Gefördert durch

Bundesministerium für Wirtschaft und Klimaschutz

aufgrund eines Beschlusses des Deutschen Bundestages

Gaia-X FEDERATION SERVICES GXFS

Gaia-X Federation Services

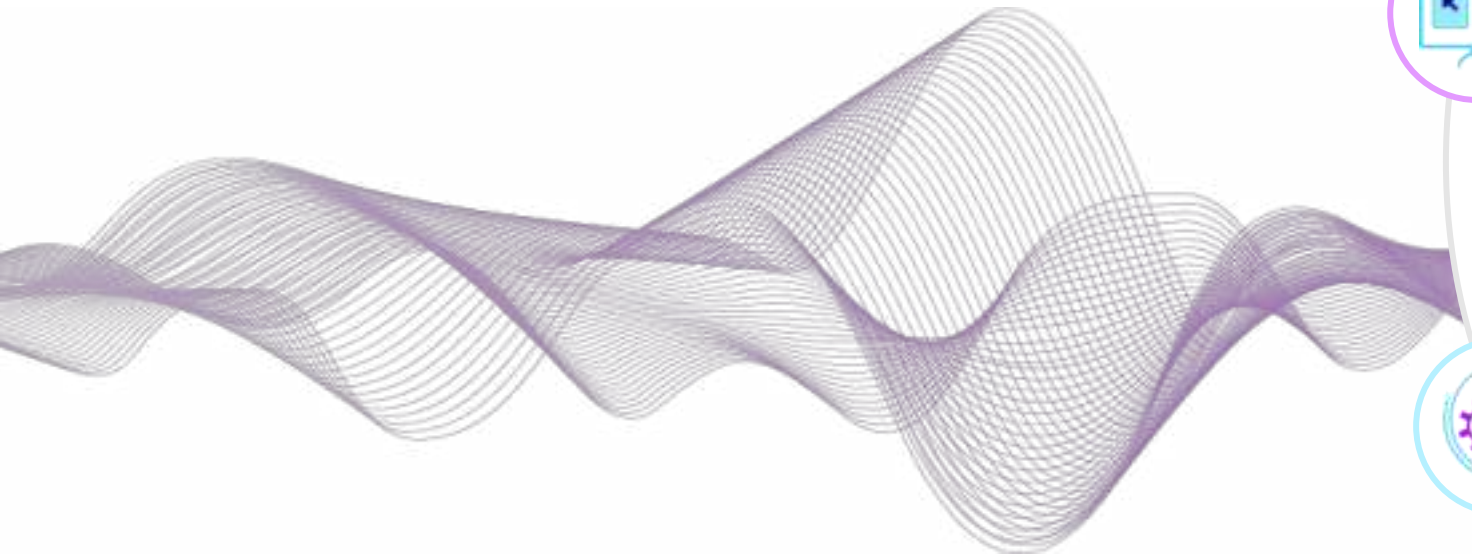
Emma Wehrwein

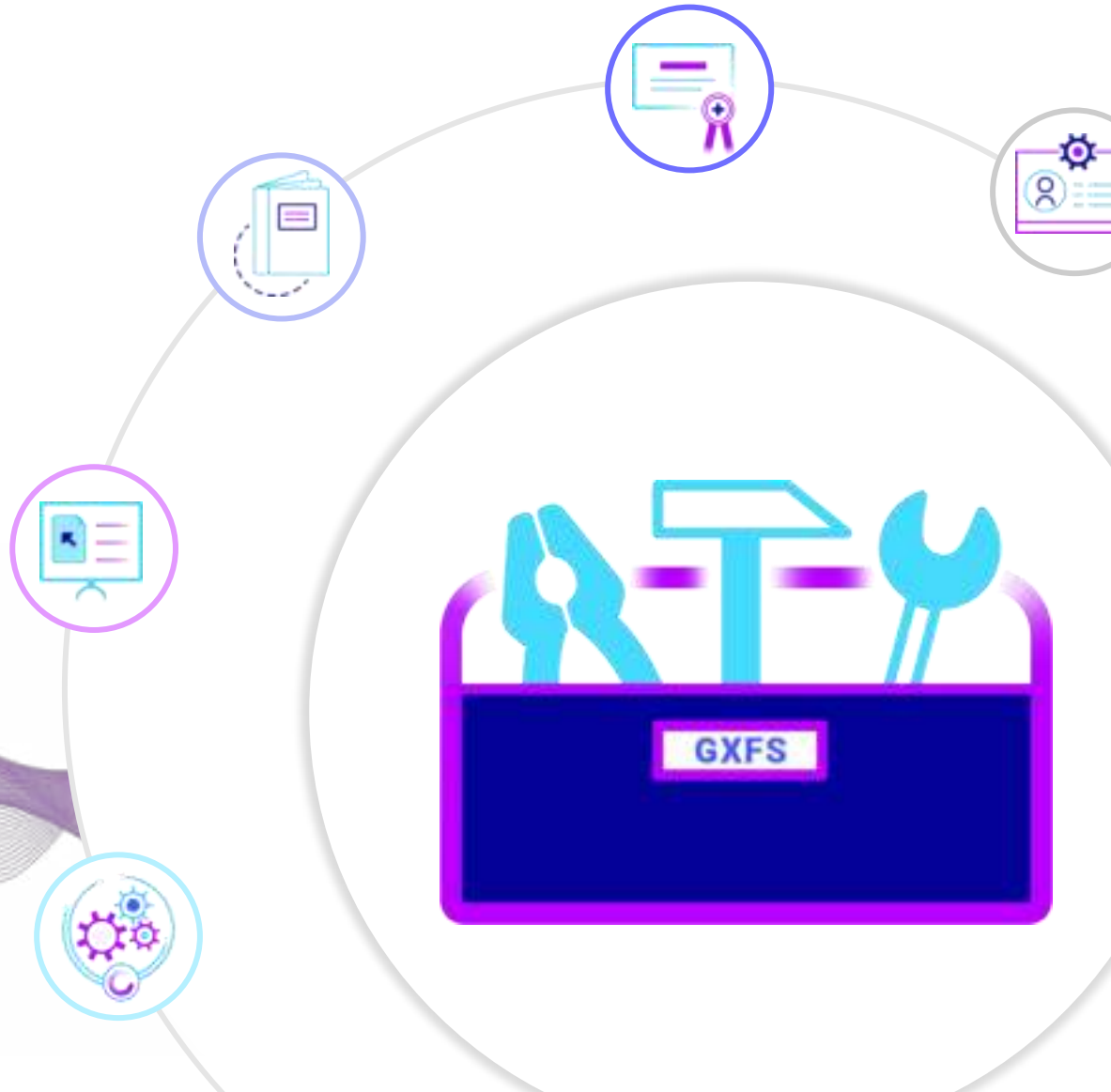
Gaia-X/GXFS Project Manager at eco Association of the Internet Industry

13 September 2022

Gaia-X
FEDERATION SERVICES
GXFS

Federation Services & Data Spaces





Definition Federation and Federation Services

- Federation
  - The conceptual model of Gaia-X enables and promotes the creation of the so-called Gaia-X Federations as a conceptual component.
  - Such Federations are self-determined ecosystems, where individual Participants join. A Federation refers to a loose set of interacting Participants that directly or indirectly consume, produce, operate or provide related Services Instances.
- Federation Services
  - The Federation Services are to be seen as the implementation of a toolbox – providing for the minimum technical requirements to empower a Federation to become operational. The first key areas are:
    - Identity and Trust
    - Federated Catalogue
    - Data Sovereignty Services
    - Compliance Services

https://gitlab.com/gaia-x/technical-committee/federation-services/federation-services-core

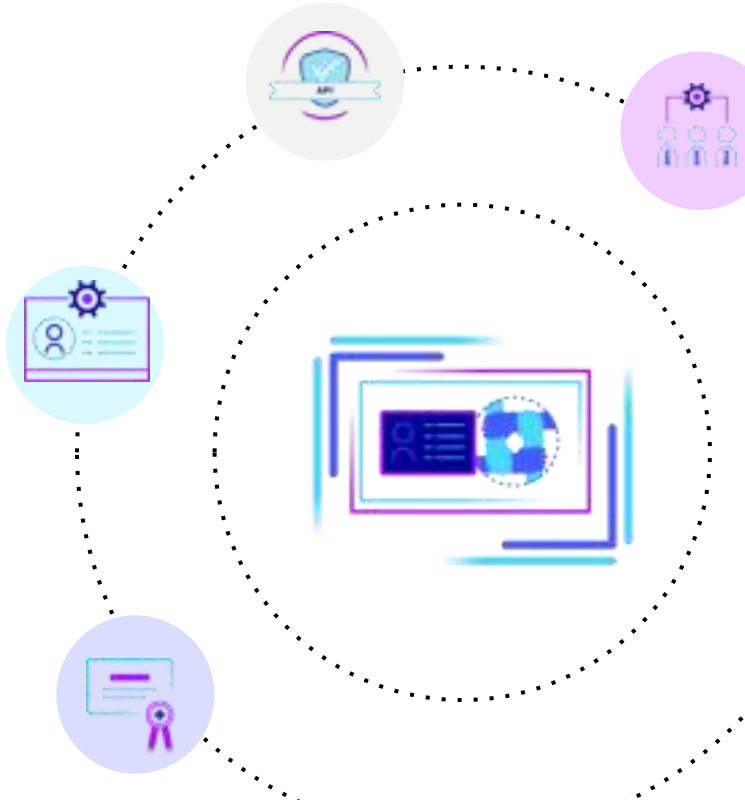
https://gaia-x.eu/publication/gaia-x-federation-services-gxfs/

Alignment of Gaia-X Federation Services to the key principles

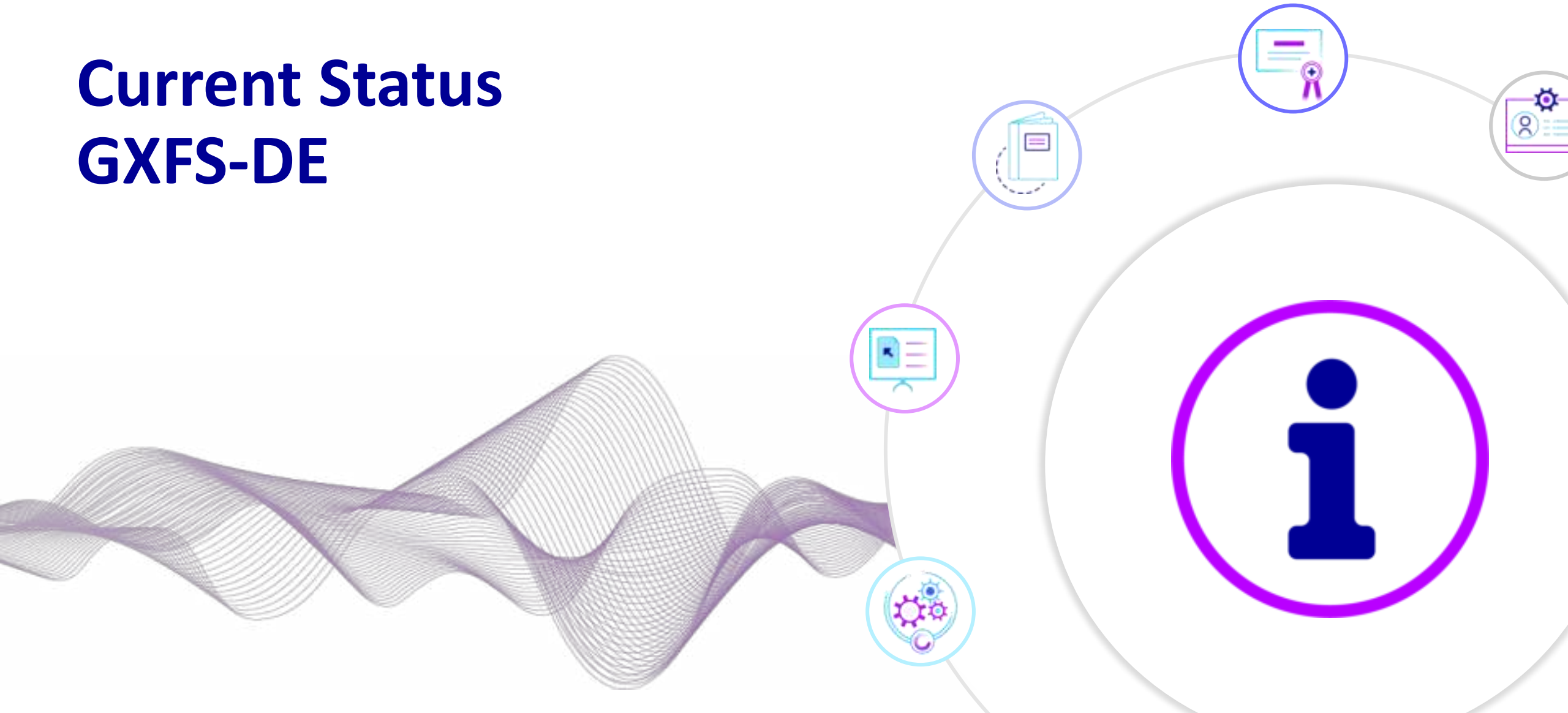
Requirement	Relation to the Federation Services
Interoperability	• The Federated Catalogues ensure that Providers offer services through the whole technology stack. The common Self-Description scheme also enables interoperability. • A shared Compliance Framework and the use of existing standards supports the combination and interaction between different Resources. • The Identity and Trust mechanisms enable unique identification in a federated, distributed setting. • The possibility to exchange data with full control and enforcement of policies as well as logging options encourages Participants to do so.
Portability	• The Federated Catalogues encourage Providers to offer Resources with transparent Self-Descriptions and make it possible to find the right kind of service that is "fit for purpose" and makes the interaction possible. • Common compliance levels and the re-use of existing standardssupports portability of data and services.
Sovereignty	• Identity and Trust provide the foundation for privacy considerations as well as access and usage rights. Standards for sovereign data exchange enable Usage Policies. The Self-Descriptions offer the opportunity to specify and attach Usage Policies for Data Resources.
Security and Trust	• The Architecture and Federation Services provide definitions for trust mechanisms that can be enabled by different entities and enable transparency. • Sovereign Data Exchange, as well as Compliance concerns address security considerations. The identity and trust mechanisms provide the basis. The Federated Catalogues present Self-Descriptions and provide transparency over Service Offerings.

Federation Services and Data Spaces

- Federation Services
  - On the lowest level, Federation Services can help to organize a data space in terms of participant and service management.
  - Federation Services can help to
    - Find Data Services
    - Contract Data Services
    - Report Data Exchanges
- Data Spaces
  - Specific Data Space Management Services
  - Technical Enforcement of Usage Policies where applicable
  - Harmonized and interoperable Data Connecter Services
  - …



Current Status
GXFS-DE



State of play GXFS

- What is GXFS?
  - Minimum set of services, necessary to operate Gaia-X Federations
  - Output will be technical specifications and baseline open-source code
  - After initial promotion continuous improvement through community-driven work on the open-source code via GitLab
  - The Gaia-X Association will maintain the developer repository during initiation
  - Further hand over to Eclipse Foundation as Community Project is planned

- What is GXFS not?
  - A ready to go product
  - A set of services operated and monitored by the Gaia-X Association

GXFS Deliverables by Q3/2022

Federated Catalogue

Repository where participants can find other participant's information, service offerings in the shape of self-descriptions

- Core Catalogue Features
- Self-Description of Participants & Services

Portal & Integration

The Portal serves as a sample integration layer

- Portal
- Orchestration

Identity & Trust

Based on the Self-Sovereign Identity (SSI) Concept these services provide the ability to handle decentralized identities and digital trust establishments

- Authentication/Authorization
- Organization Credential Manager
- Personal Credential Manager
- Trust Services

Sovereign Data Exchange

These services enable transparency and control over how data is used

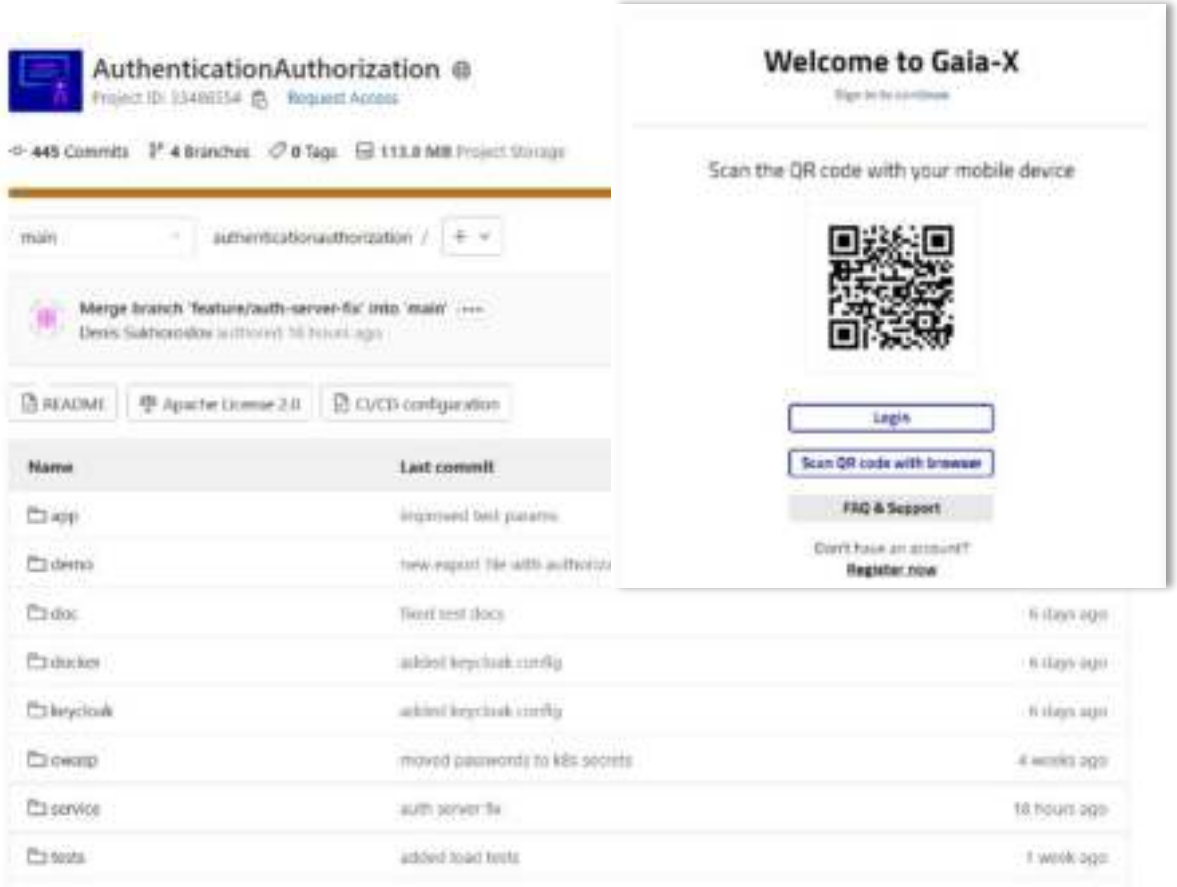
- Data Contract Transaction Service
- Data Exchange Logging Service

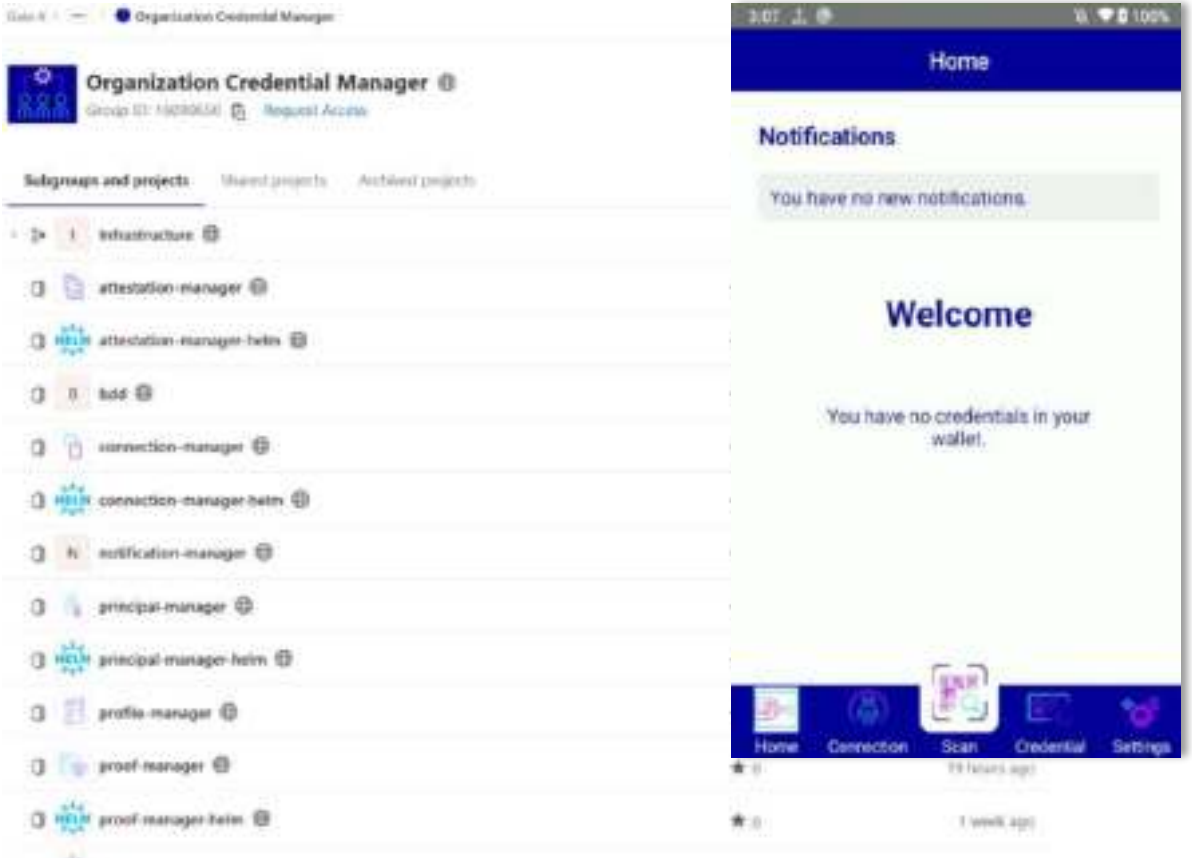
Compliance

Legal Regulation & Policies framework

- Onboarding and Accreditation Workflow
- Continuous Automated Monitoring
- Notarization Service API

GXFS Software Components as OSS @ Gaia-X GitLab





https://gitlab.com/gaia-x/data-infrastructure-federation-services

www.gxfs.eu

Gaia-X
FEDERATION SERVICES
GXFS