National Coordinator of Intelligent Mobility

EY & Ministry of Transport CZ

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Introduction

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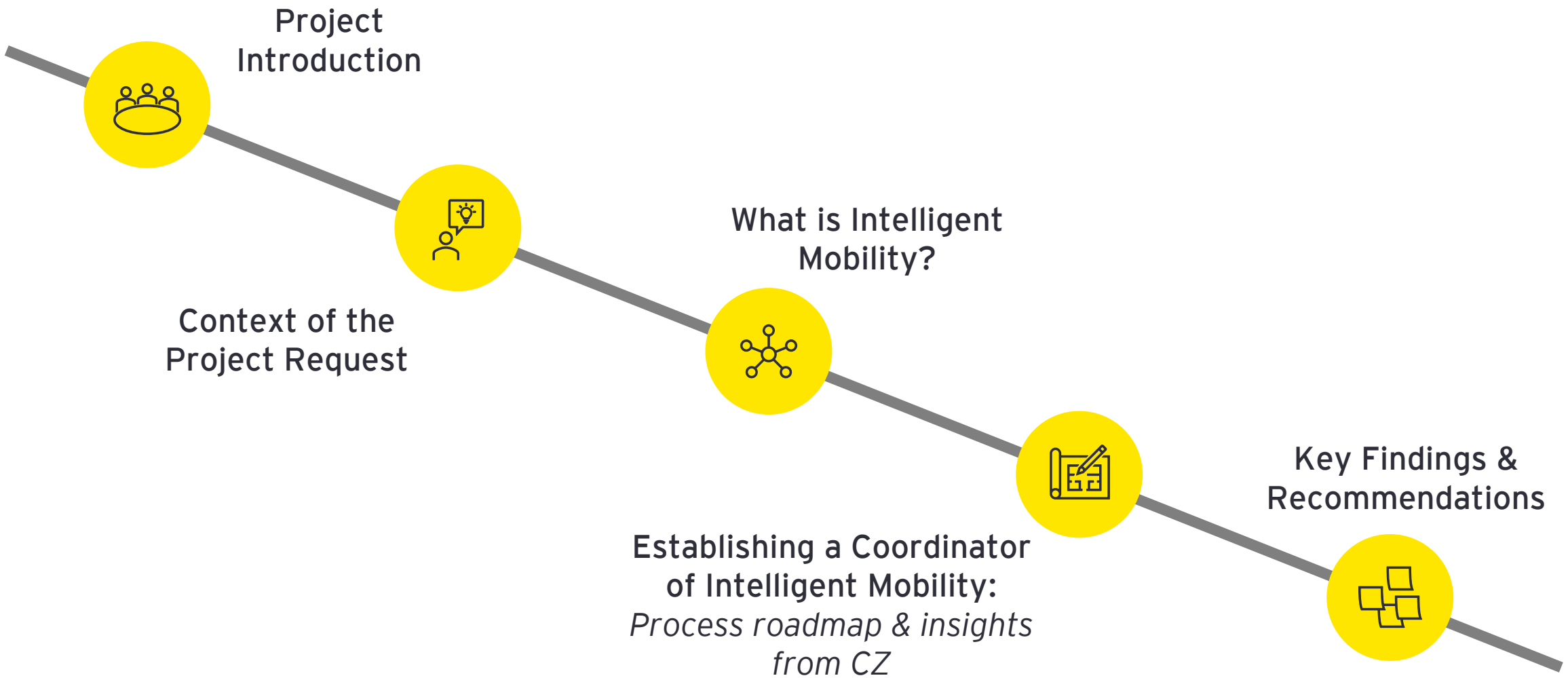
Today's agenda



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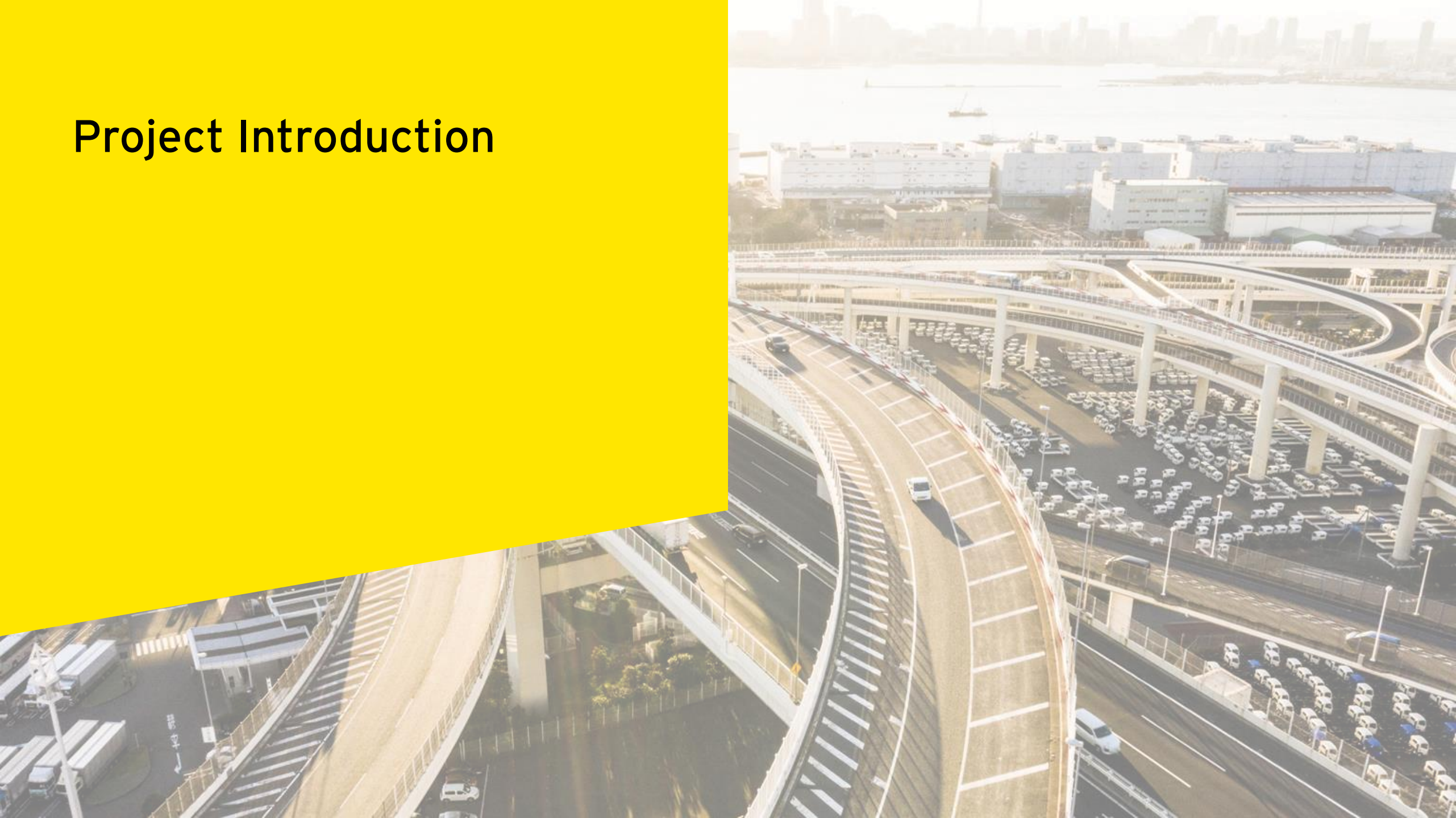
Project Introduction



Project background

Project parties

- Project oversight: DG REFORM: TSI
- Project beneficiary = Ministry of Transport of the Czech Republic
- Project contractor = EY

Project objectives

- Map the current state of Intelligent Mobility and its coordination in the Czech Republic
- Evaluate the need for an Intelligent Mobility Coordinator and define its agenda and functions
- Recommend the specific form of the National Coordinator of Intelligent Mobility in the Czech Republic

Project scope

- Analytical report with analysis of as-is state in the Czech Republic (incl. benchmark of four EU Member States)
- Recommendation report with suggestion for the optimal form for the institute of Intelligent Mobility coordination in the Czech Republic
- Focus on road and rail passenger transport

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Context of the project request

What is Intelligent Mobility?

Lack of consensus over what "Coordination of Intelligent Mobility" means before the project started

Intelligent Mobility coordination as a "blank sheet" awaiting general consensus over what it means and what it covers

- No widely accepted definition of Intelligent Mobility and its coordination
- No classification of topics under the Intelligent Mobility coordination umbrella
- No systematic framework for Intelligent Mobility coordination
- No generic approach towards institutionalization of coordination

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What is Intelligent Mobility?

Mobility

- **The ability to move** people or things from point A to point B without significant obstruction.
- **Ability to plan, build, organise and develop the** transport system as a whole.

"Intelligence"

- Access to data and information regarding transport and the ability to **use it to optimise the** entire transport system

Intelligent mobility

A comprehensive and coordinated approach that fosters the transport system to be **efficient, sustainable, safe, barrier-free and connected** transport system; it aims to meet the **socio-economic needs** of mobility users.

Intelligent mobility assumes the use of the latest knowledge, practices and reliable and proven state-of-the-art technologies and tools and contributes towards removal of barriers in the system.

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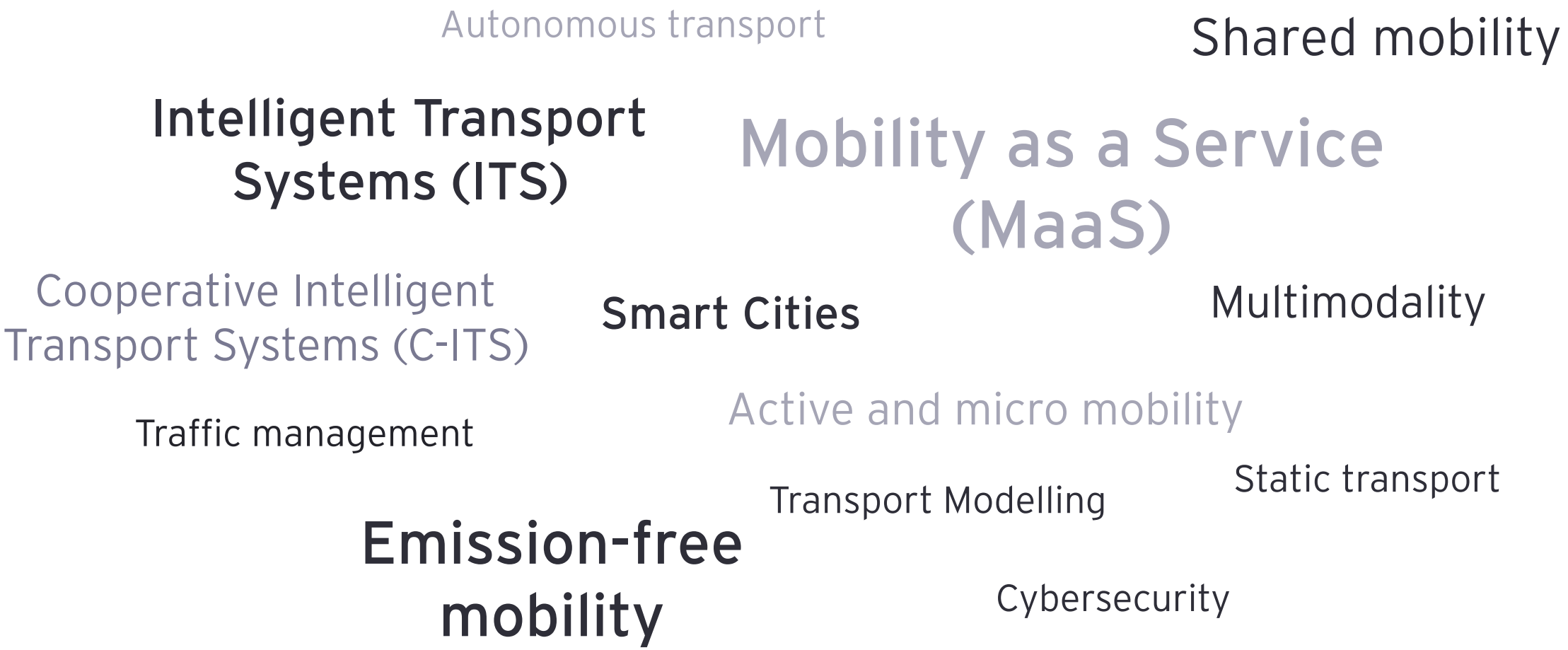
Intelligent Mobility is a broad and multi-disciplinary field



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Implementation of IM positively impacts a range of stakeholders (examples)

SAFE PASSAGE FOR EMERGENCY SERVICES
Emergency vehicle sensors link to smart traffic lights and surrounding car navigations to help clear the way

E-MOBILITY CHARGERS IN HOUSING ESTATES
Property owners/developers receive guidelines and trainings on constructing chargers in housing real estate

AUTOMATED VEHICLES
Testing autonomous shuttles, semi-automatic urban public transport, and assisted driving technology in real-life urban traffic.

MULTIMODAL MODELING & PLANNING
Agglomeration-wide pilot of a multimodal model, aimed at improving strategic, tactical and operational urban planning.

TRAFFIC ACCIDENT PREDICTION
Estonian Road Administration is working with an AI driven model to predict road traffic accidents

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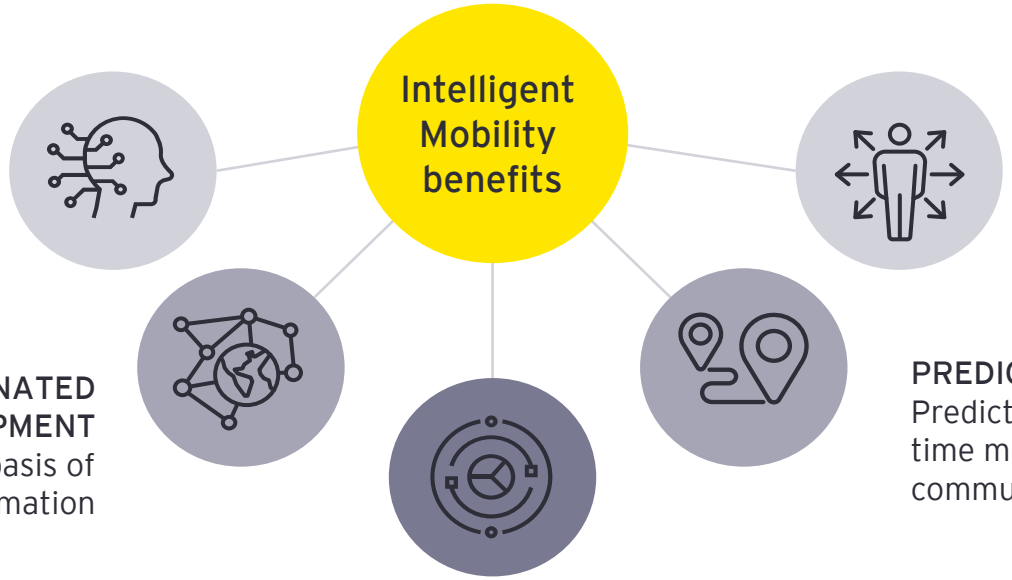
Intelligent Mobility benefits the transport system in multiple ways



UNDERSTANDING OF NEEDS
Mapping of current and predicting of future needs to optimise the transport system accordingly in all aspects of user experience

MINIMISING NEGATIVE EXTERNALITIES OF TRANSPORT
Including environmental, social, economic, safety or traffic congestion

SUSTAINABLE & COORDINATED DEVELOPMENT
Developing the transport system on the basis of factual data and information

PREDICTION AND COMMUNICATION
Prediction of incidents and their real time management including communication among mobility users

UTILISATION OF DATA FOR MANAGEMENT
Data as a basis for managing, organizing and planning of transport and mobility (allowing real-time response if needed)

Intelligent mobility is crucial for further development of multimodal and automated transport, but maximum benefits can only be achieved if the development is coordinated

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Lack of coordination over IM development poses risks to mobility as a whole

Failure to provide sufficient capacity towards Intelligent Mobility coordination can inhibit mobility and transport sector in individual countries and EU as a whole

1. **Slow and disproportional implementation** of IM technologies across transport infrastructure and systems
2. Failure to design the transport system based on the **current and future needs of mobility users**
3. **Inability to monitor and steer traffic in real time** leading to higher occurrence of traffic incidents
4. Inability to utilise the **full potential of data and its accessibility**
5. **Slow and ineffective implementation of Mobility as a Service** and its components (OneTicket)
6. **Inefficiency and duplicity of investments** across countries, regions and EU
7. Difficulty to **transform mobility innovations in real world** application
8. Slow and disproportional development of **autonomous mobility**

Widening gap between EU member states and regions in the quality of mobility & missed opportunities for economic and social benefits of a well functioning transport system

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Why is it difficult to develop & coordinate IM via existing mechanisms?

New topic

- Lack of universally accepted definition
- Flexible boundaries for topics within
- Still in investment-intensive phase
- Long-term pay-off

High complexity

- Multi-disciplinary topic touching not only transport sector
- All levels of governance
- Wide range of stakeholders and initiatives
- Expertise within various transport fields needed
- Lack of consensus over how to coordinate

Changing paradigm

- Exponential pace of innovations in traditional sector of transport
- Intelligent Mobility as a key lever for innovation push
- Ever-increasing importance for transport system as a whole

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What is the future of Intelligent Mobility?
The better the question. The better the answer.
The better the world works.
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Setting up a national coordinator of Intelligent Mobility as an umbrella for systematic IM coordination

Coordinator as an official body with authority over Intelligent Mobility coordination

- Official authority over IM coordination that overlaps multiple stakeholders
- Responsibility over development and scaling of Intelligent Mobility across the country
- Coordinated approach maximizing synergies among individual Intelligent Mobility areas
- Single touchpoint for all stakeholders and interested parties
- Coordination of IM over all national governance levels and modes of transport (incl. representation to EU)

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Coordinating Intelligent Mobility enables maximising its impacts

"Classic" mobility	Intelligent Mobility	Coordinated Intelligent Mobility
Urban parking via **street machines**	Urban parking via **app/contactless** solutions	**Unified/compatible** systems across city/region/state
Public **transport tickets** sold by the driver/vending machine	Tickets purchased via **app/contactless** payments in vehicles/stations, etc.	**Compatible solutions** and tariff systems implemented
Traffic signalling based on fixed schedules	**Intelligent intersections** reacting to public transport vehicles, etc.	Coordinated system, **dynamic reactions, consistent** preference of certain vehicles
Fixed maximum **speed** on motorways	**Dynamic** speed limit signs	**Automated** speed limit adaption based on sensor outputs

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Establishing a Coordinator of Intelligent Mobility:

Process roadmap & insights from CZ

How to build a coordinator?

Evaluate the current state

- Map existing regulation and strategic objectives
- Interview stakeholders on all levels
  - Baseline: what is IM and how it impacts them
  - Complications, which they face in the area of IM
  - Their plans/ambitions for the future
- Define needs of IM development and coordination

Plan for the future

- Design and assess the agenda of Intelligent Mobility coordination
- Specify needed characteristics for optimal functioning
- Define legal status for the coordinator and position the coordinator within the stakeholder environment
- Plan implementation

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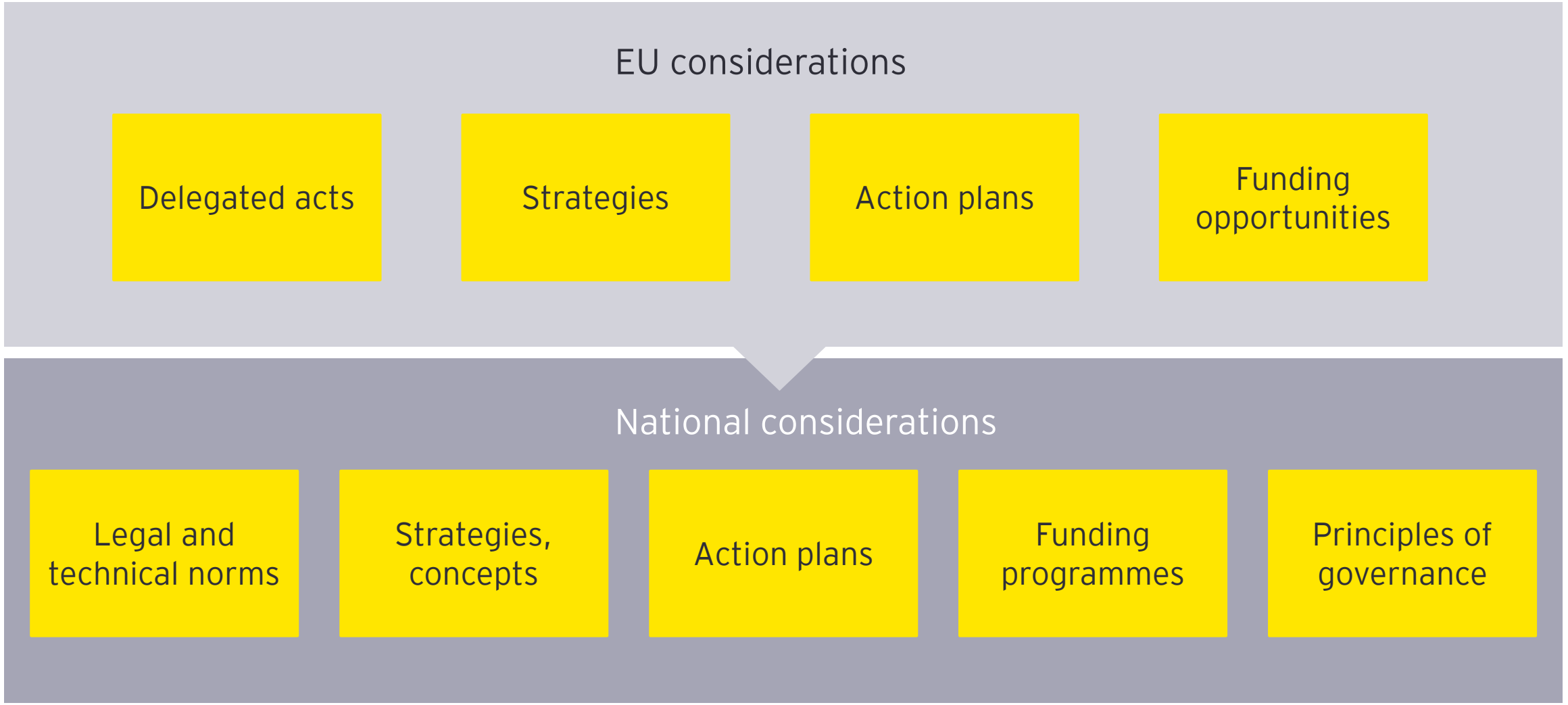
Evaluate the current state: Map existing regulation and strategic objectives



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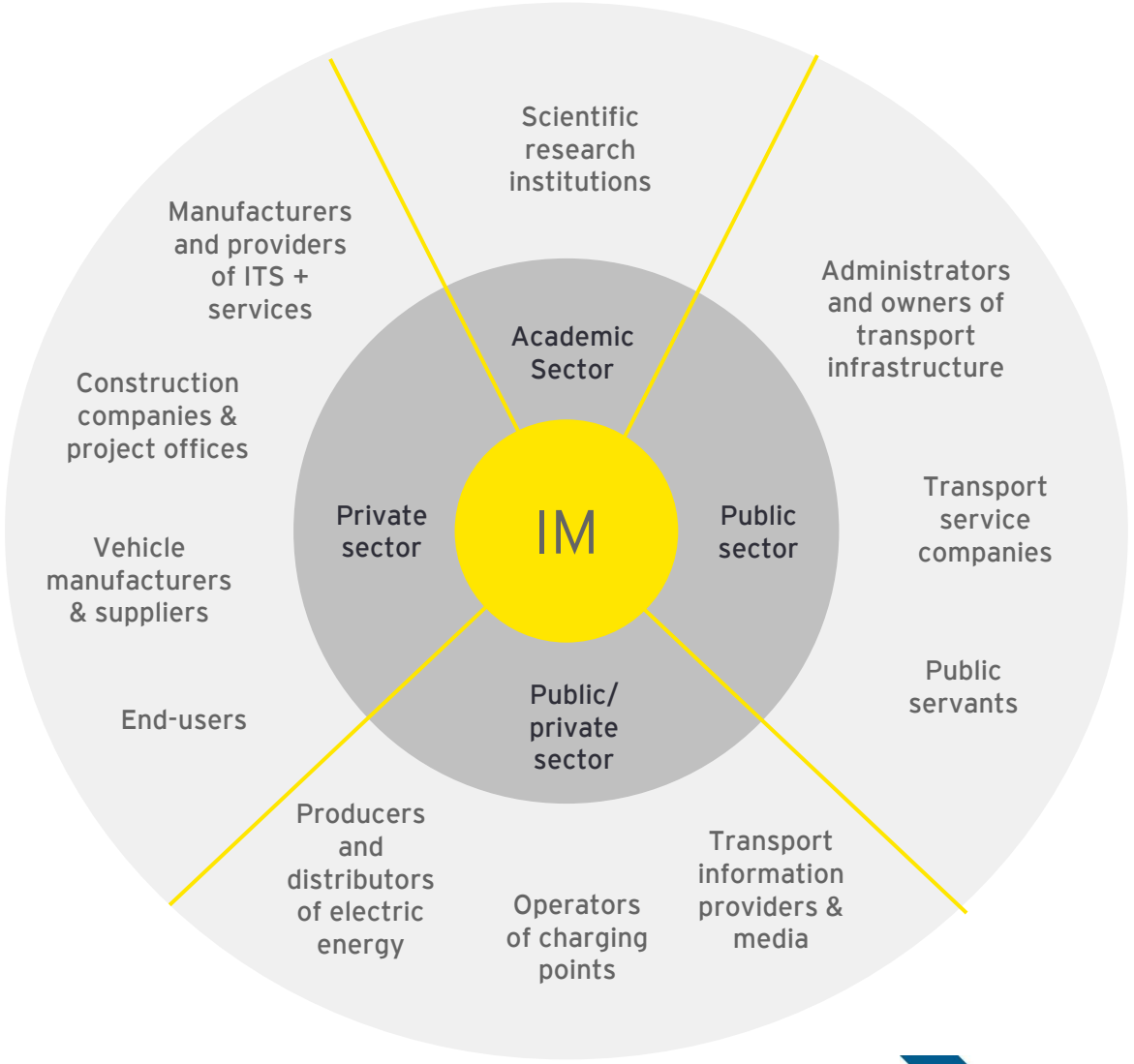
Evaluate the current state: Interview stakeholders on all levels



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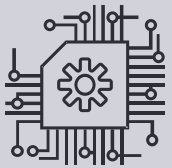
Evaluate the current state: Define needs of IM development & coordination

Governance – Regulating and co-ordinating the development of Intelligent Mobility across all areas

Infrastructure

Infrastructure and its components needed to enable transport and mobility

- Physical infrastructure
- Digital infrastructure
- Network for electronic communication



Data & Digitalisation

Using data and digital systems to inform mobility users and manage transport system

- Data collection and exchange
- Data utilisation

User-centric services

Services designed to meet the needs of mobility users

- B2B/B2C services
- All phases of mobility
- Multimodality

Innovation – Innovation, research and development of intelligent mobility systems and solutions

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Plan for the future: Design and assess the coordination agenda

Coordination Agenda

Hard co-ordination

- Regulatory and technical norms
- Strategy and implementation
- Monitoring/evaluation

Soft co-ordination

- Communication
- Stakeholder buy-in
- Collaboration
- Representation

IM services

- Data environment
- IM expertise
- Project management

Evaluation criteria

- Does the agenda include stakeholders from different sectors?
- Is there high risk of bias/conflicts of interests?
- Is there a rationale for providing the activities as public service (respecting precedent/public framework set up?)

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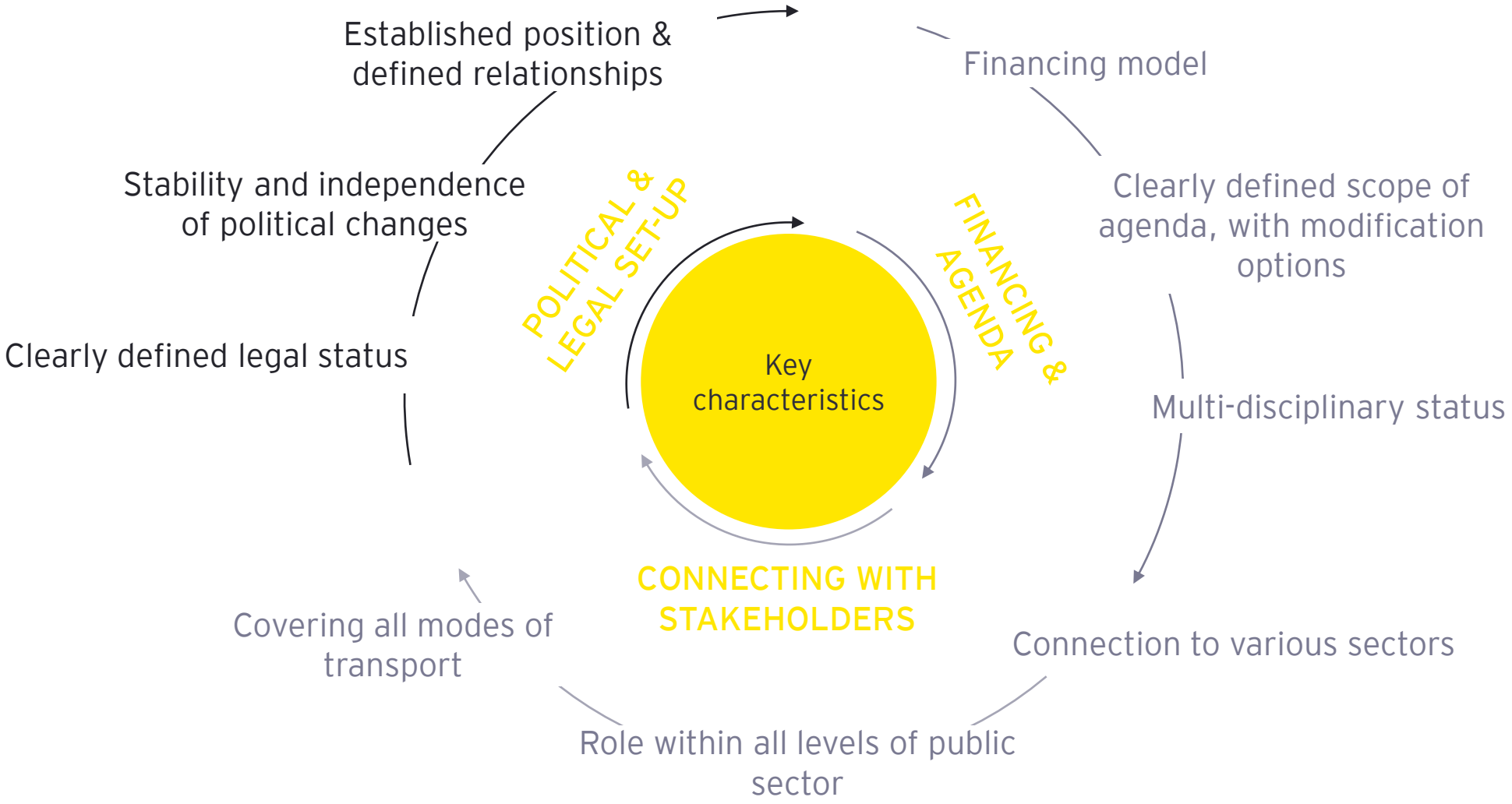
Plan for the future: Define needed characteristics for optimal functioning



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Plan for the future: Position the coordinator within the stakeholder environment

Coordinator as a private organisation	Private subject with some delegated responsibility	Coordinator as a public sector institution
Network-based coordinating subject + **Ministry in charge** of the coordination agenda	**Network-based coordinating** subject + **Ministry in charge** of the coordination agenda with some delegation **Formalised relationship** e.g. through tendering	**Delegated** tasks and responsibilities **Active engagement in all elements of coordination** **Ministry or similar as the parental organisation**

+ Selection of an appropriate legal form

CZ example

Coordinator as a public sector institution

- Coordinator as an existing institution
  - **Road and Motorway Directorate of the Czech Republic**
- Coordinator as a new institution
  - **State contributory organization**

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Current state of coordination: benchmark perspective

Austria

- AustriaTech
- Owned by the Ministry
- High degree of responsibility

The Netherlands

- Connekt
- Network
- Tendered relationship with the Ministry
- Some level of responsibility

Estonia

- ITS Estonia
- Network
- Unofficial working relationship with the Ministry
- No official responsibility

Poland

- ITS Polska
- Network
- Unofficial working relationship with the Ministry
- No official responsibility

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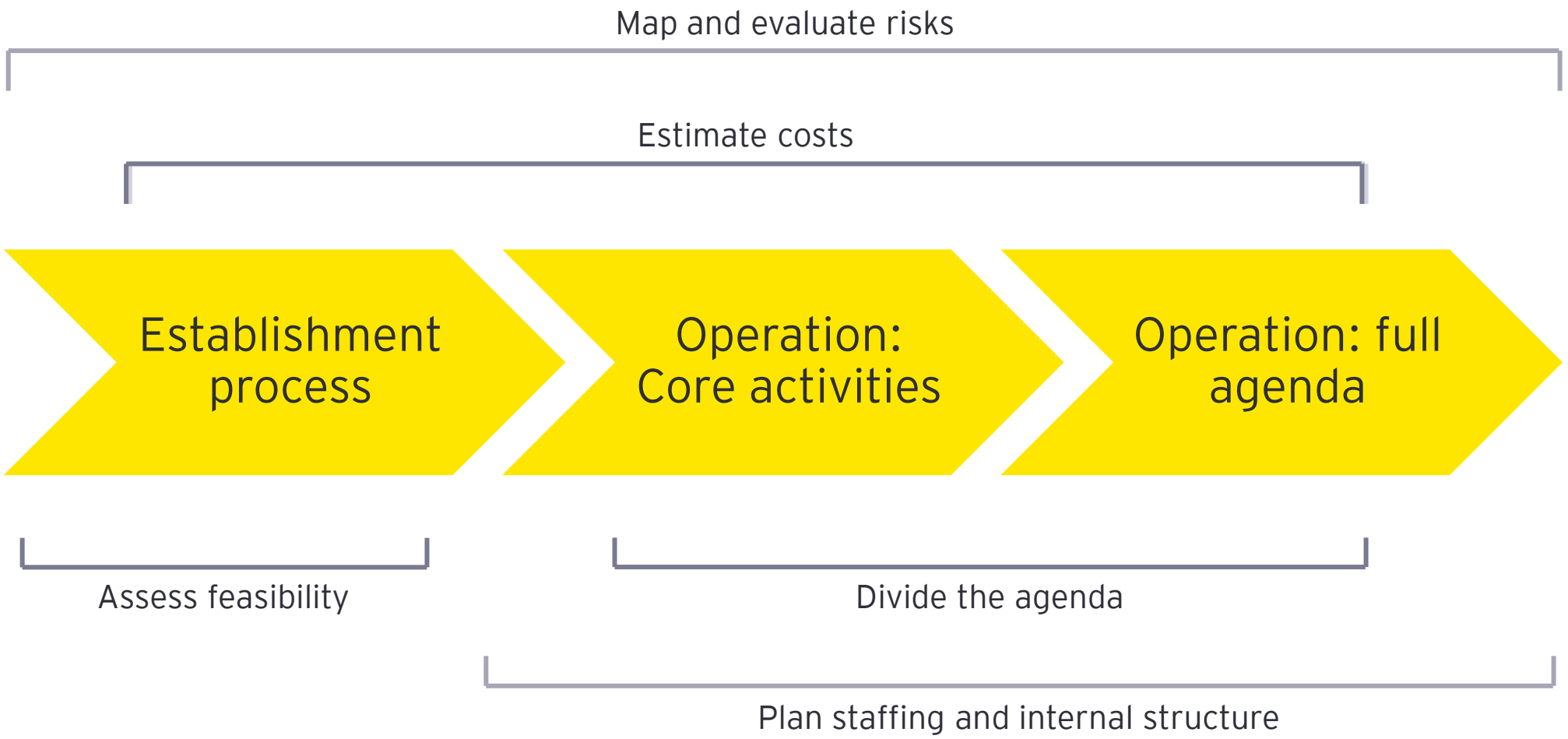
Plan for the future: Plan implementation



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Key findings & recommendations

What are the key takeaways from the project in the context of European Union?

Interoperability among countries within Intelligent Mobility technologies as a key towards mobility enhancement across EU

Common framework / guidance / umbrella of EU over Intelligent Mobility as way how to maximise potential value added

No universal agreement across countries on **the scope or definition of Intelligent Mobility** exists yet

Intelligent Mobility is a new topic but its **importance** for the transport sector **will continue to grow**

Intelligent Mobility can bring numerous benefits to the transport sector but **needs to be coordinated systematically**

Only few countries have institutionalized IM coordination but the **interest across EU is high**

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How can EC play a larger role in developing Intelligent Mobility across EU?

1

Evaluation across member states

Analysis of as-is state of Intelligent Mobility development across EU to understand:

- State of IM implementation across countries
- Actions of countries to coordinate Intelligent Mobility
- Possible cross-country synergies
- Trends influencing IM development in upcoming years

2

Guidelines for coordination

Overarching guideline umbrella for individual countries implementation:

- Guideline for coordinator implementation
- Implementation checklist
- "Cookbook" of areas to be considered
- Tips and lessons learned from across EU
- Metrics for continuous IM tracking

3

Support of individual countries

Expert knowledge for support of individual countries in implementation:

- Support with analysis
- Support with implementation
- Coordination as a flagship topic across financing mechanisms

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Thank you and do not hesitate to contact us for further consultations

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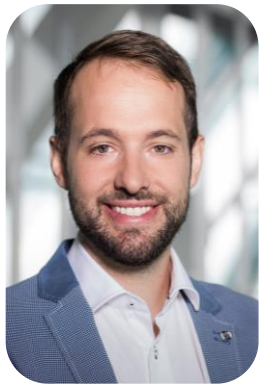

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