

# ObsCore extension for visibility data

## A new DM specification proposal

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# Status at last interop

- Available on github :
  - <https://github.com/ivoa/ObsCoreExtensionForVisibilityData>
  - Currently an IVOA note
  - To be managed by DM WG
  - Final status : endorsed note or full recommendation ? → suggested as a recommendation
  - Remaining issues : frequency bounds, uv coverage description, implementation in TAP/ registration



# Document

DRAFT – please do not distribute



## IVOA Obscore Extension for Visibility data Version 1.0

IVOA Note 2022-04-28

Working group

Data Model Working Group

This version

<http://www.ivoa.net/documents/ObsCoreExtensionForVisibilityData/20220428>

Latest version

<http://www.ivoa.net/documents/ObsCoreExtensionForVisibilityData>

Previous versions

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### Abstract

This is a proposed extension to the Obscore specification for description of visibility data

### Status of this document

This is an IVOA Note expressing suggestions from and opinions of the authors. It is intended to share best practices, possible approaches, or other perspectives on interoperability with the Virtual Observatory. It should not be referenced or otherwise interpreted as a standard specification.

A list of current IVOA Recommendations and other technical documents can be found at <http://www.ivoa.net/documents/>.

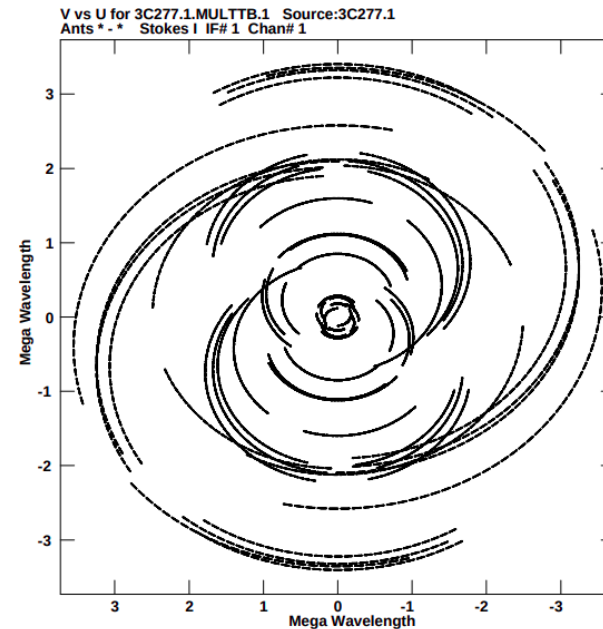
# Frequency limits

- Redondant with  $em_*$  bounds (in m) but pretty useful and USER convenient.
- Will probably be asked for Energy limits by HEA data providers
- Should be there in the table also for the new « DatasetSAP » specification (no ADQL / no UDF)
- On the other UDF may be implemented in the database and a view with the  $em_*$  and  $f_*$  parameters created on top.
  - It's an underground implementation feature



# Uv plane description

- `uv_distance_max` and `uv_distance_min` gives us potential spatial resolution and spatial maximum scale
- `uv_distribution_exc` and `uv_distribution_fill` are more about the quality of the uv plane sampling
- Major axis estimated for `uv_distribution_exc` can be used for `uv_distance_max`.  
But how can we estimate `uv_distance_min` ?



# Implementation section

```
ObsCoreExtensionForVisibilityData.tex [Viewed]
@@ -223,6 +223,15 @@ \subsection{uv coverage and dirty beam map}
223 Implementers may want to avoid adding url columns to the ObsCore table.
224 In that case DataLink \citetp{std:DataLink} may provide a solution. The semantics
FIELD in the \{link\} response will contain \#auxiliary for links to this map
while the content\_qualifier FIELD could contain the utype
225 defined here in this ObsCore extension.
226 +
227 + \section{How to implement the extension in a TAP service}
228 +
229 + The ObsCore extension for visibility data described above SHOULD not be added to
the main ObsCore table. An extension table called "visibilityobscore" SHOULD be
added to the same schema instead. The two tables will be joined in an extended
ObsTAP ADQL query. A single dataset in each observation will be associated to a
single row in ObsCore. It will be identified by a unique obs\_publisher\_did.
This obs\_publisher\_did can be used as a foreign key to join the main table and
the extension
230 +
231 + In the registry, the service capability will contain the ObsCore Model element
an the visisbilityobscore Model element and the visibilityobscore table will
be described in the tableset of the service together with obscore.
232 +
233 +
234 +
226 .
227
228 \begin{landscape}
235 .
236
237 \begin{landscape}
```



# Implementation section

- Add an extension table to the ObsCore table schema
- Join on obs\_publisher\_did
- Add a second MODEL element in the service capability for the visibility extension
- Add the extension table in the Voresource tableset



# Other questions ?

- Is this extension OK for optical interferometry ?
- So that the uv plane description should be separated from pure radio features ?

- 
- → Go to GitHub and comment the issues and PR
  - → involve new radio projects in the discussion
  - → discuss on mailing list and slack
  - → WD before fall interop ?





# Something else : Follow-up of the implementation survey note

- The note is OK for now, but should be upgraded with new projects in the next six monthes
- EAS organized in June 2021 a « data intensive radio astronomy session »
  - Organizers were contacted by Springer to write a book with the same title
  - Many of us involved for our Science/data/processing/VO CV: Mark L, Yan, Simon, Giuliano, Brent, François, others ??
  - I'm in charge of coordinating the VO chapter
  - I found that the content of the story telling is excatly what we need in this book. Do you allow us to integrate this material in the book ? How strongly should we modify this ?

