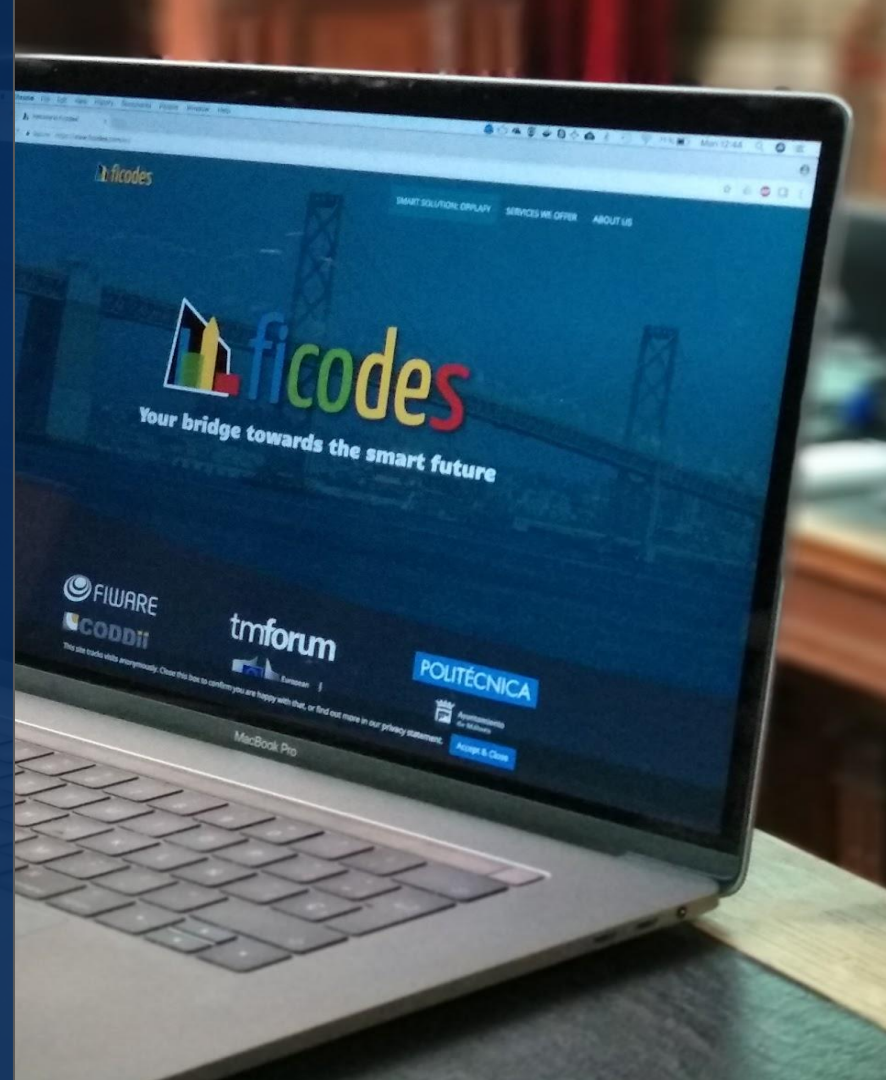




FIWARE Data Spaces

Reference Use Case

Stefan Wiedemann - Senior Software Engineer

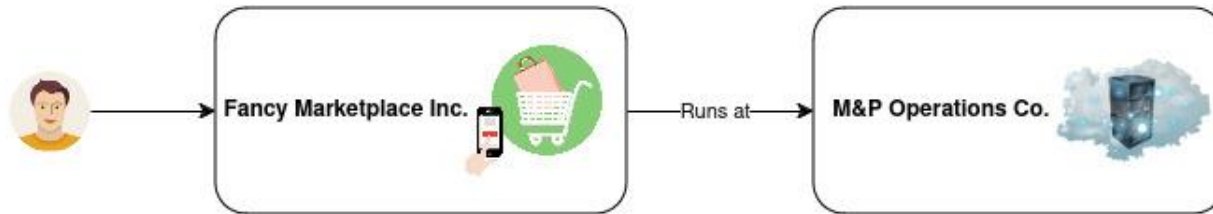


Reference Use Case

1. The Case
2. The Participants
3. Live Demo

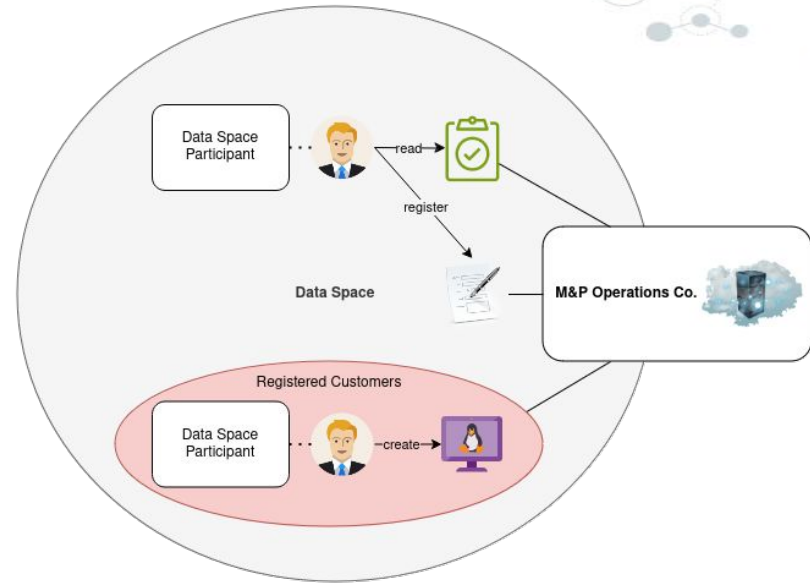
The Case

- The Company *"M&P Operations Inc."* offers solutions to host and operate digital services
- *"Fancy Marketplace Co."* is running an online-shop, selling various products to end-customers
- *"Fancy Marketplace Co."* wants to use *"M&P Operations Inc."* services to run the shop



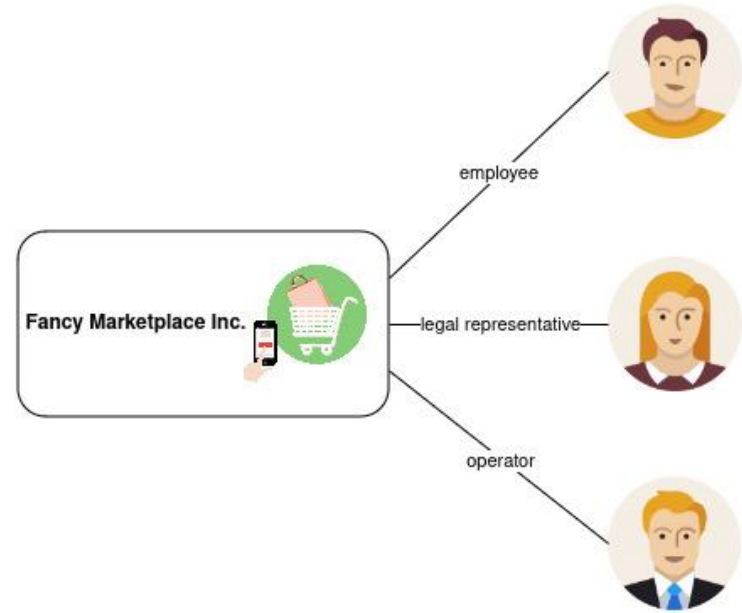
The Case

- The Company “M&P Operations Inc.” offers to participants of the Data Space:
 - energy reports about their data centers
 - allows to register as customers
- only registered customers are allowed to use the service, f.e. create Virtual Machines
- Inside the Data Space, Users can act on behalf of the Participants



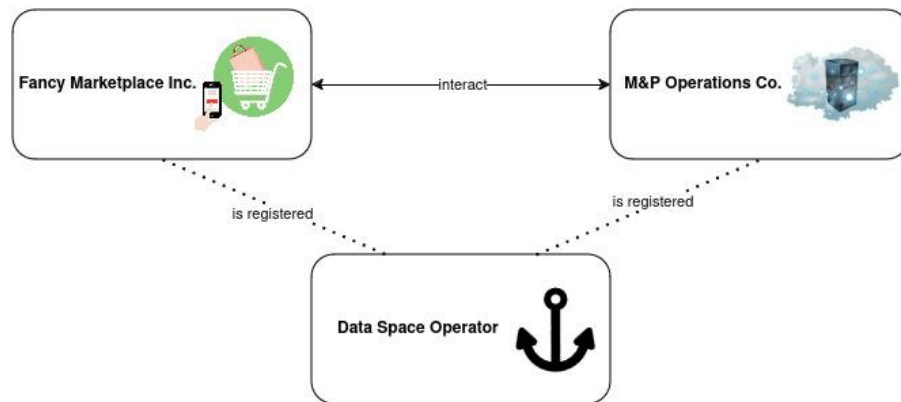
The Case

- “Fancy Marketplace Co.” wants to limit access to functionality for its employees:
 - normal employees are only allowed to read information(reports, offerings etc.) from “M&P Operations Inc.”
 - legal representatives can register the company as a customer
 - operators are allowed to actually use the offered services, for example creating a Virtual Machine



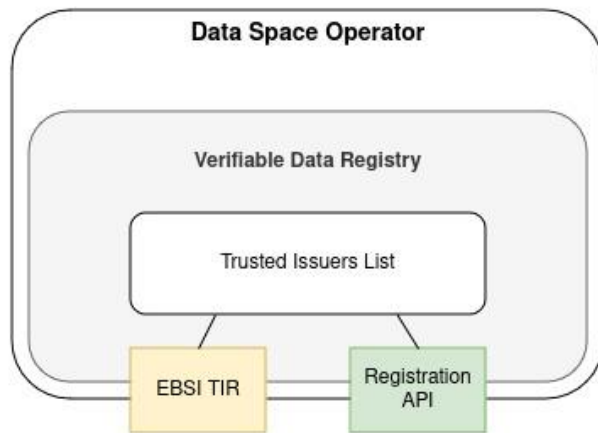
The Case

- “M&P Operations Inc.” and “Fancy Marketplace Co.” are registered as participants of the Data Space
- the “Data Space Operator” provides on-boarding functionalities and offers the [Trusted Issuers Registry API](#) as the trust anchor of the Data Space
- both companies interact under the framework of the Data Space



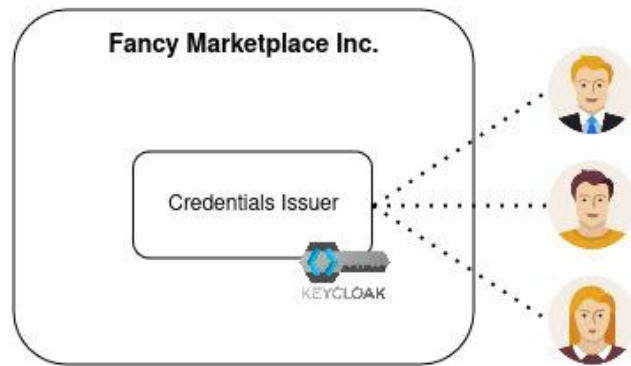
The Data Space Operator

- Responsibilities:
 - provide capabilities to identify participants - Trusted Issuers Registry
 - provide on-boarding functionality - Registration API to add new participants



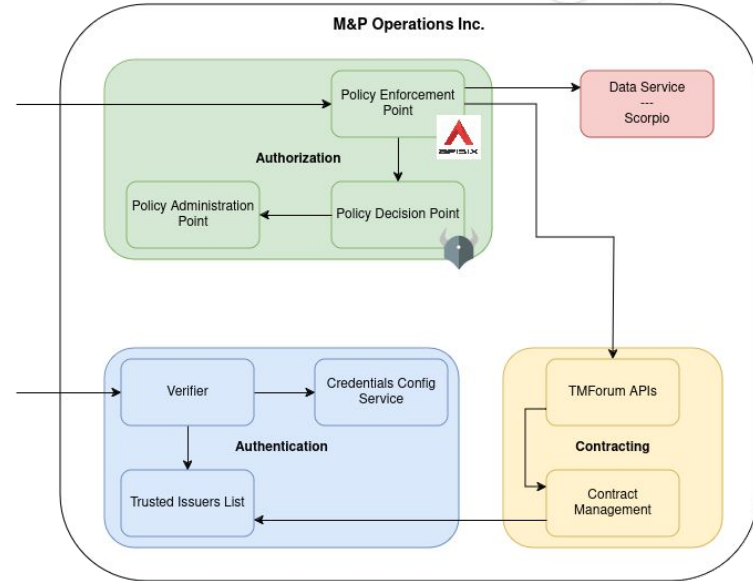
Fancy Marketplace Inc.

- wants to interact with the services of other participants, therefore:
 - has to be registered at the Data Space Operator
 - needs to support authentication of its employees
 - issue credentials
 - provide the right claims for the users
- Keycloak as issuer of credentials
 - user-management and roles allow fine grained permission management



M&P Operations Inc.

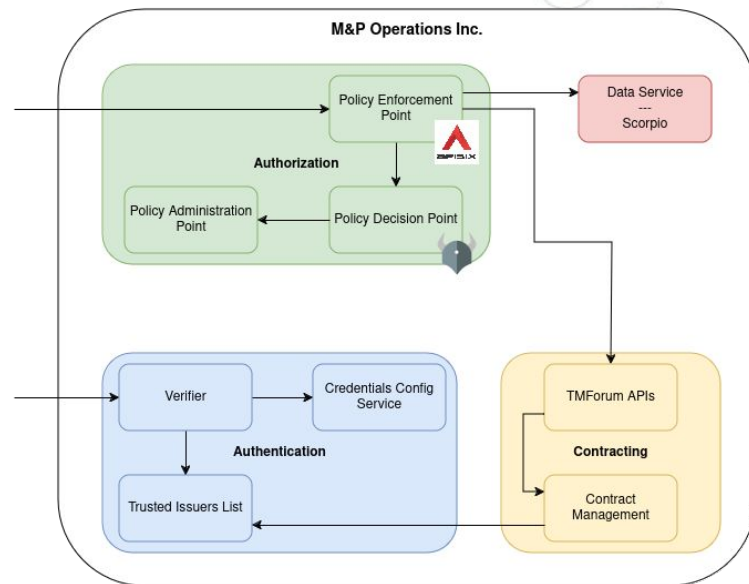
- offers digital services(e.g. the Data Service)
- wants to restrict access to Data Space Participants
- defines access policies and levels, enforces them
- fine grained access control, respects user roles of other participants
- requires components for:
 - the data service
 - authentication
 - authorization
 - contracting



M&P Operations Inc.

Components for Authentication

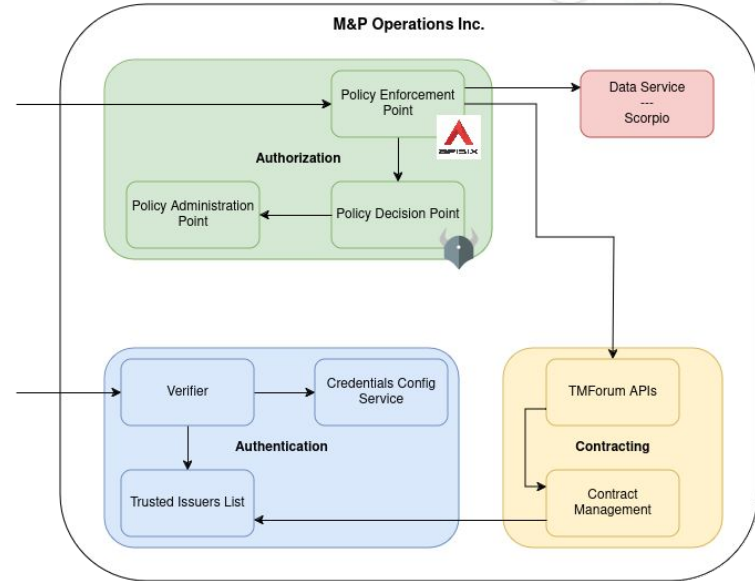
- Verifier
 - offers [OID4VP](#) compatible endpoints
 - verifies signatures of the credentials
 - verifies issuers as participants
 - verifies that only allowed claims and types are included
 - returns a JWT, containing the claims
- Credentials Config Service
 - allows configuration of responsible local and global trusted lists
- Trusted Issuers List:
 - local trust list, provides allowed types and claims for participants



M&P Operations Inc.

Components for Authorization

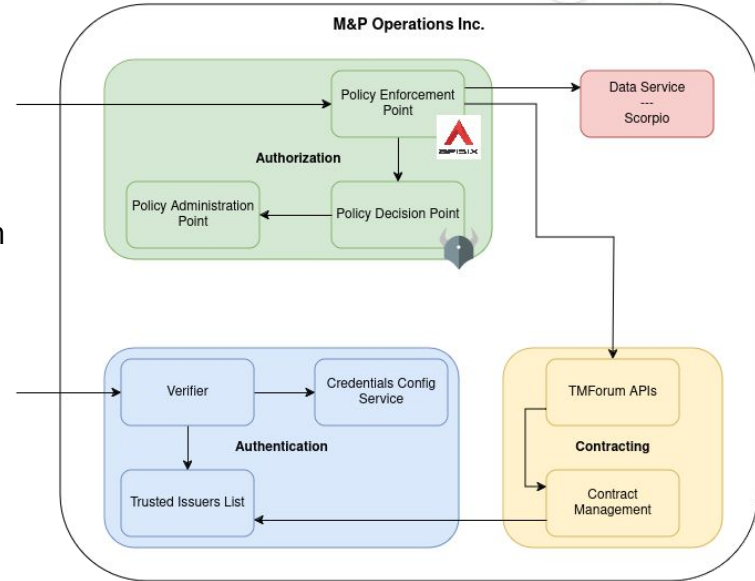
- Policy Enforcement Point
 - entry point for all requests to data service and TMForum APIs
 - requests decisions at the PDP
 - [APISIX](#) used, can provide additional ApiGateway functionality
- Policy Decision Point
 - decides about the request, based on policies and additional information
 - [Open Policy Agent](#) used as PDP
- ODRL-PAP
 - Policy Management based on ODRL
 - translates to rego for integration with the PDP



M&P Operations Inc.

Components for Contracting

- TMForum APIs to provide functionality for managing offerings and support contract negotiations via marketplaces
- Contract Management to integrate TMForum APIs with the authentication framework



Links

- Slides:
 - <https://github.com/wistefan/presentations>
- FIWARE Data Space Connector:
 - <https://github.com/FIWARE/data-space-connector>
 - <https://github.com/FIWARE/data-space-connector/blob/main/doc/deployment-integration/local-deployment/LOCAL.MD>



ficodes

contact@ficodes.com | www.ficodes.com | +34 614 20 74 47 | C/ Hespérides 5 (28232) | Las Rozas de Madrid

