



ESA EO

Federated User Management

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ESA EO Identity Management Functions

Authentication

Single Sign On for all Web applications with inheritance of User community between Service Providers.

Authorization

Exchange of authorization statements for granting user access to the EO resources.

User Registration

Acquiring user's identity information before allowing user to login.

Password Recovery

The user is able to self recover a forgotten password autonomously.

Secure Storage

Storage of sensitive identity information into secure registry via encryption.

User's Administration

Self users administration of key profile information. More advanced administration functions for IM administrators.

Security Enforcement

Password strong security enforced upon registration and password management.

Auditing

Auditing of user privileges, user access to resources, resource utilisation.

Reporting

Reporting of user information for statistical utilisation via StatRep.

Authentication for Java Applications

Used to enable EOLI authentication.

Easy Deployment

Virtual Environment with ready to use components.

IT Redundancy

Geographically distributed for authentication infrastructure.

ESA EO Identity Management Evolution

Authentication

Authorization

User Registration

Password
Recovery

Secure Storage

User's
Administration

Security
Enforcement

Auditing

Reporting

Authentication
for Java

Easy
Deployment

IT Redundancy

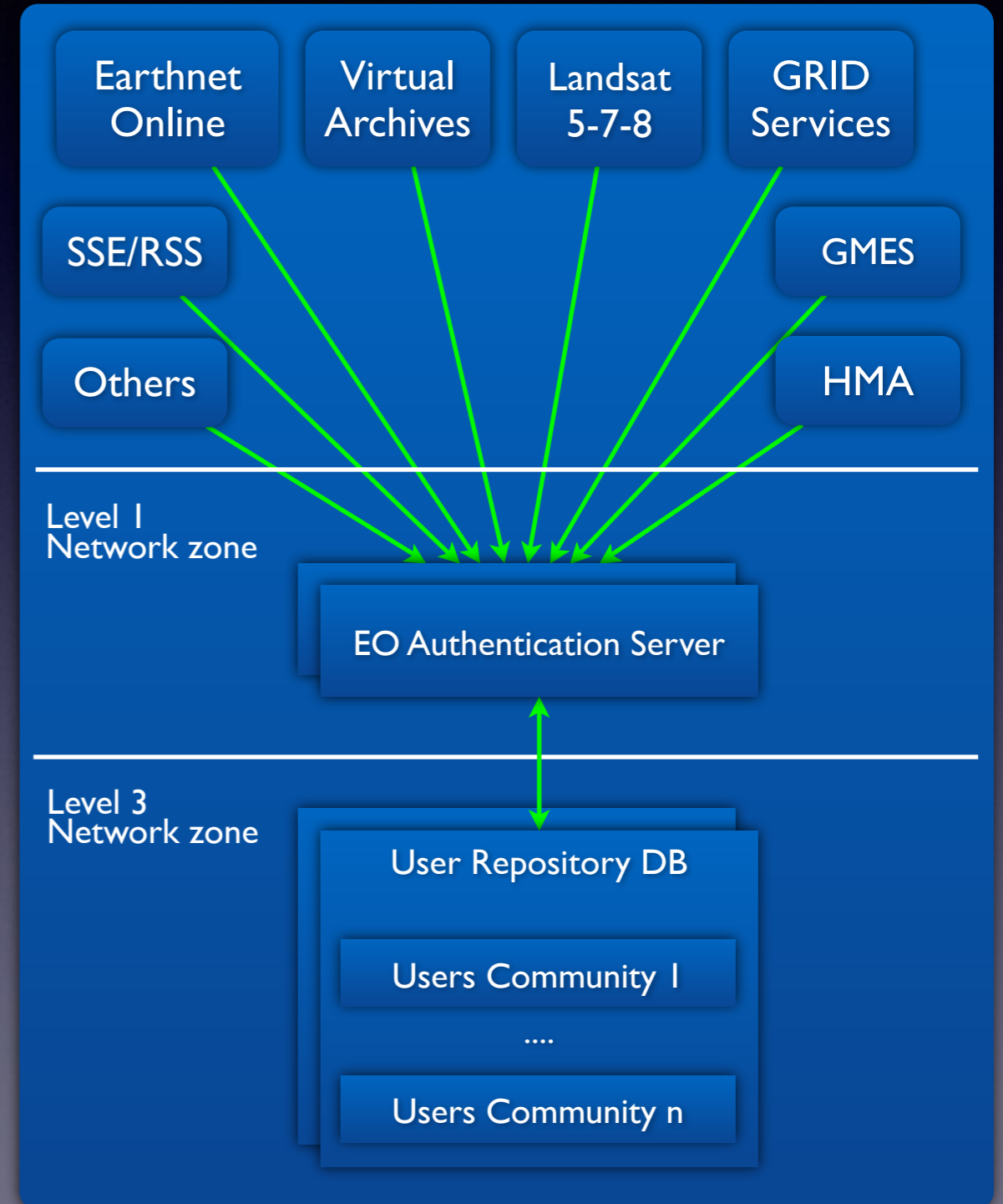
Internal ESA EO Federation:
ECP, STS,
Attribute Authority
FIM management

Short Term
Inter federation
ESA joining
IDEM/EDUGAIN

Mid/Long Term
Space Identity Management
Federation

ESA EO SSO Today

<p>~15 Applications (Service Providers) fully integrated</p>	<p>Earthnet Online Virtual Archives RSS Services SSE Services Grid Services Landsat 5-7-8 data CDS V2 HMA DAIL Others</p>
<p>Single authentication server connected to single users repository</p>	<p>Security implemented by separated security zones as for ESA Directives</p>
<p>Ongoing/Planned</p>	<p>Sentinels CDS v3</p>



Problem areas addressed by Identity Federation

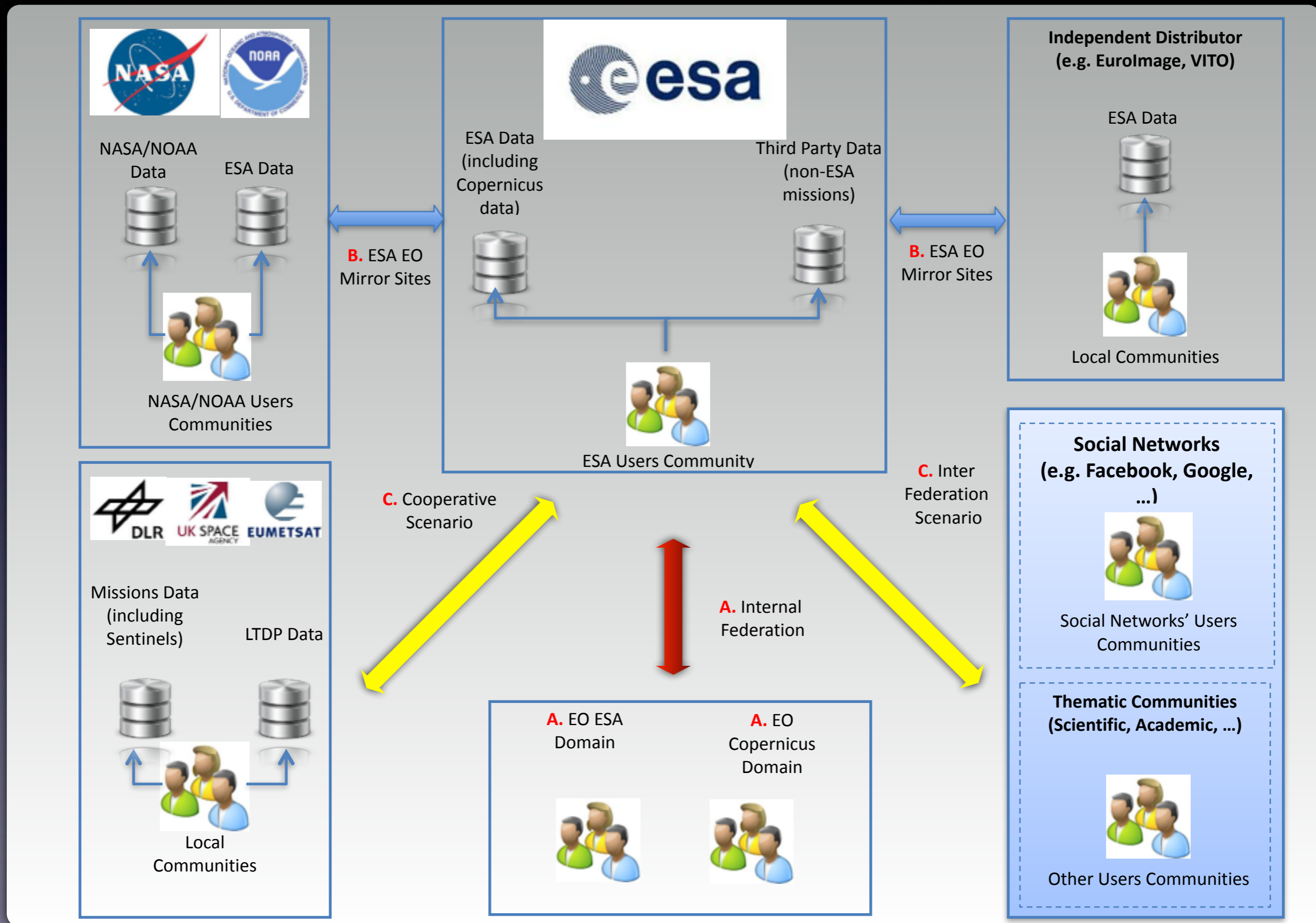
- ESA EO **Internal Federation** (e.g. ESA Copernicus, etc.)
- ESA EO **Mirror Sites**:
 - ESA data distributed by 3rd parties (e.g. Nasa, VITO)
 - ESA distributing other organisations' data
- **Cooperative Scenario** amongst federation partners:
 - Sentinel data access
 - Cooperative LTDP access
 - Exploitation Platform
- Accepting **Social Network** Users (e.g. OpenID)

Why Federation is important?

It is a **Key enabler for** *Federating users communities belonging to different organisations (e.g. space agencies) to easily share EO data/services by allowing cross authentication and authorization.*

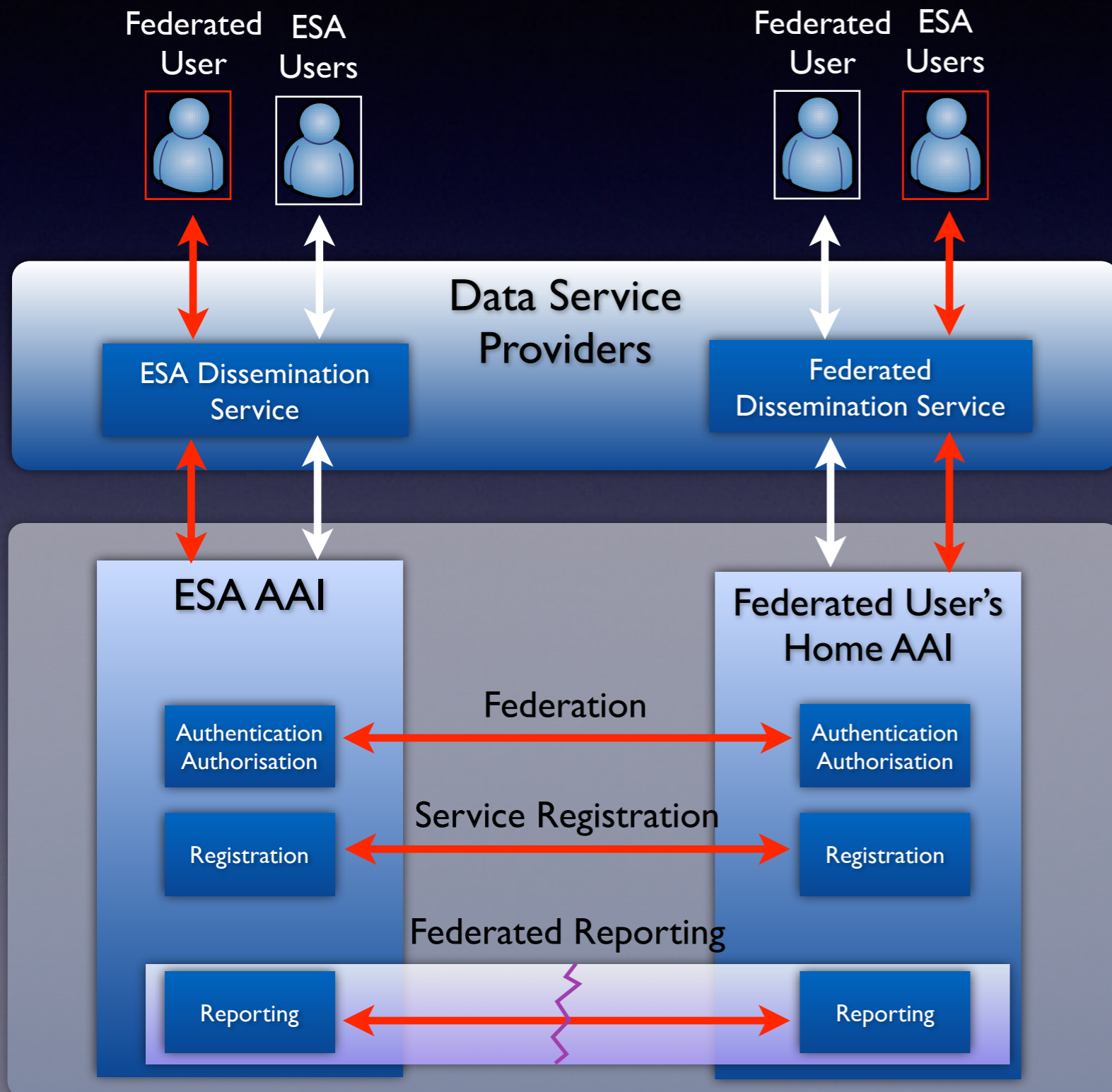
- Users management in charge of the Home Organizations:
 - ESA manages/authenticates ESA's users, Nasa manages/authenticates Nasa's users
 - Organizations accept users authenticated by federation members
- Authorization policy defined by the organizations owing the data
- Authorization process implemented & managed by the organizations supplying the data/services

Federation Context



Cooperative Scenario

- Organisations provide their own data and services to any federation members
- Data Policy Agreements established within the federation and implemented via authorisation.
- Users registered with any federated organisation can access data of any other federated members if authorised
- Users always authenticate via their own organisation
- Users' access Reporting available to Federation members
- Each Federated organisation manages its own:
 - AAls Infrastructure
 - Users relationship
 - Users registries



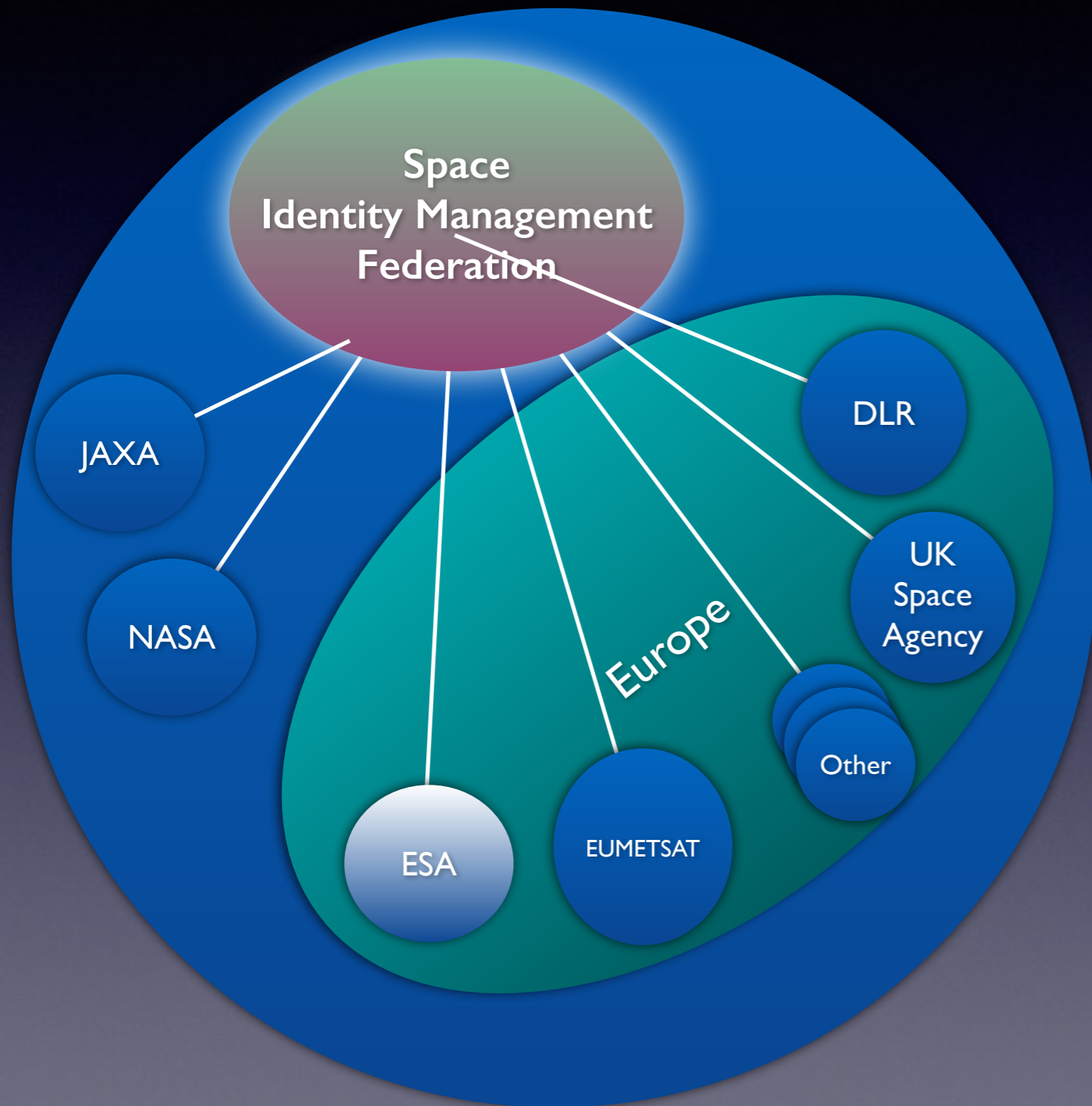
The ESA-FIM4R Vision

Federated Identity Management for Research Collaboration

addresses the challenge of scientific laboratories and research organisations of making huge amounts of data accessible by expanding user bases in dynamic collaborations that cross organizational and national boundaries.

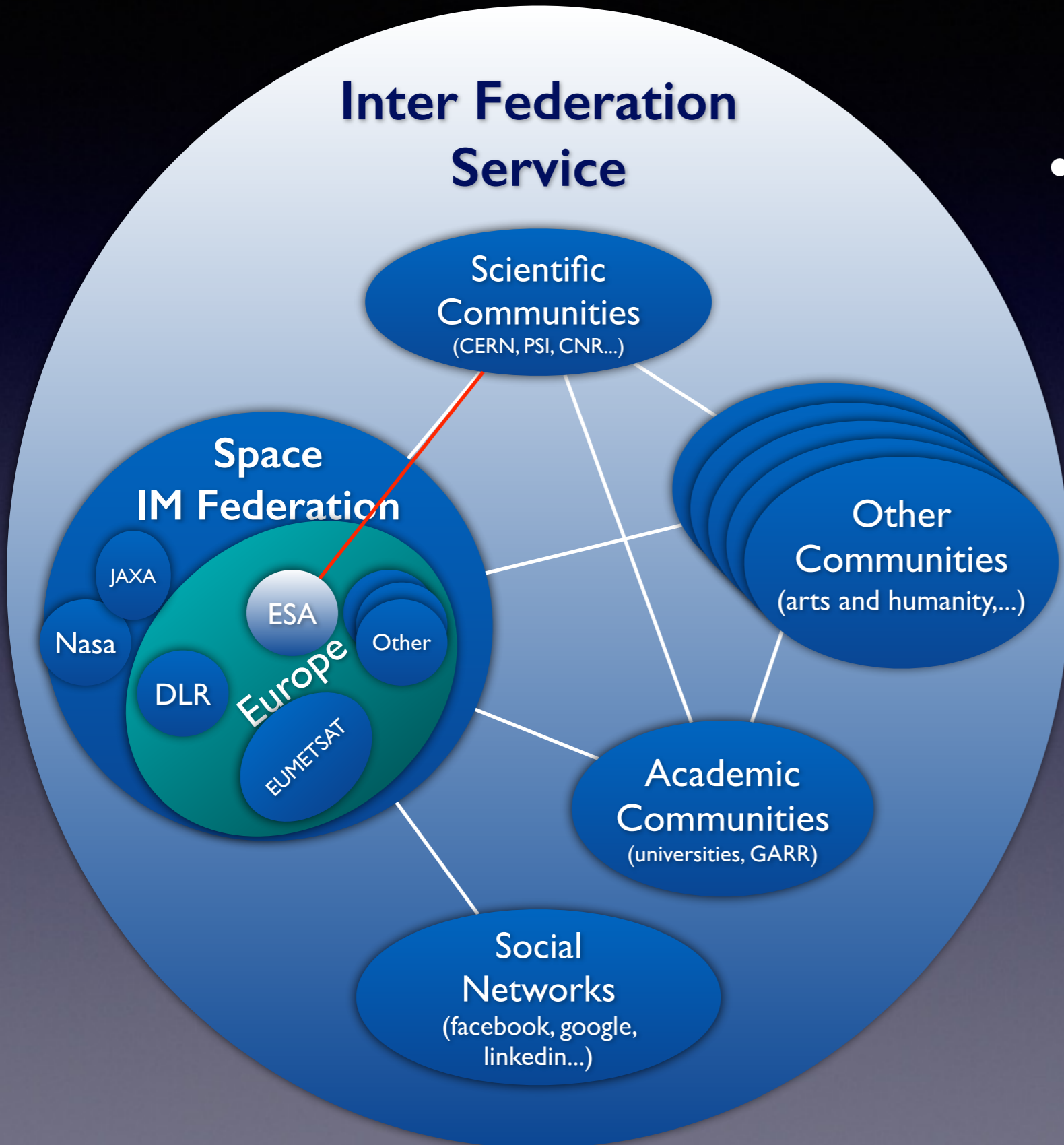
- Objectives are:
 - Provide a **common policy and trust framework** for Identity Management based on existing structures and federations either presently in use by or available to the space communities.
 - Provide users with **unique electronic identities** authenticated in multiple administrative domains and across national boundaries that can be used together with community defined attributes to authorise access to digital resources
 - Establish collaboration with European Space organisations and industry to built a Space FIM

Space Identity Management Federation Context



- Single Sign On for any service supplied by federated space organisations
- Starting with European Organisations
- **Interoperability** of users' among different space organisations
- Easy access to data and services offered by federated space organisations
- Expanding users access to EO services with no overhead for user management
- Assure the level of trust among space federation partners
- Shorter time-to-market for new services deployment within the space federation

Inter Federation Context



- Extends the already mentioned federation benefits one level more by joining existing federations.
- How to join:
 - Be a federation: **Space IM Federation**
 - **Join an existing federation:**
 - Scientific
 - Academic
 - Social Networks
 - Users can access data with their google/facebook/linkedin accounts
 - Users don't need to remember their specific credentials
 - Level of trust not assured

Conclusions

- Federated Identity Management technology creates opportunities:
 - Provides technical solutions for cooperative scenarios
 - Enable Organisations to increase data distribution via a simplified user access
 - Increase data exchange and collaboration with international partners
- Technology is mature for building a Space IM Federation

Next Steps

- Kick-off FIM internal project for building the baseline for Identity Management Federation:
 - Design and implementation building blocks for FIM
 - Establish Internal ESA EO Federation (e.g. Copernicus, Multi Mission, Earth Explorer,s etc)
 - Build capabilities to join existing federations (e.g. Joining IDEM/ EDUGAIN)