

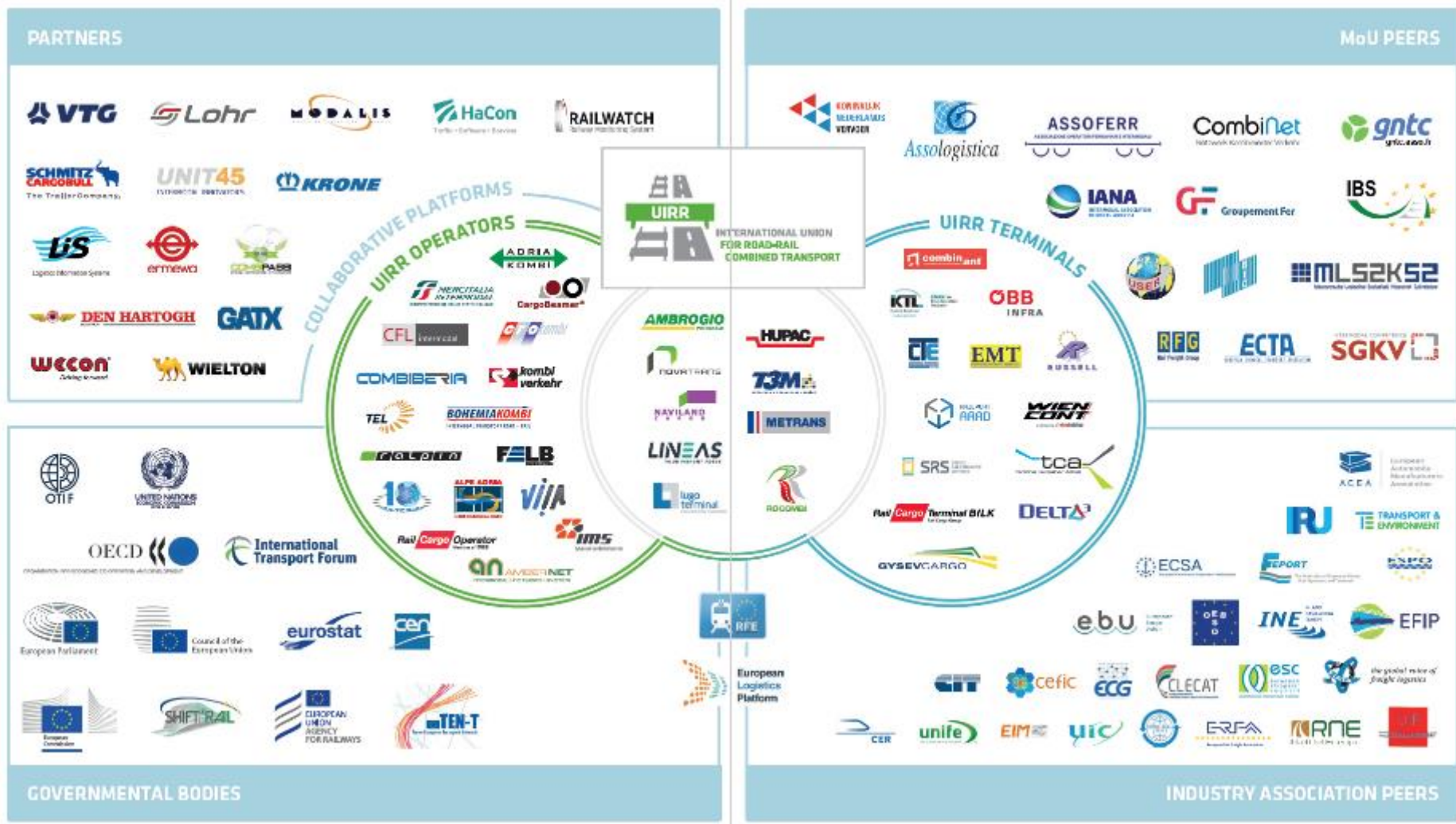
First European Mobility Workshop

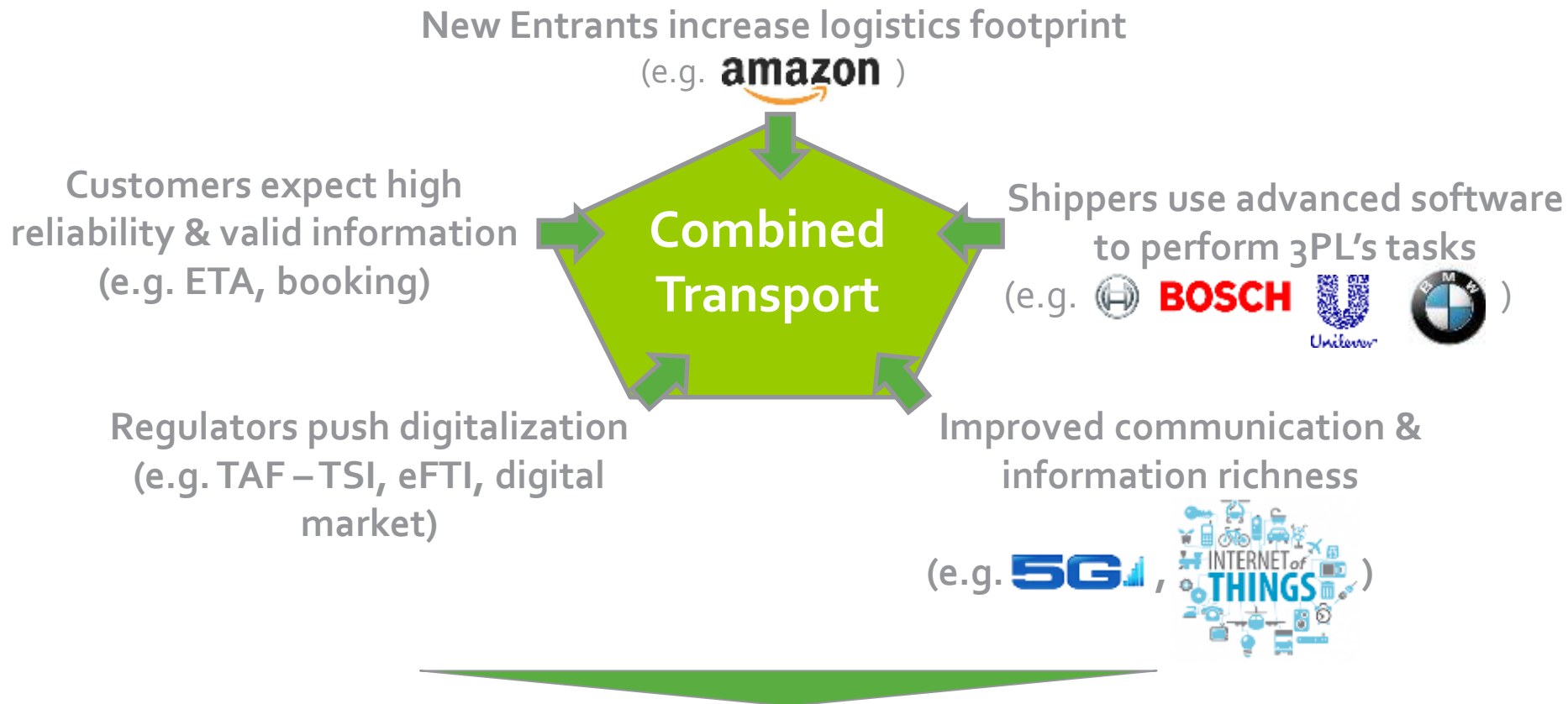
MORE EFFICIENCY THROUGH DIGITALISATION IN COMBINED TRANSPORT



UIRR: the industry association of intermodal transport

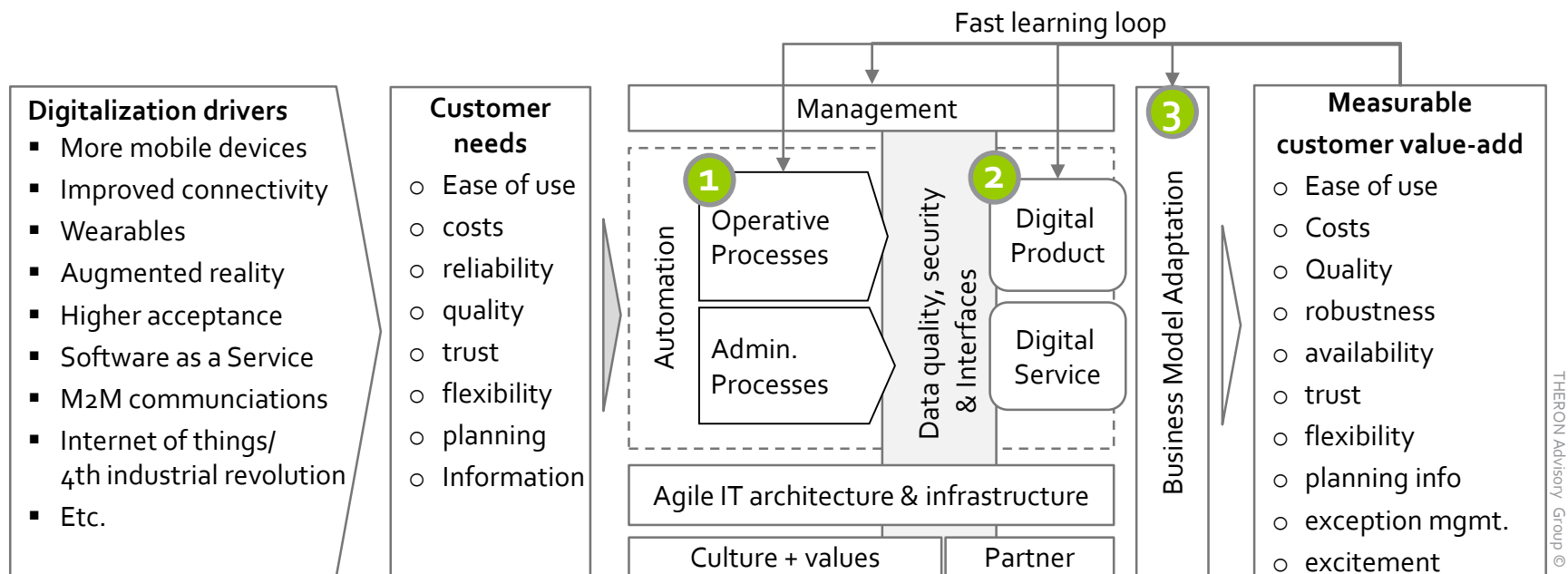
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*Role of Digitalization:
Pain or opportunity for combined transport?*

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.



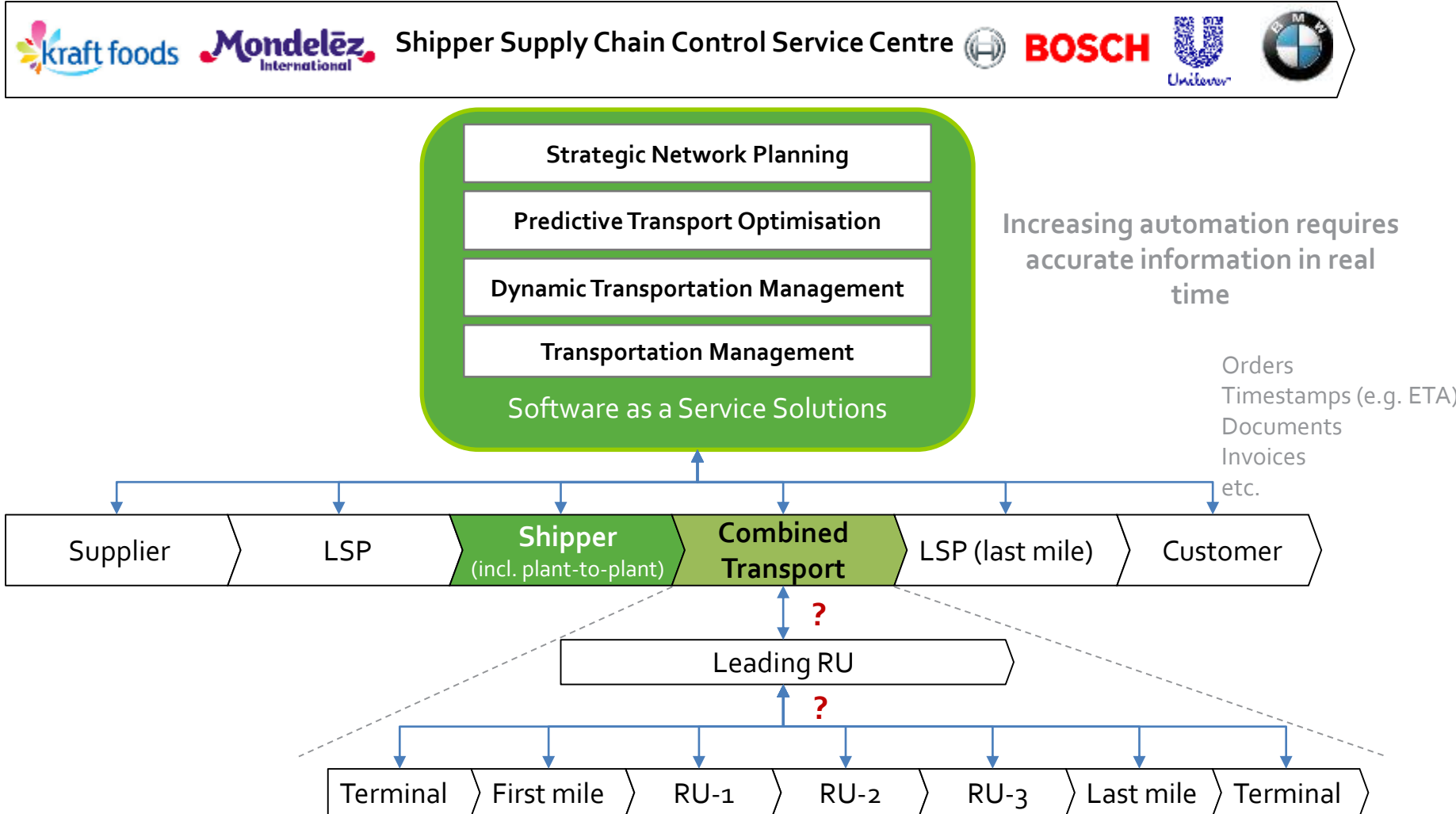
Digitalization can affect all parts of a company. Mostly automation of processes, digital output and business model innovation are in focus. A wider view encompasses the whole system of interdependencies (incl. mindset, culture, standards and partners).

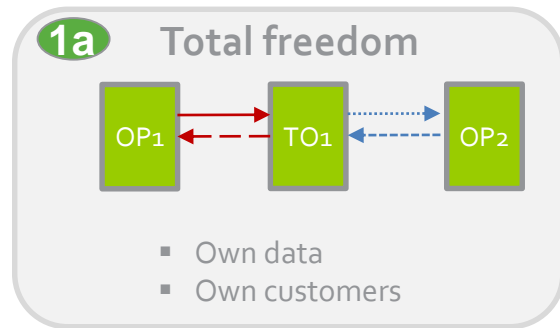
SHIPPER PERFORM LOGISTICS TASKS

5

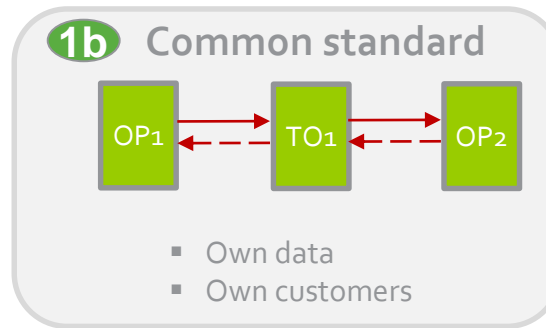


Shippers increasingly steer their logistics operations directly or via 4PLs to increase transparency, control and reduce costs and transit time.

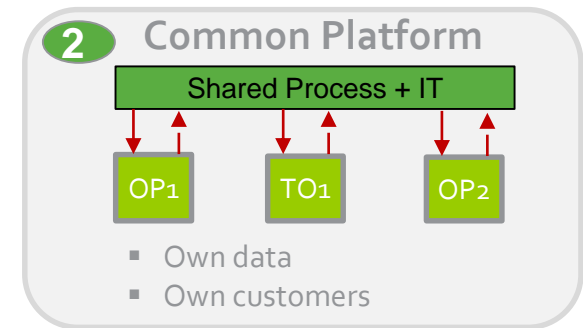




No concerted action with maximum freedom



Definition of standards and loose coupling for each actor



Platform approach for central tasks

Pros	<ul style="list-style-type: none"> ▪ No advanced alignment with other partners required ▪ Competition in all dimensions 	<ul style="list-style-type: none"> ▪ Lower costs (standardization of data) ▪ Common understanding ▪ Clarity of data for customers ▪ Regulatory support and funds accessible 	<ul style="list-style-type: none"> ▪ Lowest amount of interfaces (1:n) & costs ▪ Cost efficient standardized processes ▪ Common understanding (data + processes) ▪ Clarity of data and process for customers ▪ Regulatory support and funds accessible
Cons	<ul style="list-style-type: none"> ▪ No group scale effects and competitive advantage ▪ Maximum effort for individualized interfaces for each partner (n:m) ▪ Highest costs base per interface 	<ul style="list-style-type: none"> ▪ Maximum standard interfaces for each partner (n:m) 	<ul style="list-style-type: none"> ▪ Governance and ownership controlled ▪ Initial coordination required
Examples	<ul style="list-style-type: none"> ▪ Tracking information exchange w/o standardization (status/interfaces) ▪ Individualized booking processes 	<ul style="list-style-type: none"> ▪ Harmonized ILU code, EDIGES ▪ ETA initiative ▪ IATA (e-AWB), IRU (e-CMR) ▪ Standard of registers (e.g. terminal and unit master data) 	<ul style="list-style-type: none"> ▪ Cesar (only partially open & only terminal-to-terminal not door-to-door logistics) ▪ Hacon LEIDIS (Germany) ▪ RNE TIS

Legend: TO = Terminal Operator; OP = CT Operator



■ Mandate

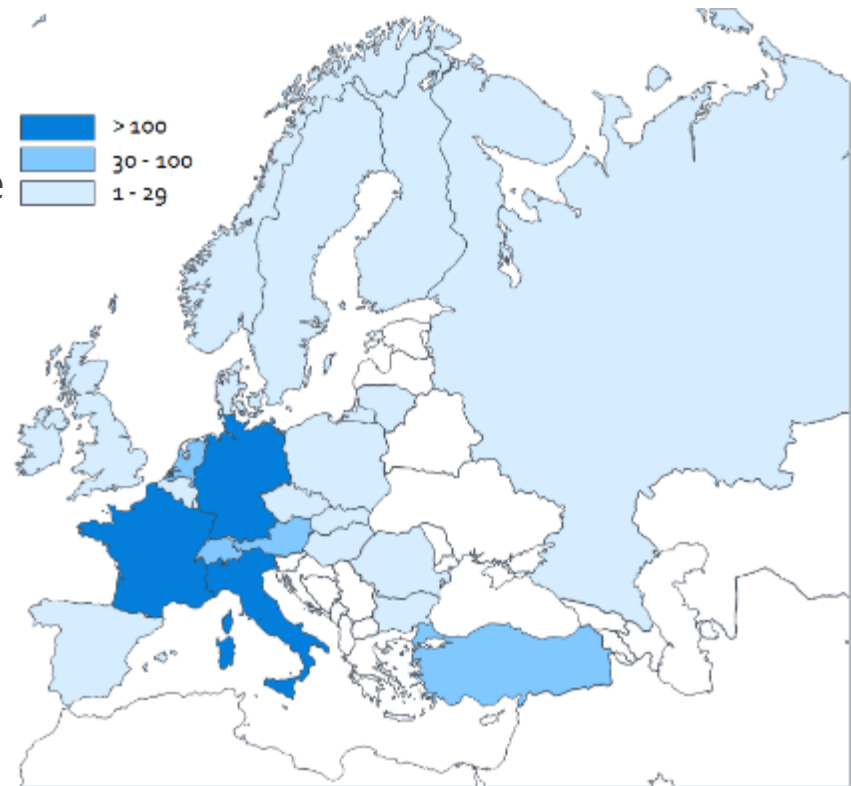
- EN13044 appointed UIRR to be the Administrator

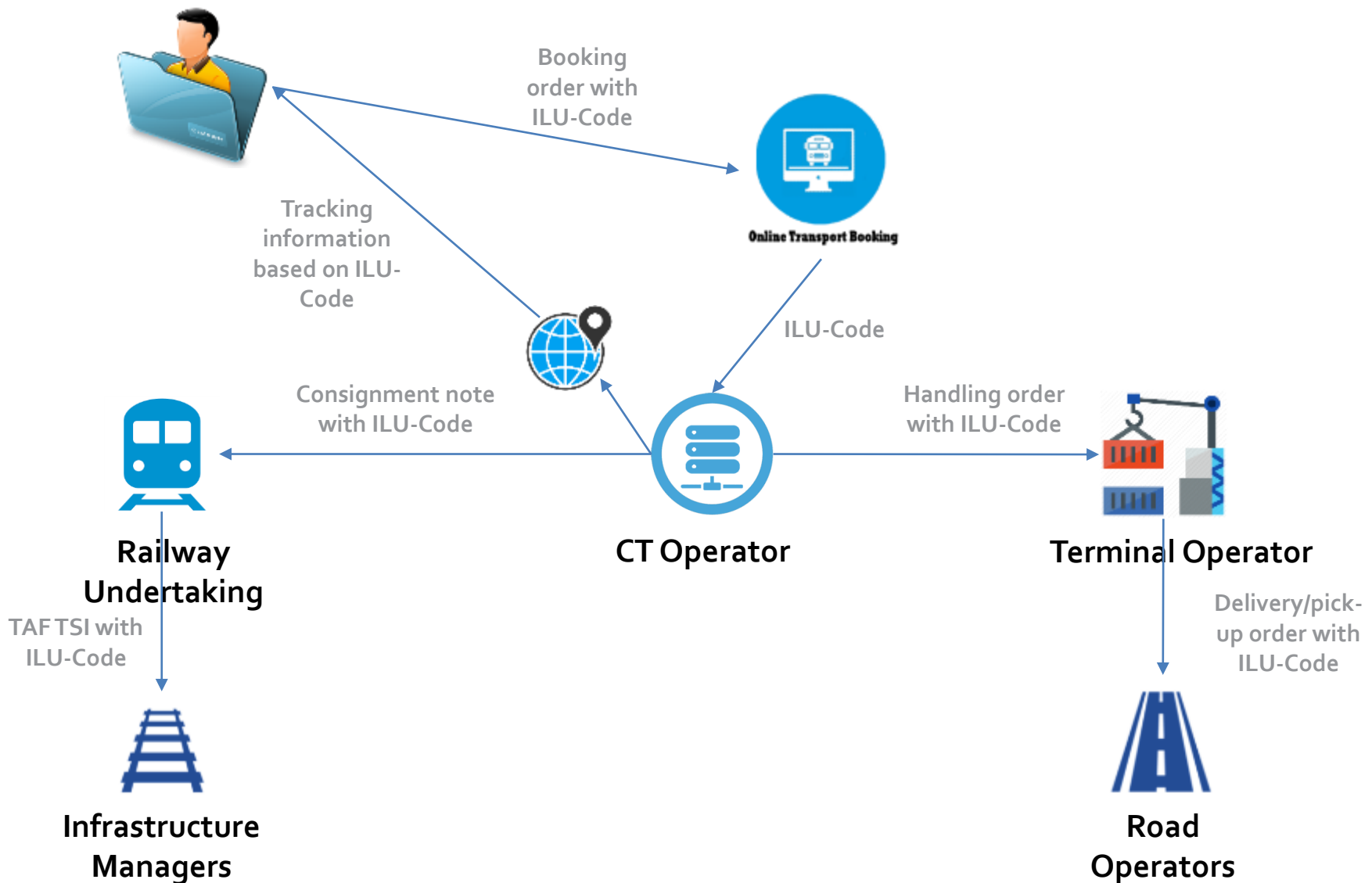
■ Marking

- 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







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)



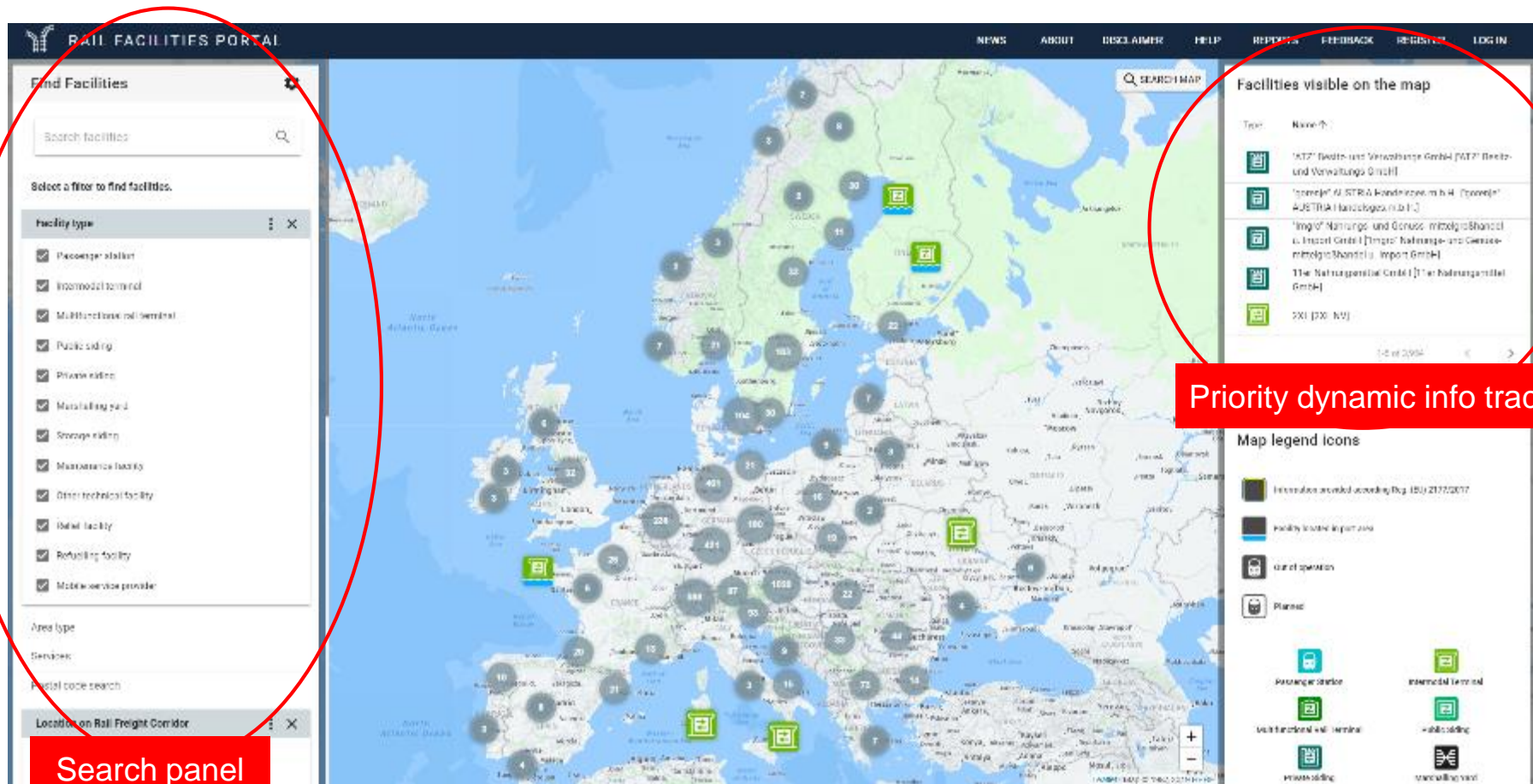
Static messages

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




The screenshot displays the Rail Service Facilities Portal home page. The interface includes a central map of Europe with numerous facility markers. On the left, a sidebar contains a search panel and filter options. On the right, a panel lists facilities visible on the map. A red circle highlights the search and filter sidebar, and another red circle highlights the facilities list and map legend. A red banner at the bottom of the facilities list reads "Priority dynamic info tracker".

Search panel

Facilities visible on the map

Map legend icons

- Information recorded according Reg. (EU) 2177/2007
- Facility located in port area
- Out of operation
- Planned
- Passenger station
- Intermodal terminal
- Multifunctional rail terminal
- Waste siding
- Private siding
- Marshalling yard






RAIL FACILITIES PORTAL













Find Facilities

Select a filter to find facilities.

Facility type
Area type
Services
Postal code search
Location on Rail Freight Corridor
Facility operation status
Facility opening days
Equipment
Public accessibility
Infrastructure access
Loading unit acceptance
Cargo type
Available capacity
☒ Show advanced filters

Map legend icons

 Information provided according Reg. (EU) 2177/2017
 Facility located in port area
 Out of operation
 Planned

 Passenger Station
 Multifunctional Rail Terminal
 Private Siding
 Storage siding
 Other Technical Facility
 Refuelling Facility
 Intermodal Terminal
 Public Siding
 Marshalling Yard
 Maintenance facility
 Relief Facility
 Mobile Service

Location on Rail Freight Corridor

☐ Not located on RFCs
☐ Located on RFC 1
☐ Located on RFC 2
☐ Located on RFC 3
☐ Located on RFC 4
☐ Located on RFC 5
☒ Located on RFC 6
☐ Located on RFC 7
☐ Located on RFC 8
☐ Located on RFC 9
☐ Located on RFC 10
☐ Located on RFC 11

Facility operation status
Facility opening days
Equipment

Public accessibility

☐ Open for all market bodies
☐ Public access with conditions
☐ Access limited to owner/operator



- **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

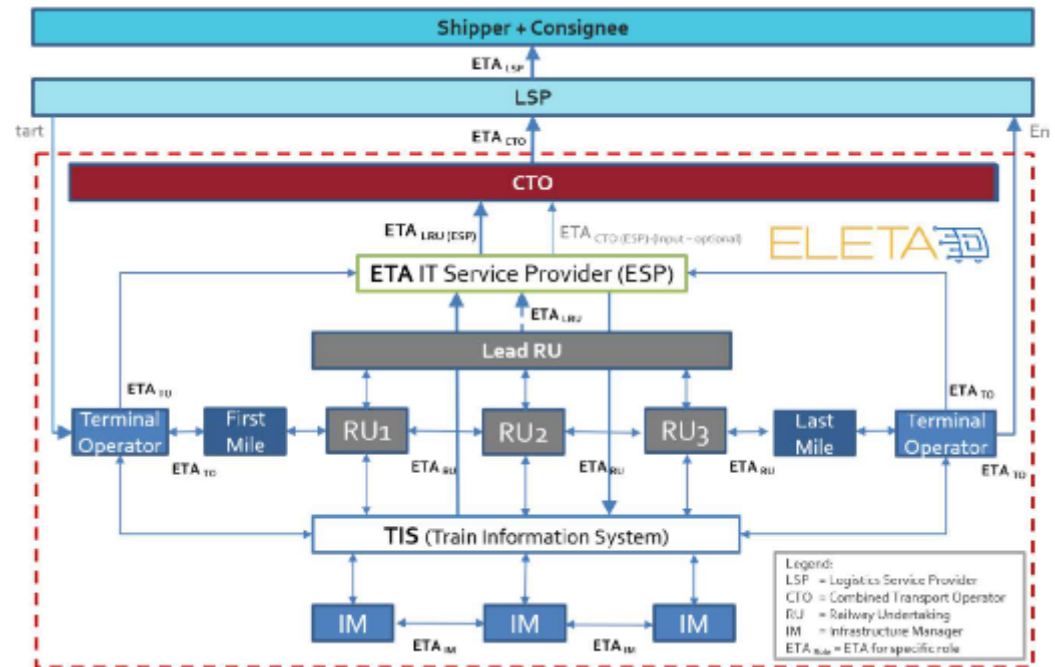
(Enhanced) ETA's for terminals and for RU's at hand-over points

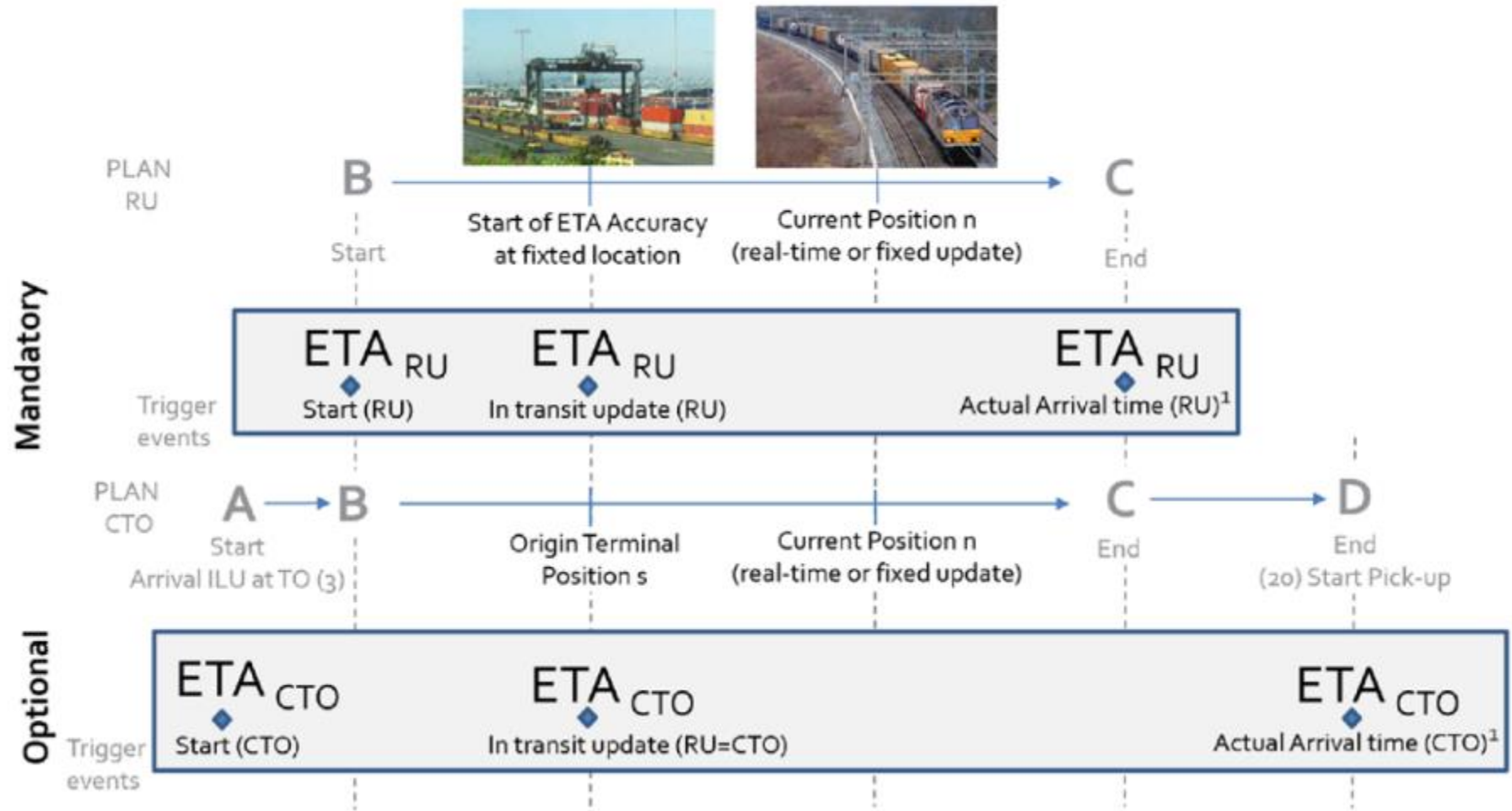
Approach

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

Implementation

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





Possible ETA calculation methodologies



1) **Real-time predictive:** based on real-time data updates

$$\text{ETA}_1 = \text{position}_n + t_{n \text{ to } B}$$

2) **History-based stochastic predictions**

$$\text{ETA}_2 = \text{position}_s t_{\text{actual}} + t_{s \text{ to } B} + \Delta t_{\text{historic}}$$

3) **Machine Learning based prediction:** Supervised learning algorithm integrating multiple sources, e.g.

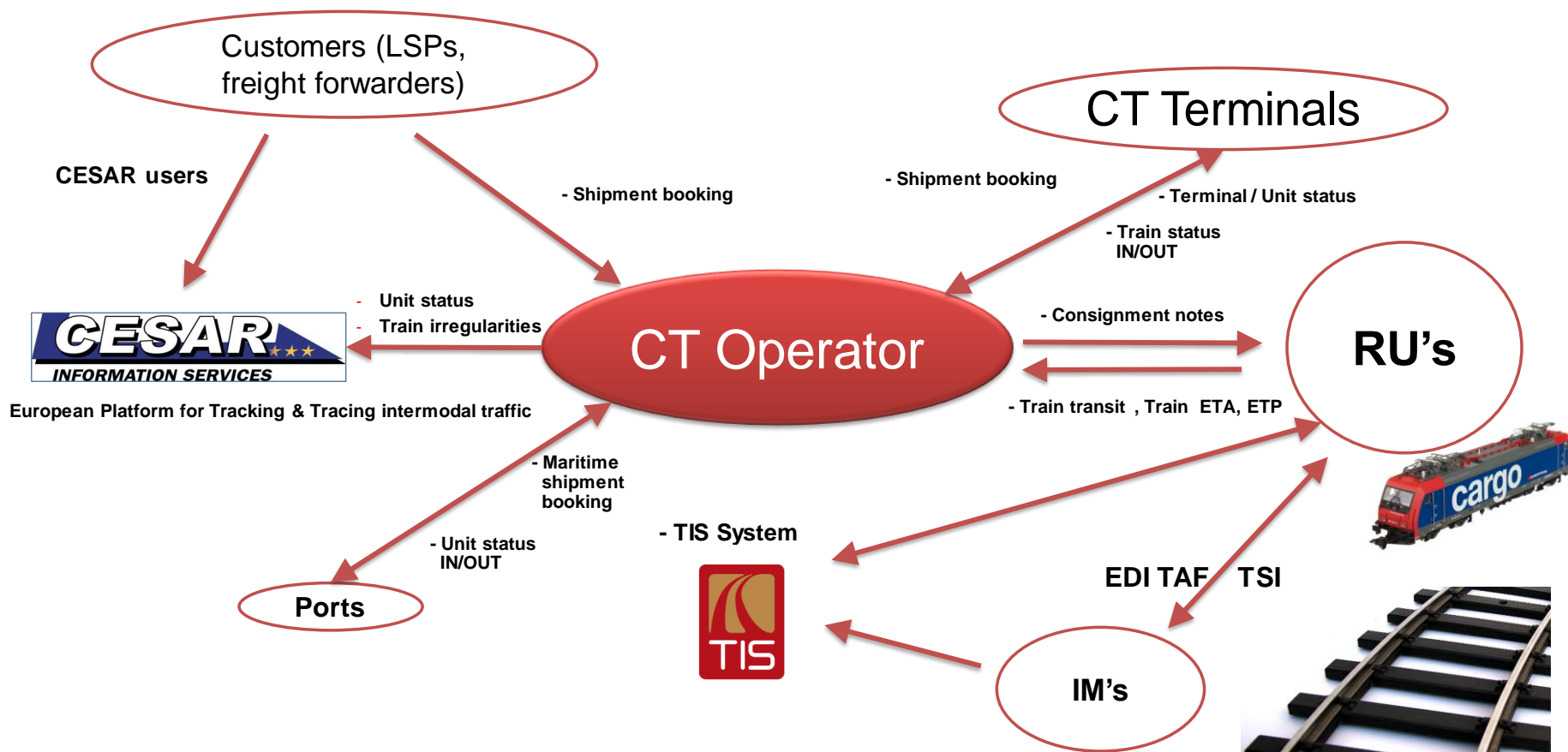
- 1) Based on past data
- 2) Based on timetables
- 3) Based on real-time updates
- 4) Based on current influencing factors from external sources (congestion, weather, terminal waiting time, etc.)

$$\text{ETA}_3 = \text{position}_n + \text{multiple-source } t_{n \text{ to } B}$$



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





- 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)



INTERNATIONAL UNION
FOR ROAD-RAIL
COMBINED TRANSPORT



THANK YOU FOR YOUR ATTENTION

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