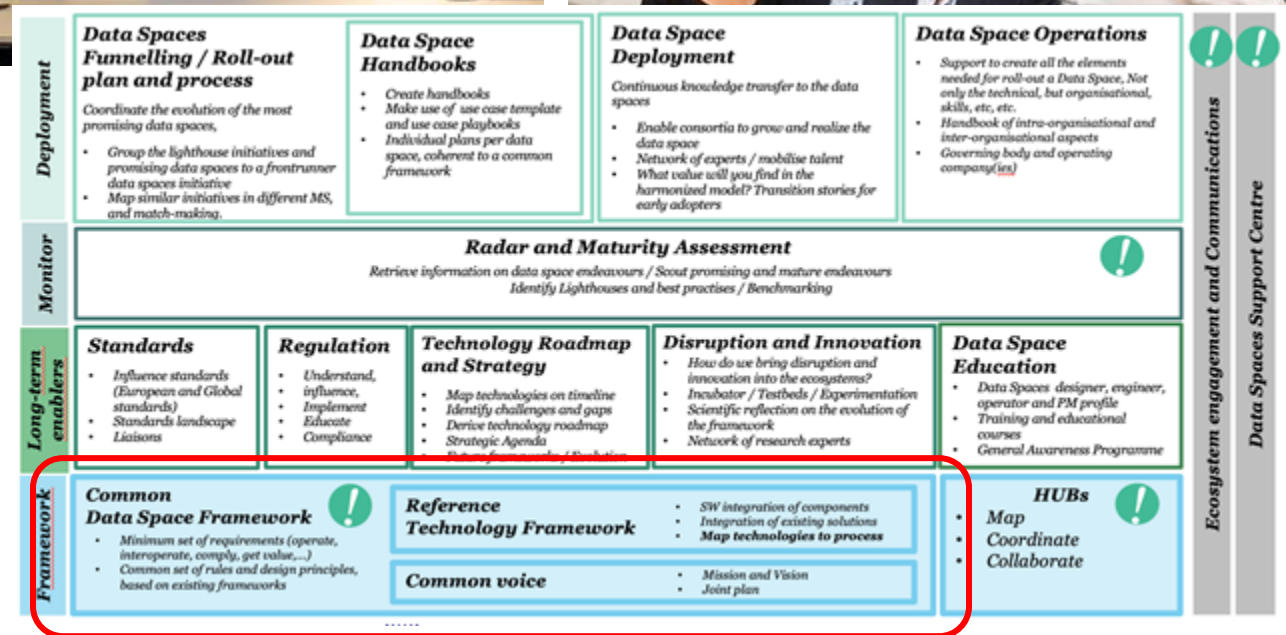


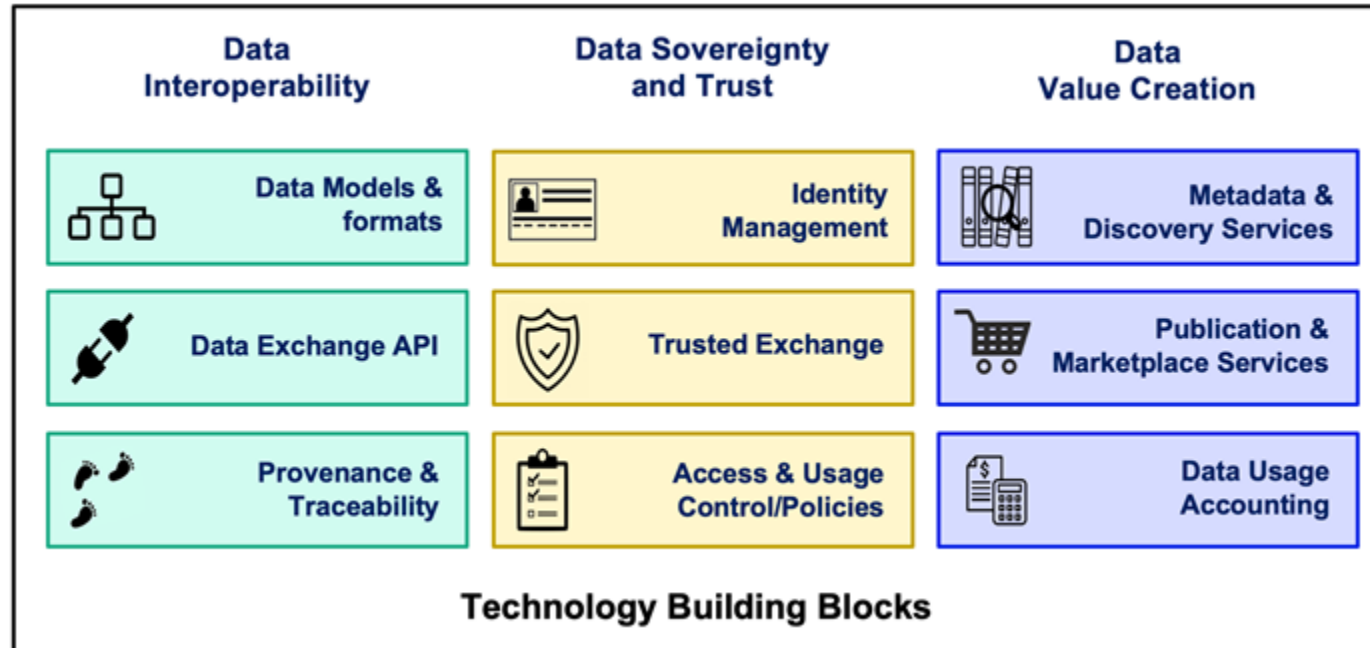
Data Spaces Business Alliance (DSBA): joining forces

BDVA, FIWARE, GAIA-X and IDSA launched the [Data Spaces Business Alliance \(DSBA\)](#) to accelerate Business Transformation in the Data Economy (Sep 23rd, 2021)

- **One voice and a common framework** to make **interoperable Data Spaces** happen;
- Together, **the Alliance's founding organisations represent 1,000+ leading key industry players**;
- With its combined **cross-industry expertise, resources and know-how**, the Alliance drives awareness and rely on **more than 100 Hubs** for dissemination
- **Technical Convergence discussions** towards common reference technology framework for creation of Data Spaces:
 - NGS-LD + Smart Data Models for Data Interoperability
 - eIDAS and EBSI compatible Trust Anchor Services
 - Decentralized IAM based on W3C DID+VC/P standards (supporting OpenID and DIDcomm protocols)
 - TM Forum compliant Data Services Marketplaces connected to Gaia-X Catalogue of self-descriptions



Data Spaces Building Blocks



MATERIALIZING DATA SPACES REQUIRES TO TAKE CHOICES AND ADOPT A MINIMUM BUT ENOUGH SET OF TECHNOLOGY STANDARDS



DSBA Technology convergence: How to get there

- Parallel workstreams launched to address a concrete aspect:
 - **Workstream 1:** Incorporation of Decentralized Identifiers (DIDs) and Verifiable Credentials / Presentations (VC/VPs) in IAM framework, Trust Anchor services aligned with Gaia-X
 - **Workstream 2:** Incorporation of IDS Connector functions and support to ODRL for access control
 - **Workstream 3:** Integration of Federated Marketplace, Services Catalogue and Data Publication services
 - **Workstream 4:** Incorporation of IDS Connector functions for usage control
- Agile approach based on delivery of subsequent versions of a **Minimum Viable Framework (MVF)** of the target technology framework
- Once alignment within a given workstream is achieved, the description of an initial/new version of the MVF will be published
- FIWARE and iSHARE Foundations, for example, are evolving i4Trust to provide an implementation that aligns with the MVF through its subsequent versions, other projects or initiatives can do the same



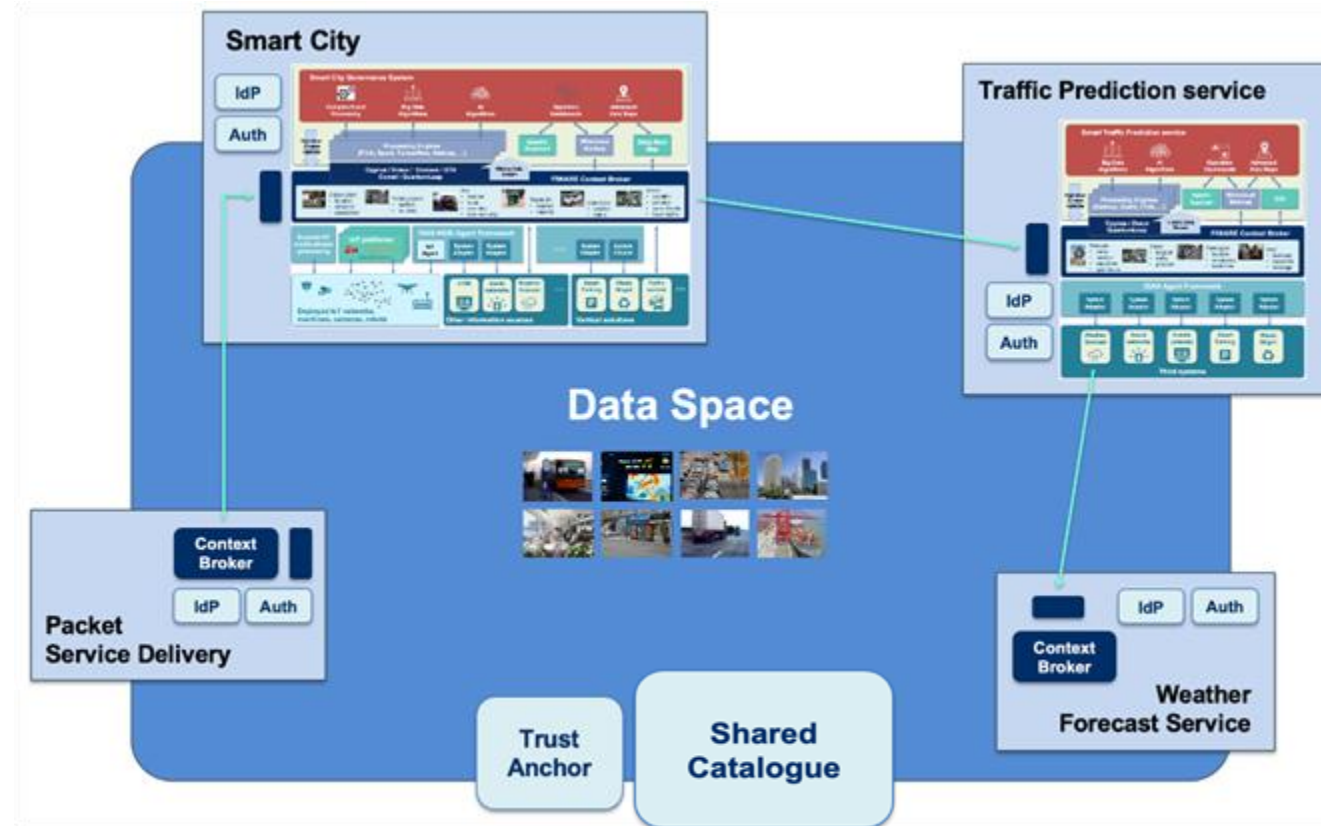
First version of DSBA MVF

- **Data Interoperability:** NGSILD API and smart data models for actual data exchange will be adopted and extend the interoperability mechanisms of the IDSRAM with a special focus on the IDSInfomodel and the Vocabulary Hub
- **Data Sovereignty and Trust:**
 - An eIDAS and EBSI -compatible Trust Anchor framework
 - A decentralized Identity and Access Management IAM framework supporting:
 - A set of Verifiable Credential issuing protocols, e.g.: Self-Issued OpenID Provider v2 (SIOPv2), DIDComm channel, ...
 - A set of verifiable presentation protocols, e.g.: OpenID Connect for Verifiable Presentations (OIDC4VP), Verifiable Presentation Request (<https://w3c-ccg.github.io/vp-request-spec/>)
 - An ABAC (Attribute Based Access Control) framework comprising components implementing PEP, PDP, PAP/PMP, and PIP functions
- **Data value creation:** Centralized Service Catalogue and Marketplace functions based on TM Forum recommendations, compatible with Gaia-X Catalogue of self-descriptions



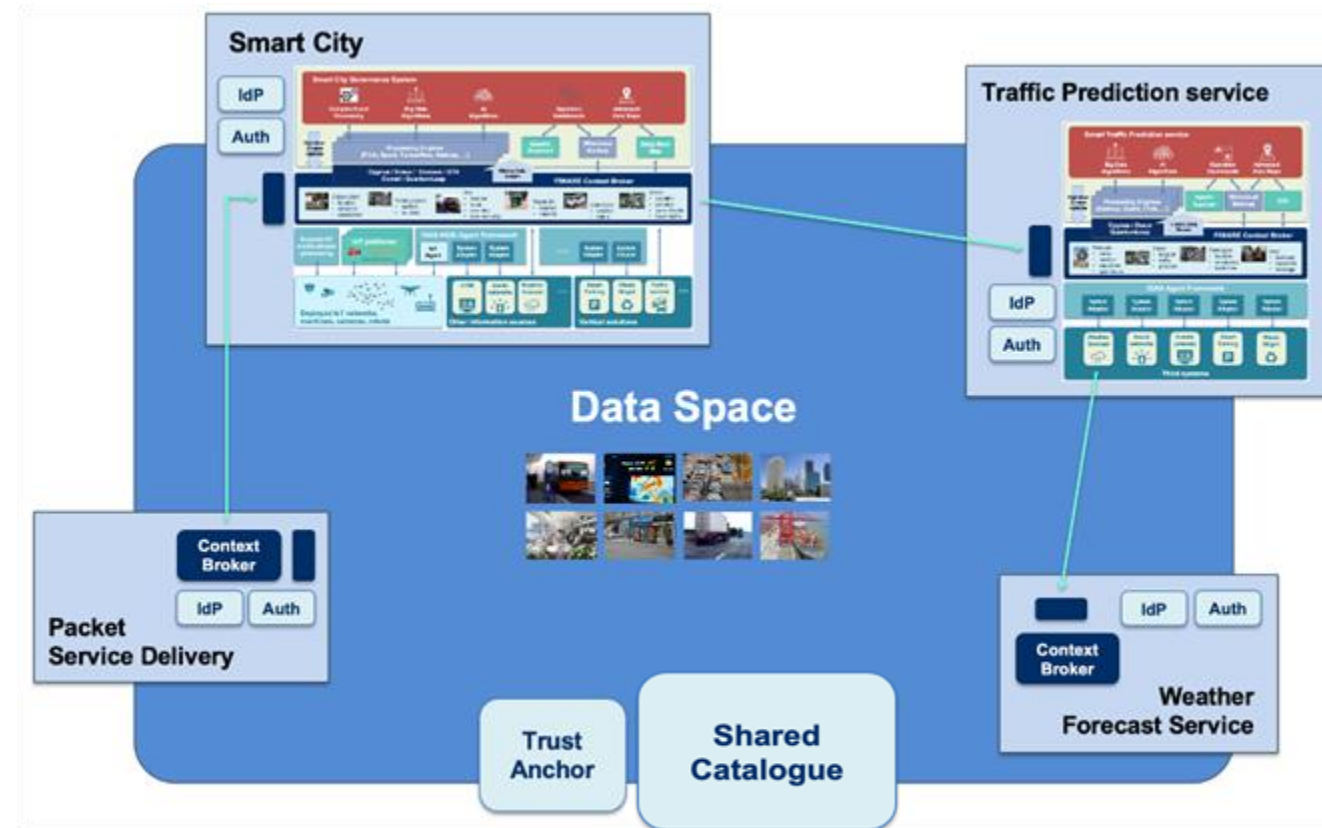
Description of data services

- VCs associated to standard Gaia-X attributes described in the Trust Framework
- VCs issued by certification agencies, for example describing compliance with certain regulations/recommendations. Examples:
 - GDPR compliance
 - Low carbon emission
 - ...
- VCs issued by certification agencies describing compliance with certain standards. Examples:
 - NGSI-LD API supported
 - Data models X, Y, Z supported
 - IDS Connector used
 - ...
- VC describing everything that is needed to support Attribute Based Access Control (ABAC) by the service provider:
 - claims that are meaningful to assign to service users
 - policies associated to combination of claims and other potential environment attributes



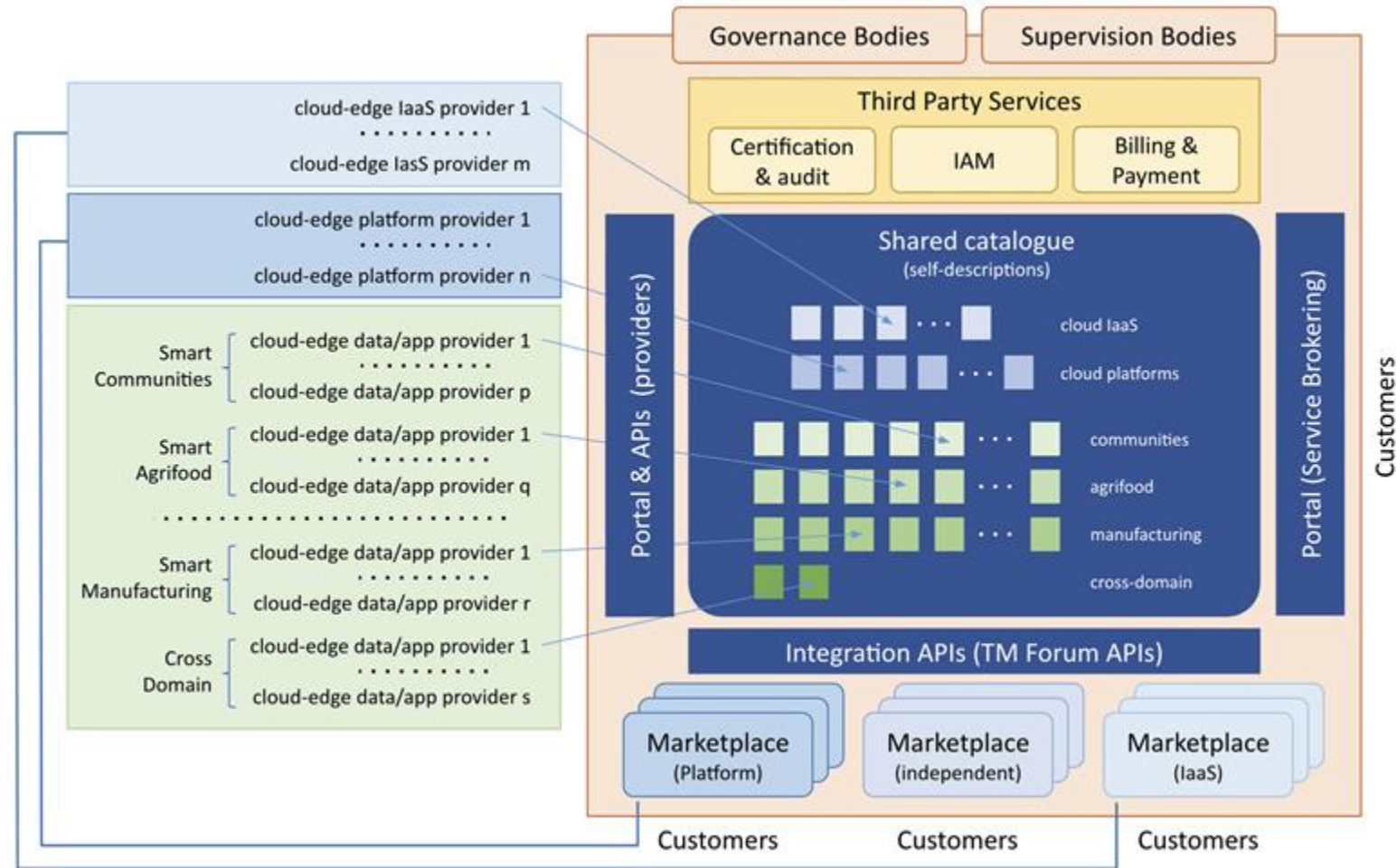
Multi-level Access Control

- Organizations that acquire rights to use a data service:
 - become trusted issuers of VCs including claims relevant for data service access
 - They can issue such VCs for users within their organization
- Access Control is then performed at several levels:
 - Verifying whether participants can be trusted (Trust Anchor service)
 - Verifying credentials at platform/connection level (e.g. NGSI-LD or IDS connector support)
 - Verifying whether access rights were properly acquired (e.g., via some marketplace)
 - Verifying that credentials at app level allow to perform the requested operation



Marketplace and Service Catalogue integration

- Different kind of service providers:
 - IaaS providers
 - Platform service providers
 - Data/App service providers
- Access rights acquired via federated marketplaces relying on a Shared Catalogue of service & service offering descriptions:
 - formatted as Verifiable Credentials / Presentations (VC/VP) in compliance with Gaia-X specs
 - Shared Catalogue relying on electronic ledgers to allow decentralized storage and facilitate spreading of info to federated marketplaces
- Standard TM Forum APIs used:
 - by federated marketplaces to access service & service offering descriptions
 - to record logs during lifecycle of service orders and activation of services
 - to record logs during execution of services



Conclusions and next steps

- **The Technology Convergence work will continue**
 - The [Discussion Paper](#) will be updated and new versions will be created based on the results of the Workstreams
 - The Data Space Support Center project may use the results and may contribute to this work
- **Integration of IDS Connectors** are work in progress. The mapping to the proposed IAM Framework is not finalized.
- **Marketplaces:** The description of how certain IDS and Gaia-X concepts will be supported with an architecture based on TM Forum recommendations is under way
- **Big Picture:** A big picture explaining the relation of the 4 DSBA partners is missing and should be created and maintained in the near future.



Thank you!

