VOEvent next steps – May 2020

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Proposed changes

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

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FAIR data

- Findable
- Accessible
- Interoperable
- Reuseable

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“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] ?

We need to define metadata for services and streams.

- 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] ?

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“80% probability supernova candidates”

FAIR data

- Findable
- **Accessible**
- Interoperabe
- 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

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

VOEvent specification

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- *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.

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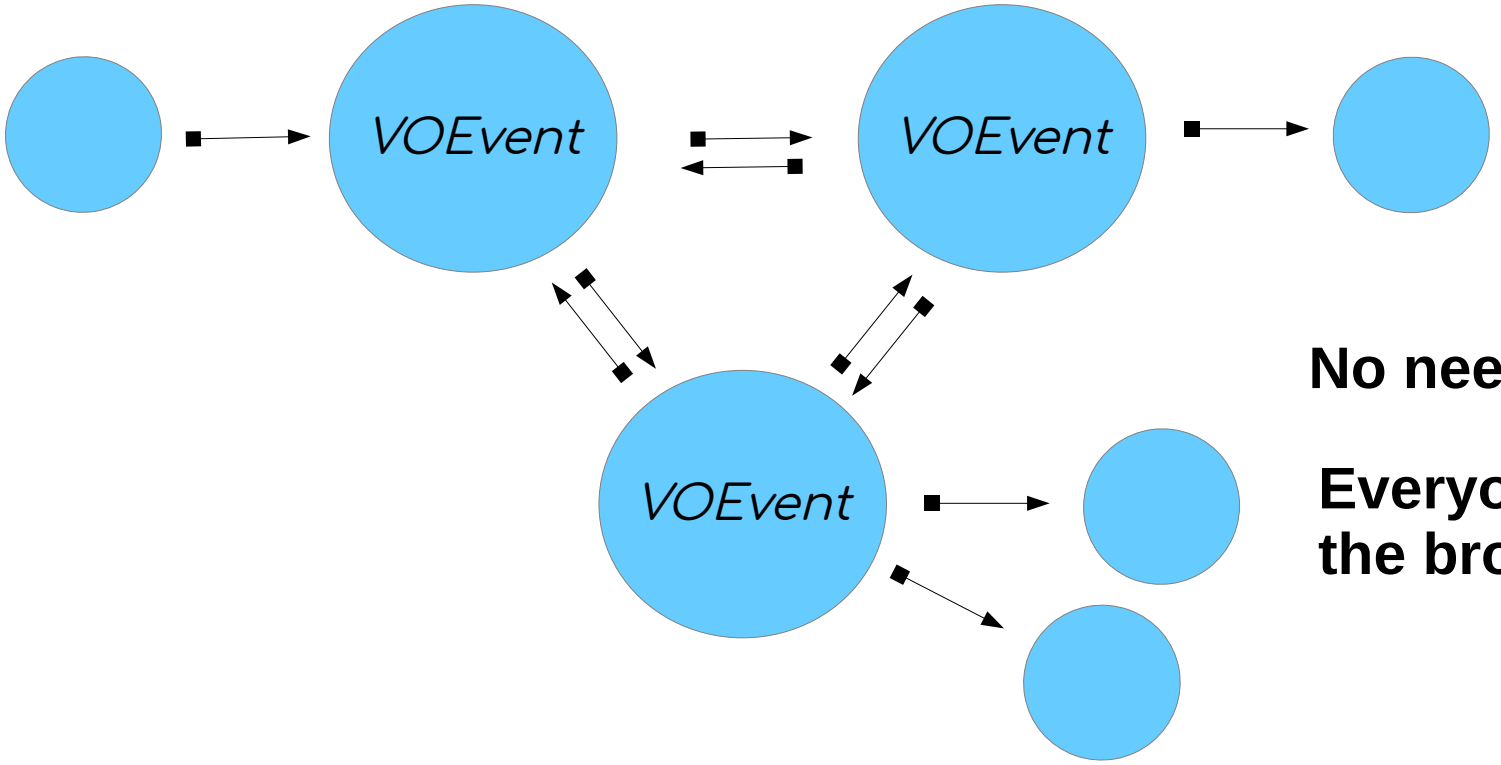
Findable data

Network of brokers broadcasting events



No need for discovery

Everyone just knows the broker endpoints

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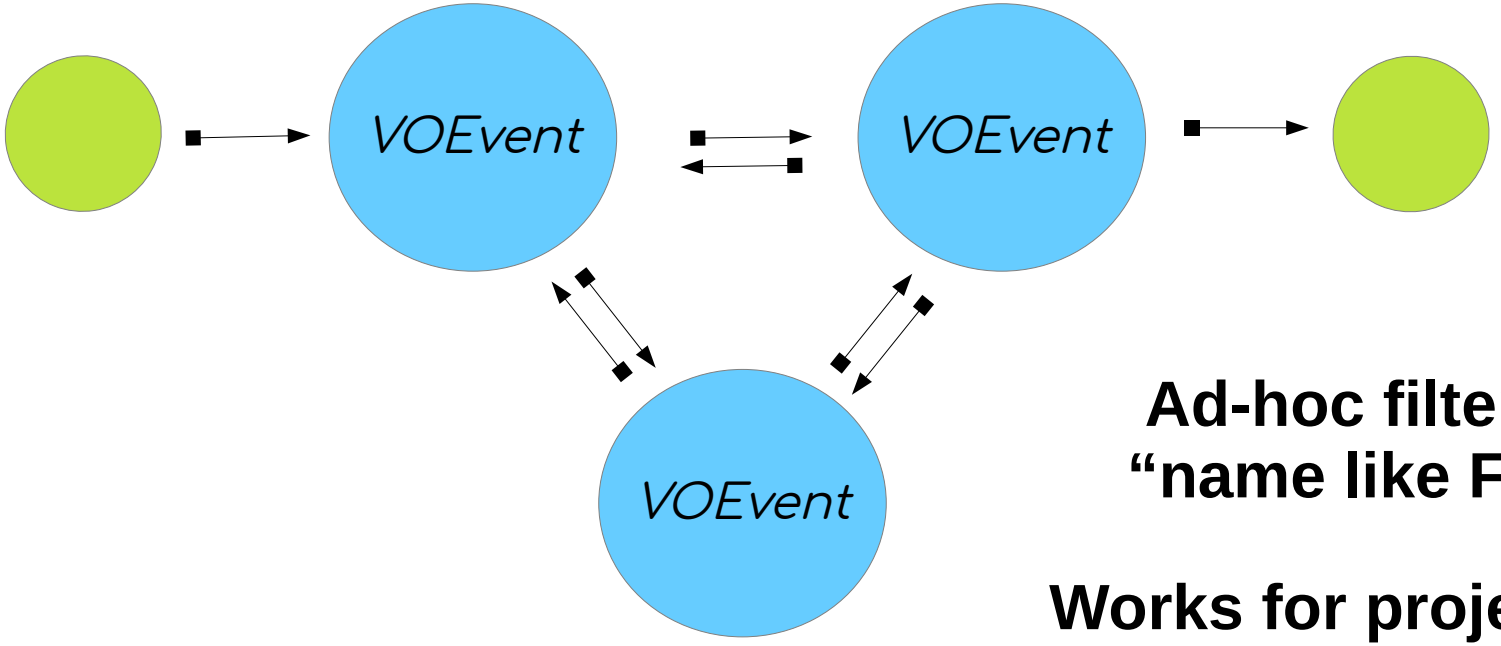
Findable data

Project specific event types

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



Ad-hoc filtering
“name like FRB*”

Works for projects < 10

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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 ?

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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 ?

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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 ?

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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

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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.

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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**

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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 ?

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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 ?

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Thank you

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