UIRR
INTERNATIONAL UNION FOR ROAD-RAIL COMBINED TRANSPORT

# Meeting Brazil

# COMBINED TRANSPORT IN EUROPE

Ralf-Charley Schultze
President

ONLINE MEETING 30 March 2021

# Long-overdue transport policy decisions become urgent



**Climate emergency declaration**

November 2019

**European Green Deal**:

January 2020

**European Climate Law – MS position**

December 2020 - *final vote expected in June 2021*

**Strategy for Smart and Sustainable Mobility**

December 2020

# Changes to anticipate



- ✓ **European Climate Law:** 55% carbon-reduction in a decade and complete carbon-neutrality by 2050

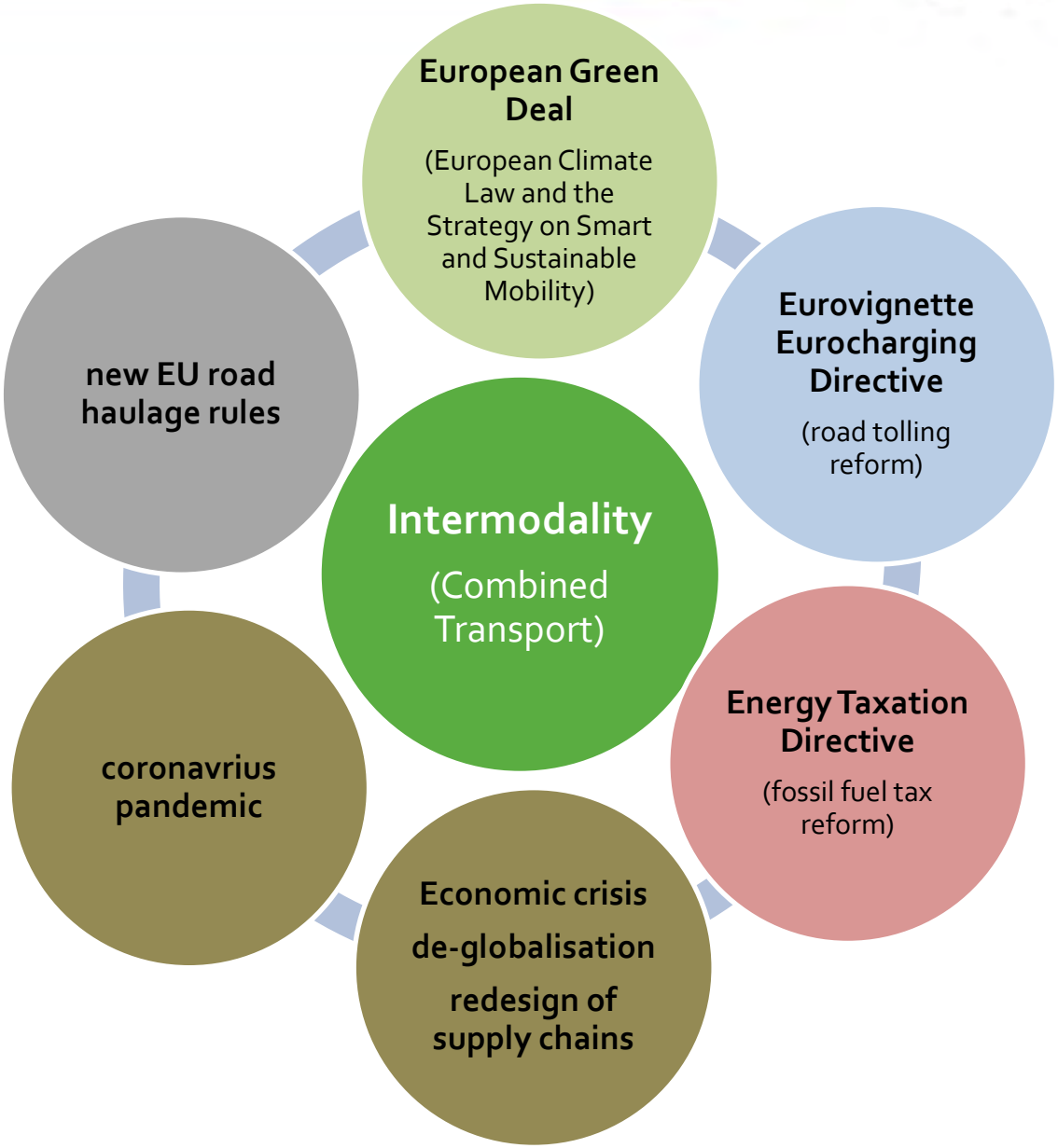
- ✓ **Strategy for Smart and Sustainable Mobility:**
  - *Rail and waterborne-based intermodal transport fully price-competitive with road-only transport in the EU* (energy taxation and tolling)
  - *50% rail freight growth by 2030, 100% by 2050 --- the facilitator can only be Combined Transport, which will have to triple its performance in 30 years*

- ✓ **Amendment of the TEN-T and Rail Freight Corridor regulations:** in order to enable the infrastructure to carry the required number of freight trains and to manage the freight traffic efficiently

- ✓ **Amendment of the CT Directive:** to provide temporary compensatory measures until price-competitiveness is achieved and to offer incentives for the needed modal shift

# Combined Transport: external factors at the end of 2021

- **European Green Deal**: 55% $CO_2$ emission-reduction + boosting energy efficiency + alternative propulsion systems
- **Eurovignette/Eurocharging Directive**: mandatory distance-based tolling + methodology for calculating toll levels
- **Energy Taxation Directive**: reform of fossil fuel taxation + the future of state budget revenues
- **New EU road haulage rules**: option to suspend Article 4 of the CTD + mandatory 8-weekly return of trucks + generally stricter rules
- **Coronavirus pandemic**: public transport collapses – freight trains experience significant punctuality impropvement
- **Economic crisis**: de-globalisation and the rethinking of global supply-chains



# 2021: the European Year of Rail



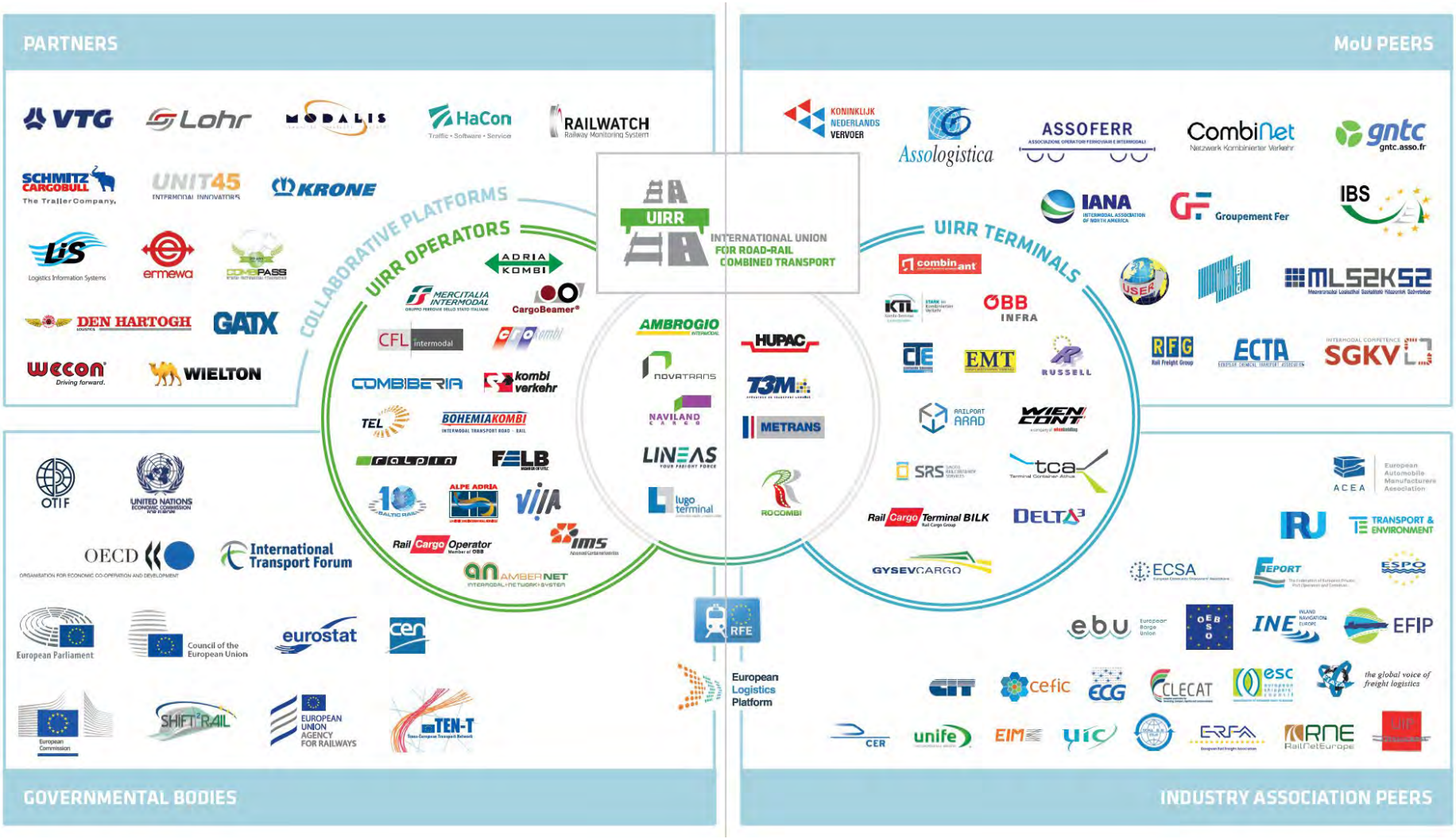
EUROPEAN YEAR OF RAIL **2021**

- ✓ **A symbolic gesture** to recognise the
  - the energy efficiency of railways: steel-on-steel vs rubber on asphalt
  - the ability of electric trains to directly turn renewable energy into motion
  - the role railways must play in the decarbonisation effort ahead of us

- ✓ **Promotion of rail freight** with intermodal rail at its core
  - trucked cargo can most efficiently be shifted to rail freight using intermodal loading units: craneable semi-trailers, swap bodies and containers
  - frequent scheduled combined transport shuttle trains together with electric terminals and battery-powered trucks will form **Zero-Carbon Combined Transport** – the future of European surface freight transportation

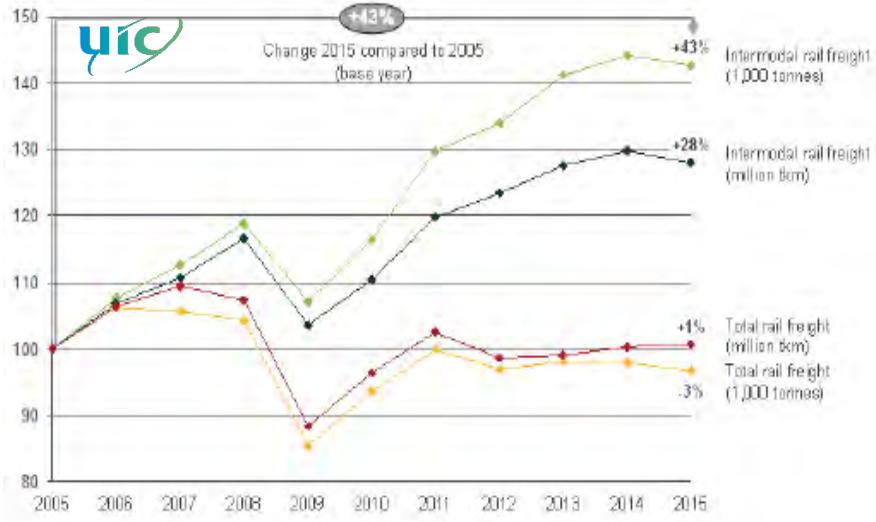
# UIRR: THE INDUSTRY ASSOCIATION OF INTERMODAL TRANSPORT

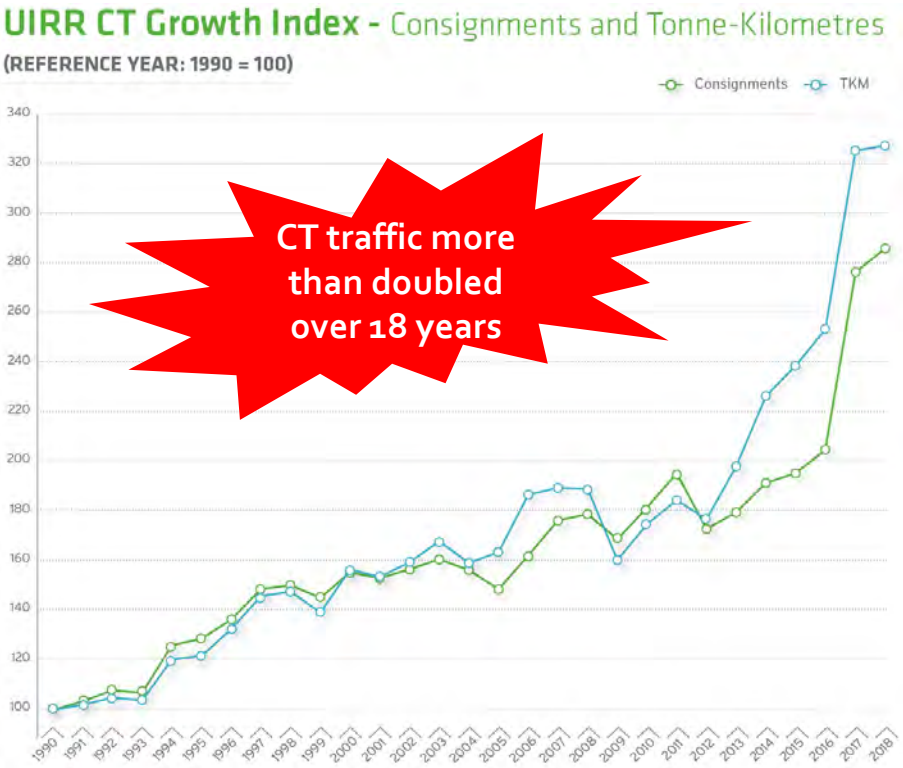




# ROAD-RAIL COMBINED TRANSPORT: performance development






## Intermodal is the engine of rail freight development

- ✓ **Total EU rail freight performance** – in tkm – stagnated during the past decade (since the economic crisis)
- ✓ **Intermodal increasingly fills freight trains** as the proportion of CT trains has grown from 1 in 3 ten years ago to more than 1 in 2 in 2018; and CT transfers mostly cargo that was carried in trucks to rail – thereby it is **a prime agent of modal shift**

# DEFINITION/TERMINOLOGY

# DEFINITION OF INTERMODAL TRANSPORT



**Multimodal transport**
*Goods transportation that employs more than one mode of transport.*

**Intermodal transport**
*Multimodal goods transportation where the cargo is carried in an intermodal loading unit throughout the entire journey.*

**Combined transport**
*Intermodal goods transportation where the road legs of the journey are kept to a minimum, while the longest possible section of the distance is covered by non-road modes of surface transport.*

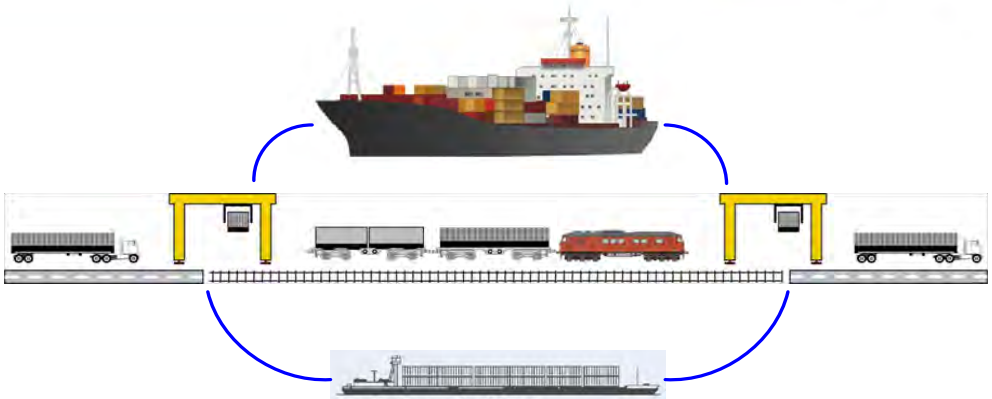
- **MULTIMODAL** = more than one mode of transport for a single assignment
- **INTERMODAL =** cargo held in a single intermodal loading unit from origin to destination
- **COMBINED TRANSPORT** = intermodal transport where the road legs are the shortest possible

EU POLICY AIM + MISSION OF UIRR:

**ENHANCEMENT OF COMBINED TRANSPORT**

## Intermodal Transport: brings the best out of each mode of transport

Intermodal is the most efficient way to insert ecologically sustainable modes of transport – like electric rail, inland navigation and short sea shipping – into long(er) distance transport-chains.



Intermodal/Combined Transport in Europe

# POLICY/REGULATION

# COMBINED TRANSPORT DIRECTIVE 92/106



**Directive 92/106**

## Definition

*what is a **combined transport operation**?*

## Enforcement

*no more disturbance to transport flows*

## State aid

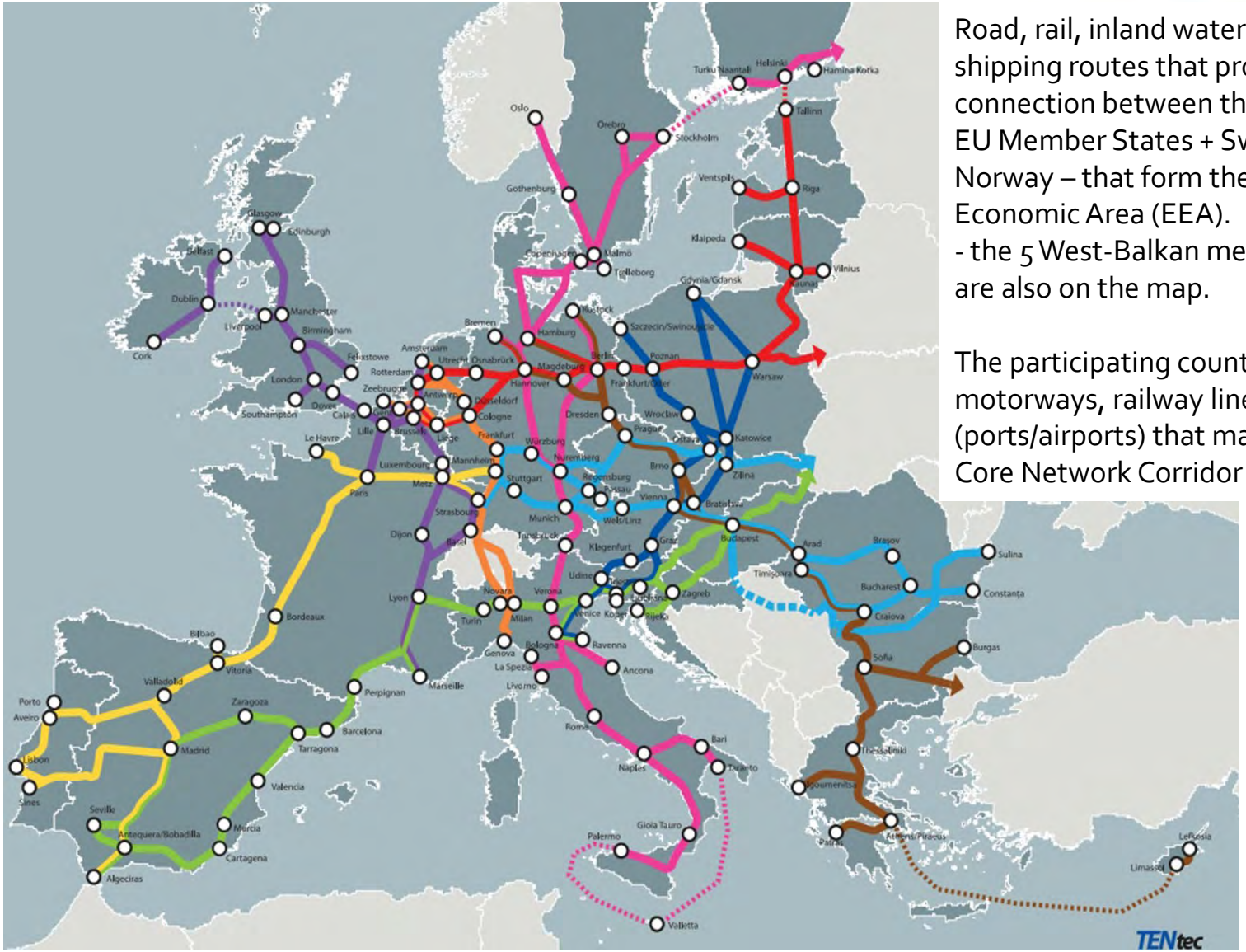
*to assist terminal development and to compensate regulatory disparities*

## Reporting and monitoring

*to inform policy-makers and the general public of reaching strategic aims*

# TEN-T: TRANS-EUROPEAN NETWORK FOR TRANSPORT






Road, rail, inland waterway and short-sea shipping routes that provide the connection between the 30 countries – 28 EU Member States + Switzerland and Norway – that form the European Economic Area (EEA).
- the 5 West-Balkan member candidates are also on the map.

The participating countries designate the motorways, railway lines and nodes (ports/airports) that make up a TEN-T Core Network Corridor (CNC).

<u>CNC rail infrastructure requirements</u>:

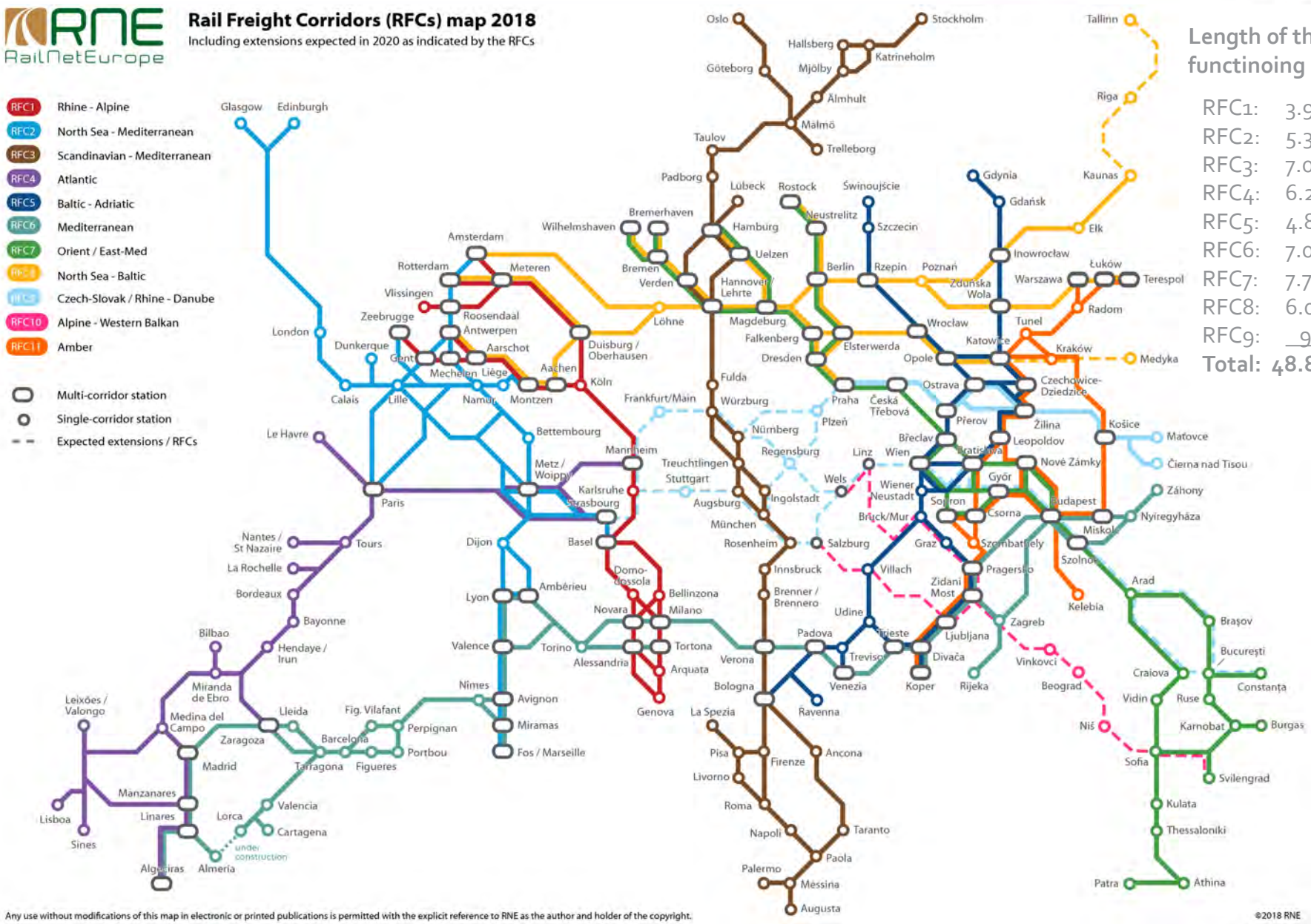
- 22,5t axle load
- 100km/h speed
- 740m length
- ERTMS

<u>Completion by</u>:
**31 December 2030**

*(Non-core lines ungraded by 2050)*

# RAIL FREIGHT CORRIDORS: overlap with Core TEN-T Corridors






**Length of the nine functinoing RFCs:**

| | |
|---|---|
| RFC1: | 3.900km |
| RFC2: | 5.300km |
| RFC3: | 7.000km |
| RFC4: | 6.200km |
| RFC5: | 4.825km |
| RFC6: | 7.000km |
| RFC7: | 7.700km |
| RFC8: | 6.000km |
| RFC9: | 900km |
| **Total:** | **48.825km** |

# 10 Priority Actions of Sector Statement Group:

| Sector Statement Priority | | Rapporteurs |
|---|---|---|
| 1. | Following the TimeTable Redesign project (TTR) | Joachim Kroll / RNE<br>N.N. / FTE |
| 2. | New concepts for capacity offer on RFCs | Thomas Vanbeveren/C-OSS Community |
| 3. | Improving coordination on Temporary Capacity Restraints (TCR) | Joachim Kroll / RNE |
| 4. | Enhancing the use of Path Coordination System (PCS) | Joachim Kroll / RNE<br>Thomas Vanbeveren/C-OSS Community |
| 5. | Improving harmonisation of processes at borders | Roland Hartkopf / RAG Speaker |
| 6. | Train tracking and Expected Time of Arrival (ETA) | Ad Toet / KNV<br>Harald Reisinger/RNE |
| 7. | Prioritisation, funding instruments, and monitoring of TEN-T parameters | Jürgen Maier / BLS<br>Hinne Groot/ NexBo |
| 8. | Facilitating concrete ERTMS Implementation | Jean-Baptiste Simonnet / CER |
| 9. | Monitoring the quality of freight services with implemented and shared KPIs | Alfred Pitnik/RU-D Freight Subgroup<br>Joachim Kroll /RNE |
| 10. | Harmonising the Corridor Information Document (CID) | Guus de Mol / RNE |

# OTHER IMPORTANT TOPICS AND INITIATIVES

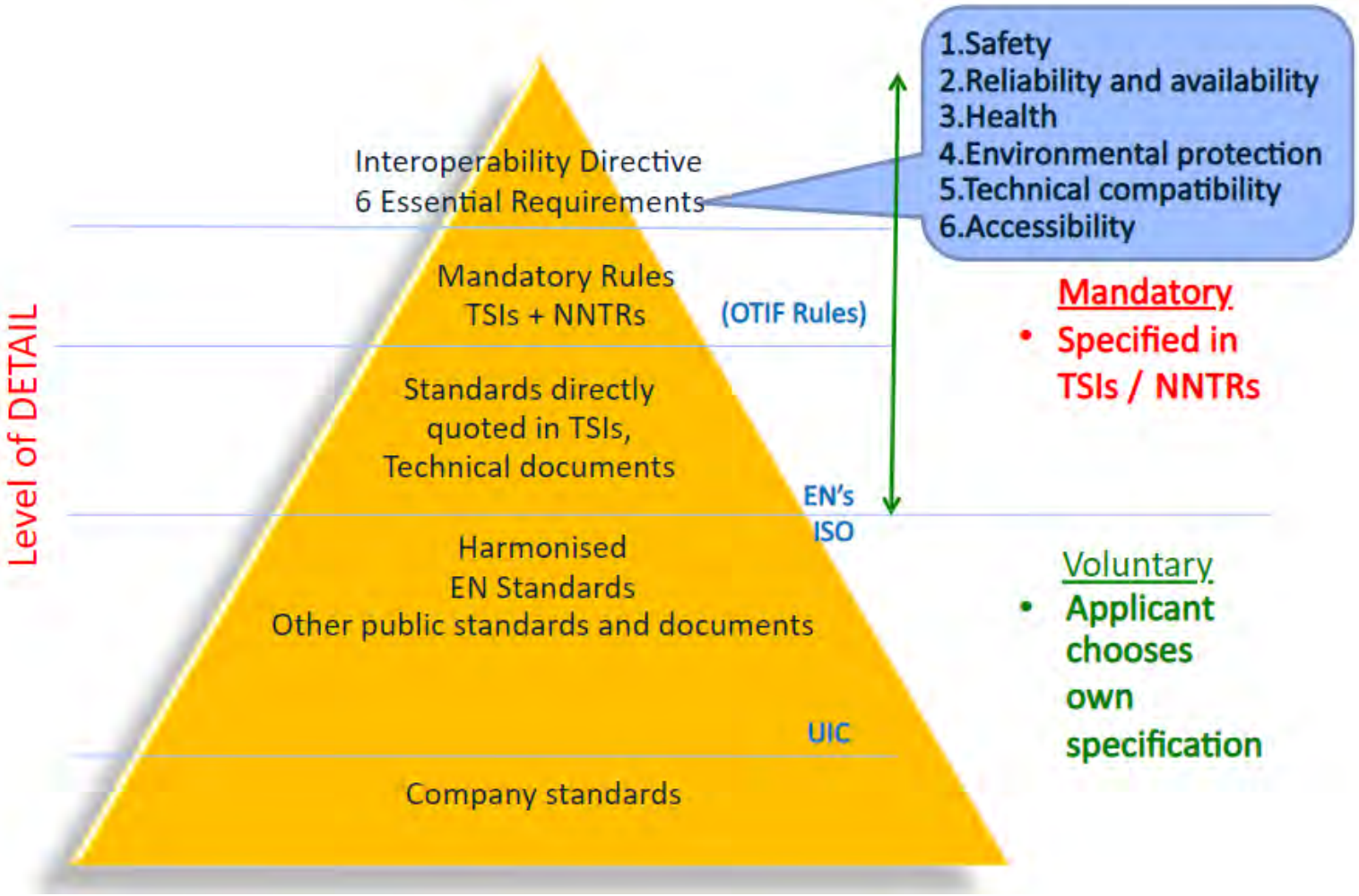


- EU Directive on Weights and Dimensions
- Statistics and Reporting: Eurostat, RMMS
- Sector initiatives on the quality performance of rail freight: ETA, quality KPIs
- Consignment note / Electronic Freight Transport Information Regulation
- Rail Freight Forward initiative
- Intercontinental corridors / UIC International Railway Standards
- UN ECE / COTIF initiatives: to proliferate the EU régime on the entire continent
- European Green Deal: decarbonisation of the EU economy by 2050

# STANDARDS

# RAILWAY STANDARDISATION PYRAMID





# LEGISLATION VS STANDARDS



**Legislation :**

- **Mandatory**
- Established by public authorities
- Revised when legislators so decide
- May refer to a change control process for annexes (e.g. CCS TSI, TAF/TAP TSI)
- Gives requirements to protect public interests
- Can make reference to standards (which then become mandatory)
- **Harmonisation foundation** (New Approach Directives, removal of barriers to trade)

**Standards :**

- **Voluntary** (unless otherwise specified in legislation)
- Consensus of stakeholders
- Developed by independent private organisations
- Revised regularly (~every 5 years)
- Provide usually technical specifications and test methods (interoperability, safety, quality, management, etc.)
- **Harmonisation tools** (harmonised standards)

# TECHNICAL SPECIFICATIONS FOR INTEROPERABILITY (TSI)

# UIRR IN THE STANDARDISATION ENVIRONMENT



EUAR and UIC Mutual Understanding

CEN, CENELEC and UIC signed a Cooperation Agreement

ISO and UIC signed a Cooperation Agreement

EUROPEAN UNION AGENCY FOR RAILWAYS

**Technical specifications for interoperability (TSIs)**

**Mandatory regulations – describe the "what"**

**European Standards (EN)**

**Tests / markings of intermodal loading units**

**CEN TC 119 on intermodal transport**

**UIC leaflets / IRS**

**CT-related leaflets on intermodal loading units, wagons, infrastructure**

**UIC revision group**

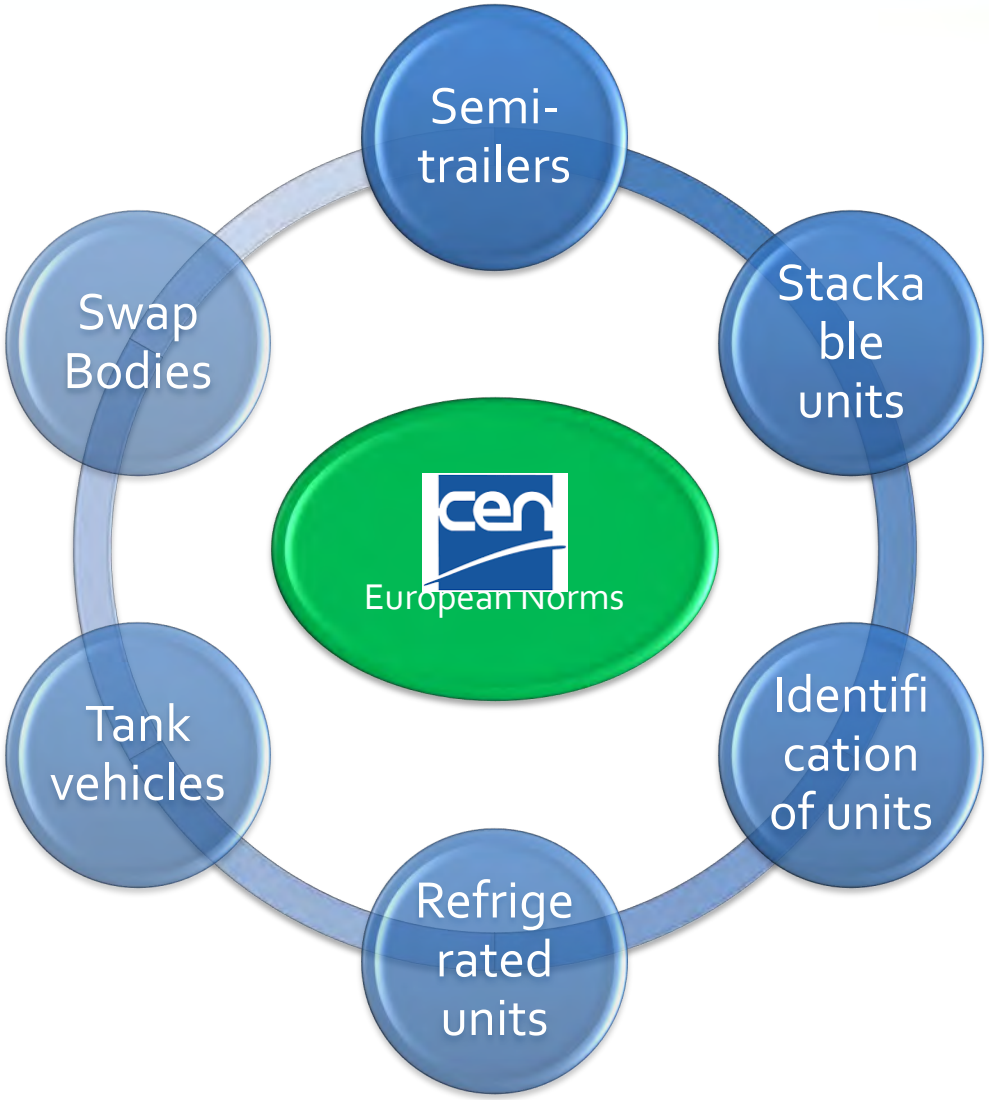
**ISO Norms**

**Standardization of freight containers, (…), as regards terminology, classification, dimensions, specifications, handling, test methods and marking**

**ISO TC 104**

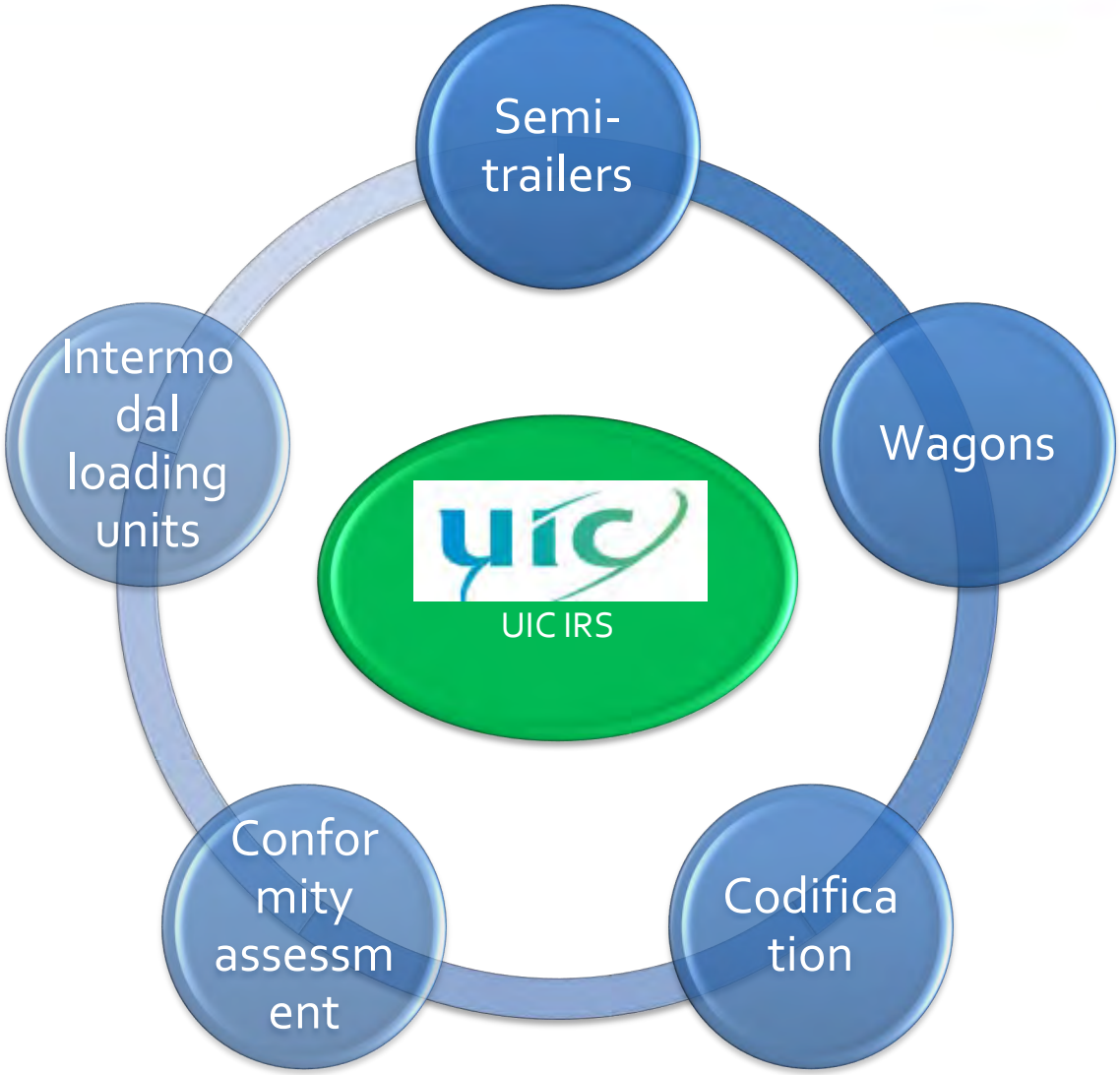
# CEN STANDARDS FOR COMBINED TRANSPORT OPERATIONS





# UIC IRS FOR COMBINED TRANSPORT OPERATIONS





***Comparative Analysis of the Combined Transport Usages and Standards***

Ease operations

Safety remains in domain of RUs

Share with other stakeholders

Improve standardisation

## Identification of areas

*TECHNICAL AREA*

1. Vehicle related topics
2. Load and loading unit related topics
3. Infrastructure related topics

*INFORMATION AREA*

4. Registers related topics
5. Telematics applications for freight topics

*PROCESS AREA*

6. Operation and Traffic Management related topics
7. Conformity assessment and legislation alignment

- Analysis of the current situation
- Solution proposal
- Interfaces management
- Appropriate mainstream process

# DIGITALISATION

# SELECTED KEY DRIVERS FOR INTERMODAL DIGITALISATION



New Entrants increase logistics footprint
(e.g. amazon )

Customers expect high reliability & valid information (e.g. ETA, booking)

**Intermodal Transport**

Shippers use advanced software to perform 3PL's tasks
(e.g. BOSCH Unilever BMW )

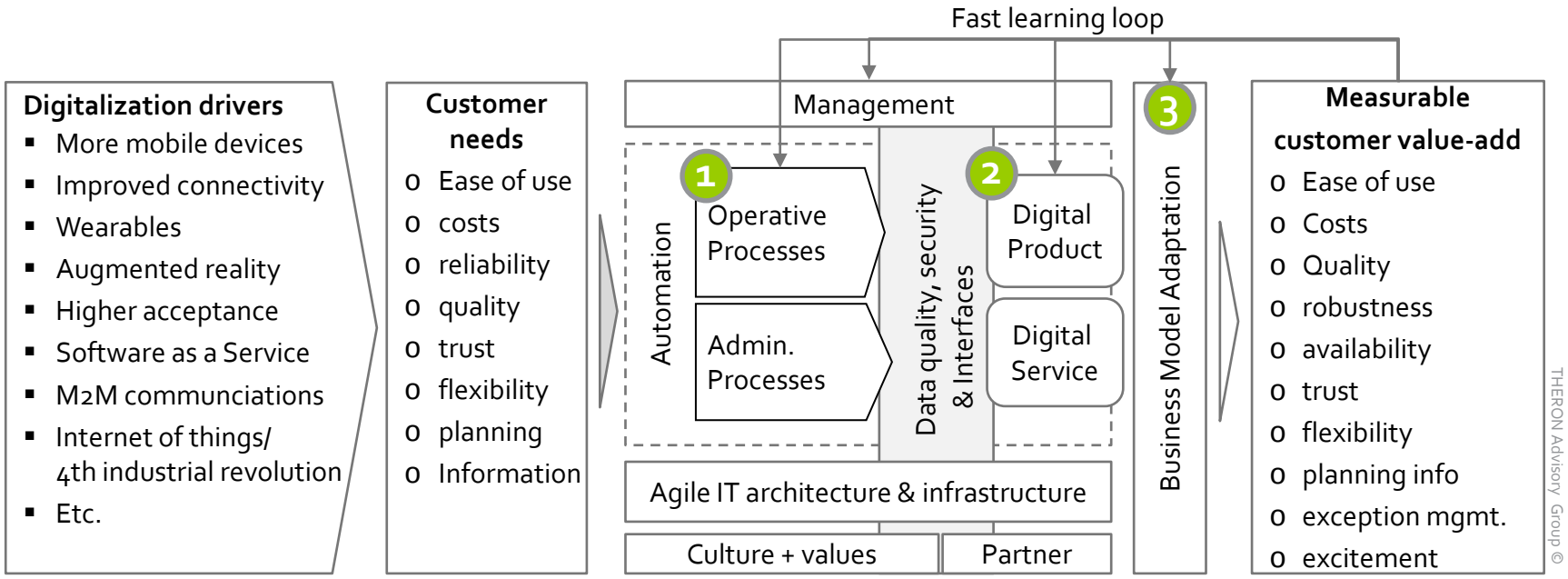
Regulators push digitalization (e.g. TAF – TSI, eFTI, digital market)

Improved communication & information richness
(e.g. 5G , INTERNET of THINGS )

***Role of Digitalisation:***
***Pain or opportunity for intermodal transport?***

# DIGITALIZATION IMPACT CAN BE WIDE

**Digitalization is the process of increasing the use of digital technologies and processes to transform the firm and other stakeholders through new value adding activities to achieve better efficiency and higher profitability.**

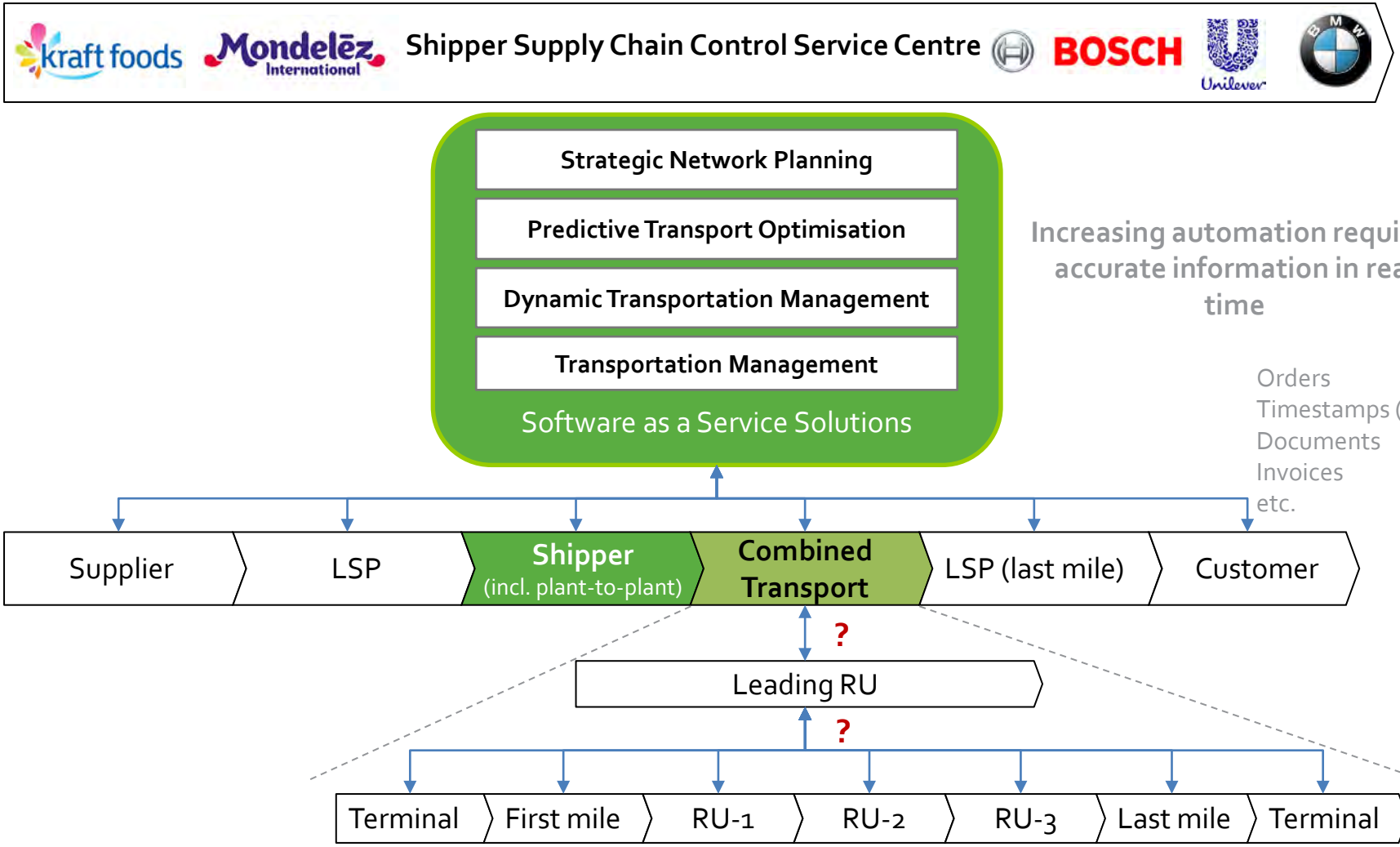



Digitalization can affect all parts of a company. Mostly automation of processes, digital output and business model innovation are in focus. A wider view encompasses the whole system of interdependencies (incl. mindset, culture, standards and partners).

# SHIPPERS PERFORM LOGISTICS TASKS



Shippers increasingly steer their logistics operations directly or via 4PLs to increase transparency, control and reduce costs and transit time.



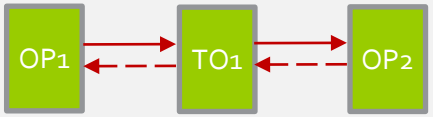
# ALTERNATIVE PATHS REQUIRE ALIGNMENT



## 1a Total freedom

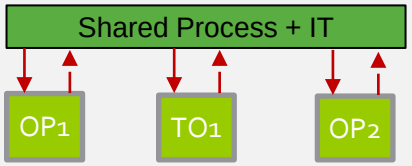
- Own data
- Own customers

## 1b Common standard




- Own data
- Own customers

## 2 Common Platform




- Own data
- Own customers

| | No concerted action with maximum freedom | Definition of standards and lose coupling for each actor | Platform approach for central tasks |
|---|---|---|---|
| Pros | ▪ **No advanced alignment with other partners required**<br>▪ **Competition in all dimensions** | ▪ **Lower costs (standardization of data)**<br>▪ **Common understanding**<br>▪ **Clarity of data for customers**<br>▪ **Regulatory support and funds accessible** | ▪ **Lowest amount of interfaces (1:n) & costs**<br>▪ **Cost efficient standardized processes**<br>▪ **Common understanding (data + processes)**<br>▪ **Clarity of data and process for customers**<br>▪ **Regulatory support and funds accessible** |
| Cons | ▪ **No group scale effects and competitive advantage**<br>▪ **Maximum effort for individualized interfaces for each partner (n:m)**<br>▪ **Highest costs base per interface** | ▪ **Maximum standard interfaces for each partner (n:m)** | ▪ **Governance and ownership controlled**<br>▪ **Initial coordination required** |
| Examples | ▪ **Tracking information exchange w/o standardization** (status/interfaces)<br>▪ **Individualized booking processes** | ▪ **Harmonized ILU code, EDIGES**<br>▪ **ETA initiative**<br>▪ **IATA (e-AWB), IRU (e-CMR)**<br>▪ **Standard of registers** (e.g. terminal and unit master data) | ▪ **Cesar** (only partially open & only terminal-to-terminal **not** door-to-door logistics)<br>▪ **Hacon LEIDIS** (Germany)<br>▪ **RNE TIS** |

Legend: TO = Terminal Operator; OP = CT Operator

# UNIQUE STANDARD ID FOR LOADING UNITs: ILU-CODE

- **Mandate**

  - EN13044 appointed UIRR to be the Administrator

- **Marking**

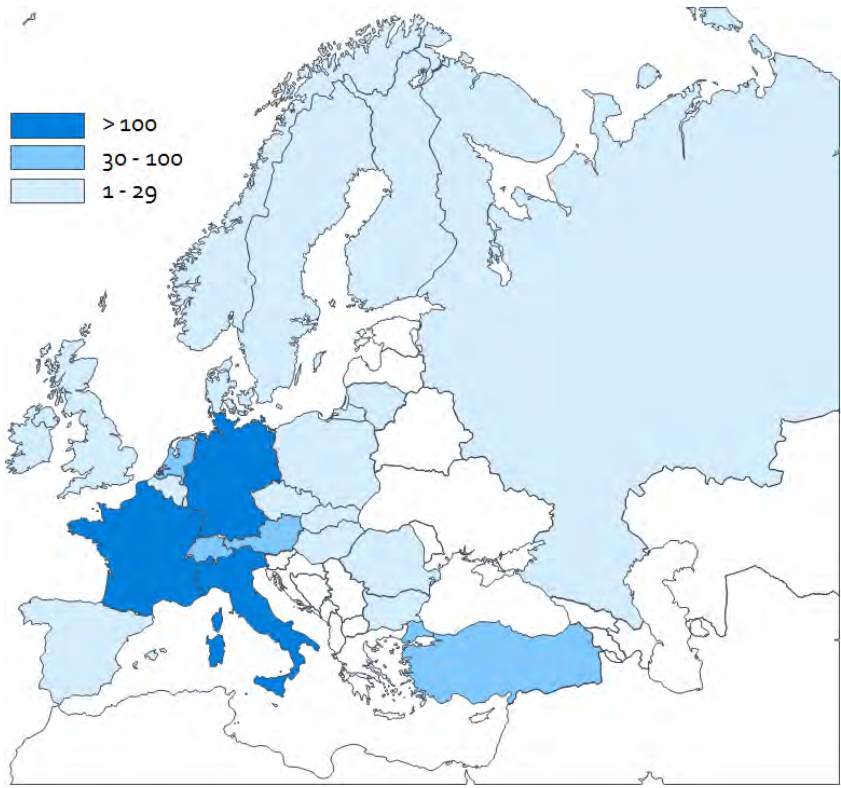
  - UIRR members reported a +98% ILU- or BIC-Code compliance of the units they handled in 2016

- **Obligatory**

  - Modernised EU Customs Code makes it mandatory for all UCT

  - Revised Directive 92/106 will make it mandatory for all intra-EU UCT

  - TAF TSI requirements - Tracking & tracing, booking, consignment note

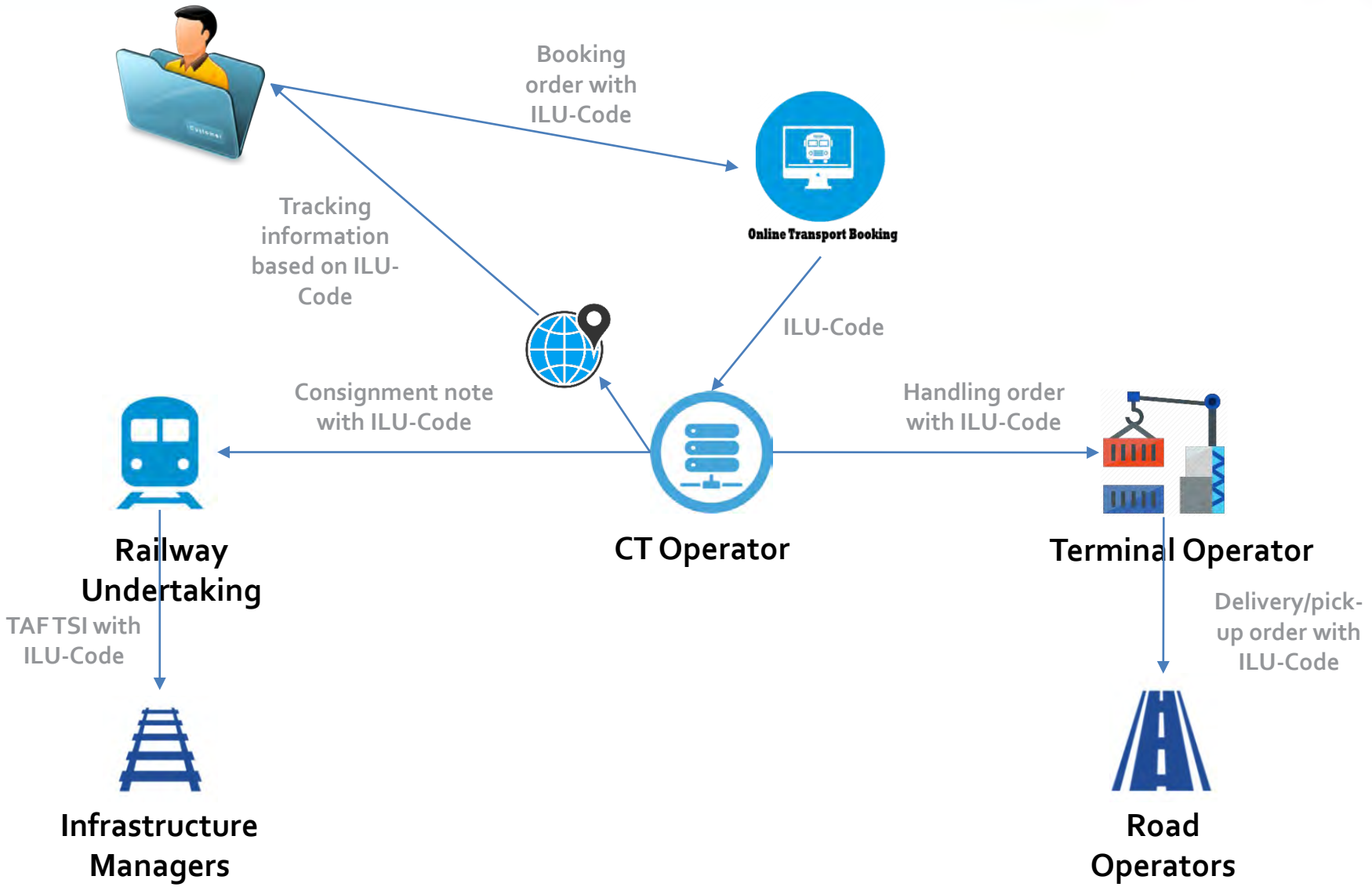



ILU-Code
identification of Intermodal Loading Units in Europe

UIRR
Administrator of the ILU-Code

# ILU-CODE AS KEY ENABLER FOR DIGITAL COMBINED TRANSPORT





**Directive 2012/34** + **Implementing Regulation 2017/2177** on access to service facilities and use of rail-related services

**Regulation 913/2010 on** Rail Freight Corridor

## Directive 2012/34: obliges Infrastructure Managers and Service Facility Managers to publish

- information concerning the capabilities of their facilities,
- the conditions of access,
- any temporary capacity restrictions,
- available capacity,
- new services and
- unused capacities/facilities (available for lease).

## Regulation 913/2010: obliges (Rail Freight) Corridor Management Entities to

- compile and make available information – including available capacities – on freight terminals and junctions through the Corridor Information Document
- In addition the information is published in the Customer Information Platform (CIP)

## Static messages

**Service Facility Description**

- Physical parameters
- Services: basic, additional and ancillary
- Opening hours
- Contact details
- Access conditions, including prices and discount schemes
- Access application, conflict resolution and complaint procedures

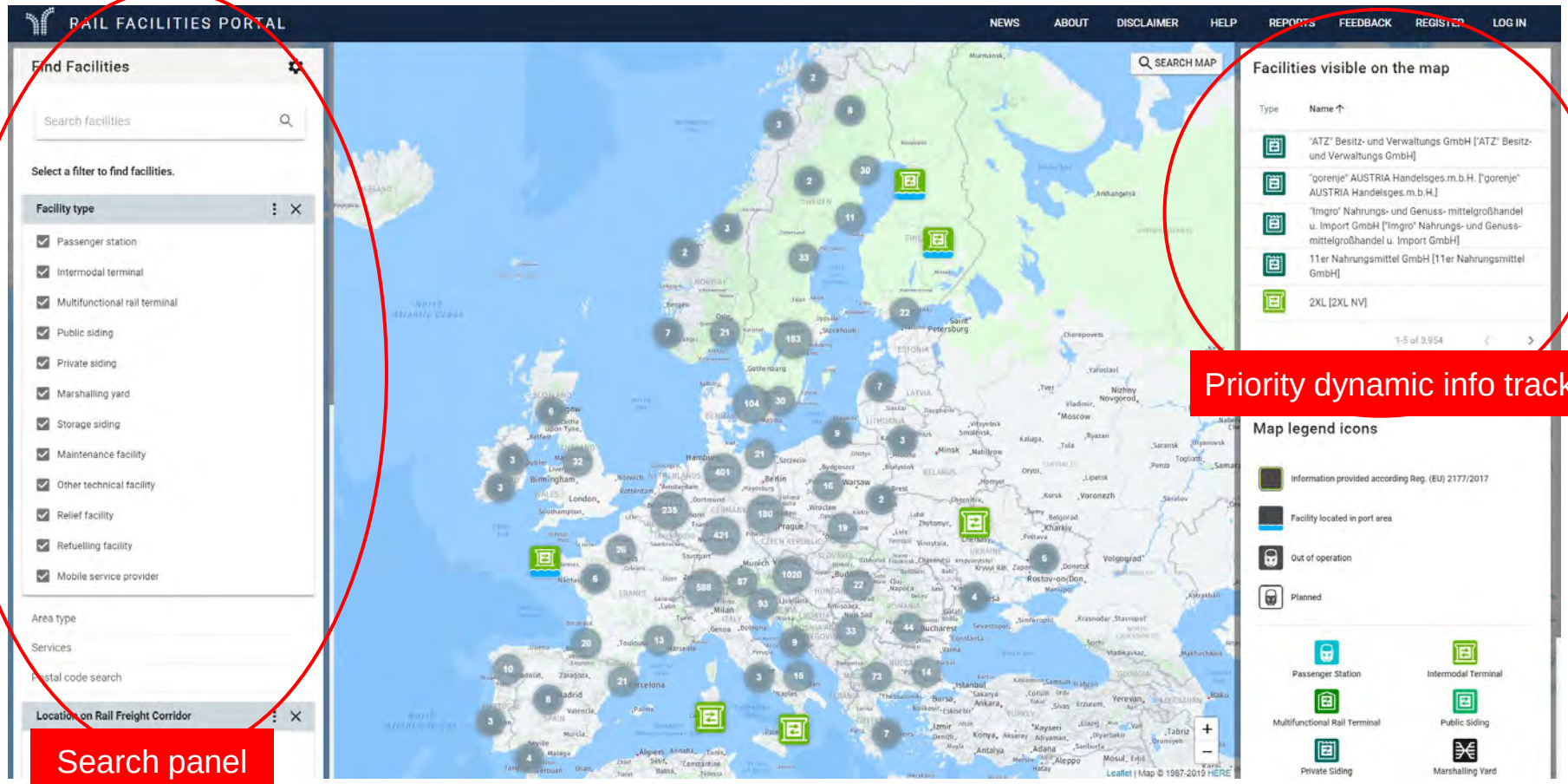
+ General Terms and Conditions (outside the information required by the Implementing Regulation)

## Dynamic messages

- Force Majeure (limitation to access)
- Planned maintenance (limitation to access)
- Capacity Availability (traffic-light indicator)
- New capacity and new service announcements (optional)
- Facility closure advertisement

# RAIL SERVICE FACILITIES PORTAL: HOME PAGE





- **Real-time information about trains, wagons, goods and loading units are a key success factor.** It was found that real-time information is
  - already available for trains
  - but legal and administrative barriers are sometimes hindering it
  - some freight forwarders use GPS-like systems for track/trace; it is expensive but provides a service which is otherwise not provided

- **Real-time information about trains should be accessible to all involved partners**. The following needs were detected:
  - information should be available to IMs/RUs/Terminals/Shippers/Forwarders/Wagon Keepers/Intermodal/Combined Transport Operators etc.
  - mileage information, based on the real train run, would be needed
  - link to wagons and/or loading units would be required
  - long-term aim shall be a better ETAs (estimated time of arrival)

Barriers to opening real-time information to all involved partners should be removed. In addition mileage information and a link to wagons and/or loading units will be developed.

## Objective

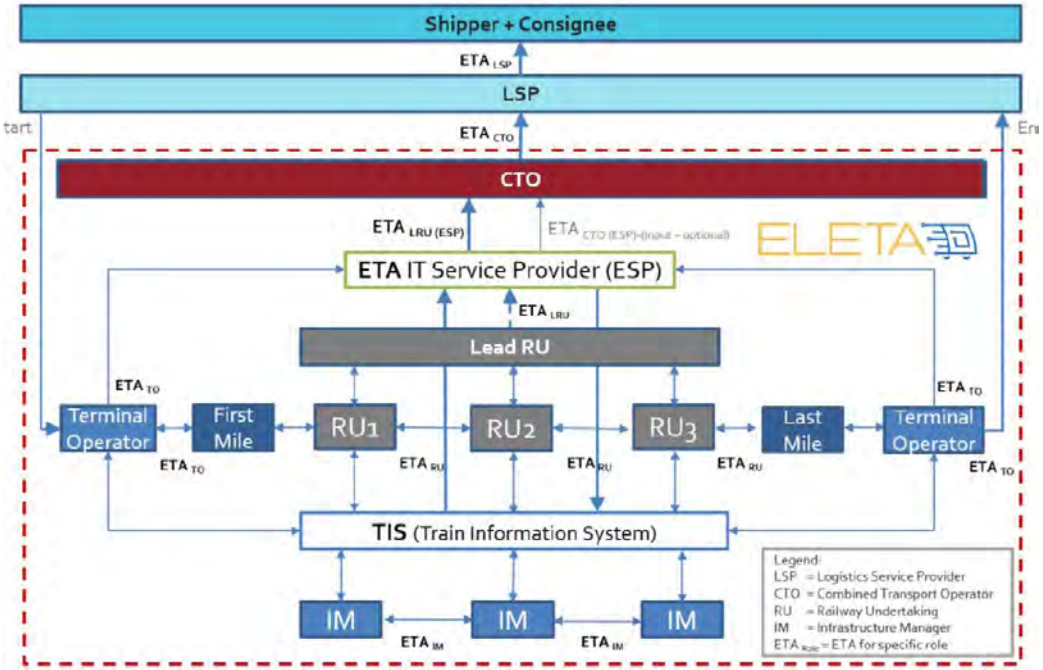
Enhanced ETA's for terminals, RU's and Intermodal Operators at hand-over points

## Approach

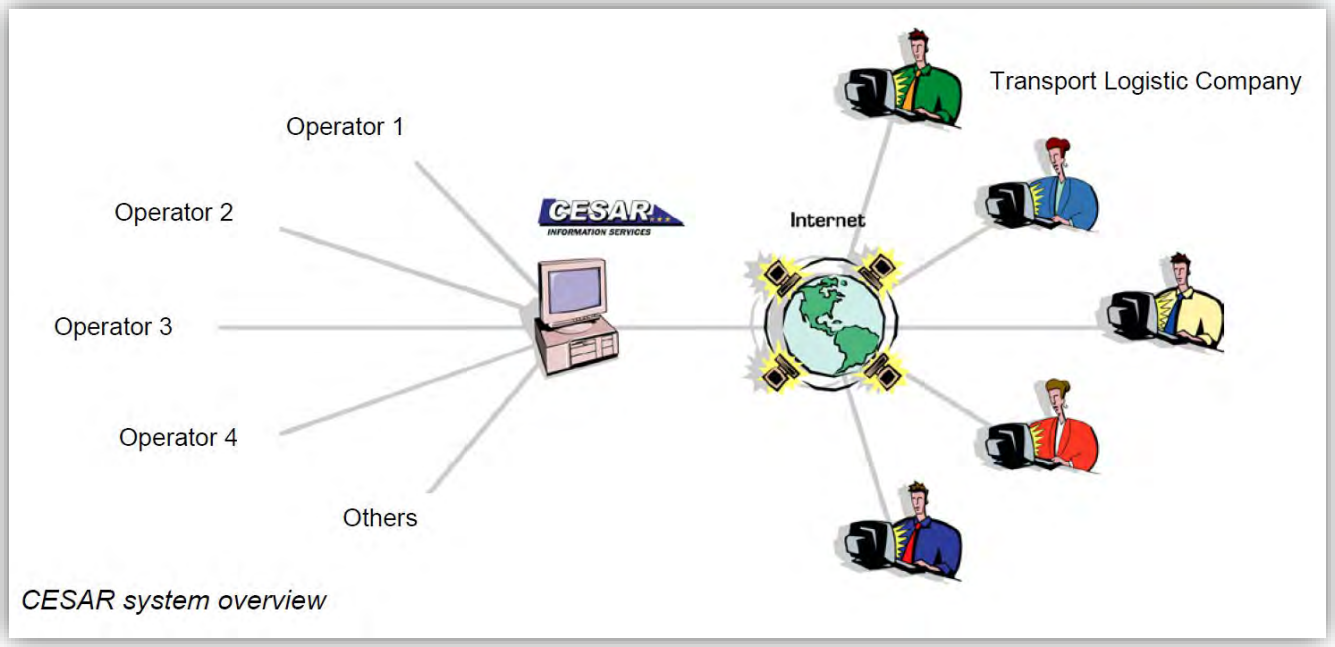
Intermodal operators in leading role; IM's, RU's and RNE/IM's actively involved in information and computation

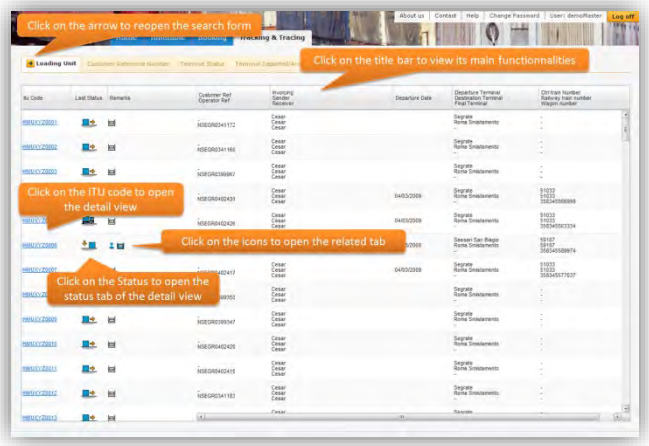
## Implementation

Selection of two service providers for smart ETA calculations (based on various data sources), one calculation methodology



# TRACKING & TRACING | CESAR APPLICATION (15-year digitalisation)



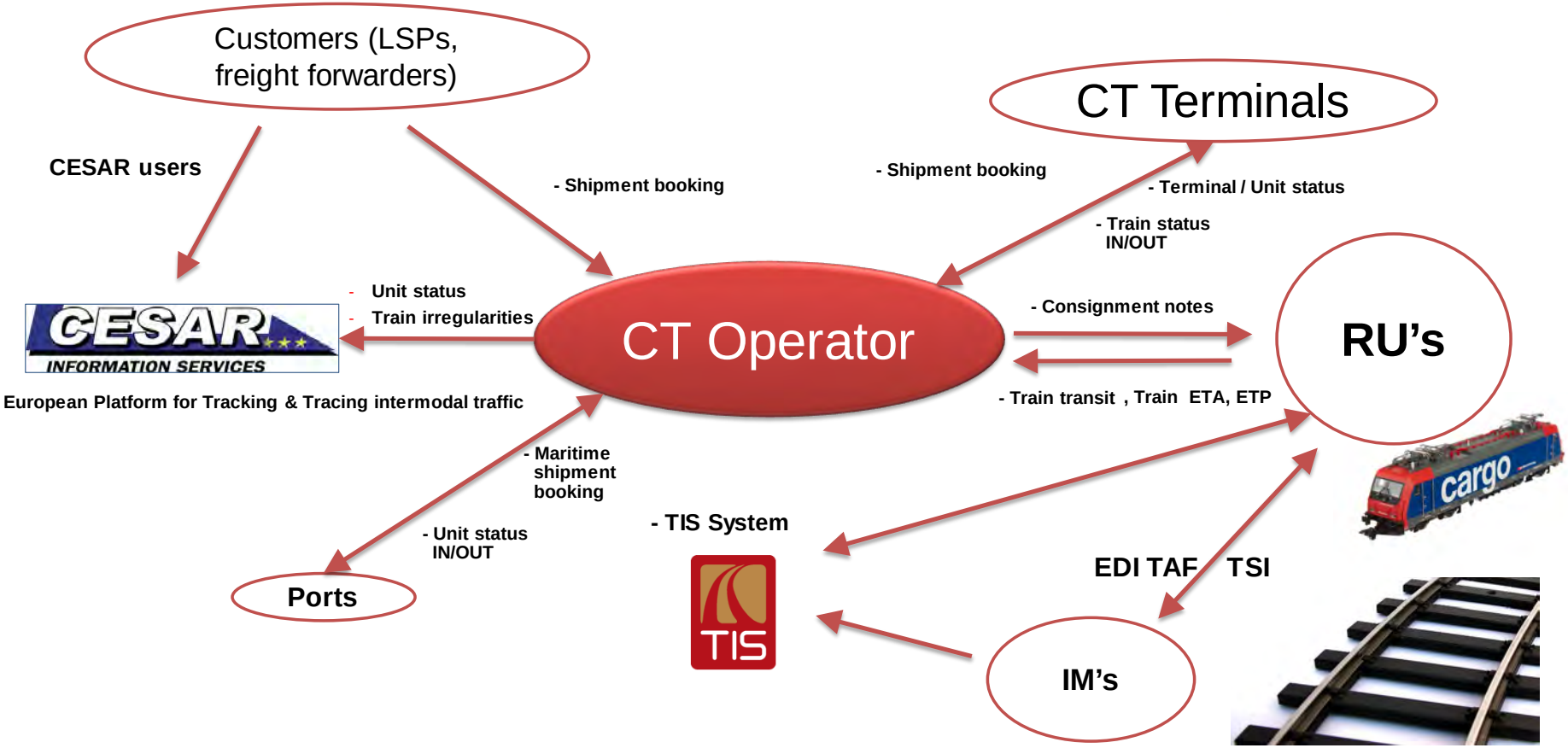

**Available status information:**

- booked
- delivered in departure terminal
- loaded on wagon
- departed from departure terminal
- foreseen arrival at destination terminal
- ready for pick-up in arrival terminal
- pick-up completed in arrival terminal
- arrived for gateway in intermediate terminal

**Need ETA information**

# STANDARD DATA EXCHANGE FORMAT IN CT | EDIGES FORMAT





# DIGITALISATION IN COMBINED TRANSPORT: CONCLUSIONS



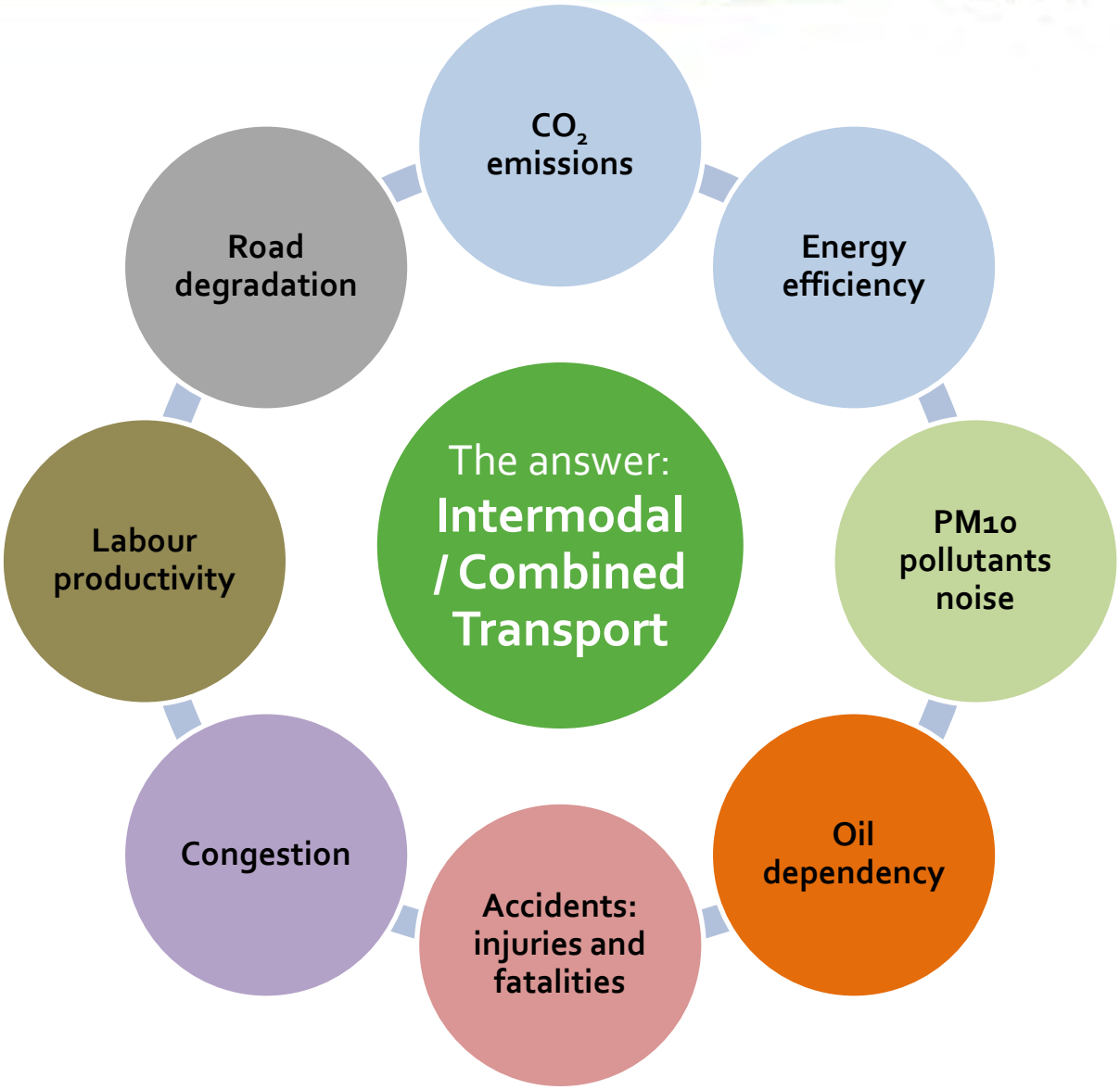
- Digitalisation means a **mental and cultural shift** ('out of the box' thinking)
- **Data democracy** (data sharing) – real-time data available for all involved freight players, free of charge and without restrictions/filtering
- Implementation of **interoperable systems and standards** to integrate all freight players in the logistics chain (e.g. EDIGES)
- Access to European-wide **reference files** (loading units, wagons, infrastructure data, location codes), e.g. ILU-Code, rail facilities portal
- Customer information: **focus on ETA (pick-up time)** and smooth B2B integration (e.g. ELETA project)

# CHALLENGES

# THE CHALLENGES OF LONGER DISTANCE FREIGHT TRANSPORT

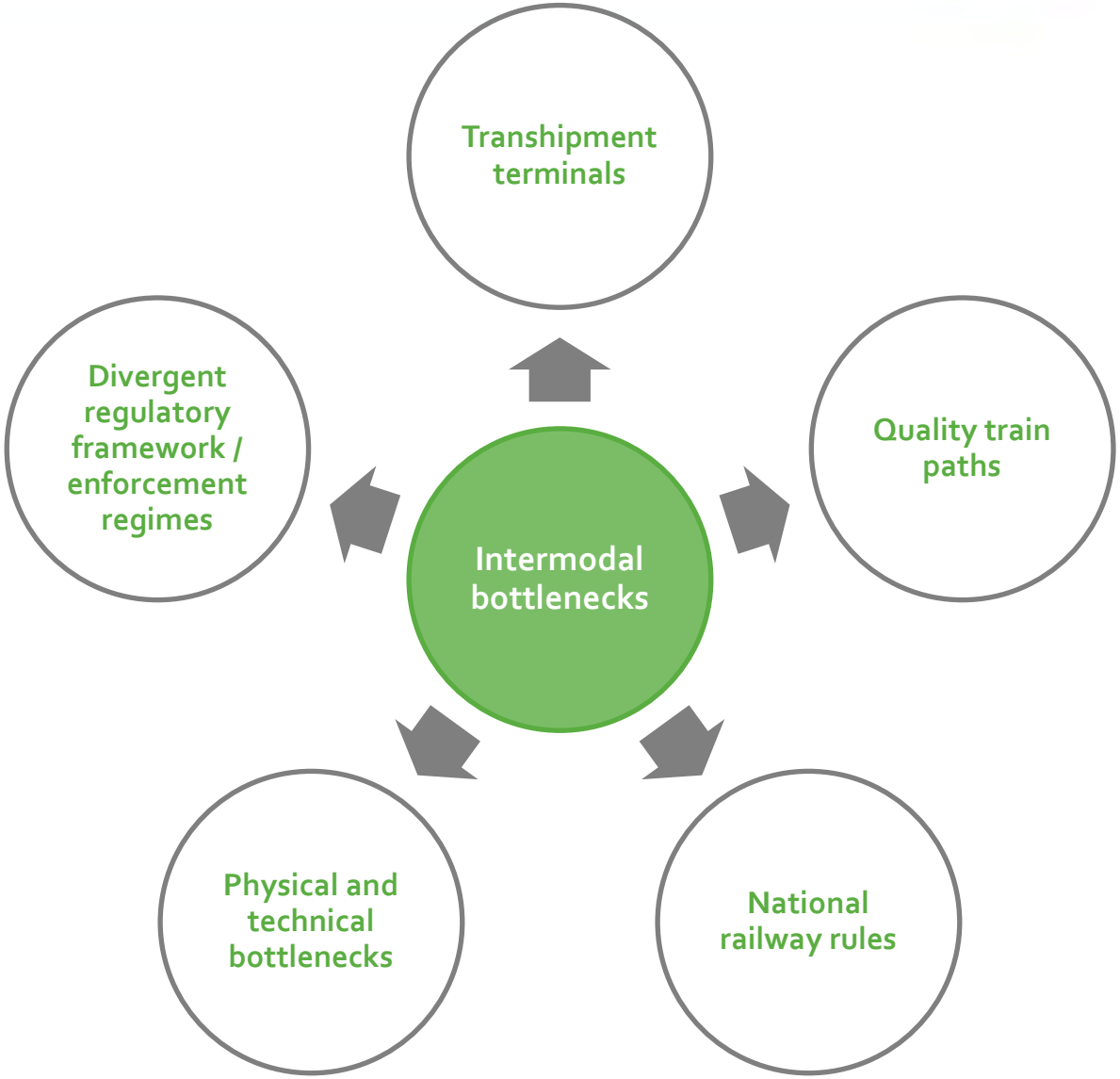


- **Climate**: CO2 and energy efficiency
- **Environment**: air and noise pollution, vibration
- **Public security**: oil dependency
- **Safety**: accident injuries/fatalities and material losses
- **The economy**: GDP loss due to congestion
- **Employment**: labour productivity
- **Infrastructure**: road degradation and spatial constraints



# RAILWAY BOTTLENECKS FROM AN INTERMODAL PERSPECTIVE



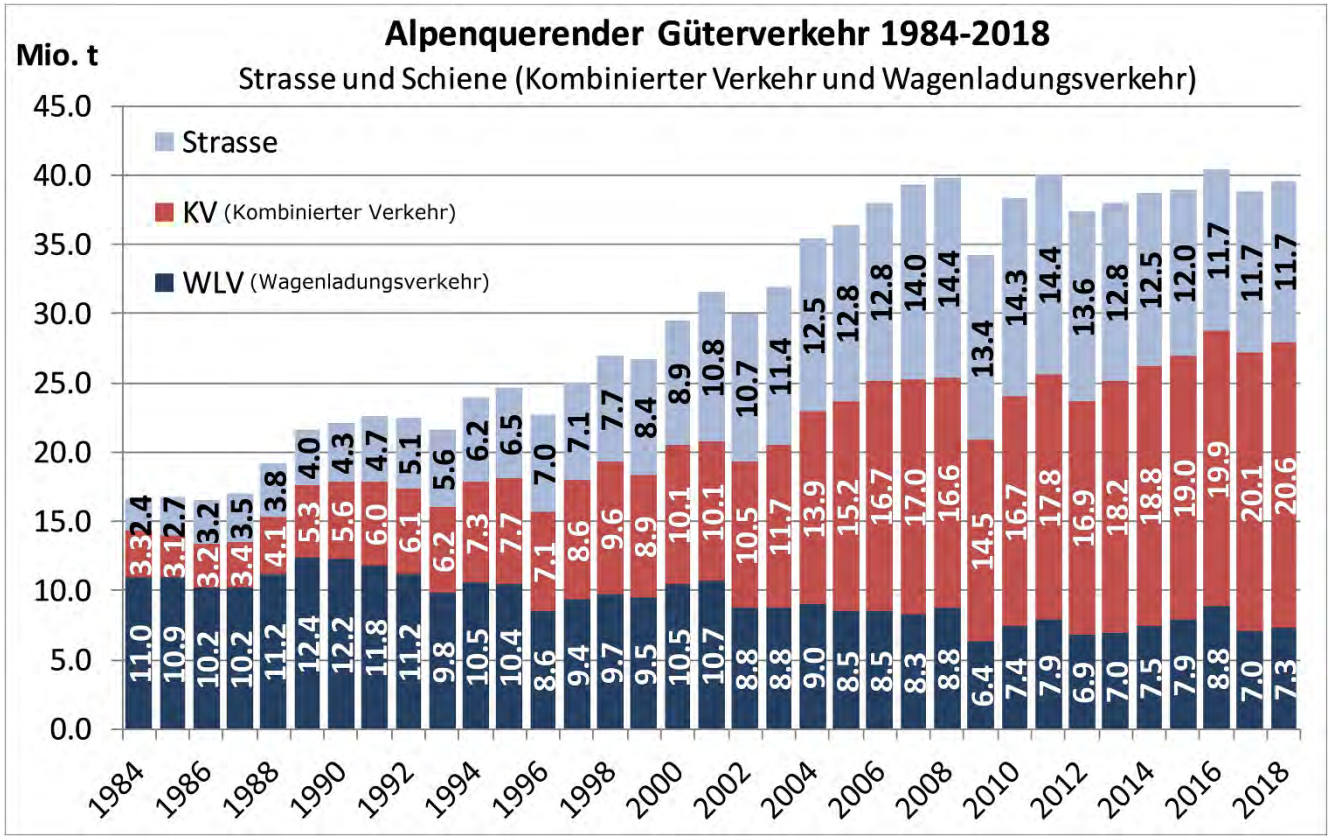


# INTERMODAL CAN DO THE JOB

## ...if and where the framework conditions are right

- ✓ Rail infrastructure is developed coherently with strategic goals
- ✓ Freight is recognised: train path capacity allocation and traffic rules
- ✓ Capacities are developed: lines and terminals (infrastructure)
- ✓ Intermodal rules are clearly defined and predictable compensation is offered

Transalpine traffic through Switzerland 1984 – 2018



# THANK YOU FOR YOUR ATTENTION

Ralf-Charley Schultze
rcschultze@uirr.com
+32 2 548 78 90