Authentication and Authorisation for Research and Collaboration

AARC Blueprint Architecture

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The starting point

- The scenario:
  - There is a **technical architect of a research community**
  - Her community is **distributed internationally**
  - **Increasing number of services** need authentication and authorization
  - Her job is to **find a solution**
  - She wants to **focus on research** and not reinvent the wheel

The goals

1. Users should be able to access the all services using the **credentials from their Home Organization**

2. Users should have one **persistent non-reassignable non-targeted unique identifier**.

3. Attempt to **retrieve user attributes** from the user's Home Organization. If this is not possible, then an alternate process should exist.

4. Distinguish **(LOA)** between self-asserted attributes and the attributes provided by the Home Organization/VO

5. **Access** to the various services should be granted **based on** the **role(s)** the users have within the collaboration

6. Users and services should not have to deal with the complexity of multiple IdPs/Federations/Attribute Authorities/technologies.

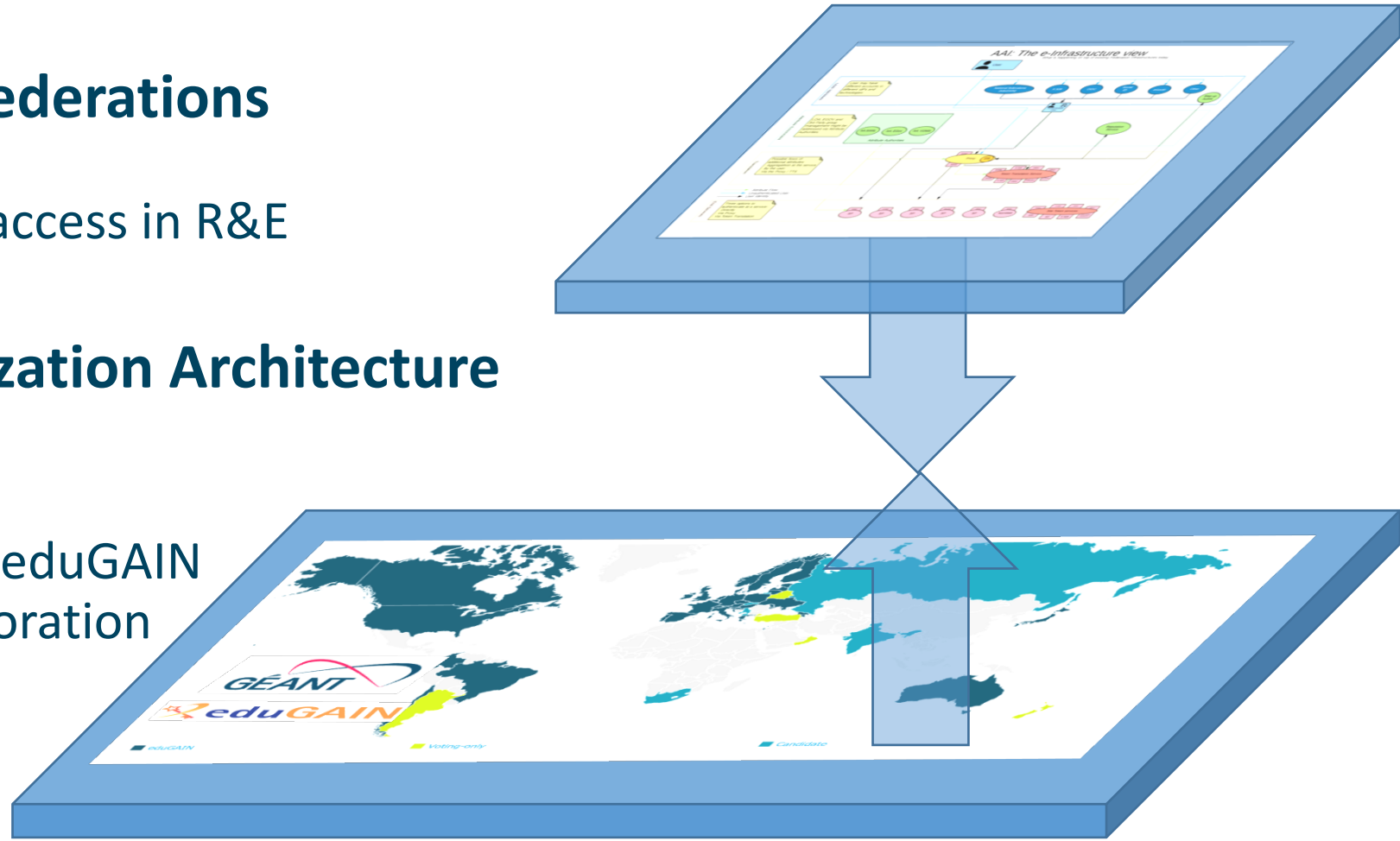
AARC Blueprint Architecture & eduGAIN

eduGAIN and the Identity Federations

A solid foundation for federated access in R&E

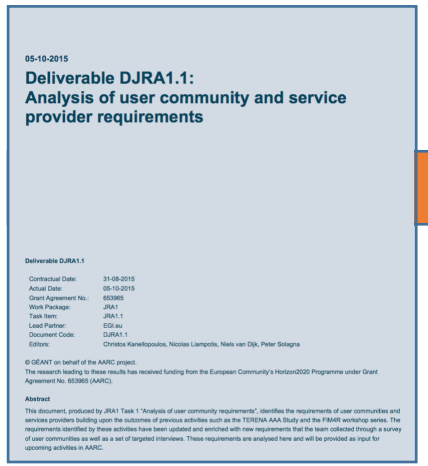
Authentication and Authorization Architecture for Research Collaboration

A set of building blocks on top of eduGAIN for International Research Collaboration

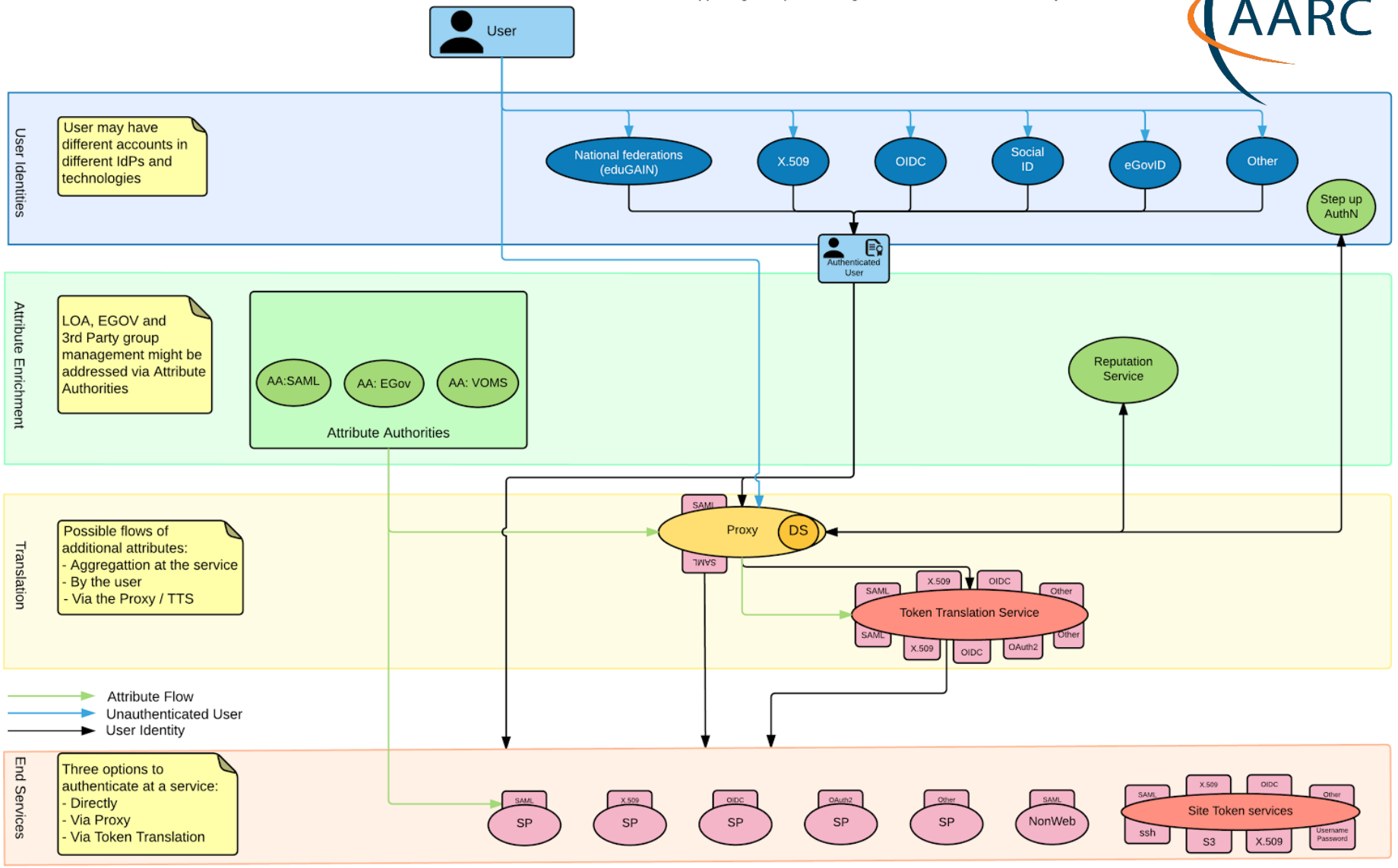


AARC Blueprint Architecture (1st Draft)

User Community Requirements

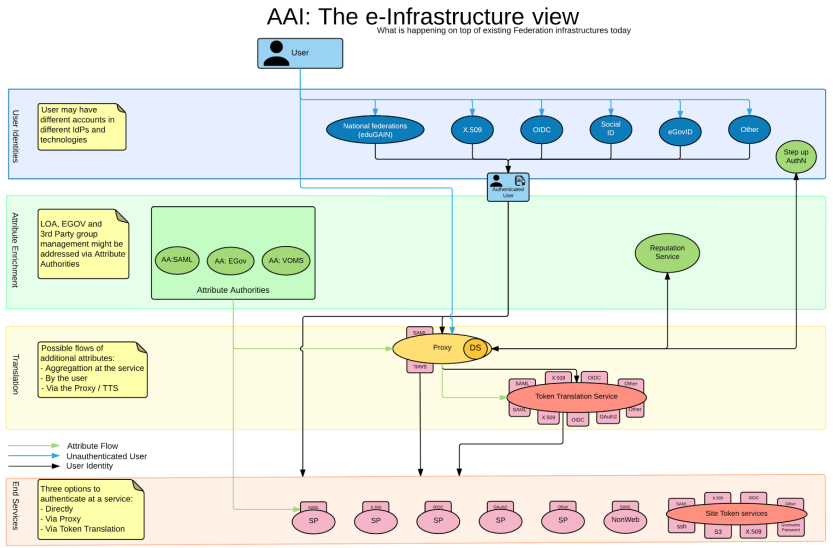


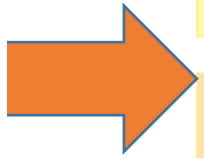
https://goo.gl/kSxENp

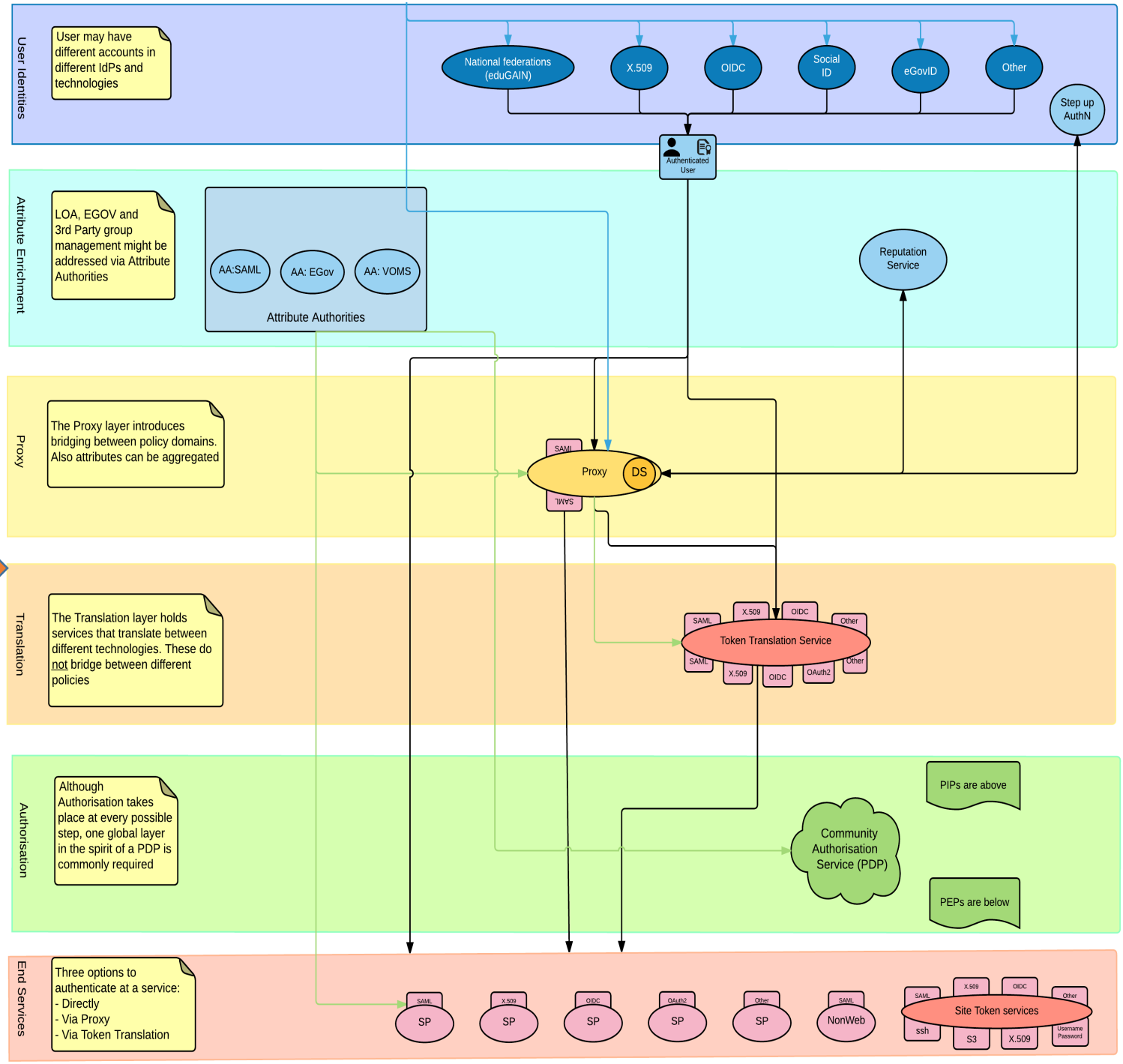


https://aarc-project.eu/aarc-draft-blueprint-architecture-available-for-comments/

AARC Blueprint Architecture (2nd Draft)







Highlights of the next version of AARC Blueprint Architecture

- Non-web access
- Token Translation Services
- Best practices for managing authorization
- Expressing group membership
- Attribute aggregation

Recommendations for AAI implementations in the context of international research collaborations

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NOT meant to be documents for general AAI deployments in the academic environment (e.g. for campuses etc)

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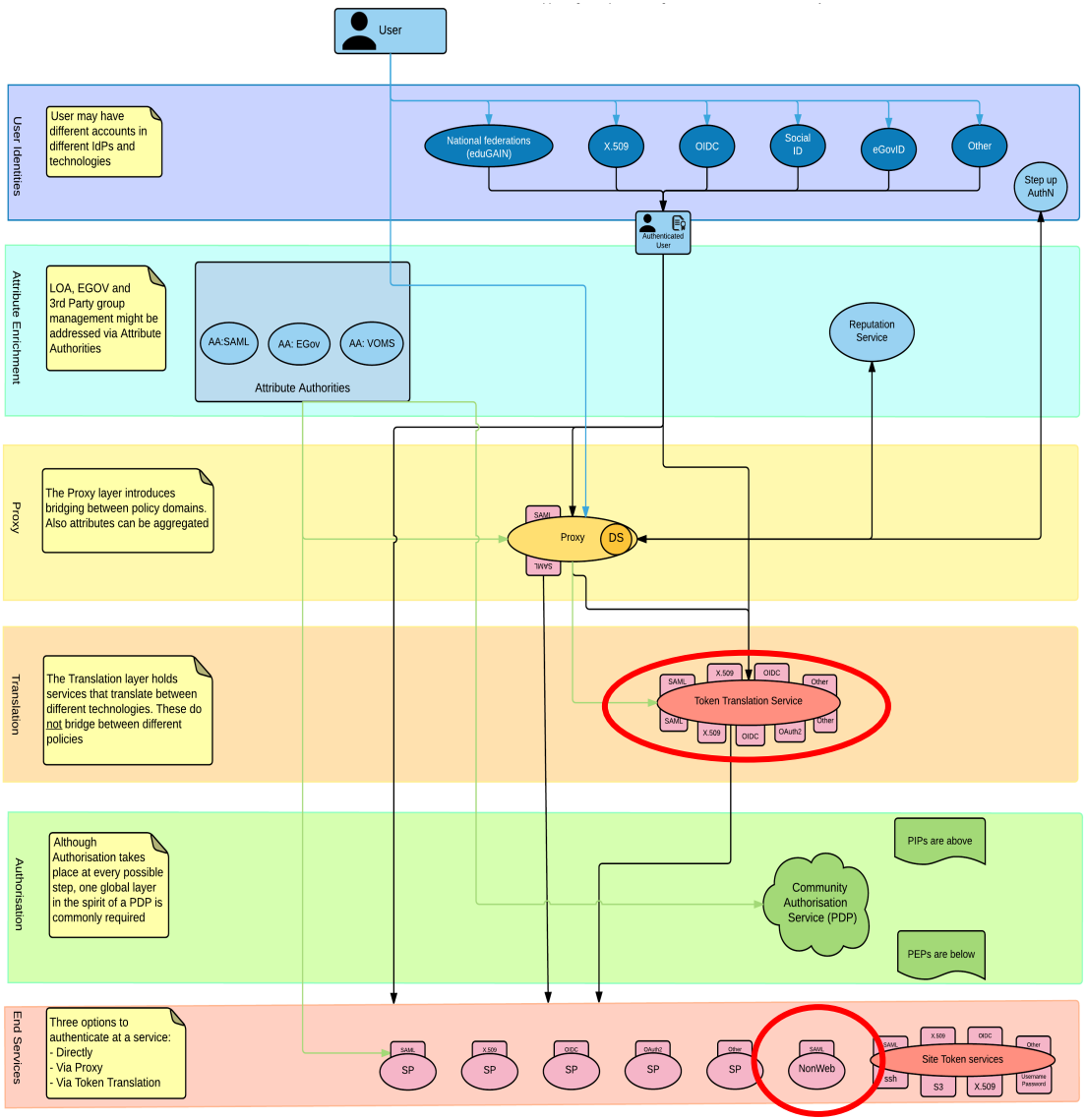
Open for comments until the end of February

Non-web access

https://goo.gl/JzatTx

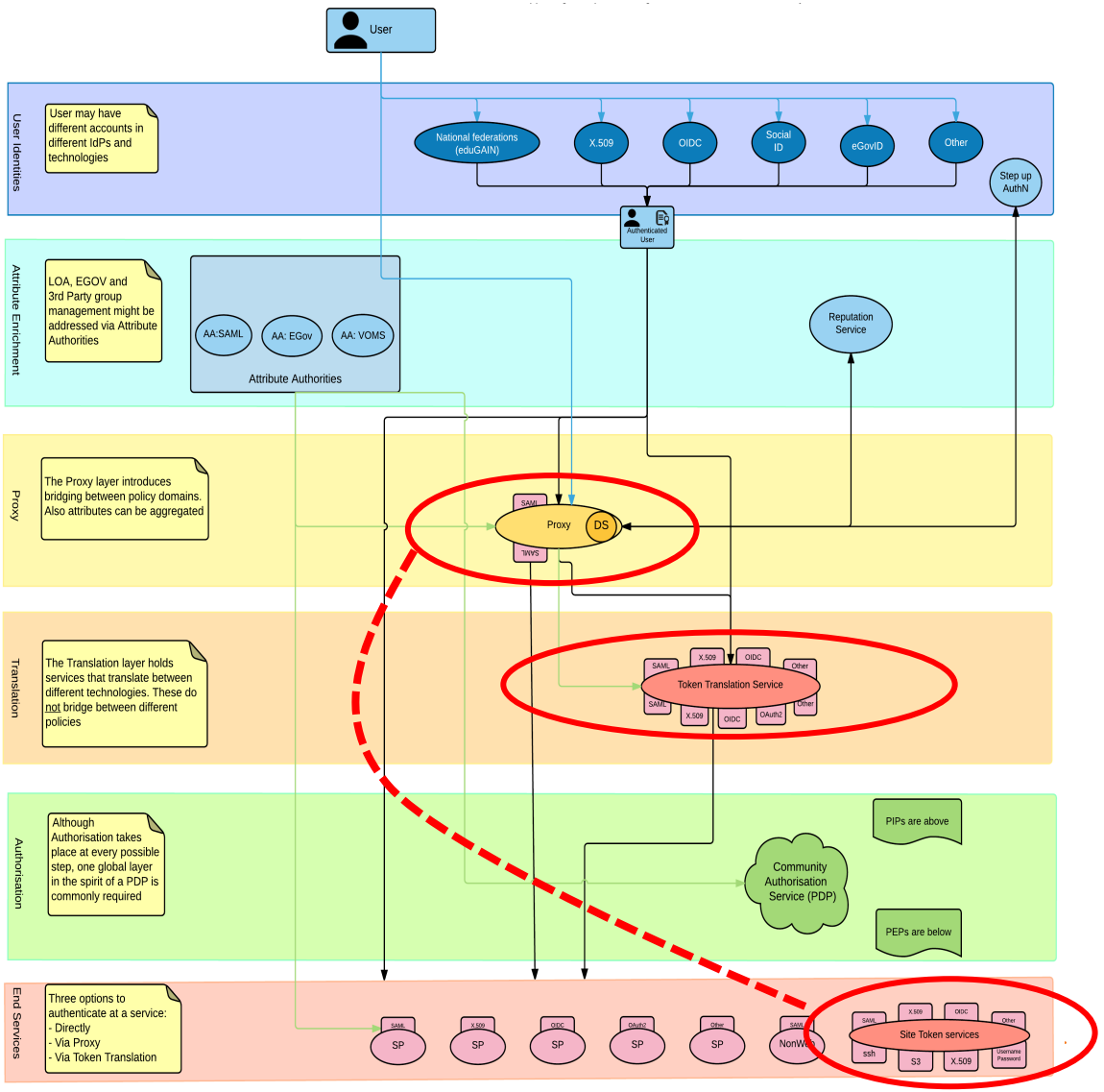
- Services that are NOT accessible with the use of a browser. Typically, command line access
- SSH / SFTP
  - SSH Key provisioning via access web portal
  - GSI Enabled SSH (x509v3 (proxy) certificates)
- HTTP APIs
  - OIDC/OAuth2
  - X509v3 (proxy) certificates
- Batch Job Submission and Data Management Systems in eScience environments
  - X509v3 (proxy) certificates
- **All require some kind of Token Translation system**



Token Translation Services

https://goo.gl/RNCsm3

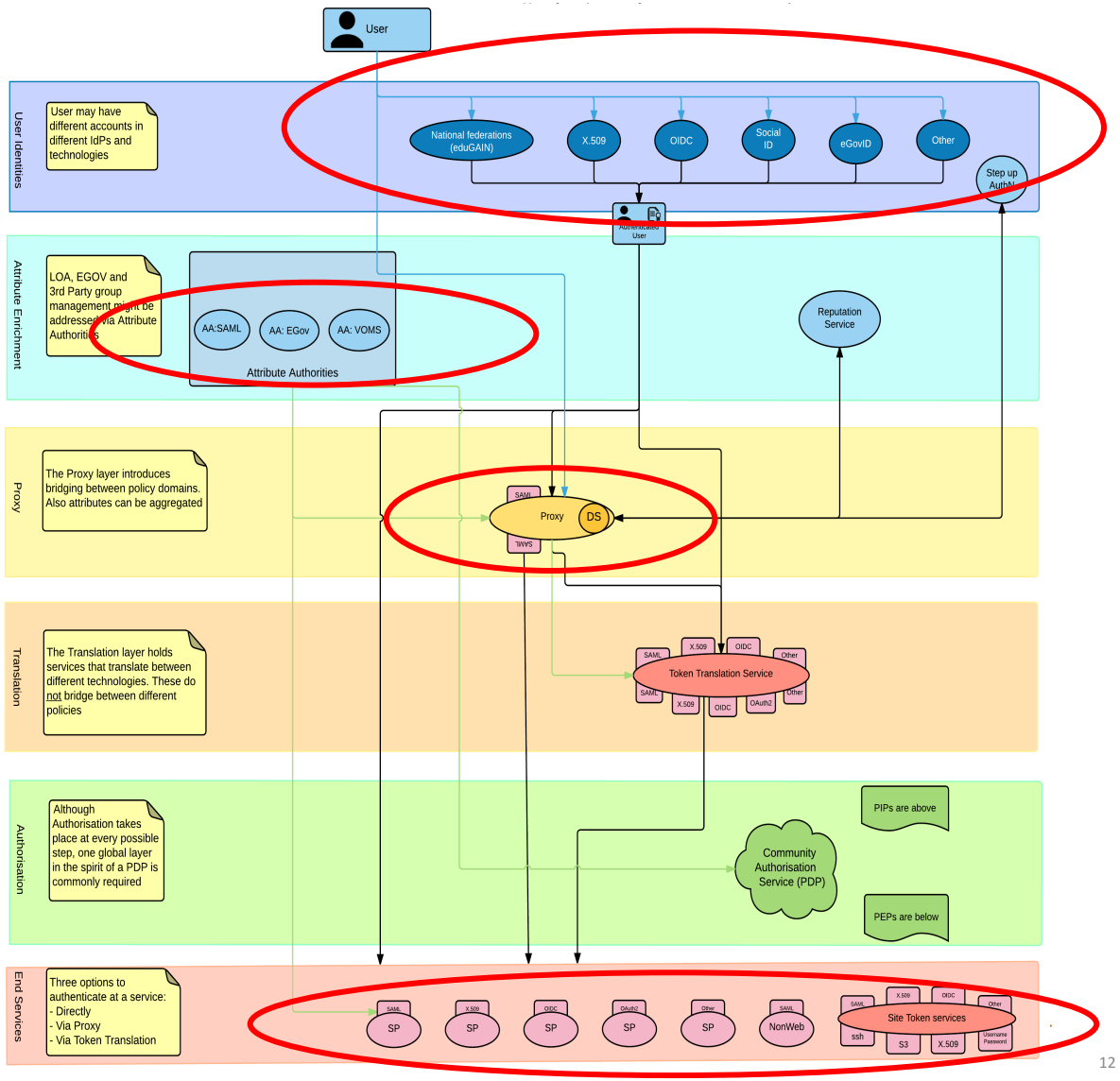
- Mechanisms that enable access to services that support different token formats
- Typical scenarios
  - SAML Assertions <-> X509v3 (proxy) certificates
  - SAML Assertions <-> OIDC Tokens
  - OIDC Tokens <-> X509v3 certificates
- Deployment use cases
  - Standalone vs Embedded
- Token Translation Type
  - Direct vs Indirect (provisioned)



Best practices for managing authorization

https://goo.gl/aFFPS1

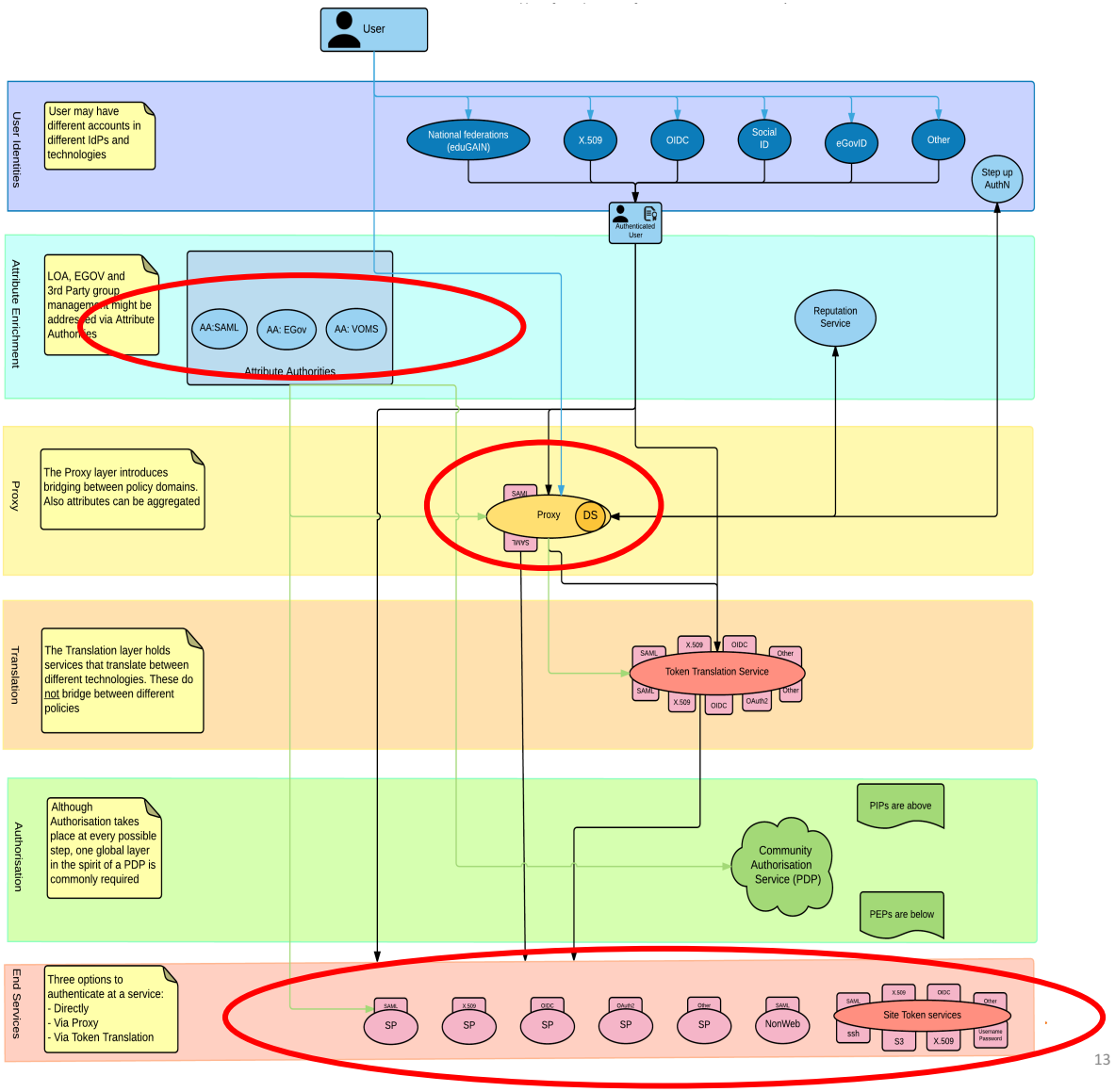
- In Research Collaborations access to services is authorized based on the role/group membership of each user in the collaboration
- Other possible parameters:
  - Affiliation of the user
  - Strength of the authentication / Level of Assurance
- Centralized vs delegated authorization management



Expressing group membership

https://goo.gl/Maz4R2

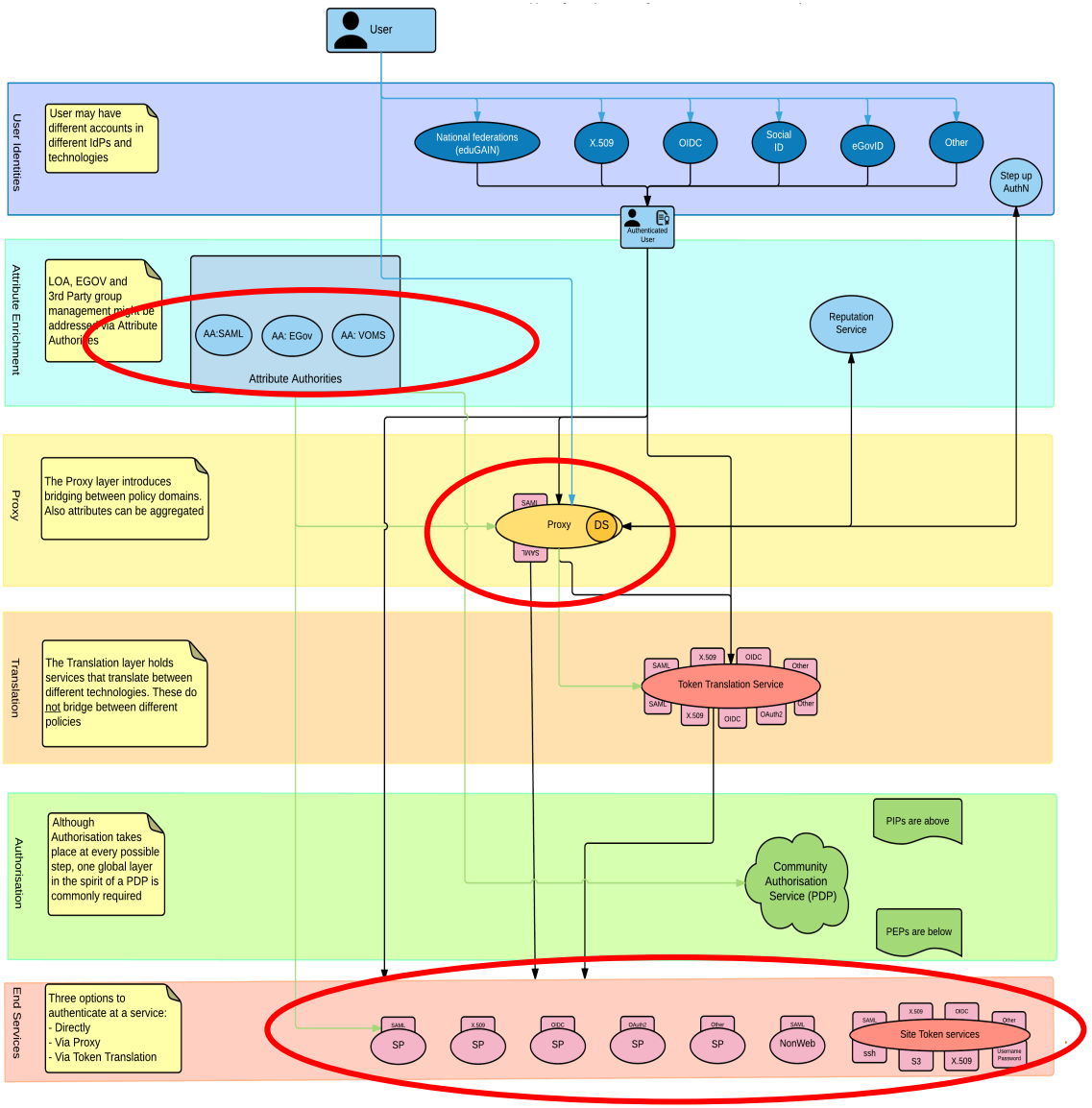
- Syntactic and semantic harmonization of group membership information
- Scoping of group membership information:
  - Specify the scopes where the identified group membership information is valid.
- Group membership and role information
  - Use the eduPersonEntitlement attribute
  - Group hierarchies



Attribute Aggregation

https://goo.gl/lQd3Rt

- Necessary when gathering attributes from more than one source
- Push vs Pull model
- Persistent unique identifiers and record/account linking
- Where attribute aggregation should take place?
- Attribute filtering and harmonization



Next steps

- Documents open for comments until the end of Feb
  - Accepting comments in the Google docs and the AARC Connect ML (https://lists.geant.org/sympa/subscribe/aarc-connect)
- Next version of the BPA due end of March

Thank you

Any Questions?

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http://aarc-project.eu/

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