napcore

NAPs and/in the Mobility Data Space

NAPCORE Mobility Data Days

Paris, 3 November 2022

Agenda

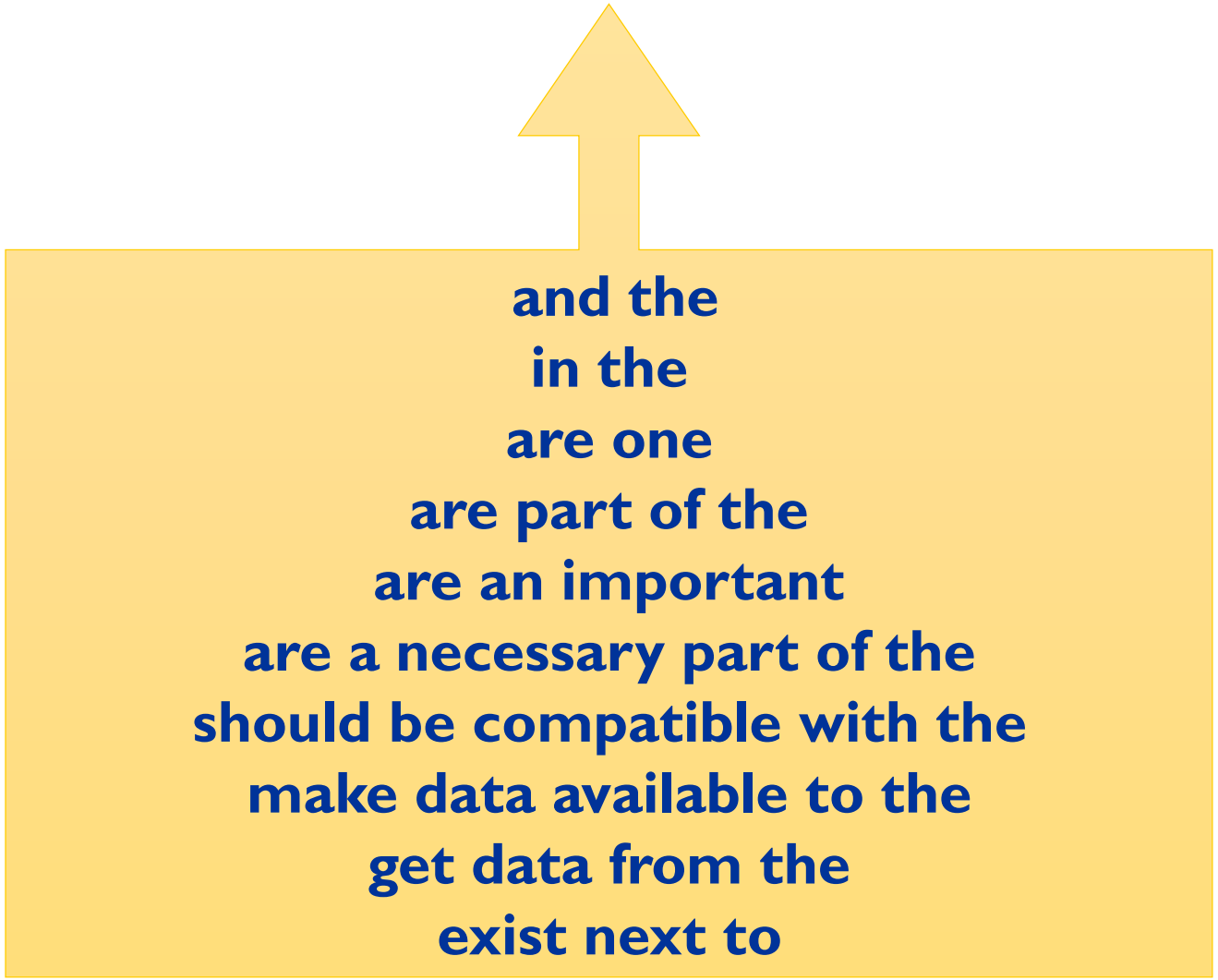
Time	Topic	Person	Institution
9:00	Welcome and setting the scene	Timo Hoffmann	NAPCORE / German Federal Highway Research Institute
9:10	The PrepDSpace4Mobility Project	Lucie Kirstein	German National Academy of Science and Engineering
9:25	Mobilithek – the German NAP and its relation to the MDS	Clara Schüürman	German Federal Ministry for Digital and Transport
9:35	Mobility Data Space – the German market place for mobility data	Michael Schäfer	DRM Datenraum Mobilität GmbH / Mobility Data Space
9:50	MDS – concept from Switzerland	Eva Thelisson	Swiss Federal Roads Office (FEDRO)
10:05	Thoughts on the MDS from the ITF	Philippe Crist	International Transport Forum at the OECD
10:10	NAPs ecosystem and Mobility Data Spaces	Johanna Tzanidaki	ERTICO
10:20	Discussion	all	

napcore

Welcome & Setting the scene

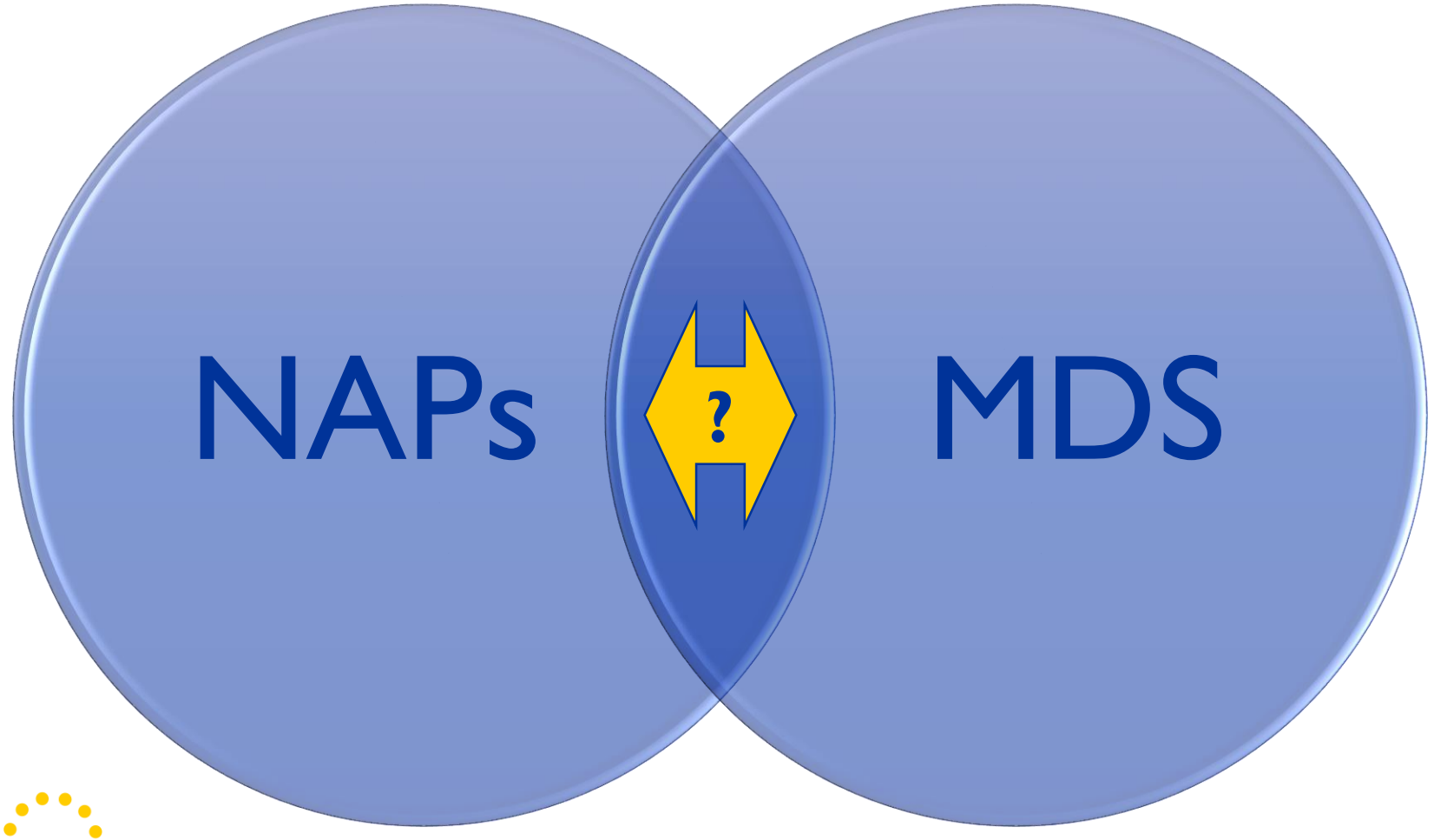
Timo Hoffmann

National Access Points ___ Mobility Data Space



napcore

NAP/MDS - Venn Diagramm



1. Data
2. Use Cases
3. Stakeholders
   a) Data Providers
   b) Data Users
   c) Operators
4. Systems/Platforms
5. Interface

napcore

Goals for today

- NAPCORE's WG1 has the task to create a common strategic positioning of the NAPs in relation to the MDS
- The task to define what the Mobility Data Space(s) is/are is not up to us
- But we want and need to create our position until some time in 2023
- Positioning is to be approved by the NAPCORE Steering Committee
- We need to involve important stakeholders right from the start
- This session is the beginning of this interaction
- A discussion with the NAPCORE Advisory Board happend yesterday
- To summarize the goals of today:
  - Get to know your viewpoints and thoughts on what was presented today
  - Discuss this in a (semi-)open/public forum before internal discussions start

napcore

Agenda

Time	Topic	Person	Institution
9:00	Welcome and setting the scene	Timo Hoffmann	NAPCORE / German Federal Highway Research Institute
9:10	The PrepDSpace4Mobility Project	Lucie Kirstein	German National Academy of Science and Engineering
9:25	Mobilithek – the German NAP and its relation to the MDS	Clara Schüürman	German Federal Ministry for Digital and Transport
9:35	Mobility Data Space – the German market place for mobility data	Michael Schäfer	DRM Datenraum Mobilität GmbH / Mobility Data Space
9:50	MDS – concept from Switzerland	Eva Thelisson	Swiss Federal Roads Office (FEDRO)
10:05	Thoughts on the MDS from the ITF	Philippe Crist	International Transport Forum at the OECD
10:10	NAPs ecosystem and Mobility Data Spaces	Johanna Tzanidaki	ERTICO
10:20	Discussion	all	

napcore

PREPARATORY ACTION

European Data Space for Mobility

Funded by the EU Commission Digital Europe Programme

Executive Update
September 2022

acatech
DEUTSCHE AKADEMIE DER TECHNIKWISSENSCHAFTEN

CONTEXT

European Data Space for Mobility

Data spaces are a strategic component of the Digital Europe Programme

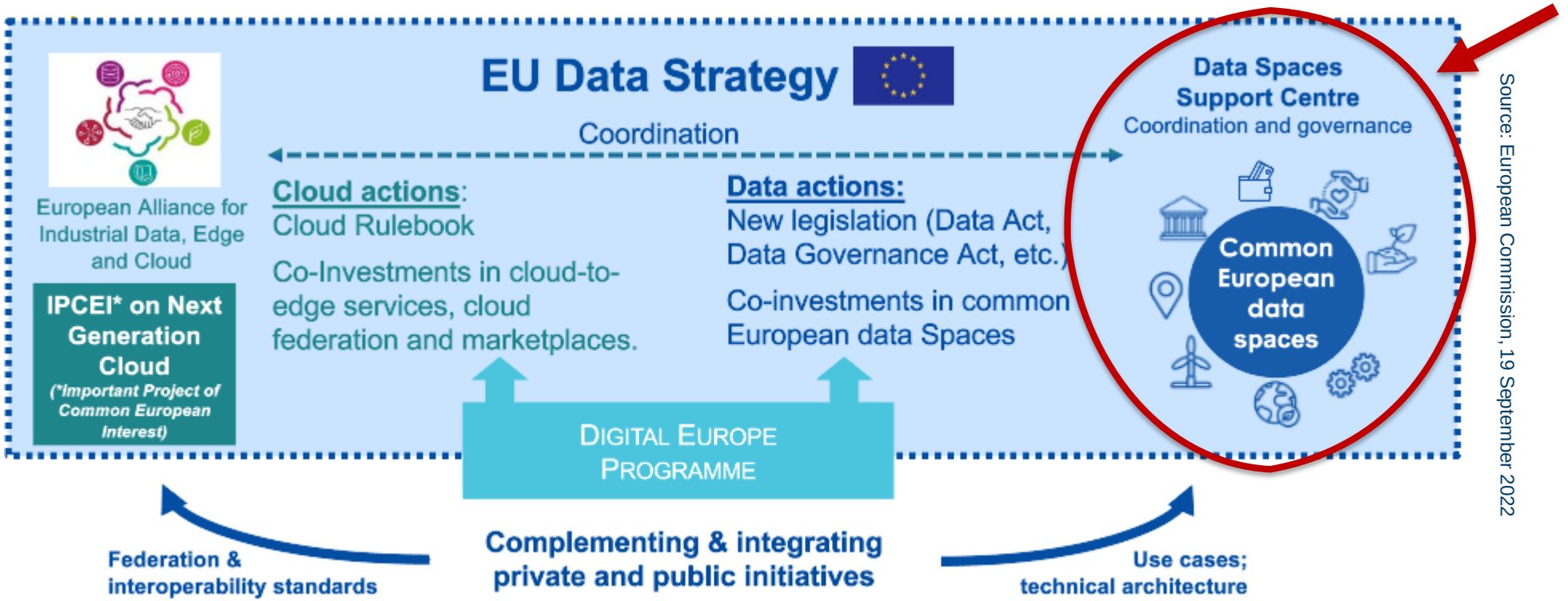
EU-wide collective effort			National, regional and local		Financial instrument
Horizon Europe	**Digital Europe**	**CEF**	**Cohesion**	**RRF**	**InvestEU**
Research Innovation	Strategic capacities: computing, **data spaces**, testbeds, etc. Advanced digital skills EU-Wide deployment	**CEF DIGITAL:** Broadband and 5G roll out Connecting Communities **CEF TRANSPORT:** Programme Support Action to federate NAPS Technical Assistance	Digital connectivity in white and grey areas Support to enterprises in line with Smart specialisation Digital skills for all citizens	Connect Scale-up Modernise Reskill and Upskill 20% digital	Leverage private capital for investments in SMEs, research., digital, infrastructure, skills…

European Commission

acatech
DEUTSCHE AKADEMIE DER TECHNIKWISSENSCHAFTEN

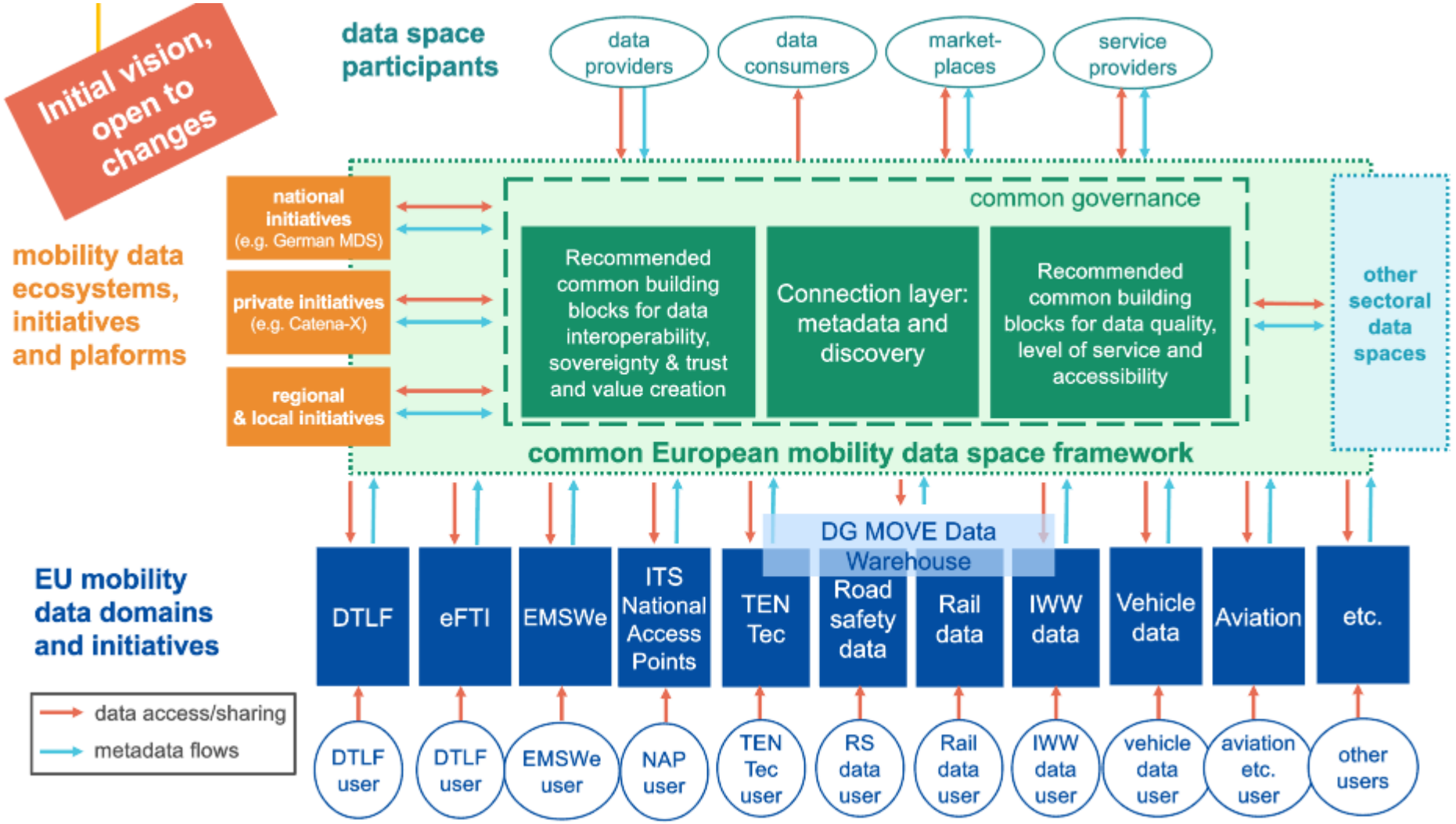
EU Data Strategy

Common European Data Spaces = sectoral implementation of the Data Strategy



Source: European Commission, 19 September 2022

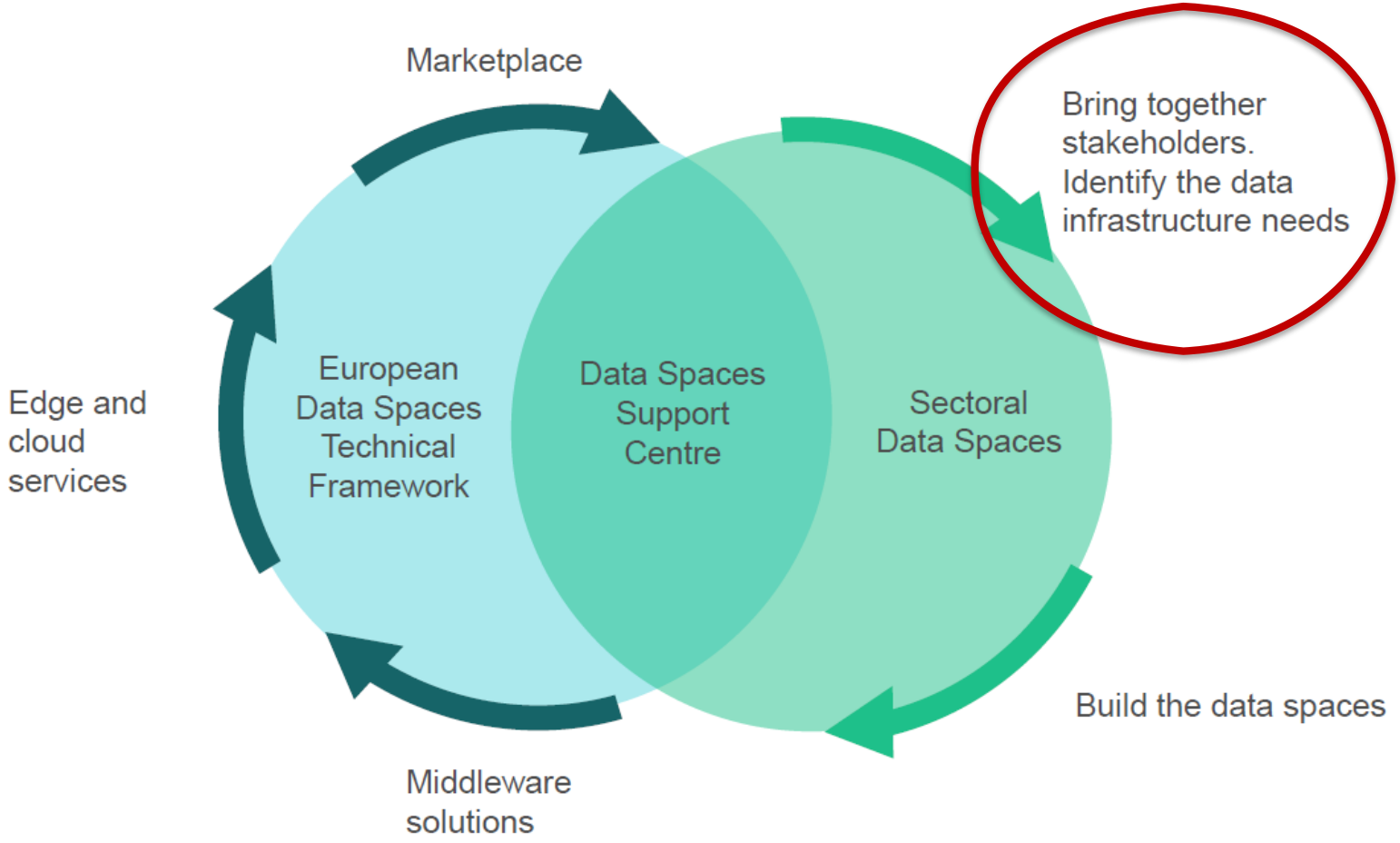
EU Long-term vision for the common Mobility Data Space



Source: European Commission, 19 September 2022

acatech
DEUTSCHE AKADEMIE DER TECHNIKWISSENSCHAFTEN

EC vision of the process



We are here. (Preparatory Action)

Source: European Commission

Challenges for a future open mobility data ecosystem/framework

THE PROJECT

- **Coordination**: agreement on principles and standards accepted by all participants/the sector, balancing stakeholder interests and specific requirements with requirements at the higher level/interoperability with other data spaces

- **Acceptance**: fair rules and balanced governance mechanisms (*"sound governance is needed in which relevant stakeholders of a common European data space participate and are represented"* – Data Governance Act)

- **Adoption and scaling**: achieving consensus > on-boarding > network effects; creative data monetisation and incentive schemes for data sharing

acatech
DEUTSCHE AKADEMIE DER TECHNIKWISSENSCHAFTEN

THE PROJECT

European Data Space for Mobility

Preparatory Action | Mission & Objectives

The project PrepDSpace4Mobility aims at contributing to the **development of the common European mobility data space** by supporting the creation of a technical infrastructure that will facilitate easy, cross-border access to key data for both passengers and freight (Digital Europe Programme).

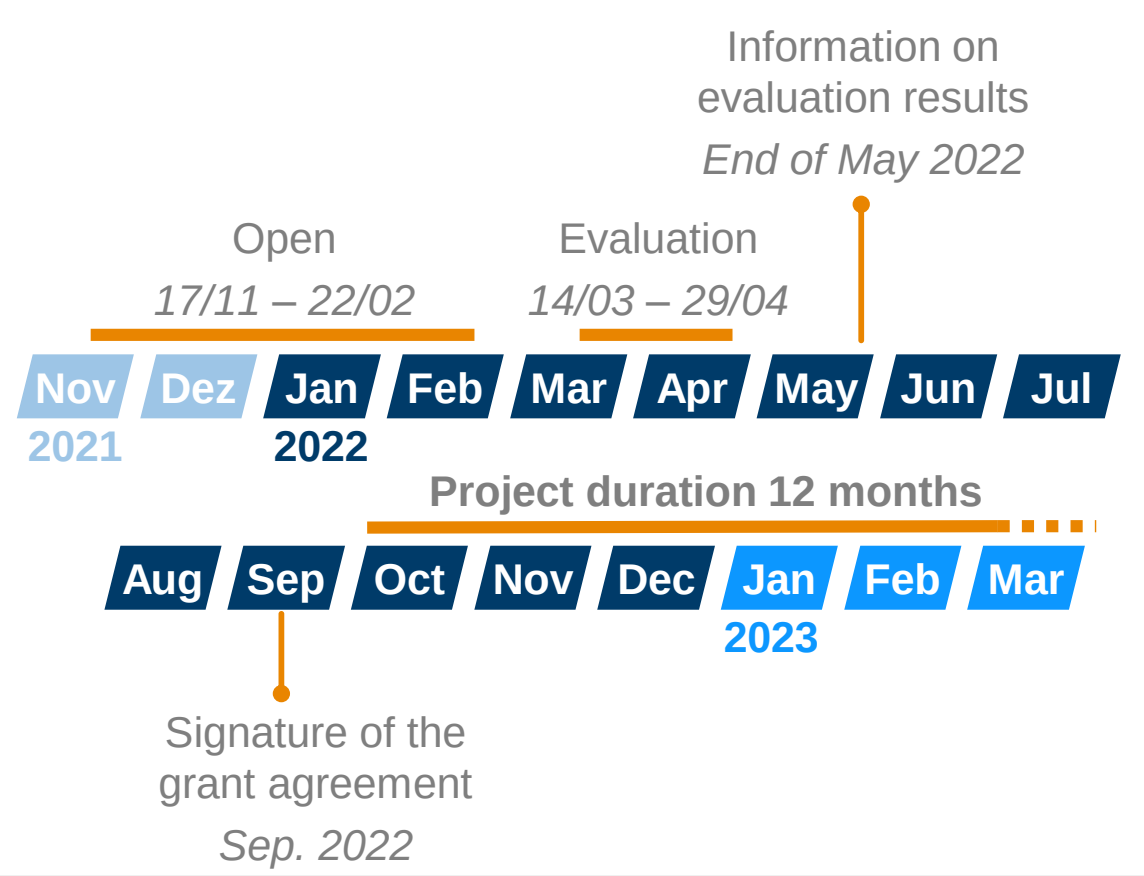
OBJECTIVES

- make an **inventory of existing data platforms and marketplaces** in the mobility and transport domains, describing their characteristics and components
- **analyse gaps** of important mobility data currently not available for access and reuse,
- identify **common building blocks**, including technical infra, governance and financial incentives
- identify **opportunities for integrating the mobility data space and data ecosystems** in the emerging European data and cloud services infrastructure.

acatech
DEUTSCHE AKADEMIE DER TECHNIKWISSENSCHAFTEN

European Data Space for Mobility
Preparatory Action

THE PROJECT



European consortium with public and private sector stakeholders, associations and governmental bodies:

14 beneficiaries and 3 associate partners

acatech	FIWARE	USI
ADP	**FhG**	VTT
Amadeus	IDSA	BASt
EIT-UM	iSHARE	UI Hungary
EMTA	KU Leuven	German MDS
ERTICO *(new)*	**TNO**	

acatech
DEUTSCHE AKADEMIE DER TECHNIKWISSENSCHAFTEN

Members of the Consortium (alphabetic sorting) I

PARTNERS

Organisation	Country	Status
acatech		*Beneficiary*
Aéroports de Paris SA (ADP)		*Beneficiary*
Amadeus SAS		*Beneficiary*
Bundesanstalt für Straßenwesen (BASt)		*Associate Partner*
DRM Datenraum Mobilität GmbH / Mobility Data Space (MDS)		*Associate Partner*
EIT Urban Mobility		*Beneficiary*
European Metropolitan Transport Authorities (EMTA)		*Beneficiary*
ERTICO		*Beneficiary*

acatech
DEUTSCHE AKADEMIE DER TECHNIKWISSENSCHAFTEN

Members of the Consortium (alphabetic sorting) II

PARTNERS

Organisation	Country	Status
FIWARE		*Beneficiary*
Fraunhofer		*Beneficiary*
International Data Spaces Association		*Beneficiary*
iSHARE		*Beneficiary*
KU Leuven		*Beneficiary*
Urban Software Institute (UI Germany + UI Hungary)		*Beneficiary*
TNO		*Beneficiary*
VTT		*Beneficiary*

acatech
DEUTSCHE AKADEMIE DER TECHNIKWISSENSCHAFTEN

Events and workshops

TIMELINE

Workshops and events (dates to be defined around mid-November – ***all virtual***):

- Expert workshops
- Workshop with end-user communities
- ERTICO data ecosystems in-focus session
- 2 stakeholder forums to discuss and disseminate preliminary findings

acatech
DEUTSCHE AKADEMIE DER TECHNIKWISSENSCHAFTEN

Possible alignment with NAPs and other stakeholders

NEXT STEPS

- Invitation to expert workshops → *contact us to receive updates!* kirstein@acatech.de
- Participation in stakeholder forums
- Written feedback/review process
- Regular alignment via BASt (Associated Partner in the CSA) or NAPCORE working groups?
- Joint meeting or workshop further down the line?

Contact

Lucie Kirstein, Coordinator
kirstein@acatech.de

Nasim Kroegel, EU Affairs Officer
kroegel@acatech.de

acatech
DEUTSCHE AKADEMIE DER TECHNIKWISSENSCHAFTEN

Agenda

Time	Topic	Person	Institution
9:00	Welcome and setting the scene	Timo Hoffmann	NAPCORE / German Federal Highway Research Institute
9:10	The PrepDSpace4Mobility Project	Lucie Kirstein	German National Academy of Science and Engineering
9:25	Mobilithek – the German NAP and its relation to the MDS	Clara Schüürman	German Federal Ministry for Digital and Transport
9:35	Mobility Data Space – the German market place for mobility data	Michael Schäfer	DRM Datenraum Mobilität GmbH / Mobility Data Space
9:50	MDS – concept from Switzerland	Eva Thelisson	Swiss Federal Roads Office (FEDRO)
10:05	Thoughts on the MDS from the ITF	Philippe Crist	International Transport Forum at the OECD
10:10	NAPs ecosystem and Mobility Data Spaces	Johanna Tzanidaki	ERTICO
10:20	Discussion	all	

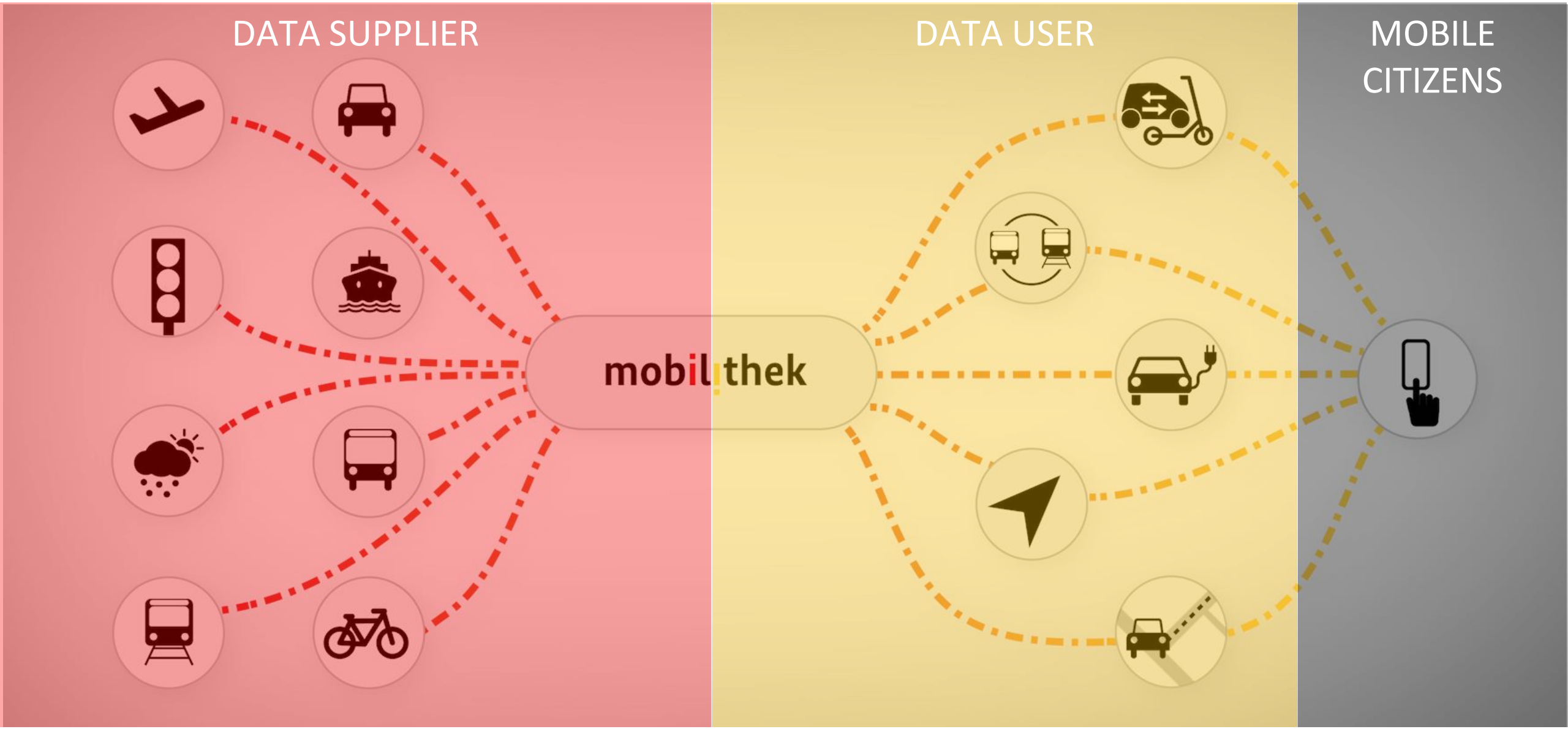
napcore

Federal Ministry
for Digital
and Transport

Mobilithek – The German National Access Point

Event: NAPCORE Mobility Data Days
Date: November 3rd 2022

mobilithek

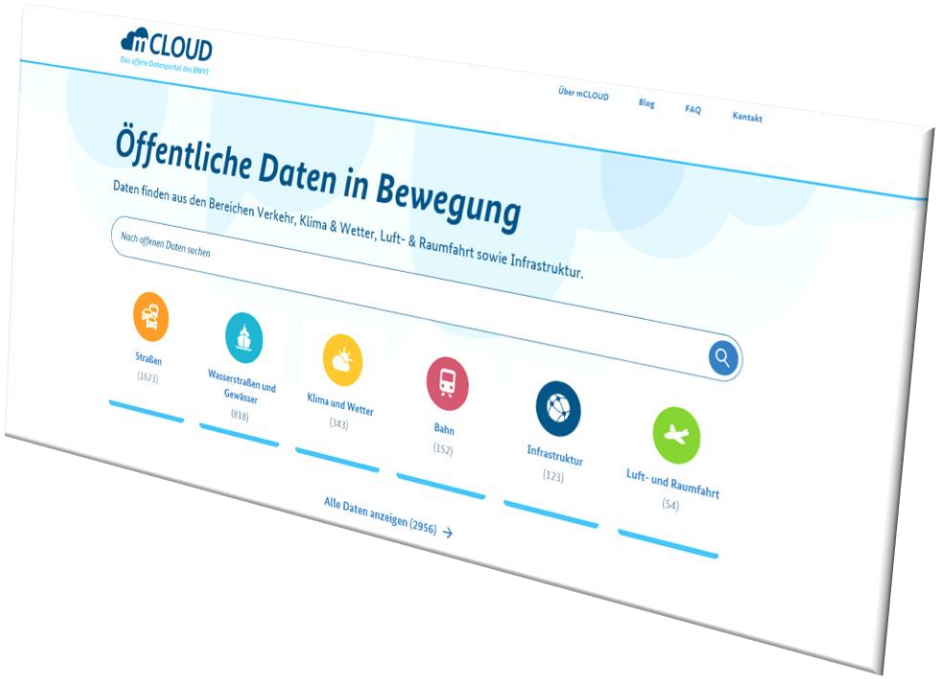


MDM: the previous NAP in Germany

- In regular **operations since 2014**
- **Real-time traffic and mobility data** for exchange between the public and private sectors
- **B2B application** with access control mechanisms, defined data formats, protocol specifications and service levels
- Established as **NAP for all current Delegated Regulations** for the European ITS Directive

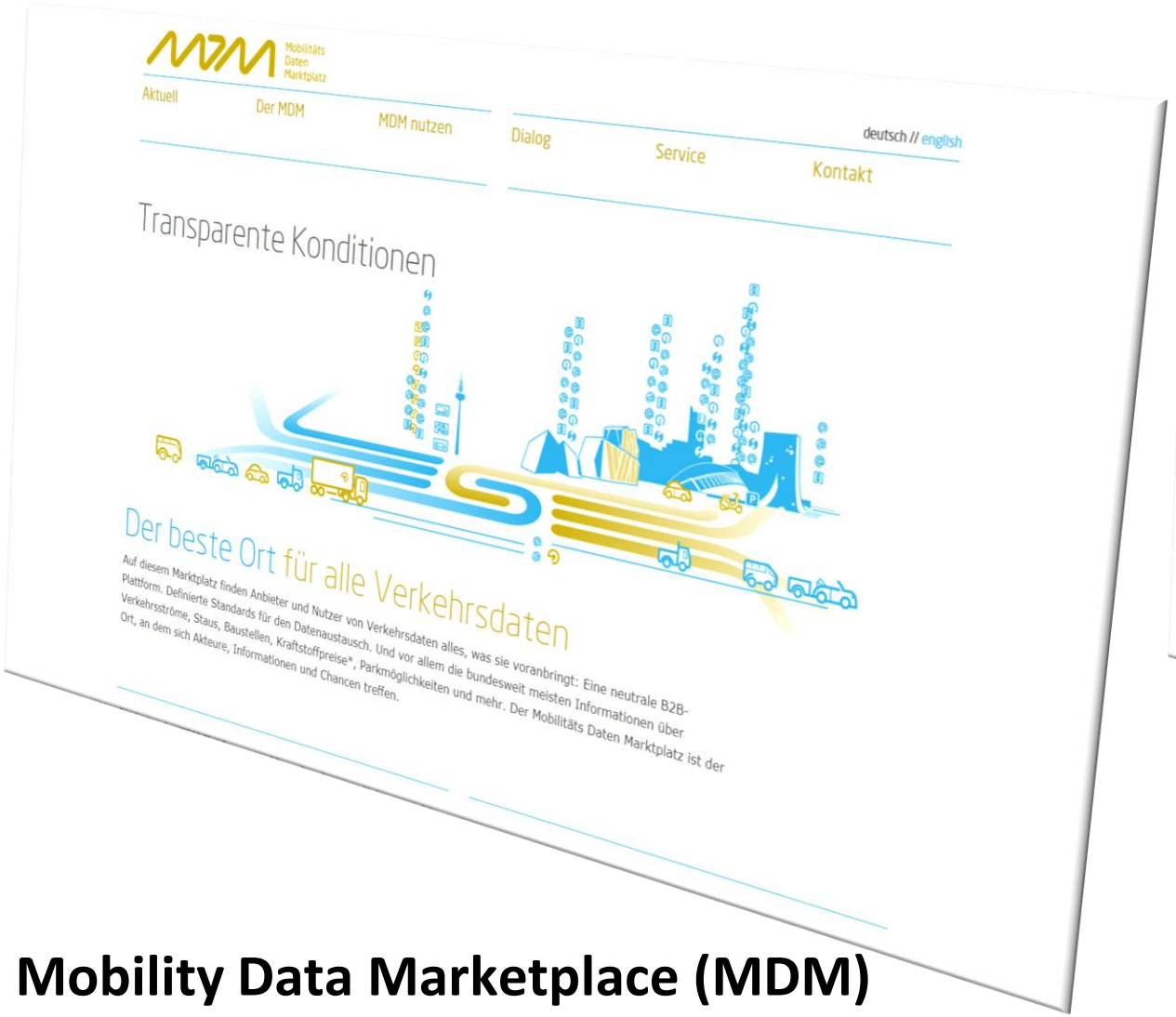
mCLOUD: the BMDV Open Data Portal

- **Direct data access** for data consumers in businesses, research and administration
- Over 5,500 **open data offers** (metadata), of which
  - > 1.000 open data offers from BMDV responsibilities and from BMDV research projects (mFUND)
- Established **harvesting mechanisms** with other public-sector data portals
- Contains also data from **public authorities, municipalities, public transport** and **mobility providers**



mobilithek

Development of the Mobilithek builds on many years of experience

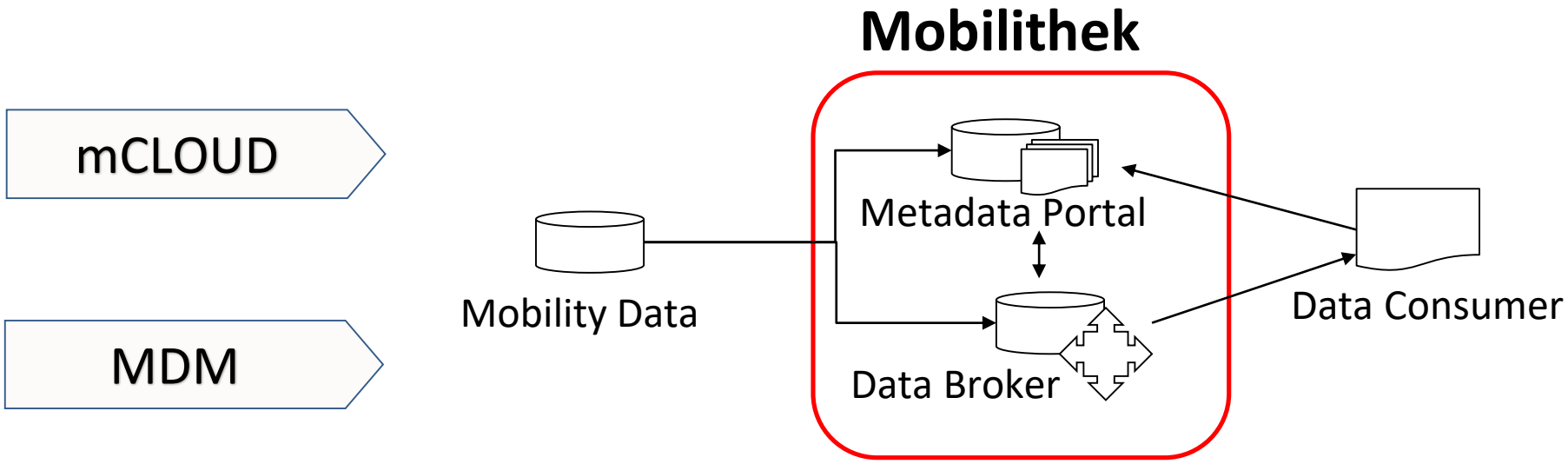


Mobility Data Marketplace (MDM)

mCLOUD (BMDV Open Data Portal)

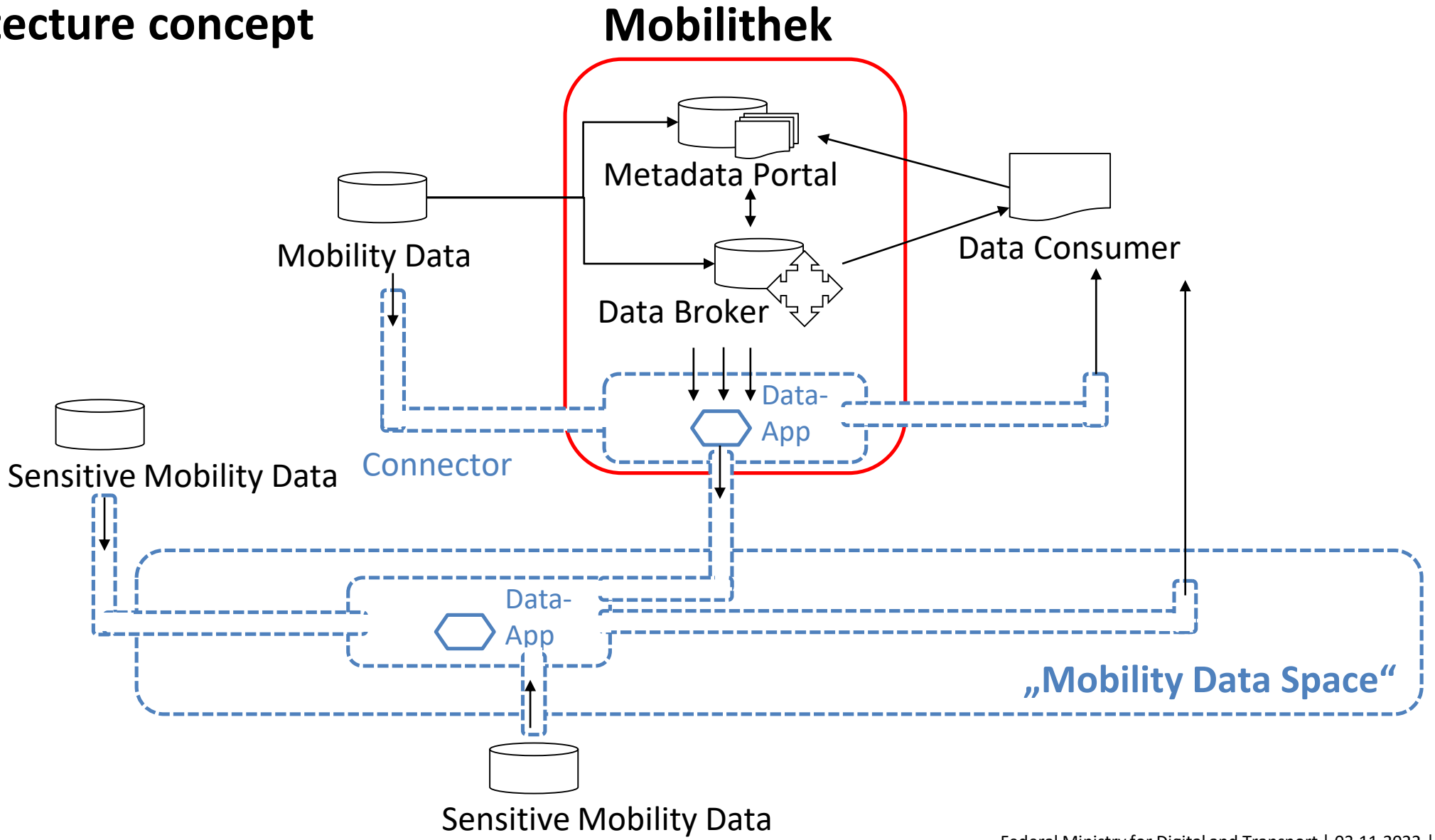
mobilithek

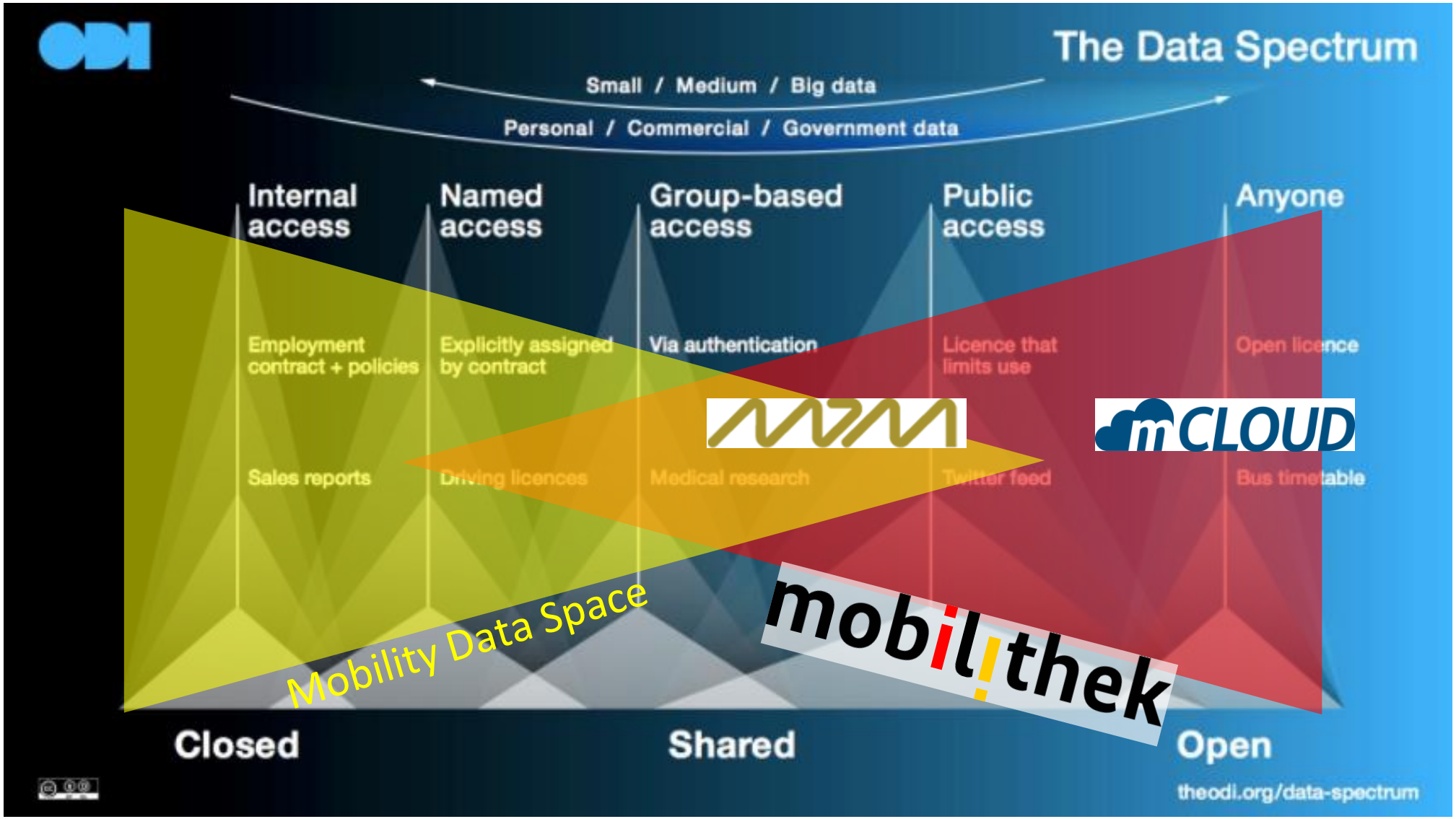
Architecture concept



mobilithek

Architecture concept





Quelle: theodi.org (CC-BY)

Sender

Contact details

Federal Ministry for Digital and Transport
Division
Invalidenstraße 44
10115 Berlin

Contact person
Clara Schüürman
Division DP23
Ref-dp23@bmdv.bund.de
www.bmdv.bund.de
Phone: +49 30 18-300-6642

Federal Ministry
for Digital
and Transport

Agenda

Time	Topic	Person	Institution
9:00	Welcome and setting the scene	Timo Hoffmann	NAPCORE / German Federal Highway Research Institute
9:10	The PrepDSpace4Mobility Project	Lucie Kirstein	German National Academy of Science and Engineering
9:25	Mobilithek – the German NAP and its relation to the MDS	Clara Schüürman	German Federal Ministry for Digital and Transport
9:35	Mobility Data Space – the German market place for mobility data	Michael Schäfer	DRM Datenraum Mobilität GmbH / Mobility Data Space
9:50	MDS – concept from Switzerland	Eva Thelisson	Swiss Federal Roads Office (FEDRO)
10:05	Thoughts on the MDS from the ITF	Philippe Crist	International Transport Forum at the OECD
10:10	NAPs ecosystem and Mobility Data Spaces	Johanna Tzanidaki	ERTICO
10:20	Discussion	all	

napcore

Mobility
Data Space
Data Sharing Community

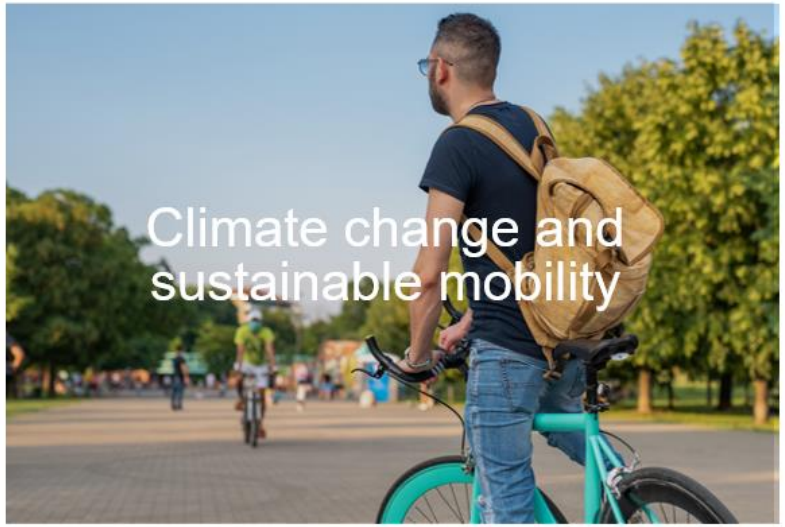
NAPCORE Mobility Data Days

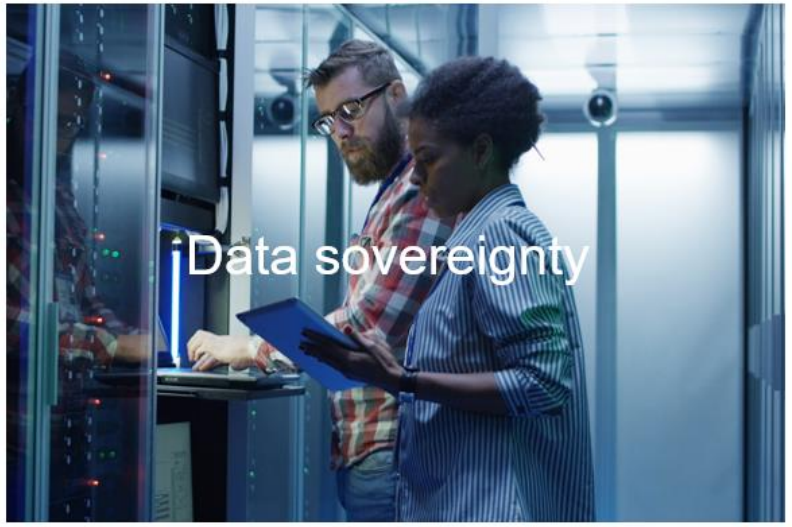
Mobility Data Space
The German market place for mobility data

Michael Schäfer, Managing Director
Nov. 3rd 2022

Challenges

Mobility Data Space
Data Sharing Community





Seven success criteria for horizontal ecosystems using the example of the Mobility Data Space

We need a new data sharing culture across Europe with clear rules for collaboration and trust

01 **Massive scaling** in alle dimensions: participants, size of data space & value added data, Use Cases with self-enhancing ecosystems, business models

02 **Open** for all market players – even competitors should be able to collaborate via the plattform for the favor of new business models

03 **Neutral Operator** without profit targets

04 **Easy access and use of data** provided by a safe, trusted and scalable platform, which provides automatic application of the collaboration rules

05 **No need for centralized data storage** data exchange happens immediately between data provider and consumer („peer-2-peer“)

06 **Real working business models** for data sharing and pricing. And users need to be ready to pay for data

07 **As leading supplier and user** the Mobility Data Space subsequently acts as driver for the new digital economy

Advice and Know-how

Mobility Data Space connects participants with specialised service providers from key data management disciplines.

Onboarding

Operation

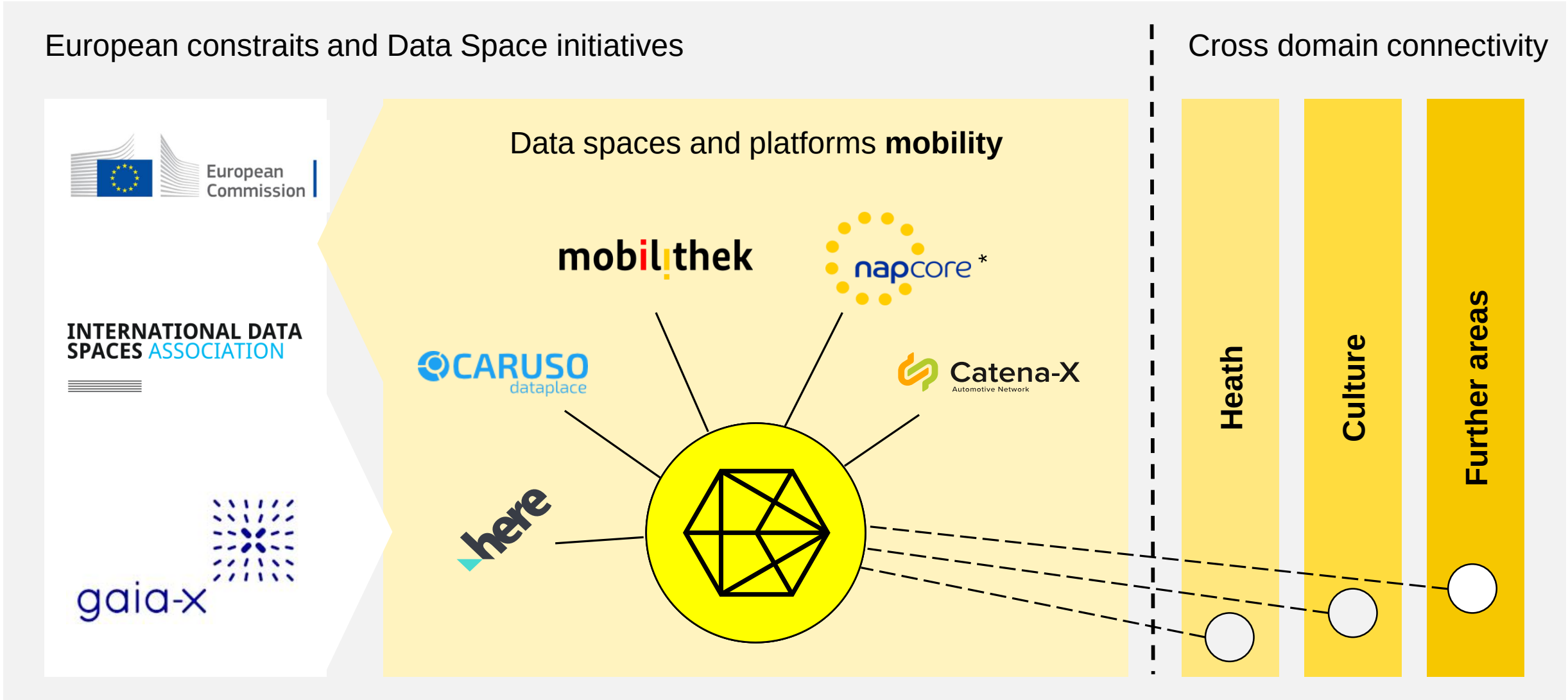
Data & identity management

Service Development

Business development

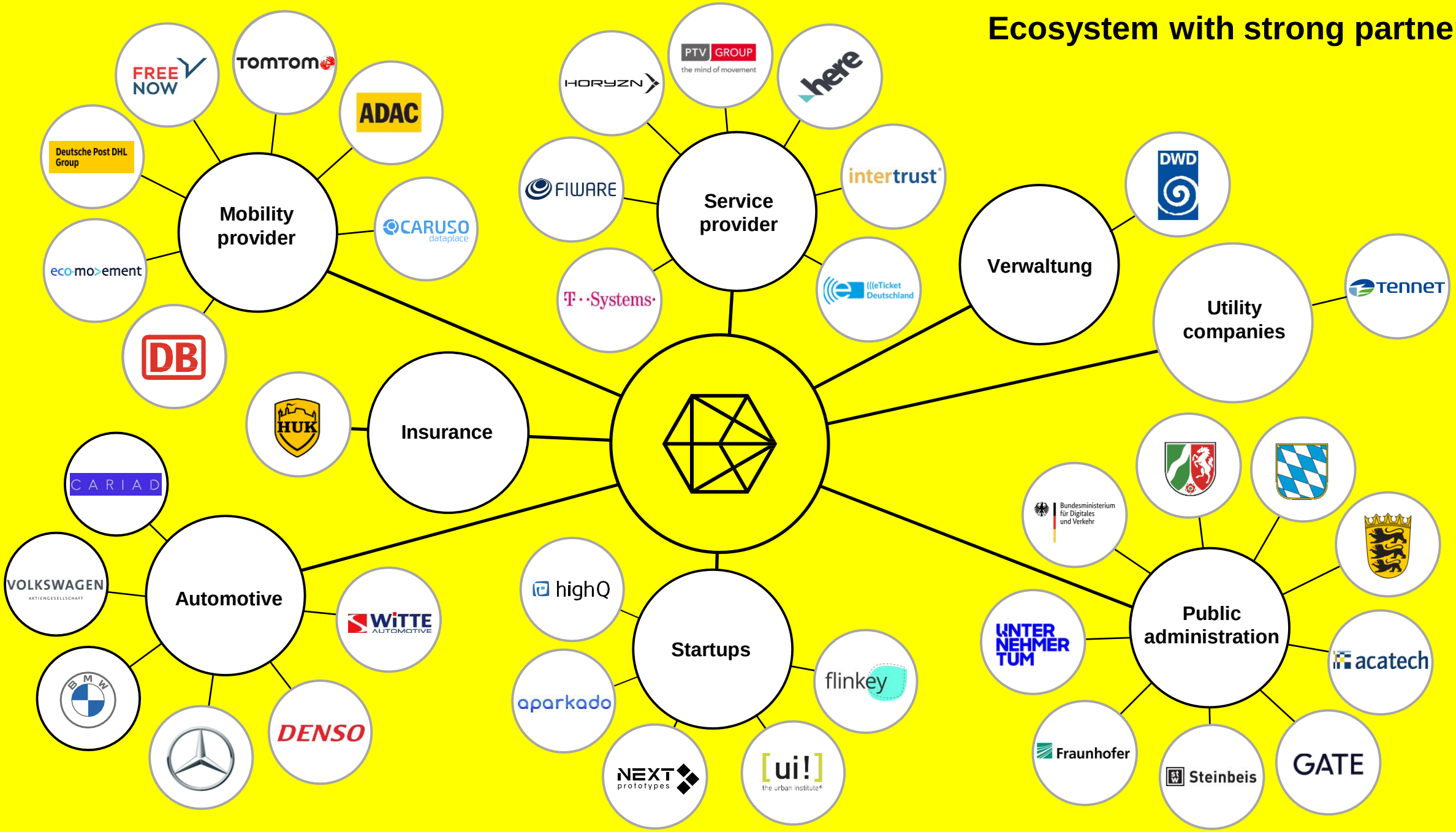
Strategy | Collaborative Mobility Data Space

Mobility Data Space
Data Sharing Community



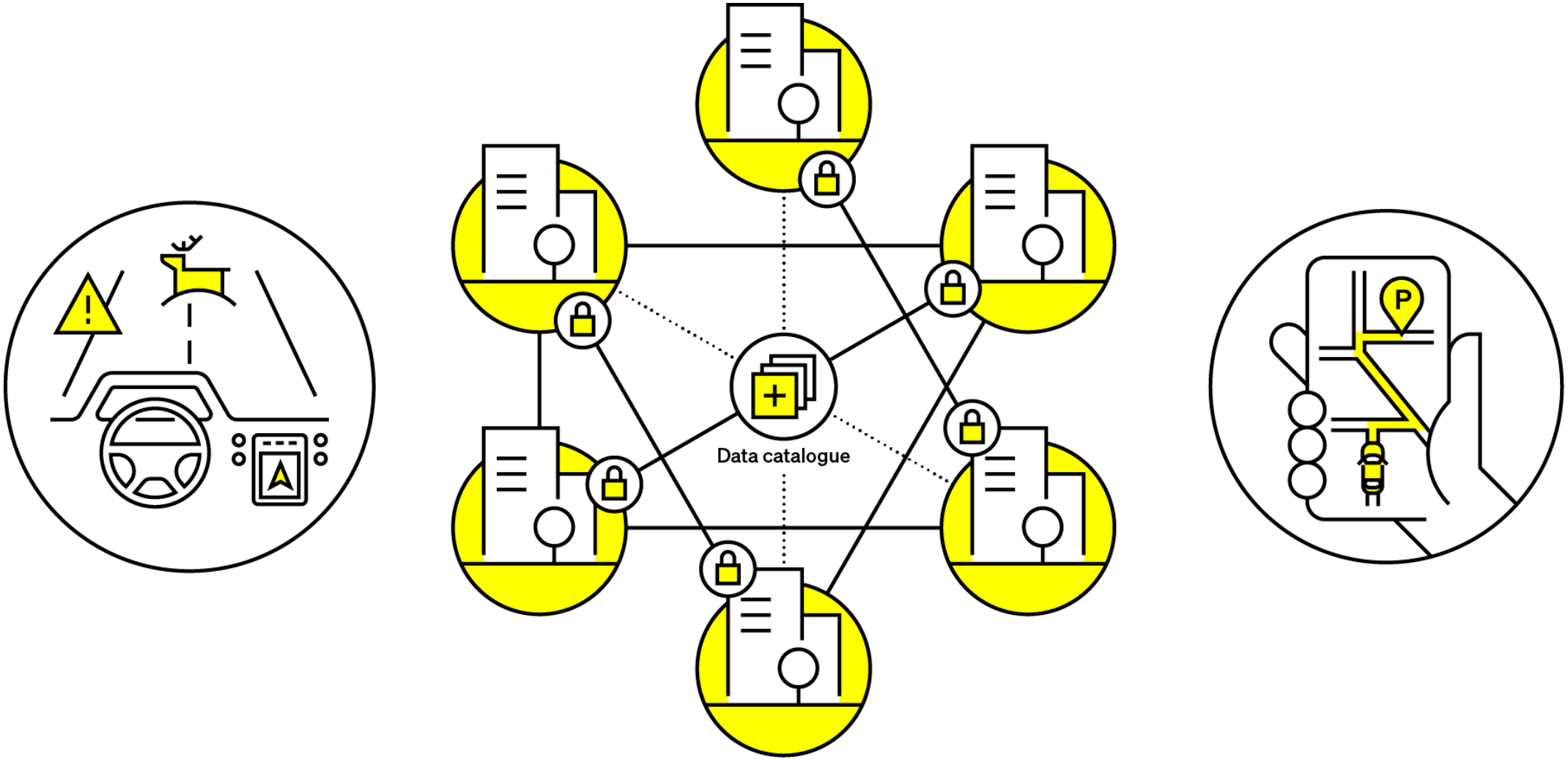
* NAPCORE ist actually not a data space, but a harmonization project for the National Access Points (NAP) across Europe

Ecosystem with strong partners



Data transmission in Mobility Data Space: the basis for innovative products, services and business models

Mobility Data Space
Data Sharing Community



Wide range of mobility data

Traffic information

Roadworks and road conditions

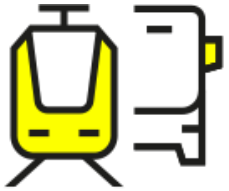
Traffic flow information

Parking information

Fuel price and electromobility

Traffic signs and speed information

Weather information

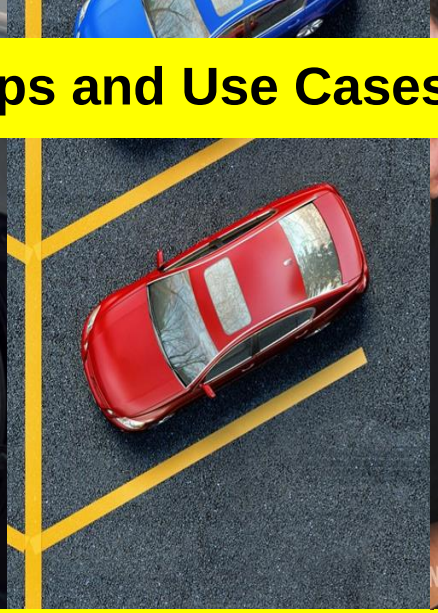


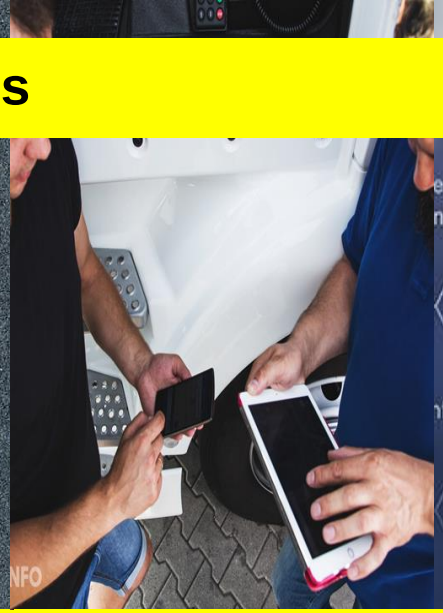
Public transport information

Car and bike sharing

Infrastructure

Working groups and Use Cases





E-Mobility & Charging | **Logistics Applications** | **Smart Parking** | **CO2-Management** | **Safety Applications** | **Intermodel Mobility**

Sample Business Cases

- **Improve data quality for charging poits** (BMW, Mercedes, Here et.al.)
- **Vehicle to Grid** (bloxmove, Stadtwerke München, TenneT)

- **eCMR – electronic way bill** (Rostocker Port, Fraunhofer IML)

- **Static & dynamic arking management** (DB, Mercedes, BMW)
- **Truck Parking Platform** (Aparkado, TIMOCOM)

- **Sustainable Fleet Mobility“** (CARUSO)
- **CO2-mobility calculatorMobilitäts-rechner** (raumobil, Forliance)
- **Weather based mobility** (FreeNow, DWD)

- **Data Analytics for Insuring Businesses** (HUK Coburg, TÜV Rheinland, GDV, OEMs, DWD, …)

- **Optimize road infra structure by floating cara data** (ADAC Service GmbH, Infralytics GmbH)


Unleash your data

info@mobility-dataspace.eu
www.mobility-dataspace.eu

Gefördert durch:

Bundesministerium
für Digitales
und Verkehr

aufgrund eines Beschlusses
des Deutschen Bundestages

DRM Datenraum Mobilität GmbH
Karolinenplatz 4
D-80333 München


Unleash your data

Agenda

Time	Topic	Person	Institution
9:00	Welcome and setting the scene	Timo Hoffmann	NAPCORE / German Federal Highway Research Institute
9:10	The PrepDSpace4Mobility Project	Lucie Kirstein	German National Academy of Science and Engineering
9:25	Mobilithek – the German NAP and its relation to the MDS	Clara Schüürman	German Federal Ministry for Digital and Transport
9:35	Mobility Data Space – the German market place for mobility data	Michael Schäfer	DRM Datenraum Mobilität GmbH / Mobility Data Space
9:50	MDS – concept from Switzerland	Eva Thelisson	Swiss Federal Roads Office (FEDRO)
10:05	Thoughts on the MDS from the ITF	Philippe Crist	International Transport Forum at the OECD
10:10	NAPs ecosystem and Mobility Data Spaces	Johanna Tzanidaki	ERTICO
10:20	Discussion	all	

napcore

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Federal Department of the Environment, Transport, Energy and Communications DETEC
Federal Roads Office FEDRO
Road Networks Division

Mutual Data Sharing

For a sustainable and efficient mobility

NAPCORE Mobility Data Days, Paris
3 November 2022, Dr.iur.Eva Thelisson

Goals

- Concept of Mutual Data Sharing
- The benefit of a collaborative ecosystem for all stakeholders
- The underlying mechanisms of Mutual Data Sharing
- How you can contribute to the project.

Structure

- The Problems
- One Solution
- The Benefits

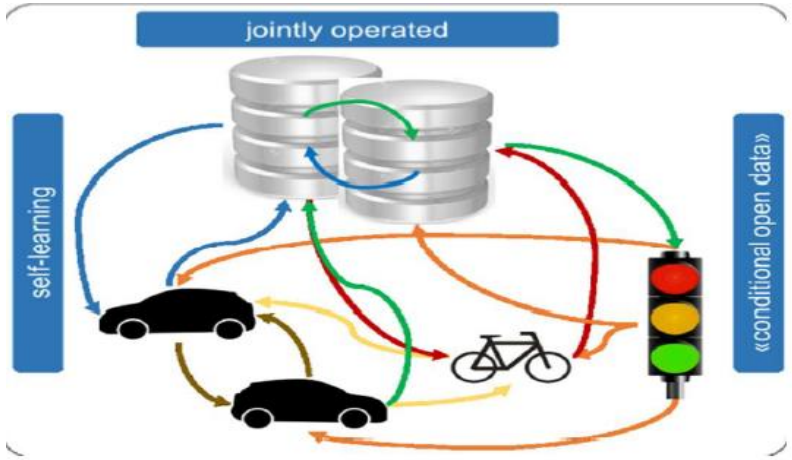


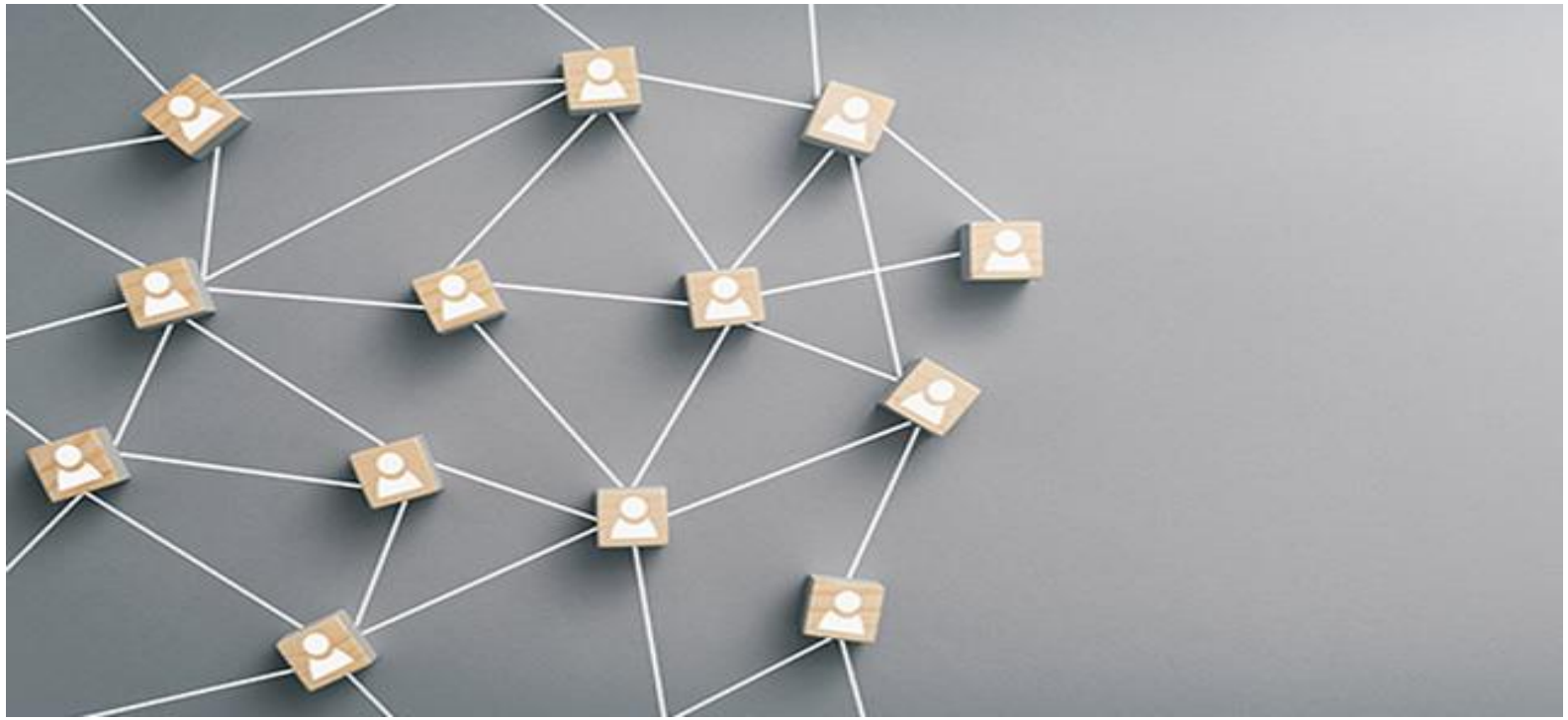
Figure 1: Jointly operated and self-learning data network based on Mutual Data Sharing

The Problems

Mobility efficiency and sustainability, inc. dynamic Traffic Management Systems, increasingly depend on real-time data, computational powers and Machine Learning models

The Problems

Public authorities need to get an accurate knowledge of the territorial flows as a sovereign State and member of a united network.



The Problems

How to optimise the extraction of value derived from mobility data, while reducing its cost?

One Solution

What if …

- Public sector, businesses and the public could access a larger pool of high quality mobility data of defined quality?
- Data would be available for reuse for the development of innovative public and private services and updated on real-time by automatic cars, road users and IoT.
- End-users would benefit from efficient mobility services, better air quality and dynamic traffic management services ?

Mutual Data Sharing

- Goal : To promote the **provision** of mobility data and thus **facilitate mobility** on the national roads - and in the long term road traffic.

- Based on the **Open Data policy**, but develops its principles and application modalities to ensure **data sharing in the public interest.**

- Under this model, traffic data should be **freely** accessible - **unless there is a business** model based on the data obtained. In that case, **data would have to be returned and made freely available for later reuse.**

Level Playing Field

- Mutual Data Sharing enables **to secure the data access** to all stakeholders and to **harmonize the conditions of use** between all stakeholders (road users, the intermediate service providers, the manufacturers and the relevant authorities).

- This can **enhance road safety.**

C-ITS

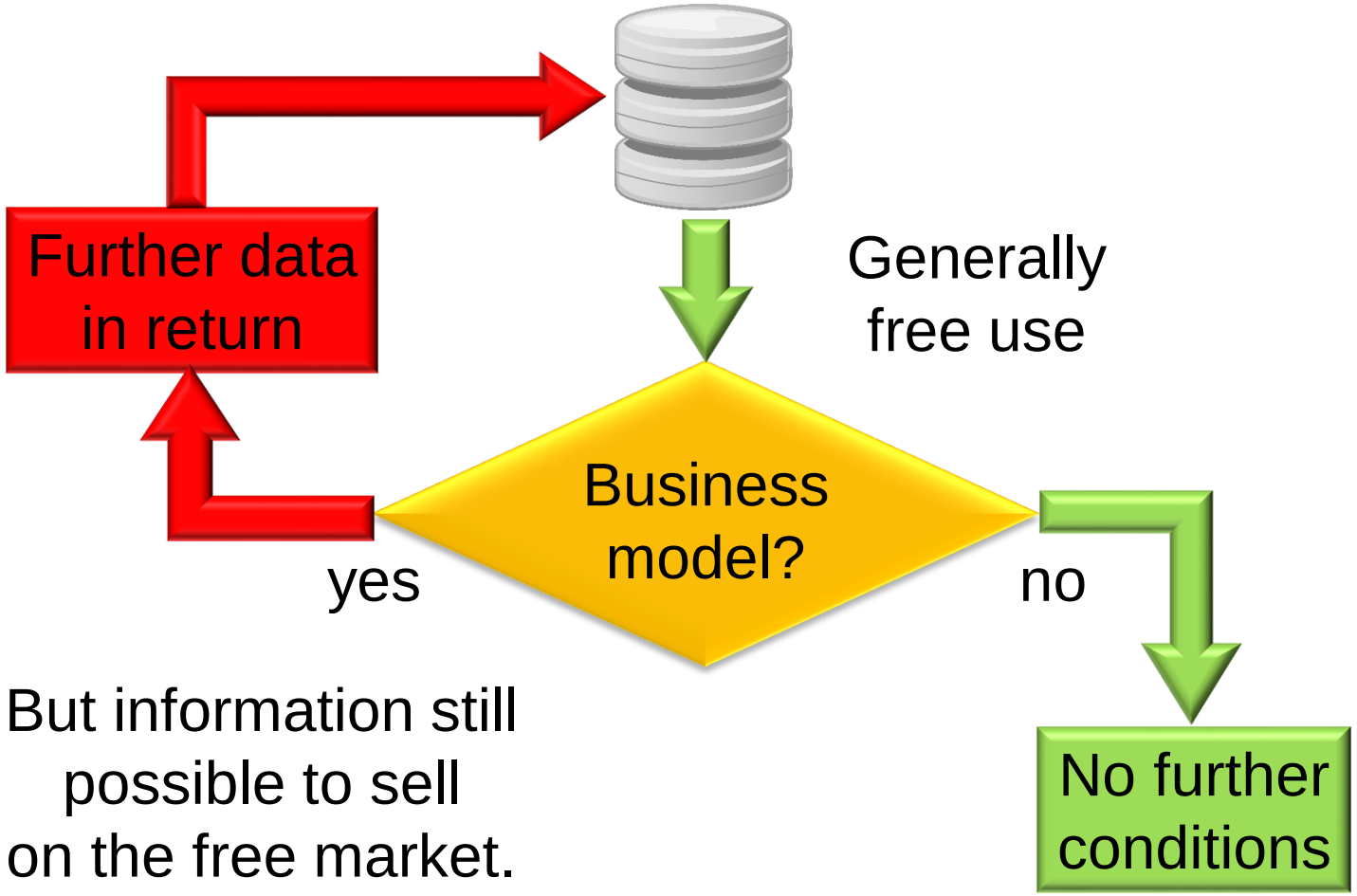
- Mutual Data Sharing has the potential to enable the implementation of an effective, cooperative and intelligent transport system including automated driving.

- Require static and dynamic data to be kept up to date and available, **while being reliably and securely exchangeable on the road network** between all stakeholders.

Underlying mechanisms

- Business model
  - **equivalent** data must be returned and made freely available for later reuse.

Mutual Data Sharing



A circular mobility data space

- Foster mobility data reuse, engage community in an equitable way, regenerate nature.

A collaborative ecosystem

- Mutually beneficial cooperation
  - **Better return on investment for companies**
    - Larger datasets
    - Innovation capacity expanded
  - **Better quality of public services and traffic** management for public authorities
  - **Better services for the end-users tailored to the needs**

Key Principles

- Legal basis (Partially Art. 57 c SVG)
- Reciprocity principle
- Equivalence principle in data sharing
- In public interest
- Level playing field (equal rights for all)
- Compliance with fundamental rights
- Human oversight
- FAIR Principles (Findable, Accessible, Interoperable and Reusable)

Mutual Data Sharing - Switzerland

- A new law (MODIG) for better use of mobility data
- Further legal basis for Mutual Data Sharing implementation
- A mobility data infrastructure (MODI) covering all modes of transportation.

Let’s imagine…

- An EU Mobility Data Space based on Mutual Data Sharing
  - Legal basis : EU Data Governance Act (re-use for protected data for common good)
  - Confidential information (e.g. trade secrets) can be disclosed for re-use with data subject or data holder’s **consent**.
  - **Secure** processing environments (e.g. data space) supervised by the public sector via NAP
  - Voluntary and Non-Exclusive data sharing agreement based on Open Source Licences inc. confidentiality clauses between the public sector body and the re-user.
  - Public sector bodies may charge fees for allowing the re-use to cover the costs.

The Benefits

- **Create favourable conditions** for the development of **innovative and high-value-added services** at a low cost due to the mutualization of resources

- **Prevent the mobility market from being locked up** in the hands of a few global players, imposing contractual and pricing conditions on all.

- **Level playing field** – foster data access for start-ups

In a nutshell …

Conclusion – Mutual Data Sharing

- Enables to **reconciliate** the interests of all stakeholders to achieve **well-being for all** through mobility
- Proposed on a **voluntary basis**
- Could also be compulsory on the basis on an the **overarching public interest** within the limits of the law
- **Legal remedies** required against potential abuses
- Rights and responsibilities of all parties clarified in written.
- Must be implemented in respect with the Rule of Law and Constitutional requirements

Conclusion

Effective check and balances are central

"*Nothing is less productive than to make more efficient, what should not be done at all*" (Peter Drucker)

Conclusion – Mutual Data Sharing

- Priority on the exchange of "**non-personal**" data only
- **Non-personal data license** that specifies fair, reasonable, and non-discriminatory terms of access for all categories of data users and clarifies liability
- Personal data processing **only** with **certified data trusts and a legal basis**
- How to contribute ?
  - Contact your NAP coordinator to discuss, if they implement Mutual Data Sharing.

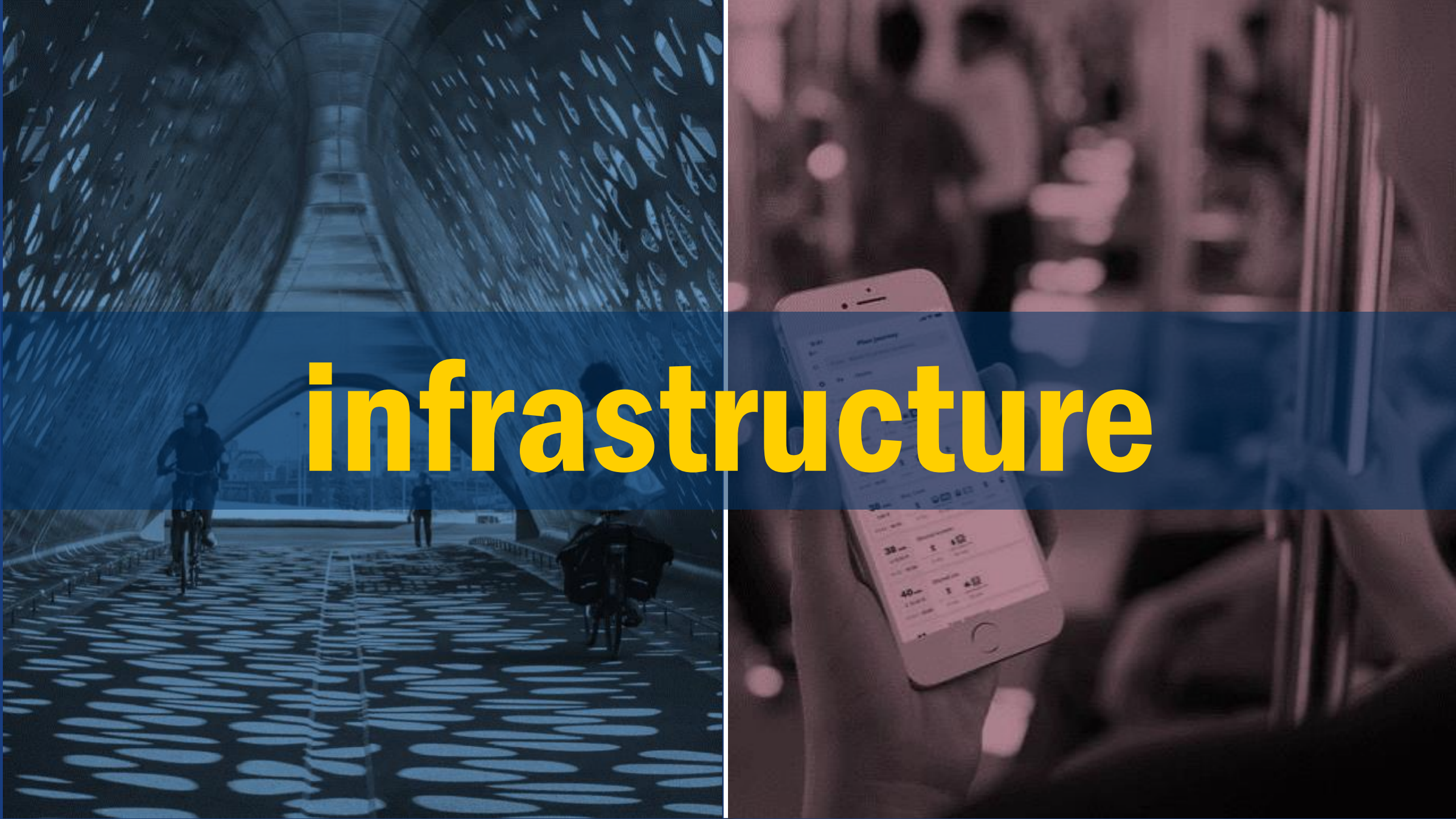
THANK YOU !

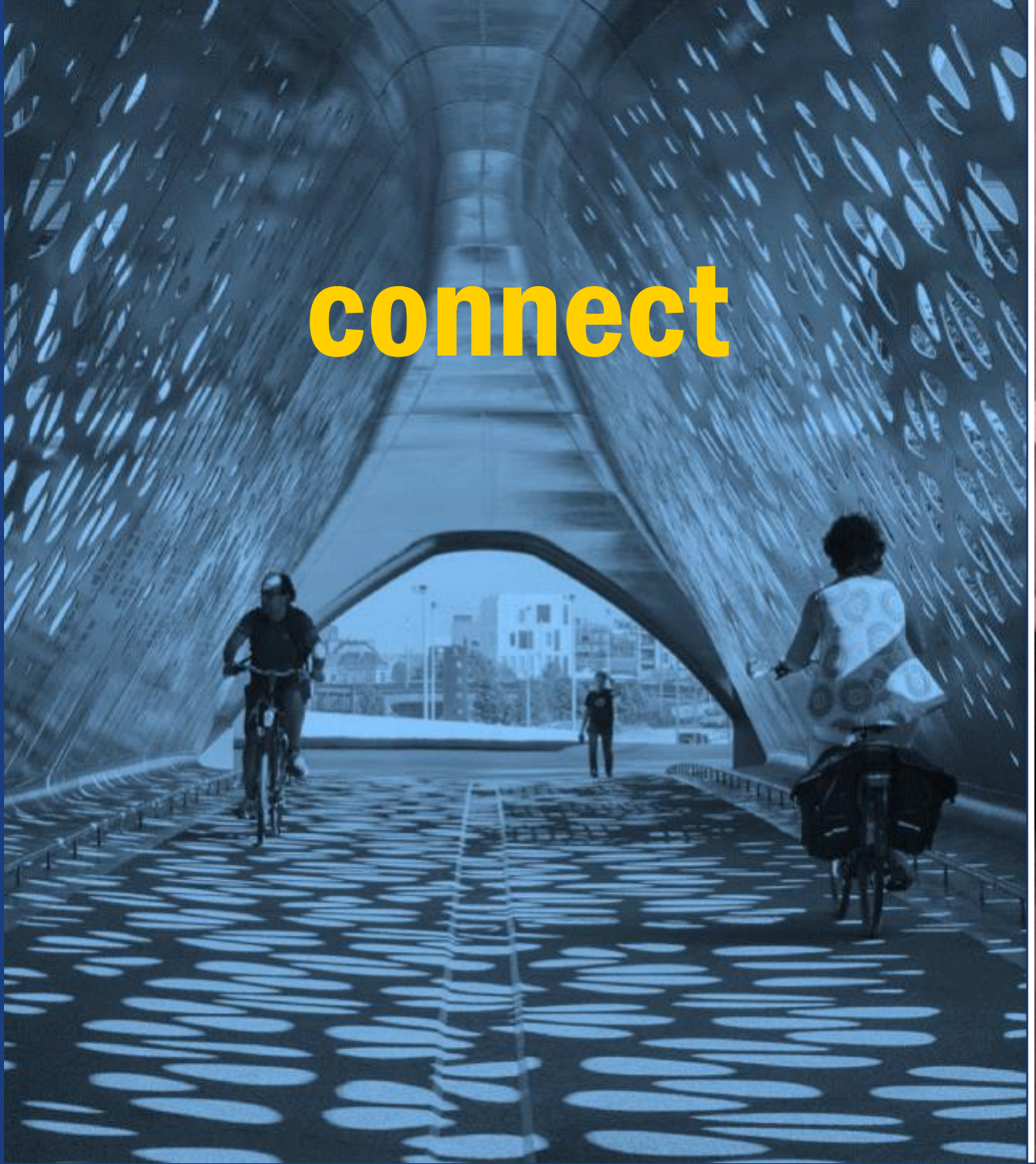
eva.thelisson@astra.admin.com

Agenda

Time	Topic	Person	Institution
9:00	Welcome and setting the scene	Timo Hoffmann	NAPCORE / German Federal Highway Research Institute
9:10	The PrepDSpace4Mobility Project	Lucie Kirstein	German National Academy of Science and Engineering
9:25	Mobilithek – the German NAP and its relation to the MDS	Clara Schüürman	German Federal Ministry for Digital and Transport
9:35	Mobility Data Space – the German market place for mobility data	Michael Schäfer	DRM Datenraum Mobilität GmbH / Mobility Data Space
9:50	MDS – concept from Switzerland	Eva Thelisson	Swiss Federal Roads Office (FEDRO)
10:05	Thoughts on the MDS from the ITF	Philippe Crist	International Transport Forum at the OECD
10:10	NAPs ecosystem and Mobility Data Spaces	Johanna Tzanidaki	ERTICO
10:20	Discussion	all	

napcore


infrastructure

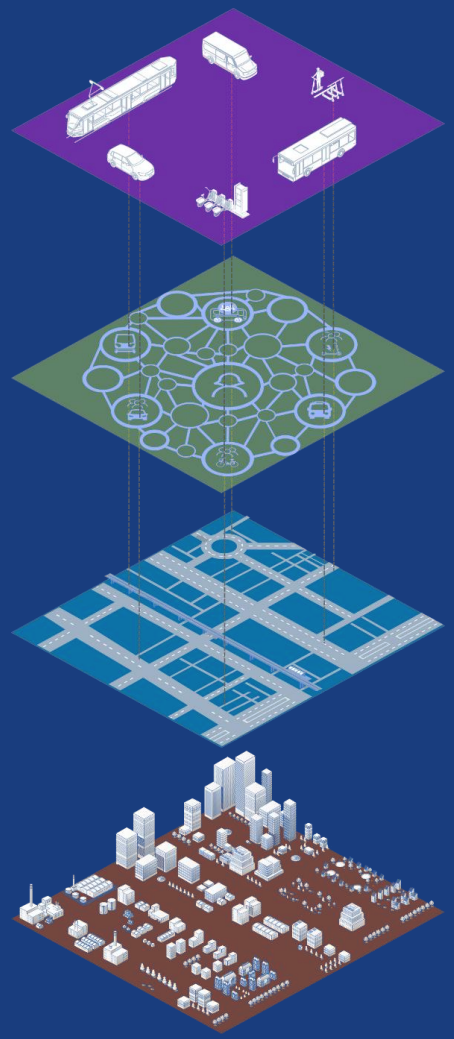

connect


integrate

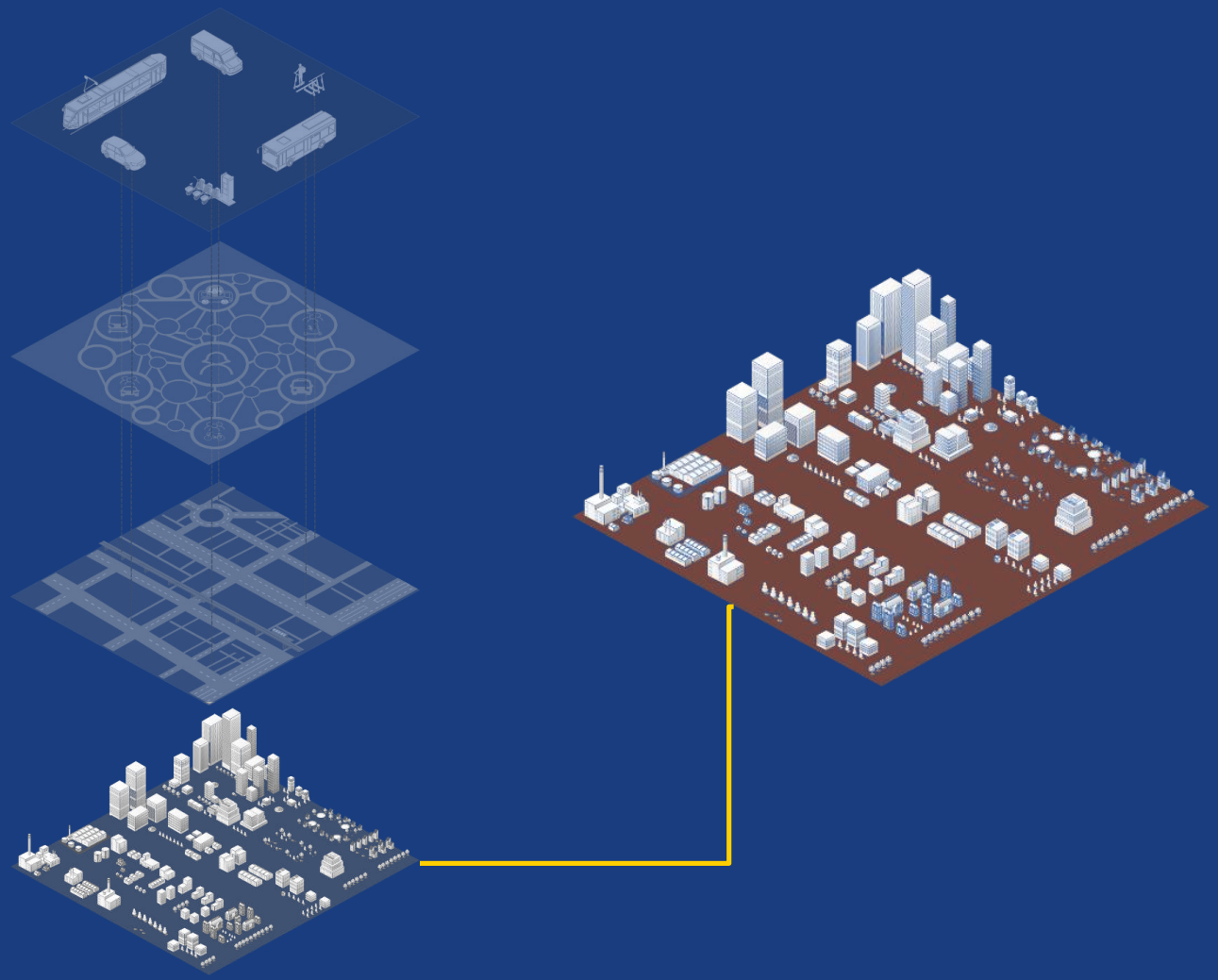

connect
hardware
concrete


integrate
software
code

Mobility Infrastructure Stack



Mobility Infrastructure Stack

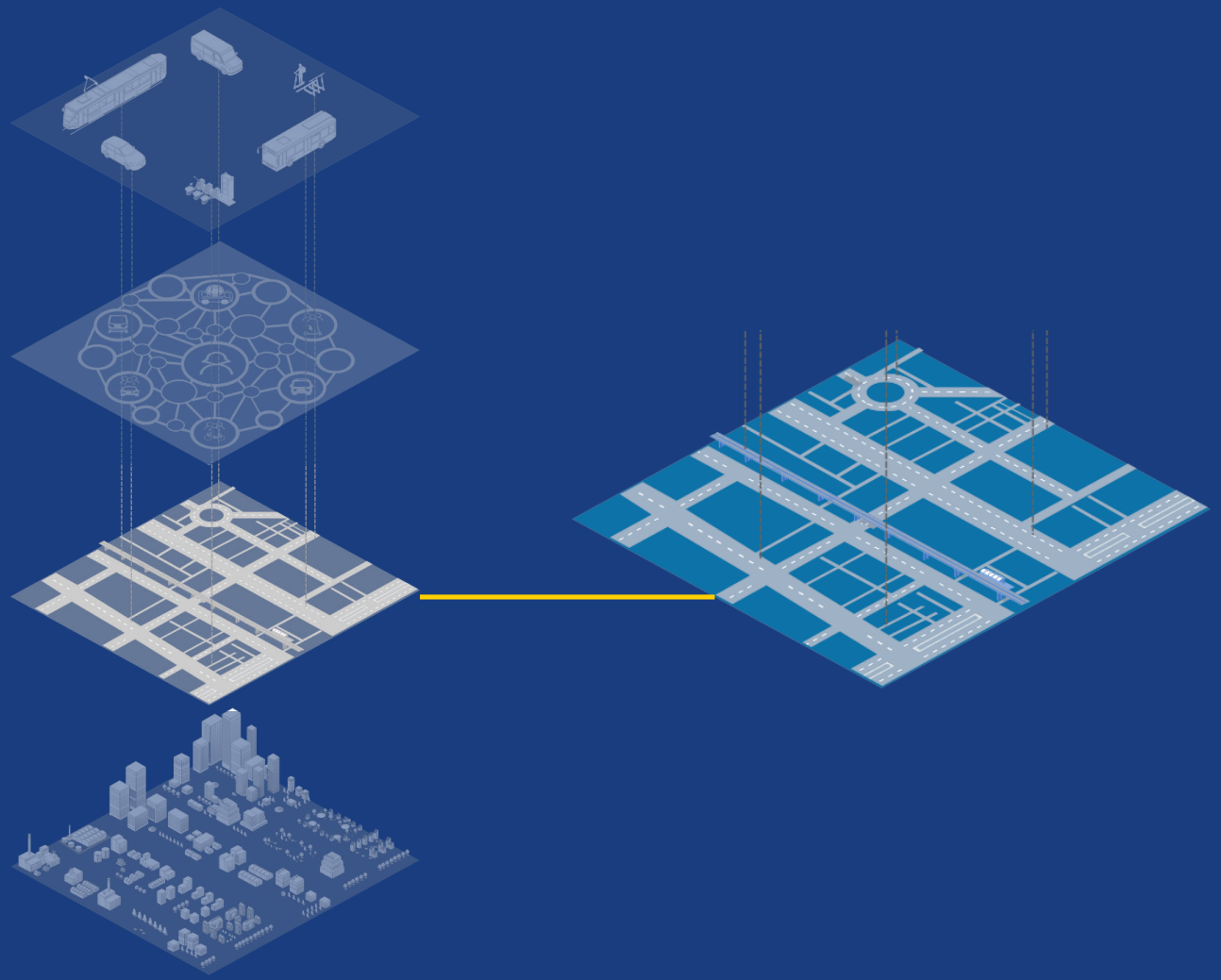


Built environment

Highly regulated

Land use and building regulations help frame what gets built where and what activities are permitted, encouraged or discouraged. Access to opportunity is conditioned by proximity or by access to transport networks. Trip origins and destinations are linked to the built environment.

Mobility Infrastructure Stack

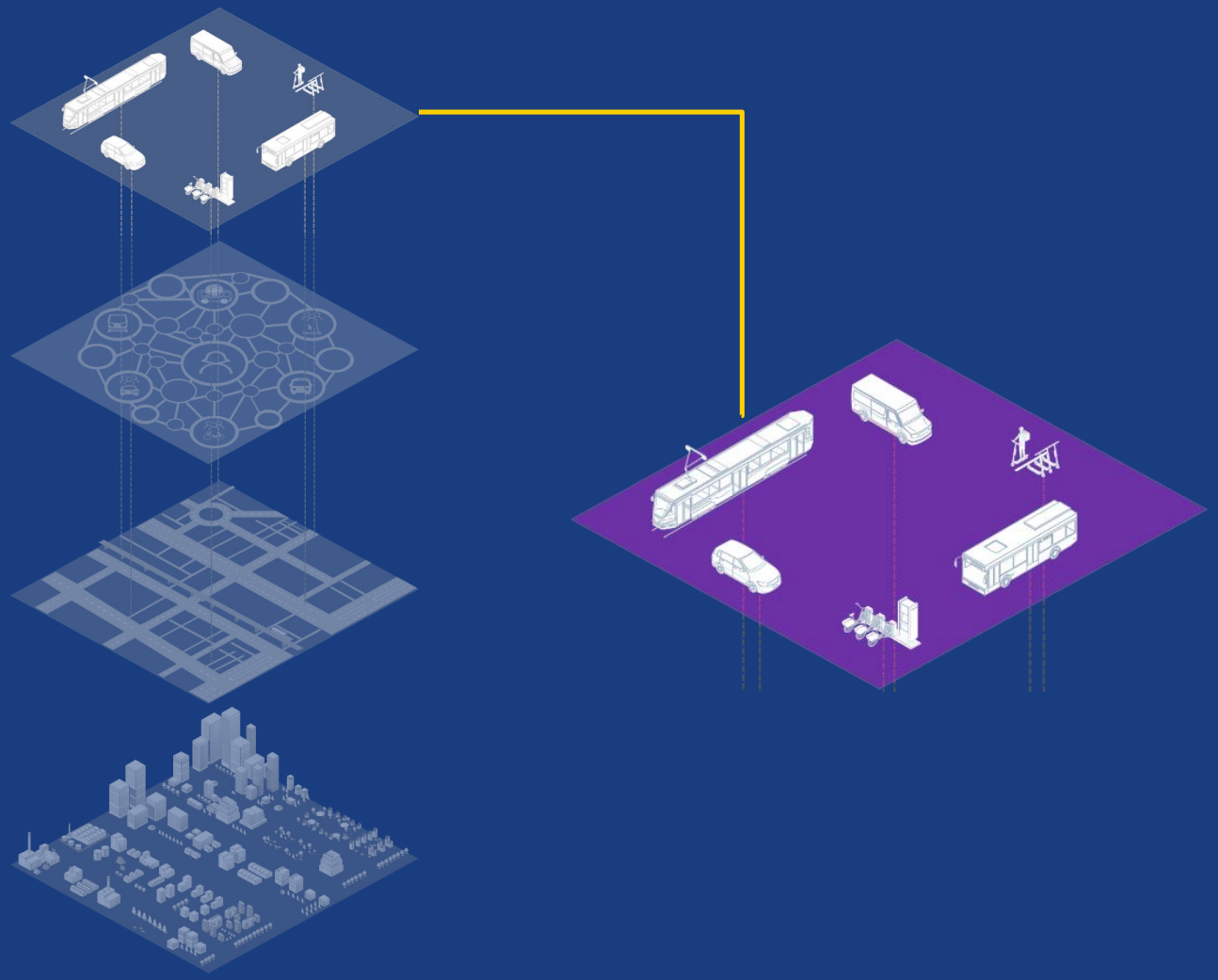


Transport network infrastructure

Highly regulated

Transport networks are connective infrastructure joining spatially distant locations. They provide access to opportunities and reduce travel times. Public authorities help determine their specification, location and typically fund these in the general interest. They have been the traditional focus of infrastructure policy for transport.

Mobility Infrastructure Stack

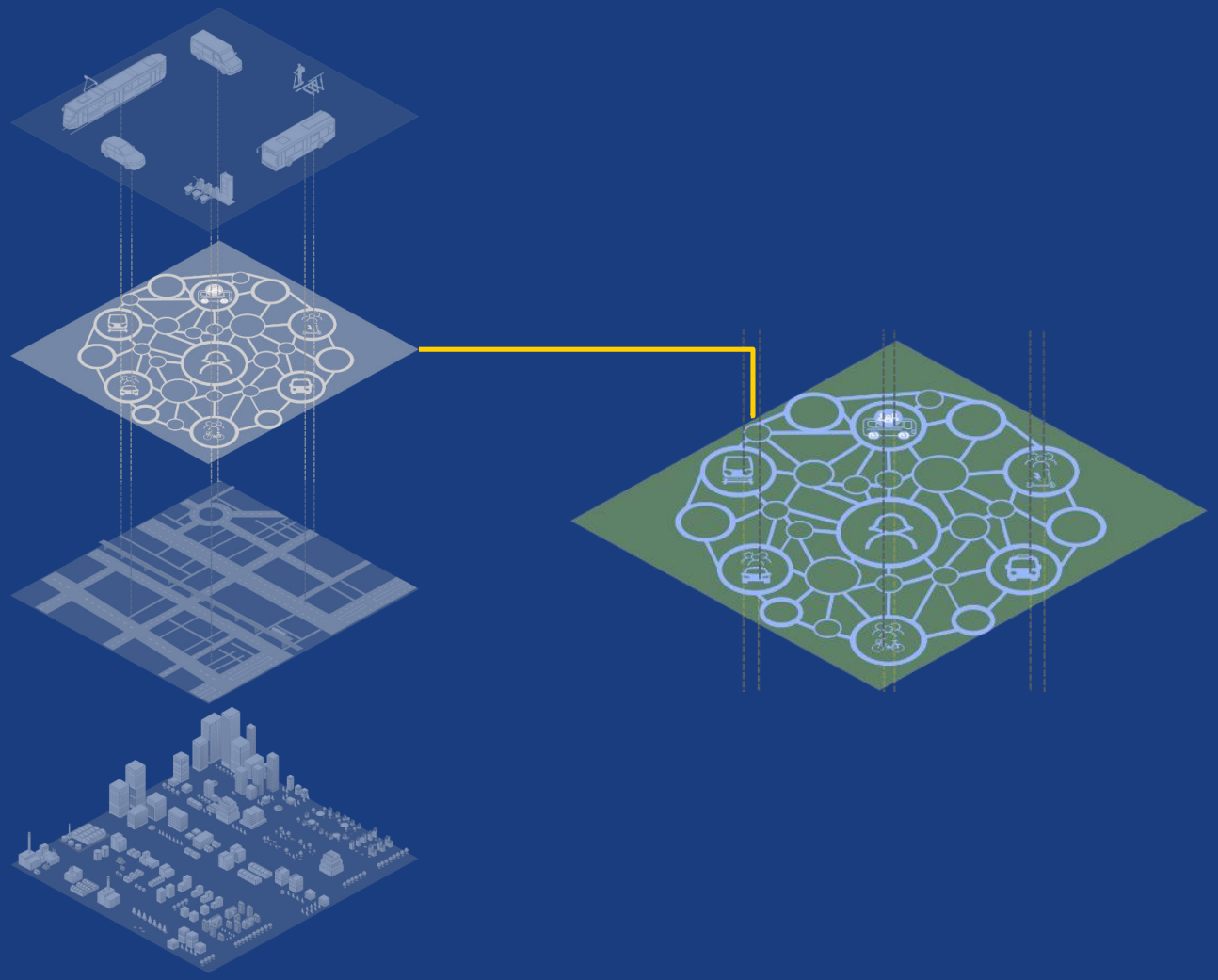


Infrastructure-based services

Highly regulated

Good quality public transport ensures equitable and sustainable access, is space efficient and is supported by public funds in return for public service obligations. Other mobility services are regulated to ensure they do not erode public policy outcomes as they deliver benefits to travelers.

Mobility Infrastructure Stack

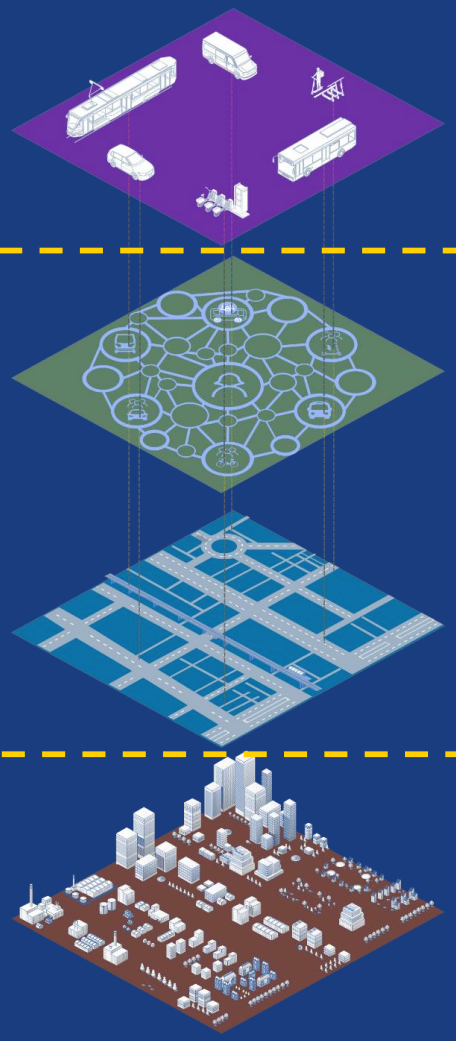


Mobility data infrastructure

Hardly regulated

Mobility data is integrative infrastructure which improves the efficiency with which transport services use transport networks. Rapid digitilisation has resulted in commercially deployed data architectures largely absent of public policy guidance.

Mobility Infrastructure Stack

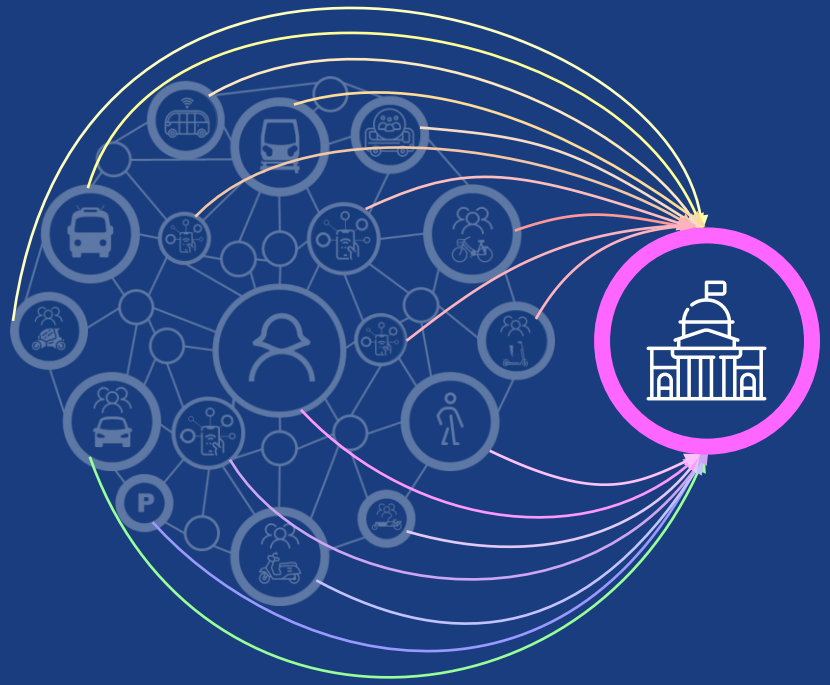


Foundational Infrastructure:

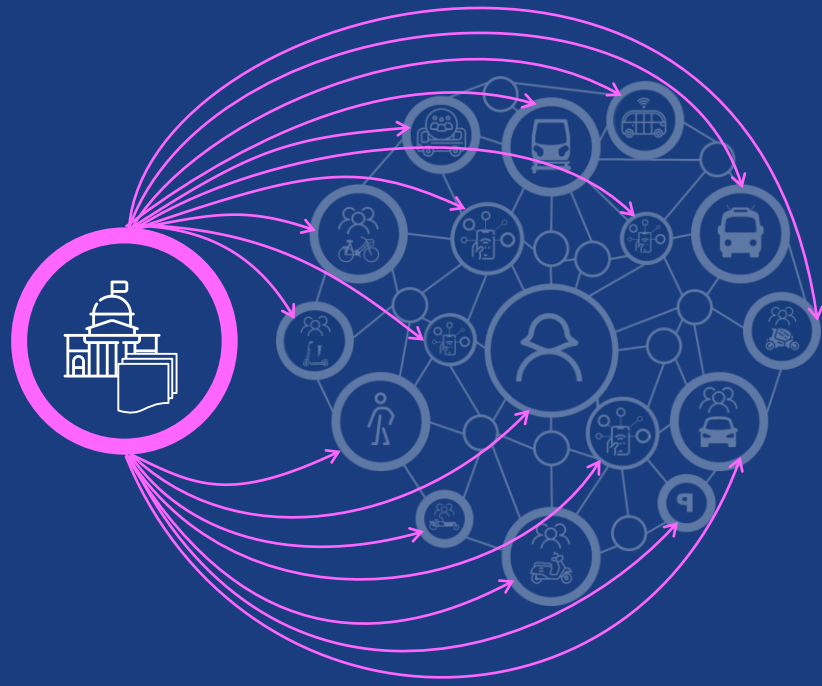
part of the infrastructure of everyday life and is a pre-condition for the well-being of every citizen

Mobility Data Architecture

1. data sharing
(among market actors,
enables market to function)

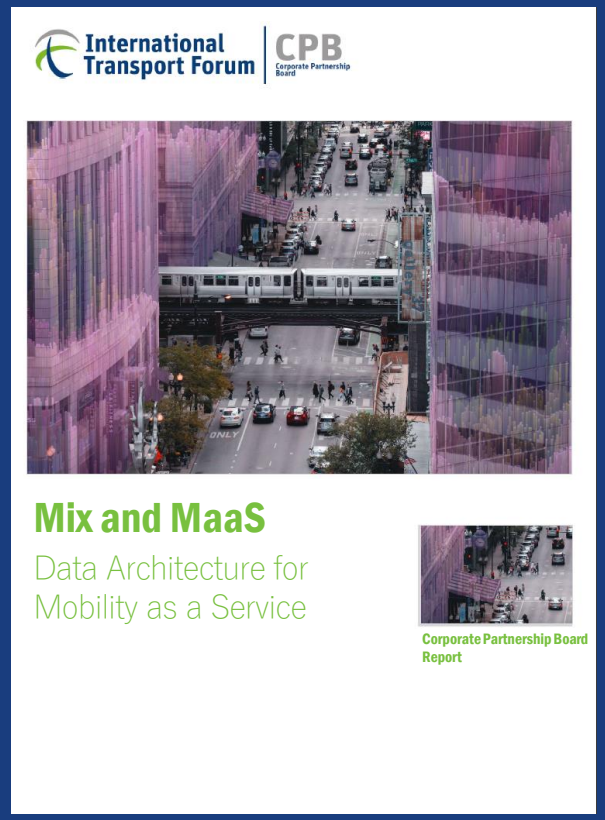


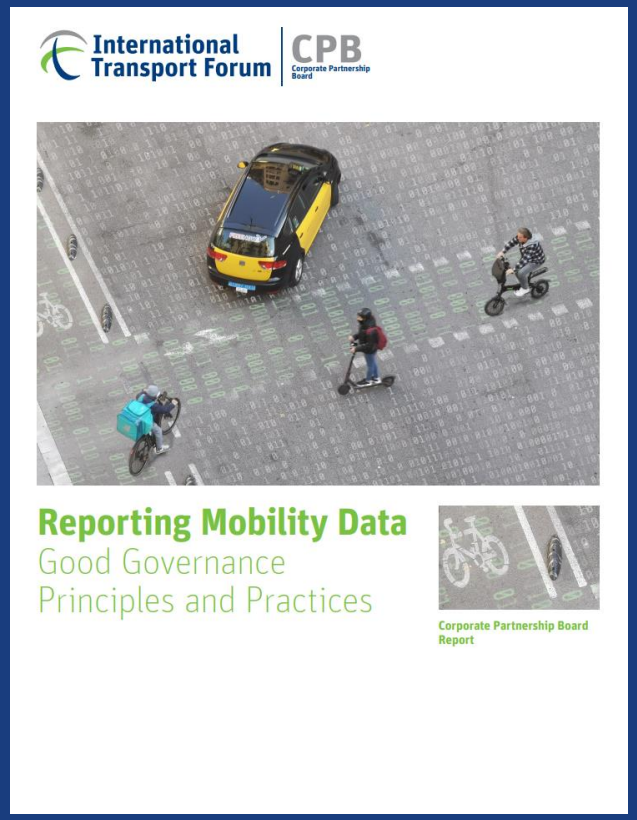
2. data reporting
(to public authority,
to monitor market function)



3. machine-readable
regulation
(digital regulations directly ingestable by
platforms and actors)

Mobility Data Architecture



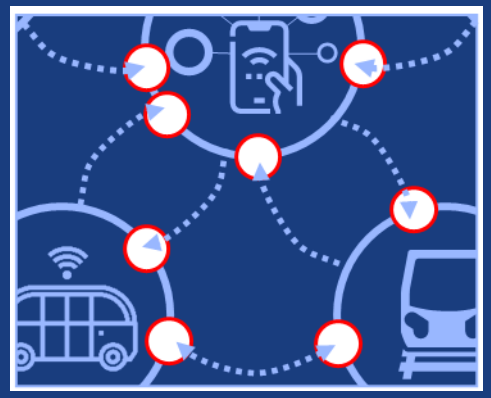


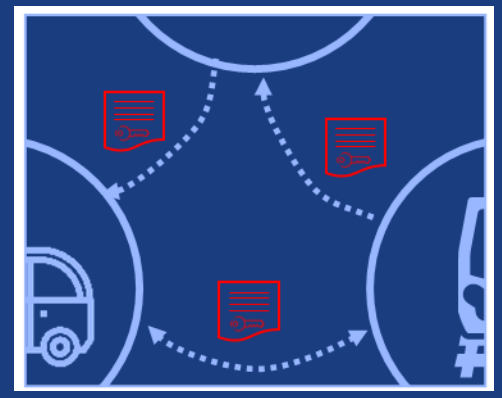
1. data sharing
(among market actors, enables market to function)

2. data reporting
(to public authority, to monitor market function)

3. machine-readable regulation
(digital regulations directly ingestable by platforms and actors)

Data sharing





What data to share?

Data heterogeneity
Data relevance
Functional categories
Data “findability”
Data quality

How to share that data?

Data portability and interoperability
Data pooling/exposure mechanisms
Conditional data access
Shared data “blocks”
Cost of data sharing

How to handle shared data?

Data handling protocols
Data retention, destruction, aggregation
Tokenised/encrypted data handling

Data vs. Information vs. Knowledge

Data

"Hilary G."

"10"

"44.40706835, 8.94675415"

Information

"Hilary G. is a registered user"

"10 transport pass swipes"

"Brignole Station, Genova, Italy"

Knowledge

" Hilary G. has taken 10 metro trips in Genova starting at Brignole Station. Based on her travel history, the probability of her next trip starting at Brignole being a leisure versus work trip is 75%"

Data is not singular!

Source

How is the data sourced?

Volunteered

Data that is explicitly and intentionally revealed by a natural person (e.g. identity or contact details).

Observed

Data that is collected from interaction with a service or a device (e.g. location data , trip history, travel schedule...)

Inferred

Knowledge that is derived from combining volunteered and observed data – and other inferred data -- and applying analytical processing to it.

Nature

To who or what does the data pertain?

Personal

Data that can be linked directly or indirectly to natural persons – including direct identifiers, location, or other factors.

Non-Personal

Data which is not or cannot be linked to natural persons – either because there is no link or because it has been robustly de-identified.

Commercially sensitive

Data which pertains to the ability for economic agents to compete in markets – e.g. that is commercially valuable, known to limited people, and/or subject to confidentiality agreements.

Function

What purpose does the data serve?

Informational

Data that supports the planning, scheduling or coordination of trips.

Operational

Data supporting the fulfillment of travel services (e.g. vehicle or station access rights, continuity management for multi-leg trips, etc...)

Transactional

Data that enable people to book and pay for services and allows revenues to be redistributed among service providers.

Access

Who has access to the data and under what conditions?

Closed

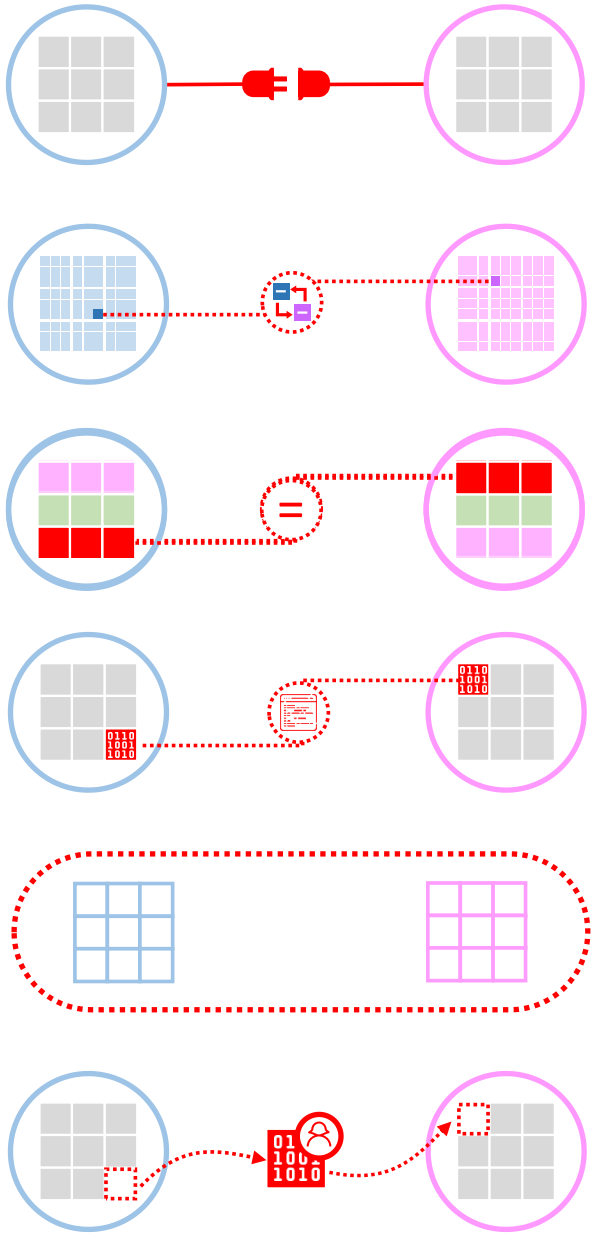
Data that is only available to the data controller parties designated by the data controller.

Restricted

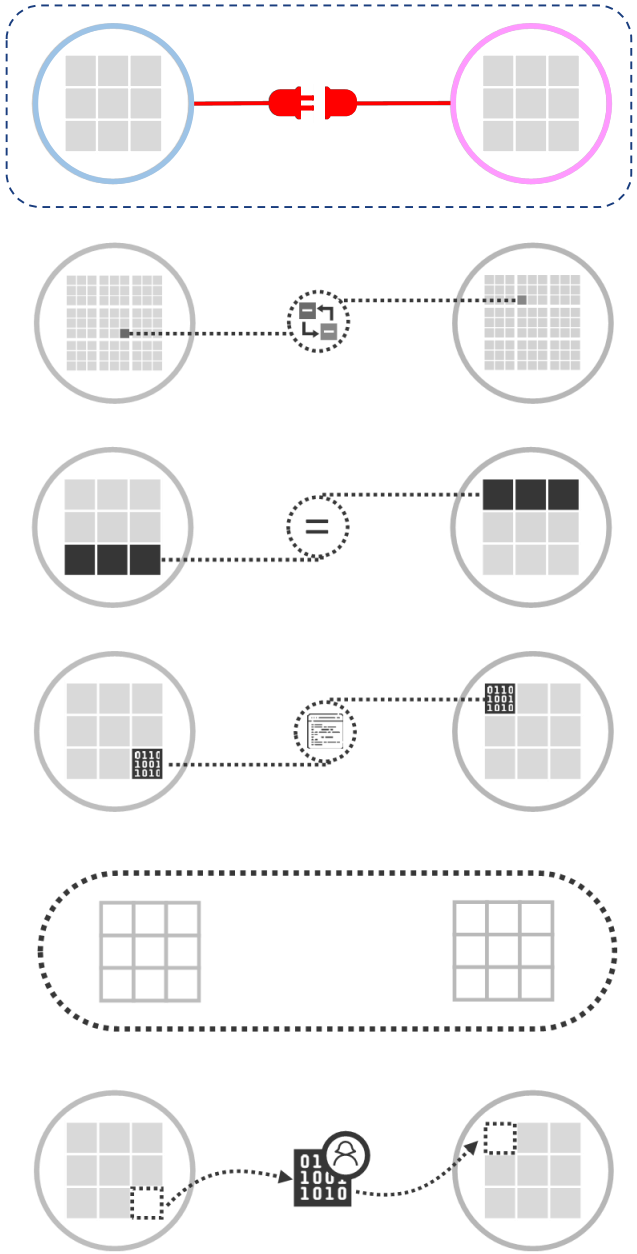
Data that is available to parties other than the data controller under specific conditions.

Open

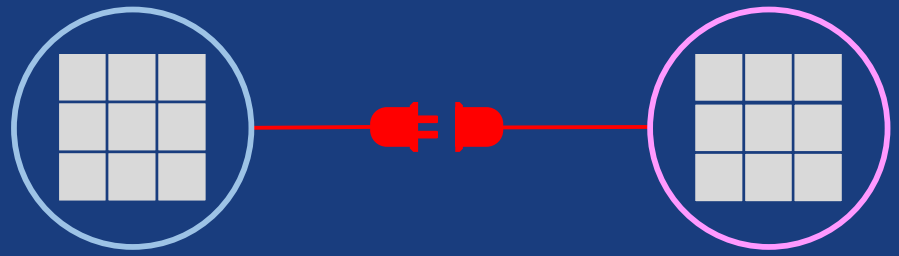
Data that is available to parties other than the data controller under no set conditions.



Data interoperability and portability

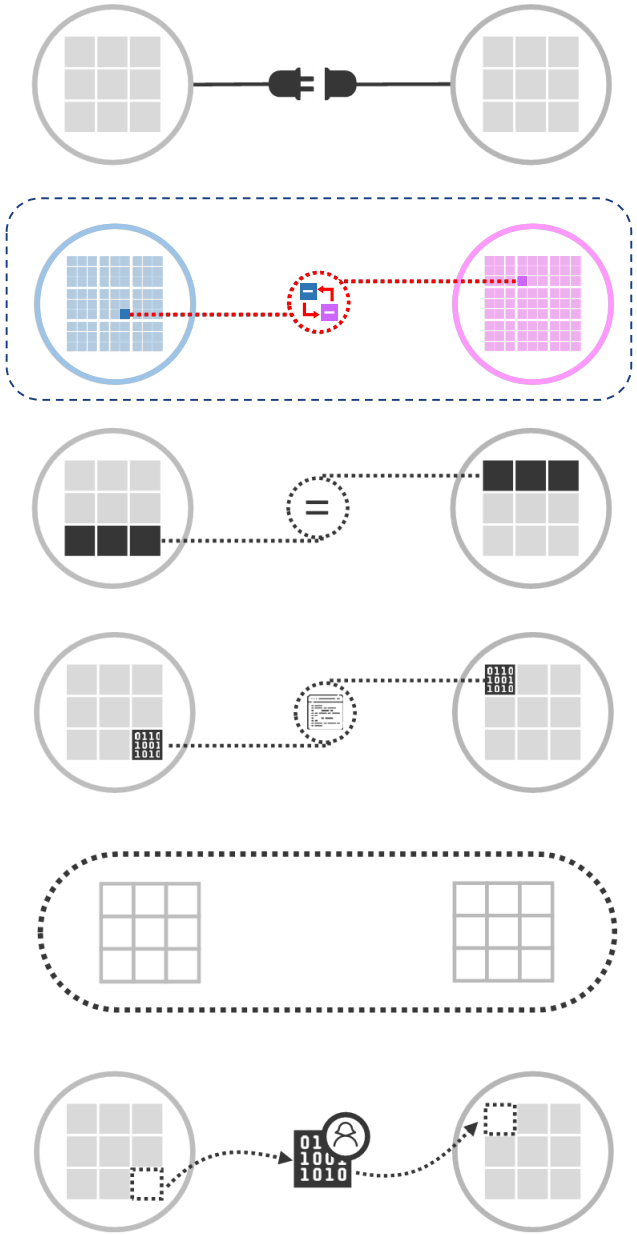


Data interoperability and portability

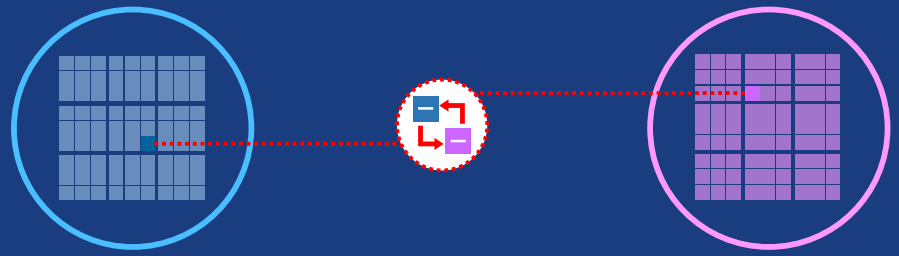


System connectivity

Are systems physically able to connect with each other? Does this connectivity ensure low-latency interaction among systems? Are people able to connect to systems? Do they face challenges in doing so?

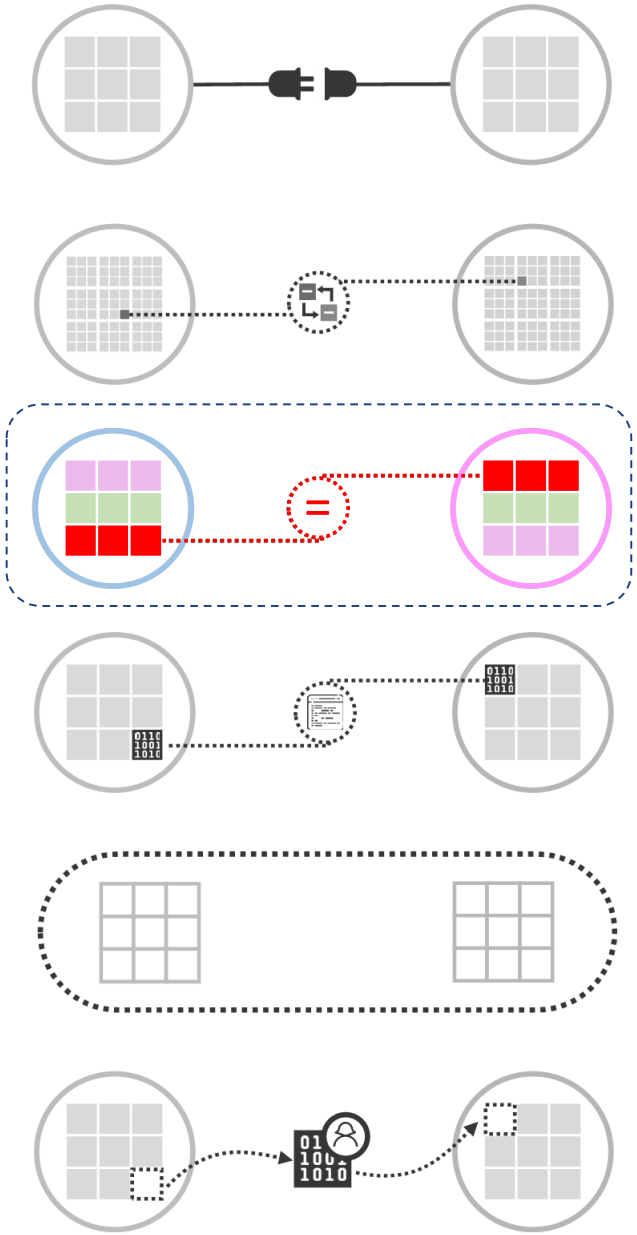


Data interoperability and portability

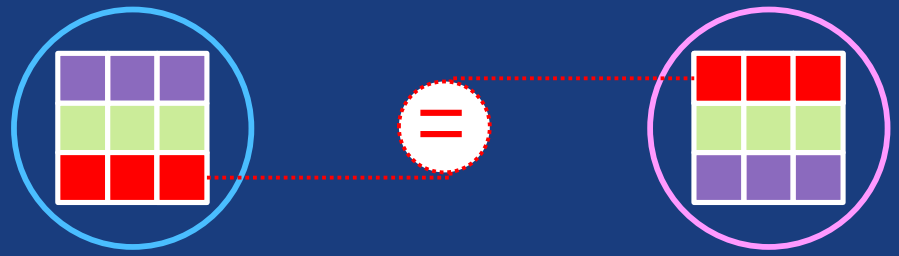


Semantical interoperability

Do systems and processes share a common understanding of basic terms? Are definitions shared and used consistently? Are translation logics consistent where there is no common agreement on terms?

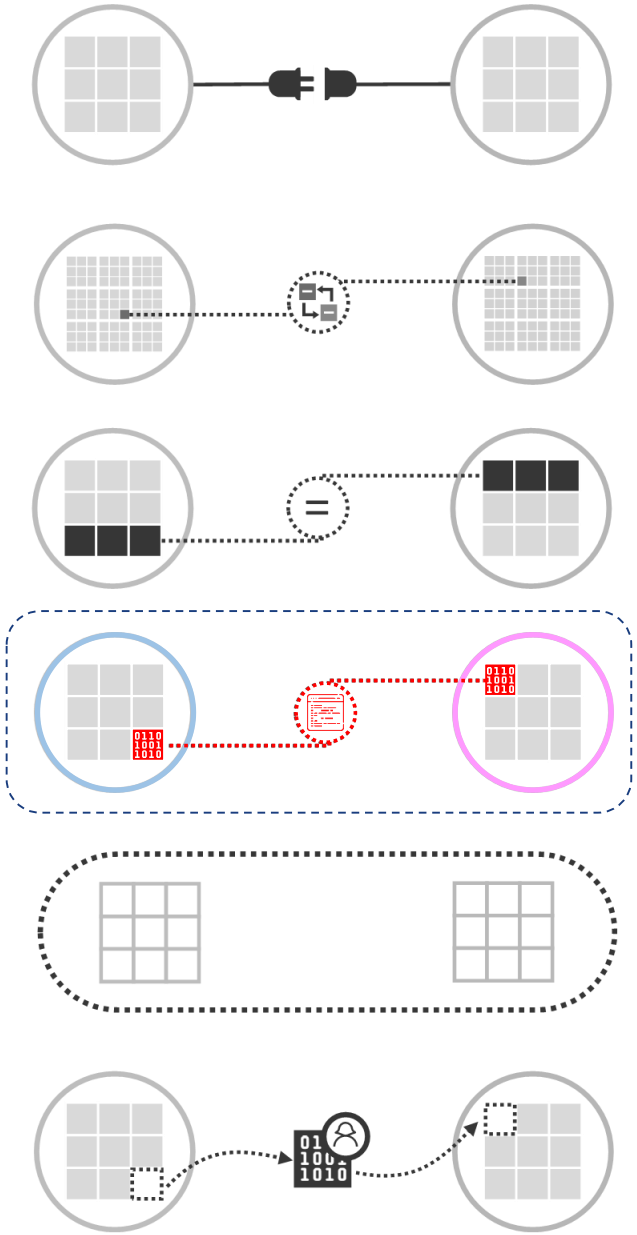


Data interoperability and portability

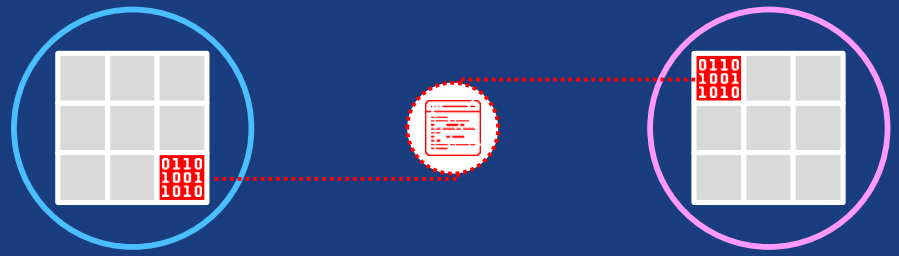


Protocol (schema) interoperability

Are systems able to interact with each other without undue friction from data structure incompatibilities - are schemas and data structures mappable between systems?

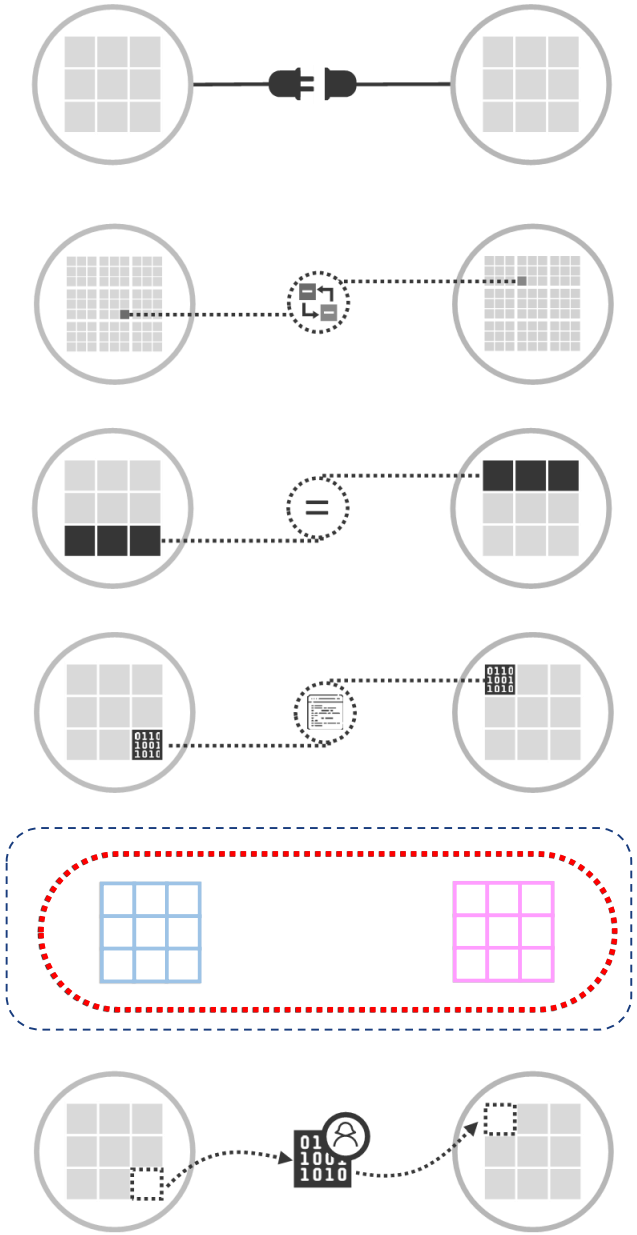


Data interoperability and portability



Data (syntaxical) interoperability

Can data generated and used in one system be relatively frictionlessly ingested and used by another system? Do systems share common codebases and are syntaxes shared or compatible amongst systems?



Data interoperability and portability

Full (native) interoperability

Do standards, hardware and systems interact “natively” and seamlessly amongst different systems? Can users of one system use features of other systems, and vice-versa, without any additional prompting or learning on their part?

Agenda

Time	Topic	Person	Institution
9:00	Welcome and setting the scene	Timo Hoffmann	NAPCORE / German Federal Highway Research Institute
9:10	The PrepDSpace4Mobility Project	Lucie Kirstein	German National Academy of Science and Engineering
9:25	Mobilithek – the German NAP and its relation to the MDS	Clara Schüürman	German Federal Ministry for Digital and Transport
9:35	Mobility Data Space – the German market place for mobility data	Michael Schäfer	DRM Datenraum Mobilität GmbH / Mobility Data Space
9:50	MDS – concept from Switzerland	Eva Thelisson	Swiss Federal Roads Office (FEDRO)
10:05	Thoughts on the MDS from the ITF	Philippe Crist	International Transport Forum at the OECD
10:10	NAPs ecosystem and Mobility Data Spaces	Johanna Tzanidaki	ERTICO
10:20	Discussion	all	

napcore

NAPs ecosystem and Mobility Data Spaces

NAPCORE Mobility Days

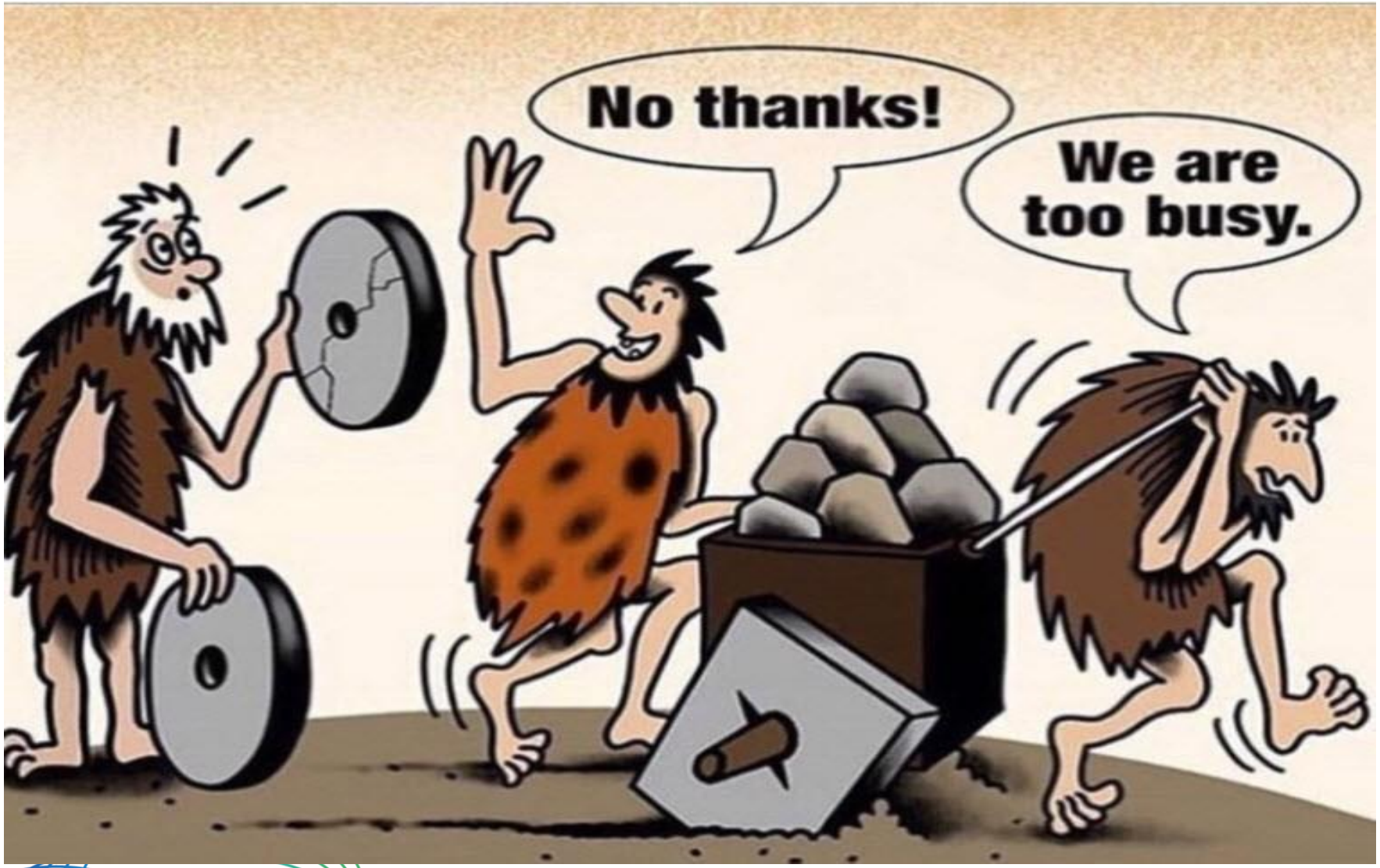
Paris, 3 November 2022

Dr. Johanna Tzanidaki

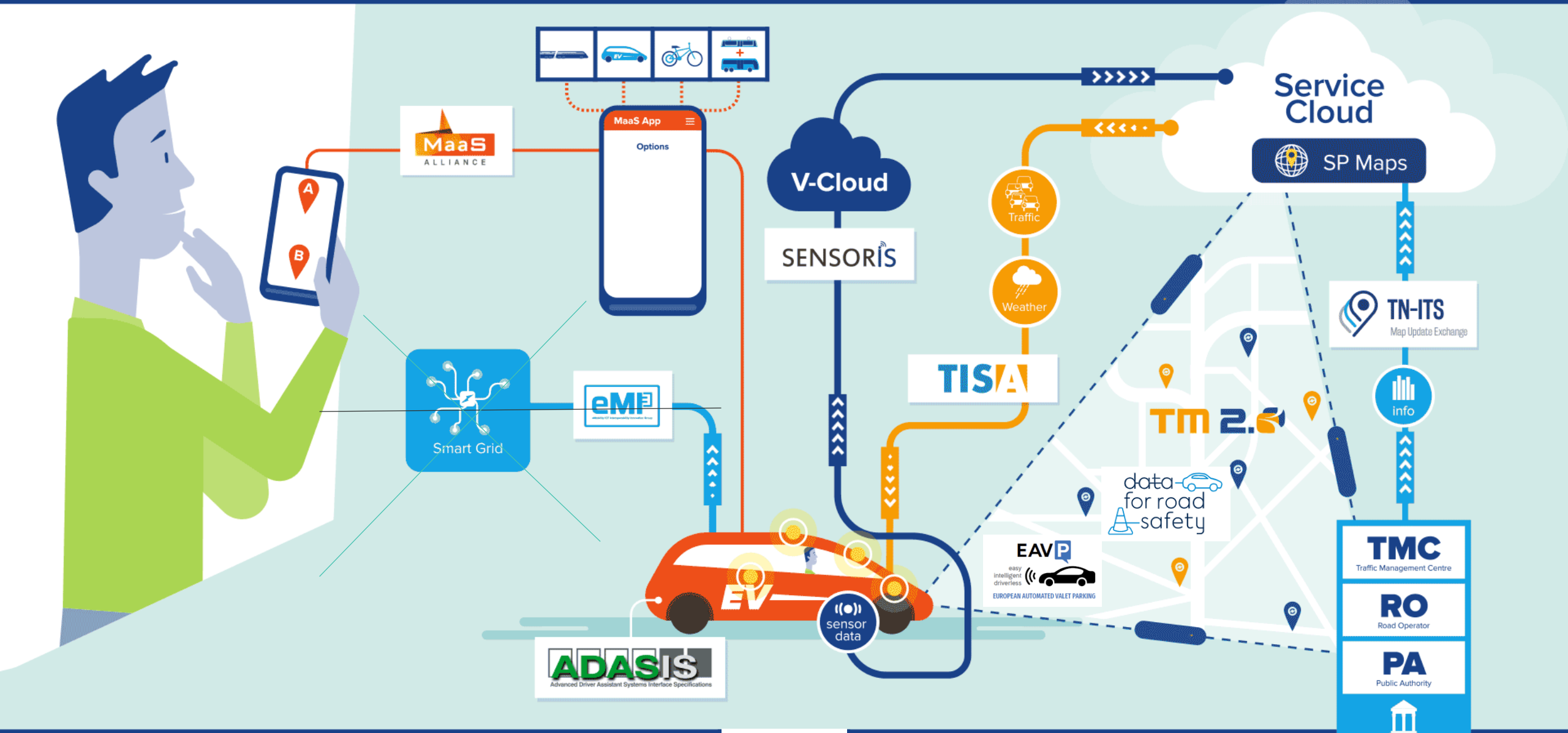
ERTICO –ITS Europe CIO

TM 2.0 co-Chair

No time to think!

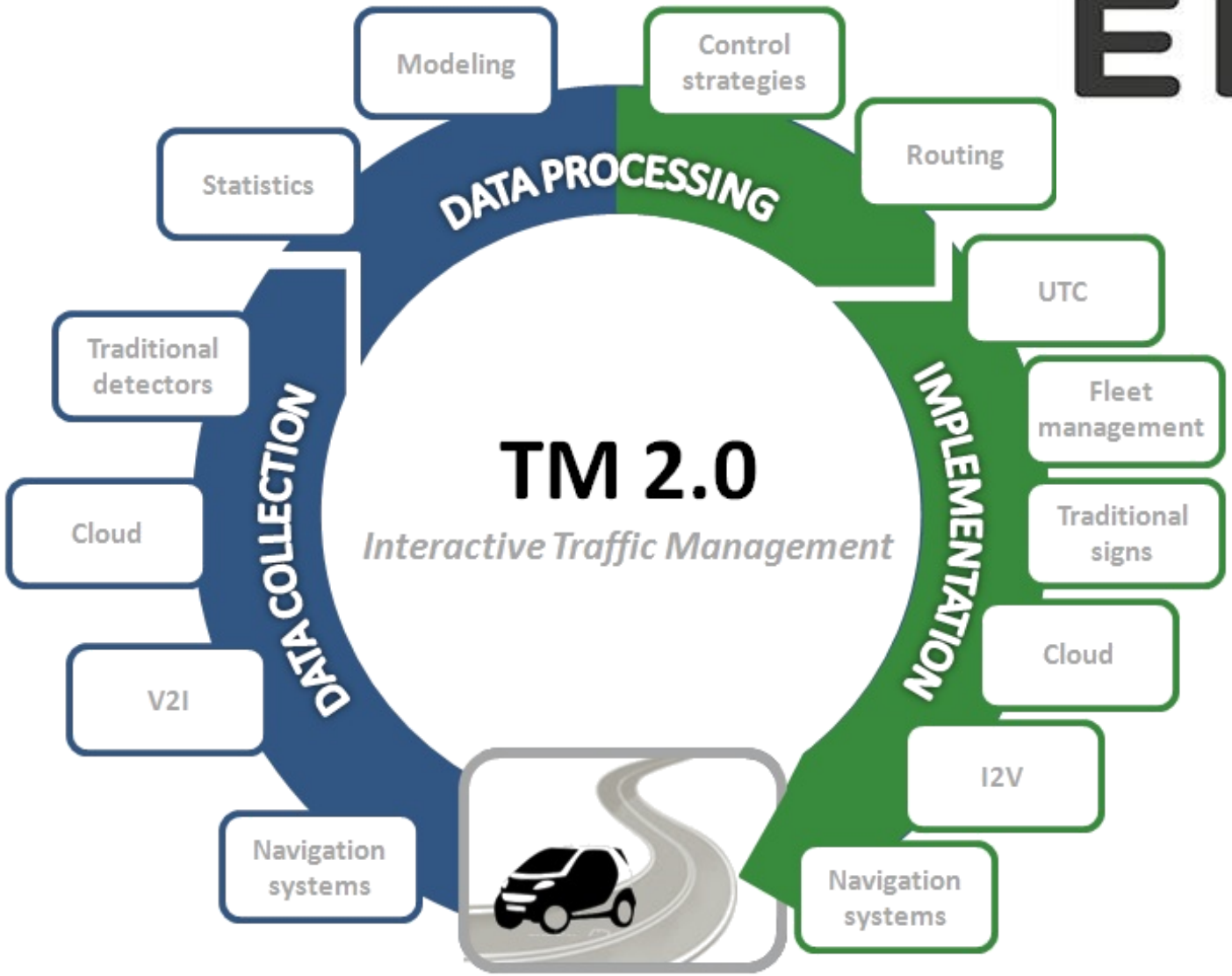


SMART MOBILITY DEPLOYMENT BY ERTICO PARTNERSHIP



ERTICO

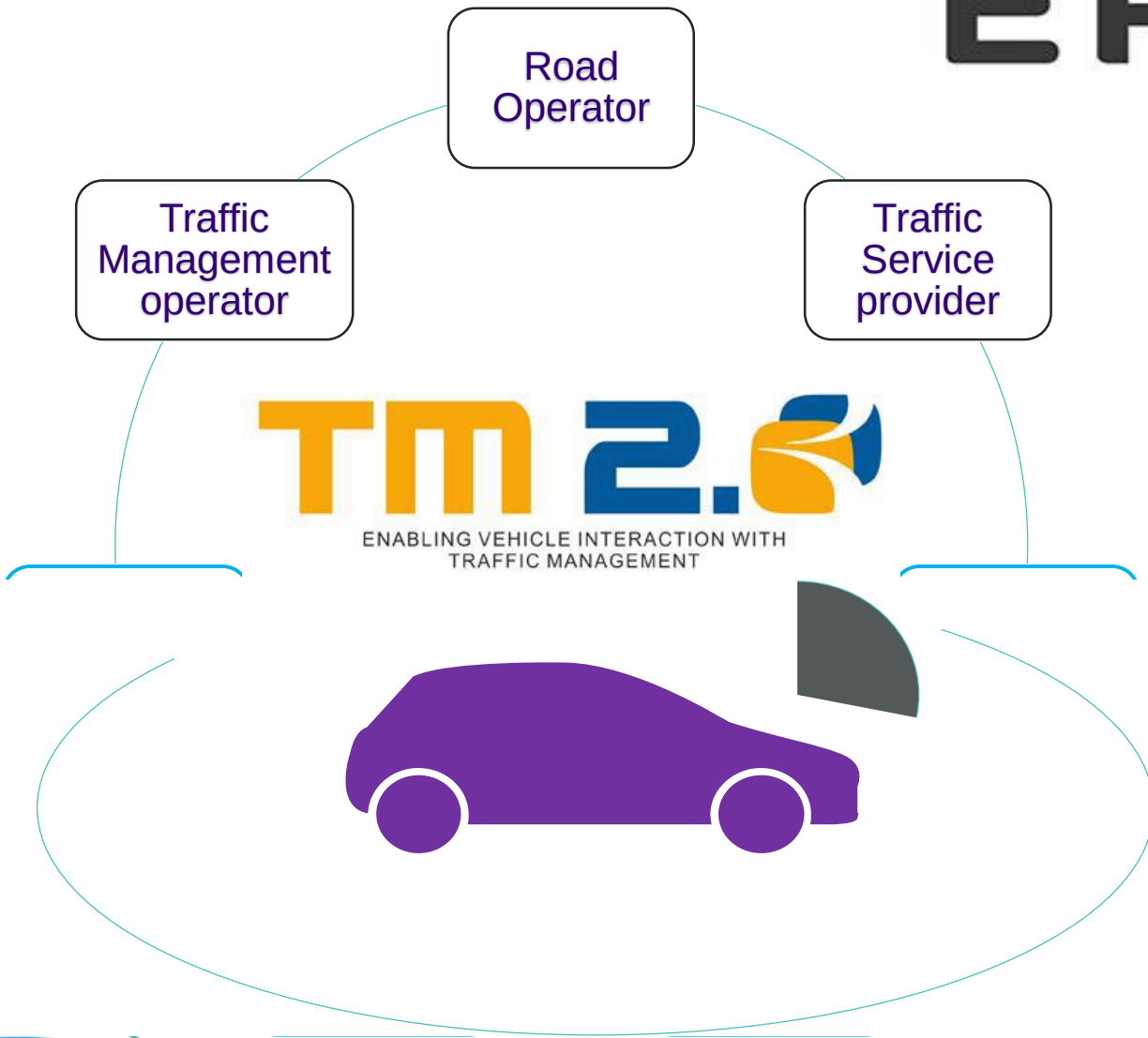
TM 2.0 – What is needed



ERTICO
ITS EUROPE

TM 2.0
ENABLING VEHICLE INTERACTION WITH TRAFFIC MANAGEMENT

TM 2.0



Principles:

Collaboration & trust

Co-opetition

Loop of information in TM value-chain

ENABLING VEHICLE INTERACTION WITH TRAFFIC MANAGEMENT

Multimodal Mobility & Common Operational Picture

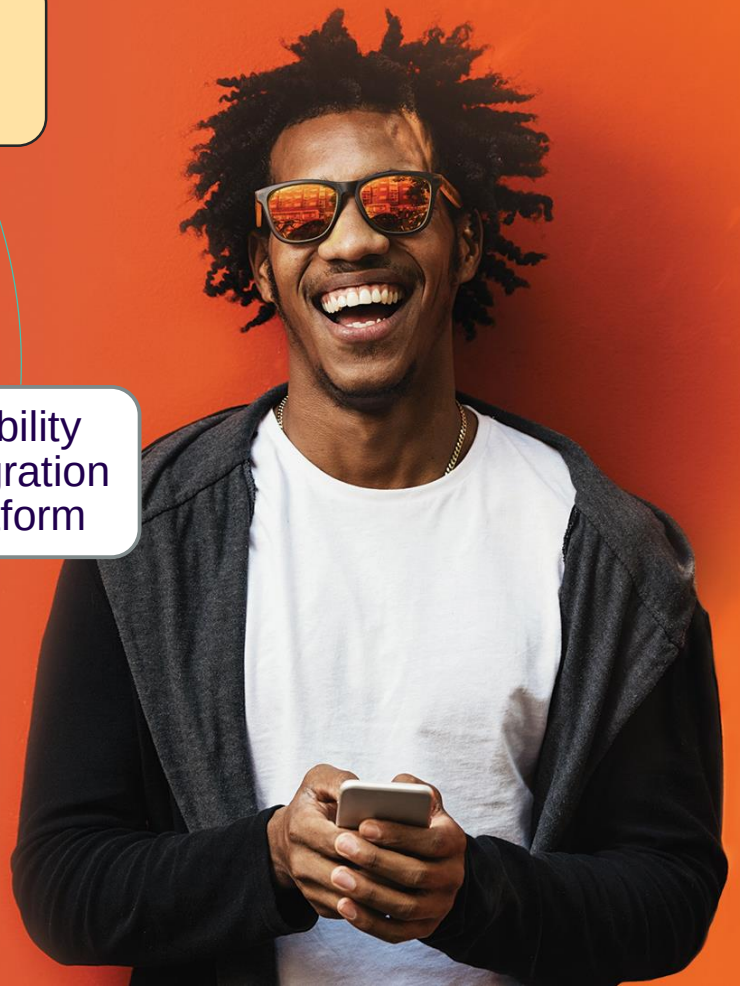
Digitalisation and Connectivity

Mobility Network Management (MNM)

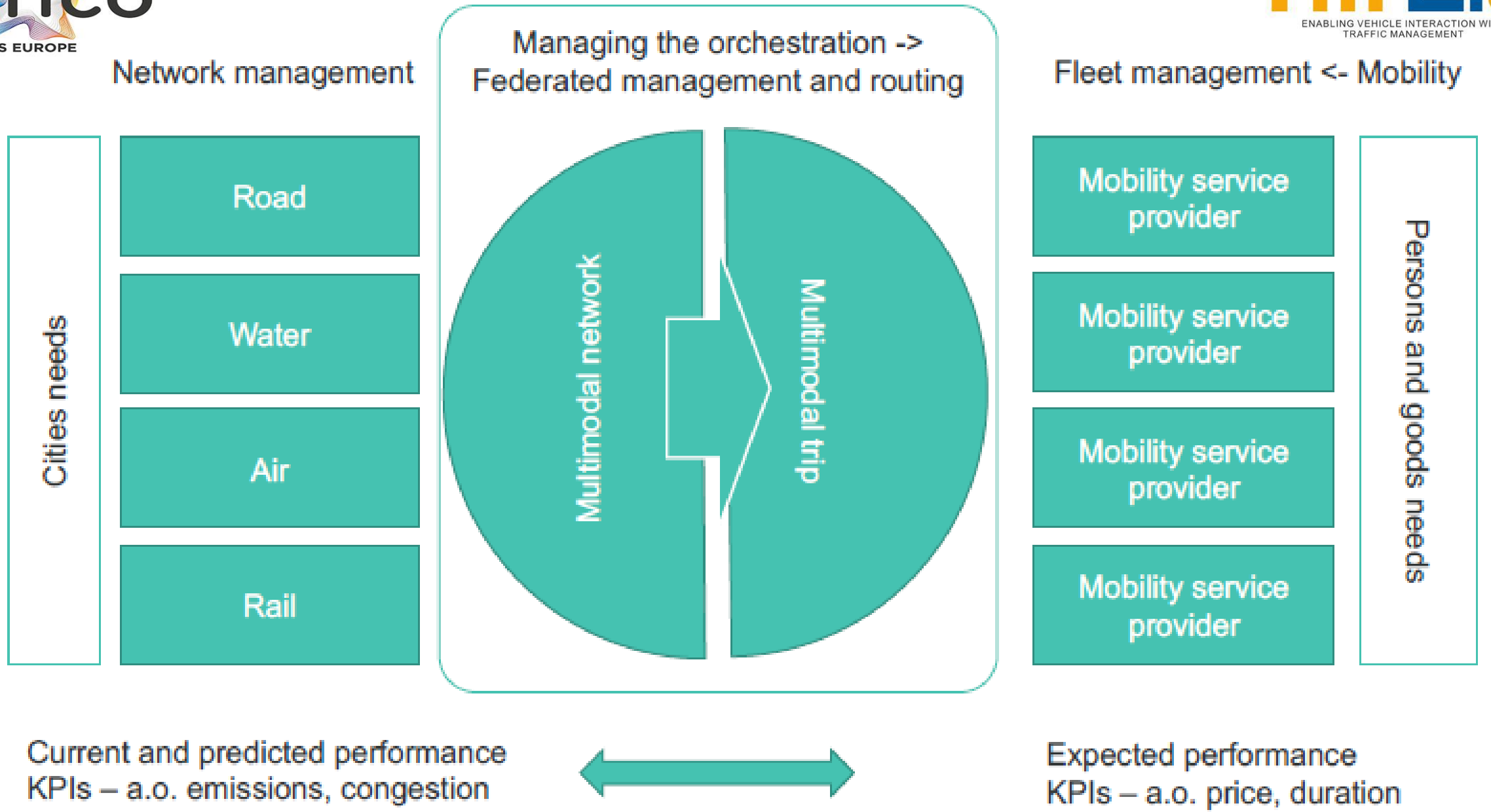
Principles:

Collaboration & Trust

Co-opetition



Loop of information in mobility value-chain


Managing the orchestration ->
Federated management and routing
Network management
Fleet management <- Mobility
Cities needs
Road
Water
Air
Rail
Multimodal network
Multimodal trip
Mobility service provider
Mobility service provider
Mobility service provider
Mobility service provider
Persons and goods needs
Current and predicted performance
KPIs – a.o. emissions, congestion
SUMIs
Expected performance
KPIs – a.o. price, duration

Innovation for tomorrow's journey.

ertico.com | @ertico

Agenda

Time	Topic	Person	Institution
9:00	Welcome and setting the scene	Timo Hoffmann	NAPCORE / German Federal Highway Research Institute
9:10	The PrepDSpace4Mobility Project	Lucie Kirstein	German National Academy of Science and Engineering
9:25	Mobilithek – the German NAP and its relation to the MDS	Clara Schüürman	German Federal Ministry for Digital and Transport
9:35	Mobility Data Space – the German market place for mobility data	Michael Schäfer	DRM Datenraum Mobilität GmbH / Mobility Data Space
9:50	MDS – concept from Switzerland	Eva Thelisson	Swiss Federal Roads Office (FEDRO)
10:05	Thoughts on the MDS from the ITF	Philippe Crist	International Transport Forum at the OECD
10:10	NAPs ecosystem and Mobility Data Spaces	Johanna Tzanidaki	ERTICO
10:20	Discussion	all	

napcore