ObsCore Extension
for radio data

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Discovery and description of radio data

- ObsCore (TAP or SIA) covers the needs of many archives
- Many VO services have been installed
  - LOFAR and APERTIF (Astron)
  - Nenufar (Nançay/ObsPM)
  - ASKAP
  - MWA
  - CGPS (CADC)
  - JIVE
  - NRAO
  - ALMA

Discovery and description
of radio data

- Some radio specificities not tackled :
  - Hence the need for an extension.
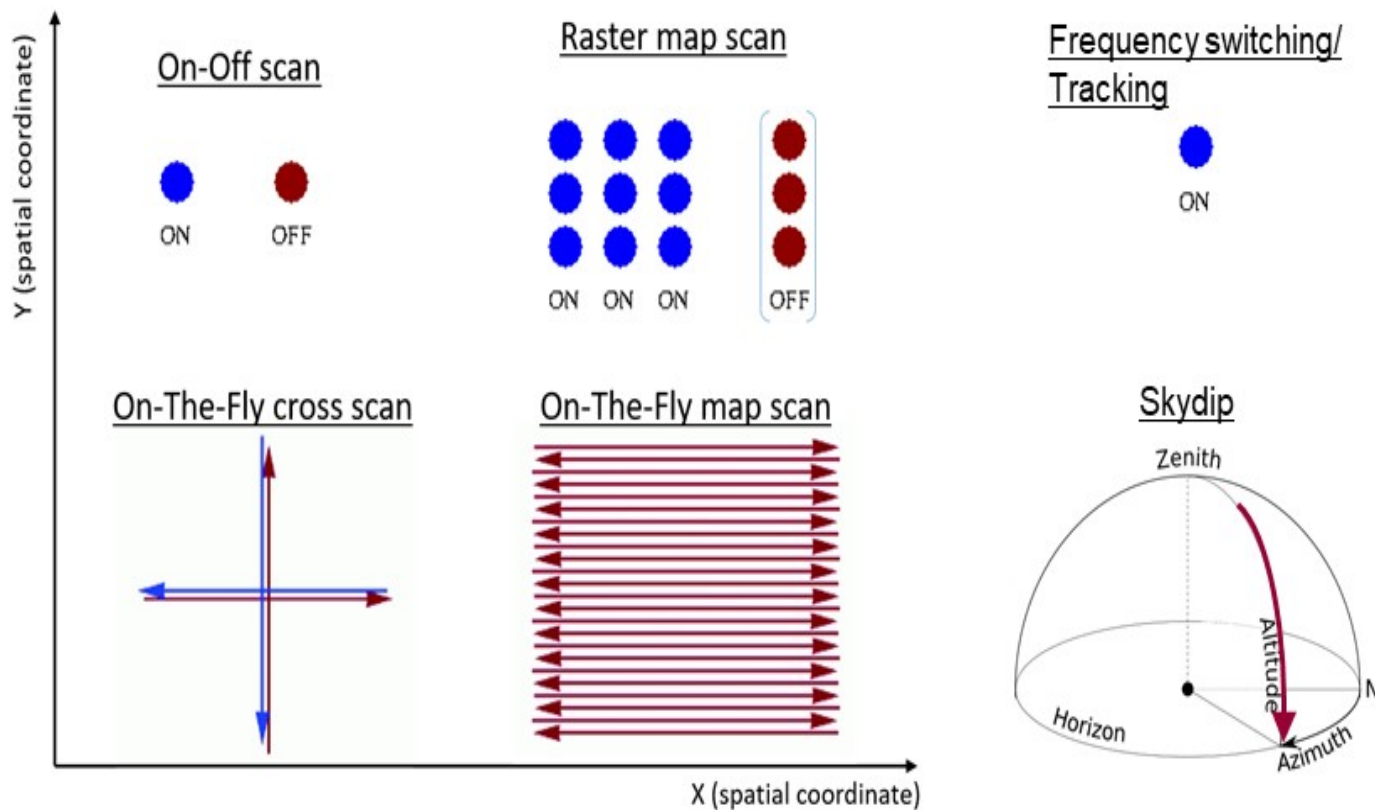 - I don't browse the whole set of new attributes

Discovery and description
of radio data

- Let's go to the recent changes and issue

- Some of them driven by single dish introduction

    – Instrument types to distinguish interferometry from single dish or beamforming

    – Dataproduct types :

        - spatial profile, list of (alpha, delta, t, flux) measurement tables

Singl dish Sky scan modes

Discovery and description of radio data

- Scan modes
  - on/off
  - Raster
  - On the fly cross-match
- Sky tracking modes (as in ObsLocTAP)
  - Altazimuth
  - pointed

Issues we tried to solve

- Frequency characterisation
  - consistency issues with wavelength
    - User defined function
  - Proposition in text : add it but implement as a view

- How to install it in TAP :
  - one extended table or two tables
  - standarID like for a version : ivo://ivoa.net/std/ObsCore#radioExt-1.0
    - Single table = simpler queries, but duplicating fields with the standard table
    - Propose to suggest to have the single table as a view on top of the standard ObsCore and a table with extension

Use cases expressed as ADQL queries

An appendix with 11 pseudo ADQL queries has been created.

Examples :

- *Find any dataset with minimum field of view larger than 0.5 degree :*

  SELECT * FROM ivoa.ObscoreRadioExtended WHERE fov_min > 0.5

- *Find any visibility data of good quality from the uv distribution point of view :*

  SELECT * FROM ivoa.ObscoreRadioExtended WHERE dataproduct_type = 'visibilty' AND

  uv_distribution_fill > 0.7 AND uv_distribution_ecc < 0.1

- **Some of them already discussed. Ruled out ? Scientific motivation ?**

Implementations

- Jive visibility data service :

    - Service with VLBI visibilities already exist

    - Upgrade towards extended ObsCore in progress

- SRCnet : Rucio ObsCore discovery service. Can it allow the extension ?

Discussion

- GitHub : https://github.com/ivoa-std/ObsCoreExtensionForRadioData/

- Twiki : https://ivoa.net/documents/ObsCoreExtensionForRadioData/20230512/index.html

https://github.com/ivoa-std/ObsCoreExtensionForR

- Email list : radioig@ivoa.net

- Session today 11 AM

DRAFT — please do not distribute

International Virtual Observatory Alliance

IVOA Obscore Extension for Radio data

Version 1.0

IVOA Working Draft 2023-09-29

Working Group
    Data Model Working Group

This version
    https://www.ivoa.net/documents/ObsCoreExtensionForRadioData/20230929

Latest version
    https://www.ivoa.net/documents/ObsCoreExtensionForRadioData

Previous versions