



DATA SPACE FOR
SMART AND SUSTAINABLE
CITIES AND COMMUNITIES

Technical blueprint

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Technical blueprint elements

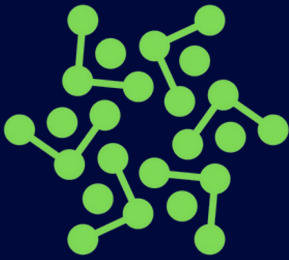
Catalogue of Specifications

Reference Architecture Model

Cookbook



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Catalogue of Specifications

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- Leverage on DSSC Building Blocks taxonomy
- Aligned with Data Spaces Business Alliance (DSBA)
- Mapped to Minimal Interoperable Mechanisms (MIMs)
- Open for contributions, both standards and reference implementations

DATA SPACE FOR SMART AND SUSTAINABLE CITIES AND COMMUNITIES

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▲ ? Catalogue of Specifications

Explanation for the MIMs, the scope and the types of maturity level

Relevant MIMs: Select... Scope: Select... Maturity: Select...

Data Models
Data from different systems and organisations needs to be interpreted by participants in a data space. This requires semantic interoperability: having a shared language between everyone involved. This BB provides the capabilities to defi...
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Data Exchange
Data spaces need to address the challenge of establishing efficient and standardised data exchange among various systems. This building block provides mechanisms to allow that the data space participants exchange data each other. It includes a...
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Provenance and Traceability
In a data space or a particular transaction, it must be defined which information about this transaction is stored and how the access and the usage is regulated and controlled. This BB provides a framework for observability and mechanisms to provide evidenc...
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Identity Management
It refers to the capability within a data space to register, maintain, and use (identity) information about various kinds of entities that are relevant to most, if not all, members of a data space. This BB provides onboarding process into a data space for any...
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Trust
It is directly related to the capacity of the data space governance authority to translate its objectives into actionable sets of policies, procedures and rules - and for participants to check whether others adhere to them. This BB provides mechanisms t...
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Access & Usage policies and control
Access and Usage Policy Enforcement is a central component for data sharing to achieve data sovereignty. During a data transaction the policies need to be evaluated and decisions on access to data and services and data usage need to be taken...
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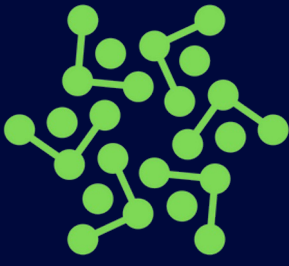
Data, Services and Offerings descriptions
This building block provides to data providers the tools to describe appropriately, and in a complete way, a data product, in a manner that will be understandable by any participant in the data space. It also includes related data policies and the wa...
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Publication and discovery
This building block allows data providers to publish the...
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Marketplaces
This building block provides marketplace capabilities, in such...
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Business Agreements
The business aspects of these agreements define the...
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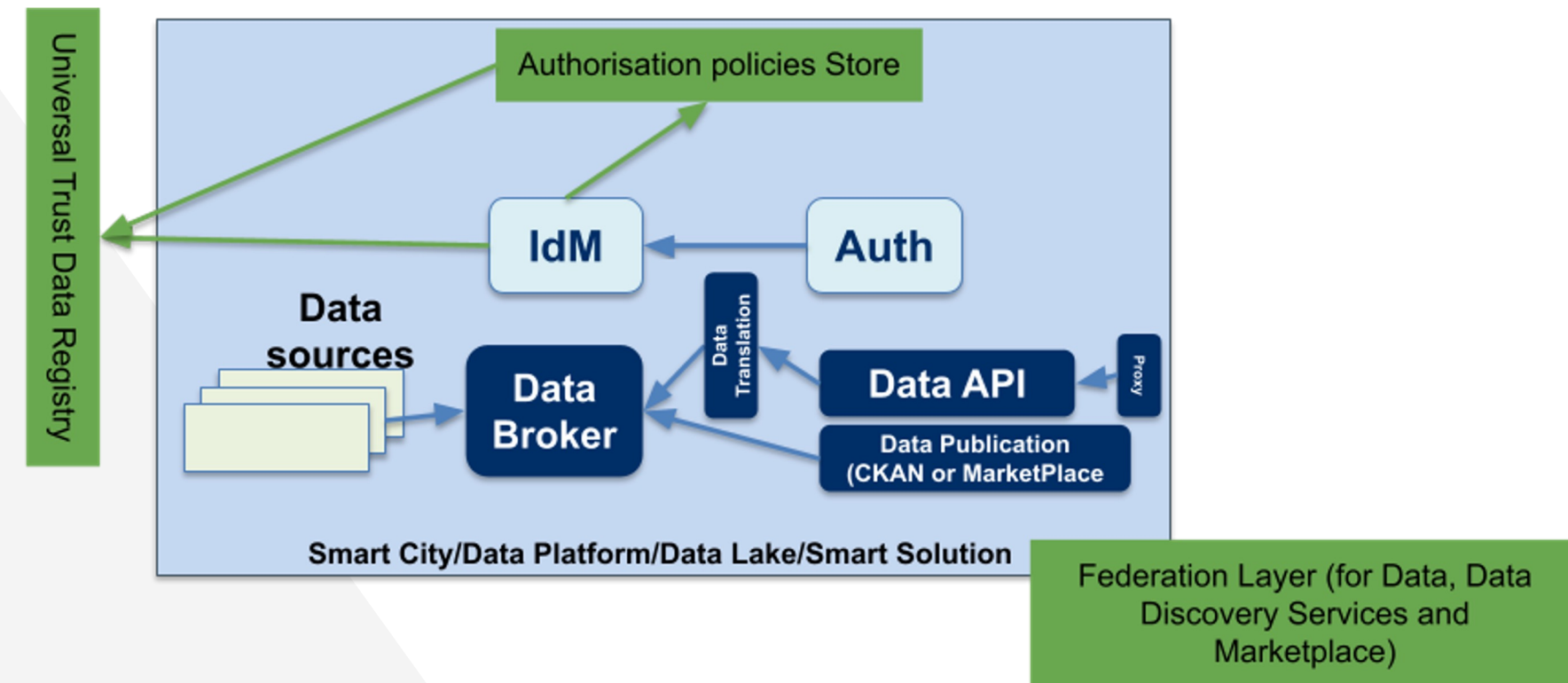
Organizational and Operational agreements
Setting up a data space also requires a number of...
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Reference Architecture (high level)

- Use case agnostic
- Extension of existing smart city/data platforms
- Evolution of brownfield/digital twin scenarios

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Components Description



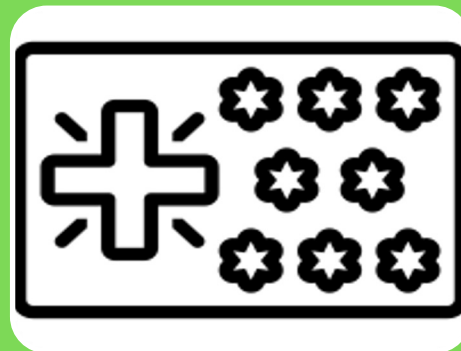
Universal Trust Data Registry

- Unique credential per user
- Mechanism to identify trusted participant
- Relied on Verifiable Credential and Trusted Issuers



Authorization Policies Store

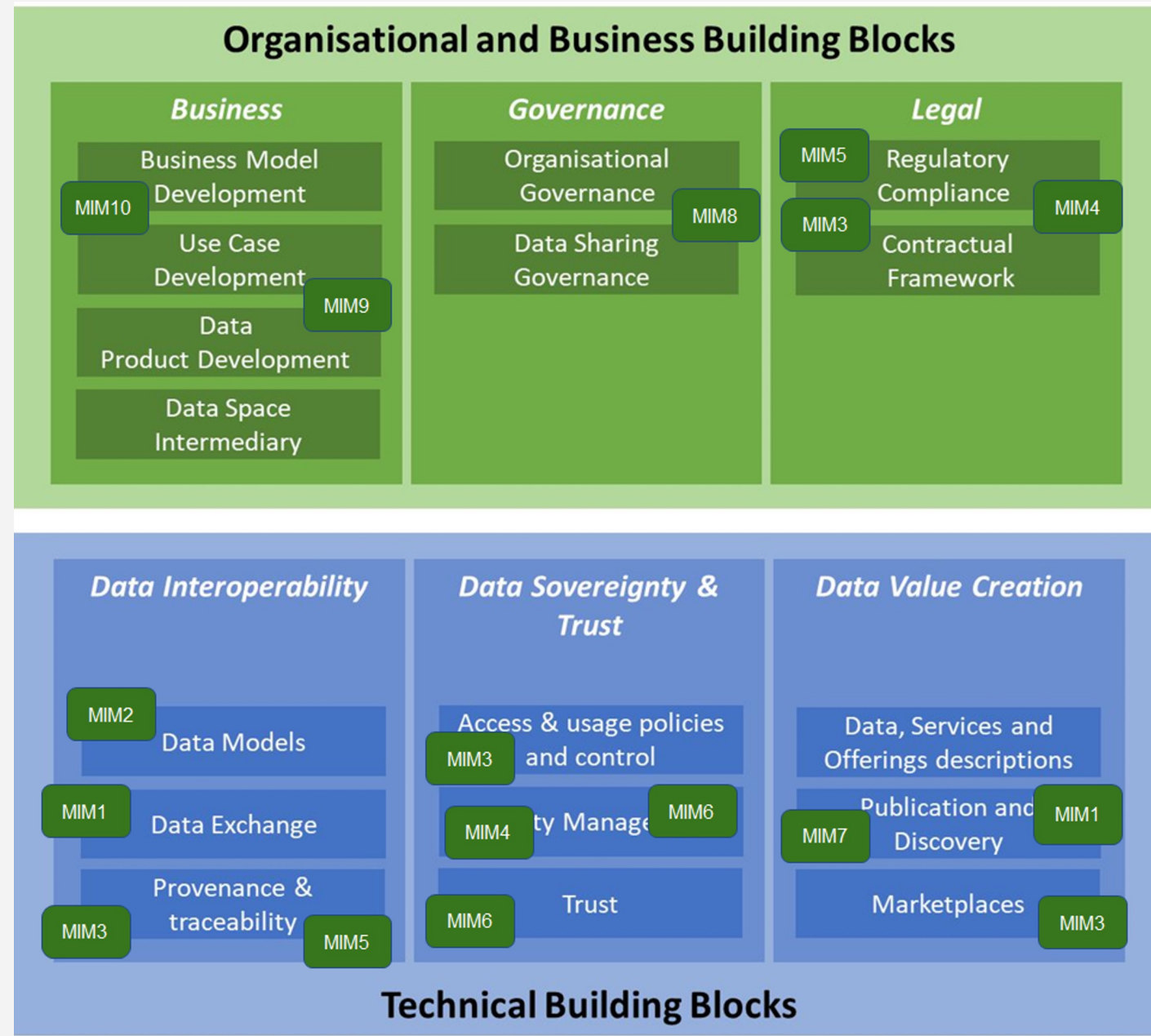
- Add-on to the Identity Management system of the data space participant
- Verifies the identity and access rights of the participant



Federation layer

- Services to access data in other data spaces: catalogue, Marketplace, metadata broker...
- Optional and under definition

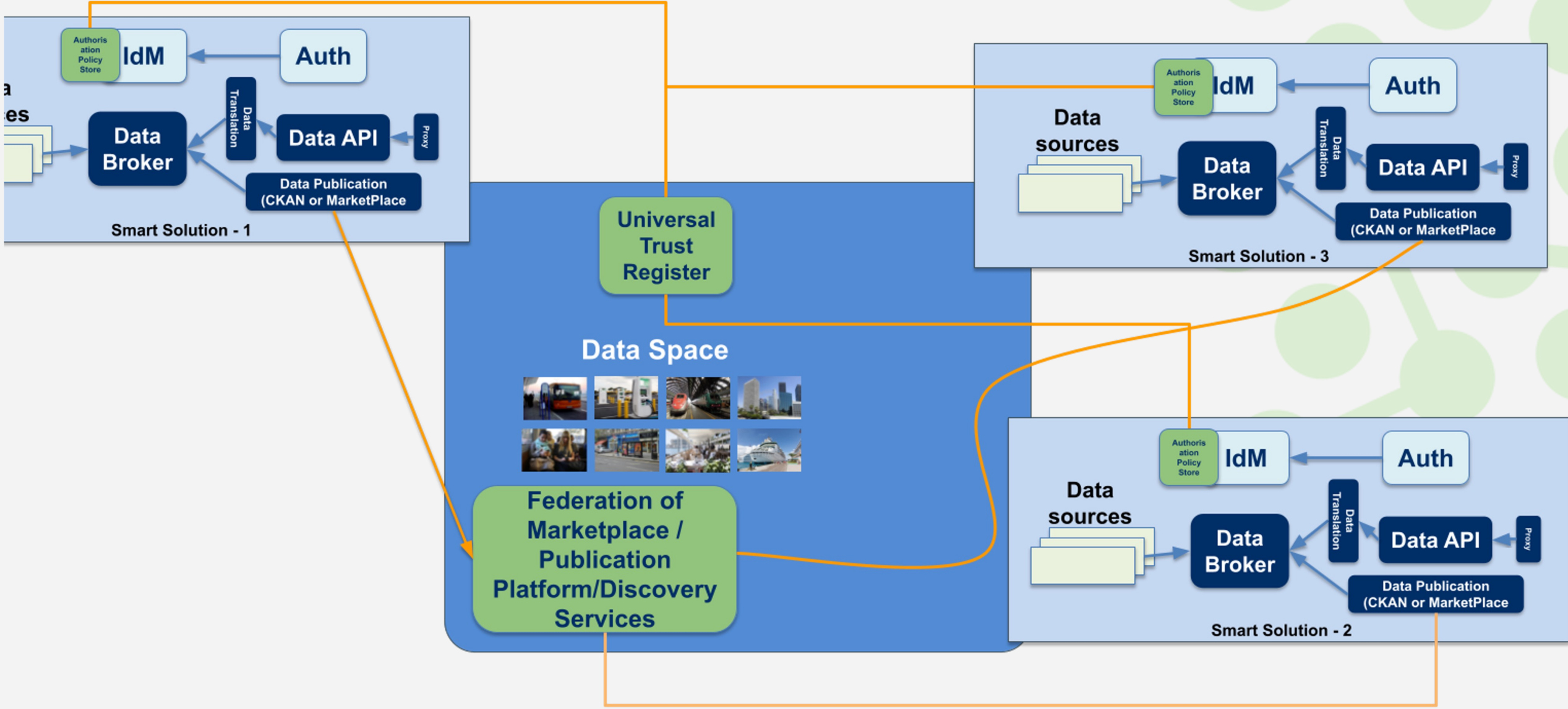
Mapping data spaces building blocks with MIMs



MIM	Description
MIM1	Context Information Management
MIM2	Shared Data Models
MIM3	Ecosystem Transactions Management
MIM4	Personal Data Management
MIM5	Fair Artificial Intelligence
MIM6	Security management
MIM7	Geospatial information management
MIM8	Ecosystem indicator management
MIM9	Data Analytics Management
MIM10	Resource Impact Assessment

DS4SSCC Building Blocks are the “mechanisms” for implementing the MIMs

Architectural evolution: from data platforms to data spaces





Customization of architecture (use cases)

Selected use cases (all brownfield)

Customization process

Helsinki

Scenario description

Valencia

Data Cooperation Canvas

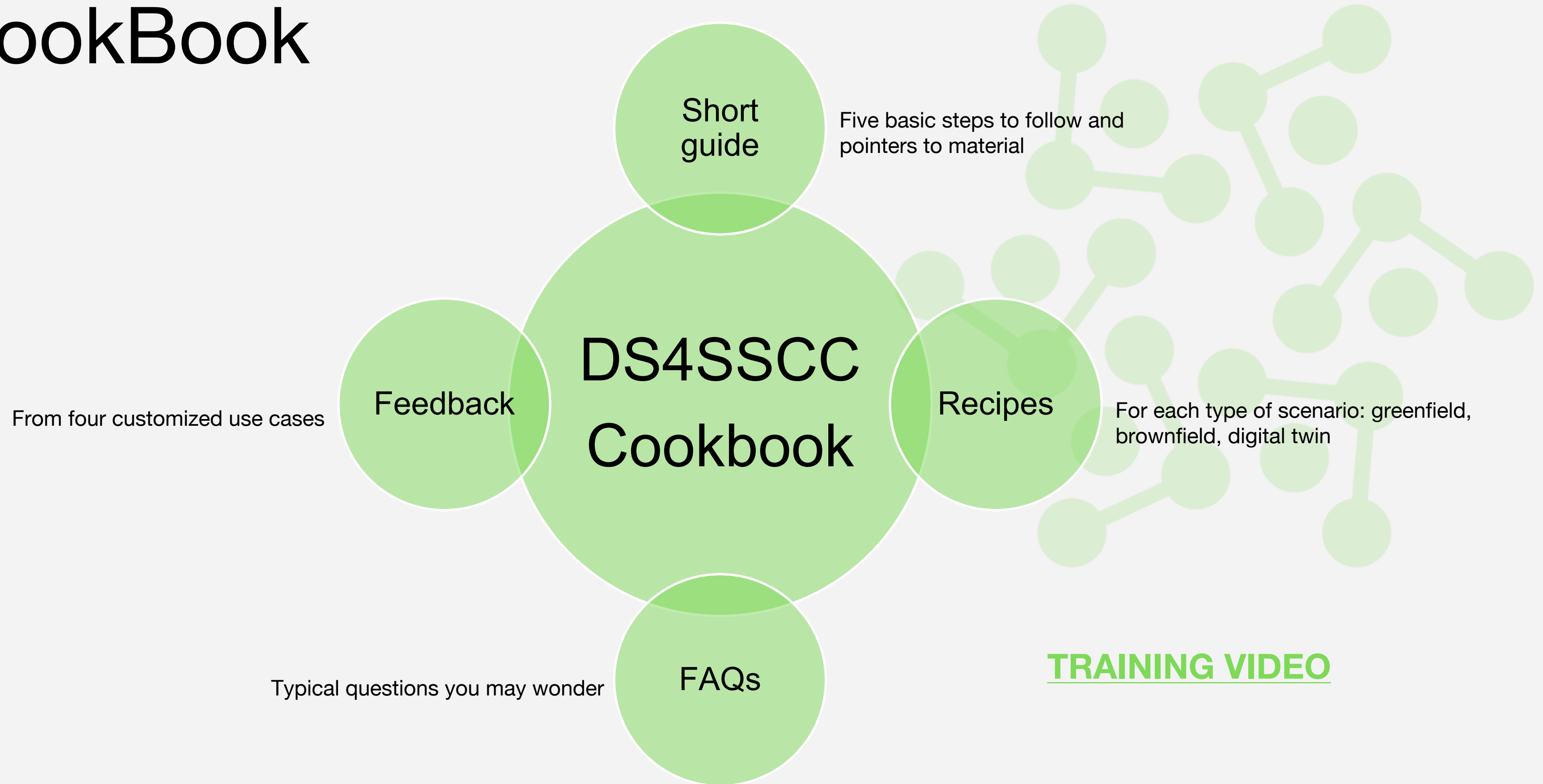
Flanders

System architecture

Amsterdam

Implementation plan

CookBook





What is next?

At the deployment project

Expand!

Enhance!

Put in practice!



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