



**EUROPEAN
CONGRESS**
SEVILLE
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Clean, resilient and
connected mobility.

Harmonization of EU NAP architectures using FRAME methodology

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RP 3 Exploiting mobility data

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Agenda

- **NAPCORE and Scope**
- **Why FRAME Architecture?**
- **Results**
- **Examples**



NAPCORE National Access Point Coordination Organisation for Europe

Objectives

- facilitate **EU-wide coordination of NAPs and NBs** for the harmonisation of the implementation of the European specifications on the ITS Directive
- **increase interoperability** by (further) establishing standards and **recommendations**
- address existing and upcoming developments and challenges with a **joint European strategy, vision, and voice.**

Facts & Figures

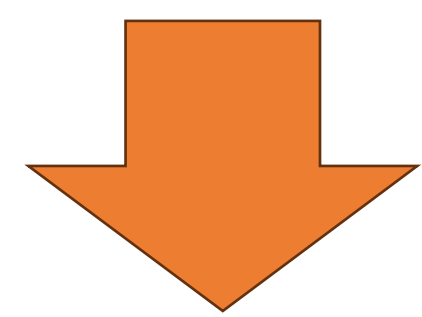
- EC funded via Connecting Europe Facility (CEF), 2021-2025, 14 Mio € budget
- All Member States, incl. Norway, Switzerland and 3 private organisations
- Follow-up call to support the coordination of ITS National Access Points, 2025-2027, 9.5 Mio €



Why FRAME Architecture?

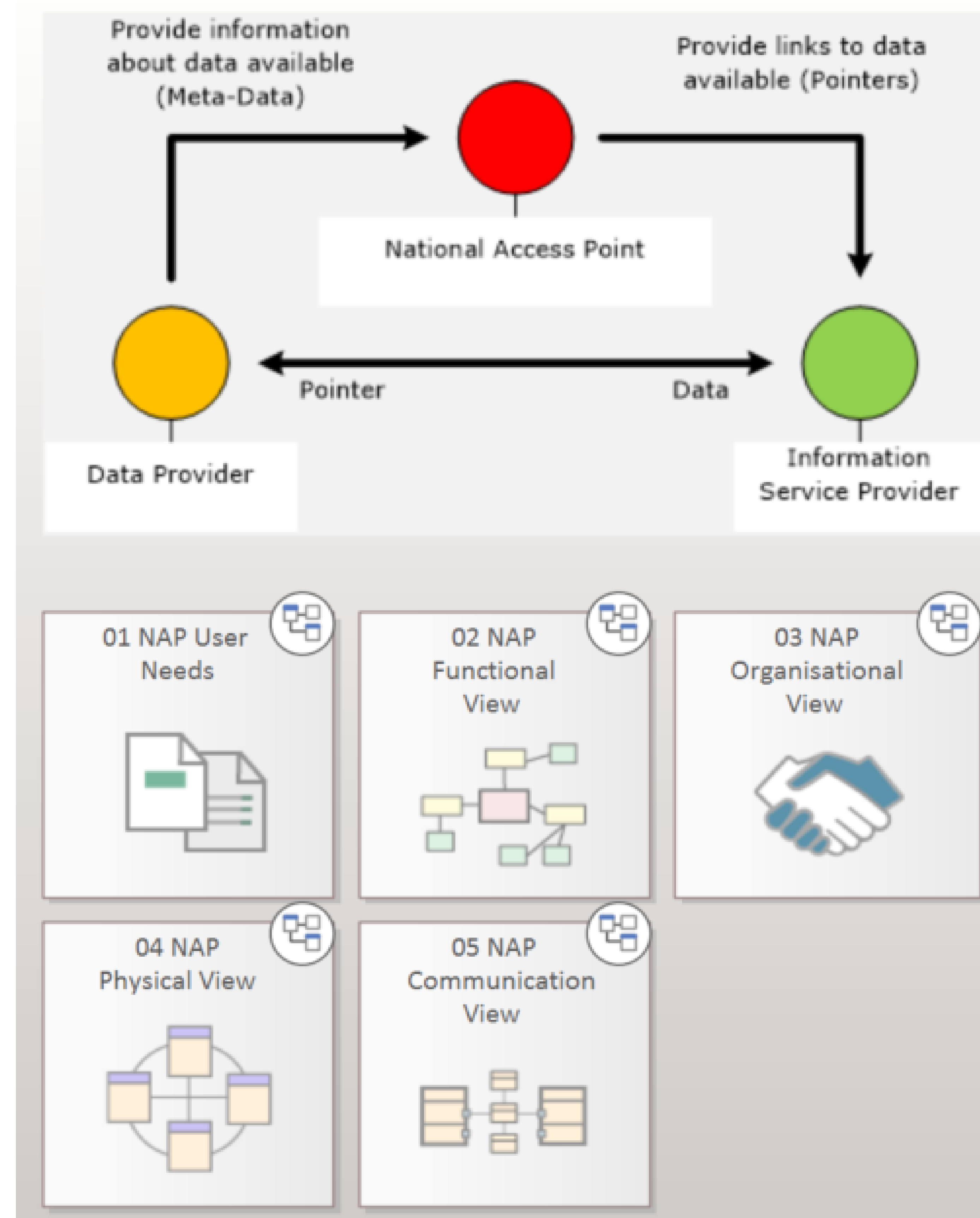
The NAP Reference Architecture defines the minimum necessary functionalities, processes, and interfaces to enable a harmonized exchange of information (metadata and data) for EU-wide reuse, creating the basis for an EU-wide mobility data space.

NAP Reference Architecture
Detailed, with other views,
technology agnostic, generic.



Architecture uses **VIEWS** to illustrate a certain aspect of a **system**

- NAP Motivation Layer
- NAP User Needs
- NAP Functional View
- NAP Organisational View
- NAP Physical View
- NAP Communications View



The architecture is developed within the **Enterprise Architect**

Each view contains:

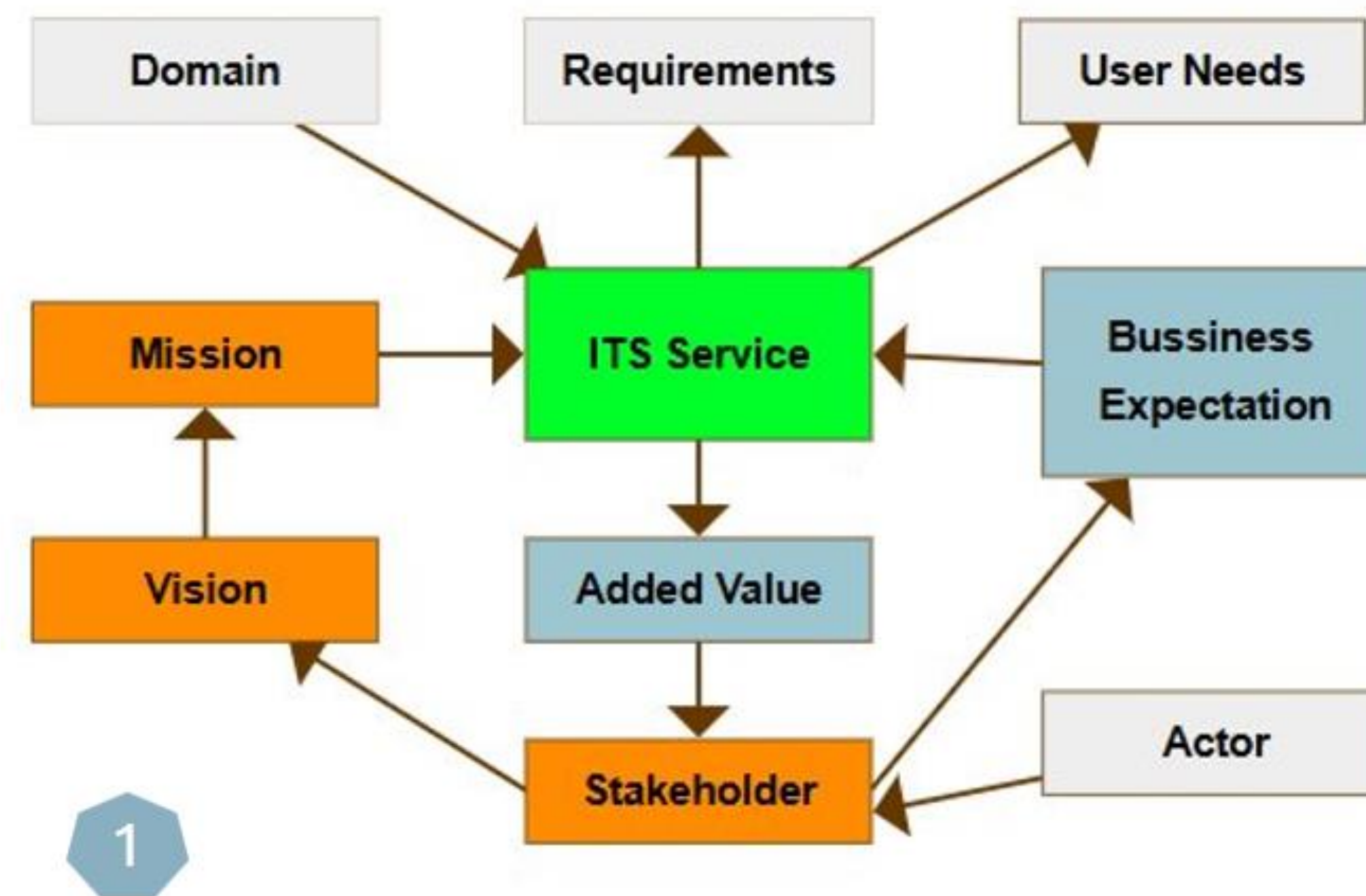
- **schema of a system** and **description** of each object and their relationships
- and also, the relationship with objects used in other views.



Results: Overview

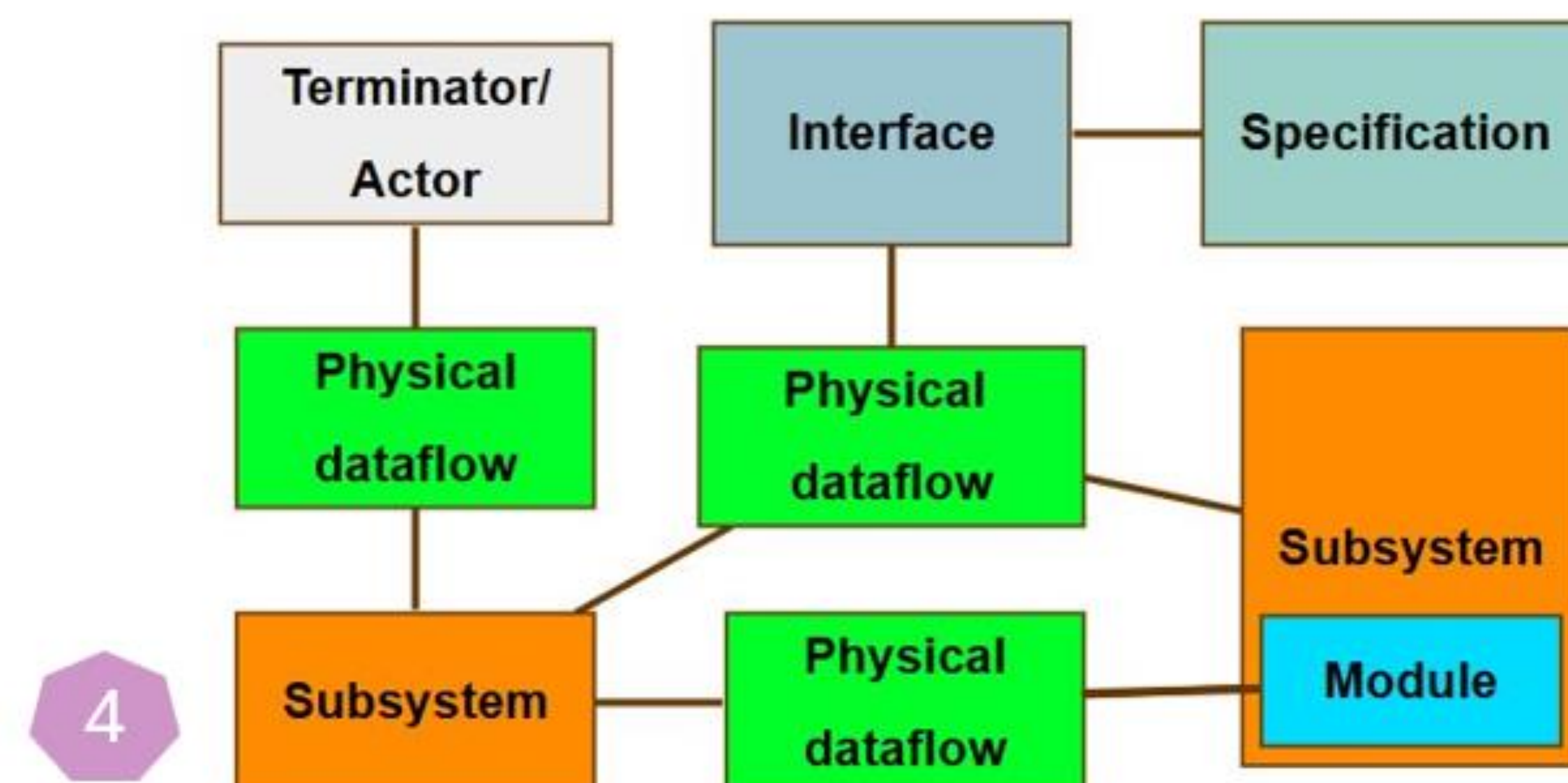
Motivational Layer

Models the motivations, reasons, and expectations for the NAP.



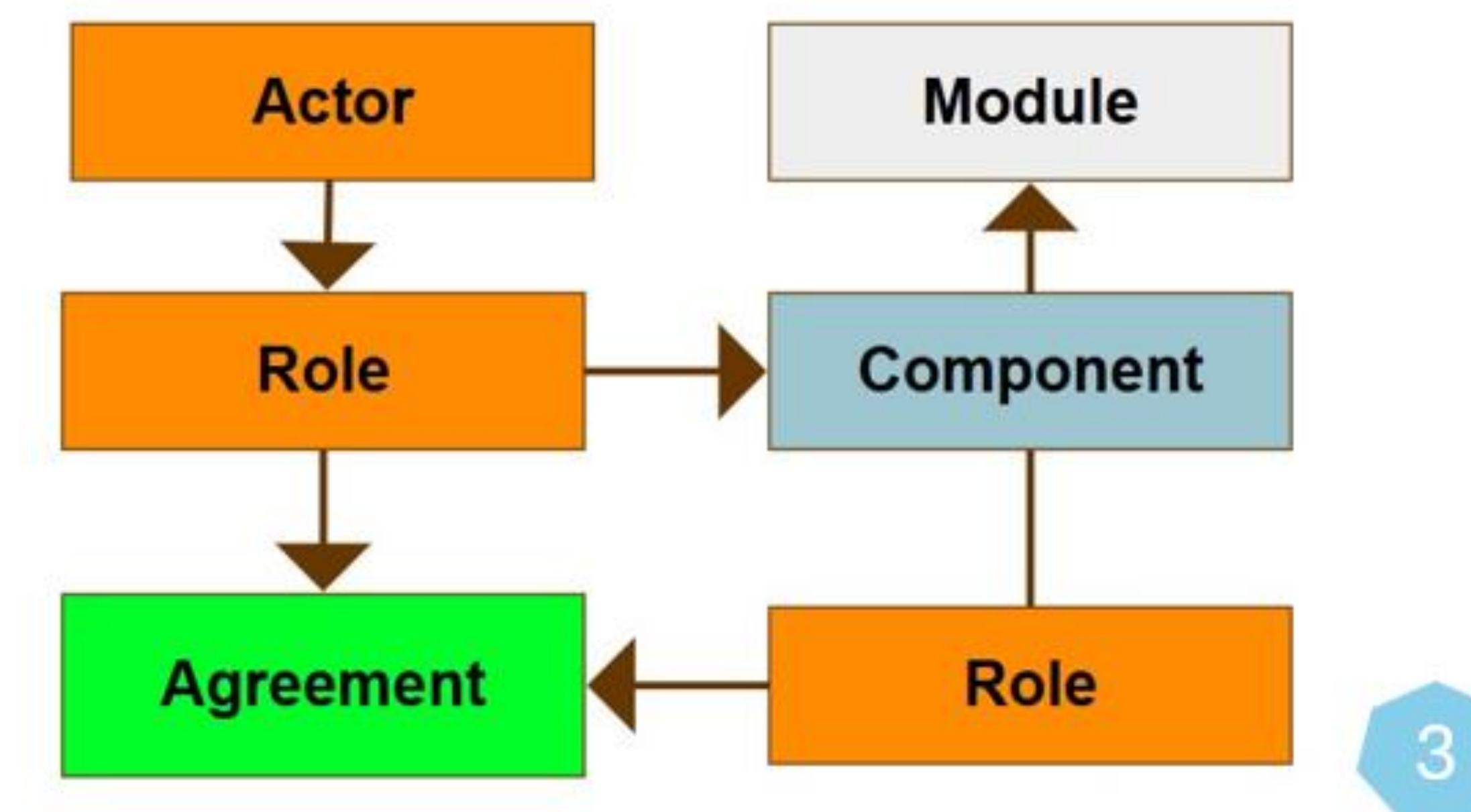
Communication View

Describes properties of communication links between physical elements.



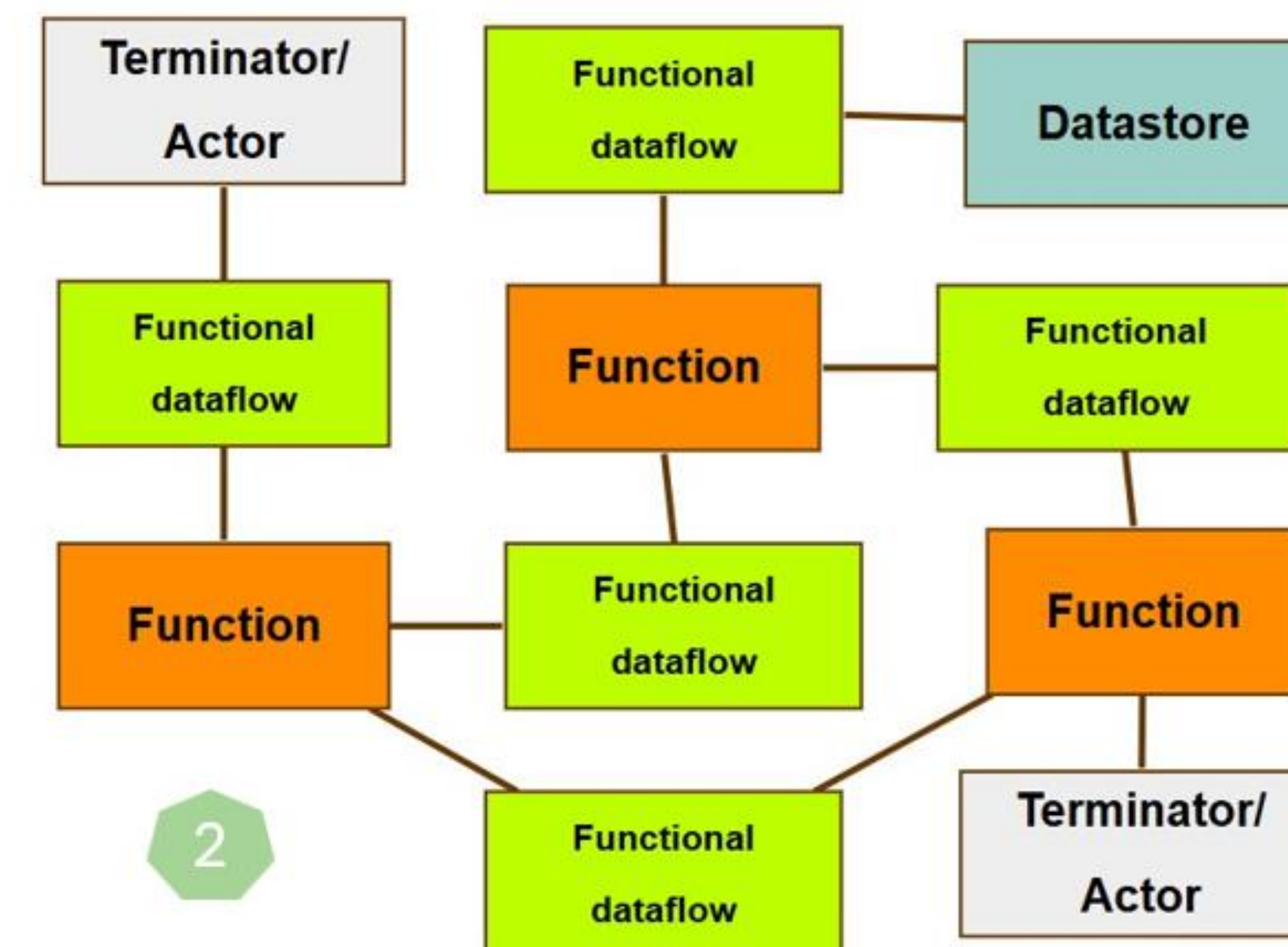
Physical View

Describes the arrangement of physical elements, such as system elements and their connections.



Organisational View

Provides information about actors, their roles, responsibilities, and relationships.



Functional View

Focuses on the system's functional aspects, defining architectural elements and their interactions.

We develop Minimum NAP Reference Architecture for:

- **metadata directory**
- **data platform**



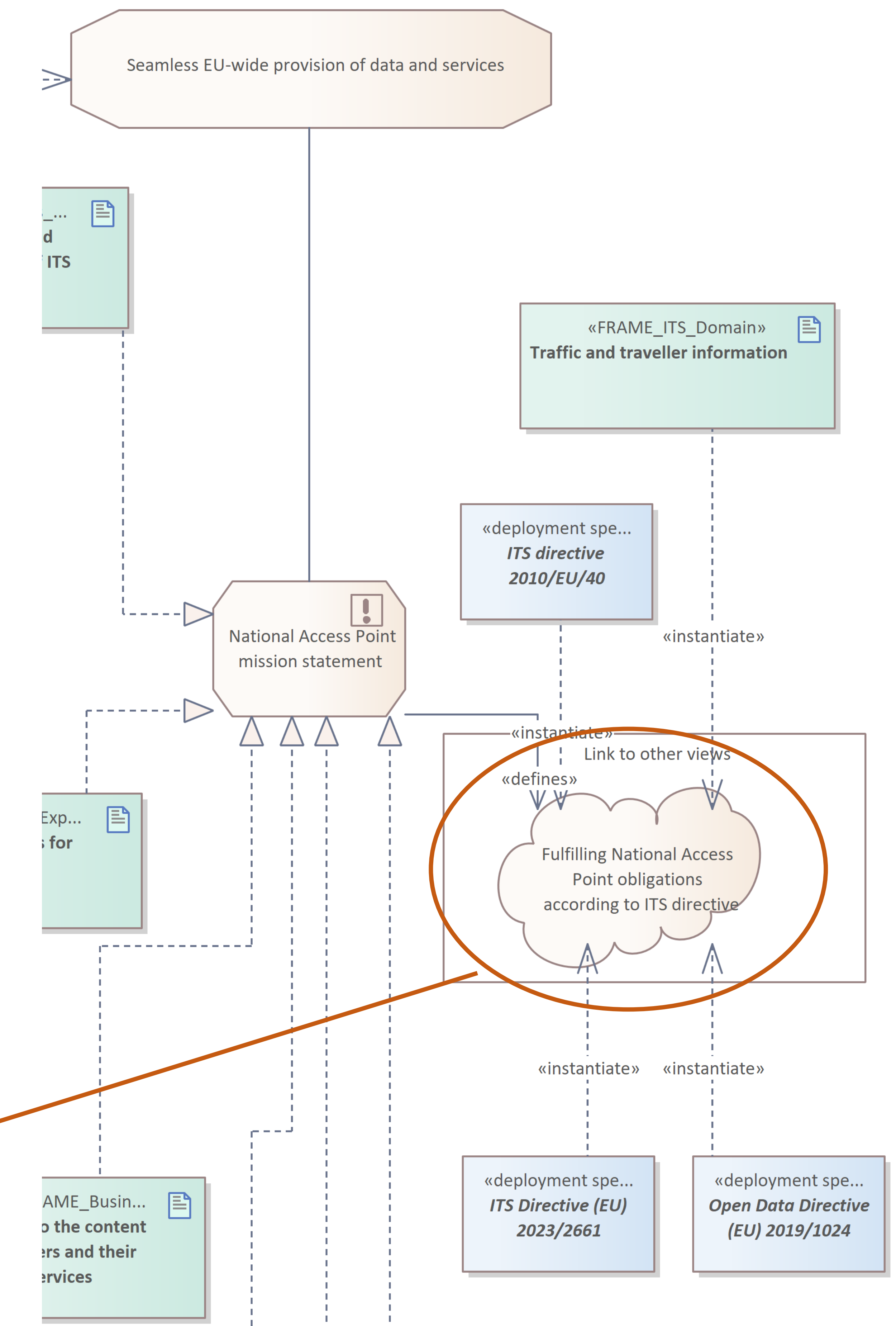
Example: Motivational Layer

It models the motivations, necessity, and expectations for the successful deployment and implementation of NAPs

- Added elements like:
 - Mission statement
 - Vision
 - Stakeholders and their business expectations
 - Legal obligations
- Added detailed descriptions

ITS Service:

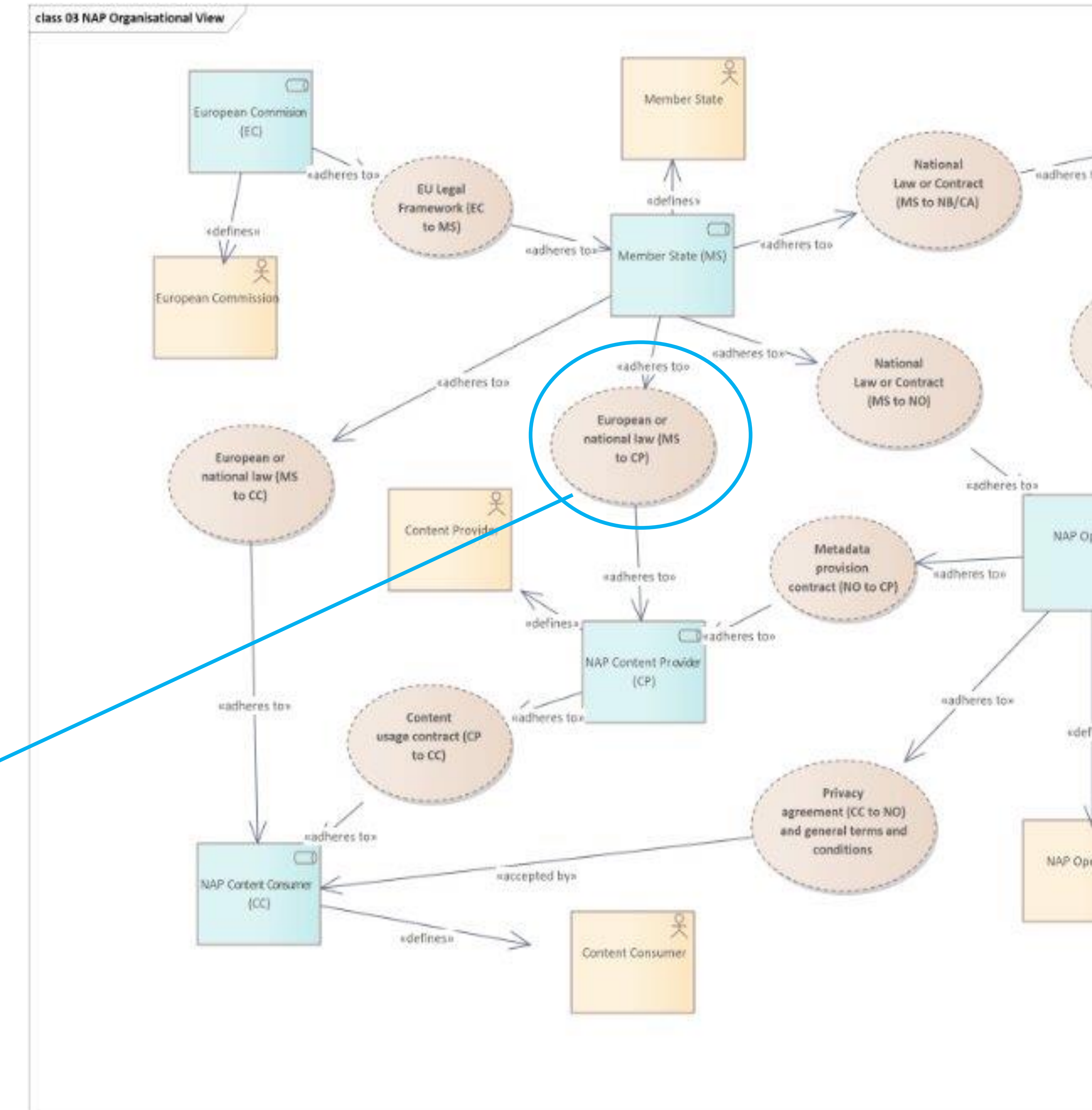
The National Access Point of a Member State has specific tasks related to the Delegated Regulations of the ITS Directive 2010/40/EU, which are requested by the European Commission. The main task is to provide non-discriminatory central access information to data listed in Delegated Regulations



Example: Organisational View

It provides information about the actors, their roles and responsibilities, and relationships between roles in terms of lawful or contractual relationships

- **Parties:** Member State (MS) and Content Provider (CP).
- **Objective:** To identify CPs and set up obligations of the CPs.
- **Form:** National law implementing the ITS Directive and direct execution of EU law
- **Obligations** (MS to CP: ---); CP to MS:
 - To ensure data provision in a correct format to the content consumers (CC) under FRAND conditions.
 - To ensure that required data is updated at the appropriate and recommended time intervals.
 - To publish relevant information about data/services and information on the data quality at the NAP.
 - To provide data compliant with the EU requirements (Provide self-declaration to the NAP and NB/CA and assistance in case further proof of compliance is required).
 - To provide a description of the data, digital map, or real-time traffic information services they provide as well as the information on the quality thereof and the conditions of re-use of these data and an evidence-based declaration of compliance to the NB/CA. And to cooperate in the compliance assessment process.



Example: Functional View

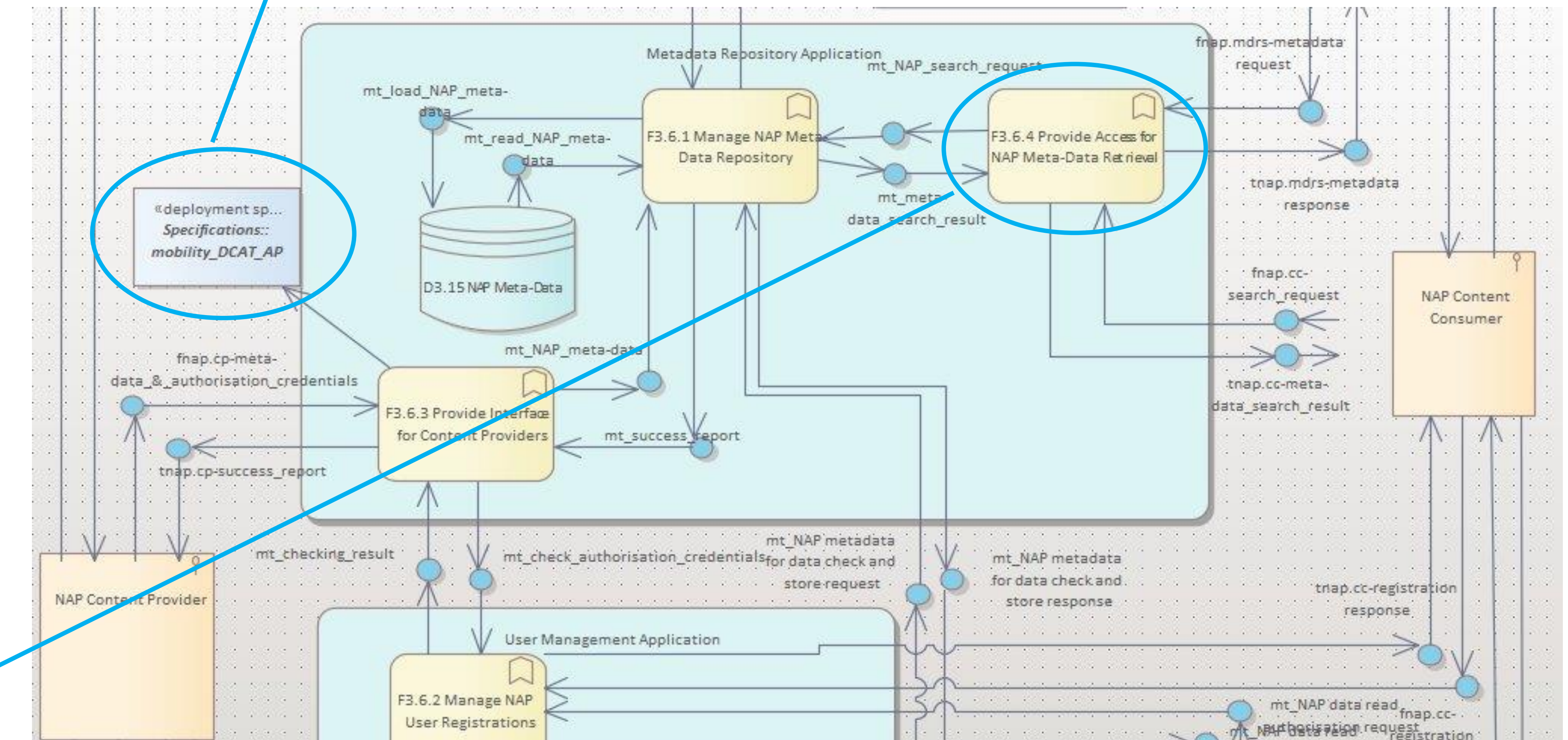
It focuses on the operational aspects of the NAP, defining harmonized system functionalities by NAPCORE and documenting the system's functional structure Interfaces linked to physical dataflows.

LLF: F3.6.4 Provide Access for NAP Meta-Data Retrieval

This Function shall be capable of providing the following facilities:

1. The ability to provide a query form or comparable search interface to define keywords or refine demands in different available meta-data elements.
2. The ability to receive and process requests from Data Consumers to be provided with NAP meta-data.
3. The ability to process the request in 1. above so that all suitable search results to the request are retrieved from the Data Store NAP Meta-Data.
4. The ability to format the NAP meta-data search results obtained in (3) above and send it to the entity that made the request in 2. above or to display them in an overview results page.

Specification: mobility DCAT-AP



Example: Physical / Communication View

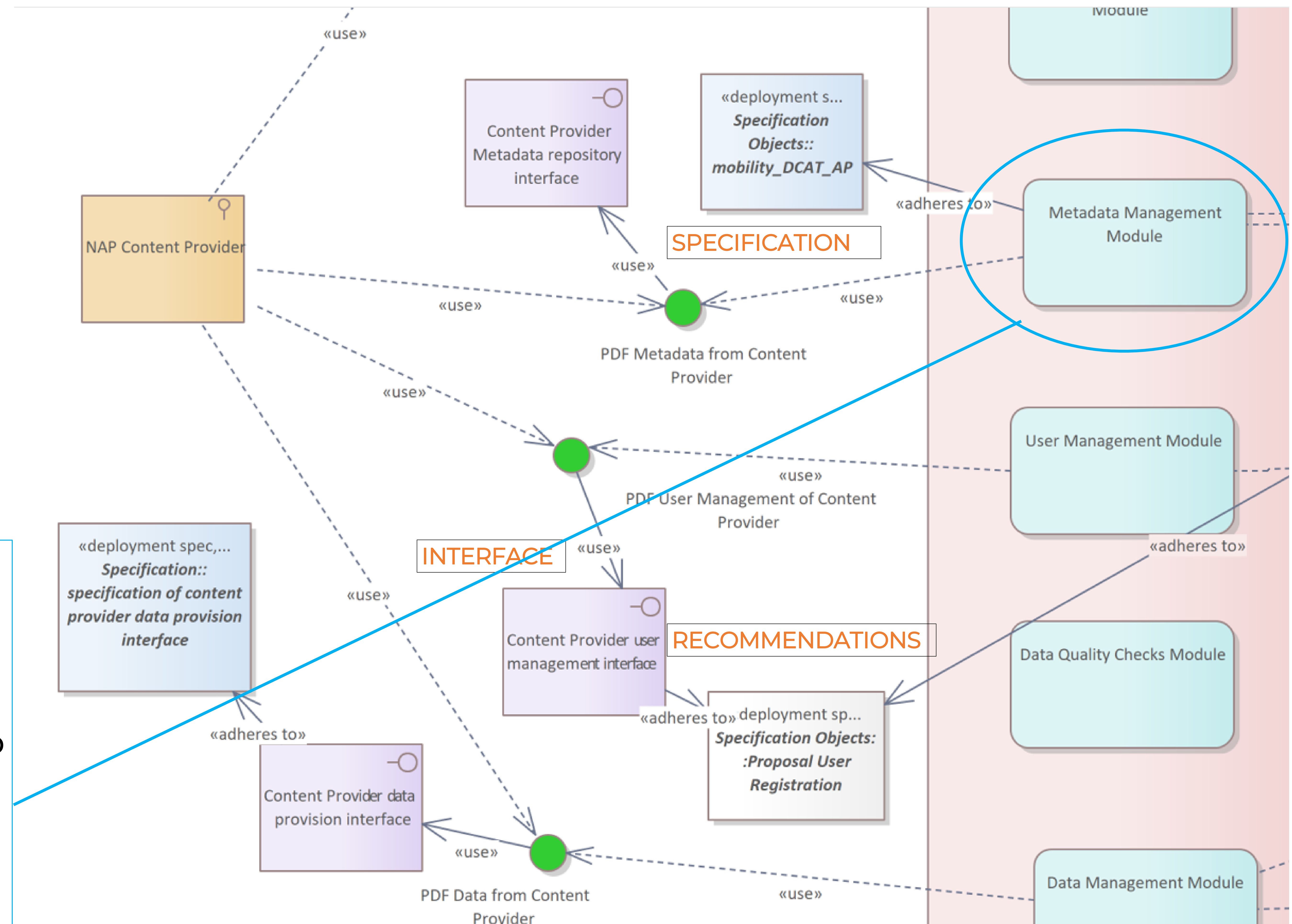
The physical view of the NRA describes the arrangement sub-systems modules and their connections building upon functionalities.

The CV of the NRA focuses on the interaction and data exchange between different components of the system.

Metadata Repository module

This application represents an application that contains a NAP Metadata store and interfaces to handle metadata.

- It shall contain an interface which enables NAP Content Providers to upload, update or delete metadata and informs about the success or failure of that interaction.
- It shall contain another interface which is able to process metadata search requests to enable NAP Content Consumers to retrieve metadata.



Conclusion

- The NRA consolidates all NAPCORE National Access Point harmonization activities
- NRA can be applied to create a harmonized NAP from scratch by implementing the necessary functional and organizational elements using the architecture, to harmonize existing NAPs
- Living architecture – continuously updated
 - Next update planned for June 2025



NAP Reference

Architecture Infopage



THANK YOU!



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