FACIS FAP-DCM

Decentralized Catalogue Management – Multi Catalogue Service and Resource Listings

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Status: *Idea / **Draft** / In Review / In Implementation / Released*

This FAP enables trusted, cross-catalogue discovery and representation of digital service and resource descriptions for multi federations.

Purpose & Value

This FAP addresses one of the key challenges in federated ecosystems: fragmented and siloed service catalogues. Its purpose is to enable **discovery, comparison, and integration of digital services** (like cloud) **and resources** (like product pass) **across multiple catalogues** without centralising them.

By introducing a **multi-catalogue abstraction layer**, it allows seamless cross-catalogue searches, service registration, and metadata harmonisation while ensuring **interoperability, transparency** and supporting **compliance requirements**.

The importance of this FAP lies in:

- **Enhancing service discoverability** across multi cloud offerings, data spaces and domains.
- **Reducing vendor lock-in** and decoupling of catalogue management.
- **Supporting sovereignty and trust** through verifiable service and resource listings.
- **Enabling scalability** for cross-border and cross-sector federations.

This FAP is essential to build a **trusted, distributed ecosystem of services**, making it easier for organisations to find, compare, and use services and resources across federated infrastructures.

Scope & Boundaries

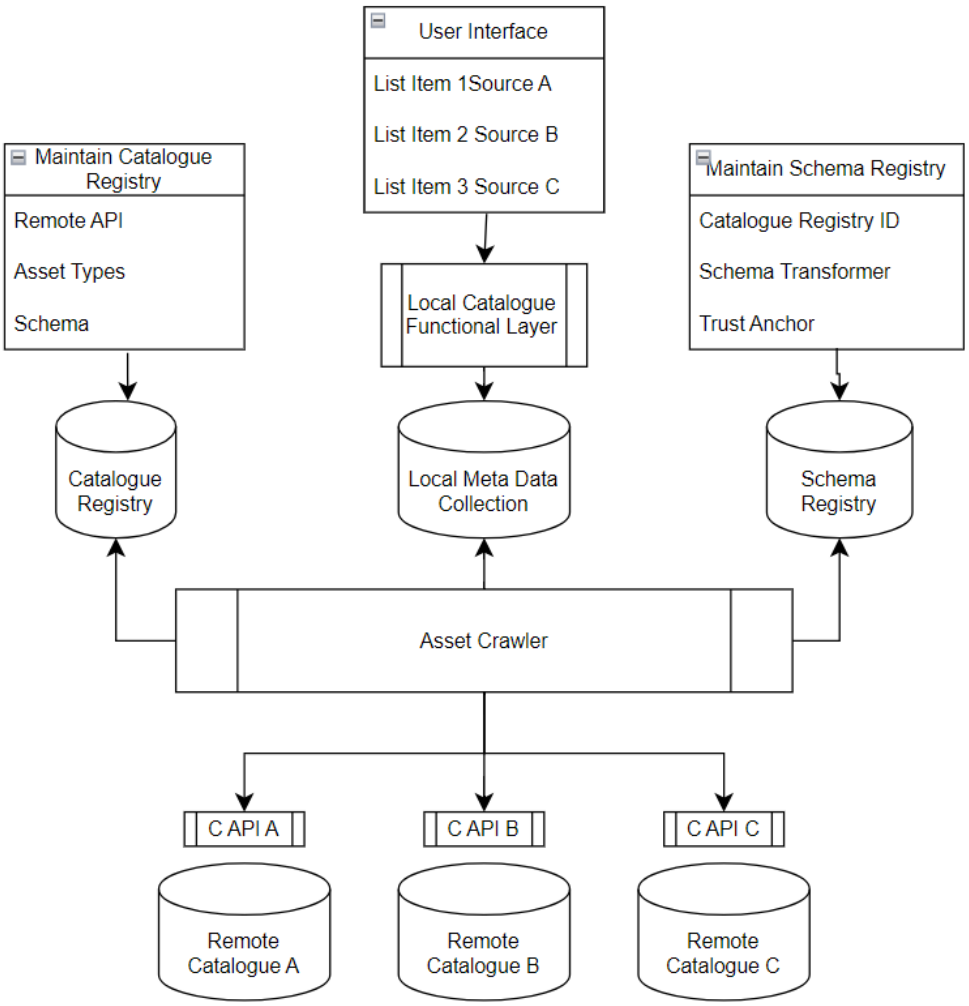
In Scope:

- Unified search across distributed service catalogues.
- Interoperable service listings and metadata exchange.
- Integration with Orchestration (ORCE) for lifecycle management (deployment hooks, updates).
- Integration with identity credential and access management (ICAM) for secure service and resource access.
- Support for cross-domain use cases.

Out of Scope:

- Data edits, updates, resynchronisation
- Schema harmonisation
- Service Instantiations
- Deep Integration

Architecture Building Blocks



Feature-FAPs:

- Asset Crawler Search & Aggregation.
- Catalogue and Schema Registry.

Micro-FAPs (examples):

- Schema Mapping: Link local schema attributes with remote schema attributes.
- Service Listing Verification: Verify claim owner against Trust Anchor.

FAP Components:

- Local Catalogue Functional layer and UI
  - Local Management of the meta data collection and User Interactions
- Catalogue Registry and UI
  - Maintain Remote Catalogue Services with relevant attributes like API, Trust Anchor, Schema types, Query languages ,...
- Schema Registry and UI
  - Mapping of local Schema with remote schema per Catalogue entity

- Asset Crawler
    - On demand remote crawling of available remote descriptions and transformation into local schema representation with storage in local meta data collection

XFSC Services:

- **CAT** (Catalogue): local data container for services and assets
- **ORCE** – orchestration of FAP service.
- **AAS** – authentication & authorisation service.
- **OCM/PCM (Credential Managers):** For participant and principal credentials.

Standards & Protocols

- **W3C DID/VC:** Decentralized identifiers and verifiable credentials for asset provenance.
- **OIDC4VC:** Standardized flows for credential issuance.
- **DIDComm v2:** Secure communication between participants.
- **Gaia-X Trust Framework:** Compliance, trust anchor, and catalogue integration.
- **JSON-LD:** Linked data for standardized service metadata.
- **OpenAPI / GraphQL** – service discovery and integration APIs.
- **GDPR** – data minimisation and lawful processing of metadata.

Reuse & Variants

Cross-domain Reuse:

- Mobility: distributed fleet service catalogues.
- Health: cross-border medical data service registries.
- Supply chain: digital product pass listings.

Reusable Modules:

- Federated search abstraction layer.
- Metadata normalisation & verification service.
- Synchronisation service.

Variants:

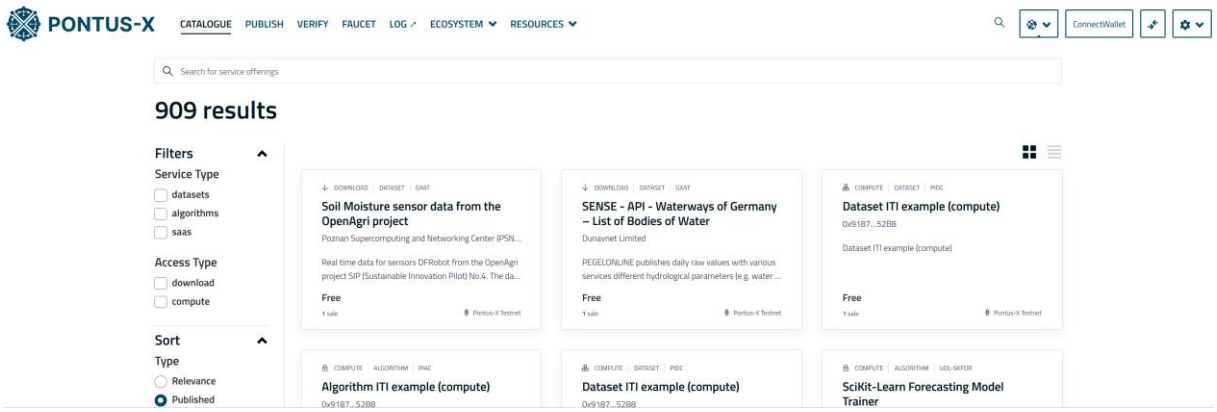
- Lightweight catalogue integration (SMEs).
- Regulated/sector-specific catalogues (finance, health).
- Hybrid: local catalogue + Gaia-X compliant synchronisation.

Next Steps & Involvement

- **Testing & QA** with existing Gaia-X aligned catalogues.
- **Pilot integrations** across 2–3 federations (see candidates).
- **Community involvement:** OSS contributors, federation operators, domain specialists.

Potential Remote Catalogues

- Pontus-X



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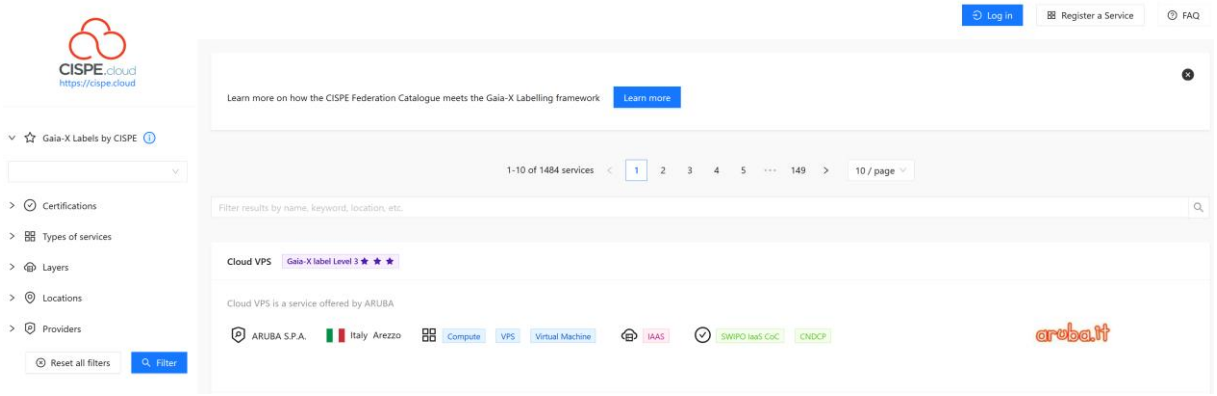

- Mobility Data Space