase:Bin, spase:High, spase:Low, spase:SpectralRange, spase:Units

Source
<xsd:complexType name="FrequencyRange">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The range of possible values for the observed frequency.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="SpectralRange" type="spase:SpectralRange" minOccurs="0" maxOccurs="1" />
    <xsd:element name="Low" type="spase:Low" minOccurs="1" maxOccurs="1" />
    <xsd:element name="High" type="spase:High" minOccurs="1" maxOccurs="1" />
    <xsd:element name="Units" type="spase:Units" minOccurs="1" maxOccurs="1" />
    <xsd:element name="Bin" type="spase:Bin" minOccurs="0" maxOccurs="unbounded" />
  </xsd:sequence>
</xsd:complexType>
Complex Type `spase:Bin`

Namespace | http://www.spase-group.org/data/schema
Annotations | A grouping of observations according to a band or window of a common attribute.
Diagram | ![Diagram of spase:Bin]
Used by | Elements
Model | `spase:BandName{0,1}`, `spase:Low`, `spase:High`
Children | `spase:BandName`, `spase:High`, `spase:Low`

Source | `<xsd:complexType name="Bin">`  
| `<xsd:annotation>`  
| `<xsd:documentation xml:lang="en">A grouping of observations according to a band or window of a common attribute.</xsd:documentation>`  
| `<xsd:annotation>`  
| `<xsd:sequence>`  
| `<xsd:element name="BandName" type="spase:BandName" minOccurs="0" maxOccurs="1"/>`  
| `<xsd:element name="Low" type="spase:Low" minOccurs="1" maxOccurs="1"/>`  
| `<xsd:element name="High" type="spase:High" minOccurs="1" maxOccurs="1"/>`  
| `</xsd:sequence>`  
| `</xsd:complexType>`

Complex Type `spase:Particle`

Namespace | http://www.spase-group.org/data/schema
Annotations | A description of the types of particles observed in the measurement. This includes both direct observations and inferred observations.
Diagram | ![Diagram of spase:Particle]
Used by | Element
| `spase:Parameter/spase:Particle`
Model | `spase:ParticleType+`, `spase:Qualifier*`, `spase:ParticleQuantity`, `spase:AtomicNumber+`, `spase:EnergyRange{0,1}`, `spase:AzimuthalAngleRange{0,1}`, `spase:PolarAngleRange{0,1}`

Source | `<xsd:complexType name="Particle">`  
| `<xsd:annotation>`  
| `<xsd:documentation xml:lang="en">A description of the types of particles observed in the measurement. This includes both direct observations and inferred observations.</xsd:documentation>`
Complex Type `spase:EnergyRange`

Namespace http://www.spase-group.org/data/schema

Annotations The minimum and maximum energy values of the particles represented by a given "physical parameter" description.

Diagram


Model `spase:Low`, `spase:High`, `spase:Units`, `spase:Bin*`

Children `spase:Bin`, `spase:High`, `spase:Low`, `spase:Units`

Source

```
<xsd:complexType name="EnergyRange">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The minimum and maximum energy values of the particles represented by a given "physical parameter" description.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="Low" type="spase:Low" minOccurs="1" maxOccurs="1"/>
    <xsd:element name="High" type="spase:High" minOccurs="1" maxOccurs="1"/>
    <xsd:element name="Units" type="spase:Units" minOccurs="1" maxOccurs="1"/>
    <xsd:element name="Bin" type="spase:Bin" minOccurs="0" maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>
```

Complex Type `spase:AzimuthalAngleRange`

Namespace http://www.spase-group.org/data/schema

Annotations The range of possible azimuthal angles for a group of energy observations. Default units are degrees.

Diagram

Used by: Element `spase:Particle/spase:AzimuthalAngleRange`
Complex Type `spase:PolarAngleRange`

**Namespace**
http://www.spase-group.org/data/schema

**Annotations**
The range of possible polar angles for a group of energy observations. Defaults units are degrees.

**Diagram**

**Used by**
Element `spase:Particle/spase:PolarAngleRange`

**Model**
`spase:Low , spase:High , spase:Units , spase:Bin*`

**Children**
`spase:Bin , spase:High , spase:Low , spase:Units`

**Source**
```xml
<xsd:complexType name="PolarAngleRange">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The range of possible polar angles for a group of energy observations. Defaults units are degrees.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="Low" type="spase:Low" minOccurs="1" maxOccurs="1"/>
    <xsd:element name="High" type="spase:High" minOccurs="1" maxOccurs="1"/>
    <xsd:element name="Units" type="spase:Units" minOccurs="1" maxOccurs="1"/>
    <xsd:element name="Bin" type="spase:Bin" minOccurs="0" maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>
```

**Schema location**
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

Complex Type `spase:Wave`

**Namespace**
http://www.spase-group.org/data/schema

**Annotations**
Periodic or quasi-periodic (AC) variations of physical quantities in time and space, capable of propagating or being trapped within particular regimes.
Diagram

Used by  Element  spase:Parameter/spase:Wave
Model  spase:WaveType , spase:Qualifier* , spase:WaveQuantity , spase:EnergyRange{0,1} , spase:FrequencyRange{0,1} , spase:WavelengthRange{0,1}

Source  <xsd:complexType name="Wave">
  <xsd:annotation>
    <xsd:documentation xml:lang="en"> Periodic or quasi-periodic (AC) variations of physical quantities in time and space, capable of propagating or being trapped within particular regimes. </xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="WaveType" type="spase:WaveType" minOccurs="1" maxOccurs="1"/>
    <xsd:element name="Qualifier" type="spase:Qualifier" minOccurs="0" maxOccurs="unbounded"/>
    <xsd:element name="WaveQuantity" type="spase:WaveQuantity" minOccurs="1" maxOccurs="1"/>
    <xsd:element name="EnergyRange" type="spase:EnergyRange" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="FrequencyRange" type="spase:FrequencyRange" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="WavelengthRange" type="spase:WavelengthRange" minOccurs="0" maxOccurs="1"/>
  </xsd:sequence>
</xsd:complexType>

Schema location  file:/C:/projects/spase/java/model-tools/build/bin/spase-2.2.4.xsd

Complex Type  spase:WavelengthRange

Namespace  http://www.spase-group.org/data/schema
Annotations  The range of possible values for the observed wavelength.

Diagram

Used by  Element  spase:Wave/spase:WavelengthRange
Model  spase:SpectralRange{0,1} , spase:Low , spase:High , spase:Units , spase:Bin*
Children  spase:Bin , spase:High , spase:Low , spase:SpectralRange , spase:Units

Source  <xsd:complexType name="WavelengthRange">
  <xsd:annotation>
    <xsd:documentation xml:lang="en"> The range of possible values for the observed wavelength. </xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="SpectralRange" type="spase:SpectralRange" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="Low" type="spase:Low" minOccurs="1" maxOccurs="1"/>
  </xsd:sequence>
</xsd:complexType>
Complex Type `spase:Mixed`

Namespace: `http://www.spase-group.org/data/schema`

Annotations: A parameter derived from more than one of the type of parameter. For example, plasma beta, the ratio of plasma particle energy density to the energy density of the magnetic field permeating the plasma, is "mixed."

Diagram:

Used by:
- Element `spase:Parameter/spase:Mixed`
- Model `spase:MixedQuantity`, `spase:ParticleType*`, `spase:Qualifier*`
- Children `spase:MixedQuantity`, `spase:ParticleType`, `spase:Qualifier`

Complex Type `spase:Support`

Namespace: `http://www.spase-group.org/data/schema`

Annotations: Information useful in understanding the context of an observation, typically observed or measured coincidentally with a physical observation.

Diagram:

Used by:
- Element `spase:Parameter/spase:Support`
- Model `spase:Qualifier*`, `spase:SupportQuantity`
- Children `spase:Qualifier`, `spase:SupportQuantity`

Source:

```xml
<xsd:complexType name="Mixed">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A parameter derived from more than one of the type of parameter. For example, plasma beta, the ratio of plasma particle energy density to the energy density of the magnetic field permeating the plasma, is "mixed."</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="MixedQuantity" type="spase:MixedQuantity" minOccurs="1" maxOccurs="1"/>
    <xsd:element name="ParticleType" type="spase:ParticleType" minOccurs="0" maxOccurs="unbounded"/>
    <xsd:element name="Qualifier" type="spase:Qualifier" minOccurs="0" maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>
```
### Complex Type `spase:Extension`

**Namespace** | http://www.spase-group.org/data/schema  
---|---
**Annotations**
A container of other metadata which is not part of the SPASE data model. The contents of this element are defined by individual usage. The organization and content are constrained by the implementation. For example, in an XML representation of the SPASE metadata the content must conform to the XML specifications.

**Diagram**
![Diagram of Extension](example.png)

**Used by**

**Model**
ANY element from ANY namespace

**Source**
```xml
<xsd:complexType name="Extension">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A container of other metadata which is not part of the SPASE data model. The contents of this element are defined by individual usage. The organization and content are constrained by the implementation. For example, in an XML representation of the SPASE metadata the content must conform to the XML specifications.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:any minOccurs="0"/>
  </xsd:sequence>
</xsd:complexType>
```

### Complex Type `spase:DisplayData`

**Namespace** | http://www.spase-group.org/data/schema  
---|---
**Annotations**
A graphical representation of data wherein the underlying numeric values are not (readily) accessible for analysis. Examples are line plots and spectrograms. A Display Data resource is a type of "data product" which is a set of data that is uniformly processed and formatted, from one or more instruments, typically spanning the full duration of the observations of the relevant instrument(s). A data product may consist of a collection of granules of successive time spans, but may be a single high-level entity.
Schema documentation for spase-2_2_4.xsd

Diagram

Used by
Element
spase:Spase/spase:DisplayData

Model
spase:ResourceId , spase:ResourceHeader , spase:AccessInformation+ , spase:ProcessingLevel{0,1} ,
spase:ProviderResourceName{0,1} , spase:ProviderProcessingLevel{0,1} , spase:ProviderVersion{0,1} ,
spase:InstrumentID* , spase:MeasurementType+ , spase:TemporalDescription{0,1} , spase:SpectralRange* , spase:DisplayCadence{0,1} ,
spase:ObservedRegion* , spase:Caveats{0,1} , spase:Keyword* , spase:InputResourceID* , spase:Parameter* , spase:Extension*

Children
spase:Keyword, spase:MeasurementType, spase:ObservedRegion, spase:Parameter, spase:ProcessingLevel,
spase:ProviderProcessingLevel, spase:ProviderResourceName, spase:ProviderVersion, spase:ResourceHeader, spase:ResourceId,
spase:SpectralRange, spase:TemporalDescription

Source
<xsd:complexType name="DisplayData">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A graphical representation of data wherein the underlying numeric values are not (readily) accessible for analysis. Examples are line plots and spectrograms. A Display Data resource is a type of "data product" which is a set of data that is uniformly processed and formatted, from one or more instruments, typically spanning the full duration of the observations of the relevant instrument(s). A data product may consist of a collection of granules of successive time spans, but may be a single high-level entity.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="ResourceId" type="spase:ResourceId" minOccurs="1" maxOccurs="1"/>
  </xsd:sequence>
</xsd:complexType>
Complex Type `spase:TemporalDescription`

Namespace `http://www.spase-group.org/data/schema`

Annotations A characterization of the time over which the measurement was taken.

Diagram

Used by `spase:DisplayData/spase:TemporalDescription`, `spase:NumericalData/spase:TemporalDescription`

Model `spase:TimeSpan, spase:Cadence[0,1], spase:Exposure[0,1]`

Children `spase:Cadence, spase:Exposure, spase:TimeSpan`

Source

```
<xs:complexType name="TemporalDescription"
    xmlns="http://www.spase-group.org/data/schema">
  <xs:annotation>
    <xs:documentation xml:lang="en">A characterization of the time over which the measurement was taken.</xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element name="TimeSpan" type="spase:TimeSpan" minOccurs="1" maxOccurs="1"/>
    <xs:element name="Cadence" type="spase:Cadence" minOccurs="0" maxOccurs="1"/>
    <xs:element name="Exposure" type="spase:Exposure" minOccurs="0" maxOccurs="1"/>
  </xs:sequence>
</xs:complexType>
```

Complex Type `spase:NumericalData`

Namespace `http://www.spase-group.org/data/schema`

Annotations Data stored as numerical values in one or more specified formats. A Numerical Data resource is a type of "data product" which is a set of data that is uniformly processed and formatted, from one or more instruments, typically spanning the full duration of the observations of the relevant instrument(s). A data product may consist of Parameters stored in a collection of granules of successive time spans or a single data granule.

184
Data stored as numerical values in one or more specified formats. A Numerical Data resource is a type of "data product" which is a set of data that is uniformly processed and formatted, from one or more instruments, typically spanning the full duration of the observations of the relevant instrument(s). A data product may consist of Parameters stored in a collection of granules of successive time spans or a single data granule.
Complex Type spase:Document

Namespace http://www.spase-group.org/data/schema

Annotations A set of information designed and presented as an individual entity. A document may contain plain or formatted text, in-line graphics, sound, other multimedia data, or hypermedia references. A Document resource is intended for use on digital objects that have no other identifier (e.g., DOI or ISBN).

Diagram

<table>
<thead>
<tr>
<th>Used by</th>
<th>Element</th>
<th>spase:Spase/spase:Document</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children</td>
<td>spase:AccessInformation, spase:DocumentType, spase:InputResourceId, spase:Keyword, spase:MIMETYPE, spase:ResourceId</td>
<td></td>
</tr>
</tbody>
</table>

Source

```xml
<xsd:complexType name="Document">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A set of information designed and presented as an individual entity. A document may contain plain or formatted text, in-line graphics, sound, other multimedia data, or hypermedia references. A Document resource is intended for use on digital objects that have no other identifier (e.g., DOI or ISBN).</xsd:documentation>
  </xsd:annotation>
</xsd:complexType>
```
Complex Type `spase:Granule`

Namespace  
http://www.spase-group.org/data/schema

Annotations  
An accessible portion of another resource.
A Granule may be composed of one or more physical pieces (files) which are considered inseparable. For example, a data storage format that maintains metadata and binary data in separate, but tightly coupled files. Granules should not be used to group files that have simple relationships or which are associated through a parent resource. For example, each file containing a time interval data for a Numerical Data resource would each be considered a Granule. The ParentID of a Granule resource must be a NumericalData resource. The attributes of a Granule supersede the corresponding attributes in the NumericalData resource.

Diagram

Used by  
Element  
`spase:Spase/spase:Granule`

Model
- `spase:ResourceId`
- `spase:ReleaseDate`
- `spase:ExpirationDate[0,1]`
- `spase:ParentID`
- `spase:PriorID*`
- `spase:StartDate`
- `spase:StopDate`
- `spase:Source+

Children
- `spase:ExpirationDate`
- `spase:ParentID`
- `spase:PriorID`
- `spase:ReleaseDate`
- `spase:ResourceId`
- `spase:Source`
- `spase:StartDate`
- `spase:StopDate`

Source

```
<xs:complexType name="Granule">
  <xs:annotation>
    <xs:documentation xml:lang="en"> An accessible portion of another resource. A Granule may be composed of one or more physical pieces (files) which are considered inseparable. For example, a data storage format that maintains metadata and binary data in separate, but tightly coupled files. Granules should not be used to group files that have simple relationships or which are associated through a parent resource. For example, each file containing a time interval data for a Numerical Data resource would each be considered a Granule. The ParentID of a Granule resource must be a NumericalData resource. The attributes of a Granule supersede the corresponding attributes in the NumericalData resource. </xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element name="ResourceId" type="spase:ResourceId" minOccurs="1" maxOccurs="1"/>
    <xs:element name="ReleaseDate" type="spase:ReleaseDate" minOccurs="1" maxOccurs="1"/>
    <xs:element name="ExpirationDate" type="spase:ExpirationDate" minOccurs="0" maxOccurs="1"/>
    <xs:element name="ParentID" type="spase:ParentID" minOccurs="1" maxOccurs="1"/>
    <xs:element name="PriorID" type="spase:PriorID" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element name="StartDate" type="spase:StartDate" minOccurs="1" maxOccurs="1"/>
    <xs:element name="StopDate" type="spase:StopDate" minOccurs="0" maxOccurs="1"/>
    <xs:element name="Source" type="spase:Source" minOccurs="1" maxOccurs="unbounded"/>
  </xs:sequence>
</xs:complexType>
```
Complex Type `spase:Source`

Namespace: `http://www.spase-group.org/data/schema`

Annotations:
The location and attributes of an object.

Diagram:

- **SourceType**
  - Type `spase:SourceType`

- **URL**
  - Type `spase:URL`

- **MirrorURL**
  - Type `spase:MirrorURL`

- **Checksum**
  - Type `spase:Checksum`

- **DataExtent**
  - Type `spase:DataExtent`

Used by:
- Element `spase:Granule/spase:Source`

Model:
- `spase:SourceType`
- `spase:URL`
- `spase:MirrorURL`
- `spase:Checksum{0,1}`
- `spase:DataExtent{0,1}`

Children:
- `spase:Checksum`
- `spase:DataExtent`
- `spase:MirrorURL`
- `spase:SourceType`
- `spase:URL`

Complex Type `spase:Checksum`

Namespace: `http://www.spase-group.org/data/schema`

Annotations:
A computed value that is dependent upon the contents of a digital data object. Primarily used to check whether errors or alterations have occurred during the transmission or storage of a data object.

Diagram:

- **HashValue**
  - Type `spase:HashValue`

- **HashFunction**
  - Type `spase:HashFunction`

Used by:
- Element `spase:Source/spase:Checksum`

Model:
- `spase:HashValue`
- `spase:HashFunction`

Children:
- `spase:HashFunction`
- `spase:HashValue`
Complex Type `spase:Instrument`

<table>
<thead>
<tr>
<th>Schema location</th>
<th>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</th>
</tr>
</thead>
</table>

### Namespace
- http://www.spase-group.org/data/schema

### Annotations
- A device that makes measurements used to characterize a physical phenomenon, or a family of like devices.

### Diagram

#### Element
- `spase:Spase/spase:Instrument`

#### Model

#### Children

### Source
```xml
<xsd:complexType name="Instrument">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A device that makes measurements used to characterize a physical phenomenon, or a family of like devices.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="ResourceID" type="spase:ResourceID" minOccurs="1" maxOccurs="1"/>
    <xsd:element name="ResourceHeader" type="spase:ResourceHeader" minOccurs="1" maxOccurs="1"/>
    <xsd:element name="InstrumentType" type="spase:InstrumentType" minOccurs="1" maxOccurs="unbounded"/>
    <xsd:element name="InvestigationName" type="spase:InvestigationName" minOccurs="1" maxOccurs="unbounded"/>
    <xsd:element name="OperatingSpan" type="spase:OperatingSpan" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="ObservatoryID" type="spase:ObservatoryID" minOccurs="1" maxOccurs="1"/>
    <xsd:element name="Caveats" type="spase:Caveats" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="Extension" type="spase:Extension" minOccurs="0" maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>
```

Complex Type `spase:OperatingSpan`

### Namespace
- http://www.spase-group.org/data/schema

### Annotations
- The interval in time from the first point at which an instrument or spacecraft was producing and sending data until the last such time, ignoring possible gaps.

### Source
```xml
<xsd:complexType name="OperatingSpan">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The interval in time from the first point at which an instrument or spacecraft was producing and sending data until the last such time, ignoring possible gaps.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="StartDate" type="xsd:dateTime" minOccurs="1" maxOccurs="1"/>
    <xsd:element name="EndDate" type="xsd:dateTime" minOccurs="1" maxOccurs="1"/>
  </xsd:sequence>
</xsd:complexType>
```
Complex Type spase:Observatory

Namespace http://www.spase-group.org/data/schema

Annotations
The host (spacecraft, network, facility) for instruments making observations, or a family of closely related hosts.

Diagram

Used by
Element spase:Spase/spase:Observatory

Model
spase:ResourceID, spase:ResourceHeader, spase:ObservatoryGroupID*, spase:Location, spase:OperatingSpan{0,1}, spase:Extension*

Children

Source
<xsd:complexType name="Observatory">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The host (spacecraft, network, facility) for instruments making observations, or a family of closely related hosts.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="ResourceID" type="spase:ResourceID" minOccurs="1" maxOccurs="1"/>
    <xsd:element name="ResourceHeader" type="spase:ResourceHeader" minOccurs="1" maxOccurs="1"/>
    <xsd:element name="ObservatoryGroupID" type="spase:ObservatoryGroupID" minOccurs="0" maxOccurs="unbounded"/>
    <xsd:element name="Location" type="spase:Location" minOccurs="1" maxOccurs="1"/>
    <xsd:element name="OperatingSpan" type="spase:OperatingSpan" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="Extension" type="spase:Extension" minOccurs="0" maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>
Complex Type `spase:Location`

Namespace http://www.spase-group.org/data/schema

Annotations A position in space definable by a regional referencing system and geographic coordinates.

Diagram

Used by Element `spase:Observatory/spase:Location`

Model `spase:ObservatoryRegion+`, `spase:CoordinateSystemName{0,1}`, `spase:Latitude{0,1}`, `spase:Longitude{0,1}`, `spase:Elevation{0,1}`

Children `spase:CoordinateSystemName`, `spase:Elevation`, `spase:Latitude`, `spase:Longitude`, `spase:ObservatoryRegion`

Source

```xml
<xsd:complexType name="Location">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A position in space definable by a regional referencing system and geographic coordinates.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="ObservatoryRegion" type="spase:Region" minOccurs="1" maxOccurs="unbounded"/>
    <xsd:element name="CoordinateSystemName" type="spase:CoordinateSystemName" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="Latitude" type="spase:Latitude" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="Longitude" type="spase:Longitude" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="Elevation" type="spase:Elevation" minOccurs="0" maxOccurs="1"/>
  </xsd:sequence>
</xsd:complexType>
```

Complex Type `spase:Person`

Namespace http://www.spase-group.org/data/schema

Annotations An individual human being.
Complex Type `spase:Registry`

**Namespace**
http://www.spase-group.org/data/schema

**Annotations**
A location or facility where resources are catalogued.

---

**Diagram**

- **Registry**
  - **ResourceID**
    - **ResourceID**
  - **ResourceHeader**
    - **ResourceID**
  - **AccessURL**
    - **AccessURL**
  - **Extension**
    - **Extension**
### Complex Type `spase:Repository`  

**Namespace**  
http://www.spase-group.org/data/schema  

**Annotations**  
A location or facility where resources are stored.

**Diagram**

![Diagram of Repository]

**Used by**  
Element `spase:Spase/spase:Repository`

**Model**  
`spase:ResourceID`, `spase:ResourceHeader`, `spase:AccessURL`, `spase:Extension*`

**Children**  

**Source**

```xml
<xsd:complexType name="Repository">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A location or facility where resources are stored.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="ResourceID" type="spase:ResourceID" minOccurs="1" maxOccurs="1"/>
    <xsd:element name="ResourceHeader" type="spase:ResourceHeader" minOccurs="1" maxOccurs="1"/>
    <xsd:element name="AccessURL" type="spase:AccessURL" minOccurs="1" maxOccurs="1"/>
    <xsd:element name="Extension" type="spase:Extension" minOccurs="0" maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>
```

**Schema location**

file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### Complex Type `spase:Service`  

**Namespace**  
http://www.spase-group.org/data/schema  

**Annotations**  
A location or facility that can perform a well defined task.

**Diagram**

![Diagram of Service]

**Used by**  
Element `spase:Spase/spase:Service`

**Model**  
`spase:ResourceID`, `spase:ResourceHeader`, `spase:AccessURL`, `spase:Extension*`

**Children**  

**Source**

```xml
<xsd:complexType name="Service">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A location or facility that can perform a well defined task.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="ResourceID" type="spase:ResourceID" minOccurs="1" maxOccurs="1"/>
    <xsd:element name="ResourceHeader" type="spase:ResourceHeader" minOccurs="1" maxOccurs="1"/>
    <xsd:element name="AccessURL" type="spase:AccessURL" minOccurs="1" maxOccurs="1"/>
    <xsd:element name="Extension" type="spase:Extension" minOccurs="0" maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>
```

**Schema location**

file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd
### Complex Type spase:Annotation

**Namespace**
http://www.spase-group.org/data/schema

**Annotations**
Information which is explanatory or descriptive which is associated with another resource.

**Diagram**

```
<complexType name="Annotation">
  <annotation>
    <documentation xml:lang="en">Information which is explanatory or descriptive which is associated with another resource.</documentation>
  </annotation>
  <sequence>
    <element name="ResourceID" type="spase:ResourceID" minOccurs="1" maxOccurs="1"/>
    <element name="ResourceHeader" type="spase:ResourceHeader" minOccurs="1" maxOccurs="1"/>
    <element name="ImageURL" type="spase:ImageURL" minOccurs="0" maxOccurs="1"/>
    <element name="AnnotationType" type="spase:AnnotationType" minOccurs="1" maxOccurs="1"/>
    <element name="PhenomenonType" type="spase:PhenomenonType" minOccurs="0" maxOccurs="1"?
    <element name="ClassificationMethod" type="spase:ClassificationMethod" minOccurs="0" maxOccurs="1"?
    <element name="ConfidenceRating" type="spase:ConfidenceRating" minOccurs="0" maxOccurs="1"?
    <element name="Presence" type="spase:Presence" minOccurs="0" maxOccurs="1"?
    <element name="ObservationExtent" type="spase:ObservationExtent" minOccurs="0" maxOccurs="1"?
    <element name="Extension" type="spase:Extension" minOccurs="0" maxOccurs="unbounded"/>
  </sequence>
</complexType>
```
Schema documentation for spase-2_2_4.xsd

Complex Type spase:ObservationExtent

Namespace http://www.spase-group.org/data/schema
Annotations The spatial area encompassed by an observation.

Diagram

Used by Element spase:Annotation/spase:ObservationExtent
Model spase:ObservedRegion{0,1}, spase:StartLocation, spase:StopLocation, spase:Note*
Children spase:Note, spase:ObservedRegion, spase:StartLocation, spase:StopLocation

Source

Complex Type spase:typeValue

Namespace http://www.spase-group.org/data/schema
Annotations

Diagram

Type extension of xsd:double
Attributes

QName xsd:string
Type Units
Use optional

Annotation

A description of the standardized measurement increments in which a value is specified. The description is represented as a mathematical phrase. Units should be represented by widely accepted representation. For example, units should conform to the International System of Units (SI) which is maintained by BIPM (Bureau International des Poids et Mesures) [see <http://www.bipm.fr/>].
<table>
<thead>
<tr>
<th>QName</th>
<th>Type</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>appropriate or use tokens like &quot;Re&quot; to represent units of the Radius of the Earth. Within a phrase the circumflex (^) is used to indicate a power, a star (*) is used to indicate multiplication and a slash (/) division. When symbols are not separated by a mathematical operator, multiplication is assumed. Symbols for base units can be found at: <a href="http://www.bipm.fr/en/si/si_brochure/chapter2/2-1/#symbols">http://www.bipm.fr/en/si/si_brochure/chapter2/2-1/#symbols</a> and those for common derived units can be found at: <a href="http://www.bipm.fr/en/si/derived_units/2-2-2.html">http://www.bipm.fr/en/si/derived_units/2-2-2.html</a> &lt;/xsd:documentation&gt;</td>
<td>xsd:string</td>
<td>optional</td>
</tr>
</tbody>
</table>

UnitsConversion

The multiplicative factor for converting a unit into International System of Units (SI) units. The factor is expressed in the form "number > x", where "number" is a numerical value and "x" is the appropriate SI units. The basic SI units are Enumerated: m (meter), N (newton), kg (kilogram), Pa (pascal), s (second), Hz (hertz), A (ampere), V (volt), K (kelvin), W (watt), rad (radian), J (joule), sr (steradian), C (coulomb), T (tesla), ohm (ohm), mho (mho or seimens), H (henry), and F (farad). Two useful units which are not SI units are: degree (angle), and unitless (no units). An example is: "1.0E-9>T" which converts the units, presumable nT, to Tesla. Another example is: "1.0e+3>m/s" which converts a velocity expressed in kilometers per second to meters per second. </xsd:documentation>

Source

A description of the standardized measurement increments in which a value is specified. The description is represented as a mathematical phrase. Units should be represented by widely accepted representation. For example, units should conform to the International System of Units (SI) which is maintained by BIPM (Bureau International des Poids et Mesures see <http://www.bipm.fr/> ) when appropriate or use tokens like "Re" to represent units of the Radius of the Earth. Within a phrase the circumflex (^) is used to indicate multiplication and a slash (/) division. When symbols are not separated by a mathematical operator, multiplication is assumed. Symbols for base units can be found at: <http://www.bipm.fr/en/si/si_brochure/chapter2/2-1/#symbols> and those for common derived units can be found at: <http://www.bipm.fr/en/si/derived_units/2-2-2.html> </xsd:documentation>

Schema location

file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd
**Complex Type spase:typeBoundary**

Namespace: http://www.spase-group.org/data/schema

Annotations

Diagram

Model

Source

```xml
<xs:complexType name="typeBoundary">
  <xs:annotation>
    <xs:documentation xml:lang="en"> </xs:documentation>
  </xs:annotation>
  <xs:sequence>
    </xs:sequence>
</xs:complexType>
```

Schema location: file:C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

**Simple Type(s)**

**Simple Type spase:Version**

Namespace: http://www.spase-group.org/data/schema

Annotations: Version number.

Diagram

Type: restriction of xsd:string

Facets: enumeration 2.2.4

Used by: Element spase:Spase/spase:Version

Source

```xml
<xs:simpleType name="Version">
  <xs:annotation>
    <xs:documentation xml:lang="en">Version number.</xs:documentation>
  </xs:annotation>
  <xs:restriction base="xsd:string">
    <xs:enumeration value="2.2.4"/>
  </xs:restriction>
</xs:simpleType>
```

Schema location: file:C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

**Simple Type spase:ResourceID**

Namespace: http://www.spase-group.org/data/schema

Annotations: A Resource ID is a URI that has the form "scheme://authority/path" where "scheme" is "spase" for those resources administered through the SPASE framework, "authority" is the unique identifier for the resource provider registered within the SPASE framework and "path" is the unique identifier of the resource within the context of the "authority". The resource ID must be unique within the SPASE framework.

Diagram

Type: xsd:string


Source

```xml
<xs:simpleType name="ResourceID">
  <xs:annotation>
    <xs:documentation xml:lang="en">A Resource ID is a URI that has the form "scheme://authority/path" where "scheme" is "spase" for those resources administered through the SPASE framework, "authority" is the unique identifier for the resource provider registered within the SPASE framework and "path" is the unique identifier of the resource within the context of the "authority". The resource ID must be unique within the SPASE framework.</xs:documentation>
  </xs:annotation>
</xs:simpleType>
```
Simple Type `spase:ResourceName`

Namespace: http://www.spase-group.org/data/schema

Annotations: A short textual description of a resource which may be useful when read by a person.

Diagram: [Diagram of `spase:ResourceName`]

Type: `xsd:string`

Used by:
- Element: `spase:ResourceHeader/spase:ResourceName`

Source:

```xml
<xsd:simpleType name="ResourceName">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A short textual description of a resource which may be useful when read by a person.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string"/>
</xsd:simpleType>
```

Schema location: file:///C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Simple Type `spase:AlternateName`

Namespace: http://www.spase-group.org/data/schema

Annotations: An alternative or shortened name used to refer to a resource. This includes acronyms, expanded names or a synonym for a resource.

Diagram: [Diagram of `spase:AlternateName`]

Type: `xsd:string`

Used by:
- Element: `spase:ResourceHeader/spase:AlternateName`

Source:

```xml
<xsd:simpleType name="AlternateName">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">An alternative or shortened name used to refer to a resource. This includes acronyms, expanded names or a synonym for a resource.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string"/>
</xsd:simpleType>
```

Schema location: file:///C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Simple Type `spase:ReleaseDate`

Namespace: http://www.spase-group.org/data/schema

Annotations: The date and time when a resource is made available. The availability of a resource coincides with the release of a resource description. If the Release Date is specified as a future date then it indicates that resource should not be made available until that time. However, this is only advisory and in practice the Release Date should be the actual date the resource description was published.

Diagram: [Diagram of `spase:ReleaseDate`]

Type: `xsd:dateTime`

Used by:
- Elements: `spase:Granule/spase:ReleaseDate`, `spase:Person/spase:ReleaseDate`, `spase:ResourceHeader/spase:ReleaseDate`

Source:

```xml
<xsd:simpleType name="ReleaseDate">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The date and time when a resource is made available. The availability of a resource coincides with the release of a resource description. If the Release Date is specified as a future date then it indicates that resource should not be made available until that time. However, this is only advisory and in practice the Release Date should be the actual date the resource description was published.</xsd:documentation>
  </xsd:annotation>
</xsd:simpleType>
```

Schema location: file:///C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd
until that time. However, this is only advisory and in practice the Release Date should be the actual date the resource description was published.</xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:dateTime"/>
</xsd:simpleType>

Simple Type spase:ExpirationDate

Namespace http://www.spase-group.org/data/schema

Annotations The date and time when a resource is no longer available. If the Expiration Date is specified then it indicates that resource should not be made available after that time. However, this is only advisory and in practice a resource description should be unpublished to eliminate access to a resource.

Diagram

Type xsd:dateTime

Used by Elements spase:Granule/spase:ExpirationDate, spase:ResourceHeader/spase:ExpirationDate

Source

Simple Type spase:Description

Namespace http://www.spase-group.org/data/schema

Annotations A narrative explanation with detail appropriate for the item it describes. For example a description of data resource should include discussions of the main quantities in the resource, possible uses and search terms. A description should also include whether any corrections (i.e., geometry, inertial) have been applied to the resource.

Diagram

Type xsd:string


Source

Simple Type spase:Acknowledgement

Namespace http://www.spase-group.org/data/schema

Annotations The individual, group or organization which should be acknowledged when the data is used in or contributes to a presentation or publication.
Schema documentation for spase-2_2_4.xsd

Diagram

| Acknowledgement | string |

Type xsd:string


Source

```xml
<xsd:simpleType name="Acknowledgement">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The individual, group or organization which should be acknowledged when the data is used in or contributes to a presentation or publication.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string"/>
</xsd:simpleType>
```

Schema location file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Simple Type spase:PersonID

Namespace http://www.spase-group.org/data/schema

Annotations The identifier assigned to a Person description.

Diagram

| Person | string |

Type xsd:string

Used by Element spase:Contact/spase:PersonID

Source

```xml
<xsd:simpleType name="PersonID">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The identifier assigned to a Person description.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string"/>
</xsd:simpleType>
```

Schema location file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Simple Type spase:Role

Namespace http://www.spase-group.org/data/schema

Annotations Identifiers for the assigned or assumed function or position of an individual.

Diagram

| Role | string |

Type restriction of xsd:string

Facets

| enumeration | ArchiveSpecialist | An individual who is an expert on a collection of resources and may also be knowledgeable of the phenomenon and related physics represented by the resources. This includes librarians, curators, archive scientists and other experts. |
| enumeration | CoInvestigator |
| enumeration | Contributor | An entity responsible for making contributions to the content of the resource. |
| enumeration | DataProducer | An individual who generated the resource and is familiar with its provenance. |
| enumeration | DeputyPI |
| enumeration | FormerPI |
| enumeration | GeneralContact | An individual who can provide information on a range of subjects or who can direct you to a domain expert. |
| enumeration | MetadataContact | An individual who can affect a change in the metadata describing a resource. |
| enumeration | PrincipalInvestigator | An individual who is the administrative and scientific lead for an investigation. |
| enumeration | ProjectScientist | An individual who is an expert in the phenomenon and related physics explored by the project. A project scientist may also have a managerial role within the project. |
| enumeration | Publisher | An individual, organization, institution or... |
government department responsible for the production and dissemination of a document.

| enumeration  | Scientist | An individual who is an expert in the phenomenon and related physics represented by the resource. |
| enumeration  | TeamLeader | An individual who is the designated leader of an investigation. |
| enumeration  | TeamMember | An individual who is a major participant in an investigation. |
| enumeration  | TechnicalContact | An individual who can provide specific information with regard to the resource or supporting software. |

Used by Element: `spase:Contact/spase:Role`

```xml
<xs:complexType name="Role">
  <xs:annotation>
    <xs:documentation xml:lang="en">Identifiers for the assigned or assumed function or position of an individual.</xs:documentation>
  </xs:annotation>
  <xs:restriction base="xsd:string">
    <xs:enumeration value="ArchiveSpecialist">
      <xs:annotation>
        <xs:documentation xml:lang="en">An individual who is an expert on a collection of resources and may also be knowledgeable of the phenomenon and related physics represented by the resources. This includes librarians, curators, archive scientists and other experts.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="CoInvestigator">
      <xs:annotation>
        <xs:documentation xml:lang="en"></xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="Contributor">
      <xs:annotation>
        <xs:documentation xml:lang="en">An entity responsible for making contributions to the content of the resource.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="DataProducer">
      <xs:annotation>
        <xs:documentation xml:lang="en">An individual who generated the resource and is familiar with its provenance.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="DeputyPI">
      <xs:annotation>
        <xs:documentation xml:lang="en"></xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="FormerPI">
      <xs:annotation>
        <xs:documentation xml:lang="en"></xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="GeneralContact">
      <xs:annotation>
        <xs:documentation xml:lang="en">An individual who can provide information on a range of subjects or who can direct you to a domain expert.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="MetadataContact">
      <xs:annotation>
        <xs:documentation xml:lang="en">An individual who can affect a change in the metadata describing a resource.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="PrincipalInvestigator">
      <xs:annotation>
        <xs:documentation xml:lang="en">An individual who is the administrative and scientific lead for an investigation.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="ProjectScientist">
      <xs:annotation>
        <xs:documentation xml:lang="en">An individual who is an expert in the phenomenon and related physics explored by the project. A project scientist may also have a managerial role within the project.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
  </xs:restriction>
</xs:complexType>
```
<xsd:annotation>
</xsd:annotation>
<xsd:enumeration value="Publisher">
<xsd:annotation>
<xsd:documentation xml:lang="en">An individual, organization, institution or government department responsible for the production and dissemination of a document.</xsd:documentation>
</xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Scientist">
<xsd:annotation>
<xsd:documentation xml:lang="en">An individual who is an expert in the phenomenon and related physics represented by the resource.</xsd:documentation>
</xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="TeamLeader">
<xsd:annotation>
<xsd:documentation xml:lang="en">An individual who is the designated leader of an investigation.</xsd:documentation>
</xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="TeamMember">
<xsd:annotation>
<xsd:documentation xml:lang="en">An individual who is a major participant in an investigation.</xsd:documentation>
</xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="TechnicalContact">
<xsd:annotation>
<xsd:documentation xml:lang="en">An individual who can provide specific information with regard to the resource or supporting software.</xsd:documentation>
</xsd:annotation>
</xsd:enumeration>
</xsd:restriction>
</xsd:simpleType>
### Simple Type `spase:URL`

**Namespace** http://www.spase-group.org/data/schema  

**Annotations** The Uniform Resource Locator (URL) is the global address of documents and other resources on the World Wide Web. The first part of the address indicates what protocol to use, and the second part specifies the IP address or the domain name where the resource is located followed by the pathname of the resource. A URL is specified in the form `protocol://server.domain.name:port/pathname`. Example protocols are HTTP or FTP, server domain name is the Internet name.

**Diagram**  

**Type** xsd:string  


**Source**  

```xml  
<xsd:simpleType name="URL">  
  <xsd:annotation>  
    <xsd:documentation xml:lang="en">Uniform Resource Locator (URL) is the global address of documents and other resources on the World Wide Web. The first part of the address indicates what protocol to use, and the second part specifies the IP address or the domain name where the resource is located followed by the pathname of the resource. A URL is specified in the form `protocol://server.domain.name:port/pathname`. Example protocols are HTTP or FTP, server domain name is the Internet name.</xsd:documentation>  
  </xsd:annotation>  
  <xsd:restriction base="xsd:string"/>  
</xsd:simpleType>  
```

**Schema location** file://C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### Simple Type `spase:Language`

**Namespace** http://www.spase-group.org/data/schema  

**Annotations** The two character indicator of language selected from the ISO 630-1 codes for the representation of names of languages.

**Diagram**  

**Type** xsd:string  


**Source**  

```xml  
<xsd:simpleType name="Language">  
  <xsd:annotation>  
    <xsd:documentation xml:lang="en">The two character indicator of language selected from the ISO 630-1 codes for the representation of names of languages.</xsd:documentation>  
  </xsd:annotation>  
  <xsd:restriction base="xsd:string"/>  
</xsd:simpleType>  
```

**Schema location** file://C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### Simple Type `spase:AssociationID`

**Namespace** http://www.spase-group.org/data/schema  

**Annotations** The resource identifier for a resource with which this resource is closely associated.

**Diagram**  

**Type** xsd:string  

**Used by** Element `spase:Association/spase:AssociationID`

**Source**  

```xml  
<xsd:simpleType name="AssociationID">  
  <xsd:annotation>  
    <xsd:documentation xml:lang="en">The resource identifier for a resource with which this resource is closely associated.</xsd:documentation>  
  </xsd:annotation>  
  <xsd:restriction base="xsd:string"/>  
</xsd:simpleType>  
```

**Schema location** file://C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### Simple Type `spase:AssociationType`

**Namespace** http://www.spase-group.org/data/schema  

**Annotations** Identifiers for resource associations.

**Diagram**  

**Type** restriction of xsd:string  

**Facets**  

- **enumeration** `ChildEventOf` A descendant or caused by another resource.  
- **enumeration** `DerivedFrom` A transformed or altered version of a resource

---

203
### Simple Type \texttt{spase:Note}

**Namespace** http://www.spase-group.org/data/schema

**Annotations** Information which is useful or important for the understanding of a value or parameter.

**Diagram**

```
|   | Note |
```

**Type** xsd:string


**Source**

```
<xs:simpleType name="Note">
  <xs:annotation>
    <xs:documentation xml:lang="en">Information which is useful or important for the understanding of a value or parameter.</xs:documentation>
  </xs:annotation>
  <xs:restriction base="xsd:string"/>
</xs:simpleType>
```

**Schema location** file://C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd
### Simple Type `spase:PriorID`

**Namespace** http://www.spase-group.org/data/schema  
**Annotations** The resource identifier for a resource that is superseded or replaced by a resource.

**Diagram**

```
< spase:PriorID />
```

**Type** xsd:string  
**Used by** Elements `spase:Granule/spase:PriorID`, `spase:ResourceHeader/spase:PriorID`

**Source**
```
<xsd:simpleType name="PriorID">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The resource identifier for a resource that is superseded or replaced by a resource.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string"/>
</xsd:simpleType>
```

**Schema location** file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### Simple Type `spase:RepositoryID`

**Namespace** http://www.spase-group.org/data/schema  
**Annotations** The identifier of a Repository resource.

**Diagram**

```
< RepositoryID />
```

**Type** xsd:string  
**Used by** Element `spase:AccessInformation/spase:RepositoryID`

**Source**
```
<xsd:simpleType name="RepositoryID">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The identifier of a Repository resource.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string"/>
</xsd:simpleType>
```

**Schema location** file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### Simple Type `spase:Availability`

**Namespace** http://www.spase-group.org/data/schema  
**Annotations** Identifiers for indicating the method or service which may be used to access the resource.

**Diagram**

```
< Availability />
```

**Type** restriction of xsd:string  
**Facets**
- `enumeration Offline`
  - Not directly accessible electronically. This includes resources which may be moved to an on-line status in response to a given request.
- `enumeration Online`
  - Directly accessible electronically.

**Used by** Element `spase:AccessInformation/spase:Availability`

**Source**
```
<xsd:simpleType name="Availability">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Identifiers for indicating the method or service which may be used to access the resource.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="Offline">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Not directly accessible electronically. This includes resources which may be moved to an on-line status in response to a given request.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Online">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Directly accessible electronically.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
  </xsd:restriction>
</xsd:simpleType>
```
Simple Type `spase:AccessRights`

Namespace: `http://www.spase-group.org/data/schema`

Annotations: Identifiers for permissions granted or denied by the host of a product to allow other users to access and use the resource.

Diagram: `restriction of xsd:string`

Facets: `enumeration` `Open` Access is granted to everyone.

Facets: `enumeration` `Restricted` Access to the product is regulated and requires some form of identification.

Used by: Element `spase:AccessInformation/spase:AccessRights`

Source:
```xml
<xsd:simpleType name="AccessRights">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Identifiers for permissions granted or denied by the host of a product to allow other users to access and use the resource.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="Open">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Access is granted to everyone.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Restricted">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Access to the product is regulated and requires some form of identification.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
  </xsd:restriction>
</xsd:simpleType>
```

Simple Type `spase:ProductKey`

Namespace: `http://www.spase-group.org/data/schema`

Annotations: The key (identifier) of the resource within a Repository. This is a local identifier which can be used to retrieve or locate the resource.

Diagram: `xsd:string`

Type: `xsd:string`

Used by: Element `spase:AccessURL/spase:ProductKey`

Source:
```xml
<xsd:simpleType name="ProductKey">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The key (identifier) of the resource within a Repository. This is a local identifier which can be used to retrieve or locate the resource.</xsd:documentation>
  </xsd:annotation>
</xsd:simpleType>
```

Simple Type `spase:Format`

Namespace: `http://www.spase-group.org/data/schema`

Annotations: Identifiers for data organized according to preset specifications.

Diagram: `restriction of xsd:string`

Type: `restriction of xsd:string`
<table>
<thead>
<tr>
<th>Facets</th>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>enumeration</td>
<td>AVI</td>
<td>Audio Video Interleave (AVI) a digital format for movies that conforms to the Microsoft Windows Resource Interchange File Format (RIFF).</td>
</tr>
<tr>
<td>enumeration</td>
<td>Binary</td>
<td>A direct representation of the bits which may be stored in memory on a computer.</td>
</tr>
<tr>
<td>enumeration</td>
<td>CDF</td>
<td>Common Data Format (CDF). A binary storage format developed at Goddard Space Flight Center (GSFC).</td>
</tr>
<tr>
<td>enumeration</td>
<td>CEF</td>
<td>Cluster Exchange Format (CEF) is a self-documenting ASCII format designed for the exchange of data. There are two versions of CEF which are not totally compatible.</td>
</tr>
<tr>
<td>enumeration</td>
<td>CEF1</td>
<td>Cluster Exchange Format (CEF), version 1, is a self-documenting ASCII format designed for the exchange of data. The metadata contains information compatible with the ISTP recommendations for CDF.</td>
</tr>
<tr>
<td>enumeration</td>
<td>CEF2</td>
<td>Cluster Exchange Format (CEF), version 2, is a self-documenting ASCII format designed for the exchange of data and introduced for Cluster Active Archive. Compared to version 1, the metadata description of vectors and tensors is different.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Excel</td>
<td>A Microsoft spreadsheet format used to hold a variety of data in tables which can include calculations.</td>
</tr>
<tr>
<td>enumeration</td>
<td>FITS</td>
<td>Flexible Image Transport System (FITS) is a digital format primarily designed to store scientific data sets consisting of multi-dimensional arrays (1-D spectra, 2-D images or 3-D data cubes) and 2-dimensional tables containing rows and columns of data.</td>
</tr>
<tr>
<td>enumeration</td>
<td>GIF</td>
<td>Graphic Interchange Format (GIF) first introduced in 1987 by CompuServe. GIF uses LZW compression and images are limited to 256 colours.</td>
</tr>
<tr>
<td>enumeration</td>
<td>HDF</td>
<td>Hierarchical Data Format</td>
</tr>
<tr>
<td>enumeration</td>
<td>HDF4</td>
<td>Hierarchical Data Format, Version 4</td>
</tr>
<tr>
<td>enumeration</td>
<td>HDF5</td>
<td>Hierarchical Data Format, Version 5</td>
</tr>
<tr>
<td>enumeration</td>
<td>HTML</td>
<td>A text file containing structured information represented in the HyperText Mark-up Language (HTML). See <a href="http://www.w3.org/MarkUp/">http://www.w3.org/MarkUp/</a></td>
</tr>
<tr>
<td>enumeration</td>
<td>Hardcopy</td>
<td>A permanent reproduction, or copy in the form of a physical object, of any media suitable for direct use by a person.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Hardcopy.Film</td>
<td>An image recording medium on which usually a &quot;negative&quot; analog image is registered. A &quot;positive&quot; image can be recovered or reproduced from film, which is usually made of flexible materials for ease of storage and transportation.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Hardcopy.Microfiche</td>
<td>A sheet of microfilm on which many pages of material have been photographed; a magnification system is used to read the material.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Hardcopy.Microfilm</td>
<td>Film rolls on which materials are photographed at greatly reduced size; a magnification system is used to read the material.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Hardcopy.Photograph</td>
<td>An image (positive or negative) registered on a piece of photo-sensitive paper.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Hardcopy.PhotographicPlate</td>
<td>A rigid (typically glass) medium that functions like film. Its rigidity is for guarding against image distortion due to medium deformation (caused by heat and humidity). Photographic plates are often used for astronomical photography.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Hardcopy.Print</td>
<td>A sheet of any written or printed material which may include notes or graphics. Multiple printed pages may be bound into a manuscript or book.</td>
</tr>
<tr>
<td>enumeration</td>
<td>IDFS</td>
<td>Instrument Data File Set (IDFS) is a set of</td>
</tr>
</tbody>
</table>
files written in a prescribed format which contain data, timing data, and meta-data. IDFS was developed at Southwest Research Institute (SwRI).

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>IDL</th>
<th>Interactive Data Language (IDL) save set. IDL is a proprietary format.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enumeration</td>
<td>JPEG</td>
<td>A binary format for still images defined by the Joint Photographic Experts Group</td>
</tr>
<tr>
<td>Enumeration</td>
<td>MATLAB_4</td>
<td>MATLAB Workspace save set, version 4. MAT-files are double-precision, binary, MATLAB format files. MATLAB is a proprietary product of The MathWorks.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>MATLAB_6</td>
<td>MATLAB Workspace save set, version 6. MAT-files are double-precision, binary, MATLAB format files. MATLAB is a proprietary product of The MathWorks.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>MATLAB_7</td>
<td>MATLAB Workspace save set, version 7. MAT-files are double-precision, binary, MATLAB format files. Version 7 includes data compression and Unicode encoding. MATLAB is a proprietary product of The MathWorks.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>MPEG</td>
<td>A digital format for movies defined by the Motion Picture Experts Group</td>
</tr>
<tr>
<td>Enumeration</td>
<td>NetCDF</td>
<td>Unidata Program Center's Network Common Data Form (NetCDF). A self-describing portable data format for array-oriented data access. See <a href="http://my.unidata.ucar.edu/content/software/netcdf">http://my.unidata.ucar.edu/content/software/netcdf</a></td>
</tr>
<tr>
<td>Enumeration</td>
<td>PDF</td>
<td>A document expressed in the Portable Document Format (PDF) as defined by Adobe.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>PNG</td>
<td>A digital format for still images. Portable Network Graphics (PNG)</td>
</tr>
<tr>
<td>Enumeration</td>
<td>Postscript</td>
<td>A page description programming language created by Adobe Systems Inc. that is a device-independent industry standard for representing text and graphics.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>QuickTime</td>
<td>A format for digital movies, as defined by Apple Computer. See <a href="http://developer.apple.com/quicktime/">http://developer.apple.com/quicktime/</a></td>
</tr>
<tr>
<td>Enumeration</td>
<td>TIFF</td>
<td>A binary format for still pictures. Tagged Image Format File (TIFF). Originally developed by Aldus and now controlled by Adobe.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>Text</td>
<td>A sequence of characters which may have an imposed structure or organization.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>Text.ASCII</td>
<td>A sequence of characters that adheres to American Standard Code for Information Interchange (ASCII) which is an 7-bit character-coding scheme.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>Text.Unicode</td>
<td>Text in multi-byte Unicode format.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>VOTable</td>
<td>A proposed IVOA standard designed as a flexible storage and exchange format for tabular data.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>XML</td>
<td>eXtensible Mark-up Language (XML). A structured format for representing information. See <a href="http://www.w3.org/XML/">http://www.w3.org/XML/</a></td>
</tr>
</tbody>
</table>

Used by
Element: spase:AccessInformation/spase:Format
Source: `<xsd:simpleType name="Format">`
Identifiers for data organized according to preset specifications.

Audio Video Interleave (AVI) a digital format for movies that conforms to the Microsoft Windows Resource Interchange File Format (RIFF).

A direct representation of the bits which may be stored in memory on a computer.

Common Data Format (CDF), a binary storage format developed at Goddard Space Flight Center (GSFC).

Cluster Exchange Format (CEF) is a self-documenting ASCII format designed for the exchange of data. There are two versions of CEF which are not totally compatible.

Cluster Exchange Format (CEF), version 1, is a self-documenting ASCII format designed for the exchange of data. The metadata contains information compatible with the INPTE recommendations for CDF.

Cluster Exchange Format (CEF), version 2, is a self-documenting ASCII format designed for the exchange of data and introduced for Cluster Active Archive. Compared to version 1, the metadata description of vectors and tensors is different.

A Microsoft spreadsheet format used to hold a variety of data in tables which can include calculations.

Flexible Image Transport System (FITS) is a digital format primarily designed to store scientific data sets consisting of multi-dimensional arrays (1-D spectra, 2-D images or 3-D data cubes) and 2-dimensional tables containing rows and columns of data.

Graphic Interchange Format (GIF) first introduced in 1987 by CompuServe. GIF uses LZW compression and images are limited to 256 colours.
A text file containing structured information represented in the HyperText Mark-up Language (HTML). See <http://www.w3.org/MarkUp/>.

A permanent reproduction, or copy in the form of a physical object, of any media suitable for direct use by a person.

An image recording medium on which usually a "negative" analog image is registered. A "positive" image can be recovered or reproduced from film, which is usually made of flexible materials for ease of storage and transportation.

A sheet of microfilm on which many pages of material have been photographed; a magnification system is used to read the material.

Instrument Data File Set (IDFS) is a set of files written in a prescribed format which contain data, timing data, and meta-data. IDFS was developed at Southwest Research Institute (SwRI).

Interactive Data Language (IDL) save set. IDL is a proprietary format.

A binary format for still images defined by the Joint Photographic Experts Group.

MATLAB Workspace save set, version 4. MAT-files are double-precision, binary, MATLAB format files. MATLAB is a proprietary product of The MathWorks.

MATLAB Workspace save set, version 6. MAT-files are double-precision, binary, MATLAB format files. MATLAB is a proprietary product of The MathWorks.
MATLAB Workspace save set, version 7. MAT-files are double-precision, binary, MATLAB format files. Version 7 includes data compression and Unicode encoding. MATLAB is a proprietary product of The MathWorks.

A digital format for movies defined by the Motion Picture Experts Group.


Unidata Program Center's Network Common Data Form (NetCDF). A self-describing portable data format for array-oriented data access. See <http://my.unidata.ucar.edu/content/software/netcdf>.

A page description programming language created by Adobe Systems Inc. that is a device-independent industry standard for representing text and graphics.


A binary format for still pictures. Tagged Image Format File (TIFF). Originally developed by Aldus and now controlled by Adobe.

A sequence of characters which may have an imposed structure or organization.

A sequence of characters that adheres to American Standard Code for Information Interchange (ASCII) which is an 7-bit character-coding scheme.
<xsd:enumeration value="VOTable">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">A proposed IVOA standard designed as a flexible storage and exchange format for tabular data.</xsd:documentation>
    </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="XML">
    <xsd:annotation>
    </xsd:annotation>
</xsd:enumeration>

</xsd:restriction>
</xsd:simpleType>

Schema location file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Simple Type spase:Encoding

Namespace http://www.spase-group.org/data/schema

Annotations Identifiers for unambiguous rules that establishes the representation of information within a file.

Diagram

Type restriction of xsd:string

Facets

- enumeration ASCII A sequence of characters that adheres to American Standard Code for Information Interchange (ASCII) which is an 8-bit character-coding scheme.
- enumeration Base64 A data encoding scheme whereby binary-encoded data is converted to printable ASCII characters. It is defined as a MIME content transfer encoding for use in Internet e-mail. The only characters used are the upper- and lower-case Roman alphabet characters (A-Z, a-z), the numerals (0-9), and the "+" and "/" symbols, with the "=" symbol as a special suffix (padding) code.
- enumeration None A lack or absence of anything.
- enumeration S3_BUCKET A container of objects that comply with the Amazon Simple Storage Service (S3) specifications. A bucket has a unique, user-assigned key (name). A bucket can contain any number of objects with an aggregate size of 5 gigabytes. A bucket may be accompanied by up to 2 kilobytes of metadata.
- enumeration TAR A file format used to collate collections of files into one larger file, for distribution or archiving, while preserving file system information such as user and group permissions, dates, and directory structures. The format was standardized by POSIX.1-1988 and later POSIX.1-2001.
- enumeration Unicode Text in multi-byte Unicode format.
- enumeration ZIP An open standard for compression which is a variation of the LZW method and was originally used in the PKZIP utility.

Used by Element spase:AccessInformation/spase:Encoding

Source

<xsd:simpleType name="Encoding">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">Identifiers for unambiguous rules that establishes the representation of information within a file.</xsd:documentation>
    </xsd:annotation>
</xsd:restriction base="xsd:string"/>
<xsd:enumeration value="ASCII">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">A sequence of characters that adheres to American Standard Code for Information Interchange (ASCII) which is an 7-bit character-coding scheme.</xsd:documentation>
    </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="BZIP2">
    <xsd:annotation>
    </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Base64">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">A data encoding scheme whereby binary-encoded data is converted to printable ASCII characters. It is defined as a MIME content transfer encoding for use in Internet e-mail. The only characters used are the upper- and lower-case Roman alphabet characters (A-Z, a-z), the numerals (0-9), and the "+" and "/" symbols, with the "=" symbol as a special suffix (padding) code.</xsd:documentation>
    </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="GZIP">
    <xsd:annotation>
    </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="None">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">A lack or absence of anything.</xsd:documentation>
    </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="S3_BUCKET">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">A container of objects that comply with the Amazon Simple Storage Service (S3) specifications. A bucket has a unique, user-assigned key (name). A bucket can contain any number of objects with an aggregate size of 5 gigabytes. A bucket may be accompanied by up to 2 kilobytes of metadata.</xsd:documentation>
    </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="TAR">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">A file format used to collate collections of files into one larger file, for distribution or archiving, while preserving file system information such as user and group permissions, dates, and directory structures. The format was standardized by POSIX.1-1988 and later POSIX.1-2001.</xsd:documentation>
    </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Unicode">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">Text in multi-byte Unicode format.</xsd:documentation>
    </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="ZIP">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">An open standard for compression which is a variation of the LZW method and was originally used in the PKZIP utility.</xsd:documentation>
    </xsd:annotation>
</xsd:enumeration>

</xsd:restriction>
</xsd:simpleType>

Schema documentation for spase-2_2_4.xsd

Simple Type spase:Quantity

Namespace http://www.spase-group.org/data/schema

Annotations A value that describes a characteristic of a system.

Diagram

Type xsd:double

Used by Element spase:DataExtent/spase:Quantity

Source

Schema location file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

213
### Simple Type `spase:Units`

**Namespace**  
http://www.spase-group.org/data/schema

**Annotations**  
A description of the standardized measurement increments in which a value is specified. The description is represented as a mathematical phrase. Units should be represented by widely accepted representation. For example, units should conform to the International System of Units (SI) which is maintained by BIPM (Bureau International des Poids et Mesures) when appropriate or use tokens like "Re" to represent units of the Radius of the Earth. Within a phrase the circumflex (^) is used to indicate a power, a star (*) is used to indicate multiplication and a slash (/) division. When symbols are not separated by a mathematical operator, multiplication is assumed. Symbols for base units can be found at: [http://www.bipm.fr/en/si/si_brochure/chapter2/2-1/#symbols](http://www.bipm.fr/en/si/si_brochure/chapter2/2-1/#symbols) and those for common derived units can be found at: [http://www.bipm.fr/en/si/derived_units/2-2-2.html](http://www.bipm.fr/en/si/derived_units/2-2-2.html)

**Diagram**  
![Diagram](attachment:Units.png)

**Type**  
xsd:string

**Used by**  
Elements  
- spase:AzimuthalAngleRange/spase:Units  
- spase:DataExtent/spase:Units  
- spase:Element/spase:Units  
- spase:EnergyRange/spase:Units  
- spase:FrequencyRange/spase:Units  
- spase:Parameter/spase:Units  
- spase:PolarAngleRange/spase:Units  
- spase:WavelengthRange/spase:Units

**Source**  
- `<xsd:simpleType name="Units">`  
  <xsd:annotation>  
    <xsd:documentation xml:lang="en">A description of the standardized measurement increments in which a value is specified. The description is represented as a mathematical phrase. Units should be represented by widely accepted representation. For example, units should conform to the International System of Units (SI) which is maintained by BIPM (Bureau International des Poids et Mesures) when appropriate or use tokens like "Re" to represent units of the Radius of the Earth. Within a phrase the circumflex (^) is used to indicate a power, a star (*) is used to indicate multiplication and a slash (/) division. When symbols are not separated by a mathematical operator, multiplication is assumed. Symbols for base units can be found at: [http://www.bipm.fr/en/si/si_brochure/chapter2/2-1/#symbols](http://www.bipm.fr/en/si/si_brochure/chapter2/2-1/#symbols) and those for common derived units can be found at: [http://www.bipm.fr/en/si/derived_units/2-2-2.html](http://www.bipm.fr/en/si/derived_units/2-2-2.html)</xsd:documentation>`  
  </xsd:annotation>  
  `<xsd:restriction base="xsd:string"/>

**Schema location**  
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### Simple Type `spase:Per`

**Namespace**  
http://www.spase-group.org/data/schema

**Annotations**  
The time interval over which a characterization applies. For example, the number of bytes generated each day.

**Diagram**  
![Diagram](attachment:Per.png)

**Type**  
xsd:duration

**Used by**  
Element  
- spase:DataExtent/spase:Per

**Source**  
- `<xsd:simpleType name="Per">`  
  `<xsd:annotation>`  
    `<xsd:documentation xml:lang="en">The time interval over which a characterization applies. For example, the number of bytes generated each day.</xsd:documentation>`  
  </xsd:annotation>  
  `<xsd:restriction base="xsd:duration"/>

**Schema location**  
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd
## Simple Type `spase:ProviderResourceName`

<table>
<thead>
<tr>
<th>Schema location</th>
<th>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</th>
</tr>
</thead>
</table>

**Namespace** http://www.spase-group.org/data/schema

**Annotations** A short textual description of a resource used by the provider which may be used to identify a resource.

**Diagram**

**Type** xsd:string

**Used by** Elements

spase:Catalog/spase:ProviderResourceName, spase:DisplayData/spase:ProviderResourceName, spase:NumericalData/spase:ProviderResourceName

---

## Simple Type `spase:ProviderVersion`

<table>
<thead>
<tr>
<th>Schema location</th>
<th>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</th>
</tr>
</thead>
</table>

**Namespace** http://www.spase-group.org/data/schema

**Annotations** Describes the release or edition of the product used by the provider. The formation rule may vary between providers. It is intended to aid in queries to the provider regarding the product.

**Diagram**

**Type** xsd:string

**Used by** Elements


---

## Simple Type `spase:InstrumentID`

<table>
<thead>
<tr>
<th>Schema location</th>
<th>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</th>
</tr>
</thead>
</table>

**Namespace** http://www.spase-group.org/data/schema

**Annotations** The identifier of an Instrument resource.

**Diagram**

**Type** xsd:string

**Used by** Elements


---
### Simple Type `spase:PhenomenonType`

<table>
<thead>
<tr>
<th>Facets</th>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><code>ActiveRegion</code></td>
<td>A localized, transient volume of the solar atmosphere in which FLAREs, SUNSPOTS, FACULAe, FLAREs, etc. may be observed.</td>
</tr>
<tr>
<td></td>
<td><code>Aurora</code></td>
<td>An atmospheric phenomenon consisting of bands of light caused by charged solar particles following the earth's magnetic lines of force.</td>
</tr>
<tr>
<td></td>
<td><code>BowShockCrossing</code></td>
<td>A crossing of the boundary between the undisturbed (except for foreshock effects) solar wind and the shocked, decelerated solar wind of the magnetosheath.</td>
</tr>
<tr>
<td></td>
<td><code>CoronalHole</code></td>
<td>An extended region of the corona, exceptionally low in density and associated with unipolar photospheric regions. A coronal hole can be an <em>open</em> magnetic field in the corona and (perhaps) inner heliosphere which has a faster than average outflow (wind); A region of lower than <em>quiet</em> ion and electron density in the corona; or a region of lower peak electron temperature in the corona than in the <em>quiet</em> corona.</td>
</tr>
<tr>
<td></td>
<td><code>CoronalMassEjection</code></td>
<td>A solar event (CME) that involves a burst of plasma ejected into the interplanetary medium. CME's may be observed remotely relatively near the sun or in situ in the interplanetary medium. The latter type of observations are often referred to as Interplanetary CME's (ICME's).</td>
</tr>
<tr>
<td></td>
<td><code>EITWave</code></td>
<td>A wave in the corona of the Sun which produce shock waves on the Sun's chromosphere (Moreton Waves). EIT Waves are produced by large solar flare and expand outward at about 1,000 km/s. It usually appears as a slowly moving diffuse arc of brightening in H-alpha, and may travel for several hundred thousand km.</td>
</tr>
<tr>
<td></td>
<td><code>EnergeticSolarParticleEvent</code></td>
<td>An enhancement of interplanetary fluxes of energetic ions accelerated by interplanetary shocks and/or solar flares.</td>
</tr>
<tr>
<td></td>
<td><code>ForbushDecrease</code></td>
<td>A rapid decrease in the observed galactic cosmic ray intensity following the passage of an outwardly convecting interplanetary magnetic field disturbance, such as those associated with large CME's, that sweep some galactic cosmic rays away from Earth.</td>
</tr>
<tr>
<td></td>
<td><code>GeomagneticStorm</code></td>
<td>A magnetospheric disturbance typically defined by variations in the horizontal component of the Earth’s surface magnetic field. The variation typically starts with a field enhancement associated with a solar wind pressure pulse and continues with a field depression associated with an enhancement of the diamagnetic magnetospheric ring current.</td>
</tr>
<tr>
<td></td>
<td><code>InterplanetaryShock</code></td>
<td>A shock propagating generally anti-sunward through the slower solar wind, often seen in front of CME-associated plasma clouds.</td>
</tr>
<tr>
<td></td>
<td><code>MagneticCloud</code></td>
<td>A transient event observed in the solar wind characterized as a region of enhanced magnetic field strength, smooth rotation of the magnetic field vector and low proton density and temperature.</td>
</tr>
<tr>
<td></td>
<td><code>MagnetopauseCrossing</code></td>
<td>A crossing of the interface between the shocked solar wind in the magnetosheath and the magnetic field and plasma in the magnetosphere.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>-------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td><strong>RadioBurst</strong></td>
<td>Emissions of the Sun in radio wavelengths from centimeters to dekameters, under both quiet and disturbed conditions. Radio Bursts can be “Type I” consisting of many short, narrow-band bursts in the metric range (300 - 50 MHz); “Type II” consisting of narrow-band emission that begins in the meter range (300 MHz) and sweeps slowly (tens of minutes) toward dekameter wavelengths (10 MHz); “Type III” consisting of narrow-band bursts that sweep rapidly (seconds) from decimeter to dekameter wavelengths (500 - 0.5 MHz); and “Type IV” consisting of a smooth continuum of broad-band bursts primarily in the meter range (300 - 30 MHz).</td>
<td></td>
</tr>
<tr>
<td><strong>SectorBoundaryCrossing</strong></td>
<td>A sector boundary crossing is a transit by a spacecraft across the heliospheric current sheet separating the dominantly outward (away-from-the-sun) interplanetary magnetic field of one hemisphere of the heliosphere from the dominantly inward (toward-the-sun) polarity of the other hemisphere. Such crossings have multi-day intervals of opposite IMF dominant polarities on either side.</td>
<td></td>
</tr>
<tr>
<td><strong>SolarFlare</strong></td>
<td>An explosive event in the Sun’s atmosphere which produces electromagnetic radiation across the electromagnetic spectrum at multiple wavelengths from long-wave radio to the shortest wavelength gamma rays.</td>
<td></td>
</tr>
<tr>
<td><strong>SolarWindExtreme</strong></td>
<td>Intervals of unusually large or small values of solar wind attributes such as flow speed and ion density.</td>
<td></td>
</tr>
<tr>
<td><strong>StreamInteractionRegion</strong></td>
<td>The region (SIR) where two solar wind streams, typically having differing characteristics and solar sources, abut up against (and possibly partially interpenetrate) each other.</td>
<td></td>
</tr>
<tr>
<td><strong>Substorm</strong></td>
<td>A process by which plasma in the magnetotail becomes energized at a fast rate.</td>
<td></td>
</tr>
</tbody>
</table>

Used by: Elements: spase:Annotation/spase:PhenomenonType, spase:Catalog/spase:PhenomenonType

Source:

```xml
<xsd:simpleType name="PhenomenonType">
  <xsd:annotation xml:lang="en">Identifiers for the characteristics or categorization of an observation. Note: Joe King to provide.</xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="ActiveRegion">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A localized, transient volume of the solar atmosphere in which PLAGES, SUNSPOTS, FACULAe, FLAREs, etc. may be observed.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Aurora">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">An atmospheric phenomenon consisting of bands of light caused by charged solar particles following the earth's magnetic lines of force.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="BowShockCrossing">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A crossing of the boundary between the undisturbed (except for foreshock effects) solar wind and the shocked, decelerated solar wind of the magnetosheath.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="CoronalHole">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">An extended region of the corona, exceptionally low in density and associated with unipolar photospheric regions. A coronal hole can be an "open" magnetic field in the corona and (perhaps) inner heliosphere which has a faster than average outflow (wind); a region of lower than "quiet" ion and electron density in the corona; or a region of lower peak electron temperature in the corona than in the "quiet" corona.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="CoronalMassEjection">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Coronal Mass Ejection(s) are large ejections of plasma and magnetic field from the Sun. They often appear as bright (i.e. hot) structures in coronagraph images, and are often associated with solar flares.<xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    </xsd:restriction>
</xsd:simpleType>
```
A solar event (CME) that involves a burst of plasma ejected into the interplanetary medium. CME's may be observed remotely relatively near the sun or in situ in the interplanetary medium. The latter type of observations are often referred to as Interplanetary CME's (ICME's).

A wave in the corona of the Sun which produce shock waves on the Sun's chromosphere (Moreton Waves). EIT Waves are produced by large solar flare and expand outward at about 1,000 km/s. It usually appears as a slowly moving diffuse arc of brightening in H-alpha, and may travel for several hundred thousand km.

An enhancement of interplanetary fluxes of energetic ions accelerated by interplanetary shocks and/or solar flares.

A rapid decrease in the observed galactic cosmic ray intensity following the passage of an outwardly convecting interplanetary magnetic field disturbance, such as those associated with large CME's, that sweep some galactic cosmic rays away from Earth.

Geomagnetic Storm:
- A magnetospheric disturbance typically defined by variations in the horizontal component of the Earth's surface magnetic field. The variation typically starts with a field enhancement associated with a solar wind pressure pulse and continues with a field depression associated with an enhancement of the diamagnetic magnetospheric ring current.

Interplanetary Shock:
- A shock propagating generally anti-sunward through the slower solar wind, often seen in front of CME-associated plasma clouds.

Magnetic Cloud:
- A transient event observed in the solar wind characterized as a region of enhanced magnetic field strength, smooth rotation of the magnetic field vector and low proton density and temperature.

Magnetopause Crossing:
- A crossing of the interface between the shocked solar wind in the magnetosheath and the magnetic field and plasma in the magnetosphere.

Radio Burst:
- Emissions of the sun in radio wavelengths from centimeters to dekameters, under both quiet and disturbed conditions. Radio Bursts can be "Type I" consisting of many short, narrow-band bursts in the metric range (300 - 50 MHz); "Type II" consisting of narrow-band emission that begins in the meter range (300 MHz) and sweeps slowly (tens of minutes) toward dekameter wavelengths (10 MHz); "Type III" consisting of narrow-band bursts that sweep rapidly (seconds) from decimeter to dekameter wavelengths (500 - 0.5 MHz); and "Type IV" consisting of a smooth continuum of broad-band bursts primarily in the meter range (300 - 30 MHz).

Sector Boundary Crossing:
- A sector boundary crossing is a transit by a spacecraft across the heliospheric current sheet separating the dominantly outward (away-from-the-sun) interplanetary magnetic field of one hemisphere of the heliosphere from the dominantly inward (toward-the-sun) polarity of the other hemisphere. Such crossings have multi-day intervals of opposite IMF dominant polarities on either side.

Solar Flare:
- An explosive event in the Sun's atmosphere which produces electromagnetic radiation across the electromagnetic spectrum at multiple wavelengths from longwave radio to the shortest wavelength gamma rays.
Simple Type `spase:StartDate`

Namespace http://www.spase-group.org/data/schema

Annotations The specification of a starting point in time.

Diagram

Type xsd:dateTime

Used by Elements `spase:Granule/spase:StartDate`, `spase:OperatingSpan/spase:StartDate`, `spase:TimeSpan/spase:StartDate`

Source

```
<xsd:simpleType name="StartDate">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The specification of a starting point in time.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:dateTime"/>
</xsd:simpleType>
```

Schema location file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Simple Type `spase:StopDate`

Namespace http://www.spase-group.org/data/schema

Annotations The specification of a stopping point in time.

Diagram

Type xsd:dateTime

Used by Elements `spase:Granule/spase:StopDate`, `spase:OperatingSpan/spase:StopDate`, `spase:TimeSpan/spase:StopDate`

Source

```
<xsd:simpleType name="StopDate">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The specification of a stopping point in time.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:dateTime"/>
</xsd:simpleType>
```

Schema location file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Simple Type `spase:RelativeStopDate`

Namespace http://www.spase-group.org/data/schema

Annotations An indication of the nominal end date relative to the present.

Diagram

Source

```
<xsd:simpleType name="RelativeStopDate">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">An indication of the nominal end date relative to the present.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:duration"/>
</xsd:simpleType>
```

Schema location file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd
### Simple Type `spase:TimeSpan/spase:RelativeStopDate`

<table>
<thead>
<tr>
<th>Type</th>
<th>xsd:duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Used by</td>
<td>Element</td>
</tr>
<tr>
<td>Source</td>
<td><code>&lt;xsd:simpleType name=&quot;RelativeStopDate&quot;</code></td>
</tr>
<tr>
<td>Schema location</td>
<td>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
</tbody>
</table>

### Simple Type `spase:Caveats`

<table>
<thead>
<tr>
<th>Type</th>
<th>xsd:string</th>
</tr>
</thead>
<tbody>
<tr>
<td>Used by</td>
<td>Elements</td>
</tr>
<tr>
<td>Source</td>
<td><code>&lt;xsd:simpleType name=&quot;Caveats&quot;</code></td>
</tr>
<tr>
<td>Schema location</td>
<td>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
</tbody>
</table>

### Simple Type `spase:Keyword`

<table>
<thead>
<tr>
<th>Type</th>
<th>xsd:string</th>
</tr>
</thead>
<tbody>
<tr>
<td>Used by</td>
<td>Elements</td>
</tr>
<tr>
<td>Source</td>
<td><code>&lt;xsd:simpleType name=&quot;Keyword&quot;</code></td>
</tr>
<tr>
<td>Schema location</td>
<td>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
</tbody>
</table>

### Simple Type `spase:InputResourceID`

<table>
<thead>
<tr>
<th>Type</th>
<th>xsd:string</th>
</tr>
</thead>
<tbody>
<tr>
<td>Used by</td>
<td>Elements</td>
</tr>
<tr>
<td>Source</td>
<td><code>&lt;xsd:simpleType name=&quot;InputResourceID&quot;</code></td>
</tr>
<tr>
<td>Schema location</td>
<td>file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
</tbody>
</table>
**Simple Type spase:InputResourceId**

- **Namespace**: http://www.spase-group.org/data/schema
- **Annotations**: The resource identifier for a resource which was used to generate this resource.
- **Type**: xsd:string
- **Used by**: Element

**Schema location**: file:C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

**Simple Type spase:Set**

- **Namespace**: http://www.spase-group.org/data/schema
- **Annotations**: A collection of items for a particular purpose.
- **Type**: xsd:string
- **Used by**: Element

**Source**: <xsd:simpleType name="Set">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A collection of items for a particular purpose.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string"/>
</xsd:simpleType>

**Schema location**: file:C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

**Simple Type spase:ParameterKey**

- **Namespace**: http://www.spase-group.org/data/schema
- **Annotations**: The name or identifier which can be used to access the parameter in the resource. The associated value is dependent on the service used to access the resource. For columnar ASCII data, use "Column_X" for a single-element parameter and "Column_X-Column_Y" for a multi-element parameter, where X and Y are the relevant column index. The first column index is 1.
- **Type**: xsd:string
- **Used by**: Elements

**Source**: <xsd:simpleType name="ParameterKey">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The name or identifier which can be used to access the parameter in the resource. The associated value is dependent on the service used to access the resource. For columnar ASCII data, use "Column_X" for a single-element parameter and "Column_X-Column_Y" for a multi-element parameter, where X and Y are the relevant column index. The first column index is 1.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string"/>
</xsd:simpleType>

**Schema location**: file:C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

**Simple Type spase:Cadence**

- **Namespace**: http://www.spase-group.org/data/schema
- **Annotations**: The time interval between the start of successive measurements.
- **Type**: xsd:duration
- **Used by**: Elements

**Source**: <xsd:simpleType name="Cadence">
  <xsd:annotation>
  </xsd:annotation>
</xsd:simpleType>

**Schema location**: file:C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd
The time interval between the start of successive measurements.

The multiplicative factor for converting a unit into International System of Units (SI) units. The factor is expressed in the form "number > x", where "number" is a numerical value and "x" is the appropriate SI units. The basic SI units are: m (meter), N (newton), kg (kilogram), Pa (pascal), s (second), Hz (hertz), A (ampere), V (volt), K (kelvin), W (watt), rad (radian), J (joule), sr (steradian), C (coulomb), T (tesla), ohm (ohm), mho (mho or seimens), H (henry), and F (farad). Two useful units which are not SI units are: degree (angle), and unitless (no units). An example is: "1.0E-9>T" which converts the units, presumable nT, to Tesla. Another example is: "1.0e+3>m/s" which converts a velocity expressed in kilometers per second to meters per second.

A representation in which a position vector or measured vector (field or flow) is specified by its components along the base axes of the coordinate system.

A coordinate representation of a position vector or measured vector (field or flow) by its k-component, the magnitude of its projection into the i-j plane, and the azimuthal angle of the i-j plane projection.

A coordinate representation of a position vector or of a measured vector by its magnitude and two direction angles. The angles are relative to the base axes of the coordinate system.
used. Typically the angles are \( \phi \) [azimuth angle, \( \arctan \left( \frac{j}{i} \right) \)] and \( \theta \), where \( \theta \) may be a polar angle, \( \arctan \left( \frac{\sqrt{i^2+j^2}}{k} \right) \), or an elevation angle, \( \arctan \left( \frac{k}{\sqrt{i^2+j^2}} \right) \).
<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECEF</td>
<td>Earth-Centered, Earth-Fixed (ECEF) coordinate system has point (0,0,0) defined as the center of mass of the Earth. Its axes are aligned with the International Reference Pole (IRP) and International Reference Meridian (IRM). The x-axis intersects the sphere of the Earth at 0 degree latitude (Equator) and 0 degree longitude (Greenwich). The z-axis points north. The y-axis completes the right handed coordinate system.</td>
<td></td>
</tr>
<tr>
<td>ENP</td>
<td>ENP (also called PEN) - The P vector component points northward, perpendicular to orbit plane which for a zero degree inclination orbit is parallel to Earth’s spin axis. The E vector component is perpendicular to P and N and points earthward. The N component is perpendicular to P and E and is positive eastward.</td>
<td></td>
</tr>
<tr>
<td>GEI</td>
<td>Geocentric Equatorial Inertial - A coordinate system where the Z axis is along Earth’s spin vector, positive northward. X axis points towards the first point of Aries (from the Earth towards the Sun at the vernal equinox). See Russell, 1971. When the X axis is the direction of the mean vernal equinox of J2000, the coordinate system is also called GCI. Then the Z axis is also defined as being normal to the mean Earth equator of J2000.</td>
<td></td>
</tr>
<tr>
<td>GEO</td>
<td>Geographic – geocentric corotating – A coordinate system where the Z axis is along Earth’s spin vector, positive northward. X axis lies in Greenwich meridian, positive towards Greenwich. See Russell, 1971.</td>
<td></td>
</tr>
<tr>
<td>GSE</td>
<td>Geocentric Solar Ecliptic – A coordinate system where the X axis is from Earth to Sun. Z axis is normal to the ecliptic, positive northward. See Russell, 1971.</td>
<td></td>
</tr>
<tr>
<td>GSEQ</td>
<td>Geocentric Solar Equatorial – A coordinate system where the X axis is from Earth to Sun. Y axis is parallel to solar equatorial plane. Z axis is positive northward. See Russell, 1971.</td>
<td></td>
</tr>
<tr>
<td>GSM</td>
<td>Geocentric Solar Magnetospheric – A coordinate system where the X axis is from Earth to Sun, Z axis is northward in a plane containing the X axis and the geomagnetic dipole axis. See Russell, 1971.</td>
<td></td>
</tr>
<tr>
<td>HAE</td>
<td>Heliocentric Aries Ecliptic – A coordinate system where the Z axis is normal to the ecliptic plane, positive northward. X axis is positive towards the first point of Aries (from Earth to Sun at vernal equinox). Same as SE below. See Hapgood, 1992.</td>
<td></td>
</tr>
<tr>
<td>HCC</td>
<td>Heliocentric Cartesian – A 3-D orthonormal coordinate system that is primarily intended to specify with two dimensions a point on the solar disk. The Z axis points toward the observer. The Y axis lies in the plane defined by the solar spin vector and the Z axis, positive northward. The X axis is perpendicular to the Y and Z axes, positive toward solar west. Standard representation for this system is via the point’s x and y values, expressed either as physical distances or as fractions of the solar disk radius.</td>
<td></td>
</tr>
<tr>
<td>HCI</td>
<td>Heliographic Carrington Inertial.</td>
<td></td>
</tr>
<tr>
<td>HCR</td>
<td>Heliocentric Radial – A 3-D orthonormal coordinate system that is primarily intended to specify with two dimensions a point on the solar disk. The Z axis points toward the observer. The Y axis lies in the plane defined by the solar spin vector and the Z axis, positive northward. The X axis is perpendicular to the Y and Z axes, positive toward solar west. Standard representation for this system is via the point’s distance rho from the Z axis [Rho</td>
<td></td>
</tr>
<tr>
<td>Enumeration</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>-------------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td><strong>HEE</strong></td>
<td>Heliocentric Earth Ecliptic - A coordinate system where the Z axis is normal to the ecliptic plane, positive northward. X axis points from Sun to Earth. See Hapgood, 1992.</td>
<td></td>
</tr>
<tr>
<td><strong>HEEQ</strong></td>
<td>Heliocentric Earth Equatorial - A coordinate system where the Z axis is normal to the solar equatorial plane, positive northward. X axis is generally Earthward in the plane defined by the Z axis and the Sun-Earth direction. See Hapgood, 1992.</td>
<td></td>
</tr>
<tr>
<td><strong>HG</strong></td>
<td>Heliographic - A heliocentric rotating coordinate system where the Z axis is normal to the solar equatorial plane, positive northward. X, Y axes rotate with a 25.38 day period. The zero longitude (X axis) is defined as the longitude that passed through the ascending node of the solar equator on the ecliptic plane on 1 January, 1854 at 12 UT. See <a href="http://nssdc.gsfc.nasa.gov/space/helios/coor_des.html">http://nssdc.gsfc.nasa.gov/space/helios/coor_des.html</a>.</td>
<td></td>
</tr>
<tr>
<td><strong>HGI</strong></td>
<td>Heliographic Inertial - A heliocentric coordinate system where the Z axis is normal to the solar equatorial plane, positive northward. X axis is along the intersection line between solar equatorial and ecliptic planes. The X axis was positive at SE longitude of 74.367 deg on Jan 1, 1900. (See SE below.) See <a href="http://nssdc.gsfc.nasa.gov/space/helios/coor_des.html">http://nssdc.gsfc.nasa.gov/space/helios/coor_des.html</a>.</td>
<td></td>
</tr>
<tr>
<td><strong>HPC</strong></td>
<td>Helioprojective Cartesian - A 3-D orthonormal (left-handed) coordinate system that is primarily intended to specify with two dimensions a point on the solar disk. The Z axis points from the observer to the center of the solar disk. The Y axis lies in the plane defined by the solar spin vector and the Z axis, positive northward. The X axis is perpendicular to the Y and Z axes, positive toward solar west. Given as the distance between the observer and the center of the solar disk, the standard representation for this system of an (x,y) point on the solar disk is via the point's longitude angle (\arctan \left( \frac{\sqrt{x^2 + y^2}}{d} \right)) or equivalent declination parameter (\delta = \arctan y/d), and its phase angle (\psi) as measured counter-clockwise from the (+Y) axis.</td>
<td></td>
</tr>
<tr>
<td><strong>HPR</strong></td>
<td>Helioprojective Radial - A 3-D orthonormal (left-handed) coordinate system that is primarily intended to specify with two dimensions a point on the solar disk. The Z axis points from the observer to the center of the solar disk. The Y axis lies in the plane defined by the solar spin vector and the Z axis, positive northward. The X axis is perpendicular to the Y and Z axes, positive toward solar west. Given as the distance between the observer and the center of the solar disk, the standard representation for this system of an (x,y) point on the solar disk is via the point's latitude angle (\theta = \arctan \left( \frac{\sqrt{x^2 + y^2}}{d} \right)) or equivalent declination parameter (\delta = \theta - 90) deg, and its phase angle (\psi) as measured counter-clockwise from the (+Y) axis ([\psi = \arctan (-y/x)]).</td>
<td></td>
</tr>
<tr>
<td><strong>J2000</strong></td>
<td>An astronomical coordinate system which uses the mean equator and equinox of Julian date 2451545.0 TT (Terrestrial Time), or January 1, 2000, noon TT. (aka J2000) to define a celestial reference frame.</td>
<td></td>
</tr>
<tr>
<td><strong>JSM</strong></td>
<td>Jovian Solar Magnetospheric - A coordinate system related to Jupiter where the X axis is from Jupiter to Sun, Z axis is northward in a plane containing the X axis and the Jovian dipole axis.</td>
<td></td>
</tr>
<tr>
<td><strong>JSO</strong></td>
<td>Jovian Solar Orbital - A coordinate system related to Jupiter where X anti-sunward, Y along the orbital velocity direction.</td>
<td></td>
</tr>
<tr>
<td><strong>KSM</strong></td>
<td>Kronian Solar Magnetospheric - A coordinate system related to Saturn where the X axis.</td>
<td></td>
</tr>
<tr>
<td>Enumeration</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>-------------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td><strong>KSO</strong></td>
<td>Kronian Solar Orbital - A coordinate system related to Saturn where X is anti-sunward, Y along the orbital velocity direction.</td>
<td></td>
</tr>
<tr>
<td><strong>LGM</strong></td>
<td>Local Geomagnetic - A coordinate system used mainly for Earth surface or near Earth surface magnetic field data. X axis northward from observation point in a geographic meridian. Z axis downward towards Earth's center. In this system, $H$ (total horizontal component) = $\sqrt{B_x^2 + B_y^2}$ and $D$ (declination angle) = $\arctan \left( \frac{B_y}{B_x} \right)$.</td>
<td></td>
</tr>
<tr>
<td><strong>MAG</strong></td>
<td>Geomagnetic - geocentric. Z axis is parallel to the geomagnetic dipole axis, positive north. X is in the plane defined by the Z axis and the Earth's rotation axis. If N is a unit vector from the Earth's center to the north geographic pole, the signs of the X and Y axes are given by $Y = N \times Z$, $X = Y \times Z$. See Russell, 1971, and <a href="http://cdpp.cnes.fr/00428.pdf">http://cdpp.cnes.fr/00428.pdf</a></td>
<td></td>
</tr>
<tr>
<td><strong>MFA</strong></td>
<td>Magnetic Field Aligned - A coordinate system spacecraft-centered system with Z in the direction of the ambient magnetic field vector. X is in the plane defined by Z and the spacecraft-Sun line, positive sunward. See <a href="http://cdpp.cnes.fr/00428.pdf">http://cdpp.cnes.fr/00428.pdf</a></td>
<td></td>
</tr>
<tr>
<td><strong>MSO</strong></td>
<td>Mars/Mercury Solar Orbital - A coordinate system related to Mars or Mercury. A coordinate system where, depending on the body (Mars or Mercury), X is anti-sunward, Y along the orbital velocity direction.</td>
<td></td>
</tr>
<tr>
<td><strong>RTN</strong></td>
<td>Radial Tangential Normal. Typically centered at a spacecraft. Used for IMF and plasma V vectors. R (radial) axis is radially away from the Sun, T (tangential) axis is normal to the plane formed by R and the Sun's spin vector, positive in the direction of planetary motion. N (normal) is $R \times T$.</td>
<td></td>
</tr>
<tr>
<td><strong>SC</strong></td>
<td>Spacecraft - A coordinate system defined by the spacecraft geometry and/or spin. Often has Z axis parallel to spacecraft spin vector. X and Y axes may or may not corotate with the spacecraft. See SR and SR2 below.</td>
<td></td>
</tr>
<tr>
<td><strong>SE</strong></td>
<td>Solar Ecliptic - A heliocentric coordinate system where the Z axis is normal to the ecliptic plane, positive northward. X axis is positive towards the first point of Aries (from Earth to Sun at vernal equinox). Same as HAE above. See <a href="http://nssdc.gsfc.nasa.gov/space/helios/coor_des.html">http://nssdc.gsfc.nasa.gov/space/helios/coor_des.html</a></td>
<td></td>
</tr>
<tr>
<td><strong>SM</strong></td>
<td>Solar Magnetic - A geocentric coordinate system where the Z axis is northward along Earth's dipole axis, X axis is in plane of z axis and Earth-Sun line, positive sunward. See Russell, 1971.</td>
<td></td>
</tr>
<tr>
<td><strong>SR</strong></td>
<td>Spin Reference - A special case of a Spacecraft (SC) coordinate system for a spinning spacecraft. Z is parallel to the spacecraft spin vector. X and Y rotate with the spacecraft. See <a href="http://cdpp.cnes.fr/00428.pdf">http://cdpp.cnes.fr/00428.pdf</a></td>
<td></td>
</tr>
<tr>
<td><strong>SR2</strong></td>
<td>Spin Reference 2 - A special case of a Spacecraft (SC) coordinate system for a spinning spacecraft. Z is in the plane defined by Z and the spacecraft-Sun line, positive sunward. See <a href="http://cdpp.cnes.fr/00428.pdf">http://cdpp.cnes.fr/00428.pdf</a></td>
<td></td>
</tr>
<tr>
<td><strong>SSE</strong></td>
<td>Spacecraft Solar Ecliptic - A coordinate system used for deep space spacecraft, for example Helios. X axis from spacecraft to Sun. Z axis normal to ecliptic plane, positive northward.</td>
<td></td>
</tr>
</tbody>
</table>
Note: Angle between normals to ecliptic and to Helios orbit plane ~ 0.25 deg.

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSE_L</td>
<td>Selenocentric Solar Ecliptic. The X axis points from the center of the Earth's moon to the sun, the Z axis is normal to the ecliptic plane, positive northward. And the Y axis completes the right-handed set of axes.</td>
</tr>
<tr>
<td>SpacecraftOrbitPlane</td>
<td>A coordinate system where X lies in the plane normal to and in the direction of motion of the spacecraft, Z is normal to this plane and Y completes the triad in a right-handed coordinate system.</td>
</tr>
<tr>
<td>VSO</td>
<td>Venus Solar Orbital - A coordinate system related to Venus where X is anti-sunward, Y along the orbital velocity direction.</td>
</tr>
<tr>
<td>WGS84</td>
<td>The World Geodetic System (WGS) defines a reference frame for the earth, for use in geodesy and navigation. The WGS84 uses the zero meridian as defined by the Bureau International de l'Heure.</td>
</tr>
</tbody>
</table>

Used by

Elements: `spase:CoordinateSystem/spase:CoordinateSystemName`, `spase:Location/spase:CoordinateSystemName`

Source

```xml
<xsd:simpleType name="CoordinateSystemName">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Identifiers of the origin and orientation of a set of typically orthogonal axes.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="CGM">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Corrected Geomagnetic - A coordinate system from a spatial point with GEO radial distance and geomagnetic latitude and longitude, follow the epoch-appropriate IGRF/DGRF model field vector through to the point where the field line crosses the geomagnetic dipole equatorial plane. Then trace the dipole magnetic field vector Earthward from that point on the equatorial plane, in the same hemisphere as the original point, until the initial radial distance is reached. Designate the dipole latitude and longitude at that point as the CGM latitude and longitude of the original point. See <http://nssdc.gsfc.nasa.gov/space/cgm/cgmm_des.html> </xsd:documentation>
    </xsd:annotation>
  </xsd:enumeration>
  <xsd:enumeration value="Carrington">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">A coordinate system which is centered at the Sun and is "fixed" with respect to the synodic rotation rate; the mean synodic value is about 27.2737 days. The Astronomical Almanac gives a value for Carrington longitude of 349.03 degrees at 0000 UT on 1 January 1995.</xsd:documentation>
    </xsd:annotation>
  </xsd:enumeration>
  <xsd:enumeration value="DM">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">Dipole Meridian - A coordinate system centered at the observation point. Z axis is parallel to the Earth's dipole axis, positive northward. X is in the plane defined by Z and the line linking the observation point with the Earth's center. Y is positive eastward. See <http://cdpp.cnes.fr/00428.pdf></xsd:documentation>
    </xsd:annotation>
  </xsd:enumeration>
  <xsd:enumeration value="ECEF">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">The Earth-Centered, Earth-Fixed (ECEF) coordinate system has point (0,0,0) defined as the center of mass of the Earth. Its axes are aligned with the International Reference Pole (IRP) and International Reference Meridian (IRM). The x-axis intersects the sphere of the Earth at 0 degree latitude (Equator) and 0 degree longitude (Greenwich). The z-axis points north. The y-axis completes the right handed coordinate system.</xsd:documentation>
    </xsd:annotation>
  </xsd:enumeration>
  <xsd:enumeration value="ENP">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">ENP (also called PEN) - The P vector component points northward, perpendicular to orbit plane which for a zero degree inclination orbit is parallel to Earth's spin axis. The E vector component is perpendicular to P and N and points earthward. The N component is perpendicular to P and E and is positive eastward.</xsd:documentation>
    </xsd:annotation>
  </xsd:enumeration>
  <xsd:enumeration value="GEI">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">GEI Geocentric Equatorial Inertial - A coordinate system where the Z axis is along Earth's spin vector, positive northward. X axis points towards the first point of Aries (from the Earth towards the Sun at the vernal equinox). See Russell, 1971. When
```
the X axis is the direction of the mean vernal equinox of J2000, the coordinate system is also called GCI. Then the Z axis is also defined as being normal to the mean Earth equator of J2000.\n
**GEO**

Geographic – geocentric corotating – A coordinate system where the Z axis is along Earth's spin vector, positive northward. X axis lies in Greenwich meridian, positive towards Greenwich. See Russell, 1971.

**GSE**

Geocentric Solar Ecliptic – A coordinate system where the X axis is from Earth to Sun. Z axis is normal to the ecliptic, positive northward. See Russell, 1971.

**GSEQ**

Geocentric Solar Equatorial – A coordinate system where the X axis is from Earth to Sun. Y axis is parallel to solar equatorial plane. Z axis is positive northward. See Russell, 1971.

**GSM**

Geocentric Solar Magnetospheric – A coordinate system where the X axis is from Earth to Sun, Z axis is northward in a plane containing the X axis and the geomagnetic dipole axis. See Russell, 1971.

**HAE**

Heliocentric Aries Ecliptic – A coordinate system where the Z axis is normal to the ecliptic plane, positive northward. X axis is positive towards the first point of Aries (from Earth to Sun at vernal equinox). Same as SE below. See Hapgood, 1992.

**HCC**

Heliocentric Cartesian – A 3-D orthonormal coordinate system that is primarily intended to specify with two dimensions a point on the solar disk. The Z axis points toward the observer. The Y axis lies in the plane defined by the solar spin vector and the Z axis, positive northward. The X axis is perpendicular to the Y and Z axes, positive toward solar west. Standard representation for this system is via the point’s x and y values, expressed either as physical distances or as fractions of the solar disk radius.

**HCR**

Heliocentric Radial – A 3-D orthonormal coordinate system that is primarily intended to specify with two dimensions a point on the solar disk. The Z axis points toward the observer. The Y axis lies in the plane defined by the solar spin vector and the Z axis, positive northward. The X axis is perpendicular to the Y and Z axes, positive toward solar west. Standard representation for this system is via the point’s distance rho from the Z axis \( \rho = \sqrt{x^2 + y^2} \) and its phase angle psi measured counterclockwise from the +Y axis \( \psi = \arctan{-y/x} \).

**HEE**

Heliocentric Earth Ecliptic – A coordinate system where the Z axis is normal to the ecliptic plane, positive northward. X axis points from Sun to Earth. See Hapgood, 1992.

**HEEQ**

Heliocentric Earth Equatorial – A coordinate system where the Z axis is normal to the solar equatorial plane, positive northward. X axis is generally Earthward in the plane defined by the Z axis and the Sun-Earth direction. See Hapgood, 1992.
<xsd:annotation>
  <xsd:documentation xml:lang="en">Heliographic - A heliocentric rotating coordinate system where the Z axis is normal to the solar equatorial plane, positive northward. X, Y axes rotate with a 25.38 day period. The zero longitude (X axis) is defined as the longitude that passed through the ascending node of the solar equator on the ecliptic plane on 1 January, 1854 at 12 UT. See http://nssdc.gsfc.nasa.gov/space/helios/coor_des.html</xsd:documentation>
</xsd:annotation>

<xsd:enumeration value="HGI">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Heliographic Inertial - A heliocentric coordinate system where the Z axis is normal to the solar equatorial plane, positive northward. X axis is along the intersection line between solar equatorial and ecliptic planes. The X axis was positive at SE longitude of 74.367 deg on Jan 1, 1900. (See SE below.) See http://nssdc.gsfc.nasa.gov/space/helios/coor_des.html</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="HPC">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Helioprojective Cartesian = A 3-D orthonormal (left-handed) coordinate system that is primarily intended to specify with two dimensions a point on the solar disk. The Z axis points from the observer to the center of the solar disk. The Y axis lies in the plane defined by the solar spin vector and the Z axis, positive northward. The X axis is perpendicular to the Y and Z axes, positive toward solar west. Given as the distance between the observer and the center of the solar disk, the standard representation of an (x,y) point on the solar disk is via the point's longitude angle \(\arctan{(x/d)}\) and latitude angle \(\arctan{y/d}\)</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="HPR">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Helioprojective Radial = A 3-D orthonormal (left-handed) coordinate system that is primarily intended to specify with two dimensions a point on the solar disk. The Z axis points from the observer to the center of the solar disk. The Y axis lies in the plane defined by the solar spin vector and the Z axis, positive northward. The X axis is perpendicular to the Y and Z axes, positive toward solar west. Given as the distance between the observer and the center of the solar disk, the standard representation for this system of an \((x,y)\) point on the solar disk is via the point's latitude angle \(\arctan{\sqrt{x^2 + y^2}}/d\) or equivalent declination parameter \(\delta = \arctan(\sqrt{x^2 + y^2}) - 90\) deg, and its phase angle \(\psi\) as measured counter-clockwise from the +Y axis \(\psi = \arctan(-y/x)\)</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="J2000">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">An astronomical coordinate system which uses the mean equator and equinox of Julian date 2451545.0 TT (Terrestrial Time), or January 1, 2000, noon TT. (aka J2000) to define a celestial reference frame</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="JSM">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Jovian Solar Magnetospheric - A coordinate system related to Jupiter where the X axis is from Jupiter to Sun, Z axis is northward in a plane containing the X axis and the Jovian dipole axis</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="JSO">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Jovian Solar Orbital - A coordinate system related to Jupiter where X anti-sunward, Y along the orbital velocity direction</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="KSM">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Kronian Solar Magnetospheric - A coordinate system related to Saturn where the X axis is anti-sunward, Z axis is northward in a plane containing the X axis and the Kronian dipole axis</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="KSO">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Kronian Solar Orbital - A coordinate system related to Saturn where X is anti-sunward, Y along the orbital velocity direction</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="LGM">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Local Geomagnetic - A coordinate system used mainly for Earth surface or near Earth surface magnetic field data. X axis northward from observation point in a geographic meridian, Z axis downward towards Earth's center. H (total horizontal component) = \(\sqrt{(Bx^2 + By^2)}\) and D (declination angle) = \(\arctan{(By/Bx)}\)</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="MAG">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Geomagnetic - geocentric. Z axis is parallel to the geomagnetic dipole axis, positive north. X is in the plane defined by the Z axis and the Earth's rotation axis. If N is a unit vector from the Earth's center to the north geographic pole, the signs of the X and Y axes are given by Y = N x Z, X = Y x Z. See Russell, 1971, and <http://cdpp.cnes.fr/00428.pdf></xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="MFA">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Magnetic Field Aligned - A coordinate system spacecraft-centered with Z in the direction of the ambient magnetic field vector. X is in the plane defined by Z and the spacecraft-Sun line, positive sunward. See <http://cdpp.cnes.fr/00428.pdf></xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="MSO">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Mars/Mercury Solar Orbital A coordinate system related to Mars or Mercury. A coordinate system where, depending on the body (Mars or Mercury), X is anti-sunward, Y along the orbital velocity direction.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="RTN">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Radial Tangential Normal. Typically centered at a spacecraft. Used for IMF and plasma V vectors. R (radial) axis is radially away from the Sun, T (tangential) axis is normal to the plane formed by R and the Sun's spin vector, positive in the direction of planetary motion. N (normal) is R x T.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="SC">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Spacecraft - A coordinate system defined by the spacecraft geometry and/or spin. Often has Z axis parallel to spacecraft spin vector. X and Y axes may or may not corotate with the spacecraft. See SR and SR2 below.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="SE">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Solar Ecliptic - A heliocentric coordinate system where the Z axis is normal to the ecliptic plane, positive northward. X axis is positive towards the first point of Aries (from Earth to Sun at vernal equinox). Same as HAE above. See <http://nssdc.gsfc.nasa.gov/space/helios/coor_des.html></xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="SM">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Solar Magnetic - A geocentric coordinate system where the Z axis is northward along Earth's dipole axis, X axis is in plane of Z axis and Earth-Sun line, positive sunward. See Russell, 1971.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="SR">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Spin Reference - A special case of a Spacecraft (SC) coordinate system for a spinning spacecraft. Z is parallel to the spacecraft spin vector. X and Y rotate with the spacecraft. See <http://cdpp.cnes.fr/00428.pdf></xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="SR2">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Spin Reference 2 - A special case of a Spacecraft (SC) coordinate system for a spinning spacecraft. Z is parallel to the spacecraft spin vector. X is in the plane defined by Z and the spacecraft-Sun line, positive sunward. See <http://cdpp.cnes.fr/00428.pdf></xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="SSE">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Spacecraft Solar Ecliptic - A coordinate system used for deep space spacecraft, for example Helios. X axis from spacecraft to Sun; Z axis normal to ecliptic plane, positive northward. Note: Angle between normals to ecliptic and to Helios orbit plane ~ 0.25 deg.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="SSE_L">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Selenocentric Solar Ecliptic. The X axis points from the center of the Earth's moon to the sun, the Z axis is normal to the ecliptic plane, positive northward. And the Y axis completes the right-handed set of axes.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
A coordinate system where X lies in the plane normal to and in the direction of motion of the spacecraft, Z is normal to this plane and Y completes the triad in a right-handed coordinate system.

Venus Solar Orbital - A coordinate system related to Venus where X is anti-sunward, Y along the orbital velocity direction.

The World Geodetic System (WGS) defines a reference frame for the earth, for use in geodesy and navigation. The WGS84 uses the zero meridian as defined by the Bureau International de l'Heure.

Identifiers for types or classes of rendered data.

A two-dimensional representation of data with values at each element of the array related to an intensity or a color.

The characterization of signal strengths in active sounding measurements as a function of virtual range or signal delay time and sounding frequency. A Plasmagram is also referred to as an Ionogram.

The characterization of signal strengths as a function of frequency (or energy) and time.

A representation of data showing multiple sets of observations on a single plot, possibly offsetting each plot by some uniform amount.

A representation of data showing a set of observations taken at different points in time and charted as a time series.

Spatial or temporal variations of wave amplitude over wave-period timescales.
The characterization of signal strengths as a function of frequency (or energy) and time.

A representation of data showing multiple sets of observations on a single plot, possibly offsetting each plot by some uniform amount.

A representation of data showing a set of observations taken at different points in time and charted as a time series.

Spatial or temporal variations of wave amplitude over wave-period timescales.

---

**Simple Type** `spase:AxisLabel`

**Namespace**  http://www.spase-group.org/data/schema

**Annotations**  A short character string (approximately 10 characters, but preferably 6 characters - more only if absolutely required for clarity) which can be used to label a y-axis for a plot or to provide a heading for a data listing.

**Type**  `xsd:string`

**Used by**  Element `spase:RenderingHints/spase:AxisLabel`

**Source**

```xml
<xsd:simpleType name="AxisLabel">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A short character string (approximately 10 characters, but preferably 6 characters - more only if absolutely required for clarity) which can be used to label a y-axis for a plot or to provide a heading for a data listing.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string"/>
</xsd:simpleType>
```

---

**Simple Type** `spase:RenderingAxis`

**Namespace**  http://www.spase-group.org/data/schema

**Annotations**  Identifiers for the reference component of a plot or rendering of data.

**Diagram**

```xml
<xsd:simpleType name="RenderingAxis">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Identifiers for the reference component of a plot or rendering of data.</xsd:documentation>
  </xsd:annotation>
</xsd:simpleType>
```
<xsd:restriction base="xsd:string">
  <xsd:enumeration value="ColorBar">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">A spectrum or set of colors used to represent data values.</xsd:documentation>
    </xsd:annotation>
  </xsd:enumeration>
  <xsd:enumeration value="Horizontal">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">Parallel to or in the plane of the horizon or a base line.</xsd:documentation>
    </xsd:annotation>
  </xsd:enumeration>
  <xsd:enumeration value="Vertical">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">Perpendicular to the plane of the horizon or a base line.</xsd:documentation>
    </xsd:annotation>
  </xsd:enumeration>
</xsd:restriction>
</xsd:simpleType>

### Simple Type `spase:Index`

**Namespace**
http://www.spase-group.org/data/schema

**Annotations**
The location of an item in an array or vector. An index can be multivalued to represent the location in a multidimensional object. The index of the first item is "1". A value of "0" is a wild card for all elements at the location in an array. A value of "-1" is a reference to the dimension at the location in the array. A "-1" is used when describing the attributes of the dimension, whereas "0" or a positive integer is used to describe attributes of individual elements.

**Diagram**
![Diagram](#)

**Type**
`spase:typeSequence`

**Type hierarchy**
- `xsd:integer`
- `spase:typeSequence`
- `spase:Index`

**Used by**
- Elements
  - `spase:Element/spase:Index`, `spase:RenderingHints/spase:Index`
- Simple Types
  - `spase:Index`, `spase:Size`

**Source**
```xml
<xsd:simpleType name="Index">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The location of an item in an array or vector. An index can be multivalued to represent the location in a multidimensional object. The index of the first item is "1". A value of "0" is a wild card for all elements at the location in an array. A value of "-1" is a reference to the dimension at the location in the array. A "-1" is used when describing the attributes of the dimension, whereas "0" or a positive integer is used to describe attributes of individual elements.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="spase:typeSequence"/>
</xsd:simpleType>
```

### Simple Type `spase:typeSequence`

**Namespace**
http://www.spase-group.org/data/schema

**Annotations**
A list of whole number values where the order of the values is fixed. A space separates each value. For example, "1 2 3".

**Diagram**
![Diagram](#)

**Type**
List of `xsd:integer`

**Used by**
- Simple Types
  - `spase:Index`, `spase:Size`
Source

```xml
<xsd:simpleType name="typeSequence">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A list of whole number values where the order of the values is fixed. A space separates each value. For example, "1 2 3".</xsd:documentation>
  </xsd:annotation>
  <xsd:list itemType="xsd:integer"/>
</xsd:simpleType>
```

Schema location

file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

**Simple Type spase:ValueFormat**

Namespace

http://www.spase-group.org/data/schema

Annotations

A string defining the output format used when extracting data values out to a file or screen. The magnitude and the number of significant figures needed should be carefully considered. The output format string can be in either Fortran or C syntax.

Diagram

```
[ Fortran ] --|--> [ C ]
```

Type

xsd:string

Used by

Element

spase:RenderingHints/spase:ValueFormat

Source

```xml
<xsd:simpleType name="ValueFormat">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A string defining the output format used when extracting data values out to a file or screen. The magnitude and the number of significant figures needed should be carefully considered. The output format string can be in either Fortran or C syntax.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string"/>
</xsd:simpleType>
```

Schema location

file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

**Simple Type spase:ScaleMin**

Namespace

http://www.spase-group.org/data/schema

Annotations

The minimum value that the variable is expected to attain. Used, for example, by automated plotting software.

Diagram

```
[ Scale ] --|--> [ double ]
```

Type

xsd:double

Used by

Element

spase:RenderingHints/spase:ScaleMin

Source

```xml
<xsd:simpleType name="ScaleMin">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The minimum value that the variable is expected to attain. Used, for example, by automated plotting software.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:double"/>
</xsd:simpleType>
```

Schema location

file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

**Simple Type spase:ScaleMax**

Namespace

http://www.spase-group.org/data/schema

Annotations

The maximum value that the variable is expected to attain. Used, for example, by automated plotting software.

Diagram

```
[ ScaleMax ] --|--> [ double ]
```

Type

xsd:double

Source

```xml
<xsd:simpleType name="ScaleMax">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The minimum value that the variable is expected to attain. Used, for example, by automated plotting software.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:double"/>
</xsd:simpleType>
```

Schema location

file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd
### Simple Type `spase:ScaleMax`

**Namespace**
http://www.spase-group.org/data/schema

**Annotations**
The maximum value that the variable is expected to attain. Used, for example, by automated plotting software.

**Source**
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

**Diagram**
![Diagram](image)

**Type**
restriction of xsd:double

**Facets**
- enumeration *LinearScale* Intervals which are equally spaced.
- enumeration *LogScale* Intervals which are spaced proportionally to the logarithms of the values being represented.

**Used by**
- Element `spase:RenderingHints/spase:ScaleMax`

### Simple Type `spase:ScaleType`

**Namespace**
http://www.spase-group.org/data/schema

**Annotations**
Identifiers for scaling applied to a set of numbers.

**Source**
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

**Diagram**
![Diagram](image)

**Type**
restriction of xsd:string

**Facets**
- enumeration *LinearScale* Intervals which are equally spaced.
- enumeration *LogScale* Intervals which are spaced proportionally to the logarithms of the values being represented.

**Used by**
- Element `spase:RenderingHints/spase:ScaleType`

### Simple Type `spase:Size`

**Namespace**
http://www.spase-group.org/data/schema

**Annotations**
The number of elements in each dimension of a multi-dimensional array. A scalar has a size of 1. A multi-dimensional vector will have a size for each dimension. Note that the number of elements in the size of an N-dimensional array conveys the array's dimensionality while the product of those numbers conveys the total number of elements in the array. When size is used to describe a tensor it is the number of elements in the tensor. As such it has a limited set of values. A tensor of rank 1 has a size of 3, rank 2 a size of 9, rank 3 a size of 27 and rank n a size of 3^n.

**Source**
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

**Diagram**
![Diagram](image)

**Type**
spase:integer

**Type hierarchy**
- `xsd:integer`
- `spase:integerSequence`
- `spase:Size`
**Schema documentation for spase-2_2_4.xsd**

<table>
<thead>
<tr>
<th>Used by</th>
<th>Element</th>
<th>spase:Structure/spase:Size</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Source</strong></td>
<td><code>&lt;xsd:simpleType name=&quot;Size&quot;&gt;</code></td>
<td></td>
</tr>
</tbody>
</table>

```xml
<xsd:annotation>
  <xsd:documentation xml:lang="en">The number of elements in each dimension of a multi-dimensional array. A scalar has a size of 1. A multi-dimensional vector will have a size for each dimension. Note that the number of elements in the size of an N-dimensional array conveys the array's dimensionality while the product of those numbers conveys the total number of elements in the array. When size is used to describe a tensor it is the number of elements in the tensor. As such it has a limited set of values. A tensor of rank 1 has a size of 3, rank 2 a size of 9, rank 3 a size of 27 and rank n a size of 3^n.</xsd:documentation>
</xsd:annotation>
```

**Source location**: file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### Simple Type `spase:Qualifier`

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Annotations</strong></td>
<td>Identifiers for terms which refine the type or attribute of a quantity.</td>
</tr>
<tr>
<td><strong>Diagram</strong></td>
<td><img src="SampleDiagram" alt="Diagram" /></td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td>restriction of xsd:string</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Facets</th>
<th>Anisotropy</th>
<th>Direction-dependent property.</th>
</tr>
</thead>
<tbody>
<tr>
<td>enumeration</td>
<td>Array</td>
<td>A sequence of values corresponding to the elements in a rectilinear, n-dimension matrix. Each value can be referenced by a unique index.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Average</td>
<td>The statistical mean; the sum of a set of values divided by the number of values in the set.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Characteristic</td>
<td>A quantity which can be easily identified and measured in a given environment.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Circular</td>
<td>Relative to polarization, right-hand circularly polarized light is defined such that the electric field is rotating clockwise as seen by an observer towards whom the wave is moving. Left-hand circularly polarized light is defined such that the electric field is rotating counterclockwise as seen by an observer towards whom the wave is moving. The polarization of magneto-hydrodynamic waves is specified with respect to the ambient mean magnetic field: right-hand polarized waves have a transverse electric field component which turns in a right-handed sense (that of the gyrating electrons) around the magnetic field.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Column</td>
<td>A two-dimensional measure of a quantity. The column is the area over which the quantity is measured.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Component</td>
<td>Projection of a vector along one of the base axes of a coordinate system.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Component.I</td>
<td>Projection of a vector along the first named axis of a coordinate system. Typically the X axis, but could be the X axis for an RTN coordinate system.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Component.J</td>
<td>Projection of a vector along the second named axis of a coordinate system. Typically the Y axis, but could be the T axis for an RTN coordinate system.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Component.K</td>
<td>Projection of a vector along the third named axis of a coordinate system. Typically the Z axis, but could be the N axis for an RTN coordinate system.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Core</td>
<td>The central or main part of an object or calculated distribution. For example, the part of a distribution of particles at low energies that is a thermal...</td>
</tr>
<tr>
<td>Enumeration</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>CrossSpectrum</td>
<td>The Fourier transform of the cross correlation of two physical or empirical observations.</td>
<td></td>
</tr>
<tr>
<td>Deviation</td>
<td>The difference between an observed value and the expected value of a quantity.</td>
<td></td>
</tr>
<tr>
<td>Differential</td>
<td>A measurement within a narrow range of energy and/or solid angle.</td>
<td></td>
</tr>
<tr>
<td>Direction</td>
<td>The spatial relation between an object and another object, the orientation of the object or the course along which the object points or moves.</td>
<td></td>
</tr>
<tr>
<td>DirectionAngle</td>
<td>The angle between a position vector or measured vector (or one of its projections onto a plane) and one of the base axes of the coordinate system.</td>
<td></td>
</tr>
<tr>
<td>DirectionAngle.AzimuthAngle</td>
<td>The angle between the projection into the i-j plane of a position or measured vector and the i-axis of the coordinate system. Mathematically defined as ( \arctan(j/i) ). This term could also be applied to angles measured in different planes, for example the IMF clock angle defined as ( \arctan(</td>
<td>By</td>
</tr>
<tr>
<td>DirectionAngle.ElevationAngle</td>
<td>The angle between the position or measured vector and the i-j plane of the coordinate system. Mathematically defined as ( \arctan(k/\sqrt{i^2+j^2}) ).</td>
<td></td>
</tr>
<tr>
<td>DirectionAngle.PolarAngle</td>
<td>The angle between the position or measured vector and the k-axis of the coordinate system. Mathematically defined as ( \arctan(\sqrt{i^2+j^2}/k) ). This term could be also applied to angles between the vector and other components, for example the IMF cone angle defined as arccos(Bx/Bt).</td>
<td></td>
</tr>
<tr>
<td>Directional</td>
<td>A measurement within a narrow range of solid angle.</td>
<td></td>
</tr>
<tr>
<td>FieldAligned</td>
<td>Values that make a model agree with the data.</td>
<td></td>
</tr>
<tr>
<td>Fit</td>
<td>An assemblage of values that a certain relation or common characteristic.</td>
<td></td>
</tr>
<tr>
<td>Halo</td>
<td>The part of an object or distribution surrounding some central body or distribution. For example, the particles above the core energies that show enhancements above the thermal population. Typically, a &quot;power law tail&quot; shows a break from the core Maxwellian at a particular energy.</td>
<td></td>
</tr>
<tr>
<td>Integral</td>
<td>A flux measurement in a broad range of energy and solid angle.</td>
<td></td>
</tr>
<tr>
<td>Integral.Area</td>
<td>Integration over the extent of a planar region, or of the surface of a solid.</td>
<td></td>
</tr>
<tr>
<td>Integral.Bandwidth</td>
<td>Integration over the width a frequency band.</td>
<td></td>
</tr>
<tr>
<td>Integral.SolidAngle</td>
<td>Integration over the angle in three-dimensional space that an object subtends at a point.</td>
<td></td>
</tr>
<tr>
<td>LineOfSight</td>
<td>The line of sight is the line that connects the observer with the observed object. This expression is often used with measurements of Doppler velocity and magnetic field in magnetograms, where only the component of the vector field directed along the line of sight is measured.</td>
<td></td>
</tr>
<tr>
<td>Linear</td>
<td>Polarization where the E-field vector is confined to a given plane</td>
<td></td>
</tr>
<tr>
<td>Magnitude</td>
<td>A measure of the strength of a vector quantity or length of its representational vector.</td>
<td></td>
</tr>
<tr>
<td>Maximum</td>
<td>The largest value of a batch or sample or the upper bound of a probability distribution.</td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td>The measure of central tendency of a set of n. values computed by ordering the values and taking the value at position ( n. + 1 )</td>
<td></td>
</tr>
<tr>
<td>Enumeration</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>---------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Minimum</td>
<td>The smallest value of a batch or sample or the lower bound of a probability</td>
<td></td>
</tr>
<tr>
<td>Moment</td>
<td>Distribution.</td>
<td></td>
</tr>
<tr>
<td>Parallel</td>
<td>Having the same direction as a given direction.</td>
<td></td>
</tr>
<tr>
<td>Peak</td>
<td>The maximum value for the quantity in question, over a period of time which</td>
<td></td>
</tr>
<tr>
<td></td>
<td>is usually equal to the cadence.</td>
<td></td>
</tr>
<tr>
<td>Perpendicular</td>
<td>At right angles to a given direction.</td>
<td></td>
</tr>
<tr>
<td>Perturbation</td>
<td>Variations in the state of a system.</td>
<td></td>
</tr>
<tr>
<td>Phase</td>
<td>A point or portion in a recurring series of changes.</td>
<td></td>
</tr>
<tr>
<td>PhaseAngle</td>
<td>Phase difference between two or more waves, normally expressed in degrees.</td>
<td></td>
</tr>
<tr>
<td>Projection</td>
<td>A measure of the length of a position or measured vector as projected into</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a plane of the coordinate system.</td>
<td></td>
</tr>
<tr>
<td>Projection.IJ</td>
<td>A measure of the length of a position or measured vector projected into the</td>
<td></td>
</tr>
<tr>
<td></td>
<td>i-j (typically X-Y) plane of the coordinate system.</td>
<td></td>
</tr>
<tr>
<td>Projection.IK</td>
<td>A measure of the length of a position or measured vector projected into the</td>
<td></td>
</tr>
<tr>
<td></td>
<td>i-k (typically X-Z) plane of the coordinate system.</td>
<td></td>
</tr>
<tr>
<td>Projection.JK</td>
<td>A measure of the length of a position or measured vector projected into the</td>
<td></td>
</tr>
<tr>
<td></td>
<td>j-k (typically Y-Z) plane of the coordinate system.</td>
<td></td>
</tr>
<tr>
<td>Pseudo</td>
<td>Similar to or having the appearance of something else. Can be used to</td>
<td></td>
</tr>
<tr>
<td></td>
<td>indicate an estimation or approximation of a particular quantity.</td>
<td></td>
</tr>
<tr>
<td>Ratio</td>
<td>The relative magnitudes of two quantities.</td>
<td></td>
</tr>
<tr>
<td>Scalar</td>
<td>A quantity that is completely specified by its magnitude and has no</td>
<td></td>
</tr>
<tr>
<td></td>
<td>direction.</td>
<td></td>
</tr>
<tr>
<td>Spectral</td>
<td>Characterized as a range or continuum of frequencies.</td>
<td></td>
</tr>
<tr>
<td>StandardDeviation</td>
<td>The square root of the average of the squares of deviations about the mean</td>
<td></td>
</tr>
<tr>
<td></td>
<td>of a set of data. Standard deviation is a statistical measure of spread</td>
<td></td>
</tr>
<tr>
<td></td>
<td>or variability.</td>
<td></td>
</tr>
<tr>
<td>StokesParameters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strahl</td>
<td>A distribution of particles concentrated in a narrow energy band. The band</td>
<td></td>
</tr>
<tr>
<td></td>
<td>may be may be aligned with a secondary feature. For example, it may occur</td>
<td></td>
</tr>
<tr>
<td></td>
<td>in a narrow cone aligned with the mean magnetic field direction.</td>
<td></td>
</tr>
<tr>
<td>Superhalo</td>
<td>The part of an object or distribution surrounding some central body or</td>
<td></td>
</tr>
<tr>
<td></td>
<td>distribution evident in a second break in the distribution function (e.g.,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a different power law). It consists of a population at a higher energies</td>
<td></td>
</tr>
<tr>
<td></td>
<td>than for a halo.</td>
<td></td>
</tr>
<tr>
<td>Symmetric</td>
<td>Equal distribution about one or more axes.</td>
<td></td>
</tr>
<tr>
<td>Tensor</td>
<td>A generalized linear “quantity” or “geometrical entity” that can be</td>
<td></td>
</tr>
<tr>
<td></td>
<td>expressed as a multi-dimensional array relative to a choice of basis of the</td>
<td></td>
</tr>
<tr>
<td></td>
<td>particular space on which it is defined.</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>The summation of quantities over all possible species.</td>
<td></td>
</tr>
<tr>
<td>Trace</td>
<td>The sum of the elements on the main diagonal (the diagonal from the upper</td>
<td></td>
</tr>
<tr>
<td></td>
<td>left to the lower right) of a square matrix.</td>
<td></td>
</tr>
<tr>
<td>Uncertainty</td>
<td>A statistically defined discrepancy between a measured quantity and the</td>
<td></td>
</tr>
<tr>
<td></td>
<td>true value of the values at positions n. / 2 and (n. / 2) + 1 when n. is</td>
<td></td>
</tr>
<tr>
<td></td>
<td>even.</td>
<td></td>
</tr>
</tbody>
</table>
that quantity that cannot be corrected by calculation or calibration.

<table>
<thead>
<tr>
<th>enumeration</th>
<th>Variance</th>
<th>A measure of dispersion of a set of data points around their mean value. The expectation value of the squared deviations from the mean.</th>
</tr>
</thead>
<tbody>
<tr>
<td>enumeration</td>
<td>Vector</td>
<td>A set of parameter values each along some independent variable (e.g., components of a field in three orthogonal spatial directions; atmospheric temperature values at several altitudes, or at a given latitude and longitude).</td>
</tr>
</tbody>
</table>

Used by


Source

```xml
<xsd:simpleType name="Qualifier">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Identifiers for terms which refine the type or attribute of a quantity.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="Anisotropy">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Direction-dependent property.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Array">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A sequence of values corresponding to the elements in a rectilinear, n-dimension matrix. Each value can be referenced by a unique index.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Average">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The statistical mean; the sum of a set of values divided by the number of values in the set.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Characteristic">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A quantity which can be easily identified and measured in a given environment.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Circular">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Relative to polarization, right-hand circularly polarized light is defined such that the electric field is rotating clockwise as seen by an observer towards whom the wave is moving. Left-hand circularly polarized light is defined such that the electric field is rotating counterclockwise as seen by an observer towards whom the wave is moving. The polarization of magnetohydrodynamic waves is specified with respect to the ambient mean magnetic field: right-hand polarized waves have a transverse electric field component which turns in a right-handed sense (that of the gyrating electrons) around the magnetic field.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Column">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A two-dimensional measure of a quantity. The column is the area over which the quantity is measured.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Component">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Projection of a vector along one of the base axes of a coordinate system.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Component.I">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Projection of a vector along the first named axis of a coordinate system. Typically the X axis, but could be the R axis for an RTN coordinate system.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Component.J">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Projection of a vector along the second named axis of a coordinate system. Typically the Y axis, but could be the T axis for an RTN coordinate system.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
  </xsd:restriction>
</xsd:simpleType>
```
<xsd:enumeration value="Component.K">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Projection of a vector along the third named axis of a coordinate system. Typically the Z axis, but could be the N axis for an RTN coordinate system.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Core">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The central or main part of an object or calculated distribution. For example, the part of a distribution of particles at low energies that is a thermal (Maxwellian) population.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="CrossSpectrum">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The Fourier transform of the cross correlation of two physical or empirical observations.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Deviation">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The difference between an observed value and the expected value of a quantity.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Differential">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A measurement within a narrow range of energy and/or solid angle.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Direction">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The spatial relation between an object and another object, the orientation of the object or the course along which the object points or moves.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="DirectionAngle">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The angle between a position vector or measured vector (or one of its projections onto a plane) and one of the base axes of the coordinate system.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="DirectionAngle.AzimuthAngle">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The angle between the projection into the i-j plane of a position or measured vector and the i-axis of the coordinate system. Mathematically defined as arctan(j/i). This term could be also applied to angles measured in different planes, for example the IMF clock angle defined as arctan(|By|/Bz).</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="DirectionAngle.ElevationAngle">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The angle between the position or measured vector and the i-j plane of the coordinate system. Mathematically defined as arctan(k/SQRT(i^2+j^2)).</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="DirectionAngle.PolarAngle">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The angle between the position or measured vector and the k-axis of the coordinate system. Mathematically defined as arctan((SQRT(i^2+j^2))/k). This term could be also applied to angles between the vector and other components, for example the IMF cone angle defined as arccos(|Bx|/Bt).</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Directional">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A measurement within a narrow range of solid angle.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="FieldAligned">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The central or main part of an object or calculated distribution. For example, the part of a distribution of particles at low energies that is a thermal (Maxwellian) population.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Fit">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The central or main part of an object or calculated distribution. For example, the part of a distribution of particles at low energies that is a thermal (Maxwellian) population.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:annotation>
  <xsd:documentation xml:lang="en">Values that make a model agree with the data.</xsd:documentation>
</xsd:annotation>
<xsd:enumeration value="Group">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">An assemblage of values that a certain relation or common characteristic.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Halo">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The part of an object or distribution surrounding some central body or distribution. For example, the particles above the core energies that show enhancements above the thermal population. Typically, a "power law tail" shows a break from the core Maxwellian at a particular energy.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Integral">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A flux measurement in a broad range of energy and solid angle.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Integral.Area">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Integration over the extent of a planar region, or of the surface of a solid.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Integral.Bandwidth">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Integration over the width a frequency band.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Integral.SolidAngle">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Integration over the angle in three-dimensional space that an object subtends at a point.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="LineOfSight">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The line of sight is the line that connects the observer with the observed object. This expression is often used with measurements of Doppler velocity and magnetic field in magnetograms, where only the component of the vector field directed along the line of sight is measured.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Linear">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Polarization where the E-field vector is confined to a given plane.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Magnitude">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A measure of the strength of a vector quantity or length of its representational vector.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Maximum">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The largest value of a batch or sample or the upper bound of a probability distribution.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Median">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The measure of central tendency of a set of n. values computed by ordering the values and taking the value at position (n. + 1) / 2 when n. is odd or the arithmetic mean of the values at positions n. / 2 and (n. / 2) + 1 when n. is even.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Minimum">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The smallest value of a batch or sample or the lower bound of a probability distribution.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Moment">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Parameters determined by integration over a distribution function convolved with a power of velocity.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Parallel">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Having the same direction as a given direction.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Peak">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The maximum value for the quantity in question, over a period of time which is usually equal to the cadence.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Perpendicular">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">At right angles to a given direction.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Perturbation">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Variations in the state of a system.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Phase">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A point or portion in a recurring series of changes.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="PhaseAngle">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Phase difference between two or more waves, normally expressed in degrees.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Projection">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A measure of the length of a position or measured vector as projected into a plane of the coordinate system.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Projection.IJ">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A measure of the length of a position or measured vector projected into the i-j (typically X-Y) plane of the coordinate system.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Projection.IK">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A measure of the length of a position or measured vector projected into the i-k (typically X-Z) plane of the coordinate system.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Projection.JK">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A measure of the length of a position or measured vector projected into the j-k (typically Y-Z) plane of the coordinate system.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Pseudo">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Similar to or having the appearance of something else. Can be used to indicate an estimation or approximation of a particular quantity.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Ratio">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The relative magnitudes of two quantities.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Scalar">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A quantity that is completely specified by its magnitude and has no direction.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Spectral">
Schema documentation for spase-2_2_4.xsd

<xsd:annotation>
  <xsd:documentation xml:lang="en">Characterized as a range or continuum of frequencies</xsd:documentation>
</xsd:annotation>

<xsd:enumeration value="StandardDeviation">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The square root of the average of the squares of deviations about the mean of a set of data. Standard deviation is a statistical measure of spread or variability.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="StokesParameters">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A distribution of particles concentrated in a narrow energy band. The band may be aligned with a secondary feature. For example, it may occur in a narrow cone aligned with the mean magnetic field direction.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Superhalo">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The part of an object or distribution surrounding some central body or distribution evident in a second break in the distribution function (e.g., a different power law). It consists of a population at a higher energies than for a halo.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Symmetric">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Equal distribution about one or more axes.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Tensor">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A generalized linear "quantity" or "geometrical entity" that can be expressed as a multi-dimensional array relative to a choice of basis of the particular space on which it is defined.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Total">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The summation of quantities over all possible species.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Trace">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The sum of the elements on the main diagonal (the diagonal from the upper left to the lower right) of a square matrix.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Uncertainty">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A statistically defined discrepancy between a measured quantity and the true value of that quantity that cannot be corrected by calculation or calibration.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Variance">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A measure of dispersion of a set of data points around their mean value. The expectation value of the squared deviations from the mean.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Vector">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A set of parameter values each along some independent variable (e.g., components of a field in three orthogonal spatial directions; atmospheric temperature values at several altitudes, or at a given latitude and longitude).</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
Simple Type `spase:ValidMin`

Namespace: http://www.spase-group.org/data/schema
Annotations: The smallest legitimate value.

Diagram: [xsd:string]

Type: xsd:string

Used by: Elements `spase:Element/spase:ValidMin`, `spase:Parameter/spase:ValidMin`

Source:
```
<xsd:simpleType name="ValidMin">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The smallest legitimate value.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string"/>
</xsd:simpleType>
```

Schema location: file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Simple Type `spase:ValidMax`

Namespace: http://www.spase-group.org/data/schema
Annotations: The largest legitimate value.

Diagram: [xsd:string]

Type: xsd:string


Source:
```
<xsd:simpleType name="ValidMax">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The largest legitimate value.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string"/>
</xsd:simpleType>
```

Schema location: file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Simple Type `spase:FillValue`

Namespace: http://www.spase-group.org/data/schema
Annotations: A value that indicates that a quantity is undefined.

Diagram: [xsd:string]

Type: xsd:string


Source:
```
<xsd:simpleType name="FillValue">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A value that indicates that a quantity is undefined.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string"/>
</xsd:simpleType>
```

Schema location: file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Simple Type `spase:FieldQuantity`

Namespace: http://www.spase-group.org/data/schema
Annotations: Identifiers for the physical attribute of the field.

Diagram: [xsd:string]

Type: restriction of xsd:string
<table>
<thead>
<tr>
<th>Facets</th>
<th>enumeration</th>
<th>Current</th>
<th>The flow of electrons through a conductor caused by a potential difference.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facets</td>
<td>enumeration</td>
<td>Electric</td>
<td>The physical attribute that exerts an electrical force.</td>
</tr>
<tr>
<td>Facets</td>
<td>enumeration</td>
<td>Electromagnetic</td>
<td>Electric and magnetic field variations in time and space that propagate through a medium or a vacuum with the wave's propagation, electric field, and magnetic field vectors forming an orthogonal triad. Waves in this category are detected by having their field quantities measured.</td>
</tr>
<tr>
<td>Facets</td>
<td>enumeration</td>
<td>Gyrofrequency</td>
<td>The number of gyrations around a magnetic guiding center (field line) a charged particle makes per unit time due to the Lorentz force.</td>
</tr>
<tr>
<td>Facets</td>
<td>enumeration</td>
<td>Magnetic</td>
<td>The physical attribute attributed to a magnet or its equivalent.</td>
</tr>
<tr>
<td>Facets</td>
<td>enumeration</td>
<td>PlasmaFrequency</td>
<td>A number-density-dependent characteristic frequency of a plasma.</td>
</tr>
<tr>
<td>Facets</td>
<td>enumeration</td>
<td>Potential</td>
<td>The work required per unit charge to move a charge from a reference point to a point at infinity (electric potential is defined to be zero). The electric potential of a spacecraft is often referred to as the &quot;spacecraft potential&quot;. The spacecraft potential is the electric potential of the spacecraft relative to the potential of the nearby plasma. The spacecraft potential is non-zero because the spacecraft charges to the level that the emitted photoelectron flux going to infinity is balanced by the plasma electron flux to the spacecraft.</td>
</tr>
<tr>
<td>Facets</td>
<td>enumeration</td>
<td>PoyntingFlux</td>
<td>Electromagnetic energy flux transported by a wave characterized as the rate of energy transport per unit area per steradian.</td>
</tr>
</tbody>
</table>

Used by

| Element | spase:Field/spase:FieldQuantity |

Source

```
<xs:complexType name="FieldQuantity">
  <xs:annotation>
    <xs:documentation xml:lang="en">Identifiers for the physical attribute of the field.</xs:documentation>
  </xs:annotation>
  <xs:restriction base="xs:string">
    <xs:enumeration value="Current">
      <xs:annotation>
        <xs:documentation xml:lang="en">The flow of electrons through a conductor caused by a potential difference.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="Electric">
      <xs:annotation>
        <xs:documentation xml:lang="en">The physical attribute that exerts an electrical force.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="Electromagnetic">
      <xs:annotation>
        <xs:documentation xml:lang="en">Electric and magnetic field variations in time and space that propagate through a medium or a vacuum with the wave's propagation, electric field, and magnetic field vectors forming an orthogonal triad. Waves in this category are detected by having their field quantities measured.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="Gyrofrequency">
      <xs:annotation>
        <xs:documentation xml:lang="en">The number of gyrations around a magnetic guiding center (field line) a charged particle makes per unit time due to the Lorentz force.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="Magnetic">
      <xs:annotation>
        <xs:documentation xml:lang="en">The physical attribute attributed to a magnet or its equivalent.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="PlasmaFrequency">
      <xs:annotation>
        <xs:documentation xml:lang="en">A number-density-dependent characteristic frequency of a plasma.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
  </xs:restriction>
</xs:complexType>
```
A number-density-dependent characteristic frequency of a plasma. The work required per unit charge to move a charge from a reference point to a point at infinity (electric potential is defined to be zero). The electric potential of a spacecraft is often referred to as the "spacecraft potential". The spacecraft potential is the electric potential of the spacecraft relative to the potential of the nearby plasma. The spacecraft potential is non-zero because the spacecraft charges to the level that the emitted photoelectron flux going to infinity is balanced by the plasma electron flux to the spacecraft.

Electromagnetic energy flux transported by a wave characterized as the rate of energy transport per unit area per steradian.

Identifiers for names associated with wavelengths. Based on the ISO 21348 Solar Irradiance Standard. Additions have been made to extend the frequency ranges to include those used in space physics. Those additions are indicated in blue text. The "Total Solar Irradiance" category has not been included since it is a type of measurement and not a specific spectral range. See Appendix A - Comparison of Spectrum Domains for a comparison of the spectral ranges with other systems.

A spectrum with a wavelength of range centered near 393.5 nm. VSO nickname: Ca-K image with range of 391.9 nm to 395.2 nm.

A spectrum with a wavelength range of 10.0 nm to 125.0 nm. VSO nickname: EUV image with a range of of 10.0 nm to 125.0 nm.

A spectrum with a wavelength range of 122 nm to 200 nm. VSO nickname: FUV image with a range of 122.0 nm to 200 nm.

Photons with a wavelength range: 0.00001 to 0.001 nm.

A spectrum with a wavelength range centered at 656.3 nm. VSO nickname: H-alpha image with a spectrum range of of 655.8 nm to 656.8 nm.

Photons with a wavelength range: 0.001 to 0.1 nm and an energy range of 12 keV to 120 keV.

A spectrum with a wavelength range centered at 1082.9 nm. VSO nickname: He 10830 image with a range of of 1082.5 nm to 1083.3 nm.

A spectrum centered around the resonance line of ionised helium at 304 Angstrom (30.4 nm).

Photons with a wavelength range: 760 to 1.00x10^6 nm.

A spectrum with a wavelength range centered at 769.9 nm. VSO nickname: K-7699 dopplergram with a range of 769.8 nm to 770.0 nm.

Lyman-Birge-Hopfield band in the far ultraviolet range with wavelength range of 140 nm to 170 nm.
| enumeration   | Microwave | Photons with a wavelength range: $1.00 \times 10^6$ to $1.50 \times 10^7$ nm |
| enumeration   | NaD       | A spectrum with a wavelength range of centered at 589.3 nm. VSO nickname: Na-D image with a range of 588.8 nm to 589.8 nm. |
| enumeration   | Ni6768    | A spectrum with a wavelength range centered at 676.8 nm. VSO nickname: Ni-6768 dopplergram with a range of 676.7 nm to 676.9 nm. |
| enumeration   | Optical   | Photons with a wavelength range: 380 to 760 nm |
| enumeration   | RadioFrequency | Photons with a wavelength range: 100,000 to 1.00\times10^{11}$ nm |
| enumeration   | SoftXrays | X-Rays with an energy range of 0.12 keV to 12 keV. |
| enumeration   | Ultraviolet | Photons with a wavelength range: 10 to 400 nm. |
| enumeration   | WhiteLight | Photons with a wavelength in the visible range for humans. |
| enumeration   | XRays     | Photons with a wavelength range: $0.001 \leq x < 10$ nm |

**Used by Elements**

- spase:DisplayData/spase:SpectralRange
- spase:FrequencyRange/spase:SpectralRange
- spase:NumericalData/spase:SpectralRange
- spase:WavelengthRange/spase:SpectralRange

Source

```xml
<xsd:simpleType name="SpectralRange">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Identifiers for names associated with wavelengths. Based on the ISO 21348 Solar Irradiance Standard. Additions have been made to extend the frequency ranges to include those used in space physics. Those additions are indicated in blue text. The "Total Solar Irradiance" category has not been included since it is a type of measurement and not a specific spectral range. See Appendix A - Comparison of Spectrum Domains for a comparison of the spectral ranges with other systems.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="CaK">A spectrum with a wavelength of range centered near 393.5 nm. VSO nickname: Ca-K image with range of 391.9 nm to 395.2 nm.</xsd:enumeration>
    <xsd:enumeration value="ExtremeUltraviolet">A spectrum with a wavelength range of 10.0 nm to 125.0 nm. VSO nickname: EUV image with a range of 122.0 nm to 200 nm.
    </xsd:enumeration>
    <xsd:enumeration value="FarUltraviolet">A spectrum with a wavelength range of 122 nm to 200.0 nm. VSO nickname: FUV image with a range of 122.0 nm to 200 nm.
    </xsd:enumeration>
    <xsd:enumeration value="GammaRays">Photons with a wavelength range: $0.00001 \leq x < 0.001$ nm
    </xsd:enumeration>
    <xsd:enumeration value="Halpha">A spectrum with a wavelength range centered at 656.3 nm. VSO nickname: H-alpha image with a spectrum range of 655.8 nm to 656.8 nm.
    </xsd:enumeration>
    <xsd:enumeration value="HardXrays">Photons with a wavelength range: 0.001 to 0.1 nm and an energy range of 12 keV to 120 keV
    </xsd:enumeration>
    <xsd:enumeration value="He10830">A spectrum with a wavelength range centered at 1082.9 nm. VSO nickname: He 10830 image with a range of 1082.5 nm to 1083.3 nm.
    </xsd:enumeration>
    <xsd:enumeration value="He304">A spectrum with a wavelength range centered at 304 nm.
    </xsd:enumeration>
  </xsd:restriction>
</xsd:simpleType>
```
A spectrum centered around the resonance line of ionised helium at 304 Angstrom (30.4 nm).

Photons with a wavelength range: 760 to 1.00x10^6 nm

Lyman-Birge-Hopfield band in the far ultraviolet range with wavelength range of 140nm to 170 nm.

Photons with a wavelength range: 1.00x10^6 to 1.50x10^7 nm

A spectrum with a wavelength range of centered at 589.3 nm. VSO nickname: Na-D image with a range of 588.8 nm to 589.8 nm.

A spectrum with a wavelength range centered at 676.8 nm. VSO nickname: NI-6768 dopplergram with a range of of 676.7 nm to 676.9 nm.

Photons with a wavelength range: 380 to 760 nm

Photons with a wavelength range: 1.00x10^6 to 1.50x10^7 nm

X-Rays with an energy range of 0.12 keV to 12 keV.

Photons with a wavelength range: 10 to 400 nm.

Photons with a wavelength in the visible range for humans.
Simple Type spase:Low

Namespace http://www.spase-group.org/data/schema
Annotations The smallest value within a range of possible values.
Diagram
Type xsd:double

Source
<xsd:simpleType name="Low">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The smallest value within a range of possible values.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:double"/>
</xsd:simpleType>

Schema location file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Simple Type spase:High

Namespace http://www.spase-group.org/data/schema
Annotations The largest value within a range of possible values.
Diagram
Type xsd:double

Source
<xsd:simpleType name="High">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The largest value within a range of possible values.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:double"/>
</xsd:simpleType>

Schema location file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Simple Type spase:BandName

Namespace http://www.spase-group.org/data/schema
Annotations A common or provider assigned name for a range of values.
Diagram
Type xsd:string
Used by Element spase:Bin/spase:BandName

Source
<xsd:simpleType name="BandName">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A common or provider assigned name for a range of values.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string"/>
</xsd:simpleType>

Schema location file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Simple Type spase:ParticleType

Namespace http://www.spase-group.org/data/schema
Annotations Identifiers for the characterization of the kind of particle observed by the measurement.
### Type

**restriction of xsd:string**

<table>
<thead>
<tr>
<th>Facets</th>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Aerosol</strong></td>
<td>A suspension of fine solid or liquid particles in a gas.</td>
</tr>
<tr>
<td></td>
<td><strong>AlphaParticle</strong></td>
<td>A positively charged nuclear particle that consists of two protons and two neutrons.</td>
</tr>
<tr>
<td></td>
<td><strong>Atom</strong></td>
<td>Matter consisting of a nucleus surrounded by electrons which has no net charge.</td>
</tr>
<tr>
<td></td>
<td><strong>Dust</strong></td>
<td>Free microscopic particles of solid material.</td>
</tr>
<tr>
<td></td>
<td><strong>Electron</strong></td>
<td>An elementary particle consisting of a charge of negative electricity equal to about $1.602 \times 10^{-19}$ Coulomb and having a mass when at rest of about $9.109534 \times 10^{-28}$ gram.</td>
</tr>
<tr>
<td></td>
<td><strong>Ion</strong></td>
<td>An atom that has acquired a net electric charge by gaining or losing one or more electrons. (Note: Z&gt;2)</td>
</tr>
<tr>
<td></td>
<td><strong>Molecule</strong></td>
<td>A group of atoms so united and combined by chemical affinity that they form a complete, integrated whole, being the smallest portion of any particular compound that can exist in a free state.</td>
</tr>
<tr>
<td></td>
<td><strong>Neutron</strong></td>
<td>An elementary particle that has no net charge and is a constituent of atomic nuclei, and that has a mass slightly larger than a proton ($1.673 \times 10^{-24}$ gram.)</td>
</tr>
<tr>
<td></td>
<td><strong>Proton</strong></td>
<td>An elementary particle that is a constituent of all atomic nuclei, that carries a positive charge numerically equal to the charge of an electron, and that has a mass of $1.673 \times 10^{-24}$ gram.</td>
</tr>
</tbody>
</table>

### Used by

**Elements**

- `spase:Mixed/spase:ParticleType`
- `spase:Particle/spase:ParticleType`

### Source

```xml
<xsd:simpleType name="ParticleType">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Identifiers for the characterization of the kind of particle observed by the measurement.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="Aerosol">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A suspension of fine solid or liquid particles in a gas.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="AlphaParticle">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A positively charged nuclear particle that consists of two protons and two neutrons.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Atom">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Matter consisting of a nucleus surrounded by electrons which has no net charge.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Dust">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Free microscopic particles of solid material.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Electron">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">An elementary particle consisting of a charge of negative electricity equal to about $1.602 \times 10^{-19}$ Coulomb and having a mass when at rest of about $9.109534 \times 10^{-28}$ gram.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Ion">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">An atom that has acquired a net electric charge by gaining or losing one or more electrons. (Note: Z>2)</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Molecule">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A group of atoms so united and combined by chemical affinity that they form a complete, integrated whole, being the smallest portion of any particular compound that can exist in a free state.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Neutron">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">An elementary particle that has no net charge and is a constituent of atomic nuclei, and that has a mass slightly larger than a proton ($1.673 \times 10^{-24}$ gram.)</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Proton">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">An elementary particle that is a constituent of all atomic nuclei, that carries a positive charge numerically equal to the charge of an electron, and that has a mass of $1.673 \times 10^{-24}$ gram.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
  </xsd:restriction>
</xsd:simpleType>
```
Simple Type `spase:ParticleQuantity`

**Namespace**
http://www.spase-group.org/data/schema

**Annotations**
Identifiers for the characterization of the physical properties of the particle.

**Diagram**

```
  +----------------+  +----------------+  +----------------+
  |                |  |                |  |                |
  +-- +------------+  +-- +------------+  +-- +------------+
  |   |    1        |  |   |    2        |  |   |    3        |
  +-- |    4        |  +-- |    5        |  +-- |    6        |
     +----------------+  +----------------+  +----------------+  
```

**Type**
restriction of `xsd:string`

**Facets**

- **enumeration** `ArrivalDirection`
  - An angular measure of the direction from which an energetic particle or photon was incident on a detector. The angles may be measured in any coordinate system.

- **enumeration** `AtomicNumberDetected`
  - The number of protons in the nucleus of an atom as determined by a detector.

- **enumeration** `AverageChargeState`
  - A measure of the composite deficit (positive) or excess (negative) of electrons with respect to protons.

- **enumeration** `ChargeState`
  - Charge of a fully or partially stripped ion, in units of the charge of a proton. Charge state of a bare proton = 1.

- **enumeration** `CountRate`
  - The number of events per unit time.

- **enumeration** `Counts`
  - The number of detection events occurring in a detector over the detector accumulation time.

- **enumeration** `Energy`
  - The capacity for doing work as measured by the capability of doing work (potential energy) or the conversion of this capability to motion (kinetic energy).

- **enumeration** `EnergyDensity`
  - The amount of energy per unit volume.

- **enumeration** `EnergyFlux`
  - The amount of energy passing through a unit area in a unit time.

- **enumeration** `FlowSpeed`
  - The rate at which particles or energy is passing through a unit area in a unit time.

- **enumeration** `FlowVelocity`
  - The volume of matter passing through a unit area perpendicular to the direction of flow in a unit of time.

- **enumeration** `Fluence`
  - The time integral of a flux. A fluence does not have any "per unit time" in its units.

- **enumeration** `Gyrofrequency`
  - The number of gyrations around a magnetic guiding center (field line) a charged particle makes per unit time due to the Lorentz force.

- **enumeration** `HeatFlux`
  - Flow of thermal energy through a gas or plasma; typically computed as third moment of a distribution.
| enumeration  | Mass       | The measure of inertia (mass) of individual objects (e.g., aerosols). |
| enumeration  | MassDensity| The mass of particles per unit volume. |
| enumeration  | MassNumber | The total number of protons and neutrons (together known as nucleons) in an atomic nucleus. |
| enumeration  | NumberDensity | The number of particles per unit volume. |
| enumeration  | NumberFlux | The number of particles passing a unit area in unit time, possibly also per unit energy (or equivalent) and/or per unit look direction. |
| enumeration  | ParticleRadius | The mean radius for a Gaussian distribution of particles with an axial ratio of 2 and a distribution width that varies as 0.5 radius. A value of zero means no cloud was detected. |
| enumeration  | PhaseSpaceDensity | |
| enumeration  | PlasmaFrequency | A number-density-dependent characteristic frequency of a plasma. |
| enumeration  | Pressure | The force per unit area exerted by a particle distribution or field. |
| enumeration  | SonicMachNumber | The ratio of the bulk flow speed to the speed of sound in the medium. |
| enumeration  | SoundSpeed | The speed at which sound travels through a medium. |
| enumeration  | Temperature | A measure of the kinetic energy of random motion with respect to the average. Temperature is properly defined only for an equilibrium particle distribution (Maxwellian distribution). |
| enumeration  | ThermalSpeed | For a Maxwellian distribution, the difference between the mean speed and the speed within which ~69% (one sigma) of all the members of the speed distribution occur. |
| enumeration  | Velocity | Rate of change of position. Also used for the average velocity of a collection of particles, also referred to as "bulk velocity". |

**Used by**

| Element | spase:Particle/spase:ParticleQuantity |

**Source**

```xml
<xsd:simpleType name="ParticleQuantity">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Identifiers for the characterization of the physical properties of the particle.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="ArrivalDirection">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">An angular measure of the direction from which an energetic particle or photon was incident on a detector. The angles may be measured in any coordinate system.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="AtomicNumberDetected">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The number of protons in the nucleus of an atom as determined by a detector.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="AverageChargeState">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A measure of the composite deficit (positive) or excess (negative) of electrons with respect to protons.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="ChargeState">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Charge of a fully or partially stripped ion, in units of the charge of a proton. Charge state of a bare proton = 1.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="CountRate">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The number of events per unit time.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
  </xsd:restriction>
</xsd:simpleType>
```
<xsd:enumeration value="Counts">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The number of detection events occurring in a detector over the detector accumulation time.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Energy">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The capacity for doing work as measured by the capability of doing work (potential energy) or the conversion of this capability to motion (kinetic energy)</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="EnergyDensity">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The amount of energy per unit volume.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="EnergyFlux">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The amount of energy passing through a unit area in a unit time.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="FlowSpeed">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The rate at which particles or energy is passing through a unit area in a unit time.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="FlowVelocity">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The volume of matter passing through a unit area perpendicular to the direction of flow in a unit of time.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Fluence">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The time integral of a flux. A fluence does not have any "per unit time" in its units.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Gyrofrequency">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The number of gyrations around a magnetic guiding center (field line) a charged particle makes per unit time due to the Lorentz force.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="HeatFlux">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Flow of thermal energy through a gas or plasma; typically computed as third moment of a distribution function.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Mass">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The measure of inertia (mass) of individual objects (e.g., aerosols).</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="MassDensity">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The mass of particles per unit volume.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="MassNumber">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The total number of protons and neutrons (together known as nucleons) in an atomic nucleus.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="NumberDensity">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The number of particles per unit volume.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="NumberFlux">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The number of particles passing a unit area in unit time, possibly also per unit energy (or equivalent) and/or per unit look direction.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="ParticleRadius">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The mean radius for a Gaussian distribution of particles with an axial ratio of 2 and a distribution width that varies as 0.5 radius. A value of zero means no cloud was detected.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="PhaseSpaceDensity">
  <xsd:annotation>
    <xsd:documentation xml:lang="en"></xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="PlasmaFrequency">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A number-density-dependent characteristic frequency of a plasma.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Pressure">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The force per unit area exerted by a particle distribution or field.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="SonicMachNumber">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The ratio of the bulk flow speed to the speed of sound in the medium.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="SoundSpeed">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The speed at which sound travels through a medium.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Temperature">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A measure of the kinetic energy of random motion with respect to the average. Temperature is properly defined only for an equilibrium particle distribution (Maxwellian distribution).</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="ThermalSpeed">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">For a Maxwellian distribution, the difference between the mean speed and the speed within which ~69% (one sigma) of all the members of the speed distribution occur.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Velocity">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Rate of change of position. Also used for the average velocity of a collection of particles, also referred to as "bulk velocity".</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

</xsd:restriction>
</xsd:simpleType>

---

**Simple Type spase:AtomicNumber**

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Annotations</td>
<td>The number of protons in the nucleus of an atom.</td>
</tr>
<tr>
<td>Diagram</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>Type</td>
<td>xsd:double</td>
</tr>
<tr>
<td>Used by</td>
<td>Element spase:Particle/spase:AtomicNumber</td>
</tr>
</tbody>
</table>
| Source                     | `<xsd:simpleType name="AtomicNumber">`<xsd:annotation>  
  `<xsd:documentation xml:lang="en">The number of protons in the nucleus of an atom.</xsd:documentation>`
  `<xsd:annotation>  
  `<xsd:restriction base="xsd:double"/>` |
Simple Type `spase:WaveType`

Namespace [http://www.spase-group.org/data/schema](http://www.spase-group.org/data/schema)

Annotations Identifiers for the carrier or phenomenon of wave information observed by the measurement.

Diagram

Type restriction of `xsd:string`

Facets

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electromagnetic</td>
<td>Electric and magnetic field variations in time and space that propagate through a medium or a vacuum with the wave's propagation, electric field, and magnetic field vectors forming an orthogonal triad. Waves in this category are detected by having their field quantities measured.</td>
</tr>
<tr>
<td>Electrostatic</td>
<td>Collective longitudinal electric-field and plasma oscillations trapped within a body of plasma.</td>
</tr>
<tr>
<td>Hydrodynamic</td>
<td>Periodic or quasi-periodic oscillations of fluid quantities.</td>
</tr>
<tr>
<td>MHD</td>
<td>Hydrodynamic waves in a magnetized plasma in which the background magnetic field plays a key role in controlling the wave propagation characteristics.</td>
</tr>
<tr>
<td>Photon</td>
<td>Electromagnetic waves detected by techniques that utilize their corpuscular character (e.g., CCD, CMOS, photomultipliers).</td>
</tr>
<tr>
<td>PlasmaWaves</td>
<td>Self-consistent collective oscillations of particles and fields (electric and magnetic) in a plasma.</td>
</tr>
</tbody>
</table>

Used by

Element `spase:Wave/spase:WaveType`

Source

```xml
<xs:simpleType name="WaveType">
  <xs:annotation>
    <xs:documentation xml:lang="en">Identifiers for the carrier or phenomenon of wave information observed by the measurement.</xs:documentation>
  </xs:annotation>
  <xs:restriction base="xsd:string">
    <xs:enumeration value="Electromagnetic">
      <xs:annotation>
        <xs:documentation xml:lang="en">Electric and magnetic field variations in time and space that propagate through a medium or a vacuum with the wave's propagation, electric field, and magnetic field vectors forming an orthogonal triad. Waves in this category are detected by having their field quantities measured.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="Electrostatic">
      <xs:annotation>
        <xs:documentation xml:lang="en">Collective longitudinal electric-field and plasma oscillations trapped within a body of plasma.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="Hydrodynamic">
      <xs:annotation>
        <xs:documentation xml:lang="en">Periodic or quasi-periodic oscillations of fluid quantities.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="MHD">
      <xs:annotation>
        <xs:documentation xml:lang="en">Hydrodynamic waves in a magnetized plasma in which the background magnetic field plays a key role in controlling the wave propagation characteristics.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="Photon">
      <xs:annotation>
        <xs:documentation xml:lang="en">Electromagnetic waves detected by techniques that utilize their corpuscular character (e.g., CCD, CMOS, photomultipliers).</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="PlasmaWaves">
      <xs:annotation>
        <xs:documentation xml:lang="en">Self-consistent collective oscillations of particles and fields (electric and magnetic) in a plasma.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
  </xs:restriction>
</xs:simpleType>
```
<xsd:annotation>
  <xsd:documentation xml:lang="en">Self-consistent collective oscillations of particles and fields (electric and magnetic) in a plasma.</xsd:documentation>
</xsd:annotation>
</xsd:restriction>
</xsd:simpleType>

| Schema location | file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd |

**Simple Type** `spase:WaveQuantity`

| Namespace | http://www.spase-group.org/data/schema |
|Annotations | Identifiers for the characterization of the physical properties of a wave. |

| Type | restriction of xsd:string |

<p>| Facets | enumeration | APElectricField | Alternating electric field component of a wave. |
| | enumeration | ACMagneticField | Alternating magnetic field component of a wave. |
| | enumeration | Absorption | Decrease of radiant energy (relative to the background continuum spectrum). |
| | enumeration | Albedo | The ratio of reflected radiation from the surface to incident radiation upon it. |
| | enumeration | DopplerFrequency | Change in the frequency of a propagating wave due to motion of the source, the observer, the reflector, or the propagation medium. |
| | enumeration | Emissivity | The energy emitted spontaneously per unit bandwidth (typically frequency) per unit time per unit mass of source. Emissivity is usually integrated over all directions/solid angles. |
| | enumeration | EnergyFlux | The amount of energy passing through a unit area in a unit time. |
| | enumeration | EquivalentWidth | The spectral width of a total absorption line having the amount of absorbed radiant energy being equivalent to that in an observed absorption line. |
| | enumeration | Frequency | The number of occurrences of a repeating event per unit time. |
| | enumeration | Gyrofrequency | The number of gyrations around a magnetic guiding center (field line) a charged particle makes per unit time due to the Lorentz force. |
| | enumeration | Intensity | The measurement of radiant or wave energy per unit detector area per unit bandwidth per unit solid angle per unit time. |
| | enumeration | LineDepth | The measure of the amount of absorption below the continuum (depth) in a particular wavelength or frequency in an absorption spectrum. |
| | enumeration | MagneticField | A region of space near a magnetized body where magnetic forces can be detected (as measured by methods such as Zeeman splitting, etc.). |
| | enumeration | ModeAmplitude | In helioseismology the magnitude of oscillation of waves of a particular geometry. |
| | enumeration | PlasmaFrequency | A number-density-dependent characteristic frequency of a plasma. |
| | enumeration | Polarization | Direction of the electric vector of an electromagnetic wave. The wave can be linearly polarized in any direction perpendicular to the direction of travel, circularly polarized (clockwise or counterclockwise), unpolarized, or mixtures of the above. |
| | enumeration | PoyntingFlux | Electromagnetic energy flux transported by a wave characterized as the rate of energy transport per unit area per steradian. |</p>
<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PropagationTime</td>
<td>Time difference between transmission and reception of a wave in an active wave experiment.</td>
</tr>
<tr>
<td>StokesParameters</td>
<td>Rate of change of position. Also used for the average velocity of a collection of particles, also referred to as &quot;bulk velocity&quot;.</td>
</tr>
<tr>
<td>Velocity</td>
<td>Rate of change of position. Also used for the average velocity of a collection of particles, also referred to as &quot;bulk velocity&quot;.</td>
</tr>
<tr>
<td>Wavelength</td>
<td>The peak-to-peak distance over one wave period.</td>
</tr>
</tbody>
</table>

Source

```xml
<xsd:simpleType name="WaveQuantity">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Identifiers for the characterization of the physical properties of a wave.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="ACElectricField">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Alternating electric field component of a wave.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="ACMagneticField">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Alternating magnetic field component of a wave.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Absorption">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Decrease of radiant energy (relative to the background continuum spectrum).</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Albedo">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The ratio of reflected radiation from the surface to incident radiation upon it.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="DopplerFrequency">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Change in the frequency of a propagating wave due to motion of the source, the observer, the reflector, or the propagation medium.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Emissivity">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The energy emitted spontaneously per unit bandwidth (typically frequency) per unit time per unit mass of source. Emissivity is usually integrated over all directions/solid angles.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="EnergyFlux">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The amount of energy passing through a unit area in a unit time.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="EquivalentWidth">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The spectral width of a total absorption line having the amount of absorbed radiant energy being equivalent to that in an observed absorption line.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Frequency">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The number of occurrences of a repeating event per unit time.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Gyrofrequency">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The number of gyrations around a magnetic guiding center (field line) a charged particle makes per unit time due to the Lorentz force.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
  </xsd:restriction>
</xsd:simpleType>
```
<xsd:enumeration value="Intensity">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The measurement of radiant or wave energy per unit detector area per unit bandwidth per unit solid angle per unit time.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="LineDepth">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The measure of the amount of absorption below the continuum (depth) in a particular wavelength or frequency in an absorption spectrum.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="MagneticField">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A region of space near a magnetized body where magnetic forces can be detected (as measured by methods such as Zeeman splitting, etc.).</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="ModeAmplitude">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">In helioseismology the magnitude of oscillation of waves of a particular geometry.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="PlasmaFrequency">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A number-density-dependent characteristic frequency of a plasma.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Polarization">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Direction of the electric vector of an electromagnetic wave. The wave can be linearly polarized in any direction perpendicular to the direction of travel, circularly polarized (clockwise or counterclockwise), unpolarized, or mixtures of the above.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="PoyntingFlux">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Electromagnetic energy flux transported by a wave characterized as the rate of energy transport per unit area per steradian.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="PropagationTime">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Time difference between transmission and reception of a wave in an active wave experiment.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="StokesParameters">
  <xsd:annotation>
    <xsd:documentation xml:lang="en"></xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Velocity">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Rate of change of position. Also used for the average velocity of a collection of particles, also referred to as "bulk velocity".</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Wavelength">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The peak-to-peak distance over one wave period.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:simpleType>
  <xsd:restriction base="xsd:string"/>
</xsd:simpleType>

Schema documentation for spase-2_2_4.xsd

---

**Simple Type spase:MixedQuantity**

**Namespace**
http://www.spase-group.org/data/schema

**Annotations**
Identifiers for the combined attributes of a mixed parameter quantity.

**Diagram**
![MixedQuantity](image-url) ![xsdstring](image-url)
<table>
<thead>
<tr>
<th>Type</th>
<th>Facets</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facets</td>
<td>restriction of xsd:string</td>
<td></td>
</tr>
<tr>
<td>enumeration</td>
<td>AkasofuEpsilon</td>
<td>A measure of the magnetopause energy flux and an indicator of the solar wind power available for subsequent magnetospheric energization. Defined as: (V^2B^2l^4\sin(\theta/2)^4) where (B) is the IMF, (l) is an empirical scaling parameter equal to 7 RE, and (\theta = \tan(BY/BZ)^{-1}) the IMF clock angle.</td>
</tr>
<tr>
<td>enumeration</td>
<td>AlfvenMachNumber</td>
<td>The ratio of the bulk flow speed to the Alfven speed.</td>
</tr>
<tr>
<td>enumeration</td>
<td>AlfvenVelocity</td>
<td>Phase velocity of the Alfven wave; In SI units it is the velocity of the magnetic field divided by the square root of the mass density times the permeability of free space ((\mu)).</td>
</tr>
<tr>
<td>enumeration</td>
<td>FrequencyToGyrofrequencyRatio</td>
<td>The ratio of the characteristic frequency of a medium to gyrofrequency of a particle.</td>
</tr>
<tr>
<td>enumeration</td>
<td>IMFClockAngle</td>
<td>The clockwise angle of the direction of interplanetary magnetic field (IMF) measured in the plane of the body pole perpendicular to the line between the body and the Sun.</td>
</tr>
<tr>
<td>enumeration</td>
<td>MagnetosonicMachNumber</td>
<td>The ratio of the velocity of fast mode waves to the Alfven velocity.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Other</td>
<td>Not classified with more specific terms. The context of its usage may be described in related text.</td>
</tr>
<tr>
<td>enumeration</td>
<td>PlasmaBeta</td>
<td>The ratio of the plasma pressure ((nkT)) to the magnetic pressure ((B^2/2\mu_0)) of the SUM((nkT)/) ((B^2/2\mu_0)).</td>
</tr>
<tr>
<td>enumeration</td>
<td>SolarUVFlux</td>
<td>The amount of Ultraviolet energy originating from the Sun passing through a unit area in a unit time.</td>
</tr>
<tr>
<td>enumeration</td>
<td>TotalPressure</td>
<td>In an MHD fluid it is the number density ((N)) times Boltzmann constant times the temperature in Kelvin.</td>
</tr>
<tr>
<td>enumeration</td>
<td>VCrossB</td>
<td>The cross product of the charge velocity ((V)) and the magnetic field ((B)). It is the electric field exerted on a point charge by a magnetic field.</td>
</tr>
</tbody>
</table>

**Used by**

**Source**

```xml
<xs:complexType name="MixedQuantity">
  <xs:documentation xml:lang="en">Identifiers for the combined attributes of a mixed parameter quantity.</xs:documentation>
  <xs:annotation>
    <xs:documentation xml:lang="en">A measure of the magnetopause energy flux and an indicator of the solar wind power available for subsequent magnetospheric energization. Defined as: \(V^2B^2l^4\sin(\theta/2)^4\) where \(B\) is the IMF, \(l\) is an empirical scaling parameter equal to 7 RE, and \(\theta = \tan(BY/BZ)^{-1}\) the IMF clock angle.</xs:documentation>
  </xs:annotation>
  <xs:restriction base="xsd:string">
    <xs:enumeration value="AkasofuEpsilon">A measure of the magnetopause energy flux and an indicator of the solar wind power available for subsequent magnetospheric energization. Defined as: \(V^2B^2l^4\sin(\theta/2)^4\) where \(B\) is the IMF, \(l\) is an empirical scaling parameter equal to 7 RE, and \(\theta = \tan(BY/BZ)^{-1}\) the IMF clock angle.</xs:enumeration>
    <xs:enumeration value="AlfvenMachNumber">The ratio of the bulk flow speed to the Alfven speed.</xs:enumeration>
    <xs:enumeration value="AlfvenVelocity">Phase velocity of the Alfven wave; In SI units it is the velocity of the magnetic field divided by the square root of the mass density times the permeability of free space \((\mu)\).</xs:enumeration>
    <xs:enumeration value="FrequencyToGyrofrequencyRatio">The ratio of the characteristic frequency of a medium to gyrofrequency of a particle.</xs:enumeration>
  </xs:restriction>
</xs:complexType>
```
<xsd:enumeration value="IMFClockAngle">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">The clockwise angle of the direction of interplanetary magnetic field (IMF) measured in the plane of the body pole perpendicular to the line between the body and the Sun.</xsd:documentation>
    </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="MagnetosonicMachNumber">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">The ratio of the velocity of fast mode waves to the Alfvén velocity.</xsd:documentation>
    </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Other">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">Not classified with more specific terms. The context of its usage may be described in related text.</xsd:documentation>
    </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="PlasmaBeta">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">The ratio of the plasma pressure \(nkT\) to the magnetic pressure \(B^2/(2\mu_0)\) of the SUM\(nkT)/(B^2/2\mu_0)\).</xsd:documentation>
    </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="SolarUVFlux">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">The amount of Ultraviolet energy originating from the Sun passing through a unit area in a unit time.</xsd:documentation>
    </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="TotalPressure">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">In an MHD fluid it is the number density \(N\) times Boltzmann constant times the temperature in Kelvin.</xsd:documentation>
    </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="VCrossB">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">The cross product of the charge velocity \(V\) and the magnetic field \(B\). It is the electric field exerted on a point charge by a magnetic field.</xsd:documentation>
    </xsd:annotation>
</xsd:enumeration>

---

**Simple Type** `spase:SupportQuantity`

**Namespace** http://www.spase-group.org/data/schema

**Annotations**
Identifiers for the information useful in understanding the context of an observation, typically observed or measured coincidentally with a physical observation.

**Diagram**
![Diagram](https://via.placeholder.com/150)

**Type**
restriction of `xsd:string`

**Facets**

- **enumeration** `InstrumentMode`
  
  An indication of a state (mode) in which the instrument is operating. How a mode influences the interpretation and representation of data is described in instrument related documentation.

- **enumeration** `Other`
  
  Not classified with more specific terms. The context of its usage may be described in related text.

- **enumeration** `Positional`
  
  The specification of the location of an object or measurement within a reference coordinate system. The position is usually expressed as a set of values corresponding to the location along a set of orthogonal axes together with the date/time of the observation.

- **enumeration** `Temporal`
  
  Pertaining to time.

- **enumeration** `Velocity`
  
  Rate of change of position. Also used for the average velocity of a collection of particles.
also referred to as “bulk velocity”.

Used by

| Element | spase:Support/spase:SupportQuantity |

Source

```xml
<xsd:simpleType name="SupportQuantity">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Identifiers for the information useful in understanding the context of an observation, typically observed or measured coincidentally with a physical observation.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="InstrumentMode">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">An indication of a state (mode) in which the instrument is operating. How a mode influences the interpretation and representation of data is described in instrument related documentation.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Other">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Not classified with more specific terms. The context of its usage may be described in related text.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Positional">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The specification of the location of an object or measurement within a reference coordinate system. The position is usually expressed as a set of values corresponding to the location along a set of orthogonal axes together with the date/time of the observation.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Temporal">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Pertaining to time.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Velocity">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Rate of change of position. Also used for the average velocity of a collection of particles, also referred to as "bulk velocity".</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
  </xsd:restriction>
</xsd:simpleType>
```

Simple Type spase:ProcessingLevel

Namespace http://www.spase-group.org/data/schema

Annotations Identifiers to characterize the amount and type of manipulation which has been applied to the sampled data.

Diagram

```
[ ProcessingLevel ] --[ restriction of xsd:string ]-- [ xsd:string ]
```

Type restriction of xsd:string

Facets

<table>
<thead>
<tr>
<th>enumeration</th>
<th>Calibrated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data wherein sensor outputs have been convolved with instrument response function, often irreversibly, to yield data in physical units.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>enumeration</th>
<th>Raw</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data in its original state with no processing to account for calibration!!!</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>enumeration</th>
<th>Uncalibrated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duplicate data are removed from the data stream and data are time ordered. Values are not adjusted for any potential biases or external factors.</td>
<td></td>
</tr>
</tbody>
</table>

Used by

| Elements | spase:DisplayData/spase:ProcessingLevel, spase:NumericalData/spase:ProcessingLevel |

Source

```xml
<xsd:simpleType name="ProcessingLevel">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Identifiers to characterize the amount and type of manipulation which has been applied to the sampled data.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="Calibrated">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Identifiers to characterize the amount and type of manipulation which has been applied to the sampled data.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Raw">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Identifiers to characterize the amount and type of manipulation which has been applied to the sampled data.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Uncalibrated">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Identifiers to characterize the amount and type of manipulation which has been applied to the sampled data.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
  </xsd:restriction>
</xsd:simpleType>
```
Data wherein sensor outputs have been convolved with instrument response function, often irreversibly, to yield data in physical units.

Data in its original state with no processing to account for calibration!!!
<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ImageIntensity</strong></td>
<td>Measurements of the two-dimensional distribution of the intensity of photons from some region or object such as the Sun or the polar auroral regions; can be in any wavelength band, and polarized, etc.</td>
</tr>
<tr>
<td><strong>InstrumentStatus</strong></td>
<td>A quantity directly related to the operation or function of an instrument.</td>
</tr>
<tr>
<td><strong>IonComposition</strong></td>
<td>In situ measurements of the relative flux or density of electrically charged particles in the space environment. May give simple fluxes, but full distribution functions are sometimes measured.</td>
</tr>
<tr>
<td><strong>Irradiance</strong></td>
<td>Irradiance - A radiometric term for the power of electromagnetic radiation at a surface, per unit area. &quot;Irradiance&quot; is used when the electromagnetic radiation is incident on the surface. Irradiance data may be reported in any units (i.e. counts/s) due to, for example, being at a particular wavelength, or to being a not-fully-calibrated relative measurement.</td>
</tr>
<tr>
<td><strong>MagneticField</strong></td>
<td>A region of space near a magnetized body where magnetic forces can be detected (as measured by methods such as Zeeman splitting, etc.).</td>
</tr>
<tr>
<td><strong>Magnetogram</strong></td>
<td>Measurements of the vector or line-of-sight magnetic field determined from remote sensing measurements of the detailed structure of spectral lines, including their splitting and polarization. (&quot;Magnetogram.&quot;)</td>
</tr>
<tr>
<td><strong>NeutralAtomImages</strong></td>
<td>Measurements of neutral atom fluxes as a function of look direction; often related to remote energetic charged particles that lose their charge through charge-exchange and then reach the detector on a line-of-sight trajectory.</td>
</tr>
<tr>
<td><strong>NeutralGas</strong></td>
<td>Measurements of neutral atomic and molecular components of a gas.</td>
</tr>
<tr>
<td><strong>Profile</strong></td>
<td>Measurements of a quantity as a function of height above an object such as the limb of a body.</td>
</tr>
<tr>
<td><strong>Radiance</strong></td>
<td>A radiometric measurement that describes the amount of electromagnetic radiation that passes through or is emitted from a particular area, and falls within a given solid angle in a specified direction. They are used to characterize both emission from diffuse sources and reflection from diffuse surfaces.</td>
</tr>
<tr>
<td><strong>Spectrum</strong></td>
<td>The distribution of a characteristic of a physical system or phenomenon, such as the energy emitted by a radiant source, arranged in the order of wavelengths.</td>
</tr>
<tr>
<td><strong>ThermalPlasma</strong></td>
<td>Measurements of the plasma in the energy regime where the most of the plasma occurs. May be the basic fluxes in the form of distribution functions or the derived bulk parameters (density, flow velocity, etc.).</td>
</tr>
<tr>
<td><strong>Waves</strong></td>
<td>Data resulting from observations of wave experiments and natural wave phenomena. Wave experiments are typically active and natural wave phenomena are passive. Examples of wave experiments include coherent/incoherent scatter radars, radio soundings, VLF propagation studies, ionospheric scintillation of beacon satellite signals, etc. Examples of natural wave phenomena include micropulsations, mesospheric gravity waves, auroral/plasmaspheric hiss, Langmuir waves, AKR, Jovian decametric radiation, solar radio bursts, etc.</td>
</tr>
<tr>
<td><strong>Waves.Active</strong></td>
<td>Exerting an influence or producing a change or effect. An active measurement is one which produces a transmission or excitation as a result of time. When used as an Instrument Type it represents the process or methods used to generate spatial coordinates.</td>
</tr>
</tbody>
</table>
part of the measurement cycle.

### Waves.Passive

Movement or effect produced by outside influence. A passive measurement is one which does not produce a transmission or excitation as a part of the measurement cycle.

---

**Used by**

- Elements: `spase:DisplayData/spase:MeasurementType`, `spase:NumericalData/spase:MeasurementType`

**Source**

```xml
<xs:simpleType name="MeasurementType">
  <xs:annotation>
    <xs:documentation xml:lang="en">Identifiers for the method of making an estimated value of a quantity that forms the basis of an observation.</xs:documentation>
  </xs:annotation>
  <xs:restriction base="xsd:string">
    <xs:enumeration value="ActivityIndex">
      <xs:annotation>
        <xs:documentation xml:lang="en">An indication, derived from one or more measurements, of the level of activity of an object or region, such as sunspot number, F10.7 flux, Dst, or the Polar Cap Indices.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="Dopplergram">
      <xs:annotation>
        <xs:documentation xml:lang="en">A map or image depicting the spatial distribution of line-of-sight velocities of the observed object.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="Dust">
      <xs:annotation>
        <xs:documentation xml:lang="en">Free microscopic particles of solid material.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="ElectricField">
      <xs:annotation>
        <xs:documentation xml:lang="en">A region of space around a charged particle, or between two voltages within which a force is exerted on charged objects in its vicinity. An electric field is the electric force per unit charge.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="EnergeticParticles">
      <xs:annotation>
        <xs:documentation xml:lang="en">Pieces of matter that are moving very fast. Energetic particles include protons, electrons, neutrons, neutrinos, the nuclei of atoms, and other subatomic particles.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="Ephemeris">
      <xs:annotation>
        <xs:documentation xml:lang="en">The spatial coordinates of a body as a function of time. When used as an Instrument Type it represents the process or methods used to generate spatial coordinates.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="ImageIntensity">
      <xs:annotation>
        <xs:documentation xml:lang="en">Measurements of the two-dimensional distribution of the intensity of photons from some region or object such as the Sun or the polar auroral regions; can be in any wavelength band, and polarized, etc.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="InstrumentStatus">
      <xs:annotation>
        <xs:documentation xml:lang="en">A quantity directly related to the operation or function of an instrument.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="IonComposition">
      <xs:annotation>
        <xs:documentation xml:lang="en">In situ measurements of the relative flux or density of electrically charged particles in the space environment. May give simple fluxes, but full distribution functions are sometimes measured.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="Irradiance">
      <xs:annotation>
        <xs:documentation xml:lang="en">Irradiance - A radiometric term for the power of electromagnetic radiation at a surface, per unit area. "Irradiance" is used when the electromagnetic radiation is incident on the surface. Irradiance data may be reported in any units (i.e. counts/s) due to, for example, being at a particular wavelength, or to being a not-fully-calibrated relative measurement.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
  </xs:restriction>
</xs:simpleType>
```
<xsd:enumeration value="MagneticField">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A region of space near a magnetized body where magnetic forces can be detected (as measured by methods such as Zeeman splitting, etc.).</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Magnetogram">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Measurements of the vector or line-of-sight magnetic field determined from remote sensing measurements of the detailed structure of spectral lines, including their splitting and polarization. (Magnetogram.)</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="NeutralAtomImages">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Measurements of neutral atom fluxes as a function of look direction; often related to remote energetic charged particles that lose their charge through charge-exchange and then reach the detector on a line-of-sight trajectory.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="NeutralGas">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Measurements of neutral atomic and molecular components of a gas.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Profile">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Measurements of a quantity as a function of height above an object such as the limb of a body.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Radiance">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A radiometric measurement that describes the amount of electromagnetic radiation that passes through or is emitted from a particular area, and falls within a given solid angle in a specified direction. They are used to characterize both emission from diffuse sources and reflection from diffuse surfaces.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Spectrum">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The distribution of a characteristic of a physical system or phenomenon, such as the energy emitted by a radiant source, arranged in the order of wavelengths.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="ThermalPlasma">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Measurements of the plasma in the energy regime where the most of the plasma occurs. May be the basic fluxes in the form of distribution functions or the derived bulk parameters (density, flow velocity, etc.).</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Waves">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Data resulting from observations of wave experiments and natural wave phenomena. Wave experiments are typically active and natural wave phenomena are passive. Examples of wave experiments include coherent/incoherent scatter radars, radio soundings, VLF propagation studies, ionospheric scintillation of beacon satellite signals, etc. Examples of natural wave phenomena include micro pulsations, mesospheric gravity waves, auroral/plasmaspheric hiss, Langmuir waves, AKR, Jovian decametric radiation, solar radio bursts, etc.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Waves.Active">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Exerting an influence or producing a change or effect. An active measurement is one which produces a transmission or excitation as a part of the measurement cycle.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Waves.Passive">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Movement or effect produced by outside influence. A passive measurement is one which does not produce a transmission or excitation as a part of the measurement cycle.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
Schema documentation for spase-2_2_4.xsd

Simple Type spase:Exposure

Namespace  http://www.spase-group.org/data/schema
Annotations The time interval over which an individual measurement is taken.
Diagram

Type  xsd:duration
Used by  Element  spase:TemporalDescription/spase:Exposure
Source

    <xsd:simpleType name="Exposure">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">The time interval over which an individual measurement is taken.</xsd:documentation>
    </xsd:annotation>
    <xsd:restriction base="xsd:duration"/>
    </xsd:simpleType>

Schema location  file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Simple Type spase:DisplayCadence

Namespace  http://www.spase-group.org/data/schema
Annotations The time interval between the successive display elements.
Diagram

Type  xsd:duration
Used by  Element  spase:DisplayData/spase:DisplayCadence
Source

    <xsd:simpleType name="DisplayCadence">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">The time interval between the successive display elements.</xsd:documentation>
    </xsd:annotation>
    <xsd:restriction base="xsd:duration"/>
    </xsd:simpleType>

Schema location  file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Simple Type spase:Region

Namespace  http://www.spase-group.org/data/schema
Annotations Identifiers for areas of the physical world which may be occupied or observed.
Diagram

Type  restriction of xsd:string
Facets

enumeration  Asteroid  A small extraterrestrial body consisting mostly of rock and metal that is in orbit around the sun.
enumeration  Comet  A relatively small extraterrestrial body consisting of a frozen mass that travels around the sun in a highly elliptical orbit.
enumeration  Earth  The third planet from the sun in our solar system.
enumeration  Earth.Magnetosheath  The region between the bow shock and the magnetopause, characterized by very turbulent plasma.
enumeration  Earth.Magnetosphere  The region of space above the atmosphere or surface of the planet, and bounded by the magnetopause, that is under the direct influence of the planet’s magnetic field.
enumeration  Earth.Magnetosphere.Magnetotail  The region on the night side of the body where the magnetic field is stretched backwards.
by the force of the solar wind. For Earth, the magnetotail begins at a night-side radial distance of 10 Re (X > -10Re).

<table>
<thead>
<tr>
<th>Schema Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earth.Magnetosphere.Main</td>
<td>The region of the magnetosphere where the magnetic field lines are closed, but does not include the gaseous region gravitationally bound to the body.</td>
</tr>
<tr>
<td>Earth.Magnetosphere.Polar</td>
<td>The region near the pole of a body. For a magnetosphere the polar region is the area where magnetic field lines are open and includes the auroral zone.</td>
</tr>
<tr>
<td>Earth.Magnetosphere.RadiationBelt</td>
<td>A region within a magnetosphere where high-energy particles could potentially be trapped in a magnetic field.</td>
</tr>
<tr>
<td>Earth.Moon</td>
<td>The only natural satellite of the Earth.</td>
</tr>
<tr>
<td>Earth.NearSurface</td>
<td>The gaseous and possibly ionized environment of a body extending from the surface to some specified altitude. For the Earth, this altitude is 2000 km.</td>
</tr>
<tr>
<td>Earth.NearSurface.Atmosphere</td>
<td>Neutral gases surrounding a body that extends from the surface and is bound to the body by virtue of the gravitational attraction.</td>
</tr>
<tr>
<td>Earth.NearSurface.AuroralRegion</td>
<td>A region in the atmosphere where electrically-charged particles bombarding the upper atmosphere of a planet in the presence of a magnetic field produce an optical phenomenon.</td>
</tr>
<tr>
<td>Earth.NearSurface.EquatorialRegion</td>
<td>A region centered on the equator and limited in latitude by approximately 23 degrees north and south of the equator.</td>
</tr>
<tr>
<td>Earth.NearSurface.Ionosphere</td>
<td>Charged or ionized gases surrounding a body that are nominally bound to the body by virtue of the gravitational attraction.</td>
</tr>
<tr>
<td>Earth.NearSurface.Ionosphere.FRegion</td>
<td>The layer of the ionosphere that exists approximately 50 to 95 km above the surface of the Earth. One of several layers in the ionosphere.</td>
</tr>
<tr>
<td>Earth.NearSurface.Ionosphere.FRegion</td>
<td>A layer of ionised gas occurring atitive of the Earth. One of several layers in the ionosphere. Also called the The Kennelly-Heaviside layer.</td>
</tr>
<tr>
<td>Earth.NearSurface.Ionosphere.FRegion</td>
<td>A layer that contains ionized gases at a height of around 150-800 km above sea level, placing it in the thermosphere. The F region has the highest concentration of free electrons and ions anywhere in the atmosphere. It may be thought of as comprising two layers, the F1-and F2-layers. One of several layers in the ionosphere. Also known as the Appleton layer.</td>
</tr>
<tr>
<td>Earth.NearSurface.Ionosphere.FRegion</td>
<td>The layer at the upper most areas of the ionosphere.</td>
</tr>
<tr>
<td>Earth.NearSurface.Mesosphere</td>
<td>A layer of the atmosphere that extends from the Stratosphere to a range of 80 km to 85 km, temperature decreasing with height.</td>
</tr>
<tr>
<td>Earth.NearSurface.Plasmopause</td>
<td>A region of the magnetosphere consisting of low energy (cool) plasma. It is located above the ionosphere. The outer boundary of the plasmasphere is known as the plasmapause, which is defined by an order of magnitude drop in plasma density.</td>
</tr>
<tr>
<td>Earth.NearSurface.PolarCap</td>
<td>The areas of the globe surrounding the poles and consisting of the region north of 60 degrees north latitude and the region south of 60 degrees south latitude.</td>
</tr>
<tr>
<td>Earth.NearSurface.SouthAtlanticAnomalyRegion</td>
<td>Earth's inner van Allen radiation belt makes its closest approach to the planet's surface. The result is that, for a given altitude, the radiation intensity is higher over this region than elsewhere.</td>
</tr>
<tr>
<td>Earth.NearSurface.Stratosphere</td>
<td>A layer of the atmosphere that extends from...</td>
</tr>
<tr>
<td>Schema documentation for spase-2_2_4.xsd</td>
<td></td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>the troposphere to about 30 km, temperature increases with height. The stratosphere contains the ozone layer.</td>
<td></td>
</tr>
<tr>
<td>enumeration Earth.NearSurface.Thermosphere of the atmosphere that extends from the Mesosphere to 640+ km, temperature increasing with height.</td>
<td></td>
</tr>
<tr>
<td>enumeration Earth.NearSurface.Troposphere of the lowest layer of the atmosphere which begins at the surface and extends to between 7 km (4.4 mi) at the poles and 17 km (10.6 mi) at the equator, with some variation due to weather factors.</td>
<td></td>
</tr>
<tr>
<td>enumeration Earth.Surface The outermost area of a solid object.</td>
<td></td>
</tr>
<tr>
<td>enumeration Heliosphere The solar atmosphere extending roughly from the outer corona to the edge of the solar plasma at the heliopause separating primarily solar plasma from interstellar plasma.</td>
<td></td>
</tr>
<tr>
<td>enumeration Heliosphere.Heliosheath The region extending radially outward from the heliospheric termination shock and in which the decelerated solar wind plasma is still significant.</td>
<td></td>
</tr>
<tr>
<td>enumeration Heliosphere.Inner The region of the heliosphere extending radially outward from the solar coronal base to just inside 1 AU.</td>
<td></td>
</tr>
<tr>
<td>enumeration Heliosphere.NearEarth The heliospheric region near the Earth which extends to and includes the area near the L1 and L2 Lagrange point.</td>
<td></td>
</tr>
<tr>
<td>enumeration Heliosphere OUTER The region of the heliosphere extending radially outward from just outside 1 AU to the heliospheric termination shock.</td>
<td></td>
</tr>
<tr>
<td>enumeration Heliosphere.Remote1AU A roughly toroidal region that includes the Earth's orbit, but exclusive of the region near the Earth.</td>
<td></td>
</tr>
<tr>
<td>enumeration Interstellar The region between stars outside of the star's heliopause.</td>
<td></td>
</tr>
<tr>
<td>enumeration Jupiter The fifth planet from the sun in our solar system.</td>
<td></td>
</tr>
<tr>
<td>enumeration Mars The forth planet from the sun in our solar system.</td>
<td></td>
</tr>
<tr>
<td>enumeration Mercury The first planet from the sun in our solar system.</td>
<td></td>
</tr>
<tr>
<td>enumeration Neptune The seventh planet from the sun in our solar system.</td>
<td></td>
</tr>
<tr>
<td>enumeration Pluto The ninth (sub)planet from the sun in our solar system.</td>
<td></td>
</tr>
<tr>
<td>enumeration Saturn The sixth planet from the sun in our solar system.</td>
<td></td>
</tr>
<tr>
<td>enumeration Sun The star upon which our solar system is centered.</td>
<td></td>
</tr>
<tr>
<td>enumeration Sun.Chromosphere The region of the Sun's (or a star's) atmosphere above the temperature minimum and below the Transition Region. The solar chromosphere is approximately 400 km to 2100 km above the photosphere, and characterized by temperatures from 4500 - 28000 K.</td>
<td></td>
</tr>
<tr>
<td>enumeration Sun.CORONA The outermost atmospheric region of the Sun or a star, characterized by ionization temperatures above 10^5 K. The solar corona starts at about 2100 km above the photosphere; there is no generally defined upper limit.</td>
<td></td>
</tr>
<tr>
<td>enumeration Sun.Interior The region inside the body which is not visible from outside the body.</td>
<td></td>
</tr>
<tr>
<td>enumeration Sun.Photosphere The atmospheric layer of the Sun or a star from which continuum radiation, especially optical, is emitted to space. For the Sun, the photosphere is about 500 km thick.</td>
<td></td>
</tr>
<tr>
<td>enumeration Sun.TransitionRegion A very narrow (&lt;100 km) layer between the chromosphere and the corona where the temperature rises abruptly from about 8000 to about 500,000 K.</td>
<td></td>
</tr>
</tbody>
</table>
Schema documentation for spase-2_2_4.xsd

<table>
<thead>
<tr>
<th>enumeration</th>
<th>Uranus</th>
<th>The eighth planet from the sun in our solar system.</th>
</tr>
</thead>
<tbody>
<tr>
<td>enumeration</td>
<td>Venus</td>
<td>The second planet from the sun in our solar system.</td>
</tr>
</tbody>
</table>

**Used by**

- `spase:DisplayData/spase:ObservedRegion`
- `spase:Location/spase:ObservatoryRegion`
- `spase:NumericalData/spase:ObservedRegion`
- `spase:ObservationExtent/spase:ObservedRegion`

**Source**

```xml
<xsd:simpleType name="Region">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Identifiers for areas of the physical world which may be occupied or observed.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="Asteroid">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A small extraterrestrial body consisting mostly of rock and metal that is in orbit around the sun.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Comet">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A relatively small extraterrestrial body consisting of a frozen mass that travels around the sun in a highly elliptical orbit.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Earth">The third planet from the sun in our solar system.</xsd:enumeration>
    <xsd:enumeration value="Earth.Magnetosheath">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The region between the bow shock and the magnetopause, characterized by very turbulent plasma.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Earth.Magnetosphere">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The region of space above the atmosphere or surface of the planet, and bounded by the magnetopause, that is under the direct influence of the planet’s magnetic field.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Earth.Magnetosphere.Magnetotail">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The region on the night side of the body where the magnetic field is stretched backwards by the force of the solar wind. For Earth, the magnetotail begins at a night-side radial distance of 10 Re (X > -10Re).</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Earth.Magnetosphere.Main">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The region of the magnetosphere where the magnetic field lines are closed, but does not include the gaseous region gravitationally bound to the body.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Earth.Magnetosphere.Polar">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The region near the pole of a body. For a magnetosphere the polar region is the area where magnetic field lines are open and includes the auroral zone.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Earth.Magnetosphere.RadiationBelt">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The region within a magnetosphere where high-energy particles could potentially be trapped in a magnetic field.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Earth.Moon">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The only natural satellite of the Earth.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Earth.NearSurface">
      <xsd:annotation>
      </xsd:annotation>
    </xsd:enumeration>
  </xsd:restriction>
</xsd:simpleType>
```
The gaseous and possibly ionized environment of a body extending from the surface to some specified altitude. For the Earth, this altitude is 2000 km.

The neutral gases surrounding a body that extends from the surface and is bound to the body by virtue of the gravitational attraction.

The region in the atmosphere where electrically-charged particles bombarding the upper atmosphere of a planet in the presence of a magnetic field produce an optical phenomenon.

A region centered on the equator and limited in latitude by approximately 23 degrees north and south of the equator.

The charged or ionized gases surrounding a body that are nominally bound to the body by virtue of the gravitational attraction.

The layer of the ionosphere that exists approximately 50 to 95 km above the surface of the Earth. One of several layers in the ionosphere.

A layer of ionised gas occurring at 90-150km above the ground. One of several layers in the ionosphere. Also called The Kennelly-Heaviside layer.

A layer that contains ionized gases at a height of around 150–800 km above sea level, placing it in the thermosphere. The F region has the highest concentration of free electrons and ions anywhere in the atmosphere. It may be thought of as comprising two layers, the F1-and F2-layers. One of several layers in the ionosphere. Also known as the Appleton layer.

A layer of ionised gas occurring at 90-150km above the ground. One of several layers in the ionosphere. Also called The Kennelly-Heaviside layer.

A layer that contains ionized gases at a height of around 150–800 km above sea level, placing it in the thermosphere. The F region has the highest concentration of free electrons and ions anywhere in the atmosphere. It may be thought of as comprising two layers, the F1-and F2-layers. One of several layers in the ionosphere. Also known as the Appleton layer.

The layer at the upper most areas of the ionosphere.

A layer containing ionized gases at a height of 80 km to 85 km, temperature decreasing with height.

A region of the magnetosphere consisting of low energy (cool) plasma. It is located above the ionosphere. The outer boundary of the plasmasphere is known as the plasmapause, which is defined by an order of magnitude drop in plasma density.

The areas of the globe surrounding the poles and consisting of the region north of 60 degrees north latitude an the region south of 60 degrees south latitude.
The region where the Earth's inner van Allen radiation belt makes its closest approach to the planet's surface. The result is that, for a given altitude, the radiation intensity is higher over this region than elsewhere.
<xsd:documentation xml:lang="en">The forth planet from the sun in our solar system.</xsd:documentation>
</xsd:enumeration>
<xsd:enumeration value="Mercury">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The first planet from the sun in our solar system.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Neptune">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The seventh planet from the sun in our solar system.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Pluto">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The ninth (sub)planet from the sun in our solar system.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Saturn">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The sixth planet from the sun in our solar system.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Sun">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The star upon which our solar system is centered.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Sun.Chromosphere">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The region of the Sun's (or a star's) atmosphere above the temperature minimum and below the Transition Region. The solar chromosphere is approximately 400 km to 2100 km above the photosphere, and characterized by temperatures from 4500 - 28000 K.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Sun.Corona">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The outermost atmospheric region of the Sun or a star, characterized by ionization temperatures above 10^5 K. The solar corona starts at about 2100 km above the photosphere; there is no generally defined upper limit.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Sun.Interior">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The region inside the body which is not visible from outside the body.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Sun.Photosphere">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The atmospheric layer of the Sun or a star from which continuum radiation, especially optical, is emitted to space. For the Sun, the photosphere is about 500 km thick.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Sun.TransitionRegion">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A very narrow (<100 km) layer between the chromosphere and the corona where the temperature rises abruptly from about 8000 to about 500,000 K.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Uranus">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The eighth planet from the sun in our solar system.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Venus">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The second planet from the sun in our solar system.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
## Schema documentation for spase-2_2_4.xsd

### Schema location
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### Simple Type spase:DocumentType

#### Namespace
http://www.spase-group.org/data/schema

#### Annotations
Identifiers for the characterization of the content or purpose of a document.

#### Diagram
![Diagram](image)

#### Type
restriction of xsd:string

#### Facets

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other</td>
<td>Not classified with more specific terms. The context of its usage may be described in related text.</td>
</tr>
<tr>
<td>Poster</td>
<td>A set of information arranged on a single page or sheet, typically in a large format.</td>
</tr>
<tr>
<td>Presentation</td>
<td>A set of information that is used when communicating to an audience.</td>
</tr>
<tr>
<td>Report</td>
<td>A document which describes the findings of some individual or group.</td>
</tr>
<tr>
<td>Specification</td>
<td>A detailed description of the requirements and other aspects of an object or component that may be used to develop an implementation.</td>
</tr>
<tr>
<td>TechnicalNote</td>
<td>A document summarizing the performance and other technical characteristics of a product, machine, component, subsystem or software in sufficient detail to be used by an engineer or researcher.</td>
</tr>
<tr>
<td>WhitePaper</td>
<td>An authoritative report giving information or proposals on an issue.</td>
</tr>
</tbody>
</table>

#### Used by
spase:Document/spase:DocumentType

#### Source
```xml
<xsd:simpleType name="DocumentType">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Identifiers for the characterization of the content or purpose of a document.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="Other">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Not classified with more specific terms. The context of its usage may be described in related text.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Poster">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A set of information arranged on a single page or sheet, typically in a large format.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Presentation">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A set of information that is used when communicating to an audience.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Report">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A document which describes the findings of some individual or group.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Specification">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A detailed description of the requirements and other aspects of an object or component that may be used to develop an implementation.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="TechnicalNote">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A document summarizing the performance and other technical characteristics of a product, machine, component, subsystem or software in sufficient detail to be used by an engineer or researcher.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="WhitePaper">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">An authoritative report giving information or proposals on an issue.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
  </xsd:restriction>
</xsd:simpleType>
```
### Simple Type `spase:MIMEType`

**Namespace**
http://www.spase-group.org/data/schema

**Annotations**
Multipurpose Internet Mail Extensions (MIME) type and sub-type which characterizes the format of a file. MIME media types are defined in RFC memorandum RFC 2046. Current MIME types are maintained by Internet Assigned Numbers Authority (IANA) at http://www.iana.org/assignments/media-types/index.html. Commonly used MIME types are: application/vnd.ms-powerpoint (ppt, pptx), application/vnd.ms-excel (xls, xlsx), text/richtext (rtx), application/postscript (eps, ps), application/pdf (pdf), application/xml-dtd (dtd), text/html (htm, html), text/xml (xsl, xml, xsd), application/x-dvi (dvi). If a document is compressed the specified MIME type should be for the uncompressed document.

**Source**

```xml
<xs:simpleType name="MIMEType">
  <xs:annotation>
    <xs:documentation xml:lang="en">Multipurpose Internet Mail Extensions (MIME) type and sub-type which characterizes the format of a file. MIME media types are defined in RFC memorandum RFC 2046. Current MIME types are maintained by Internet Assigned Numbers Authority (IANA) at http://www.iana.org/assignments/media-types/index.html. Commonly used MIME types are: application/vnd.ms-powerpoint (ppt, pptx), application/vnd.ms-excel (xls, xlsx), text/richtext (rtx), application/postscript (eps, ps), application/pdf (pdf), application/xml-dtd (dtd), text/html (htm, html), text/xml (xsl, xml, xsd), application/x-dvi (dvi). If a document is compressed the specified MIME type should be for the uncompressed document.</xs:documentation>
  </xs:annotation>
</xs:simpleType>
```

**Schema Location**
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### Simple Type `spase:ParentID`

**Namespace**
http://www.spase-group.org/data/schema

**Annotations**
The resource identifier for a resource that a resource is a part of. The resource inherits the attributes of the referenced resource. Attributes defined in the resource override attributes of the parent in the manner prescribed by the containing resource.

**Source**

```xml
<xs:simpleType name="ParentID">
  <xs:annotation>
    <xs:documentation xml:lang="en">The resource identifier for a resource that a resource is a part of. The resource inherits the attributes of the referenced resource. Attributes defined in the resource override attributes of the parent in the manner prescribed by the containing resource.</xs:documentation>
  </xs:annotation>
</xs:simpleType>
```

**Schema Location**
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd
<table>
<thead>
<tr>
<th>Source</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;xsd:simpleType name=&quot;SourceType&quot;&gt;</td>
<td></td>
</tr>
<tr>
<td><a href="">xsd:annotation</a></td>
<td></td>
</tr>
<tr>
<td>&lt;xsd:documentation xml:lang=&quot;en&quot;&gt;Identifiers for the characterization of the function or purpose of a source.</td>
<td></td>
</tr>
<tr>
<td>&lt;xsd:restriction base=&quot;xsd:string&quot;&gt;</td>
<td></td>
</tr>
<tr>
<td>&lt;xsd:enumeration value=&quot;Ancillary&quot;&gt;A complementary item which can be subordinate, subsidiary, auxiliary, supplementary to the primary item.</td>
<td></td>
</tr>
<tr>
<td><a href="">xsd:annotation</a></td>
<td></td>
</tr>
<tr>
<td>&lt;xsd:documentation xml:lang=&quot;en&quot;&gt;A representation of an image which is suitable to reveal most or all of the details of the image.</td>
<td></td>
</tr>
<tr>
<td>&lt;/xsd:annotation&gt;</td>
<td></td>
</tr>
<tr>
<td>&lt;xsd:enumeration value=&quot;Data&quot;&gt;A collection of organized information, usually the results of experience, observation or experiment, or a set of premises. This may consist of numbers, words, or images, particularly as measurements or observations of a set of variables.</td>
<td></td>
</tr>
<tr>
<td>&lt;/xsd:annotation&gt;</td>
<td></td>
</tr>
<tr>
<td>&lt;xsd:enumeration value=&quot;Layout&quot;&gt;The structured arrangement of items in a collection.</td>
<td></td>
</tr>
<tr>
<td>&lt;/xsd:annotation&gt;</td>
<td></td>
</tr>
<tr>
<td>&lt;xsd:enumeration value=&quot;Thumbnail&quot;&gt;A small representation of an image which is suitable to infer what the full-sized imaged is like.</td>
<td></td>
</tr>
<tr>
<td>&lt;/xsd:annotation&gt;</td>
<td></td>
</tr>
<tr>
<td>&lt;/xsd:simpleType&gt;</td>
<td></td>
</tr>
</tbody>
</table>
Simple Type `spase:MirrorURL`

**Namespace**
http://www.spase-group.org/data/schema

**Annotations**
A Uniform Resource Locator (URL) to an alternate location of a resource.

**Diagram**

**Type**
xsd:anyURI

**Used by**
Element `spase:Source/spase:MirrorURL`

**Source**
```xml
<xsd:simpleType name="MirrorURL">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A Uniform Resource Locator (URL) to an alternate location of a resource.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:anyURI"/>
</xsd:simpleType>
```

**Schema location**
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

Simple Type `spase:HashValue`

**Namespace**
http://www.spase-group.org/data/schema

**Annotations**
The value calculated by a hash function, e.g. the message digest of a digital data object.

**Diagram**

**Type**
xsd:string

**Used by**
Element `spase:Checksum/spase:HashValue`

**Source**
```xml
<xsd:simpleType name="HashValue">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The value calculated by a hash function, e.g. the message digest of a digital data object.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string"/>
</xsd:simpleType>
```

**Schema location**
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

Simple Type `spase:HashFunction`

**Namespace**
http://www.spase-group.org/data/schema

**Annotations**
Identifiers for functions or algorithms that convert a digital data object into a hash value.

**Diagram**

**Type**
restriction of xsd:string

**Facets**

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MD5</td>
<td>Message Digest 5 (MD5) is a 128-bit message digest algorithm created in 1991 by Professor Ronald Rivest.</td>
</tr>
<tr>
<td>SHA1</td>
<td>Secure Hash Algorithm (SHA), a 160-bit message digest algorithm developed by the NSA and described in Federal Information Processing Standard (FIPS) publication 180-1.</td>
</tr>
<tr>
<td>SHA256</td>
<td>Secure Hash Algorithm (SHA), a 256-bit message digest algorithm developed by the NSA and described in Federal Information Processing Standard (FIPS) publication 180-1.</td>
</tr>
</tbody>
</table>

**Used by**
Element `spase:Checksum/spase:HashFunction`

**Source**
```xml
<xsd:simpleType name="HashFunction">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Identifiers for functions or algorithms that convert a digital data object into a hash value.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="MD5"/>
    <xsd:enumeration value="SHA1"/>
    <xsd:enumeration value="SHA256"/>
  </xsd:restriction>
</xsd:simpleType>
```
<xsd:documentation xml:lang="en">Message Digest 5 (MD5) is a 128-bit message digest algorithm created in 1991 by Professor Ronald Rivest.</xsd:documentation>

<xsd:enumeration value="SHA1">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Secure Hash Algorithm (SHA), a 160-bit message digest algorithm developed by the NSA and described in Federal Information Processing Standard (FIPS) publication 180-1.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="SHA256">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Secure Hash Algorithm (SHA), a 256-bit message digest algorithm developed by the NSA and described in Federal Information Processing Standard (FIPS) publication 180-1.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xs:simpleType>
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="Antenna">A sensor used to measure electric potential.
    </xsd:enumeration>

    <xsd:enumeration value="Channeltron">An instrument that detects electrons, ions, and UV-radiation, according to the principle of a secondary emission multiplier. It is typically used in electron spectroscopy and mass spectrometry.
    </xsd:enumeration>

    <xsd:enumeration value="Coronograph">An instrument which can image things very close to the Sun by using a disk to block the Sun's bright surface which reveals the faint solar corona and other celestial objects.
    </xsd:enumeration>

    <xsd:enumeration value="DoubleSphere">A dipole antenna of which the active (sensor) elements are small spheres located at the ends of two wires deployed in the equatorial plane, on opposite sides of a spinning spacecraft.
    </xsd:enumeration>

    <xsd:enumeration value="DustDetector">An instrument which determines the mass and speed of ambient dust particles.
    </xsd:enumeration>

    <xsd:enumeration value="ElectronDriftInstrument">An active experiment to measure the electron drift velocity based on sensing the displacement of a weak beam of electrons after one gyration in the ambient magnetic field.
    </xsd:enumeration>

    <xsd:enumeration value="ElectrostaticAnalyser">An instrument which uses charged plates to analyze the mass, charge and kinetic energies of charged particles which enter the instrument.
    </xsd:enumeration>

    <xsd:enumeration value="EnergeticParticleInstrument">An instrument that measures fluxes of charged particles as a function of time, direction of motion, mass, charge and/or species.
    </xsd:enumeration>

    <xsd:enumeration value="FaradayCup">An instrument consisting of an electrode from which electrical current is measured while a charged particle beam (electrons or ions) impinges on it. Used to determine energy spectrum and sometimes ion composition of the impinging particles.
    </xsd:enumeration>

    <xsd:enumeration value="FluxFeedback">A search coil whose bandwidth and signal/noise ratio are increased by the application of negative feedback at the sensor (flux) level by driving a collocated coil with a signal from the preamplifier.
    </xsd:enumeration>

    <xsd:enumeration value="FourierTransformSpectrograph">An instrument that determines the spectra of a radiative source, using time-domain measurements.
    </xsd:enumeration>
  </xsd:restriction>
</xs:simpleType>
<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GeigerMuellerTube</td>
<td>An instrument which samples the radiation from an area at one or more spectral ranges emitted or reflected by an object.</td>
</tr>
<tr>
<td>Imager</td>
<td>An instrument which is a multispectral scanner with a very large number of channels (64-256 channels) with very narrow band widths.</td>
</tr>
<tr>
<td>ImagingSpectrometer</td>
<td>An instrument to study the properties of two or more waves from the pattern of interference created by their superposition.</td>
</tr>
<tr>
<td>Interferometer</td>
<td>An instrument which is a multispectral scanner with a very large number of channels (64-256 channels) with very narrow band widths.</td>
</tr>
<tr>
<td>IonChamber</td>
<td>An instrument which captures images at multiple spectral ranges.</td>
</tr>
<tr>
<td>IonDrift</td>
<td>A device which measures the current produced by the displacement of ambient ions on a grid, thereby allowing the determination of the ion trajectory and velocity.</td>
</tr>
<tr>
<td>LangmuirProbe</td>
<td>A monopole antenna associated with an instrument. The instrument applies a potential to the antenna which is swept to determine the voltage/current characteristic. This provides information about the plasma surrounding the probe and spacecraft.</td>
</tr>
<tr>
<td>LongWire</td>
<td>A dipole antenna whose active (sensor) elements are two wires deployed in the equatorial plane on opposite sides of a spinning spacecraft, and whose length is several times greater than the spacecraft diameter.</td>
</tr>
<tr>
<td>Magnetograph</td>
<td>A special type of magnetometer that records a time plot of the local magnetic field near the instrument; or a telescope capable of determining the magnetic field strength and/or direction on a distant object such as the Sun, using the Zeeman splitting or other spectral signatures of magnetization.</td>
</tr>
<tr>
<td>Magnetometer</td>
<td>An instrument which measures the ambient magnetic field.</td>
</tr>
<tr>
<td>MassSpectrometer</td>
<td>An instrument which distinguishes chemical species in terms of their different isotopic masses.</td>
</tr>
<tr>
<td>MicrochannelPlate</td>
<td>An instrument used for the detection of elementary particles, ions, ultraviolet rays and soft X-rays constructed from very thin conductive glass capillaries.</td>
</tr>
<tr>
<td>MultispectralImager</td>
<td>An instrument which measures the quantity and properties of neutral particles over a range of angles. Measured properties can include mass and energy.</td>
</tr>
<tr>
<td>NeutralAtomImager</td>
<td>An instrument which measures the quantity and properties of neutral particles. Measured properties can include mass and plasma bulk densities.</td>
</tr>
<tr>
<td>NeutralParticleDetector</td>
<td>An instrument which correlates particle flux to help identify wave/particle interactions.</td>
</tr>
<tr>
<td>Photometer</td>
<td>An instrument which detects particle flux!!!</td>
</tr>
<tr>
<td>PhotomultiplierTube</td>
<td>A vacuum phototube that is an extremely sensitive detector of light in the ultraviolet, visible, and near-infrared ranges of the electromagnetic spectrum.</td>
</tr>
<tr>
<td>Photopolarimeter</td>
<td>An instrument which measures the intensity and polarization of radiant energy. A photopolarimeter</td>
</tr>
</tbody>
</table>
is a combination of a photometer and a polarimeter.

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platform</td>
<td>A collection of components which can be positioned and oriented as a single unit. A platform may contain other platforms. For example, a spacecraft is a platform which may have components that can be articulated and are also considered platforms.</td>
</tr>
<tr>
<td>ProportionalCounter</td>
<td>An instrument which measures energy of ionization radiation based on interactions with a gas.</td>
</tr>
<tr>
<td>QuadrisphereAnalyser</td>
<td>An instrument used for the 3-D detection of plasma, energetic electrons and ions, and for positive-ion composition measurements.</td>
</tr>
<tr>
<td>Radar</td>
<td>An instrument that uses directional properties of returned power to infer spatial and/or other characteristics of a remote object.</td>
</tr>
<tr>
<td>Radiometer</td>
<td>An instrument for detecting or measuring radiant energy. Radiometers are commonly limited to infrared radiation.</td>
</tr>
<tr>
<td>ResonanceSounder</td>
<td>A combination of a radio receiver and a pulsed transmitter used to study the plasma surrounding a spacecraft by identifying resonances or cut-offs (of the wave dispersion relation), whose frequencies are related to the ambient plasma density and magnetic field. When the transmitter is off it is essentially a high frequency-resolution spectral power receiver.</td>
</tr>
<tr>
<td>RetardingPotentialAnalyser</td>
<td>An instrument which measures ion temperatures and ion concentrations using a planar ion trap.</td>
</tr>
<tr>
<td>Riometer</td>
<td>An instrument which measure the signal strength in various directions of the galactic radio signals. Variations in these signals are influenced by solar flare activity and geomagnetic storm and substorm processes.</td>
</tr>
<tr>
<td>ScintillationDetector</td>
<td>An instrument which detects flouresences of a material which is excited by high energy (ionizing) electromagnetic or charged particle radiation.</td>
</tr>
<tr>
<td>SearchCoil</td>
<td>An instrument which measures the time variation of the magnetic flux threading a loop by measurement of the electric potential difference induced between the ends of the wire.</td>
</tr>
<tr>
<td>SolidStateDetector</td>
<td>A detector of the charge carriers (electrons and holes) generated in semiconductors by energy deposited by gamma ray photons. Also known as a &quot;semiconductor detector&quot;.</td>
</tr>
<tr>
<td>Sounder</td>
<td>An instrument which measures the radiances from an object. A sounder may measure radiances at multiple spectral ranges.</td>
</tr>
<tr>
<td>SpacecraftPotentialControl</td>
<td>An instrument to control the electric potential of a spacecraft with respect to the ambient plasma by emitting a variable current of positive ions.</td>
</tr>
<tr>
<td>SpectralPowerReceiver</td>
<td>A radio receiver which determines the power spectral density of the electric or magnetic field, or both, at one or more frequencies.</td>
</tr>
<tr>
<td>Spectrometer</td>
<td>An instrument that measures the component wavelengths of light (or other electromagnetic radiation) by splitting the light up into its component wavelengths.</td>
</tr>
<tr>
<td>TimeOfFlight</td>
<td>An instrument which measures the time it takes for a particle to travel between two detectors.</td>
</tr>
<tr>
<td>Unspecified</td>
<td>A value which is not provided.</td>
</tr>
<tr>
<td>WaveformReceiver</td>
<td>A radio receiver which outputs the value of one or more components of the electric and/or magnetic field as a function of time.</td>
</tr>
</tbody>
</table>

Used by:

- **Element**: `spase:Instrument/spase:InstrumentType`
<xsd:simpleType name="InstrumentType">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Identifiers for the type of experiment the instrument performs. This is the technique of observation.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="Antenna">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A sensor used to measure electric potential.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Channeltron">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">An instrument that detects electrons, ions, and UV-radiation, according to the principle of a secondary emission multiplier. It is typically used in electron spectroscopy and mass spectrometry.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Coronograph">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">An instrument which can image things very close to the Sun by using a disk to block the Sun's bright surface which reveals the faint solar corona and other celestial objects.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="DoubleSphere">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A dipole antenna of which the active (sensor) elements are small spheres located at the ends of two wires deployed in the equatorial plane, on opposite sides of a spinning spacecraft.</xsd:/documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="DustDetector">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">An instrument which determines the mass and speed of ambient dust particles.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="ElectronDriftInstrument">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">An active experiment to measure the electron drift velocity based on sensing the displacement of a weak beam of electrons after one gyration in the ambient magnetic field.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="ElectrostaticAnalyser">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">An instrument which uses charged plates to analyze the mass, charge and kinetic energies of charged particles which enter the instrument.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="EnergeticParticleInstrument">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">An instrument that measures fluxes of charged particles as a function of time, direction of motion, mass, charge and/or species.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="FaradayCup">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">An instrument consisting of an electrode from which electrical current is measured while a charged particle beam (electrons or ions) impinges on it. Used to determine energy spectrum and sometimes ion composition of the impinging particles.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="FluxFeedback">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A search coil whose bandwidth and signal/noise ratio are increased by the application of negative feedback at the sensor (flux) level by driving a collocated coil with a signal from the preamplifier.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="FourierTransformSpectrograph">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">An instrument that determines the spectra of a radiative source, using time-domain measurements and a Fourier transform.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="GeigerMuellerTube">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">An instrument that detects radiation by creating a discharge in a gas-filled tube when a charged particle passes through it.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
  </xsd:restriction>
</xsd:simpleType>
<xsd:documentation xml:lang="en">An instrument which samples the radiation from an area at one or more spectral ranges emitted or reflected by an object.</xsd:documentation>
</xsd:enumeration>
<xsd:enumeration value="ImagingSpectrometer">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">An instrument which is a multispectral scanner with a very large number of channels (64-256 channels) with very narrow band widths.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Interferometer">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">An instrument to study the properties of two or more waves from the pattern of interference created by their superposition.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="IonChamber">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A device in which the collected electrical charge from ionization in a gas-filled cavity is taken to be the proportion to some parameter (e.g. dose or exposure) of radiation field.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="IonDrift">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A device which measures the current produced by the displacement of ambient ions on a grid, thereby allowing the determination of the ion trajectory and velocity.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="LangmuirProbe">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A monopole antenna associated with an instrument. The instrument applies a potential to the antenna which is swept to determine the voltage/current characteristic. This provides information about the plasma surrounding the probe and spacecraft.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="LongWire">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A dipole antenna whose active (sensor) elements are two wires deployed in the equatorial plane on opposite sides of a spinning spacecraft, and whose length is several times greater than the spacecraft diameter.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Magnetograph">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A special type of magnetometer that records a time plot of the local magnetic field near the instrument; or a telescope capable of determining the magnetic field strength and/or direction on a distant object such as the Sun, using the Zeeman splitting or other spectral signatures of magnetization.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Magnetometer">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">An instrument which measures the ambient magnetic field.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="MassSpectrometer">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">An instrument which distinguishes chemical species in terms of their different isotopic masses.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="MicrochannelPlate">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">An instrument used for the detection of elementary particles, ions, ultraviolet rays and soft X-rays constructed from very thin conductive glass capillaries.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="MultispectralImager">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">An instrument which captures images at multiple spectral ranges.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
An instrument which measures the quantity and properties of neutral particles over a range of angles. Measured properties can include mass and energy.

An instrument which measures the properties of neutral particles. Measured properties can include mass and plasma bulk densities.

An instrument which correlates particle flux to help identify wave/particle interactions.

An instrument which detects particle flux!!!

An instrument which measures the strength of electromagnetic radiation within a spectral band which can range from ultraviolet to infrared and includes the visible spectrum.

A vacuum phototube that is an extremely sensitive detector of light in the ultraviolet, visible, and near-infrared ranges of the electromagnetic spectrum.

An instrument which measures the intensity and polarization or radiant energy. A photopolarimeter is a combination of a photometer and a polarimeter.

A collection of components which can be positioned and oriented as a single unit. A platform may contain other platforms. For example, a spacecraft is a platform which may have components that can be articulated and are also considered platforms.

An instrument which measures energy of ionization radiation based on interactions with a gas.

An instrument used for the 3-D detection of plasma, energetic electrons and ions, and for positive-ion composition measurements.

An instrument that uses directional properties of returned power to infer spatial and/or other characteristics of a remote object.

An instrument for detecting or measuring radiant energy. Radiometers are commonly limited to infrared radiation.
A combination of a radio receiver and a pulsed transmitter used to study the plasma surrounding a spacecraft by identifying resonances or cut-offs (of the wave dispersion relation), whose frequencies are related to the ambient plasma density and magnetic field. When the transmitter is off it is essentially a high frequency-resolution spectral power receiver.
Simple Type `spase:InvestigationName`  

**Namespace**  http://www.spase-group.org/data/schema  

**Annotations**  The name given to the contract or engagement which enabled the data to be produced. Each investigation is associated with a Principal Investigator or Guest Investigator who was responsible for the original proposal. For single PI missions each major subsystem having its own identified Team Leader may also be classed as an "Investigation" for the purposes of data archiving.

**Source**  

```xml  
<xsd:simpleType name="InvestigationName">  
  <xsd:annotation>  
    <xsd:documentation xml:lang="en">The name given to the contract or engagement which enabled the data to be produced. Each investigation is associated with a Principal Investigator or Guest Investigator who was responsible for the original proposal. For single PI missions each major subsystem having its own identified Team Leader may also be classed as an "Investigation" for the purposes of data archiving.</xsd:documentation>  
  </xsd:annotation>  
  <xsd:restriction base="xsd:string"/>  
</xsd:simpleType>  
```

**Schema location**  file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

Simple Type `spase:ObservatoryID`  

**Namespace**  http://www.spase-group.org/data/schema  

**Annotations**  The identifier of an Observatory resource.

**Source**  

```xml  
<xsd:simpleType name="ObservatoryID">  
  <xsd:annotation>  
    <xsd:documentation xml:lang="en">The identifier of an Observatory resource.</xsd:documentation>  
  </xsd:annotation>  
  <xsd:restriction base="xsd:string"/>  
</xsd:simpleType>  
```

**Schema location**  file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

Simple Type `spase:ObservatoryGroupID`  

**Namespace**  http://www.spase-group.org/data/schema  

**Annotations**  The identifier of an Observatory resource which the referring resource is a member of.

**Source**  

```xml  
<xsd:simpleType name="ObservatoryGroupID">  
  <xsd:annotation>  
    <xsd:documentation xml:lang="en">The identifier of an Observatory resource which the referring resource is a member of.</xsd:documentation>  
  </xsd:annotation>  
  <xsd:restriction base="xsd:string"/>  
</xsd:simpleType>  
```

**Schema location**  file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd
### Simple Type spase:Latitude

**Namespace** | http://www.spase-group.org/data/schema  
---|---
**Annotations** | The angular distance north (positive) or south (negative) from the equator, measured along the meridian passing through the point.

**Diagram**

Type | xsd:double  
---|---
**Used by** | Element spase:Location/spase:Latitude  
**Source**

```xml
<xsd:simpleType name="Latitude">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The angular distance north (positive) or south (negative) from the equator, measured along the meridian passing through the point.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:double"/>
</xsd:simpleType>
```

**Schema location** | file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

### Simple Type spase:Longitude

**Namespace** | http://www.spase-group.org/data/schema  
---|---
**Annotations** | The angular distance measured west (positive) or east (negative) from a north-south line called the Prime Meridian.

**Diagram**

Type | xsd:double  
---|---
**Used by** | Element spase:Location/spase:Longitude  
**Source**

```xml
<xsd:simpleType name="Longitude">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The angular distance measured west (positive) or east (negative) from a north-south line called the Prime Meridian.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:double"/>
</xsd:simpleType>
```

**Schema location** | file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

### Simple Type spase:Elevation

**Namespace** | http://www.spase-group.org/data/schema  
---|---
**Annotations** | The distance in meters above (positive) or below (negative) the "zero elevation" defined by the World Geodetic System reference frame (WGS84).

**Diagram**

Type | xsd:double  
---|---
**Used by** | Element spase:Location/spase:Elevation  
**Source**

```xml
<xsd:simpleType name="Elevation">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The distance in meters above (positive) or below (negative) the "zero elevation" defined by the World Geodetic System reference frame (WGS84).</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:double"/>
</xsd:simpleType>
```

**Schema location** | file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

### Simple Type spase:PersonName

**Namespace** | http://www.spase-group.org/data/schema

---
### Simple Type `spase:PersonName`

**Annotations**
- The words used to address an individual.

**Diagram**
- ![Diagram](Image)

**Type** `xsd:string`

**Used by** Element `spase:Person/spase:PersonName`

**Source**
- `<xsd:simpleType name="PersonName"`<xsd:annotation>
  - `<xsd:documentation xml:lang="en">The words used to address an individual.</xsd:documentation>
- `<xsd:restriction base="xsd:string"/>
</xsd:simpleType>`

**Schema location**
- file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### Simple Type `spase:OrganizationName`

**Annotations**
- A unit within a company or other entity (e.g., Government agency or branch of service) within which many projects are managed as a whole.

**Diagram**
- ![Diagram](Image)

**Type** `xsd:string`

**Used by** Element `spase:Person/spase:OrganizationName`

**Source**
- `<xsd:simpleType name="OrganizationName"`<xsd:annotation>
  - `<xsd:documentation xml:lang="en">A unit within a company or other entity (e.g., Government agency or branch of service) within which many projects are managed as a whole.</xsd:documentation>
- `<xsd:restriction base="xsd:string"/>
</xsd:simpleType>`

**Schema location**
- file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### Simple Type `spase:Address`

**Annotations**
- Directions for finding some location; written on letters or packages that are to be delivered to that location.

**Diagram**
- ![Diagram](Image)

**Type** `xsd:string`

**Used by** Element `spase:Person/spase:Address`

**Source**
- `<xsd:simpleType name="Address"`<xsd:annotation>
  - `<xsd:documentation xml:lang="en">Directions for finding some location; written on letters or packages that are to be delivered to that location.</xsd:documentation>
- `<xsd:restriction base="xsd:string"/>
</xsd:simpleType>`

**Schema location**
- file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### Simple Type `spase:Email`

**Annotations**
- The electronic address at which the individual may be contacted expressed in the form "local-part@domain".

**Diagram**
- ![Diagram](Image)

**Type** `xsd:string`

**Used by** Element `spase:Person/spase:Email`

**Source**
- `<xsd:simpleType name="Email"`
### Simple Type `spase:PhoneNumber`

**Namespace**  
http://www.spase-group.org/data/schema

**Annotations**  
The symbols and numerals required to contact an individual by telephone. The string may contain punctuation marks such as dash (-) or dot (.) to separate fields within the string.

**Diagram**

![Diagram](Diagram)

**Type**  
`xsd:string`

**Used by**  
- `spase:Person/spase:PhoneNumber`

**Source**

```xml
<xsd:simpleType name="PhoneNumber">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The symbols and numerals required to contact an individual by telephone. The string may contain punctuation marks such as dash (-) or dot (.) to separate fields within the string.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string"/>
</xsd:simpleType>
```

### Simple Type `spase:FaxNumber`

**Namespace**  
http://www.spase-group.org/data/schema

**Annotations**  
The symbols and numerals required to send a facsimile (FAX) to an individual by telephone. The string may contain punctuation marks such as dash (-) or dot (.) to separate fields within the string.

**Diagram**

![Diagram](Diagram)

**Type**  
`xsd:string`

**Used by**  
- `spase:Person/spase:FaxNumber`

**Source**

```xml
<xsd:simpleType name="FaxNumber">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The symbols and numerals required to send a facsimile (FAX) to an individual by telephone. The string may contain punctuation marks such as dash (-) or dot (.) to separate fields within the string.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string"/>
</xsd:simpleType>
```

### Simple Type `spase:ImageURL`

**Namespace**  
http://www.spase-group.org/data/schema

**Annotations**  
A URL to graphic, image or movie.

**Diagram**

![Diagram](Diagram)

**Type**  
`xsd:anyURI`

**Used by**  
- `spase:Annotation/spase:ImageURL`

**Source**

```xml
<xsd:simpleType name="ImageURL">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A URL to graphic, image or movie.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:anyURI"/>
</xsd:simpleType>
```
### Simple Type spase:AnnotationType

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Annotations</td>
<td>Identifiers for an classification of an annotation.</td>
</tr>
<tr>
<td>Diagram</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>Type</td>
<td>restriction of xsd:string</td>
</tr>
<tr>
<td>Facets</td>
<td></td>
</tr>
<tr>
<td>enumeration Anomaly</td>
<td>An interval where measurements or observations may be adversely affected.</td>
</tr>
<tr>
<td>enumeration Event</td>
<td>An action or observation which occurs at a point in time.</td>
</tr>
<tr>
<td>enumeration Feature</td>
<td>A prominent or distinctive characteristic that occurs at a location or persists over a period of time.</td>
</tr>
<tr>
<td>Used by</td>
<td>Element spase:Annotation/spase:AnnotationType</td>
</tr>
<tr>
<td>Source</td>
<td><code>&lt;xsd:simpleType name=&quot;AnnotationType&quot;&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;xsd:annotation&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;xsd:documentation xml:lang=&quot;en&quot;&gt;Identifiers for an classification of an annotation.&lt;/xsd:documentation&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;xsd:restriction base=&quot;xsd:string&quot;&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;xsd:enumeration value=&quot;Anomaly&quot;&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;xsd:annotation&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;xsd:documentation xml:lang=&quot;en&quot;&gt;An interval where measurements or observations may be adversely affected.&lt;/xsd:documentation&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;xsd:enumeration value=&quot;Event&quot;&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;xsd:annotation&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;xsd:documentation xml:lang=&quot;en&quot;&gt;An action or observation which occurs at a point in time.&lt;/xsd:documentation&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;xsd:enumeration value=&quot;Feature&quot;&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;xsd:annotation&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;xsd:documentation xml:lang=&quot;en&quot;&gt;A prominent or distinctive characteristic that occurs at a location or persists over a period of time.&lt;/xsd:documentation&gt;</code></td>
</tr>
<tr>
<td>Source</td>
<td><code>&lt;xsd:simpleType name=&quot;ClassificationMethod&quot;&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;xsd:annotation&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;xsd:documentation xml:lang=&quot;en&quot;&gt;Identifiers for the technique used to determine the characteristics of an object.&lt;/xsd:documentation&gt;</code></td>
</tr>
</tbody>
</table>

### Simple Type spase:ClassificationMethod

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Annotations</td>
<td>Identifiers for the technique used to determine the characteristics of an object.</td>
</tr>
<tr>
<td>Diagram</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>Type</td>
<td>restriction of xsd:string</td>
</tr>
<tr>
<td>Facets</td>
<td></td>
</tr>
<tr>
<td>enumeration Automatic</td>
<td>Determined by the analysis or assessment performed by a program or server.</td>
</tr>
<tr>
<td>enumeration Inferred</td>
<td>Determined by the analysis of other information or resources.</td>
</tr>
<tr>
<td>enumeration Inspection</td>
<td>Determined by the analysis or assessment performed by a person.</td>
</tr>
<tr>
<td>Used by</td>
<td>Element spase:Annotation/spase:ClassificationMethod</td>
</tr>
<tr>
<td>Source</td>
<td><code>&lt;xsd:simpleType name=&quot;ClassificationMethod&quot;&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;xsd:annotation&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;xsd:documentation xml:lang=&quot;en&quot;&gt;Identifiers for the technique used to determine the characteristics of an object.&lt;/xsd:documentation&gt;</code></td>
</tr>
</tbody>
</table>
Simple Type `spase:ConfidenceRating`

Namespace | http://www.spase-group.org/data/schema

Annotations | Identifiers for the classification of the certainty of an assertion.

Diagram | ![Diagram](image)

Type | restriction of xsd:string

Facets

| Enumeration | Probable | Likely given the available evidence. Considered in the range of 4-7 on a scale of 0-10.
| Enumeration | Strong | Highly likely given the available evidence. Considered in the range of 7-10 on a scale of 0-10.
| Enumeration | Unlikely | Not likely given the available evidence. Considered in the range of 0 on a scale of 0-10.
| Enumeration | Weak | Slightly likely given the available evidence. Considered in the range of 1-4 on a scale of 0-10.

Used by Element `spase:Annotation/spase:ConfidenceRating`

Source

```xml
<xs:simpleType name="ConfidenceRating">
  <xs:annotation>
    <xs:documentation xml:lang="en">Identifiers for the classification of the certainty of an assertion.</xs:documentation>
  </xs:annotation>
  <xs:restriction base="xsd:string">
    <xs:enumeration value="Probable">
      <xs:annotation>
        <xs:documentation xml:lang="en">Likely given the available evidence. Considered in the range of 4-7 on a scale of 0-10.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="Strong">
      <xs:annotation>
        <xs:documentation xml:lang="en">Highly likely given the available evidence. Considered in the range of 7-10 on a scale of 0-10.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="Unlikely">
      <xs:annotation>
        <xs:documentation xml:lang="en">Not likely given the available evidence. Considered in the range of 0 on a scale of 0-10.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="Weak">
      <xs:annotation>
        <xs:documentation xml:lang="en">Slightly likely given the available evidence. Considered in the range of 1-4 on a scale of 0-10.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
  </xs:restriction>
</xs:simpleType>
```
**Simple Type spase:StartLocation**

Namespace: http://www.spase-group.org/data/schema

Annotations: The initial position in space.

Diagram: ![StartLocation Diagram](image)

Type: xsd:string

Used by: Element `spase:ObservationExtent/spase:StartLocation`

Source:
```xml
<xsd:simpleType name="StartLocation">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">The initial position in space.</xsd:documentation>
    </xsd:annotation>
    <xsd:restriction base="xsd:string"/>
</xsd:simpleType>
```

Schema location: file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

**Simple Type spase:StopLocation**

Namespace: http://www.spase-group.org/data/schema

Annotations: The final position in space.

Diagram: ![StopLocation Diagram](image)

Type: xsd:string

Used by: Element `spase:ObservationExtent/spase:StopLocation`

Source:
```xml
<xsd:simpleType name="StopLocation">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">The final position in space.</xsd:documentation>
    </xsd:annotation>
    <xsd:restriction base="xsd:string"/>
</xsd:simpleType>
```

Schema location: file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

**Simple Type spase:Component**

Namespace: http://www.spase-group.org/data/schema

Annotations: Identifiers for the axis of coordinate systems.

Diagram: ![Component Diagram](image)

Type: restriction of xsd:string

Facets:
- `enumeration I`: Projection of a vector along the first named axis of a coordinate system. Typically the X axis, but could be the R axis for an RTN coordinate system.
- `enumeration J`: Projection of a vector along the second named axis of a coordinate system. Typically the Y axis, but could be the T axis for an RTN coordinate system.
- `enumeration K`: Projection of a vector along the third named axis of a coordinate system. Typically the Z axis, but could be the N axis for an RTN coordinate system.

Source:
```xml
<xsd:simpleType name="Component">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">Identifiers for the axis of coordinate systems.</xsd:documentation>
    </xsd:annotation>
    <xsd:restriction base="xsd:string">
        <xsd:enumeration value="I"/>
    </xsd:restriction>
</xsd:simpleType>
```

Schema location: file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd
<table>
<thead>
<tr>
<th>Facets</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>enumeration</td>
<td>&lt;xsd:simpleType name=&quot;DirectionAngle&quot;&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;xsd:annotation xml:lang=&quot;en&quot;&gt;Identifiers for the angle between a vector and a base axis.</td>
</tr>
</tbody>
</table>
could be also applied to angles between the vector and other components, for example the IMF cone angle defined as arccos(Bx/Bt).</xsd:documentation>
</xsd:annotation>
</xsd:restriction>
</xsd:simpleType>

**Schema location**

file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

---

**Simple Type** `spase:Earth`

**Namespace**

http://www.spase-group.org/data/schema

**Annotations**

Identifiers for the regions surrounding the Earth.

**Diagram**

![Diagram](image)

**Type**

restriction of xsd:string

**Facets**

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnetosheath</td>
<td>The region between the bow shock and the magnetopause, characterized by very turbulent plasma.</td>
</tr>
<tr>
<td>Magnetosphere</td>
<td>The region of space above the atmosphere or surface of the planet, and bounded by the magnetopause, that is under the direct influence of the planet's magnetic field.</td>
</tr>
<tr>
<td>Magnetosphere.Magnetotail</td>
<td>The region on the night side of the body where the magnetic field is stretched backwards by the force of the solar wind. For Earth, the magnetotail begins at a night-side radial distance of 10 Re (X &gt; -10Re).</td>
</tr>
<tr>
<td>Magnetosphere.Main</td>
<td>The region of the magnetosphere where the magnetic field lines are closed, but does not include the gaseous region gravitationally bound to the body.</td>
</tr>
<tr>
<td>Magnetosphere.Polar</td>
<td>The region near the pole of a body. For a magnetosphere the polar region is the area where magnetic field lines are open and includes the auroral zone.</td>
</tr>
<tr>
<td>Magnetosphere.RadiationBelt</td>
<td>The region within a magnetosphere where high-energy particles could potentially be trapped in a magnetic field.</td>
</tr>
<tr>
<td>Moon</td>
<td>The only natural satellite of the Earth.</td>
</tr>
<tr>
<td>NearSurface</td>
<td>The gaseous and possibly ionized environment of a body extending from the surface to some specified altitude. For the Earth, this altitude is 2000 km.</td>
</tr>
<tr>
<td>NearSurface.Atmosphere</td>
<td>The neutral gases surrounding a body that extends from the surface and is bound to the body by virtue of the gravitational attraction.</td>
</tr>
<tr>
<td>NearSurface.AuroralRegion</td>
<td>The region in the atmospheric where electrically-charged particles bombarding the upper atmosphere of a planet in the presence of a magnetic field produce an optical phenomenon.</td>
</tr>
<tr>
<td>NearSurface.EquatorialRegion</td>
<td>A region centered on the equator and limited in latitude by approximately 23 degrees north and south of the equator.</td>
</tr>
<tr>
<td>NearSurface.Ionosphere</td>
<td>The charged or ionized gases surrounding a body that are nominally bound to the body by virtue of the gravitational attraction.</td>
</tr>
<tr>
<td>NearSurface.Ionosphere.DRegion</td>
<td>A layer of the ionosphere that exists approximately 50 to 95 km above the surface of the Earth. One of several layers in the ionosphere.</td>
</tr>
<tr>
<td>NearSurface.Ionosphere.ERegion</td>
<td>A layer of ionised gas occurring at 90-150km above the ground. One of several layers in the ionosphere. Also called the The Kennelly-Heaviside layer.</td>
</tr>
<tr>
<td>NearSurface.Ionosphere.FRegion</td>
<td>A layer that contains ionized gases at a height of around 150-800 km above sea level, placing...</td>
</tr>
</tbody>
</table>
it in the thermosphere, the F region has the highest concentration of free electrons and ions anywhere in the atmosphere. It may be thought of as comprising two layers, the F1- and F2-layers. One of several layers in the ionosphere. Also known as the Appleton layer.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NearSurface.Ionosphere.Topside</td>
<td>Region at the uppermost areas of the ionosphere.</td>
</tr>
<tr>
<td>NearSurface.Mesosphere</td>
<td>The layer of the atmosphere that extends from the Stratosphere to a range of 80 km to 85 km, temperature decreasing with height.</td>
</tr>
<tr>
<td>NearSurface.Plasmasphere</td>
<td>A region of the magnetosphere consisting of low energy (cool) plasma. It is located above the ionosphere.</td>
</tr>
<tr>
<td></td>
<td>The outer boundary of the plasmasphere is known as the plasmapause, which is defined by an order of magnitude drop in plasma density.</td>
</tr>
<tr>
<td>NearSurface.PolarCap</td>
<td>The areas of the globe surrounding the poles and consisting of the region north of 60 degrees north latitude and the region south of 60 degrees south latitude.</td>
</tr>
<tr>
<td>NearSurface.SouthAtlanticAnomalyRegion</td>
<td>The region where the Earth's inner van Allen radiation belt makes its closest approach to the planet's surface. The result is that, for a given altitude, the radiation intensity is higher over this region than elsewhere.</td>
</tr>
<tr>
<td>NearSurface.Stratosphere</td>
<td>The layer of the atmosphere that extends from the troposphere to about 30 km, temperature increases with height. The stratosphere contains the ozone layer.</td>
</tr>
<tr>
<td>NearSurface.Thermosphere</td>
<td>The layer of the atmosphere that extends from the Mesosphere to 640+ km, temperature increasing with height.</td>
</tr>
<tr>
<td>NearSurface.Troposphere</td>
<td>The lowest layer of the atmosphere which begins at the surface and extends to between 7 km (4.4 mi) at the poles and 17 km (10.6 mi) at the equator, with some variation due to weather factors.</td>
</tr>
<tr>
<td>Surface</td>
<td>The outermost area of a solid object.</td>
</tr>
</tbody>
</table>

Source

```xml
<xsd:simpleType name="Earth">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">Identifiers for the regions surrounding the Earth.</xsd:documentation>
    </xsd:annotation>
    <xsd:restriction base="xsd:string">
        <xsd:enumeration value="Magnetosheath">
            <xsd:annotation>
                <xsd:documentation xml:lang="en">The region between the bow shock and the magnetopause, characterized by very turbulent plasma.</xsd:documentation>
            </xsd:annotation>
        </xsd:enumeration>
        <xsd:enumeration value="Magnetosphere">
            <xsd:annotation>
                <xsd:documentation xml:lang="en">The region of space above the atmosphere or surface of the planet, and bounded by the magnetopause, that is under the direct influence of the planet’s magnetic field.</xsd:documentation>
            </xsd:annotation>
        </xsd:enumeration>
        <xsd:enumeration value="Magnetosphere.Magnetotail">
            <xsd:annotation>
                <xsd:documentation xml:lang="en">The region on the night side of the body where the magnetic field is stretched backwards by the force of the solar wind. For Earth, the magnetotail begins at a night-side radial distance of 10 Re (X > -10Re).</xsd:documentation>
            </xsd:annotation>
        </xsd:enumeration>
        <xsd:enumeration value="Magnetosphere.Main">
            <xsd:annotation>
                <xsd:documentation xml:lang="en">The region of the magnetosphere where the magnetic field lines are closed, but does not include the gaseous region gravitationally bound to the body.</xsd:documentation>
            </xsd:annotation>
        </xsd:enumeration>
    </xsd:restriction>
</xsd:simpleType>
```
The region near the pole of a body. For a magnetosphere the polar region is the area where magnetic field lines are open and includes the auroral zone.

- **Magnetosphere**: The region within a magnetosphere where high-energy particles could potentially be trapped in a magnetic field.
- **RadiationBelt**: The region near the pole of a body. For a magnetosphere the polar region is the area where magnetic field lines are open and includes the auroral zone.
- **Moon**: The only natural satellite of the Earth.
- **NearSurface**: The gaseous and possibly ionized environment of a body extending from the surface to some specified altitude. For the Earth, this altitude is 2000 km.
- **Atmosphere**: The neutral gases surrounding a body that extends from the surface and is bound to the body by virtue of the gravitational attraction.
- **AuroralRegion**: The region in the atmosphere where electrically-charged particles bombarding the upper atmosphere of a planet in the presence of a magnetic field produce an optical phenomenon.
- **EquatorialRegion**: A region centered on the equator and limited in latitude by approximately 23 degrees north and south of the equator.
- **Ionosphere**: The charged or ionized gases surrounding a body that are nominally bound to the body by virtue of the gravitational attraction.
- **DRegion**: The layer of the ionosphere that exists approximately 50 to 95 km above the surface of the Earth. One of several layers in the ionosphere.
- **FRegion**: A layer of ionised gas occurring at 90-150km above the ground. One of several layers in the ionosphere. Also called the The Kennelly-Heaviside layer.
- **Topside**: The region at the upper most areas of the ionosphere.
- **Mesosphere**: The layer of the atmosphere that extends from the Stratosphere to a range of 80 km to 85 km, temperature decreasing with height.
<xsd:enumeration value="NearSurface.Plasmasphere">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A region of the magnetosphere consisting of low energy (cool) plasma. It is located above the ionosphere. The outer boundary of the plasmasphere is known as the plasmapause, which is defined by an order of magnitude drop in plasma density.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="NearSurface.PolarCap">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The areas of the globe surrounding the poles and consisting of the region north of 60 degrees north latitude or the region south of 60 degrees south latitude.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="NearSurface.SouthAtlanticAnomalyRegion">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The region where the Earth's inner van Allen radiation belt makes its closest approach to the planet's surface. The result is that, for a given altitude, the radiation intensity is higher over this region than elsewhere.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="NearSurface.Stratosphere">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The layer of the atmosphere that extends from the troposphere to about 30 km, temperature increases with height. The stratosphere contains the ozone layer.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="NearSurface.Thermosphere">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The layer of the atmosphere that extends from the Mesosphere to 640+ km, temperature increasing with height.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="NearSurface.Troposphere">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The lowest layer of the atmosphere which begins at the surface and extends to between 7 km (4.4 mi) at the poles and 17 km (10.6 mi) at the equator, with some variation due to weather factors.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Surface">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The outermost area of a solid object.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

</xsd:simpleType>
Photographic plates are often used for astronomical photography.

A sheet of any written or printed material which may include notes or graphics. Multiple printed pages may be bound into a manuscript or book.

Identifiers for permanent reproductions, or copy in the form of a physical object, of any media suitable for direct use by a person.

An image recording medium on which usually a "negative" analog image is registered. A "positive" image can be recovered or reproduced from film, which is usually made of flexible materials for ease of storage and transportation.

A sheet of microfilm on which many pages of material have been photographed; a magnification system is used to read the material.

Film rolls on which materials are photographed at greatly reduced size; a magnification system is used to read the material.

An image (positive or negative) registered on a piece of photo-sensitive paper.

A rigid (typically glass) medium that functions like film. Its rigidity is for guarding against image distortion due to medium deformation (caused by heat and humidity). Photographic plates are often used for astronomical photography.
| Source | <xsd:simpleType name="Heliosphere">
|        | </xsd:annotation>
|        | <xsd:annotation>
|        | <xsd:documentation xml:lang="en">Identifiers for regions of the solar atmosphere which extends roughly from the inner corona to the edge of the solar plasma at the heliopause separating primarily solar plasma from interstellar plasma.</xsd:documentation>
|        | </xsd:annotation>
|        | <xsd:restriction base="xsd:string">
|        | </xsd:annotation>
|        | <xsd:enumeration value="Heliosheath">
|        | </xsd:annotation>
|        | <xsd:annotation>
|        | <xsd:documentation xml:lang="en">The region extending radially outward from the heliospheric termination shock and in which the decelerated solar wind plasma is still significant.</xsd:documentation>
|        | </xsd:annotation>
|        | </xsd:enumeration>
|        | <xsd:enumeration value="Inner">
|        | </xsd:annotation>
|        | <xsd:annotation>
|        | <xsd:documentation xml:lang="en">The region of the heliosphere extending radially outward from the solar coronal base to just inside 1 AU.</xsd:documentation>
|        | </xsd:annotation>
|        | </xsd:enumeration>
|        | <xsd:enumeration value="NearEarth">
|        | </xsd:annotation>
|        | <xsd:annotation>
|        | <xsd:documentation xml:lang="en">The heliospheric region near the Earth which extends to and includes the area near the L1 and L2 Lagrange point.</xsd:documentation>
|        | </xsd:annotation>
|        | </xsd:enumeration>
|        | <xsd:enumeration value="Outer">
|        | </xsd:annotation>
|        | <xsd:annotation>
|        | <xsd:documentation xml:lang="en">The region of the heliosphere extending radially outward from just outside 1 AU to the heliospheric termination shock.</xsd:documentation>
|        | </xsd:annotation>
|        | </xsd:enumeration>
|        | <xsd:enumeration value="Remote1AU">
|        | </xsd:annotation>
|        | <xsd:annotation>
|        | <xsd:documentation xml:lang="en">A roughly toroidal region that includes the Earth’s orbit, but exclusive of the region near the Earth.</xsd:documentation>
|        | </xsd:annotation>
|        | </xsd:enumeration>
|        | </xsd:restriction>
|        | </xsd:simpleType>
<xsd:simpleType name="Ionosphere">
  <xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="DRegion">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The layer of the ionosphere that exists approximately 50 to 95 km above the surface of the Earth. One of several layers in the ionosphere.\</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="ERegion">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A layer of ionised gas occurring at 90-150km above the ground. One of several layers in the ionosphere. Also called the The Kennelly-Heaviside layer.\</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="FRegion">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A layer that contains ionized gases at a height of around 150-800 km above sea level, placing it in the thermosphere. the F region has the highest concentration of free electrons and ions anywhere in the atmosphere. It may be thought of as comprising two layers, the F1- and F2-layers. One of several layers in the ionosphere. Also known as the Appleton layer.\</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Topside">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The region at the upper most areas of the ionosphere.\</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
  </xsd:restriction>
</xsd:simpleType>
<xsd:documentation xml:lang="en">The region at the upper most areas of the ionosphere.</xsd:documentation>
</xsd:annotation>
</xsd:enumeration>
</xsd:restriction>
</xsd:simpleType>

Schema location file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Simple Type `spase:Magnetosphere`

<table>
<thead>
<tr>
<th>Facets</th>
<th>Description</th>
</tr>
</thead>
</table>
| enumeration  | **Magnetotail** <xsd:annotation>
<xsd:documentation xml:lang="en">The region on the night side of the body where the magnetic field is stretched backwards by the force of the solar wind. For Earth, the magnetotail begins at a night-side radial distance of 10 Re (X > -10Re).
</xsd:documentation>
</xsd:annotation>
| enumeration  | **Main** <xsd:annotation>
<xsd:documentation xml:lang="en">The region of the magnetosphere where the magnetic field lines are closed, but does not include the gaseous region gravitationally bound to the body.
</xsd:documentation>
</xsd:annotation>
| enumeration  | **Polar** <xsd:annotation>
<xsd:documentation xml:lang="en">The region near the pole of a body. For a magnetosphere the polar region is the area where magnetic field lines are open and includes the auroral zone.
</xsd:documentation>
</xsd:annotation>
| enumeration  | **RadiationBelt** <xsd:annotation>
<xsd:documentation xml:lang="en">The region within a magnetosphere where high-energy particles could potentially be trapped in a magnetic field.
</xsd:documentation>
</xsd:annotation>

Source

```xml
<xsd:simpleType name="Magnetosphere">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Identifiers for the region of space above the atmosphere or surface of the planet, and bounded by the magnetopause, that is under the direct influence of planet’s magnetic field.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="Magnetotail">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The region on the night side of the body where the magnetic field is stretched backwards by the force of the solar wind. For Earth, the magnetotail begins at a night-side radial distance of 10 Re (X > -10Re).</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Main">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The region of the magnetosphere where the magnetic field lines are closed, but does not include the gaseous region gravitationally bound to the body.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Polar">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The region near the pole of a body. For a magnetosphere the polar region is the area where magnetic field lines are open and includes the auroral zone.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="RadiationBelt">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The region within a magnetosphere where high-energy particles could potentially be trapped in a magnetic field.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
  </xsd:restriction>
</xsd:simpleType>
```
# Simple Type `spase:NearSurface`

**Namespace**  http://www.spase-group.org/data/schema

**Annotations**  Identifiers for regions of the gaseous and possibly ionized environment of a body extending from the surface to some specified altitude.

**Diagram**  ![Diagram](image)

**Type**  restriction of xsd:string

<table>
<thead>
<tr>
<th>Facets</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>enumeration</td>
<td>Atmosphere</td>
<td>The neutral gases surrounding a body that extends from the surface and is bound to the body by virtue of the gravitational attraction.</td>
<td></td>
</tr>
<tr>
<td>enumeration</td>
<td>AuroralRegion</td>
<td>The region in the atmospheric where electrically-charged particles bombarding the upper atmosphere of a planet in the presence of a magnetic field produce an optical phenomenon.</td>
<td></td>
</tr>
<tr>
<td>enumeration</td>
<td>EquatorialRegion</td>
<td>A region centered on the equator and limited in latitude by approximately 23 degrees north and south of the equator.</td>
<td></td>
</tr>
<tr>
<td>enumeration</td>
<td>Ionosphere</td>
<td>The charged or ionized gases surrounding a body that are nominally bound to the body by virtue of the gravitational attraction.</td>
<td></td>
</tr>
<tr>
<td>enumeration</td>
<td>Ionosphere.DRegion</td>
<td>The layer of the ionosphere that exists approximately 50 to 95 km above the surface of the Earth. One of several layers in the ionosphere.</td>
<td></td>
</tr>
<tr>
<td>enumeration</td>
<td>Ionosphere.ERegion</td>
<td>A layer of ionised gas occurring at 90-150km above the ground. One of several layers in the ionosphere. Also called the The Kennelly-Heaviside layer.</td>
<td></td>
</tr>
<tr>
<td>enumeration</td>
<td>Ionosphere.FRegion</td>
<td>A layer that contains ionized gases at a height of around 150-800 km above sea level, placing it in the thermosphere. The F region has the highest concentration of free electrons and ions anywhere in the atmosphere. It may be thought of as comprising two layers, the F1- and F2-layers. One of several layers in the ionosphere. Also known as the Appleton layer.</td>
<td></td>
</tr>
<tr>
<td>enumeration</td>
<td>Ionosphere.Topside</td>
<td>The region at the upper most areas of the ionosphere.</td>
<td></td>
</tr>
<tr>
<td>enumeration</td>
<td>Mesosphere</td>
<td>The layer of the atmosphere that extends from the Stratosphere to a range of 80 km to 85 km, temperature decreasing with height.</td>
<td></td>
</tr>
<tr>
<td>enumeration</td>
<td>Plasmasphere</td>
<td>A region of the magnetosphere consisting of low energy (cool) plasma. It is located above the ionosphere. The outer boundary of the plasmasphere is known as the plasmapause, which is defined by an order of magnitude drop in plasma density.</td>
<td></td>
</tr>
<tr>
<td>enumeration</td>
<td>PolarCap</td>
<td>The areas of the globe surrounding the poles and consisting of the region north of 60 degrees north latitude an the region south of 60 degrees south latitude.</td>
<td></td>
</tr>
<tr>
<td>enumeration</td>
<td>SouthAtlanticAnomalyRegion</td>
<td>The region where the Earth's inner van Allen radiation belt makes its closest approach to the planet's surface. The result is that, for a given altitude, the radiation intensity is higher over this region than elsewhere.</td>
<td></td>
</tr>
<tr>
<td>enumeration</td>
<td>Stratosphere</td>
<td>The layer of the atmosphere that extends from the troposphere to about 30 km, temperature increases with height. The stratosphere contains the ozone layer.</td>
<td></td>
</tr>
<tr>
<td>enumeration</td>
<td>Thermosphere</td>
<td>The layer of the atmosphere that extends from the Mesosphere to 640+ km, temperature increasing with height.</td>
<td></td>
</tr>
<tr>
<td>enumeration</td>
<td>Troposphere</td>
<td>The lowest layer of the atmosphere which begins at the surface and extends to between 7 km (4.4 mi) at the poles and 17 km (10.6 mi) at the equator, with some variation due to</td>
<td></td>
</tr>
</tbody>
</table>
Source

<xs:simpleType name="NearSurface">
  <xs:annotation />
  <xs:documentation xml:lang="en">Identifiers for regions of the gaseous and possibly ionized environment of a body extending from the surface to some specified altitude.</xs:documentation>
  <xs:restriction base="xsd:string">
    <xs:enumeration value="Atmosphere">
      <xs:annotation />
      <xs:documentation xml:lang="en">The neutral gases surrounding a body that extends from the surface and is bound to the body by virtue of the gravitational attraction.</xs:documentation>
    </xs:enumeration>
    <xs:enumeration value="AuroralRegion">
      <xs:annotation />
      <xs:documentation xml:lang="en">The region in the atmospheric where electrically-charged particles bombarding the upper atmosphere of a planet in the presence of a magnetic field produce an optical phenomenon.</xs:documentation>
    </xs:enumeration>
    <xs:enumeration value="EquatorialRegion">
      <xs:annotation />
      <xs:documentation xml:lang="en">A region centered on the equator and limited in latitude by approximately 23 degrees north and south of the equator.</xs:documentation>
    </xs:enumeration>
    <xs:enumeration value="Ionosphere">
      <xs:annotation />
      <xs:documentation xml:lang="en">The charged or ionized gases surrounding a body that are nominally bound to the body by virtue of the gravitational attraction.</xs:documentation>
    </xs:enumeration>
    <xs:enumeration value="Ionosphere.DRegion">
      <xs:annotation />
      <xs:documentation xml:lang="en">The layer of the ionosphere that exists approximately 50 to 95 km above the surface of the Earth. One of several layers in the ionosphere.</xs:documentation>
    </xs:enumeration>
    <xs:enumeration value="Ionosphere.ERegion">
      <xs:annotation />
      <xs:documentation xml:lang="en">A layer of ionised gas occurring at 90-150km above the ground. One of several layers in the ionosphere. Also called the The Kennelly-Heaviside layer.</xs:documentation>
    </xs:enumeration>
    <xs:enumeration value="Ionosphere.FRegion">
      <xs:annotation />
      <xs:documentation xml:lang="en">A layer that contains ionized gases at a height of around 150-800 km above sea level, placing it in the thermosphere. the F region has the highest concentration of free electrons and ions anywhere in the atmosphere. It may be thought of as comprising two layers, the F1-and F2-layers. One of several layers in the ionosphere. Also known as the Appleton layer.</xs:documentation>
    </xs:enumeration>
    <xs:enumeration value="Ionosphere.Topside">
      <xs:annotation />
      <xs:documentation xml:lang="en">The region at the upper most areas of the ionosphere.</xs:documentation>
    </xs:enumeration>
    <xs:enumeration value="Mesosphere">
      <xs:annotation />
      <xs:documentation xml:lang="en">The layer of the atmosphere that extends from the Stratosphere to a range of 80 km to 85 km, temperature decreasing with height.</xs:documentation>
    </xs:enumeration>
    <xs:enumeration value="Plasmasphere">
      <xs:annotation />
      <xs:documentation xml:lang="en">A region of the magnetosphere consisting of low energy (cool) plasma. It is located above the ionosphere. The outer boundary of the plasmasphere is known as the plasmapause, which is defined by an order of magnitude drop in plasma density.</xs:documentation>
    </xs:enumeration>
    <xs:enumeration value="PolarCap">
      <xs:annotation />
      <xs:documentation xml:lang="en">The areas of the globe surrounding the poles and consisting of the region north of 60 degrees north latitude an the region south of 60 degrees south latitude.</xs:documentation>
    </xs:enumeration>
    <xs:enumeration value="SouthAtlanticAnomalyRegion">
      <xs:annotation />
      <xs:documentation xml:lang="en">A region of the Earth that is located in the South Atlantic Ocean and is characterized by a region of reduced geomagnetic activity.</xs:documentation>
    </xs:enumeration>
  </xs:restriction>
</xs:simpleType>
A measure of the length of a position or measured vector projected into the i-j (typically X-Y) plane of the coordinate system.

A measure of the length of a position or measured vector projected into the i-k (typically X-Z) plane of the coordinate system.

A measure of the length of a position or measured vector projected into the j-k (typically Y-Z) plane of the coordinate system.
**Simple Type spase:Sun**

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagram</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>Type</td>
<td>restriction of xsd:string</td>
</tr>
<tr>
<td>Facets</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>enumeration</strong> Chromosphere</td>
</tr>
<tr>
<td></td>
<td>The region of the Sun's (or a star's) atmosphere above the temperature minimum and below the Transition Region. The solar chromosphere is approximately 400 km to 2100 km above the photosphere, and characterized by temperatures from 4500 - 28000 K.</td>
</tr>
<tr>
<td></td>
<td><strong>enumeration</strong> Corona</td>
</tr>
<tr>
<td></td>
<td>The outermost atmospheric region of the Sun or a star, characterized by ionization temperatures above 10^5 K. The solar corona starts at about 2100 km above the photosphere; there is no generally defined upper limit.</td>
</tr>
<tr>
<td></td>
<td><strong>enumeration</strong> Interior</td>
</tr>
<tr>
<td></td>
<td>The region inside the body which is not visible from outside the body.</td>
</tr>
<tr>
<td></td>
<td><strong>enumeration</strong> Photosphere</td>
</tr>
<tr>
<td></td>
<td>The atmospheric layer of the Sun or a star from which continuum radiation, especially optical, is emitted to space. For the Sun, the photosphere is about 500 km thick.</td>
</tr>
<tr>
<td></td>
<td><strong>enumeration</strong> TransitionRegion</td>
</tr>
<tr>
<td></td>
<td>A very narrow (&lt;100 km) layer between the chromosphere and the corona where the temperature rises abruptly from about 8000 to about 500,000 K.</td>
</tr>
</tbody>
</table>

**Source**

```xml
<xsd:simpleType name="Sun">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Identifiers for regions of the star upon which our solar system is centered.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="Chromosphere">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The region of the Sun's (or a star's) atmosphere above the temperature minimum and below the Transition Region. The solar chromosphere is approximately 400 km to 2100 km above the photosphere, and characterized by temperatures from 4500 - 28000 K.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Corona">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The outermost atmospheric region of the Sun or a star, characterized by ionization temperatures above 10^5 K. The solar corona starts at about 2100 km above the photosphere; there is no generally defined upper limit.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Interior">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The region inside the body which is not visible from outside the body.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Photosphere">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The atmospheric layer of the Sun or a star from which continuum radiation, especially optical, is emitted to space. For the Sun, the photosphere is about 500 km thick.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="TransitionRegion">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A very narrow (<100 km) layer between the chromosphere and the corona where the temperature rises abruptly from about 8000 to about 500,000 K.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
  </xsd:restriction>
</xsd:simpleType>
```

**Schema location**

file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd
### Simple Type spase:Text

**Namespace**  
http://www.spase-group.org/data/schema

**Annotations**  
Identifiers for the encoding of sequences of characters.

**Diagram**

- Text
- Restricted Text

**Type**

restriction of xsd:string

**Facets**

<table>
<thead>
<tr>
<th>Facet</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>enumeration</td>
<td>ASCII</td>
<td>A sequence of characters that adheres to American Standard Code for Information Interchange (ASCII) which is an 7-bit character-coding scheme.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Unicode</td>
<td>Text in multi-byte Unicode format.</td>
</tr>
</tbody>
</table>

**Source**

```xml
<xs:simpleType name="Text">
  <xs:annotation>
    <xs:documentation xml:lang="en">Identifiers for the encoding of sequences of characters.</xs:documentation>
  </xs:annotation>
  <xs:restriction base="xsd:string">
    <xs:enumeration value="ASCII">
      <xs:annotation>
        <xs:documentation xml:lang="en">A sequence of characters that adheres to American Standard Code for Information Interchange (ASCII) which is an 7-bit character-coding scheme.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="Unicode">
      <xs:annotation>
        <xs:documentation xml:lang="en">Text in multi-byte Unicode format.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
  </xs:restriction>
</xs:simpleType>
```

**Schema location**  
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

### Simple Type spase:Waves

**Namespace**  
http://www.spase-group.org/data/schema

**Annotations**  
Identifiers for experimental and natural wave phenomena.

**Diagram**

- Waves
- Restricted Waves

**Type**

restriction of xsd:string

**Facets**

<table>
<thead>
<tr>
<th>Facet</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>enumeration</td>
<td>Active</td>
<td>Exerting an influence or producing a change or effect. An active measurement is one which produces a transmission or excitation as a part of the measurement cycle.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Passive</td>
<td>Movement or effect produced by outside influence. A passive measurement is one which does not produce a transmission or excitation as a part of the measurement cycle.</td>
</tr>
</tbody>
</table>

**Source**

```xml
<xs:simpleType name="Waves">
  <xs:annotation>
    <xs:documentation xml:lang="en">Identifiers for experimental and natural wave phenomena.</xs:documentation>
  </xs:annotation>
  <xs:restriction base="xsd:string">
    <xs:enumeration value="Active">
      <xs:annotation>
        <xs:documentation xml:lang="en">Exerting an influence or producing a change or effect. An active measurement is one which produces a transmission or excitation as a part of the measurement cycle.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="Passive">
      <xs:annotation>
        <xs:documentation xml:lang="en">Movement or effect produced by outside influence. A passive measurement is one which does not produce a transmission or excitation as a part of the measurement cycle.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
  </xs:restriction>
</xs:simpleType>
```

304
Simple Type `spase:typeStringSequence`

Namespace | http://www.spase-group.org/data/schema
Annotations | 
Diagram | ![Diagram](typeStringSequence.png)
Type | list of xsd:string
Source | 
Schema location | file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Simple Type `spase:typeFloatSequence`

Namespace | http://www.spase-group.org/data/schema
Annotations | 
Diagram | ![Diagram](typeFloatSequence.png)
Type | list of xsd:float
Source | 
Schema location | file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd

Simple Type `spase:typeID`

Namespace | http://www.spase-group.org/data/schema
Annotations | 
Diagram | ![Diagram](typeID.png)
Type | restriction of xsd:string
Facets | pattern `[^:]\+://[^/]+/.+`
Source | 
Schema location | file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd
### Attribute spase:Spase / @lang

<table>
<thead>
<tr>
<th>Namespace</th>
<th>No namespace</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>xsd:string</td>
</tr>
<tr>
<td>Properties</td>
<td>default: en</td>
</tr>
<tr>
<td>Used by</td>
<td>Complex Type</td>
</tr>
<tr>
<td>Source</td>
<td>spase:Spase</td>
</tr>
<tr>
<td>Schema location</td>
<td>file://C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
</tbody>
</table>

### Attribute spase:typeValue / @Units

<table>
<thead>
<tr>
<th>Namespace</th>
<th>No namespace</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annotations</td>
<td>A description of the standardized measurement increments in which a value is specified. The description is represented as a mathematical phrase. Units should be represented by widely accepted representation. For example, units should conform to the International System of Units (SI) which is maintained by BIPM (Bureau International des Poids et Mesures) when appropriate or use tokens like &quot;Re&quot; to represent units of the Radius of the Earth. Within a phrase the circumflex (^) is used to indicate a power, a star (*) is used to indicate multiplication and a slash (/) division. When symbols are not separated by a mathematical operator, multiplication is assumed. Symbols for base units can be found at: <a href="http://www.bipm.fr/en/si/si_brochure/chapter2/2-1/#symbols">http://www.bipm.fr/en/si/si_brochure/chapter2/2-1/#symbols</a> and those for common derived units can be found at: <a href="http://www.bipm.fr/en/si/derived_units/2-2-2.html">http://www.bipm.fr/en/si/derived_units/2-2-2.html</a></td>
</tr>
<tr>
<td>Type</td>
<td>xsd:string</td>
</tr>
<tr>
<td>Properties</td>
<td>content: simple</td>
</tr>
<tr>
<td>Used by</td>
<td>Complex Type</td>
</tr>
<tr>
<td>Source</td>
<td>spase:typeValue</td>
</tr>
<tr>
<td>Schema location</td>
<td>file://C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
</tbody>
</table>

### Attribute spase:typeValue / @UnitsConversion

<table>
<thead>
<tr>
<th>Namespace</th>
<th>No namespace</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annotations</td>
<td>The multiplicative factor for converting a unit into International System of Units (SI) units. The factor is expressed in the form &quot;number &gt; x&quot;,</td>
</tr>
<tr>
<td>Source</td>
<td>file://C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
<tr>
<td>Schema location</td>
<td>file://C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd</td>
</tr>
</tbody>
</table>
where "number" is a numerical value and "x" is the appropriate SI units. The basic SI units are:
Enumerated: m (meter), N (newton), kg (kilogram), Pa (pascal), s (second), Hz (hertz), A (ampere),
V (volt), K (kelvin), W (watt), rad (radian), J (joule), sr (steradian), C (coulomb), T (tesla),
ohm (ohm), mho (mho or seimens), H (henry), and F (farad). Two useful units which are not SI units
are: degree (angle), and unitless (no units). An example is: "1.0E-9>T" which converts the units,
presumeably nT, to Tesla. Another example is: "1.0e+3>m/s" which converts a velocity expressed in
kilometers per second to meters per second.</xsd:documentation>
</xsd:annotation>

<table>
<thead>
<tr>
<th>Type</th>
<th>xsd:string</th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties</td>
<td>content:</td>
</tr>
<tr>
<td>Used by</td>
<td>Complex Type</td>
</tr>
</tbody>
</table>

Schema location  
file:/C:/projects/spase/java/model-tools/build/bin/spase-2_2_4.xsd