

AAI Architectures

What's out there?

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GÉANT/SWITCH

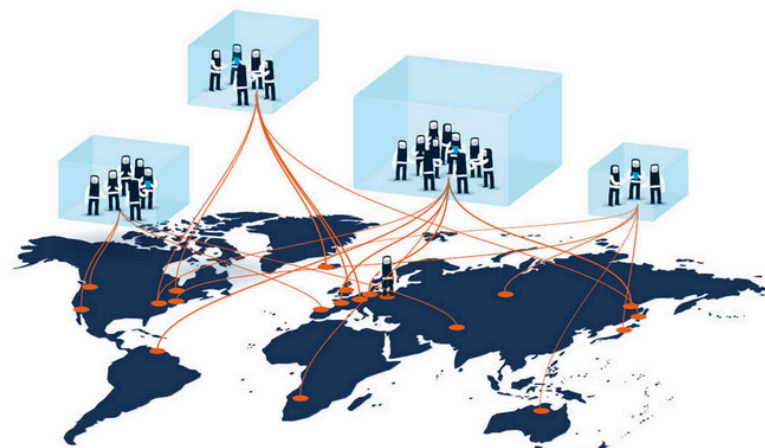
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Scenario

- You are technical architect of a research community
- Your **community is distributed**
- Increasing number of services that **need authentication & authorisation**
- Your job is to find a solution
- You want to focus on research and not reinvent the wheel

- You start googling...



You find ...

- International general-purpose authentication and authorisation infrastructures (AAI), services and technologies available for research and education



(Moonshot)

... and Likely to Get Lost

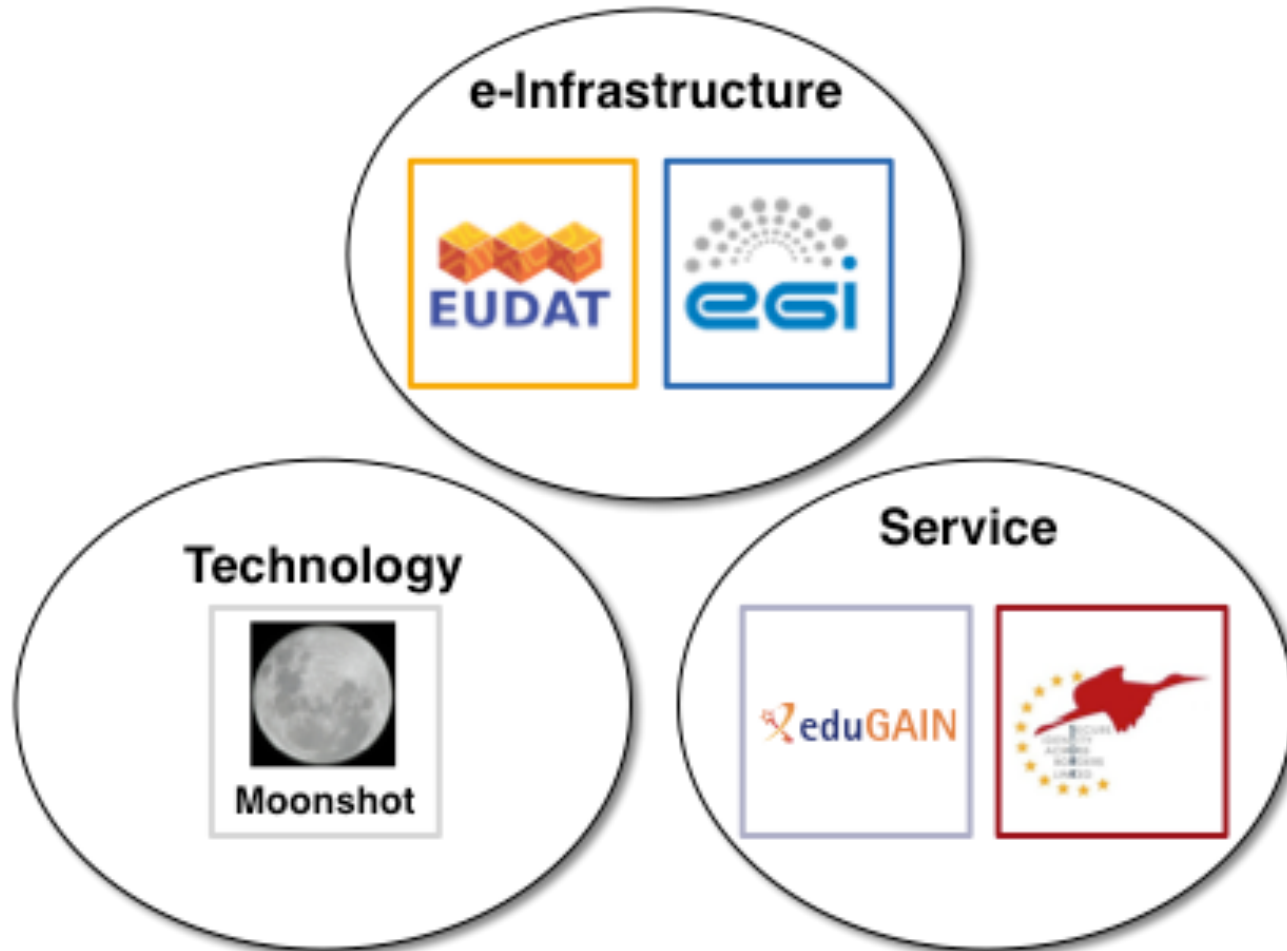


The Problem

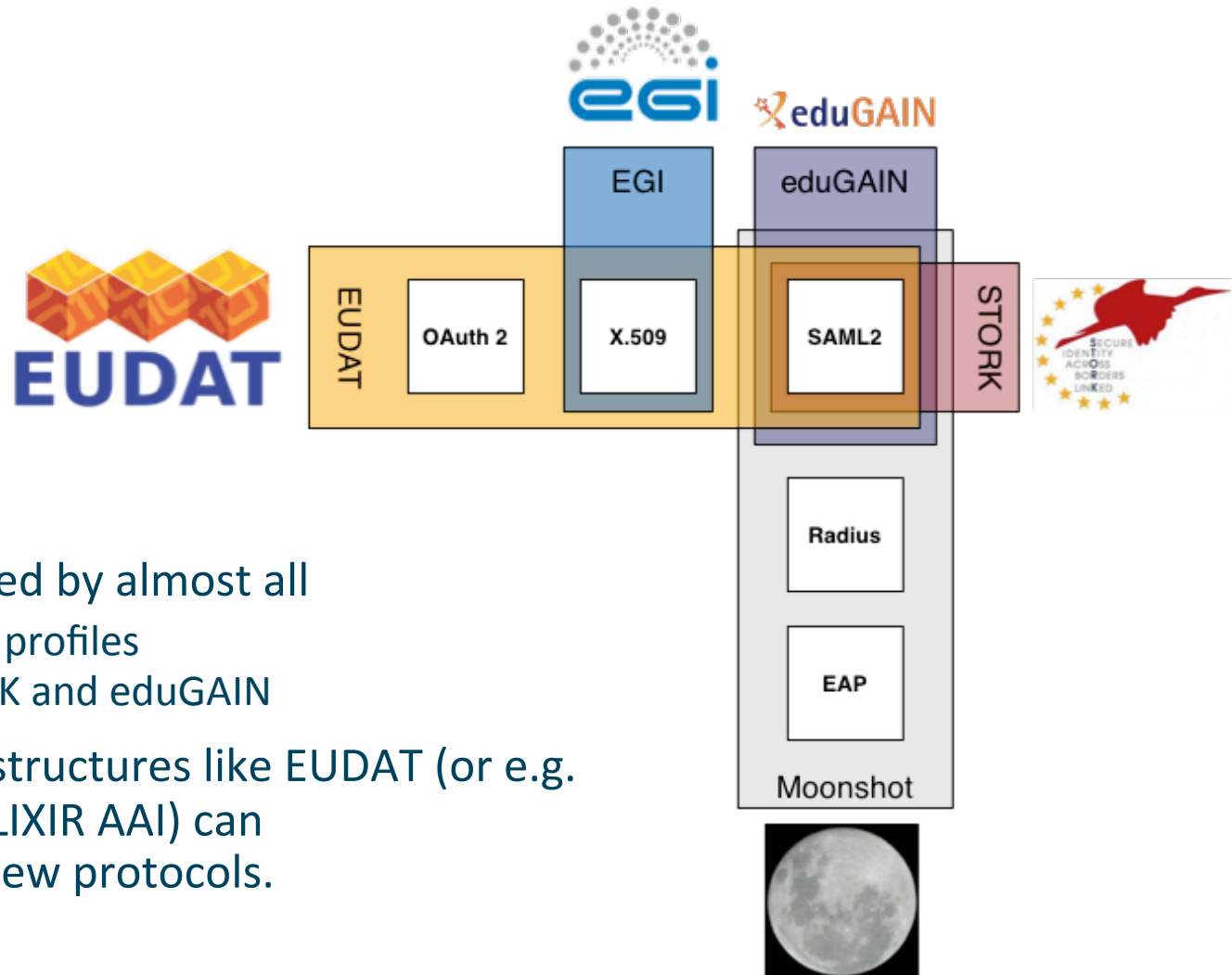
- As a "newbie" it's hard to figure out some of the basic info about these infrastructures, services and technologies
 - (It's also hard even if you are not a newbie anymore, also for GÉANT people...)
 - Talking to all representatives of these infrastructures is time-consuming and they often fail to explain things in easy terms
- How to learn about pros and cons without testing all of them?
 - Operators of one AAI often don't look beyond one's own nose
- Do they differ? After all they all provide some authentication and authorisation features. They can't be so different... can they?



Differences in Type



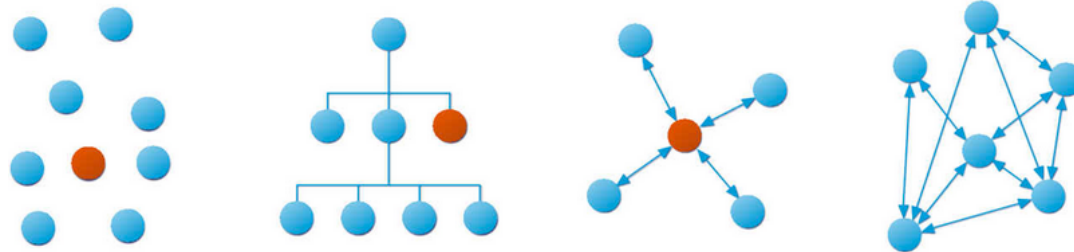
Differences in Technologies



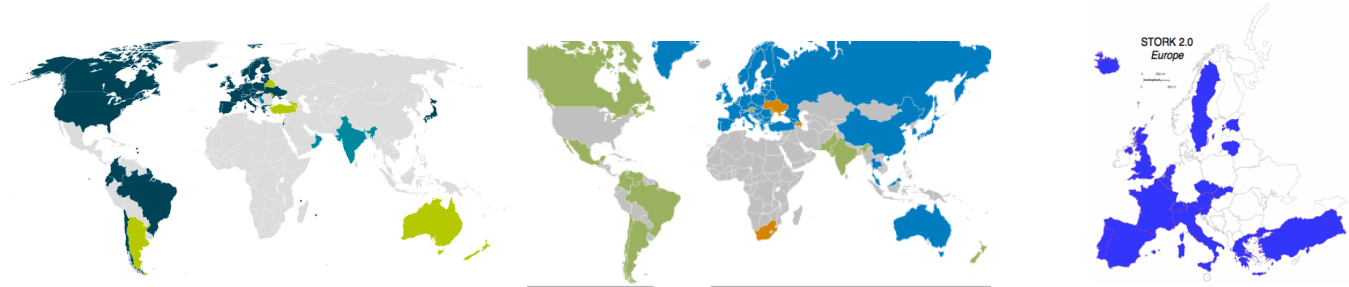
- SAML 2 supported by almost all
 - But different profiles
e.g. for STORK and eduGAIN
- Hub-like e-Infrastructures like EUDAT (or e.g. the upcoming ELIXIR AAI) can easier support new protocols.

More Differences...

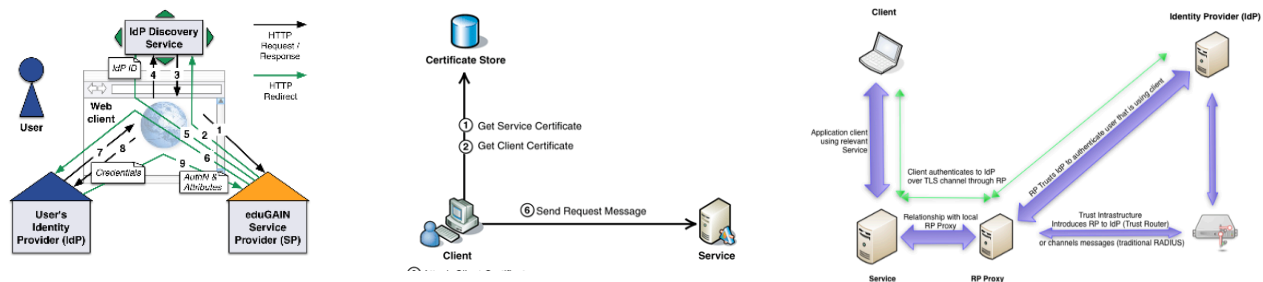
- Architecture



- Coverage



- Login Flows



Services, Governance, financing, technical features ...

and many more

- Started by GÉANT Enabling Users task
- Task members mostly NREN staff familiar with eduroam, eduGAIN and Moonshot
- Based on feedback from our work with research communities a structure with a few key questions was created

- Plan:

1. ~~Internal author completes and answers questions for given AAI~~ ✓
2. ~~Internal reviewer checks information on described AAI~~ ✓
3. ~~Invite experts from described AAI to verify/correct information~~ ✓
4. Have document polished by Tech Authors and publish it
Draft currently available at: <http://swit.ch/aai-comparison>

1 and 2 more difficult than expected, even for people already familiar with AAI!
Imagine how difficult it must be for researchers getting familiar with AAI.

Key Questions about each AAI - Part 1



For each AAI, answers to the following questions?

- Introduction
 - What is it?
 - What does it do?
 - Does it provide anything else besides authentication and authorisation function? (mostly relevant for e-Infrastructures)
- History and Current Status
 - When was it created and by whom?
 - What's the current coverage/numbers of countries, organisations and users?
- Intended Audience
 - For whom is it operated primarily?
 - Further eligible intended audiences (who else could be using it)?
 - For whom is it suited?

Key Questions about each AAI - Part 2

- Operation and Governance
 - Who operates it?
 - Who controls and governs it?
 - Where to get support from?
- Business Model
 - How is it financed?
 - How sustainable is it?
- Underlying Technology
 - What protocols and technologies are used?
 - How does the architecture look like?
 - How does the login flow typically look like?
- Major Benefits
- Limitations
- How to Join

- To understand the basics of a single AAI is non-trivial.
- It's not that easy to **compare apples and bananas** in a structured format 😊
 - e-Infrastructures (with more than just AAI functionality) vs services vs technologies. E.g. Moonshot is "only" a technology but was included because by quite a few people it is perceived as an infrastructure.
- Even seemingly easy **facts** (how many users/services/authentications?) are **difficult to quantify** for some AAIs
- Reliable **basic information is hard to find sometimes** (still up-to-date? authoritative content? info about project or platform?) even for people familiar with one AAI.
Guess how difficult it is for researchers familiar with no AAI.
- Probably an increasing number of research communities might use e-Infrastructures like EUDAT or the new INDIGO Datacloud (currently in project stage)



Thank you

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What is an e-Infrastructure anyway?

- Many definitions 😊
- "e-Infrastructure refers to a combination and interworking of digitally-based technology (hardware and software), resources (data, services, digital libraries), communications (protocols, access rights and networks), and the people and organisational structures needed to support modern, internationally leading collaborative research [...]."
(Source <http://www.rcuk.ac.uk/research/xrcprogrammes/otherprogs/einfrastructure/>)