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

Schemas

Main schema spase-1_3_3.xsd

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
</table>
| Properties | attribute form default: unqualified  
element form default: qualified |
| Schema location | file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd |

Elements

Element Spase

<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="" /></td>
</tr>
<tr>
<td>Type</td>
<td>Spase</td>
</tr>
<tr>
<td>Properties</td>
<td>content: complex</td>
</tr>
<tr>
<td>Model</td>
<td>Version , ResourceEntity*</td>
</tr>
<tr>
<td>Children</td>
<td>ResourceEntity, Version</td>
</tr>
</tbody>
</table>
| Instance | <Spase lang="en">  
  <Version>{1,1}</Version>  
  <ResourceEntity>[0,unbounded] </ResourceEntity>  
</Spase> |
| Attributes | QName | Type | Fixed | Default | Use |
| | lang | xsd:string | | en | optional |
| Source | <xsd:element name="Spase" type="Spase"/> |
| Schema location | file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd |

Element Version

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

```
<xs:element name="Version" type="enumVersion">
  <xs:annotation>
    <xs: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).</xs:documentation>
  </xs:annotation>
</xs:element>
```

Schema location: file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

**Element ResourceEntity**

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

Diagom

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

Properties

<table>
<thead>
<tr>
<th>Name</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>abstract</td>
<td>true</td>
</tr>
</tbody>
</table>

5
Schema documentation for spase-1_3_3.xsd

Substitution Group

- Catalog
- DisplayData
- NumericalData
- Document
- Granule
- Instrument
- Observatory
- 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_3.xsd

Element Catalog

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

Diagram
## Type

<table>
<thead>
<tr>
<th>Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catalog</td>
</tr>
</tbody>
</table>

## Properties

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

## Substitution Group

- ResourceEntity

## Model

- ResourceID, ResourceHeader, AccessInformation+, ProviderResourceName[0,1], ProviderVersion[0,1], InstrumentID*, PhenomenonType+, TimeSpan[0,1], Caveats[0,1], Keyword*, InputResourceID*, Parameter*, Extension*

## Children


## Instance

```
<Catalog>
  <ResourceID>{1,1}</ResourceID>
  <ResourceHeader>{1,1}</ResourceHeader>
  <AccessInformation>{1,unbounded}</AccessInformation>
  <ProviderResourceName>{0,1}</ProviderResourceName>
  <ProviderVersion>{0,1}</ProviderVersion>
  <InstrumentID>{0,unbounded}</InstrumentID>
  <PhenomenonType>{1,unbounded}</PhenomenonType>
  <TimeSpan>{0,1}</TimeSpan>
  <Caveats>{0,1}</Caveats>
  <Keyword>{0,unbounded}</Keyword>
  <InputResourceID>{0,unbounded}</InputResourceID>
  <Parameter>{0,unbounded}</Parameter>
  <Extension>{0,unbounded}</Extension>
</Catalog>
```

## Source

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

## Schema location

file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

### 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**

```
ResourceID
     Type: xsd:string

```

**Type**

xsd:string

**Properties**

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

**Used by**

- Catalog, DisplayData, Document, Granule, Instrument, NumericalData, Observatory, Person, Registry, Repository, Service

**Source**

```xml
<xsd:simpleType name="ResourceID">
  <xsd:annotation>
    <xsd: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.</xsd:documentation>
</xsd:annotation>
</xsd:simpleType>
```

**Schema location**

file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

### Element ResourceHeader

**Namespace**

http://www.spase-group.org/data/schema
Schema documentation for spase-1_3_3.xsd

### ResourceHeader

**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* , Association* , PriorID*

**Children**

- Acknowledgement , AlternateName , Association , 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>
  <Association>[0,unbounded]</Association>
  <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_3.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**

```
ResourceName
  Type xsd:string
```

**Type** xsd:string

**Properties**

- content: simple

**Used by**

- Complex Type: ResourceHeader

**Source**

```
<xsd:element name="ResourceName" type="xsd:string">
  <xsd:annotation>
```

8
### 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**  
![Diagram](image)

**Type**  
`xsd:string`

**Properties**  
`content: simple`

**Used by**  
Complex Type `ResourceHeader`

**Source**  
```xml
<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**  
![Diagram](image)

**Type**  
`xsd:dateTime`

**Properties**  
`content: simple`

**Used by**  
Complex Types `Granule, Person, ResourceHeader`

**Source**  
```xml
<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 theExpiration 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.

**Expiration Date**

- **Type**: `xsd:dateTime`
- **Properties**: `simple`
- **Used by**:
  - Complex Types: Granule, ResourceHeader

**Source**

```xml
<xsd:element name="ExpirationDate" type="xsd:dateTime">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">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.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

**Schema location**

file:/var/www/spase/site/root/data/schema/spase-1_3_3.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.

**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_3.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.

**Source**

```xml
<xsd:element name="Acknowledgement" type="xsd:string">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The individual, group or organization which
```
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
<Contact>
<PersonID>(1,1)</PersonID>
<Role>[1, unbounded]</Role>
</Contact>

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

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
<xsd:element name="PersonID" type="xsd:string"/>
<xsd:annotation>
<xsd:documentation xml:lang="en">The identifier assigned to a Person description.</xsd:documentation>
</xsd:annotation>
</xsd:element>

Schema location file:/var/www/spase/site/root/data/schema/spase-1_3_3.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 enumeration ArchiveSpecialist An individual who is an expert on a collection of resources and may also be knowledgeable

Source
<xsd:element name="Role" type="enumRole"/>

of the phenomenon and related physics represented by the resources. This includes librarians, curators, archive scientists and other experts.

<table>
<thead>
<tr>
<th>Role</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<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 the designated leader of an investigation!!!</td>
</tr>
<tr>
<td>TeamMember</td>
<td>An individual who is a major participant in an investigation.</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>Complex Type</th>
<th>Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Source**

```
<xs:element name="Role" type="enumRole">
  <xs:annotation>
    <xs:documentation xml:lang="en">The assigned or assumed function or position of an individual.</xs:documentation>
  </xs:annotation>
</xs:element>
```

**Schema location**

file://var/www/spase/site/root/data/schema/spase-1_3_3.xsd

**Element** InformationURL

**Namespace**

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

**Diagram**

![Diagram of InformationURL](image)

**Type** InformationURL
<table>
<thead>
<tr>
<th>Properties</th>
<th>content: complex</th>
</tr>
</thead>
<tbody>
<tr>
<td>Used by</td>
<td>Complex Type</td>
</tr>
<tr>
<td></td>
<td>ResourceHeader</td>
</tr>
<tr>
<td>Model</td>
<td>Name{0,1,} , URL , Description{0,1}</td>
</tr>
<tr>
<td>Children</td>
<td>Description, Name, URL</td>
</tr>
</tbody>
</table>

### Instance

<table>
<thead>
<tr>
<th>&lt;InformationURL&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;Name&gt;{0,1}&lt;/Name&gt;</td>
</tr>
<tr>
<td>&lt;URL&gt;{1,1}&lt;/URL&gt;</td>
</tr>
<tr>
<td>&lt;Description&gt;{0,1}&lt;/Description&gt;</td>
</tr>
</tbody>
</table>

### Source

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

### Schema location

file:/var/www/spase/site/root/data/schema/spase-1_3_3.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](image)

**Type**

|xsd:string|

**Properties**

content: simple

**Used by**

Complex Types: AccessURL, Element, InformationURL, Parameter

**Source**

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

### 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](image)

**Type**

|xsd:string|

**Properties**

content: simple

**Used by**

Complex Types: AccessURL, InformationURL, Source

**Source**

<xsd:element name="URL" type="xsd:string">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Uniform Resource Locator (URL) is the global address of documents and other resources on the World Wide Web. The first part of the address indicates what protocol to use, and the second part specifies the IP address or the domain name where the resource is located followed by the pathname of the resource. A URL is specified in the form protocol://server.domain.name:port/pathname. Example protocols are HTTP or FTP, server domain name is the Internet name.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
### Schema documentation for spase-1_3_3.xsd

**Element Association**

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Namespace</td>
<td><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></td>
</tr>
<tr>
<td>Diagram</td>
<td>![Diagram of Association]</td>
</tr>
<tr>
<td>Model</td>
<td>AssociationID[0,1], AssociationType[0,1], Note[0,1]</td>
</tr>
<tr>
<td>Children</td>
<td>AssociationID, AssociationType, Note</td>
</tr>
<tr>
<td>Instance</td>
<td><code>&lt;Association&gt;&lt;AssociationID&gt;[0,1]&lt;/AssociationID&gt;&lt;AssociationType&gt;[0,1]&lt;/AssociationType&gt;&lt;Note&gt;[0,1]&lt;/Note&gt;&lt;/Association&gt;</code></td>
</tr>
<tr>
<td>Source</td>
<td><code>&lt;xsd:element name=&quot;Association&quot; type=&quot;Association&quot;/&gt;</code></td>
</tr>
</tbody>
</table>

**Element AssociationID**

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Namespace</td>
<td><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></td>
</tr>
<tr>
<td>Annotations</td>
<td>The resource identifier for a resource with which this resource is closely associated.</td>
</tr>
<tr>
<td>Diagram</td>
<td>![Diagram of AssociationID]</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 Association</td>
</tr>
<tr>
<td>Source</td>
<td><code>&lt;xsd:element name=&quot;AssociationID&quot; type=&quot;xsd:string&quot;&gt;</code></td>
</tr>
</tbody>
</table>

**Element AssociationType**

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Namespace</td>
<td><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></td>
</tr>
<tr>
<td>Annotations</td>
<td>A characterization of the role or purpose of an associated resource.</td>
</tr>
<tr>
<td>Diagram</td>
<td>![Diagram of AssociationType]</td>
</tr>
<tr>
<td>Properties</td>
<td>enumAssociationType</td>
</tr>
<tr>
<td>Facets</td>
<td>enumeration DerivedFrom A transformed or altered version of a resource</td>
</tr>
</tbody>
</table>

---

14
### Element `Note`

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Annotations</td>
<td>Information which is useful or important for the understanding of a value or parameter.</td>
</tr>
<tr>
<td>Diagram</td>
<td><img src="note.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 Types Association, TimeSpan</td>
</tr>
<tr>
<td>Source</td>
<td><code>&lt;xsd:element name=&quot;Note&quot; type=&quot;xsd:string&quot;&gt;</code> <code>&lt;xsd:annotation&gt;  </code>&lt;xsd:documentation xml:lang=&quot;en&quot;&gt;Information which is useful or important for the understanding of a value or parameter.&lt;/xsd:documentation&gt;  &lt;/xsd:annotation&gt;  &lt;/xsd:element&gt;`</td>
</tr>
<tr>
<td>Schema location</td>
<td>file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd</td>
</tr>
</tbody>
</table>

### Element `PriorID`

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Annotations</td>
<td>The resource identifier for a resource that is superceded or replaced by a resource.</td>
</tr>
<tr>
<td>Diagram</td>
<td><img src="priorid.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 Types Granule, ResourceHeader</td>
</tr>
<tr>
<td>Source</td>
<td><code>&lt;xsd:element name=&quot;PriorID&quot; type=&quot;xsd:string&quot;&gt;</code> <code>&lt;xsd:annotation&gt;  </code>&lt;xsd:documentation xml:lang=&quot;en&quot;&gt;The resource identifier for a resource that is superceded or replaced by a resource.&lt;/xsd:documentation&gt;  &lt;/xsd:annotation&gt;  &lt;/xsd:element&gt;`</td>
</tr>
<tr>
<td>Schema location</td>
<td>file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd</td>
</tr>
</tbody>
</table>

### Element `AccessInformation`
Schema documentation for spase-1_3_3.xsd

**Diagram**

```
<AccessInformation>
  <RepositoryID> {1,1} </RepositoryID>
  <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>
```

**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**

```xml
<AccessInformation>
  <RepositoryID> {1,1} </RepositoryID>
  <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>
```

**Source**

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

**Namespace**

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

The identifier of an Repository resource.

---

**Element RepositoryID**

**Namespace**

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

**Annotations**

The identifier of an Repository resource.

**Diagram**

```
<RepositoryID>
  Type: xsd:string
</RepositoryID>
```

**Type**

xsd:string

**Properties**

content: simple

**Used by**

Complex Type: AccessInformation

**Source**

```
<xsd:element name= "RepositoryID" type= "xsd:string">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The identifier of an Repository resource.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

**Schema location**

file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

---

**Element Availability**

**Namespace**

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

**Annotations**

An indication of the method or service which
## Element Availability

### 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.
  - **Online**
    - Directly accessible electronically.

### Used by
- Complex Type: AccessInformation

### Source
```
<xs:element name="Availability" type="enumAvailability">
  <xs:annotation>
    <xs:documentation xml:lang="en">An indication of the method or service which may be used to access the resource.</xs:documentation>
  </xs:annotation>
</xs:element>
```

### Schema location
file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

## Element AccessRights

### Properties
- **content:** simple

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

### Used by
- Complex Type: AccessInformation

### Source
```
<xs:element name="AccessRights" type="enumAccessRights">
  <xs:annotation>
    <xs:documentation xml:lang="en">Permissions granted or denied by the host of a product to allow other users to access and use the resource.</xs:documentation>
  </xs:annotation>
</xs:element>
```

### Schema location
file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

## Element AccessURL

### Properties
- **content:** complex
Schema documentation for spase-1_3_3.xsd

Used by: Complex Types AccessInformation, Service

Model:
- Name{0,1}
- URL{1,1}
- Description{0,1}
- Language{0,1}

Children:
- Description
- Language
- Name
- URL

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

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

Schema location: file:/var/www/spase/site/root/data/schema/spase-1_3_3.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:

Type: xsd:string

Properties: content: simple

Used by: Complex Type AccessURL

Source:
```
<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 location: file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

---

**Element Format**

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

Annotations: The organization of data according to preset specifications. The value is selected from a list of accepted names for known, well documented formats.

Diagram:

Type: enumFormat

Properties: content: simple

Facets:
- enumeration AVI Audio Video Interleave (AVI) a digital format for movies that conforms to the Microsoft Windows Resource Interchange File Format (RIFF).
- enumeration Binary A direct representation of the bits which may be stored in memory on a computer.
- enumeration CDF Common Data Format (CDF). A binary storage format developed at Goddard Space Flight Center (GSFC).
- enumeration CEF Cluster Exchange Format (CEF) is a self-documenting ASCII format designed for the exchange of data. There are two versions of CEF which are not totally compatible.
- enumeration CEF1 Cluster Exchange Format (CEF), version 1, is a self-documenting ASCII format designed for the exchange of data. The metadata contains
### CEF2

Cluster Exchange Format (CEF), version 2, is a self-documenting ASCII format designed for the exchange of data and introduced for Cluster Active Archive. Compared to version 1, the metadata description of vectors and tensors is different.

### FITS

Flexible Image Transport System (FITS) is a digital format primarily designed to store scientific data sets consisting of multi-dimensional arrays (1-D spectra, 2-D images or 3-D data cubes) and 2-dimensional tables containing rows and columns of data.

### GIF

Graphic Interchange Format (GIF) first introduced in 1987 by CompuServe. GIF uses LZW compression and images are limited to 256 colours.

### HDI

Hierarchical Data Format

### HDF4

Hierarchical Data Format, Version 4

### HDF5

Hierarchical Data Format, Version 5

### HTML

A text file containing structured information represented in the HyperText Mark-up Language (HTML). See [http://www.w3.org/MarkUp/](http://www.w3.org/MarkUp/)

### IDFS

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).

### IDL

Interactive Data Language (IDL) save set. IDL is a proprietary format.

### JPEG

A binary format for still images defined by the Joint Photographic Experts Group

### MATLAB

MATLAB Workspace save set, version 4. MAT-files are double-precision, binary, MATLAB format files. MATLAB is a proprietary product of The MathWorks.

### MATLAB_6

MATLAB Workspace save set, version 6. MAT-files are double-precision, binary, MATLAB format files. MATLAB is a proprietary product of The MathWorks.

### MATLAB_7

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.

### MPEG

A digital format for movies defined by the Motion Picture Experts Group

### NCAR


### NetCDF

Unidata Program Centers 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>

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<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>
<tr>
<td>VOTable</td>
<td>A proposed XML standard designed as a flexible storage and exchange format for tabular data.</td>
</tr>
<tr>
<td>XML</td>
<td>eXtensible Mark-up Language (XML). A structured format for representing information. See <a href="http://www.w3.org/XML/">http://www.w3.org/XML/</a></td>
</tr>
</tbody>
</table>

Used by Complex Type AccessInformation

Source

```xml
<xs:element name="Format" type="enumFormat">
  <xs:annotation>
    <xs:documentation xml:lang="en">The organization of data according to preset specifications. The value is selected from a list of accepted names for known, well documented formats.</xs:documentation>
  </xs:annotation>
</xs:element>
```

Schema location file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

**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

![Diagram](image)

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</td>
</tr>
</tbody>
</table>
used are the upper- and lower-case Roman alphabet characters (A#Z, a#z), the numerals (0#9), and the "*" and "/" symbols, with the "=" symbol as a special suffix (padding) code.

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GZIP</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>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 LZ77 method and was originally used in the PKZIP utility.</td>
</tr>
</tbody>
</table>

Used by

<table>
<thead>
<tr>
<th>Complex Type</th>
<th>AccessInformation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source</td>
<td></td>
</tr>
</tbody>
</table>

Element **DataExtent**

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

Diagram

<table>
<thead>
<tr>
<th>Type</th>
<th>DataExtent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties</td>
<td></td>
</tr>
<tr>
<td>content: complex</td>
<td></td>
</tr>
<tr>
<td>Used by</td>
<td></td>
</tr>
<tr>
<td>Complex Types AccessInformation</td>
<td></td>
</tr>
<tr>
<td>Model</td>
<td></td>
</tr>
<tr>
<td>Quantity, Units[0,1] Per[0,1]</td>
<td></td>
</tr>
<tr>
<td>Children</td>
<td></td>
</tr>
<tr>
<td>Per, Quantity, Units</td>
<td></td>
</tr>
</tbody>
</table>

Instance

```xml
<DataExtent>
  <Quantity>{1,1}</Quantity>
  <Units>[0,1]</Units>
  <Per>{0,1}</Per>
</DataExtent>
```

Source

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

Schema location: file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

Element **Quantity**

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

A value that describes a characteristic of a system.

Type

xsd:double

Properties

content: simple

Used by

Complex Type DataExtent

Source

<xsd:element name="Quantity" type="xsd:double">  
  <xsd:annotation>  
    <xsd:documentation xml:lang="en">A value that describes a characteristic of a system.</xsd:documentation>  
  </xsd:annotation>  
</xsd:element>

Schema location

file:/var/www/spase/site/root/data/schema/spase-1_3_3.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 (see <http://www.bipm.fr/> ) when appropriate or use tokens like "Re" to represent units of the Radius of the Earth. Within a phrase the circumflex (^) is used to indicate 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 found at: <http://www.bipm.fr/en/si/derived_units/2-2-2.html>

Diagram

Type

xsd:string

Properties

content: simple

Used by

Complex Types AzimuthalAngleRange, DataExtent, Element, EnergyRange, FrequencyRange, Parameter, PolarAngleRange, WavelengthRange

Source

<xsd:element name="Units" type="xsd:string">  
  <xsd:annotation>  
    <xsd:documentation xml:lang="en">A description of the standardized measurement increments in which a value is specified. The description is represented as a mathematical phrase. Units should be represented by widely accepted representation. For example, units should conform to the International System of Units (SI) which is maintained by BIPM (Bureau International des Poids et Mesures (see <http://www.bipm.fr/> ) when appropriate or use tokens like "Re" to represent units of the Radius of the Earth. Within a phrase the circumflex (^) is used to indicate 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 found at: <http://www.bipm.fr/en/si/derived_units/2-2-2.html> </xsd:documentation>  
  </xsd:annotation>  
</xsd:element>

Schema location

file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd
### Element `Per`

<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 time interval over which a characterization applies. For example, the number of bytes generated each day.</td>
</tr>
<tr>
<td>Diagram</td>
<td>![Diagram](## Diagram)</td>
</tr>
<tr>
<td>Type</td>
<td><code>xsd:duration</code></td>
</tr>
<tr>
<td>Properties</td>
<td>content: simple</td>
</tr>
<tr>
<td>Used by</td>
<td>Complex Type</td>
</tr>
</tbody>
</table>
| Source                        | `<xsd:element name="Per" type="xsd:duration">`  
  `<xsd:annotation>`  
  `<xsd:documentation xml:lang="en">The time interval over which a characterization applies. For example, the number of bytes generated each day.</xsd:documentation>`  
  `</xsd:annotation>`  
  `</xsd:element>` |
| Schema location               | file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd |

### Element `ProviderResourceName`

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Annotations</td>
<td>A short textual description of a resource used by the provider which may be used to identify a resource.</td>
</tr>
<tr>
<td>Diagram</td>
<td>![Diagram](## 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 Types</td>
</tr>
</tbody>
</table>
| Source                        | `<xsd:element name="ProviderResourceName" type="xsd:string">`  
  `<xsd:annotation>`  
  `<xsd:documentation xml:lang="en">A short textual description of a resource used by the provider which may be used to identify a resource.</xsd:documentation>`  
  `</xsd:annotation>`  
  `</xsd:element>` |
| Schema location               | file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd |

### Element `ProviderVersion`

<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>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>Diagram</td>
<td>![Diagram](## 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 Types</td>
</tr>
</tbody>
</table>
| Source                        | `<xsd:element name="ProviderVersion" type="xsd:string">`  
  `<xsd:annotation>`  
  `<xsd:documentation xml:lang="en">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.</xsd:documentation>`  
  `</xsd:annotation>`  
  `</xsd:element>` |
| Schema location               | file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd |
### Element InstrumentID

<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>Annotations</strong></td>
<td>The identifier of an Instrument resource.</td>
</tr>
<tr>
<td><strong>Diagram</strong></td>
<td><img src="instrumentid.png" alt="Diagram" /></td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td>xsd:string</td>
</tr>
<tr>
<td><strong>Properties</strong></td>
<td>content: simple</td>
</tr>
<tr>
<td><strong>Used by</strong></td>
<td>Complex Types: Catalog, DisplayData, NumericalData</td>
</tr>
<tr>
<td><strong>Source</strong></td>
<td><code>&lt;xsd:element name=&quot;InstrumentID&quot; type=\&quot;xsd:string\&quot;&gt;</code></td>
</tr>
</tbody>
</table>

### Element PhenomenonType

<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>Annotations</strong></td>
<td>The characteristics or categorization of an event type.</td>
</tr>
<tr>
<td><strong>Diagram</strong></td>
<td><img src="phenomenontype.png" alt="Diagram" /></td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td>enumPhenomenonType</td>
</tr>
<tr>
<td><strong>Properties</strong></td>
<td>content: simple</td>
</tr>
<tr>
<td><strong>Facets</strong></td>
<td>enumeration: ActiveRegion, Aurora, BowShockCrossing, CoronalRole, CoronalMassEjection, EITWave</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ActiveRegion</td>
<td>A localized, transient volume of the solar atmosphere in which PLAGEs, SUNSPOTS, FACULAe, FLAREs, etc. may be observed.</td>
</tr>
<tr>
<td>Aurora</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>BowShockCrossing</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>CoronalRole</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>CoronalMassEjection</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>EITWave</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</td>
</tr>
</tbody>
</table>
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.

**EnergeticSolarParticleEvent**
Enhancement of interplanetary fluxes of energetic ions accelerated by interplanetary shocks and/or solar flares.

**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.

**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.

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

**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.

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

**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).

**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.

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

**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_3.xsd

Element TimeSpan

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

Diagram

Type TimeSpan
Properties content: complex
Used by Complex Types Catalog, TemporalDescription
Model StartDate, StopDateEntity, Note*
Children Note, StartDate, StopDateEntity

Instance
<TimeSpan>
    <StartDate>(1,1)</StartDate>
    <StopDateEntity>(1,1)</StopDateEntity>
    <Note>0,unbounded</Note>
</TimeSpan>

Source <xsd:element name="TimeSpan" type="TimeSpan"/>
Schema location file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

Element StartDate

Annotations The specification of a starting point in time.

Diagram

Type xsd:dateTime
Properties content: simple
Used by Complex Types Granule, TimeSpan

Source <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_3.xsd

Element StopDateEntity

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

Diagram


**Properties** | **abstract**: true
---|---

**Substitution Group**
- RelativeStopDate
- StopDate

**Used by**
- Complex Type: TimeSpan

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

**Schema location**
file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

### Element Caveats

**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**
![Diagram]

**Type**
xsd:string

**Properties**
- content: simple

**Used by**
- Complex Types: Catalog, DisplayData, Instrument, NumericalData, Parameter

**Source**
```xml
<xsd:element name="Caveats" type="xsd:string">
  <xsd:annotation>
    <xsd: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.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

**Schema location**
file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

### 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**
![Diagram]

**Type**
xsd:string

**Properties**
- content: simple

**Used by**
- Complex Types: Catalog, DisplayData, Document, NumericalData

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

**Schema location**
file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

### 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**
![Diagram]

**Type**
xsd:string

**Properties**
- content: simple

**Used by**
- Complex Types: Catalog, DisplayData, Document, NumericalData
Source

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

Schema location

```
file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd
```

**Element Parameter**

**Namespace**

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

**Diagram**

```
<Parameter>
  <Name>{1,1}</Name>
  <Set>{0,1}</Set>
  <ParameterKey>{0,1}</ParameterKey>
  <Description>{0,1}</Description>
  <Caveats>{0,1}</Caveats>
  <Cadence>{0,1}</Cadence>
  <CoordinateSystem>{0,1}</CoordinateSystem>
  <RenderingHints>{0,1}</RenderingHints>
  <Structure>{0,1}</Structure>
  <ValidMin>{0,1}</ValidMin>
  <ValidMax>{0,1}</ValidMax>
  <FillValue>{0,1}</FillValue>
  <ParameterEntity>{0,1}</ParameterEntity>
</Parameter>
```

**Type**

Parameter

**Properties**

- content: complex

**Used by**

- Complex Types
- Catalog
- DisplayData
- NumericalData

**Model**

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

**Children**

- Cadence, Caveats, CoordinateSystem, Description, FillValue, Name, ParameterEntity, ParameterKey, RenderingHints, Set, Structure, Units, UnitsConversion, ValidMax, ValidMin

**Instance**

```
<Parameter>
  <Name>{1,1}</Name>
  <Set>{0,1}</Set>
  <ParameterKey>{0,1}</ParameterKey>
  <Description>{0,1}</Description>
  <Caveats>{0,1}</Caveats>
  <Cadence>{0,1}</Cadence>
</Parameter>
```
### Element Set

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

**Annotations**
A collection of items for a particular purpose.

**Diagram**

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

**Source**
<xsd:element name="Set" type="xsd:string" />
<xsd:annotation>
  <xsd:documentation xml:lang="en">A collection of items for a particular purpose.</xsd:documentation>
</xsd:annotation>
</xsd:element>

**Schema location**
file:/var/www/spase/site/root/data/schema/spase-1_3_3.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 used to access the resource.

**Diagram**

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

**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_3.xsd

### Element Cadence

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

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

**Diagram**

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

**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_3.xsd
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_3.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), 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+3>m/s" which converts a velocity expressed in kilometers per second to meters per second.

Diagram

Type xsd:string

Properties content: simple

Used by Complex Types Element, Parameter

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), 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+3>m/s" which converts a velocity expressed in kilometers per second to meters per second.</xsd:documentation>
  </xsd:annotation>
</xsd:element>

Schema location file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

Element CoordinateSystem

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

Diagram

Type CoordinateSystem

Properties content: complex
### 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**

<table>
<thead>
<tr>
<th>Facets</th>
<th>Content</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>enumeration</td>
<td>Cartesian</td>
<td>A coordinate system in which the position of a point is determined by its distance from two or three mutually perpendicular axes.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Cylindrical</td>
<td>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.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Spherical</td>
<td>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.</td>
</tr>
</tbody>
</table>

**Used by**

- Complex Type: CoordinateSystem

**Source**

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

**Schema location**

file:/var/www/spase/site/root/data/schema/spase-1_3_3.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**

<table>
<thead>
<tr>
<th>Facets</th>
<th>Content</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>enumeration</td>
<td>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 27.273 days. The Astronomical Almanac gives a value for Carrington longitude of 349.03 degrees at 0000 UT on 1 January 1995.</td>
</tr>
<tr>
<td>enumeration</td>
<td>CGM</td>
<td>Corrected Geomagnetic - A coordinate system</td>
</tr>
</tbody>
</table>

**Used by**

- Complex Type: CoordinateSystem

**Source**

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

**Schema location**

file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd
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/
cgm_des.html>

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>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>
</tr>
<tr>
<td>GEI</td>
<td>Geocentric Equatorial Inertial - A coordinate system where the Z axis is along Earth's spin vector, positive northward. X axis points towards the first point of Aries (from the Earth towards the Sun at the vernal equinox). See Russell, 1971</td>
</tr>
<tr>
<td>GEO</td>
<td>Geographic - geocentric corotating - A coordinate system where the Z axis is along Earth's spin vector, positive northward. X axis lies in Greenwich meridian, positive towards Greenwich. See Russell, 1971.</td>
</tr>
<tr>
<td>GSE</td>
<td>Geocentric Solar Ecliptic - A coordinate system where the X axis is from Earth to Sun. Z axis is normal to the ecliptic, positive northward. See Russell, 1971.</td>
</tr>
<tr>
<td>GSEQ</td>
<td>Geocentric Solar Equatorial - A coordinate system where the X axis is from Earth to Sun. Y axis is parallel to solar equatorial plane. Z axis is positive northward. See Russell, 1971</td>
</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>
</tr>
<tr>
<td>HAE</td>
<td>Heliocentric Aries Ecliptic - A coordinate system where the Z axis is normal to the ecliptic plane, positive northward. X axis is positive towards the first point of Aries (from Earth to Sun at vernal equinox). Same as SE below. See Happgood, 1992.</td>
</tr>
<tr>
<td>HCI</td>
<td>Heliographic Carrington Inertial.</td>
</tr>
<tr>
<td>HEE</td>
<td>Heliocentric Earth Ecliptic - A coordinate system where the Z axis is normal to the ecliptic</td>
</tr>
</tbody>
</table>
plane, positive northward. X axis points from the Sun to Earth. See Hapgood, 1992.

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEEQ</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>HG</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>HGI</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>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>
</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 Earth's center. In this system, ( H = \sqrt{B_x^2 + B_y^2} ) and ( D ) (declination angle) = ( \arctan(B_y/B_x) ).</td>
</tr>
<tr>
<td>MAG</td>
<td>Geomagnetic – geocentric. Z axis is parallel to the geomagnetic dipole axis, positive north. X is in the plane defined by the Z axis and the Earth's rotation axis. If N is a unit vector from the Earth's center to the north geographic pole, the signs of the X and Y axes are given by ( Y = N \times Z ), ( X = Y \times Z ). See Russell, 1971, and <a href="http://cdpp.cnes.fr/00428.pdf">http://cdpp.cnes.fr/00428.pdf</a></td>
</tr>
<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...</td>
</tr>
</tbody>
</table>
has Z axis parallel to spacecraft spin vector.
X and Y axes may or may not corotate with the spacecraft. See SR and SR2 below.

**enumeration SE**

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

**enumeration SM**

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

**enumeration SpacecraftOrbitPlane**

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.

**enumeration SR**

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

**enumeration SR2**

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

**enumeration SSE**

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

**enumeration WGS84**

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

---

**Used by**

- Complex Types
  - CoordinateSystem, Location

**Source**

```xml
<xs:complexType name="CoordinateSystemName">
  <xs:annotation>
    <xs:documentation xml:lang="en">Identifies the coordinate system in which the position, direction or observation has been expressed.</xs:documentation>
  </xs:annotation>
</xs:complexType>
```

**Schema location**

file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

---

**Element RenderingHints**

**Namespace**

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

```
<RenderingHints>
  <DisplayType>{0,1}</DisplayType>
  <AxisLabel>{0,1}</AxisLabel>
  <ValueFormat>{0,1}</ValueFormat>
  <ScaleMin>{0,1}</ScaleMin>
  <ScaleMax>{0,1}</ScaleMax>
  <ScaleType>{0,1}</ScaleType>
</RenderingHints>
```

Source

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

Element DisplayType

Namespace

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

Annotations

The general styling or type of plot that is suitable for the variable.

Diagram

```
DisplayType
  Type enumDisplayType
```

Type

enumDisplayType

Properties

content: simple

Facets

enumeration Image A two-dimensional representation of data with values at each element of the array related to an intensity or a color.

enumeration Spectrogram A representation of data which is the result of calculating the frequency spectrum of windowed frames of a compound signal.

enumeration StackPlot A representation of data showing multiple sets of observations on a single plot, possibly offsetting each plot by some uniform amount.

enumeration TimeSeries A representation of data showing a set of observations taken at different points in time and charted as a time series.

Used by

Complex Type RenderingHints

Source

```
<xsd:element name="DisplayType" type="enumDisplayType">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The general styling or type of plot that is suitable for the variable.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```
Element `AxisLabel`

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

Annotations: A short character string (approximately 10 characters, but preferably 6 characters - more only if absolutely required for clarity) which can be used to label a y-axis for a plot or to provide a heading for a data listing.

Diagram: ![Diagram](AxisLabel.png)

Type: `xsd:string`

Properties: `content: simple`

Used by: Complex Type, RenderingHints

Source:
```xml
<xsd:element name="AxisLabel" type="xsd:string">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A short character string (approximately 10 characters, but preferably 6 characters - more only if absolutely required for clarity) which can be used to label a y-axis for a plot or to provide a heading for a data listing.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

Schema location: `file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd`

Element `ValueFormat`

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

Annotations: A string defining the output format used when extracting data values out to a file or screen. The magnitude and the number of significant figures needed should be carefully considered. The output format string can be in either Fortran or C syntax.

Diagram: ![Diagram](ValueFormat.png)

Type: `xsd:string`

Properties: `content: simple`

Used by: Complex Type, RenderingHints

Source:
```xml
<xsd:element name="ValueFormat" type="xsd:string">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A string defining the output format used when extracting data values out to a file or screen. The magnitude and the number of significant figures needed should be carefully considered. The output format string can be in either Fortran or C syntax.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

Schema location: `file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd`

Element `ScaleMin`

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

Annotations: The minimum value that the variable is expected to attain. Used, for example, by automated plotting software.

Diagram: ![Diagram](ScaleMin.png)

Type: `xsd:double`

Source:
```xml
<xsd:element name="ScaleMin" type="xsd:double">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The minimum value that the variable is expected to attain. Used, for example, by automated plotting software.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

Schema location: `file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd`
Element ScaleMin

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

Annotations The minimum value that the variable is expected to attain. Used, for example, by automated plotting software.

Diagram

Type xsd:double

Properties content: simple

Used by Complex Type RenderingHints

Source

Schema location file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

Element ScaleMax

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

Annotations The maximum value that the variable is expected to attain. Used, for example, by automated plotting software.

Diagram

Type xsd:double

Properties content: simple

Used by Complex Type RenderingHints

Source

Schema location file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

Element ScaleType

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

Annotations The scaling to apply to an axis. If this attribute is not present, linear scale should be assumed.

Diagram

Type enumScaleType

Properties content: simple

Facets

enumeration Linear 1) Intervals which are equally spaced. 2) Relative to polarization, confinement of the E-field vector to a given plane

enumeration Log Intervals which are spaced proportionally to the logarithms of the values being represented.

Used by Complex Type RenderingHints

Source

Schema location file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

Element Structure

Namespace http://www.spase-group.org/data/schema
Schema documentation for spase-1_3_3.xsd

Diagram

```
<Structure>
  <Size>0,1</Size>
  <Description>0,1</Description>
  <Element>0,unbounded</Element>
</Structure>
```

Type

Structure

Properties

content: complex

Used by

Complex Type  Parameter

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_3.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 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.

Diagram

```
<Size>
  <typeSequence/>
</Size>
```

Type
typeSequence

Properties

content: simple

Used by

Complex Type  Structure

Source

```
<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_3.xsd

Element Element

Namespace

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

Element

- **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>
  <UnitsConversion>{0,1}</UnitsConversion>
  <ValidMin>{0,1}</ValidMin>
  <ValidMax>{0,1}</ValidMax>
  <FillValue>{0,1}</FillValue>
</Element>
```

**Source**

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

**Schema location**

`file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd`

### 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**

- **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:
\[ \Phi = \arctan(y/x) \]

<table>
<thead>
<tr>
<th>enumeration</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The component of a vector in the radial direction from the center of the coordinate system.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>enumeration</th>
<th>Theta</th>
</tr>
</thead>
<tbody>
<tr>
<td></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>
</tbody>
</table>

<table>
<thead>
<tr>
<th>enumeration</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The component of a vector along the X-axis in a cartesian coordinate system.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>enumeration</th>
<th>Y</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The component of a vector along the Y-axis in a cartesian coordinate system.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>enumeration</th>
<th>Z</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The component of a vector along the Z-axis in a cartesian coordinate system.</td>
</tr>
</tbody>
</table>

**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.

<table>
<thead>
<tr>
<th>Diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="typeSequence" alt="Index Type Sequence" /></td>
</tr>
</tbody>
</table>

**Type**
typeSequence

**Properties**
ccontent: simple

**Used by**
Complex Type Element

**Source**

```xml
<xsd:element name="Index" type="typeSequence">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The location of an item in an array or vector. An index can be multivalued to represent the location in a multidimensional object.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

**Schema location** file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

**Element ValidMin**

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

**Annotations**
The smallest legitimate value.

<table>
<thead>
<tr>
<th>Diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="" alt="ValidMin Type XSDString" /></td>
</tr>
</tbody>
</table>

**Type**
xsd:string

**Properties**
ccontent: simple

**Used by**
Complex Types Element, Parameter
### Element `ValidMin`

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

**Annotations**
The smallest legitimate value.

**Diagram**
![Diagram of ValidMin]

**Type**
`xsd:string`

**Properties**
- `content`: simple

**Used by**
- Complex Types: Element, Parameter

**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_3.xsd

### Element `ValidMax`

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

**Annotations**
The largest legitimate value.

**Diagram**
![Diagram of ValidMax]

**Type**
`xsd:string`

**Properties**
- `content`: simple

**Used by**
- Complex Types: Element, Parameter

**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_3.xsd

### Element `FillValue`

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

**Annotations**
A value that indicates that a quantity is undefined.

**Diagram**
![Diagram of FillValue]

**Type**
`xsd:string`

**Properties**
- `content`: simple

**Used by**
- Complex Types: Element, Parameter

**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_3.xsd

### Element `ParameterEntity`

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

**Diagram**
![Diagram of ParameterEntity]

---

41
### Properties

| abstract: | true |

### Substitution Group
- Field
- Particle
- Photon
- Support
- Mixed

### Used by
- Complex Type
- Parameter

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

### Schema location
file:/var/www/spase/site/root/data/schema/spase-1_3_3.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**

![](image)

**Properties**
- content: complex

**Substitution Group**
- ResourceEntity

**Used by**
- Complex Types
- Catalog, DisplayData, 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">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A container of other metadata which is not part of the SPASE data model. The contents of this element are defined by individual usage. The organization and content are constrained by the implementation. For example, in an XML representation of the SPASE metadata the content must conform to the XML specifications.</xsd:documentation>
  </xsd:annotation>
  <xsd:complexType>
    <xsd:sequence>
      <xsd:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
```

**Schema location**
file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

---

#### Element Field

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

Source
<xsd:element  name= "Field"  type= "Field"  substitutionGroup= "ParameterEntity"/>

Schema location
file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

Element Qualifier

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

Annotations
Characterizes the refinement to apply to a type or attribute of a quantity.

Diagram

Type
enumQualifier

Properties
content:  simple

Facets

<table>
<thead>
<tr>
<th>Facet</th>
<th>Content</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anisotropy</td>
<td>enumeration</td>
<td>Direction-dependent property.</td>
</tr>
<tr>
<td>Average</td>
<td>enumeration</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>Characteristic</td>
<td>enumeration</td>
<td>A quantity which can be easily identified and measured in a given environment.</td>
</tr>
<tr>
<td>Circular</td>
<td>enumeration</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>
</tbody>
</table>

Source
<xsd:element  name= "Field"  type= "Field"  substitutionGroup= "ParameterEntity"/>

Schema location
file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd
<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Component</td>
<td>A part of a multi-part entity, e.g., the components of a vector.</td>
</tr>
<tr>
<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>Component.R</td>
<td>The component of a vector in the radial direction from the center of the coordinate system.</td>
</tr>
<tr>
<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 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>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>Differential</td>
<td>A flux measurement within a given energy and solid-angle range.</td>
</tr>
<tr>
<td>Fit</td>
<td>Values that make a model agree with the data.</td>
</tr>
<tr>
<td>Integral</td>
<td>The summation of values above a given threshold and over area or solid-angle range.</td>
</tr>
<tr>
<td>LineofSight</td>
<td>The line of sight is the line that connects the observer with the observed object. This expression is often used with measurements of Doppler velocity and magnetic field in magnetograms, where only the component of the vector field directed along the line of sight is measured.</td>
</tr>
<tr>
<td>Linear</td>
<td>1) Intervals which are equally spaced. 2) Relative to polarization, confinement of the E-field vector to a given plane</td>
</tr>
<tr>
<td>Magnitude</td>
<td>A measure of the strength or size of a vector quantity.</td>
</tr>
<tr>
<td>Moment</td>
<td>Parameters determined by integration over a distribution function convolved with a power of velocity.</td>
</tr>
<tr>
<td>Parallel</td>
<td>Having the same direction as a given direction.</td>
</tr>
<tr>
<td>Peak</td>
<td>The maximum value for the quantity in question, over a period of time which is usually equal to the cadence.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>Description</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------------------------------------------------------------------------</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>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>StokesParameters</td>
<td>The four coordinates (usually called I, Q, U, and V) relative for the representation of the polarization state of an electromagnetic wave propagating through space.</td>
</tr>
<tr>
<td>Symmetric</td>
<td>Equal distribution about one or more axes.</td>
</tr>
<tr>
<td>Tensor</td>
<td>A generalized linear <em>&quot;quantity&quot;</em> 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>Trace</td>
<td>The sum of the elements on the main diagonal (the diagonal from the upper left to the lower right) of a square matrix.</td>
</tr>
<tr>
<td>Uncertainty</td>
<td>A statistically defined discrepancy between a measured quantity and the true value of that quantity that cannot be corrected by calculation or calibration.</td>
</tr>
<tr>
<td>Variance</td>
<td>A measure of dispersion of a set of data points around their mean value. The expectation value of the squared deviations from the mean.</td>
</tr>
<tr>
<td>Vector</td>
<td>A set of parameter values each along some independent variable (e.g., components of a field in three orthogonal spatial directions; atmospheric temperature values at several altitudes, or at a given latitude and longitude).</td>
</tr>
</tbody>
</table>

**Used by**

Field, Particle, Photon, Support

**Source**

```
<xs:element name="Qualifier" type="enumQualifier">
    <xs:annotation>
        <xs:documentation xml:lang="en">Characterizes the refinement to apply to a type or attribute of a quantity.</xs:documentation>
    </xs:annotation>
</xs:element>
```

**Schema location**

file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

---

**Element FieldQuantity**

**Namespace**

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

**Annotations**

The physical attribute of the field.

**Diagram**

```
<schema:complexType name="FieldQuantity">
    <schema:annotation>
        <schema:documentation xml:lang="en">The physical attribute of the field.</schema:documentation>
    </schema:annotation>
</schema:complexType>
```

**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.
**Schema documentation for spase-1_3_3.xsd**

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electromagnetic</td>
<td>The physical attribute that is or is caused by a mutual interaction of electric and magnetic fields.</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>Magnetic</td>
<td>The physical attribute attributed to a magnet or its equivalent.</td>
</tr>
<tr>
<td>PlasmaFrequency</td>
<td>The frequency with which a plasma oscillates.</td>
</tr>
<tr>
<td>Potential</td>
<td>A field which obeys Laplaces Equation.</td>
</tr>
<tr>
<td>PoyntingFlux</td>
<td>The rate of energy transport per unit area per steradian.</td>
</tr>
</tbody>
</table>

**Used by**

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

**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_3.xsd

---

**Element FrequencyRange**

**Namespace**

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

**Diagram**

![Diagram](image)

**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>
  <High>[1,1]</High>
  <Units>[1,1]</Units>
  <Bin>[0,unbounded]</Bin>
</FrequencyRange>
```

**Source**

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

**Schema location**

file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

---

**Element SpectralRange**

**Namespace**

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

**Annotations**

The general term used to describe wavelengths or frequencies within a given span of values for those quantities.
Type: `enumSpectralRange`

Properties:
- content: simple

Facets:
- `enumeration CaK`: A spectrum with a wavelength 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 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 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: 1.00x10^6 to 1.50x10^7 nm.
- `enumeration NaD`: A spectrum with a wavelength range centered at 589.3 nm. VSO nickname: Na-D image with a range of 588.8 nm to 589.8 nm.
- `enumeration Ni6768`: A spectrum with a wavelength range centered at 676.8 nm. VSO nickname: Ni-6768 dopplergram with a range of 676.7 nm to 676.9 nm.
- `enumeration Optical`: Photons with a wavelength range: 380 to 760 nm.
- `enumeration RadioFrequency`: Photons with a wavelength range: 100,000 to 1.00x10^11 nm.
- `enumeration Ultraviolet`: Photons with a wavelength range: 10 to 400 nm.
- `enumeration WhiteLight`: Photons with a wavelength in the visible range for humans!!!
- `enumeration XRays`: Photons with a wavelength range: 0.001 <= x < 10 nm.

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

Source:
```
<xs:element name="SpectralRange" type="enumSpectralRange">
  <xs:annotation>
    <xs:documentation xml:lang="en">The general term used to describe wavelengths or frequencies within a given span of values for those quantities.</xs:documentation>
  </xs:annotation>
</xs:element>
```

Schema location: file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

Element Low:

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

Annotations:
The smallest value within a range of possible values.
### Element `Low`

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

**Annotations**
The smallest value within a range of possible values.

**Diagram**
![Diagram for Low]

**Type** `xsd:double`

**Properties**
- `content: simple`

**Used by**
- Complex Types: `AzimuthalAngleRange`, `Bin`, `EnergyRange`, `FrequencyRange`, `PolarAngleRange`, `WavelengthRange`

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

**Schema location**
file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

### Element `High`

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

**Annotations**
The largest value within a range of possible values.

**Diagram**
![Diagram for High]

**Type** `xsd:double`

**Properties**
- `content: simple`

**Used by**
- Complex Types: `AzimuthalAngleRange`, `Bin`, `EnergyRange`, `FrequencyRange`, `PolarAngleRange`, `WavelengthRange`

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

**Schema location**
file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

### Element `Bin`

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

**Diagram**
![Diagram for Bin]

**Type** `Bin`

**Properties**
- `content: complex`

**Used by**
- Complex Types: `AzimuthalAngleRange`, `EnergyRange`, `FrequencyRange`, `PolarAngleRange`, `WavelengthRange`

**Model**
- `BandName{0,1}.Low.High`

**Children**
- `BandName`, `High`, `Low`

**Instance**
```xml
<Bin>
    <BandName>{0,1}</BandName>
    <Low>{1,1}</Low>
    <High>{1,1}</High>
</Bin>
```

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

**Schema location**
file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd
Element **BandName**

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Namespace</td>
<td><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></td>
</tr>
<tr>
<td>Annotations</td>
<td>A common or provider assigned name for a range of values.</td>
</tr>
<tr>
<td>Diagram</td>
<td>![Diagram of BandName]</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 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_3.xsd |

Element **Particle**

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Namespace</td>
<td><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></td>
</tr>
<tr>
<td>Diagram</td>
<td>![Diagram of Particle]</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>ParameterEntity</td>
</tr>
<tr>
<td>Affiliation</td>
<td></td>
</tr>
<tr>
<td>Model</td>
<td>ParticleType+, Qualifier*, ParticleQuantity, AtomicNumber*, EnergyRange{0,1}, AzimuthalAngleRange{0,1}, PolarAngleRange{0,1}</td>
</tr>
<tr>
<td>Children</td>
<td>AtomicNumber, AzimuthalAngleRange, EnergyRange, ParticleQuantity, ParticleType, PolarAngleRange, Qualifier</td>
</tr>
</tbody>
</table>
| Instance           | `<Particle>`  
|                    |   `<ParticleType>{1,unbounded}</ParticleType>`  
|                    |   `<Qualifier>{0,unbounded}</Qualifier>`  
|                    |   `<ParticleQuantity>{1,1}</ParticleQuantity>`  
|                    |   `<AtomicNumber>{0,unbounded}</AtomicNumber>`  
|                    |   `<EnergyRange>{0,1}</EnergyRange>`  
|                    |   `<AzimuthalAngleRange>{0,1}</AzimuthalAngleRange>`  
|                    |   `<PolarAngleRange>{0,1}</PolarAngleRange>`  
|                    |</Particle>`                                  |
| Source             | `<xsd:element name="Particle" type="Particle" substitutionGroup="ParameterEntity"/>` |
**Element ParticleType**

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

**Annotations**
A characterization of the kind of particle observed by the measurement.

**Diagram**
```
  ParticleType (Type: enumParticleType)
    +-------------------+
    |       |           |
    +--enumParticleType+--
```

**Type**
enumParticleType

**Properties**

- **content**: simple

**Facets**

- **enumeration** Aerosol: A suspension of fine solid or liquid particles in gas.
- **enumeration** AlphaParticle: A positively charged nuclear particle that consists of two protons and two neutrons.
- **enumeration** Dust: Free microscopic particles of solid material.
- **enumeration** Electron: An elementary particle consisting of a charge of negative electricity equal to about 1.602 x 10**(-19) Coulomb and having a mass when at rest of about 9.109534 x 10**(-28) gram.
- **enumeration** Ion: An atom that has acquired a net electric charge by gaining or losing one or more electrons. (Note: Z>2)
- **enumeration** Molecule: A group of atoms so united and combined by chemical affinity that they form a complete, integrated whole, being the smallest portion of any particular compound that can exist in a free state.
- **enumeration** Neutral: Either a particle, an object, or a system that has a net electric charge of zero.
- **enumeration** Proton: An elementary particle that is a constituent of all atomic nuclei, that carries a positive charge numerically equal to the charge of an electron, and that has a mass of 1.673 x 10**(-24) gram.

**Used by**
Complex Type: Particle

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

**Element ParticleQuantity**

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

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

**Diagram**
```
  ParticleQuantity (Type: enumParticleQuantity)
    +-------------------+
    |       |           |
    +--enumParticleQuantity+--
```

**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.

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>CountRate</th>
<th>The number of events per unit time.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enumeration</td>
<td>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</td>
<td>Energy</td>
<td>The capacity for doing work as measured by the capability of doing work (potential energy) or the conversion of this capability to motion (kinetic energy).</td>
</tr>
<tr>
<td>Enumeration</td>
<td>EnergyDensity</td>
<td>The amount of energy per unit volume.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>EnergyFlux</td>
<td>The amount of energy passing through a unit area in a unit time.</td>
</tr>
<tr>
<td>Enumeration</td>
<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>Enumeration</td>
<td>FlowVelocity</td>
<td>The volume of matter passing through a unit area perpendicular to the direction of flow in a unit of time.</td>
</tr>
<tr>
<td>Enumeration</td>
<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>Enumeration</td>
<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>Enumeration</td>
<td>Mass</td>
<td>The measure of inertia (mass) of individual objects (e.g., aerosols).</td>
</tr>
<tr>
<td>Enumeration</td>
<td>MassDensity</td>
<td>The mass of particles per unit volume.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>NumberDensity</td>
<td>The number of particles per unit volume.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>NumberFlux</td>
<td>The number of particles passing through a unit area in a unit time.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>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>PlasmaBeta</td>
<td>The ratio of the plasma pressure to the magnetic pressure.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>PlasmaFrequency</td>
<td>The frequency with which a plasma oscillates.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>Pressure</td>
<td>The force per unit area exerted by a particle distribution or field.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>SonicMachNumber</td>
<td>The ratio of the bulk flow speed to the speed of sound in the medium.</td>
</tr>
<tr>
<td>Enumeration</td>
<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>Enumeration</td>
<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>Enumeration</td>
<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>

Source

```
<xsd:element name="ParticleQuantity" type="enumParticleQuantity">
<xs:annotation>
```
### Element AtomicNumber

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Annotations</td>
<td>The the number of protons in the nucleus of an atom.</td>
</tr>
<tr>
<td>Diagram</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>Type</td>
<td>xsd:double</td>
</tr>
<tr>
<td>Properties</td>
<td>content: simple</td>
</tr>
<tr>
<td>Used by</td>
<td>Complex Type Particle</td>
</tr>
</tbody>
</table>
| Source | `<xsd:element name="AtomicNumber" type="xsd:double">`  
`<xsd:annotation>`  
`<xsd:documentation xml:lang="en">The the number of protons in the nucleus of an atom.</xsd:documentation>`  
`</xsd:annotation>`  
`</xsd:element>` |
| Schema location | file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd |

### Element EnergyRange

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagram</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>Type</td>
<td>EnergyRange</td>
</tr>
<tr>
<td>Properties</td>
<td>content: complex</td>
</tr>
<tr>
<td>Used by</td>
<td>Complex Types Particle, Photon</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>
</tbody>
</table>
| Instance | `<EnergyRange>`  
`<SpectralRange>{0,1}</SpectralRange>`  
`<Low>{1,1}</Low>`  
`<High>{1,1}</High>`  
`<Units>{1,1}</Units>`  
`<Bin>{0,unbounded}</Bin>`  
`</EnergyRange>` |
| Source | `<xsd:element name="EnergyRange" type="EnergyRange"/>` |
| Schema location | file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd |

### Element AzimuthalAngleRange

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

Type AzimuthalAngleRange
Properties content: complex
Used by Complex Type Particle
Model Low, High, Units, Bin*
Children Bin, High, Low, Units
Instance

<?xml version="1.0" encoding="UTF-8"?>
<AzimuthalAngleRange>
  <Low>{1,1}</Low>
  <High>{1,1}</High>
  <Units>{1,1}</Units>
  <Bin>{0,unbounded}</Bin>
</AzimuthalAngleRange>

Source <xsd:element name="AzimuthalAngleRange" type="AzimuthalAngleRange"/>
Schema location file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

Element PolarAngleRange

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

Type PolarAngleRange
Properties content: complex
Used by Complex Type Particle
Model Low, High, Units, Bin*
Children Bin, High, Low, Units
Instance

<?xml version="1.0" encoding="UTF-8"?>
<PolarAngleRange>
  <Low>{1,1}</Low>
  <High>{1,1}</High>
  <Units>{1,1}</Units>
  <Bin>{0,unbounded}</Bin>
</PolarAngleRange>

Source <xsd:element name="PolarAngleRange" type="PolarAngleRange"/>
Schema location file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

Element Photon

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

Diagram showing the structure of the Photon element.

Type

Photon

Properties

content: complex

Substitution Group

• ParameterEntity

Model

Qualifier*, PhotonQuantity, EnergyRange(0,1), WavelengthRange(0,1), FrequencyRange(0,1)

Children

EnergyRange, FrequencyRange, PhotonQuantity, Qualifier, WavelengthRange

Instance

<Photon>
  <Qualifier>[0,unbounded]</Qualifier>
  <PhotonQuantity>[1,1]</PhotonQuantity>
  <EnergyRange>[0,1]</EnergyRange>
  <WavelengthRange>[0,1]</WavelengthRange>
  <FrequencyRange>[0,1]</FrequencyRange>
</Photon>

Source

<xsd:element name="Photon" type="Photon" substitutionGroup="ParameterEntity"/>

Schema location

file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

Element PhotonQuantity

Namespace

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

Annotations

A characterization of the physical properties of the photon.

Diagram

Diagram showing the structure of the PhotonQuantity element.

Type

enumPhotonQuantity

Properties

content: simple

Facets

enumeration Emissivity The ratio of radiant energy from a material to that from a blackbody at the same kinetic temperature
enumeration EnergyFlux The amount of energy passing through a unit area in a unit time.
enumeration EquivalentWidth The area of the spectral line profile divided by the peak height or depth.
enumeration Gyrofrequency The frequency with which a charged particle (as an electron) executes spiral gyrations in moving obliquely across a magnetic field
enumeration LineDepth In spectra, a measure of the amount of absorption for a particular wavelength or frequency in the spectrum
enumeration MagneticField Measurements of magnetic field vectors (sometimes not all components) as time series; can be
### Element WavelengthRange

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

**Diagram**

![WavelengthRange diagram](image)

**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>
</WavelengthRange>
```
Element **Support**

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

**Diagram**

```
<Support>
  <Qualifier>{0,unbounded}</Qualifier>
  <SupportQuantity>{1,1}</SupportQuantity>
</Support>
```

**Type**
Support

**Properties**
content: complex

**Substitution Group**
ParameterEntity

**Affiliation**
Qualifier*, SupportQuantity

**Model**
Qualifier, SupportQuantity

**Children**
Qualifier, SupportQuantity

**Instance**

```
<Support>
  <Qualifier>{0,unbounded}</Qualifier>
  <SupportQuantity>{1,1}</SupportQuantity>
</Support>
```

**Source**
<xs:element name="Support" type="Support" substitutionGroup="ParameterEntity"/>

**Schema location**
file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

---

Element **SupportQuantity**

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

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

**Diagram**

```
<SupportQuantity>
  <enumSupportQuantity>
    <enumSupportQuantity>
      <enumSupportQuantity>
    </enumSupportQuantity>
  </enumSupportQuantity>
</SupportQuantity>
```

**Type**
enumSupportQuantity

**Properties**
content: simple

**Facets**

<table>
<thead>
<tr>
<th>Facet</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>enumeration</td>
<td>Other</td>
<td>1) A general category which is described in related text. 2) 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>
<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>
<tr>
<td>enumeration</td>
<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: Support

**Source**
<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>
Element **DisplayData**

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagram</td>
<td><img src="image" alt="Diagram of DisplayData" /></td>
</tr>
</tbody>
</table>

<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+.

---

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Element ProcessingLevel

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

Annotations
The standard classification of the processing performed on the product.

Diagram

<table>
<thead>
<tr>
<th>Type</th>
<th>simple</th>
</tr>
</thead>
</table>

Facets

<table>
<thead>
<tr>
<th>Facet</th>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>content</td>
<td>simple</td>
<td></td>
</tr>
<tr>
<td>Calibrated</td>
<td>Data wherein sensor outputs have been convolved with instrument response function, often irreversibly, to yield physical parameter values.</td>
<td></td>
</tr>
<tr>
<td>Raw</td>
<td>Data in its original state with no processing to account for calibration!!!</td>
<td></td>
</tr>
<tr>
<td>Uncalibrated</td>
<td>Duplicate data are removed from the data stream and data are time ordered. Values are not adjusted for any potential biases or external factors.</td>
<td></td>
</tr>
</tbody>
</table>

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>
```

Schema location file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

Element ProviderProcessingLevel

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

Annotations
The provider specific classification of the processing performed on the product.

Diagram

<table>
<thead>
<tr>
<th>Type</th>
<th>xsd:string</th>
</tr>
</thead>
</table>

Source

```
<xsd:element name="ProviderProcessingLevel" type="xsd:string">
  <xsd:annotation>
    <xsd:documentation>The provider specific classification of the processing performed on the product.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

Schema location file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd
**Element MeasurementType**

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

**Annotations**  
A characterization of the quantitative assessment of a phenomenon.

**Diagram**

```
MeasurementType
  Type : enumMeasurementType
```

**Type**  
enumMeasurementType

**Properties**  
content: simple

**Facets**

- **enumeration**  
  **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.

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

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

- **enumeration**  
  **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.

- **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.

- **enumeration**  
  **ImageIntensity**  
  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.

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

- **enumeration**  
  **IonComposition**  
  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.

- **enumeration**  
  **Irradiance**  
  A radiometric term for the power of electromagnetic radiation at a surface, per unit area. "Irradiance" is used when the electromagnetic radiation is incident on the surface. The SI unit of irradiance is watts per square meter (W·m⁻²).

- **enumeration**  
  **MagneticField**  
  Measurements of magnetic field vectors (sometimes not all components) as time series; can be
<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>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>
<td></td>
</tr>
<tr>
<td>enumeration 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>enumeration 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>enumeration NeutralGas</td>
<td>Measurements of neutral atomic and molecular components of a gas.</td>
</tr>
<tr>
<td>enumeration 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>enumeration 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>enumeration 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>enumeration 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>enumeration 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>enumeration 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
--- | --- | ---
Schema location | file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd | |

**Element TemporalDescription**

Namespace | http://www.spase-group.org/data/schema
--- | ---
Diagram | ![TemporalDescription Diagram]
Type | TemporalDescription
Properties | content: complex
Used by | Complex Types | DisplayData, NumericalData
Model | TimeSpan, Cadence{0,1}, Exposure{0,1}
Children | Cadence, Exposure, TimeSpan
Instance | `<TemporalDescription>` `<TimeSpan>{1,1}</TimeSpan>` `<Cadence>{0,1}</Cadence>` `<Exposure>{0,1}</Exposure>` | |
Source | `<xsd:element name="TemporalDescription" type="TemporalDescription"/>` |
Schema location | file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd | |

**Element Exposure**

Namespace | http://www.spase-group.org/data/schema
--- | ---
Annotations | The time interval over which an individual measurement is taken.
Diagram | ![Exposure Diagram]
Type | xsd:duration
Properties | content: simple
Used by | Complex Type | TemporalDescription
Source | `<xsd:element name="Exposure" type="xsd:duration">` `<xsd:annotation>` `<xsd:documentation xml:lang="en">The time interval over which an individual measurement is taken.</xsd:documentation>` `<xsd:annotation>` `<xsd:element>` | |
Schema location | file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd | |

**Element DisplayCadence**

Namespace | http://www.spase-group.org/data/schema
--- | ---
Annotations | The time interval between the successive display elements.
Diagram | ![DisplayCadence Diagram]
Type | xsd:duration
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.

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 planet's 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.
<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earth.NearSurface.Atmosphere. neutral gases surrounding a body that extends from the surface and is bound to the body by virtue of the gravitational attraction.</td>
<td></td>
</tr>
<tr>
<td>Earth.NearSurface.AuroralRegion. region in the atmospheric where electrically-charged particles bombarding the upper atmosphere of a planet in the presence of a magnetic field produce an optical phenomenon.</td>
<td></td>
</tr>
<tr>
<td>Earth.NearSurface.EquatorialRegion. region centered on the equator and limited in latitude by approximately 23 degrees north and south of the equator.</td>
<td></td>
</tr>
<tr>
<td>Earth.NearSurface.Ionosphere. charged or ionized gases surrounding a body that are nominally bound to the body by virtue of the gravitational attraction.</td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>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 Kennelly-Heaviside layer.</td>
<td></td>
</tr>
<tr>
<td>Earth.NearSurface.Ionosphere.FRegion. a layer that contains ionized gases at a height of around 150-800 km above sea level, placing it in the thermosphere. The F region has the highest concentration of free electrons and ions anywhere in the atmosphere. It may be thought of as comprising two layers, the F1- and F2-layers. One of several layers in the ionosphere. Also known as the Appleton layer.</td>
<td></td>
</tr>
<tr>
<td>Earth.NearSurface.Ionosphere.Topside. the uppermost areas of the ionosphere.</td>
<td></td>
</tr>
<tr>
<td>Earth.NearSurface.Mesosphere. layer of the atmosphere that extends from the Stratosphere to a range of 80 km to 85 km, temperature decreasing with height.</td>
<td></td>
</tr>
<tr>
<td>Earth.NearSurface.Plasmasphere. region of the magnetosphere consisting of low energy (cool) plasma. It is located above the ionosphere. The outer boundary of the plasmasphere is known as the plasmapause, which is defined by an order of magnitude drop in plasma density.</td>
<td></td>
</tr>
<tr>
<td>Earth.NearSurface.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.</td>
<td></td>
</tr>
<tr>
<td>Earth.NearSurface.SouthAtlanticAnomalyRegion. inner van Allen radiation belt makes its closest approach to the planet surface. The result is that, for a given altitude, the radiation intensity is higher over this region than elsewhere.</td>
<td></td>
</tr>
<tr>
<td>Earth.NearSurface.Stratosphere. region of the atmosphere that extends from the troposphere to about 30 km, temperature increases with height. The stratosphere contains the ozone layer.</td>
<td></td>
</tr>
<tr>
<td>Earth.NearSurface.Thermosphere. region of the atmosphere that extends from the Mesosphere to 640+ km, temperature increasing with height.</td>
<td></td>
</tr>
<tr>
<td>Enumeration</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Earth.NearSurface.Troposphere</td>
<td>The lowest layer of the atmosphere which begins at the surface and extends to between 7 km (4.4 mi) at the poles and 17 km (10.6 mi) at the equator, with some variation due to weather factors.</td>
</tr>
<tr>
<td>Earth.Surface</td>
<td>The outermost area of a solid object.</td>
</tr>
<tr>
<td>Heliosphere</td>
<td>The solar atmosphere extending roughly from the outer corona to the edge of the solar plasma at the heliopause separating primarily solar plasma from interstellar plasma.</td>
</tr>
<tr>
<td>Heliosphere.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 the heliosphere (heliopause).</td>
</tr>
<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>Interstellar</td>
<td>The region between stars outside of the stars heliopause.</td>
</tr>
<tr>
<td>Jupiter</td>
<td>The fifth planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Mars</td>
<td>The forth planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Mercury</td>
<td>The first planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Neptune</td>
<td>The seventh planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Pluto</td>
<td>The ninth (sub)planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Saturn</td>
<td>The sixth planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Sun</td>
<td>The star upon which our solar system is centered.</td>
</tr>
<tr>
<td>Sun.Chromosphere</td>
<td>The region of the Sun's (or a star's) atmosphere above the temperature minimum and below the Transition Region. The solar chromosphere is approximately 400 km to 2100 km above the photosphere, and characterized by temperatures from 4500 - 28000 K.</td>
</tr>
<tr>
<td>Sun.Corona</td>
<td>The outermost atmospheric region of the Sun or a star, characterized by ionization temperatures above 10^5 K. The solar corona starts at about 2100 km above the photosphere; there is no generally defined upper limit.</td>
</tr>
<tr>
<td>Sun.Interior</td>
<td>The region inside the body which is not visible from outside the body.</td>
</tr>
<tr>
<td>Sun.Photosphere</td>
<td>The atmospheric layer of the Sun or a star from which continuum radiation, especially optical, is emitted to space. For the Sun, the photosphere is about 500 km thick.</td>
</tr>
<tr>
<td>Sun.TransitionRegion</td>
<td>A very narrow (&lt;100 km) layer between the chromosphere and the corona where the temperature rises abruptly from about 8000 to about 500,000 K.</td>
</tr>
<tr>
<td>Uranus</td>
<td>The eighth planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Venus</td>
<td>The second planet from the sun in our solar system.</td>
</tr>
</tbody>
</table>
schema documentation for spase-1_3_3.xsd

Used by
Complex Types: DisplayData, NumericalData

Source
```
<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 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.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

Schema location
file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

Element NumericalData

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

Diagram
### Type
NumericalData

### Properties
- **content:** complex

### Substitution Group
- Affiliation

### Model
- ResourceID, ResourceHeader, AccessInformation+, ProcessingLevel[0,1], ProviderResourceName[0,1], ProviderProcessingLevel[0,1], InstrumentID+, MeasurementType+, TemporalDescription[0,1], SpectralRange*, ObservedRegion*, Caveats[0,1], Keyword*, InputResourceID*, Parameter*, Extension*

### Children
- AccessInformation, Caveats, Extension, InputResourceID, InstrumentID, Keyword, MeasurementType, ObservedRegion, Parameter, ProcessingLevel, ProviderProcessingLevel, ProviderResourceName, ProviderVersion, ResourceHeader, ResourceID, SpectralRange, TemporalDescription

### Instance
```xml
<NumericalData>
  <ResourceID>{1,1}</ResourceID>
  <ResourceHeader>{1,1}</ResourceHeader>
  <AccessInformation>{1,unbounded}</AccessInformation>
  <ProcessingLevel>{0,1}</ProcessingLevel>
  <ProviderResourceName>{0,1}</ProviderResourceName>
  <ProviderProcessingLevel>{0,1}</ProviderProcessingLevel>
  <ProviderVersion>{0,1}</ProviderVersion>
  <InstrumentID>{0,unbounded}</InstrumentID>
  <MeasurementType>{1,unbounded}</MeasurementType>
  <TemporalDescription>{0,1}</TemporalDescription>
  <SpectralRange>{0,unbounded}</SpectralRange>
  <ObservedRegion>{0,unbounded}</ObservedRegion>
  <Caveats>{0,1}</Caveats>
  <Keyword>{0,unbounded}</Keyword>
  <InputResourceID>{0,unbounded}</InputResourceID>
  <Parameter>{0,unbounded}</Parameter>
  <Extension>{0,unbounded}</Extension>
</NumericalData>
```

### Source
```xml
<xsd:element name="NumericalData" type="NumericalData" substitutionGroup="ResourceEntity"/>
```

### Schema location
file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

---

### Element
**Document**

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

### Diagram
![Diagram](image)

### Type
Document

### Properties
- **content:** complex

### Substitution Group
- Affiliation

### Model
- ResourceID, ResourceHeader, AccessInformation+, Keyword*, DocumentType, InputResourceID*

### Children
- AccessInformation, DocumentType, InputResourceID, Keyword, ResourceHeader, ResourceID
Element DocumentType

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

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

Diagram

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

Source <xsd:element name="DocumentType" type="enumDocumentType">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A characterization of the content or purpose of a document.</xsd:documentation>
  </xsd:annotation>
</xsd:element>

Schema location file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

Element Granule

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

Diagram

Type Granule
## Properties

**content:** complex

### Substitution Group

- ResourceEntity

### Model

```xml
ResourceId , ReleaseDate , ExpirationDate[0,1] , ParentID , PriorID* , StartDate , StopDate , Source+
```

### Children

ExpirationDate, ParentID, PriorID, ReleaseDate, ResourceID, Source, StartDate, StopDate

### Instance

```xml
<Granule>
<ResourceId>(1,1)</ResourceId>
<ReleaseDate>(1,1)</ReleaseDate>
<ExpirationDate>[0,1]</ExpirationDate>
<ParentID>(1,1)</ParentID>
<PriorID>[0,unbounded]</PriorID>
<StartDate>(1,1)</StartDate>
<StopDate>(1,1)</StopDate>
<Source>[1,unbounded]</Source>
</Granule>
```

### Source

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

### Schema location

file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

## 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

[Diagram of ParentID]

### Type

xsd:string

### Properties

**content:** simple

### Used by

Complex Type Granule

### Source

```xml
<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_3.xsd

## Element StopDate

### Namespace

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

### Annotations

The specification of a stopping point in time.

### Diagram

[Diagram of StopDate]

### Type

xsd:dateTime

### Properties

**content:** simple

### Substitution Group

- StopDateEntity

### Used by

Complex Type Granule

### Source

```xml
<xsd:element name="StopDate" type="xsd:dateTime" substitutionGroup="StopDateEntity"/>
```

### Schema location

file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd
The specification of a stopping point in time.

Element Source

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

Diagram

Type Source
Properties content: complex
Used by Complex Type, Granule
Model SourceType, URL, MirrorURL, Checksum[0,1], DataExtent[0,1]
Children Checksum, DataExtent, MirrorURL, SourceType, URL

Instance
<Source>
  <SourceType>(1,1)</SourceType>
  <URL>(1,1)</URL>
  <MirrorURL>(0,unbounded)</MirrorURL>
  <Checksum>(0,1)</Checksum>
  <DataExtent>(0,1)
</Source>

Source
<xs:element name="source" type="Source"/>

Schema location file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

Element SourceType

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

Annotations A characterization of the function or purpose of the source.

Type enumSourceType
Properties content: simple
Facets
enumeration Ancillary A complementary item which can be subordinate, subsidiary, auxiliary, supplementary to the primary item.
enumeration Browse A representation of an image which is suitable to reveal most or all of the details of the image.
enumeration Data A collection of organized information, usually the results of experience, observation or experiment, or a set of premises. This may consist of numbers, words, or images, particularly as measurements or observations of a set of
variables.

<table>
<thead>
<tr>
<th>enumeration</th>
<th>Layout</th>
<th>The structured arrangement of items in a collection.</th>
</tr>
</thead>
<tbody>
<tr>
<td>enumeration</td>
<td>Thumbnail</td>
<td>A small representation of an image which is suitable to infer what the full-sized image is like.</td>
</tr>
</tbody>
</table>

### Element MirrorURL

- **Namespace**: http://www.spase-group.org/data/schema
- **Annotations**: A Uniform Resource Locator (URL) to an alternate location of a resource.
- **Diagram**: ![Diagram](mirror_url_diagram.png)
- **Type**: xsd:string
- **Properties**: content: simple

### Element Checksum

- **Namespace**: http://www.spase-group.org/data/schema
- **Diagram**: ![Diagram](checksum_diagram.png)
- **Type**: Checksum
- **Properties**: content: complex

### Element HashValue

- **Namespace**: http://www.spase-group.org/data/schema
- **Instance**: `<Checksum>
  <HashValue>1</HashValue>
  <HashFunction>1</HashFunction>
</Checksum>`
- **Source**: file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd
Annotations
The value calculated by a hash function, e.g. the message digest of a digital data object.

Diagram
![Diagram](image)

Type
xsd:string

Properties
content: simple

Used by
Complex Type
Checksum

Source
```
<xs:element name="HashValue" type="xsd:string">
  <xs:annotation>
    <xs:documentation xml:lang="en">The value calculated by a hash function, e.g. the message digest of a digital data object.</xs:documentation>
  </xs:annotation>
</xs:element>
```

Schema location
file:/var/www/spase/site/root/data/schema/spase-1_3_3.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
![Diagram](image)

Type
enumHashFunction

Properties
content: simple

Facets
<table>
<thead>
<tr>
<th>Facet</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>enumeration</td>
<td>MD5</td>
<td>Message Digest 5 (MD5) is a 128-bit message digest algorithm created in 1991 by Professor Ronald Rivest.</td>
</tr>
<tr>
<td>enumeration</td>
<td>SHA1</td>
<td>Secure Hash Algorithm (SHA), a 160-bit message digest algorithm developed by the NSA and described in Federal Information Processing Standard (FIPS) publication 180-1.</td>
</tr>
<tr>
<td>enumeration</td>
<td>SHA256</td>
<td>Secure Hash Algorithm (SHA), a 256-bit message digest algorithm developed by the NSA and described in Federal Information Processing Standard (FIPS) publication 180-1.</td>
</tr>
</tbody>
</table>

Used by
Complex Type
Checksum

Source
```
<xs:element name="HashFunction" type="enumHashFunction">
  <xs:annotation>
    <xs:documentation xml:lang="en">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.</xs:documentation>
  </xs:annotation>
</xs:element>
```

Schema location
file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

**Element Instrument**

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

```
<Instrument>
  <ResourceID>[1,1]</ResourceID>
  <ResourceHeader>[1,1]</ResourceHeader>
  <InstrumentType>[1,unbounded]</InstrumentType>
  <InvestigationName>[1,1]</InvestigationName>
  <ObservatoryID>[1,1]</ObservatoryID>
  <Caveats>[0,1]</Caveats>
  <Extension>[0,unbounded]</Extension>
</Instrument>
```

### Schema documentation for spase-1_3_3.xsd

#### Type

**Instrument**

#### Properties

- **content:** complex

#### Substitution Group

- **ResourceEntity**

#### Model

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

#### Children

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

#### Instance

```
<Instrument>
  <ResourceID>[1,1]</ResourceID>
  <ResourceHeader>[1,1]</ResourceHeader>
  <InstrumentType>[1,unbounded]</InstrumentType>
  <InvestigationName>[1,1]</InvestigationName>
  <ObservatoryID>[1,1]</ObservatoryID>
  <Caveats>[0,1]</Caveats>
  <Extension>[0,unbounded]</Extension>
</Instrument>
```

#### Source

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

#### Schema location

file://var/www/spase/site/root/data/schema/spase-1_3_3.xsd

### Element InstrumentType

#### Namespace

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

#### Annotations

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.

#### Diagram

```
InstrumentType
  Type enumInstrumentType
```

#### Type

**enumInstrumentType**

#### Properties

- **content:** simple

#### Facets

- **enumeration** Antenna  
  A sensor used to measure electric potential.

- **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.

- **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.
<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DoubleSphere</td>
<td>A dipole antenna of which the active (sensor) elements are small spheres located at the ends of two wires deployed in the equatorial plane, on opposite sides of a spinning spacecraft.</td>
</tr>
<tr>
<td>DustDetector</td>
<td>An instrument which determines the mass and speed of ambient dust particles.</td>
</tr>
<tr>
<td>ElectronDriftInstrument</td>
<td>An active experiment to measure the electron drift velocity based on sensing the displacement of a weak beam of electrons after one gyration in the ambient magnetic field.</td>
</tr>
<tr>
<td>ElectrostaticAnalyser</td>
<td>An instrument which uses charged plates to analyze the mass, charge and kinetic energies of charged particles which enter the instrument.</td>
</tr>
<tr>
<td>EnergeticParticleInstrument</td>
<td>An instrument that measures fluxes of charged particles as a function of time, direction of motion, mass, charge and/or species.</td>
</tr>
<tr>
<td>FaradayCup</td>
<td>An instrument consisting of an electrode from which electrical current is measured while a charged particle beam (electrons or ions) impinges on it. Used to determine energy spectrum and sometimes ion composition of the impinging particles.</td>
</tr>
<tr>
<td>FluxFeedback</td>
<td>A search coil whose bandwidth and signal/noise ratio are increased by the application of negative feedback at the sensor (flux) level by driving a collocated coil with a signal from the preamplifier.</td>
</tr>
<tr>
<td>FourierTransformSpectrograph</td>
<td>An instrument that determines the spectra of a radiative source, using time-domain measurements and a Fourier transform.</td>
</tr>
<tr>
<td>GeigerMuellerTube</td>
<td>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>IonDrift</td>
<td>A device which measures the current produced by the displacement of ambient ions on a grid, thereby allowing the determination of the ion trajectory and velocity.</td>
</tr>
<tr>
<td>LangmuirProbe</td>
<td>A monopole antenna associated with an instrument. The instrument applies a potential to the antenna which is swept to determine the voltage/current characteristic. This provides information about the plasma surrounding the probe and spacecraft.</td>
</tr>
<tr>
<td>LongWire</td>
<td>A dipole antenna whose active (sensor) elements are two wires deployed in the equatorial plane on opposite sides of a spinning spacecraft, and whose length is several times greater than the spacecraft diameter.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Schema documentation for spase-1_3_3.xsd</td>
</tr>
<tr>
<td>-------------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td>enumeration</td>
<td>Magnetometer An instrument which measures the ambient magnetic field.</td>
</tr>
<tr>
<td>enumeration</td>
<td>MassSpectrometer An instrument which distinguishes chemical species in terms of their different isotopic masses.</td>
</tr>
<tr>
<td>enumeration</td>
<td>MicrochannelPlate An instrument used for the detection of elementary particles, ions, ultraviolet rays and soft X-rays constructed from very thin conductive glass capillaries.</td>
</tr>
<tr>
<td>enumeration</td>
<td>MultispectralImager An instrument which captures images at multiple spectral ranges.</td>
</tr>
<tr>
<td>enumeration</td>
<td>NeutralAtomImager An instrument which measures the quantity and properties of neutral particles over a range of angles. Measured properties can include mass and energy.</td>
</tr>
<tr>
<td>enumeration</td>
<td>NeutralParticleDetector An instrument which measures the quantity and properties of neutral particles. Measured properties can include mass and plasma bulk densities.</td>
</tr>
<tr>
<td>enumeration</td>
<td>ParticleCorrelator An instrument which correlates particle flux to help identify wave/particle interactions.</td>
</tr>
<tr>
<td>enumeration</td>
<td>ParticleDetector An instrument which detects particle flux.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Photometer 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>enumeration</td>
<td>Photopolarimeter An instrument which measures the intensity and polarization or radiant energy. A photopolarimeter is a combination of a photometer and a polarimeter.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Platform A collection of components which can be positioned and oriented as a single unit. A platform may contain other platforms. For example, a spacecraft is a platform which may have components that can be articulated and are also considered platforms.</td>
</tr>
<tr>
<td>enumeration</td>
<td>ProportionalCounter An instrument which measures energy of ionization radiation based on interactions with a gas.</td>
</tr>
<tr>
<td>enumeration</td>
<td>QuadrisphericalAnalyser An instrument used for the 3-D detection of plasma, energetic electrons and ions, and for positive-ion composition measurements.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Radar An instrument that uses directional properties of returned power to infer spatial and/or other characteristics of a remote object.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Radiometer An instrument for detecting or measuring radiant energy. Radiometers are commonly limited to infrared radiation.</td>
</tr>
<tr>
<td>enumeration</td>
<td>ResonanceSounder A combination of a radio receiver and a pulsed transmitter used to study the plasma surrounding a spacecraft by identifying resonances or cut-offs (of the wave dispersion relation), whose frequencies are related to the ambient plasma density and magnetic field. When the transmitter is off it is essentially a high frequency-resolution spectral power receiver.</td>
</tr>
<tr>
<td>enumeration</td>
<td>RetardingPotentialAnalyser An instrument which measures ion temperatures and ion concentrations using aplanar ion trap.</td>
</tr>
</tbody>
</table>
Riometer: 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.

ScintillationDetector: An instrument which detects flourescences of a material which is excited by high energy (ionizing) electromagnetic or charged particle radiation.

SearchCoil: 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.

Sounder: An instrument which measures the radiances from an object. A sounder may measure radiances at multiple spectral ranges.

SpacecraftPotentialControl: An instrument to control the electric potential of a spacecraft with respect to the ambient plasma by emitting a variable current of positive ions.

SpectralPowerReceiver: A radio receiver which determines the power spectral density of the electric or magnetic field, or both, at one or more frequencies.

Spectrometer: An instrument that measures the component wavelengths of light or other electromagnetic radiation into its component wavelengths.

TimeofFlight: An instrument which measures the time it takes for a particle to travel between two detectors.

Unspecified: A value which is not provided.

WaveformReceiver: A radio receiver which outputs the value of one or more components of the electric and/or magnetic field as a function of time.
### Properties

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

### Used by

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

### Source

```xml
<xsd:element name="InvestigationName" type="xsd:string">
<xsd:annotation>
<xsd:documentation xml:lang="en">The name given to the contract or engagement which enabled the data to be produced. Each investigation is associated with a Principal Investigator or Guest Investigator who was responsible for the original proposal. For single PI missions each major subsystem having its own identified Team Leader may also be classed as an "Investigation" for the purposes of data archiving.</xsd:documentation>
</xsd:annotation>
</xsd:element>
```

### Schema location

`file://var/www/spase/site/root/data/schema/spase-1_3_3.xsd`

---

### Element ObservatoryID

**Namespace**

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

**Annotations**

The identifier of an Observatory resource.

**Diagram**

![Diagram of ObservatoryID](image)

**Type**

`xsd:string`

**Properties**

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

**Used by**

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

**Source**

```xml
<xsd:element name="ObservatoryID" type="xsd:string">
<xsd:annotation>
<xsd:documentation xml:lang="en">The identifier of an Observatory resource.</xsd:documentation>
</xsd:annotation>
</xsd:element>
```

### Schema location

`file://var/www/spase/site/root/data/schema/spase-1_3_3.xsd`

---

### Element Observatory

**Namespace**

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

**Diagram**

![Diagram of Observatory](image)

**Type**

`Observatory`

**Properties**

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

**Substitution Group**

- ResourceEntity

**Affiliation**

- ResourceID, ResourceHeader, ObservatoryGroup*, Location, Extension*

**Model**

ResourceID, ResourceHeader, ObservatoryGroup*, Location, Extension*

**Children**

Extension, Location, ObservatoryGroup, ResourceHeader, ResourceID
### Schema documentation for spase-1_3_3.xsd

#### Instance

```xml
<Observatory>
  <ResourceID>{1,1}</ResourceID>
  <ResourceHeader>{1,1}</ResourceHeader>
  <ObservatoryGroup>{0,unbounded}</ObservatoryGroup>
  <Location>{1,1}</Location>
  <Extension>{0,unbounded}</Extension>
</Observatory>
```

#### Source

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

#### 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="image" 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>
</tbody>
</table>

#### Source

```xml
<xsd:element name="ObservatoryGroup" type="xsd:string">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A set of programmatically related observatories. The value is taken from an approved list of observatory group names.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

#### 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="image" 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>
</tbody>
</table>

#### Instance

```xml
<Location>
  <ObservatoryRegion>{1,unbounded}</ObservatoryRegion>
  <CoordinateSystemName>{0,1}</CoordinateSystemName>
  <Latitude>{0,1}</Latitude>
  <Longitude>{0,1}</Longitude>
  <Elevation>{0,1}</Elevation>
</Location>
```

#### Source

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

#### Schema location

file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd
## Element ObservatoryRegion

<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 spatial location distinguished by certain natural features or physical characteristics where an observatory is located.</td>
</tr>
<tr>
<td>Diagram</td>
<td><img src="Diagram.png" alt="" /></td>
</tr>
<tr>
<td>Type</td>
<td>enumRegion</td>
</tr>
<tr>
<td>Properties</td>
<td>content: simple</td>
</tr>
</tbody>
</table>

### 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 planet’s magnetic field.</td>
</tr>
<tr>
<td>Earth.Magnetosphere.Magnetotail</td>
<td>The region on the night side of the body where the magnetic field is stretched backwards by the force of the solar wind. For Earth, the magnetotail begins at a night-side radial distance of 10 Re (X &gt; -10Re).</td>
</tr>
<tr>
<td>Earth.Magnetosphere.Main</td>
<td>The region of the magnetosphere where the magnetic field lines are closed, but does not include the gaseous region gravitationally bound to the body.</td>
</tr>
<tr>
<td>Earth.Magnetosphere.Polar</td>
<td>The region near the pole of a body. For a magnetosphere the polar region is the area where magnetic field lines are open and includes the auroral zone.</td>
</tr>
<tr>
<td>Earth.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.Atlmosphere</td>
<td>The neutral gases surrounding a body that extends from the surface and is bound to the body by virtue of the gravitational attraction.</td>
</tr>
<tr>
<td>Earth.NearSurface.AuroralRegion</td>
<td>An area in the atmospheric where electrically-charged particles bombarding the upper atmosphere of a planet in the presence of a magnetic field produce an optical phenomena.</td>
</tr>
<tr>
<td>Earth.NearSurface.EquatorialRegion</td>
<td>A region centered on the equator and limited in latitude by approximately 23 degrees north and south of the equator.</td>
</tr>
<tr>
<td>Earth.NearSurface.Ionosphere</td>
<td>Charged or ionized gases surrounding a body that are nominally bound to the body by virtue of the gravitational attraction.</td>
</tr>
</tbody>
</table>
**Earth.NearSurface.Ionosphere.DRegion**
The layer of the ionosphere that exists approximately 50 to 95 km above the surface of the Earth. One of several layers in the ionosphere.

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

**Earth.NearSurface.Ionosphere.Topside**
The uppermost areas of the ionosphere.

**Earth.NearSurface.Mesosphere**
The 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**
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.

**Earth.NearSurface.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.

**Earth.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.

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

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

**Earth.NearSurface.Troposphere**
The lowest layer of the atmosphere which begins at the surface and extends to between 7 km (4.4 mi) at the poles and 17 km (10.6 mi) at the equator, with some variation due to weather factors.

**Earth.Surface**
The outermost area of a solid object.

**Heliosphere**
The solar atmosphere extending roughly from the outer corona to the edge of the solar plasma at the heliopause separating primarily solar plasma from interstellar plasma.

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

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

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heliosphere OUTER</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>Heliosphere REMOTE 1AU</td>
<td>The heliospheric region near the Earth's orbit, but exclusive of the region near the Earth.</td>
</tr>
<tr>
<td>Interstellar</td>
<td>The region between stars outside of the stars heliopause.</td>
</tr>
<tr>
<td>Jupiter</td>
<td>The fifth planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Mars</td>
<td>The forth planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Mercury</td>
<td>The first planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Neptune</td>
<td>The seventh planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Pluto</td>
<td>The ninth (sub)planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Saturn</td>
<td>The sixth planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Sun</td>
<td>The star upon which our solar system is centered.</td>
</tr>
<tr>
<td>Sun CHROMOSPHERE</td>
<td>The region of the Sun's (or a star's) atmosphere above the temperature minimum and below the Transition Region. The solar chromosphere is approximately 400 km to 2100 km above the photosphere, and characterized by temperatures from 4500 to 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 TRANSITION REGION</td>
<td>A very narrow (&lt;100 km) layer between the chromosphere and the corona where the temperature rises abruptly from about 8500 to about 500,000 K.</td>
</tr>
<tr>
<td>Uranus</td>
<td>The eighth planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Venus</td>
<td>The second planet from the sun in our solar system.</td>
</tr>
</tbody>
</table>

**Element 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
Type
xsd:double
Properties
content: simple
Used by
Complex Type Location
Source
<xs:element name="Latitude" type="xsd:double">
  <xs:annotation>
    <xs: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.</xs:documentation>
  </xs:annotation>
</xs:element>
Schema location file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

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
Type
xsd:double
Properties
content: simple
Used by
Complex Type Location
Source
<xs:element name="Longitude" type="xsd:double">
  <xs:annotation>
    <xs: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.</xs:documentation>
  </xs:annotation>
</xs:element>
Schema location file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

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
Type
xsd:double
Properties
content: simple
Used by
Complex Type Location
Source
<xs:element name="Elevation" type="xsd:double">
  <xs:annotation>
    <xs: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).</xs:documentation>
  </xs:annotation>
</xs:element>
Element Person

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

Diagram

Type Person

Properties content: complex

Substitution Group Affiliation • ResourceEntity

Model ResourceID, ReleaseDate[0,1], PersonName[0,1], OrganizationName, Address[0,1], Email*, PhoneNumber*, Extension*, FaxNumber[0,1]

Children Address, Email, Extension, FaxNumber, OrganizationName, PersonName, PhoneNumber, ReleaseDate, ResourceID

Instance

```
<Person>
    <ResourceID>{1,1}</ResourceID>
    <ReleaseDate>[0,1]/ReleaseDate>
    <PersonName>[0,1]/PersonName>
    <OrganizationName>[1,1]/OrganizationName>
    <Address>[0,1]/Address>
    <Email>[0,unbounded]/Email>
    <PhoneNumber>[0,unbounded]/PhoneNumber>
    <Extension>[0,unbounded]/Extension>
    <FaxNumber>[0,1]/FaxNumber>
</Person>
```

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

Schema location file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

Element PersonName

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

Annotations The words used to address an individual.

Diagram

Type xsd:string

Properties content: simple
<table>
<thead>
<tr>
<th>Used by</th>
<th>Complex Type</th>
<th>Person</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source</td>
<td><code>&lt;xsd:element name=&quot;PersonName&quot; type=&quot;xsd:string&quot;&gt;</code></td>
<td></td>
</tr>
<tr>
<td></td>
<td><code>&lt;xsd:annotation&gt;</code></td>
<td></td>
</tr>
<tr>
<td></td>
<td><code>&lt;xsd:documentation xml:lang=&quot;en&quot;&gt;The words used to address an individual.&lt;/xsd:documentation&gt;</code></td>
<td></td>
</tr>
<tr>
<td></td>
<td><code>&lt;xsd:element&gt;</code></td>
<td></td>
</tr>
<tr>
<td>Schema location</td>
<td>file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd</td>
<td></td>
</tr>
</tbody>
</table>

**Element OrganizationName**

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Annotations</td>
<td>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.</td>
</tr>
<tr>
<td>Diagram</td>
<td><img src="image" alt="Diagram OrganizationName" /></td>
</tr>
<tr>
<td>Type</td>
<td><code>xsd:string</code></td>
</tr>
<tr>
<td>Properties</td>
<td>content: <code>simple</code></td>
</tr>
<tr>
<td>Used by</td>
<td>Complex Type</td>
</tr>
<tr>
<td>Source</td>
<td><code>&lt;xsd:element name=&quot;OrganizationName&quot; type=&quot;xsd:string&quot;&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;xsd:annotation&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;xsd:documentation xml:lang=&quot;en&quot;&gt;A unit within a company or other entity (e.g., Government agency or branch of service) within which many projects are managed as a whole.&lt;/xsd:documentation&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;xsd:element&gt;</code></td>
</tr>
<tr>
<td>Schema location</td>
<td>file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd</td>
</tr>
</tbody>
</table>

**Element Address**

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Annotations</td>
<td>Directions for finding some location; written on letters or packages that are to be delivered to that location.</td>
</tr>
<tr>
<td>Diagram</td>
<td><img src="image" alt="Diagram Address" /></td>
</tr>
<tr>
<td>Type</td>
<td><code>xsd:string</code></td>
</tr>
<tr>
<td>Properties</td>
<td>content: <code>simple</code></td>
</tr>
<tr>
<td>Used by</td>
<td>Complex Type</td>
</tr>
<tr>
<td>Source</td>
<td><code>&lt;xsd:element name=&quot;Address&quot; type=&quot;xsd:string&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;Directions for finding some location; written on letters or packages that are to be delivered to that location.&lt;/xsd:documentation&gt;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;xsd:element&gt;</code></td>
</tr>
<tr>
<td>Schema location</td>
<td>file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd</td>
</tr>
</tbody>
</table>

**Element Email**

<table>
<thead>
<tr>
<th>Namespace</th>
<th><a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Annotations</td>
<td>The electronic address at which the individual may be contacted expressed in the form &quot;local-part@domain&quot;.</td>
</tr>
<tr>
<td>Diagram</td>
<td><img src="image" alt="Diagram Email" /></td>
</tr>
<tr>
<td>Type</td>
<td><code>xsd:string</code></td>
</tr>
<tr>
<td>Properties</td>
<td>content: <code>simple</code></td>
</tr>
</tbody>
</table>
### 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**

```
PhoneNumber
  Type: xsd:string
```

**Type**
xsd:string

**Properties**
content: simple

**Used by**
Complex Type  Person

---

### 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**

```
FaxNumber
  Type: xsd:string
```

**Type**
xsd:string

**Properties**
content: simple

**Used by**
Complex Type  Person

---

### Element **Registry**

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

---
### Element Registry

**Diagram**

![Diagram of Registry](image)

**Type**

Registry

**Properties**

- content: complex

**Substitution Group**

- ResourceEntity

**Model**

- ResourceID, ResourceHeader, Extension*

**Children**

- Extension, ResourceHeader, ResourceID

**Instance**

```
<Registry>
  <ResourceID>(1,1)</ResourceID>
  <ResourceHeader>(1,1)</ResourceHeader>
  <Extension>(0,unbounded)</Extension>
</Registry>
```

**Source**

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

**Schema location**

file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

### Element Repository

**Diagram**

![Diagram of Repository](image)

**Type**

Repository

**Properties**

- content: complex

**Substitution Group**

- ResourceEntity

**Model**

- ResourceID, ResourceHeader, Extension*

**Children**

- Extension, ResourceHeader, ResourceID

**Instance**

```
<Repository>
  <ResourceID>(1,1)</ResourceID>
  <ResourceHeader>(1,1)</ResourceHeader>
  <Extension>(0,unbounded)</Extension>
</Repository>
```

**Source**

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

**Schema location**

file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

### Element Service

**Namespace**

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

**Diagram**

![Diagram of Service](image)

**Type**

Service

**Properties**

- content: complex

**Substitution Group**

- ResourceEntity

**Model**

- ResourceID, ResourceHeader, Extension*

**Children**

- Extension, ResourceHeader, ResourceID

**Instance**

```
<Service>
  <ResourceID>(1,1)</ResourceID>
  <ResourceHeader>(1,1)</ResourceHeader>
  <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_3.xsd

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Diagram

Type Service
Properties
Substitution Group ResourceEntity
Affiliation
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_3.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
Substitution Group ParameterEntity
Affiliation
Source
<xsd:element name="Mixed" type="xsd:string" substitutionGroup="ParameterEntity"/>
<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_3.xsd

Element RelativeStopDate

Namespace http://www.spase-group.org/data/schema
Annotations An indication of the nominal end date relative to the present.
Diagram

Type: `xsd:duration`

Properties:
- `content`: simple

Substitution Group: StopDateEntity

Affiliation:

Source:
```xml
<xs:element name="RelativeStopDate" type="xsd:duration" substitutionGroup="StopDateEntity"/>
```

Annotations:
- `xml:lang`: "en"
- "An indication of the nominal end date relative to the present." (Documentation)

Schema location: file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

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." (Documentation)

Diagram

Attributes:
- QName: Spase
- Type: xsd:string
- Fixed: en
- Default: optional
- Use: optional

Source:
```xml
<xs:complexType name="Spase">
    <xs:annotation>
        <xs: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. </xs:documentation>
    </xs:annotation>
    <xs:sequence>
        <xs:element ref="Version" minOccurs="1" maxOccurs="1"/>
        <xs:element ref="ResourceEntity" minOccurs="0" maxOccurs="unbounded"/>
    </xs:sequence>
    <xs:attribute name="lang" type="xsd:string" default="en"/>
</xs:complexType>
```

Schema location: file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

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,
Diagram

Used by

<table>
<thead>
<tr>
<th>Element</th>
<th>Catalog</th>
</tr>
</thead>
<tbody>
<tr>
<td>ResourceID</td>
<td></td>
</tr>
<tr>
<td>ResourceHeader</td>
<td></td>
</tr>
<tr>
<td>AccessInformation+</td>
<td></td>
</tr>
<tr>
<td>ProviderResourceName[0,1]</td>
<td></td>
</tr>
<tr>
<td>ProviderVersion[0,1]</td>
<td></td>
</tr>
<tr>
<td>InstrumentID*</td>
<td></td>
</tr>
<tr>
<td>PhenomenonType+</td>
<td></td>
</tr>
<tr>
<td>TimeSpan{0,1}</td>
<td></td>
</tr>
<tr>
<td>Caveats{0,1}</td>
<td></td>
</tr>
<tr>
<td>Keyword*</td>
<td></td>
</tr>
<tr>
<td>InputResourceID*</td>
<td></td>
</tr>
<tr>
<td>Parameter*</td>
<td></td>
</tr>
<tr>
<td>Extension*</td>
<td></td>
</tr>
</tbody>
</table>

Source

<xsd:complexType name="Catalog">
  <xsd:annotation>
    <xsd: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.</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="ProviderResourceName" minOccurs="0" maxOccurs="1"/>
    <xsd:element ref="ProviderVersion" minOccurs="0" maxOccurs="1"/>
    <xsd:element ref="InstrumentID" minOccurs="0" maxOccurs="unbounded"/>
    <xsd:element ref="PhenomenonType" minOccurs="1" maxOccurs="unbounded"/>
    <xsd:element ref="TimeSpan" minOccurs="0" maxOccurs="1"/>
    <xsd:element ref="Caveats" minOccurs="0" maxOccurs="1"/>
    <xsd:element ref="Keyword" minOccurs="0" maxOccurs="unbounded"/>
    <xsd:element ref="InputResourceID" minOccurs="0" maxOccurs="unbounded"/>
    <xsd:element ref="Parameter" minOccurs="0" maxOccurs="unbounded"/>
    <xsd:element ref="Extension" minOccurs="0" maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd: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
Schema documentation for spase-1_3_3.xsd

Diagram

Used by
Element ResourceHeader

Model
ResourceName, AlternateName*, ReleaseDate, ExpirationDate(0,1), Description, Acknowledgement(0,1), Contact+, InformationURL*, Association*, PriorID*

Children
Acknowledgement, AlternateName, Association, Contact, Description, ExpirationDate, InformationURL, PriorID, ReleaseDate, ResourceName

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

Diagram

Used by
Element Contact

Model PersonID, Role+

Children PersonID, Role

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Source

<xsd:complexType name="Contact">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">The person or organization who may be able to provide special assistance or serve as a channel for communication for additional information about a resource.</xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
        <xsd:element ref="PersonID" minOccurs="1" maxOccurs="1"/>
        <xsd:element ref="Role" minOccurs="1" maxOccurs="unbounded"/>
    </xsd:sequence>
</xsd: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

<xsd:complexType name="InformationURL">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">Attributes of the method of acquiring additional information.</xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
        <xsd:element ref="Name" minOccurs="0" maxOccurs="1"/>
        <xsd:element ref="URL" minOccurs="1" maxOccurs="1"/>
        <xsd:element ref="Description" minOccurs="0" maxOccurs="1"/>
    </xsd:sequence>
</xsd:complexType>

Complex Type Association

Namespace http://www.spase-group.org/data/schema
Annotations Attributes of a relationship a resource has with another resource.

Diagram

Used by Element Association

Model AssociationID{0,1}, AssociationType{0,1}, Note{0,1}

Children AssociationID, AssociationType, Note

Source

<xsd:complexType name="Association">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">Attributes of a relationship a resource has with another resource.</xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
        <xsd:element ref="AssociationID" minOccurs="0" maxOccurs="1"/>
        <xsd:element ref="AssociationType" minOccurs="0" maxOccurs="1"/>
        <xsd:element ref="Note" minOccurs="0" maxOccurs="1"/>
    </xsd:sequence>
</xsd:complexType>
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**

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**

```xml
<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_3.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**

---

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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**  
![Diagram of DataExtent]

**Used by**  
Element `DataExtent`

**Model**  
Quantity, Units[0,1], Per[0,1]

**Children**  
Per, Quantity, Units

**Source**  
```xml  
<xs:complexType name="DataExtent">  
  <xs:annotation>  
    <xs: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.</xs:documentation>  
  </xs:annotation>  
  <xs:sequence>  
    <xs:element ref="Quantity" minOccurs="1" maxOccurs="1"/>  
    <xs:element ref="Units" minOccurs="0" maxOccurs="1"/>  
    <xs:element ref="Per" minOccurs="0" maxOccurs="1"/>  
  </xs:sequence>  
</xs:complexType>  
```

**Complex Type `TimeSpan`**

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

**Annotations**  
The duration of an interval in time.

**Diagram**  
![Diagram of TimeSpan]

**Used by**  
Element `TimeSpan`

**Model**  
StartDate, StopDateEntity, Note*

**Children**  
Note, StartDate, StopDateEntity

**Source**  
```xml  
<xs:complexType name="TimeSpan">  
  <xs:annotation>  
    <xs:documentation>  
      <xs:abstract>true</xs:abstract>  
    </xs:documentation>  
  </xs:annotation>  
  <xs:sequence>  
    <xs:element ref="Note" minOccurs="0" maxOccurs="*"/>  
  </xs:sequence>  
</xs:complexType>  
```
<xsd:documentation xml:lang="en">The duration of an interval in time.</xsd:documentation>
</xsd:annotation>
<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 Parameter

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

Annotations A container of information regarding a parameter whose values are part of the product. Every product contains or can be related to one or more parameters.

Used by
Element Parameter

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

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

Source
<xsd:complexType name="Parameter">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A container of information regarding a parameter whose values are part of the product. Every product contains or can be related to one or more parameters.</xsd:documentation>
  </xsd:annotation>
</xsd:complexType>
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

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 RenderingHints

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

Annotations  Attributes to aid in the rendering of parameter.

Diagram
### Complex Type Structure

- **Namespace**: http://www.spase-group.org/data/schema
- **Annotations**: The organization and relationship of individual values within a quantity.

![Diagram](image)

### Used by

- **Element**
- **Structure**

### Model

- **Size**
- **Description**
- **Element**

### Children

- **Description**, **Element**, **Size**

### Source

```xml
<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>
```

### Schema location

file://var/www/spase/site/root/data/schema/spase-1_3_3.xsd

---

### 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

Used by
Element Element

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

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

Schema location
file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

Complex Type Field

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

Annotations
The space around a radiating body within which its electromagnetic attributes can exert force on another similar body that is not in direct contact.

Diagram

Used by
Element Field

Model
Qualifier*, FieldQuantity, FrequencyRange[0,1]

Children
FieldQuantity, FrequencyRange, Qualifier

Source
<xsd:complexType name="Field">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The space around a radiating body within which
its electromagnetic attributes can exert force on another similar body that is not in direct contact. </xsd:documentation>
</xsd:annotation>
</xsd:sequence>
</xsd:complexType>

Complex Type FrequencyRange

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

Annotations The range of possible values for the observed frequency.

Diagram

Used by
Element FrequencyRange

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

Children Bin, High, Low, SpectralRange, Units

Source
<xsd:complexType name="FrequencyRange">
<xsd:annotation>
<xsd:documentation xml:lang="en">The range of possible values for the observed frequency.</xsd:documentation>
</xsd:annotation>
<xsd:sequence>
<xsd:element ref="SpectralRange" minOccurs="0" maxOccurs="1"/>
<xsd:element ref="Low" minOccurs="1" maxOccurs="1"/>
<xsd:element ref="High" minOccurs="1" maxOccurs="1"/>
<xsd:element ref="Units" minOccurs="1" maxOccurs="1"/>
<xsd:element ref="Bin" minOccurs="0" maxOccurs="unbounded"/>
</xsd:sequence>
</xsd:complexType>

Complex Type Bin

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

Annotations A grouping of observations according to a band or window of a common attribute.

Diagram

Used by
Element Bin

Model BandName(0,1), Low, High

Children BandName, High, Low

Source
<xsd:complexType name="Bin">
<xsd:annotation>
A grouping of observations according to a band or window of a common attribute.

Complex Type Particle

Namespace: http://www.spase-group.org/data/schema
Annotations: A description of the types of particles observed in the measurement. This includes both direct observations and inferred observations.

Diagram:

Used by:
- Element
- Particle

Model:
- ParticleType+ , Qualifier*, ParticleQuantity*, AtomicNumber*, EnergyRange[0,1), AzimuthalAngleRange[0,1), PolarAngleRange(0,1)

Children:
- AtomicNumber, AzimuthalAngleRange, EnergyRange, ParticleQuantity, ParticleType, PolarAngleRange, Qualifier

Source:

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

```
<xs:complexType name="EnergyRange">
  <xs:annotation>
    <xs:documentation xml:lang="en">The minimum and maximum energy values of the particles represented by a given "physical parameter" description.</xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element ref="SpectralRange" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="Low" minOccurs="1" maxOccurs="1"/>
    <xs:element ref="High" minOccurs="1" maxOccurs="1"/>
    <xs:element ref="Units" minOccurs="1" maxOccurs="1"/>
    <xs:element ref="Bin" minOccurs="0" maxOccurs="unbounded"/>
  </xs:sequence>
</xs:complexType>
```

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

```
<xs:complexType name="AzimuthalAngleRange">
  <xs:annotation>
    <xs:documentation xml:lang="en">The range of possible azimuthal angles for a group of energy observations. Default units are degrees.</xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element ref="Low" minOccurs="1" maxOccurs="1"/>
    <xs:element ref="High" minOccurs="1" maxOccurs="1"/>
    <xs:element ref="Units" minOccurs="1" maxOccurs="1"/>
    <xs:element ref="Bin" minOccurs="0" maxOccurs="unbounded"/>
  </xs:sequence>
</xs:complexType>
```

Schema location file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd
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

Schema documentation for spase-1_3_3.xsd

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
Model | Qualifier*, PhotonQuantity, EnergyRange{0,1}, WavelengthRange{0,1}, FrequencyRange{0,1}
Children | EnergyRange, FrequencyRange, PhotonQuantity, Qualifier, WavelengthRange
Source

Schema location | file://var/www/spase/site/root/data/schema/spase-1_3_3.xsd
Complex Type **WavelengthRange**

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

**Annotations**  
The range of possible values for the observed wavelength.

**Diagram**

---

**Used by**  
Element WavelengthRange

**Model**  
SpectralRange{0,1}, Low, High, Units, Bin*

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

**Source**

```
<xsd:complexType name="WavelengthRange">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The range of possible values for the observed wavelength.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element ref="SpectralRange" minOccurs="0" maxOccurs="1"/>
    <xsd:element ref="Low" minOccurs="1" maxOccurs="1"/>
    <xsd:element ref="High" minOccurs="1" maxOccurs="1"/>
    <xsd:element ref="Units" minOccurs="1" maxOccurs="1"/>
    <xsd:element ref="Bin" minOccurs="0" maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>
```

**Schema location**  
file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

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**

---

**Used by**  
Element Support

**Model**  
Qualifier*, SupportQuantity

**Children**  
Qualifier, SupportQuantity

**Source**

```
<xsd:complexType name="Support">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Information useful in understanding the context of an observation, typically observed or measured coincidentally with a physical observation.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element ref="Qualifier" minOccurs="0" maxOccurs="unbounded"/>
    <xsd:element ref="SupportQuantity" minOccurs="1" maxOccurs="1"/>
  </xsd:sequence>
</xsd:complexType>
```

**Schema location**  
file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd
Complex Type DisplayData

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

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

Diagram

Used by

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

| Children | AccessInformation, Caveats, DisplayCadence, Extension, InputResourceID, InstrumentID, Keyword, MeasurementType, ObservedRegion, Parameter, ProcessingLevel, ProviderProcessingLevel, ProviderResourceName, ProviderVersion, ResourceHeader, ResourceID, SpectralRange, TemporalDescription |

Source

```xml
<xsd:complexType name="DisplayData">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A graphical representation of data wherein the underlying numeric values are not (readily) accessible for analysis... Examples are line plots and spectrograms.</xsd:documentation>
  </xsd:annotation>
</xsd:complexType>
```
the underlying numeric values are not (readily) accessible for analysis. Examples are line plots and spectrograms.

```
<xs:documentation>
  A characterization of the time over which the measurement was taken.
</xs:documentation>
```

Complex Type TemporalDescription

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

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

Diagram

```
<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

Model
- ResourceID
- ResourceHeader
- AccessInformation
- ProcessingLevel
- ProviderResourceName
- ProviderProcessingLevel
- ProviderVersion
- InstrumentID
- MeasurementType
- TemporalDescription
- SpectralRange
- ObservedRegion
- Caveats
- Keyword
- InputResourceID
- Parameter
- Extension

Children
- AccessInformation
- Caveats
- Extension
- InputResourceID
- InstrumentID
- Keyword
- MeasurementType
- ObservedRegion
- Parameter
- ProcessingLevel
- ProviderProcessingLevel
- ProviderVersion
- 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="Parameter" 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.

Diagram

Used by | Element Document
Model | ResourceID, ResourceHeader, AccessInformation+, Keyword*, DocumentType, InputResourceID*
Children | AccessInformation, DocumentType, InputResourceID, Keyword, ResourceHeader, ResourceID

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 inseparable. For example, a data storage format that maintains metadata and binary data in separate, but tightly coupled files. Granules should not be used to group files that have simple relationships or which are associated through a parent resource. For example, each file containing a time interval data for a Numerical Data resource would each
be considered a Granule. The ParentID of a Granule resource must be a NumericalData resource. The attributes of a Granule supersede the corresponding attributes in the NumericalData resource.

Diagram

```
Model
ResourceID, ReleaseDate, ExpirationDate[0,1], ParentID, PriorID*, StartDate, StopDate, Source+

Source
<xsd:complexType name="Granule">
  <xsd:annotation>
    <xsd: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 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.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element ref="ResourceID" minOccurs="1" maxOccurs="1"/>
    <xsd:element ref="ReleaseDate" minOccurs="1" maxOccurs="1"/>
    <xsd:element ref="ExpirationDate" minOccurs="0" maxOccurs="1"/>
    <xsd:element ref="ParentID" minOccurs="1" maxOccurs="1"/>
    <xsd:element ref="PriorID" minOccurs="0" maxOccurs="unbounded"/>
    <xsd:element ref="StartDate" minOccurs="1" maxOccurs="1"/>
    <xsd:element ref="StopDate" minOccurs="1" maxOccurs="1"/>
    <xsd:element ref="Source" minOccurs="1" maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>
```

Schema location
file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

Complex Type Source

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

Annotations
The location and attributes of an object.
Diagram

Used by

Element

Source

Model

SourceType, URL, MirrorURL*, Checksum[0,1], DataExtent[0,1]

Children

Checksum, DataExtent, MirrorURL, SourceType, URL

Source

<

xsd:complexType name="Source"

>

<xsd:annotation>

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

The location and attributes of an object.

</xsd:documentation>

</xsd:annotation>

<xsd:sequence>

<xsd:element ref="SourceType" minOccurs="1" maxOccurs="1"/>

<xsd:element ref="URL" minOccurs="1" maxOccurs="1"/>

<xsd:element ref="MirrorURL" minOccurs="0" maxOccurs="unbounded"/>

<xsd:element ref="Checksum" minOccurs="0" maxOccurs="1"/>

<xsd:element ref="DataExtent" minOccurs="0" maxOccurs="1"/>

</xsd:sequence>

</xsd:complexType>

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

<

xsd:complexType name="Checksum"

>

<xsd:annotation>

<xsd: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.

</xsd:documentation>

</xsd:annotation>

<xsd:sequence>

<xsd:element ref="HashValue" minOccurs="1" maxOccurs="1"/>

<xsd:element ref="HashFunction" minOccurs="1" maxOccurs="1"/>

</xsd:sequence>

</xsd:complexType>

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

```
<xsd:complexType name="Instrument">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">A device which is used to sense and parameterize a physical phenomenon.</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="InstrumentType" minOccurs="1" maxOccurs="unbounded"/>
        <xsd:element ref="InvestigationName" minOccurs="1" maxOccurs="1"/>
        <xsd:element ref="ObservatoryID" minOccurs="1" maxOccurs="1"/>
        <xsd:element ref="Caveats" minOccurs="0" 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_3.xsd

Complex Type Observatory

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

```
<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>
```
Complex Type Location

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

Diagram

Used by Element 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:element ref="ObservatoryRegion" minOccurs="1" maxOccurs="unbounded"/>
    <xsd:element ref="CoordinateSystemName" minOccurs="0" maxOccurs="1"/>
    <xsd:element ref="Latitude" minOccurs="0" maxOccurs="1"/>
    <xsd:element ref="Longitude" minOccurs="0" maxOccurs="1"/>
    <xsd:element ref="Elevation" minOccurs="0" maxOccurs="1"/>
  </xsd:sequence>
</xsd:complexType>
```

Complex Type Person

Namespace http://www.spase-group.org/data/schema
Annotations An individual human being.

Diagram

```
```
#### Complex Type Registry

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

**Annotations**
A location or facility where resources are cataloged.

**Diagram**

```
<complexType name="Registry">
  <annotation>
    <documentation xml:lang="en">A location or facility where resources are cataloged.</documentation>
  </annotation>
  <sequence>
    <element ref="ResourceID" minOccurs="1" maxOccurs="1"/>
    <element ref="ResourceHeader" minOccurs="1" maxOccurs="1"/>
    <element ref="Extension" minOccurs="0" maxOccurs="unbounded"/>
  </sequence>
</complexType>
```

**Schema location**
file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

#### Complex Type Repository

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

**Annotations**
A location or facility where resources are stored.

**Diagram**

```
<complexType name="Repository">
  <annotation>
    <documentation xml:lang="en">Resource repository</documentation>
  </annotation>
  <sequence>
    <element ref="ResourceID" minOccurs="1" maxOccurs="1"/>
    <element ref="ResourceHeader" minOccurs="1" maxOccurs="1"/>
    <element ref="Extension" minOccurs="0" maxOccurs="unbounded"/>
  </sequence>
</complexType>
```

**Schema location**
file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd
**Complex Type Service**

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

**Annotations**
A location or facility that can perform a well defined task.

**Diagram**

![Diagram of Service](image)

**Used by**
Element: Service

**Model**
ResourceID, ResourceHeader, AccessURL, Extension*

**Children**
AccessURL, Extension, ResourceHeader, ResourceID

**Source**
```xml
<xsd:simpleType name="Service">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">A location or facility that can perform a well defined task.</xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
        <xsd:element ref="ResourceID" minOccurs="1" maxOccurs="1"/>
        <xsd:element ref="ResourceHeader" minOccurs="1" maxOccurs="1"/>
        <xsd:element ref="AccessURL" minOccurs="1" maxOccurs="1"/>
        <xsd:element ref="Extension" minOccurs="0" maxOccurs="unbounded"/>
    </xsd:sequence>
</xsd:simpleType>
```

**Simple Types**

**Simple Type enumVersion**

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

**Annotations**
Version number.

**Diagram**

![Diagram of enumVersion](image)

**Type**
restriction of xsd:string

**Facets**
enumeration 1.3.3

**Used by**
Element: Version

**Source**
```xml
<xsd:simpleType name="enumVersion">
    <xsd:annotation>
        <xsd:documentation xml:lang="en">Version number.</xsd:documentation>
    </xsd:annotation>
    <xsd:restriction base="xsd:string">
        <xsd:enumeration value="1.3.3"/>
    </xsd:restriction>
</xsd:simpleType>
```
**Simple Type `enumRole`**

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

**Annotations**  
Identifiers for the assigned or assumed function or position of an individual.

**Diagram**  
[Diagram of `enumRole` and `xsd:string`]

**Type**  
restriction of xsd:string

<table>
<thead>
<tr>
<th>Facets</th>
<th></th>
<th></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 knowledgeable 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 to the content of the resource.</td>
</tr>
<tr>
<td>enumeration</td>
<td>DataProducer</td>
<td>An individual who generated the resource and is familiar with its provenance.</td>
</tr>
<tr>
<td>enumeration</td>
<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>enumeration</td>
<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>enumeration</td>
<td>MetadataContact</td>
<td>An individual who can affect a change in the metadata describing a resource.</td>
</tr>
<tr>
<td>enumeration</td>
<td>PrincipalInvestigator</td>
<td>An individual who is the administrative and scientific lead for an investigation.</td>
</tr>
<tr>
<td>enumeration</td>
<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>enumeration</td>
<td>Publisher</td>
<td>An individual, organization, institution or government department responsible for the production and dissemination of a document.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Scientist</td>
<td>An individual who is an expert in the phenomenon and related physics represented by the resource.</td>
</tr>
<tr>
<td>enumeration</td>
<td>TeamLeader</td>
<td>An individual who is the designated leader of an investigation!!!</td>
</tr>
<tr>
<td>enumeration</td>
<td>TeamMember</td>
<td>An individual who is a major participant in an investigation.</td>
</tr>
<tr>
<td>enumeration</td>
<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**  
- Element
- Role

**Source**  
```xml
<xsd:simpleType name="enumRole">
   <xsd:annotation>
      <xsd:documentation xml:lang="en">Identifiers for the assigned or assumed function or position of an individual.</xsd:documentation>
   </xsd:annotation>
   <xsd:restriction base="xsd:string">
      <xsd:enumeration value="ArchiveSpecialist">
         <xsd:annotation>
            <xsd: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.</xsd:documentation>
         </xsd:annotation>
      </xsd:enumeration>
   </xsd:restriction>
</xsd:simpleType>
```
<xsd:enumeration value="CoInvestigator">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">An individual who is a scientific peer and major participant for an investigation.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

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

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

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

<xsd:enumeration value="GeneralContact">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">An individual who can provide information on a range of subjects or who can direct you to a domain expert.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

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

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

<xsd:enumeration value="ProjectScientist">
  <xsd:annotation>
    <xsd: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.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

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

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

<xsd:enumeration value="TeamLeader">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">An individual who is the designated leader of an investigation!!!(</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="TeamMember">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">An individual who is a major participant in an investigation.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="TechnicalContact">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">An individual who can provide specific information with regard to the resource or supporting
Simple Type enumAssociationType

Namespace | http://www.spase-group.org/data/schema
Annotations | Identifiers for resource associations.
Diagram | ![Diagram](image)
Type | restriction of xsd:string
Facets | 
| | enumeration | DerivedFrom | A transformed or altered version of a resource instance.
| | enumeration | Other | 1) A general category which is described in related text. 2) Values, such as flags, that are not time tags, location data or measured or derived parameters.
| | enumeration | PartOf | A portion of a larger resource.
| | enumeration | RevisionOf |

Used by

Source

Schema location | file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

Simple Type enumAvailability

Namespace | http://www.spase-group.org/data/schema
Annotations | Identifiers for indicating the method or service which may be used to access the resource.
Diagram | ![Diagram](image)
Type | restriction of xsd:string
Facets | 
| | enumeration | Offline | Not directly accessible electronically. This includes resources which may to be moved to
an online status in response to a given request.

| enumeration | Online | Directly accessible electronically. |

### Used by

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

```xml
<xsd:complexType name="(enumAvailability)">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Identifiers for indicating the method or service which may be used to access the resource.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="Offline">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Not directly accessible electronically. This includes resources which may to be moved to an online status in response to a given request.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Online">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Directly accessible electronically.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
  </xsd:restriction>
</xsd:complexType>
```

### 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>
</tbody>
</table>

### Diagram

```
enumAccessRights ○→ xsd:string
```

<table>
<thead>
<tr>
<th>Facets</th>
<th>enumeration</th>
<th>Open</th>
<th>Access is granted to everyone.</th>
</tr>
</thead>
<tbody>
<tr>
<td></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

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

```xml
<xsd:complexType 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:complexType>
```

### Simple Type enumFormat

<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 data organized according to preset specifications.</td>
</tr>
</tbody>
</table>

### Diagram

```
enumFormat ○→ xsd:string
```

### Schema location

file://var/www/spase/site/root/data/schema/spase-1_3_3.xsd
<table>
<thead>
<tr>
<th>Type</th>
<th>restriction of xsd:string</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facets</td>
<td></td>
</tr>
<tr>
<td>enumeration</td>
<td>AVI</td>
</tr>
<tr>
<td></td>
<td>Audio Video Interleave (AVI) a digital format for movies that conforms to the Microsoft Windows Resource Interchange File Format (RIFF).</td>
</tr>
<tr>
<td>enumeration</td>
<td>Binary</td>
</tr>
<tr>
<td></td>
<td>A direct representation of the bits which may be stored in memory on a computer.</td>
</tr>
<tr>
<td>enumeration</td>
<td>CDF</td>
</tr>
<tr>
<td></td>
<td>Common Data Format (CDF). A binary storage format developed at Goddard Space Flight Center (GSFC).</td>
</tr>
<tr>
<td>enumeration</td>
<td>CEF</td>
</tr>
<tr>
<td></td>
<td>Cluster Exchange Format (CEF) is a self-documenting ASCII format designed for the exchange of data. There are two versions of CEF which are not totally compatible.</td>
</tr>
<tr>
<td>enumeration</td>
<td>CEF1</td>
</tr>
<tr>
<td></td>
<td>Cluster Exchange Format (CEF), version 1, is a self-documenting ASCII format designed for the exchange of data. The metadata contains information compatible with the ISTP recommendations for CDF.</td>
</tr>
<tr>
<td>enumeration</td>
<td>CEF2</td>
</tr>
<tr>
<td></td>
<td>Cluster Exchange Format (CEF), version 2, is a self-documenting ASCII format designed for the exchange of data and introduced for Cluster Active Archive. Compared to version 1, the metadata description of vectors and tensors is different.</td>
</tr>
<tr>
<td>enumeration</td>
<td>FITS</td>
</tr>
<tr>
<td></td>
<td>Flexible Image Transport System (FITS) is a digital format primarily designed to store scientific data sets consisting of multi-dimensional arrays (1-D spectra, 2-D images or 3-D data cubes) and 2-dimensional tables containing rows and columns of data.</td>
</tr>
<tr>
<td>enumeration</td>
<td>GIF</td>
</tr>
<tr>
<td></td>
<td>Graphic Interchange Format (GIF) first introduced in 1987 by CompuServe. GIF uses LZW compression and images are limited to 256 colours.</td>
</tr>
<tr>
<td>enumeration</td>
<td>HDF</td>
</tr>
<tr>
<td></td>
<td>Hierarchical Data Format</td>
</tr>
<tr>
<td>enumeration</td>
<td>HDF4</td>
</tr>
<tr>
<td></td>
<td>Hierarchical Data Format, Version 4</td>
</tr>
<tr>
<td>enumeration</td>
<td>HDF5</td>
</tr>
<tr>
<td></td>
<td>Hierarchical Data Format, Version 5</td>
</tr>
<tr>
<td>enumeration</td>
<td>HTML</td>
</tr>
<tr>
<td></td>
<td>A text file containing structured information represented in the HyperText Mark-up Language (HTML). See <a href="http://www.w3.org/MarkUp/">http://www.w3.org/MarkUp/</a></td>
</tr>
<tr>
<td>enumeration</td>
<td>IDFS</td>
</tr>
<tr>
<td></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>enumeration</td>
<td>IDL</td>
</tr>
<tr>
<td></td>
<td>Interactive Data Language (IDL) save set. IDL is a proprietary format.</td>
</tr>
<tr>
<td>enumeration</td>
<td>JPEG</td>
</tr>
<tr>
<td></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>
</tr>
<tr>
<td></td>
<td>MATLAB Workspace save set, version 4. MAT-files are double-precision, binary, MATLAB format files. MATLAB is a proprietary product of The MathWorks.</td>
</tr>
<tr>
<td>enumeration</td>
<td>MATLAB_6</td>
</tr>
<tr>
<td></td>
<td>MATLAB Workspace save set, version 6. MAT-files are double-precision, binary, MATLAB format files. MATLAB is a proprietary product of The MathWorks.</td>
</tr>
<tr>
<td>enumeration</td>
<td>MATLAB_7</td>
</tr>
<tr>
<td></td>
<td>MATLAB Workspace save set, version 7. MAT-files</td>
</tr>
</tbody>
</table>
are double-precision, binary, MATLAB format files. Version 7 includes data compression and Unicode encoding. MATLAB is a proprietary product of The MathWorks.

**enumeration** MPEG
A digital format for movies defined by the Motion Picture Experts Group

**enumeration** NCAR

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

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

**enumeration** PNG
A digital format for still images. Portable Network Graphics (PNG)

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

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

**enumeration** Text
ASCII text

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

**enumeration** UDF

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

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

---

**Used by**

**Source**

```xml
<xsd:simpleType name="enumFormat">
  <xsd:documentation xml:lang="en">Identifiers for data organized according to preset specifications.</xsd:documentation>
  <xsd:annotation>
  </xsd:annotation>
  <xsd:enumeration value="AVI"/>
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A direct representation of the bits which may be stored in memory on a computer.</xsd:documentation>
  </xsd:annotation>
</xsd:simpleType>
```
Common Data Format (CDF). A binary storage format developed at Goddard Space Flight Center (GSFC).

Cluster Exchange Format (CEF) is a self-documenting ASCII format designed for the exchange of data. There are two versions of CEF which are not totally compatible.

Cluster Exchange Format (CEF), version 1, is a self-documenting ASCII format designed for the exchange of data. The metadata contains information compatible with the ISTP recommendations for CDF.

Cluster Exchange Format (CEF), version 2, is a self-documenting ASCII format designed for the exchange of data and introduced for Cluster Active Archive. Compared to version 1, the metadata description of vectors and tensors is different.

Flexible Image Transport System (FITS) is a digital format primarily designed to store scientific data sets consisting of multi-dimensional arrays (1-D spectra, 2-D images or 3-D data cubes) and 2-dimensional tables containing rows and columns of data.

Graphic Interchange Format (GIF) first introduced in 1987 by CompuServe. GIF uses LZW compression and images are limited to 256 colours.

Hierarchical Data Format (HDF) is a system for storing multidimensional scientific data. HDF is designed to support all stages of scientific workflow, from experiments to long-term archival storage.

Hierarchical Data Format, Version 4 (HDF4) is an extension to HDF that adds new features such as object-oriented programming, distributed data management, and improved metadata handling.

Hierarchical Data Format, Version 5 (HDF5) is a newer version of HDF that includes improvements and new features such as better support for parallel I/O and improved performance.

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.
<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">
  <xsd:annotation>
  </xsd:annotation>
</xsd:enumeration>

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

<xsd:enumeration value="PDF">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A document expressed in the Portable Document Format (PDF) as defined by Adobe.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

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

<xsd:enumeration value="Postscript">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A page description programming language created by Adobe Systems Inc. that is a device-independent industry standard for representing text and graphics.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:annotation>
</xsd:annotation>
<xsd:annotation value="QuickTime">
</xsd:annotation>
<xsd:annotation value="Text">
<xsd:documentation xml:lang="en">ASCII text</xsd:documentation>
</xsd:annotation>
<xsd:annotation value="TIFF">
<xsd:documentation xml:lang="en">A binary format for still pictures. Tagged Image File Format (TIFF). Originally developed by Aldus and now controlled by Adobe.</xsd:documentation>
</xsd:annotation>
<xsd:annotation value="UDF">
</xsd:annotation>
<xsd:annotation value="VOTable">
<xsd:documentation xml:lang="en">A proposed XML standard designed as a flexible storage and exchange format for tabular data</xsd:documentation>
</xsd:annotation>
<xsd:annotation value="XML">
</xsd:annotation>
<xsd:restriction>
<xsd:annotation>
</xsd:annotation>
</xsd:restriction>
</xsd:simpleType>

Schema location
file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

Simple Type enumEncoding

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

Annotations
Identifier for unambiguous rules that establishes the representation of information within a file.

Diagram

Type
restriction of xsd:string

Facets

<table>
<thead>
<tr>
<th>enumeration</th>
<th>ASCII</th>
<th>A sequence of characters that adheres to American Standard Code for Information Interchange (ASCII) which is a 7-bit character-coding scheme.</th>
</tr>
</thead>
<tbody>
<tr>
<td>enumeration</td>
<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>enumeration</td>
<td>BZIP2</td>
<td>An open standard algorithm by Julian Seward using Burrows-Wheeler block sorting and Huffman coding.</td>
</tr>
</tbody>
</table>
**GZIP**

**None**
A lack or absence of anything.

**TAR**
A file format used to collate collections of files into one larger file, for distribution or archiving, while preserving file system information such as user and group permissions, dates, and directory structures. The format was standardized by POSIX.1-1988 and later POSIX.1-2001.

**Unicode**
Text in multi-byte Unicode format.

**ZIP**
An open standard for compression which is a variation of the LZ7 method and was originally used in the PKZIP utility.

---

**Source**
<xsd:simpleType name="enumEncoding">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Identifier for unambiguous rules that establishes the representation of information within a file.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="ASCII">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A sequence of characters that adheres to American Standard Code for Information Interchange (ASCII) which is an 7-bit character-coding scheme.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Base64">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A data encoding scheme whereby binary-encoded data is converted to printable ASCII characters. It is defined as a MIME content transfer encoding for use in internet e-mail. The only characters used are the upper- and lower-case Roman alphabet characters (A#Z, a#z), the numerals (0#9), and the "+" and "/" symbols, with the "=" symbol as a special suffix (padding) code.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="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:restriction>
</xsd:simpleType>
Simple Type **enumPhenomenonType**

<table>
<thead>
<tr>
<th>Facets</th>
<th>enumeration</th>
<th>ActiveRegion</th>
<th>A localized, transient volume of the solar atmosphere in which PLAGEs, SUNSPOTS, FACULAe, FLAREs, etc. may be observed.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>enumeration</td>
<td>Aurora</td>
<td>An atmospheric phenomenon consisting of bands of light caused by charged solar particles following the earth's magnetic lines of force.</td>
</tr>
<tr>
<td></td>
<td>enumeration</td>
<td>BowShockCrossing</td>
<td>A crossing of the boundary between the undisturbed (except for foreshock effects) solar wind and the shocked, decelerated solar wind of the magnetosheath.</td>
</tr>
<tr>
<td></td>
<td>enumeration</td>
<td>CoronalHole</td>
<td>An extended region of the corona, exceptionally low in density and associated with unpolar 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></td>
<td>enumeration</td>
<td>CoronalMassEjection</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></td>
<td>enumeration</td>
<td>EITWave</td>
<td>A wave in the corona of the Sun which produce shock waves on the Sun's chromosphere (Moreton Waves), EIT Waves are produced by large solar flare and expand outward at about 1,000 km/ s. It usually appears as a slowly moving diffuse arc of brightening in H-alpha, and may travel for several hundred thousand km.</td>
</tr>
<tr>
<td></td>
<td>enumeration</td>
<td>EnergeticSolarParticleEvent</td>
<td>An enhancement of interplanetary fluxes of energetic ions accelerated by interplanetary...</td>
</tr>
</tbody>
</table>
shocks and/or solar flares.

type Enumeration

- **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.

- **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.

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

- **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.

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

- **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).

- **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.

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

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

Used by
- **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 PLAGEs, SUNSPOTS, FACULAE, FLAREs, etc. may be observed.</xsd:documentation>
</xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Aurora">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">An atmospheric phenomenon consisting of bands of light caused by charged solar particles following the Earth's magnetic lines of force.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="BowShockCrossing">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A crossing of the boundary between the undisturbed (except for foreshock effects) solar wind and the shocked, decelerated solar wind of the magnetosheath.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="CoronalHole">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">An extended region of the corona, exceptionally low in density and associated with unipolar photospheric regions. A coronal hole can be an "open" magnetic field in the corona and (perhaps) inner heliosphere which has a faster than average outflow (wind); A region of lower than "quiet" ion and electron density in the corona; or a region of lower peak electron temperature in the corona than in the "quiet" corona.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="CoronalMassEjection">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">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 1,000 km/s. It usually appears as a slowly moving diffuse arc of brightening in H-alpha, and may travel for several hundred thousand km.</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 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>
A shock propagating generally antisunward through the slower solar wind, often seen in front of CME-associated plasma clouds.

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.

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

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).

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.

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

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

Identifiers the representational form for coordinate system.ation has been expressed.

A coordinate system in which the position of a point is determined by its distance from two or three mutually perpendicular axes.

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.

<table>
<thead>
<tr>
<th>enumeration</th>
<th>Spherical</th>
</tr>
</thead>
</table>
| 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. |

Used by

Element CoordinateRepresentation

Source

```
<xs:complexType name="enumCoordinateRepresentation">
  <xs:annotation>
    <xs:documentation xml:lang="en">Identifiers the represenational form for coordinate
    system has been expressed.</xs:documentation>
  </xs:annotation>
  <xs:restriction base="xsd:string">
    <xs:enumeration value="Cartesian">
      <xs:annotation>
        <xs:documentation xml:lang="en">A coordinate system in which the position
        of a point is determined by its distance from
two or three mutually perpendicular axes.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="Cylindrical">
      <xs:annotation>
        <xs:documentation xml:lang="en">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.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="Spherical">
      <xs:annotation>
        <xs:documentation xml:lang="en">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.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
  </xs:restriction>
</xs:complexType>
```

Schema location file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

---

**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](enumCoordinateSystemNames)

**Type** restriction of xsd:string

**Facets**

<table>
<thead>
<tr>
<th>enumeration</th>
<th>Carrington</th>
</tr>
</thead>
</table>
| 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. |

<table>
<thead>
<tr>
<th>enumeration</th>
<th>CGM</th>
</tr>
</thead>
</table>
| 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/cgm_des.html]

**enumeration** DM

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

**enumeration** GEI

Geocentric Equatorial Inertial - A coordinate system where the Z axis is along Earth's spin vector, positive northward. X axis points towards the first point of Aries (from the Earth towards the Sun at the vernal equinox). See Russell, 1971

**enumeration** GEO

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

**enumeration** GSE

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

**enumeration** GSEQ

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

**enumeration** GSM

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

**enumeration** HAE

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

**enumeration** HCI

Heliographic Carrington Inertial.

**enumeration** HEE

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

**enumeration** HEEQ

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

e numeration RG  
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>

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

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

e numeration LGM  
Local Geomagnetic - A coordinate system used mainly for Earth surface or near Earth surface magnetic field data. X axis northward from observation point in a geographic meridian. Z axis downward towards Earth's center. In this system, H (total horizontal component) = SQRT (Bx**2 + By**2) and D (declination angle) = arctan (By/Bx)

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

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

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

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

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

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<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 geodesy and navigation. The WGS84 uses the zero meridian as defined by the Bureau International de l'Heure.</td>
</tr>
</tbody>
</table>

**Used by**

<table>
<thead>
<tr>
<th>Element</th>
<th>CoordinateSystemName</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source</td>
<td>enumCoordinateSystemName</td>
</tr>
</tbody>
</table>

```xml
<xsd:simpleType name="enumCoordinateSystemName">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Identifiers for coordinate systems in which the position, direction or observation has been expressed.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="Carrington">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A coordinate system which is centered at the Sun and is "fixed" with respect to the synodic rotation rate; the mean synodic value is about 27.2753 days. The Astronomical Almanac gives a value for Carrington longitude of 349.03 degrees at 0000 UT on 1 January 1995.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="CGM">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Corrected Geomagnetic - A coordinate system from a spatial point with GEO radial distance and geomagnetic latitude and longitude, follow the epoch-appropriate IGRF/DCMF 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</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
  </xsd:restriction>
</xsd:simpleType>
```
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>.

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

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.

Geocentric Solar Ecliptic - A coordinate system where the X axis is from Earth to Sun, Z axis is normal to the ecliptic plane containing the X axis and the geomagnetic dipole axis. See Russell, 1971.

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 Happood, 1992. 
plane, positive northward. X axis points from Sun to Earth. See Hapgood, 1992.

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.

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.

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.

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

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).

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 X, X = Y x Z. See Russell, 1971, and http://cdpp.cnes.fr/00428.pdf.

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.

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
**Schema documentation for spase-1_3_3.xsd**

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

**Annotations**
Identifiers for types or classes of rendered data.

**Diagram**
- enumDisplayType
- xsd:string

**Type**
restriction of xsd:string

**Facets**
- enumeration Image A two-dimensional representation of data with values at each element of the array related to an intensity or a color.
- enumeration Spectrogram A representation of data which is the result of calculating the frequency spectrum of windowed frames of a compound signal.
- enumeration StackPlot A representation of data showing multiple sets of observations on a single plot, possibly offsetting each plot by some uniform amount.
- enumeration TimeSeries A representation of data showing a set of observations taken at different points in time and charted as a time series.

**Used by**
- Element DisplayType

**Source**
```xml
<xs:simpleType name="enumDisplayType">
  <xs:documentation xml:lang="en">Identifiers for types or classes of rendered data.</xs:documentation>
</xs:simpleType>
```

**Simple Type enumScaleType**

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

**Annotations**
Identifiers for scaling applied to a set of numbers.
Diagram

Type
	restriction of xsd:string

Facets
	enumeration Linear
	1) Intervals which are equally spaced. 2) Relative to polarization, confinement of the E-field vector to a given plane
	enumeration Log
	Intervals which are spaced proportionally to the logarithms of the values being represented.

Used by

Element
	ScaleType

Source

<xsd:simpleType name="enumScaleType">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Identifiers for scaling applied to a set of numbers.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="Linear">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">1) Intervals which are equally spaced. 2) Relative to polarization, confinement of the E-field vector to a given plane</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Log">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Intervals which are spaced proportionally to the logarithms of the values being represented.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
  </xsd:restriction>
</xsd:simpleType>

Schema location

file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

Simple Type typeSequence

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

Diagram

Type
	list of xsd:integer

Used by

Elements
	Index, Size

Source

<xsd:simpleType name="typeSequence">
  <xsd:list itemType="xsd:integer"/>
</xsd:simpleType>

Schema location

file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

Simple Type enumComponent

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

Annotations
	Identifiers for the axis of coordinate systems.

Diagram

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:

\[ \Phi = \arctan\left(\frac{y}{x}\right) \]

enumeration R

The component of a vector in the radial direction from the center of the coordinate system.
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:
\[ \Theta = \arctan\left(\frac{\sqrt{x^2 + y^2}}{z}\right) \]

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

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

The component of a vector along the Z-axis in a cartesian coordinate system.
Simple Type `enumQualifier`

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

Annotations: Identifiers for terms which refine the type or attribute of a quantity.

Diagram: ![Diagram](image.png)

Type: restriction of `xsd:string`

Facets:

- **Anisotropy**: Direction-dependent property.
- **Average**: The statistical mean; the sum of a set of values divided by the number of values in the set.
- **Characteristic**: A quantity which can be easily identified and measured in a given environment.
- **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.
- **Component**: A part of a multi-part entity, e.g., the components of a vector.
- **Component.Phil**: 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: \( \Phi = \arctan(y/x) \)
- **Component.R**: The component of a vector in the radial direction from the center of the coordinate system.
- **Component.Theta**: The component of a vector along the X-axis in a cartesian coordinate system.
- **Component.X**: The component of a vector along the Y-axis in a cartesian coordinate system.
<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<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>Differential</td>
<td>A flux measurement within a given energy and solid-angle range.</td>
</tr>
<tr>
<td>Fit</td>
<td>Values that make a model agree with the data.</td>
</tr>
<tr>
<td>Integral</td>
<td>The summation of values above a given threshold and over area or solid-angle range.</td>
</tr>
<tr>
<td>LineofSight</td>
<td>The line of sight is the line that connects the observer with the observed object. This expression is often used with measurements of doppler velocity and magnetic field in magnetograms, where only the component of the vector field directed along the line of sight is measured.</td>
</tr>
<tr>
<td>Linear</td>
<td>1) Intervals which are equally spaced. 2) Relative to polarization, confinement of the E-field vector to a given plane.</td>
</tr>
<tr>
<td>Magnitude</td>
<td>A measure of the strength or size of a vector quantity.</td>
</tr>
<tr>
<td>Moment</td>
<td>Parameters determined by integration over a distribution function convolved with a power of velocity.</td>
</tr>
<tr>
<td>Parallel</td>
<td>Having the same direction as a given direction.</td>
</tr>
<tr>
<td>Peak</td>
<td>The maximum value for the quantity in question, over a period of time which is usually equal to the cadence.</td>
</tr>
<tr>
<td>Perpendicular</td>
<td>At right angles to a given direction.</td>
</tr>
<tr>
<td>PhaseAngle</td>
<td>Phase difference between two or more waves, normally expressed in degrees.</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>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>Symmetric</td>
<td>Equal distribution about one or more axes.</td>
</tr>
<tr>
<td>Tensor</td>
<td>A generalized linear &quot;quantity&quot; or &quot;geometrical entity&quot; that can be expressed as a multi-dimensional array relative to a choice of basis of the particular space on which it is defined.</td>
</tr>
<tr>
<td>Trace</td>
<td>The sum of the elements on the main diagonal (the diagonal from the upper left to the lower right) of a square matrix.</td>
</tr>
<tr>
<td>Uncertainty</td>
<td>A statistically defined discrepancy between a measured quantity and the true value of that quantity that cannot be corrected by calculation or calibration.</td>
</tr>
</tbody>
</table>
**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.

**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).

Used by

**Source**

<table>
<thead>
<tr>
<th>enumeration</th>
<th>Qualifier</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>variance</td>
<td>Anisotropy</td>
<td>Direction-dependent property.</td>
</tr>
<tr>
<td>variance</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>variance</td>
<td>Characteristic</td>
<td>A quantity which can be easily identified and measured in a given environment.</td>
</tr>
<tr>
<td>variance</td>
<td>Circular</td>
<td>Relative to polarization, right-hand circularly polarized light is defined such that the electric field is rotating clockwise as seen by an observer towards whom the wave is moving. Left-hand circularly polarized light is defined such that the electric field is rotating counterclockwise as seen by an observer towards whom the wave is moving. The polarization of magnetohydrodynamic waves is specified with respect to the ambient mean magnetic field: right-hand polarized waves have a transverse electric field component which turns in a right-handed sense (that of the gyrating electrons) around the magnetic field.</td>
</tr>
<tr>
<td>variance</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>variance</td>
<td>Component.R</td>
<td>The component of a vector in the radial direction from the center of the coordinate system.</td>
</tr>
</tbody>
</table>
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:

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

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.

Equal distribution about one or more axes.

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.
right) of a square matrix.

<xsd:enumeration value="Variance">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A measure of dispersion of a set of data points around their mean value. The expectation value of the squared deviations from the mean.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Vector">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A set of parameter values each along some independent variable (e.g., components of a field in three orthogonal spatial directions; atmospheric temperature values at several altitudes, or at a given latitude and longitude).</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

</xsd:restriction>
</xsd:simpleType>

Schema location file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

Simple Type enumFieldQuantity

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

Annotations Identifiers for the physical attribute of the field.

Diagram

Type restriction of xsd:string

Facets

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Current</th>
<th>The flow of electrons through a conductor caused by a potential difference.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enumeration</td>
<td>Electric</td>
<td>The physical attribute that exerts an electrical force.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>Electromagnetic</td>
<td>The physical attribute that is or is caused by a mutual interaction of electric and magnetic fields.</td>
</tr>
<tr>
<td>Enumeration</td>
<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>Enumeration</td>
<td>Magnetic</td>
<td>The physical attribute attributed to a magnet or its equivalent.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>PlasmaFrequency</td>
<td>The frequency with which a plasma oscillates.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>Potential</td>
<td>A field which obeys Laplace's Equation.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>PoyntingFlux</td>
<td>The rate of energy transport per unit area per steradian.</td>
</tr>
</tbody>
</table>

Used by Element FieldQuantity

Source

<xsd:simpleType name="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="Uncertainty">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A statistically defined discrepancy between a measured quantity and the true value of that quantity that cannot be corrected by calculation or calibration.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Variance">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A measure of dispersion of a set of data points around their mean value. The expectation value of the squared deviations from the mean.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Vector">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A set of parameter values each along some independent variable (e.g., components of a field in three orthogonal spatial directions; atmospheric temperature values at several altitudes, or at a given latitude and longitude).</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
  </xsd:restriction>
</xsd:simpleType>
Schema documentation for spase-1_3_3.xsd

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Simple Type enumSpectralRange

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CaK</td>
<td>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.</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 of 0.00001 to 0.001 nm.</td>
</tr>
<tr>
<td>Halpha</td>
<td>A spectrum with a wavelength range centered at 656.3 nm. VSO nickname: H-alpha image with a spectrum range of 655.8 nm to 656.8 nm.</td>
</tr>
<tr>
<td>HardXrays</td>
<td>Photons with a wavelength range of 0.001 to 0.00001.</td>
</tr>
<tr>
<td>Enumeration</td>
<td>Description</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td>He10830</td>
<td>0.1 nm 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 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 in the visible range for humans!!!</td>
</tr>
<tr>
<td>X Rays</td>
<td>Photons with a wavelength range: 0.001 &lt;= x &lt; 10 nm</td>
</tr>
</tbody>
</table>

**Source**

```xml
<xs:simpleType name="enumSpectralRange">
  <xs:annotation>
    <xs:documentation xml:lang="en">Identifiers for names associated with wavelengths. Based on the ISO 21348 Solar Irradiance Standard. Additions have been made to extend the frequency ranges to include those used in space physics. Those additions are indicated in blue text. The "Total Solar Irradiance" category has not been included since it is a type of measurement and not a specific spectral range. See Appendix A - Comparison of Spectrum Domains for a comparison of the spectral ranges with other systems.</xs:documentation>
  </xs:annotation>
  <xs:restriction base="xsd:string">
    <xs:enumeration value="CaK">A spectrum with a wavelength of range centered near 393.5 nm. VSO nickname: Ca-K image with range of 391.9 nm to 395.2 nm.</xs:enumeration>
    <xs:enumeration value="ExtremeUltraviolet">A spectrum with a wavelength range of 10.0 nm to 125.0 nm. VSO nickname: EUV image with a range of of 10.0 nm to 125.0 nm</xs:enumeration>
    <xs:enumeration value="GammaRays">Photons with a wavelength range: 0.00001 to 0.001 nm</xs:enumeration>
    <xs:enumeration value="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.</xs:enumeration>
    <xs:enumeration value="HardXrays"> Photons with a wavelength range: 0.001 <= x < 10 nm
```
<xsd:enumeration value="He10830">
  <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="NaD">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A spectrum with a wavelength range centered at 589.3 nm. VSO nickname: Na-D image with a range of 588.8 nm to 589.8 nm.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Ni6768">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">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.</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">Photons with a wavelength in the visable range for humans!!!</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="XRays">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Photons with a wavelength range: 0.001 \(\leq x < 10\) nm</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
Simple Type `enumParticleType`

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

**Annotations**
Identifiers for the characterization of the kind of particle observed by the measurement.

**Diagram**

**Type**
restriction of xsd:string

**Facets**

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>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**

<table>
<thead>
<tr>
<th>Element</th>
<th>ParticleType</th>
</tr>
</thead>
</table>

**Source**

```xml
<xsd:simpleType name="enumParticleType">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Identifiers for the characterization of the kind of particle observed by the measurement.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="Aerosol">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A suspension of fine solid or liquid particles in gas.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="AlphaParticle">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A positively charged nuclear particle that consists of two protons and two neutrons.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Dust">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Free microscopic particles of solid material.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Electron">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">An elementary particle consisting of a charge of negative electricity equal to about 1.602 x 10^-19 Coulomb and having a mass when at rest of about 9.109534 x 10^-28 gram.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Ion">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">An atom that has acquired a net electric charge by gaining or losing one or more electrons. (Note: Z>2) </xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Molecule">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A group of atoms so united and combined by chemical affinity that they form a complete, integrated whole, being the smallest portion of any particular compound that can exist in a free state</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Neutral">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Either a particle, an object, or a system that has a net electric charge of zero</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Proton">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">An elementary particle that is a constituent of all atomic nuclei, that carries a positive charge numerically equal to the charge of an electron, and that has a mass of 1.673 x 10^-24 gram.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
  </xsd:restriction>
</xsd:simpleType>
```
by gaining or losing one or more electrons. (Note: Z>2)
</xsd:documentation>
</xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Molecule">
  <xsd:annotation>
    <xsd:documentation xml:lang="en"> A group of atoms so united and combined by chemical affinity that they form a complete, integrated whole, being the smallest portion of any particular compound that can exist in a free state </xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
</xsd:enumeration>
<xsd:enumeration value="Neutral">
  <xsd:annotation>
    <xsd:documentation xml:lang="en"> Either a particle, an object, or a system that has a net electric charge of zero </xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
</xsd:enumeration>
<xsd:enumeration value="Proton">
  <xsd:annotation>
    <xsd:documentation xml:lang="en"> An elementary particle that is a constituent of all atomic nuclei, that carries a positive charge numerically equal to the charge of an electron, and that has a mass of 1.673 x 10**(-24) gram. </xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
</xsd:restriction>
</xsd:simpleType>

Schema location
file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd

**Simple Type enumParticleQuantity**

<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 physical properties of the particle.</td>
</tr>
<tr>
<td>Diagram</td>
<td><img src="#" alt="enumParticleQuantity" /> <img src="#" alt="xsd:string" /></td>
</tr>
<tr>
<td>Type</td>
<td>restriction of xsd:string</td>
</tr>
<tr>
<td>Facets</td>
<td>enumeration AlfvenMachNumber: The ratio of the bulk flow speed to the Alfven speed.</td>
</tr>
<tr>
<td></td>
<td>enumeration AverageChargeState: A measure of the composite deficit (positive) or excess (negative) of electrons with respect to protons.</td>
</tr>
<tr>
<td></td>
<td>enumeration CountRate: The number of events per unit time.</td>
</tr>
<tr>
<td></td>
<td>enumeration Counts: 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></td>
<td>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).</td>
</tr>
<tr>
<td></td>
<td>enumeration EnergyDensity: The amount of energy per unit volume.</td>
</tr>
<tr>
<td></td>
<td>enumeration EnergyFlux: The amount of energy passing through a unit area in a unit time.</td>
</tr>
<tr>
<td></td>
<td>enumeration FlowSpeed: The rate at which particles or energy is passing through a unit area in a unit time.</td>
</tr>
<tr>
<td></td>
<td>enumeration FlowVelocity: The volume of matter passing through a unit area perpendicular to the direction of flow in a unit of time.</td>
</tr>
<tr>
<td></td>
<td>enumeration Gyrofrequency: The frequency with which a charged particle (as an electron) executes spiral gyrations in moving obliquely across a magnetic field.</td>
</tr>
<tr>
<td></td>
<td>enumeration HeatFlux: Flow of thermal energy through a gas or plasma;</td>
</tr>
<tr>
<td>Measure</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>-----------------------------------------------------------------------------</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>The frequency with which a plasma oscillates.</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**

<table>
<thead>
<tr>
<th>Source</th>
<th>Element</th>
<th>ParticleQuantity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Element</td>
<td>ParticleQuantity</td>
</tr>
</tbody>
</table>

```xml
typically computed as third moment of a distribution function.
```
the capability of doing work (potential energy)
or the conversion of this capability to motion
(kinetic energy).
<xsd:documentation xml:lang="en">The frequency with which a plasma oscillates.</xsd:documentation>
</xsd:annotation>
</xsd:enumeration>
</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>
<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>
<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>
<xsd:enumeration value="ThermalSpeed">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">For a Maxwellian distribution, the difference
between the mean speed and the speed within
which ~69% (one sigma) of all the members
of the speed distribution occur.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
</xsd:enumeration>
<xsd:enumeration value="Velocity">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Rate of change of position. Also used for
the average velocity of a collection of particles,
also referred to as "bulk velocity".</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
</xsd:restriction>
</xsd:simpleType>

**Simple Type enumPhotonQuantity**

<table>
<thead>
<tr>
<th>Field</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 the characterization of the physical properties of the photon.</td>
</tr>
<tr>
<td>Diagram</td>
<td><a href="#">enumPhotonQuantity</a></td>
</tr>
<tr>
<td>Type</td>
<td>restriction of xsd:string</td>
</tr>
<tr>
<td>Facets</td>
<td></td>
</tr>
<tr>
<td>enumeration</td>
<td>Emissivity</td>
</tr>
<tr>
<td></td>
<td>The ratio of radiant energy from a material to that from a blackbody at the same kinetic temperature</td>
</tr>
<tr>
<td>enumeration</td>
<td>EnergyFlux</td>
</tr>
<tr>
<td></td>
<td>The amount of energy passing through a unit area in a unit time.</td>
</tr>
<tr>
<td>enumeration</td>
<td>EquivalentWidth</td>
</tr>
<tr>
<td></td>
<td>The area of the spectral line profile divided by the peak height or depth.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Gyrofrequency</td>
</tr>
<tr>
<td></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</td>
<td>LineDepth</td>
</tr>
<tr>
<td></td>
<td>In spectra, a measure of the amount of absorption for a particular wavelength or frequency in the spectrum</td>
</tr>
<tr>
<td>enumeration</td>
<td>MagneticField</td>
</tr>
<tr>
<td></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,</td>
</tr>
<tr>
<td>enumeration</td>
<td>ModeAmplitude</td>
</tr>
<tr>
<td>enumeration</td>
<td>PlasmaFrequency</td>
</tr>
<tr>
<td>enumeration</td>
<td>Polarization</td>
</tr>
<tr>
<td>enumeration</td>
<td>StokesParameters</td>
</tr>
<tr>
<td>enumeration</td>
<td>Velocity</td>
</tr>
</tbody>
</table>

Used by Element PhotonQuantity

```xml
<xs:simpleType name="enumPhotonQuantity">
  <xs:annotation>
    <xs:documentation xml:lang="en">Identifiers for the characterization of the physical properties of the photon.</xs:documentation>
  </xs:annotation>
  <xs:restriction base="xsd:string">
    <xs:enumeration value="Emissivity">
      <xs:annotation>
        <xs:documentation xml:lang="en">The ratio of radiant energy from a material to that from a blackbody at the same kinetic temperature.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="EnergyFlux">
      <xs:annotation>
        <xs:documentation xml:lang="en">The amount of energy passing through a unit area in a unit time.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="EquivalentWidth">
      <xs:annotation>
        <xs:documentation xml:lang="en">The area of the spectral line profile divided by the peak height or depth.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="Gyrofrequency">
      <xs:annotation>
        <xs:documentation xml:lang="en">The frequency with which a charged particle (as an electron) executes spiral gyrations in moving obliquely across a magnetic field.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="LineDepth">
      <xs:annotation>
        <xs:documentation xml:lang="en">In spectra, a measure of the amount of absorption for a particular wavelength or frequency in the spectrum.</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="MagneticField">
      <xs:annotation>
        <xs: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.].</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
    <xs:enumeration value="ModeAmplitude">
      <xs:annotation>
        <xs:documentation xml:lang="en">In helioseismology the magnitude of oscillation etc.]</xs:documentation>
      </xs:annotation>
    </xs:enumeration>
  </xs:restriction>
</xs:simpleType>
```
of waves of a particular geometry.

```xml
<xs:enumeration value="PlasmaFrequency">
    <xs:documentation xml:lang="en">The frequency with which a plasma oscillates.</xs:documentation>
</xs:enumeration>
<xs:enumeration value="Polarization">
    <xs: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.</xs:documentation>
</xs:enumeration>
<xs:enumeration value="StokesParameters">
    <xs: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.</xs:documentation>
</xs:enumeration>
<xs:enumeration value="Velocity">
    <xs: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".</xs:documentation>
</xs:enumeration>
```

**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**

| Facets |  
| --- | --- |
| **enumeration** | Other |
| **enumeration** | Positional |
| **enumeration** | Temporal |
| **enumeration** | Velocity |

1) A general category which is described in related text. 2) Values, such as flags, that are not time tags, location data or measured or derived parameters.

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.

Pertaining to time.

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

**Used by**

<table>
<thead>
<tr>
<th>Element</th>
<th>SupportQuantity</th>
</tr>
</thead>
</table>

**Source**

```xml
<xs:simpleType name="enumSupportQuantity">
    <xs:documentation>
        Identifiers for the information useful in understanding the context of an observation, typically observed or measured coincidently with a physical observation.
    </xs:documentation>
</xs:simpleType>
```
<xsd:restriction base="xsd:string">
  <xsd:enumeration value="Other">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">1) A general category which is described in related text. 2) Values, such as flags, that are not time tags, location data or measured or derived parameters.</xsd:documentation>
    </xsd:annotation>
  </xsd:enumeration>
  <xsd:enumeration value="Positional">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">The specification of the location of an object or measurement within a reference coordinate system. The position is usually expressed as a set of values corresponding to the location along a set of orthogonal axes together with the date/time of the observation.</xsd:documentation>
    </xsd:annotation>
  </xsd:enumeration>
  <xsd:enumeration value="Temporal">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">Pertaining to time.</xsd:documentation>
    </xsd:annotation>
  </xsd:enumeration>
  <xsd:enumeration value="Velocity">
    <xsd:annotation>
      <xsd:documentation xml:lang="en">Rate of change of position. Also used for the average velocity of a collection of particles, also referred to as "bulk velocity".</xsd:documentation>
    </xsd:annotation>
  </xsd:enumeration>
</xsd:restriction>
</xsd:simpleType>

**Simple Type** `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**

**Type** restriction of xsd:string

**Facets**

<table>
<thead>
<tr>
<th>enumeration</th>
<th>Calibrated</th>
<th>Data wherein sensor outputs have been convolved with instrument response function, often irreversibly, to yield physical parameter values.</th>
</tr>
</thead>
<tbody>
<tr>
<td>enumeration</td>
<td>Raw</td>
<td>Data in its original state with no processing to account for calibration!!!</td>
</tr>
<tr>
<td>enumeration</td>
<td>Uncalibrated</td>
<td>Duplicate data are removed from the data stream and data are time ordered. Values are not adjusted for any potential biases or external factors.</td>
</tr>
</tbody>
</table>

**Used by**

**Element** ProcessingLevel

**Source**

```xml
<xsd:simpleType name="enumProcessingLevel">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Identifiers to characterize the amount and type of manipulation which has been applied to the sampled data.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="Calibrated">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Data wherein sensor outputs have been convolved with instrument response function, often irreversibly, to yield physical parameter values.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Raw">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Data in its original state with no processing</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Uncalibrated">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Duplicate data are removed from the data stream and data are time ordered. Values are not adjusted for any potential biases or external factors.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
  </xsd:restriction>
</xsd:simpleType>
```
### Simple Type enumMeasurementType

<table>
<thead>
<tr>
<th>Facets</th>
<th>Permanent Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>enumeration</td>
<td>ActivityIndex</td>
</tr>
<tr>
<td>Facets</td>
<td>Enumeration of a quantity that forms the basis of an observation.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Dopplergram</td>
</tr>
<tr>
<td>Facets</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>
</tr>
<tr>
<td>Facets</td>
<td>Measurements of electric field vectors (sometimes not all components) as a time series.</td>
</tr>
<tr>
<td>enumeration</td>
<td>EnergeticParticles</td>
</tr>
<tr>
<td>Facets</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>
</tr>
<tr>
<td>Facets</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>
</tr>
<tr>
<td>Facets</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>
</tr>
<tr>
<td>Facets</td>
<td>A quantity directly related to the operation or function of an instrument.</td>
</tr>
<tr>
<td>enumeration</td>
<td>IonComposition</td>
</tr>
<tr>
<td>Facets</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>
</tr>
<tr>
<td>Facets</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>
</tr>
<tr>
<td>Facets</td>
<td>Measurements of magnetic field vectors (sometimes not all components) as time series; can be space- or ground-based. Also, [Zeeman splitting,]</td>
</tr>
</tbody>
</table>
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.]

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Measurement Type</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 Element MeasurementType
Source <xsd:simpleType name="enumMeasurementType">
Identifiers for the method of making an estimated value of a quantity that forms the basis of an observation.

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.

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

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

Pieces of matter that are moving very fast. Energetic particles include protons, electrons, neutrons, neutrinos, the nuclei of atoms, and other sub-atomic particles.

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.

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.

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

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.

A radiometric term for the power of electromagnetic radiation at a surface, per unit area. "Irradiance" is used when the electromagnetic radiation is incident on the surface. The SI unit of irradiance is watts per square meter (W·m⁻²).

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.].

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.*)

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.

Measurements of neutral atomic and molecular components of a gas.

Measurements of a quantity as a function of height above an object such as the limb of a body.

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).

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.

Measurements of plasma density, magnetic field and possibly other parameters of the space environment by active probing of the plasma by radio waves.

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.

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.).

Simple Type **enumRegion**

<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 areas of the physical world which may be occupied or observed.</td>
</tr>
<tr>
<td>Diagram</td>
<td><img src="#" alt="Diagram" /></td>
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<tr>
<td>Type</td>
<td>restriction of xsd:string</td>
</tr>
<tr>
<td>Facets</td>
<td></td>
</tr>
<tr>
<td>enumeration</td>
<td>Asteroid</td>
</tr>
<tr>
<td></td>
<td>A small extraterrestrial body consisting mostly of rock and metal that is in orbit around the sun.</td>
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<tr>
<td>enumeration</td>
<td>Comet</td>
</tr>
<tr>
<td></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>enumeration</td>
<td>Earth</td>
</tr>
<tr>
<td></td>
<td>The third planet from the sun in our solar system.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Earth.Magnetosheath</td>
</tr>
<tr>
<td></td>
<td>The region between the bow shock and the magnetopause, characterized by very turbulent plasma.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Earth.Magnetosphere</td>
</tr>
<tr>
<td></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>enumeration</td>
<td>Earth.Magnetosphere.Magnetotail</td>
</tr>
<tr>
<td></td>
<td>The region on the night side of the body where the magnetic field is stretched backwards by the force of the solar wind. For Earth, the magnetotail begins at a night-side radial distance of 10 Re (X &gt; -10Re).</td>
</tr>
<tr>
<td>enumeration</td>
<td>Earth.Magnetosphere.Main</td>
</tr>
<tr>
<td></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>enumeration</td>
<td>Earth.Magnetosphere.Polar</td>
</tr>
<tr>
<td></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>enumeration</td>
<td>Earth.Magnetosphere.RadiationBelt</td>
</tr>
<tr>
<td></td>
<td>The region within a magnetosphere where high-energy particles could potentially be trapped in a magnetic field.</td>
</tr>
<tr>
<td>enumeration</td>
<td>Earth.NearSurface.Atmosphere</td>
</tr>
<tr>
<td></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>enumeration</td>
<td>Earth.NearSurface.AuroralRegion</td>
</tr>
<tr>
<td></td>
<td>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>Earth.NearSurface.EquatorialRegion</td>
</tr>
<tr>
<td></td>
<td>The region centered on the equator and limited...</td>
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</table>
in latitude by approximately 23 degrees north and south of the equator.

**enumeration** Earth.NearSurface.Ionosphere

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

**enumeration** Earth.NearSurface.Ionosphere.DRegion

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

**enumeration** Earth.NearSurface.Ionosphere.ERegion

The 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.

**enumeration** Earth.NearSurface.Ionosphere.FRegion

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

**enumeration** Earth.NearSurface.Ionosphere.Topside

The region at the uppermost areas of the ionosphere.

**enumeration** Earth.NearSurface.Mesosphere

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

**enumeration** Earth.NearSurface.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.

**enumeration** Earth.NearSurface.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** Earth.NearSurface.Stratosphere

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

**enumeration** Earth.NearSurface.Thermosphere

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

**enumeration** 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

The outermost area of a solid object.

**enumeration** Heliosphere

The solar atmosphere extending roughly from the outer corona to the edge of the solar

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<table>
<thead>
<tr>
<th>enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heliopause</td>
<td>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 the heliosphere (heliopause).</td>
</tr>
<tr>
<td>Heliosphere.Remote1AU</td>
<td>The heliospheric region near the Earths orbit, but exclusive of the region near the Earth.</td>
</tr>
<tr>
<td>Interstellar</td>
<td>The region between stars outside of the stars heliopause.</td>
</tr>
<tr>
<td>Jupiter</td>
<td>The fifth planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Mars</td>
<td>The forth planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Mercury</td>
<td>The first planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Neptune</td>
<td>The seventh planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Pluto</td>
<td>The ninth (sub)planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Saturn</td>
<td>The sixth planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Sun</td>
<td>The star upon which our solar system is centered.</td>
</tr>
<tr>
<td>Sun.Chromosphere</td>
<td>The region of the Sun's (or a star's) atmosphere above the temperature minimum and below the Transition Region. The solar chromosphere is approximately 400 km to 2100 km above the photosphere, and characterized by temperatures from 4500 - 28000 K.</td>
</tr>
<tr>
<td>Sun.Corona</td>
<td>The outermost atmospheric region of the Sun or a star, characterized by ionization temperatures above 10^5 K. The solar corona starts at about 2100 km above the photosphere; there is no generally defined upper limit.</td>
</tr>
<tr>
<td>Sun.Interior</td>
<td>The region inside the body which is not visible from outside the body.</td>
</tr>
<tr>
<td>Sun.Photosphere</td>
<td>The atmospheric layer of the Sun or a star from which continuum radiation, especially optical, is emitted to space. For the Sun, the photosphere is about 500 km thick.</td>
</tr>
<tr>
<td>Sun.TransitionRegion</td>
<td>A very narrow (&lt;100 km) layer between the chromosphere and the corona where the temperature rises abruptly from about 8000 to about 500,000 K.</td>
</tr>
<tr>
<td>Uranus</td>
<td>The eighth planet from the sun in our solar system.</td>
</tr>
<tr>
<td>Venus</td>
<td>The second planet from the sun in our solar system.</td>
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Used by: ObservatoryRegion, ObservedRegion

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159
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  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Comet">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A relatively small extraterrestrial body consisting of a frozen mass that travels around the sun in a highly elliptical orbit.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

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

<xsd:enumeration value="Earth.Magnetosheath">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The region between the bow shock and the magnetopause, characterized by very turbulent plasma.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Earth.Magnetosphere">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The region of space above the atmosphere or surface of the planet, and bounded by the magnetopause, that is under the direct influence of the planet's magnetic field.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Earth.Magnetosphere.Magnetotail">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The region on the night side of the body where the magnetic field is stretched backwards by the force of the solar wind. For Earth, the magnetotail begins at a night-side radial distance of 10 Re (X > -10Re).</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Earth.Magnetosphere.Main">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The region of the magnetosphere where 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 aural 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 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="Earth.NearSurface.EquatorialRegion">
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    <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.ERegion">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A layer of ionised gas occurring at 90-150km above the ground. One of several layers in the ionosphere. Also called the The Kennelly-Heaviside layer.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="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 upper most areas of the ionosphere.</xsd:documentation>
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<xsd:enumeration value="Earth.NearSurface.Mesosphere">
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    <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>

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

<xsd:enumeration value="Earth.Surface">
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    <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>
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<xsd:enumeration value="Heliosphere.NearEarth">
  <xsd:annotation>
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    <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>
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</xsd:enumeration>

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    <xsd:documentation xml:lang="en">The region of the Sun's (or a star's) atmosphere above the temperature minimum and below the Transition Region. The solar chromosphere is approximately 400 km to 2100 km above the photosphere, and characterized by temperatures from 4000 - 28000 K.</xsd:documentation>
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<xsd:enumeration value="Sun.Photosphere">
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    <xsd:documentation xml:lang="en">The atmospheric layer of the Sun or a star from which continuum radiation, especially optical, is emitted to space. For the Sun, the photosphere is about 500 km thick.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Sun.TransitionRegion">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A very narrow (<100 km) layer between the chromosphere and the corona where the temperature rises abruptly from about 8000 to about 500,000 K.</xsd:documentation>
  </xsd:annotation>
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<xsd:enumeration value="Uranus">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The eighth planet from the sun in our solar system.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

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

</xsd:restriction>
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Schema documentation for spase-1_3_3.xsd

Simple Type enumDocumentType

Namespace http://www.spase-group.org/data/schema
Annotations Identifiers for the characterization of the content or purpose of a document.

Diagram

Type restriction of xsd:string
Facets

<table>
<thead>
<tr>
<th>Facet</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>enum</td>
<td>A formal presentation of an idea or discovery typically more than a few pages in length.</td>
</tr>
</tbody>
</table>

Used by

<table>
<thead>
<tr>
<th>Used by</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Element</td>
<td>DocumentType</td>
</tr>
</tbody>
</table>

Source

<xsd:simpleType name="enumDocumentType">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Identifiers for the characterization of the content or purpose of a document.</xsd:documentation>
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        <xsd:documentation xml:lang="en">A formal presentation of an idea or discovery typically more than a few pages in length.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
  </xsd:restriction>
</xsd:simpleType>

Simple Type enumSourceType

Namespace http://www.spase-group.org/data/schema
Annotations Identifiers for the characterization of the function or purpose of a source.

Diagram

Type restriction of xsd:string
Facets

<table>
<thead>
<tr>
<th>Facet</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>enum</td>
<td>A complementary item which can be subordinate, auxiliary, supplementary to the primary item.</td>
</tr>
<tr>
<td>enum</td>
<td>A representation of an image which is suitable to reveal most or all of the details of the image.</td>
</tr>
<tr>
<td>enum</td>
<td>A collection of organized information, usually the results of experience, observation or experiment, or a set of premises. This may consist of numbers, words, or images, particularly as measurements or observations of a set of variables.</td>
</tr>
<tr>
<td>enum</td>
<td>The structured arrangement of items in a collection.</td>
</tr>
<tr>
<td>enum</td>
<td>A small representation of an image which is</td>
</tr>
</tbody>
</table>

Used by

<table>
<thead>
<tr>
<th>Used by</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Element</td>
<td>DocumentType</td>
</tr>
</tbody>
</table>

Source

<xsd:simpleType name="enumSourceType">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Identifiers for the characterization of the function or purpose of a source.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="Ancillary">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A complementary item which can be subordinate, auxiliary, supplementary to the primary item.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Browse">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A representation of an image which is suitable to reveal most or all of the details of the image.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Data">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A collection of organized information, usually the results of experience, observation or experiment, or a set of premises. This may consist of numbers, words, or images, particularly as measurements or observations of a set of variables.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Layout">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The structured arrangement of items in a collection.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Thumbnail">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A small representation of an image which is |
      </xsd:annotation>
    </xsd:enumeration>
  </xsd:restriction>
</xsd:simpleType>
### Schema documentation for spase-1_3_3.xsd

<table>
<thead>
<tr>
<th>Used by</th>
<th>Element</th>
<th>SourceType</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source</td>
<td>&lt;xsd:simpleType name=&quot;enumSourceType&quot;&gt;</td>
<td>suitable to infer what the full-sized imaged is like.</td>
</tr>
</tbody>
</table>

```xml
<xsd:simpleType name="enumSourceType">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Identifiers for the characterization of the function or purpose of a source.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="Ancillary">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A complementary item which can be subordinate, subsidiary, auxiliary, supplementary to the primary item.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Browse">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A representation of an image which is suitable to reveal most or all of the details of the image.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Data">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A collection of organized information, usually the results of experience, observation or experiment, or a set of premises. This may consist of numbers, words, or images, particularly as measurements or observations of a set of variables.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Layout">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">The structured arrangement of items in a collection.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Thumbnail">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">A small representation of an image which is suitable to infer what the full-sized imaged is like.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
  </xsd:restriction>
</xsd:simpleType>
```

### 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**
![enumHashFunction](image)

**Type**
restriction of xsd:string

**Facets**

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>enumeration</td>
<td>MD5</td>
<td>Message Digest 5 (MD5) is a 128-bit message digest algorithm created in 1991 by Professor Ronald Rivest.</td>
</tr>
<tr>
<td>enumeration</td>
<td>SHA1</td>
<td>Secure Hash Algorithm (SHA), a 160-bit message digest algorithm developed by the NSA and described in Federal Information Processing Standard (FIPS) publication 180-1.</td>
</tr>
<tr>
<td>enumeration</td>
<td>SHA256</td>
<td>Secure Hash Algorithm (SHA), a 256-bit message digest algorithm developed by the NSA and described in Federal Information Processing Standard (FIPS) publication 180-1.</td>
</tr>
</tbody>
</table>

**Used by**

<table>
<thead>
<tr>
<th>Element</th>
<th>HashFunction</th>
</tr>
</thead>
</table>

---

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**Source**

```xml
<xsd:simpleType name="enumHashFunction">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">Identifiers for functions or algorithms that convert a digital data object into a hash value.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="MD5">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Message Digest 5 (MD5) is a 128-bit message digest algorithm created in 1991 by Professor Ronald Rivest.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="SHA1">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Secure Hash Algorithm (SHA), a 160-bit message digest algorithm developed by the NSA and described in Federal Information Processing Standard (FIPS) publication 180-1.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="SHA256">
      <xsd:annotation>
        <xsd:documentation xml:lang="en">Secure Hash Algorithm (SHA), a 256-bit message digest algorithm developed by the NSA and described in Federal Information Processing Standard (FIPS) publication 180-1.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
  </xsd:restriction>
</xsd:simpleType>
```

**Schema location**

```
file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd
```

---

**Simple Type enumInstrumentType**

**Namespace**

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

**Annotations**

Identifiers for the type of experiment the instrument performs. This is the technique of observation.

**Diagram**

```
enumInstrumentType xsd:string
```

**Type**

restriction of xsd:string

**Facets**

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Antenna</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>enumeration</td>
<td>Antenna</td>
<td>A sensor used to measure electric potential.</td>
</tr>
<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>DustDetector</td>
<td>An instrument which determines the mass and speed of ambient dust particles.</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.</td>
</tr>
</tbody>
</table>
particles as a function of time, direction of motion, mass, charge and/or species.

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FaradayCup</td>
<td>An instrument consisting of an electrode from which electrical current is measured while a charged particle beam (electrons or ions) impinges on it. Used to determine energy spectrum and sometimes ion composition of the impinging particles.</td>
</tr>
<tr>
<td>FluxFeedback</td>
<td>A search coil whose bandwidth and signal/noise ratio are increased by the application of negative feedback at the sensor (flux) level by driving a collocated coil with a signal from the preamplifier.</td>
</tr>
<tr>
<td>FourierTransformSpectrograph</td>
<td>An instrument that determines the spectra of a radiative source, using time-domain measurements and a Fourier transform.</td>
</tr>
<tr>
<td>GeigerMuellerTube</td>
<td>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>IonDrift</td>
<td>A device which measures the current produced by the displacement of ambient ions on a grid, thereby allowing the determination of the ion trajectory and velocity.</td>
</tr>
<tr>
<td>LangmuirProbe</td>
<td>A monopole antenna associated with an instrument. The instrument applies a potential to the antenna which is swept to determine the voltage/current characteristic. This provides information about the plasma surrounding the probe and spacecraft.</td>
</tr>
<tr>
<td>LongWire</td>
<td>A dipole antenna whose active (sensor) elements are two wires deployed in the equatorial plane on opposite sides of a spinning spacecraft, and whose length is several times greater than the spacecraft diameter.</td>
</tr>
<tr>
<td>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>NeutralParticleDetector</td>
<td>An instrument which measures the quantity of neutral particles as a function of time, direction of motion, mass, charge and/or species.</td>
</tr>
</tbody>
</table>
and properties of neutral particles. Measured properties can include mass and plasma bulk densities.

<table>
<thead>
<tr>
<th><strong>Enumeration</strong></th>
<th><strong>Class</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>enumeration</strong></td>
<td><strong>ParticleCorrelator</strong></td>
<td>An instrument which correlates particle flux to help identify wave/particle interactions.</td>
</tr>
<tr>
<td><strong>enumeration</strong></td>
<td><strong>ParticleDetector</strong></td>
<td>An instrument which detects particle flux!!!</td>
</tr>
<tr>
<td><strong>enumeration</strong></td>
<td><strong>Photometer</strong></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><strong>enumeration</strong></td>
<td><strong>Photopolarimeter</strong></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><strong>enumeration</strong></td>
<td><strong>Platform</strong></td>
<td>A collection of components which can be positioned and oriented as a single unit. A platform may contain other platforms. For example, a spacecraft is a platform which may have components that can be articulated and are also considered platforms.</td>
</tr>
<tr>
<td><strong>enumeration</strong></td>
<td><strong>ProportionalCounter</strong></td>
<td>An instrument which measures energy of ionization radiation based on interactions with a gas.</td>
</tr>
<tr>
<td><strong>enumeration</strong></td>
<td><strong>QuadrisphericalAnalyser</strong></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><strong>enumeration</strong></td>
<td><strong>Radar</strong></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><strong>enumeration</strong></td>
<td><strong>Radiometer</strong></td>
<td>An instrument for detecting or measuring radiant energy. Radiometers are commonly limited to infrared radiation.</td>
</tr>
<tr>
<td><strong>enumeration</strong></td>
<td><strong>ResonanceSounder</strong></td>
<td>A combination of a radio receiver and a pulsed transmitter used to study the plasma surrounding a spacecraft by identifying resonances or cut-offs (of the wave dispersion relation), whose frequencies are related to the ambient plasma density and magnetic field. When the transmitter is off it is essentially a high frequency-resolution spectral power receiver.</td>
</tr>
<tr>
<td><strong>enumeration</strong></td>
<td><strong>RetardingPotentialAnalyser</strong></td>
<td>An instrument which measures ion temperatures and ion concentrations using an ion trap.</td>
</tr>
<tr>
<td><strong>enumeration</strong></td>
<td><strong>Riometer</strong></td>
<td>An instrument which measure the signal strength in various directions of the galactic radio signals. Variations in these signals are influenced by solar flare activity and geomagnetic storm and substorm processes.</td>
</tr>
<tr>
<td><strong>enumeration</strong></td>
<td><strong>ScintillationDetector</strong></td>
<td>An instrument which detects fluorences of a material which is excited by high energy (ionizing) electromagnetic or charged particle radiation.</td>
</tr>
<tr>
<td><strong>enumeration</strong></td>
<td><strong>SearchCoil</strong></td>
<td>An instrument which measures the time variation of the magnetic flux threading a loop by measurement of the electric potential difference induced between the ends of the wire.</td>
</tr>
<tr>
<td><strong>enumeration</strong></td>
<td><strong>Sounder</strong></td>
<td>An instrument which measures the radiances from an object. A sounder may measure radiances</td>
</tr>
</tbody>
</table>
at multiple spectral ranges.

**Schema documentation for spase-1_3_3.xsd**

<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SpacecraftPotentialControl</td>
<td>An instrument to control the electric potential of a spacecraft with respect to the ambient plasma by emitting a variable current of positive ions.</td>
</tr>
<tr>
<td>SpectralPowerReceiver</td>
<td>A radio receiver which determines the power spectral density of the electric or magnetic field, or both, at one or more frequencies.</td>
</tr>
<tr>
<td>Spectrometer</td>
<td>An instrument that measures the component wavelengths of light or other electromagnetic radiation into its component wavelengths.</td>
</tr>
<tr>
<td>TimeofFlight</td>
<td>An instrument which measures the time it takes for a particle to travel between two detectors.</td>
</tr>
<tr>
<td>Unspecified</td>
<td>A value which is not provided.</td>
</tr>
<tr>
<td>WaveformReceiver</td>
<td>A radio receiver which outputs the value of one or more components of the electric and/or magnetic field as a function of time.</td>
</tr>
</tbody>
</table>

**Used by**

<table>
<thead>
<tr>
<th>Element</th>
<th>InstrumentType</th>
</tr>
</thead>
</table>

**Source**

```xml
<xs:complexType name="enumInstrumentType">
    <xs:annotation>
        <xs:documentation xml:lang="en">Identifiers for the type of experiment the instrument performs. This is the technique of observation.</xs:documentation>
    </xs:annotation>
    <xs:restriction base="xsd:string">
        <xs:enumeration value="Antenna">
            <xs:documentation xml:lang="en">A sensor used to measure electric potential.</xs:documentation>
        </xs:enumeration>
        <xs:enumeration value="Channeltron">
            <xs:documentation xml:lang="en">An instrument that detects electrons, ions, and UV-radiation, according to the principle of a secondary emission multiplier. It is typically used in electron spectroscopy and mass spectrometry.</xs:documentation>
        </xs:enumeration>
        <xs:enumeration value="Coronograph">
            <xs:documentation xml:lang="en">An instrument which can image things very close to the Sun by using a disk to block the Sun's bright surface which reveals the faint solar corona and other celestial objects.</xs:documentation>
        </xs:enumeration>
        <xs:enumeration value="DoubleSphere">
            <xs:documentation xml:lang="en">A dipole antenna of which the active (sensor) elements are small spheres located at the ends of two wires deployed in the equatorial plane, on opposite sides of a spinning spacecraft.</xs:documentation>
        </xs:enumeration>
        <xs:enumeration value="DustDetector">
            <xs:documentation xml:lang="en">An instrument which determines the mass and speed of ambient dust particles.</xs:documentation>
        </xs:enumeration>
        <xs:enumeration value="ElectronDriftInstrument">
            <xs:documentation xml:lang="en">An active experiment to measure the electron drift velocity based on sensing the displacement of a weak beam of electrons after one gyration in the ambient magnetic field.</xs:documentation>
        </xs:enumeration>
        <xs:enumeration value="ElectrostaticAnalyser">
            <xs:documentation xml:lang="en">An instrument which determines the electric potential of a spacecraft with respect to the ambient plasma by emitting a variable current of positive ions.</xs:documentation>
        </xs:enumeration>
    </xs:restriction>
</xs:complexType>
```
An instrument which uses charged plates to analyze the mass, charge and kinetic energies of charged particles which enter the instrument.

An instrument that measures fluxes of charged particles as a function of time, direction of motion, mass, charge and/or species.

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 device which measures the current produced by the displacement of ambient ions on a grid, thereby allowing the determination of the ion trajectory and velocity.

A monopole antenna associated with an instrument. The instrument applies a potential to the antenna which is swept to determine the voltage/current characteristic. This provides information about the plasma surrounding the probe and spacecraft.
<xsd:enumeration value="LongWire">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A dipole antenna whose active (sensor) elements are two wires deployed in the equatorial plane on opposite sides of a spinning spacecraft, and whose length is several times greater than the spacecraft diameter.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="Magnetometer">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">An instrument which measures the ambient magnetic field.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="MassSpectrometer">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">An instrument which distinguishes chemical species in terms of their different isotopic masses.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="MicrochannelPlate">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">An instrument used for the detection of elementary particles, ions, ultraviolet rays and soft X-rays constructed from very thin conductive glass capillaries.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="MultispectralImager">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">An instrument which captures images at multiple spectral ranges.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="NeutralAtomImager">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">An instrument which measures the quantity and properties of neutral particles over a range of angles. Measured properties can include mass and energy.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="NeutralParticleDetector">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">An instrument which measures the quantity and properties of neutral particles. Measured properties can include mass and plasma bulk densities.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="ParticleCorrelator">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">An instrument which correlates particle flux to help identify wave/particle interactions.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="ParticleDetector">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">An instrument which detects particle flux!!!</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<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="Platform">
  <xsd:annotation>
  </xsd:annotation>
</xsd:enumeration>
A collection of components which can be positioned and oriented as a single unit. A platform may contain other platforms. For example, a spacecraft is a platform which may have components that can be articulated and are also considered platforms.

An instrument which measures energy of ionization radiation based on interactions with a gas.

An instrument used for the 3-D detection of plasma, energetic electrons and ions, and for positive-ion composition measurements.

An instrument that uses directional properties of returned power to infer spatial and/or other characteristics of a remote object.

An instrument for detecting or measuring radiant energy. Radiometers are commonly limited to infrared radiation.

A combination of a radio receiver and a pulsed transmitter used to study the plasma surrounding a spacecraft by identifying resonances or cut-offs (of the wave dispersion relation), whose frequencies are related to the ambient plasma density and magnetic field. When the transmitter is off it is essentially a high frequency-resolution spectral power receiver.

An instrument which measures ion temperatures and ion concentrations using aplanr ion trap.

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.

An instrument which detects flouresences of a material which is excited by high energy (ionizing) electromagnetic or charged particle radiation.

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.

An instrument which measures the radiances from an object. A sounder may measure radiances.
at multiple 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">An instrument which measures the time it takes for a particle to travel between two detectors.</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`

<table>
<thead>
<tr>
<th>Facets</th>
<th>Restriction of xsd:string</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>enumeration</code></td>
<td><code>Magnetosheath</code></td>
</tr>
<tr>
<td><code>enumeration</code></td>
<td><code>Magnetosphere</code></td>
</tr>
<tr>
<td><code>enumeration</code></td>
<td><code>Magnetopause.Magnetotail</code></td>
</tr>
<tr>
<td><code>enumeration</code></td>
<td><code>Magnetosphere.Main</code></td>
</tr>
<tr>
<td><code>enumeration</code></td>
<td><code>Magnetosphere.Polar</code></td>
</tr>
</tbody>
</table>
magnetosphere the polar region is the area where magnetic field lines are open and includes the auroral zone.

**Enumeration**

<table>
<thead>
<tr>
<th>Region</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<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>A region centered on the equator and limited in latitude by approximately 23 degrees north and south of the equator.</td>
</tr>
<tr>
<td>NearSurface.Ionosphere</td>
<td>The charged or ionized gases surrounding a body that are nominally bound to the body by virtue of the gravitational attraction.</td>
</tr>
<tr>
<td>NearSurface.Ionosphere.DRegion</td>
<td>One of several layers in the ionosphere. The ionospheric region that exists approximately 50 to 95 km above the surface of the Earth. One of several layers in the ionosphere.</td>
</tr>
<tr>
<td>NearSurface.Ionosphere.ERegion</td>
<td>A layer of ionised gas occurring at 90-150km above the ground. One of several layers in the ionosphere. Also called the The Kennelly-Heaviside layer.</td>
</tr>
<tr>
<td>NearSurface.Ionosphere.FRegion</td>
<td>A layer that contains ionized gases at a height of around 150-800 km above sea level, placing 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.TRegion</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>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>NearSurface.PolarCap</td>
<td>The areas of the globe surrounding the poles and consisting of the region north of 60 degrees north latitude an the region south of 60 degrees south latitude.</td>
</tr>
<tr>
<td>NearSurface.SouthAtlanticAnomalyRegion</td>
<td>Earth's inner van Allen radiation belt makes its closest approach to the planets surface. The result is that, for a given altitude,</td>
</tr>
</tbody>
</table>
the radiation intensity is higher over this region than elsewhere.

**enumeration** 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.

**enumeration** NearSurface.Thermosphere

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

**enumeration** 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** Surface

The outermost area of a solid object.

Source

```xml
<xsd:simpleType name="enumEarth">
    <xsd:documentation xml:lang="en">Identifiers for the regions surrounding the Earth.</xsd:documentation>
</xsd:simpleType>

<xsd:restriction base="xsd:string">
    <xsd:enumeration value="Magnetosheath">
        <xsd:documentation xml:lang="en">The region between the bow shock and the magnetopause, characterized by very turbulent plasma.</xsd:documentation>
    </xsd:enumeration>
    <xsd:enumeration value="Magnetosphere">
        <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:enumeration>
    <xsd:enumeration value="Magnetosphere.Magnetotail">
        <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:enumeration>
    <xsd:enumeration value="Magnetosphere.Main">
        <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:enumeration>
    <xsd:enumeration value="Magnetosphere.Polar">
        <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:enumeration>
    <xsd:enumeration value="Magnetosphere.RadiationBelt">
        <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:enumeration>
    <xsd:enumeration value="NearSurface">
        <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:enumeration>
</xsd:restriction>
```
<xsd:enumeration value="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="NearSurface.AuroralRegion">
  <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: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: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: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:documentation xml:lang= "en">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.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

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

<xsd:enumeration value="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="NearSurface.Plasmasphere">
  <xsd:annotation>
    <xsd:documentation xml:lang= "en">A region of the magnetosphere consisting of low energy (cool) plasma. It is located above the ionosphere. The outer boundary of the plasmasphere is known as the plasmapause, which is defined by an order of magnitude drop in plasma density.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="NearSurface.PolarCap">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The areas of the globe surrounding the poles and consisting of the region north of 60 degrees north latitude and the region south of 60 degrees south latitude.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="NearSurface.SouthAtlanticAnomalyRegion">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The region where Earth's inner van Allen radiation belt makes its closest approach to the planet's surface. The result is that, for a given altitude, the radiation intensity is higher over this region than elsewhere.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="NearSurface.Stratosphere">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The layer of the atmosphere that extends from the troposphere to about 30 km, temperature increases with height. The stratosphere contains the ozone layer.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="NearSurface.Thermosphere">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The layer of the atmosphere that extends from the Mesosphere to 640+ km, temperature increasing with height.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

<xsd:enumeration value="NearSurface.Troposphere">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">The lowest layer of the atmosphere which begins at the surface and extends to between 7 km (4.4 mi) at the poles and 17 km (10.6 mi) at the equator, with some variation due to weather factors.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

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

<xs:restriction base="xsd:string">
  <xs:enumeration value="Inner">The region of the heliosphere extending radially from the "surface" of the Sun to 1 AU.</xs:enumeration>
  <xs:enumeration value="NearEarth">The heliospheric region near the Earth which extends to and includes the area near the L1 and L2 Lagrange point.</xs:enumeration>
  <xs:enumeration value="Outer">The region of the heliosphere from, but not including, 1 AU to the farthest extent of the heliosphere (heliopause).</xs:enumeration>
  <xs:enumeration value="Remote1AU">The heliospheric region near the Earth's orbit, but exclusive of the region near the Earth.</xs:enumeration>
</xs:restriction>

Source: <xsd:simpleType name="enumHeliosphere">
<table>
<thead>
<tr>
<th>Facets</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>enumeration Magnetotail</td>
<td>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 field. The region on the night side of the body where the magnetic field is stretched backwards by the force of the solar wind. For Earth, the magnetotail begins at a night-side radial distance of 10 Re (X &gt; -10Re).</td>
</tr>
<tr>
<td>enumeration 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>enumeration 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>enumeration RadiationBelt</td>
<td>The region within a magnetosphere where high-energy particles could potentially be trapped in a magnetic field.</td>
</tr>
</tbody>
</table>
the direct influence of planet’s magnetic field.</xsd:documentation>
</xsd:annotation>
<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 aura 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>

Schema documentation for spase-1_3_3.xsd

Simple Type enumNearSurface

<p>| Namespace | <a href="http://www.spase-group.org/data/schema">http://www.spase-group.org/data/schema</a> |
| Diagram | <img src="image" alt="Diagram" /> |
| Type | restriction of xsd:string |
| Facets |
| enumeration | Atmosphere | The neutral gases surrounding a body that extends from the surface and is bound to the body by virtue of the gravitational attraction. |
| enumeration | 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. |
| enumeration | EquatorialRegion | A region centered on the equator and limited in latitude by approximately 23 degrees north and south of the equator. |
| enumeration | Ionosphere | The charged or ionized gases surrounding a body that are nominally bound to the body by virtue of the gravitational attraction. |
| enumeration | 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. |
| enumeration | 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. |</p>
<table>
<thead>
<tr>
<th>Enumeration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ionosphere.FRegion</strong></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><strong>Ionosphere.Topside</strong></td>
<td>The region at the uppermost areas of the ionosphere.</td>
</tr>
<tr>
<td><strong>Mesosphere</strong></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><strong>Plasmasphere</strong></td>
<td>A region of the magnetosphere consisting of low energy (cool) plasma. It is located above the ionosphere. The outer boundary of the plasmasphere is known as the plasmapause, which is defined by an order of magnitude drop in plasma density.</td>
</tr>
<tr>
<td><strong>PolarCap</strong></td>
<td>The areas of the globe surrounding the poles and consisting of the region north of 60 degrees north latitude and the region south of 60 degrees south latitude.</td>
</tr>
<tr>
<td><strong>SouthAtlanticAnomalyRegion</strong></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><strong>Stratosphere</strong></td>
<td>The layer of the atmosphere that extends from the troposphere to about 30 km, temperature increasing with height. The stratosphere contains the ozone layer.</td>
</tr>
<tr>
<td><strong>Thermosphere</strong></td>
<td>The layer of the atmosphere that extends from the Mesosphere to 640+ km, temperature increasing with height.</td>
</tr>
<tr>
<td><strong>Troposphere</strong></td>
<td>The lowest layer of the atmosphere which begins at the surface and extends to between 7 km (4.4 mi) at the poles and 17 km (10.6 mi) at the equator, with some variation due to weather factors.</td>
</tr>
</tbody>
</table>

Source

```
<xs:simpleType name="enumNearSurface">
  <xs:annotation>
    <xs:documentation xml:lang="en">Identifiers for regions of the gaseous and possibly ionized environment of a body extending from the surface to some specified altitude.</xs:documentation>
  </xs:annotation>
  <xs:restriction base="xsd:string">
    <xs:enumeration value="Atmosphere">
      <xs:documentation xml:lang="en">The neutral gases surrounding a body that extends from the surface and is bound to the body by virtue of the gravitational attraction.</xs:documentation>
    </xs:enumeration>
    <xs:enumeration value="AuroralRegion">
      <xs: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.</xs:documentation>
    </xs:enumeration>
  </xs:restriction>
</xs:simpleType>
```
<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 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.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.ERegion">
  <xsd:annotation>
    <xsd:documentation xml:lang="en">A layer of ionised gas occurring at 90-150km above the ground. One of several layers in the ionosphere. Also called the The Kennelly-Heaviside layer.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

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

<xsd: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 and 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 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>
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.

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.
Transition Region. The solar chromosphere is approximately 400 km to 2100 km above the photosphere, and characterized by temperatures from 4500 - 28000 K. 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.

Attributes:

**Spase / @lang**

- **Namespace**: No namespace
- **Type**: xsd:string
- **Properties**: default: en
- **Used by**: Complex Type Spase
- **Source**: <xsd:attribute name="lang" type="xsd:string" default="en"/>
- **Schema location**: file:/var/www/spase/site/root/data/schema/spase-1_3_3.xsd