

DAL problems and solutions for Time Series



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TimeSeries discovery

- 3 discovery modes
 - Source driven (direct or via DataLink)
 - ObsCore/SLAV2-like driven (extensions are needed ?)
 - Physical Content driven (project specific?)



Source driven (Use case : GAIA)

- We retrieve sources via a TAP or an SCS service
- For each source an URL retrieves TimeSeries
- How do we put a standard tag on this URL ?
 - Utype on a single FIELD ?
 - LINK feature with new « content » attribute ?
 - Service descriptor (DataLink) towards a TimeSeries retriever ?
 - Links to TimeSeries in a {link resource} (DataLink) associated to the source ?



Obscore-like driven (use case :SVO, planets, GAIA, all)

- CoordSystem is ICRS, TT, BARYCENTER
- Obscore allows discovery of « data_product=TimeSeries » datasets with other constraints
- What should be added (if any -→ see Adas' talk)? Eg :
 - Time resolution
 - Time coverage bounds
 - Time sampling « frequency » bounds attributes
 - Time sample « width » bounds attributes
 - Extend o_ucd value domain : what is varying with time
- Close to previous SSA-like approach (SVO)



Physical Content- driven (GAPS exoplanets...)

- List of metadata
 - Signal periodicity
 - Periods
 - Object type candidate (exoplanet, variable star, etc..)
 - Transiency
 - Etc...
- Requires specific analysis
 - Project specific
 - Additional physical content metadata table.
 - Joins to Obscore-like table



TimeSeries access

- Representation is tackled by DM spec.
- Single URL-based retrieval to TimeSeries straightforward
- Will be insufficient in the long term
 - Extraction from a database
 - Subsetting on one band or range
 - SODA-like approach to generate the actual retrieved TimeSeries (dataprodct= and resampling parameters)
 - Consequence for virtual data discovery.



Required changes in DAL specification

- 1 Obscure extension (Time sampling...)
- 2 Corresponding PARAMETERS in SIAV2-like interface
- 3 SODA extension parameters for data selection
- 4 Access or DataLinks tags in source-driven context



How to proceed in DAL ?

- 1 Obscore changes in DM spec. (As well as data representation).
- 1-2-3 Extension of ObsCore table, adding parameters to SODA and SIAV2.
 - TimeSeries extension for DAL protocols as a single spec ?
 - or several extensions ?
- 4 tags can be defined in the same spec. See also DataLink recognition note

