

ObsCore extension for visibility data

A new DM specification proposal

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Work done so far

- Idea came around one year ago around fall 2020 interop and RIG running meetings
- First table of parameters shown in DM session during spring 2021 interop
- Preliminary draft currently on github as an IVOA note
(github.com/ivoa instead of github.com/ivoa-std)



What is it all about ?

- Visibility data is a low level product of interferometry
 - Not specific to radio data, although probably dominant in that domain.
 - Measurements spread in the uv plane (Fourier axes)
- Can appear as progenitors of science data
- If we want to discover directly, Visibility data are not fully described by ObsCore
 - Observations are generally complex (ObsCore applies to parts not to the whole)
 - Standard quantities such as `s_fov` or `s_resolution` strongly depends from frequency. Maximum angular scale in addition
 - Could be useful to have min/max on those



What is it all about ?

- « uv plane » characterisation is a better « spatial » characterisation for visibility data
 - Minimum maximum distance for `max_angular_scale` and resolution
 - Excentricity (departure from axial symmetry) and filling factor
- Instrumental critical features
 - Number of Antennae
 - Antenna diameter
 - Min and max baselines



What is it all about ?

- Could be useful to provide maps : at least
 - Uv coverage
 - Dirty beam
 - Integrated to the main table (URL) ? Or through DataLink ?
- How do we manage the new parameters ?
 - Additional parameters in the ObsCore table ?
 - Secondary table (with join) ?



Status

- Available on github :
 - <https://github.com/ivoa/ObsCoreExtensionForVisibilityData>
 - Currently an IVOA note
 - To be managed by DM WG
 - Final status : endorsed note or recommendation ?



What is an ObsCore dataset in Visibility Data context ?

- Observation = dataset (Mark Kettenis)
 - Each row in ObsCore is a simple entry point to the dataset
 - obs_id redondant with obs_publisher_id
 - They all have the same DataLink response
- Observation is a gathering of « ObsCore datasets »
 - Each row is a dataset and has a specific obs_publisher_id
 - We can group datasets in an Observation by their obs_id
 - The whole observation may have the same DataLink response because the DataLink query parameter ID may be the obs_id (not required to be the obs_publisher_id)

