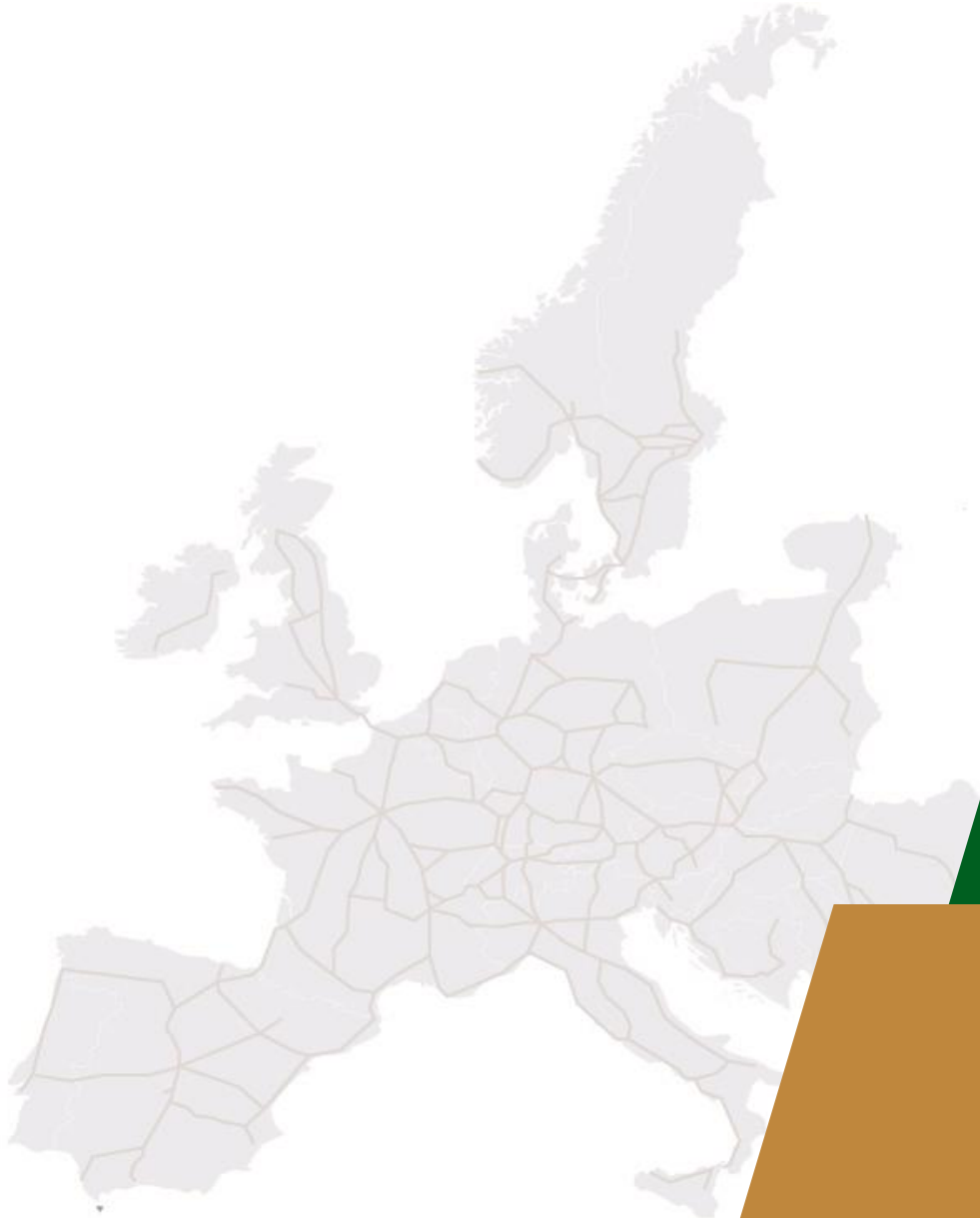
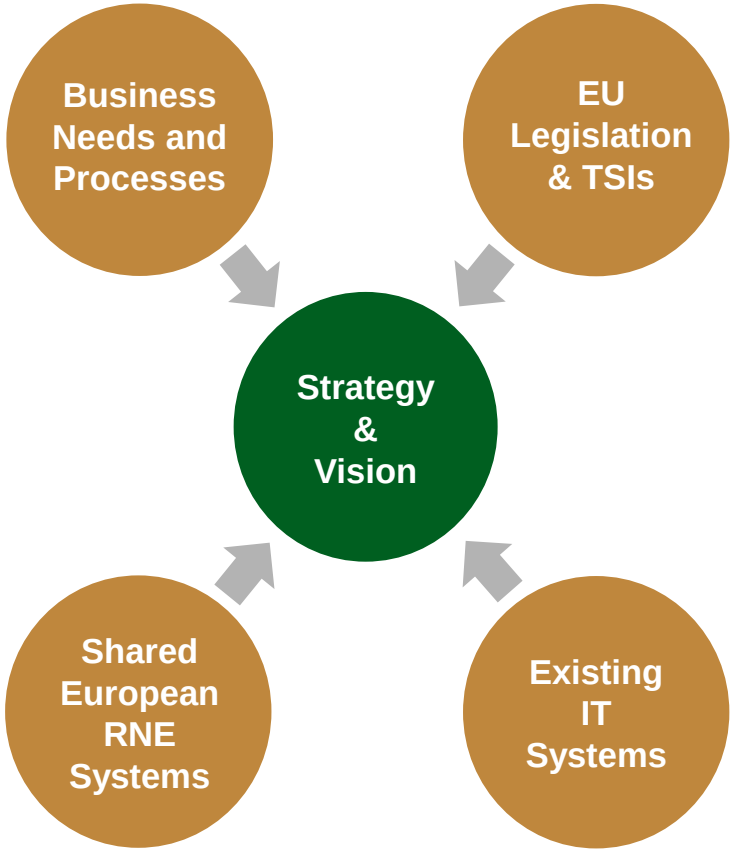


6th TEG Plenary

Facilitating traffic on European rail

Harald Reisinger RNE

Strategy and Vision for RNE IT – High Level



Supporting Business Needs and Processes

The business defines the requirements.

IT solutions are an enabler to support business needs

Compliant with EU Legislation & TSIs (TAF&TAP)

Shared and national systems have to be in line with EU legislations

Shared and national systems are enablers to fulfil EU legislations

Based upon Shared European RNE Systems (Services for Sector)

Shared RNE Systems use data provided by IMs whenever possible

Shared Systems must be connected to legacy systems via standardised interfaces

Common Systems shall be able to act as data exchange platform

Based upon the Existing IT Systems landscape

Based on the IMs as well as the shared IM/RNE legacy systems.

Taking into account other shared systems (RINF, …).

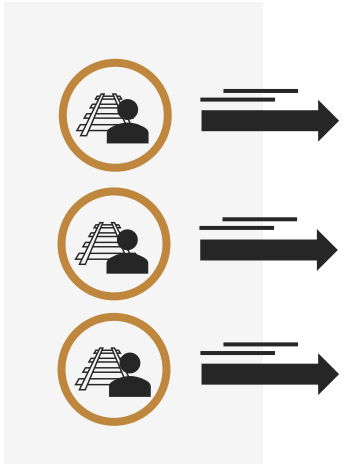
IT Systems shall use the same reference files (locations, segments)

RNE RailNetEurope

IM Data provision via RNE

1

RNE **Infrastructure Managers** provide data from their systems to RNE (*)



TAF/TAP TSI compliant

2

Data is collected, **combined** and processed (*) via RNE systems

RNE RailNetEurope

TIS PCS TCR CIP CCS RIS

TAF/TAP TSI compliant

3

European rail data is made available for the benefit of the rail business in an non-discriminatory way

(*) **The data quality remains the responsability of the IM**

(*) **Collected data via the IMs is never adapted, and RNE processed data is under the responsability of RNE**

RNE RailNetEurope

The current RNE Systems Overview

TIS

Digital Train 2.0

Train Performance Management

PCS

PCS Mandatory Interface

Capacity Broker (Ad-Hoc Request)

TCR

European Capacity Managing Tool

Capacity Supply

CIP CCS RIS

RINF

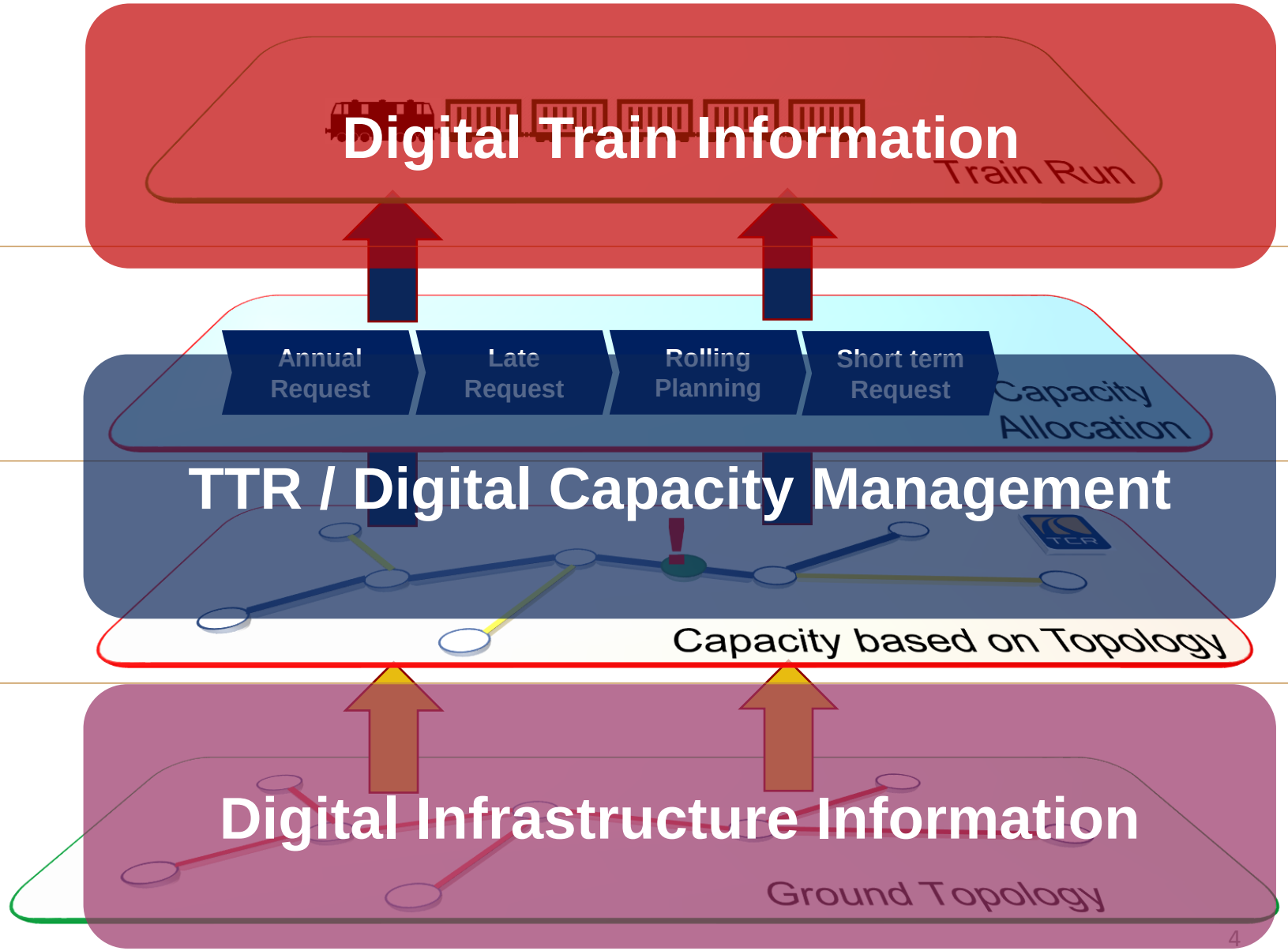
Corridor Informations

Rail Facilities Portal

TAF & TAP Locations PLCs (SLC)

EUROPEAN UNION AGENCY FOR RAILWAYS

RNE RailNetEurope



TAF/TAP TSI function

TAF/TAP TSI functions for RU/IM communication to be implemented/reported per type of company		Type of company				
		IM	RU-F	RU-P	WK	AB
TAF/TAP TSI function	Primary Location Codes (PLC)	X				
	Company Code (CC)	X	X	X	X	X
	Common Interface (CI)	X	X	X	X	X
	New Identifiers (NI)	X	X	X	X	X
	Path Request (PR)	X	X	X		X
	Path Details (PD)	X	X	X		X
	Train Ready (TR)	X	X	X		
	Train Running Information (TRI)	X	X	X		
	Train Running Interrupted Message (TRIM)	X	X	X		
	Train Running Forecast (TRF)	X				
	Train Composition Message (TCM)	X	X			
	Consignment Note Data (CND)		X			
	Wagon Movement (WM)		X			
	Shipment ETA (ETA)		X			
	Rolling Stock Reference Database (RSRD)				X	

Digital Infrastructure Information

TTR / Digital Capacity Management

Digital Train Information

Digital Infrastructure Information

1. IMs/RNE have agreed to use the TAF TSI PLC for the coding of locations
2. IMs/RNE have agreed to use the CI for all kinds of data exchange included in TAF/TAP TSI

→ RNE systems were migrated to use PLC as coding of locations

→ Locations were, step by step, also harmonised on IM level

→ Same location coding is used from planning to operation

CRD USAGE

At least 1 large IM published

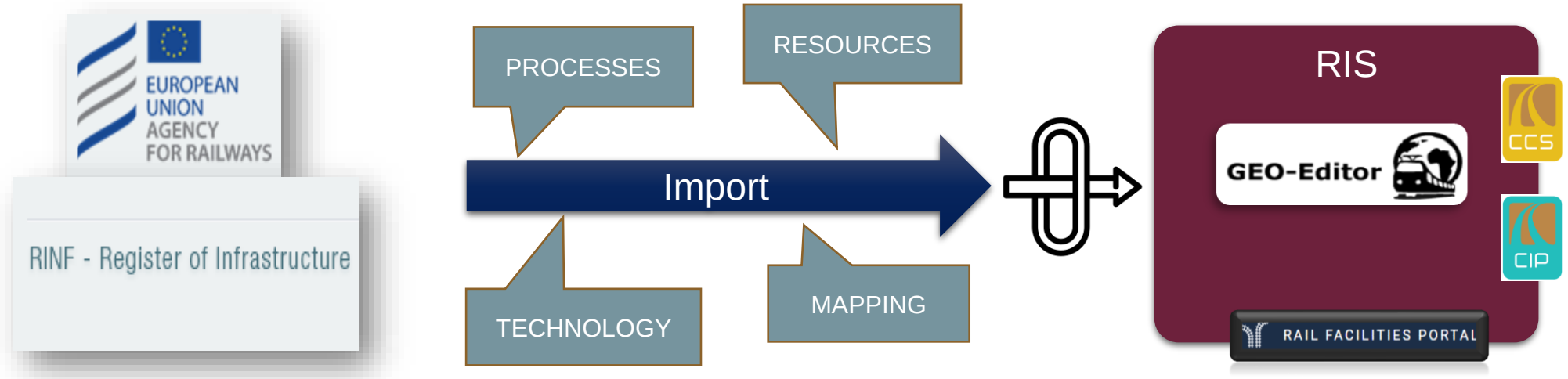
Not published

- **60256** Primary Locations for **48** IMs
- **46,644** Subsidiary Locations
  - Published by **22** companies
  - **21** subsidiary location types

Funded by
the European Union

RNE RailNetEurope

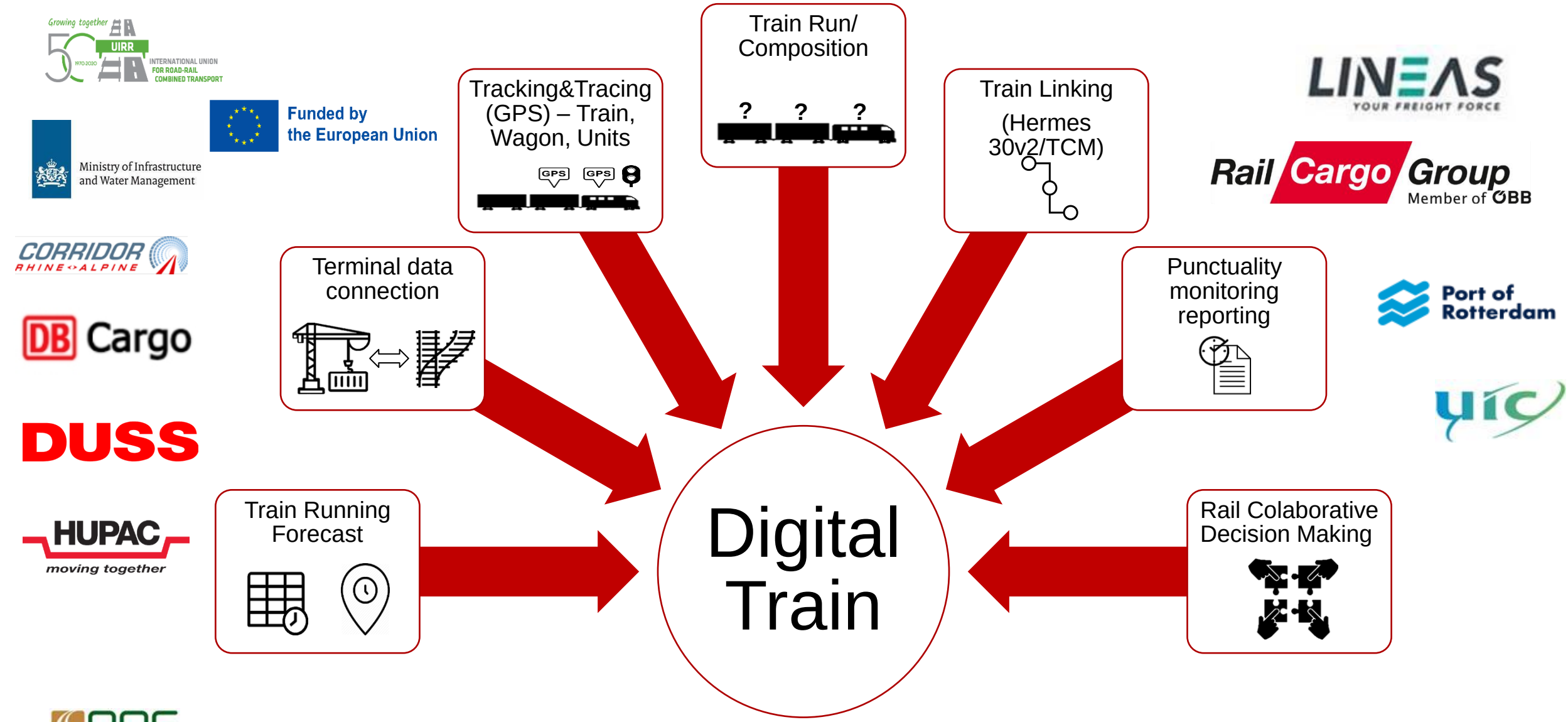
RINF connection



- **ERA Task Force on Data Quality was set up in June 2022 to address data quality issues in ERA Registers**

- **IMs/RNE have set upped a INFRA Data Quality WG:**
  - Support relevant representative bodies in preparation for the ERA Task Force on Data Quality.
  - Identify those IMs where mayor differences in the corresponding network representation of both RINF and CRD.
  - Coordinate a survey with participating IMs concerning existing data models of the respective IMs mapping them with RINF and further supporting automated upload of data by IMs to RINF.

What is Digital Train Information



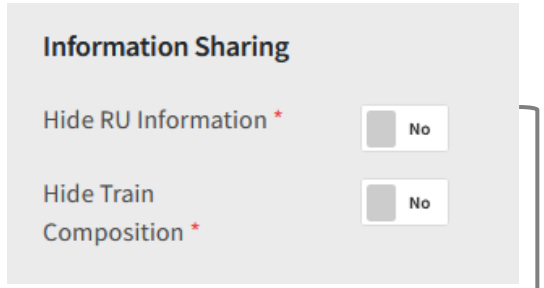
Funded by the European Union

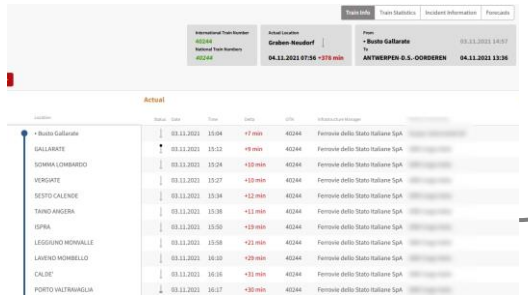
TIS – General Overview

- International freight, passenger and national freight trains can be followed in **T**rain **I**nformation **S**ystem
- Nearly 30.000 trains can be identified daily in the **T**rain **I**nformation **S**ystem
- Around 4.000 users from 350 companies connect every month with **T**rain **I**nformation **S**ystem
- Approximately 5 million TAF/TAP TSI messages exchanged daily in **T**rain **I**nformation **S**ystem

RNE
RailNetEurope

TAF/TAP TSI – Data Sharing new Approach





Datasharing new approach:

- …. Information can be exchange with all stakeholders involved in the train run as long they can be identified …..

Rail companies shall have access to the data relating to its own trains and to the trains of other applicants if they cooperate in the same train run (data sharing by default).

The Data shared by default includes the following data/messages:

- TrainRunningMessage (real time info)
- PathDetails used in operation
- TrainDealyReasons
- TrainRunningForecast
- …

The data sharing of other date/messages can be managed by the TIS User via the dashboard of TIS.

TIS Services

TIS Web

Real time train monitoring

Timetables, train delays, path cancelations

Free of charge access to all stakeholders

User management

Train view based on TAF/TAP TSI principles

Incident Management

TIS Mobile

Optimized version of TIS Web for mobile devices

Train Driver App for GPS data

One final product for the TIS user community

Data Exchange

Data exchange based on the TAF/TAP TSI framework

Secure data exchange through the Common Interface

Various charging schemas based on the volume of the trains

Reporting

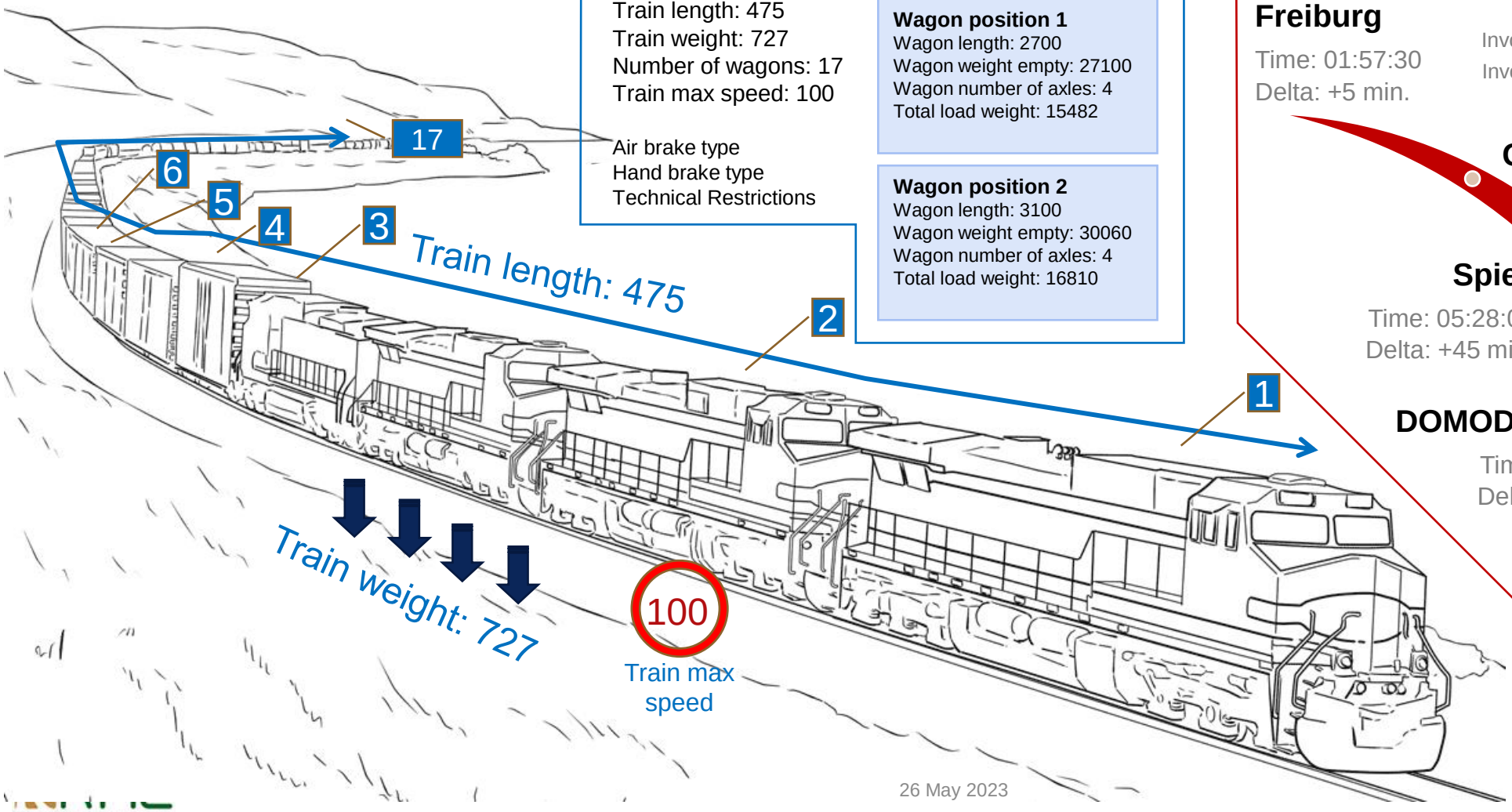
Scheduled train performance reports

Tailormade to match the business needs

Possibility for reports per case (ad hoc)

RNE RailNetEurope

Train Run / Composition



Train composition data

Train length: 475
Train weight: 727
Number of wagons: 17
Train max speed: 100

Air brake type
Hand brake type
Technical Restrictions

Wagon position 1
Wagon length: 2700
Wagon weight empty: 27100
Wagon number of axles: 4
Total load weight: 15482

Wagon position 2
Wagon length: 3100
Wagon weight empty: 30060
Wagon number of axles: 4
Total load weight: 16810

Train running data

Freiburg
Time: 01:57:30
Delta: +5 min.

Involved IMs: DBNetz, SBB INFRA, BLS, RFI
Involved RUs: SBB Cargo, BLS Cargo

Gellert
Time: 03:34:44
Delta: +40 min.

Spiez
Time: 05:28:04
Delta: +45 min.

Brig
Time: 06:18:47
Delta: +26 min.

DOMODOSSOLA
Time: 07:16:30
Delta: +28 min.

NOVARA
Time: 11:48:30
Delta: +132

TAF/TAP TSI function

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	Train Ready (TR)	X	X	X		
	Train Running Information (TRI)	X	X	X		
	Train Running Interrupted Message (TRIM)	X	X	X		
	Train Running Forecast (TRF)	X				
	Train Composition Message (TCM)	X	X			
	Consignment Note Data (CND)		X			
	Wagon Movement (WM)		X			
	Shipment ETA (ETA)		X			
	Rolling Stock Reference Database (RSRD)				X	

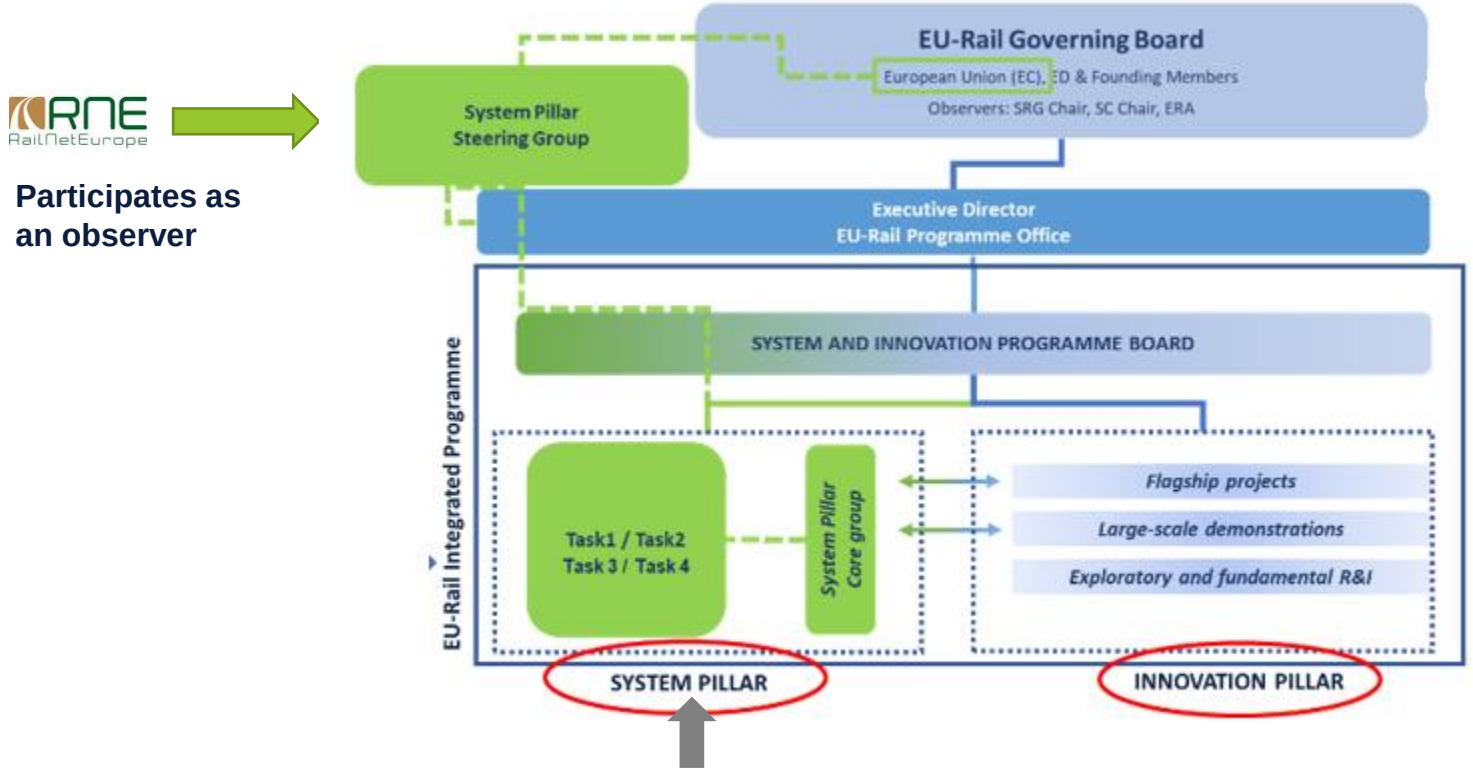
Digital Infrastructure Information

TTR / Digital Capacity Management

Digital Train Information

The System pillar and Innovation Pillar

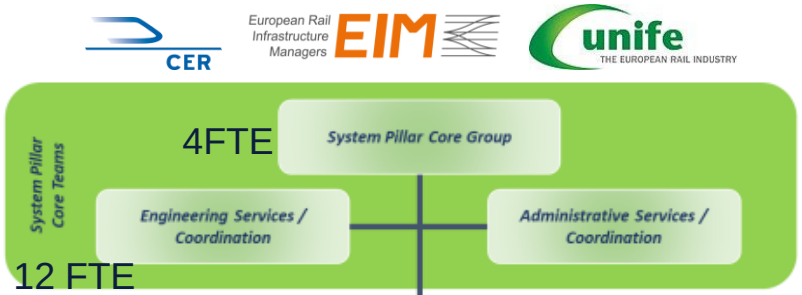
- The System Pillar is responsible for delivering the common Railway “System View”
- The input for this “System View” is given by the sector via the “System Pillar Consortium”
- Four domains (tasks): Control & Command systems, Digital Automated Coupling, Capacity/Traffic management,



The lot's and tasks of the System Pillar

The work of the "System Pillar" (8Mio €) is divided in 4 functional "Tasks" (Lot 2), one umbrella group (Lot 1) an one group responsible for the update of the CCS TSI (+ evt OPE TSI) coming from the outputs (Lot 3)

Lot 1 :



"Support and coordinate Task 1-4 deliverables prepare the Standardisation and TSI input plan, first draft Q1 2023"

Lot 2 :

"Defining detailed operational processes and requirements, functional system analysis and technical architecture "

Coordination:

Organisation of the Task 3 mirror group

Domain CMS/TMS

18 reimbursed **domain members** including domain leads

Coordination

CER
Single entry point (Coordination hub)

EIM
(to be further defined)

Other sector stakeholders
(RNE, OCORA, EULYNX,…)

Mirror groups

CER – SP* Support Group

EIM – SP* Experts team

RNE – HL Groups + strategy

Sector - TEG planning

Sector - Telematics JSG

Sector - TEG operations

IM specialists

RU specialists

Others

* System Pillar

ANNEXES