


# CDS WP7 report

F.Bonnarel  
CDS WP7  
correspondant

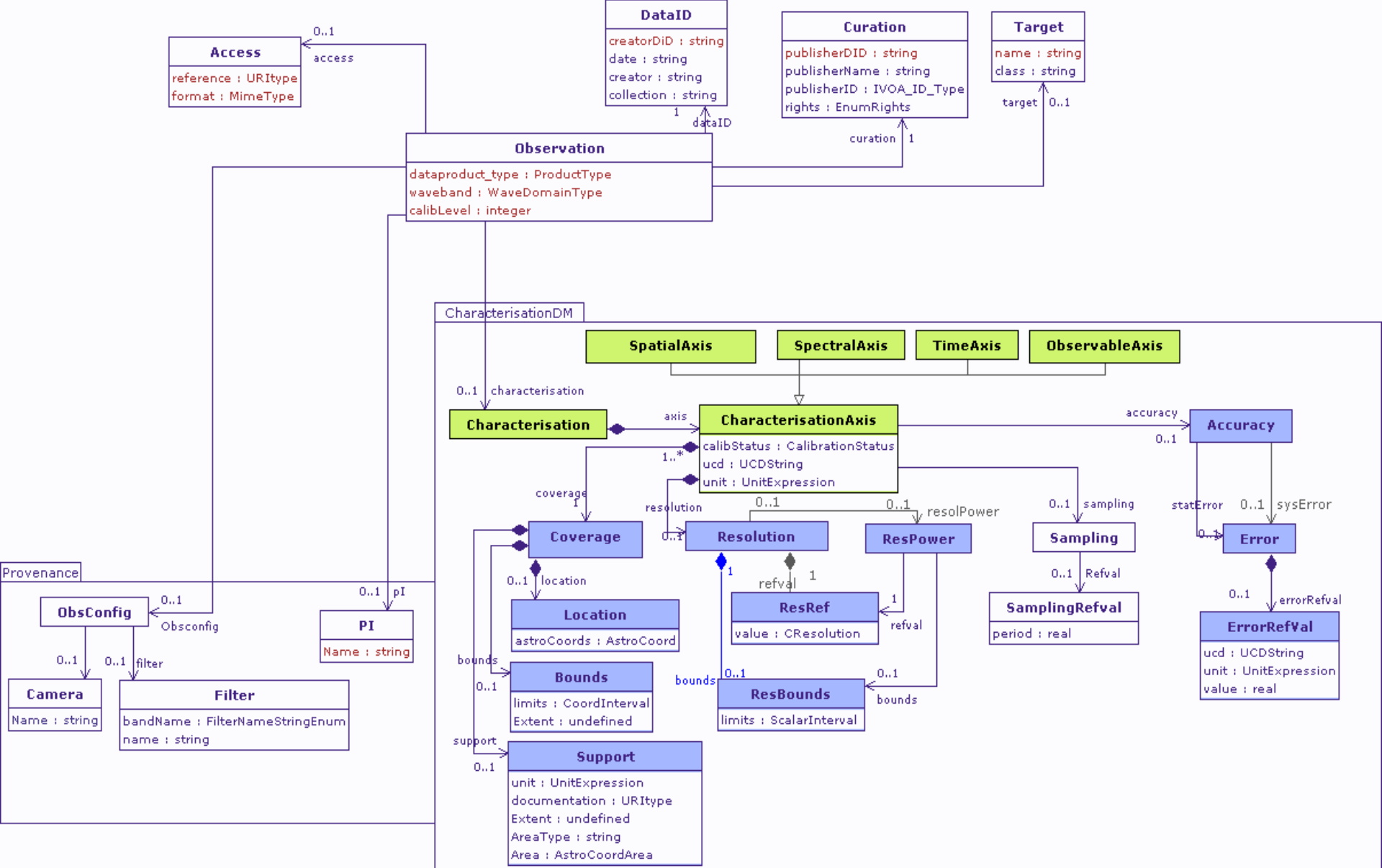


# Observation/Provenance/Char (coord: M.Louys)



- **Obstap effort** (M.Louys, F.Bonnarel + A.Micol + A.Richards + J.Salgado + P.Dowler + L.Michel + R.Thomson + D Tody + D.Schade):
  - Observation data model core elements for implementation in a TAP service
  - List of mandatory and optional fields with database names and utypes finalized by garching interop
  - Working Draft edited by M.Louys, F.bonnarel (review process from other authors started)
  - *Implementation of the first obstap service (CADC, Pat Dowler)*
  - Implementation in Strasbourg (ACDS data) with G.Mantelet, L.Michel, M.Louys





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Local short name	Utype	Units	Type	Description
datapduct_type	obs:Observation.ProductType	unitless	enum	see proposal
obs_publisher_did	obs:Curation.PublisherDID	unitless	string	Data set ID given by the publisher.
obs_creator_did	obs:DataID.CreatorDID	unitless	string	Ivoa ID given by the creator
calib_level	obs:Observation.calibLevel	unitless	enum integer	Calibration status of the observation: in {0, 1, 2, 3}
target_name	obs:Target.name	unitless	string	object of interest
s_ra	obs:Char/SpatialAxis.Coverage.Location.coord.Position2D.Value2.C1	[deg]	double	Central Spatial Position in ICRS
s_dec	obs:Char/SpatialAxis.Coverage.Location.coord.Position2D.Value2.C2	[deg]	double	
s_ra_min	obs:Char/SpatialAxis.Coverage.Bounds.limits.CoordInterval.LoLimit2Vec.C1	[deg]	double	Min RA coordinates of spatial bounding box in ICRS
s_ra_max	obs:Char/SpatialAxis.Coverage.Bounds.limits.CoordInterval.HiLimit2Vec.C1	[deg]	double	Max RA coordinates of spatial bounding box in ICRS
s_dec_min	obs:Char/SpatialAxis.Coverage.Bounds.limits.CoordInterval.LoLimit2Vec.C2	[deg]	double	Min DEC limit in spatial Position in ICRS
s_dec_max	obs:Char/SpatialAxis.Coverage.Location.limits.CoordInterval.HiLimit2Vec.C2	[deg]	double	Max DEC limit in spatial Position in ICRS
s_resolution	obs:Char/SpatialAxis.Resolution.refVal	[arcsec]	float	Spatial resolution of data
t_start	obs:Char/TimeAxis.Coverage.Bounds.limits.TimeInterval.StartTime	MJD	double	Start time
t_stop	obs:Char/TimeAxis.Coverage.Bounds.limits.TimeInterval.StopTime	MJD	double	Stop time
t_span	obs:Char/TimeAxis.Coverage.Bounds.Extent	day	float	Total observation elapsed time
t_exptime	obs:Char/TimeAxis.Coverage.Support.Extent	[s]	float	Total exposure time
t_resolution	obs:Char/TimeAxis.Resolution.refVal	[s]	float	Temporal resolution FWHM
em_domain	obs:Observation.waveband	unitless	enum string	vr:waveband in { RADIO, MILLIMETER, INFRARED, OPTICAL, UV, EUV, X-RAY, GAMMA-RAY } cf VODataService
em_min	obs:Char/SpectralAxis.Coverage.Bounds.limits.Interval.LoLim	[m]	double	start in spectral coordinates
em_max	obs:Char/SpectralAxis.Coverage.Bounds.limits.Interval.HiLim	[m]	double	stop in spectral coordinates
em_res_power	obs:Char/SpectralAxis.Resolution.ResolPower	unitless	double	Value of the resolution power along the SpectralAxis.
o_ucd	obs:Char/ObservableAxis.ucd	unitless	string	Nature of the observable axis; necessary for polarisation data or any kind of flux. Values in { phot.flux, phot.flux.density, phot.count, phot.mag }
instrument	obs:Provenance/ObsConfig..Instrument.name	unitless	string	In uppercase ?
access_url	obs:Access.Reference	unitless	uri string	URL used to access dataset

# Observation/Provenance/Char (coord: M.Louys)



- Observation data model.
  - Observation UML diagram (ML)
  - Observation xml schema and examples . Usage for footprint services (FB + ML)
  - Muse IFU simulated data description (ML + FB)
- Characterisation 2 (F.Bonnarel + A.Richards + I.Chilingarian + M.Louys )
  - Examples for characterisation of Polarized data
  - Variation maps (« level 4 » description) 2 examples
    - SDSS spectral resolution (on spectra) / full spectral fitting with models
    - WFPC2 PSF variations description / crowded field photometry



muse\_s3v2c3\_ao\_cube\_10\_full.xml

Access	<!--	Obscure name "access_url"	
	<!--	As an instance to illustrate a possible value :	
	Reference	http://urania1.univ-lyon1.fr/cgi-bin/nph-Simu++dev.cgi?out=cube..etc	
	<!--	Target	
Target	<!--	extrapolation for a Muse data cube small/ 80hours re-suses Metadata for multiwavelength images and SED constructions used in SED prototype/ G. Mantelet	
	<!--	Characterisation	
char	cha:spati...	cha:axisName	spatial
		cha:ucd	pos
		cha:unit	deg
		cha:coordsystem	
		cha:calibrat...	CALIBRATED
	cha:numBins	@xsi:type	cha:numBins2Type
		cha:I1	301
		cha:I2	301
		cha:coverage	
		cha:resolution	
	cha:spect...	cha:axisName	spectral
		cha:ucd	em
		cha:unit	nm
		cha:coordsystem	
		cha:calibrat...	'CALIBRATED'
	cha:numBins	@xsi:type	cha:numBins1Type
		cha:I1	3463
	cha:coverage	cha:bounds	@xsi:type
			cha:BoundsLimType
		cha:limits	@coord_syste... TT-ICRS-TOP0
			@xsi:type cha:CharCoordAreaTypeInterval1

Texte Grille Auteur

Recherche: BoundsEx    Suivant    Précédent    Tout     Incrémental     Sensible à la casse    🔍

C:\Users\bonnarel\Documents\muse\_s3v2c3\_ao\_cube\_10\_full.xml    Validation -- échec Erreurs: 5    U+0063    135:3    Modifié



polarization1.xml

```
<?xml version="1.0" encoding="UTF-8">
```

character... @xmlns:char http://www.ivoa.net/xml/Characterisation/Characterisation-v1.11.xsd  
 @xsi:type char:complexType  
 @xmlns:xsi http://www.w3.org/2001/XMLSchema-instance

globalChar

char:chara...	char:axisName	char:ucd	char:unit	char:coordsy...	char:accuracy	char:independ...	char:calibra...	char:numBins2	char:undersa...
1	spatial	pos	deg	char:coord...		true	CALIBRATED	char:numB...	true
2	time	time	none				CALIBRATED		
3	spectral	em	Ghz			true	CALIBRATED		
4	polarization	phys.polarization	None						

segment (3 rows)

number	characterization																																
1	<table border="1"> <thead> <tr> <th>char:char...</th> <th>char:axisName</th> <th>char:ucd</th> <th>char:unit</th> <th>char:coord...</th> <th>char:accuracy</th> <th>char:independ...</th> <th>char:calibra...</th> <th>char:numBins1</th> <th>char:cove...</th> <th>char:loca...</th> <th>char:unit</th> <th>char:coord</th> <th>stc:Scala...</th> <th>@xmlns:stc</th> <th>stc:Value</th> </tr> </thead> <tbody> <tr> <td></td> <td>StokesI</td> <td>phot.flux.density;phys.polarization.stokes.I</td> <td>jy</td> <td>TT-ICRS-T0P0</td> <td></td> <td>false</td> <td>CALIBRATED</td> <td>10000</td> <td></td> <td></td> <td>Jy.beam-1</td> <td></td> <td></td> <td>http://www.ivoa.net/xml/STC/stc-v1</td> <td>10.0</td> </tr> </tbody> </table>	char:char...	char:axisName	char:ucd	char:unit	char:coord...	char:accuracy	char:independ...	char:calibra...	char:numBins1	char:cove...	char:loca...	char:unit	char:coord	stc:Scala...	@xmlns:stc	stc:Value		StokesI	phot.flux.density;phys.polarization.stokes.I	jy	TT-ICRS-T0P0		false	CALIBRATED	10000			Jy.beam-1			http://www.ivoa.net/xml/STC/stc-v1	10.0
char:char...	char:axisName	char:ucd	char:unit	char:coord...	char:accuracy	char:independ...	char:calibra...	char:numBins1	char:cove...	char:loca...	char:unit	char:coord	stc:Scala...	@xmlns:stc	stc:Value																		
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2	<table border="1"> <thead> <tr> <th>char:char...</th> <th>char:axisName</th> <th>char:ucd</th> <th>char:unit</th> <th>char:accuracy</th> <th>char:independ...</th> </tr> </thead> <tbody> <tr> <td></td> <td>StokesQ</td> <td>phot.flux.density;phys.polarization.stokes.Q</td> <td>Jy.beam-1</td> <td></td> <td>false</td> </tr> </tbody> </table>	char:char...	char:axisName	char:ucd	char:unit	char:accuracy	char:independ...		StokesQ	phot.flux.density;phys.polarization.stokes.Q	Jy.beam-1		false																				
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Texte Grille Auteur

/windows/Users/bonnarel/Documents/CHar2Prov/polarization1.xml

■ Apprentissage effectué

U+003C

1:1



# Observation/Provenance/Char (coord: M.Louys)



- Provenance:
  - Use case: Trace the history of the data
  - Collaboration with ESO = Juan De Santander, Arancha Delgado, Nausicaa Delmotte,
  - Main packages = Data Processing, Ambient conditions, Observing configuration
  - Observing elements (with common features to all wavelengths : telescope, instrument, mode, etc ...)
  - Version 0.1 of the draft with preliminary uml and xml schema with examples planned before Interop





# Observation/Provenance/Char (coord: M.Louys)



- SED generation Plugin

(G.Mantelet, P.Fernique, C.Bot +M.Louys+F.Bonnarel)

- Images in Aladin server come with xml serialisation of IVOA characterisation standard
- The Plugin integrates fluxes on Images and uses characterisation of flux and spectral axes of these images in order to build a SED
- Produced SED can be saved using all IVOA spectrum DM consistent formats and sent to other VOtools using SAMP



# Footprints (coord: T.Boch)



- Reuse of observation DM xml serialisation by the NVO footprint service
- Discussion for adopting VOTABLE output as an alternative format. Just restarted



# Generic dataset and S\*AP Associations + Data Cubes (F.B + J.Salgado + A.Richards)



- ObsTap is the first step of Generic Data Set (see previous slides)
- SIA2 issues were discussed after Garching Interop.  
(D.Tody, A.Micol, A.Richards, F.Bonnarel, D.Durand, J.Salgado)
  - First preliminary version of Working draft published.
  - SIA2 implementation for 2D images in preparation at CDS
- DAL extension mechanism = new example with J.Salgado





# Photometry

- Photometry data model and Vizier (S.Derriere + F.Ochsenbein + ESAVO + SVO)
  - Photometric system description:
    - Vizier has 223 filter descriptions available
    - Binding to SVO filter profile service can be done
  - Which outputs for SEDs ?
    - SSA like (to be interpreted by VOSPEC or other VO tools ?)
    - Alternatively: more compact format (requires adaptation of VO tools)
- Photometry data model and general DM landscape (M.Louys + ESAVO discussion)

