Open Data Market Architecture and Functional Components

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Data Market Infrastructure Components
Data Market Infrastructure to enable secure trusted data exchange and data services delivery.

- **Virtual Private Data Market (VPDM)** – Virtual Data Market infrastructure provisioned on demand for a cooperating group of the data market entities
- **Data Market Platform (DMP)** – Cloud based Trusted Data Market (TDM) platform to provision on demand VPDM using Virtual Private Cloud (VPC) templates
- **Data Exchange(s)** – the main component for Data Market actors interaction to exchange data
- **IDS – Secure Data Connectors** (Industrial Data Space Architecture compliant) to enable sovereign end-to-end data provider and consumer connection
- **Data (Intelligence) Hub** – Support generic services in data exchange, delivery, i.e. caching, containerized delivery of data services.
- **Policy & Biz Rules Enforcement and Compliance** – Private Blockchain and Smart Contracts based DM service
- **SCVPE4DM (EVM)** – Ethereum Virtual Machine for Solidity Smart Contracts processing
- **FedAAI and VI TrustBP** - Federated Access Control, Trust Management infrastructure and Trust Bootstrapping protocol

ODM Operational Scenarios

1 to 1 – individual contracts (including intermediaries)
1 to n – data webshop providing data services to many customers, e.g. IoT sensor data streaming; most common Biz&Ops model for data services subscription
to 1 – one data consumer collecting data from many data sources/providers with the goal to drive own data-based applications or provide value added data services.
to m – full data market mesh; can use VPDM instance for a group of cooperating organisations

Open Data Market Design Principles

- Enable STREAM data properties and comply with FAIR data principles
- Provide secure and trusted environment for contractual exchange of data and data processing services while preserving Data Sovereignty
- Enable data monetisation and data exchange policy enforcement
- Built on well defined rules, processes and protocols, supported by open API to enable anybody join and operate their legal business
- Adopting the Industrial Data Space Association (IDSA) Architecture 2.0

References

IDA International Group on Data Economics - https://www.ida-alliance.org/group/data-economics/q1/year-statement/interest-group-data-economics-de-charter

IC-DE mailing list - data-economics-idfa group
FAIR data [online] https://www.dlib.org/fair-data/fair-data/

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