



**JIVE**

Joint Institute for VLBI

ERIC



# Use of VO Standards at JIVE

**IVOA Virtual Interop, 5 May 2020**

**Mark Kettenis, JIVE**

*ESCAPE - The European Science Cluster of Astronomy & Particle Physics ESFRI Research Infrastructures has received funding from the European Union's Horizon 2020 research and innovation programme under the Grant Agreement n° 824064*



# European VLBI Network Archive

## Description

- Offers radio-interferometric visibility data in (mostly) FITS-IDI format
  - Includes calibration data products
  - Includes pipeline products including crude (not science-ready) images
- Primary data delivery channel to PIs

# European VLBI Network Archive

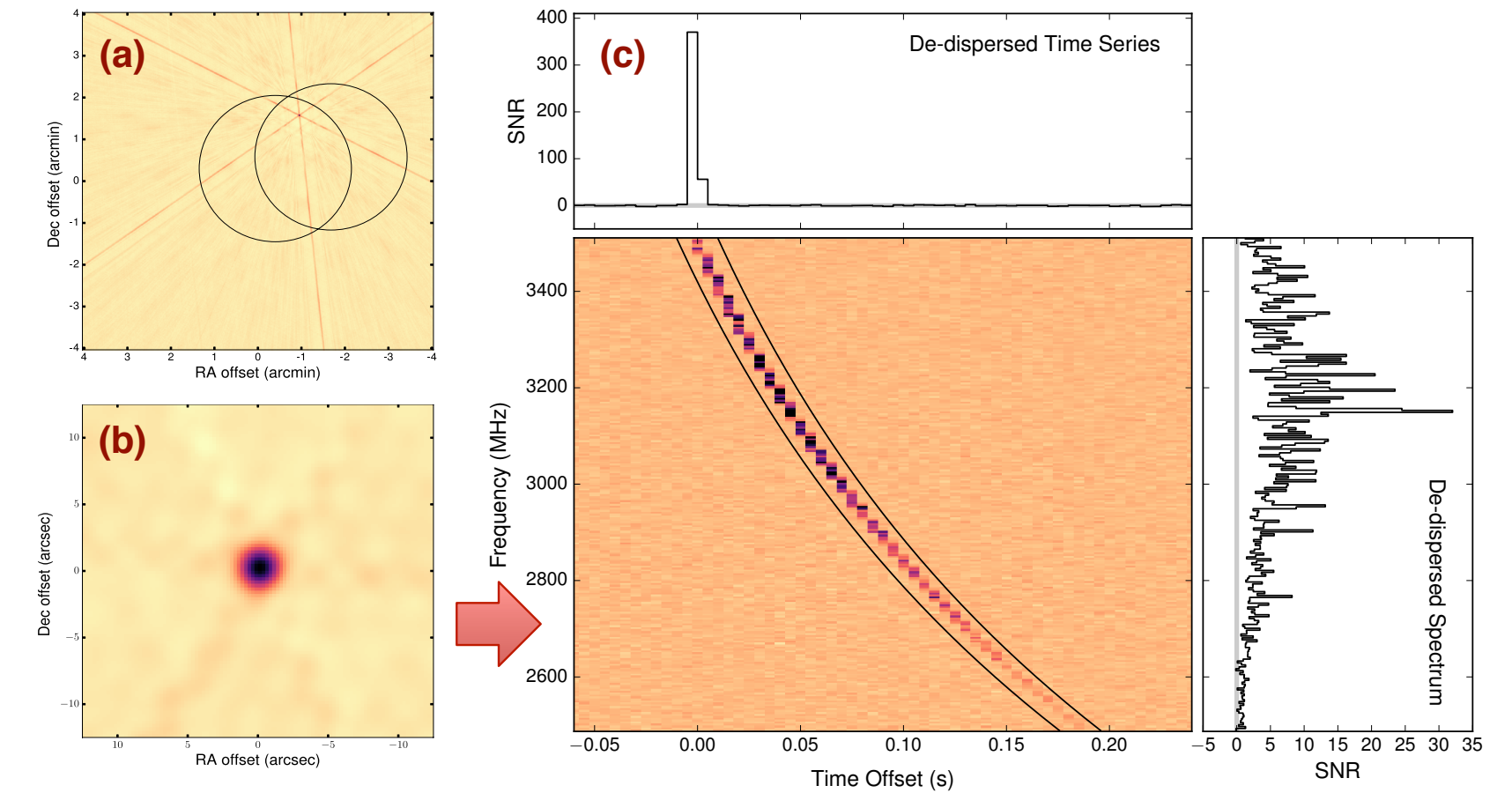
## VO standards

- ObsCore already meets most of our requirements
  - Enough information to handle current set of queries offered by EVN Archive
  - Circular regions are good enough approximation
- Prototype ObsTAP service using DaCHS
- Python code to parse FITS-IDI and populate ObsCore records
- Use datalink to encapsulate data products

# Fast Radio Bursts

## Science Case

- First FRB was detected in archival data (Lorimer 2007)
- EVN played key role in localisation of first “repeater”
- 112 Published frbcat (Petroff et. al.); order of magnitude more unpublished
  - Uses VOEvent
- “Time-domain” data with spectral access: dynamic spectra:
  - High-resolution correlated data: FITS-IDI or PSR-FITS
  - Short fragments of baseband data: VLBI-specific Pulsar-specific data acquisition formats
- Desire to query such data across facilities



*Chatterjee et.al. 2017*

# Data Formats

## (not just) for Radio Astronomy

- **Goal:** Collect set of Media Types for use in ESCAPE Software and Services Catalogue
- In collaboration with VO (Marco Molinaro)
- Allow science platform (WP5) to pair software and services from catalogue (WP3) with services and data from VO (WP4)
- May grow into an IVOA note
- List of current Radio Astronomy formats:  
UVFITS, FITS-IDI, MeasurementSet, PSR-FITS