



VOEvent next steps – May 2020

D.Morris

University of Edinburgh

D.Morris
Institute for Astronomy,
Edinburgh University
May 2020



IVOA interop meeting
May 2020

Proposed changes

- Step #1 accept LaTeX version
- Step #2 new changes
 - Proposal from Solar System Interest Group
 - Details in presentation by Baptiste Cecconi



FAIR data



- Findable
- Accessible
- Interoperable
- Reuseable





“Find streams that have <data I’m interested in>”

FAIR data



- **Findable** 
- Accessible
- Interoperable
- Reuseable

“Data and supplementary materials have sufficiently rich metadata and a unique and persistent identifier.”

- Where do I find events happening in [region] ?
- Where do I find events from [last year] ?
- Where do I find events for [wavelength] ?

- Where do I find events from [instrument] ?
- Where do I find events about [supernova] ?
- Where do I find events matching [criteria] ?
- Where do I find events filtered by [algorithm] ?

We need to define metadata for services and streams.



“80% probability supernova candidates”

FAIR data



- Findable
- **Accessible**
- Interoperable
- Reuseable

“Metadata and data are understandable to humans and machines.”

<what> ✓
<why> ✗

What does *“80% probability”* mean ?

Do we need some more terms ?

What does *“supernova”* mean ?

Would an *“event type”* URL help ?

No changes to the XML schema,
just a new property.

FRB community
best practice

FAIR data



- Findable
- Accessible
- **Interoperable**
- Reuseable



“Metadata use a formal, accessible, shared, and broadly applicable language for knowledge representation.”

VOEvent specification



FAIR data



- Findable
- Accessible
- Interoperable
- **Reuseable**



- *Who* says they are supernova ?
- Based on what criteria ?
- What algorithm was used ?

“Data and collections have a clear usage licenses and provide accurate information on provenance.”

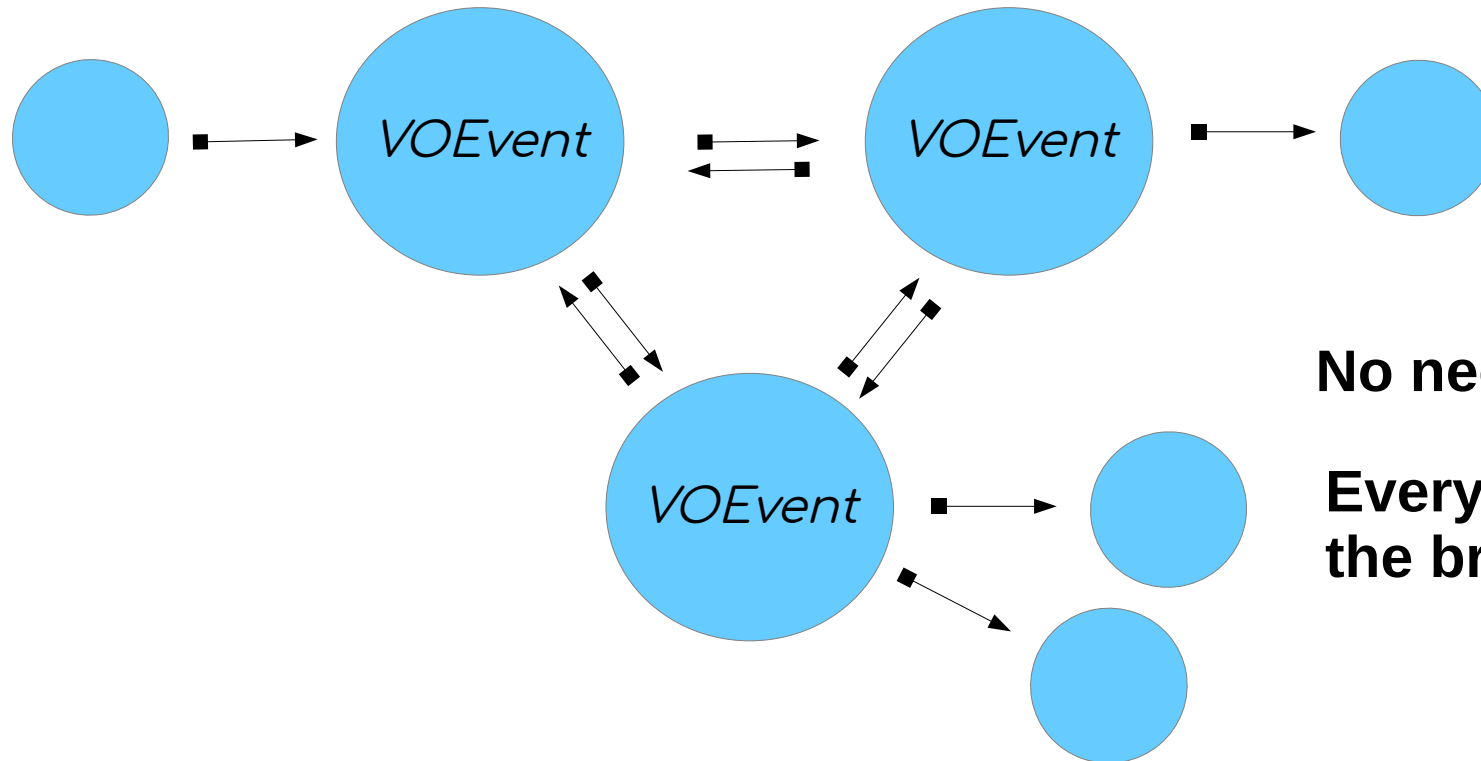
- Can I publish this data ?
- Who should I cite ?

Each event has a URL for provenance and license ?

No changes to the XML schema, just two new properties.

Findable data

Network of brokers broadcasting events



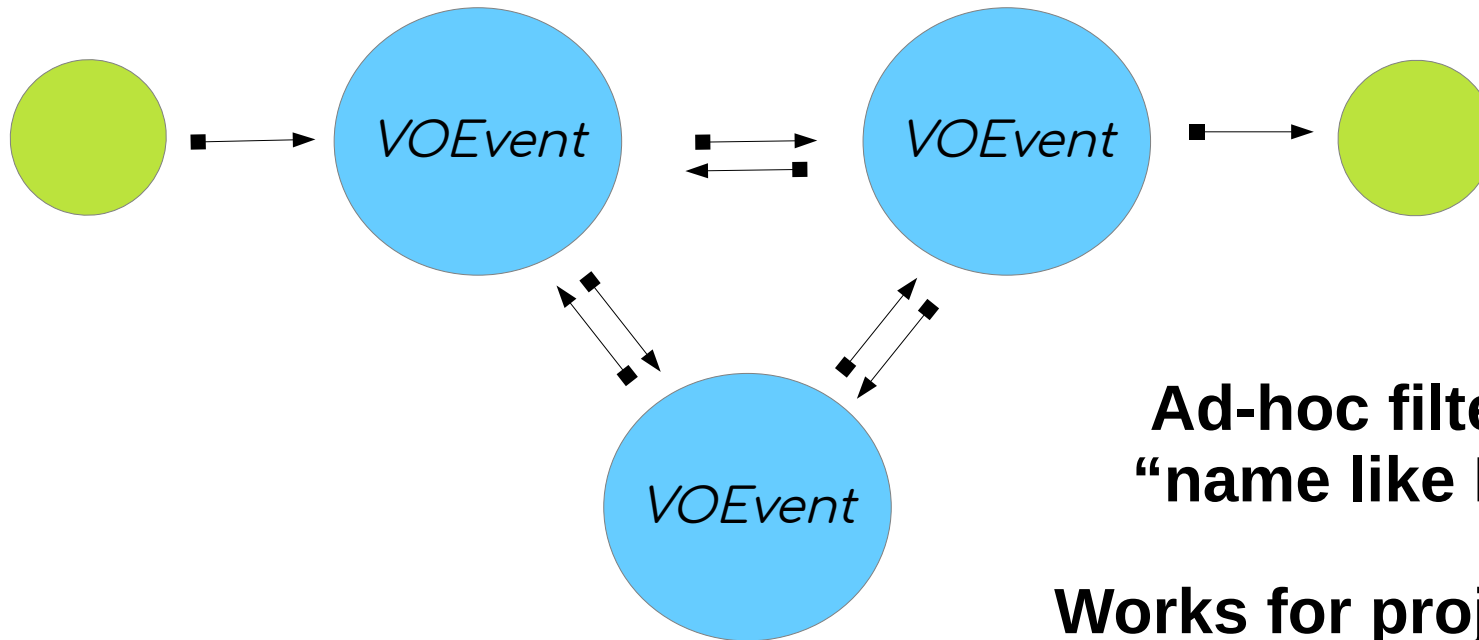
No need for discovery

**Everyone just knows
the broker endpoints**

Findable data

**Project specific
event types**

**VOEvent for Fast Radio Bursts
arXiv:1710.08155v1 [astro-ph.IM]**





Findable data



Where we are now



VOEventRegExt:

An XML Encoding Schema for Resource Metadata for Collections of Events

Version 1.0

IVOA Working Draft

13 May 2014

Is anyone using this ?





Findable data



VOEventRegExt:

“... each VOEventStream has a defined set of named ‘parameters’, and each event that is a member of the stream should use only parameters that are selected from the list in the stream definition.”

Event type definitions :-)

Is anyone using this ?

Can we combine this with the template approach from the FRB community ?





Findable data



VOEventRegExt:

If a server supports a subscription capability with filtering, it means that a client can submit a criterion

("R magnitude brighter than 17")

and events will be delivered by the server in the future which satisfy that criteria.

As far as I know, none of the current brokers support filtering.

Do we remove this text ?





Findable data



Do you want to register and discover streams ?

“Kind of, but running a registry is too heavy for what we need.”

What do you use for the IVOID identifiers ?

“We just made something ourselves.”



lightweight *‘registry in a container’* would go along way to help solve this





Findable data



Do you want to discover streams ?

Yes, I want to explore what is available.

No, users will learn where the important streams are from published papers.

(*) we will still need to lookup technical details like transport protocol, event type and properties.





Findable data



What criteria would use to find streams ?

Area of sky – footprint, MOC ?

Type of phenomenon – vocabulary (extensible) ?

Primary source (instrument)

Upstream source (another filter)

Processing algorithm

Probability of classification





Findable data



What criteria would use to find streams ?

Area of sky – footprint, MOC ?

VOEvents use a range of different coordinate systems
Do we just use ICRS ?

What about solar system objects ?





Findable data



What criteria would use to find streams ?

Type of phenomenon – extensible vocabulary ?

According to the arXiv, there are >50 types of FRBs

http://multi-messenger.asterics2020.eu/Documents/presentations/Hessels_Jason.pdf

Can semantics help us with this ?





Thank you

**VOEvent mailing list
voevent@ivoa.net**

D.Morris
Institute for Astronomy,
Edinburgh University
May 2020



IVOA interop meeting
May 2020