What are MIMs?

Minimal Interoperability Mechanisms

OPEN & AGILE SMART CITIES & COMMUNITIES

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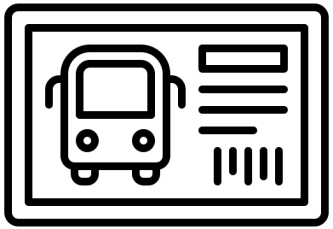
You go travelling!

How do you plan your travel?

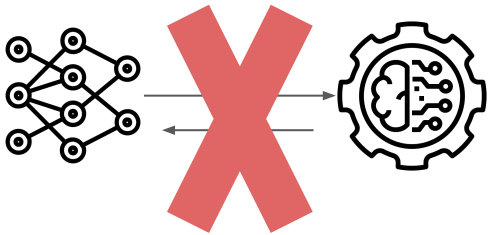
Download the local app!

But….You already have a card and an application that you use in you local area.



Why can't you use the same application abroad?

The applications cannot exchange information



Interoperability?

work together and share information seamlessly

without any extra effort from the end-user.

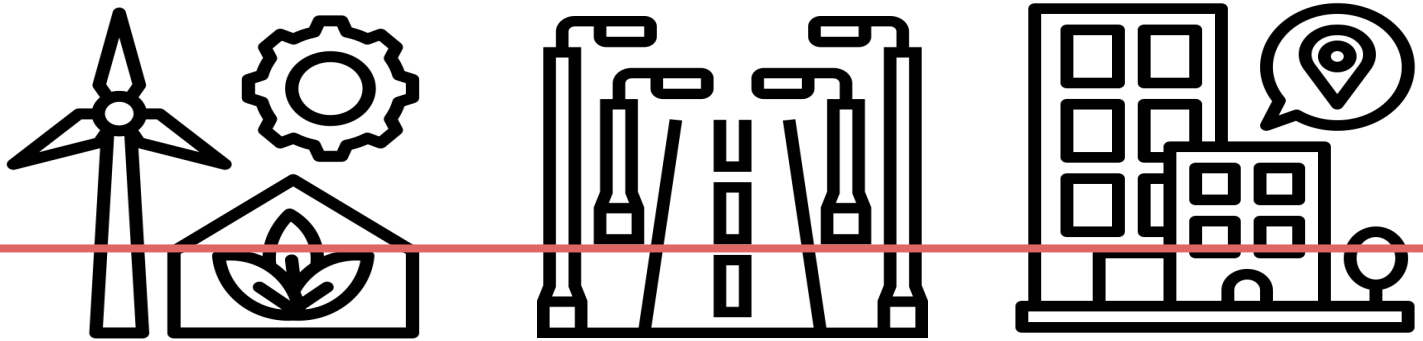
What can work together ?

services

applications

solutions

From across domains



ESTABLISHING A MINIMAL LEVEL OF INTEROPERABILITY

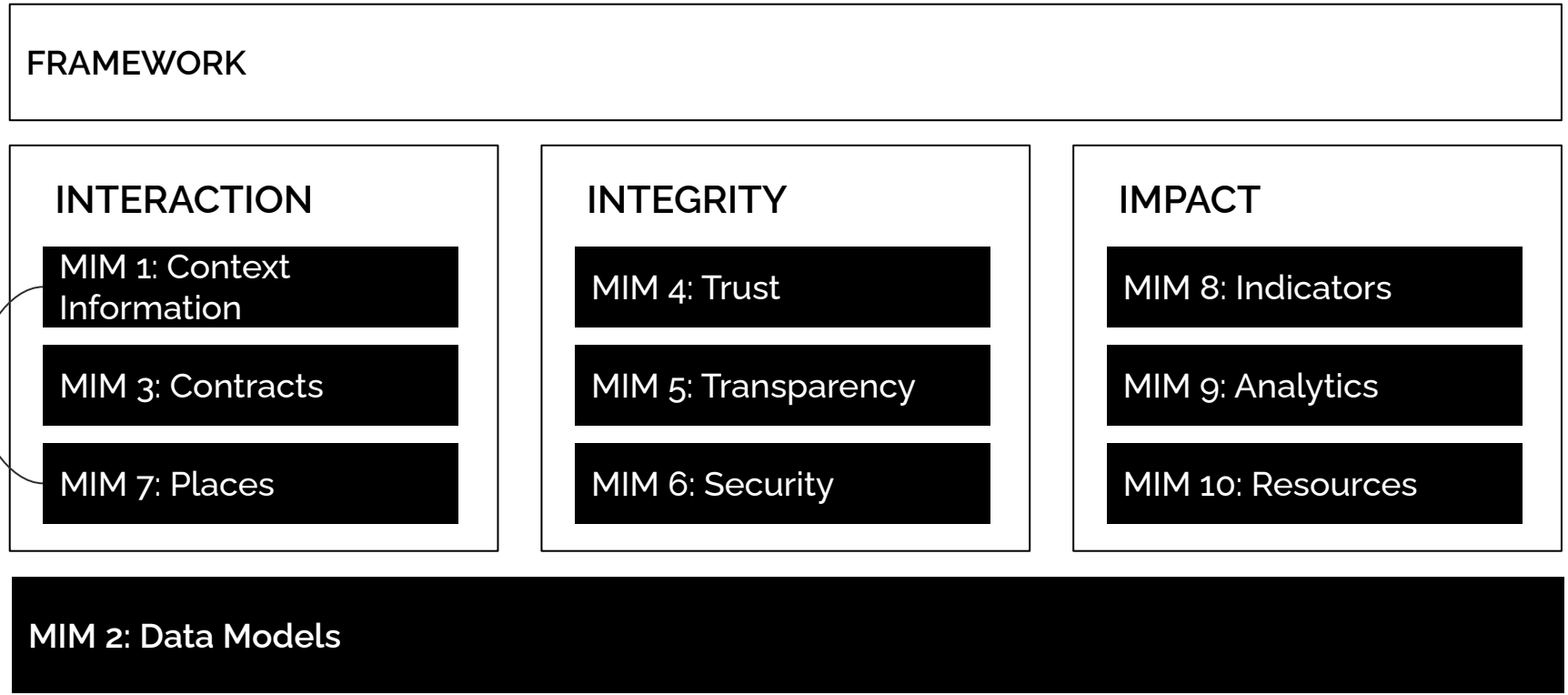
Minimal Interoperability Mechanisms (MIMs)

Value Proposition

Common list of standards & technical specifications

Key Enablers - Available for all

Common Marketplace



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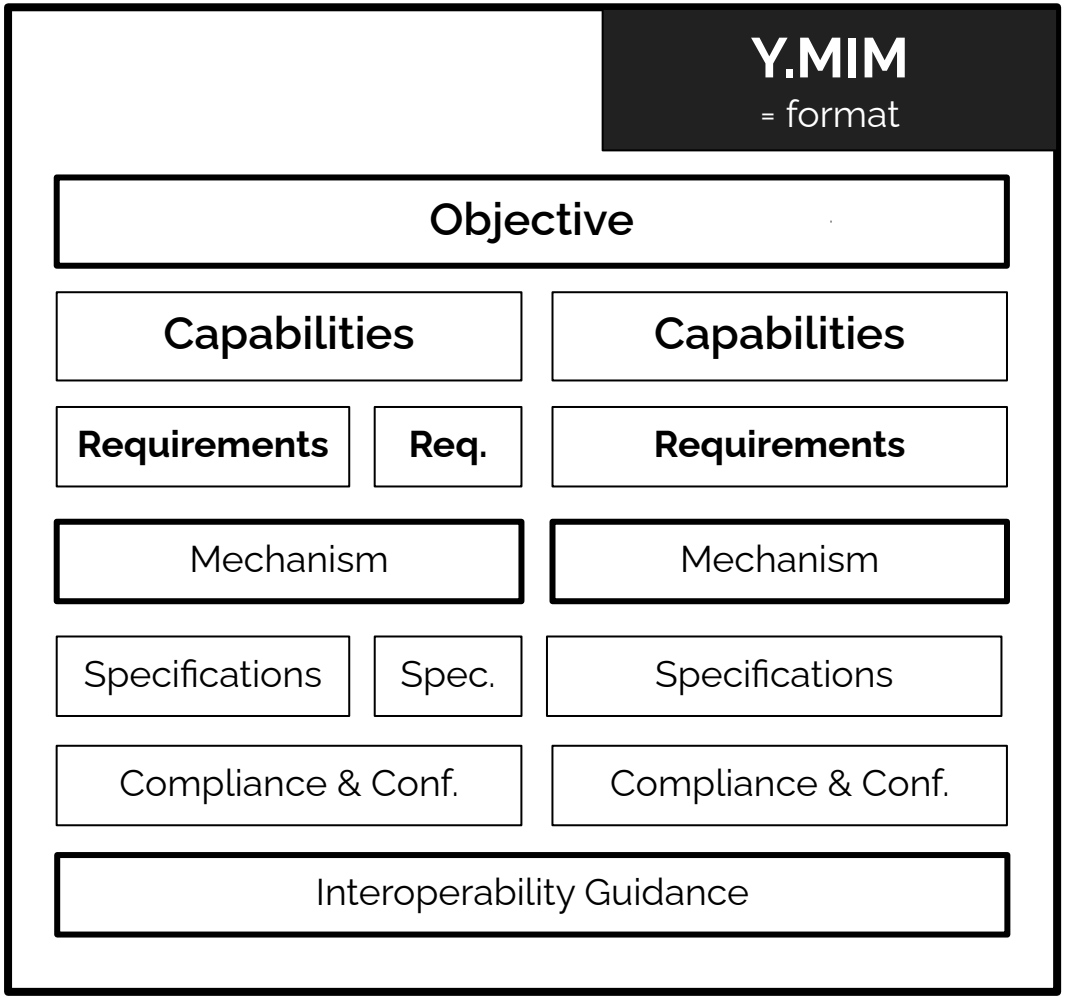

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Y.MIM

= format

Objective

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Y.MIM
= format

Objective

MIM1

- To enable context information from different systems within or across organisations, such as cities or communities, originating from heterogeneous sources, to be brought together
- To enable comprehensive and integrated use, reuse and sharing of data as well as management of context information
- To turn data into a strategic resource

Description

Objective

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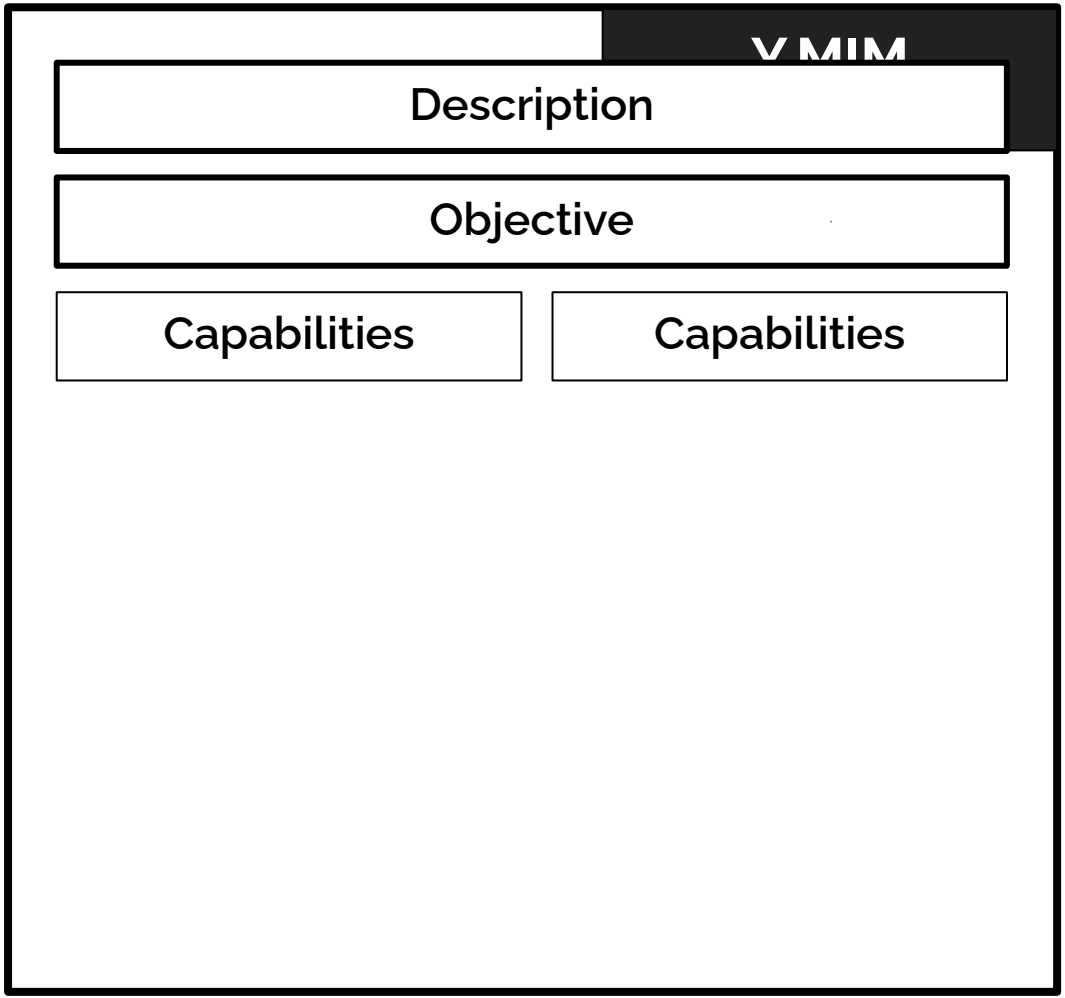
	Description	Objective
MIM1	Context Information is the information that is necessary for systems to be more adaptable to different contexts within the real world. **Examples:** Traffic Management: MIM 1 can aggregate and standardise data from various sensors into a unified format. This enables traffic management systems to automatically adjust signal timings and offer route recommendations to drivers based on real-time traffic conditions, weather, and events, thus reducing congestion and enhancing traffic flow... Literature: Dey et al. (2001) define Context as "any information that can be used to characterize the situation of an entity."	



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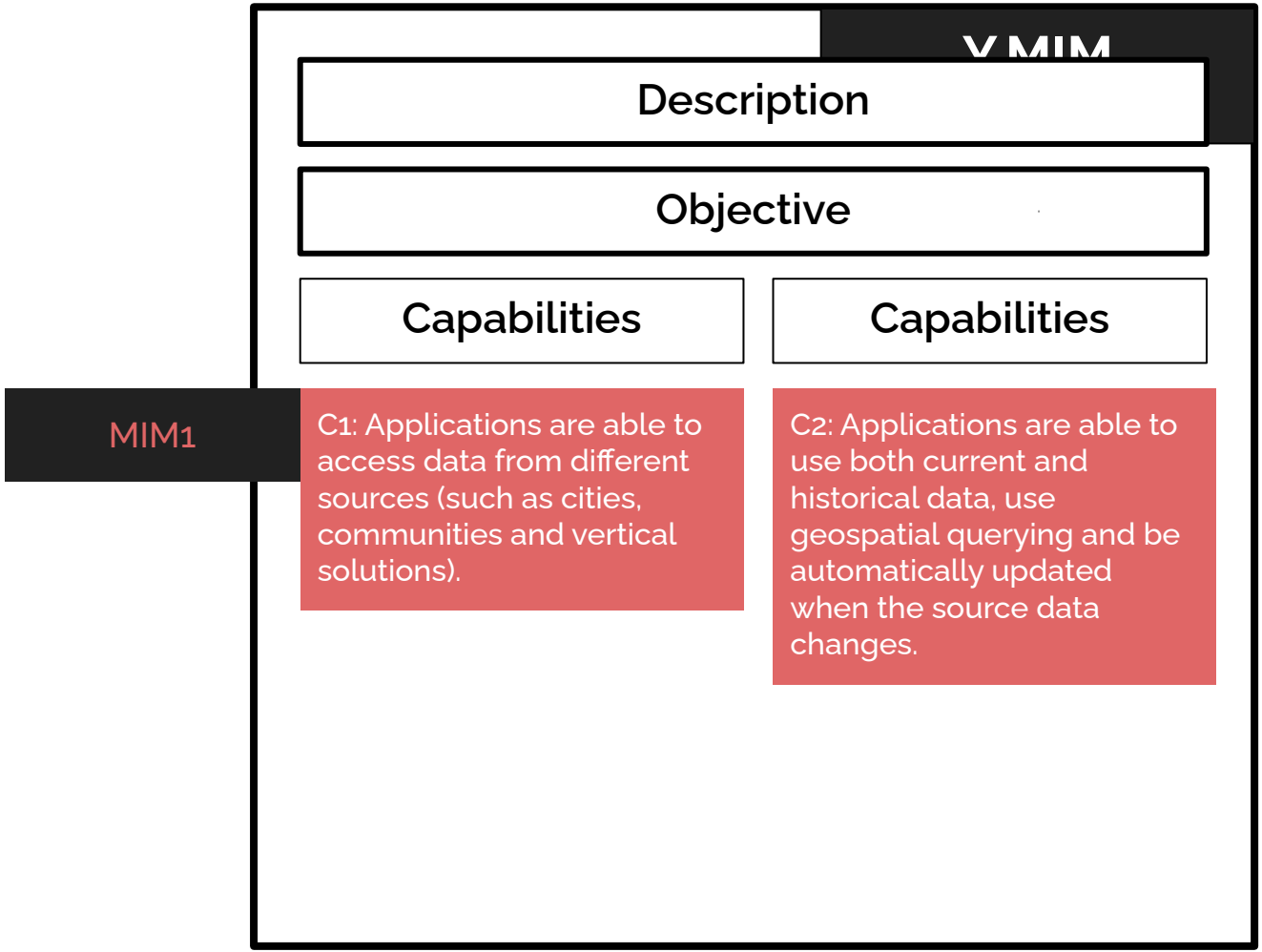

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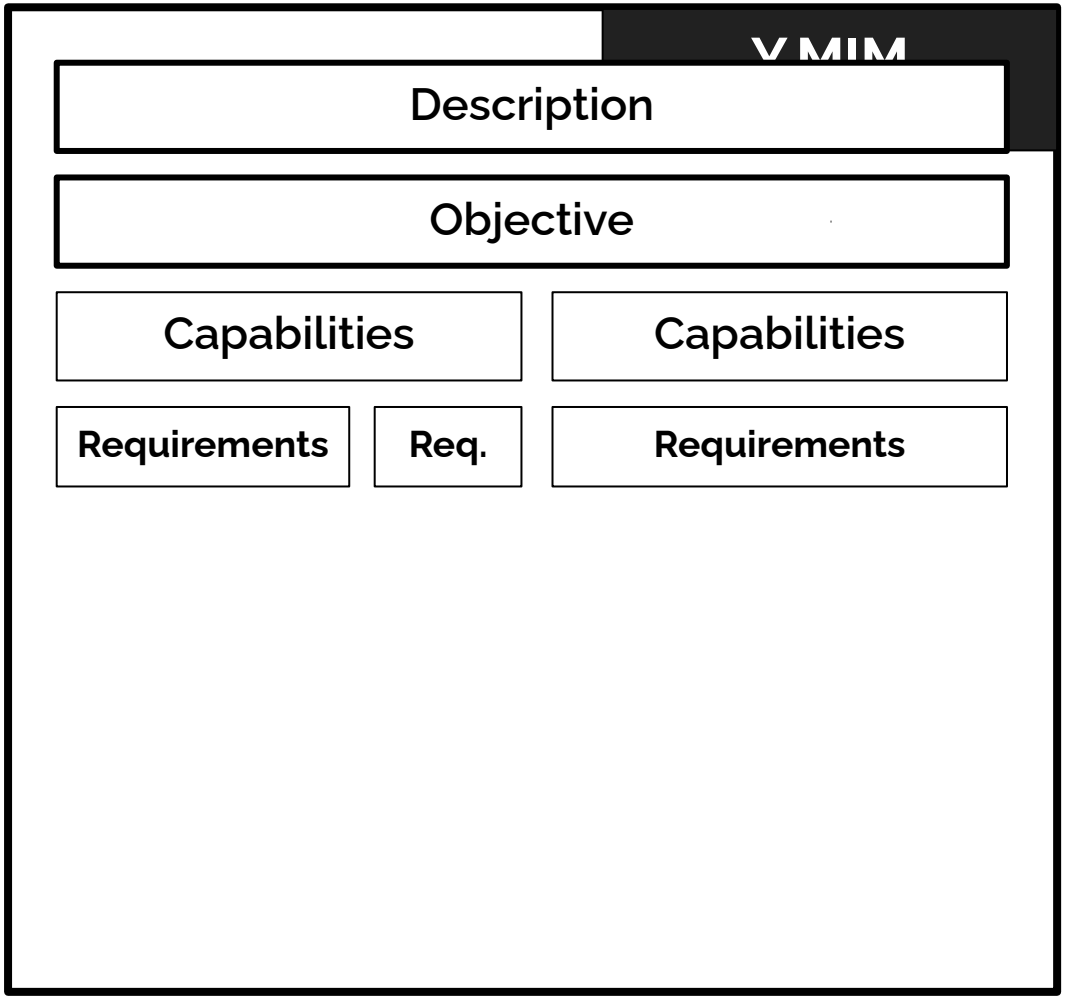

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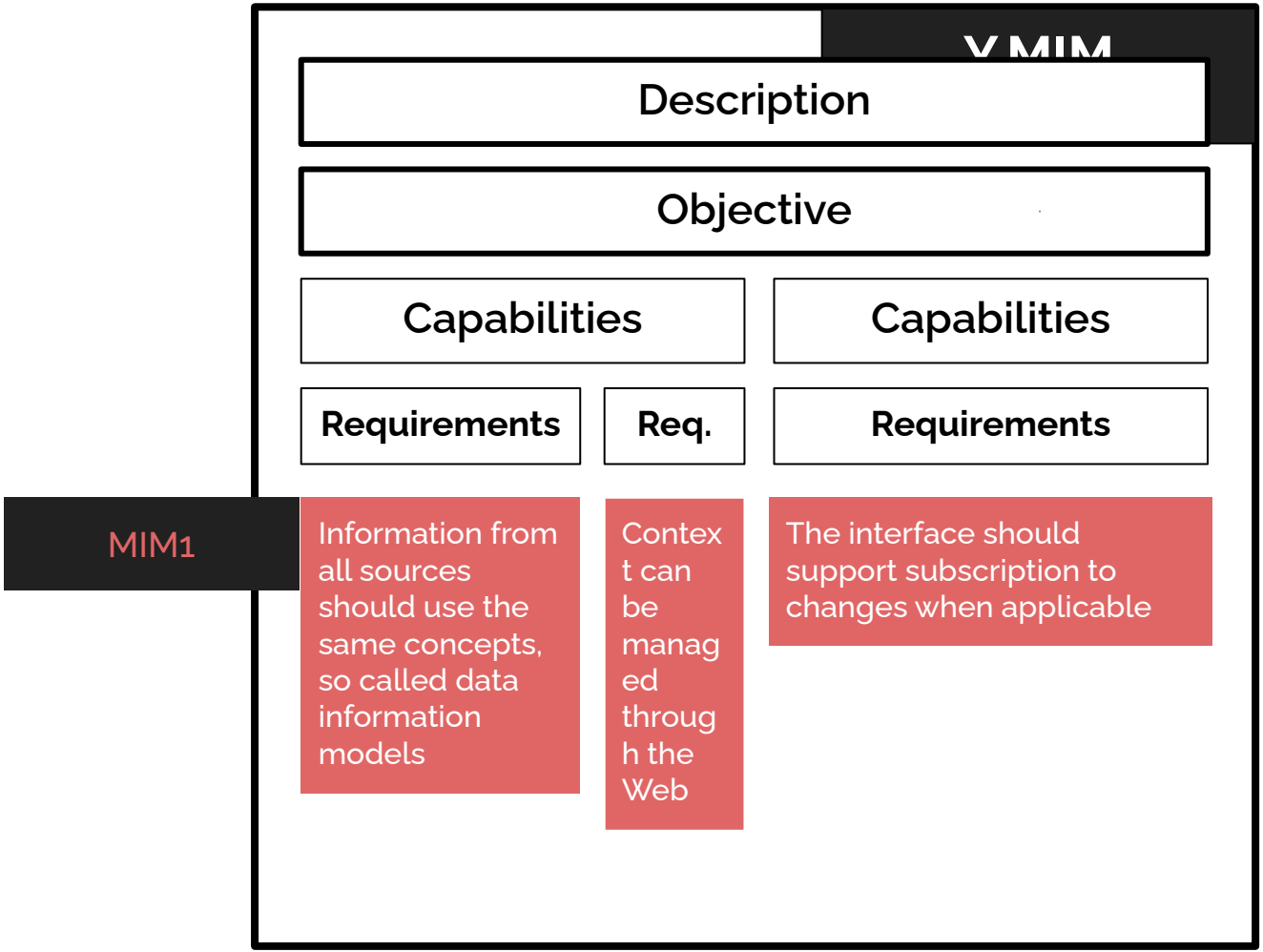

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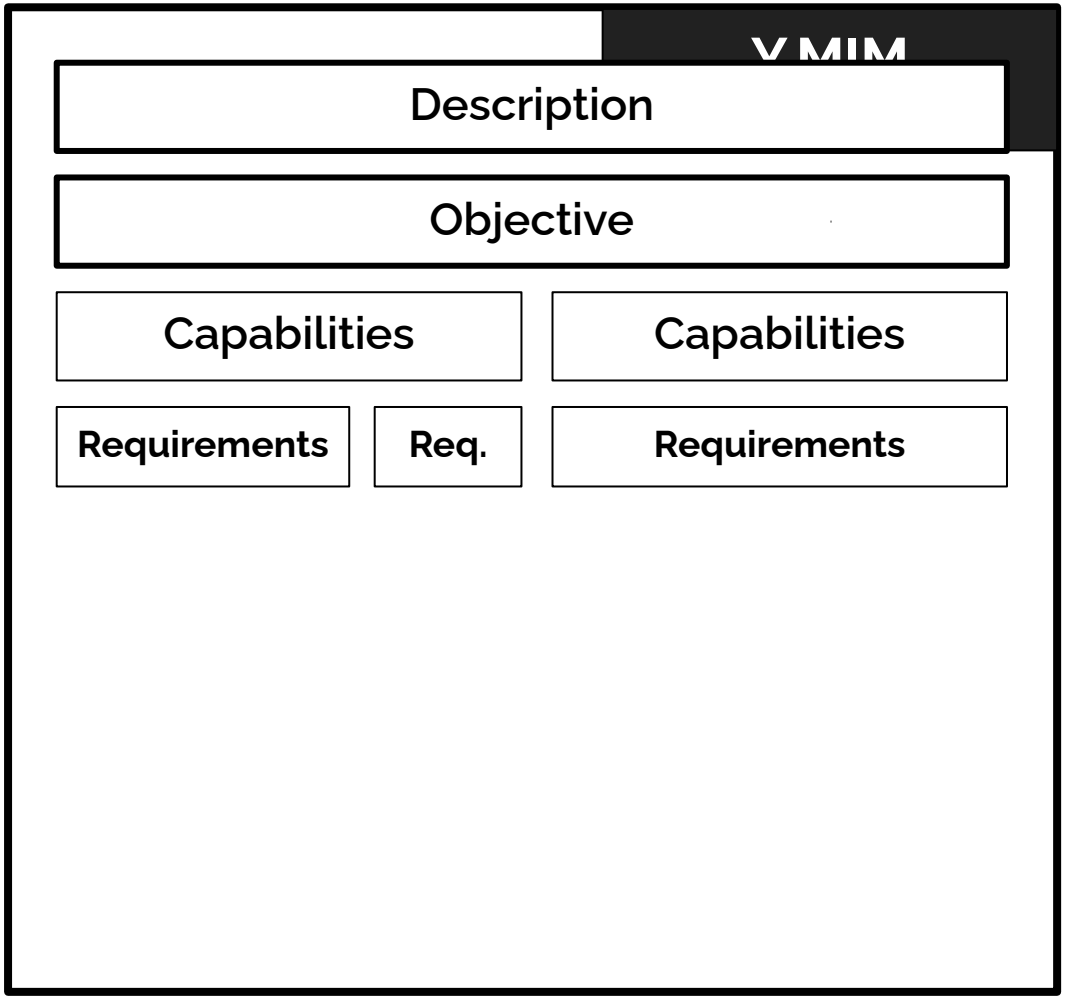
policy



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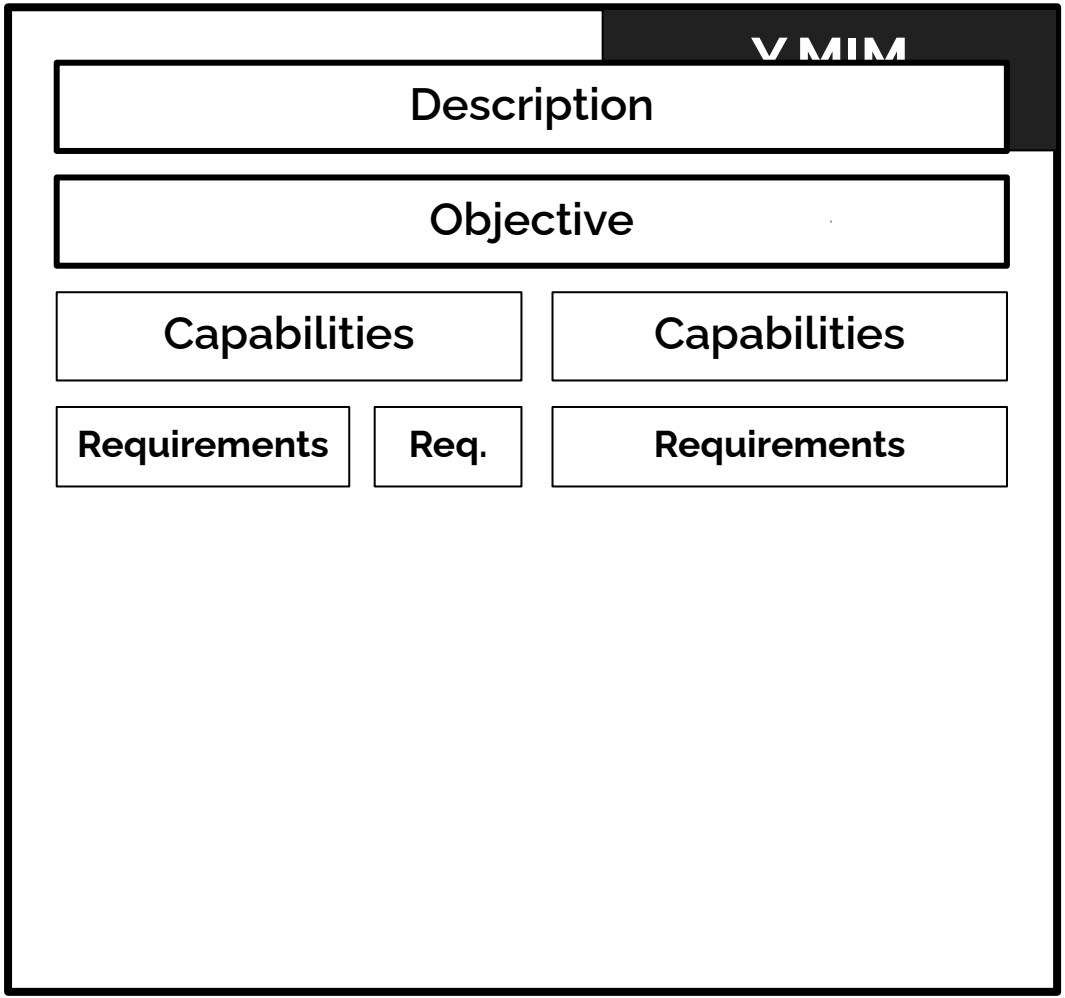
functional

procurement



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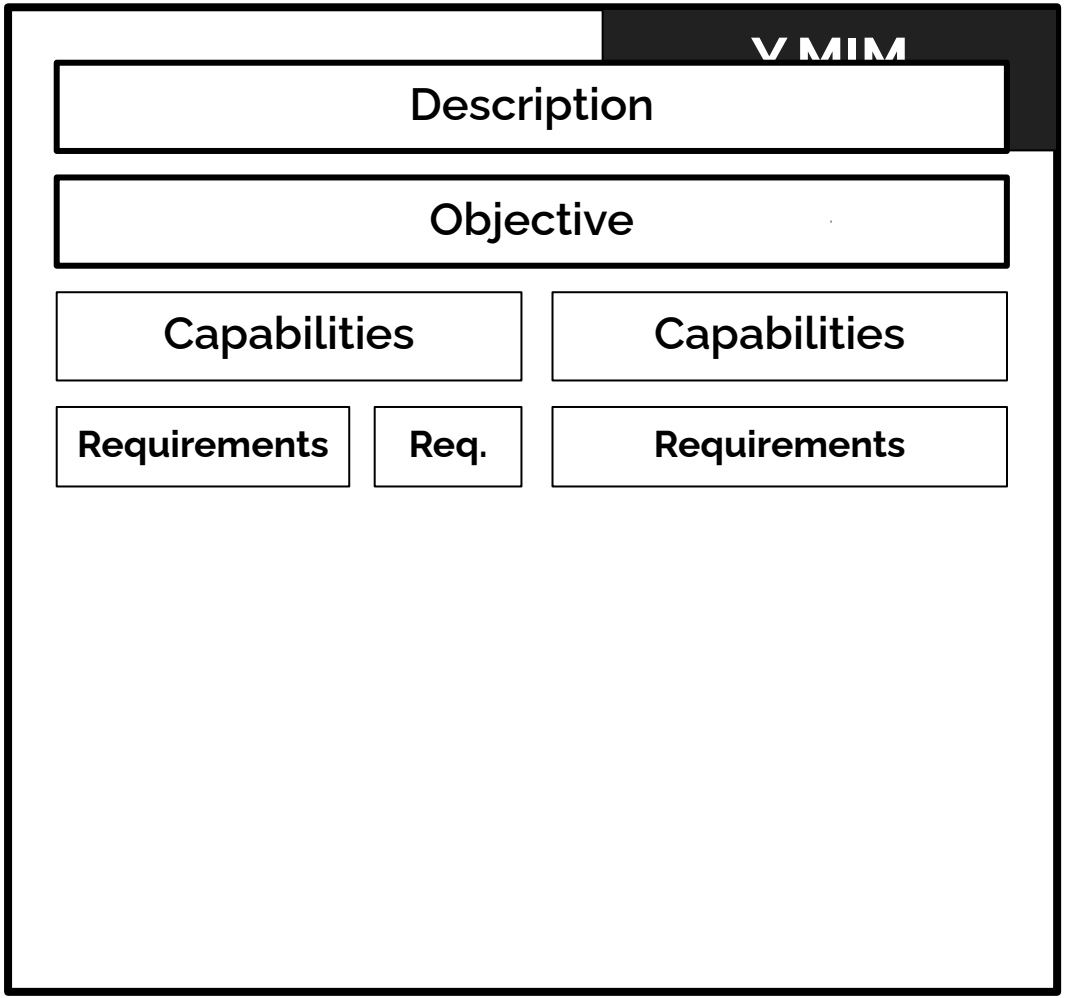

policy

technical

procurement

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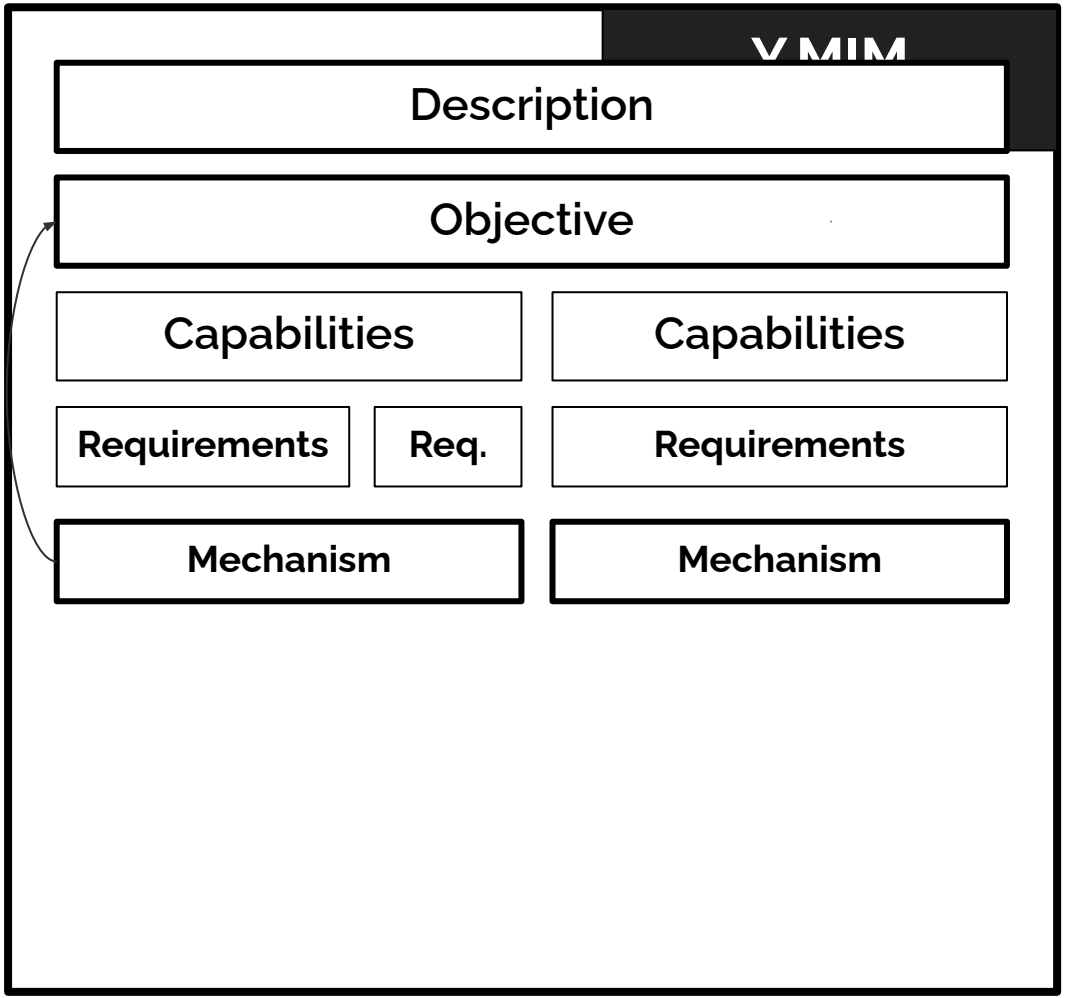

policy

technical

procurement

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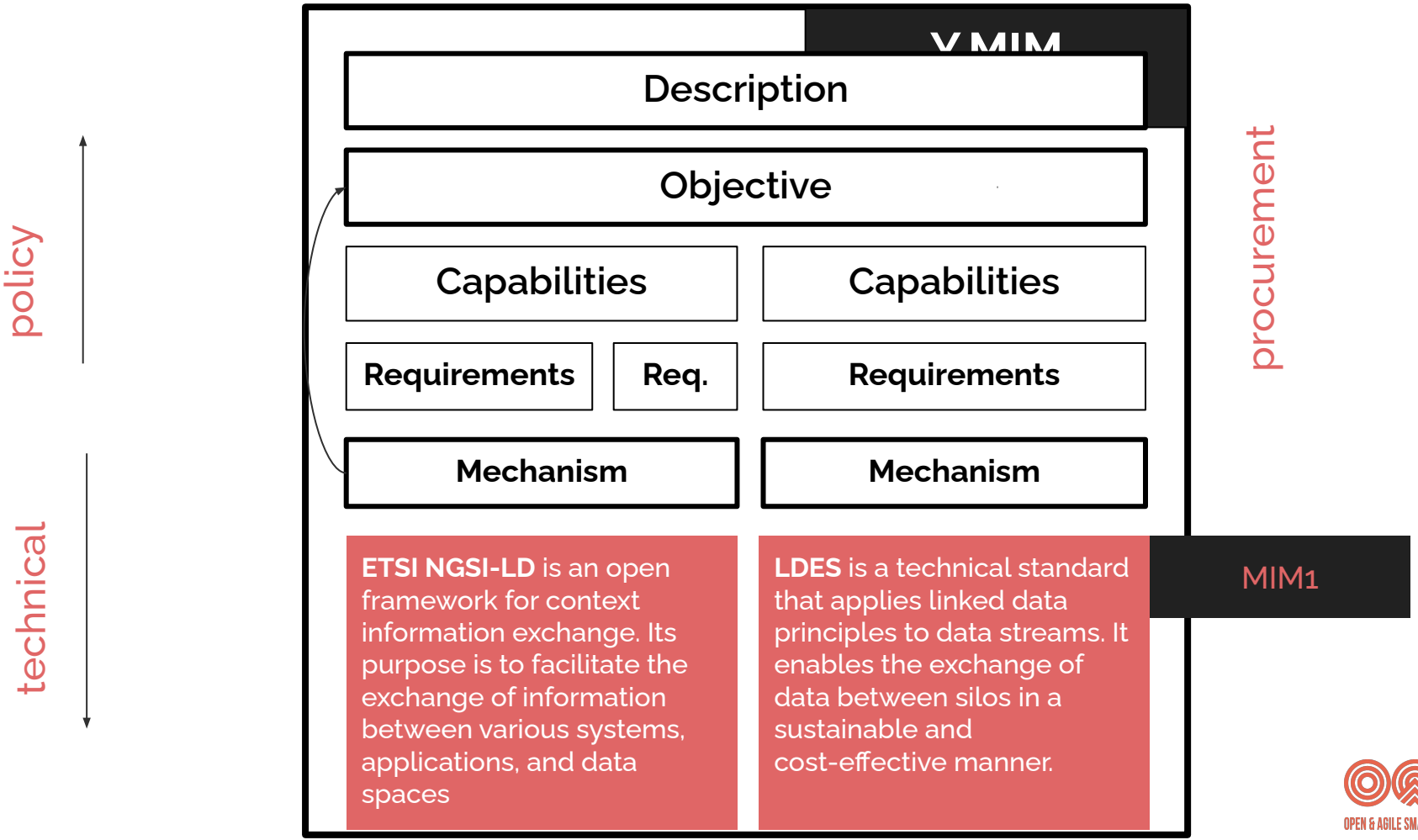

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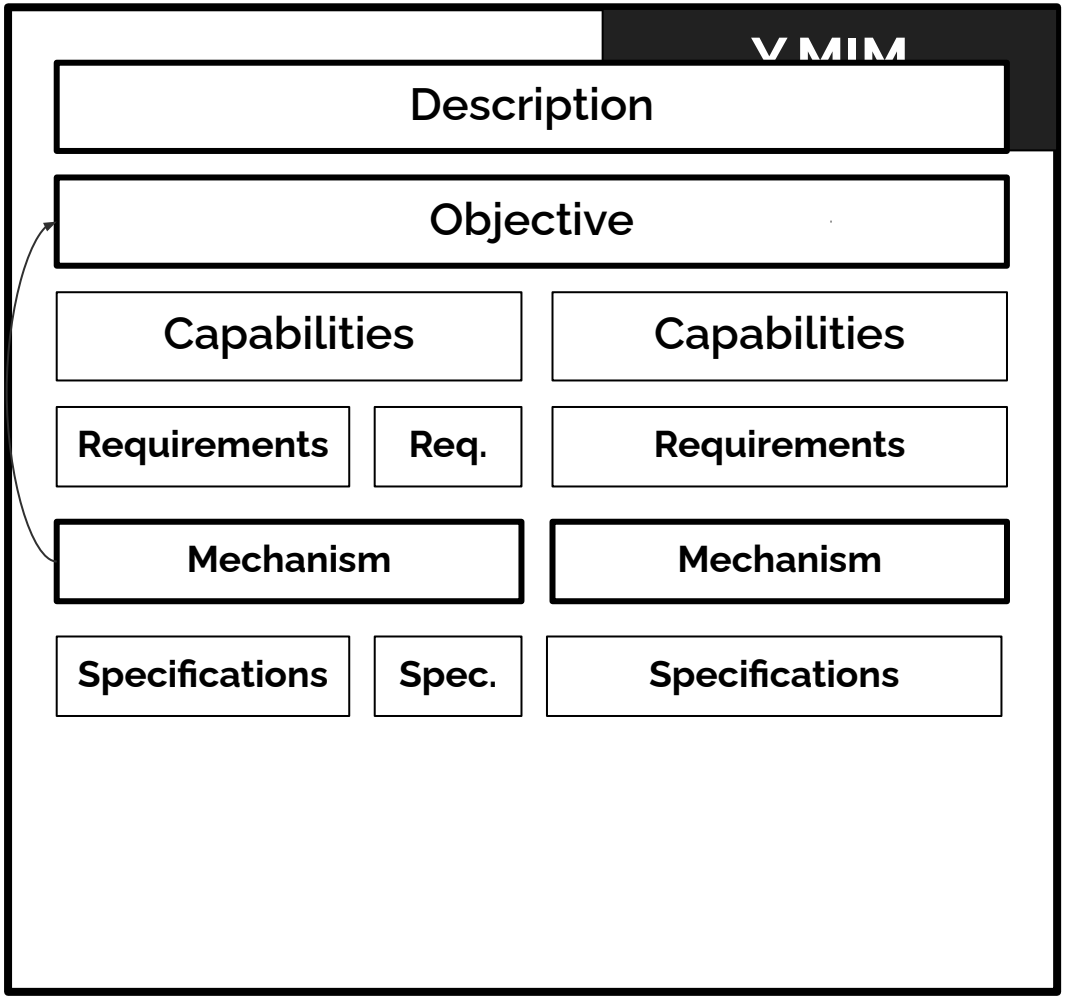

policy

technical

procurement

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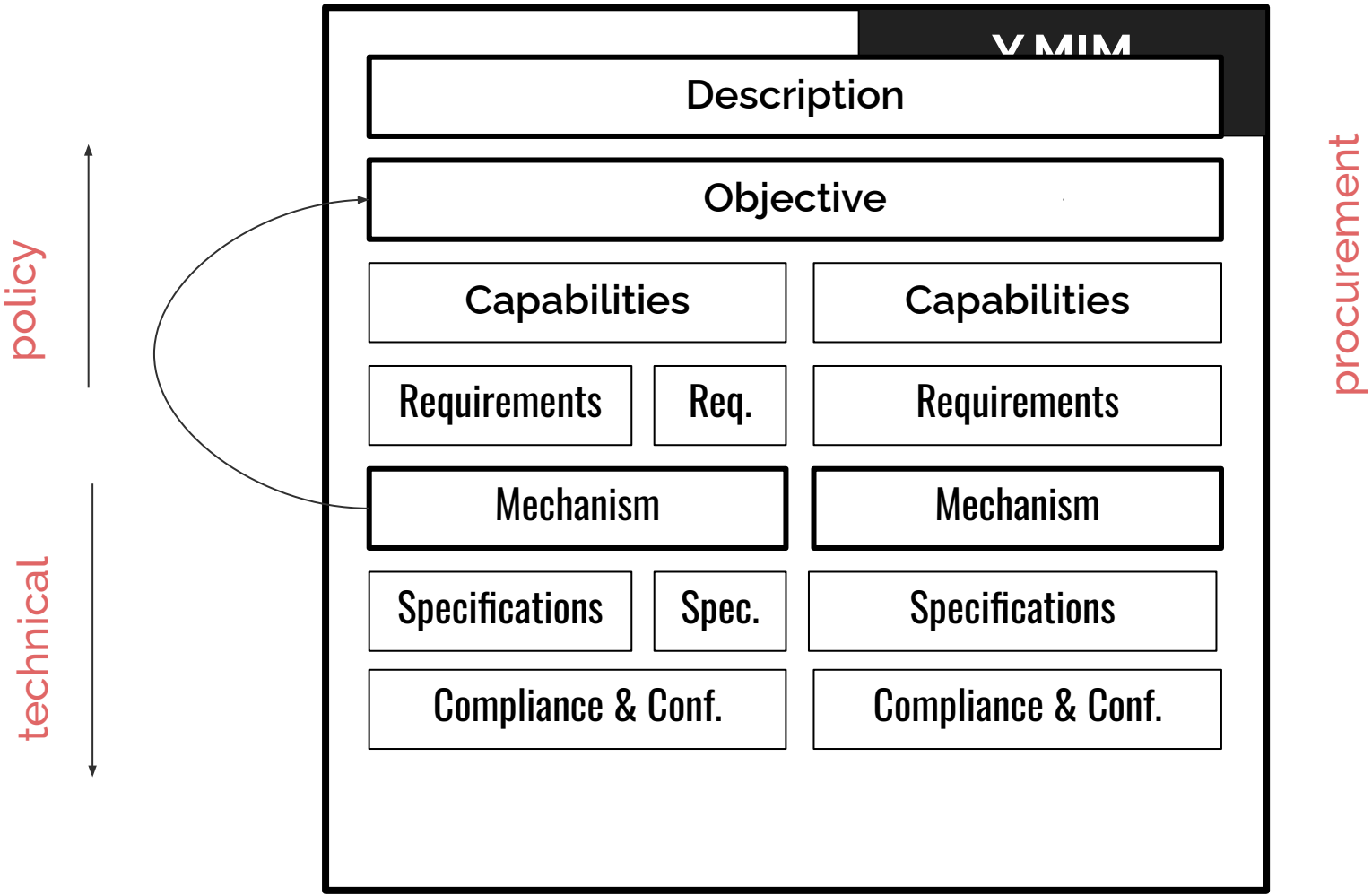

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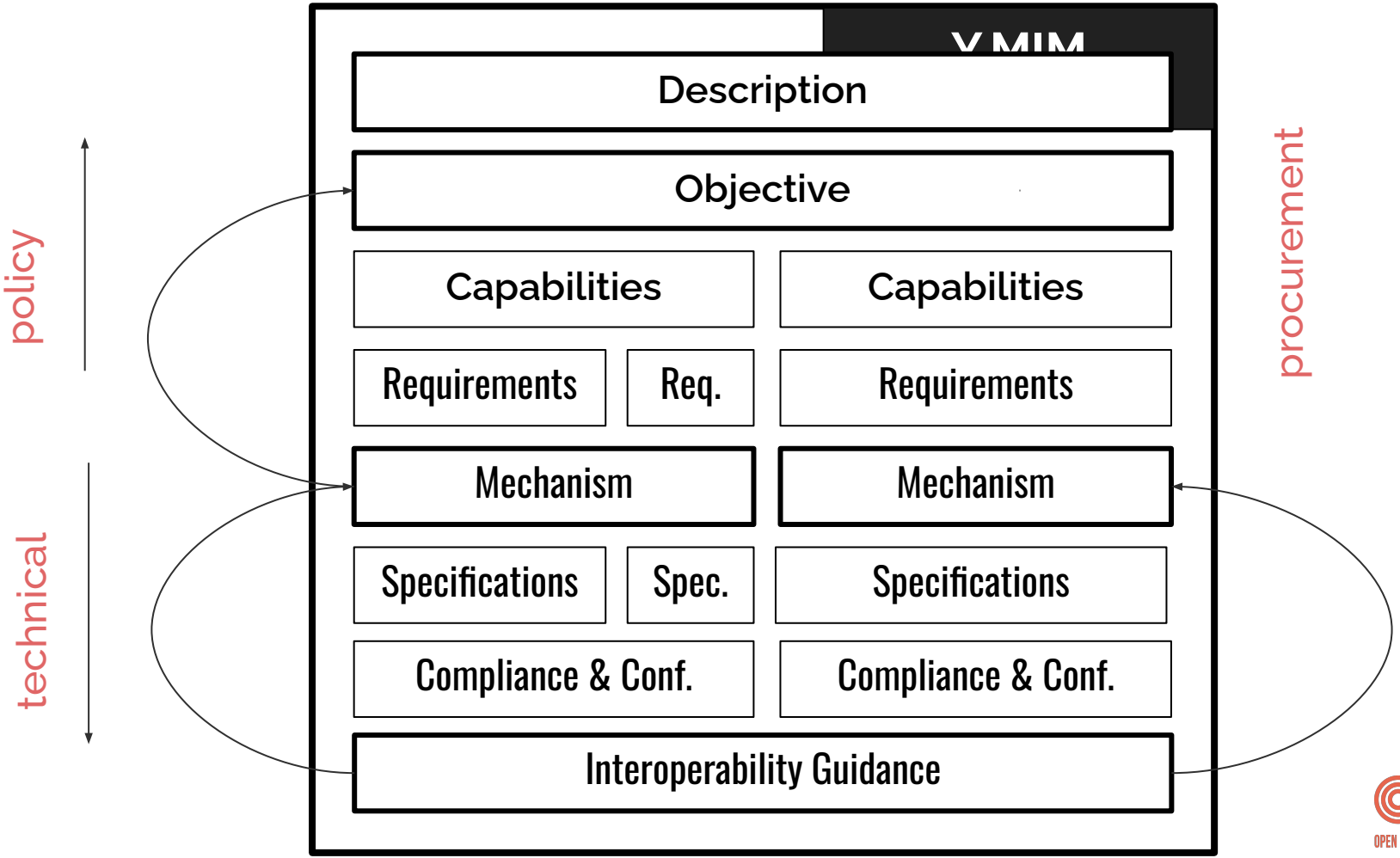

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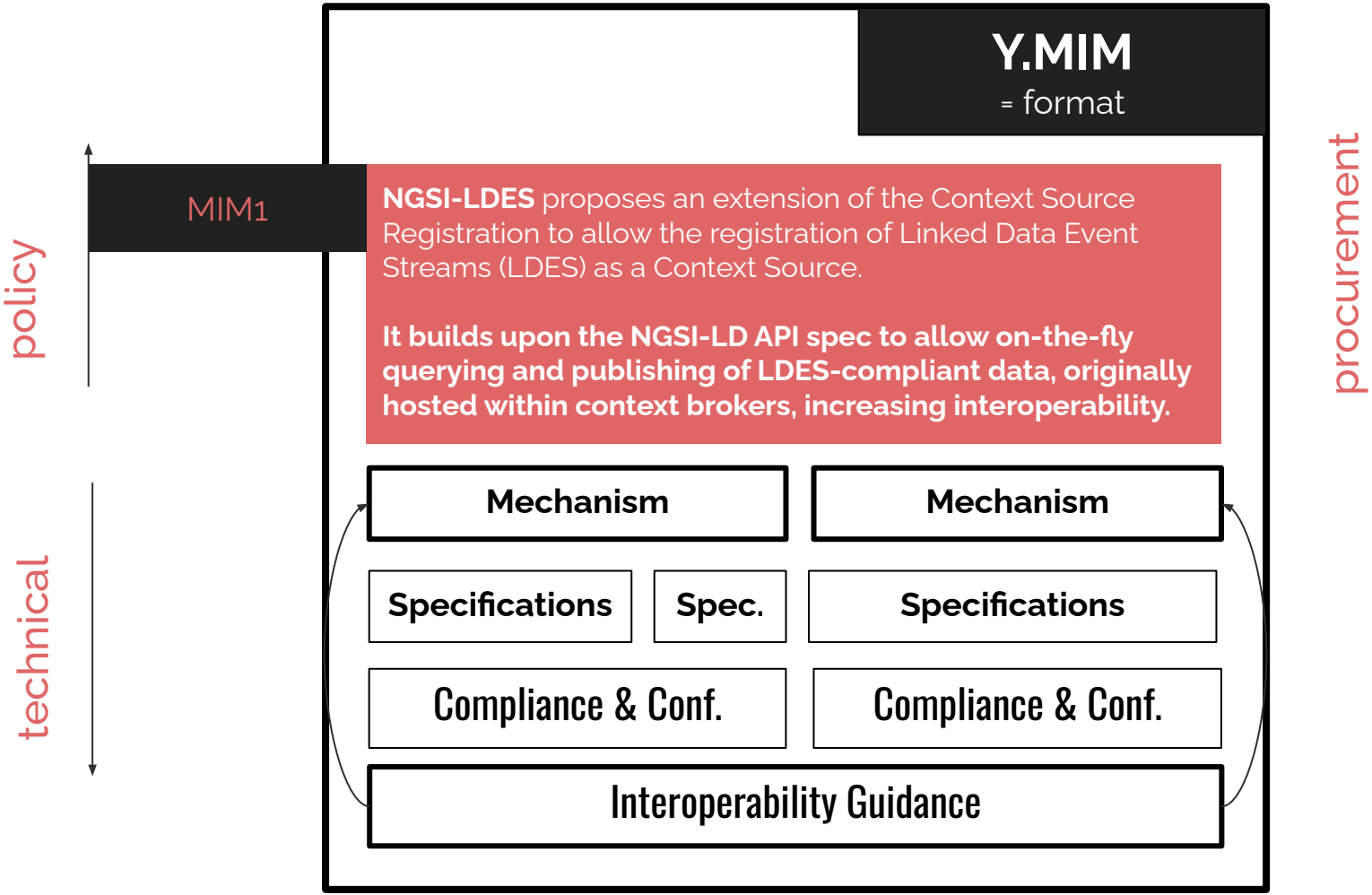

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policy

technical

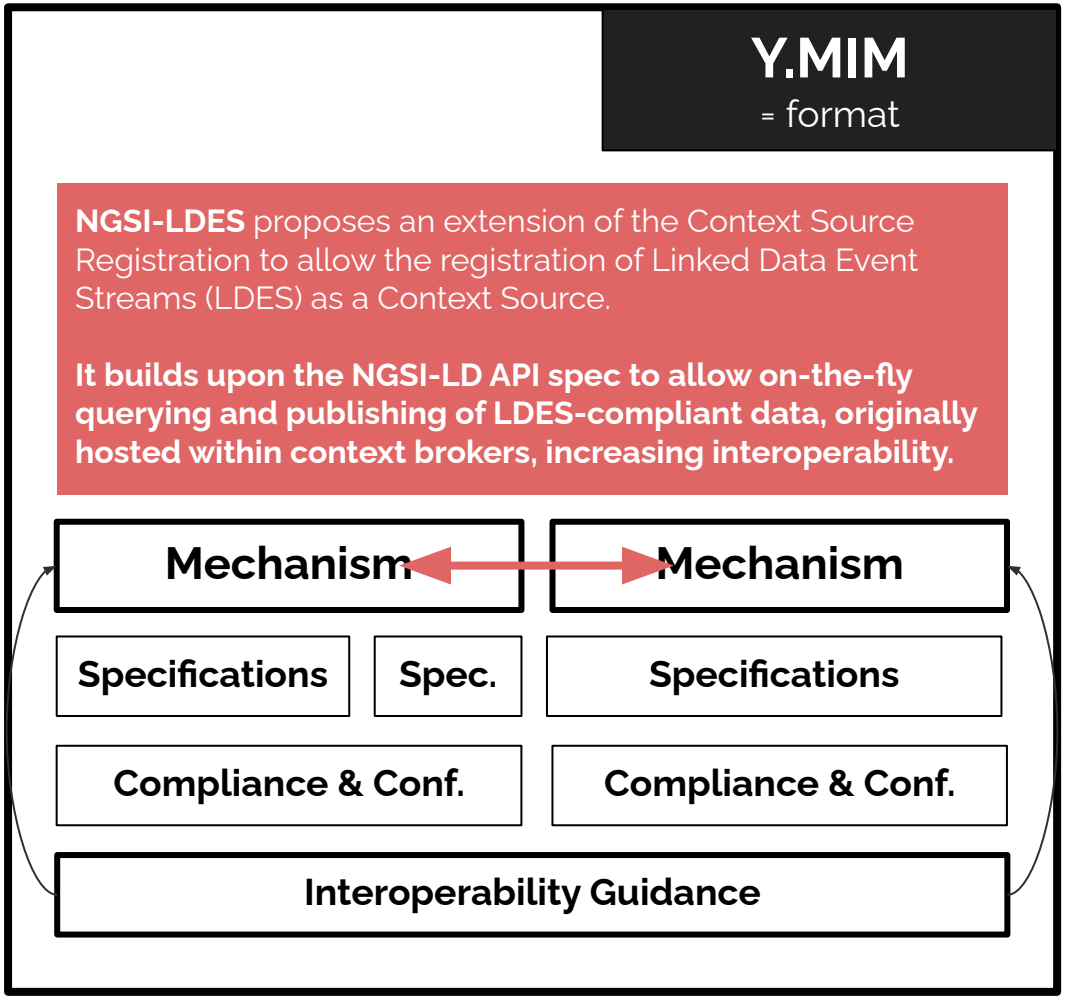
procurement

Y.MIM

= format

NGSI-LDES proposes an extension of the Context Source Registration to allow the registration of Linked Data Event Streams (LDES) as a Context Source.

It builds upon the NGSI-LD API spec to allow on-the-fly querying and publishing of LDES-compliant data, originally hosted within context brokers, increasing interoperability.



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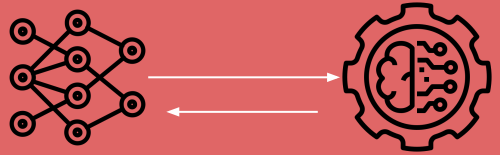
How To Use MIMs



You want to procure different technologies while maintaining the same capabilities and data

You work with a mechanism and want to access/exchange with different mechanisms

You have some legacy systems and you want to access/exchange information in an interoperable way

You want to build and use interoperable solutions

You want to procure different technologies while maintaining the same capabilities and data

new Customer Relationship Management (CRM) tool

SalesForce

Microsoft Dynamics CRM

Access and import (historic) data

Transform data & map onto new tool

MIM2: Data Models

You work with a mechanism and want to access/exchange with different mechanisms

Air quality drop notification

Local Authority

National Environment Agency

Subscribe to notification: Context Management API

ICT infrastructure based on MIM1: Context Information

You want to build and use interoperable solutions

a Startup is building a mobility solution

Start-up

Parking Provider

integration for each parking provider

Information in machine-readable format

MIM1:Context Management
MIM2: Data Models
MIM3: Contracts

MIMs Governance

Code of Conduct

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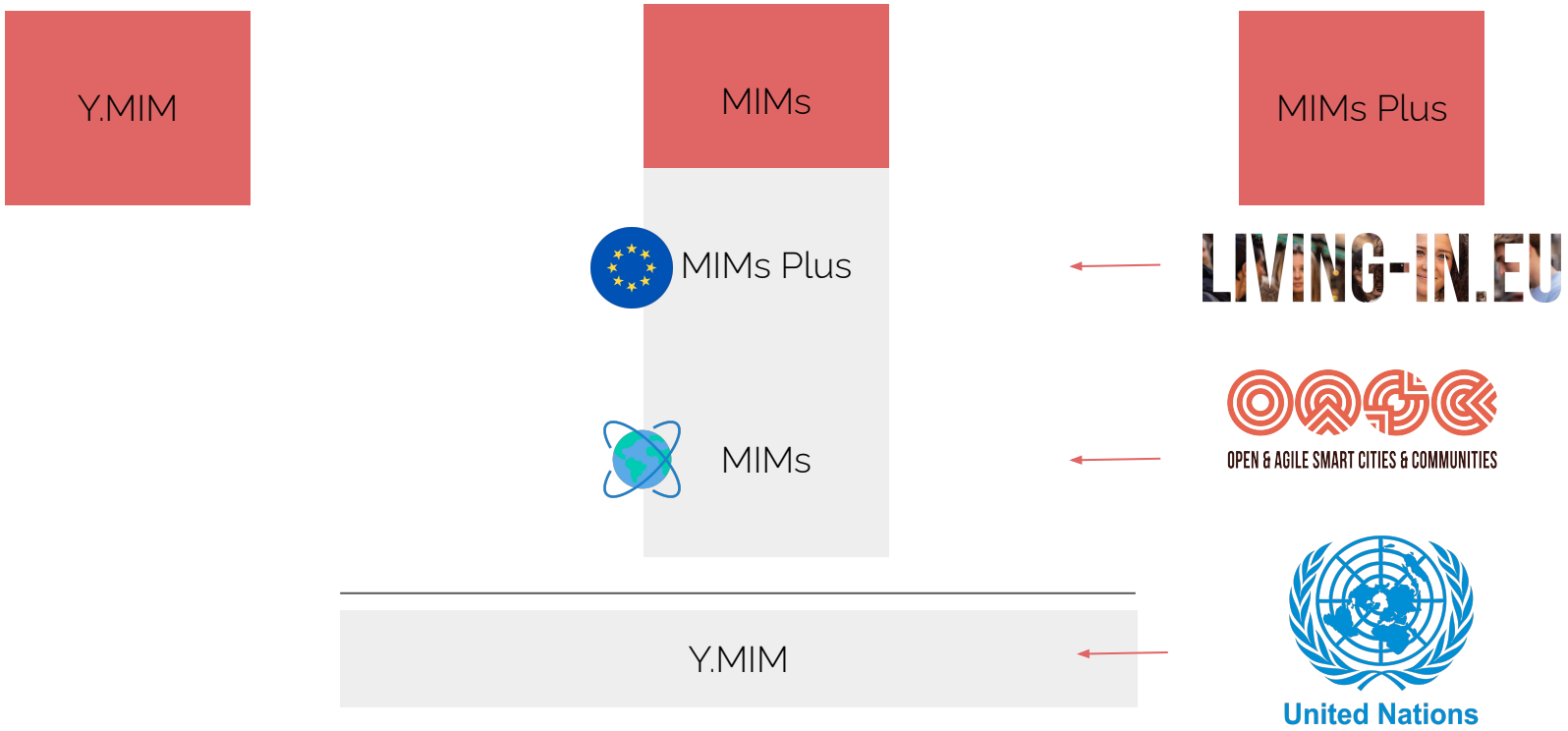
Birdseye View of the MIMs



MIMs/ MIMs Plus Development

MIMs Plus

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Technical Working Group Members

MIMs

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OASC Members
OASC Strategic Partners

MIMs Working Groups
Communities & Experts

CODE OF CONDUCT

Roles

- Working Group Champion
  The community taking the initiative to lead the development of a MIM

- Working Group Lead
  OASC staff members assist the champion and the WG by setting up working environments, contact lists, and gathering input from contributors.

- Working Group Contributor
  Working group members contribute and sign off the work of the monthly WG meetings. Only members have voting rights

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CODE OF CONDUCT

Bodies

- MIMs Working Groups
  Each MIM working group develops a specific MIM. Each MIM Working Group is championed by a city or community, facilitated by an OASC staff member, and filled with knowledgeable experts from, or linked to, cities and communities.

- OASC Tech Team
  The OASC Tech Team is part of the OASC operational team and is responsible, among other things, for driving the development work of the MIMs and MIMs Plus. The team is convened by the OASC Tech Team Lead every week with the purpose of alignment, general work progress reporting and assigning tasks.

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CODE OF CONDUCT

Bodies

- Council of Cities

  The over 155 member communities of OASC are represented by the Council of Cities. It is headed by the Council of Cities Coordinator who is elected every two years. This body is tasked with approving strategic decisions as well as the development of and latest versions of the OASC MIMs. The Council of cities is in the position to consult the technical council to ensure the needs and requirements of communities are translated accurately into technical terms.

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CODE OF CONDUCT

Bodies

- OASC Technical Council

  The Technical Council is an advisory body composed of individuals whose technical expertise can provide reliable guidance to the Council of Cities, ensuring MIMs' accuracy and applicability across various domains and expertise areas. They review the MIM specifications at each milestone and inform both the Tech Team and the Council of Cities on potential improvements. These individuals can be representatives from cities, industry experts, working group champions, and relevant associations.

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CODE OF CONDUCT

Bodies (MIMS Plus)

- Living-in.EU Technical Working Group

  The Living-in.EU movement was launched to support the digital transformation of European communities. In doing so, it offers thematic working groups to those communities that have joined the movement by signing its declaration. The technical working group facilitated by OASC is one of the working groups signatories can join. This environment is then solely composed of community representatives who are in the position to adapt the MIMs development work to the European requirements, also known as MIMs Plus. The group meets a minimum of four times a year to work towards validating the latest version of the MIMs Plus.

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CODE OF CONDUCT

Bodies (MIMS Plus)

- Living-in.EU Steering Group

  The steering board of the Living-in.EU movement is populated by members of the facilitating organisations (Eurocities, ERRIN, CEMR, OASC, ENoLL, Committee of Regions, European Commission) and chaired by a representative of the coordination and the European Commission. The board meets every month except during the holiday season. Each year in June, the technical working group puts forth the latest validated version of MIMs Plus for the boards' approval. Upon its acceptance the latest version of MIMs Plus will be published on platform and made publicly available for adoption.

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MIMs/ MIMs Plus Development

LIVING-IN.EU

MIMs Plus

Steering board

Technical Working Group

MIMs

Council of Cities

Technological Council

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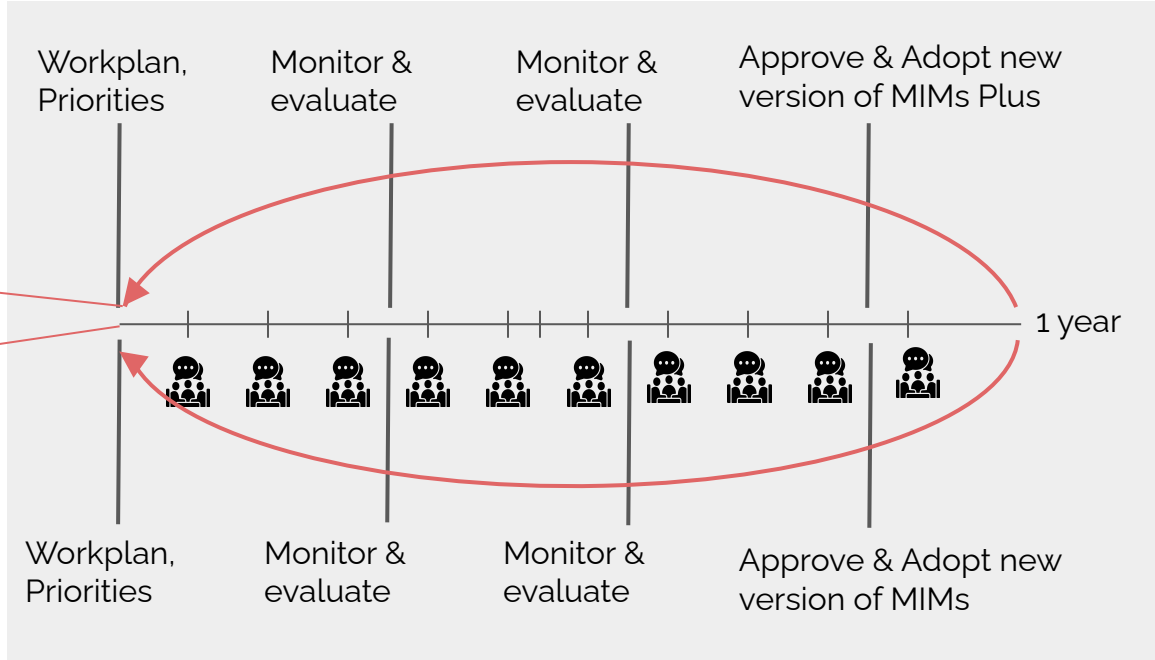

MIMs Working Groups

Communities & Experts

MIMs Deep dive

1, 2, 4, 5, 6, 7

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Latest version always on
GitBook

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Audience time

Warm-up question:

What is your city and/or affiliation?

menti.com 8144 7790

CURRENT DEVELOPMENT

	MIM1	MIM2	MIM3	MIM4	MIM5	MIM6	MIM7
Objective defined	✅	✅		✅		✅	✅
Capabilities & Reqs defined	✅	✅		✅			✅
Mechanism defined	✅	✅					✅
Compliance & conformance	✅	✅					✅
Interoperability Guidance	✅	✅					✅
Use Cases (“pilots”)							✅

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MIM1 - Context Information

OBJECTIVE	To enable context information from different systems within or across organisations, such as cities or communities, originating from heterogeneous sources, to be brought together using a uniform interface. To enable comprehensive and integrated use, reuse and sharing of data as well as management of context information To turn data into a strategic resource

MIM2 - Data Models

OBJECTIVE	To support cities and communities to use consistent and machine-readable definitions of all the entities about which data is being captured in a data ecosystem, along with a consistent set of identifiers of individual instances of each entity, so that data about any entity can be combined with other data referring to that entity, and every instance of that entity, in the confidence that they refer to the same thing.

MIM4 - Trust

OBJECTIVE	To enable individuals to be able to easily manage data about themselves so that it can enable outcomes they want, both for themselves and their community, while not compromising on privacy. To do this in a way that will make it easy to integrate with whatever credible personal data management systems (such as forthcoming EU-registered personal data intermediary services) the individual may wish to use.

Identified Interoperability Angles in MIM5 (May 2024)

In general, there are **two main interoperability angles** that should be embedded in the MIM5 focus.

1. Ensure that the process of training AI algorithms is transparent and fair.
2. AI algorithms can be understood and used more transparently and fairly by the public and users

+

1. testing and verification standards/mechanisms.

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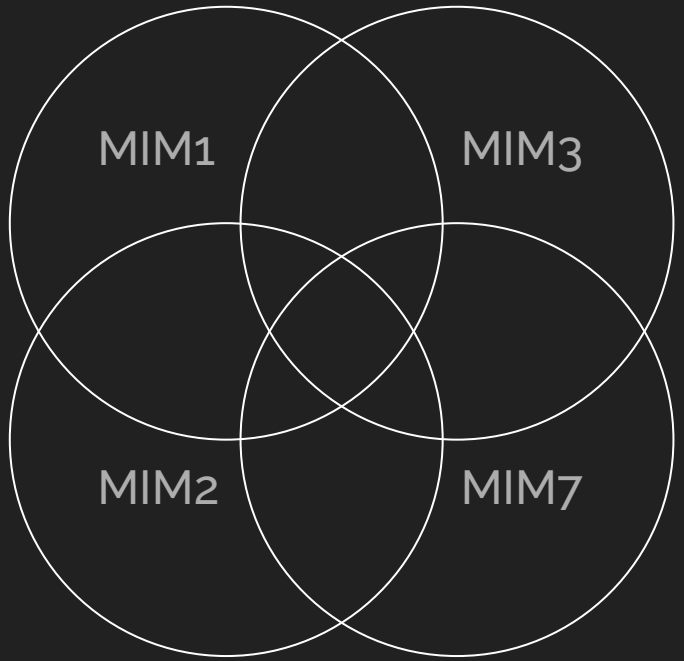
MIM6 - Security

OBJECTIVE	• When information is transferred, between parts of the data platform or externally, this is done securely. • Data processors know what requirements concerning security and interoperability to make of suppliers and systems when evaluating, procuring, developing, operating, and using solutions.

MIM7 - Places

OBJECTIVE	To enable cities and communities to easily integrate data about spatial assets such as streetlights, buildings, and streets with spatio-temporal data from sensors, along with other data sources that can provide helpful context information to the geospatial data, and make the data interoperable within, and between cities and communities.

DEVELOPMENT GOALS BY MIM v7.0 - FRAMEWORK DISCUSSION



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Your ideas?

We are looking for use cases!

Get in touch:

tech-team@oascities.org

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Thank You