# Schema documentation for spase-1_3_0.xsd

19 November 2010

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Schemas

Main schema spase-1_3_0.xsd

<table>
<thead>
<tr>
<th>Properties</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>attribute form default</td>
<td>unqualified</td>
</tr>
<tr>
<td>element form default</td>
<td>qualified</td>
</tr>
</tbody>
</table>

Schema location

file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

Elements

Element Spase

<table>
<thead>
<tr>
<th>Properties</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>content</td>
<td>complex</td>
</tr>
</tbody>
</table>

Model

Version , ResourceEntity*

Children

ResourceEntity, Version

Instance

<Spase lang="en">
  <Version>{1,1}</Version>
  <ResourceEntity>{0,unbounded}</ResourceEntity>
</Spase>

Attributes

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

Source

<xsd:element name="Spase" type="Spase"/>

Schema location

file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

Element Version

Annotations

Indicates the release identifier. When used to indicate the release of the SPASE data model, it is a in the form Major.Minor.Fix
where Major: A significant change in the architecture of the model or rewrite of the implementation. This includes major changes in design or implementation language. This number starts at 0 (zero).
Minor: An addition of terms or features that require changes in documentation/external API. This number starts at 0 (zero). Fix:
Any change that doesn't require documentation/external API changes. This number starts at 0 (zero).

Type

xsd:string

Diagram

<Version>
  Type xsd:string
</Version>
<xsd:element name="Version" type="xsd:string">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">Indicates the release identifier. When used to indicate the release of the SPASE data model, it is in the form Major.Minor.Fix where Major: A significant change in the architecture of the model or rewrite of the implementation. This includes major changes in design or implementation language. This number starts at 0 (zero). Minor: An addition of terms or features that require changes in documentation/external API. This number starts at 0 (zero). Fix: Any change that doesn’t require documentation/external API changes. This number starts at 0 (zero).</xsd:documentation>
    </xsd:annotation>
</xsd:element>
• Person
• Registry
• Repository
• Service
• Extension

Used by
Complex Type Spase

Source
<xsd:element name="ResourceEntity" abstract="true"/>

Schema location
file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

Element Catalog

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

Diagram

Type Catalog

Properties
content: complex

Substitution Group
• ResourceEntity

Affiliation

Model
ResourceId, ResourceHeader, AccessInformation+, ProviderResourceName{0,1}, ProviderVersion{0,1}
, InstrumentID*, PhenomenonType+, TimeSpan{0,1}, Caveats{0,1}, Keyword*, InputResourceId*,
PhysicalParameter*, Extension*

Children
AccessInformation, Caveats, Extension, InputResourceId, InstrumentID, Keyword, PhenomenonType,
PhysicalParameter, ProviderResourceName, ProviderVersion, ResourceHeader, ResourceId, TimeSpan
Element 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

Properties content: simple

Used by Complex Types Catalog, DisplayData, Document, Granule, Instrument, NumericalData, Observatory, Person, Registry, Repository, Service

Source

```
<xs:element name="ResourceID" type="xsd:string">
  <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:element>
```

Schema location file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

Element ResourceHeader

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

...
Diagram

Type ResourceHeader
Properties content: complex
Used by Complex Types Catalog, DisplayData, Document, Instrument, NumericalData, Observatory, Registry, Repository, Service
Model ResourceName, AlternateName*, ReleaseDate, ExpirationDate{0,1}, Description, Acknowledgement{0,1}, Contact+, InformationURL*, AssociationID*, PriorID*
Children Acknowledgement, AlternateName, AssociationID, Contact, Description, ExpirationDate, InformationURL, PriorID, ReleaseDate, ResourceName

Instance
<ResourceHeader>
  <ResourceName>(1,1)</ResourceName>
  <AlternateName>[0,unbounded]</AlternateName>
  <ReleaseDate>(1,1)</ReleaseDate>
  <ExpirationDate>[0,1]</ExpirationDate>
  <Description>[1,1]</Description>
  <Acknowledgement>[0,1]</Acknowledgement>
  <Contact>[1,unbounded]</Contact>
  <InformationURL>[0,unbounded]</InformationURL>
  <AssociationID>[0,unbounded]</AssociationID>
  <PriorID>[0,unbounded]</PriorID>
</ResourceHeader>

Source <xsd:element name="ResourceHeader" type="ResourceHeader"/>
Schema location file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

Element 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

Type xsd:string
Properties content: simple
Used by Complex Type ResourceHeader
Source <xsd:element name="ResourceName" type="xsd:string"/>
<xsd:annotation>
  <xsd:documentation xml:lang="en">A short textual description of a resource</xsd:documentation>
</xsd:annotation>
## Element 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 synonym for a resource.

**Diagram**

```
<complexType name="AlternateName">
  <simpleContent>
    <extension base="xsd:string"/>
  </simpleContent>
</complexType>
```

**Type**  
xsd:string

**Properties**

- content: simple

**Used by**

- Complex Type: ResourceHeader

**Source**

```
<xsd:element name="AlternateName" type="xsd:string">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">An alternative or shortened name used to refer to a resource. This includes acronyms, expanded names or synonym for a resource.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

## Element 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**

```
<complexType name="ReleaseDate">
  <simpleContent>
    <restriction base="xsd:dateTime"/>
  </simpleContent>
</complexType>
```

**Type**  
xsd:dateTime

**Properties**

- content: simple

**Used by**

- Complex Types: Granule, Person, ResourceHeader

**Source**

```
<xsd:element name="ReleaseDate" type="xsd:dateTime">
  <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:element>
```

## Element 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.
Schema documentation for spase-1_3_0.xsd

**Element Description**

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

**Annotations**
A detailed description of the resource which 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 it.

**Type**
xsd:string

**Properties**
content: simple

**Used by**
Complex Types AccessURL, InformationURL, PhysicalParameter, ResourceHeader, Structure

**Source**

```xml
<xsd:element name="Description" type="xsd:string">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A detailed description of the resource which 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 it.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

**Schema location**
file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

**Element 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.

**Type**
xsd:string

**Properties**
content: simple

**Used by**
Complex Types AccessInformation, ResourceHeader

**Source**

```xml
<xsd:element name="Acknowledgement" type="xsd:string">
  <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:element>
```

**Schema location**
file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd
Element Contact

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

Diagram

Type  Contact
Properties  content: complex
Used by  Complex Type  ResourceHeader
Model  PersonID, Role+
Children  PersonID, Role
Instance

Source  

Schema location  file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

Element PersonID

Namespace  http://www.spase-group.org/data/schema
Annotations  The identifier assigned to a Person description.

Diagram

Type  xsd:string
Properties  content: simple
Used by  Complex Type  Contact
Source

Schema location  file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

Element Role

Namespace  http://www.spase-group.org/data/schema
Annotations  The assigned or assumed function or position of an individual.

Diagram

Type  enumRole
Properties  content: simple
Facets

<table>
<thead>
<tr>
<th>Facet</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>enumeration</td>
<td>ArchiveSpecialist</td>
<td>An individual who is an expert on a collection of resources and may also be knowledgable of the phenomenon and related physics represented by the resources. This includes librarians, curators, archive scientists and other experts.</td>
</tr>
<tr>
<td>enumeration</td>
<td>CoInvestigator</td>
<td>An individual who is a scientific peer and major participant for an investigation.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Contributor</td>
<td>An entity responsible for making contributions</td>
</tr>
</tbody>
</table>

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### Element InformationURL

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

**Type**
InformationURL

**Properties**
- Complex Type: complex

**Used by**
- Complex Type: ResourceHeader

**Model**
Name{0,1}, URL, Description{0,1}

**Children**
- Description, Name, URL

**Instance**

```
<InformationURL>
  <Name>{0,1}</Name>
  <URL>{1,1}</URL>
  <Description>{0,1}</Description>
</InformationURL>
```
<InfoURL>

<xs:element name="InfoURL" type="InfoURL"/>

Schema location: file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

**Element Name**

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

**Annotations**: A language unit by which a person or thing is known.

**Diagram**: [Diagram of Name]

**Type**: xsd:string

**Properties**: content: simple

**Used by**: Complex Types: AccessURL, Element, InformationURL, PhysicalParameter

**Source**

<xs:element name="Name" type="xsd:string">
  <xs:annotation>
    <xs:documentation xml:lang="en">A language unit by which a person or thing is known.</xs:documentation>
  </xs:annotation>
</xs:element>

Schema location: file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

**Element URL**

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

**Annotations**: 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**: [Diagram of URL]

**Type**: xsd:string

**Properties**: content: simple

**Used by**: Complex Types: AccessURL, Granule, InformationURL

**Source**

<xs:element name="URL" type="xsd:string">
  <xs:annotation>
    <xs: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.</xs:documentation>
  </xs:annotation>
</xs:element>

Schema location: file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

**Element AssociationID**

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

**Annotations**: The resource identifier for a resource with which this resource is closely associated.

**Diagram**: [Diagram of AssociationID]

**Type**: xsd:string
Properties | content: simple  
---|---  
Used by | Complex Type ResourceHeader  
Source | `<xsd:element name="AssociationID" type="xsd:string">  
  <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:element>`  
Schema location | file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd  
  
**Element PriorID**  
  
Namespace | http://www.spase-group.org/data/schema  
Annotations | The resource identifier for a resource that is superceeded or replaced by a resource.  
Diagram |  
Type | xsd:string  
Properties | content: simple  
Used by | Complex Types Granule, ResourceHeader  
Source | `<xsd:element name="PriorID" type="xsd:string">  
  <xsd:annotation>  
    <xsd:documentation xml:lang="en">The resource identifier for a resource that is superceeded or replaced by a resource.</xsd:documentation>  
  </xsd:annotation>  
</xsd:element>`  
Schema location | file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd  
  
**Element AccessInformation**  
  
Namespace | http://www.spase-group.org/data/schema  
Diagram |  
Type | AccessInformation  
Properties | content: complex  
Used by | Complex Types Catalog, DisplayData, Document, NumericalData  
Model | RepositoryID , Availability[0,1] , AccessRights[0,1] , AccessURL+, Format , Encoding[0,1] , DataExtent[0,1] , Acknowledgement[0,1]  
Children | AccessRights, AccessURL, Acknowledgement, Availability, DataExtent, Encoding, Format, RepositoryID  
Instance | `<AccessInformation>  
  <RepositoryID>{1,1}</RepositoryID>  
</AccessInformation>`
<Availability> {0,1} </Availability>
<AccessRights> {0,1} </AccessRights>
<AccessURL> {1, unbounded} </AccessURL>
<Format> {1,1} </Format>
<Encoding> {0,1} </Encoding>
<DataExtent> {0,1} </DataExtent>
<Acknowledgement> {0,1} </Acknowledgement>
</AccessInformation>

Element RepositoryID

Namespace http://www.spase-group.org/data/schema
Annotations
Diagram
Type xsd:string
Properties content: simple
Used by Complex Type AccessInformation
Source

Element Availability

Namespace http://www.spase-group.org/data/schema
Annotations An indication of the method or service which may be used to access the resource.
Diagram
Type enumAvailability
Properties content: simple
Facets enumeration Offline Not directly accessible electronically. This includes resources which may be moved to an online status in response to a given request.
enumeration Online Directly accessible electronically.
Used by Complex Type AccessInformation
Source

Element AccessRights

Namespace http://www.spase-group.org/data/schema
Annotations Permissions granted or denied by the host of a product to allow other users to access and use the resource.
Diagram
Type enumAccessRights
Properties content: simple
Facets

<table>
<thead>
<tr>
<th>Facets</th>
<th>enumeration</th>
<th>Open</th>
<th>Access is granted to everyone.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facets</td>
<td>enumeration</td>
<td>Restricted</td>
<td>Access to the product is regulated and requires some form of identification.</td>
</tr>
</tbody>
</table>

Used by

Complex Type | AccessInformation

Source

```xml
<xsd:element name="AccessRights" type="enumAccessRights">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">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:element>
```

Schema location

file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

**Element AccessURL**

Namespace

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

Diagram

![Diagram of AccessURL element]

Type

AccessURL

Properties

content: complex

Used by

Complex Types | AccessInformation, Service

Model

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

Children

Description, Language, Name, URL

Instance

```xml
<AccessURL>
  <Name>{0,1}</Name>
  <URL>{1,1}</URL>
  <Description>{0,1}</Description>
  <Language>{0,1}</Language>
</AccessURL>
```

Source

```xml
<xsd:element name="AccessURL" type="AccessURL"/>
```

Schema location

file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

**Element 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

![Diagram of Language element]

Type

xsd:string

Properties

content: simple

Used by

Complex Type | AccessURL

Source

```xml
<xsd:element name="Language" type="xsd:string">
  <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:element>
```
### Schema documentation for spase-1_3_0.xsd

**Schema location**

file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

---

## Element Format

<table>
<thead>
<tr>
<th><strong>Annotations</strong></th>
<th>The organization of data according to preset specifications. The value is selected from a list of accepted names for known, well documented formats.</th>
</tr>
</thead>
</table>

### Diagram

![Diagram](image)

<table>
<thead>
<tr>
<th><strong>Type</strong></th>
<th>enumFormat</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>Properties</strong></th>
<th>content: simple</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>Facets</strong></th>
<th>content: AVI</th>
<th>Audio Video Interleave (AVI) a digital format for movies that conforms to the Microsoft Windows Resource Interchange File Format (RIFF).</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>content: Binary</td>
<td>A direct representation of the bits which may be stored in memory on a computer.</td>
</tr>
<tr>
<td></td>
<td>content: CDF</td>
<td>Common Data Format (CDF). A binary storage format developed at Goddard Space Flight Center (GSFC).</td>
</tr>
<tr>
<td></td>
<td>content: 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></td>
<td>content: CEF1</td>
<td>Cluster Exchange Format (CEF), version 1, is a self-documenting ASCII format designed for the exchange of data. The metadata description of vectors and tensors is different.</td>
</tr>
<tr>
<td></td>
<td>content: 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></td>
<td>content: 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></td>
<td>content: 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></td>
<td>content: HDF</td>
<td>Hierarchical Data Format</td>
</tr>
<tr>
<td></td>
<td>content: HDF4</td>
<td>Hierarchical Data Format, Version 4</td>
</tr>
<tr>
<td></td>
<td>content: HDF5</td>
<td>Hierarchical Data Format, Version 5</td>
</tr>
<tr>
<td></td>
<td>content: 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></td>
<td>content: 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></td>
<td>content: IDL</td>
<td>Interactive Data Language (IDL) save set.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>Value</td>
<td>Description</td>
</tr>
<tr>
<td>-------------</td>
<td>---------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<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. MATLAB 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. MATLAB 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. MATLAB 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 Centers Network Common Data Form (NetCDF). A self-describing data 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>Text</td>
<td>ASCII text</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>VOTable</td>
<td>A proposed XML 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**

<table>
<thead>
<tr>
<th>Complex Type</th>
<th>AccessInformation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source</td>
<td><code>&lt;xsd:element name=&quot;Format&quot; type=&quot;enumFormat&quot;&gt;</code></td>
</tr>
</tbody>
</table>
### Element Encoding

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

**Annotations**  
A set of unambiguous rules that establishes the representation of information within a file.

**Diagram**  

```
Encoding
  Type: enumEncoding
```

**Type**  
enumEncoding

**Properties**  
content: simple

**Facets**  

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<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>Base64</td>
<td>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 &quot;+&quot; and &quot;/&quot; symbols, with the &quot;=&quot; symbol as a special suffix (padding) code.</td>
</tr>
<tr>
<td>GZIP</td>
<td>An open standard algorithm distributed by GNU based on LZW and Huffman coding. See <a href="http://www.gnu.org/software/gzip/gzip.html">http://www.gnu.org/software/gzip/gzip.html</a> or <a href="http://www.gzip.org/">http://www.gzip.org/</a></td>
</tr>
<tr>
<td>None</td>
<td>A lack or absence of anything.</td>
</tr>
<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>

**Used by**  
Complex Type AccessInformation

**Source**  
```xml
<xsd:element name="Encoding" type="enumEncoding">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A set of unambiguous rules that establishes the representation of information within a file.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

**Schema location**  
file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd
**Element DataExtent**

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

Diagram:

- **Type**: DataExtent
- **Properties**: content: complex
- **Used by**: Complex Types AccessInformation, Granule
- **Model**: Quantity, Units[0,1], Per[0,1]
- **Children**: Per, Quantity, Units

**Instance**

```xml
dataExtent
type='DataExtent'
Quantity{1,1}
Units{0,1}
Per{0,1}
```

**Source**

file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

**Element Quantity**

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

Annotations: A value that describes a characteristic of a system.

Diagram:

- **Type**: xsd:double
- **Properties**: content: simple
- **Used by**: Complex Type DataExtent

**Source**

file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

**Element 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> and those for common derived units can be
Schema documentation for spase-1_3_0.xsd

Diagram

Type xsd:string
Properties content: simple
Used by Complex Types AzimuthalAngleRange, DataExtent, Element, EnergyRange, FrequencyRange, PhysicalParameter, PolarAngleRange, WavelengthRange

Source

Element **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

Type xsd:duration
Properties content: simple
Used by Complex Type DataExtent

Source

Element **ProviderResourceName**

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
Properties content: simple
<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ProviderVersion</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>InstrumentID</strong></td>
<td>The identifier of an Instrument resource.</td>
</tr>
<tr>
<td><strong>PhenomenonType</strong></td>
<td>The characteristics or categorization of an event type.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>atmosphere in which PLAGEs, SUNSPOTS, FACULAE, FLAREs, etc. may be observed.</td>
<td></td>
</tr>
<tr>
<td><strong>Aurora</strong></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><strong>BowShockCrossing</strong></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><strong>CoronalHole</strong></td>
<td>An extended region of the corona, exceptionally low in density and associated with unipolar photospheric regions. A coronal hole can be an &quot;open&quot; magnetic field in the corona and (perhaps) inner heliosphere which has a faster than average outflow (wind); A region of lower than &quot;quiet&quot; ion and electron density in the corona; or a region of lower peak electron temperature in the corona than in the &quot;quiet&quot; corona.</td>
</tr>
<tr>
<td><strong>CoronalMassEjection</strong></td>
<td>A solar event which involves a burst of plasma which is ejected from the Sun into the interplanetary medium.</td>
</tr>
<tr>
<td><strong>EITWave</strong></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><strong>EnergeticSolarParticleEvent</strong></td>
<td>An enhancement of interplanetary fluxes of energetic ions accelerated by interplanetary shocks and/or solar flares.</td>
</tr>
<tr>
<td><strong>ForbushDecrease</strong></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 CMEs, that sweep some galactic cosmic rays away from Earth.</td>
</tr>
<tr>
<td><strong>GeomagneticStorm</strong></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><strong>InterplanetaryShock</strong></td>
<td>A shock propagating generally antisunward through the slower solar wind, often seen in front of CME-associated plasma clouds.</td>
</tr>
<tr>
<td><strong>MagneticCloud</strong></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>
</tbody>
</table>
enumeration MagnetopauseCrossing  
A crossing of the interface between the shocked solar wind in the magnetosheath and the magnetic field and plasma in the magnetosphere.

enumeration RadioBurst  
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).

enumeration SolarFlare  
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.

enumeration SolarWindExtreme  
Intervals of unusually large or small values of solar wind attributes such as flow speed and ion density.

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

Used by  | Complex Type  | Catalog  
--- | --- | ---  
Source  | `<xsd:element name="PhenomenonType" type="enumPhenomenonType">`  
| `<xsd:annotation>`  
| `<xsd:documentation xml:lang="en">The characteristics or categorization of an event type.</xsd:documentation>`  
| `</xsd:annotation>`  
| `</xsd:element>`  

Schema location  | file://var/www/spase/site/root/data/schema/spase-1_3_0.xsd

**Element TimeSpan**

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

Diagram

- TimeSpan
  - Type: TimeSpan

  Properties  
  - content: complex

  Used by  
  - Complex Types, Catalog, TemporalDescription

  Model  
  - StartDate, StopDateEntity, Note*

  Children  
  - Note, StartDate, StopDateEntity

Instance  

```xml
<TimeSpan>
  <StartDate>{1,1}</StartDate>
  <StopDateEntity>{1,1}</StopDateEntity>
  <Note>{0,unbounded}</Note>
</TimeSpan>
```
### Element StartDate

<table>
<thead>
<tr>
<th>Source</th>
<th>&lt;xsd:element name=&quot;StartDate&quot; type=&quot;xsd:dateTime&quot;/&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schema location</td>
<td>file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd</td>
</tr>
</tbody>
</table>

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

**Annotations**  
The specification of a starting point in time.

**Diagram**

![Diagram](startDate.png)

**Type**  
xsd:dateTime

**Properties**  
- content: simple

**Used by**
- Complex Types: Granule, TimeSpan

**Source**

```xml
<xsd:element name="StartDate" type="xsd:dateTime">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">The specification of a starting point in time.</xsd:documentation>
    </xsd:annotation>
</xsd:element>
```

**Schema location**  
file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

### Element StopDateEntity

<table>
<thead>
<tr>
<th>Source</th>
<th>&lt;xsd:element name=&quot;StopDateEntity&quot; abstract=&quot;true&quot;/&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schema location</td>
<td>file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd</td>
</tr>
</tbody>
</table>

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

**Diagram**

![Diagram](stopDateEntity.png)

**Properties**  
- abstract: true

**Substitution Group**  
- RelativeStopDate
- StopDate

**Used by**
- Complex Type: TimeSpan

**Source**

```xml
<xsd:element name="StopDateEntity" abstract="true"/>
```

### Element Note

<table>
<thead>
<tr>
<th>Source</th>
<th>&lt;xsd:element name=&quot;Note&quot; type=&quot;xsd:string&quot;/&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schema location</td>
<td>file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd</td>
</tr>
</tbody>
</table>

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

**Annotations**  
Information which is useful or important for the understanding of a value or parameter.

**Diagram**

![Diagram](note.png)

**Type**  
xsd:string

**Properties**  
- content: simple

**Used by**
- Complex Type: TimeSpan

**Source**

```xml
<xsd:element name="Note" type="xsd:string">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">Information which is useful or important for the understanding of a value or parameter.</xsd:documentation>
    </xsd:annotation>
</xsd:element>
```

### Element Caveats

<table>
<thead>
<tr>
<th>Source</th>
<th>&lt;xsd:element name=&quot;Caveats&quot; type=&quot;xsd:string&quot;/&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schema location</td>
<td>file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd</td>
</tr>
</tbody>
</table>

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

Information which may be important in the avoidance of misuse of the resource. This includes things such as instrument maladies, corruption or contamination.

Diagram

```
<element name="Caveats" type="xsd:string">
  <annotation>
    <documentation xml:lang="en">Information which may be important in the avoidance of misuse of the resource. This includes things such as instrument maladies, corruption or contamination.</documentation>
  </annotation>
</element>
```

Type

`xsd:string`

Properties

- `content: simple`

Used by

- Complex Types: Catalog, DisplayData, Instrument, NumericalData, PhysicalParameter

Source

```
<element name="Caveats" type="xsd:string">
  <annotation>
    <documentation xml:lang="en">Information which may be important in the avoidance of misuse of the resource. This includes things such as instrument maladies, corruption or contamination.</documentation>
  </annotation>
</element>
```

Element **Keyword**

Namespace

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

Annotations

A word or phrase that is relevant to the resource but does not exist in other documentary information.

Diagram

```
<element name="Keyword" type="xsd:string">
  <annotation>
    <documentation xml:lang="en">A word or phrase that is relevant to the resource but does not exist in other documentary information.</documentation>
  </annotation>
</element>
```

Type

`xsd:string`

Properties

- `content: simple`

Used by

- Complex Types: Catalog, DisplayData, Document, NumericalData

Source

```
<element name="Keyword" type="xsd:string">
  <annotation>
    <documentation xml:lang="en">A word or phrase that is relevant to the resource but does not exist in other documentary information.</documentation>
  </annotation>
</element>
```

Element **InputResourceID**

Namespace

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

Annotations

The resource identifier for a resource which was used to generate this resource.

Diagram

```
<element name="InputResourceID" type="xsd:string">
  <annotation>
    <documentation xml:lang="en">The resource identifier for a resource which was used to generate this resource.</documentation>
  </annotation>
</element>
```

Type

`xsd:string`

Properties

- `content: simple`

Used by

- Complex Types: Catalog, DisplayData, Document, NumericalData

Source

```
<element name="InputResourceID" type="xsd:string">
  <annotation>
    <documentation xml:lang="en">The resource identifier for a resource which was used to generate this resource.</documentation>
  </annotation>
</element>
```

Element **PhysicalParameter**

Namespace

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

Type PhysicalParameter

Properties content: complex

Used by Complex Types Catalog, DisplayData, NumericalData

Model Name, ParameterKey{0,1}, Description{0,1}, Caveats{0,1}, Cadence{0,1}, Units{0,1}, UnitsConversion{0,1}, CoordinateSystem{0,1}, Structure{0,1}, ValidMin{0,1}, ValidMax{0,1}, FillValue{0,1}, ParameterEntity

Children Cadence, Caveats, CoordinateSystem, Description, FillValue, Name, ParameterEntity, ParameterKey, Structure, Units, UnitsConversion, ValidMax, ValidMin

Instance

<PhysicalParameter>
  <Name>{1,1}</Name>
  <ParameterKey>{0,1}</ParameterKey>
  <Description>{0,1}</Description>
  <Caveats>{0,1}</Caveats>
  <Cadence>{0,1}</Cadence>
  <Units>{0,1}</Units>
  <UnitsConversion>{0,1}</UnitsConversion>
  <CoordinateSystem>{0,1}</CoordinateSystem>
  <Structure>{0,1}</Structure>
  <ValidMin>{0,1}</ValidMin>
  <ValidMax>{0,1}</ValidMax>
  <FillValue>{0,1}</FillValue>
  <ParameterEntity>{1,1}</ParameterEntity>
</PhysicalParameter>

Source <xsd:element name="PhysicalParameter" type="PhysicalParameter"/>

Schema location file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

Element 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
Schema documentation for spase-1_3_0.xsd

**Diagram**

ParameterKey

Type: xsd:string

Properties:
content: simple

Used by:
Complex Types: Element, PhysicalParameter

Source:
<xsd:element name="ParameterKey" type="xsd:string">
  <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.</xsd:documentation>
  </xsd:annotation>
</xsd:element>

Schema location: file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

**Element Cadence**

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

Annotations:
The time interval between the start of successive measurements.

Diagram:

Cadence

Type: xsd:duration

Properties:
content: simple

Used by:
Complex Types: PhysicalParameter, TemporalDescription

Source:
<xsd:element name="Cadence" type="xsd:duration">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The time interval between the start of successive measurements.</xsd:documentation>
  </xsd:annotation>
</xsd:element>

Schema location: file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

**Element UnitsConversion**

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

Annotations:
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), 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-5>T" which converts the units, presumably nT, to tesla. Another example is: "1.0e-1>km/s" which converts a velocity expressed in meters per second to kilometers per second.

Diagram:

UnitsConversion

Type: xsd:string

Properties:
content: simple

Used by:
Complex Types: Element, PhysicalParameter

Source:
<xsd:element name="UnitsConversion" type="xsd:string">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">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), 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-5>T" which converts the units, presumably nT, to tesla. Another example is: "1.0e-1>km/s" which converts a velocity expressed in meters per second to kilometers per second.</xsd:documentation>
  </xsd:annotation>
</xsd:element>

Schema location: file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd
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-5>T" which converts the units, presumably nT, to tesla. Another example is: "1.0e-1>km/s" which converts a velocity expressed in meters per second to kilometers per second.

Element **CoordinateSystem**

- **Namespace**: http://www.spase-group.org/data/schema
- **Diagram**
- **Type**: CoordinateSystem
- **Properties**
  - content: complex
- **Used by**
  - Complex Type PhysicalParameter
- **Model**
  - CoordinateRepresentation{0,1} , CoordinateSystemName{0,1}
- **Children**
  - CoordinateRepresentation, CoordinateSystemName
- **Instance**

```
<CoordinateSystem>
  <CoordinateRepresentation>{0,1}</CoordinateRepresentation>
  <CoordinateSystemName>{0,1}</CoordinateSystemName>
</CoordinateSystem>
```

- **Source**

```
<xsd:element name="CoordinateSystem" type="CoordinateSystem"/>
```

Element **CoordinateRepresentation**

- **Namespace**: http://www.spase-group.org/data/schema
- **Annotations**
  - The method or form for specifying a given point in a given coordinate system
- **Diagram**
- **Type**: enumCoordinateRepresentation
- **Properties**
  - content: simple
- **Facets**
  - **enumeration**: Cartesian
    - A coordinate system in which the position of a point is determined by its distance from two or three mutually perpendicular axes.
  - **enumeration**: Cylindrical
    - A system of curvilinear coordinates in which the position of a point in space is determined by its perpendicular distance from a given line, its distance from a selected reference plane perpendicular to this line, and its angular distance from a selected reference line when projected onto this plane.
  - **enumeration**: Spherical
    - A system of curvilinear coordinates characterized by an azimuthal angle (longitude), a polar...
angle (latitude), and a distance (radius) from a point to the origin.

**Source**

```xml
<xsd:element name="CoordinateRepresentation" type="enumCoordinateRepresentation">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The method or form for specifying a given point in a given coordinate system</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

**Schema location**

file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

---

**Element CoordinateSystemName**

**Namespace**

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

**Annotations**

Identifies the coordinate system in which the position, direction or observation has been expressed.

**Diagram**

![Diagram of CoordinateSystemName](image)

**Type**

enumCoordinateSystemName

**Properties**

content: simple

**Facets**

- **enumeration** 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.

- **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)

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

- **enumeration** GEI
  - Geocentric Equatorial Inertial - A coordinate system where the Z axis is along Earths 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

- **enumeration** GEO
  - Geographic - geocentric corotating - A coordinate system where the Z axis is along Earths spin vector, positive northward. X axis lies in Greenwich meridian, positive towards Greenwich.
<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GSE</strong></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>
</tr>
<tr>
<td><strong>GSEQ</strong></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>
</tr>
<tr>
<td><strong>GSM</strong></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>
</tr>
<tr>
<td><strong>HAE</strong></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>
</tr>
<tr>
<td><strong>HCI</strong></td>
<td>Heliographic Carrington Inertial.</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>
</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>
</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>
</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>
</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>
</tr>
<tr>
<td><strong>LGM</strong></td>
<td>Local Geomagnetic - A coordinate system used mainly for Earth surface or near Earth surface.</td>
</tr>
</tbody>
</table>
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 (Bx**2 + By**2) and D (declination angle) = arctan (By/Bx)

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<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 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 <a href="http://cdpp.cnes.fr/00428.pdf">http://cdpp.cnes.fr/00428.pdf</a>].</td>
</tr>
<tr>
<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>RTN</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 x T.</td>
</tr>
<tr>
<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>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>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>SpacecraftOrbitPlane</td>
<td>A coordinate system where X lies in the orbit plane normal to and in the direction of motion of the spacecraft, Z in normal to the orbit plane and Y completes the triad in a right-handed coordinate system.</td>
</tr>
<tr>
<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>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.</td>
</tr>
</tbody>
</table>
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.

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.

Used by

Complex Types
CoordinateSystem, Location

Source

-xsd:element name="CoordinateSystemName" type="enumCoordinateSystemName">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Identifies the coordinate system in which the position, direction or observation has been expressed.</xsd:documentation>
  </xsd:annotation>
</xsd:element>

Schema location

file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

Element Structure

Namespace

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

Diagram

Type

Structure

Properties

content: complex

Used by

Complex Type
PhysicalParameter

Model

Size{0,1} , Description{0,1} , Element*

Children

Description , Element , Size

Instance

<Structure>
  <Size>{0,1}</Size>
  <Description>{0,1}</Description>
  <Element>{0,unbounded}</Element>
</Structure>

Source

<xsd:element name="Structure" type="Structure"/>

Schema location

file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

Element Size

Namespace

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

Annotations

The number of elements in each dimension of a multi-dimensional array. =1 for a scalar; = n for a vector, the number of vector elements; = (m, n, p ...), Note that the number of elements in the size of an N-dimensional array conveys the arrays 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 $3^n$.

Diagram

**Type**

typeSequence

**Properties**

content: simple

**Used by**

Complex Type Structure

**Source**

```xml
<xsd:element name="Size" type="typeSequence">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The number of elements in each dimension of a multi-dimensional array. =1 for a scalar; = n for a vector, the number of vector elements; = (m, n, p ...), 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>
</xsd:element>
```

**Schema location**

file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

---

**Element Element**

**Namespace**

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

**Diagram**

**Type**

Element

**Properties**

content: complex

**Used by**

Complex Type Structure

**Model**

Name, Component{{0,1}}, Index, ParameterKey{{0,1}}, Units{{0,1}}, UnitsConversion{{0,1}}, ValidMin{{0,1}}, ValidMax{{0,1}}, FillValue{{0,1}}

**Children**

Component, FillValue, Index, Name, ParameterKey, Units, UnitsConversion, ValidMax, ValidMin

**Instance**

```xml
<Element>
  <Name>{1,1}</Name>
  <Component>{0,1}</Component>
  <Index>{1,1}</Index>
  <ParameterKey>{0,1}</ParameterKey>
  <Units>{0,1}</Units>
</Element>
```
```
<UnitsConversion>{0,1}</UnitsConversion>
<ValidMin>{0,1}</ValidMin>
<ValidMax>{0,1}</ValidMax>
<FillValue>{0,1}</FillValue>
</Element>
```

**Element Component**

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

**Annotations**
A part of a multi-part entity, e.g., the components of a vector.

**Diagram**

```
<complexType name="enumComponent">
  <simpleContent>
    <restriction base="float">...
  </simpleContent>
</complexType>
```

**Type**
enumComponent

**Properties**
```
content: simple
```

**Facets**

- **enumeration Phi**
The angle between the meridian of a vector and the zero meridian of the coordinate system in which the vector is expressed. Equivalently, the angle between the projection of a position or measured vector into the X-Y plane and X-axis in the coordinate system in which the vector is expressed. Also referred to as the azimuthal angle or "longitude". Mathematically:
  \[ \Phi = \arctan\left(\frac{y}{x}\right) \]

- **enumeration R**
The component of a vector in the radial direction from the center of the coordinate system.

- **enumeration Theta**
For spatial points, the angular distance from a meridian normal to the equator. Also referred to as the zenith angle or "latitude". As a "latitude" angles range from +90 to -90 with zero at the equator and positive angles are in the direction designated as "North." An alternate range of values is often called "co-latitude" where values range from 0 to +180 as measured from the "north" pole. Mathematically:
  \[ \Theta = \arctan\left(\frac{\sqrt{x^2 + y^2}}{z}\right) \]

- **enumeration X**
The component of a vector along the X-axis in a cartesian coordinate system.

- **enumeration Y**
The component of a vector along the Y-axis in a cartesian coordinate system.

- **enumeration Z**
The component of a vector along the Z-axis in a cartesian coordinate system.

**Used by**
Complex Type Element

**Source**
```
<xs:element name="Component" type="enumComponent"/>
<xs:annotation>
  <xs:documentation xml:lang="en">A part of a multi-part entity, e.g., the components of a vector.</xs:documentation>
</xs:annotation>
```

**Schema location**
file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

**Element 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.
### Element `ValidMin`

- **Namespace**: http://www.spase-group.org/data/schema
- **Annotations**: The smallest legitimate value.
- **Type**: `xsd:string`
- **Properties**: content: simple
- **Used by**: Complex Types, Element, PhysicalParameter
- **Source**:

```xml
<xsd:element name="ValidMin" type="xsd:string">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The smallest legitimate value.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

- **Schema location**: file://var/www/spase/site/root/data/schema/spase-1_3_0.xsd

### Element `ValidMax`

- **Namespace**: http://www.spase-group.org/data/schema
- **Annotations**: The largest legitimate value.
- **Type**: `xsd:string`
- **Properties**: content: simple
- **Used by**: Complex Types, Element, PhysicalParameter
- **Source**:

```xml
<xsd:element name="ValidMax" type="xsd:string">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The largest legitimate value.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

- **Schema location**: file://var/www/spase/site/root/data/schema/spase-1_3_0.xsd

### Element `FillValue`

- **Namespace**: http://www.spase-group.org/data/schema
- **Annotations**: A value that indicates that a quantity is undefined.
- **Type**: `xsd:string`
- **Properties**: content: simple
- **Used by**: Complex Types, Element
- **Source**:

```xml
<xsd:element name="FillValue" type="xsd:string">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A value that indicates that a quantity is undefined.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

- **Schema location**: file://var/www/spase/site/root/data/schema/spase-1_3_0.xsd
### Element **ParameterEntity**

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

**Diagram**  
![Diagram of ParameterEntity]

**Properties**  
abstract: true

**Substitution Group**  
- Measured
- Support

**Used by**  
Complex Type, PhysicalParameter

**Source**  
```xml
<xsd:element name="ParameterEntity" abstract="true"/>
```

**Schema location**  
file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

### Element **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]

**Properties**  
content: complex

**Substitution Group**  
- ResourceEntity

**Affiliation**  
Complex Types: Catalog, DisplayData, Granule, Instrument, NumericalData, Observatory, Person, Registry, Repository, Service

**Model**  
ANY element from ANY namespace OTHER than 'http://www.spase-group.org/data/schema'

**Source**  
```xml
<xsd:element name="Extension" substitutionGroup="ResourceEntity"/>
```

**Schema location**  
file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd
Element **Measured**

Namespace | http://www.spase-group.org/data/schema
---|---
Diagram | ![Diagram of Measured](image)
Type | Measured
Properties | content: complex
Substitution Group | • ParameterEntity
Affiliation
Model | MeasuredEntity
Children | MeasuredEntity
Instance | `<Measured>
<MeasuredEntity>[1,1]</MeasuredEntity>
</Measured>`
Source | `<xsd:element name="Measured" type="Measured" substitutionGroup="ParameterEntity"/>

Element **MeasuredEntity**

Namespace | http://www.spase-group.org/data/schema
---|---
Diagram | ![Diagram of MeasuredEntity](image)
Properties | abstract: true
Substitution Group | • Field
• Particle
• Photon
• Mixed
Used by | Complex Type Measured
Source | `<xsd:element name="MeasuredEntity" abstract="true"/>

Element **Field**

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

Type: Field

Properties:
- content: complex

Substitution Group: MeasuredEntity

Affiliation:
- FieldQualifier

Model:
- FieldQualifier
- FieldQuantity
- FrequencyRange[0,1]

Children:
- FieldQualifier
- FieldQuantity
- FrequencyRange

Instance:
```xml
<Field>
  <FieldQualifier>[0, unbounded]</FieldQualifier>
  <FieldQuantity>[1, 1]</FieldQuantity>
  <FrequencyRange>[0, 1]</FrequencyRange>
</Field>
```

Source:
```xml
<xsd:element name="Field" type="Field" substitutionGroup="MeasuredEntity"/>
```

Schema location:
`file://var/www/spase/site/root/data/schema/spase-1_3_0.xsd`

---

**Element FieldQualifier**

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

Annotations:
Characterizes the directional and statistical aspects of the field observation.

Diagram

Type: enumFieldQualifier

Properties:
- content: simple

Facets:

<table>
<thead>
<tr>
<th>Facet</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<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>Component</td>
<td>A part of a multi-part entity, e.g., the components of a vector.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Component.Phi</td>
<td>The angle between the meridian of a vector and the zero meridian of the coordinate system in which the vector is expressed. Equivalently, the angle between the projection of a position or measured vector into the X-Y plane and X-axis in the coordinate system in which the vector is expressed. Also referred to as the azimuthal angle or &quot;longitude&quot;. Mathematically: Phi = arctan(y/x)</td>
</tr>
<tr>
<td>enumeration</td>
<td>Component.R</td>
<td>The component of a vector in the radial direction from the center of the coordinate system.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Component.Theta</td>
<td>For spatial points, the angular distance from a meridian normal to the equator. Also referred to as the zenith angle or &quot;latitude&quot;. As a &quot;latitude&quot; angles range from +90 to -90 with</td>
</tr>
</tbody>
</table>
zero at the equator and positive angles are in the direction designated as "North." An alternate range of values is often called "co-latitude" where values range from 0 to +180 as measured from the "north" pole. Mathematically:

\[ \Theta = \arctan(\sqrt{x^2 + y^2}/z) \]

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Component.X</td>
<td>The component of a vector along the X-axis in a cartesian coordinate system.</td>
</tr>
<tr>
<td>Component.Y</td>
<td>The component of a vector along the Y-axis in a cartesian coordinate system.</td>
</tr>
<tr>
<td>Component.Z</td>
<td>The component of a vector along the Z-axis in a cartesian coordinate system.</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>Magnitude</td>
<td>A measure of the strength or size of a vector quantity.</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>PhaseAngle</td>
<td>Phase difference between two or more waves, normally expressed in degrees.</td>
</tr>
<tr>
<td>Scalar</td>
<td>A quantity that is completely specified by its magnitude and has no direction.</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>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>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>

**Used by Complex Type Field**

```xml
<xsd:element name="FieldQualifier" type="enumFieldQualifier">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Characterizes the directional and statistical aspects of the field observation.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

**Schema location**

file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd
**Element FieldQuantity**

- **Namespace**: http://www.spase-group.org/data/schema
- **Annotations**: The physical attribute of the field.
- **Type**: enumFieldQuantity
- **Properties**:
  - content: simple
  - Facets:
    - enumeration Current: The flow of electrons through a conductor caused by a potential difference.
    - enumeration Electric: The physical attribute that exerts an electrical force.
    - enumeration Electromagnetic: The physical attribute that is or is caused by a mutual interaction of electric and magnetic fields.
    - enumeration Gyrofrequency: The frequency with which a charged particle (as an electron) executes spiral gyrations in moving obliquely across a magnetic field.
    - enumeration Magnetic: The physical attribute attributed to a magnet or its equivalent.
    - enumeration Plasmafrequency: 
    - enumeration Potential: A field which obeys Laplace’s Equation.
    - enumeration PoyntingFlux: The rate of energy transport per unit area per steradian.

**Used by**

- Complex Type: Field

**Source**

```xml
<xsd:element name="FieldQuantity" type="enumFieldQuantity">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The physical attribute of the field.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

**Schema location**

file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

---

**Element FrequencyRange**

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

**Type**: FrequencyRange

**Properties**:

- content: complex

**Used by**

- Complex Types: Field, Photon

**Model**

SpectralRange(0,1), Low, High, Units, Bin*

**Children**

Bin, High, Low, SpectralRange, Units

**Instance**

```xml
<FrequencyRange>
  <SpectralRange>[0,1]</SpectralRange>
  <Low>[1,1]</Low>
</FrequencyRange>
```
Element SpectralRange

Annotations
The general term used to describe wavelengths or frequencies within a given span of values for those quantities.

Diagram

Type
enumSpectralRange

Properties
ccontent: simple

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.
enumeration 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.
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
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 Infrared Photons with a wavelength range: 760 to 1.00x10^6 nm
enumeration 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.
enumeration Microwave Photons with a wavelength range: 1.08x10^-6 to 1.50x10^-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 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 1.00x10^11 nm
enumeration Ultraviolet Photons with a wavelength range: 10 to 400 nm.
enumeration Whitelight
enumeration XRays Photons with a wavelength range: 0.001 <= x < 10 nm

Used by
Complex Types DisplayData, EnergyRange, FrequencyRange, NumericalData, WavelengthRange

Source
<xsd:element name="SpectralRange" type="enumSpectralRange"/>
<xsd:annotation>
<xsd:documentation xml:lang="en">The general term used to describe wavelengths or frequencies within a given span of values</xsd:documentation>
</xsd:annotation>
**Element Low**

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

Annotations:

The smallest value within a range of possible values.

Diagram:

![Diagram of Low element]

Type: xsd:double

Properties:

content: simple

Used by:

Complex Types: AzimuthalAngleRange, Bin, EnergyRange, FrequencyRange, PolarAngleRange, WavelengthRange

Source:

```xml
<xs:element name="Low" type="xsd:double">
  <xs:annotation>
    <xs:documentation xml:lang="en"> The smallest value within a range of possible values. </xs:documentation>
  </xs:annotation>
</xs:element>
```

**Element High**

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

Annotations:

The largest value within a range of possible values.

Diagram:

![Diagram of High element]

Type: xsd:double

Properties:

content: simple

Used by:

Complex Types: AzimuthalAngleRange, Bin, EnergyRange, FrequencyRange, PolarAngleRange, WavelengthRange

Source:

```xml
<xs:element name="High" type="xsd:double">
  <xs:annotation>
    <xs:documentation xml:lang="en"> The largest value within a range of possible values. </xs:documentation>
  </xs:annotation>
</xs:element>
```

**Element Bin**

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

Diagram:

![Diagram of Bin element]

Type: Bin

Properties:

content: complex

Used by:

Complex Types: AzimuthalAngleRange, EnergyRange, FrequencyRange, PolarAngleRange, WavelengthRange

Model:

BandName{0,1}.Low.High
### Schema documentation for spase-1_3_0.xsd

<table>
<thead>
<tr>
<th>Children</th>
<th>BandName, High, Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instance</td>
<td><code>&lt;Bin&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;BandName&gt;{0,1}&lt;/BandName&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;Low&gt;{1,1}&lt;/Low&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;High&gt;{1,1}&lt;/High&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;/Bin&gt;</code></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Source</th>
<th><code>&lt;xsd:element name=&quot;Bin&quot; type=&quot;Bin&quot;/&gt;</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>Schema location</td>
<td>file://var/www/spase/site/root/data/schema/spase-1_3_0.xsd</td>
</tr>
</tbody>
</table>

#### Element BandName

<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>A common or provider assigned name for a range of values.</td>
</tr>
<tr>
<td>Diagram</td>
<td><img src="image" alt="BandName Diagram" /></td>
</tr>
<tr>
<td>Type</td>
<td><code>xsd:string</code></td>
</tr>
<tr>
<td>Properties</td>
<td>content: simple</td>
</tr>
<tr>
<td>Used by</td>
<td>Complex Type Bin</td>
</tr>
</tbody>
</table>

| Source | `<xsd:element name="BandName" type="xsd:string">` |
|        | `<xsd:annotation>` |
|        | `<xsd:documentation xml:lang="en">A common or provider assigned name for a range of values.</xsd:documentation>` |
|        | `</xsd:annotation>` |
|        | `</xsd:element>` |

| Schema location | file://var/www/spase/site/root/data/schema/spase-1_3_0.xsd |

#### Element Particle

<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="Particle Diagram" /></td>
</tr>
<tr>
<td>Type</td>
<td>Particle</td>
</tr>
<tr>
<td>Properties</td>
<td>content: complex</td>
</tr>
<tr>
<td>Substitution Group</td>
<td>MeasuredEntity</td>
</tr>
<tr>
<td>Affiliation</td>
<td>ParticleType+, ParticleQualifier*, ParticleQuantity, AtomicNumber*, EnergyRange{0,1}, AzimuthalAngleRange{0,1}, PolarAngleRange{0,1}</td>
</tr>
<tr>
<td>Model</td>
<td>ParticleType+, ParticleQualifier*, ParticleQuantity, AtomicNumber*, EnergyRange{0,1}, AzimuthalAngleRange{0,1}, PolarAngleRange{0,1}</td>
</tr>
<tr>
<td>Children</td>
<td>AtomicNumber, AzimuthalAngleRange, EnergyRange, ParticleQualifier, ParticleQuantity, ParticleType, PolarAngleRange</td>
</tr>
</tbody>
</table>

---

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### Instance

```
<Particle>
  <ParticleType>{1,unbounded}</ParticleType>
  <ParticleQualifier>{0,unbounded}</ParticleQualifier>
  <ParticleQuantity>{1,1}</ParticleQuantity>
  <AtomicNumber>{0,unbounded}</AtomicNumber>
  <EnergyRange>{0,1}</EnergyRange>
  <AzimuthalAngleRange>{0,1}</AzimuthalAngleRange>
  <PolarAngleRange>{0,1}</PolarAngleRange>
</Particle>
```

### Source

```
<xs:element name="Particle" type="Particle" substitutionGroup="MeasuredEntity"/>
```

### Element **ParticleType**

<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>A characterization of the kind of particle observed by the measurement.</td>
</tr>
</tbody>
</table>

#### Type

`enumParticleType`

#### Properties

- **content:** Simple

#### Facets

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerosol</td>
<td>A suspension of fine solid or liquid particles in gas.</td>
</tr>
<tr>
<td>AlphaParticle</td>
<td>A positively charged nuclear particle that consists of two protons and two neutrons.</td>
</tr>
<tr>
<td>Dust</td>
<td>Free microscopic particles of solid material.</td>
</tr>
<tr>
<td>Electron</td>
<td>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.</td>
</tr>
<tr>
<td>Ion</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>Molecule</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>Neutral</td>
<td>Either a particle, an object, or a system that has a net electric charge of zero</td>
</tr>
<tr>
<td>Proton</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 x 10**(-24) gram.</td>
</tr>
</tbody>
</table>

#### Used by

Complex Type: Particle

#### Source

```
<xs:element name="ParticleType" type="enumParticleType"/>
<xs:annotation>
  <xs:documentation xml:lang="en">A characterization of the kind of particle observed by the measurement.</xs:documentation>
</xs:annotation>
```

### Element **ParticleQualifier**

<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>Characterizes the directional and statistical aspects of the particle observation.</td>
</tr>
</tbody>
</table>

#### Diagram

![Diagram](image-url)
## enumParticleQualifier

<table>
<thead>
<tr>
<th>Type</th>
<th>Facets</th>
</tr>
</thead>
<tbody>
<tr>
<td>content:</td>
<td>simple</td>
</tr>
<tr>
<td>enumeration</td>
<td>Anisotropy</td>
</tr>
<tr>
<td>enumeration</td>
<td>Average</td>
</tr>
<tr>
<td>enumeration</td>
<td>Characteristic</td>
</tr>
<tr>
<td>enumeration</td>
<td>Component</td>
</tr>
<tr>
<td>enumeration</td>
<td>Component.Phi</td>
</tr>
<tr>
<td>enumeration</td>
<td>Component.R</td>
</tr>
<tr>
<td>enumeration</td>
<td>Component.Theta</td>
</tr>
<tr>
<td>enumeration</td>
<td>Component.X</td>
</tr>
<tr>
<td>enumeration</td>
<td>Component.Y</td>
</tr>
<tr>
<td>enumeration</td>
<td>Component.Z</td>
</tr>
<tr>
<td>enumeration</td>
<td>Deviation</td>
</tr>
<tr>
<td>enumeration</td>
<td>Differential</td>
</tr>
<tr>
<td>enumeration</td>
<td>Fit</td>
</tr>
<tr>
<td>enumeration</td>
<td>Integral</td>
</tr>
<tr>
<td>enumeration</td>
<td>Magnitude</td>
</tr>
<tr>
<td>enumeration</td>
<td>Moment</td>
</tr>
<tr>
<td>enumeration</td>
<td>Parallel</td>
</tr>
<tr>
<td>enumeration</td>
<td>Peak</td>
</tr>
<tr>
<td>enumeration</td>
<td>Perpendicular</td>
</tr>
<tr>
<td>Enumeration</td>
<td>Description</td>
</tr>
<tr>
<td>---------------</td>
<td>-----------------------------------------------------------------------------</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>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>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>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>

**Element ParticleQuantity**

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

**Annotations**
A characterization of the physical properties of the particle.

**Diagram**

- **Type**: enumParticleQuantity
- **Properties**: content: simple
- **Facets**:
  - **enumeration**: AlfvenMachNumber
    - The ratio of the bulk flow speed to the Alfven speed.
  - **enumeration**: AverageChargeState
    - A measure of the composite deficit (positive) or excess (negative) of electrons with respect to protons.
  - **enumeration**: Counts
    - An enumeration of the number of detection events occurring in a particle detector per unit time or over detector accumulation times.
  - **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.

**Source**
<xsd:element name="ParticleQualifier" type="enumParticleQualifier">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Characterizes the directional and statistical aspects of the particle observation.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<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>FlowSpeed</td>
<td>The rate at which particles or energy is passing through a unit area in a unit time.</td>
</tr>
<tr>
<td>Gyrofrequency</td>
<td>The frequency with which a charged particle (as an electron) executes spiral gyrations in moving obliquely across a magnetic field.</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>NumberDensity</td>
<td>The number of particles per unit volume.</td>
</tr>
<tr>
<td>NumberFlux</td>
<td>The number of particles passing through a unit area in a unit time.</td>
</tr>
<tr>
<td>PhaseSpaceDensity</td>
<td>The number of particles per unit volume in the six-dimensional space of position and velocity.</td>
</tr>
<tr>
<td>PlasmaBeta</td>
<td>The ratio of the plasma pressure to the magnetic pressure.</td>
</tr>
<tr>
<td>Plasmafrequency</td>
<td></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>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, also referred to as &quot;bulk velocity&quot;.</td>
</tr>
</tbody>
</table>

**Used by**

- Complex Type: Particle

---

**Element AtomicNumber**

**Namespace**

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

**Annotations**

The the number of protons in the nucleus of an atom.

**Diagram**

![Diagram](attachment:image.png)

**Type**

xsd:double

**Properties**

content: simple
### Used by
<table>
<thead>
<tr>
<th>Complex Type</th>
<th>Particle</th>
</tr>
</thead>
</table>

### Source
```xml
<xs:element name="AtomicNumber" type="xsd:double">
  <xs:annotation>
    <xs:documentation xml:lang="en">The number of protons in the nucleus of an atom.</xs:documentation>
  </xs:annotation>
</xs:element>
```

**Schema location**
file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

### Element EnergyRange

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

**Diagram**
![EnergyRange Diagram](image)

**Type**
EnergyRange

**Properties**
- content: complex

**Used by**
- Complex Types: Particle, Photon

**Model**
- SpectralRange(0,1), Low, High, Units, Bin*

**Children**
- Bin, High, Low, SpectralRange, Units

**Instance**
```xml
<EnergyRange>
  <SpectralRange>{0,1}</SpectralRange>
  <Low>{1,1}</Low>
  <High>{1,1}</High>
  <Units>{1,1}</Units>
  <Bin>{0,unbounded}</Bin>
</EnergyRange>
```

**Source**
```xml
<xsd:element name="EnergyRange" type="EnergyRange"/>
```

**Schema location**
file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

### Element AzimuthalAngleRange

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

**Diagram**
![AzimuthalAngleRange Diagram](image)

**Type**
AzimuthalAngleRange

**Properties**
- content: complex

**Used by**
- Complex Type: Particle

**Model**
- Low, High, Units, Bin*

**Instance**
```xml
<AzimuthalAngleRange>
  <Low>xsd:double</Low>
  <High>xsd:double</High>
  <Units>xsd:string</Units>
  <Bin>xsd:string</Bin>
</AzimuthalAngleRange>
```

**Source**
```xml
<xsd:element name="AzimuthalAngleRange" type="AzimuthalAngleRange"/>
```

**Schema location**
file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

---

49
<table>
<thead>
<tr>
<th>Schema documentation for spase-1_3_0.xsd</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Children</strong> Bin, High, Low, Units</td>
</tr>
<tr>
<td><strong>Instance</strong></td>
</tr>
<tr>
<td><code>&lt;AzimuthalAngleRange&gt;</code></td>
</tr>
<tr>
<td><code>&lt;Low&gt;{1,1}&lt;/Low&gt;</code></td>
</tr>
<tr>
<td><code>&lt;High&gt;{1,1}&lt;/High&gt;</code></td>
</tr>
<tr>
<td><code>&lt;Units&gt;{1,1}&lt;/Units&gt;</code></td>
</tr>
<tr>
<td><code>&lt;Bin&gt;{0, unbounded}&lt;/Bin&gt;</code></td>
</tr>
<tr>
<td><code>&lt;/AzimuthalAngleRange&gt;</code></td>
</tr>
<tr>
<td><strong>Source</strong></td>
</tr>
<tr>
<td><code>&lt;xsd:element name=&quot;AzimuthalAngleRange&quot; type=&quot;AzimuthalAngleRange&quot;/&gt;</code></td>
</tr>
<tr>
<td><strong>Schema location</strong> file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd</td>
</tr>
</tbody>
</table>

**Element PolarAngleRange**

<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="image" alt="Diagram" /></td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td>PolarAngleRange</td>
</tr>
<tr>
<td><strong>Properties</strong></td>
<td></td>
</tr>
<tr>
<td>content:</td>
<td>complex</td>
</tr>
<tr>
<td><strong>Used by</strong></td>
<td></td>
</tr>
<tr>
<td>Complex Type</td>
<td>Particle</td>
</tr>
<tr>
<td><strong>Model</strong></td>
<td></td>
</tr>
<tr>
<td>Low, High, Units, Bin*</td>
<td></td>
</tr>
<tr>
<td><strong>Children</strong></td>
<td></td>
</tr>
<tr>
<td>Bin, High, Low, Units</td>
<td></td>
</tr>
<tr>
<td><strong>Instance</strong></td>
<td></td>
</tr>
<tr>
<td><code>&lt;PolarAngleRange&gt;</code></td>
<td></td>
</tr>
<tr>
<td><code>&lt;Low&gt;{1,1}&lt;/Low&gt;</code></td>
<td></td>
</tr>
<tr>
<td><code>&lt;High&gt;{1,1}&lt;/High&gt;</code></td>
<td></td>
</tr>
<tr>
<td><code>&lt;Units&gt;{1,1}&lt;/Units&gt;</code></td>
<td></td>
</tr>
<tr>
<td><code>&lt;Bin&gt;{0, unbounded}&lt;/Bin&gt;</code></td>
<td></td>
</tr>
<tr>
<td><code>&lt;/PolarAngleRange&gt;</code></td>
<td></td>
</tr>
<tr>
<td><strong>Source</strong></td>
<td></td>
</tr>
<tr>
<td><code>&lt;xsd:element name=&quot;PolarAngleRange&quot; type=&quot;PolarAngleRange&quot;/&gt;</code></td>
<td></td>
</tr>
<tr>
<td><strong>Schema location</strong> file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd</td>
<td></td>
</tr>
</tbody>
</table>

**Element Photon**

<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="image" alt="Diagram" /></td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td>Photon</td>
</tr>
<tr>
<td><strong>Properties</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Used by</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Model</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Children</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Instance</strong></td>
<td></td>
</tr>
<tr>
<td><code>&lt;Photon&gt;</code></td>
<td></td>
</tr>
<tr>
<td><code>&lt;PhotonQualifier&gt;</code></td>
<td></td>
</tr>
<tr>
<td><code>&lt;PhotonQuantity&gt;</code></td>
<td></td>
</tr>
<tr>
<td><code>&lt;EnergyRange&gt;</code></td>
<td></td>
</tr>
<tr>
<td><code>&lt;WavelengthRange&gt;</code></td>
<td></td>
</tr>
<tr>
<td><code>&lt;FrequencyRange&gt;</code></td>
<td></td>
</tr>
<tr>
<td><code>&lt;/Photon&gt;</code></td>
<td></td>
</tr>
<tr>
<td><strong>Source</strong></td>
<td></td>
</tr>
<tr>
<td><code>&lt;xsd:element name=&quot;Photon&quot; type=&quot;Photon&quot;/&gt;</code></td>
<td></td>
</tr>
<tr>
<td><strong>Schema location</strong> file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd</td>
<td></td>
</tr>
</tbody>
</table>
Properties

| content: complex |

Substitution Group

- MeasuredEntity

Model

PhotonQualifier*, PhotonQuantity, EnergyRange{0,1}, WavelengthRange{0,1}, FrequencyRange{0,1}

Children

EnergyRange, FrequencyRange, PhotonQualifier, PhotonQuantity, WavelengthRange

Instance

```xml
<Photon>
  <PhotonQualifier>{0,unbounded}</PhotonQualifier>
  <PhotonQuantity>{1,1}</PhotonQuantity>
  <EnergyRange>{0,1}</EnergyRange>
  <WavelengthRange>{0,1}</WavelengthRange>
  <FrequencyRange>{0,1}</FrequencyRange>
</Photon>
```

Source

```xml
<xsd:element name="Photon" type="Photon" substitutionGroup="MeasuredEntity"/>
```

Schema location

file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

---

**Element PhotonQualifier**

Namespace

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

Annotations

Characterizes the directional and statistical aspects of the photon observation.

Diagram

![Diagram of PhotonQualifier](image)

Type

enumPhotonQualifier

Properties

| content: simple |

Facets

- **Average**: The statistical mean; the sum of a set of values divided by the number of values in the set.
- **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.
- **LineofSight**: 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.
- **Linear**: Relative to polarization, confinement of the E-field vector to a given plane.
- **Peak**: The maximum value for the quantity in question, over a period of time which is usually equal to the cadence.
- **Scalar**: A quantity that is completely specified by its magnitude and has no direction.
- **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.

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>StokesParameters</td>
<td>The four coordinates (usually called I, Q, U, and V) relative to a particular basis for the representation of the polarization state of an electromagnetic wave propagating through space.</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>
</tbody>
</table>

**Used by**

- Complex Type: Photon

**Source**

```xml
definition
<xs:element name="PhotonQualifier" type="enumPhotonQualifier">
  <xs:annotation>
    <xs:documentation xml:lang="en">Characterizes the directional and statistical aspects of the photon observation.</xs:documentation>
  </xs:annotation>
</xs:element>
```

**Schema location**

file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

---

**Element PhotonQuantity**

**Namespace**

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

**Annotations**

A characterization of the physical properties of the photon.

**Diagram**

![Diagram of PhotonQuantity](image)

**Type**

enumPhotonQuantity

**Properties**

- content: simple

**Facets**

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emissivity</td>
<td>The ratio of radiant energy from a material to that from a blackbody at the same kinetic temperature</td>
</tr>
<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 area of the spectral line profile divided by the peak height or depth.</td>
</tr>
<tr>
<td>Gyrofrequency</td>
<td>The frequency with which a charged particle (as an electron) executes spiral gyrations in moving obliquely across a magnetic field</td>
</tr>
<tr>
<td>LineDepth</td>
<td>In spectra, a measure of the amount of absorption for a particular wavelength or frequency in the spectrum</td>
</tr>
<tr>
<td>MagneticField</td>
<td>Measurements of magnetic field vectors (sometimes not all components) as time series; can be space- or ground-based. Also, [Zeeman splitting, etc. based]: 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>The frequency with which a plasma oscillates.</td>
</tr>
<tr>
<td>Polarization</td>
<td>Direction of the electric vector of an electromagnetic</td>
</tr>
</tbody>
</table>
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 StokesParameters**
The four coordinates (usually called I, Q, U, and V) relative to a particular basis for the representation of the polarization state of an electromagnetic wave propagating through space.

**Enumeration Velocity**
Rate of change of position. Also used for the average velocity of a collection of particles, also referred to as "bulk velocity".

**Element WavelengthRange**

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

**Diagram**

**Type** WavelengthRange

**Properties**
- content: complex

**Used by**
- Complex Type Photon

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

**Children**
- Bin , High , Low , SpectralRange , Units

**Instance**

```xml
<WavelengthRange>
  <SpectralRange>{0,1}</SpectralRange>
  <Low>{1,1}</Low>
  <High>{1,1}</High>
  <Units>{1,1}</Units>
  <Bin>{0,unbounded}</Bin>
</WavelengthRange>
```

**Source**

```xml
<xsd:element name="WavelengthRange" type="WavelengthRange" />
```

**Schema location** file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

**Element Support**

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

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

**Annotations**
A characterization of the support information.

**Type**
enumSupportQuantity

**Properties**
content: simple

**Facets**
<table>
<thead>
<tr>
<th>Facet</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>enumeration</td>
<td>Other</td>
</tr>
<tr>
<td></td>
<td>Values, such as flags, that are not time tags, location data or measured or derived parameters.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Positional</td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Temporal</td>
</tr>
<tr>
<td></td>
<td>Pertaining to time.</td>
</tr>
</tbody>
</table>

**Used by**
Complex Type: **Support**

**Source**
```xml
<xs:element name="SupportQuantity" type="enumSupportQuantity">
  <xs:annotation>
    <xs:documentation xml:lang="en">A characterization of the support information.</xs:documentation>
  </xs:annotation>
</xs:element>
```

**Schema location**
file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd
### Diagram

```
<DisplayData>
  <ResourceID>(1,1)</ResourceID>
  <ResourceHeader>(1,1)</ResourceHeader>
</DisplayData>
```

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

**Substitution Group**: ResourceEntity

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

**Model**: AccessInformation, Caveats, DisplayCadence, Extension, InputResourceID, InstrumentID, Keyword, MeasurementType, ObservedRegion, PhysicalParameter, ProcessingLevel, ProviderProcessingLevel, ProviderResourceName, ProviderVersion, ResourceHeader, ResourceID, SpectralRange, TemporalDescription

**Instance**

```
<DisplayData>
  <ResourceID>(1,1)</ResourceID>
  <ResourceHeader>(1,1)</ResourceHeader>
</DisplayData>
```
Schema documentation for spase-1_3_0.xsd

Element `ProcessingLevel`

- **Namespace**: `http://www.spase-group.org/data/schema`
- **Annotations**: The standard classification of the processing performed on the product.
- **Diagram**:
  
  ![Diagram of ProcessingLevel](image)

- **Type**: `enumProcessingLevel`

- **Properties**
  - `content`: simple

- **Facets**
  - `enumeration`:
    - **Calibrated**: Data wherein sensor outputs have been convolved with instrument response function, often irreversibly, to yield physical parameter values.
    - **Raw**: Duplicate data are removed from the data stream and data are time ordered. Values are not adjusted for any potential biases or external factors.
  - `enumeration`:
    - **Uncalibrated**

- **Used by**
  - Complex Types: `DisplayData`, `NumericalData`

- **Source**
  <xsd:element name="ProcessingLevel" type="enumProcessingLevel">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">The standard classification of the processing performed on the product.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>

Element `ProviderProcessingLevel`

- **Namespace**: `http://www.spase-group.org/data/schema`
- **Annotations**: The provider specific classification of the processing performed on the product.
- **Diagram**:
  
  ![Diagram of ProviderProcessingLevel](image)

- **Type**: `xsd:string`

- **Properties**
  - `content`: simple

- **Used by**
  - Complex Types: `DisplayData`, `NumericalData`

- **Source**
  <xsd:element name="ProviderProcessingLevel" type="xsd:string">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">The provider specific classification of the processing performed on the product.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
## Element MeasurementType

<table>
<thead>
<tr>
<th>Properties</th>
<th>Simple</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Facets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>enumeration</td>
<td>ActivityIndex</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</td>
<td>ChargedParticleFlux</td>
<td>Measurements of fluxes of charged or ionized particles at above thermal energies, including relativistic particles of solar and galactic origin. May give simple fluxes, but more complete distributions are sometimes possible. Composition measurements may also be made.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Dopplergram</td>
<td>A map or image depicting the spatial distribution of line-of-sight velocities of the observed object.</td>
</tr>
<tr>
<td>enumeration</td>
<td>ElectricField</td>
<td>Measurements of electric field vectors (sometimes not all components) as a time series.</td>
</tr>
<tr>
<td>enumeration</td>
<td>EnergeticParticles</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</td>
<td>Ephemeris</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</td>
<td>ImageIntensity</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>enumeration</td>
<td>InstrumentStatus</td>
<td>A quantity directly related to the operation or function of an instrument.</td>
</tr>
<tr>
<td>enumeration</td>
<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>enumeration</td>
<td>Irradiance</td>
<td>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. The SI unit of irradiance is watts per square meter (W·m⁻²).</td>
</tr>
<tr>
<td>enumeration</td>
<td>MagneticField</td>
<td>Measurements of magnetic field vectors (sometimes not all components) as time series; can be space- or ground-based. Also, [Zeeman splitting, etc. based]; A region of space near a magnetized</td>
</tr>
</tbody>
</table>
body where magnetic forces can be detected [as measured by methods such as Zeeman splitting, etc.]

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<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. (<em>Magnetogram.</em>)</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.</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 describe 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. The SI unit of radiance is watts per steradian per square meter (W·sr⁻¹·m⁻²).</td>
</tr>
<tr>
<td>RadioandPlasmaWaves</td>
<td>Measurements of electric and/or magnetic fields using electric or magnetic antennas at frequencies anywhere between the spacecraft spin frequency and the characteristic frequencies of the ambient plasma. The output can be waveform, power spectral density, or other statistical parameters.</td>
</tr>
<tr>
<td>RadioSoundings</td>
<td>Measurements of plasma density, magnetic field and possibly other parameters of the space environment by active probing of the plasma by radio waves.</td>
</tr>
<tr>
<td>Spectrum</td>
<td>A three-dimensional representation of successive spectra which allows time evolution to be clearly seen. Time is plotted along the abscissa, frequency (or particle energy) along the ordinate, and the spectral power density (or differential particle flux) is represented by different shades of grey, or color. This representation is also known as a spectrogram.</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>
</tbody>
</table>

Used by Complex Types DisplayData, NumericalData

Source

```xml
<xs:element name="MeasurementType" type="enumMeasurementType">
  <xs:annotation>
    <xs:documentation xml:lang="en">A characterization of the quantitative assessment</xs:documentation>
  </xs:annotation>
</xs:element>
```
Element TemporalDescription

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

Diagram

<table>
<thead>
<tr>
<th>Type</th>
<th>TemporalDescription</th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties</td>
<td>content: complex</td>
</tr>
<tr>
<td>Used by</td>
<td>Complex Types DisplayData, NumericalData</td>
</tr>
<tr>
<td>Model</td>
<td>TimeSpan, Cadence{0,1}, Exposure{0,1}</td>
</tr>
<tr>
<td>Children</td>
<td>Cadence, Exposure, TimeSpan</td>
</tr>
</tbody>
</table>

Instance

<TemporalDescription>
  <TimeSpan>{1,1}</TimeSpan>
  <Cadence>{0,1}</Cadence>
  <Exposure>{0,1}</Exposure>
</TemporalDescription>

Source

<xs:element name="TemporalDescription" type="TemporalDescription"/>

Schema location

file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

Element Exposure

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

Annotations

The time interval over which an individual measurement is taken.

Diagram

<table>
<thead>
<tr>
<th>Type</th>
<th>xsd:duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties</td>
<td>content: simple</td>
</tr>
<tr>
<td>Used by</td>
<td>Complex Type TemporalDescription</td>
</tr>
</tbody>
</table>

Source

<xs:element name="Exposure" type="xsd:duration">
  <xs:annotation>
    <xs:documentation xml:lang="en">The time interval over which an individual measurement is taken.</xs:documentation>
  </xs:annotation>
</xs:element>

Schema location

file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

Element DisplayCadence

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

Annotations

The time interval between the successive display elements.

Diagram

<table>
<thead>
<tr>
<th>Type</th>
<th>xsd:duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties</td>
<td>content: simple</td>
</tr>
<tr>
<td>Used by</td>
<td>Complex Type DisplayData</td>
</tr>
</tbody>
</table>
### Element: ObservedRegion

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

**Annotations**: The portion of space measured by the instrument at the time of an observation. A region is distinguished by certain natural features or physical characteristics. It is the location of the observatory for in situ data, the location or region sensed by remote sensing observatories and the location-of-relevance for parameters that are derived from observational data.

**Diagram**: ![Diagram showing ObservedRegion](image)

**Type**: enumRegion

**Properties**: content: simple

**Facets**

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asteroid</td>
<td>A small extraterrestrial body consisting mostly of rock and metal that is in orbit around the sun.</td>
</tr>
<tr>
<td>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>Earth</td>
<td>The third planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Earth.Magnetosheath</td>
<td>The region between the bow shock and the magnetopause, characterized by very turbulent plasma.</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 planets 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 magnetoal 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.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>
</tbody>
</table>
Earth.NearSurface.AuroralRegion
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.

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

Earth.NearSurface.Ionosphere
charged or ionized gases surrounding a body that are nominally bound to the body by virtue of the gravitational attraction.

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

Earth.NearSurface.Ionosphere.ERegion
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.

Earth.NearSurface.Ionosphere.FRegion
a layer that contains ionized gases at a height of around 150 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
the upper most areas of the ionosphere.

Earth.NearSurface.Mesosphere
a layer of the atmosphere that extends from the Stratosphere to a range of 80 km to 85 km, temperature decreasing with height.

Earth.NearSurface.Plasmasphere
an outer layer 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
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.

Earth.NearSurface.SouthAtlanticAnomalyRegion
the inner van Allen radiation belt makes its closest approach to the planets surface. The result is that, for a given altitude, the radiation intensity is higher over this region than elsewhere.

Earth.NearSurface.Stratosphere
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 outermost 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.

- **Enumeration**: Earth.Surface
  - Description: The outermost area of a solid object.

- **Enumeration**: Heliosphere
  - Description: 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.

- **Enumeration**: Heliosphere.Inner
  - Description: The region of the heliosphere extending radially out from the "surface" of the Sun to 1 AU.

- **Enumeration**: Heliosphere.NearEarth
  - Description: The heliospheric region near the Earth which extends to and includes the area near the L1 and L2 Lagrange point.

- **Enumeration**: Heliosphere.Outer
  - Description: The region of the heliosphere from, but not including, 1 AU to the farthest extent of the heliosphere (heliopause).

- **Enumeration**: Heliosphere.Remote1AU
  - Description: The heliospheric region near the Earth's orbit, but exclusive of the region near the Earth.

- **Enumeration**: Jupiter
  - Description: The fifth planet from the sun in our solar system.

- **Enumeration**: Mars
  - Description: The forth planet from the sun in our solar system.

- **Enumeration**: Mercury
  - Description: The first planet from the sun in our solar system.

- **Enumeration**: Neptune
  - Description: The seventh planet from the sun in our solar system.

- **Enumeration**: Pluto
  - Description: The ninth (sub)planet from the sun in our solar system.

- **Enumeration**: Saturn
  - Description: The sixth planet from the sun in our solar system.

- **Enumeration**: Sun
  - Description: The star upon which our solar system is centered.

- **Enumeration**: Sun.Chromosphere
  - Description: 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.

- **Enumeration**: Sun.Corona
  - Description: 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.

- **Enumeration**: Sun.Interior
  - Description: The region inside the body which is not visible from outside the body.

- **Enumeration**: Sun.Photosphere
  - Description: 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.

- **Enumeration**: Sun.TransitionRegion
  - Description: 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.

- **Enumeration**: Uranus
  - Description: The eighth planet from the sun in our solar system.

- **Enumeration**: Venus
  - Description: The second planet from the sun in our solar system.

---

### Complex Types

- DisplayData
- NumericalData

---

**Source**

```xml
<xsd:element name="ObservedRegion" type="enumRegion">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">The portion of space measured by the instrument at the time of an observation. A region is</xsd:documentation>
    </xsd:annotation>
</xsd:element>
```
distinguished by certain natural features or physical characteristics. It is the location of the observatory for in situ data, the location or region sensed by remote sensing observatories and the location-of-relevance for parameters that are derived from observational data.

Element **NumericalData**

<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>![NumericalData Diagram]</td>
</tr>
<tr>
<td>Type</td>
<td>NumericalData</td>
</tr>
<tr>
<td>Properties</td>
<td>content: complex</td>
</tr>
<tr>
<td>Substitution Group</td>
<td>• ResourceEntity</td>
</tr>
<tr>
<td>Affiliation</td>
<td>• ResourceEntity</td>
</tr>
</tbody>
</table>

Schema location file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd
Element DocumentType

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

Annotations  
A characterization of the content or purpose of a document.

Type  
enumDocumentType

Properties  
content:  
simple

Facets  
enumeration  
Paper  
A formal presentation of an idea or discovery typically more than a few pages in length.

Used by  
Complex Type  
Document

Element Granule

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

Diagram

Type  
Granule
### Properties

<table>
<thead>
<tr>
<th>Substitution Group Affiliation</th>
<th>content: complex</th>
</tr>
</thead>
</table>

### Model

- ResourceID
- ReleaseDate
- ExpirationDate[0,1]
- ParentID
- PriorID*
- URL+
- StartDate
- StopDate
- Checksum[0,1]
- DataExtent[0,1]
- Extension*

### Children

- Checksum
- DataExtent
- ExpirationDate
- Extension
- ParentID
- PriorID
- ReleaseDate
- ResourceID
- StartDate
- StopDate
- URL

### Instance

```
<Granule>
  <ResourceID>(1,1)</ResourceID>
  <ReleaseDate>(1,1)</ReleaseDate>
  <ExpirationDate>[0,1](ExpirationDate)
  <ParentID>(1,1)</ParentID>
  <PriorID>[0,unbounded](PriorID)
  <URL>(1,unbounded)</URL>
  <StartDate>(1,1)</StartDate>
  <StopDate>(1,1)</StopDate>
  <Checksum>(0,1)</Checksum>
  <DataExtent>(0,1)</DataExtent>
  <Extension>(0,unbounded)
</Granule>
```

### Source

```
<xsd:element name="Granule" type="Granule" substitutionGroup="ResourceEntity"/>
```

### Element 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.

**Diagram**

```
ParentID
  ^
  |<xsd:string>
```

**Type**

xsd:string

**Properties**

<table>
<thead>
<tr>
<th>content:</th>
<th>simple</th>
</tr>
</thead>
</table>

**Used by**

Complex Type: Granule

**Source**

```
<xsd:element name="ParentID" type="xsd:string">
  <xsd:annotation>
    <xsd: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.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

**Schema location**

file://var/www/spase/site/root/data/schema/spase-1_3_0.xsd

### Element StopDate

**Namespace**

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

**Annotations**

The specification of a stopping point in time.

**Diagram**

```
StopDate
  ^
  |<xsd:dateTime>
```

**Type**

xsd:dateTime

**Properties**

<table>
<thead>
<tr>
<th>content:</th>
<th>simple</th>
</tr>
</thead>
</table>

**Substitution Group Affiliation**

- StopDateEntity
Schema documentation for spase-1_3_0.xsd

Element Checksum

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

Diagram

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

Used by Complex Type Granule

Model HashValue, HashFunction

Children HashFunction, HashValue

Instance

Source

Schema location file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

Element 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

<table>
<thead>
<tr>
<th>Type</th>
<th>xsd:string</th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties</td>
<td>content: simple</td>
</tr>
</tbody>
</table>

Used by Complex Type Checksum

Source

Schema location file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

Element HashFunction

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

Annotations A function or algorithm that converts a digital data object into a hash value. Typically the hash value is small and concise when compared to the digital data object.

Diagram

<table>
<thead>
<tr>
<th>Type</th>
<th>enumHashFunction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties</td>
<td>content: simple</td>
</tr>
</tbody>
</table>
Facets

<table>
<thead>
<tr>
<th>Facet</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>enumeration</td>
<td><strong>MD5</strong></td>
</tr>
<tr>
<td></td>
<td>Message Digest 5 (MD5) is a 128-bit message digest algorithm created in 1991 by Professor Ronald Rivest.</td>
</tr>
<tr>
<td>enumeration</td>
<td><strong>SHA1</strong></td>
</tr>
<tr>
<td></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>enumeration</td>
<td><strong>SHA256</strong></td>
</tr>
<tr>
<td></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

<table>
<thead>
<tr>
<th>Source</th>
<th>Complex Type</th>
<th>Checksum</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;xsd:element name=&quot;HashFunction&quot; type=&quot;enumHashFunction&quot;&gt;</td>
<td>Complex Type</td>
<td>Checksum</td>
</tr>
<tr>
<td></td>
<td><a href="">xsd:annotation</a></td>
<td>&lt;xsd:documentation xml:lang=&quot;en&quot;&gt;A function or algorithm that converts a digital data object into a hash value. Typically the hash value is small and concise when compared to the digital data object.&lt;/xsd:documentation&gt;</td>
</tr>
</tbody>
</table>

Schema location

file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

**Element Instrument**

Namespace

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

Diagram

Type

Instrument

Properties

- **content:** complex

Substitution Group

- **ResourceEntity**

Affiliation

Model

- **ResourceId**, **ResourceHeader**, **InstrumentType+**, **InvestigationName**, **ObservatoryID**, **Caveats{0,1}**, **Extension***

Children

- **Caveats**, **Extension**, **InstrumentType**, **InvestigationName**, **ObservatoryID**, **ResourceId**

Instance

- `<Instrument>`
  - `<ResourceId>{1,1}</ResourceId>`
  - `<ResourceHeader>{1,1}</ResourceHeader>`
  - `<InstrumentType>{1,unbounded}</InstrumentType>`
  - `<InvestigationName>{1,unbounded}</InvestigationName>`
  - `<ObservatoryID>{1,1}</ObservatoryID>`
  - `<Caveats>{0,1}</Caveats>`
  - `<Extension>{0,unbounded}</Extension>`
  - `<Instrument>`
<table>
<thead>
<tr>
<th>Source</th>
<th>&lt;xsd:element name=&quot;Instrument&quot; type=&quot;Instrument&quot; substitutionGroup=&quot;ResourceEntity&quot;/&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schema location</td>
<td>file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd</td>
</tr>
</tbody>
</table>

**Element InstrumentType**

<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>A characterization of an integrated collection of software and hardware containing one or more sensors and associated controls used to produce data on an environment.</td>
</tr>
<tr>
<td>Type</td>
<td>enumInstrumentType</td>
</tr>
<tr>
<td>Properties</td>
<td>content: simple</td>
</tr>
<tr>
<td>Facets</td>
<td>enumeration Antenna A sensor used to measure electric potential.</td>
</tr>
<tr>
<td></td>
<td>enumeration 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.</td>
</tr>
<tr>
<td></td>
<td>enumeration 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.</td>
</tr>
<tr>
<td></td>
<td>enumeration 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.</td>
</tr>
<tr>
<td></td>
<td>enumeration 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.</td>
</tr>
<tr>
<td></td>
<td>enumeration ElectrostaticAnalyser 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></td>
<td>enumeration EnergeticParticleInstrument 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></td>
<td>enumeration 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.</td>
</tr>
<tr>
<td></td>
<td>enumeration 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.</td>
</tr>
<tr>
<td></td>
<td>enumeration 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.</td>
</tr>
<tr>
<td></td>
<td>enumeration FourierTransformSpectrograph An instrument that determines the spectra of a radiative source, using time-domain measurements and a Fourier transform.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>GeigerMuellerTube</td>
<td>An instrument which measures density of ionizing radiation based on interactions with a gas.</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 which measures the difference between two or more waves.</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>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 captures images at multiple spectral ranges.</td>
</tr>
<tr>
<td>NeutralAtomImager</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>ParticleCorrelator</td>
<td>An instrument which correlates particle flux to help identify wave/particle interactions.</td>
</tr>
<tr>
<td>ParticleDetector</td>
<td></td>
</tr>
<tr>
<td>Photometer</td>
<td>An instrument which measures the strength of electromagnetic radiation in the range from ultraviolet to infrared and including the visible spectrum.</td>
</tr>
<tr>
<td>Photopolarimeter</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>ProportionalCounter</td>
<td>An instrument which measures energy of ionization radiation based on interactions with a gas.</td>
</tr>
<tr>
<td>QuadrisphericalAnalyser</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>enumeration</td>
<td>ResonanceSounder</td>
</tr>
<tr>
<td>enumeration</td>
<td>RetardingPotentialAnalyser</td>
</tr>
<tr>
<td>enumeration</td>
<td>Riometer</td>
</tr>
<tr>
<td>enumeration</td>
<td>ScintillationDetector</td>
</tr>
<tr>
<td>enumeration</td>
<td>SearchCoil</td>
</tr>
<tr>
<td>enumeration</td>
<td>Sounder</td>
</tr>
<tr>
<td>enumeration</td>
<td>SpacecraftPotentialControl</td>
</tr>
<tr>
<td>enumeration</td>
<td>SpectralPowerReceiver</td>
</tr>
<tr>
<td>enumeration</td>
<td>Spectrometer</td>
</tr>
<tr>
<td>enumeration</td>
<td>Timeofflight</td>
</tr>
<tr>
<td>enumeration</td>
<td>Unspecified</td>
</tr>
<tr>
<td>enumeration</td>
<td>WaveformReceiver</td>
</tr>
</tbody>
</table>

Used by

<table>
<thead>
<tr>
<th>Complex Type</th>
<th>Instrument</th>
</tr>
</thead>
</table>

Source

```xml
<xs:element name="InstrumentType" type="enumInstrumentType">
  <xs:annotation>
    <xs:documentation xml:lang="en">A characterization of an integrated collection of software and hardware containing one or more sensors and associated controls used to produce data on an environment.</xs:documentation>
  </xs:annotation>
</xs:element>
```

Element 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>Annotations</td>
<td>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</td>
</tr>
</tbody>
</table>
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.

Diagram

Type xsd:string

Properties content: simple

Used by Complex Type Instrument

Source

Element ObservatoryID

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

Annotations The identifier of an Observatory resource.

Diagram

Type xsd:string

Properties content: simple

Used by Complex Type Instrument

Source

Element Observatory

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

Diagram
<table>
<thead>
<tr>
<th>Type</th>
<th>Observatory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties</td>
<td>content: complex</td>
</tr>
<tr>
<td>Substitution Group Affiliation</td>
<td>ResourceEntity</td>
</tr>
<tr>
<td>Model</td>
<td>ResourceID, ResourceHeader, ObservatoryGroup*, Location, Extension*</td>
</tr>
<tr>
<td>Children</td>
<td>Extension, Location, ObservatoryGroup, ResourceHeader, ResourceID</td>
</tr>
<tr>
<td>Instance</td>
<td>&lt;Observatory&gt; &lt;ResourceID&gt;{1,1}&lt;/ResourceID&gt; &lt;ResourceHeader&gt;{1,1}&lt;/ResourceHeader&gt; &lt;ObservatoryGroup&gt;{0,unbounded}&lt;/ObservatoryGroup&gt; &lt;Location&gt;{1,1}&lt;/Location&gt; &lt;Extension&gt;{0,unbounded}&lt;/Extension&gt; &lt;/Observatory&gt;</td>
</tr>
<tr>
<td>Source</td>
<td>Source:&lt;xsd:element name=&quot;Observatory&quot; type=&quot;Observatory&quot; substitutionGroup=&quot;ResourceEntity&quot;/&gt;</td>
</tr>
<tr>
<td>Schema location</td>
<td>file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd</td>
</tr>
</tbody>
</table>

**Element ObservatoryGroup**

<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>A set of programmatically related observatories. The value is taken from an approved list of observatory group names.</td>
</tr>
<tr>
<td>Diagram</td>
<td><img src="Diagram.png" alt="Diagram" /></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, Observatory</td>
</tr>
<tr>
<td>Schema location</td>
<td>file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd</td>
</tr>
</tbody>
</table>

**Element Location**

<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="Diagram.png" alt="Diagram" /></td>
</tr>
<tr>
<td>Type</td>
<td>Location</td>
</tr>
<tr>
<td>Properties</td>
<td>content: complex</td>
</tr>
<tr>
<td>Used by</td>
<td>Complex Type, Observatory</td>
</tr>
<tr>
<td>Model</td>
<td>ObservatoryRegion+, CoordinateSystemName{0,1}, Latitude{0,1}, Longitude{0,1}, Elevation{0,1}</td>
</tr>
<tr>
<td>Children</td>
<td>CoordinateSystemName, Elevation, Latitude, Longitude, ObservatoryRegion</td>
</tr>
<tr>
<td>Instance</td>
<td>&lt;Location&gt; &lt;ObservatoryRegion&gt;{1,unbounded}&lt;/ObservatoryRegion&gt;</td>
</tr>
</tbody>
</table>
Element ObservatoryRegion

Annotations
A spatial location distinguished by certain natural features or physical characteristics where an observatory is located.

Diagram

Type
enumRegion

Properties
content: simple

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 planets magnetic field.

enumeration Earth.Magnetosphere.Magnetotail 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).

enumeration 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.

enumeration 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 aural zone.

enumeration Earth.Magnetosphere.RadiationBelt Within a magnetosphere where high-energy particles could potentially be trapped in a magnetic field.

enumeration 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.

enumeration Earth.NearSurface.Atmosphere Central gases surrounding a body that extends from the surface and is bound to the body by virtue of the gravitational attraction.

enumeration Earth.NearSurface.AuroralRegion In the atmospheric where electrically-charged particles bombarding the upper atmosphere of a planet in the presence of a magnetic
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<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>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>Earth.NearSurface.Ionosphere.ERegion</td>
<td>A layer of ionised gas occurring at 90-150 km 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>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.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 and the region south of 60 degrees south latitude.</td>
</tr>
<tr>
<td>Earth.NearSurface.SouthAtlanticAnomalyRegion</td>
<td>The region where 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 layer of the atmosphere that extends from the Mesosphere to 640+ km, temperature increasing with height.</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>
</tbody>
</table>
### Schema documentation for spase-1_3_0.xsd

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<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.Inner</strong></td>
<td>The region of the heliosphere extending radially out from the &quot;surface&quot; of the Sun to 1 AU.</td>
</tr>
<tr>
<td><strong>Heliosphere.NearEarth</strong></td>
<td>The heliospheric region near the Sun 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 from, but not including, 1 AU to the farthest extent of the heliosphere (heliopause).</td>
</tr>
<tr>
<td><strong>Heliosphere.Remote1AU</strong></td>
<td>The heliospheric region near the Earth's orbit, but exclusive of the region near the Earth.</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 fourth 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 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><strong>Sun.Corona</strong></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><strong>Sun.Interior</strong></td>
<td>The region inside the body which is not visible from outside the body.</td>
</tr>
<tr>
<td><strong>Sun.Photosphere</strong></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><strong>Sun.TransitionRegion</strong></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><strong>Uranus</strong></td>
<td>The eighth planet from the sun in our solar system.</td>
</tr>
<tr>
<td><strong>Venus</strong></td>
<td>The second planet from the sun in our solar system.</td>
</tr>
</tbody>
</table>

### Used by

**Source**<xsd:element name="ObservatoryRegion" type="enumRegion">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A spatial location distinguished by certain natural features or physical characteristics where an observatory is located.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
Element **Latitude**

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

Annotations  
The location of a place on Earth specified as an angle east (positive) or west (negative) of a north-south line called the Prime Meridian defined by the coordinate system in use.

Diagram  
![Diagram of Latitude](image)

Type  
xsd:double

Properties  
content: simple

Used by  
Complex Type Location

Source  
```xml
<xsd:element name="Latitude" type="xsd:double">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">The location of a place on Earth specified as an angle east (positive) or west (negative) of a north-south line called the Prime Meridian defined by the coordinate system in use.</xsd:documentation>
    </xsd:annotation>
</xsd:element>
```

Element **Longitude**

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

Annotations  
The location of a place on Earth specified as an angle north (positive) or south (negative) of the equator defined by the coordinate system in use.

Diagram  
![Diagram of Longitude](image)

Type  
xsd:double

Properties  
content: simple

Used by  
Complex Type Location

Source  
```xml
<xsd:element name="Longitude" type="xsd:double">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">The location of a place on Earth specified as an angle north (positive) or south (negative) of the equator defined by the coordinate system in use.</xsd:documentation>
    </xsd:annotation>
</xsd:element>
```

Element **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  
![Diagram of Elevation](image)

Type  
xsd:double

Properties  
content: simple

Used by  
Complex Type Location

Source  
```xml
<xsd:element name="Elevation" type="xsd:double">
    <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:element>
```
The distance in meters above (positive) or below (negative) the "zero elevation" defined by the World Geodetic System reference frame (WGS84).
Annotations | The words used to address an individual.
---|---

**Type** | xsd:string
**Properties** | content: simple
**Used by** | Complex Type Person

**Source**<xsd:element name="PersonName" type="xsd:string">  
  <xsd:annotation>  
    <xsd:documentation xml:lang="en">The words used to address an individual.</xsd:documentation>  
  </xsd:annotation>  
</xsd:element>

**Schema location** file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

---

**Element** **OrganizationName**

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

**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.

**Type** xsd:string
**Properties** content: simple
**Used by** Complex Type Person

**Source**<xsd:element name="OrganizationName" type="xsd:string">  
  <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:annotation>  
</xsd:element>

**Schema location** file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

---

**Element** **Address**

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

**Annotations** Directions for finding some location; written on letters or packages that are to be delivered to that location.

**Type** xsd:string
**Properties** content: simple
**Used by** Complex Type Person

**Source**<xsd:element name="Address" type="xsd:string">  
  <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:annotation>  
</xsd:element>

**Schema location** file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

---

**Element** **Email**

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

**Annotations** The electronic address at which the individual
Schema documentation for spase-1_3_0.xsd

Diagram

Type xsd:string

Properties content: simple

Used by Complex Type Person

Source <xsd:element name="Email" type="xsd:string">
   <xsd:annotation>
      <xsd:documentation xml:lang="en">The electronic address at which the individual may be contacted expressed in the form "local-part@domain".</xsd:documentation>
   </xsd:annotation>
</xsd:element>

Schema location file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

Element 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

Type xsd:string

Properties content: simple

Used by Complex Type Person

Source <xsd:element name="PhoneNumber" type="xsd:string">
   <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:element>

Schema location file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

Element 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

Type xsd:string

Properties content: simple

Used by Complex Type Person

Source <xsd:element name="FaxNumber" type="xsd:string">
   <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:element>

Schema location file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd
### Element Registry

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

**Diagram**

| **Substitution Group** | ResourceEntity |
| **Affiliation** | ResourceEntity |

**Model** | ResourceID , ResourceHeader , Extension* |

**Children** | Extension , ResourceHeader , ResourceID |

**Instance**

```xml
<Registry>
  <ResourceID>{1,1}</ResourceID>
  <ResourceHeader>{1,1}</ResourceHeader>
  <Extension>{0,unbounded}</Extension>
</Registry>
```

**Source**

```xml
<xsd:element name="Registry" type="Registry" substitutionGroup="ResourceEntity"/>
```

**Schema location**

file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

### Element Repository

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

**Diagram**

| **Substitution Group** | ResourceEntity |
| **Affiliation** | ResourceEntity |

**Model** | ResourceID , ResourceHeader , Extension* |

**Children** | Extension , ResourceHeader , ResourceID |

**Instance**

```xml
<Repository>
  <ResourceID>{1,1}</ResourceID>
  <ResourceHeader>{1,1}</ResourceHeader>
  <Extension>{0,unbounded}</Extension>
</Repository>
```

**Source**

```xml
<xsd:element name="Repository" type="Repository" substitutionGroup="ResourceEntity"/>
```

**Schema location**

file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd
Element Service

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

Diagram

Type | Service

Properties

content: complex

Substitution Group

Affiliation | • ResourceEntity

Model | ResourceID, ResourceHeader, AccessURL, Extension*

Children | AccessURL, Extension, ResourceHeader, ResourceID

Instance

<Service>
<ResourceID>(1,1)</ResourceID>
<ResourceHeader>(1,1)</ResourceHeader>
<AccessURL>(1,1)</AccessURL>
<Extension>(0,unbounded)</Extension>
</Service>

Source

<xsd:element name="Service" type="Service" substitutionGroup="ResourceEntity"/>

Schema location

file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

Element Mixed

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

Annotations

A measured observation which is derived from a combination of two or more individual measurements.

Diagram

Type | xsd:string

Properties

content: simple

Substitution Group

Affiliation | • MeasuredEntity

Source

<xsd:element name="Mixed" type="xsd:string" substitutionGroup="MeasuredEntity">
<xsd:annotation>
<xsd:documentation xml:lang="en">A measured observation which is derived from a combination of two or more individual measurements.</xsd:documentation>
</xsd:annotation>
</xsd:element>

Schema location

file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

Element RelativeStopDate

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

Annotations

An indication of the nominal end date relative
**Diagram**

```
RelativeStopDate
  Type: xsd:duration
```

**Type**

xsd:duration

**Properties**

content: simple

**Substitution Group**

* StopDateEntity

**Source**

```xml
<xsd:element name="RelativeStopDate" type="xsd:duration"
  substitutionGroup="StopDateEntity"/>
<xsd:annotation>
  <xsd:documentation xml:lang="en">An indication of the nominal end date relative to the present.</xsd:documentation>
</xsd:annotation>
```

**Schema location**

file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

---

**Element enumObservatoryGroup**

**Namespace**

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

**Annotations**

Open List. See: Identifiers for programmatically related observatories. The value is taken from an approved list of observatory group names. See <http://www.igpp.ucla.edu/spase/> for the list.

```
enumObservatoryGroup
  Type: xsd:string
```

**Type**

xsd:string

**Properties**

content: simple

**Source**

```xml
<xsd:element name="enumObservatoryGroup" type="xsd:string">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Open List. See: Identifiers for programmatically related observatories. The value is taken from an approved list of observatory group names. See <http://www.igpp.ucla.edu/spase/> for the list.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

**Schema location**

file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

---

**Element enumObservatoryName**

**Namespace**

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

**Annotations**

Open List. See: Identifiers for a location or platform. An observatory may be part of an observatory group. The value is taken from an approved list of observatory names. See <http://www.igpp.ucla.edu/spase/> for the list.

```
enumObservatoryName
  Type: xsd:string
```

**Type**

xsd:string

**Properties**

content: simple

**Source**

```xml
<xsd:element name="enumObservatoryName" type="xsd:string">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Open List. See: Identifiers for a location or platform. An observatory may be part of an observatory group. The value is taken from an approved list of observatory names. See <http://www.igpp.ucla.edu/spase/> for the list.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

**Schema location**

file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd
**Element `enumRepositoryName`**

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

**Annotations**
Open List. See: Identifiers for the location or facility where the product is stored. The repository name is selected from a list of established repositories. See [http://www.igpp.ucla.edu/spase/](http://www.igpp.ucla.edu/spase/) for the list.

**Diagram**

```
<composite type="xsd:string">
  <attribute name="lang" type="xsd:string" default="en"/>
</composite>
```

**Type**
`xsd:string`

**Properties**
content: `simple`

**Source**

```
<xsd:complexType name="Spase">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Space Physics Archive Search and Extract (SPASE). The outermost container or envelope for SPASE metadata. This indicates the start of the SPASE metadata.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element ref="Version" minOccurs="1" maxOccurs="1"/>
    <xsd:element ref="ResourceEntity" minOccurs="0" maxOccurs="unbounded"/>
  </xsd:sequence>
  <xsd:attribute name="lang" type="xsd:string" default="en"/>
</xsd:complexType>
```

**Complex Types**

**Complex Type `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.

**Diagram**

```
<composite type="xsd:string">
  <attribute name="lang" type="xsd:string" default="en"/>
</composite>
```

**Used by**
Element `Spase`

**Model**
`Version`, `ResourceEntity`

**Children**
`ResourceEntity`, `Version`

**Attributes**

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

**Source**

```
<xsd:complexType name="Spase">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Space Physics Archive Search and Extract (SPASE). The outermost container or envelope for SPASE metadata. This indicates the start of the SPASE metadata.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element ref="Version" minOccurs="1" maxOccurs="1"/>
    <xsd:element ref="ResourceEntity" minOccurs="0" maxOccurs="unbounded"/>
  </xsd:sequence>
  <xsd:attribute name="lang" type="xsd:string" default="en"/>
</xsd:complexType>
```
Complex Type 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. Catalogues include lists of events, files in a product, and data availability.

Diagram:

```
<xs:complexType name="Catalog">
  <xs:annotation>
    <xs:documentation xml:lang="en">A tabular listing of events or observational notes, especially those that have utility in aiding a user in locating data. Catalogues include lists of events, files in a product, and data availability.</xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element ref="ResourceID" minOccurs="1" maxOccurs="1"/>
    <xs:element ref="ResourceHeader" minOccurs="1" maxOccurs="1"/>
    <xs:element ref="AccessInformation" minOccurs="1" maxOccurs="unbounded"/>
    <xs:element ref="ProviderResourceName" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="ProviderVersion" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="InstrumentID" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element ref="PhenomenonType" minOccurs="1" maxOccurs="unbounded"/>
    <xs:element ref="TimeSpan" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="Caveats" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="Keyword" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element ref="InputResourceID" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element ref="PhysicalParameter" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element ref="Extension" minOccurs="0" maxOccurs="unbounded"/>
  </xs:sequence>
</xs:complexType>
```
Complex Type 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:
- Element: ResourceHeader

Model:
- ResourceName
- AlternateName
- ReleaseDate
- ExpirationDate
- Description
- Acknowledgement
- Contact
- InformationURL
- AssociationID
- PriorID

Source:
```xml
<xs:complexType name="ResourceHeader">
  <xs:annotation>
    <xs:documentation xml:lang="en">Attributes of a resource which pertain to the provider of the resource and descriptive information about the resource.</xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element ref="ResourceName" minOccurs="1" maxOccurs="1"/>
    <xs:element ref="AlternateName" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element ref="ReleaseDate" minOccurs="1" maxOccurs="1"/>
    <xs:element ref="ExpirationDate" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="Description" minOccurs="1" maxOccurs="1"/>
    <xs:element ref="Acknowledgement" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="Contact" minOccurs="1" maxOccurs="unbounded"/>
    <xs:element ref="InformationURL" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element ref="AssociationID" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element ref="PriorID" minOccurs="0" maxOccurs="unbounded"/>
  </xs:sequence>
</xs:complexType>
```

Complex Type 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.

Source:
```xml
<xs:complexType name="Contact">
  <xs:annotation>
    <xs: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.</xs:documentation>
  </xs:annotation>
  <!-- omissions... -->
</xs:complexType>
```
Complex Type InformationURL

Namespace http://www.spase-group.org/data/schema
Annotations Attributes of the method of acquiring additional information.

Diagram

Used by Element InformationURL

Model Name{0,1}, URL, Description{0,1}

Children Description, Name, URL

Source

Schema location file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

Complex Type AccessInformation

Namespace http://www.spase-group.org/data/schema
Annotations Attributes of the resource which pertain to how to acquire the resource, availability and storage format.

Diagram

Used by Element AccessInformation

Model

Children

Source

Schema location file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd
Schema documentation for spase-1_3_0.xsd

Diagram

Used by
Element AccessInformation

Model
RepositoryID, Availability[0,1], AccessRights[0,1], AccessURL+, Format, Encoding[0,1], DataExtent[0,1], Acknowledgement[0,1]

Children
AccessRights, AccessURL, Acknowledgement, Availability, DataExtent, Encoding, Format, RepositoryID

Source
<xsd:complexType name="AccessInformation">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Attributes of the resource which pertain to how to acquire the resource, availability and storage format.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element ref="RepositoryID" minOccurs="1" maxOccurs="1"/>
    <xsd:element ref="Availability" minOccurs="0" maxOccurs="1"/>
    <xsd:element ref="AccessRights" minOccurs="0" maxOccurs="1"/>
    <xsd:element ref="AccessURL" minOccurs="1" maxOccurs="unbounded"/>
    <xsd:element ref="Format" minOccurs="1" maxOccurs="1"/>
    <xsd:element ref="Encoding" minOccurs="0" maxOccurs="1"/>
    <xsd:element ref="DataExtent" minOccurs="0" maxOccurs="1"/>
    <xsd:element ref="Acknowledgement" minOccurs="0" maxOccurs="1"/>
  </xsd:sequence>
</xsd:complexType>

Schema location file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

Complex Type AccessURL

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

Annotations Attributes of the method of acquiring a resource including a URL, name and description.

Diagram

Used by
Element AccessURL

Model Name[0,1], URL, Description[0,1], Language[0,1]

Children Description, Language, Name, URL

Source
<xsd:complexType name="AccessURL">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Attributes of the method of acquiring a resource including a URL, name and description.</xsd:documentation>
  </xsd:annotation>
</xsd:complexType>
**Complex Type 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 data extent is expressed in unitized bytes.

**Diagram**

**Used by**  
Element | DataExtent

**Model** | Quantity, Units{0,1}, Per{0,1}

**Children** | Per, Quantity, Units

**Source**

```xml
<xsd:complexType name="DataExtent">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The area of storage in a file system required to store the contents of a resource. The data extent is expressed in unitized bytes.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element ref="Quantity" minOccurs="1" maxOccurs="1"/>
    <xsd:element ref="Units" minOccurs="0" maxOccurs="1"/>
    <xsd:element ref="Per" minOccurs="0" maxOccurs="1"/>
  </xsd:sequence>
</xsd:complexType>
```

**Complex Type TimeSpan**

Namespace | http://www.spase-group.org/data/schema  
Annotations | The duration of an interval in time.

**Diagram**

**Used by**  
Element | TimeSpan

**Model** | StartDate, StopDateEntity, Note*

**Children** | Note, StartDate, StopDateEntity

**Source**

```xml
<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 ref="StartDate" minOccurs="1" maxOccurs="1"/>
    <xsd:element ref="StopDateEntity" minOccurs="1" maxOccurs="1"/>
    <xsd:element ref="Note" minOccurs="0" maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>
```
Complex Type PhysicalParameter

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

Used by  Element  PhysicalParameter

Model  Name, ParameterKey(0,1), Description(0,1), Caveats(0,1), Cadence(0,1), Units(0,1), UnitsConversion(0,1), CoordinateSystem(0,1), Structure(0,1), ValidMin(0,1), ValidMax(0,1), FillValue(0,1), ParameterEntity

Children  Cadence, Caveats, CoordinateSystem, Description, FillValue, Name, ParameterEntity, ParameterKey, Structure, Units, UnitsConversion, ValidMax, ValidMin

Source

<xs:complexType name="PhysicalParameter">
  <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 ref="Name" minOccurs="1" maxOccurs="1"/>
    <xs:element ref="ParameterKey" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="Description" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="Caveats" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="Cadence" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="Units" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="UnitsConversion" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="CoordinateSystem" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="Structure" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="ValidMin" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="ValidMax" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="FillValue" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="ParameterEntity" minOccurs="1" maxOccurs="1"/>
  </xs:sequence>
</xs:complexType>

Schema location  file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd
Complex Type CoordinateSystem

Namespace | http://www.spase-group.org/data/schema
Annotations | Specification of the origin and orientation of axes against which the location of some point is given and the representative form of each point.
Diagram | ![Diagram of CoordinateSystem]
Used by | Element CoordinateSystem
Model | CoordinateRepresentation{0,1} , CoordinateSystemName{0,1}
Children | CoordinateRepresentation, CoordinateSystemName
Source | `<xsd:complexType name="CoordinateSystem">`<xsd:annotation>  `<xsd:documentation xml:lang="en">Specification of the origin and orientation of axes against which the location of some point is given and the representative form of each point.</xsd:documentation>`</xsd:annotation> `<xsd:sequence>`  `<xsd:element ref="CoordinateRepresentation" minOccurs="0" maxOccurs="1"/>` `<xsd:element ref="CoordinateSystemName" minOccurs="0" maxOccurs="1"/>`</xsd:sequence>`</xsd:complexType>

Complex Type Structure

Namespace | http://www.spase-group.org/data/schema
Annotations | The organization and relationship of individual values within a quantity.
Diagram | ![Diagram of Structure]
Used by | Element Structure
Model | Size{0,1} , Description{0,1} , Element*
Children | Description, Element, 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:element ref="Size" minOccurs="0" maxOccurs="1"/>` `<xsd:element ref="Description" minOccurs="0" maxOccurs="1"/>` `<xsd:element ref="Element" minOccurs="0" maxOccurs="unbounded"/>`</xsd:sequence>`</xsd:complexType>

Complex Type 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

```
<complexType name="Element">
  <annotation>
    <documentation xml:lang="en">A component or indiviual unit of a multiple value quantity such as an array or vector.</documentation>
  </annotation>
  <sequence>
    <element ref="Name" minOccurs="1" maxOccurs="1"/>
    <element ref="Component" minOccurs="0" maxOccurs="1"/>
    <element ref="Index" minOccurs="1" maxOccurs="1"/>
    <element ref="ParameterKey" minOccurs="0" maxOccurs="1"/>
    <element ref="Units" minOccurs="0" maxOccurs="1"/>
    <element ref="UnitsConversion" minOccurs="0" maxOccurs="1"/>
    <element ref="ValidMin" minOccurs="0" maxOccurs="1"/>
    <element ref="ValidMax" minOccurs="0" maxOccurs="1"/>
    <element ref="FillValue" minOccurs="0" maxOccurs="1"/>
  </sequence>
</complexType>
```

Schema location  
file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

Complex Type Measured

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

Annotations  
Attributes of observations obtained from an instrument or sensor.

Diagram

```
<complexType name="Measured">
  <annotation>
    <documentation xml:lang="en">Attributes of observations obtained from an instrument or sensor.</documentation>
  </annotation>
  <sequence>
    <element ref="MeasuredEntity" minOccurs="1" maxOccurs="1"/>
  </sequence>
</complexType>
```

Schema location  
file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd
### Complex Type Field

<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 space around a radiating body within which its electromagnetic attributes can exert force on another similar body that is not in direct contact.</td>
</tr>
<tr>
<td>Used by</td>
<td>Element Field</td>
</tr>
<tr>
<td>Model</td>
<td>FieldQualifier, FieldQuantity, FrequencyRange[0,1]</td>
</tr>
<tr>
<td>Children</td>
<td>FieldQualifier, FieldQuantity, FrequencyRange</td>
</tr>
<tr>
<td>Source</td>
<td><code>&lt;xsd:complexType name=&quot;Field&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;The space around a radiating body within which its electromagnetic attributes can exert force on another similar body that is not in direct contact.&lt;/xsd:documentation&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;xsd:sequence&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;xsd:element ref=&quot;FieldQualifier&quot; minOccurs=&quot;0&quot; maxOccurs=&quot;unbounded&quot;/&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;xsd:element ref=&quot;FieldQuantity&quot; minOccurs=&quot;1&quot; maxOccurs=&quot;1&quot;/&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;xsd:element ref=&quot;FrequencyRange&quot; minOccurs=&quot;0&quot; maxOccurs=&quot;1&quot;/&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;/xsd:sequence&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;/xsd:complexType&gt;</code></td>
</tr>
<tr>
<td>Schema location</td>
<td>file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd</td>
</tr>
</tbody>
</table>

### Complex Type 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>
<tbody>
<tr>
<td>Annotations</td>
<td>The range of possible values for the observed frequency.</td>
</tr>
<tr>
<td>Used by</td>
<td>Element FrequencyRange</td>
</tr>
<tr>
<td>Model</td>
<td>SpectralRange[0,1], Low, High, Units, Bin*</td>
</tr>
<tr>
<td>Children</td>
<td>Bin, High, Low, SpectralRange, Units</td>
</tr>
<tr>
<td>Source</td>
<td><code>&lt;xsd:complexType name=&quot;FrequencyRange&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;The range of possible values for the observed frequency.&lt;/xsd:documentation&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;xsd:sequence&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;xsd:element ref=&quot;SpectralRange&quot; minOccurs=&quot;0&quot; maxOccurs=&quot;1&quot;/&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;xsd:element ref=&quot;Low&quot; minOccurs=&quot;1&quot; maxOccurs=&quot;1&quot;/&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;xsd:element ref=&quot;High&quot; minOccurs=&quot;1&quot; maxOccurs=&quot;1&quot;/&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;xsd:element ref=&quot;Units&quot; minOccurs=&quot;1&quot; maxOccurs=&quot;1&quot;/&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;xsd:element ref=&quot;Bin&quot; minOccurs=&quot;0&quot; maxOccurs=&quot;unbounded&quot;/&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;/xsd:sequence&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;/xsd:complexType&gt;</code></td>
</tr>
<tr>
<td>Schema location</td>
<td>file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd</td>
</tr>
</tbody>
</table>
### Complex Type Bin

<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>A grouping of observations according to a band or window of a common attribute.</td>
</tr>
</tbody>
</table>
| Diagram | ![Diagram of Bin](Image)

**Used by**  
Element: Bin  
Model: BandName\(\{0,1\}\), Low, High  
Children: BandName, High, Low

**Source**
```xml
default-content
<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 ref="BandName" minOccurs="0" maxOccurs="1"/>
    <xsd:element ref="Low" minOccurs="1" maxOccurs="1"/>
    <xsd:element ref="High" minOccurs="1" maxOccurs="1"/>
  </xsd:sequence>
</xsd:complexType>
```

**Schema location**  
file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

### Complex Type Particle

<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>A description of the types of particles observed in the measurement. This includes both direct observations and inferred observations.</td>
</tr>
</tbody>
</table>
| Diagram | ![Diagram of Particle](Image)

**Used by**  
Element: Particle  
Model: ParticleType\(+\), ParticleQualifier\(^*\), ParticleQuantity, AtomicNumber\(^*\), EnergyRange\(\{0,1\}\), AzimuthalAngleRange\(\{0,1\}\), PolarAngleRange\(\{0,1\}\)  
Children: AtomicNumber, AzimuthalAngleRange, EnergyRange, ParticleQualifier, ParticleQuantity, ParticleType, PolarAngleRange

**Source**
```xml
default-content
<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>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element ref="ParticleType" minOccurs="1" maxOccurs="unbounded"/>
    <xsd:element ref="ParticleQualifier" minOccurs="0" maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>
```
Complex Type 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

Used by Element EnergyRange

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

Children Bin, High, Low, SpectralRange, Units

Source

Complex Type 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 AzimuthalAngleRange

Model Low, High, Units, Bin*

Children Bin, High, Low, Units

Source
Complex Type 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 PolarAngleRange

Model: Low, High, Units, Bin*

Children: Bin, High, Low, Units

Source:

Complex Type Photon

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

Annotations: Photon (radio through gamma-rays): the fundamental particle or quantum of electromagnetic radiation (radiant energy)

Diagram

Used by: Element Photon
<table>
<thead>
<tr>
<th>Model</th>
<th>PhotonQualifier*, PhotonQuantity, EnergyRange{0,1}, WavelengthRange{0,1}, FrequencyRange{0,1}</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children</td>
<td>EnergyRange, FrequencyRange, PhotonQualifier, PhotonQuantity, WavelengthRange</td>
</tr>
</tbody>
</table>
| Source | `<xsd:complexType name="Photon">  
  <xsd:documentation xml:lang="en">Photon (radio through gamma-rays): the fundamental  
  particle or quantum of electromagnetic radiation  
  (radiant energy)</xsd:documentation>` |

Complex Type WavelengthRange

| Namespace | http://www.spase-group.org/data/schema |
| Annotations | The range of possible values for the observed wavelength. |
| Diagram | ![Diagram of WavelengthRange] |
| Used by | Element WavelengthRange |
| Model | SpectralRange{0,1}, Low, High, Units, Bin* |
| Children | Bin, High, Low, SpectralRange, Units |
| Source | `<xsd:complexType name="WavelengthRange">  
  <xsd:documentation xml:lang="en">The range of possible values for the observed  
  wavelength.</xsd:documentation>` |

Complex Type 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 | ![Diagram of Support] |
| Used by | Element Support |
| Model | SupportQuantity |
| Children | SupportQuantity |
| Source | `<xsd:complexType name="Support">` |
Complex Type DisplayData

Annotations
A graphical representation of data wherein the underlying numeric values are not (readily) accessible for analysis. Examples are line plots and spectrograms.

Diagram

Used by
Element
DisplayData

Model
ResourceId, ResourceHeader, AccessInformation+, ProcessingLevel[0,1], ProviderResourceName[0,1], ProviderProcessingLevel[0,1], ProviderVersion[0,1], InstrumentID*, MeasurementType+, TemporalDescription[0,1], SpectralRange*, DisplayCadence[0,1], ObservedRegion*, Caveats[0,1], Keyword*, InputResourceId*, PhysicalParameter*, Extension*
Complex Type TemporalDescription

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

Annotations A characterization of the time over which the measurement was taken.

Diagram

Used by Element TemporalDescription

Model TimeSpan, Cadence[0,1], Exposure[0,1]

Children Cadence, Exposure, TimeSpan

Source

<xs:complexType name="TemporalDescription">
  <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 ref="TimeSpan" minOccurs="1" maxOccurs="1"/>
    <xs:element ref="Cadence" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="Exposure" minOccurs="0" maxOccurs="1"/>
  </xs:sequence>
</xs:complexType>

Complex Type NumericalData

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

Annotations Data stored as numerical values in a specified format.
Diagram

Used by

<table>
<thead>
<tr>
<th>Model</th>
<th>Element</th>
</tr>
</thead>
<tbody>
<tr>
<td>ResourceID, ResourceHeader, AccessInformation+, ProcessingLevel[0,1], ProviderResourceName[0,1], ProviderProcessingLevel[0,1], ProviderVersion[0,1], InstrumentID*, MeasurementType+, TemporalDescription[0,1], SpectralRange*, ObservedRegion*, Caveats[0,1], Keyword*, InputResourceID*, PhysicalParameter*</td>
<td></td>
</tr>
<tr>
<td>NumericalData</td>
<td></td>
</tr>
</tbody>
</table>

Children

AccessInformation, Caveats, Extension, InputResourceID, InstrumentID, Keyword, MeasurementType, ObservedRegion, PhysicalParameter, ProcessingLevel, ProviderProcessingLevel, ProviderResourceName, ProviderVersion, ResourceHeader, ResourceID, SpectralRange, TemporalDescription

Source

```xml
<xsd:complexType name="NumericalData">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Data stored as numerical values in a specified format.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element ref="ResourceID" minOccurs="1" maxOccurs="1" />
    <xsd:element ref="ResourceHeader" minOccurs="1" maxOccurs="1" />
    <xsd:element ref="AccessInformation" minOccurs="1" maxOccurs="unbounded" />
    <xsd:element ref="ProcessingLevel" minOccurs="0" maxOccurs="1" />
    <xsd:element ref="ProviderResourceName" minOccurs="0" maxOccurs="1" />
    <xsd:element ref="ProviderProcessingLevel" minOccurs="0" maxOccurs="1" />
    <xsd:element ref="ProviderVersion" minOccurs="0" maxOccurs="1" />
    <xsd:element ref="InstrumentID" minOccurs="0" maxOccurs="unbounded" />
    <xsd:element ref="MeasurementType" minOccurs="1" maxOccurs="unbounded" />
    <xsd:element ref="TemporalDescription" minOccurs="0" maxOccurs="1" />
    <xsd:element ref="SpectralRange" minOccurs="0" maxOccurs="unbounded" />
    <xsd:element ref="ObservedRegion" minOccurs="0" maxOccurs="unbounded" />
    <xsd:element ref="Caveats" minOccurs="0" maxOccurs="1" />
    <xsd:element ref="Keyword" minOccurs="0" maxOccurs="1" />
    <xsd:element ref="InputResourceID" minOccurs="0" maxOccurs="1" />
    <xsd:element ref="PhysicalParameter" minOccurs="0" maxOccurs="1" />
    <xsd:element ref="Extension" minOccurs="0" maxOccurs="1" />
  </xsd:sequence>
</xsd:complexType>
```
Complex Type 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, inlined graphics, sound, other multimedia data, or hypermedia references. Some examples of documents include a paper, letter, book, user guide, map, drawing, photograph, or image.

Source

```
<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, inlined graphics, sound, other multimedia data, or hypermedia references. Some examples of documents include a paper, letter, book, user guide, map, drawing, photograph, or image.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element ref="ResourceID" minOccurs="1" maxOccurs="1"/>
    <xsd:element ref="ResourceHeader" minOccurs="1" maxOccurs="1"/>
    <xsd:element ref="AccessInformation" minOccurs="1" maxOccurs="unbounded"/>
    <xsd:element ref="Keyword" minOccurs="0" maxOccurs="unbounded"/>
    <xsd:element ref="DocumentType" minOccurs="1" maxOccurs="1"/>
    <xsd:element ref="InputResourceID" minOccurs="0" maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>
```

Complex Type 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 inseperable. For example, a data storage format that maintains metadata and binary data in seperate, 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

```
<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 inseperable. 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 ref="ResourceID" minOccurs="1" maxOccurs="1"/>
    <xs:element ref="ReleaseDate" minOccurs="1" maxOccurs="1"/>
    <xs:element ref="ExpirationDate" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="ParentID" minOccurs="1" maxOccurs="1"/>
    <xs:element ref="PriorID" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element ref="URL" minOccurs="1" maxOccurs="unbounded"/>
    <xs:element ref="StartDate" minOccurs="1" maxOccurs="1"/>
    <xs:element ref="StopDate" minOccurs="1" maxOccurs="1"/>
    <xs:element ref="Checksum" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="DataExtent" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="Extension" minOccurs="0" maxOccurs="unbounded"/>
  </xs:sequence>
</xs:complexType>
```

Schema location file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd
Complex Type 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:

Used by:
Element: Checksum

Model: HashValue, HashFunction

Children: HashFunction, HashValue

Source:
```xml
<xs:complexType name="Checksum">
  <xs:annotation>
    <xs:documentation xml:lang="en">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.</xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element ref="HashValue" minOccurs="1" maxOccurs="1"/>
    <xs:element ref="HashFunction" minOccurs="1" maxOccurs="1"/>
  </xs:sequence>
</xs:complexType>
```

Schema location: file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

Complex Type Instrument

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

Annotations:
A device which is used to sense and parameterize a physical phenomenon.

Diagram:

Used by:
Element: Instrument

Model: ResourceID, ResourceHeader, InstrumentType+, InvestigationName, ObservatoryID, Caveats[0,1], Extension*

Children: Caveats, Extension, InstrumentType, InvestigationName, ObservatoryID, ResourceHeader, ResourceID

Source:
```xml
<xs:complexType name="Instrument">
  <xs:annotation>
    <xs:documentation xml:lang="en">A device which is used to sense and parameterize a physical phenomenon.</xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element ref="ResourceID" minOccurs="1" maxOccurs="1"/>
    <xs:element ref="ResourceHeader" minOccurs="1" maxOccurs="1"/>
    <xs:element ref="InstrumentType" minOccurs="1" maxOccurs="unbounded"/>
    <xs:element ref="InvestigationName" minOccurs="1" maxOccurs="1"/>
    <xs:element ref="ObservatoryID" minOccurs="1" maxOccurs="1"/>
    <xs:element ref="Caveats" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="Extension" minOccurs="0" maxOccurs="1"/>
  </xs:sequence>
</xs:complexType>
```
Complex Type **Observatory**

Namespace | http://www.spase-group.org/data/schema
Annotiations | The host (spacecraft, network, facility) for instruments making observations.

Diagram

Used by
- Element | Observatory

Model | ResourceID, ResourceHeader, ObservatoryGroup*, Location, Extension*
Children | Extension, Location, ObservatoryGroup, ResourceHeader, ResourceID

Source
```xml
<xsd:complexType name="Observatory">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The host (spacecraft, network, facility) for instruments making observations.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element ref="ResourceID" minOccurs="1" maxOccurs="1"/>
    <xsd:element ref="ResourceHeader" minOccurs="1" maxOccurs="1"/>
    <xsd:element ref="ObservatoryGroup" minOccurs="0" maxOccurs="unbounded"/>
    <xsd:element ref="Location" minOccurs="1" maxOccurs="1"/>
    <xsd:element ref="Extension" minOccurs="0" maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>
```

Schema location | file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

---

Complex Type **Location**

Namespace | http://www.spase-group.org/data/schema
Annotiations | A position in space definable by a regional referencing system and geographic coordinates.

Diagram

Used by
- Element | Location

Model | ObservatoryRegion+, CoordinateSystemName{0,1}, Latitude{0,1}, Longitude{0,1}, Elevation{0,1}
Children | CoordinateSystemName, Elevation, Latitude, Longitude, 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:sequence>
</xsd:complexType>
```
Complex Type Person

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

Annotations: An individual human being.

Diagram:

Used by:
- Element: Person

Model:
- ResourceID
- ReleaseDate
- PersonName
- OrganizationName
- Address
- Email
- PhoneNumber
- Extension
- FaxNumber

Children:
- Address
- Email
- Extension
- FaxNumber
- OrganizationName
- PersonName
- PhoneNumber
- ReleaseDate
- ResourceID

Source:
```xml
<xs:complexType name="Person">
  <xs:annotation>
    <xs:documentation xml:lang="en">An individual human being.</xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element ref="ResourceID" minOccurs="1" maxOccurs="1" />
    <xs:element ref="ReleaseDate" minOccurs="0" maxOccurs="1" />
    <xs:element ref="PersonName" minOccurs="0" maxOccurs="1" />
    <xs:element ref="OrganizationName" minOccurs="1" maxOccurs="1" />
    <xs:element ref="Address" minOccurs="0" maxOccurs="1" />
    <xs:element ref="Email" minOccurs="0" maxOccurs="unbounded" />
    <xs:element ref="PhoneNumber" minOccurs="0" maxOccurs="unbounded" />
    <xs:element ref="Extension" minOccurs="0" maxOccurs="unbounded" />
    <xs:element ref="FaxNumber" minOccurs="0" maxOccurs="1" />
  </xs:sequence>
</xs:complexType>
```

Complex Type Registry

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

Annotations: A location or facility where resources are cataloged.

Diagram:

Used by:
- Element: Person

Model:
- ResourceID
- ResourceCenter
- Extension

Children:
- ResourceID
- ResourceCenter
- Extension

Source:
```xml
<xs:complexType name="Registry">
  <xs:annotation>
    <xs:documentation xml:lang="en">A location or facility where resources are cataloged.</xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element ref="ResourceID" />
    <xs:element ref="ResourceCenter" minOccurs="0" maxOccurs="unbounded" />
    <xs:element ref="Extension" />
  </xs:sequence>
</xs:complexType>
```
Schema documentation for spase-1_3_0.xsd

Complex Type Repository

Namespace  | http://www.spase-group.org/data/schema
Annotations | A location or facility where resources are stored.

Complex Type Service

Namespace  | http://www.spase-group.org/data/schema
Annotations | A location or facility that can perform a well defined task.
Simple Types

### Simple Type `enumRole`

<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 assigned or assumed function or position of an individual.</td>
</tr>
<tr>
<td>Diagram</td>
<td><img src="enumRole" alt="Diagram" /> ![xsd:string]</td>
</tr>
<tr>
<td>Type</td>
<td>restriction of xsd:string</td>
</tr>
</tbody>
</table>

#### Facets

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>ArchiveSpecialist</td>
<td>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.</td>
</tr>
<tr>
<td>CoInvestigator</td>
<td>An individual who is a scientific peer and major participant for an investigation.</td>
</tr>
<tr>
<td>Contributor</td>
<td>An entity responsible for making contributions to the content of the resource.</td>
</tr>
<tr>
<td>DataProducer</td>
<td>An individual who generated the resource and is familiar with its provenance.</td>
</tr>
<tr>
<td>DeputyPI</td>
<td>An individual who is an administrative or scientific leader for an investigation operating under the supervision of a Principal Investigator.</td>
</tr>
<tr>
<td>GeneralContact</td>
<td>An individual who can provide information on a range of subjects or who can direct you to a domain expert.</td>
</tr>
<tr>
<td>MetadataContact</td>
<td>An individual who can affect a change in the metadata describing a resource.</td>
</tr>
<tr>
<td>PrincipalInvestigator</td>
<td>An individual who is the administrative and scientific lead for an investigation.</td>
</tr>
<tr>
<td>ProjectScientist</td>
<td>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.</td>
</tr>
<tr>
<td>Publisher</td>
<td>An individual, organization, institution or government department responsible for the production and dissemination of a document.</td>
</tr>
<tr>
<td>Scientist</td>
<td>An individual who is an expert in the phenomenon and related physics represented by the resource.</td>
</tr>
<tr>
<td>TeamLeader</td>
<td>An individual who is a major participant in an investigation.</td>
</tr>
<tr>
<td>TeamMember</td>
<td>An individual who can provide specific information with regard to the resource or supporting software</td>
</tr>
<tr>
<td>TechnicalContact</td>
<td>An individual who can provide specific information with regard to the resource or supporting software</td>
</tr>
</tbody>
</table>

#### Used by

<table>
<thead>
<tr>
<th>Element</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>&lt;xsd:simpleType name=&quot;enumRole&quot;&gt;</code></td>
<td><code>&lt;xsd:annotation&gt;</code></td>
</tr>
</tbody>
</table>
Identifiers for the assigned or assumed function or position of an individual. 

<xs:enumeration value="ArchiveSpecialist">
  <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:enumeration>

<xs:enumeration value="CoInvestigator">
  <xs:documentation xml:lang="en">An individual who is a scientific peer and major participant for an investigation.</xs:documentation>
</xs:enumeration>

<xs:enumeration value="Contributor">
  <xs:documentation xml:lang="en">An entity responsible for making contributions to the content of the resource.</xs:documentation>
</xs:enumeration>

<xs:enumeration value="DataProducer">
  <xs:documentation xml:lang="en">An individual who generated the resource and is familiar with its provenance.</xs:documentation>
</xs:enumeration>

<xs:enumeration value="DeputyPI">
  <xs:documentation xml:lang="en">An individual who is an administrative or scientific leader for an investigation operating under the supervision of a Principal Investigator.</xs:documentation>
</xs:enumeration>

<xs:enumeration value="GeneralContact">
  <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:enumeration>

<xs:enumeration value="MetadataContact">
  <xs:documentation xml:lang="en">An individual who can affect a change in the metadata describing a resource.</xs:documentation>
</xs:enumeration>

<xs:enumeration value="PrincipalInvestigator">
  <xs:documentation xml:lang="en">An individual who is the administrative and scientific lead for an investigation.</xs:documentation>
</xs:enumeration>

<xs:enumeration value="ProjectScientist">
  <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:enumeration>

<xs:enumeration value="Publisher">
  <xs:documentation xml:lang="en">An individual, organization, institution or government department responsible for the production and dissemination of a document.</xs:documentation>
</xs:enumeration>

<xs:enumeration value="Scientist">
  <xs:documentation xml:lang="en">An individual who is an expert in the phenomenon and related physics represented by the resource.</xs:documentation>
</xs:enumeration>

<xs:enumeration value="TeamLeader">
  <xs:documentation xml:lang="en"></xs:documentation>
</xs:enumeration>
### Simple Type `enumAvailability`

<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 indicating the method or service which may be used to access the resource.</td>
</tr>
<tr>
<td>Diagram</td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>restriction of xsd:string</td>
</tr>
<tr>
<td>Facets</td>
<td></td>
</tr>
<tr>
<td>enumeration Offline</td>
<td>Not directly accessible electronically. This includes resources which may be moved to an online status in response to a given request.</td>
</tr>
<tr>
<td>enumeration Online</td>
<td>Directly accessible electronically.</td>
</tr>
<tr>
<td>Used by</td>
<td>Element Availability</td>
</tr>
<tr>
<td>Source</td>
<td></td>
</tr>
</tbody>
</table>

### Simple Type `enumAccessRights`

<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 permissions granted or denied by the host of a product to allow other users to access and use the resource.</td>
</tr>
<tr>
<td>Diagram</td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>restriction of xsd:string</td>
</tr>
<tr>
<td>Facets</td>
<td></td>
</tr>
<tr>
<td>enumeration Open</td>
<td>Access is granted to everyone.</td>
</tr>
<tr>
<td>enumeration Restricted</td>
<td>Access to the product is regulated and requires some form of identification.</td>
</tr>
<tr>
<td>Used by</td>
<td>Element AccessRights</td>
</tr>
</tbody>
</table>
Source

<xsd:simpleType name="enumAccessRights">
  <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>

Schema location  file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

Simple Type enumFormat

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

Annotations  Identifiers for data organized according to preset specifications.

Diagram

Facets

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<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>Binary</td>
<td>A direct representation of the bits which may be stored in memory on a computer.</td>
</tr>
<tr>
<td>CDF</td>
<td>Common Data Format (CDF). A binary storage format developed at Goddard Space Flight Center (GSFC).</td>
</tr>
<tr>
<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>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>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>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>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>HDF</td>
<td>Hierarchical Data Format</td>
</tr>
<tr>
<td>Enumeration</td>
<td>Description</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------</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>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>NetCDF</td>
<td>Unidata Program Centers Network Common Data Form (NetCDF). A self-describing data 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>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>Text</td>
<td>ASCII text</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>
</tbody>
</table>

A proposed XML standard designed as a flexible storage and exchange format for tabular data.

eXtensible Mark-up Language (XML). A structured format for representing information. See <http://www.w3.org/XML/>

_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 and introduced for Cluster Active Archive. Compared to version 1, the metadata description of vectors and tensors is different.

Cluster Exchange Format (CEF), version 2, is a self-documenting ASCII format designed for the exchange of data.

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.
<xsd:annotation>
  <xsd:documentation xml:lang="en">Graphic Interchange Format (GIF) first introduced in 1987 by CompuServe. GIF uses LZW compression and images are limited to 256 colours.</xsd:documentation>
</xsd:annotation>

<xsd:enumeration value="HDF">  
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Hierarchical Data Format</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="HDF4">  
  <xsd:annotation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="HDF5">  
  <xsd:annotation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="HTML">  
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A text file containing structured information represented in the HyperText Mark-up Language (HTML). See <http://www.w3.org/MarkUp/></xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="IDFS">  
  <xsd:annotation>
    <xsd:documentation xml:lang="en">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).</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="IDL">  
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Interactive Data Language (IDL) save set. IDL is a proprietary format.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="JPEG">  
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A binary format for still images defined by the Joint Photographic Experts Group</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="MATLAB_4">  
  <xsd:annotation>
    <xsd:documentation xml:lang="en">MATLAB Workspace save set, version 4. MAT-files are double-precision, binary, MATLAB format files. MATLAB is a proprietary product of The MathWorks.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="MATLAB_6">  
  <xsd:annotation>
    <xsd:documentation xml:lang="en">MATLAB Workspace save set, version 6. MAT-files are double-precision, binary, MATLAB format files. MATLAB is a proprietary product of The MathWorks.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="MATLAB_7">  
  <xsd:annotation>
    <xsd:documentation xml:lang="en">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.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="MPEG">  
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A digital format for movies defined by the Motion Picture Experts Group</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="NCAR">

Unidata Program Center's Network Common Data Form (NetCDF). A self-describing data portable data format for array-oriented data access. See <http://my.unidata.ucar.edu/content/software/netcdf>.

A document expressed in the Portable Document Format (PDF) as defined by Adobe.


A page description programming language created by Adobe Systems Inc. that is a device-independent industry standard for representing text and graphics.

A format for digital movies, as defined by Apple Computer. See <http://developer.apple.com/quicktime>.

ASCII text.

A binary format for still pictures. Tagged Image Format File (TIFF). Originally developed by Aldus and now controlled by Adobe.


A proposed XML standard designed as a flexible storage and exchange format for tabular data.

Simple Type `enumEncoding`

<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>Identifier for unambiguous rules that establishes the representation of information within a file.</td>
</tr>
<tr>
<td>Diagram</td>
<td><img src="" alt="enumEncoding" /></td>
</tr>
<tr>
<td>Type</td>
<td>restriction of xsd:string</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Facets</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>enumeration</td>
<td>ASCII</td>
</tr>
<tr>
<td></td>
<td></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></td>
<td>enumeration</td>
<td>Base64</td>
</tr>
<tr>
<td></td>
<td></td>
<td>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 &quot;*&quot; and &quot;/&quot; symbols, with the &quot;=&quot; symbol as a special suffix (padding) code.</td>
</tr>
<tr>
<td></td>
<td>enumeration</td>
<td>BZIP2</td>
</tr>
<tr>
<td></td>
<td>enumeration</td>
<td>GZIP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>An open standard algorithm distributed by GNU based on LZ77 and Huffman coding. See <a href="http://www.gnu.org/software/gzip/gzip.html">http://www.gnu.org/software/gzip/gzip.html</a> or <a href="http://www.gzip.org/">http://www.gzip.org/</a></td>
</tr>
<tr>
<td></td>
<td>enumeration</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A lack or absence of anything.</td>
</tr>
<tr>
<td></td>
<td>enumeration</td>
<td>TAR</td>
</tr>
<tr>
<td></td>
<td></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></td>
<td>enumeration</td>
<td>Unicode</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Text in multi-byte Unicode format.</td>
</tr>
<tr>
<td></td>
<td>enumeration</td>
<td>ZIP</td>
</tr>
<tr>
<td></td>
<td></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>

<table>
<thead>
<tr>
<th>Used by</th>
<th>Element</th>
<th>Encoding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source</td>
<td><code>&lt;xsd:simpleType name=&quot;enumEncoding&quot;&gt;</code></td>
<td><code>&lt;xsd:annotation&gt;</code></td>
</tr>
<tr>
<td></td>
<td></td>
<td><code>&lt;xsd:documentation xml:lang=&quot;en&quot;&gt;Identifier for unambiguous rules that establishes the representation of information within a file.&lt;/xsd:documentation&gt;</code></td>
</tr>
<tr>
<td></td>
<td></td>
<td><code>&lt;xsd:restriction base=&quot;xsd:string&quot;&gt;</code></td>
</tr>
<tr>
<td></td>
<td></td>
<td><code>&lt;xsd:enumeration value=&quot;ASCII&quot;&gt;</code></td>
</tr>
<tr>
<td></td>
<td></td>
<td><code>&lt;xsd:documentation xml:lang=&quot;en&quot;&gt;A sequence of characters that adheres to American Standard Code for Information Interchange (ASCII) which is a 7-bit character-coding scheme.&lt;/xsd:documentation&gt;</code></td>
</tr>
<tr>
<td></td>
<td></td>
<td><code>&lt;xsd:annotation&gt;</code></td>
</tr>
<tr>
<td></td>
<td></td>
<td><code>&lt;xsd:enumeration value=&quot;Base64&quot;&gt;</code></td>
</tr>
<tr>
<td></td>
<td></td>
<td><code>&lt;xsd:documentation xml:lang=&quot;en&quot;&gt;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),</code></td>
</tr>
</tbody>
</table>

115
and the "+" and "/" symbols, with the "=" symbol as a special suffix (padding) code.

<xsd:enumeration value="BZIP2">
  <xsd:annotation>
  </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="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>
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.

event CoronalMassEjection
A solar event which involves a burst of plasma which is ejected from the Sun into the interplanetary medium.

event EITWave
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.


event EnergeticSolarParticleEvent
An enhancement of interplanetary fluxes of energetic ions accelerated by interplanetary shocks and/or solar flares.

event ForbushDecrease
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 CMEs, that sweep some galactic cosmic rays away from Earth.

event GeomagneticStorm
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.


event InterplanetaryShock
A shock propagating generally antisunward through the slower solar wind, often seen in front of CME-associated plasma clouds.

event MagneticCloud
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.


event MagnetopauseCrossing
A crossing of the interface between the shocked solar wind in the magnetosheath and the magnetic field and plasma in the magnetosphere.


event RadioBurst
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).

**enumeration**

<table>
<thead>
<tr>
<th>Element</th>
<th>PhenomenonType</th>
</tr>
</thead>
<tbody>
<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>Substorm</td>
<td>A process by which plasma in the magnetotail becomes energized at a fast rate.</td>
</tr>
</tbody>
</table>

---

**Source**

```xml
<xsd:simpleType name="enumPhenomenonType">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Identifiers for the characteristics or categorization of an observation. Note: Joe King to provide.</xsd:documentation>
  </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 FLAREs, 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 "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">A solar event which involves a burst of plasma which is ejected from the Sun into the interplanetary medium.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="EITWave">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">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 flares and expand outward at about 1,500 km/s. It usually appears as a slowly moving diffuse wavefront.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
  </xsd:restriction>
</xsd:simpleType>
```
arc of brightening in H-alpha, and may travel for several hundred thousand km.</xsd:documentation>
</xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="EnergeticSolarParticleEvent">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">An enhancement of interplanetary fluxes of energetic ions accelerated by interplanetary shocks and/or solar flares.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="ForbushDecrease">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">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 CMEs, that sweep some galactic cosmic rays away from Earth.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="GeomagneticStorm">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">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.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="InterplanetaryShock">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A shock propagating generally antisunward through the slower solar wind, often seen in front of CME-associated plasma clouds.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="MagneticCloud">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">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.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="MagnetopauseCrossing">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A crossing of the interface between the shocked solar wind in the magnetosheath and the magnetic field and plasma in the magnetosphere.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="RadioBurst">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">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 meter 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).</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="SolarFlare">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">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.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
**Simple Type** enumCoordinateRepresentation

<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></td>
</tr>
<tr>
<td>Diagram</td>
<td>![Diagram]( kadar sahnenin bir parçası )</td>
</tr>
<tr>
<td>Type</td>
<td>restriction of xsd:string</td>
</tr>
<tr>
<td>Facets</td>
<td>enumeration</td>
</tr>
<tr>
<td></td>
<td>enumeration</td>
</tr>
<tr>
<td></td>
<td>enumeration</td>
</tr>
<tr>
<td>Used by</td>
<td>Element</td>
</tr>
</tbody>
</table>
**Simple Type** `enumCoordinateSystemName`  

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

**Annotations**  
Identifiers for coordinate systems in which the position, direction or observation has been expressed.  

**Diagram**  
![Diagram](attachment:enumCoordinateSystemName.png)  

**Type** restriction of `xsd:string`  

<table>
<thead>
<tr>
<th>Facets</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>enumeration</strong> Carrington</td>
<td>A coordinate system which is centered at the Sun and is &quot;fixed&quot; 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.</td>
<td></td>
</tr>
<tr>
<td><strong>enumeration</strong> CGM</td>
<td>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 <a href="http://nssdc.gsfc.nasa.gov/space/cgm/cgmm_des.html">http://nssdc.gsfc.nasa.gov/space/cgm/cgmm_des.html</a></td>
<td></td>
</tr>
<tr>
<td><strong>enumeration</strong> DM</td>
<td>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 <a href="http://cdpp.cnes.fr/00428.pdf">http://cdpp.cnes.fr/00428.pdf</a></td>
<td></td>
</tr>
<tr>
<td><strong>enumeration</strong> 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</td>
<td></td>
</tr>
<tr>
<td><strong>enumeration</strong> 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><strong>enumeration</strong> 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><strong>enumeration</strong> GSEQ</td>
<td>Geocentric Solar Equatorial - A coordinate system where the X axis is from Earth to Sun.</td>
<td></td>
</tr>
<tr>
<td>Enumeration</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>-------------</td>
<td>-------------</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>RAE</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>HGI</td>
<td>Heliographic Carrington Inertial.</td>
<td></td>
</tr>
<tr>
<td>HEE</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>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>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 towards Earths center. In this system, H (total horizontal component) = SQRT (Bx<strong>2 + By</strong>2) and D (declination angle) = arctan (By/Bx)</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 Earths rotation axis. If N is a unit...</td>
<td></td>
</tr>
</tbody>
</table>
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>

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<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>RTN</td>
<td>Radial Tangential Normal. Typically centered at a spacecraft. Used for IMF and plasma Y vectors. R (radial) axis is radially away from the Sun, T (tangential) axis is normal to the plane formed by R and the Sun spin vector, positive in the direction of planetary motion, N (normal) is R x T.</td>
</tr>
<tr>
<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>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>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>SpacecraftOrbitPlane</td>
<td>A coordinate system where X lies in the orbit plane normal to and in the direction of motion of the spacecraft, Z in normal to the orbit plane and Y completes the triad in a right-handed coordinate system.</td>
</tr>
<tr>
<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>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>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>WGS84</td>
<td>The World Geodetic System (WGS) defines a reference frame for the earth, for use in</td>
</tr>
</tbody>
</table>
geodesy and navigation. The WGS84 uses the zero meridian as defined by the Bureau International de l'Heure.

<table>
<thead>
<tr>
<th>Used by</th>
<th>Element</th>
<th>CoordinateSystemName</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source</td>
<td>&lt;xsd:simpleType name=&quot;enumCoordinateSystemName&quot;&gt;</td>
<td>&lt;xsd:documentation xml:lang=&quot;en&quot;&gt;Identifiers for coordinate systems in which the position, direction or observation has been expressed.&lt;/xsd:documentation&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td><a href="">xsd:annotation</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;xsd:documentation xml:lang=&quot;en&quot;&gt;A coordinate system which is centered at the Sun and is &quot;fixed&quot; 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.&lt;/xsd:documentation&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;/xsd:documentation&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;xsd:enumeration value=&quot;Carrington&quot;&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;xsd:documentation xml:lang=&quot;en&quot;&gt;Corrected Geomagnetic - A coordinate system from a spatial point with GEO radial distance and geomagnetic latitude and longitude, follow the epoch-appropriate IGRF/GRF 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 <a href="http://nssdc.gsfc.nasa.gov/space/cgm/cgm_des.html">http://nssdc.gsfc.nasa.gov/space/cgm/cgm_des.html</a> &lt;/xsd:documentation&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;/xsd:enumeration&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;xsd:enumeration value=&quot;CGM&quot;&gt;</td>
</tr>
<tr>
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<td></td>
<td>&lt;xsd:documentation xml:lang=&quot;en&quot;&gt;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 <a href="http://cdpp.cnes.fr/00428.pdf">http://cdpp.cnes.fr/00428.pdf</a> &lt;/xsd:documentation&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;/xsd:enumeration&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;xsd:enumeration value=&quot;GEI&quot;&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;xsd:documentation xml:lang=&quot;en&quot;&gt;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. &lt;/xsd:documentation&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;/xsd:enumeration&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;xsd:enumeration value=&quot;GEO&quot;&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;xsd:documentation xml:lang=&quot;en&quot;&gt;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. &lt;/xsd:documentation&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;/xsd:enumeration&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;xsd:enumeration value=&quot;GSE&quot;&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;xsd:documentation xml:lang=&quot;en&quot;&gt;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. &lt;/xsd:documentation&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;/xsd:enumeration&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;xsd:enumeration value=&quot;GSEQ&quot;&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;xsd:documentation xml:lang=&quot;en&quot;&gt;Geocentric Solar Equatorial - 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. &lt;/xsd:documentation&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;/xsd:enumeration&gt;</td>
</tr>
</tbody>
</table>
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.</xsd:documentation>
</xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="GSM">
<xsd:annotation>
<xsd:documentation xml:lang="en">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</xsd:documentation>
</xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="HAE">
<xsd:annotation>
<xsd:documentation xml:lang="en">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</xsd:documentation>
</xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="HCI">
<xsd:annotation>
<xsd:documentation xml:lang="en">Heliographic Carrington Inertial.</xsd:documentation>
</xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="HEE">
<xsd:annotation>
<xsd:documentation xml:lang="en">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</xsd:documentation>
</xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="HEEQ">
<xsd:annotation>
<xsd:documentation xml:lang="en">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:documentation>
</xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="HG">
<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>
<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="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="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. In this system, 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 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></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="SpacecraftOrbitPlane">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A coordinate system where X lies in the orbit plane normal to and in the direction of motion of the spacecraft, Z in normal to the orbit plane and Y completes the triad in a right-handed coordinate system.</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="WGS84">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">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.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

Simple Type `typeSequence`

**Namespace**: [http://www.spase-group.org/data/schema](http://www.spase-group.org/data/schema)

**Diagram**: ![typeSequence Diagram](attachment:image.png)

**Type**: list of xsd:integer

**Used by**: Elements: Index, Size

**Source**:
```xml
<xsd:simpleType name="typeSequence">
  <xsd:list itemType="xsd:integer"/>
</xsd:simpleType>
```

**Schema location**: file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

Simple Type `enumComponent`

**Namespace**: [http://www.spase-group.org/data/schema](http://www.spase-group.org/data/schema)

**Annotations**: Identifiers for the axis of coordinate systems.

**Diagram**: ![enumComponent Diagram](attachment:image.png)

**Type**: restriction of xsd:string

**Facets**: enumeration Phi

The angle between the meridian of a vector and the zero meridian of the coordinate system in which the vector is expressed. Equivalently, the angle between the projection of a position or measured vector into the X-Y plane and X-axis in the coordinate system in which the vector is expressed. Also referred to as the azimuthal angle or "longitude".

Mathematically:

\[ \Phi = \arctan(y/x) \]
### Schema documentation for spase-1.3.0.xsd

<table>
<thead>
<tr>
<th>enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>R</td>
<td>The component of a vector in the radial direction from the center of the coordinate system.</td>
</tr>
<tr>
<td>Theta</td>
<td>For spatial points, the angular distance from a meridian normal to the equator. Also referred to as the zenith angle or &quot;latitude&quot;. As a &quot;latitude&quot; angles range from +90 to -90 with zero at the equator and positive angles are in the direction designated as &quot;North.&quot; An alternate range of values is often called &quot;co-latitude&quot; where values range from 0 to +180 as measured from the &quot;north&quot; pole. Mathematically: ( \Theta = \arctan(\sqrt{x^2 + y^2}/z) )</td>
</tr>
<tr>
<td>X</td>
<td>The component of a vector along the X-axis in a cartesian coordinate system.</td>
</tr>
<tr>
<td>Y</td>
<td>The component of a vector along the Y-axis in a cartesian coordinate system.</td>
</tr>
<tr>
<td>Z</td>
<td>The component of a vector along the Z-axis in a cartesian coordinate system.</td>
</tr>
</tbody>
</table>

Used by:

<table>
<thead>
<tr>
<th>Source</th>
<th>Element</th>
<th>Component</th>
</tr>
</thead>
</table>

```xml
<xsd:simpleType name="enumComponent">
  <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="Phi">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The angle between the meridian of a vector and the zero meridian of the coordinate system in which the vector is expressed. Equivalently, the angle between the projection of a position or measured vector into the X-Y plane and X-axis in the coordinate system in which the vector is expressed. Also referred to as the azimuthal angle or "longitude". Mathematically: \( \Phi = \arctan(y/x) \).</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="R">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The component of a vector in the radial direction from the center of the coordinate system.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Theta">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">For spatial points, the angular distance from a meridian normal to the equator. Also referred to as the zenith angle or "latitude". As a "latitude" angles range from +90 to -90 with zero at the equator and positive angles are in the direction designated as "North." An alternate range of values is often called "co-latitude" where values range from 0 to +180 as measured from the "north" pole. Mathematically: \( \Theta = \arctan(\sqrt{x^2 + y^2}/z) \).</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="X">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The component of a vector along the X-axis in a cartesian coordinate system.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Y">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The component of a vector along the Y-axis in a cartesian coordinate system.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Z">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The component of a vector along the Z-axis in a cartesian coordinate system.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
  </xsd:restriction>
</xsd:simpleType>
```
Simple Type `enumFieldQualifier`

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

**Annotations**: Identifiers for terms which can be associated with a Field Quantity.

**Diagram**: 

**Type**: restriction of xsd:string

**Facets**:

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

- **enumeration** `Component`:
  A part of a multi-part entity, e.g., the components of a vector.

- **enumeration** `Component.Ph`:
  The angle between the meridian of a vector and the zero meridian of the coordinate system in which the vector is expressed. Equivalently, the angle between the projection of a position or measured vector into the X-Y plane and X-axis in the coordinate system in which the vector is expressed. Also referred to as the azimuthal angle or "longitude". Mathematically: \( \Phi = \arctan(y/x) \)

- **enumeration** `Component.R`:
  The component of a vector in the radial direction from the center of the coordinate system.

- **enumeration** `Component.Z`:
  The component of a vector along the Z-axis in a cartesian coordinate system.

- **enumeration** `CrossSpectrum`:
  The Fourier transform of the cross correlation of two physical or empirical observations.

- **enumeration** `Deviation`:
  The difference between an observed value and the expected value of a quantity.

- **enumeration** `Magnitude`:
  A measure of the strength or size of a vector quantity.

- **enumeration** `Parallel`:
  Having the same direction as a given direction.

- **enumeration** `Peak`:
  The maximum value for the quantity in question, over a period of time which is usually equal to the cadence.

- **enumeration** `Perpendicular`:
  At right angles to a given direction.

- **enumeration** `PhaseAngle`:
  Phase difference between two or more waves,
<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scalar</td>
<td>A quantity that is completely specified by its magnitude and has no direction.</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>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>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>

Used by Element FieldQualifier

Source

<xs:complexType name="enumFieldQualifier">
  <xs:annotation>
    <xs:documentation xml:lang="en">Identifiers for terms which can be associated with a Field Quantity.</xs:documentation>
  </xs:annotation>
  <xs:restriction base="xs:string">
    <xs:enumeration value="Average">
      <xs:annotation>
        <xs:documentation xml:lang="en">The statistical mean; the sum of a set of values divided by the number of values in the set.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="Component">
      <xs:annotation>
        <xs:documentation xml:lang="en">A part of a multi-part entity, e.g., the components of a vector.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="Component.Phi">
      <xs:annotation>
        <xs:documentation xml:lang="en">The angle between the meridian of a vector and the zero meridian of the coordinate system in which the vector is expressed. Equivalently, the angle between the projection of a position or measured vector into the X-Y plane and X-axis in the coordinate system in which the vector is expressed. Also referred to as the azimuthal angle or "longitude". Mathematically: Phi = arctan(y/x)</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="Component.R">
      <xs:annotation>
        <xs:documentation xml:lang="en">The component of a vector in the radial direction from the center of the coordinate system.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="Component.Theta">
      <xs:annotation>
        <xs:documentation xml:lang="en">For spatial points, the angular distance from a meridian normal to the equator. Also referred to as the zenith angle or "latitude". As a "latitude" angles range from +90 to -90 with normally expressed in degrees.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
  </xs:restriction>
</xs:complexType>
zero at the equator and positive angles are in the direction designated as "North." An alternate range of values is often called "co-latitude" where values range from 0 to +180 as measured from the "north" pole. Mathematically: \[ \Theta = \arctan\left(\frac{\sqrt{x^2 + y^2}}{z}\right) \]
<xsd:enumFieldQuantity>
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Identifiers for the physical attribute of the field.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="Current">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The flow of electrons through a conductor caused by a potential difference.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Electric">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The physical attribute that exerts an electrical force.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Electromagnetic">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The physical attribute that is or is caused by a mutual interaction of electric and magnetic fields.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Gyrofrequency">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The frequency with which a charged particle (as an electron) executes spiral gyraations in moving obliquely across a magnetic field</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Magnetic">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The physical attribute attributed to a magnet or its equivalent.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Plasmafrequency">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A field which obeys Laplace's Equation.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Potential">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A field which obeys Laplace's Equation.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="PoyntingFlux">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The rate of energy transport per unit area per steradian.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
  </xsd:restriction>
</xsd:enumFieldQuantity>
caused by a potential difference.</xsd:documentation>
</xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Electric">
  <xsd:annotation>
    <xsd:documentation xml:lang= "en">The physical attribute that exerts an electrical
force.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Electromagnetic">
  <xsd:annotation>
    <xsd:documentation xml:lang= "en">The physical attribute that is or is caused
by a mutual interaction of electric and magnetic
fields.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Gyrofrequency">
  <xsd:annotation>
    <xsd:documentation xml:lang= "en">The frequency with which a charged particle
(as an electron) executes spiral gyrations
in moving obliquely across a magnetic field</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Magnetic">
  <xsd:annotation>
    <xsd:documentation xml:lang= "en">The physical attribute attributed to a magnet
or its equivalent.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Plasmafrequency">
  <xsd:annotation>
    <xsd:documentation xml:lang= "en"></xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Potential">
  <xsd:annotation>
    <xsd:documentation xml:lang= "en">A field which obeys Laplace's Equation.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="PoyntingFlux">
  <xsd:annotation>
    <xsd:documentation xml:lang= "en">The rate of energy transport per unit area
per steradian.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
</xsd:restriction>
</xsd:simpleType>

Schema location  file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

**Simple Type** enumSpectralRange

<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 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 &quot;Total Solar Irradiance&quot; 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.</td>
</tr>
<tr>
<td>Facets</td>
<td>restriction of xsd:string</td>
</tr>
<tr>
<td>enumeration</td>
<td><strong>CaK</strong></td>
</tr>
<tr>
<td>enumeration</td>
<td><strong>ExtremeUltraviolet</strong></td>
</tr>
<tr>
<td>enumeration</td>
<td><strong>GammaRays</strong></td>
</tr>
<tr>
<td>enumeration</td>
<td><strong>Halpha</strong></td>
</tr>
<tr>
<td>Enumerations</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------</td>
</tr>
<tr>
<td>HardXrays</td>
<td>Photons with a wavelength range: 0.001 to 0.1 nm</td>
</tr>
<tr>
<td>He10830</td>
<td>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.</td>
</tr>
<tr>
<td>Infrared</td>
<td>Photons with a wavelength range: 760 to 1.00x10^-6 nm</td>
</tr>
<tr>
<td>K7699</td>
<td>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.</td>
</tr>
<tr>
<td>Microwave</td>
<td>Photons with a wavelength range: 1.00x10^-6 to 1.50x10^-7 nm</td>
</tr>
<tr>
<td>NaD</td>
<td>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.</td>
</tr>
<tr>
<td>Ni6768</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>Optical</td>
<td>Photons with a wavelength range: 380 to 760 nm</td>
</tr>
<tr>
<td>RadioFrequency</td>
<td>Photons with a wavelength range: 100,000 to 1.00x10^11 nm</td>
</tr>
<tr>
<td>Ultraviolet</td>
<td>Photons with a wavelength range: 10 to 400 nm.</td>
</tr>
<tr>
<td>Whitelight</td>
<td>Photons with a wavelength range: 0.001 &lt;= x &lt; 10 nm</td>
</tr>
<tr>
<td>X Rays</td>
<td>Photons with a wavelength range: 0.001 to 10 nm</td>
</tr>
<tr>
<td>ExtremeUltraviolet</td>
<td>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.</td>
</tr>
<tr>
<td>GammaRays</td>
<td>Photons with a wavelength range: 0.00001 to 0.001 nm</td>
</tr>
<tr>
<td>H alpha</td>
<td>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.</td>
</tr>
</tbody>
</table>
<xsd:restriction base="xsd:wsu:Name">
  <xsd:enumeration value="HardXrays">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">Photons with a wavelength range: 0.001 to 0.1 nm</xsd:documentation>
    </xsd:annotation>
  </xsd:enumeration>
  <xsd:enumeration value="HeI0830">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">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:documentation>
    </xsd:annotation>
  </xsd:enumeration>
  <xsd:enumeration value="Infrared">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">Photons with a wavelength range: 760 to 1.00x10^6 nm</xsd:documentation>
    </xsd:annotation>
  </xsd:enumeration>
  <xsd:enumeration value="K7699">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">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.</xsd:documentation>
    </xsd:annotation>
  </xsd:enumeration>
  <xsd:enumeration value="Microwave">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">Photons with a wavelength range: 1.00x10^6 to 1.50x10^7 nm</xsd:documentation>
    </xsd:annotation>
  </xsd:enumeration>
  <xsd:enumeration value="Optical">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">Photons with a wavelength range: 380 to 760 nm</xsd:documentation>
    </xsd:annotation>
  </xsd:enumeration>
  <xsd:enumeration value="RadioFrequency">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">Photons with a wavelength range: 100,000 to 1.00x10^11 nm</xsd:documentation>
    </xsd:annotation>
  </xsd:enumeration>
  <xsd:enumeration value="Ultraviolet">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">Photons with a wavelength range: 10 to 400 nm.</xsd:documentation>
    </xsd:annotation>
  </xsd:enumeration>
  <xsd:enumeration value="Whitelight">
    <xsd:annotation>
      <xsd:documentation xml:lang="en"></xsd:documentation>
    </xsd:annotation>
  </xsd:enumeration>
  <xsd:enumeration value="XRays">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">Photons with a wavelength range: 0.001 <= x < 10 nm</xsd:documentation>
    </xsd:annotation>
  </xsd:enumeration>
</xsd:restriction>
### Simple Type `enumParticleType`

<table>
<thead>
<tr>
<th>Facets</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>Aerosol</code></td>
<td>A suspension of fine solid or liquid particles in gas.</td>
</tr>
<tr>
<td><code>AlphaParticle</code></td>
<td>A positively charged nuclear particle that consists of two protons and two neutrons.</td>
</tr>
<tr>
<td><code>Dust</code></td>
<td>Free microscopic particles of solid material.</td>
</tr>
<tr>
<td><code>Electron</code></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><code>Ion</code></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><code>Molecule</code></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><code>Neutral</code></td>
<td>Either a particle, an object, or a system that has a net electric charge of zero.</td>
</tr>
<tr>
<td><code>Proton</code></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>

#### Source
```xml
<xs:simpleType name="enumParticleType">
    <xs:annotation>
        <xs:documentation xml:lang="en">Identifiers for the characterization of the kind of particle observed by the measurement.</xs:documentation>
    </xs:annotation>
    <xs:restriction base="xs:string">
        <xs:enumeration value="Aerosol">
            <xs:annotation>
                <xs:documentation xml:lang="en">A suspension of fine solid or liquid particles in gas.</xs:documentation>
            </xs:annotation>
        </xs:enumeration>
        <xs:enumeration value="AlphaParticle">
            <xs:annotation>
                <xs:documentation xml:lang="en">A positively charged nuclear particle that consists of two protons and two neutrons.</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="Electron">
            <xs:annotation>
                <xs: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.</xs:documentation>
            </xs:annotation>
        </xs:enumeration>
        <xs:enumeration value="Ion">
            <xs:annotation>
                <xs:documentation xml:lang="en">An atom that has acquired a net electric charge by gaining or losing one or more electrons. (Note: $Z>2$) </xs:documentation>
            </xs:annotation>
        </xs:enumeration>
        <xs:enumeration value="Molecule">
            <xs:annotation>
                <xs: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.</xs:documentation>
            </xs:annotation>
        </xs:enumeration>
        <xs:enumeration value="Neutral">
            <xs:annotation>
                <xs:documentation xml:lang="en">Either a particle, an object, or a system that has a net electric charge of zero.</xs:documentation>
            </xs:annotation>
        </xs:enumeration>
        <xs:enumeration value="Proton">
            <xs:annotation>
                <xs: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.</xs:documentation>
            </xs:annotation>
        </xs:enumeration>
    </xs:restriction>
</xs:simpleType>
```
by gaining or losing one or more electrons. (Note: Z > 2).

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.

Either a particle, an object, or a system that has a net electric charge of zero.

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.

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.

Identifiers for terms which can be associated with a Particle Quantity.

<table>
<thead>
<tr>
<th>Facets</th>
<th>Anisotropy</th>
<th>Average</th>
<th>Characteristic</th>
<th>Component</th>
<th>Component.Phi</th>
<th>Component.R</th>
<th>Component.Theta</th>
</tr>
</thead>
<tbody>
<tr>
<td>enumeration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>The angle between the meridian of a vector and the zero meridian of the coordinate system in which the vector is expressed. Equivalently, the angle between the projection of a position or measured vector into the X-Y plane and X-axis in the coordinate system in which the vector is expressed. Also referred to as the azimuthal angle or &quot;longitude&quot;. Mathematically: ( \Phi = \arctan(y/x) )</td>
<td>The component of a vector in the radial direction from the center of the coordinate system.</td>
<td>For spatial points, the angular distance from a meridian normal to the equator. Also referred to as the zenith angle or &quot;latitude&quot;. As a &quot;latitude&quot; angles range from +90 to -90 with zero at the equator and positive angles are in the direction designated as &quot;North.&quot; An alternate range of values is often called &quot;co-latitude&quot; where values range from 0 to 90.</td>
</tr>
</tbody>
</table>
+180 as measured from the "north" pole. Mathematically:
\[ \Theta = \arctan\left(\sqrt{x^2 + y^2}\right)/z \]

**enumeration** Component.X
The component of a vector along the X-axis in a cartesian coordinate system.

**enumeration** Component.Y
The component of a vector along the Y-axis in a cartesian coordinate system.

**enumeration** Component.Z
The component of a vector along the Z-axis in a cartesian coordinate system.

**enumeration** Deviation
The difference between an observed value and the expected value of a quantity.

**enumeration** Differential
A flux measurement within a given energy and solid-angle range.

**enumeration** Fit
Values that make a model agree with the data.

**enumeration** Integral
The summation of values above a given threshold and over area or solid-angle range.

**enumeration** Magnitude
A measure of the strength or size of a vector quantity.

**enumeration** Moment
Parameters determined by integration over a distribution function convolved with a power of velocity.

**enumeration** Parallel
Having the same direction as a given direction.

**enumeration** Peak
The maximum value for the quantity in question, over a period of time which is usually equal to the cadence.

**enumeration** Perpendicular
At right angles to a given direction.

**enumeration** Ratio
The relative magnitudes of two quantities.

**enumeration** Scalar
A quantity that is completely specified by its magnitude and has no direction.

**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** 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** 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).
<xsd:enumeration value="Anisotropy">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Direction-dependent property.</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="Component">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A part of a multi-part entity, e.g., the components of a vector.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Component.Phi">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The angle between the meridian of a vector and the zero meridian of the coordinate system in which the vector is expressed. Equivalently, the angle between the projection of a position or measured vector into the X-Y plane and X-axis in the coordinate system in which the vector is expressed. Also referred to as the azimuthal angle or "longitude". Mathematically: Phi = arctan(y/x)</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Component.R">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The component of a vector in the radial direction from the center of the coordinate system.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Component.Theta">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">For spatial points, the angular distance from a meridian normal to the equator. Also referred to as the zenith angle or "latitude". As a "latitude" angles range from +90 to -90 with zero at the equator and positive angles are in the direction designated as "North." An alternate range of values is often called "co-latitude" where values range from 0 to +180 as measured from the "north" pole. Mathematically: Theta = arctan(sqrt(x^2 + y^2)/z)</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Component.X">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The component of a vector along the X-axis in a cartesian coordinate system.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Component.Y">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The component of a vector along the Y-axis in a cartesian coordinate system.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Component.Z">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The component of a vector along the Z-axis in a cartesian coordinate system.</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">
A flux measurement within a given energy and solid-angle range.

Values that make a model agree with the data.

The summation of values above a given threshold and over area or solid-angle range.

A measure of the strength or size of a vector quantity.

Parameters determined by integration over a distribution function convolved with a power of velocity.

Having the same direction as a given direction.

The maximum value for the quantity in question, over a period of time which is usually equal to the cadence.

At right angles to a given direction.

The relative magnitudes of two quantities.

A quantity that is completely specified by its magnitude and has no direction.

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.

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.

A statistically defined discrepancy between a measured quantity and the true value of that quantity that cannot be corrected by calculation or calibration.
### Schema documentation for spase-1_3_0.xsd

Simple Type `enumParticleQuantity`

<table>
<thead>
<tr>
<th>Facets</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>enumeration AlfvenMachNumber</td>
<td>The ratio of the bulk flow speed to the Alfven speed.</td>
</tr>
<tr>
<td>enumeration AverageChargeState</td>
<td>A measure of the composite deficit (positive) or excess (negative) of electrons with respect to protons.</td>
</tr>
<tr>
<td>enumeration Counts</td>
<td>An enumeration of the number of detection events occurring in a particle detector per unit time or over detector accumulation times.</td>
</tr>
<tr>
<td>enumeration 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>enumeration EnergyDensity</td>
<td>The amount of energy per unit volume.</td>
</tr>
<tr>
<td>enumeration EnergyFlux</td>
<td>The amount of energy passing through a unit area in a unit time.</td>
</tr>
<tr>
<td>enumeration FlowSpeed</td>
<td>The rate at which particles or energy is passing through a unit area in a unit time.</td>
</tr>
<tr>
<td>enumeration Gyrofrequency</td>
<td>The frequency with which a charged particle (as an electron) executes spiral gyrations in moving obliquely across a magnetic field.</td>
</tr>
<tr>
<td>enumeration 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>enumeration Mass</td>
<td>The measure of inertia (mass) of individual objects (e.g., aerosols).</td>
</tr>
<tr>
<td>enumeration MassDensity</td>
<td>The mass of particles per unit volume.</td>
</tr>
<tr>
<td>enumeration NumberDensity</td>
<td>The number of particles per unit volume.</td>
</tr>
<tr>
<td>enumeration NumberFlux</td>
<td>The number of particles passing through a unit area in a unit time.</td>
</tr>
<tr>
<td>enumeration PhaseSpaceDensity</td>
<td>The number of particles per unit volume in the six-dimensional space of position and velocity.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------</td>
<td>------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>PlasmaBeta</td>
<td>The ratio of the plasma pressure to the magnetic pressure.</td>
</tr>
<tr>
<td>PlasmaFrequency</td>
<td></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>Temperature</td>
<td>A measure of the kinetic energy of random motion with respect to the average.</td>
</tr>
<tr>
<td>Temperature</td>
<td>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, also referred to as &quot;bulk velocity&quot;.</td>
</tr>
</tbody>
</table>

Used by: Element ParticleQuantity

Source

```xml
<xsd:simpleType name="enumParticleQuantity">
  <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="AlfvenMachNumber">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The ratio of the bulk flow speed to the Alfven speed.</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="Counts">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">An enumeration of the number of detection events occurring in a particle detector per unit time or over detector accumulation times.</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:restriction>
</xsd:simpleType>
```
<xsd:enumeration value="Gyrofrequency">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The frequency with which a charged particle (as an electron) executes spiral gyrations in moving obliquely across a magnetic field.</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="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 through a unit area in a unit time.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="PhaseSpaceDensity">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The number of particles per unit volume in the six-dimensional space of position and velocity.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="PlasmaBeta">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The ratio of the plasma pressure to the magnetic pressure.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Plasmafrequency">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The plasma frequency.</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="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
</xsd:enumeration>
of the speed distribution occur.</xsd:documentation>
</xsd:annotation>
</xsd:enumeration>
</xsd:restriction>
</xsd:simpleType>

Schema documentation for spase-1_3_0.xsd

Simple Type enumPhotonQualifier

<table>
<thead>
<tr>
<th>Facets</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>enumeration</td>
<td>Average</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>enumeration</td>
<td>Circular</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 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>LineOfSight</td>
</tr>
<tr>
<td></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>
</tr>
<tr>
<td></td>
<td>Relative to polarization, confinement of the E-field vector to a given plane</td>
</tr>
<tr>
<td>enumeration</td>
<td>Peak</td>
</tr>
<tr>
<td></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>Scalar</td>
</tr>
<tr>
<td></td>
<td>A quantity that is completely specified by its magnitude and has no direction.</td>
</tr>
<tr>
<td>enumeration</td>
<td>StandardDeviation</td>
</tr>
<tr>
<td></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>enumeration</td>
<td>StokesParameters</td>
</tr>
<tr>
<td></td>
<td>The four coordinates (usually called I, Q, U, and V) relative to a particular basis for the representation of the polarization state of an electromagnetic wave propagating through space.</td>
</tr>
</tbody>
</table>
Uncertainty

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

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.

 enumerations

<table>
<thead>
<tr>
<th>Uncertainty</th>
<th>A statistically defined discrepancy between a measured quantity and the true value of that quantity that cannot be corrected by calculation or calibration.</th>
</tr>
</thead>
<tbody>
<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>
</tbody>
</table>

Used by

Element

PhotonQualifier

Source

<xsd:simpleType name="enumPhotonQualifier">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Identifiers for terms which can be associated with a Photon Quantity.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <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="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="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">Relative to polarization, confinement of the E-field vector to a given plane</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="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="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 quantity that is completely specified by its magnitude and has no direction.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
  </xsd:restriction>
</xsd:simpleType>
The four coordinates (usually called I, Q, U, and V) relative to a particular basis for the representation of the polarization state of an electromagnetic wave propagating through space.

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

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

Identifiers for the characterization of the physical properties of the photon.

The ratio of radiant energy from a material to that from a blackbody at the same kinetic temperature.

The amount of energy passing through a unit area in a unit time.

The area of the spectral line profile divided by the peak height or depth.

The frequency with which a charged particle (as an electron) executes spiral gyrations in moving obliquely across a magnetic field.

In spectra, a measure of the amount of absorption for a particular wavelength or frequency in the spectrum.

Measurements of magnetic field vectors (sometimes not all components) as time series; can be space- or ground-based. Also, [Zeeman splitting, etc. based]; A region of space near a magnetized body where magnetic forces can be detected [as measured by methods such as Zeeman splitting, etc.]

In helioseismology the magnitude of oscillation of waves of a particular geometry.

The frequency with which a plasma oscillates.

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.
The four coordinates (usually called I, Q, U, and V) relative to a particular basis for the representation of the polarization state of an electromagnetic wave propagating through space.

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 PhotonQuantity

*Source*

```xml
<xsd:simpleType name="enumPhotonQuantity">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Identifiers for the characterization of the physical properties of the photon.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="Emissivity">
      <xsd:documentation xml:lang="en">The ratio of radiant energy from a material to that from a blackbody at the same kinetic temperature.</xsd:documentation>
    </xsd:enumeration>
    <xsd:enumeration value="EnergyFlux">
      <xsd:documentation xml:lang="en">The amount of energy passing through a unit area in a unit time.</xsd:documentation>
    </xsd:enumeration>
    <xsd:enumeration value="EquivalentWidth">
      <xsd:documentation xml:lang="en">The area of the spectral line profile divided by the peak height or depth.</xsd:documentation>
    </xsd:enumeration>
    <xsd:enumeration value="Gyrofrequency">
      <xsd:documentation xml:lang="en">The frequency with which a charged particle (as an electron) executes spiral gyrations in moving obliquely across a magnetic field.</xsd:documentation>
    </xsd:enumeration>
    <xsd:enumeration value="LineDepth">
      <xsd:documentation xml:lang="en">In spectra, a measure of the amount of absorption for a particular wavelength or frequency in the spectrum.</xsd:documentation>
    </xsd:enumeration>
    <xsd:enumeration value="MagneticField">
      <xsd:documentation xml:lang="en">Measurements of magnetic field vectors (sometimes not all components) as time series; can be space- or ground-based. Also, [Zeeman splitting, etc. based]: 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:enumeration>
    <xsd:enumeration value="ModeAmplitude">
      <xsd:documentation xml:lang="en">In helioseismology the magnitude of oscillation of waves of a particular geometry.</xsd:documentation>
    </xsd:enumeration>
    <xsd:enumeration value="PlasmaFrequency">
      <xsd:documentation xml:lang="en">The frequency with which a plasma oscillates.</xsd:documentation>
    </xsd:enumeration>
    <xsd:enumeration value="Polarization">
      <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="StokesParameters">
<xsd: annotation>
<xsd: documentation xml:lang="en">The four coordinates (usually called I, Q, U, and V) relative to a particular basis for the representation of the polarization state of an electromagnetic wave propagating through space.</xsd: documentation>
</xsd: annotation>
</xsd: enumeration>
</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>

Schema location file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

Simple Type enumSupportQuantity

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 coincidently with a physical observation.

Diagram

Type restriction of xsd:string

Facets

<table>
<thead>
<tr>
<th>enumeration</th>
<th>Other</th>
<th>Values, such as flags, that are not time tags, location data or measured or derived parameters.</th>
</tr>
</thead>
<tbody>
<tr>
<td>enumeration</td>
<td>Positional</td>
<td>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.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Temporal</td>
<td>Pertaining to time.</td>
</tr>
</tbody>
</table>

Used by

Source

Element SupportQuantity

```xml
<xsds:simpleType name="enumSupportQuantity">
  <xsds:annotation>
    <xsds: documentation xml:lang="en">Identifiers for the information useful in understanding the context of an observation, typically observed or measured coincidently with a physical observation.</xsds: documentation>
  </xsds: annotation>
  <xsds: restriction base="xsd:string">
    <xsds: enumeration value="Other">
      <xsds: annotation>
        <xsds: documentation xml:lang="en">Values, such as flags, that are not time tags, location data or measured or derived parameters.</xsds: documentation>
      </xsds: annotation>
    </xsds: enumeration>
    <xsds: enumeration value="Positional">
      <xsds: annotation>
        <xsds: 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.</xsds: documentation>
      </xsds: annotation>
    </xsds: enumeration>
    <xsds: enumeration value="Temporal">
      <xsds: annotation>
        <xsds: documentation xml:lang="en">Pertaining to time.</xsds: documentation>
      </xsds: annotation>
    </xsds: enumeration>
  </xsds: restriction>
</xsds:simpleType>
```
Simple Type enumProcessingLevel

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

Facets

Calibrated Data wherein sensor outputs have been convolved with instrument response function, often irreversibly, to yield physical parameter values.

Raw

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.

Used by Element ProcessingLevel

Source

Simple Type enumMeasurementType

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

Annotations Identifiers for the method of making an estimated value of a quantity that forms the basis of an observation.

Diagram

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.

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ChargedParticleFlux</td>
<td>Measurements of fluxes of charged or ionized particles at above thermal energies, including relativistic particles of solar and galactic origin. May give simple fluxes, but more complete distributions are sometimes possible. Composition measurements may also be made.</td>
</tr>
<tr>
<td>Dopplergram</td>
<td>A map or image depicting the spatial distribution of line-of-sight velocities of the observed object.</td>
</tr>
<tr>
<td>ElectricField</td>
<td>Measurements of electric field vectors (sometimes not all components) as a time series.</td>
</tr>
<tr>
<td>EnergeticParticles</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>Ephemeris</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>ImageIntensity</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>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>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. The SI unit of irradiance is watts per square meter (W·m⁻²).</td>
</tr>
<tr>
<td>MagneticField</td>
<td>Measurements of magnetic field vectors (sometimes not all components) as time series; can be space- or ground-based. Also, [Zeeman splitting, etc. based]; 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. (<em>Magnetogram.</em>)</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.</td>
</tr>
<tr>
<td>NeutralGas</td>
<td>Measurements of neutral atomic and molecular</td>
</tr>
</tbody>
</table>

150
components of a gas.

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>MeasurementType</th>
</tr>
</thead>
<tbody>
<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 describe 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. The SI unit of radiance is watts per steradian per square meter (W·sr⁻¹·m⁻²).</td>
</tr>
<tr>
<td>RadioandPlasmaWaves</td>
<td>Measurements of electric and/or magnetic fields using electric or magnetic antennas at frequencies anywhere between the spacecraft spin frequency and the characteristic frequencies of the ambient plasma. The output can be waveform, power spectral density, or other statistical parameters.</td>
</tr>
<tr>
<td>RadioSoundings</td>
<td>Measurements of plasma density, magnetic field and possibly other parameters of the space environment by active probing of the plasma by radio waves.</td>
</tr>
<tr>
<td>Spectrum</td>
<td>A three-dimensional representation of successive spectra which allows time evolution to be clearly seen. Time is plotted along the abscissa, frequency (or particle energy) along the ordinate, and the spectral power density (or differential particle flux) is represented by different shades of grey, or color. This representation is also known as a spectrogram.</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>
</tbody>
</table>

Used by

<table>
<thead>
<tr>
<th>Element</th>
<th>MeasurementType</th>
</tr>
</thead>
</table>
| Source  | <xsd:simpleType name="enumMeasurementType">  
  <xsd:annotation>  
  <xsd:documentation xml:lang="en">Identifiers for the method of making an estimated value of a quantity that forms the basis of an observaton.</xsd:documentation>  
  </xsd:annotation>  
  <xsd:restriction base="xsd:string">  
    <xsd:enumeration value="ActivityIndex">  
      <xsd:annotation>  
        <xsd: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.</xsd:documentation>  
        </xsd:annotation>  
      </xsd:enumeration>  
    <xsd:enumeration value="ChargedParticleFlux">  
      <xsd:annotation>  
        <xsd:documentation xml:lang="en">Measurements of fluxes of charged or ionized particles at above thermal energies, including relativistic particles of solar and galactic origin. May give simple fluxes, but more complete  
        </xsd:annotation>  
      </xsd:enumeration>  
  </xsd:restriction>  
</xsd:simpleType> |
distributions are sometimes possible. Composition measurements may also be made.

- **Dopplergram**
  - A map or image depicting the spatial distribution of line-of-sight velocities of the observed object.

- **ElectricField**
  - Measurements of electric field vectors (sometimes not all components) as a time series.

- **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.

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  - A quantity directly related to the operation or function of an instrument.

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  - Measurements of magnetic field vectors (sometimes not all components) as time series; can be space- or ground-based. Also, [Zeeman splitting, etc. based]: A region of space near a magnetized body where magnetic forces can be detected [as measured by methods such as Zeeman splitting, etc.].

- **Magnetogram**
  - 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.</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 describe 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. The SI unit of radiance is watts per steradian per square meter (W·sr⁻¹·m⁻²).</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="RadioandPlasmaWaves">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Measurements of electric and/or magnetic fields using electric or magnetic antennas at frequencies anywhere between the spacecraft spin frequency and the characteristic frequencies of the ambient plasma. The output can be waveform, power spectral density, or other statistical parameters.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="RadioSoundings">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Measurements of plasma density, magnetic field and possibly other parameters of the space environment by active probing of the plasma by radio waves.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Spectrum">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A three-dimensional representation of successive spectra which allows time evolution to be clearly seen. Time is plotted along the abscissa, frequency (or particle energy) along the ordinate, and the spectral power density (or differential particle flux) is represented by different shades of grey, or color. This representation is also known as a spectrogram.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Thermal Plasma">
  <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:restriction>
</xsd:simpleType>
# Simple Type `enumRegion`

<table>
<thead>
<tr>
<th>Annotation Type</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>Annotations</td>
<td>Identifiers for areas of the physical world which may be occupied or observed.</td>
</tr>
</tbody>
</table>

## Diagram

![Diagram of `enumRegion`]

## Type

- `restriction of xsd:string`

### Facets

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>Asteroid</code></td>
<td>A small extraterrestrial body consisting mostly of rock and metal that is in orbit around the sun.</td>
</tr>
<tr>
<td><code>Comet</code></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>Earth</code></td>
<td>The third planet from the sun in our solar system.</td>
</tr>
<tr>
<td><code>Earth.Magnetosheath</code></td>
<td>The region between the bow shock and the magnetopause, characterized by very turbulent plasma.</td>
</tr>
<tr>
<td><code>Earth.Magnetosphere</code></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 planets magnetic field.</td>
</tr>
<tr>
<td><code>Earth.Magnetosphere.Magnetotail</code></td>
<td>The region on the night side of the body where the magnetic filed 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>Earth.Magnetosphere.Main</code></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>Earth.Magnetosphere.Polar</code></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>Earth.Magnetosphere.RadiationBelt</code></td>
<td>The region within a magnetosphere where high-energy particles could potentially be trapped in a magnetic field.</td>
</tr>
<tr>
<td><code>Earth.NearSurface</code></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>Earth.NearSurface.Atmosphere</code></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>Earth.NearSurface.AuroralRegion</code></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><code>Earth.NearSurface.EquatorialRegion</code></td>
<td>The atmospheric 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><code>Earth.NearSurface.Ionosphere</code></td>
<td>The region centered on the equator in latitude by approximately 23 degrees north and south of the equator.</td>
</tr>
</tbody>
</table>

## Additional Notes

- `enumRegion` is an enumeration type that restricts `xsd:string` values to a predefined set of regions.
- Each region is defined with a unique identifier and a detailed description.
<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earth.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>Earth.NearSurface.Ionosphere.FRegion</td>
<td>A layer that contains ionized gases at a height of around 150 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>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>The region where 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 layer of the atmosphere that extends from the Mesosphere to 640+ km, temperature increasing with height.</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.Inner</td>
<td>The region of the heliosphere extending radially out from the &quot;surface&quot; of the Sun to 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 from, but not including, 1 AU to the farthest extent of...</td>
</tr>
</tbody>
</table>
the heliosphere (heliopause).

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heliosphere.Remote1AU</td>
<td>The heliospheric region near the Earth's orbit, but exclusive of the region near the Earth.</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 fourth 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>

Used by Elements: ObservatoryRegion, ObservedRegion

Source

```xml
<xs:simpleType name="enumRegion">
  <xs:annotation>
    <xs:documentation xml:lang="en">Identifiers for areas of the physical world which may be occupied or observed.</xs:documentation>
  </xs:annotation>
  <xs:restriction base="xsd:string">
    <xs:enumeration value="Asteroid">
      <xs:annotation>
        <xs:documentation xml:lang="en">A small extraterrestrial body consisting mostly of rock and metal that is in orbit around the sun.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="Comet">
      <xs:annotation>
        <xs:documentation xml:lang="en">A relatively small extraterrestrial body consisting of a frozen mass that travels around the sun in a highly elliptical orbit.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="Earth">
      <xs:annotation>
      </xs:annotation>
    </xs:enumeration>
  </xs:restriction>
</xs:simpleType>
```
<xsd:documentation xml:lang="en">The third planet from the sun in our solar system.</xsd:documentation>
</xsd:annotation>
<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.NearSurface">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">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.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Earth.NearSurface.Atmosphere">
  <xsd:annotation>
    <xsd: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.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Earth.NearSurface.AuroralRegion">
  <xsd:annotation>
    <xsd: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.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Earth.NearSurface.EquatorialRegion">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A region centered on the equator and limited in latitude by approximately 23 degrees north and south of the equator.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Earth.NearSurface.Ionosphere">
  <xsd:annotation>
    <xsd: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.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Earth.NearSurface.Ionosphere.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="Earth.NearSurface.Ionosphere.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="Earth.NearSurface.Ionosphere.Topside">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The region at the uppermost areas of the ionosphere.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Earth.NearSurface.Mesosphere">
  <xsd:annotation>
    <xsd: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.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Earth.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="Earth.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="Earth.NearSurface.SouthAtlanticAnomalyRegion">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The region where 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="Earth.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="Earth.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="Earth.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="Earth.Surface">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">The outermost area of a solid object.</xsd:documentation>
    </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Heliosphere">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">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.</xsd:documentation>
    </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Heliosphere.Inner">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">The region of the heliosphere extending radially out from the "surface" of the Sun to 1 AU.</xsd:documentation>
    </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Heliosphere.NearEarth">
    <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="Heliosphere.Outer">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">The region of the heliosphere from, but not including, 1 AU to the farthest extent of the heliosphere (heliopause).</xsd:documentation>
    </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Heliosphere.Remote1AU">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">The heliospheric region near the Earth's orbit, but exclusive of the region near the Earth.</xsd:documentation>
    </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Jupiter">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">The fifth planet from the sun in our solar system.</xsd:documentation>
    </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Mars">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">The forth planet from the sun in our solar system.</xsd:documentation>
    </xsd:annotation>
</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:documentation xml:lang="en">The sixth planet from the sun in our solar system.</xsd:documentation>
</xsd:enumeration>
<xsd:enumeration value="Saturn">
  <xsd:documentation xml:lang="en">The star upon which our solar system is centered.</xsd:documentation>
</xsd:enumeration>
<xsd:enumeration value="Sun.Chromosphere">
  <xsd:documentation xml:lang="en">The region of the Sun'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:enumeration>
<xsd:enumeration value="Sun.Corona">
  <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:enumeration>
<xsd:enumeration value="Sun.Interior">
  <xsd:documentation xml:lang="en">The region inside the body which is not visible from outside the body.</xsd:documentation>
</xsd:enumeration>
<xsd:enumeration value="Sun.Photosphere">
  <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:enumeration>
<xsd:enumeration value="Sun.TransitionRegion">
  <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:enumeration>
<xsd:enumeration value="Uranus">
  <xsd:documentation xml:lang="en">The eighth planet from the sun in our solar system.</xsd:documentation>
</xsd:enumeration>
<xsd:enumeration value="Venus">
  <xsd:documentation xml:lang="en">The second planet from the sun in our solar system.</xsd:documentation>
</xsd:restriction>
</xsd:simpleType>

Schema location file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

**Simple Type** `enumDocumentType`

<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 characterization of the content or purpose of a document.</td>
</tr>
</tbody>
</table>
Diagram

Type restriction of xsd:string

Facets enumeration Paper A formal presentation of an idea or discovery typically more than a few pages in length.

Used by Element DocumentType

Source

Schema location file:/var/www/spase/site/root/data/schema/spase-1_3_0.xsd

Simple Type enumHashFunction

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 enumeration MD5 Message Digest 5 (MD5) is a 128-bit message digest algorithm created in 1991 by Professor Ronald Rivest.

enumeration SHA1 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.

enumeration SHA256 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.

Used by Element HashFunction

Source

<xs:simpleType name="enumHashFunction">
  <xs:annotation>
    <xs:documentation xml:lang="en">Identifiers for functions or algorithms that convert a digital data object into a hash value.</xs:documentation>
  </xs:annotation>
  <xs:restriction base="xsd:string">
    <xs:enumeration value="MD5">
      <xs:annotation>
        <xs:documentation xml:lang="en">Message Digest 5 (MD5) is a 128-bit message digest algorithm created in 1991 by Professor Ronald Rivest.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="SHA1">
      <xs:annotation>
        <xs: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.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="SHA256">
      <xs:annotation>
        <xs: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.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
  </xs:restriction>
</xs:simpleType>
### Schema documentation for spase-1_3_0.xsd

digest algorithm developed by the NSA and described in Federal Information Processing Standard (FIPS) publication 180-1.</xsd:documentation>

### Simple Type `enumInstrumentType`

<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 type of experiment the instrument performs. This is the technique of observation.</td>
</tr>
<tr>
<td>Diagram</td>
<td><img src="" alt="enumInstrumentType" /></td>
</tr>
<tr>
<td>Type</td>
<td>restriction of xsd:string</td>
</tr>
<tr>
<td>Facets</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>enumeration</th>
<th>Antenna</th>
<th>A sensor used to measure electric potential.</th>
</tr>
</thead>
<tbody>
<tr>
<td>enumeration</td>
<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>enumeration</td>
<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>enumeration</td>
<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>enumeration</td>
<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>enumeration</td>
<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>enumeration</td>
<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>enumeration</td>
<td>Ephemeris</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</td>
<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>enumeration</td>
<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 collocated coil with a signal from the preamplifier.</td>
</tr>
<tr>
<td>enumeration</td>
<td>FourierTransformSpectrograph</td>
<td>An instrument that determines the spectra of a radiative source, using time-domain measurements.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>-----------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>GeigerMuellerTube</td>
<td>An instrument which measures density of ionizing radiation based on interactions with a gas.</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>
<td></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>
<td></td>
</tr>
<tr>
<td>Interferometer</td>
<td>An instrument which measures the difference between two or more waves.</td>
<td></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>
<td></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>
<td></td>
</tr>
<tr>
<td>Magnetometer</td>
<td>An instrument which measures the ambient magnetic field.</td>
<td></td>
</tr>
<tr>
<td>MassSpectrometer</td>
<td>An instrument which distinguishes chemical species in terms of their different isotopic masses.</td>
<td></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>
<td></td>
</tr>
<tr>
<td>MultispectralImager</td>
<td>An instrument which captures images at multiple spectral ranges.</td>
<td></td>
</tr>
<tr>
<td>NeutralAtomImager</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>
<td></td>
</tr>
<tr>
<td>ParticleCorrelator</td>
<td>An instrument which correlates particle flux to help identify wave/particle interactions.</td>
<td></td>
</tr>
<tr>
<td>ParticleDetector</td>
<td>An instrument which measures the strength of electromagnetic radiation in the range from ultraviolet to infrared and including the visible spectrum.</td>
<td></td>
</tr>
<tr>
<td>Photometer</td>
<td>An instrument which measures energy of ionization radiation based on interactions with a gas.</td>
<td></td>
</tr>
<tr>
<td>Photopolarimeter</td>
<td>An instrument used for the 3-D detection of plasma, energetic electrons and ions, and for positive-ion composition measurements.</td>
<td></td>
</tr>
<tr>
<td>ProportionalCounter</td>
<td>An instrument which measures energy of ionization radiation based on interactions with a gas.</td>
<td></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>
<td></td>
</tr>
<tr>
<td>Radiometer</td>
<td>An instrument for detecting or measuring radiant energy. Radiometers are commonly limited to and a Fourier transform.</td>
<td></td>
</tr>
<tr>
<td>InstrumentType</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td></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>
<td></td>
</tr>
<tr>
<td>RetardingPotentialAnalyser</td>
<td>An instrument which measures 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>
<td></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>
<td></td>
</tr>
<tr>
<td>ScintillationDetector</td>
<td>An instrument which detects the resonances of a material which is excited by high energy (ionizing) electromagnetic or charged particle radiation.</td>
<td></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>
<td></td>
</tr>
<tr>
<td>Sounder</td>
<td>An instrument which measures the radiance from an object. A sounder may measure radiances at multiple spectral ranges.</td>
<td></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>
<td></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>
<td></td>
</tr>
<tr>
<td>Spectrometer</td>
<td>An instrument that measures the component wavelengths of light or other electromagnetic radiation into its component wavelengths.</td>
<td></td>
</tr>
<tr>
<td>Timeofflight</td>
<td>A value which is not provided.</td>
<td></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>
<td></td>
</tr>
</tbody>
</table>

**Source**

```xml
<xsd:simpleType name="enumInstrumentType">  
  <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">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.
  </xsd:restriction>
</xsd:simpleType>
```
typically used in electron spectroscopy and mass spectrometry. 

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.

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.

An instrument which uses charged plates to analyze the mass, charge and kinetic energies of charged particles which enter the instrument.

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.

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.

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.

An instrument that determines the spectra of a radiative source, using time-domain measurements and a Fourier transform.

An instrument which measures density of ionizing radiation based on interactions with a gas.
An instrument which samples the radiation from an area at one or more spectral ranges emitted or reflected by an object.

An instrument which is a multispectral scanner with a very large number of channels (64-256 channels) with very narrow band widths.

An instrument which measures the difference between two or more waves.

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.

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.

An instrument which measures the ambient magnetic field.

An instrument which distinguishes chemical species in terms of their different isotopic masses.

An instrument used for the detection of elementary particles, ions, ultraviolet rays and soft X-rays constructed from very thin conductive glass capillaries.

An instrument which captures images at multiple spectral ranges.

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 correlates particle flux to help identify wave/particle interactions.

An instrument which measures the radiation from an area at one or more spectral ranges emitted or reflected by an object.
<xsd:enumeration value="Photometer">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">An instrument which measures the strength of electromagnetic radiation in the range from ultraviolet to infrared and including the visible spectrum.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Photopolarimeter">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">An instrument which measures the intensity and polarization or radiant energy. A photopolarimeter is a combination of a photometer and a polarimeter.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="ProportionalCounter">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">An instrument which measures energy of ionization radiation based on interactions with a gas.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="QuadrisphericalAnalyser">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">An instrument used for the 3-D detection of plasma, energetic electrons and ions, and for positive-ion composition measurements.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Radar">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">An instrument that uses directional properties of returned power to infer spatial and/or other characteristics of a remote object.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Radiometer">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">An instrument for detecting or measuring radiant energy. Radiometers are commonly limited to infrared radiation.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="ResonanceSounder">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">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.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="RetardingPotentialAnalyser">
  <xsd:annotation>
    <xsd:documentation xml:lang="en"></xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Riometer">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">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.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="ScintillationDetector">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">An instrument which detects flourescences of a material which is excited by high energy (ionizing) electromagnetic or charged particle radiation.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="SearchCoil">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">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.</xsd:documentation>
</xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Sounder">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">An instrument which measures the radiiances
from an object. A sounder may measure radiiances
at multile spectral ranges.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="SpacecraftPotentialControl">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">An instrument to control the electric potential
of a spacecraft with respect to the ambient
plasma by emitting a variable current of positive
ions.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="SpectralPowerReceiver">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A radio receiver which determines the power
spectral density of the electric or magnetic
field, or both, at one or more frequencies.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Spectrometer">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">An instrument that measures the component
wavelengths of light or other electromagnetic
radiation into its component wavelengths.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Timeofflight">
  <xsd:annotation>
    <xsd:documentation xml:lang="en"></xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Unspecified">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A value which is not provided.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="WaveformReceiver">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A radio receiver which outputs the value of
one or more components of the electric and/or
magnetic field as a function of time.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
</xsd:restriction>
</xsd:simpleType>

---

**Simple Type** enumEarth

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

**Annotations**
Identifiers for the regions surrounding the Earth.

**Diagram**
![enumEarth](image)

**Type**
restriction of xsd:string

**Facets**

<table>
<thead>
<tr>
<th>enumeration</th>
<th>Magnetosheath</th>
<th>The region between the bow shock and the magnetopause, characterized by very turbulent plasma.</th>
</tr>
</thead>
<tbody>
<tr>
<td>enumeration</td>
<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>enumeration</td>
<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,</td>
</tr>
</tbody>
</table>
the magnetotail begins at a night-side radial distance of 10 Re (X > -10Re).

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<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 aural 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>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>The 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>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>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>NearSurface.Ionosphere.Topside</td>
<td>The region at the upper most 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>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>NearSurface.PolarCap</td>
<td>The areas of the globe surrounding the poles and consisting of the region north of 60 degrees</td>
</tr>
</tbody>
</table>
north latitude and the region south of 60 degrees south latitude.

**NearSurface.SouthAtlanticAnomalyRegion**

The region where 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.

**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.

**NearSurface.Thermosphere**

The layer of the atmosphere that extends from the Mesosphere to 640+ km, temperature increasing with height.

**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.

**Surface**

The outermost area of a solid object.

---

Source

```xml
<xsd:simpleType name="enumEarth">
  <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:enumeration value="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="Magnetosphere.RadiationBelt">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The region within a magnetosphere where high-energy</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
  </xsd:restriction>
</xsd:simpleType>
```
particles could potentially be trapped in a magnetic field.}</xsd:documentation></xsd:enumeration>

<xsd:enumeration value="NearSurface."

<xsd:annotation>
</xsd:annotation>

<xsd:documentation xml:lang="en">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.</xsd:documentation>

</xsd:annotation></xsd:enumeration>

<xsd:enumeration value="NearSurface.Atmosphere">

<xsd:annotation>
</xsd:annotation>

<xsd: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.</xsd:documentation>

</xsd:annotation></xsd:enumeration>

<xsd:enumeration value="NearSurface.AuroralRegion">

<xsd:annotation>
</xsd:annotation>

<xsd:documentation xml:lang="en">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.</xsd:documentation>

</xsd:annotation></xsd:enumeration>

<xsd:enumeration value="NearSurface.EquatorialRegion">

<xsd:annotation>
</xsd:annotation>

<xsd:documentation xml:lang="en">A region centered on the equator and limited in latitude by approximately 23 degrees north and south of the equator.</xsd:documentation>

</xsd:annotation></xsd:enumeration>

<xsd:enumeration value="NearSurface.Ionosphere">

<xsd:annotation>
</xsd:annotation>

<xsd: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.</xsd:documentation>

</xsd:annotation></xsd:enumeration>

<xsd:enumeration value="NearSurface.Ionosphere.DRegion">

<xsd:annotation>
</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="NearSurface.Ionosphere.ERegion">

<xsd:annotation>
</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="NearSurface.Ionosphere.FRegion">

<xsd:annotation>
</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="NearSurface.Ionosphere.Topside">

<xsd:annotation>
</xsd:annotation>

<xsd:documentation xml:lang="en">The region at the upper most areas of the ionosphere.</xsd:documentation>

</xsd:annotation></xsd:enumeration>

<xsd:enumeration value="NearSurface.Mesosphere">

<xsd:annotation>
</xsd:annotation>

<xsd: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.</xsd:documentation>

</xsd:annotation></xsd:enumeration>
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 and the region south of 60 degrees south latitude.

The region where 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.

The layer of the atmosphere that extends from the troposphere to about 30 km, temperature increases with height. The stratosphere contains the ozone layer.

The layer of the atmosphere that extends from the Mesosphere to 640+ km, temperature increasing with height.

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.

The outermost area of a solid object.
Simple Type `enumHeliosphere`

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

Annotations
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.

Diagram

<table>
<thead>
<tr>
<th>Facets</th>
<th>Inner</th>
<th>The region of the heliosphere extending radially out from the &quot;surface&quot; of the Sun to 1 AU.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NearEarth</td>
<td>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>Outer</td>
<td>The region of the heliosphere from, but not including, 1 AU to the farthest extent of the heliosphere (heliopause).</td>
<td></td>
</tr>
<tr>
<td>Remote1AU</td>
<td>The heliospheric region near the Earth's orbit, but exclusive of the region near the Earth.</td>
<td></td>
</tr>
</tbody>
</table>

Source

```xml
<xsd:simpleType name="enumHeliosphere">
    <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:enumeration value="Inner">
            <xsd:annotation>
                <xsd:documentation xml:lang="en">The region of the heliosphere extending radially out from the "surface" of the Sun to 1 AU.</xsd:documentation>
            </xsd:annotation>
        </xsd:enumeration>
        <xsd:enumeration value="NearEarth">
            <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:documentation xml:lang="en">The region of the heliosphere from, but not including, 1 AU to the farthest extent of the heliosphere (heliopause).</xsd:documentation>
            </xsd:annotation>
        </xsd:enumeration>
        <xsd:enumeration value="Remote1AU">
            <xsd:annotation>
                <xsd:documentation xml:lang="en">The heliospheric region near the Earth's orbit, but exclusive of the region near the Earth.</xsd:documentation>
            </xsd:annotation>
        </xsd:enumeration>
    </xsd:restriction>
</xsd:simpleType>
```

Simple Type `enumMagnetosphere`

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

Annotations
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 planets magnetic
Diagram

<table>
<thead>
<tr>
<th>Type</th>
<th>Restriction of xsd:string</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facets</td>
<td>enumeration Magnetotail</td>
</tr>
<tr>
<td></td>
<td>enumeration Main</td>
</tr>
<tr>
<td></td>
<td>enumeration Polar</td>
</tr>
<tr>
<td></td>
<td>enumeration RadiationBelt</td>
</tr>
</tbody>
</table>

Source

```xml
<xsd:simpleType name="enumMagnetosphere">
  <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 aural 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 enumNearEarth

<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 heliospheric regions near the earth or within the earth's orbit</td>
</tr>
</tbody>
</table>
### Schema documentation for spase-1_3_0.xsd

#### Simple Type enumNearEarth

<table>
<thead>
<tr>
<th>Facets</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>enumeration</td>
<td>Atmosphere 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>enumeration</td>
<td>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.</td>
</tr>
<tr>
<td>enumeration</td>
<td>EquatorialRegion A region centered on the equator and limited in latitude by approximately 23 degrees north and south of the equator.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Ionosphere 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>enumeration</td>
<td>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.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Ionosphere.ERegion A layer of 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>enumeration</td>
<td>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.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Ionosphere.Topside The region at the upper most areas of the ionosphere.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Mesosphere 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>enumeration</td>
<td>Plasmasphere 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>
</tbody>
</table>
enumeration PolarCap
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.

enumeration SouthAtlanticAnomalyRegion
A region where 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.

enumeration 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.

enumeration Thermosphere
The layer of the atmosphere that extends from the Mesosphere to 640+ km, temperature increasing with height.

enumeration 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.

Source
<xsd:simpleType name="enumNearSurface">
  <xsd:annotation>
    <xsd: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.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="Atmosphere">
      <xsd:annotation>
        <xsd: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.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="AuroralRegion">
      <xsd:annotation>
        <xsd: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.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="EquatorialRegion">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A region centered on the equator and limited in latitude by approximately 23 degrees north and south of the equator.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Ionosphere">
      <xsd:annotation>
        <xsd: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.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Ionosphere.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="Ionosphere.ERegion">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A layer of ionised gas occurring at 90-150km altitude.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
  </xsd:restriction>
</xsd:simpleType>
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="Ionosphere.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="Ionosphere.Topsider">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The region at the upper most areas of the
ionosphere.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Mesosphere">
  <xsd:annotation>
    <xsd: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.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="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="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 an the region south of 60 degrees
south latitude.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="SouthAtlanticAnomalyRegion">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The region where Earth's inner van Allen
radiation belt makes its closest approach to the planet's inner van Allen
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="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="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="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>
Schema documentation for spase-1_3_0.xsd

Simple Type `enumStructureType`

Namespace | http://www.spase-group.org/data/schema
Annotations | Identifiers for the classification of the organization of a structure.
Diagram | ![Diagram](enumStructureType)
Type | `xsd:string`

Simple Type `enumSun`

Namespace | http://www.spase-group.org/data/schema
Annotations | Identifiers for regions of the star upon which our solar system is centered.
Diagram | ![Diagram](enumSun)
Type | restriction of `xsd:string`
Facets |
| enumeration | 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.
| enumeration | 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.
| enumeration | Interior | The region inside the body which is not visible from outside the body.
| enumeration | 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.
| enumeration | 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.

Source | `<xsd:simpleType name="enumSun">`<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 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>`
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.

The region inside the body which is not visible from outside the body.

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.

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.