

1. STC in VOTable

Markus Demleitner (msdemlei@ari.uni-heidelberg.de)

„Referencing STC in VOTable, Version 2.0“, IVOA Note 18 June 2010¹

– an agreement between the VOTable and DM working groups on how to describe coordinate system metadata in VOTables using utypes.

- Basic Mechanisms
- Tricks Points
- Onward?

2. Basics 1

All STC metadata is contained in groups with a defined utype:

```
<GROUP utype="stc:CatalogEntryLocation">
```

These groups transmit a sequence of PARAM elements as utype-value pairs:

```
<PARAM name="CoordRefFrame" datatype="char" arraysize="*"
  utype="stc:AstroCoordSystem.SpaceFrame.CoordRefFrame"
  value="ICRS"/>
```

The connection to actual table columns is done via typed FIELDrefs:

```
<FIELDref ref="raErr"
  utype="stc:AstroCoords.Position2D.Error2.C1"/>
```

3. Basics 2

The utypes are generated from the STC data model via xpath-like expressions using STC-X.

Multiple groups with a utype `stc:CatalogEntryLocation` may be present for a single table, e.g., when you have both ICRS and some legacy system.

As in STC, a coordinate system can define temporal and spatial aspects as well as a spectral location and a redshift-like coordinate in one specification.

The data model URI is transmitted in-line:

```
<PARAM name="URI" datatype="char" arraysize="*"
  utype="stc:DataModel.URI"
  value="http://www.ivoa.net/xml/STC/stc-v1.30.xsd"/>
```

¹ <http://www.ivoa.net/Documents/Notes/VOTableSTC/>

4. Fine Points

XSD substitution groups are pain. Special handling is required to get `stc:AstroCoordSystem.SpaceFrame.CoordRefFrame`, ICRS

rather than a single utype `stc:AstroCoordSystem.SpaceFrame.CoordRefFrame.ICRS` with an empty value.

One group with the utype `src:ObservatoryLocation` can specify the observer location.

You can define columns containing geometries:

```
<FIELDref ref="region" utype="stc:AstroCoordArea.Circle"/>
...
<FIELD ID="region" name="region" datatype="char"
  xtype="adql:REGION" arraysize="*" />
```

All PARAM values are serialized according to XSD rules.

5. Onward

- The examples in the VOTable spec should be adapted (how?)
- I'd venture to suggest the basic mechanism as the default way to associate general data models with VOTable columns
- Before we revise this, we should probably revise STC-X
- Otherwise – should we strive for REC?