



Smart transport & mobility

Enhanced Service Delivery Through Data Sharing

The 13th GIO roundtable

Barcelona, 27th February 2024

Joost Vantomme

CEO ERTICO – ITS Europe

Vice-president of the MaaS Alliance





Traffic & Transport Industry



Connectivity Industry



Users



Public Authorities



**A unique European
public-private partnership**

Connecting the dots with > 120
Partners from all ITS sectors to make
mobility smarter, cleaner, safer and more
efficient.



Service Providers



Research



Vehicle
Manufacturers



Suppliers

- ✓ Established in 1991 by the European Commission, public authorities and industry leaders
- ✓ Focus on innovation and technology in the transport and mobility system
- ✓ European projects on research, innovation -> deployment
- ✓ Building bridges with the ITS community worldwide & thought leadership
- ✓ Organiser of ITS congresses



Automated driving



Drones



Data exchange



Traffic management



Artificial Intelligence



Mobility as a Service



Navigation



Mobility Apps



Transport and Logistics



Intelligent Infrastructure



Safety



Micromobility



Payment Systems



V2X Communication



eMobility

**Innovation
through ITS
Intelligent Transport Systems**

Complex labyrinth -> European policy agenda



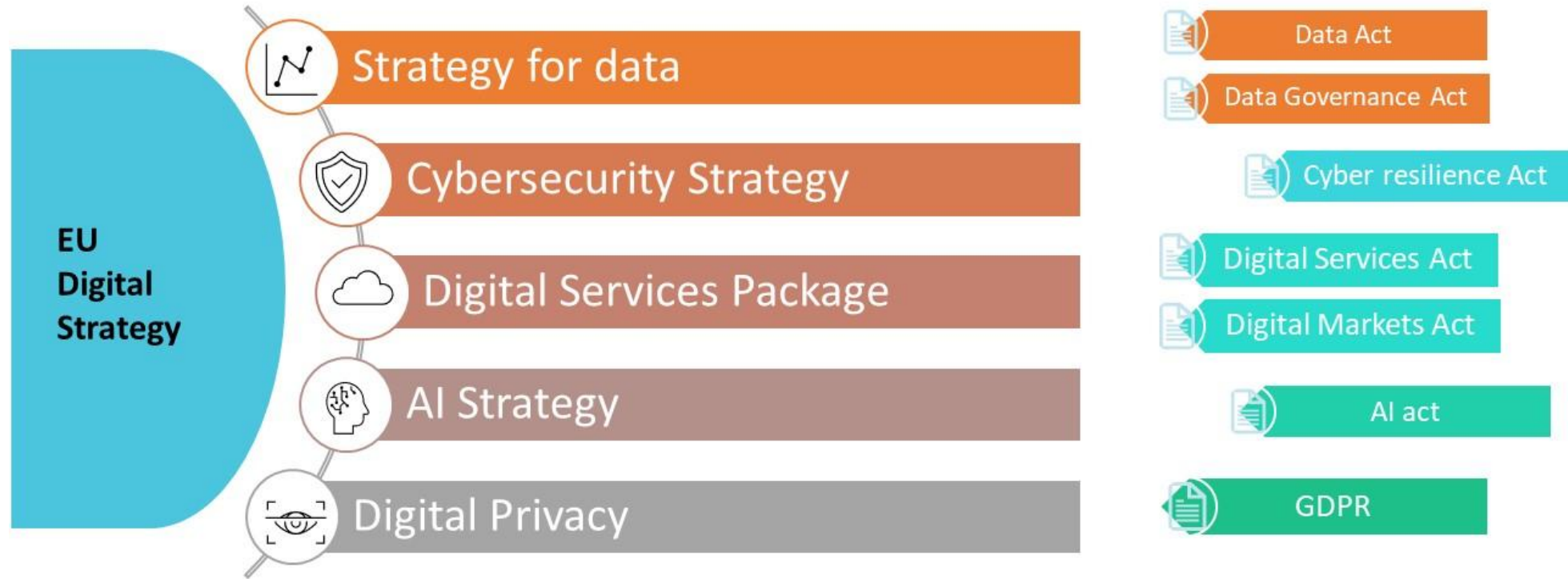
- Increasing the uptake of **zero-emission vehicles**
- Making **sustainable alternative charging solutions** available to the public & businesses
- Supporting **digitalisation & automation**
- Improving **connectivity & access**

- **GDPR**
- **Free flow of data**
- **Data governance** policies
- **European mobility data space & national data tools**
- **Focus on ITS, C-ITS**
- **Access to in-vehicle data**
- **Cloud** computing interoperability
- **Artificial intelligence**
- **Cybersecurity framework**
- **Chips act**

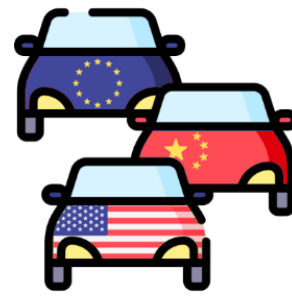
- Making the EU transport system **sustainable, smart and resilient**
- **Automated mobility** deployed at large scale by **2030**
- **82 initiatives** in 10 key areas
- Deployment and management of ITS and connected and automated mobility, facilitate cross border AV, recharging infrastructure, 5G

- **112 climate-neutral and smart European cities**
- Ensure these cities are **experimentation** and **innovation hubs** to support all European cities to become climate-neutral by 2050
- New urban mobility framework

Digitalisation of transport & mobility sectors

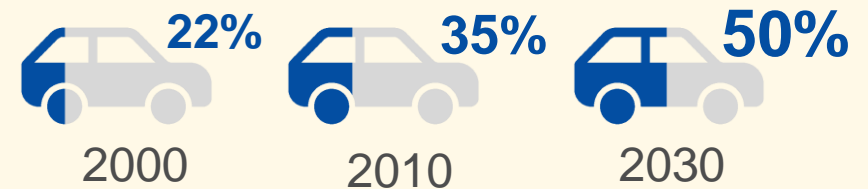


Vehicle of the future: connected, cooperative, autonomous, electrified, software driven



- **Advance of non-EU companies:** chip suppliers, 'digital-native' automakers, hyper-scalers
- **Dependencies:** threat to the autonomy of the EU automotive industry, impact of export control for semiconductors on automotive markets
- but growing number of **partnerships and alliances**

Share of electronics in total cost of a car
Deloitte



Lines of SW code in a car

100 million	200 million	1 billion
Today	2025	2030

Value creation through data sharing

Safety & security

- ✓ ADAS & automated driving (comfort + reducing human errors)
- ✓ Vehicle safety & security (braking, steering, eCall, cybersecurity,...)
- ✓ Road & pedestrian safety
- ✓ Platooning, automated valet parking

Traffic efficiency

- ✓ Connected and cooperated V2V/V2I/I2V/V2X
- ✓ Better vehicle throughput
- ✓ Optimisation of road capacity
- ✓ Digital twinning and city planning

Service economy

- ✓ Integration into multi-modal digital mobility services (MaaS, ...)
- ✓ Insurance & logistics related services
- ✓ Repair & maintenance aftermarket
- ✓ Charging infrastructure, grid management
- ✓ Parking & tolling management

Overall

- ✓ Sustainability: climate & air quality
- ✓ Productivity: supply chain, regulatory compliance, asset management, ...
- ✓ Enhanced urban mobility, optimisation use of space and time

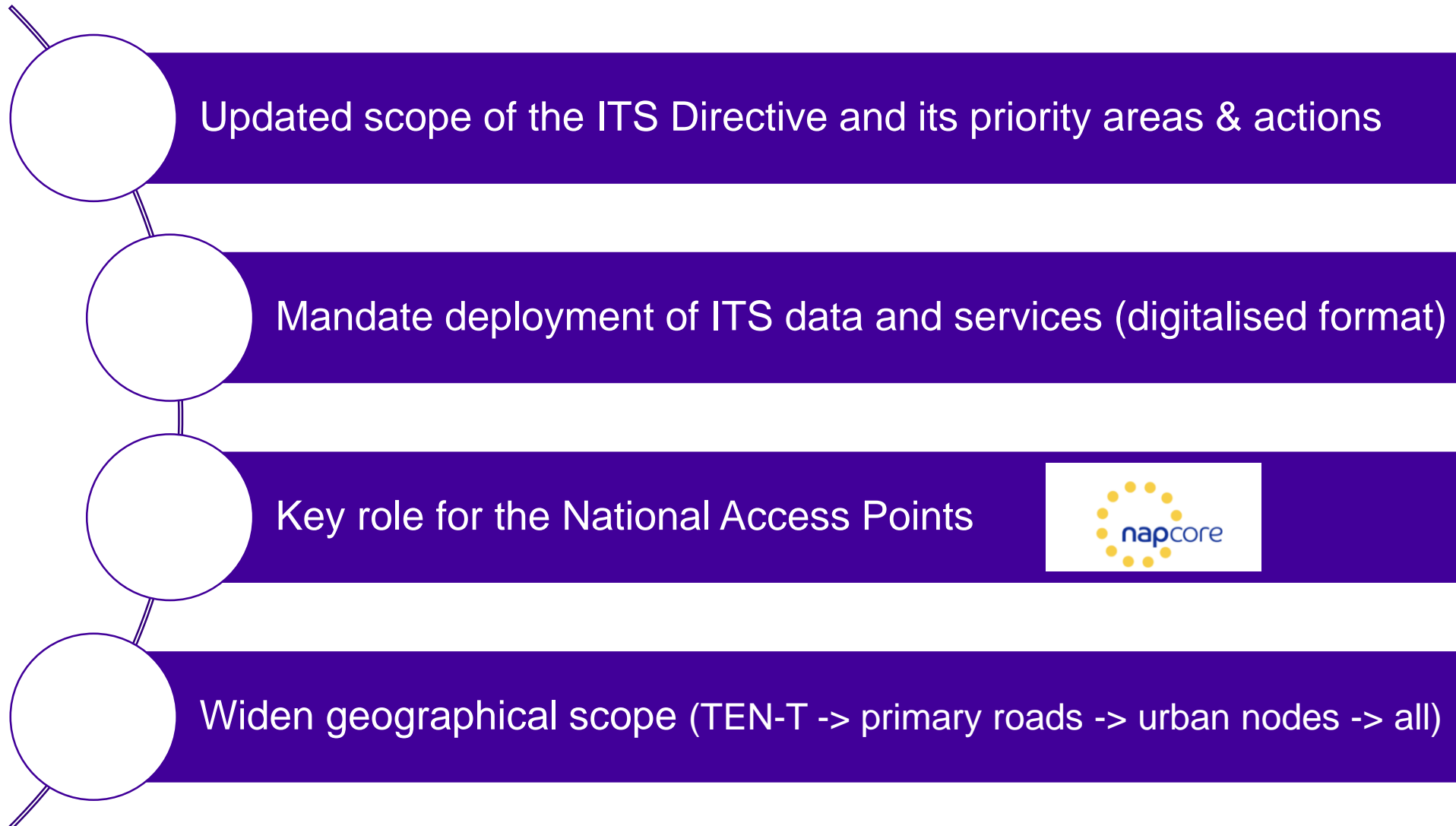
Value creation through access to in-vehicle data & resources

- ❑ Sectorial application of the new EU Data act & linked to vehicle type approval regulation
- ❑ Various EU consultations, papers, working groups but no final regulation yet
- ❑ Access to OBD port (UNECE R155 on cybersecurity)
- ❑ Competition elements:
 - *Vehicle as manufacturer (product) versus vehicle as service*
 - *Level playing field, separation of duties -> equal right to access for service providers*
- ❑ Important caveats -> cybersecurity, safety, privacy and data protection requirements
- ❑ Diverging arguments and reasoning between OEMs and independent service providers

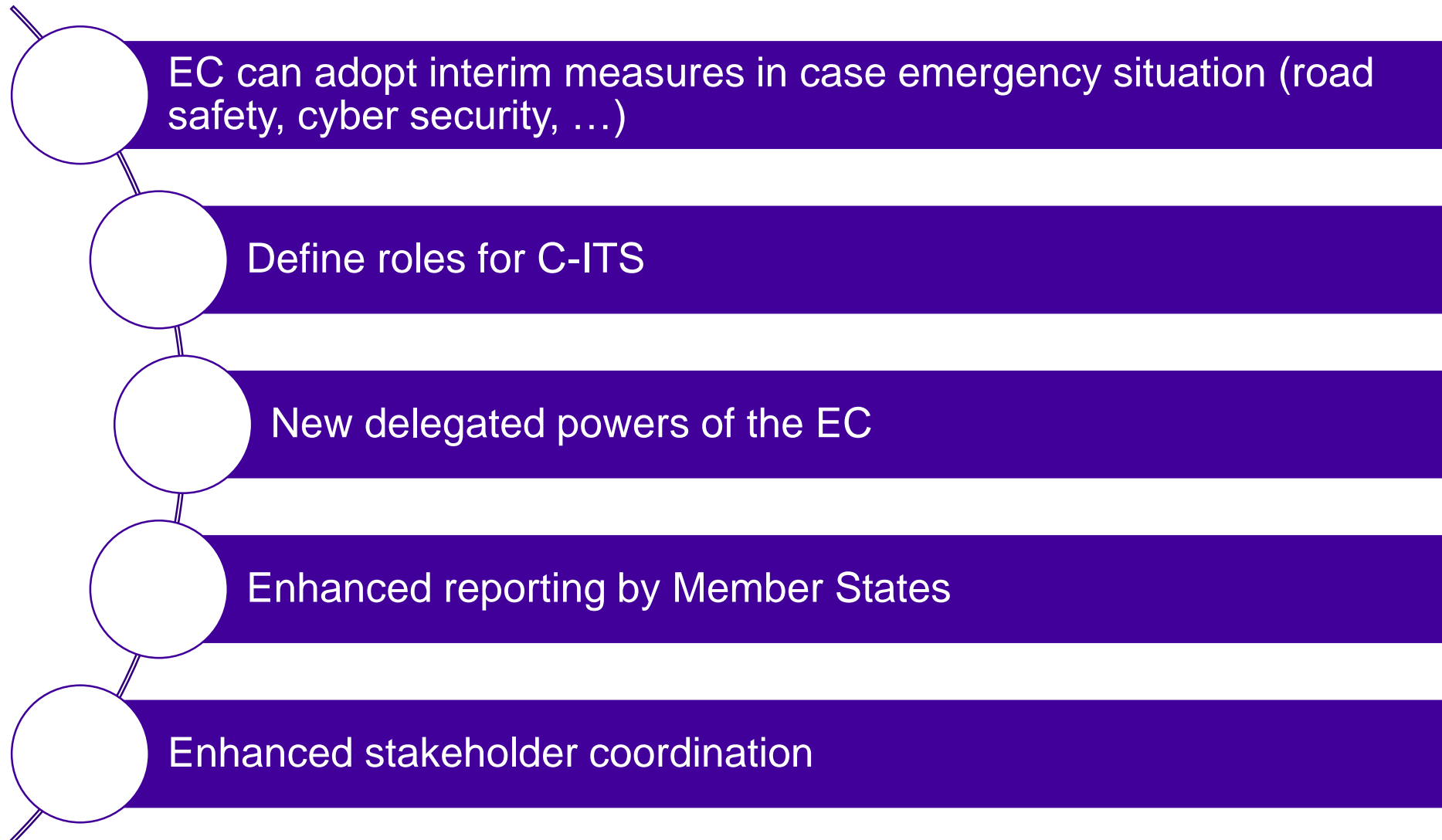
Value creation through access to in-vehicle data & resources

- ❑ Diverging arguments between OEMs and independent service providers
- ❑ Availability of data is not the same as accessibility of data -> publication of catalogue of available data
- ❑ Need common framework for description of data (open standard) -> common set of data
- ❑ Structured forum to discuss available data, SLA's
- ❑ Non-monitoring by OEMs of data flows
- ❑ Need for proper guidelines for the deployment of third-party applications
- ❑ Service providers: real time direct access, ability to run independent software directly in the vehicle, ability to independently interact with the driver remotely using the HMI functions, bidirectional communication with the vehicle and its functions

Revised ITS directive (July 2010 -> November 2023)



Revised ITS directive (July 2010 -> November 2023)



Updated priority areas

Priority area 1: Information, booking and payment services

- Multimodal digital mobility services
- Road traffic information & navigation services

Priority area 2: Travel, Transport and Traffic management ITS services

- Enhanced traffic and incident management services
 - Mobility management services
 - EU ITS framework architecture
- ITS applications and freight transport logistics

Priority area 3: road safety and security ITS services

- eCall
- Safe & secure truck parking information and reservation
- Road safety related minimum universal traffic information
- HMI & nomadic devices support to road safety (including VRUs)
 - ADAS (outside type approval)
- exchange of information between services providers of security ITS applications

Priority area 4: Cooperative, Connected and Automated Mobility services

- C-ITS V2X specifications
- Specifications for CCAM Services
- Specifications for the EU C-ITS security credential management system

At the crossroads of two EU strategies

Data Strategy



Establish a single market for data
Enable data sharing and
establish fair and clear rules on
data use and access.

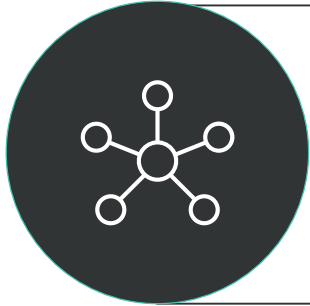
Sustainable and smart mobility strategy



Ensure that the EU transport sector
is fit for a clean, digital and modern
economy

Towards a common European mobility data space
facilitating access, pooling and sharing of data from existing and
future transport and mobility data sources

Context of the European data space



Data interoperability

Sharing and exchanging data in a standardised way.



Data sovereignty and trust

Retaining authority and control over data.



Accessibility

Discoverability and availability of mobility data.



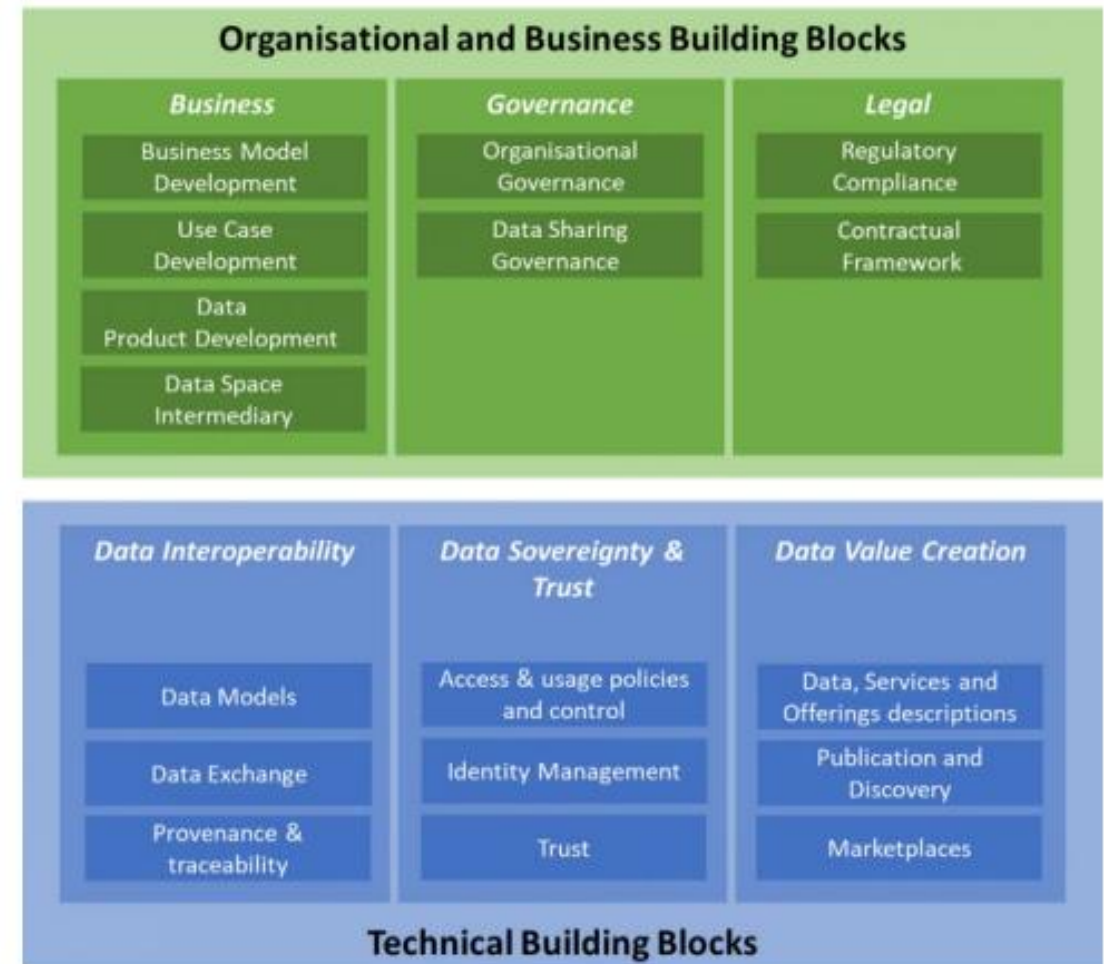
PrepDSpace4Mobility

Inventory: Identified **272 mobility data ecosystems** in Europe.

Building blocks recommendations:

- Create a **multi-level governance**
- Facilitate and accelerate **use cases**
- Follow the **generic common European data spaces approach**
- Embrace the **diversity** of sector-specific **data interoperability standards**
- Support **mobility-specific building blocks** e.g. event-driven smart contracting, booking/ticketing

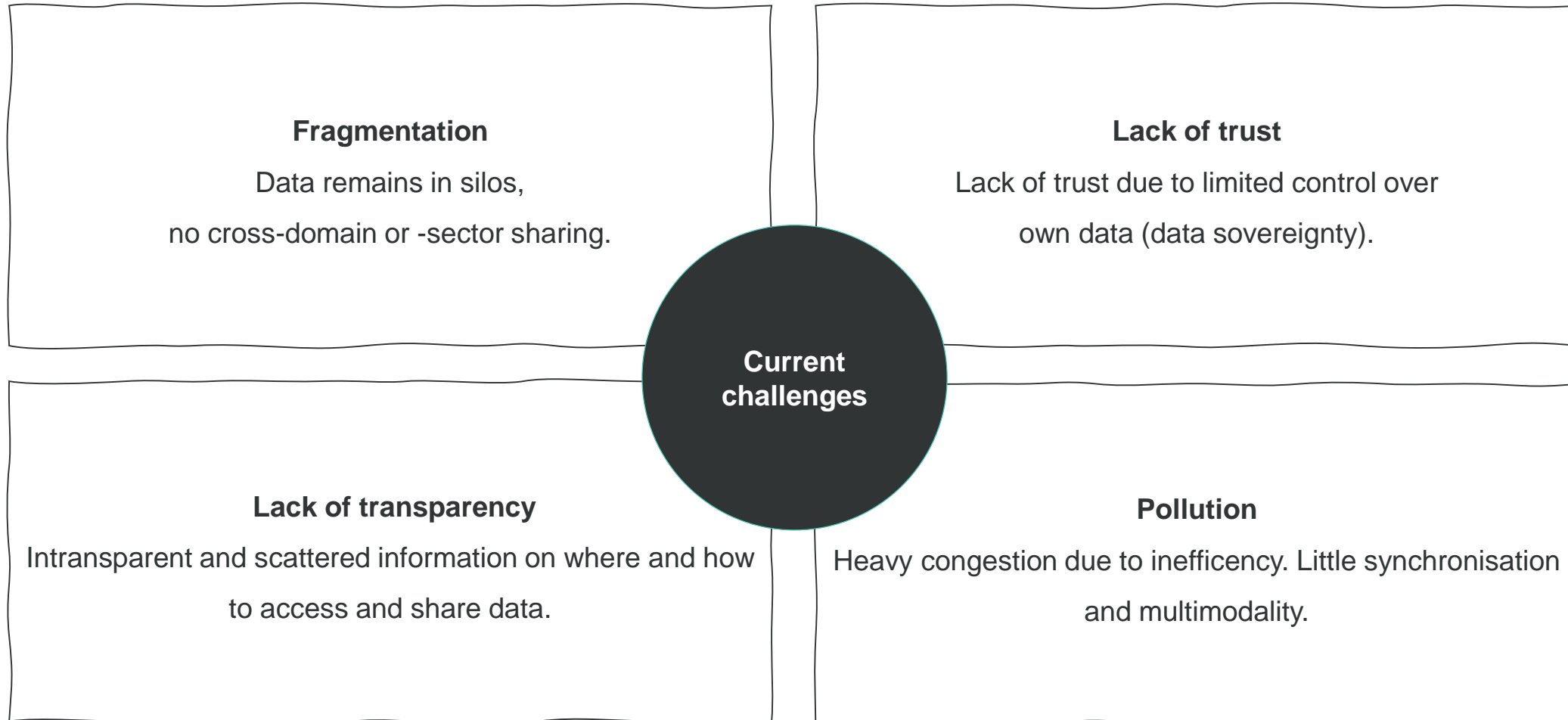
Final report 27 November 2023: <https://digital-strategy.ec.europa.eu/en/news/completion-prepdspace4mobility>



DSSC taxonomy of building blocks, used by the project



Insights/learnings





Recommendations (extract, non-exhaustive)

Data sources

- Requirements for mobility and logistics data sources
- Use DSSC technical grounding work
- Increase discoverability and availability
- Ensure quality, harmonisation, standardisation
- Minimise redundancies ,...

Business and funding models

- Prioritise discoverability, data sovereignty and trust,
- Install neutral governance entity
- Ensure stringent standards
- Enable via public funding, ...

Governance framework

- Align with EU strategies like DSSC, SIMPL and EDIB
- Multi-level governance model with role for subsidiarity
- Address imbalances between stakeholder interests
- Ensure data sovereignty, trust and discoverability at the European level to ensure interoperability,...



Recommendations

Legal

- Supporting privacy and data protection rules
- Support stakeholders in respecting intellectual property rights and safeguard trade secrets
- Support members regarding competition law and possible implications for data sharing
- Invest in robust cyber resilience measures
- New rules from the Data Governance Act, ensuring awareness on obligations and rights
- Promote dialogue between other preparatory actions and initiatives to inform the EMDS, ...

Technical grounding

- Ensuring alignment with overarching European data space architectures under development (initiatives such as IDSA, Gaia-X, iSHARE, and the DSBA)
- Prioritising the development of Minimal Interoperability Mechanisms (MIMs)
- Facilitating the adoption process for EMDS guidelines or frameworks through interconnection, tools and scenarios, ...

Data interoperability

- Focusing on harmonising sector-specific data models
- Implementing linked data concepts for a unified approach
- Offering methods for data model registration and mappings and for run-time data conversion;
- Instituting unified metadata and information models
- Ensuring full compatibility with existing mobility specific protocols
- Employing data quality frameworks, ...



Recommendations

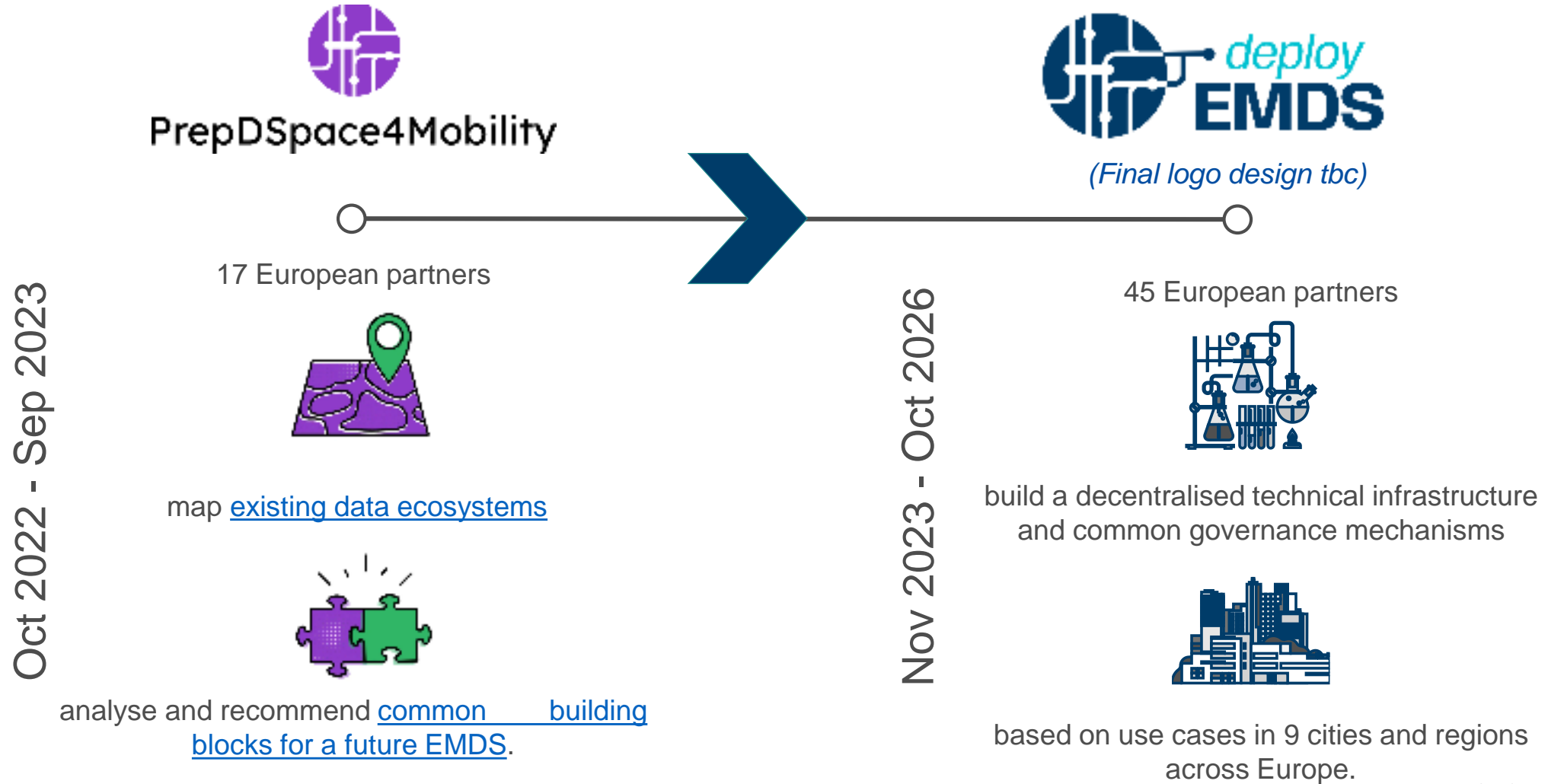
Data sovereignty and trust

- Aligning EMDS operations with the emerging EU technical framework for data spaces;
- Supporting decentralised trust mechanisms;
- Supporting delegation of authorisation rights to third parties;
- Implementing robust consent management systems to allow entitled parties, not just data holders, to provide consent for data sharing, thereby reinforcing data sovereignty;
- Supporting multiple approaches for agreements on authorisation policies
- Ensuring the confidentiality aspects of information security
- Designing robust conflict and incident management measures
- Ensuring operations are mobile-friendly with information available offline and facilitate integration with prevalent digital wallets,

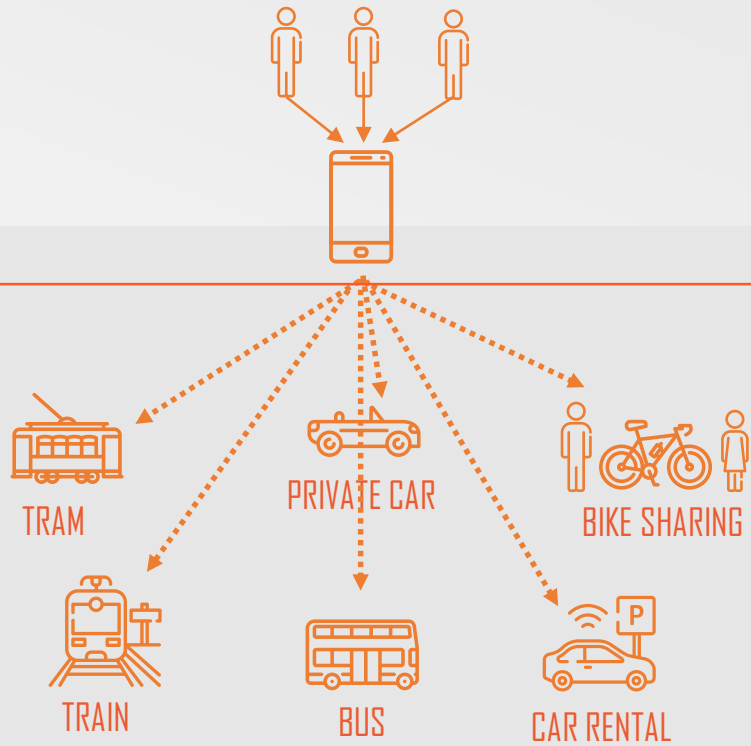
Data value creation

- Developing a metadata broker that supports the four types of data sharing identified for the mobility and logistics data space
- Harmonising the federation of metadata/context brokers to ensure discoverability across data spaces
- Endorsing local execution of data apps, ensuring data protection and scalability
- Integrating Mobility-as-a-Service requirements and considering the proposal of harmonized tools for varied ticket categories, pricing, and user demands
- Exploring and supporting use cases and application areas that bridge various sectors
- City implementations, ...

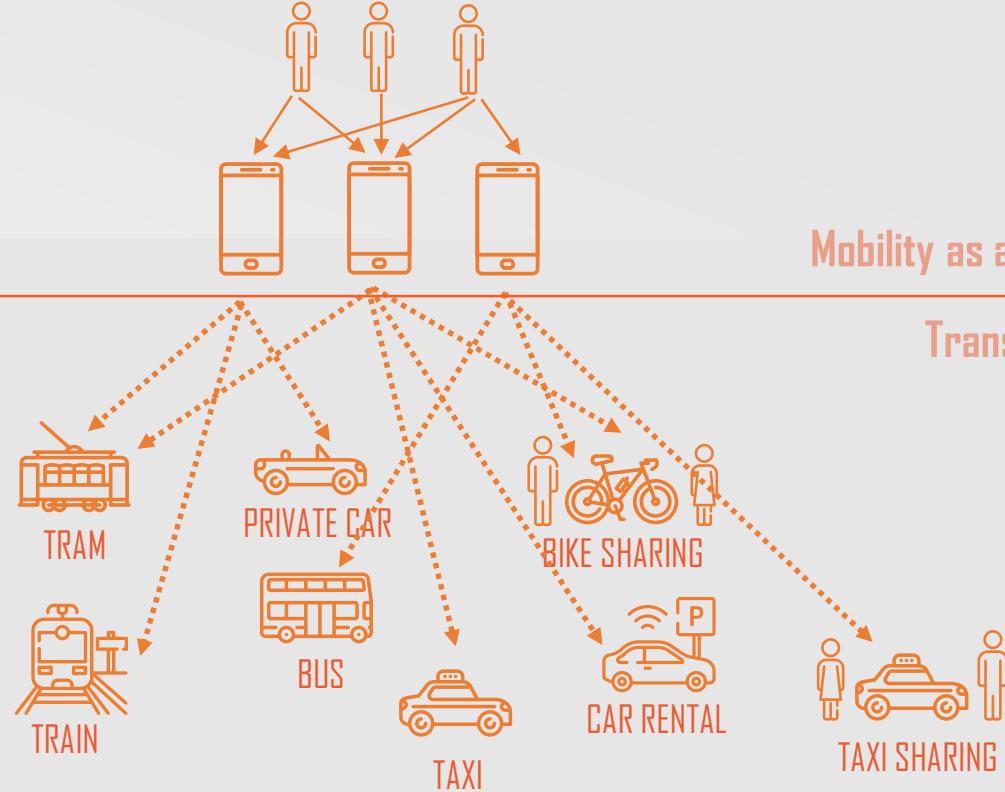
From preparation to implementation



Winner takes it all (UNDESIRED)



Open MaaS ecosystem (DESIRED)



Mobility as a Service (aggregators)

Transport service providers

- Access to market
- Data sharing
- Public-private partnerships

Vision: an open MaaS ecosystem



<https://erticonetwork.com/ertico-presents-the-its-market-radar-a-strategic-foresight-into-the-industry-transformation/>

Released 31 January 2024

Chapters in the report

The report predominantly adopted a qualitative approach, complemented by quantitative insights derived from Partners' contributions and desk sources.

Each sector was allocated a dedicated page covering the following topics:

Introduction: Sector Definition and Sectorial Transition

Key Trends in the Sector

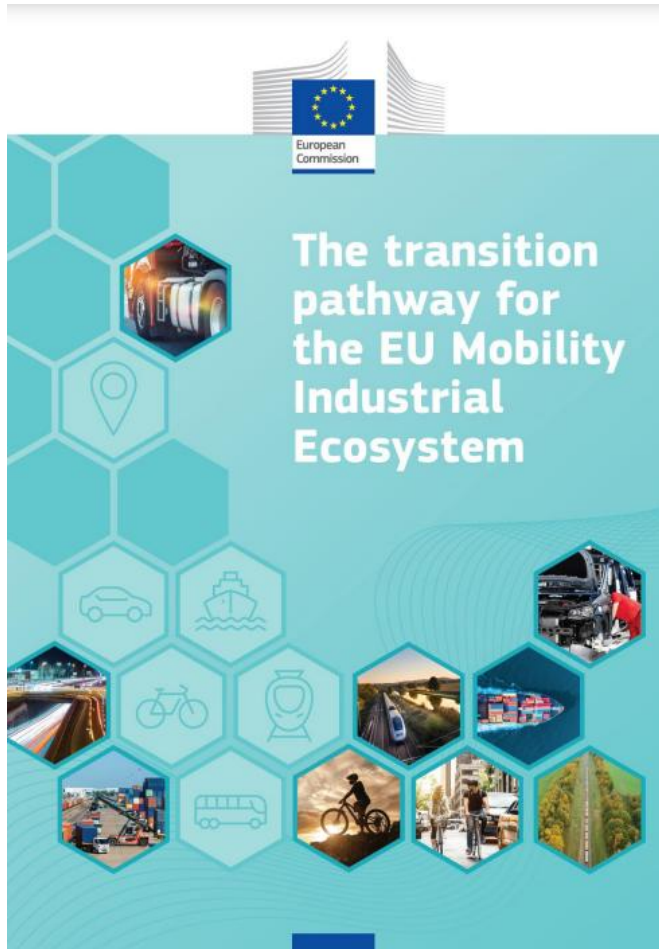
Historical Market Figures, Market Share by ERTICO Partners, and Future Evolution (Value, Volumes)

Employment Figures, categorized by sector and as an aggregate of ERTICO partners (Jobs)

Challenges for the Transition and Issues to Be Overcome

European Leadership in Transport & Mobility Services through Key Projects and Partnerships

EU transition pathway strategy



https://single-market-economy.ec.europa.eu/news/transition-pathway-green-digital-and-resilient-eu-mobility-industrial-ecosystem-2024-01-29_en

Published 29th January 2024

<https://erticonetwork.com/transition-pathway-for-a-green-digital-and-resilient-eu-mobility-industrial-ecosystem/>

Automotive Industry Focus

Automotive industry crucial for sustainable competitiveness in the EU mobility ecosystem.

Undergoing radical transformation due to the twin transition driven by the European Green Deal and the European Digital Decade.

Challenges include limited value chain control, high energy prices, and international competition distortions.

EU adopts measures like Critical Raw Materials Act and Net-Zero Industry Act to mitigate risks.

Recent CO2 emission standards and #Route35 platform emphasize decarbonization and electrification goals.

Disparities in electro-mobility among the EU, US, and China challenge positive trade balances.

Actions include diversifying the value chain, developing software-defined vehicle technologies, and monitoring competition dynamics.





DUBAI

ITS World Congress

16 -20 September 2024
Mobility Driven by ITS



#ITSDubai2024



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itsworldcongress.com

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Exhibitors

High Level
Programme &
Future of Mobility
Summit

20+
Sponsors / Partners

Demonstrations
& Technical visits

Up to **20.000**
International Participants

**VIP & ITS
Dinners**
Social Networking

Over 5 days 16-20 September 2024

15.000 m2
Exhibition Space

200+
Technical Programme
Sessions

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CONGRESS THEMES & TOPICS



Urban Mobility

- Regulatory challenges for transport authorities
- A seamless travel experience – user perspective
- Safe, clean and efficient transport
- Multimodal deployment
- Data and digital transformation
- Connected Vehicles
- Smart infrastructure
- Next generation urban traffic management and control systems



Innovation in Mobility & Logistics

- Big data
- Artificial intelligence and machine learning
- Cybersecurity
- First and Last mile solutions
- Smart freight movement
- All modes – road; air; rail and waterborne and beyond
- Connectivity and communication technologies



Clean Mobility

- Systems and solutions to support sustainable cities
- Electrification
- Alternative fuels
- Challenges of adopting clean mobility schemes
- Business models
- Energy efficient systems
- Life-cycle assessments



Automated Mobility

- Regulation and Governance
- Automated air, rail and waterborne transport
- Autonomous systems
- High-definition mapping
- Business models
- Connectivity and communication technologies
- Impact assessment
- Security considerations

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1. **Vehicle as product versus vehicle as a service/element in the transport system: 2 different ecosystems and policy contexts**
2. **Data sharing: from an egosystem to a true ecosystem**
3. **Strongly impacting European regulatory policy agenda**
4. **Role of the user/trust in the system**
5. **ITS connects the dots through the ERTICO partnership**
6. **Attend the ITS World Congress in Dubai, September 2024 !**



ERTICO

ITS EUROPE

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**“Alone we can do so little,
together we can do so much”** Helen Keller

ERTICO Partnership

ertico.com

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Stay tuned !



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Back-up info on ERTICO-ITS Europe

SMART MOBILITY DEPLOYMENT BY ERTICO PARTNERSHIP



MaaS
ALLIANCE



V-Cloud
SENSORIS



TISA

data for road safety



ADASIS
Advanced Driver Assistant Systems Interface Specifications

Service Cloud

SP Maps

EAVP
easy intelligent driverless
EUROPEAN AUTOMATED VALET PARKING

TM 2.6

TN-ITS
Map Update Exchange

Info

TMC
Traffic Management Centre

RO
Road Operator

PA
Public Authority

ERTICO platforms & innovations



ERTICO in sync with the broader ecosystem



alice



6GSNS

Expert Group on
Urban Mobility
(EGUM)



ITS AMERICA



ITSNATIONALS

Data sharing for road safety



- Trusted public/private ecosystem
- EU delegated Regulation 886/2013 on Safety related Traffic Information exchange
- B2G/G2B data sharing
- Vehicle manufacturers – suppliers – service providers – road authorities & operators
- Decentralized ecosystem with defined roles
- Based on reciprocity
- Clear rules in Multi-party agreement
- Cooperation agreement with NAPCORE
- www.dataforroadsafety.eu



DFRS : LIVE MAP



- Event category
- Accident
 - Slippery road
 - Broken down vehicle
 - Weather
 - Rain
 - Fog
 - Slow down

⚠ Not contractually binding real time data (delayed by 48 hours for presentation purposes). [Join DFRS for live data streams.](#)



May 21st, 2023 at 3:00

Examples of the logistics sector



Develop and Deploy Next Generation ports & logistics hubs operation system architecture integrated in 5G networks at three main ports in Europe: Athens (GR), Hamburg (DE) and Koper (SL) utilising new types of 5G IoT sensors and devices

- 1) **Truck & Emission Data for Sustainable Traffic Management** based on 5G V2X in Hamburg
- 2) **Automated Truck Platooning using 5G based GLOSA** in the logistics corridor of Hamburg to **achieve low emission targets** for ports and hub-logistics
- 3) **Data exchange with SWARCO traffic management center.** Dynamic control loop for the reduction of CO₂/NO_x emissions from trucks by **avoiding Start-Stop events** by using GLOSA technology

With **5G-LOGINNOV**, ports will minimize their environmental footprint to the city. They will decrease disturbance to the local population through a **significant reduction in the congestion** around the port.



A European federated network of information exchange in logistics



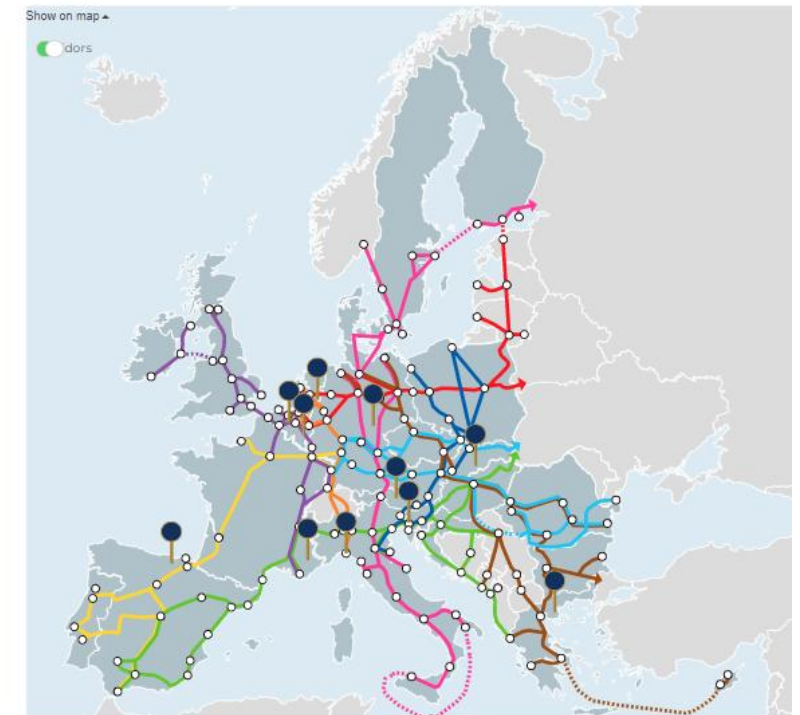
Develops the first European federated architecture for data sharing serving the European logistics community of shippers, logistics service providers, mobility infrastructure providers, cities, and authorities

eCMR is one of the key for supply chain services: UN-ECE convention, signed by 56 states

PILOT SITES

Legend

-  FENIX Pilot Site
-  Baltic - Adriatic corridor
-  North Sea - Baltic corridor
-  Mediterranean corridor
-  Orient / East Mediterranean corridor
-  Scandinavian - Mediterranean corridor
-  Rhine - Alpine corridor
-  Atlantic corridor
-  North Sea - Mediterranean corridor
-  Rhine - Danube corridor



Data sharing in the EU research agenda

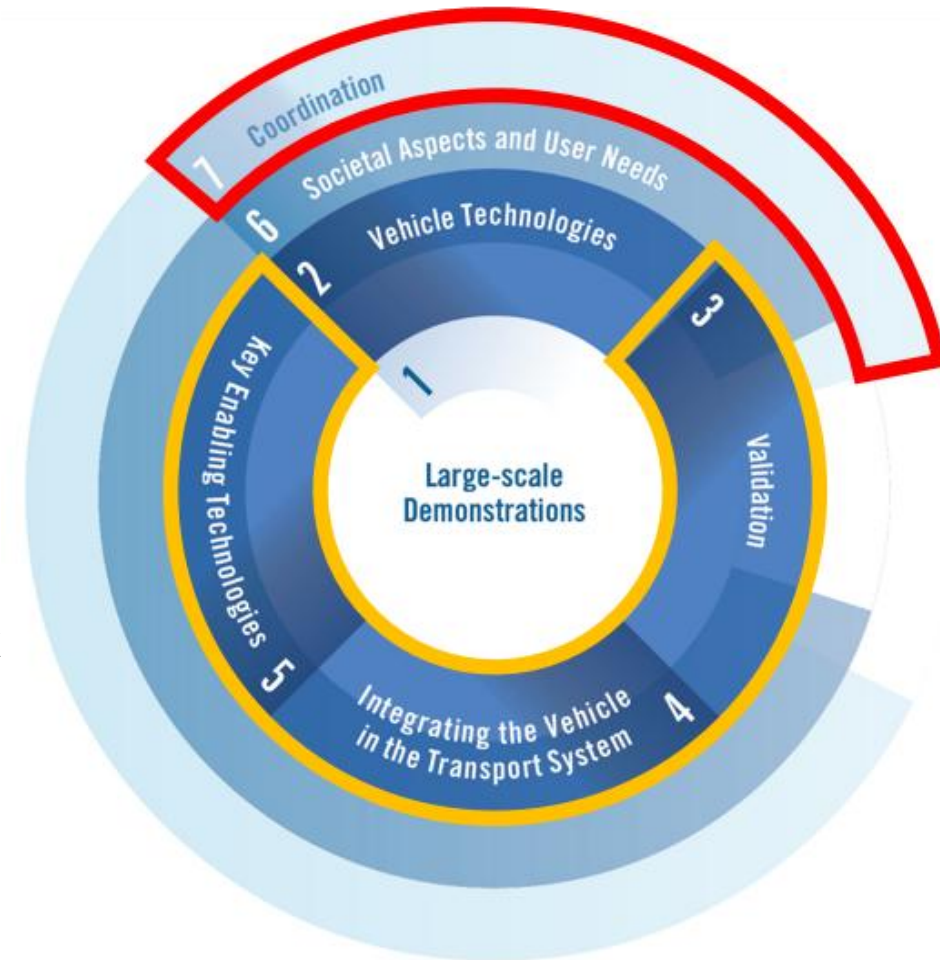
CCAM Single Platform Platform WG2 “Coordination & Cooperation of R&I and testing activities”

- Facilitate data sharing of tests
- Identify challenges, priorities and requirements for Test Data Sharing Framework

CCAM Partnership – Strategic R&I Agenda (SRIA)

- Cluster 3 – Validation, Scenario database
- Cluster 4 – Digital Twin, Traffic Management
- Cluster 5 – Key Enabling Technologies – tools, AI,...
- Cluster 7 – Coordination & Federation

DigitalEurope funding for a European Mobility Data Space framework



Seamless and Trusted Data Exchange – TN-ITS

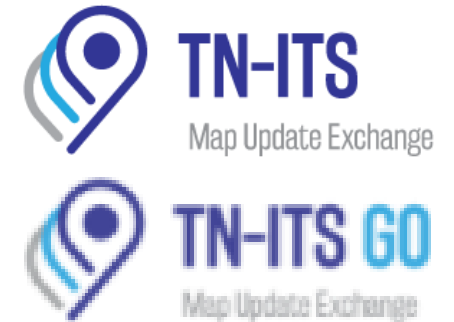
Realisation of the ‘digital twin’ requires trusted data.

- Map and service providers to provide **fresh, regularly updated, accurate, and trusted** digital maps.
- Basis for **future regulatory data governing full automation**, supporting EU policy on RTTI and ITS (e.g. Intelligent Speed Assistance).
- TN-ITS forms a pillar for the European public **mobility data space** for current and future deployed **National Access Points (NAP)** organised by Member States



TN-ITS Map Update Exchange

- TN-ITS association, acting as an innovation platform under the legal umbrella of ERTICO
- TN-ITS Go Programme Support Action (PSA) for implementation and facilitation of seamless spatial data exchange



National Access Point Coordination Organisation for Europe

- Strategy and governance
- Interoperability and level of service
- Content and accessibility
- Development and enhancements of standards (Datex II, TN-ITS, MMTIS, Metadata)
- National bodies and compliance assessment



Advanced Interactive Traffic Management – TM2.0



Started in 2014



Focus on new solutions for advanced and active traffic management

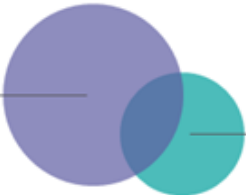


an ERTICO innovation platform

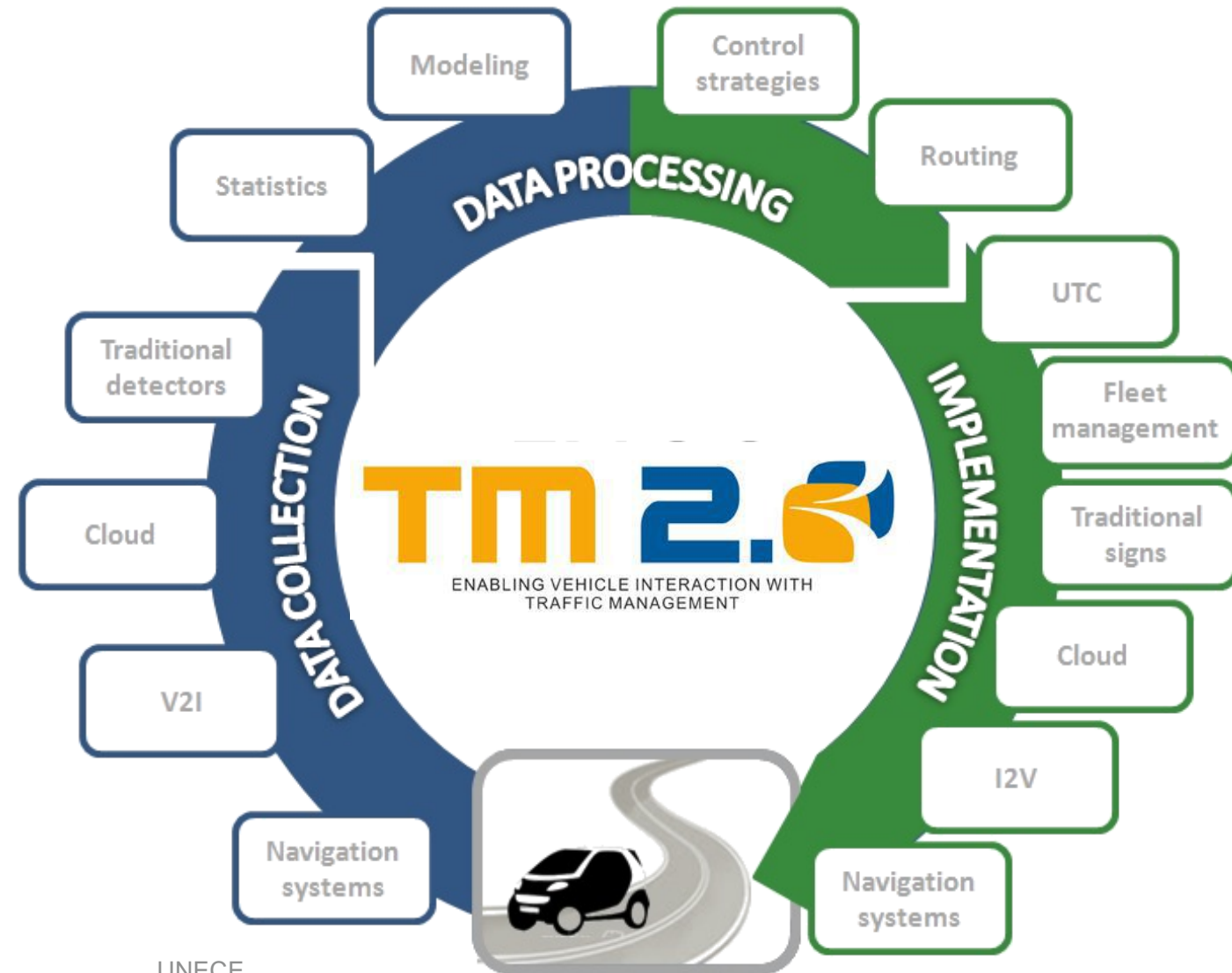


Vision: “Enable vehicle interaction with traffic management”

Use a set of common interfaces, principles and business models to facilitate the exchange of data between vehicles and TMC.



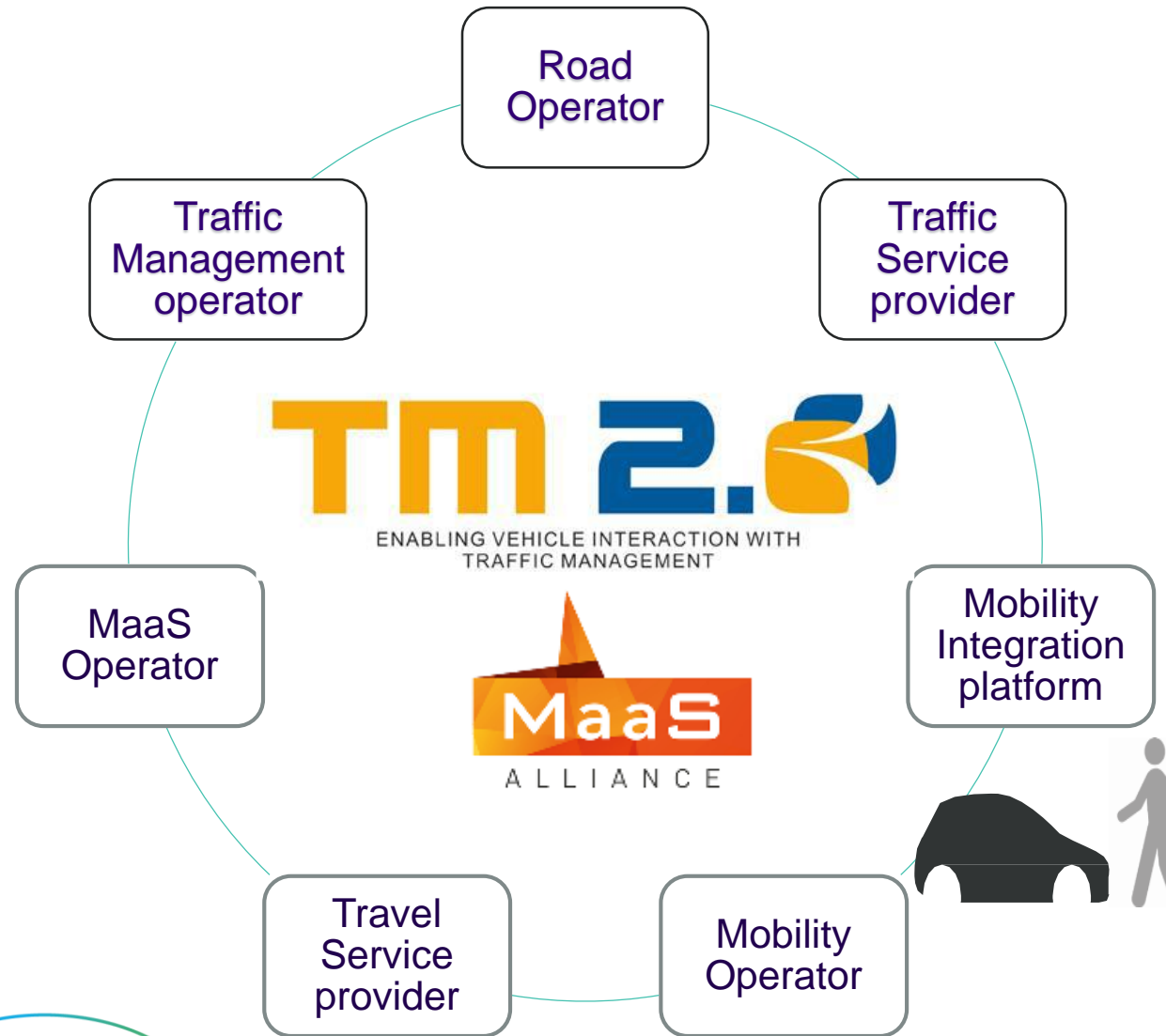
+ Improve entire value chain for consistent TM and Mobility services.



Mobility Network Management

Principles:

- Collaboration
- Trust
- Co-opetition



Loop of information in the mobility value-chain

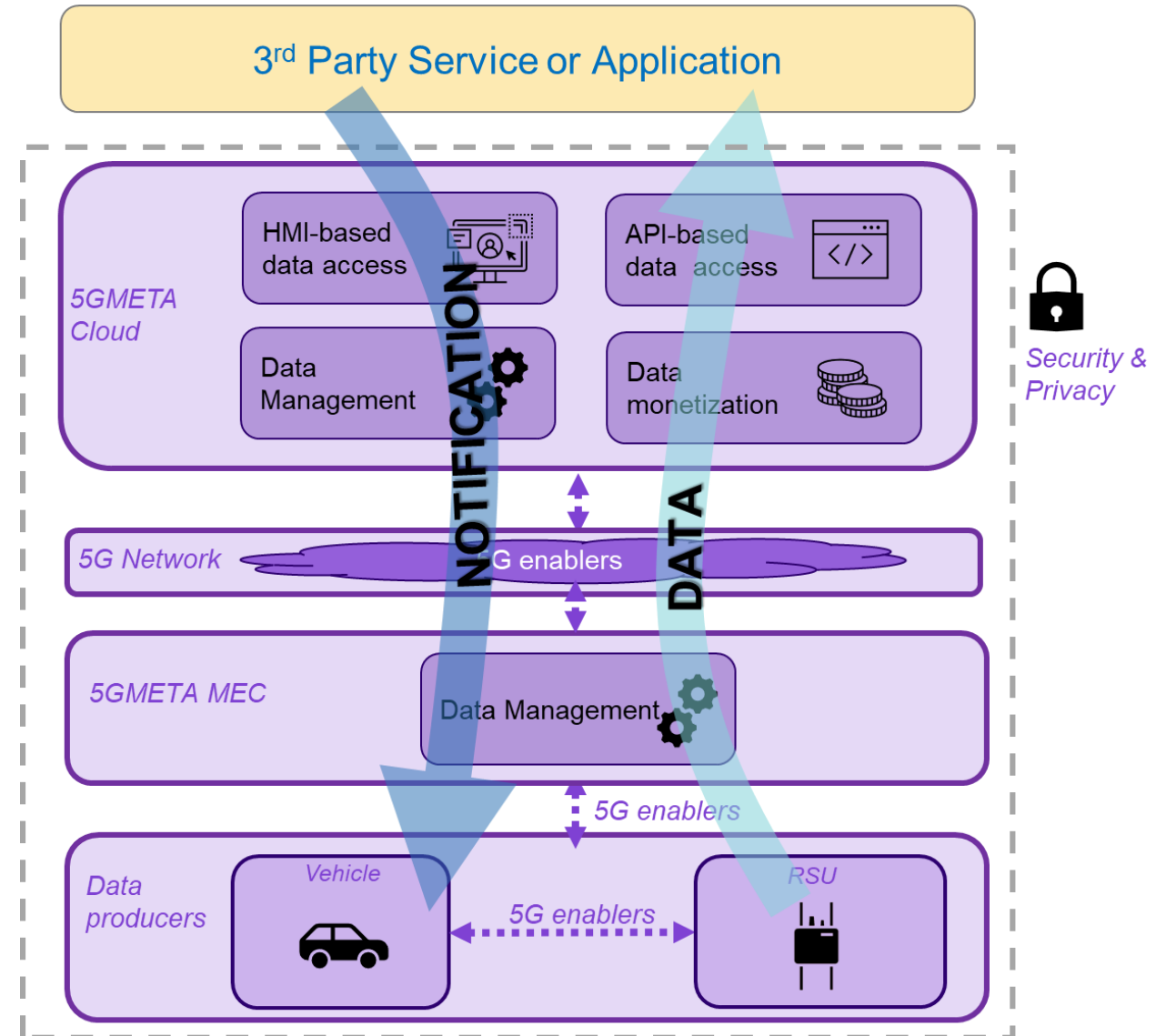
The 5GMETA Platform: 5GMETA project main product

5GMETA is an **open** data-centric Internet of Things (IoT) **messaging platform for Connected and Automated Mobility (CAM)** application and service providers.

The **5GMETA Platform** creates a **CAM data monetization ecosystem** that allows different stakeholders along the data value chain to exploit data in a more effective and profitable way.

How does the 5GMETA Platform work?

- **5GMETA Platform is not a simple publish-subscribe broker.**
- It includes functions for data management, data monetization and cybersecurity as well as providing data access mechanisms.
- Key enabling technologies (KETs):
 - 5G
 - Cloud
 - Multi-access Edge Computing (MEC)

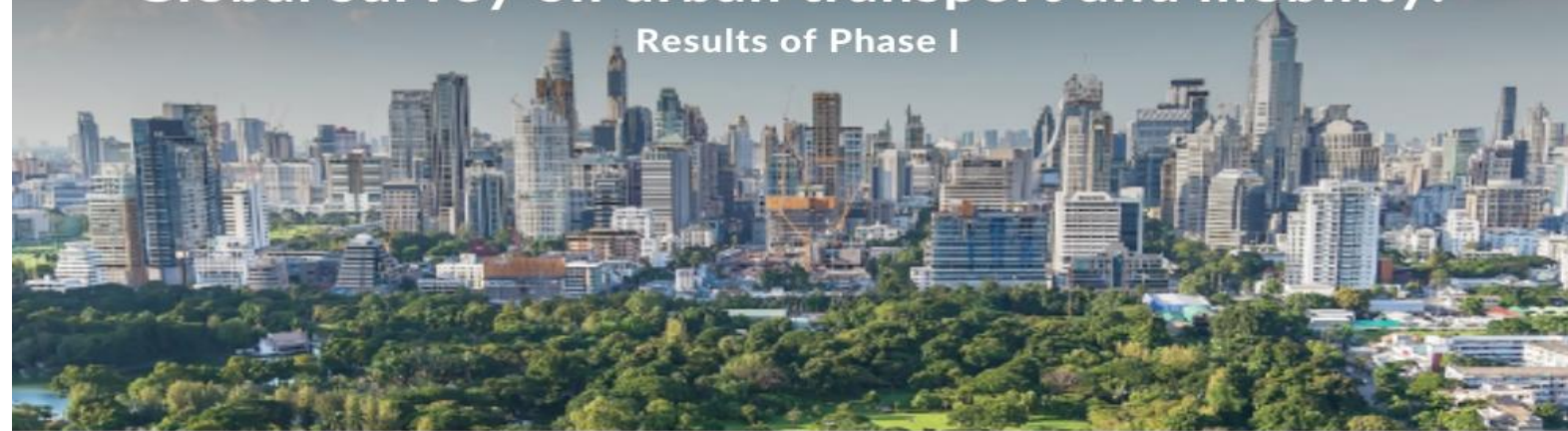




CITY MOONSHOT

Global survey on urban transport and mobility:

Results of Phase I



ENGAGE, INSPIRE, EMPOWER.

Key topics in the survey (Phase I)

1. Sustainability (air quality & climate change)
2. Data sharing
3. Mobility-as-a-Service (MaaS)

Understand the needs and requirements from the cities in relation to mobility and transport.

Phase I

150 cities worldwide

Report available at

ertico.com/city-moonshot

Phase II

1. Sustainability
2. MaaS
3. Electromobility
4. Urban Air Mobility