AAI Architectures

What's out there?

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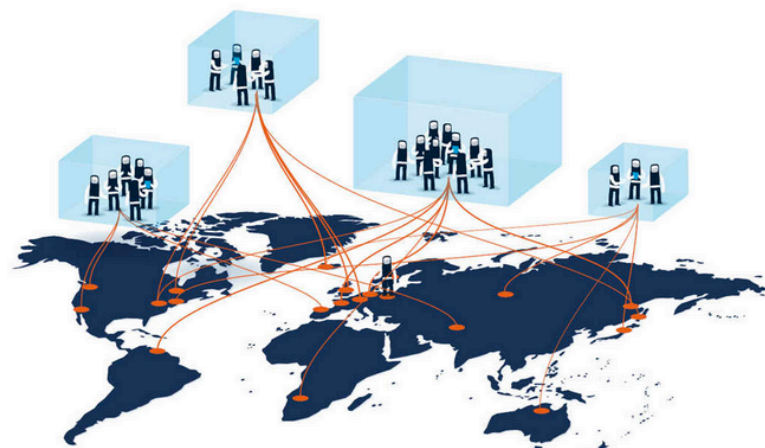Task Leader "Enabling Users"
GÉANT/SWITCH

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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 <u>general-purpose</u> authentication and authorisation infrastructures (<u>AAI</u>), services and technologies available <u>for research</u> and education

EUDAT

eduGAIN

SECURE IDENTITY ACROSS BORDERS LINKED

egi

(Moonshot)

INDIGO - DataCloud
Better Software for Better Science
**(new, being built)**

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
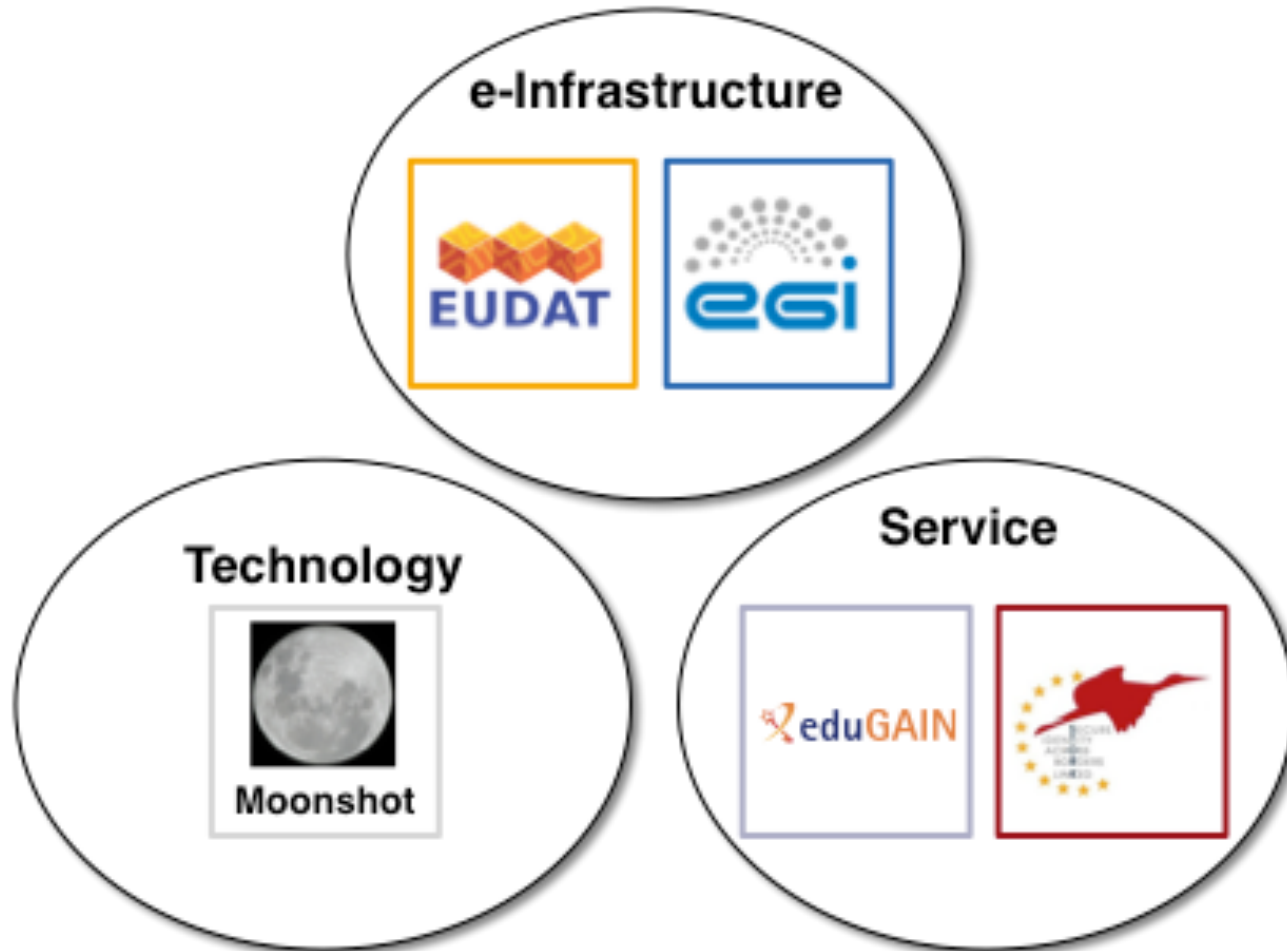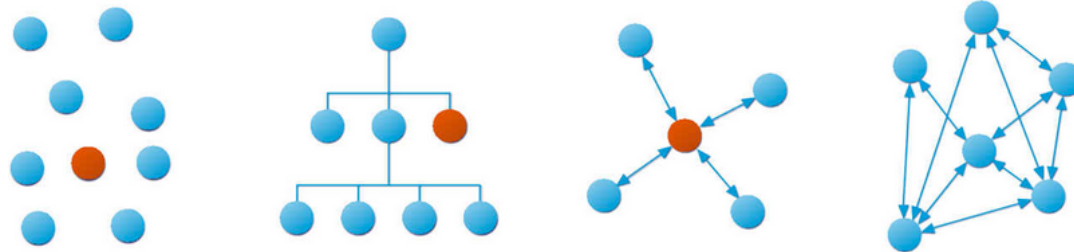
Differences in Technologies
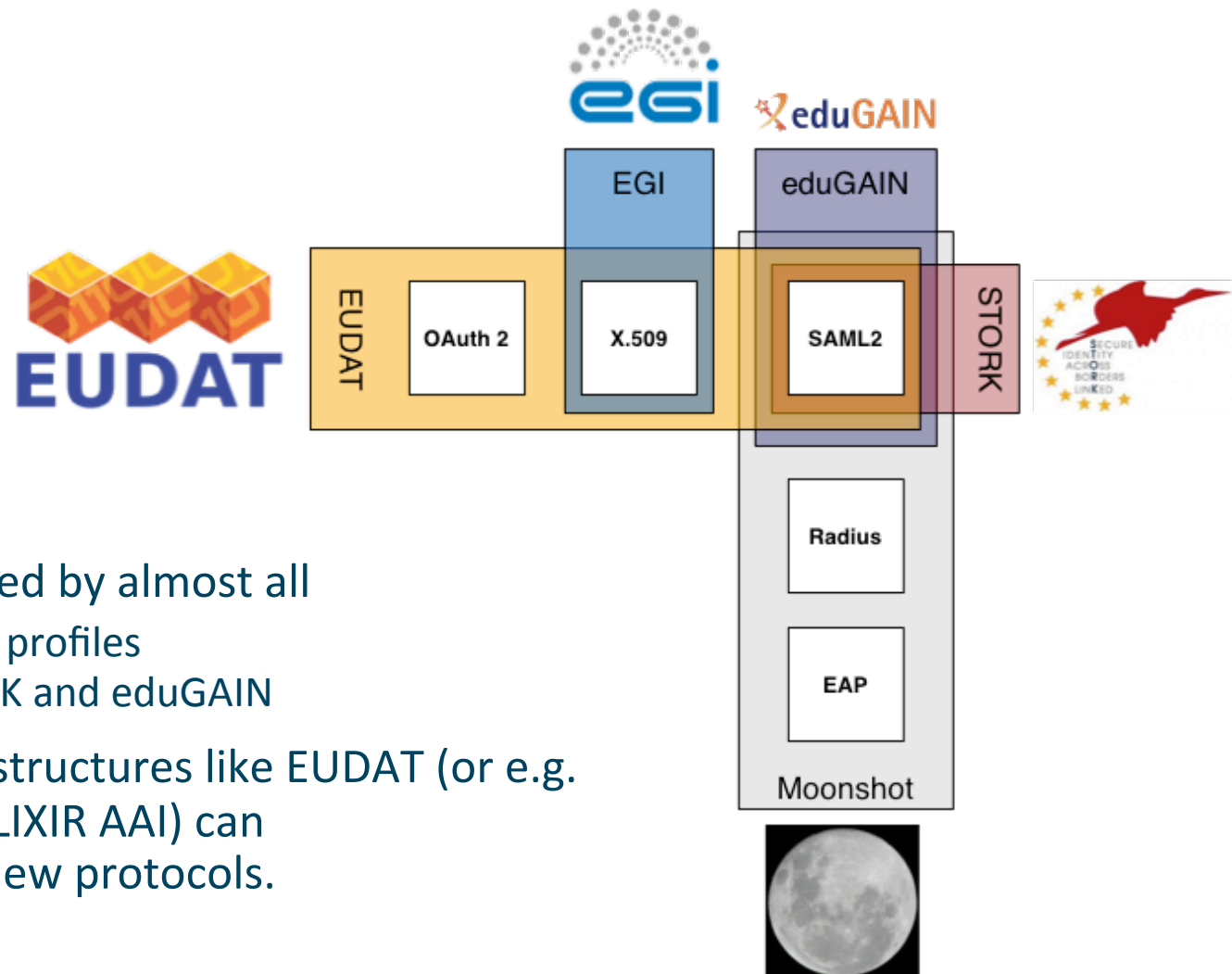
- SAML 2 supported by almost all
  - But different profiles
    e.g. for STORK and eduGAIN

- Hub-like e-Infrastructures like EUDAT (or e.g.
  the upcoming ELIXIR AAI) can
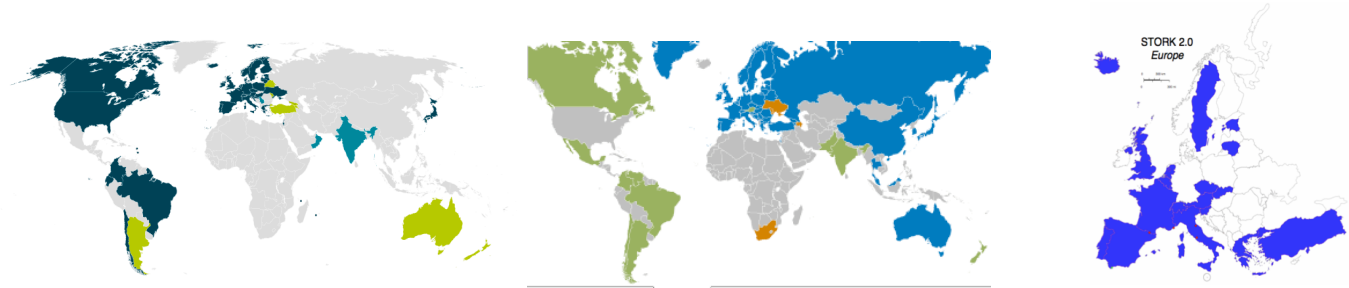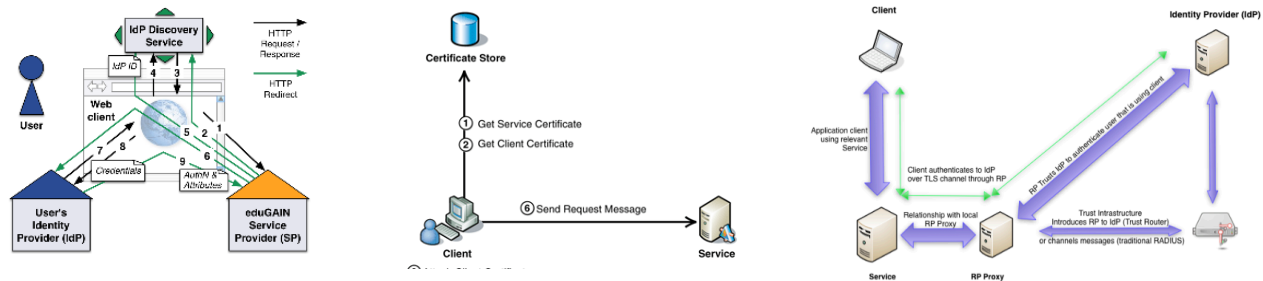 easier support new protocols.

More Differences...

- Architecture

- Coverage

- Login Flows

Services, Governance, financing, technical features …   and many more

AAI Comparison Document

- 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 AAIs!
  Imagine how difficult it must be for researchers getting familiar with AAI.

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

Findings

- 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/)