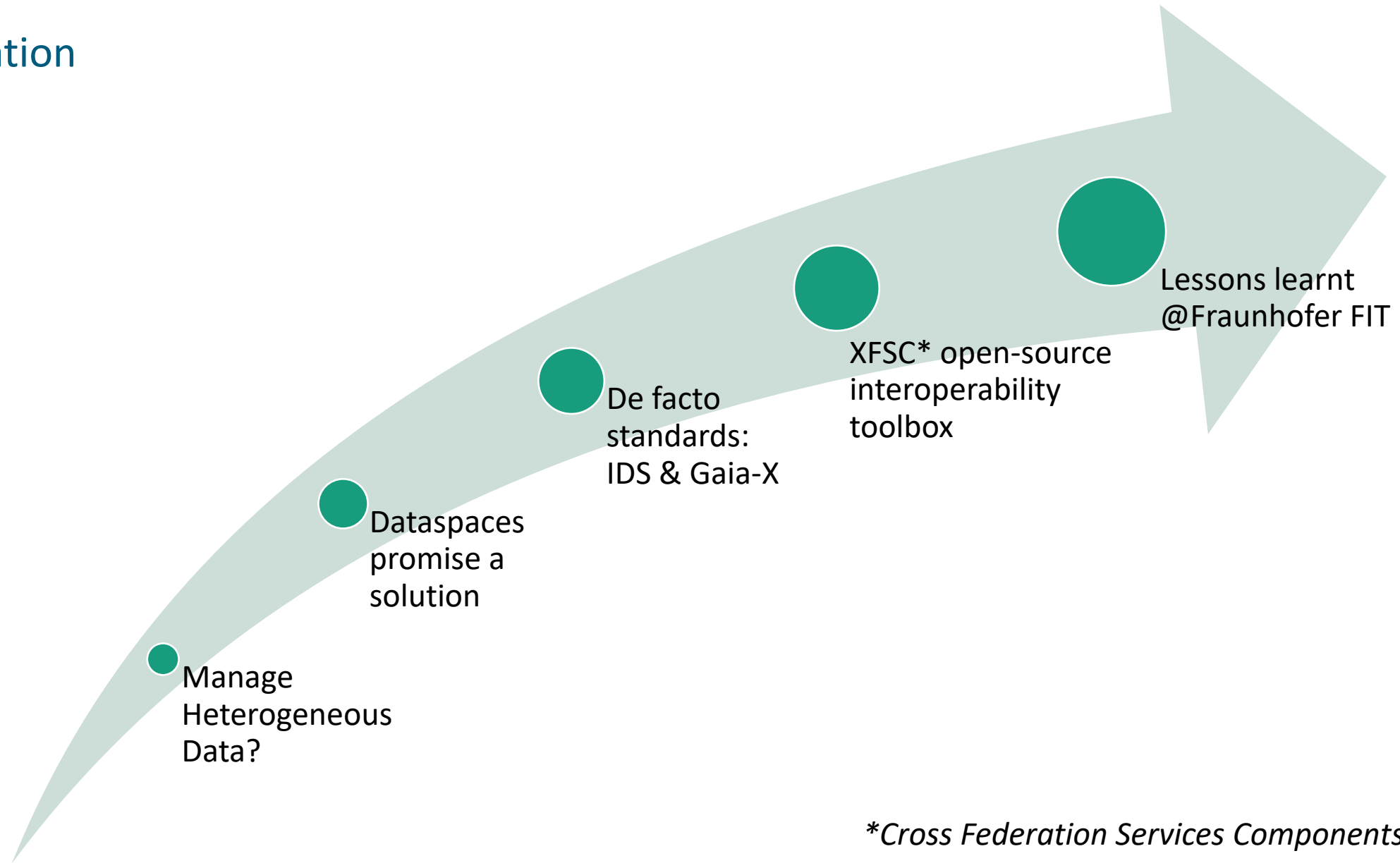


Johannes Theissen-Lipp, Ahmad Hemid, Christoph Lange, Christina Gillmann

Towards a Federated Data and Service Catalogue

Position Paper

Motivation



**Cross Federation Services Components (Eclipse)*

Methodology

XFSC Open-source Interoperability Toolbox



Lessons Learnt From a Wide Variety of Projects



A Federated Data and Service Catalogue

- Life sciences
- Healthcare
- Manufacturing
- Logistics
- Culture
- Tourism

The Eclipse XFSC

Cross Federation Services Components

Software for creating federated systems that connect participants

Federations = Interconnected ecosystems

XFSC consists of components (microservices)*

- Identity, Credential, Access Management and Trust
- Decentralised Catalogue and Contracting Service
- Orchestration & Monitoring
- Portal

*snapshot of June 2024

Towards a Federated Data and Services Catalogue

Result of our experiences and lessons learnt

- IDS, Gaia-X, NFDI, Mobility Data Space, NAPCORE, German Datenraum Kultur, Semantics in Dataspaces, ...

6 Building blocks + concrete proposals

| Individual Application Profiles | Metadata Service Offering | Trustable Management | Interoperable Data Sharing | Towards Merging Ecosystems | Metadata Broker Provision |
|--|---|--|--|--|--|
| <ul style="list-style-type: none">• Sets of metadata elements, policies, guidelines• Represent & validate use cases | <ul style="list-style-type: none">• Publish metadata, not data• Secure and sovereign sharing | <ul style="list-style-type: none">• Digital signatures from certified organisations• Trust and security | <ul style="list-style-type: none">• Reuse through IDS and Gaia-X standards• Enhanced semantic mapping | <ul style="list-style-type: none">• Connect multiple ecosystems• Work towards seamless transition | <ul style="list-style-type: none">• Discover available metadata assets• Make the XFSC usable in the EDC ecosystem |
| e.g. SHACL | Dataspace Protocol | Trust chains | e.g. RDF Mapping Language (RML) | Clear interfaces & mappings | Repository fork |

Conclusion: Towards a Federated Data and Service Catalogue

Need: Manage heterogeneous data & services

Baseline solution: Dataspaces and the Eclipse XFSC

Challenge: Practical insights from various projects

Proposal: Six enhancements → Federated Data and Service Catalogue

Next: Drive implementation with partners

Contact

Johannes Theissen-Lipp, M. Sc.
Data Science and AI – Data Management
johannes.theissen-lipp@fit.fraunhofer.de

Fraunhofer FIT
Schloss Birlinghoven 1
53757 Sankt Augustin
www.fit.fraunhofer.de



Fraunhofer Institute for Applied
Information Technology FIT

