Utypes used in the IVOA

Data Model Working Group , M.Louys, IVOA Interop Meeting , Napoli, May 2011

Utypes are used in IVOA services

▸ Mostly in VOTable serialisation

▸ Now in TAP services to link column names used in queries with data model fields ➔ `TAP_SCHEMA.columns`

Column Name	Datatype	Size	Units	ObsCoreDM Utype	UCD	Principal	Index	Std
dataproduct_type	adql:VARCHAR	TBD	NULL	obscore:Obs.dataProductType	meta.id;class	1	TBD	1
calib_level	adql:INTEGER	NULL	NULL	obscore:Obs.calibLevel	meta.id;class	1	TBD	1

   ▸ Identifies a quantity in the context of a data model.

<PARAM name="zpvalue" utype="photdm:PhotCal.ZeroPoint. Flux.value" ucd="" value="115.2" unit="Jy" datatype="float" />

▸ Still useful for list of (utype, value) pairs for simple applications

▸

Utype syntax definition
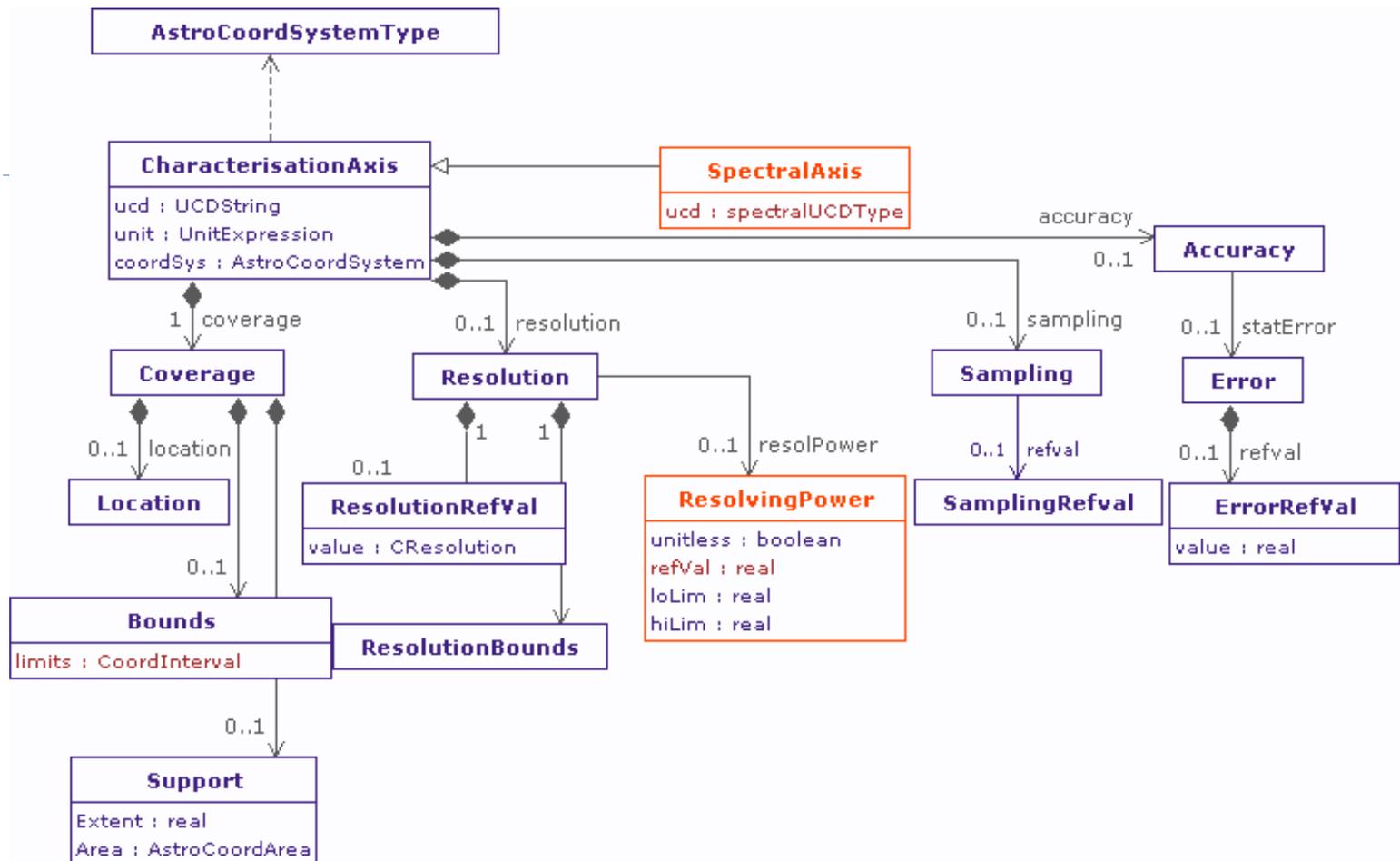
▶ Existing Models : use historical definitions (in the standard document)

  ▶ Spectrum/SSA

  ▶ Characterisation 1 and 2

▶ Current models : use an automated process

| UML | → | XSD | → | HTML |

Class diagram   XML schema   Documentation

                                      UtypeList

  ▶ Apply the extraction pipeline suggested by G.Lemson et coll. : VO_URP

  ▶ Use some reasonable design rules for UML representation

▶

UML rules

- Attribute name start with lower case

- Classes and attribute names may use CamelCase

- Prefer reference to inclusion

- Avoid nesting of too many packages → shorter utypes

Reuse classes from a different model

- ObsTAP re-uses classes from Spectrum DM , SSA Access class
- These objects are directly included in the model and reused in a specific way defined in the UML model
  - Follow down the encapsulated attributes within reused classes
- Include classes from other models as types of attributes (STC re-use)

Characterisation.SpatialAxis.Coverage.Bounds.limits.Interval.LoLimit2Vec.C1

Characterisation.SpatialAxis.Resolution.refVal.CResolution

Plans

▸ Revisit the existing Utype WD

http://www.ivoa.net/cgi-bin/twiki/bin/view/IVOA/Utypes

Recap these rules in a new version

▸ Use examples in the VOTable format with groups

▸ Test the automatic generation (VO_URP) for the Objecteering modeler

Utypes publishing

▸ Publish and document the Utype list with each data model standard document as a reference for implementers and users

  ▸ See SSA data model summary, PhotometryDM utypes table, etc..

▸ Do we need to register them?