



ELIXIR Science and Data Platforms for UK National Federated Compute Services

Peter Maccallum (*ELIXIR, EOSC-ENTRUST*)

NFCS Network Plus, Bristol, 26 Feb 2026

elixir-europe.org

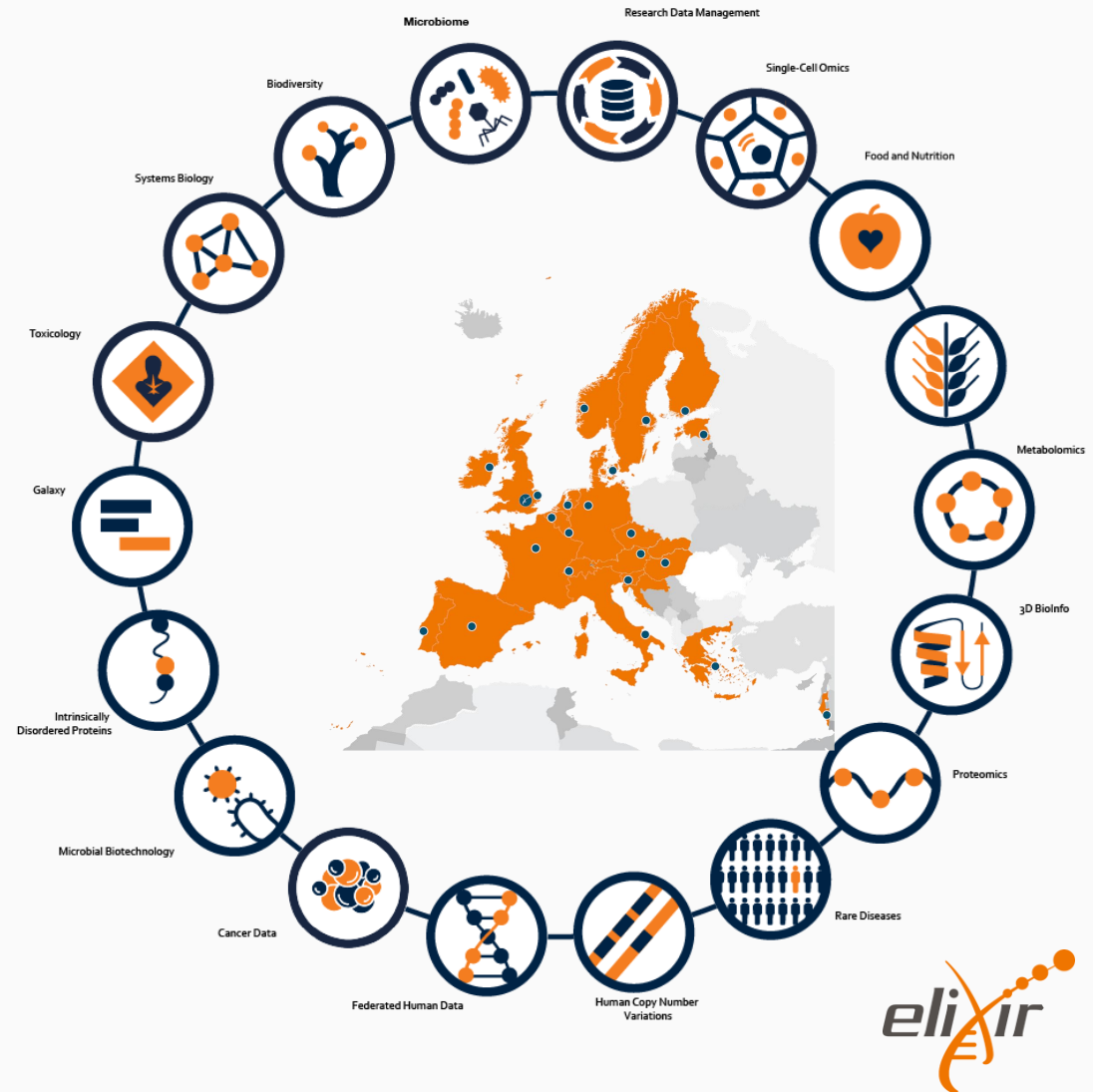
ELIXIR

ELIXIR is an intergovernmental organisation that brings together life science resources from 24 countries:

- Databases
- Software tools
- Training resources
- Interoperability resources
- Compute resources
- Data management support

We build and sustain life science informatics **capacity and infrastructure** in Europe, connect and develop a **network of experts** and provide hundreds of high-quality **services and resources** available to all.

Areas of expertise in ELIXIR



A sustainable infrastructure for biological data

Members



Belgium



Czech Republic



Denmark



EMBL



Estonia



Finland



France



Germany



Greece



Hungary



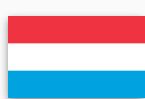
Ireland



Italy



Israel



Luxembourg



Netherlands



Norway



Portugal



Slovakia



Slovenia



Spain



Sweden



Switzerland



United Kingdom

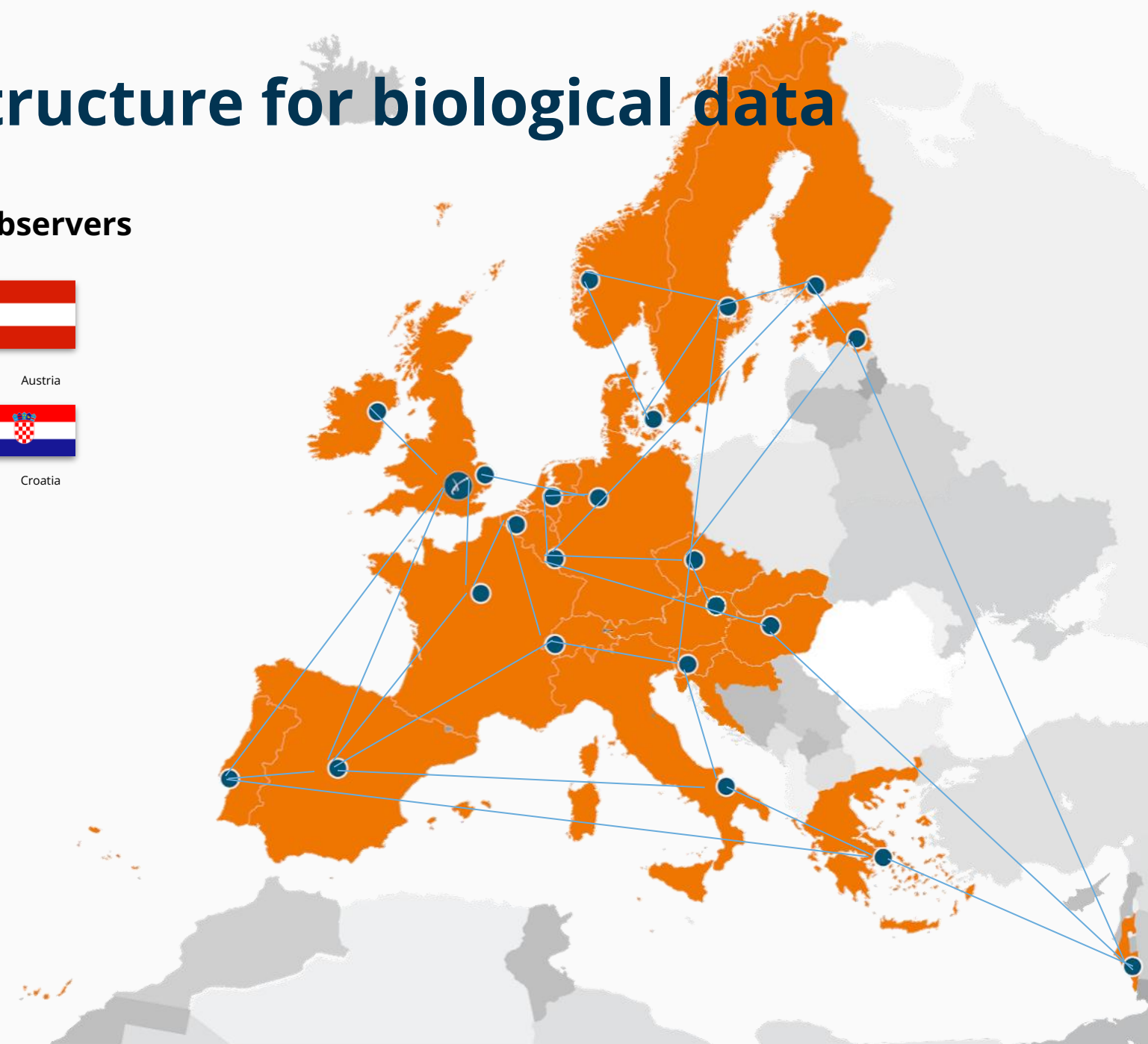
Observers



Austria



Croatia



Example Driver - federation of human genomic data

Many national datasets from human research participants needs to be **stored locally** (European Genome phenome Archive – EGA)

ELIXIR developing a federation with shared metadata (FAIR) and local data store (secure). Based on suite of interoperable, reusable, adopted, and fit-for-purpose **standards**

Linking local EGA to national clouds and international access (ELIXIR-AAI - Authentication and Authorisation Infrastructure)

17/25 ELIXIR Nodes are funded in the FHD community

Use case: COVID-19



Status as of 17 Feb 2025



Central EGA



Data available



Signed FEGA
Collaboration Agreement



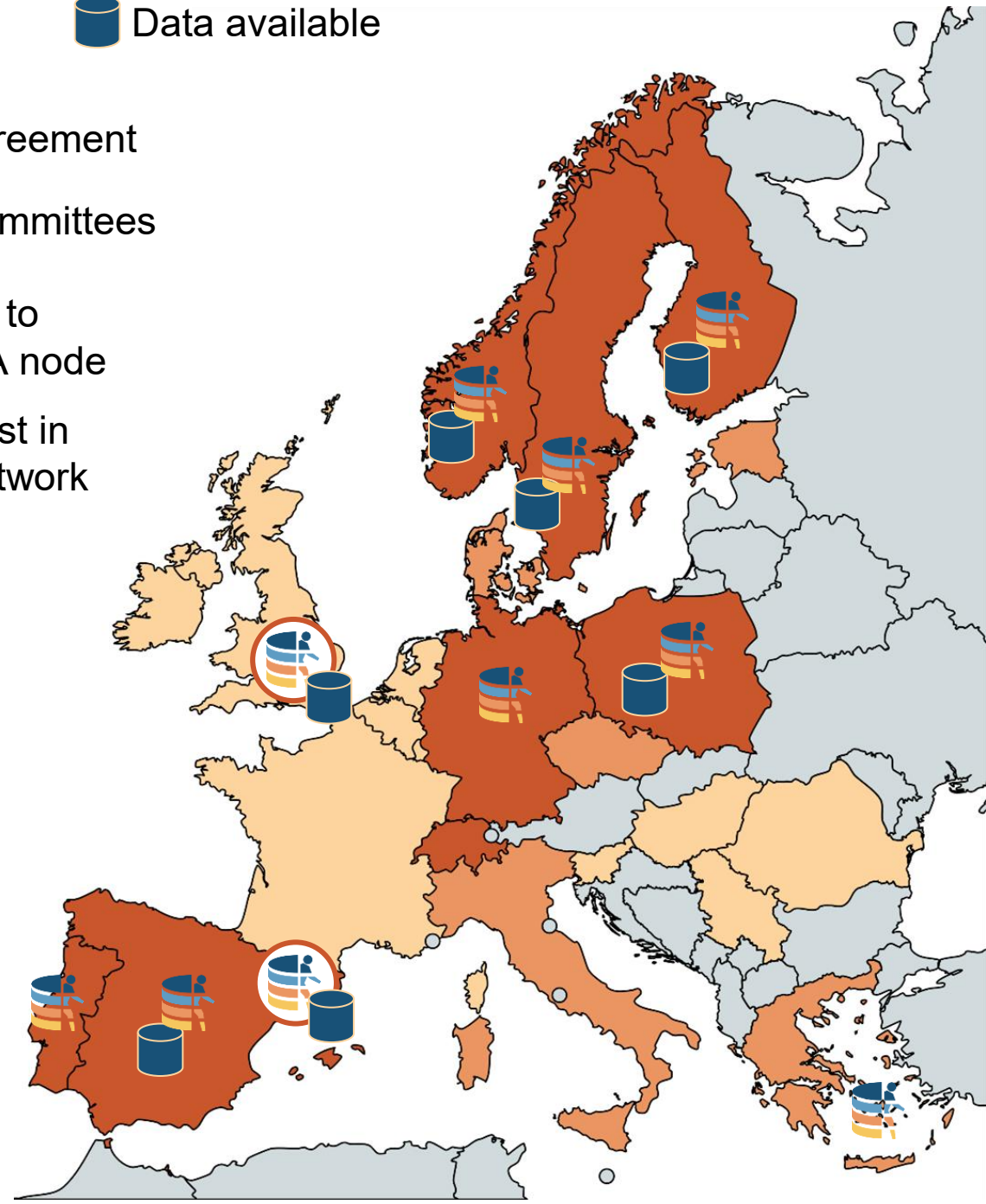
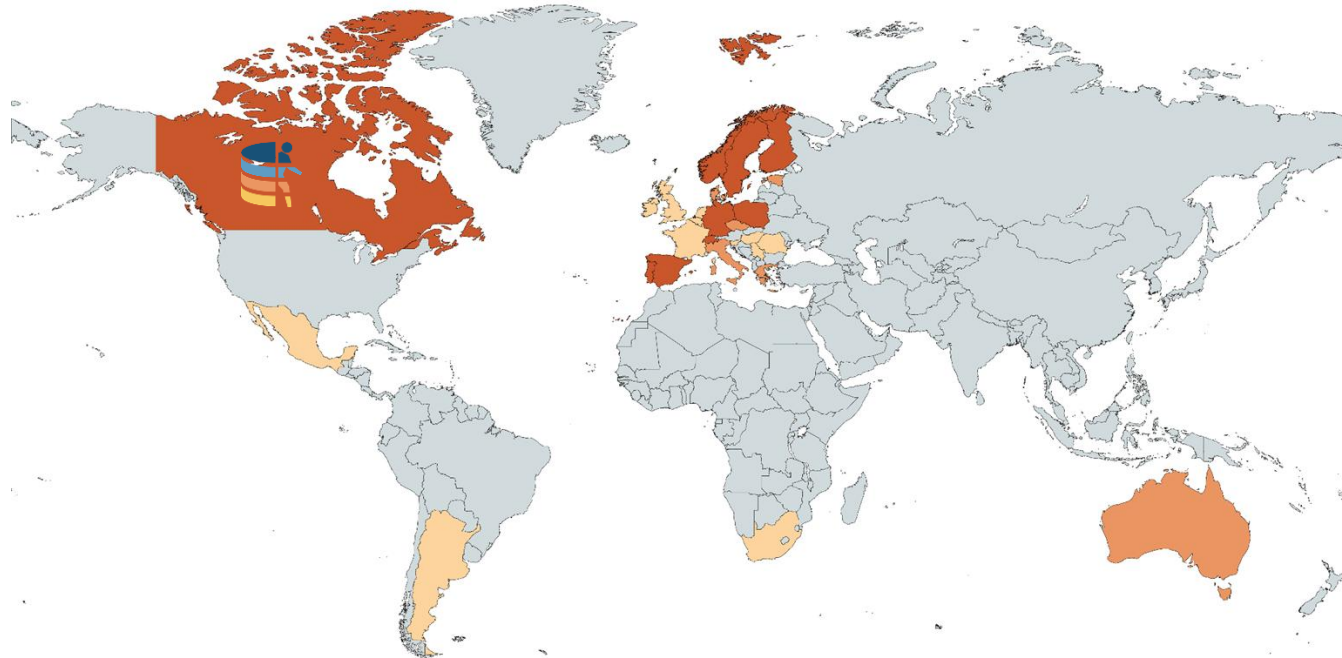
Joined FEGA Committees



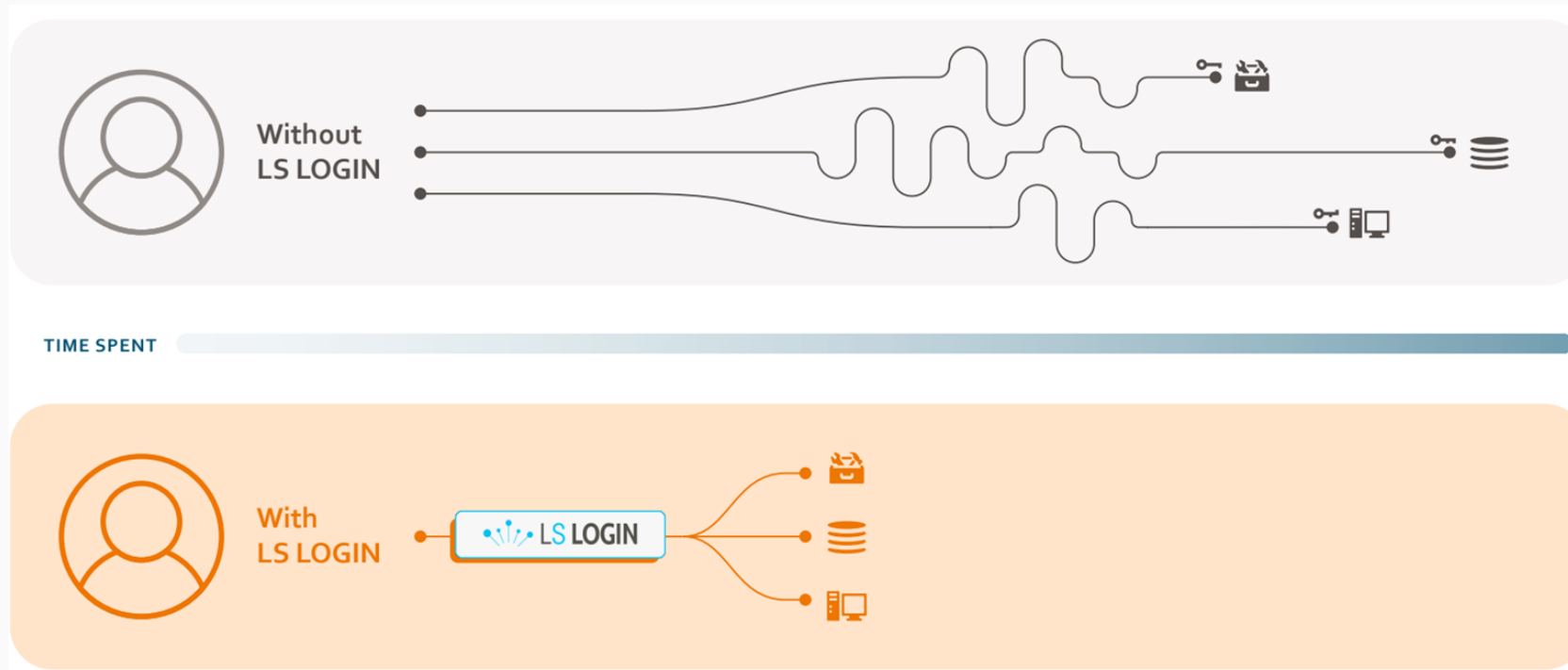
Engaged in work to
establish a FEGA node



Expressed interest in
joining FEGA Network



Life Science Login as a single-entry point



Originally ELIXIR AAI

Co-developed through EOSC-Life Project (WP5) into current Life Science Login

Applicability for federated authentication and access management for LS services

Use case example: Federated EGA - Norway



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Federated EGA Norway node



LS AAI Service status 2025

Funded via ELIXIR as an **Infrastructure Service** in support of our other services.

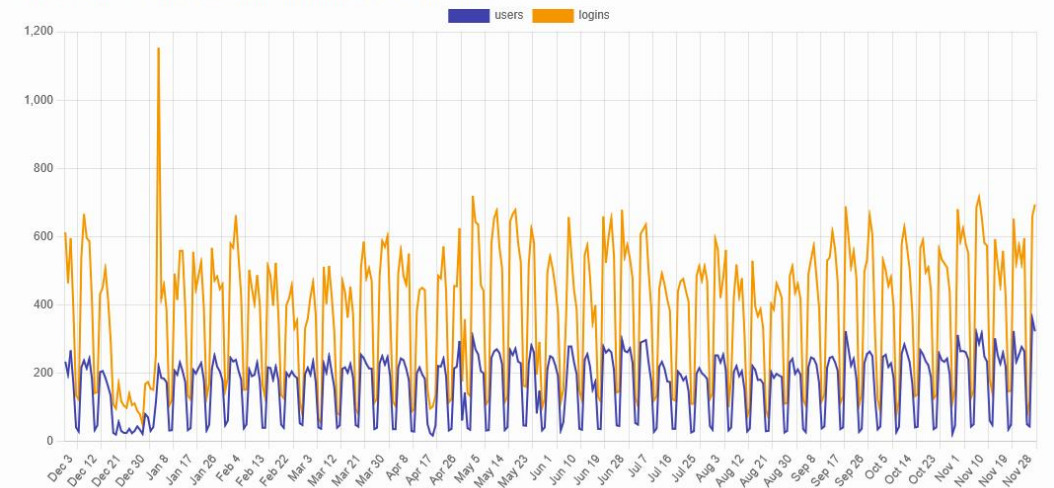
- Life Science Community active users: over 13 000
- Connected Life Science services across 5 ESFRIs: 300
- Availability 99,5 %
- LS AAI statistics

Last year

Auth OIDC	Uptime: 99.54059	Downtime: 0.45941
Events of login.aai.lifescience-ri.eu		
Auth Saml	Uptime: 99.65985	Downtime: 0.34015
Events of login.aai.lifescience-ri.eu		
MFA	Uptime: 99.99699	Downtime: 0.00301
Events of login.aai.lifescience-ri.eu		

Number of logins

The chart shows overall number of logins from identity providers for each day.



 eosC | ENTRUST

EOSC-ENTRUST

European Network of Trusted Research Environments

 eosC



Funded by
the European Union

*This project has received funding from the European Union's Horizon Europe Programme
under GA 101131056 - EOSC-ENTRUST - HORIZON-INFRA-2023-EOSC-01-06*

EOSC-ENTRUST Information

EOSC-ENTRUST aims to create a **European Network of TRUSTed Research Environments (TREs)** for **sensitive data** and drive European interoperability by joint development of a **common blueprint for federated data access and analysis**.

Duration: 03/2024 - 02/2027

EU contribution: € 4.2M **UKRI contribution:** € 0.8M

Coordinated by: ELIXIR

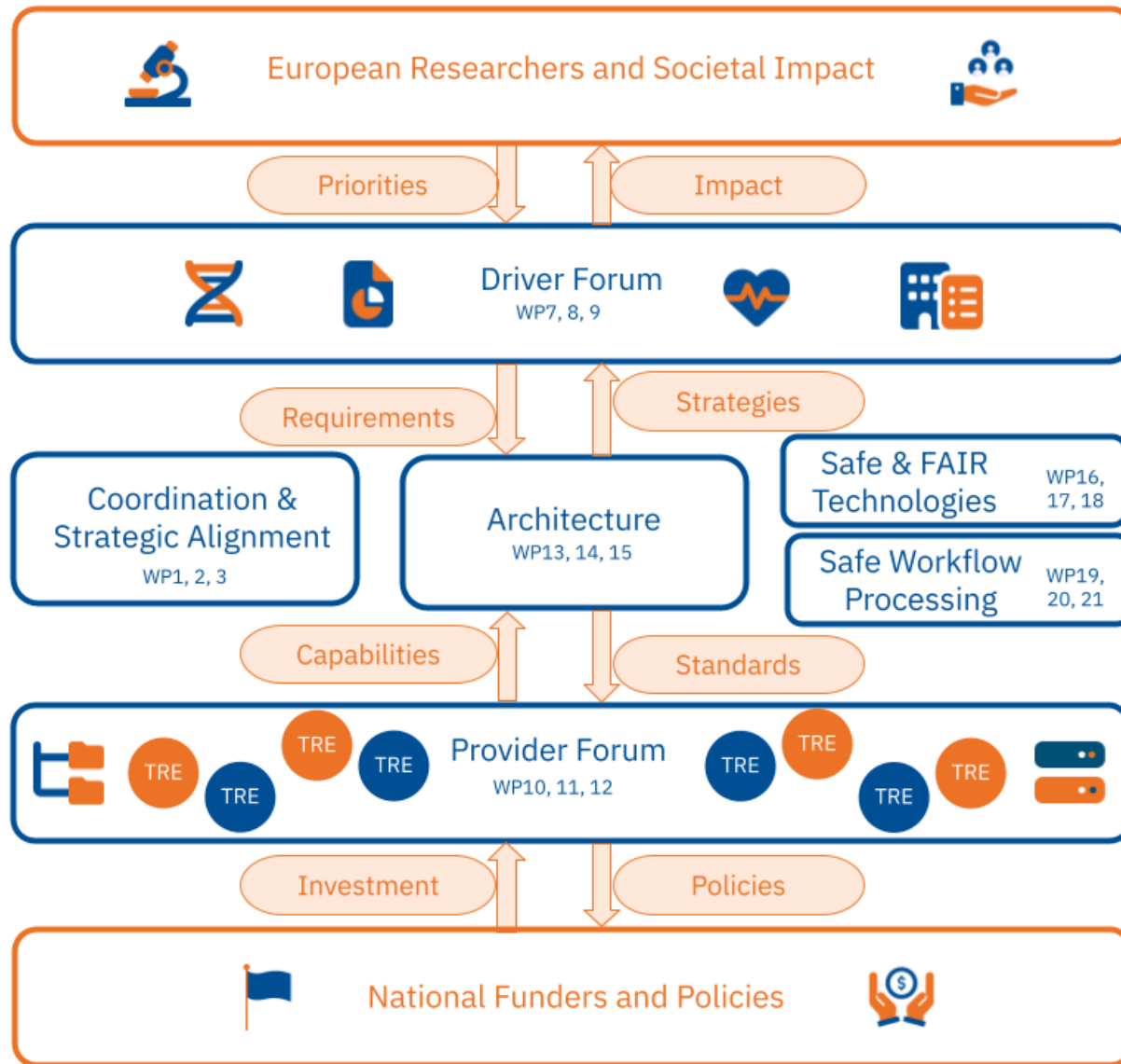

Project partners: 34




eosc



European Context and Data Spaces

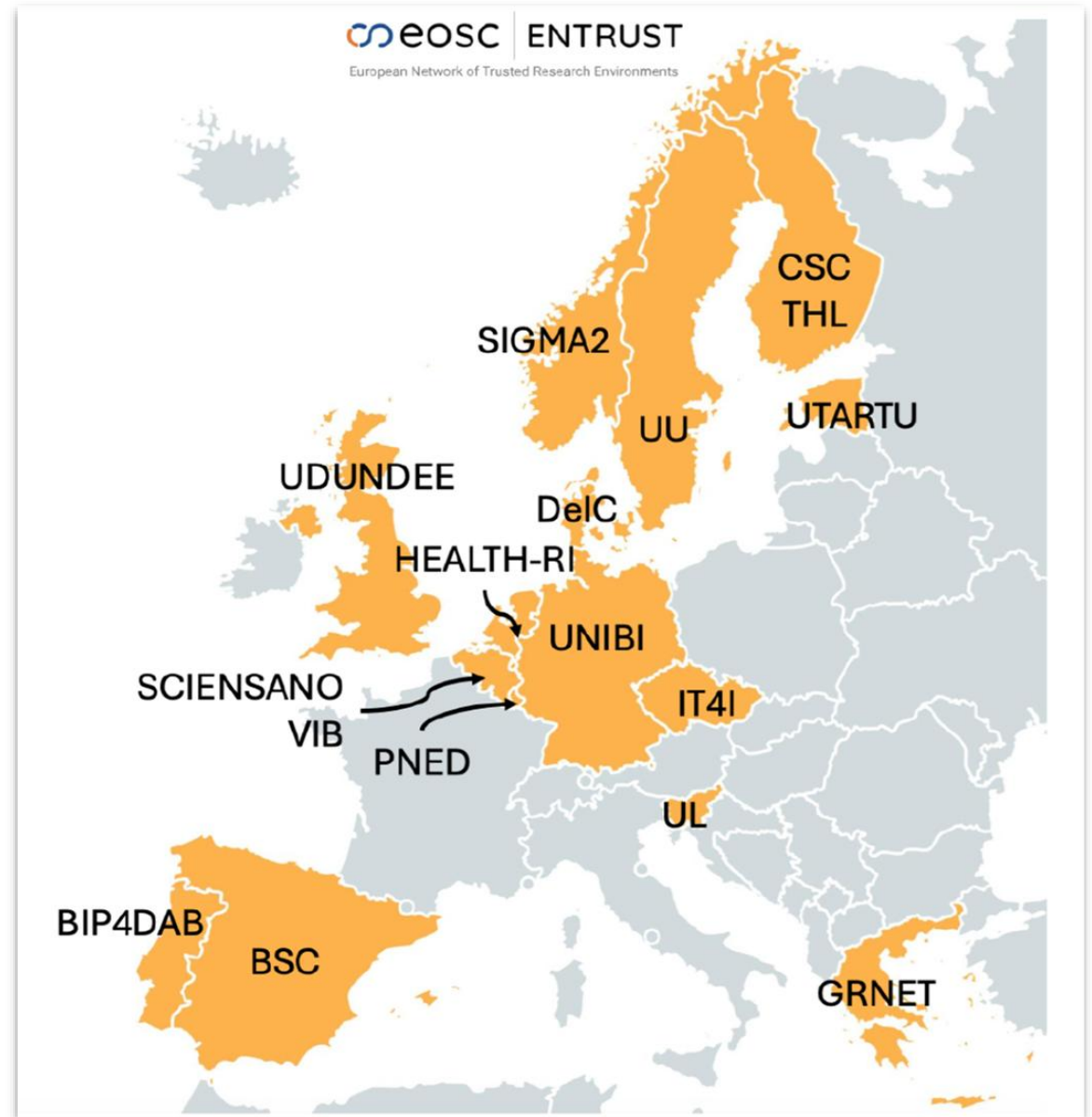



Communication and Outreach
WP4, 5, 6

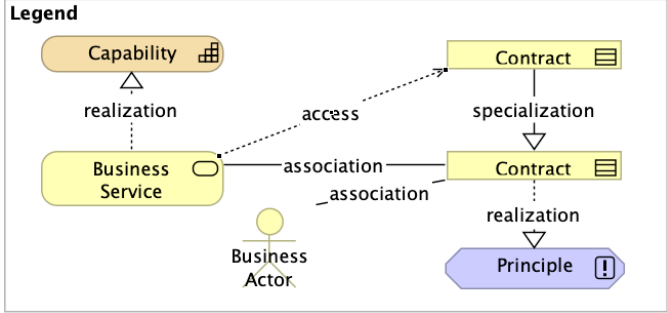
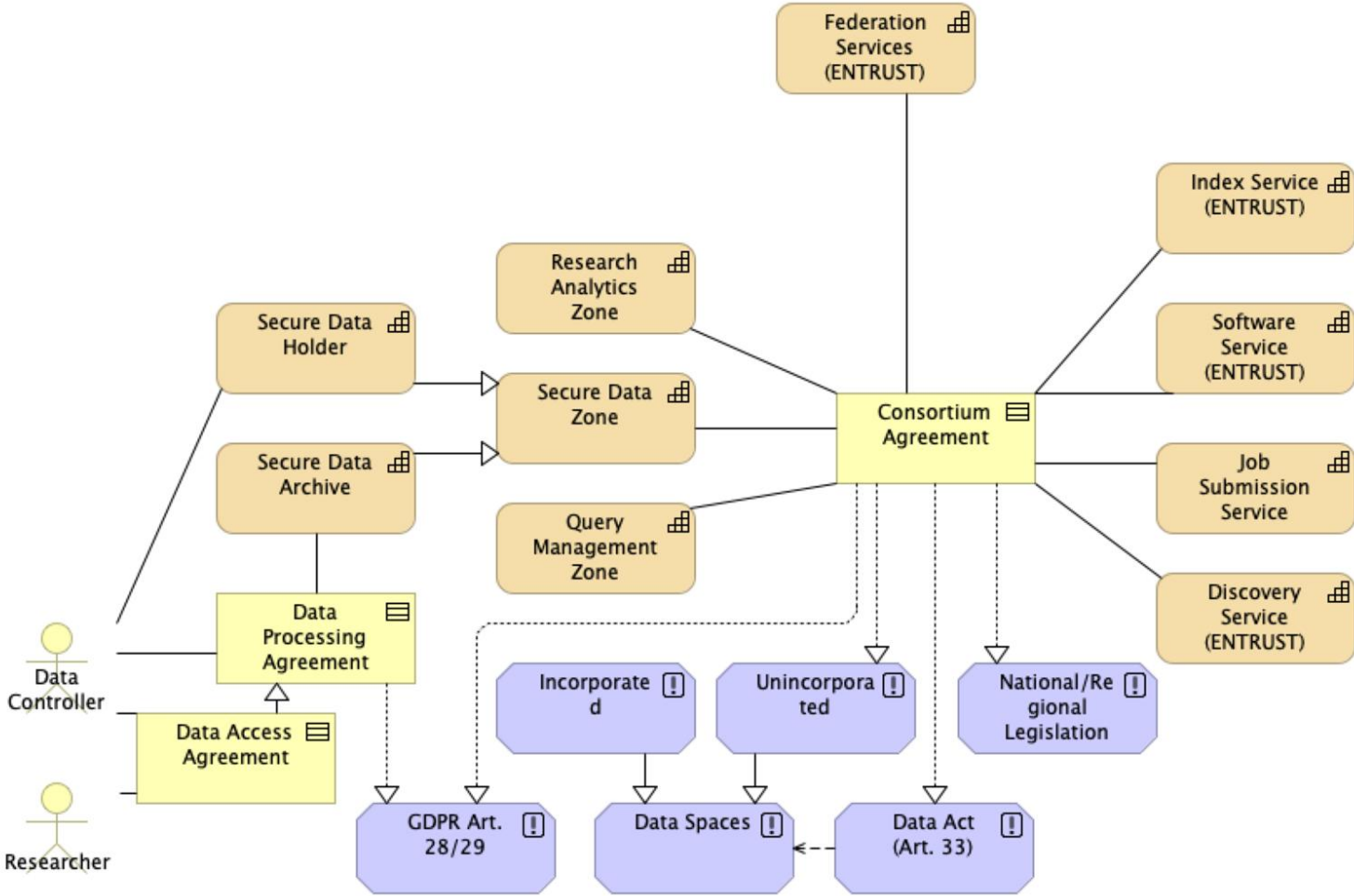


EOSC-ENTRUST TRE Providers Forum

Geographical distribution of Year 1 members



Consortium agreement model for the EOSC-ENTRUST Blueprint architecture



AAAI requirements for a Sustainable TRE federation

- **Goal:** Establish a sustainable, federated AAAI that supports TREs to ensure secure, interoperable access to sensitive data
- **Key Challenges:**
 - Interoperability costs
 - Continuous evolution of AAAI technologies
 - Operational costs (infrastructure, services, support, etc.)
- **Strategy:**
 - **Federation-level cost sharing:** central AAAI absorbs interoperability and operational costs.
 - **Incremental development:** built on Life Science AAI and AARC Blueprint Architecture for reuse and longevity

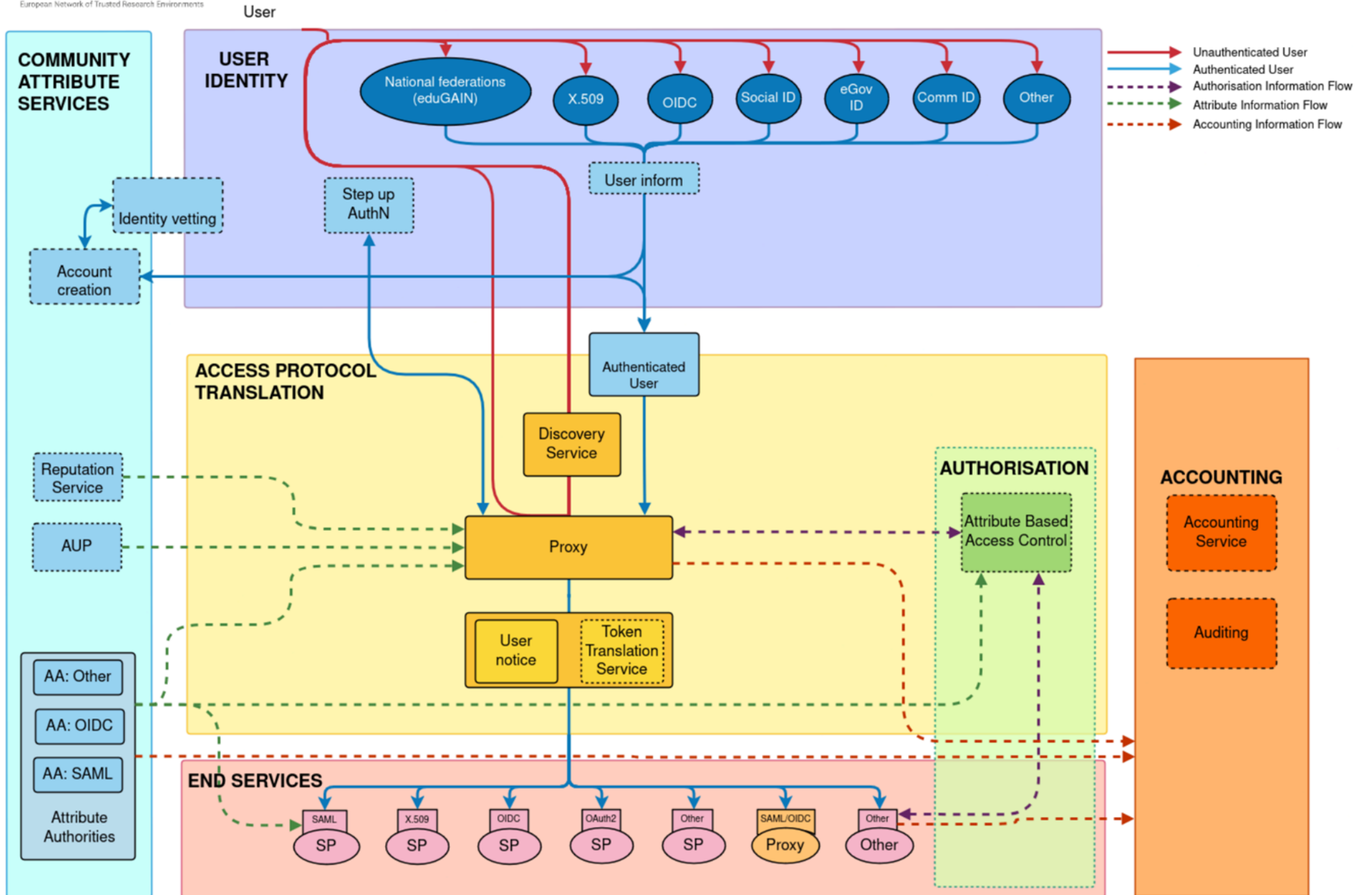
The AAI for TREs Blueprint

- based on the **AARC** (Authentication and Authorisation for Research Collaboration) Blueprint Architecture used by EOSC AAI WG
- adds to **Authentication** and **Authorization** the third “A” - **Accounting** (and Auditing)

- **Authentication** is based on high-quality identity vetting
- **Authorization** is ABAC (Attribute Based Access Control) with explicitly written access policies for individual objects
- **Accounting** collects data who, what, where, when, why and to whom
- **Auditing** is reviewing the data collected in Accounting

Deliverable: [D16.1 The AAI for TREs Blueprint, first version](#)

AAAI for TREs Blueprint



In EOSC, and the European Data Spaces

Current EOSC Federation (prototype) has 14 Nodes

- Uses MyAccessID as AARC-compliant authentication proxy
- Attribute-based access control work-in progress
- Accounting/Auth still work-in-progress, not part of the Blueprints

Will we wait for MyAccessId maturity, or continue LS Login development?

- There is a 'third way' - OpenID Federation
- Our expectation is Federation will become the basis of EOSC/DS on 'reasonable' (2-3 year) timelines.



Thank you



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