NRC·CNRC

prototype: ObsCore++

Patrick Dowler

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ObsCore is about data discovery

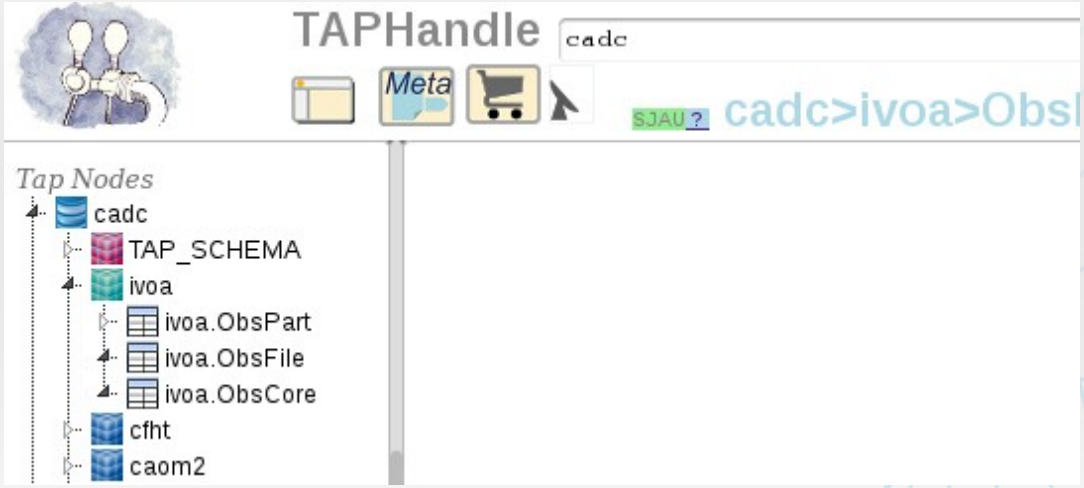
- ObsCore provides a physical table model
  - suitable for TAP
  - suitable as a data discovery response format
  - can download data (access_url and/or DataLink)
  - doesn't tell you anything about the data format, arrays of pixels, etc: for that we wait for SIA {metadata} and ImageDM...
- what about World Coordinate System?
  - could get it from a service
  - could put it in a database with ObsCore: ObsCore++

What is ObsCore++?

- a physical table model to store WCS metadata for data products
- based on experience with CAOM-2.x (Common Archive Observation Model) developed at CADC over the last 5 years
- proven to work for ~10 million observations from 15 telescopes

What is ObsCore++?

- implemented in the CADC TAP service – explore!



ObsFile : metadata about one file

- basic file metadata

column_name	datatype	array size
uri	char	*
content_length	long	
content_type	char	*
core_id		
file_id		

foreign key → ObsCore
surrogate primary key

Note: core_id is also surrogate primary key in the ObsCore table

ObsPart : metadata about one data array

column_name	datatype	array size
name	char	*
naxis	int	
s_axis1	int	
s_axis2	int	
em_axis	int	
t_axis	int	
p_axis	int	

. . . .

– number of axes in the array

– the index of this axis in the array, or null

– *naxis* of these have values, but ...

ObsPart : Spatial WCS for one array

column name	datatype	array size
s_coordsys	char	*
s_equinox	double	
s_ctype1	char	*
s_ctype2	char	*
s_cunit1	char	*
s_cunit2	char	*
s_syser1	double	
s_syser2	double	
s_rnder1	double	
s_rnder2	double	

column name	datatype	array size
s_naxis1	long	
s_naxis2	long	
s_crpix1	double	
s_crpix2	double	
s_crval1	double	
s_crval2	double	
s_cd11	double	
s_cd12	double	
s_cd21	double	
s_cd22	double	

. . . .

ObsPart : Spectral WCS for one array

column name	datatype	array size
em_specsys	char	*
em_ssysobs	char	*
em_ssyssrc	char	*
em_restfrq	char	*
em_restwav	char	*
em_velosys	char	*
em_zsource	char	*
em_velang	char	*

column name	datatype	array size
em_ctype	char	*
em_cunit	char	*
em_naxis	long	
em_crpix	double	
em_crval	double	
em_cdelt	double	
em_syser	double	
em_rnder	double	

. . . .

ObsPart : Time WCS for one array … and Polarization WCS

column name	datatype	array size
t_timesys	char	*
t_refpos	char	*
t_mjdref	double	
t_ctype	char	*
t_cunit	char	*
t_naxis	long	
t_crpix	double	
t_crval	double	
t_cdelt	double	
t_syser	double	
t_rnder	double	

column name	datatype	array size
p_ctype	char	*
p_cunit	char	*
p_naxis	long	
p_crpix	double	
p_crval	double	
p_cdelt	double	

OK, ctype, cunit and datatypes for symmetry

file_id			FK
part_id			PK

ObsCore++

- ObsCore : 29 columns for data discovery
- ObsFile : 3 columns for minimal file metadata, could be augmented with semantics
- ObsPart : 62 columns for WCS of one data array
  - everything you need for sky<-->pixel transformations on 5 axes
  - originally designed to model one extension in a FITS file
  - some use for simple data in a package (TAR)
  - could work for one array in an HDF (name ~ path), untested
  - in CAOM-2.x the equivalent class is further normalised to support parts with and without a data array (not uncommon)