Managing information sharing communities

E.103

CIRCL Computer Incident Response Center Luxembourg

MISP Project
https://www.misp-project.org/

March 21, 2022

Objectives of this module

- Tips for joining information sharing communities
- Tips for being a good member in a sharing community
- Tips for building your own sharing community
- Tool for managing a sharing community
  - Managing organisations and contacts
  - Maintaining distribution lists (aka sharing groups)
  - Managing a large cluster of MISPs

Being part of an information sharing community

Joining an information sharing communities

There is a wide range of MISP communities type:

- Private sector communities
  - Private organisations, researchers, central hub
- ISACs communities
  - Central hub for sectorial or geographical Communities
  - Examples: GSMA, FIRST.org, CSIRT Network, Banking, etc
- Ad-hoc communities
  - Often use for exercises such as ENISA or LockedShield

Joining an information sharing communities

Considerations before joining a sharing community:

- Understand the community's objectives
  - Defense, prevention, collaboration, research, specific reporting duties
- Make sure the use-cases are not conflicting
  - False-positive appetite, maturity levels, topical interests
  - Detection rules VS threat intelligence VS prevention

Tips for being a good member of a sharing community

- As explained extensively in course *e.206*, Context is king:
  - You should try to contextualise as best as you can using:
  - Normalized vocab: Taxonomies, Galaxies & MITRE ATT&CK
  - Connected graph using MISP Objects and relationships
  - Add timeliness with Sightings and `first_seen` / `last_seen`
- Sharing results and reports
- Sharing enhancements or proposals to existing data
- Validating data (sightings) or flagging false positives
- Asking for support from the community

Tips for building your own sharing community

- Different models for your constituents
  - **Having an account** on a MISP instance
  - **Hosting** their own instance and connecting to a peer
  - **Becoming member** of a sectorial MISP community that is connected to multiple peers
- Planning ahead for future growth
  - Estimating requirements (workforce, hardware requirements)
  - Deciding early on common vocabularies (i.e. taxonomies)
  - Offering services through MISP to promote adhesion

Tips for building your own sharing community

- **Lead by example** - the power of immitation
- Don't block sharing with unrealistic quality controls
  - You might loose organisations that might turn into valuable contributors
  - Organisations will start sharing junk to stay above the thresholds
- Encourage **improving by doing**
  - What should the information look like?
  - How should it be contextualised
  - What do you consider as useful information?
  - What tools did you use to get your conclusions?
- Side effect is that you will end up **raising the capabilities of your constituents**

Tips for building your own sharing community

- Convert the passive organisations into actively sharing ones
  - Help them increase their capabilities
  - Lead by example
  - **Give credit where credit is due**
    - Never steal the contribution of your community
  - Offers the possiblity to take over their data via **delegation**
    - Anonymity of organisations might help them building confidence at the beginning

Tips for building your own sharing community

- Encourage sharing of supporting materials, scripts or guidance for protection
- Raise awareness about the benefits of a well modelled, graph-based information
- Again, **context is king**! If possible, make contextualisation a requirement
  - Users can then filter based on their needs
  - Classification help your peers to understand why the data is important
  - And also, why this data can be useful to them

Dispelling the myths around blockers when it comes to information sharing

- Sharing difficulties are not really technical issues but often it's a matter of **social interactions** (e.g. **trust**).
  - You can play a role here: organise regular workshops, conferences, have face to face meetings
- Legal restrictions
  - "Our legal framework doesn't allow us to share information."
  - "Risk of information leak is too high and it's too risky for our organization or partners."
- Practical restrictions
  - "We don't have information to share."
  - "We don't have time to process or contribute indicators."
  - "Our model of classification doesn't fit your model."
  - "Tools for sharing information are tied to a specific format, we use a different one."

Managing sub-sharing communities

- Often within a community, **smaller bubbles** of information sharing will form
  - e.g: Within a national private sector community, a dedicated community for financial institutions
  - If an incident involves multiple organisations
- MISP's sharing group serve this purpose mainly
- If you are building your own community, consider bootstraping these specific sharing community
  - Organisations can self-organise, but you are probably the ones with the know-how to get them started

Community management and orchestration tool

Additional challenges of community management

- MISP is just one part of the puzzle
- Information sharing presumes knowledge of contacts
- Creating reusable community-specific distribution list need to be maintained
- Fleet management for larger organisations needs additional work

Cerebrate is an open-source tool meant to address these challenges

What is Cerebrate?

- Open source **community management and orchestration** tool
- Central tool for the Melicertes 2 project (Co-funded by the EU as a CEF project)
  - Project for the CSIRT network building a common set of tools and services for the national CSIRTs
  - Flexible to support a wide range of communities
- Tight **integration** with various open-source tools
- Planned as the primary MISP management tool

Why do we need Cerebrate from a MISP perspective

- **Deficiencies** in our current tool chain
  - Do I really have to jump through hoops and long e-mail chains to **onboard new members**?
  - How do I **find trusted information** on who an organisation is in MISP?
  - How can I **manage a large cluster of MISPs** without tedious manual labour?
  - If I run a community through MISP, how can I reuse my member information for other community tasks such as mailing lists?
  - Information signing has been on the MISP roadmap for a long time - where do we get ground truths for a community from?

What issues is Cerebrate trying to tackle?

- Community management
  - **Repository** of organisations and individuals
  - Management of **sharing groups**
  - **Exchange** of contact and sharing group information
  - Cryptographic key lookup for **information signing**
- Local tool management
  - Instrumentation of **local tool interconnections**
  - Local tool **fleet management**
  - **Feeding** the local tools with Cerebrate data

Cerebrate: What is available currently?

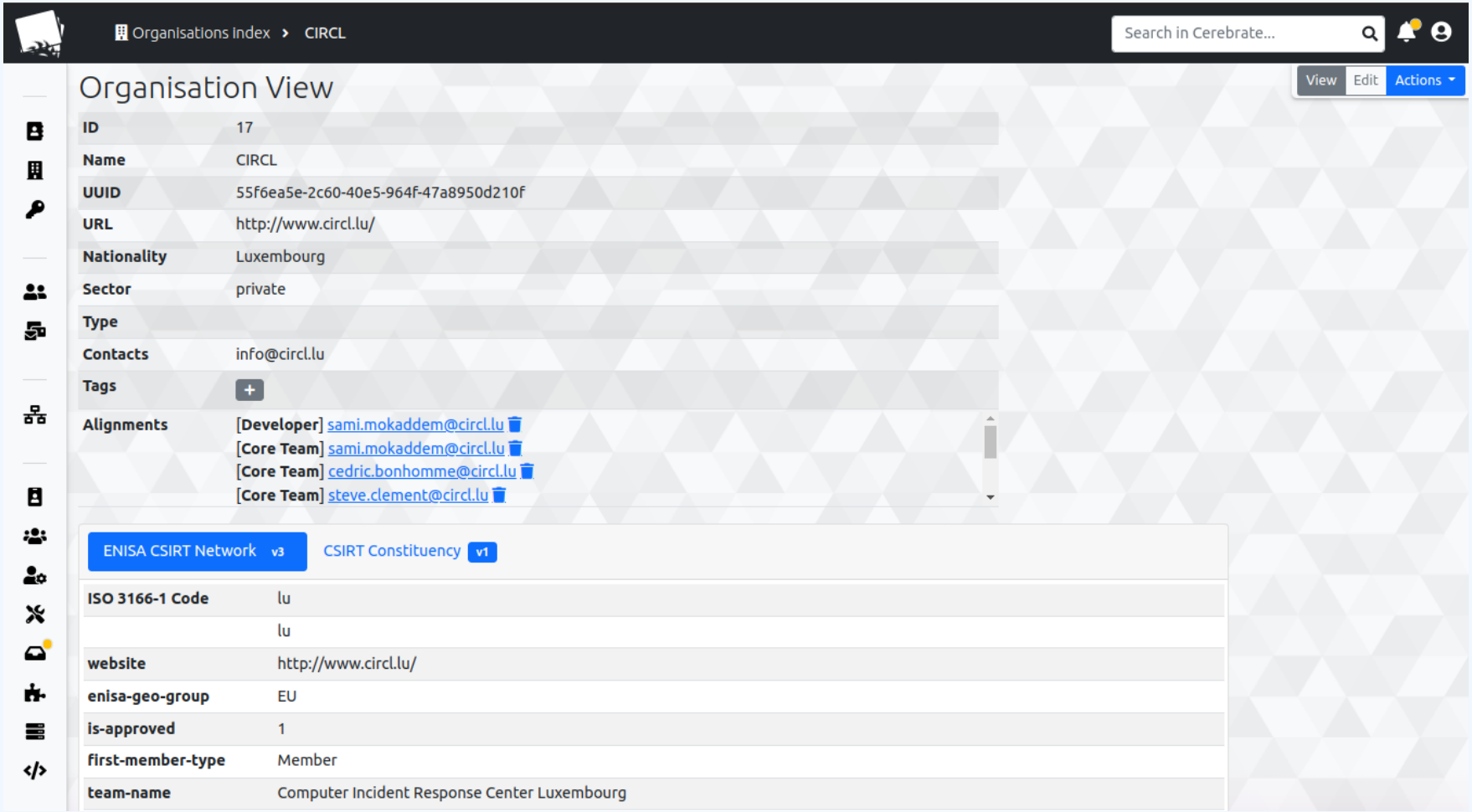
- A set of Common functionalities
- Contact Database
- Sharing group management
- Cerebrate to Cerebrate synchronisation
- Mailing list management
- Local tool orchestration - integration modules
- Inbox system
- Local tool fleet management

Cerebrate: Contact database

- Index of Organisations and Individuals
- Flexible meta-data model (community specific, constituency, etc)
- Content aware search functionalities

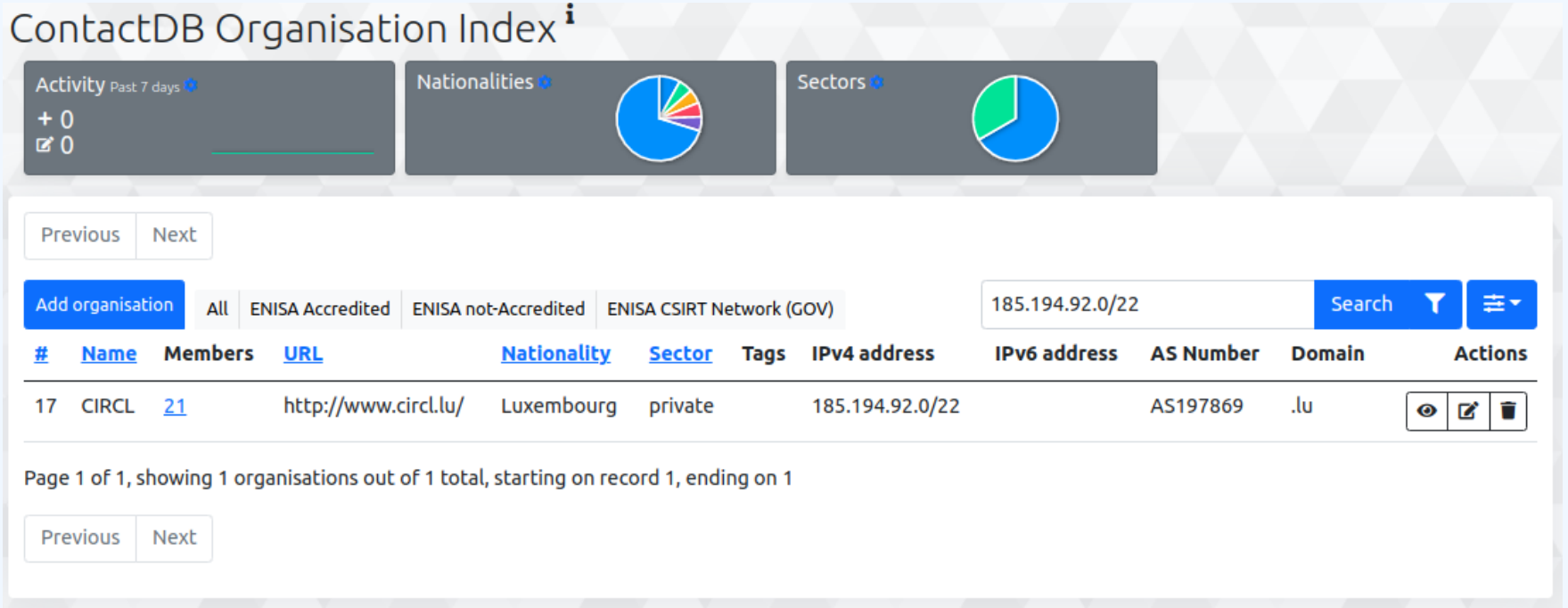
Cerebrate: Contact database

Flexible meta-data model to include community specific data point



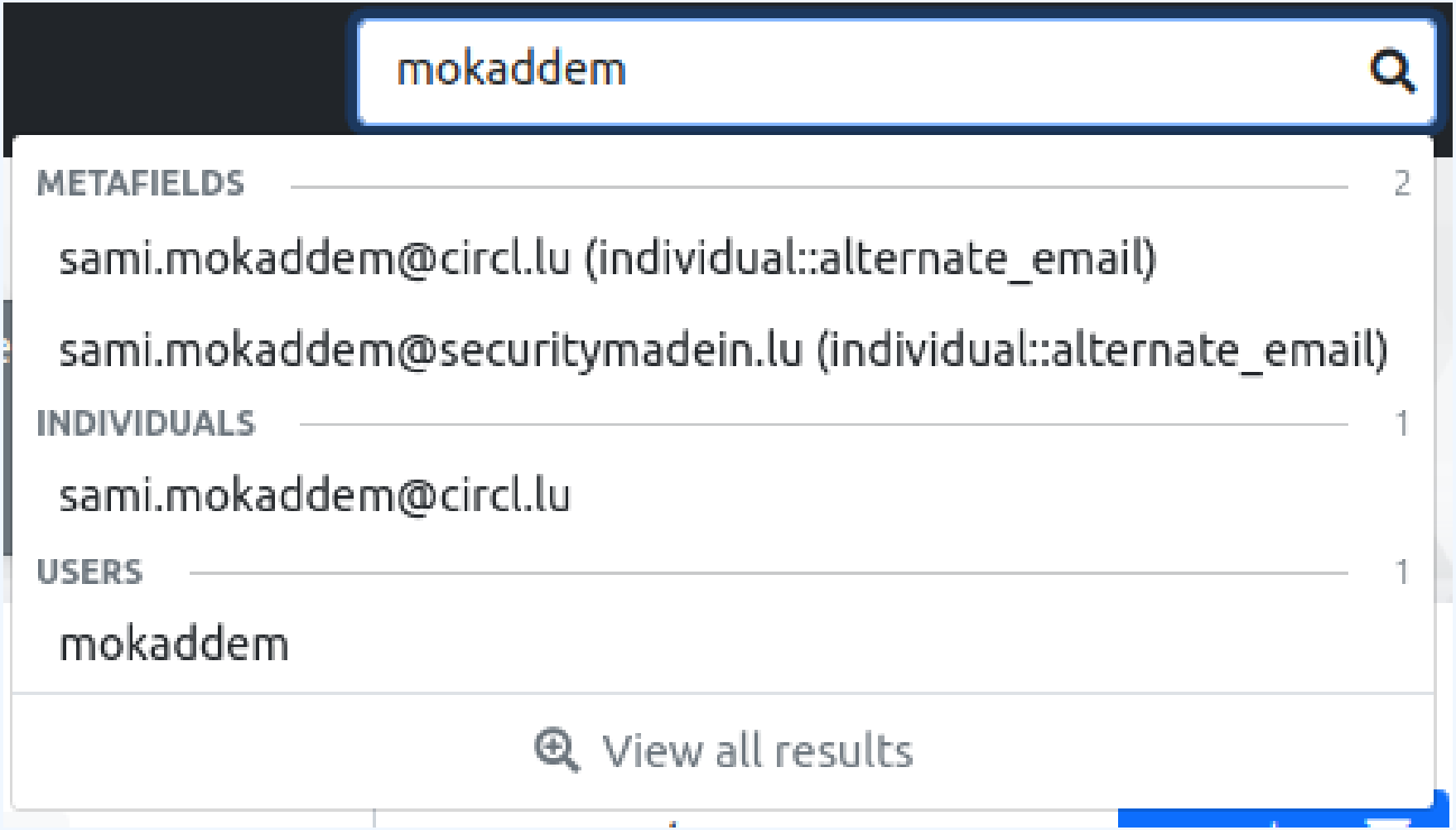
Cerebrate: Contact database

Content aware search functionalities: CIDR block search



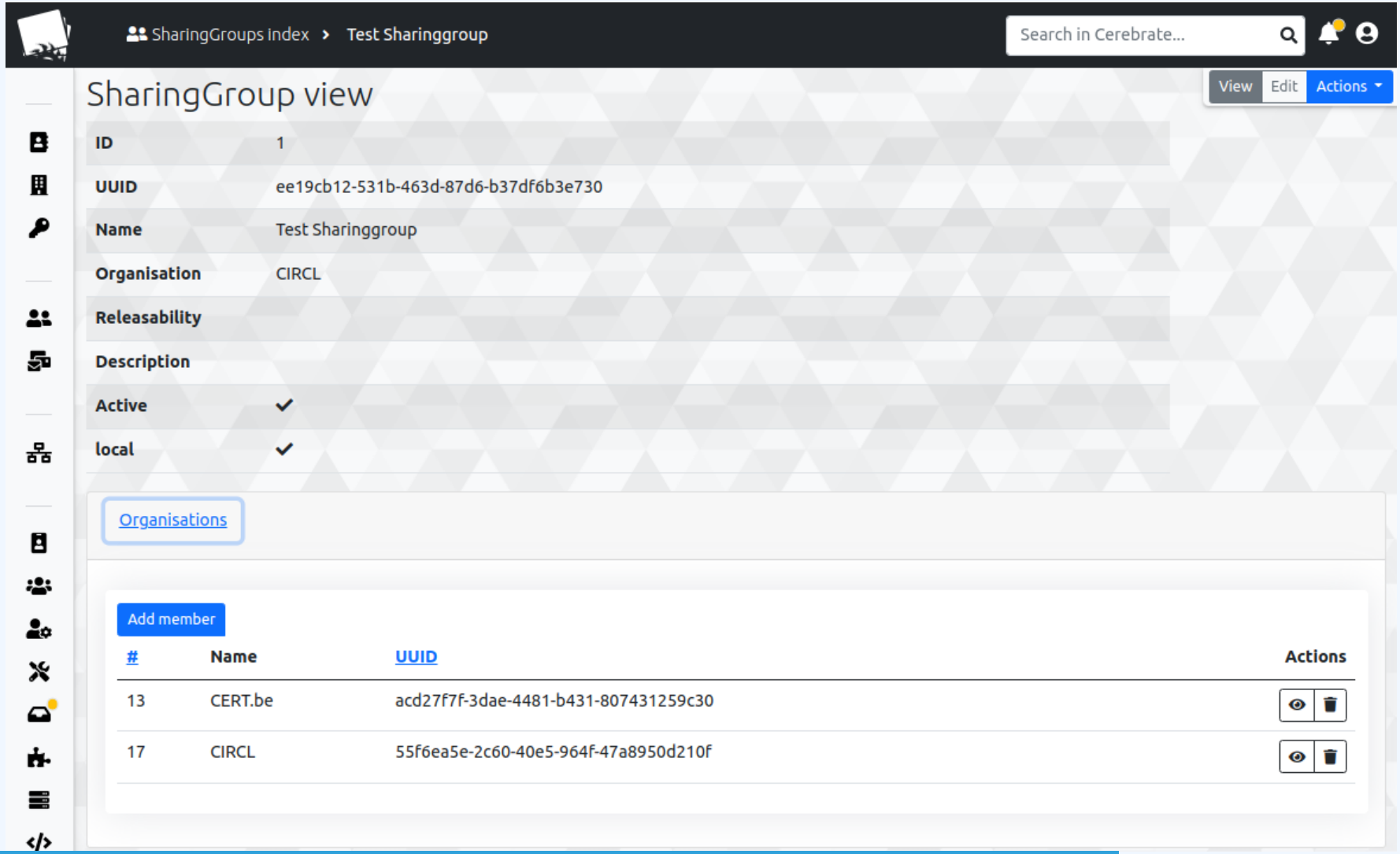
Cerebrate: Contact database

Global searches on a large variety of data point



Cerebrate: Sharing Group management

Allow to define sharing groups composed of organisations that can be download from another Cerebrate or from MISP



Cerebrate: Sharing Group management

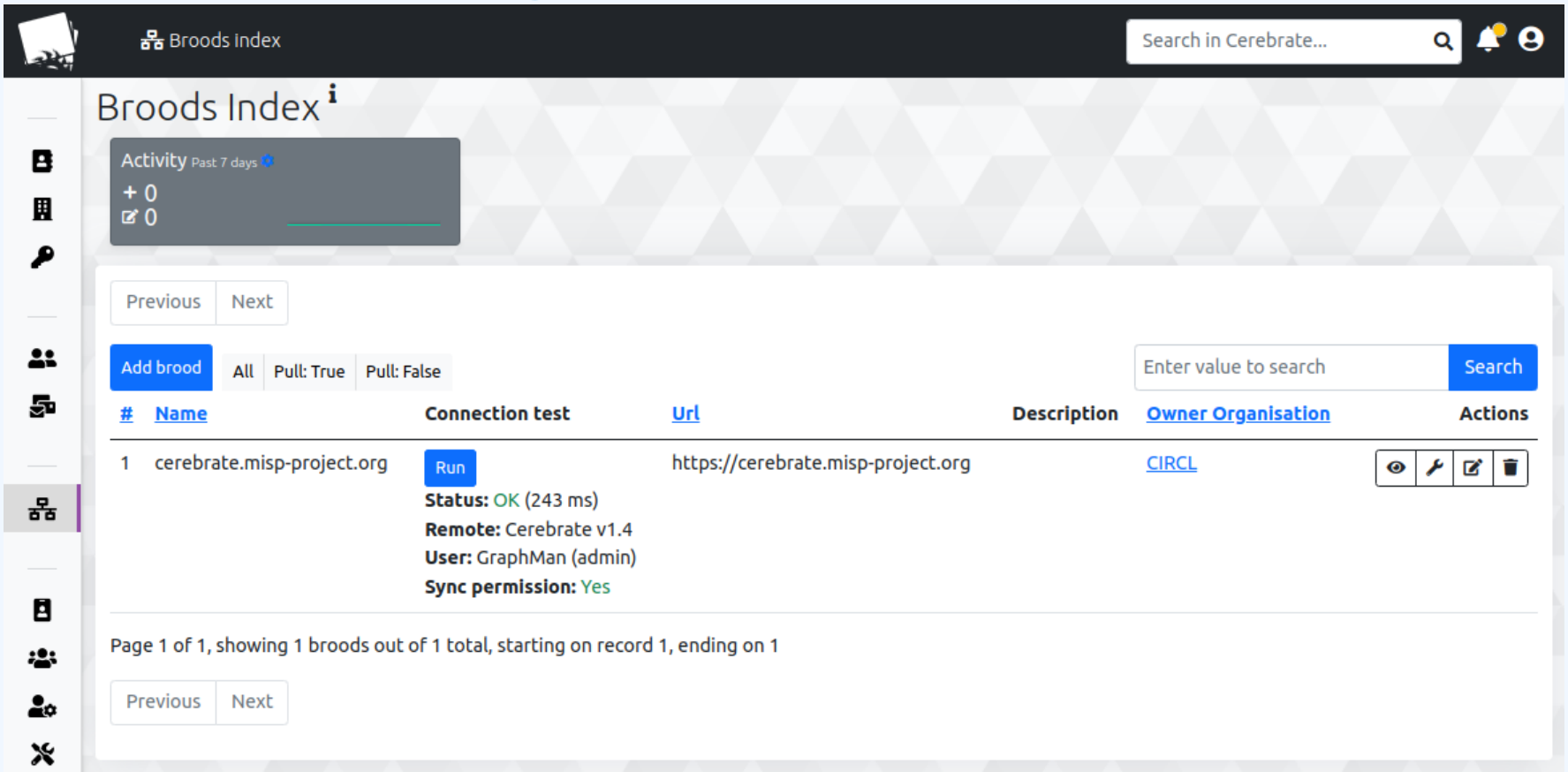
Sharing groups can also be generated based on filters via the reusable blueprints

#19: Non-sanctioned financial organisations


```
{
  "AND": {
    "OR": {
      "org_sector": "Financial",
      "sharing_group_id": 127
    },
    "NOT": {
      "org_nationality": [
        "Russia",
        "Russian Federation",
        "Belarus",
        "Republic of Belarus"
      ]
    }
  }
}
```

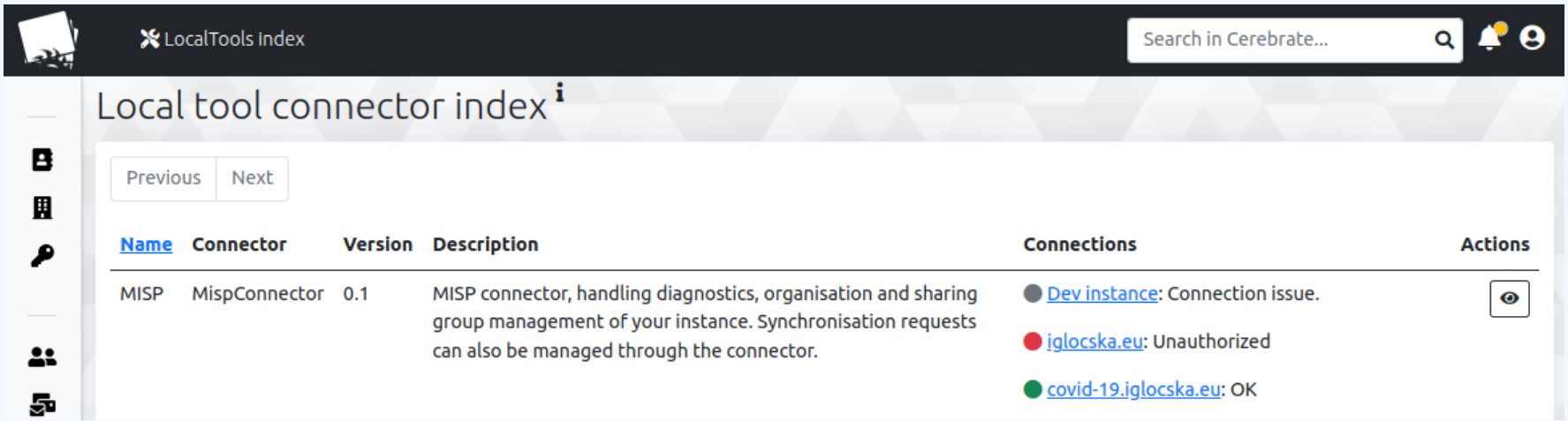
Cerebrate: synchronisation

Mechanism to exchange contact data via synchronisation



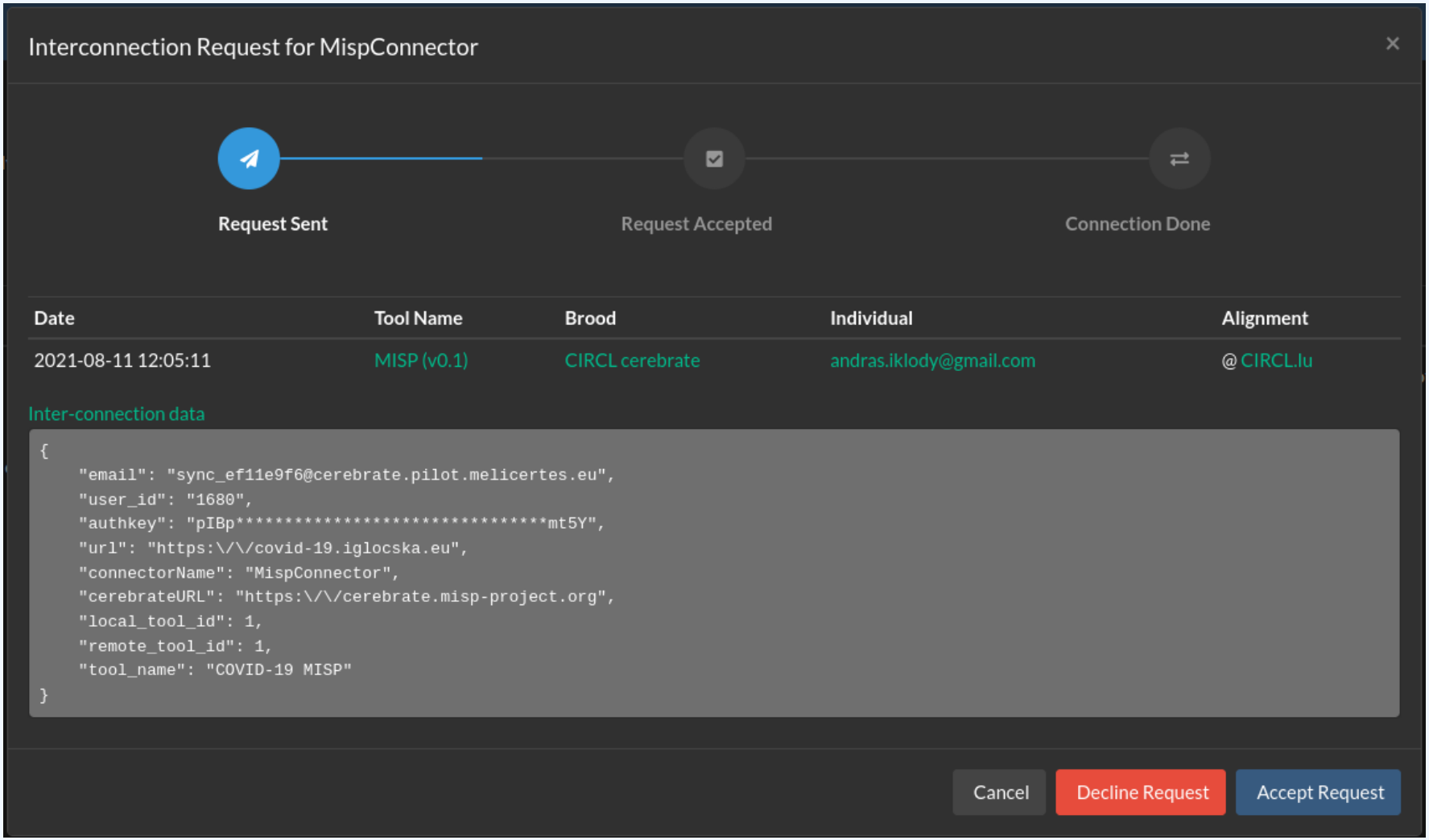
Cerebrate: Local tool orchestration

Manage and configure local tools (such as MISP) via Cerebrate



Cerebrate: Local tool orchestration

Inter-connect local tools (such as a MISP instance) to another through Cerebrate



Use case specific to law enforcement

- Budapest convention allowed us to have a public inventory of contact infomartion
- Once this data is ingested in Cerebrate, we can make use of the search functionalities to quickly get the infomartion we need

TODO: Include picture of data stored in Cerebrate