Towards a common European mobility data space

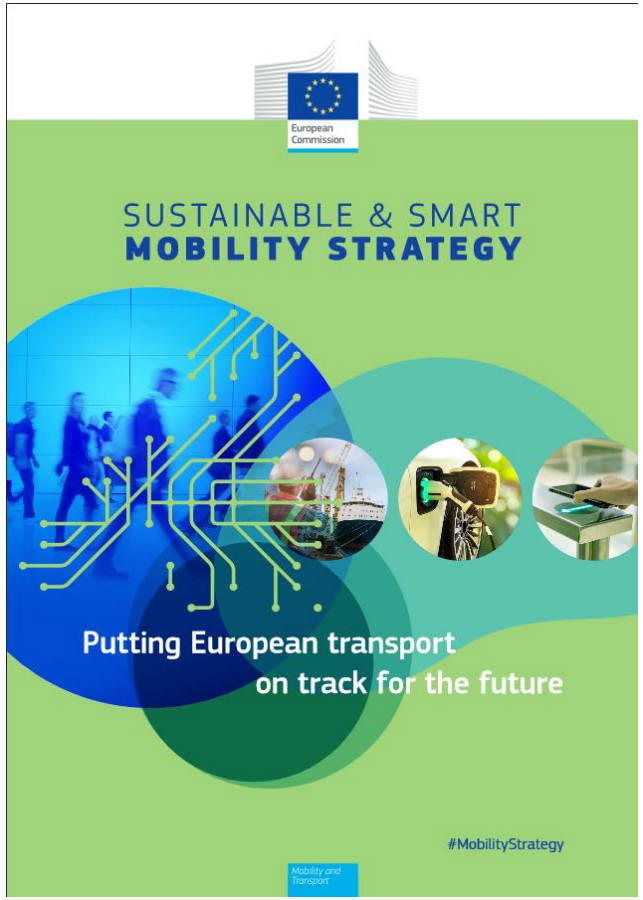
Florence

25 November 2022

Context

- *Sustainability*: Green Deal calls for 90% reduction in GHG emissions from transport by 2050.
- *Digitalisation*: opportunity to make mobility smarter, more efficient and greener.
- *Resilience*: transport sector heavily affected by the COVID-19 pandemic. Need to support the recovery.

→ Vision and pathway: Commission **Strategy for Sustainable and Smart Mobility** (2020).



Mobility Strategy – milestones (selection)

By 2030

- **Paperless freight** transport
- **Automated mobility** deployed at a large scale
- Integrated electronic **ticketing**
- Operational **multimodal Trans-European Transport Network** equipped for sustainable and smart transport with high speed connectivity (**core** network)

By 2050

- Operational **multimodal Trans-European Transport Network** equipped for sustainable and smart transport with high speed connectivity (**comprehensive** network)
- **Death toll** for all modes of transport in the EU close to **zero**

“Smart” in the Strategy

Achieving seamless, safe and efficient connectivity

- offering a seamless multimodal experience
- supporting sustainable choices by taking advantage of digitalization & automation
- shaping the mobility of the future
- ensuring the right framework and enablers are in place

Strategy and the Mobility Data Space

- The digital transformation depends on data availability, access and exchange. Often hampered by:
  - Unclear regulatory conditions
  - Lack of an EU market for data
  - Absence of obligations to collect and share data
  - Incompatible tools and systems; different standards

→ Need to facilitate the access, pooling and sharing of data of existing and future transport databases/platforms.

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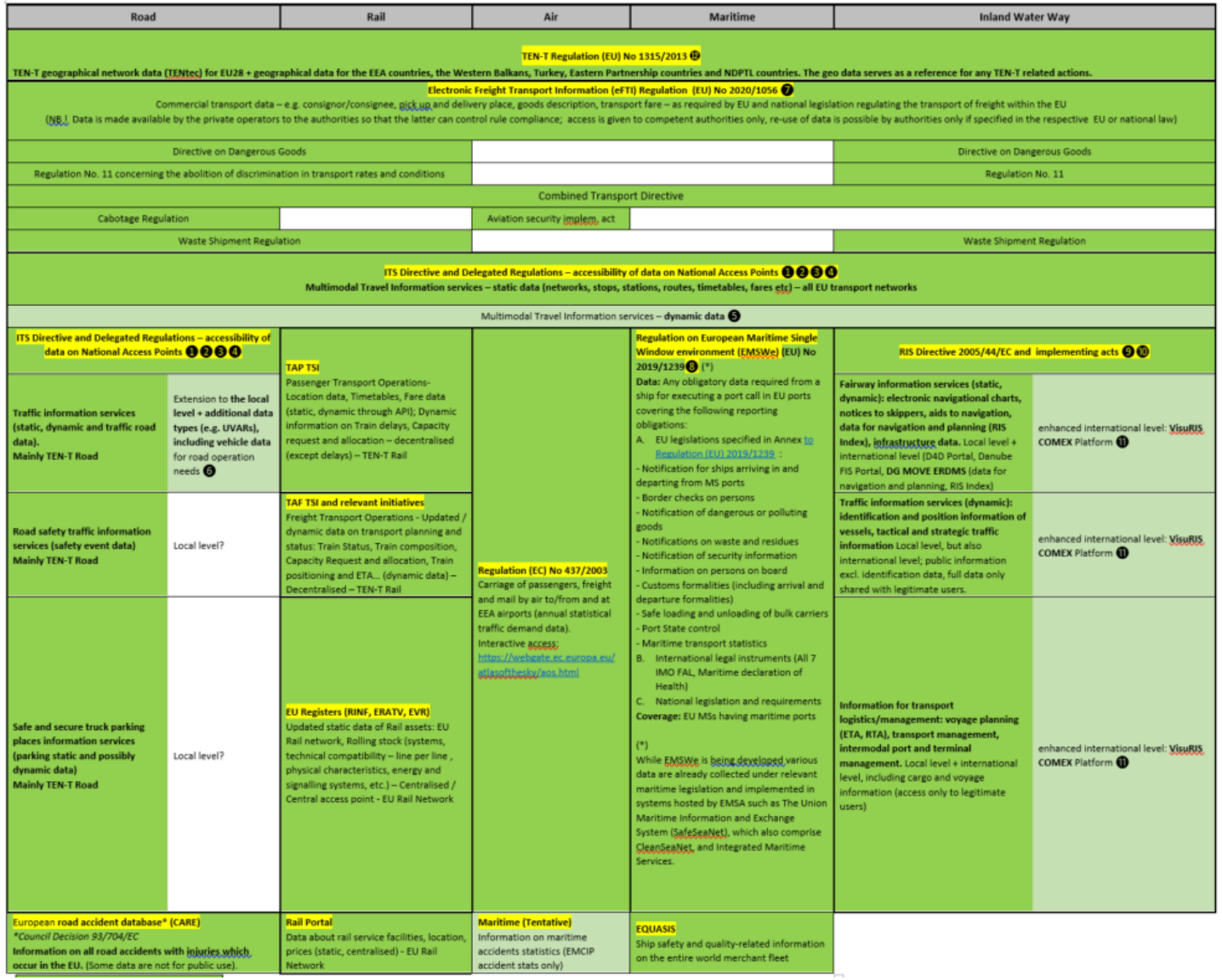
Large acquis of existing (data) ecosystems

>30 existing and upcoming initiatives organising sharing of transport data

Often include own:

- Data governance
- Architecture / infrastructure
- Harmonisation of sharing conditions
- Divergent definitions

→ How to create links between these initiatives?



Road	Rail	Air	Maritime	Inland Water Way
TEN-T Regulation (EU) No 1315/2013 ⓬ **TEN-T geographical network data (TENtec) for EU28 + geographical data for the EEA countries, the Western Balkans, Turkey, Eastern Partnership countries and NDPTL countries. The geo data serves as a reference for any TEN-T related actions.**				
Electronic Freight Transport Information (eFTI) Regulation (EU) No 2020/1056 ⓫ Commercial transport data – e.g. consignor/consignee, pick up and delivery place, goods description, transport fare – as required by EU and national legislation regulating the transport of freight within the EU (NB ! Data is made available by the private operators to the authorities so that the latter can control rule compliance; access is given to competent authorities only, re-use of data is possible by authorities only if specified in the respective EU or national law)				
Directive on Dangerous Goods				Directive on Dangerous Goods
Regulation No. 11 concerning the abolition of discrimination in transport rates and conditions				Regulation No. 11
Combined Transport Directive				
Cabotage Regulation		Aviation security implem. act		
Waste Shipment Regulation				Waste Shipment Regulation
ITS Directive and Delegated Regulations – accessibility of data on National Access Points ❶❷❸❹ **Multimodal Travel Information services – static data (networks, stops, stations, routes, timetables, fares etc) – all EU transport networks**				
Multimodal Travel Information services – **dynamic data** ❺				
ITS Directive and Delegated Regulations – accessibility of data on National Access Points ❶❷❸❹	**TAP TSI** Passenger Transport Operations- Location data, Timetables, Fare data (static, dynamic through API); Dynamic information on Train delays, Capacity request and allocation – decentralised (except delays) – TEN-T Rail	**Regulation (EC) No 437/2003** Carriage of passengers, freight and mail by air to/from and at EEA airports (annual statistical traffic demand data). Interactive access: https://webgate.ec.europa.eu/atlasofthesky/aos.html	**Regulation on European Maritime Single Window environment (EMSWe) (EU) No 2019/1239** ❽ (*) **Data:** Any obligatory data required from a ship for executing a port call in EU ports covering the following reporting obligations: A. EU legislations specified in Annex to Regulation (EU) 2019/1239 : - Notification for ships arriving in and departing from MS ports - Border checks on persons - Notification of dangerous or polluting goods - Notifications on waste and residues - Notification of security information - Information on persons on board - Customs formalities (including arrival and departure formalities) - Safe loading and unloading of bulk carriers - Port State control - Maritime transport statistics B. International legal instruments (All 7 IMO FAL, Maritime declaration of Health) C. National legislation and requirements **Coverage:** EU MSs having maritime ports (*) While EMSWe is being developed various data are already collected under relevant maritime legislation and implemented in systems hosted by EMSA such as The Union Maritime Information and Exchange System (SafeSeaNet), which also comprise CleanSeaNet, and Integrated Maritime Services.	**RIS Directive 2005/44/EC and implementing acts** ❾❿	
Traffic information services (static, dynamic and traffic road data). **Mainly TEN-T Road**	Extension to **the local level + additional data types (e.g. UVARs), including vehicle data** for road operation needs ❻			**Fairway information services (static, dynamic): electronic navigational charts, notices to skippers, aids to navigation, data for navigation and planning (RIS Index), infrastructure data.** Local level + international level (D4D Portal, Danube FIS Portal, **DG MOVE ERDMS** (data for navigation and planning, RIS Index)	enhanced international level: **VisuRIS COMEX** Platform ⓫
Road safety traffic information services (safety event data) **Mainly TEN-T Road**	Local level?	**TAF TSI and relevant initiatives** Freight Transport Operations - Updated / dynamic data on transport planning and status: Train Status, Train composition, Capacity Request and allocation, Train positioning and ETA... (dynamic data) – Decentralised – TEN-T Rail		**Traffic information services (dynamic): identification and position information of vessels, tactical and strategic traffic information** Local level, but also international level; public information excl. identification data, full data only shared with legitimate users.	enhanced international level: **VisuRIS COMEX** Platform ⓫
Safe and secure truck parking places information services (parking static and possibly dynamic data) **Mainly TEN-T Road**	Local level?	**EU Registers (RINF, ERATV, EVR)** Updated static data of Rail assets: EU Rail network, Rolling stock (systems, technical compatibility – line per line , physical characteristics, energy and signalling systems, etc.) – Centralised / Central access point - EU Rail Network		**Information for transport logistics/management: voyage planning (ETA, RTA), transport management, intermodal port and terminal management.** Local level + international level, including cargo and voyage information (access only to legitimate users)	enhanced international level: **VisuRIS COMEX** Platform ⓫
European **road accident database* (CARE)** **Council Decision 93/704/EC* **Information on all road accidents with injuries which occur in the EU.** (Some data are not for public use).	**Rail Portal** Data about rail service facilities, location, prices (static, centralised) - EU Rail Network	**Maritime (Tentative)** Information on maritime accidents statistics (EMCIP accident stats only)	**EQUASIS** Ship safety and quality-related information on the entire world merchant fleet		

Many data initiatives are also in the pipeline:

Action in the Mobility Strategy	timeline
38. Revision of the Directive on Intelligent Transport Systems	Q4/2021
36. Revise Delegated Regulation 2015/962 on real time traffic information services and Delegated Regulation 2017/1926 on multimodal travel information services	Q1/2022, Q2/2023
37. Initiative on multimodal digital mobility services	Q2/2023
49. A stronger coordination mechanism for the ITS national access points (NAPCORE)	*launched*
27. establish a common dataset for reporting formalities in EU ports and a multimodal transport common data set for regulatory freight transport information	Q1/2022, Q1/2023
54. Propose rules on a trusted environment for corridor data exchange to support collaborative logistics	2023

Efficient & Green Mobility

proposal to amend the

ITS Directive 2010/40/EU

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Efficient & Green Mobility

Information & mobility services

Travel, transport & traffic management services

Road safety & security

Cooperative, connected & automated mobility

Efficient & Green Mobility

- Extension of the scope of the Directive to
  - **Mandate availability of crucial data** (real-time traffic information, road-safety related events and multimodal travel information services)
  - **Mandate deployment of essential services** (currently road safety, C-ITS also included in the Impact Assessment but requires additional new legislation)

Efficient & Green Mobility

Expected impact of the revised Directive **until 2040 (includes mature C-ITS services)**

- Time saved benefits of €145 bn
- Reduction in cost of accidents €30 bn
- Total cost of €21 bn
- Benefit-cost-ratio: 8.6
- The positive effects of digital mobility services on multimodality, as well as those of highly automated vehicles, cannot yet be reliably estimated and are NOT yet included

Digital Transport and Logistics Forum (DTLF)

Expert Group of the Commission

- **Mission:** To provide a platform for structural dialogue, exchange and provision of technical expertise, cooperation and coordination between the Commission, Member States and relevant stakeholders,
- **Objective:** to assist the Commission in the development and implementation of the Union's activities and programmes aimed at the digitalisation of the transport and logistics sector and at fostering a more efficient electronic exchange of information in transport and logistics.
- **First mandate:** 2015 – 2018
- **Second mandate** 2018 - ….

Digital Transport and Logistics Forum

2015

130

44

3

Establishment of the DTLF
The DTLF's first mandate (April 2015 – June 2018) was set up by Commission Decision C(2015)2259. It was renewed for a second mandate (September 2018 – September 2023) by Commission Decision C(2018)5921.

Appointed Forum Members and Observers
The DTLF offers a platform for dialogue between key stakeholders, including companies, associations, NGOs, trade unions, universities and research institutes, subject matter experts, Member States' authorities and other public entities.

Official Meetings since 2015
The DTLF meets on a regular basis, mainly in Brussels. Each year, the Forum holds two Plenary meetings, thereby reuniting all Members and Observers. In addition, several meetings are held for both Subgroups of the DTLF.

The Forum is divided into three Subgroups, dealing with the digitalisation and acceptance of transport documents (Subgroup 1), the establishment of digital corridor information and management systems (Subgroup 2) and the eFTI delegated acts Expert Group (Subgroup 3)

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Main achievements so far…..

Electronic Freight Transport Information (EFTI)

- Recommendations and preparatory work for the EU Regulation on Electronic Freight Transport Information (EFTI) adopted on 15 July 2020

Corridor Freight Information Systems

- A concept of “federated network of platforms” to create a common framework for information sharing in multimodal transport and logistics chains

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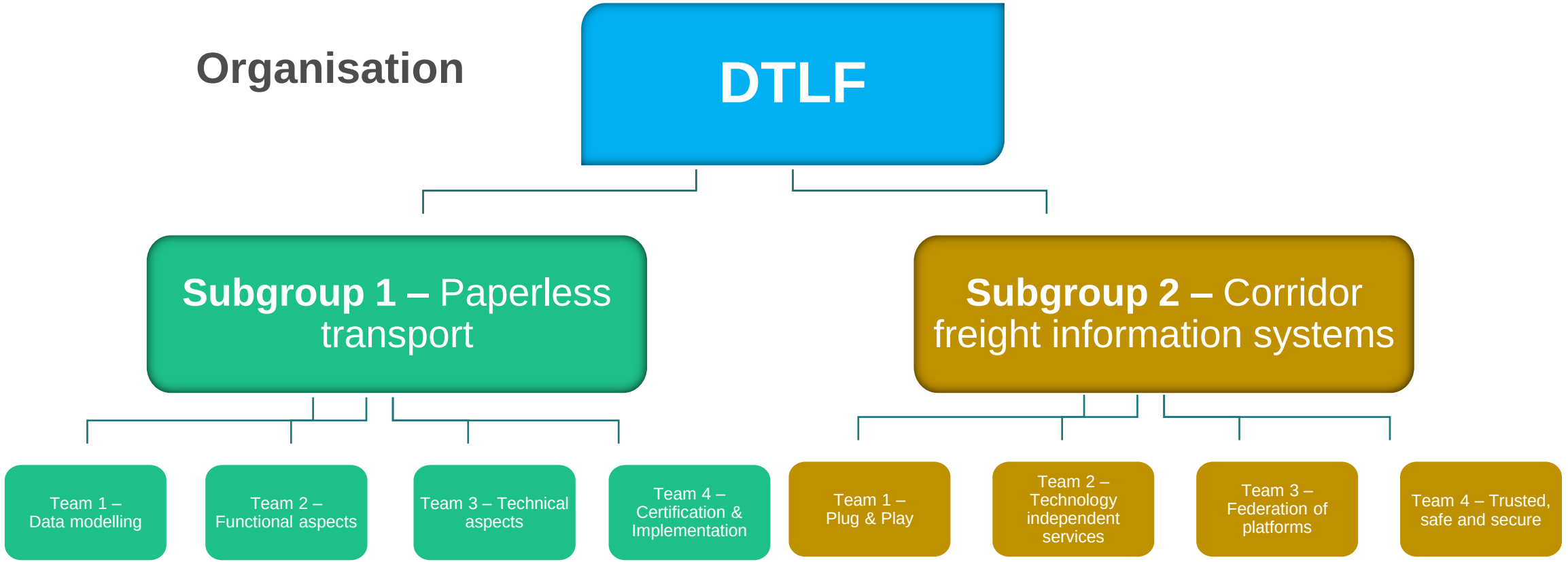

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Digital Transport and Logistics Forum – SG1

Milestones

DTLF I recommends EU action on Paperless Transport

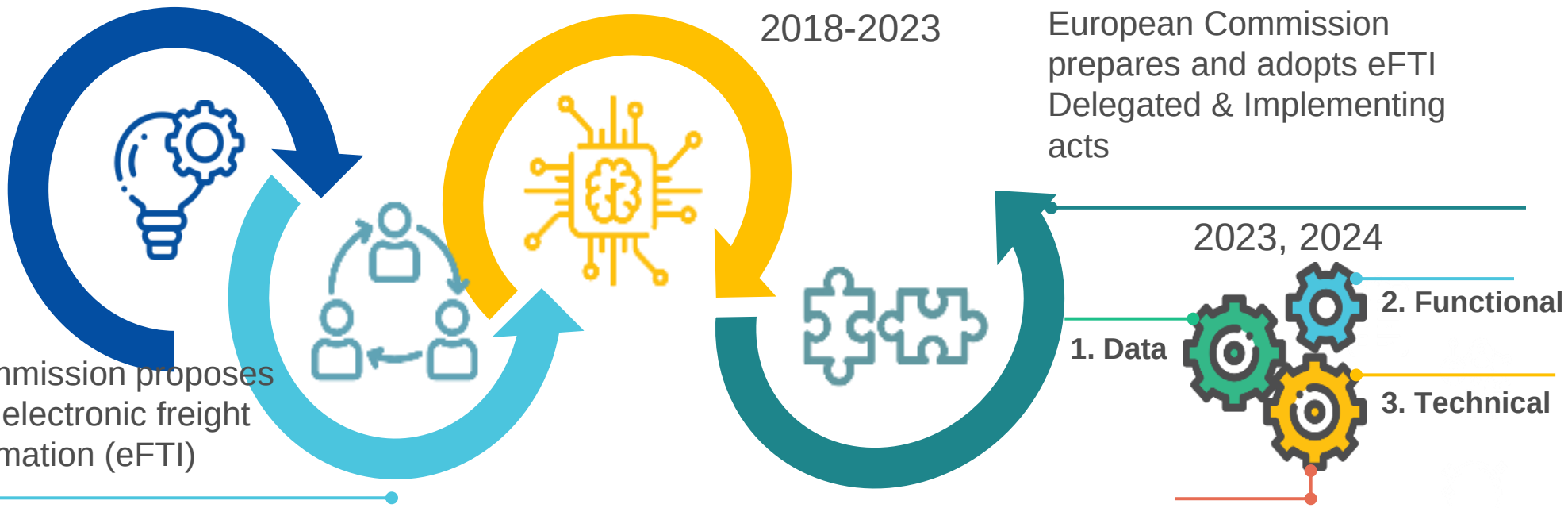
2016

DTLF II SG1 advises & assists in the creation and implementation of eFTI sub legislation

2018-2023

European Commission prepares and adopts eFTI Delegated & Implementing acts

2023, 2024



European Commission proposes Regulation on electronic freight transport information (eFTI)

2018

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Digital Transport and Logistics Forum – SG1

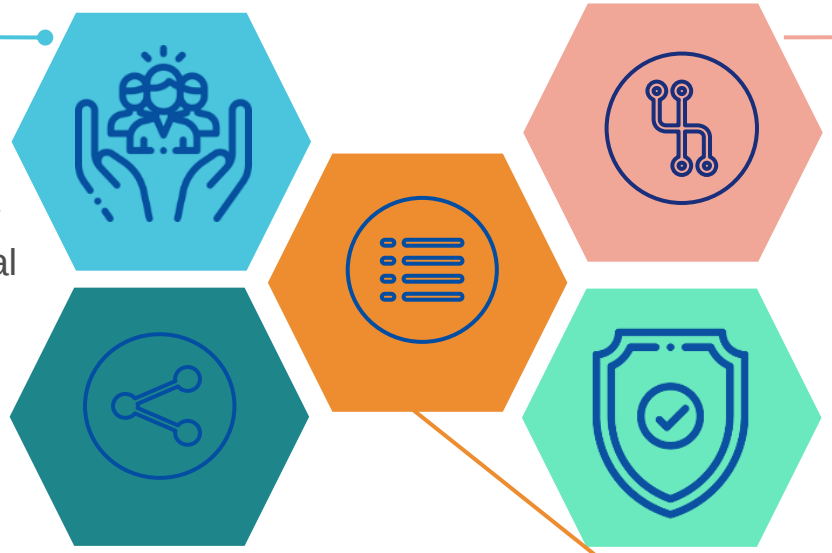
Contents

Obligation for all competent authorities in all EU MS

- To accept the information electronically
- To use the same requirements/technical specifications for acceptance

Option for the economic operators

- Can present the information electronically or use paper
- When opting for electronic, obligation to use certified eFTI platforms or service providers



Common requirements for service providers and platforms

- Platforms' functionalities
- Service providers' obligations

One stop shop certification

- Harmonised rules for third-party certification valid EU-wide

Information requirements

- EU and national legislation regulating freight transport in the EU hinterland
  - Rail, road, inland waterways, aviation
  - Rules concerning the means of transport and the personnel not concerned

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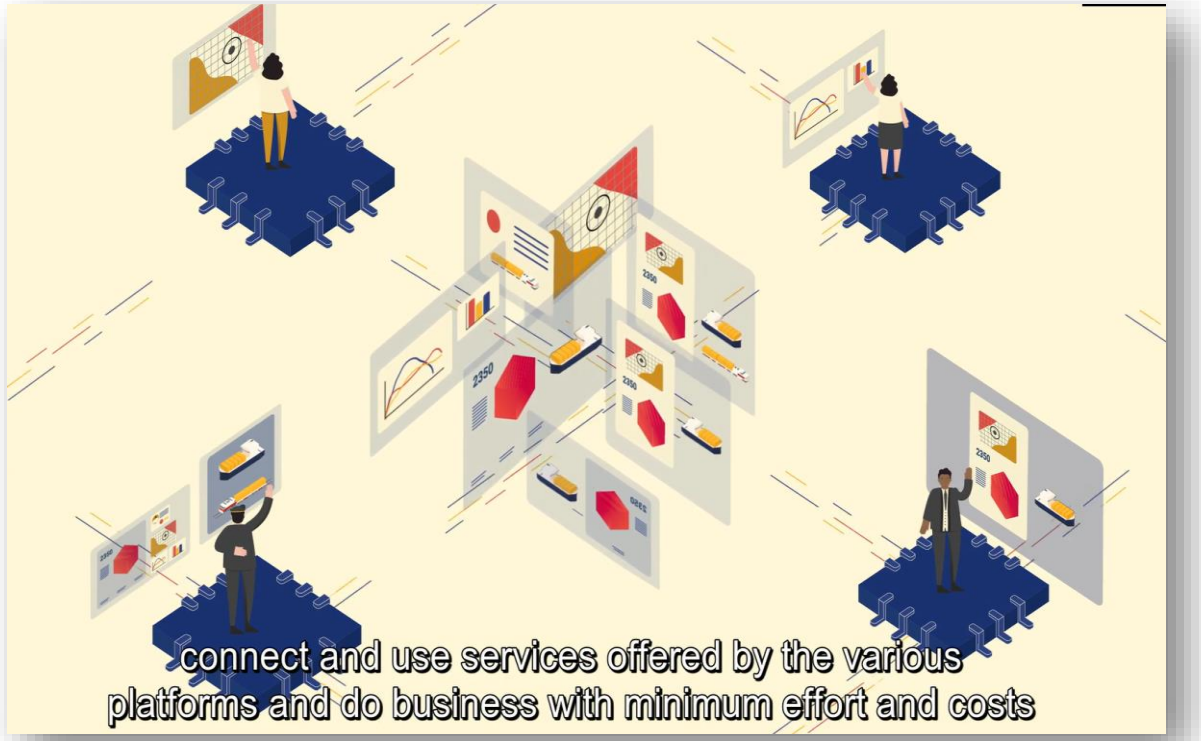
Digital Transport and Logistics Forum - SG2

A seamless environment for data sharing with two main features:

- unique entry point for each organisation (business and authorities) based on common, agreed data sharing mechanisms and semantics
- built on existing (and future) solutions that have to become interoperable (platforms, peer-to-peer)

Federated network of platforms



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Digital Transport and Logistics Forum - SG2

Challenge: fragmented digital infrastructure

road	infrastructure equipment
rail	infrastructure
aviation	
inland waterway	equipment
maritime	infrastructure equipment
government	
public institutions	
private institutions	
private operators	
Paper processes	standards private
Client Server	standards private
EDI	
API	
Blockchain	private
Semantic web	open private

multimodal

multi governance

multi tech

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Digital Transport and Logistics Forum - SG2

Solution: cooperation & interoperability

road	infrastructure	equipment
rail	infrastructure	equipment
aviation	infrastructure	equipment
inland waterways	infrastructure	equipment
maritime	infrastructure	equipment
government		
public institutions		
private institutions		
private operators		
Paper processes	standards	private
Client Server	standards	private
EDI	standards	private
API	open	private
Blockchain	public	private
Semantic web	open	

multi platform network

semantic model

Federated network of platforms

Trusted safe & secure

Plug & play architecture

Technology independent services

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Design principles

- Register and connect once
- Interoperability by default
- Open infrastructure with a solution of choice
- Trust and security
- Scope: B2A and B2B
- Transparency and level playing field
- Re-use of existing standards
- Technology independent
- No centralised solution

Corridor freight information systems

Building Blocks

Teams

- Plug & Play
- Technology Independent Services
- Federation of Platforms
- Trusted, Safe & Secure

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Digital Transport and Logistics Forum – SG2

- **Plug & Play**: The ability to do business in a digital way with any other enterprise without prior bilateral or community agreements on which data to share, compliant with regulations.
- **Technology Independent Services / Semantics**: The availability of technology independent platform services offered by the federated platform for data sharing to support business interoperability (for a number of selected business services) and compliance of business with legislation.
- **Federation of Platforms**: Interoperability (technical, functional, and business model) between different platforms, even when each platform is realised with different technology.
- **Trusted, Safe and Secure**: A neutral governance structure ensuring trust, safety, and security for data sharing via multiple providers of platform services, including peer-to-peer solutions.

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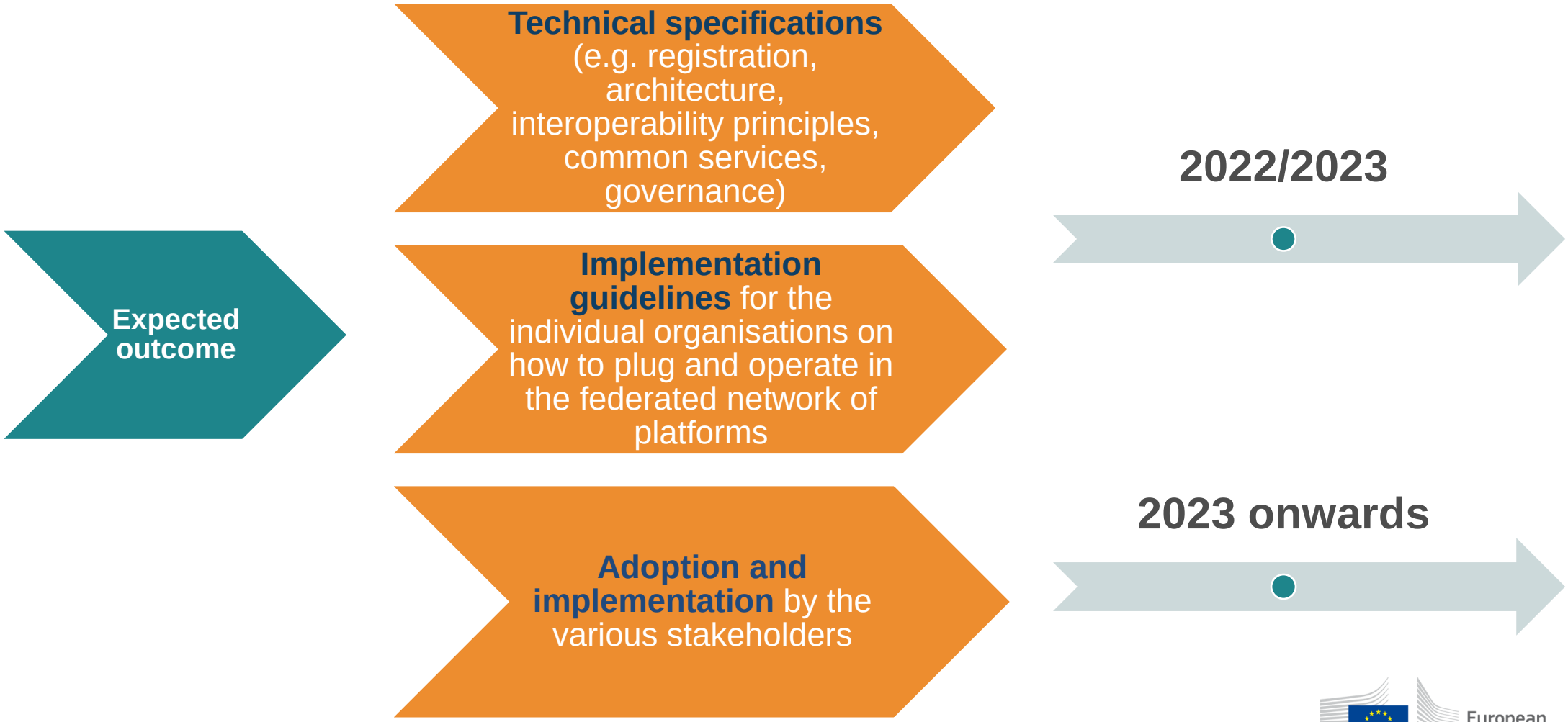

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Digital Transport and Logistics Forum

- **Validation of the DTLF concept, principles and technical components in large scale CEF projects**
- **Use cases and living labs**
- **Feedback to DTLF subgroups and teams for fine-tuning, adaptation….**

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Background summary

- As stated in the **Sustainable and Smart Mobility Strategy**, the Commission is committed to propose further actions to build a common European mobility data space **facilitating access, pooling and sharing of data** from existing and future transport and mobility data sources.
- It will supplement and take advantage of the new European cross-sectoral data legislation, namely the **Data Governance Act**, the **Data Act** and the **Implementing Act on High Value Datasets**. The initiative will notably take due account of data sharing mechanisms proposed in these legislations and existing data sharing ecosystems, which in some cases are already quite advanced.
- A “data space” is not necessarily a database or a piece of hardware infrastructure. In the area of mobility, a data space is a **framework for bringing together data domains** that are rather **heterogeneous** and **difficult to discover** or **access**.

Objectives of the common European mobility data space (1/2)

1. **Identify essential data** and **increase their availability** to support services considered crucial across the EU's territory, covering themes from sustainability to multimodality.

2. **Help users in the discovery of available data sources**, providing tools for the user to understand the data quality and related access conditions.

3. Facilitate data access and re-use through the modal and cross-modal harmonisation of sharing conditions in a **fair, transparent, proportionate and non-discriminatory manner**.

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Objectives of the common European mobility data space (2/2)

4. **Enable technical, organisational and legal interoperability** for data access, re-use and data sharing between public and private actors.

5. **Optimise data collection and reduce administrative burden**, through identifying gaps and overlaps in existing data collection arrangements and making recommendations for respective adjustments in sectoral legislation.

6. **Facilitate interoperability with other common European data spaces** and allow data sharing and re-use among those in line with new and emerging EU data-related legislation.

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Initial vision, open to changes

data space participants

data providers

data consumers

market-places

service providers

mobility data ecosystems, initiatives and plaforms

national initiatives (e.g. German MDS)

private initiatives (e.g. Catena-X, EONA-X)

regional & local initiatives

common governance

Recommended common building blocks for data interoperability, sovereignty & trust and value creation

Connection layer: metadata and discovery

Recommended common building blocks for data quality, level of service and accessibility

other sectoral data spaces

common European mobility data space framework

DG MOVE Data Warehouse

EU mobility data domains and initiatives

DTLF

eFTI

EMSWe

ITS National Access Points

TEN Tec

Road safety data

Rail data

IWW data

Vehicle data

Aviation

etc.

DTLF user

DTLF user

EMSWe user

NAP user

TEN Tec user

RS data user

Rail data user

IWW data user

vehicle data user

aviation etc. user

other users

data access/sharing

metadata flows

Activities towards a common European mobility data space

Digital Europe Programme (DEP)

- Coordination Support Action for a European data space for mobility (Kick-off 19/9/2022, will run for 12 months)
- Data space for mobility – deployment (Call open 29/9/2022-24/1/2023)

Initiative for a Communication

- To publicly announce the objectives and proposed way forward (Planned Q2 2023)
- Supported by a Call for Evidence and stakeholder workshops (e.g. Florence School of Regulation on Nov 25th)

Connecting Europe Facility (CEF)

- Technical assistance study to be launched in 2023 followed by a deployment in 2024-2025

More information

Directorate-General for Mobility and Transport:
http://ec.europa.eu/transport/index_en.htm

Sustainable & Smart Mobility Strategy
https://transport.ec.europa.eu/transport-themes/mobility-strategy_en

ITS Action Plan and Directive
https://transport.ec.europa.eu/transport-themes/intelligent-transport-systems/road/action-plan-and-directive_en

Digital Transport and Logistics Forum (DTLF)
https://transport.ec.europa.eu/transport-themes/digital-transport-and-logistics-forum-dtlf_en

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