

FIWARE: Technology Update

16:55 – 17:25



- Stefan Wiedemann – SEAMWARE



In partnership with



FIWARE Data Space Connector

Integration of the Dataspace Protocol

Stefan Wiedemann - Senior Software Engineer & Member FIWARE TSC

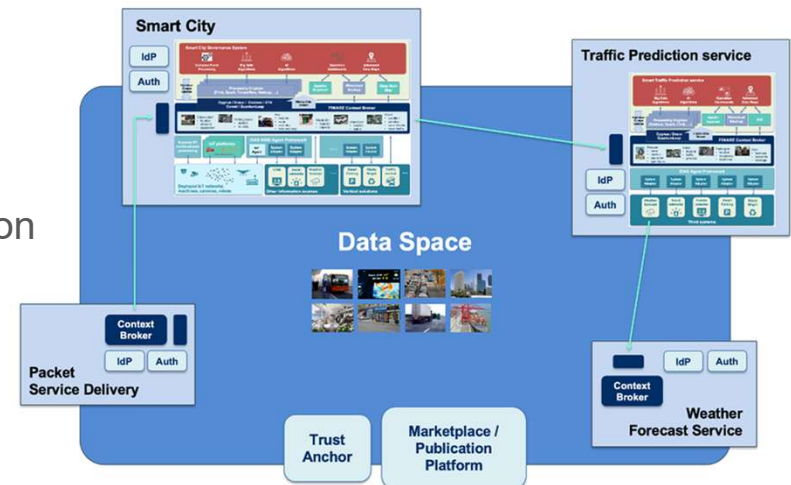


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FIWARE Data Space Connector - Vision



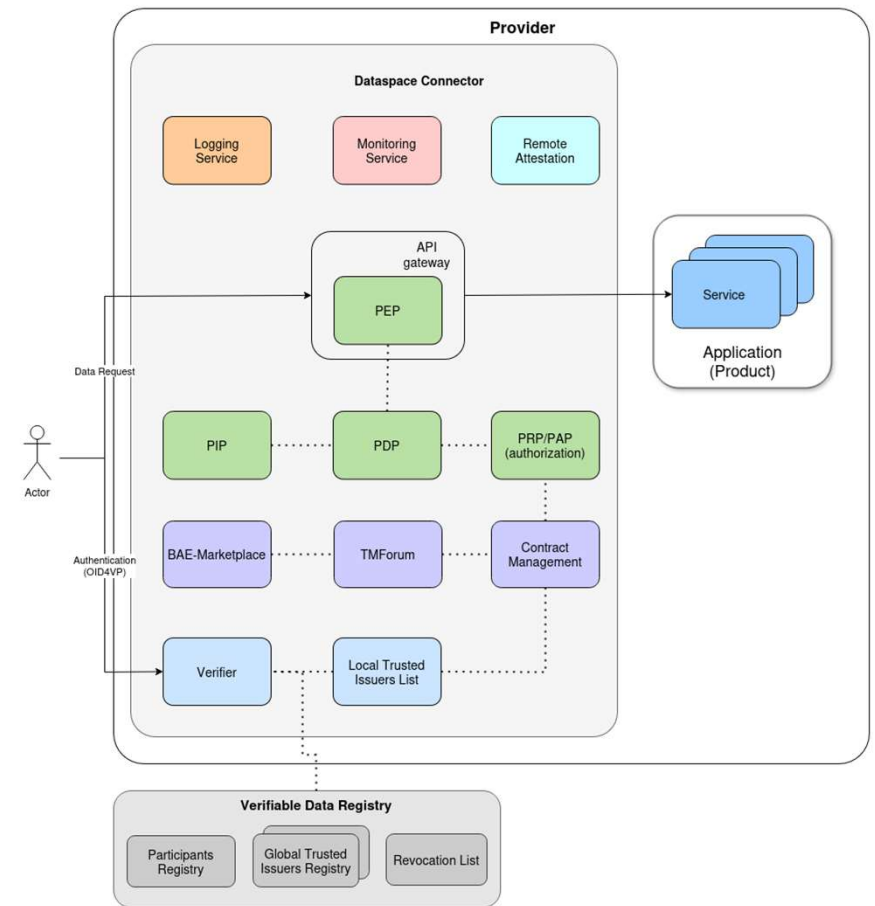
- Not just about organizations publishing data, but also about enabling application providers to offer services
 - for accessing, processing, visualizing and interpreting data
 - APIs & GUIs serving Applications directly to end users
- Not just about organizations consuming plain data, but also about enabling users of organizations to consume application services
 - natural persons as first class citizens (employees, customers)
 - devices or software agents owning identity
- Allow Organizations to extend their systems through the Dataspace in a **Trusted**, **Sovereign** and **Agile** manner



FIWARE Data Space Connector

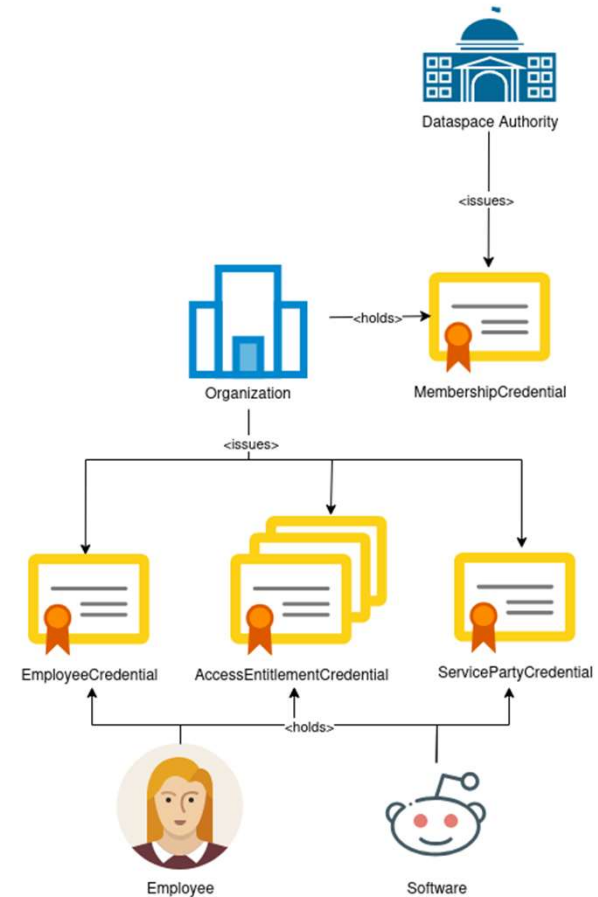


- Microservice Architecture, allowing Participants to integrate services based on their needs
- standardized Protocols and APIs
 - OpenId4VC to authenticate (EUDI Wallet RAF compliant)
 - ODRL for authorization Policies
 - TMForum APIs marketplace functionality
- established Open Source Components
 - Apisix as PEP/Gateway
 - Open Policy Agent for Policy evaluation
 - Keycloak for Credentials Issuance



FIWARE Data Space Connector - OpenId4Verifiable Credentials

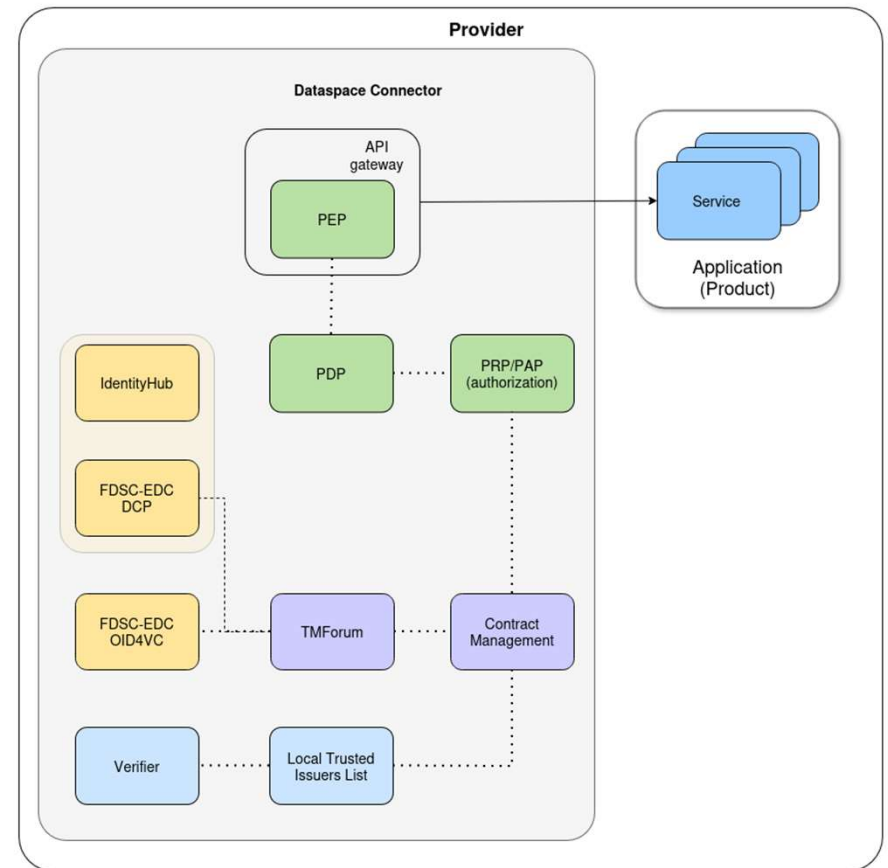
- OpenId 4 Verifiable Credentials defined by [OpenId Foundation](#)
- presentation of Verifiable Credentials based on OAuth 2.0
- allows identification of persons, devices, software agents etc. instead of pure organizational identity
- users can be entitled by their organization and act independently inside the Dataspace



FIWARE Data Space Connector - DSP Integration

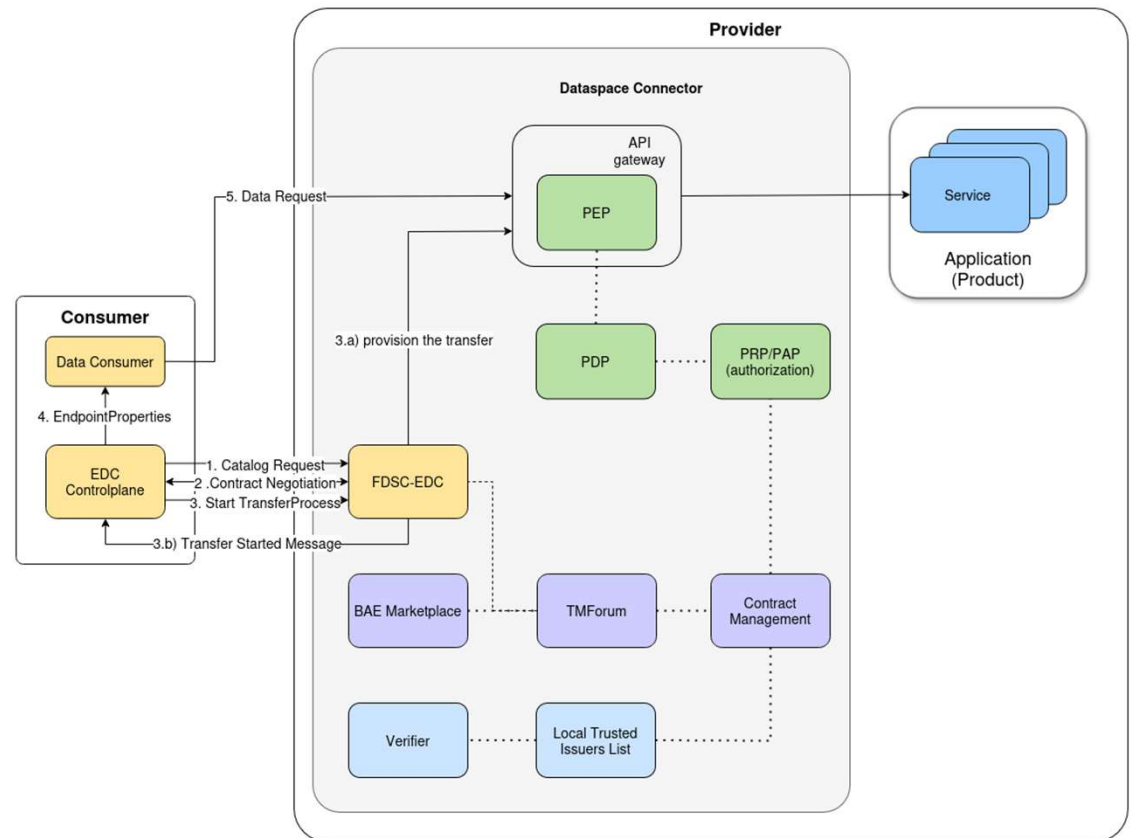


- Extension of EDC Implementation through its SPI's
 - no custom DSP implementation
 - future compatibility easier to ensure
- Separate Data Space Protocol and Decentralized Claims Protocol
 - allows the Auth-Framework to support DCP and OpenId4VP
- Storage of DSP Entities(Catalogs, Offerings, Agreements etc.) as corresponding entities in TMForum
 - automatic integration to the FIWARE DSC Contract Management



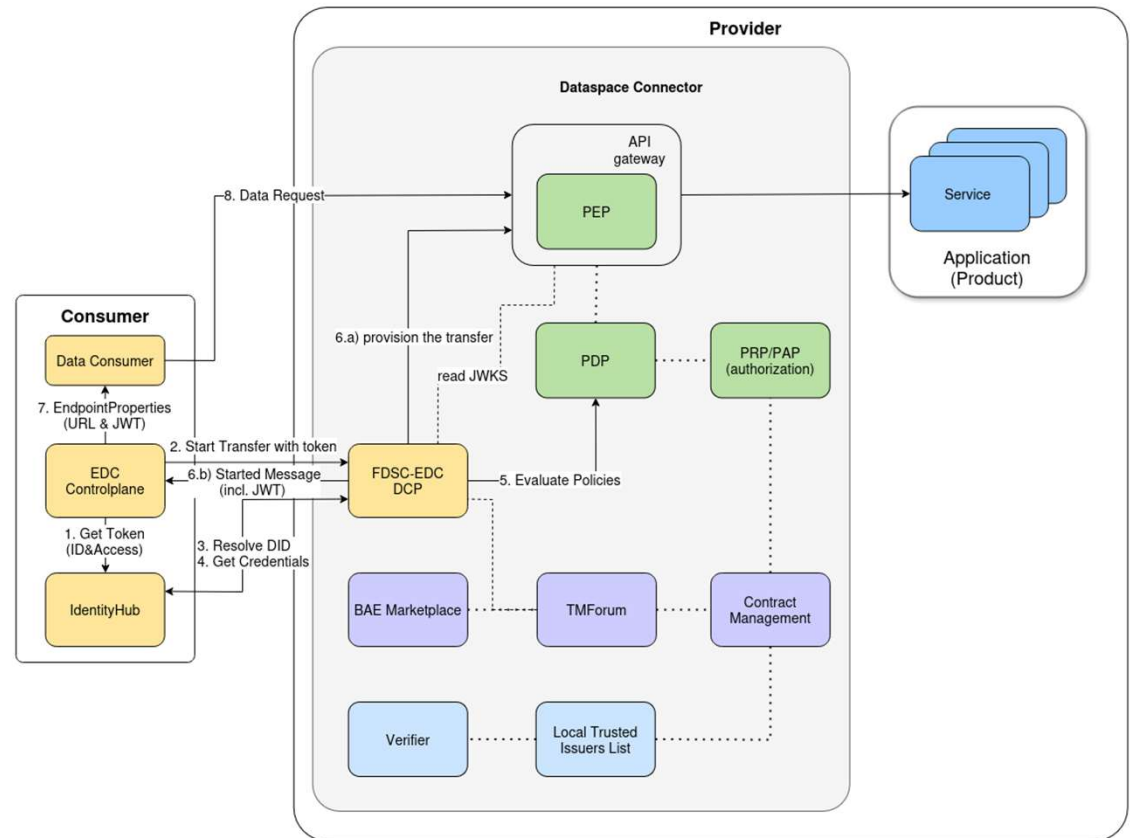
FIWARE Data Space Connector - DSP Integration

- Catalog serves information stored at TMForum - Products can be contracted through DSP or TMForum
- Contract Negotiation stored as “Quotes” in TMForum, integrating with its negotiation flow
- Transfers are provisioned at the APIGateway(acting as Dataplane) as new route
- information about the new route is delivered through Started Message
- Consumer registered as Trusted Issuer



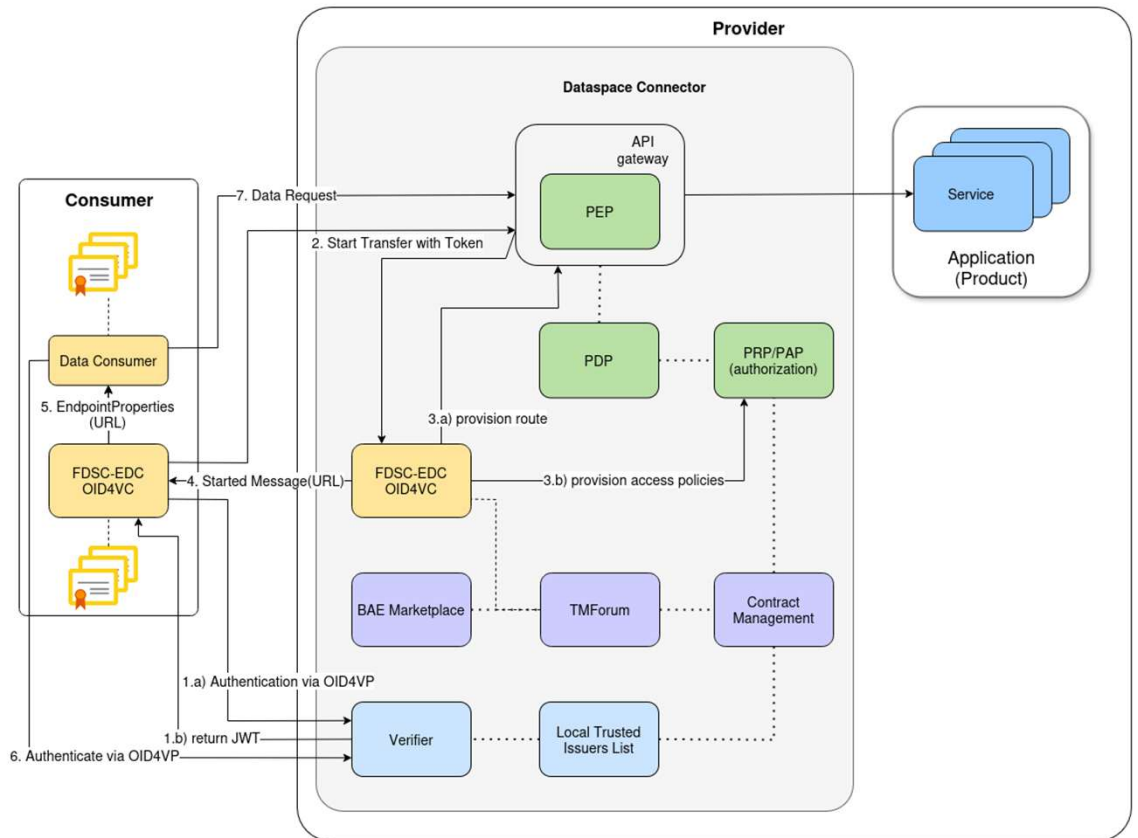
FIWARE Data Space Connector - DCP Integration

- integration of IdentityHub
- usage of the PDP for policy evaluation - addition of policy functionality at runtime
- provisioning at the APIGateway, token verification through Apisix standard mechanism



FIWARE Data Space Connector - OID4VC Integration

- Credentials hold by Connector and Data Consumer
- authentication through [OID4VP-Client-Lib](#) at Verifier
- transfer provisioned at APIGateway&PAP - policy enforcement on request
- Data Consumer Service and Connector act under their own identity
- allows usage of user-focused services, like GUI-Applications





Funding information and communication compliance



Plan de Recuperación,
Transformación y Resiliencia



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Project: DSIRE – Data Spaces Interoperability and Reusable Enablers

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- FIWARE Data Spaces:
 - <https://github.com/FIWARE/data-spaces>
- FIWARE Data Space Connector:
 - <https://github.com/FIWARE/data-space-connector>
- FDSC-EDC:
 - <https://github.com/SEAMWARE/fdsc-edc>
- Presentation:
 - <https://github.com/wistefan/presentations/tree/main/tech-x-athen>

