EUROPEAN CLIMATE, INFRASTRUCTURE AND ENVIRONMENT EXECUTIVE AGENCY (CINEA)

CINEA.B – Sustainable networks and investments
Head of Department

AMENDMENT No AMD-101079600-3

Project: 101079600 — 21-EU-TG-DCM IMP 22_24

The parties agree to amend the Agreement as follows ('**Amendment**'):

1. Change of the participant short name

The short name in the **Preamble** and **Data Sheet** is changed:

- for DB INFRAGO AG (DB NETZ): to DB INFRAGO AG (DB InfraGO)

2 . Change of Annex 1

Annex 1 is changed and replaced by the Annex 1 attached to this Amendment.

3 . Change of the project duration

The project duration in the **Data Sheet** is changed to 48.

4. Change of the reporting periods

The reporting period(s) in the **Data Sheet** are changed to:

– RP 1: month 1 to month 48

5. Change of Annex 2

The estimated budget in **Annex 2** is changed.

This implies the **following changes** to the Agreement:

- **Annex 2** is changed and replaced by the Annex 2 attached to this Amendment.
- The table on maximum grant amount and total estimated eligible costs and contributions in the **Data Sheet** is updated.

All other provisions of the Agreement and its Annexes remain unchanged.

This Amendment **enters into force** on the day of the last signature.

This Amendment **takes effect** on the date(s) mentioned in the amendment clause(s) (or — if no date was chosen — on the same date the Amendment enters into force).

Please inform the other members of your consortium (if any) of this Amendment.

SIGNATURES

For the coordinator

Harald REISINGER with ECAS id nreisiha signed in the Participant Portal on 06/12/2024 at 11:28:59 (transaction id SigId-130820-n1OmY2sYvnLzI7pSJH3Iw7Qw42E048MAGDpj9Z9ijxyPOJKCDXsKBzHUlV4whzNtslsqe1uINqAF1IEXe1Su7W0-yntOf97TTHqjUzoB6sLU0b-JXhmQP5ZlaBIT7JrdI6TyCBnAtfOHyAG95AAZAzczicqdvBCHidIQjh0QEEN9CSabaueQAP0SQAGNKXhsheFjn). Timestamp by third party at 2024.12.06 11:29:18 CET

For the granting authority

Signed by Christian FAURE with ECAS id faurecn as an authorised representative on 17-12-2024 14:53:47 (transaction id SigId-14306-JjgxczlzV5hyvxTvD9jU2hsxcvpzHTNIjJZfBmyLRoU9DzLE6xO80NwXuoZdSGDA2QmmKtyxIwMBzbosvu3Il1L-yntOf97TTHqOEyh6VidCjq-pnhgQRHgf2RasEcdX7jBzmG6eFU4vlMYwDd160iLZEtgsu4tYt3tnIXZjETXeo0AVf2UvZKJL95L0gfGQwXnzu) 2024.12.17 14:53:49 CET

Done in English

Enclosures: Grant Agreement Data Sheet
Grant Agreement Annex 1
Grant Agreement Annex 2

ANNEX 1

Connecting Europe Facility (CEF)

Description of the action (DoA)

Part A

Part B

DESCRIPTION OF THE ACTION (PART A)

COVER PAGE

Part A of the Description of the Action (DoA) must be completed directly on the Portal Grant Preparation screens.

PROJECT *Grant Preparation (General Information screen) — Enter the info.*	
Project number:	101079600
Project name:	Digital Capacity Management Implementation 2022-2024
Project acronym:	21-EU-TG-DCM IMP 22_24
Call:	CEF-T-2021-SIMOBGEN
Topic:	CEF-T-2021-SIMOBGEN-NEWTECH-STUDIES
Type of action:	CEF-PJG
Service:	CINEA/B/03
Project starting date:	fixed date: 1 January 2022
Project duration:	48 months

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PROJECT SUMMARY

Project summary

Grant Preparation (General Information screen) — Provide an overall description of your project (including context and overall objectives, planned activities and main achievements, and expected results and impacts (on target groups, change procedures, capacities, innovation etc)). This summary should give readers a clear idea of what your project is about.

Use the project summary from your proposal.

The overall objective of this project 'Digital Capacity Management – Implementation 22-24 [DCM IMP 22_24]' (a study without physical interventions) is to continue the Europe-wide implementation of the programme 'TTR for a Smart Capacity Management' which was launched as a project in 2014 with the overall aim to increase international rail attractiveness and efficiency, so that rail can increase its competitiveness and market share on the European transport market.
This project intends to continue the valuable work started by previous EU-funded actions. It will do so by:
» Supporting rail stakeholders in implementing the agreed and committed activities in the frame of the programme 'TTR for a Smart Capacity Management'
» Implementing an additional market-oriented application for Short Term Path requests – the so-called 'Automated Short Term Path Request' at international level (reduction of lead time from 2-3 weeks to 1-2 days)
» Adjusting IM legacy systems to allow cross-border data exchange, to facilitate integrated infrastructure capacity and traffic management
» Supporting rail stakeholders in developing common Telematics Reference Files, merging the existing TAF and TAP Reference File sets to be used in the telematics framework and by other registers managed by the ERA or the rail sector.
» Supporting Infrastructure Managers and Railway Undertakings in implementing and ensuring the compliance of the rail system and its sub-systems with the TAP and TAF TSI.

LIST OF PARTICIPANTS

PARTICIPANTS

Grant Preparation (Beneficiaries screen) — Enter the info.

Number	Role	Short name	Legal name	Country	PIC
1	COO	RNE	RAILNETEUROPE-VEREINIGUNG ZUR FORDERUNG DES INTERNATIONALEN VERKEHRS AUF DER EISENBAHNINFRASTRUKTUR	AT	899409512
2	BEN	DB InfraGO	DB INFRAGO AG	DE	999426794
3	BEN	RFI	RETE FERROVIARIA ITALIANA	IT	999434360
4	BEN	SNCF RÉSEAU	SNCF RESEAU	FR	996525621
5	BEN	INFRABEL	INFRABEL SA	BE	983319847
6	BEN	SZCZ	SPRAVA ZELEZNIC STATNI ORGANIZACE	CZ	996456460
7	BEN	RFC NS-M	RAIL FREIGHT CORRIDOR NORTH SEA-MEDITERRANEAN	LU	888405444
8	AP	SBB	SCHWEIZERISCHE BUNDESBAHNEN SBB	CH	996523875

LIST OF WORK PACKAGES

Work packages

Grant Preparation (Work Packages screen) — Enter the info.

Work Package No	Work Package name	Lead Beneficiary	Effort (Person-Months)	Start Month	End Month	Deliverables
WP1	Project management	1 - RNE	0.00	1	48	D1.1 – D1.1.1 Kick-off meeting D1.2 – D1.1.2 Closing meeting D1.3 – D1.2.1 Final Financial Report D1.4 – D1.3.1 Project Technical Report Period1 D1.5 – D1.3.2 Project Technical Report Period2 D1.6 – D1.3.3 Project Technical Report Period3 D1.7 – D1.4.1 Plan for the Exploitation and Dissemination of Results (PEDR) D1.8 – D1.4.2 Project Webpage D1.9 – D1.5.1 Overview of technical coordination meetings held D1.10 – D1.3.4 Personal cost records report Q1 D1.11 – D1.3.5 Personal records report Q2 D1.12 – D1.3.6 Personal records report Q3 D1.13 – D1.3.7 Personal records report Q4 D1.14 – D1.3.8 Personal records report Q5 D1.15 – D1.3.9 Personal records report Q6 D1.16 – D1.3.10 Personal records report Q7 D1.17 – D1.3.11 Personal records report Q8 D1.18 – D1.3.12 Personal records report Q9 D1.19 – D1.3.13 Personal records report Q10 D1.20 – D1.3.14 Personal records report Q11

Work packages

Grant Preparation (Work Packages screen) — Enter the info.

Work Package No	Work Package name	Lead Beneficiary	Effort (Person-Months)	Start Month	End Month	Deliverables
						D1.21 – D1.3.15 Personal records report Q12 D1.22 – D1.3.16 Personal records report Q13 D1.23 – D1.3.17 Personal records report Q14 D1.24 – D1.3.18 Personal records report Q15 D1.25 – D1.3.19 Personal records report Q16 D1.26 – D1.3.20 Project Technical Report Period4
WP2	TTR Capacity strategy/model	1 - RNE	0.00	1	48	D2.1 – D2.1.1.1 Functional requirements for ECMT D2.2 – D2.1.2.1 Adjusted/new forms for creation and editing of the CNA, TCRs and Capacity Model objects D2.3 – D2.1.2.2 Adjusted object model of ECMT with the new attributes and the links to Variants D2.4 – D2.1.4.1 Import template and import function for importing CNA, Capacity Model objects and intended capacity volume D2.5 – D2.1.3.3 Overview of the CNAs is implemented D2.6 – D2.1.5.3 The formula for calculating the TCR impact on traffic in % is implemented

Work packages

Grant Preparation (Work Packages screen) — Enter the info.

Work Package No	Work Package name	Lead Beneficiary	Effort (Person-Months)	Start Month	End Month	Deliverables
						D2.7 – D2.1.3.2 Calculation logic of the TCR duration overview D2.8 – D2.1.3.1 Capacity Model views (section, line, network) are implemented D2.9 – D2.1.5.1 Workflow is implemented for CNA harmonization D2.10 – D2.1.5.2 Workflow is implemented for linking CNAs to Capacity Model D2.11 – D2.1.6.1 Interface connection is established between ECMT and the TCR Tool D2.12 – D2.1.6.2 TCRs are imported (CRUD) from the TCR tool to ECMT using TAF/TAP TSI messages D2.13 – D2.1.6.3 ECMT XSD is published for capacity model D2.14 – D2.1.6.4 CI configuration with the partner IMs D2.15 – D2.1.6.5 Capacity model objects are imported (CRUD) from the IM's national system to ECMT using TAF/TAP TSI messages D2.16 – D2.2.1.1 Study for Modelisation and implementation of capacity bands, rolling-planning requests on dedicated multi-annual offer D2.17 – D2.3.1.1 IT concept (feasibility study) D2.18 – D2.3.2.1 Final concept D2.19 – D2.3.3.1 Development , including

Work packages

Grant Preparation (Work Packages screen) — Enter the info.

Work Package No	Work Package name	Lead Beneficiary	Effort (Person-Months)	Start Month	End Month	Deliverables
						testing phase and related interface with IT Common tool D2.20 – D2.4.1.1 concept new planning process D2.21 – D2.4.2.1 Concept of rules and logics D2.22 – D2.4.2.2 Concept of IT algorithms D2.23 – D2.4.3.1 Short-term: Delivery of Interim-Capacity Model 2025 (according to agreed scope and legal basis) D2.24 – D2.4.3.2 Long-term: Processes and required IT for an automated KNK-implementation D2.25 – D2.5.1.1 Single international “path & TCRs Database” TAF TAP TSI compliant D2.26 – D2.5.1.2 Feedback from the database merging process D2.27 – D2.5.1.3 Compendium of capacity maps & Charts + TTR Capacity Model and Supply D2.28 – D2.5.1.4 Description of the process to produce those maps, charts, capacity model & supply and its connection to the National IM process D2.29 – D2.5.2.1 Feedbacks from users and decision-makers via mirror groups D2.30 – D2.5.2.2 Specifications for IT Tools D2.31 – D2.6.1.1 Delivery of the software component that enables the integration

Work packages

Grant Preparation (Work Packages screen) — Enter the info.

Work Package No	Work Package name	Lead Beneficiary	Effort (Person-Months)	Start Month	End Month	Deliverables
						D2.32 – D2.7.1.1 Status report TTR@Infrabel 2022 D2.33 – D2.7.1.2 Status report TTR@Infrabel 2023 D2.34 – D2.7.1.3 Status report TTR@Infrabel 2024 D2.35 – D2.1.6.6 Report on the development according to the technical specification (phase 1) D2.36 – D2.1.6.7 Report on the developments D2.37 – D2.2.2.1 "Deployment of enhanced TCR tool with supervision functionality " D2.38 – D2.2.3.1 Implementation of timetable redesign capacity scenario process D2.39 – D2.2.4.1 Integration of ECTS-Related infrastructure objects into GAIA repository D2.40 – D2.2.5.1 Upgradation of legacy information systems for TSI observations integration D2.41 – D2.7.1.4 Status report TTR@Infrabel 2025 D2.42 – D2.7.3.1 Development of new common interface D2.43 – D2.7.4.1 Modification of the PCS link to reach PCS CB compliancy D2.44 – D2.7.5.1 Analysis of TSI telematic related functions D2.45 – D2.8.1.1 Delivery of updated version of IT tools - DYPOD and ETD

Work packages

Grant Preparation (Work Packages screen) — Enter the info.

Work Package No	Work Package name	Lead Beneficiary	Effort (Person-Months)	Start Month	End Month	Deliverables
						D2.46 – D2.7.2.1 Final report on usage EU train ID
WP3	Temporary Capacity restriction tool	1 - RNE	0.00	1	48	D3.1 – D3.1.1.1 Functional requirements for the TCR Tool D3.2 – D3.1.2.1 Adjusted object model of TCR Tool with the new attributes D3.3 – D3.1.3.1 New/adjusted forms for creation, and editing of the TCR objects D3.4 – D3.1.4.1 Adjusting the import template and function for importing TCR objects D3.5 – D3.1.5.1 Impact assessment calculation feature for TCRs D3.6 – D3.1.6.1 Notification logic related to the object changes D3.7 – D3.1.6.2 Workflow is implemented for TCR consultation D3.8 – D3.1.6.3 Adjusting the publication function and workflow D3.9 – D3.1.6.4 Messages for searching TCRs D3.10 – D3.1.7.1 TCR Tool XSD is published for TCRs D3.11 – D3.1.7.2 CI configuration with partner IMs D3.12 – D3.1.7.3 TCR objects are imported (CRUD) from the IM's national system to TCR Tool using TAF/TAP TSI messages D3.13 – D3.1.7.4 Setting GeoEditor

Work packages

Grant Preparation (Work Packages screen) — Enter the info.

Work Package No	Work Package name	Lead Beneficiary	Effort (Person-Months)	Start Month	End Month	Deliverables
						parameters required for TCR coordination with partner IMs D3.14 – D3.2.1.1 Acceptance note D3.15 – D3.2.1.2 Acceptance note D3.16 – D3.3.1.1 IT concept (feasibility study) for a national digitalised tool D3.17 – D3.3.1.2 Final concept for a national digitalised tool D3.18 – D3.3.1.3 "Development of a national digitalised tool , including testing phase and related interface with IT central tool" D3.19 – D3.3.2.1 IT concept (feasibility study) for interface with central IT tool D3.20 – D3.3.2.2 Final concept for interface with central IT tool D3.21 – D3.3.2.3 Development , including testing phase and related interface with IT central tool D3.22 – D3.4.1.1 Possibility to manage long term Temporary Capacity Restrictions in the Infrabel planning tool D3.23 – D3.4.1.2 Publication of the approved TCRs to the RUs and the ability to signal the importance of each TCR in accordance with RNE guidelines D3.24 – D3.4.2.1 Development customization algorithm platform D3.25 – D3.4.3.1 Development Customization in the TCR planning tool

Work packages

Grant Preparation (Work Packages screen) — Enter the info.

Work Package No	Work Package name	Lead Beneficiary	Effort (Person-Months)	Start Month	End Month	Deliverables
						D3.26 – D3.4.3.2 Development further customizations in the algorithm platform D3.27 – D3.4.4.1 First study with integrator based on the algorithm D3.28 – D3.4.4.2 Development of the software that enables Infrabel to start own studies D3.29 – D3.5.1.1 Acceptance protocol D3.30 – D3.5.2.1 Acceptance protocol D3.31 – D3.4.5.1 Go-live of said improvements relating the operational planning of infrastructure works D3.32 – D3.5.3.1 Acceptance protocol
WP4	TTR Capacity Supply/allocation	1 - RNE	0.00	1	48	D4.1 – D4.1.1.1 Functional requirements for ECMT D4.2 – D4.1.2.1 Adjusted object model of ECMT with the new attributes and the links to Variants D4.3 – D4.1.2.2 New/adjusted forms for creation and editing of the capacity supply objects D4.4 – D4.1.4.1 Adjusting the import template and function for importing capacity supply objects D4.5 – D4.1.5.1 Adjusted form for creating and editing TCRs D4.6 – D4.1.5.2 Impact assessment feature for TCRs D4.7 – D4.1.5.3 Adjusted Capacity Supply chart

Work packages

Grant Preparation (Work Packages screen) — Enter the info.

Work Package No	Work Package name	Lead Beneficiary	Effort (Person-Months)	Start Month	End Month	Deliverables
						D4.8 – D4.1.5.4 Network view is implemented D4.9 – D4.1.5.5 Capacity Model views are generated from selected Capacity Supply dataset D4.10 – D4.1.5.6 Summary of the changes between selected dates are presented in ECMT D4.11 – D4.1.5.7 Feasibility study result is published in the Capacity Supply D4.12 – D4.1.5.8 Default presentation options are applied on the Feasibility study result objects D4.13 – D4.1.5.9 Path details from each process type (New path request, Late path request, Rolling Planning, Ad-hoc) can be published by the IMs in ECMT D4.14 – D4.1.5.10 Default presentation options are applied on the path details according to their process type and train type D4.15 – D4.1.5.11 Workflow for updating the allocated capacity supply objects is implemented D4.16 – D4.1.6.1 ECMT XSD is published for capacity supply D4.17 – D4.1.6.2 CI configuration with the partner IMs D4.18 – D4.1.6.3 Capacity supply objects are imported (CRUD) from the IM’s

Work packages

Grant Preparation (Work Packages screen) — Enter the info.

Work Package No	Work Package name	Lead Beneficiary	Effort (Person-Months)	Start Month	End Month	Deliverables
						national system to ECMT using TAF/TAP TSI messages D4.19 – D4.2.1.1 Acceptance note D4.20 – D4.2.1.2 Acceptance note D4.21 – D4.2.1.3 Acceptance note D4.22 – D4.2.2.1 Acceptance note D4.23 – D4.2.2.2 Acceptance note D4.24 – D4.2.2.3 Acceptance note D4.25 – D4.2.3.1 Acceptance note D4.26 – D4.2.3.2 Acceptance note D4.27 – D4.2.3.3 Acceptance note D4.28 – D4.2.4.1 Acceptance note D4.29 – D4.2.4.2 Acceptance note D4.30 – D4.2.4.3 Acceptance note D4.31 – D4.2.5.1 Process D4.32 – D4.2.5.2 Acceptance note D4.33 – D4.2.5.3 Acceptance note D4.34 – D4.3.1.1 IT concept (feasibility study) for a national digitalised tool D4.35 – D4.3.1.2 Final concept for a national digitalised tool D4.36 – D4.3.1.3 "Development of a national digitalised tool , including testing phase and related interface with IT Common tool" D4.37 – D4.3.2.1 IT concept (feasibility study) for a national digitalised tool D4.38 – D4.3.2.2 Final concept for a national digitalised tool D4.39 – D4.3.2.3 "Development of a national digitalised tool , including

Work packages

Grant Preparation (Work Packages screen) — Enter the info.

Work Package No	Work Package name	Lead Beneficiary	Effort (Person-Months)	Start Month	End Month	Deliverables
						testing phase and related interface with IT Common tool" D4.40 – D4.4.1.1 PCS process types are implemented in line with the TTR process description D4.41 – D4.4.1.2 Compliance of the PCS XSD with the TAF/TAP TSI D4.42 – D4.4.2.1 Feasibility study for the integration to the capacity broker D4.43 – D4.4.2.2 PCS is ready for integration to the capacity broker D4.44 – D4.5.1.1 The validated roadmap for the integration of all train planning activities into one state-of-the-art tool D4.45 – D4.5.1.2 Improving trajectory runtime calculation in UPM. D4.46 – D4.5.2.1 An analysis outlining the technical and functional requirements of the PoC D4.47 – D4.5.2.2 Implementation of a functional Proof of Concept D4.48 – D4.5.3.1 Delivery of the software component D4.49 – D4.5.3.2 Delivery of customizations D4.50 – D4.5.4.1 Delivery of first version that works with the planning tool for the transport plan D4.51 – D4.5.4.2 Delivery of customizations D4.52 – D4.5.5.1 The timetable planners

Work packages

Grant Preparation (Work Packages screen) — Enter the info.

Work Package No	Work Package name	Lead Beneficiary	Effort (Person-Months)	Start Month	End Month	Deliverables
						will receive a report of all discontinuous timetables. D4.53 – D4.5.5.2 Possibility to define timetables at the lowest level (switch level). D4.54 – D4.5.6.1 Use of the macroview INT data on multiple UPM maps D4.55 – D4.5.7.1 Creating a search for freight train routes that avoid forbidden line sections D4.56 – D4.5.7.2 Use of the PC codification on the routefinder map D4.57 – D4.5.7.3 Easier detection and resolution of conflicts and overlappings by means of new reports, better anomaly resolution and ergonomic improvements D4.58 – D4.6.1.1 Acceptance protocol D4.59 – D4.6.2.1 Acceptance protocol D4.60 – D4.6.3.1 Acceptance protocol D4.61 – D4.6.4.1 Acceptance protocol D4.62 – D4.6.5.1 Acceptance protocol D4.63 – D4.7.1.1 Design for user interface with IT tool elements D4.64 – D4.7.1.2 Definition of background software D4.65 – D4.7.1.3 Definition of IT Tool interfaces D4.66 – D4.7.2.1 Development of the IT Tool D4.67 – D4.7.2.2 Test of the IT Tool D4.68 – D4.7.3.1 Pilot for usage test in ATT 2024 preparation

Work packages

Grant Preparation (Work Packages screen) — Enter the info.

Work Package No	Work Package name	Lead Beneficiary	Effort (Person-Months)	Start Month	End Month	Deliverables
						D4.69 – D4.7.3.2 Evaluation and postprocessing of the IT Tool D4.70 – D4.5.8.1 The go live of developments related to managing the transport plan and annual service planning in one application D4.71 – D4.6.6.1 Acceptance protocol)KADR Tool)
WP5	TTR Capacity Broker (Short Term / Ad Hoc) and Capacity Production	1 - RNE	0.00	1	48	D5.1 – D5.1.1.1 Functional requirements of the Capacity Broker D5.2 – D5.1.1.2 Tender documentation, evaluation criteria D5.3 – D5.1.1.3 Signed contract D5.4 – D5.1.2.1 Capacity Broker domain D5.5 – D5.1.2.2 Synchronization of reference data is implemented D5.6 – D5.1.2.3 New Case Reference creation wizard D5.7 – D5.1.2.4 TT quality constraints D5.8 – D5.1.3.1 Timetable views inside the Case Reference D5.9 – D5.1.3.2 Control view of the Case Reference D5.10 – D5.1.3.3 Alpha release D5.11 – D5.1.3.4 Workflow D5.12 – D5.1.3.5 Administration views of the Capacity Broker D5.13 – D5.1.4.1 Inbound/outbound messaging

Work packages

Grant Preparation (Work Packages screen) — Enter the info.

Work Package No	Work Package name	Lead Beneficiary	Effort (Person-Months)	Start Month	End Month	Deliverables
						D5.14 – D5.1.5.1 Common Interface configuration D5.15 – D5.1.6.1 Beta release D5.16 – D5.1.6.2 UAT results and CR/fix plan D5.17 – D5.1.6.3 Production release D5.18 – D5.1.6.4 Performance report D5.19 – D5.2.1.1 Description of API D5.20 – D5.2.1.2 TAF / TAP compliant interface D5.21 – D5.2.2.1 Automated train path creation for international paths D5.22 – D5.2.3.1 Legacy systems ready for international train paths D5.23 – D5.2.4.1 Description of extended API D5.24 – D5.2.5.1 Extended Interface with validation of path request D5.25 – D5.4.1.1 Acceptance note D5.26 – D5.4.1.2 Acceptance note D5.27 – D5.4.2.1 Acceptance note D5.28 – D5.4.2.2 Acceptance note D5.29 – D5.5.1.1 Acceptance protocol D5.30 – D5.6.1.1 Customization in software D5.31 – D5.6.1.2 Test results of this PoC D5.32 – D5.1.7.1 Description of requirements and release notes on PCS Capacity Broker upgrades D5.33 – D5.1.8.1 Description of requirements and release notes - Integration

Work packages

Grant Preparation (Work Packages screen) — Enter the info.

Work Package No	Work Package name	Lead Beneficiary	Effort (Person-Months)	Start Month	End Month	Deliverables
						of MVP Short Term Ad Hoc (STAH) into PCS CB D5.34 – D5.1.9.1 Description of requirements and release notes - Integration of MVP Border Harmonization Tool (BHT) into PCS CB D5.35 – D5.4.3.1 Upgradation of legacy information systems for TSI observations integration D5.36 – D5.4.4.1 Implementation of standardized rolling stock dependencies management system D5.37 – D5.4.5.1 Expansion and enhancement of TAF-TAP message exchanges for telematics TSI D5.38 – D5.5.2.1 Delivery of updated version of IT tool KADR D5.39 – D5.6.2.1 Go live of all TMS related web-apps D5.40 – D5.6.3.1 Go live of of connection TMS-DAS / eDrive D5.41 – D5.6.4.1 Final Delivery Report D5.42 – D5.7.1.1 IT concept (draft and final) and development, including testing phase and related interface with RNE TIS IMT, of the national IT tool to manage and send data concerning disruptions on RFI network D5.43 – D5.8.1.1 Implementation report on the TIS developments

Work packages

Grant Preparation (Work Packages screen) — Enter the info.

Work Package No	Work Package name	Lead Beneficiary	Effort (Person-Months)	Start Month	End Month	Deliverables
						D5.44 – D5.8.2.1 Implementation report on the ETMN P2 D5.45 – D5.8.3.1 Report on the developments and upgrades of the Language Tool D5.46 – D5.8.4.1 Implementation report on Network ETA D5.47 – D5.8.5.1 Report on the findings and the conept of KPIs D5.48 – D5.8.6.1 Report on the deployment of TIS Performance Monitoring D5.49 – D5.8.7.1 Report on the deployment of PM Tool Europerformance
WP6	Digital Infrastructure data/Interfaces	1 - RNE	0.00	1	48	D6.1 – D6.2.1.1 Defined infrastructure objects and attributes needed for the Capacity Model D6.2 – D6.2.1.2 Established connection between Capacity Model and infrastructure supply D6.3 – D6.3.1.1 Acceptance note D6.4 – D6.3.1.2 Acceptance note D6.5 – D6.3.1.3 Acceptance note D6.6 – D6.3.2.1 Acceptance note D6.7 – D6.3.2.2 Acceptance note D6.8 – D6.3.3.1 Acceptance note D6.9 – D6.3.3.2 Acceptance note D6.10 – D6.3.4.1 Acceptance note D6.11 – D6.3.4.2 Acceptance note D6.12 – D6.3.4.3 Acceptance note

Work packages

Grant Preparation (Work Packages screen) — Enter the info.

Work Package No	Work Package name	Lead Beneficiary	Effort (Person-Months)	Start Month	End Month	Deliverables
						D6.13 – D6.4.1.1 Technical specification of new CI D6.14 – D6.4.1.2 Common interface software package D6.15 – D6.5.1.1 concept of interfaces D6.16 – D6.6.1.1 Acceptance note D6.17 – D6.6.1.2 Acceptance note D6.18 – D6.6.2.1 Acceptance note D6.19 – D6.6.2.2 Acceptance note D6.20 – D6.6.2.3 Acceptance note D6.21 – D6.7.1.1 Acceptance note D6.22 – D6.7.1.2 Acceptance note D6.23 – D6.7.1.3 Acceptance note D6.24 – D6.7.2.1 Acceptance note D6.25 – D6.7.2.2 Acceptance note D6.26 – D6.7.2.3 Acceptance note D6.27 – D6.7.3.1 Acceptance note D6.28 – D6.7.3.2 Acceptance note D6.29 – D6.7.4.1 Acceptance note D6.30 – D6.7.4.2 Acceptance note D6.31 – D6.7.5.1 Acceptance note D6.32 – D6.7.5.2 Acceptance note D6.33 – D6.7.5.3 Acceptance note D6.34 – D6.8.1.1 Acceptance protocol D6.35 – D6.9.1.1 Implementation of multiple periods of validity on the level of each infrastructure component in INT D6.36 – D6.9.1.2 Implementation of the possibility to create different infrastructure versions for each important modification

Work packages

Grant Preparation (Work Packages screen) — Enter the info.

Work Package No	Work Package name	Lead Beneficiary	Effort (Person-Months)	Start Month	End Month	Deliverables
						D6.37 – D6.9.2.1 Analysis of import and additional requirements source database D6.38 – D6.9.2.2 Delivery of the software components D6.39 – D6.10.1.1 Development of the interface with PCS D6.40 – D6.10.1.2 Finalised Test of the interface with PCS D6.41 – D6.10.2.1 Development of the interface LT with RNE TCR-tool D6.42 – D6.10.2.2 Finalised Test of the interface LT with RNE TCR-tool D6.43 – D6.10.3.1 Development of the interface INT with ECMT D6.44 – D6.10.3.2 Finalised Test of the interface INT with ECMT D6.45 – D6.10.4.1 Development of the interface planning - ECMT D6.46 – D6.10.5.1 Development of the interface UPM-TCR-tool D6.47 – D6.10.5.2 Finalised Test of the interface UPM-TCR-tool D6.48 – D6.11.1.1 Study/analysis report D6.49 – D6.11.1.2 Proof of Concept EU train ID in real time management tool D6.50 – D6.11.1.3 Proof of Concept EU train ID in capacity planning tool D6.51 – D6.11.2.1 Study/analysis report D6.52 – D6.11.2.2 Development of TCM with ITU container information D6.53 – D6.11.3.1 Study/analysis report

Work packages

Grant Preparation (Work Packages screen) — Enter the info.

Work Package No	Work Package name	Lead Beneficiary	Effort (Person-Months)	Start Month	End Month	Deliverables
						D6.54 – D6.11.4.1 Study report D6.55 – D6.11.3.2 Development of new connections (news partners) D6.56 – D6.11.3.3 Development concerning exchange of new messages D6.57 – D6.2.2.1 Graphical user interface for validation of detection algorithm and its demonstration to ERA D6.58 – D6.4.3.1 Collection of improvements for the application NCI, RIS, CIS and Common Interface, and Communication Plan of NCI, CIS Tool for 2025 D6.59 – D6.12.1.1 IT concept (draft and final) and development of MRC-tool for rail facilities data, including testing phase and related interface, to manage and send RFI data to RFP via RINF and to CRD via RINF D6.60 – D6.12.2.1IT concept (draft and final) and development, including testing phase, of the digitalized system to manage and send RFI data to RINF D6.61 – D6.12.3.1 IT concept (draft and final) and development, including testing phase, of the digitalized system to manage and send RFI data to RINF

Work package WP1 – Project management

Work Package Number	WP1	Lead Beneficiary	1 - RNE
Work Package Name	Project management		
Start Month	1	End Month	48

Objectives

Involved beneficiaries
• RNE

Objectives
The following objectives shall be fulfilled:
• Action management and coordination of tasks within the activities and the working groups
• Monitoring and facilitation of the project's implementation according to the defined milestones and deliverables
• Reporting the status of the Action to the relevant stakeholders, and organisation of regular meetings to steer the progress of the activities, and to validate the deliverables
• Quality control and management of procurement procedures for investments planned under the other activities
• Communication, promotion and dissemination of results towards approximately 800 European stakeholders via suitable communication events (e.g. the currently planned three Rail Freight Day events together with DG Move, Road Show events) and through other dissemination materials (e.g. e-newsletters, digital brochures, videos).

Anticipated effects:
• Smooth project implementation
• Monitoring of time frames
• Monitoring of budget
• Monitoring of deliverables and milestones
• Document management
• Quality control
• Organisation of regular meetings to steer the activities and sub-activities
• Continuous communication with and reporting to the RNE Managing Board (RNE MB), RNE General Assembly (RNE GA) and Rail Freight Corridors (RFC).
• Ensuring contact with and reporting to the EC and CINEA

Links to other WPs
• WP 2-6 (steering and monitoring of all activities)

Description

Overall WP description
The objective of this WP is to ensure the full and timely implementation of the project. It encompasses tasks such as Action management, coordination of tasks within the activities and the working groups, as well as special events like the Rail Freight Day (RFD) and Regulatory Bodies Conference.
The Action management and process development activity will steer the WPs progress, deliver guidelines for WP 2, 3, 4, 5 and 6 and will secure proper milestone validation by the different bodies mentioned in the activities.
Project Management is done according to the RNE Project Management Process. A result of this shall be the timely start of all activities.

Project organisation
Taking into account the significant amount of the funding action and the complexity of the tasks to be implemented by the co-beneficiaries, a methodology for project management and progress monitoring has been developed. It is based on regular meetings of all stakeholders concerned on different levels:
(1) At the project level: each co-beneficiary has been asked to nominate one co-beneficiary coordinator who serves as primary contact point for the respective co-beneficiary. Their task is to communicate towards RNE for all questions regarding the overall participation of the co-beneficiary in this funding action. All co-beneficiary coordinators meet at least twice per year to jointly monitor the progress of the respective work packages and deal with organisational question e.g. setting up structures for the technical reporting.
(2) At work package level: each co-beneficiary has been asked to nominate a work package manager for each work package they are participating in. Moreover, RNE provides for each work package a lead and a co-lead who are technical

experts for the respective field from the RNE staff. Organised by the co-lead, the work package managers of a specific work package shall convene at least four times (quarterly) per year for a meeting to monitor the progress of the tasks within this work package.
(3) At task level: each co-beneficiary has been asked to nominate a task owner for each task they have to perform. This means that there will be one expert responsible for each task defined in the grant agreement. These task owners are invited to the meeting of the work package managers and are the ones supposed to report on the progress (quarterly) of their respective task.
This elaborated methodology has been designed to monitor the timely implementation of each task and create a chain of responsibility. Moreover, this structure will be used for the fulfilment of all five tasks under WP1.

Progress monitoring (KPI)
As far as all other work packages are concerned, this structured approach can be used to generate KPIs in monitoring the progress of each work package. For each meeting at work package level, each task owner is asked to evaluate the progress of their task using a simple yet effective traffic light system on a quarterly basis. This can be used for a quantitative and qualitative assessment of the work package, activity and the whole funding project.

WP level – Status report
The WP status reports displays an overview of the implementation status of each work package.
Moreover, a display of the assessment of each sub-activity will be accessible.

Activity level – Status report
Mitigation measures
If a certain sub-activity is assessed with “yellow” the task owner shall report to the WP leader on a monthly basis. If a task is assessed with “red” it shall be discussed at project level and specific mitigation measures shall be defined.

Reporting staff effort in person/months
To monitor the consumption of staff costs defined in the Grant Agreement, the co-beneficiaries will be asked to submit the number of person/days worked by their staff per month and work package. For the sake of efficiency and keeping effort for collecting the reports as lean as possible, a compiled version shall be submitted every 4 months in the format of an Excel Template provided by CINEA. For the collection of all the reports by RNE, a period of 30 days is foreseen.

Internal Communication
To enable a seamless communication among all stakeholders and involved people a SharePoint page dedicated to this funding action has been set up.

Tasks:
1.1 General project management
Overall project management activities (e.g. calling in project meetings, preparation of minutes, steering GA preparation, etc.)

1.2 Financial project coordination
Collecting information from co-beneficiaries, compilation of reports, steering of RfCs, …

1.3 Technical reporting
Preparation and steering for Technical Reports, Personal Reports, Compilation, Drafting of ASR and Final report

1.4 Dissemination activities
Organisation of all kind of dissemination activities, preparation of Webpage content, articles, etc.

1.5 Technical coordination
Steering the project results to comply with TTR program

Demarcation to other CEF projects:
» The risk of overlaps with other ongoing EU projects is minimal because all staff costs are closely monitored through periodic reports.

Work package WP2 – TTR Capacity strategy/model

Work Package Number	WP2	**Lead Beneficiary**	1 - RNE
Work Package Name	TTR Capacity strategy/model		

Start Month	1	End Month	48

Objectives

Involved beneficiaries
» RNE
» DB InfraGO
» RFI
» SNCF-Reseau
» SZCZ
» Infrabel
» RFC NSM

Objectives
The following objectives shall be achieved:
» Facilitate the collection of information and general principles to be used further in the capacity planning and capacity allocation process on a European scale (RNE)
» Support the harmonisation of the cross-border capacity planning (RNE)
» Provide an overview on the available capacities on a European scale (RNE)
» Enable and facilitate Capacity Partitioning (RNE)
» Provide an overview concerning the infrastructure sections where future capacity bottlenecks might occur (RNE)
» Create different visualisation possibilities of the capacities in order to satisfy the needs of various stakeholders (e.g. Regulatory Bodies, Applicants, Infrastructure Managers, Allocation Bodies etc.) (RNE)
» Create different Capacity Model variants for the same period to facilitate the pre-planning of capacities (RNE)
» Ensure that the potential Applicants can indicate their future capacity needs (via Capacity Needs Announcements), which can be directly transferred to the Capacity Model, which leads to smoother cooperation between the stakeholders (RNE)
» Enable the unified clustering of TCRs (RNE)
» Enable the unified impact calculation of TCRs (RNE)
» Facilitate the TCR Consultation process through providing a standardised, transparent platform for every involved stakeholder.
» Study on capacity bands, rolling planning requests on dedicated multi-annual offer (SNCF Réseau)
» TTR-compliant Capacity Model (DB Netz)
» Long-term planning Capacity Model (RFI)
» Capacity Intelligence – homogeneous KPIs on capacity issues and visualisation (RFC NSM)
» National capacity strategy and model tool (Infrabel)

Anticipated effects:
» Harmonised visualisation of capacity
» Harmonised principles for infrastructure development and planning
» Exchange of data in all phases (planning, operation, …)
» Transparent communication of capacity and specific capacity restrictions

Links to other WPs
» WP 3 and 4 (TCRs and allocation procedures are heavily affected by capacity model and strategy and vice versa)

Description

Overall WP description
The IMs start the advance planning with the creation of Capacity Strategies. The focus of the strategy is on the future infrastructure development and the planning principles, already at this stage international coordination is needed, as various planning approaches exist between IMs. The Capacity Strategy is also the main connection between political and social requirements of citizens and the capacity planning process, since the competent authorities have a prominent role in this phase. The validated final strategies set the rules for the Capacity Models and next planning steps. A Capacity Model is a visualisation of:
» volumes of capacity for commercial traffic
» volumes of capacity to be used for TCRs
The model is used to transparently communicate and discuss, in more detail, the expected volumes (not path or TCR details) and detect pressure points. In case of lines with international relevance, harmonisation with involved IMs is

obligatory. The final model at X-18 (X as point of timetable change; i.e. 18 months prior the timetable change) is subject to the Capacity Partitioning. The capacity of a railway line section is set aside in the Capacity Model for dedicated purposes:
» volumes for passenger traffic,
» volumes for freight traffic,
» Temporary Capacity Restrictions
It should be ensured that high-quality capacity products will be set aside for both market segments (passenger and freight). In order to facilitate the TCR consultation, Capacity Model variants are created for major and high impact TCR periods. The number of Capacity Model variants depends on modifications made for this specific line. This can vary from 0 variants (no changes apply) to hundreds of variants (hundreds of changes apply). The Capacity Models is valid for a period from 24 months to 18 before timetable change and will be altered based on input from construction planning of the respective Infrastructure Manager which is becoming increasingly detailed.

Note: It is not possible to indicate a specific number

Tasks:
2.1 Joint capacity model RNE
To enable Applicants submitting their future capacity needs, the European Capacity Management Tool (ECMT) shall be extended with a new form, including dedicated parameters to the Applicant's needs. A new user role shall be prepared as Applicant user and workflow shall be implemented to track the statuses of the created Capacity Needs Announcements (CNA).

Based on the Capacity Model Handbook, the existing objects in ECMT shall be extended with additional parameters, so that the IMs can publish all the necessary information for their Capacity Model (including paths, capacity bands and TCRs). That helps the interpretation of the models, the presentation options and also the capacity partitioning.

The tool shall support variants of Capacity Models. That means, that an IM can prepare different Capacity Models for a particular day of the calendar. The objects can be then assigned to one or more variants.

After the creation or import of the Capacity Model objects and Capacity Needs Announcements, those shall be presented on several different kind of views. There are four new potential views foreseen. A line overview showing the planned train runs on an hourly basis for the selected route; a block diagram showing the departing trains for a selected section of the network; a network overview showing the estimated free or booked capacity with different colours on a map; and a TCR duration overview showing the planned TCRs on a selected section clustered by the TCRs' impact.

Once the object model of the tool is adjusted, and CNA objects, CM objects can be created in the tool, it is also essential to provide an import feature. An import template shall be available for the users (most likely in an XLSX format) where they can set up their CNA and CM inputs in a single source.
Apart from importing the objects to the tool, there is an artifact on the capacity model views that presents an estimated limit of the capacity. It is called intended capacity and it is represented on the views with a line. The information behind this line is much less than for any CNA or CM object, that is why a dedicated import function shall be prepared.

Compared to the Capacity Models, where an IM can prepare an object on its network alone, it works different for the Applicants with the CNAs. That is why, a harmonisation process shall be added to the tool so that Applicants will be able to coordinate their status among themselves, before submitting the CNA to the IMs.
As the tool will serve as a platform for CNA and for Capacity Model objects, it's almost trivial that there should be a connection among those. In the Capacity Model handbook there is a dedicated process about how to deal with the CNAs and how the IMs can fit those to their Capacity Models. The workflow shall be specified in more details, then implemented in the tool, so that those two areas (CNA and CM) can interact with each other.

After adjusting the object model in the tool and preparing Excel import, it's also necessary to provide more advanced integration options, meaning API options. There are two kinds of API options foreseen. First, a synchronization inside the RNE IT Tools, and synchronize the TCR objects from RNE's TCR Tool to the ECMT. Then, IMs would create, read, update and delete TCRs only in the TCR tool.
Apart from the RNE internal integration, it's also relevant to integrate to the national tool of the IMs, so that the Capacity Model objects can be imported directly from their national tool to ECMT. Or vice versa, any IM could download the published Capacity Model to their national tool from ECMT.

The documentation is essential before the implementation, but even during the implementation. We expect to have frequent deploys for the internal tests, so that the RNE team can check the implementation status and adjust the requirements immediately. During the implementation the change requests shall be tracked and included in the development, just like as the results of the UATs.

At the end, this booking shall be a machine-to-machine process between RNE and the IMs. Therefore, the performance of the application is essential. The acceptance and effectiveness of the ECMT Tool shall be measured in data entries. When this tool is being set up, a total of more than 5000 data objects (Capacity Supply, Capacity Model, Capacity Needs Announcements, TCRs) per timetable year will be considered as successful in the first timetable year of deployment. It shall be monitored, but also the frequency of usage.

Sub-tasks:
2.1.1 Preparation for the implementation
Preparing the functional requirements for developments
2.1.2 Implementation of the necessary objects
Creation of capacity model objects, CNAs, TCR part
2.1.3 Implementation of the necessary views
Section view, line view, network view, TCR duration overview
2.1.4 Adjusting the import function of ECMT
Intended capacity line, CNAs, Capacity Model objects and TCRs can be imported
2.1.5 Implementing the workflows
Harmonization function for the Applicants for their CNAs, connection between CNA and the Capacity Model
2.1.6 Establishing the interface connections
TCR Tool and ECMT are connected, ECMT is connected to the national systems of the IMs
2.1.7 Release and change management
Preparing the releases, performing the UATs and managing the change requests during the implementation
2.1.8 “ECMT/TCR Tools Fusion” Phase 1, RNE
"The TCR Tool was developed to collect, coordinate, and publish the Temporary Capacity Restrictions (TCRs) considering Annex VII of Directive 2012/34/EU.
European Capacity Management Tool (ECMT) is the tool for IMs and RUs, which helps IMs in the coordination and publication of their capacity models and capacity supply plans, and submission of the capacity needs announcements(CNAs) for Applicants. The tool was initially developed to support the pilots, and on this basis started to be further developed to support all the capacity functionalities defined by TTR and later the Capacity Regulation. The new tools should provide centra workflows to enable cross border planning, coordination, and harmonization. In addition, the new tool will be based on TAF TAP TSI communication. "
2.1.9 Common developments on ECMT for Capacity Supply incl. developments in the future tool, RNE
The current version of ECMT supports only the basic functionality of the Capacity Supply. Some functionalities not feasible to be developed in CEF II TA 2021 were shifted to this call. In addition, the Capacity Supply handbook (following the draft capacity regulation) is currently being created with the aim of approval in May 2024. Some additional developments to support stakeholders' needs are expected to be implemented into the current version of the ECMT before a new tool (Fusion) is developed.

2.2 National implementation of IT packages "Capacity Model“ SNCF Reseau
The goal of this task is to develop processes which will enable define the capacity model for several years (up to 5 years in advance). This will be done in from of a
study for modelling and implementation of capacity bands, rolling-planning requests on dedicated multi-annual offer. The output is the baseline for IT developments in respect to capacity models in SNCF Reseau.

Sub-tasks:
2.2.1 Study for Modelisation and implementation of capacity bands, rolling-planning requests on dedicated multi-annual offer
Study for Modelisation and implementation of capacity bands, rolling-planning requests on dedicated multi-annual offer
2.2.2 TCR after X-36 (Supervision tool “Macro Ordonnancement” & Ordo)
This project aims at deploying Temporary Capacity Restrictions (TCRs) messages to transmit restrictions capacities on the different time horizons
2.2.3 National (FR) Capacity Strategy (TCR before X-36)
First steps of Implementation of a national (FR) Capacity strategy tool for TCR before X-36
2.2.4 Data - ETCS infrastructure update
The project is a global initiative to model the infrastructure objects of the European Train Control System (ECTS) for SNCF Réseau in its infrastructure repository and its data provision in the timetables and train paths tool for run time calculation and conflict detection. EU-Rail are working on the creation and update of the standard / norm.
2.2.5 TAF/TAP TSI for national (FR) Capacity
Improve existing national (FR) information systems to ensure continuity of capability processes from upstream to deployment of TAF-TAP TSI

2.3 National implementation of IT packages "Capacity Model“ RFI
The aim of this task is to create a “Strategic Planner tool” to develop a Capacity Model incl. capacity sections, periods, and possible alternative scenarios (variants). This tool will have interfaces to RNE ECMT, RNE TCR tool and with other national IT systems.
The implementation of the “Strategic Planner Tool” is divided into three tasks:
» IT concept (feasibility study), during which draft technical specifications will be prepared and evaluated.
» Final concept, which involves the transformation from a draft paper into a final concept which is aligned with the common IT strategy and agreed among all stakeholders.
» Development: Once defined, the IT architecture will allow for advance planning being in line with the TTR process. Several releases of the IT tool will assure that all functions of the tool can be tested, and improvements can be implemented. Until the final deployment, all needed interfaces and connections for data exchange both with other national tools and with central RNE IT architecture have to be tested as well, in strong cooperation with RNE. This phase will conclude with Real operational testing on the field, including connection with central IT.

Sub-tasks:
2.3.1 National (IT) IT concept (feasibility study)
Drafting thenational (IT) IT concept for a Long-Term planning (Capacity Model)
2.3.2 Final national (IT) concept
Transform the draft concept paper into a Final national (IT)
2.3.3 National (IT) Development
Finetuning of the national (IT) IT solution for long-term planning and releated deployment

2.4 National implementation of IT packages "Capacity Model“ DB InfraGO
Apart from the requirements of TTR to improve the timetable planning process due to incomplete harmonization of timetabling procedures between European countries, bottlenecks in the German network as well as predatory competition must be considered as well for the timetable redesign. Current requirements in passenger and freight transport, such as the “Deutschlandtakt”, as well as the rising demand for transport, which is leading to these capacity bottlenecks on the corridors, can no longer be adequately served by the historically grown processes and structures in the timetable and capacity management of DB InfraGO.
Due to these circumstances, a higher granularity in capacity planning (compared to what is expected from the current status of TTR so far) is necessary at early process stages to give the market a higher transparency on available capacity and possible connections between lines. To achieve this, it is necessary to pre-structure the available capacities and to communicate these capacities transparently to the market. Resulting from that, there are two pre-structured process steps, Capacity Usage Concept (KNK) and Capacity Framework Plan (KNP), which serve as a guideline for the allocation of framework contracts and train paths.
The concrete model contains three new, partially automated optimized timetable products where the individual planning stages hierarchically build on each other:
» The “Kapazitätsnutzungskonzept” (KNK), or Capacity Usage Concept, from which the Capacity Strategy will be derived
» The “Kapazitätsrahmenverträge” (KRV), or Capacity Framework Contracts, from which the Capacity Model will be derived
» The “Kapazitätsrahmenplan” (KRP), or Capacity Framework Plan, from which the Capacity Supply will be derived

DB InfraGO shall deliver:
» Concept of a new automated continuous planning process
Definition of new planning products, capacity objects, required data inputs and IT features. For an automated continuous planning process the life cycle of a capacity object throughout all the timetabling process has to be described.
» Concept of new rules, logics and algorithms for a new capacity planning
Definition of new rules, logics and algorithms for an automated capacity planning and allocation
» Prototype Capacity Model
Creation and delivery of interim Capacity Model 2025
Preparation of delivery of an automated Capacity Model prototype
As one of the pre-steps to an automated Capacity Model prototype, preparation of the KNK, by implementing the processes and IT-features for its automated pre-construction

Sub-tasks:
2.4.1 Concept of a new automated continuous planning process
Definition of new planning products, capacity objects, required data inputs and IT features. For a automated continuous planning process the life cycle of a capacity object throughout all the timetabling process has to be described.
2.4.2 Concept of new rules, logics and algorithms for a new capacity planning

Definition of new rules, logics and algorithms for an automated capacity planning and allocation
2.4.3 Prototype national (DE) Capacity Model
"Creation and delivery of interim national (DE) Capacity Model 2025
Preparation of delivery of an automated national (DE) Capacity Model prototype
As one of the pre-steps to an automated national (DE) Capacity Model prototype, preparation of the KNK, by implementing the processes and IT-features for its automated pre-construction"

2.5 CAPACITY INTELLIGENCE (MVP) - RFC NSM
On corridor routes, capacity issues are crucial. Capacity is necessary for the everyday rail freight business but is also necessary for organizing the modal shift and achieving the European Green Deal objectives. However, RFC North Sea Med (NSM) team found that it is very difficult to have a clear and trans-national view of the issue. It is very difficult to have full understanding of the remaining capacity. In view of this, the RFC NSM decided to launch a Proof of Concept (POC) to test the concept of “Capacity Intelligence”. As with “Business Intelligence”, can we develop a process for analyzing data and presenting information to help executives, managers and other stakeholders to make informed “capacity” decisions.

This POC has been held end of 2020 and NSM have been able to demonstrate the viability of the concept of “Capacity intelligence”. It also brought interesting feedback:
» The issue of merging Paths and TCRs databases from different countries
» The interest of compression analysis and path search analysis for capacity
» The need to combine several representations, several scales to properly identify and locate capacity problems

Now, under the authority of its main IMs and under the umbrella of RNE & TTR, the RFC NSM aims at moving from a POC to a consolidated and fully functional process.

The tasks are:
» Production of visualisations to understand capacity issues
The initial step is to gather Paths and TCRs database from different countries (France, Belgium and Luxembourg involved in the MVP) in order to provide homogeneous KPIs on capacity issues, and solutions to visualise the results.
» Test of the validity and relevance of the visualisations produced
Because the objective is to feed the decision-making process, the project includes tests with mirror groups of stakeholders to get feedback on the efficiency of the KPIs and visualisations.

Sub-tasks:
2.5.1 Production of visualisations to understand capacity issues
The initial step is to gather Paths and TCRs database from different countries (France, Belgium and Luxembourg involved in the MVP) in order to provide homogeneous KPIs on capacity issues, and solutions to visualise the results.
2.5.2 Test of the validity and relevance of the visualisations produced
Because the objective is to feed the decision making process, the project includes tests with mirror groups of stakeholders to get feedback on the efficiency of the KPIs and visualisations. For this purpose at least four workshops shall be conducted.

2.6/2.7 Development Digital twin for long term capacity planning optimisation Infrabel/TTR process implementation Infrabel
Infrabel foresees two tasks in work package 2 (TTR capacity model and strategy). On the one hand Infrabel foresees to acquire a module that will allow the long-term planning tool to use the calculation engine of Infrabel’s simulation tool in order to automate conflict detection. This way, Infrabel can increase the efficiency of building a conflict free capacity model and respective supply
On the other hand, Infrabel include the coordination of all tasks to adapt Infrabel’s national processes to the TTR model. This is because today Infrabel does not have a standardised process on building a capacity strategy and model, and the implementation of these new process steps will influence the way Infrabel manage capacity greatly in the future. On top of this, the capacity strategy and model serve as the foundation on which all capacity management will be built on. This activity covers all tasks of the national TTR implementation manager, as well as expert contributions to the development of the TTR process description. The progress will be described in the yearly national implementation report.

Sub-tasks:
2.6.1 Simulation national (BE) tool support for long term planning tool
Allowing simulations in order to prepare national (BE) capacity strategy and model
2.7.1 Adaption national (BE) processes to international TTR process
General project management, internal studies and preparation, communication to and interaction with stakeholders

2.7.2 National (BE) Capacity Management Support - EU Train ID
Roadmap use of EU Train ID, Additional reporting and testing is needed to be able to implement national (BE) the use of the EU train ID in operations at Infrabel. The testing and analysis scheduled foresees in the preparation of this.
2.7.3 National (BE) Capacity Management Support -Common Interface
Developments related to a new version of Common Interface, RNE will install a new Common Interface in 2024. This new CI is intended to be the interface of the future for all TAF TAP TTR data exchanges (and Telematics). Infrabel will analyse the impact, install the new CI and migrate the existing TAF TAP TSI flows.
2.7.4 National (BE) Capacity Management Support -PCS TSI Compliant
"Additional developments for the TAF TAP TSI compliant PCS-link, to allow the link to function with the migration from PCS EC (legacy system) to PCS CB (new system). € 242.021,54 "
2.7.5 National (BE) Capacity Management Support -TSI Telematics
"Studies and developments related to TSI Telematics, TSI Telematic asks Infrabel to be able to process the following functions:
- Object Identifier,
- Common Interface,
- Temporary Capacity restriction,
- Common Reference Files (RINF)
- Train Preparation (Train Ready, TCM TAP TAF)
- Train Movement (ETA)
- Strategic Capacity

2.8 Update of national (CZ) IT systems of SZCZ in the area of Infrastructure data, SZCZ
"The project aims to update and adjust the national (CZ) IT system of SZCZ in the area of Infrastructure data:
• Update of national (CZ) IT tool DYPOD regarding display of infrastructure data transmitted to RINF;
• Update of national (CZ) tool ETD in area of primary locations update
• Update of national (CZ) IT tool ETD managed by SZCZ in the area of infrastructure data for ETCS timetable construction
• Analysis of further development of national (CZ) IT tool ETD regarding SZCZ infrastructure description on meso and micro level;"

Demarcation to other CEF projects:
» The risk of overlaps with other ongoing EU projects is minimal because all staff costs are closely monitored through periodic reports.
» Task 2.1 The personnel cost for Capacity management IT – Team (DCM) will be financed under CEF TA. All other developments and implementation for TTR DCM (e.g. Rail Capacity Broker, ECMT, ...) are covered by the 21-EU-TG-DCM IMP 22_24.
» All other Tasks are dedicated CO-Beneficiary tasks without any overlapping to RNE projects.

Work package WP3 – Temporary Capacity restriction tool

Work Package Number	WP3	**Lead Beneficiary**	1 - RNE
Work Package Name	Temporary Capacity restriction tool		
Start Month	1	**End Month**	48

Objectives
Involved beneficiaries » RNE » RFI » SNCF-Reseau » SZCZ » Infrabel Objectives The following objectives shall be reached: » Enhance the unified implementation of the provisions set in Annex VII of the Directive 2012/34/EU (RNE) » Create a clear overview of the steps to be followed during the lifecycles of TCRs (RNE)

» Facilitate the TCR coordination process through the establishment of interfaces between the national TCR tools and the common European TCR tool (RNE)
» Facilitate the TCR consultation process among stakeholders (RNE)
» Enhance the implementation of the commonly agreed principles and methods to be used (RNE)
» Contribute to the unified clustering and impact calculation of TCRs (RNE)
» Contribute to the unified handling of Late TCRs (RNE)
» Always provide up-to-date information concerning TCRs (RNE)
» Provide a unified method to evaluate the planned and real TCR consumption (RNE)
» Update/Develop technical interfaces (RNE)
» Update/Develop IM legacy systems (RNE)
» Evolution of the work planning applications to the standards of Annex VII (SNCF Réseau)
» Update of data structure of IT tool CSV (SZCZ)
» Adaptation of IT tool Domin (SZCZ)
» Development of a national digitalised tool for TCR (RFI)
» Implement interfaces between legacy systems and TCR (RFI)
» First steps of the implementation of TCR in the national planning tool (Infrabel)
» TCR indicator, calculator capacity usage, TCR optimisation maintenance window (Infrabel)

Anticipated effects:
» Automated exchange of TCR data from IM legacy systems to comply with Annex VII of 2012/34/EC
» Technical interface on TCR tool level as well as for legacy systems
» Fully deployed and used TCR web tool for TCR coordination

Links to other WPs
» WP 2, 4, 6 (TCRs and allocation procedures are heavily affected by Capacity Model and Strategy and vice versa)

Description

Overall WP description
The IMs apply different approaches regarding the planning and coordination of TCRs. This is mainly due to different construction and maintenance planning processes, which depend on the budget and financial planning. Furthermore, the national legislation may contain different rules in connection with the applied timeframes, periods, and communication with the applicants. To ensure, that the applicants can provide reliable and competitive railway transportation services to the end customers, the negative effects of TCRs have to be reduced to a minimum. Therefore, the following goals must be achieved:
» Highest possible availability of infrastructure options to connect origins to destinations:
» Shortest possible timeframe for TCRs to reduce production costs
» Shortest possible transport time to account for customers' needs and reduce production costs - reliable timetables
Reduced delays compared to reference times to build a reputation as a reliable partner level.

To achieve the mentioned goals, the improvement of the existing RNE TCR tool is very important. Currently the RNE TCR tool only has a manual interface (excel) for data exchange. This limits the success of the tool, since many iterative steps are required until an input file complies with the IT tool requirements to allow data import. For this reason, a technical interface shall be established allowing direct data exchange between the RNE TCR tool and IMs' legacy systems. In addition, the legacy systems which are currently just prepared to deliver input to the respective excel list need to be updated. Finally, these systems need to be newly developed not just to feed the RNE TCR tool but also enable input to the Capacity Model as well as the allocation process.

Tasks:
3.1 Upgrade TCR tool - RNE
Before starting the implementation, RNE shall prepare the functional requirements for the TCR Tool.

Some additional information should be added to the TCR objects to have more precise TCR data. This information is related to the number of tracks, electricity, gauge, profile, and speed.

The current version of the TCR Tool does not contain information about the number of tracks on the line and stations, and information on which one is closed. Means, e.g., in the case of closure of one track on the station, in the current version of the tool, it seems that whole station is closed, what is not a case.
All the newly implemented TCR objects must be visualized in the TCR Tool views. This objects must be visualized in the TCR form and incorporated into the interfaces used for data exchange (the most important to the technical interface based on the TAF/TAP TSI).

The tool shall automatically calculate the impact of the TCR (TCR classification) according the the defined rules from Annex VII and the TCR guidenlance.

Once the TCR object model of the tool is adjusted and can be created in the tool, it is also essential to provide an import feature. The import template should be available for the IMs (in the Excel and XML format, but also as a technical interface based on API service), where IMs can set up their TCRs inputs in a single source. A new requirements related to the precise definition of TCRs on the line or Primary Location Code (PLC), related to the affected track is considered.

According to the Annex VII of the Directive 2012/34/EU, Applicants should be able to consult the TCRs planned by IMs, to possibly reduce the impact of TCRs on their traffic. Applicants should have a possibility to search for TCRs that are created on the line or route of their interest. There should be a notification logic to which Applicants can subscribe to automatically receive all the changes.

According to the newly defined process, the TCR publication workflow should be updated.
After adjusting the object model in the tool and preparing Excel import, it's also necessary to provide more advanced integration options, meaning API options. There are two kinds of API options foreseen. First, a synchronization of TCRs among the RNE IT Tools, which is planned to be done automatically by the TCR Tool (push), and synchronize the TCR objects from IMs' national systems to the TCR Tool.

Using the interface, IMs will create, read, update, delete and coordinate TCRs only in the TCR tool. The frequency cannot be clearly defined as there are two ways of data input: » » either manual which will be done twice per year or
» by interface, which will happen continuously.

Therefore, the number of entries could serve as indicator and during the period of this project. For the overall European network more than 5000 entries shall be registered per timetable year. We expect to have frequent deploys for the internal tests, so that the RNE team can check the implementation status and adjust the requirements immediately.

During the implementation the change requests shall be tracked and included in the development, just like as the results of the UATs.

At the end, this booking shall be a machine-to-machine process between RNE and the IMs. Therefore, the performance of the application is essential. It shall be monitored, but also the frequency of usage. The frequency cannot be clearly defined as there are two ways of data input:
» either manual which will be done twice per year and IM or
» by technical interface, which will happen continuously.

In addition, the tool shall be used for publication of TCRs and therefore RUs will enter the tool. More than 150 logins per timetable year are being aimed at. The frequency will be an indicator for the acceptance of the tool by the sector.

Sub-tasks:
3.1.1 Preparation for the implementation
Preparing the functional requirements for development
3.1.2 Adjustment of the TCR objects
Adjusting the creation and editing of minimum sector specifications for the TCR objects and ensuring compliance with applicable EU law (SERA Directive, Capacity Regulation, OPE TSI, RINF and TSI Telematics)
3.1.3 Implementation of adjustment to the necessary views
List view, Gantt view, Map view
3.1.4 Adjusting the import function of common European TCR Tool
TCR objects (IT developments to optimize/adjust the import function of TCR tool)
3.1.5 Implementing the workflows
Coordination with IMs and consultation of applicants workflow; TCR publication workflow,
3.1.6 Establishing the common European interface connection
National systems of IMs are connected to the common European TCR tool to exchange data on TCRs; TCR tool is connected to the ECMT to provide input for Capacity Model and Supply
3.1.7 Release and change management
Preparing the releases, performing the UATs and managing the change requests during the implementation

3.2 Development of a national digitalised tool for TCR (SNCF Reseau) - SNCF Réseau
The goal of this task is the development of the work planning applications of SNCF Reseau complying with Annex VII of the EU/2012/34 directive, in particular: classification and traffic impact of work. Furthermore, to fill the RNE TCR Tool with French TCRs.

For this reason, the following implementations have to be done:
» Develop an interface for the dedicated tool for TCR 'TCAP' at X-12 (X as timetable change; i.e. 12 months prior to the timetable change) and connect with RNE TCR Tool
» Develop a new processes and IT system to aggregate information on TCR at X-24 (i.e. 24 months prior to the timetable change) and X-36 i.e. 36 months prior to the timetable change), and connect with RNE TCR Tool.

Sub-tasks:
3.2.1 Evolution of the work planning national (FR) applications to the standards of Annex VII
Evolution of the work planning national (FR) applications to the standards of Annex VII of the EU/2012/34 directive, in particular: classification and traffic impact of work

3.3 Development of a national digitalised tool for TCR - RFI
The objective of WP3 - Development of a national digitalized tool for TCR is the creation of a national TCR tool to be able to generate and manage the elements of the multi-year planning of interruptions and to be able to communicate with RNE systems. The RFI "PIC RIR" application for planning temporary capacity reductions, does not automatically generate the inputs for the RNE TCR tool, nor can automatically transmit. Furthermore, PIC RIR limits planning up to one year, and does not allow multi-year planning required by Annex VII of the EU/2012/34 directive. It is, therefore, necessary to update PIC RIR or develop a new compliant system.
The work is divided into two tasks that will be worked on simultaneously:
» the development of a national digitalized tool for TCRs
» the implementation of interfaces between legacy systems and TCR tool

Once the draft technical paper have been written, it will be evaluated and transformed into the final technical specification necessary for the development of the respective tool.

Sub-tasks:
3.3.1 Development of a national (IT) digitalised tool for TCR
Interpretation and evaluation of needed technical requirements and subsequent first draft of national (IT) IT concept definition. Architecture design of the national (IT) IT solution, evaluation of needed resources. Step by step deployment as prescheduled through releases, including interfaces with common European IT architecture. Checking of functionalities, corrections to be applied if needed
3.3.2 Implement interfaces between national (IT) systems and TCR
Study on how to connect and exchange data between the national digitalised tool for TCR, the national IT Long-term planner (for TCR part on Capacity Model) and Common IT TCR tool

3.4 Development of a national digitalised tool for TCR - Infrabel
The goal of the IT developments included in the joint DCM funding project for Infrabel consist in delivering essential building blocks for the future implementation of TTR, and a general quality increase in the capacity management on our network.
The task foresees the development of several necessary elements dealing with the following aspects:
» manage TCRs in a more qualitative and efficient way in Infrabel's national planning tool, and
» to automate the planning process for TCRs.

The planning process for TCRs is a long and heavy one, where Infrabel has to take into account a vast array of variants and elements. We foresee to use the calculation engine of our simulation tool to automate some conflict detection when planning the TCRs, in order to improve the quality and efficiency of TCR planning. The first step will be to acquire the necessary module that will indicate the capacity impact of a potentially planned TCR. The second step will be to integrate this module into our TCR planning tool, allowing automatic indication on capacity impact when planning TCRs. The third step foresees the development in order to use our simulation tool capabilities to find the best suited timeframes for a certain TCR or maintenance window (in order to minimise capacity impact).

These steps will allow Infrabel to enhance transport services by decreasing the general impact of scheduled TCRs.

At the moment, the planning of long term TCRs and path planning are done in different IT tools at Infrabel. The goal is to step by step introduce a module in our planning tool in order to manage the TCRs and path together. This way Infrabel can much more efficiently and proactively detect and resolve inconsistencies between TCRs and planned paths.
The developments also foresee an automatic categorisation in accordance with Annex VII of the EU/2012/34 directive to better detect needs for coordination with neighbouring networks and publish the TCRs to the sector accordingly.

Sub-tasks:
3.4.1 First steps of the implementation of TCR in the national (BE) planning tool

Possibility to manage long-term temporary capacity restrictions in the national (BE) planning tools managed by Infrabel. Possibility to elaborate draft and final offer. Publication of the coordinated TCRs for consultation of to the RU and determining the importance of the TCR in compliance with the RNE guidelines

3.4.2 National (BE) TCR indicator capacity usage

Development customisation algorithm platform to enable when a TCR is planned in the national (BE) planning tool for works, an online call to the Algorithm platform will be triggered to get an indication how much impact it will have on the capacity.

3.4.3 National (BE) TCR calculator capacity usage

This project includes the development of the customization in the national (BE) TCR planning tool to be able to use the algorithm platform. During this development, we will also continuously improve the indicators of the algorithm platform.

3.4.4 National (BE) TCR optimisation maintenance windows

Study and development of national (BE) software to enable Infrabel to calculate up front on which places TCRs can be implemented without (or with minimal) impact on the traffic.

3.4.5 Improving operational planning of infrastructure works

Enabling the creation of seperate works dossiers (BNX) for RUs on the one hand (containing only information relevant for them) and Infrabel operational services on the other hand, accompanied by a new validation process

3.5 Adaptation of existing (legacy) systems of SZCZ regarding temporary capacity restriction - SZCZ

The IT tool CSV is an application used at Správa železnic for planning, evidence and evaluation of maintenance works and infrastructure restriction at the network operated by Správa železnic. The existing data structure of the IT tool CSV will be extended with information used in the TCRResponseMessage. It will be mostly information about impact of temporary capacity restriction to railway undertakings. Information created in IT tool IS CSV will further transmitted via internal data communication into IT tool DOMIN, which ensures data communication with IT tools of railway undertakings and other IT tools of Správa železnic.

IT tool DOMIN is application used at Správa železnic for transmitting information about planned and unexpected infrastructure restriction into IT tools of railway undertakings and further application of Správa železnic. It tool DOMIN enables creation of information about unexpected infrastructure restriction and is able to receive this information from other IT tool of Správa železnic. IT tool DOMIN receives information about real content of infrastructure restriction from application of Správa železnic and forward these information into IT tools of railway undertakings and into other IT tools of Správa železnic.

Data structure of IT tool DOMIN will be updated with information received via internal data communication from IT tool CSV to enable further transmission of information into RNE TCR tool. User interface of www DOMIN will be updated to enable responsible user of Správa železnic to enter information about unexpected capacity restriction necessary from RNE TCR tool. Development will be done to enable both way communication with system RNE TCR tool using TSI messages TCRMessage, TCRResponseMessage a TCRCanceledMessage. For communication with RNE TCR tool, Common Interface will be used.

Sub-tasks:

3.5.1 Update of data structure of IT tool CSV

- Update of data structure of IT tool CSV according to TCR it tool
  - update of user interface of national (CZ) IT tool CSV with information requested by TCR IT tool
  - update of internal data communication from it tool CSV to IT tool DOMIN with information requested by IT tool TCR RNE

3.5.2 Adaptation of IT tool DOMIN

- update of data structure of IT tool DOMIN with information used in TCRResponseMessage
- analysis of TCR content and internal format of Správa železnic used for transmission of information about infrastructure restrictions
- update of data structure of IT tool DOMIN with information used in long term planning of maintenance works for transmission into TCR tool
- update of internal data communication from IT tool CSV to IT tool DOMIN with information requested by TCR tool
- update of user interface of wwwDOMIN to display additional information used in TCR tool about (planned and unexpected) infrastructure restriction
- update of user interface of wwwDOMIN to enter additional information used in TCR tool in case of unexpected infrastructure restriction.
- communication between IT tool DOMIN and TCR via Common Interface using TCRMessage, TCRResponseMessage a TCRCanceledMessage "

3.5.3 Updates of national (CZ) IT tools SZCZ in area of identification of object with infrastructure restriction

The project aim is to update national (CZ) applications managed by SZCZ to enable better identification of object with infrastructure restriction for purpose of TCRs , including impacted infrastructure characteristics.

- Update of national (CZ) IT tool DOMIN regarding identification of object with infrastructure restriction;
- Update of national (CZ) IT tool ETD regarding identification of object with infrastructure restriction;
- Update of module of national (CZ) IT tool KADR for purpose of TCR identification;
- Update of national (CZ) IT tool CSV regarding identification of object with infrastructure restriction for purpose of TCR"""

Demarcation to other CEF projects:
» The risk of overlaps with other ongoing EU projects is minimal because all staff costs are closely monitored through periodic reports.
» Task 3.1 The personnel cost for Capacity management IT – Team (DCM) will be financed under CEF TA. All other developments and implementation for TTR DCM (e.g. Rail Capacity Broker, ECMT, ...) are covered by the 21-EU-TG-DCM IMP 22_24.
» All other Tasks are dedicated CO-Beneficiary tasks without any overlapping to RNE projects.

Work package WP4 – TTR Capacity Supply/allocation

Work Package Number	WP4	**Lead Beneficiary**	1 - RNE
Work Package Name	TTR Capacity Supply/allocation		
Start Month	1	**End Month**	48

Objectives

Involved beneficiaries
» RNE
» RFI
» SNCF-Reseau
» SZCZ
» Infrabel
» DB InfraGO

Objectives
The following objectives shall be reached:
» Provide a detailed and constantly updated overview of the available capacities on a European scale (RNE)
» Support the international harmonisation of the capacity products (RNE)
» Create different Capacity Supply variants for the same period to facilitate the pre-planning of capacities (RNE)
» Facilitate the preparation of harmonised capacity products for diversionary lines during the TCR / TCR window periods (RNE)
» Contribute to the transparent and appropriate handling of capacities safeguarded for dedicated purposes (RNE)
» Ensure the unified clustering of TCRs (RNE)
» Facilitate the TCR consultation process by providing a standardised, transparent platform for every involved stakeholder (RNE)
» Reduce the path elaboration phase, thus achieving earlier final offer publication deadlines (RNE)
» Facilitates the feasibility study process (RNE)
» Upgrading of national existing ordering tools (supply/request) to ensure: synchronisation, homogenisation, merge IS, interoperability (RNE)
» Upgrading Path Coordination System (RNE)
» Ready for integration of Capacity Broker (RNE)
» Acceptance Refusal Process, capacity TAF/TAP TSI (SNCF-Reseau)
» Border harmonisation tool (DB InfraGO)
» Tactical planner to be ready for preparation and elaboration of capacity (continuous capacity planning) (RFI)
» IT tool able to support capacity requests and allocation (RFI)
» Adaptation of existing (legacy) systems for connection with PCS (SZCZ)
» First steps of national implementation of IT packages ‘Capacity Supply/Request/Modification’ (Infrabel)

Anticipated effects:
» Harmonised supply/allocation of capacity
» Harmonised principles for infrastructure capacity management

» Exchange of data in all phases (planning, operation, …)
» Transparent communication of capacity and specific capacity restrictions

Links to other WPs
WP 2, 3, 5, 6 (TCRs and allocation procedures are heavily affected by Capacity Model and Strategy and vice versa)

Description

Overall WP description
The Capacity Partitioning (final version of the model) is the basis for the construction of the Capacity Supply. The Capacity Planning phase starts at X-18 and IMs start to work on the internationally harmonised Capacity Supply from X-16 at the latest. The Supply consists of a 365-day overview – capacity diagram, where objects are displayed as pre-planned paths and or wider bandwidths with the number of available slots. It is up to the IMs to decide in which form (which objects) the Capacity Supply will be published. Nevertheless, the international Capacity Supply has to be harmonised. The IMs should start harmonisation of the international Capacity Supply as soon as possible and at the latest at X-13,5 actively approach neighbouring IMs with proposals for the Capacity Supply to coordinate the products and their publication. For days when the traffic will be affected by TCRs, IMs should jointly prepare sufficient, harmonised Capacity Supply on the diversionary lines. Alignment of the TCR windows is also part of this harmonisation.

Tasks:
4.1 ECMT implementation - RNE
Before starting the implementation, RNE shall prepare the functional requirements for the ECMT.

The object modell shall be adjusted, so that the fresh requirements and new attributes can be stored for the capacity supply objects. Objects can be linked to variants and an object can belong to one or more variants.

As the attributes will be extended, the views and the forms shall be adjusted in line with the fresh requirements.

The capacity supply objects might be prepared on a mezzo-level infrastructure data, so, the related views shall be adjusted accordingly. It has an impact on the network view presentation and also on the chart (space-time diagram) where the mezzo-level information can be presented.

It would be also possible to prepare views on the track level, perhaps even on the primary locations. The views shall be adjusted accordingly.
Apart from adjusting the views and forms according to the changed object model, the import options shall be improved. This means that the tool shall support an Excel import option for the IMs, where they can import multiple objects for their capacity supply:
» Paths
» Catalogue paths
» Capacity bands
» Temporary Capacity Restrictions

Apart from the publication of the objects, their update procedure is essential, also the interaction between those objects.

As part of the TCR publication process, the impact assessment can be triggered, and the affected capacity supply objects shall be detected by the tool.

Paths can be published by the IMs in the tool, however the workflow shall be implemented, in which steps, statuses and presentation options they are handled in the tool. That concerns not only the allocated paths, but also the feasibility study results.

After adjusting the object model in the tool and preparing Excel import, it's also necessary to provide more advanced integration options, meaning API options.

It is essential to integrate to the national tool of the IMs, so that the Capacity Supply objects can be imported directly from their national tool to ECMT. Or vice versa, any IM could download the published Capacity Supply to their national tool from ECMT.

It has special relevance for objects (paths) that are not planned in advanced as pre-constructed products in the Capacity Supply, but allocated during the running timetable period. Those mean negative capacity too, just a like a TCR, because they will reduce the still available capacity.

The documentation is essential before the implementation, but even during the implementation. We expect to have

frequent deploys for the internal tests, so that the RNE team can check the implementation status and adjust the requirements immediately. The testing shall happen at least 12 times during the implementation of the project.

During the implementation the change requests shall be tracked and included in the development, just like as the results of the User Acceptance Tests (UAT).
At the end, this booking shall be a machine-to-machine process between RNE and the IMs. Therefore, the performance of the application is essential. More than 2000 data entries per timetable year are expected. It shall be monitored, but also the frequency of usage.

Sub-tasks:
4.1.1 Preparation for the implementation
Preparing the functional requirements for developments
4.1.2 Adjustment of the capacity supply objects
Adjustment the creation and editing of capacity supply objects (pre-planned paths, paths, capacity bands, TCRs)
4.1.3 Implementation and adjustment of the necessary views
Network view, new capacity supply chart
4.1.4 Adjusting the import function of ECMT
Capacity supply objects and TCRs
4.1.5 Implementing the workflows
Path details update and feasibility study result workflow; TCR impact assessment
4.1.6 Establishing the common European interface connections
ECMT is connected to the national systems of the IMs to synchronize capacity supply
4.1.7 Release and change management
Preparing the releases, performing the UATs and managing the change requests during the implementation

4.2 National implementation of IT packages "Capacity Supply/Request/Modification“ - SNCF Reseau

The goal of this task is to implement in SNCF Réseau’s IT systems the process for acceptance or refusal of path requests. Moreover, the existing national tools shall be upgraded to ensure compliance with TSI implementation. This includes synchronization, homogenization, interoperability and merge of old IT systems. In addition a B2B (business-to-business) platform shall be developed to provide new web services to Railway Undertakings (RU), in line with TSI messages.
In detail, the following activities shall be performed:
» Implementation of a service platform to showcase the capacity offer and commercial response using national tools, in interaction with STI TAF/TAP Message Path Details
» Interfacing with order management tools (BASIC / CMDE) and adding advanced functions (routes, scenarios)
» Adaptation of existing tools (calculation tool Houat/Galite)
» Downstream adaptation of the legacy IS for real-time management (dispacher, RU)
» Update the data in the legacy data base
» Provide theoretical running time calculation results for DAS (Driver Advisory System)
» Implementation of a service platform to showcase the capacity offer and commercial response using national tools, in interaction with STI TAF/TAP Message Path Request
» Interfacing with order management tools (BASIC / CMDE) and adding advanced functions (routes, scenarios)
» Adaptation of existing tools (calculation tool Houat/Galite)
» Downstream adaptation of the legacy IS for real-time management (dispacher, RU)
» Update the data in the legacy data base
» Provide theoretical running time calculation results for DAS (Driver Advisory System)
» Implementation of the "path workflow" associated with the acceptance-refusal process and the corresponding TSI messages

Sub-tasks:
4.2.1 National (FR) implementation of IT packages "Capacity Supply“ B2B
B2B platform aiming to provide RUs with a clear view of the national (FR) applications submitted
4.2.2 National (FR) implementation of IT packages "Capacity Supply“
Upgrading of national (FR) existing ordering tools to ensure: synchronisation, homogenisation, merge IS, interoperability
4.2.3 National (FR) implementation of IT package “Capacity Request” B2B
B2B platform aiming to provide RUs with a clear view of the national (FR) applications submitted
4.2.4 National (FR) implementation of IT package “Capacity Request”
Upgrading of national (FR) existing ordering tools to ensure: synchronisation, homogenisation, merge IS, interoperability
4.2.5 National (FR) Path Workflow implementation for acceptance/refusal

National (FR) Implementation of the ‘path workflow’ associated with the acceptance-refusal process and the corresponding TSI messages

4.3 National implementation of IT packages "Capacity Supply/Request“ - RFI
RFI will develop a “tactical planner”, a tool that allows to build and plan the annual capacity. This tool will be able to communicate with RNE ECMT, and RFI’s commercial requests system, which in turn will communicate with the RNE PCS. To achieve these objectives, the task has been divided into two sub-activities:
» National implementation of IT packages "Capacity Supply" RFI.
This task contains the feasibility study to prepare the creation of the first Capacity Supply. After the feasibility study has been launched, the second step is to draw up the final concept. The third step is the development and the publication of the capacity product (Capacity supply). The deliverable should comply with the TTR handbook and should be aligned with the central Capacity Hub of Digital Capacity Management for an overall capacity publication at the central level.
» National implementation of IT packages “Capacity Request” RFI.
This task contains the development (and related activities like feasibility study, testing, etc.) for the national implementation of IT package "Capacity Request". The interface between the national tool for requests (the current Astro IF tool) and the central RNE PCS has to be adapted and updated in order to fulfil the TTR products' demanded by customers. Connections with the new tactical and strategic planning systems have to be taken into account as part of this sub-activity.

Sub-tasks:
4.3.1 National (IT) implementation of IT packages "Capacity Supply“ RFI
Interpretation and evaluation of needed technical requirements and subsequent first draft of national (IT) IT concept definition. Architecture design of the national (IT) IT solution, evaluation of needed resources. Step by step deployment as prescheduled through releases, including interfaces with common European IT architecture. Checking of functionalities, corrections to be applied if needed
4.3.2 National (IT) implementation of IT package “Capacity Request” RFI
Interpretation and evaluation of needed technical requirements and subsequent first draft of national (IT) IT concept definition. Architecture design of the national (IT) IT solution, evaluation of needed resources. Step by step deployment as prescheduled through releases, including interfaces with common European IT architecture. Checking of functionalities, corrections to be applied if needed

4.4 Upgrading the RNE system PCS - RNE
Based on the permanent workshops and meetings with the PCS users, the tool might need to be extended with new views. Or existing views, presentations shall be improved so that the users can finalise their requests and offers faster.
New processes (like path optimisation as an example) shall be added to PCS, or existing process types shall be amended according to the TTR process description.
The TAF/TAP TSI gets new XML Schema Definitions (XSD) twice a year, published by ERA and a sector schema published by the Joint Sector Group. To keep the tool TAF/TAP TSI compliant, PCS shall be permanently updated with the recent changes in the TAF/TAP TSI.

RNE, together with the existing PCS supplier, prepares a feasibility study for the integration to the capacity broker, including reference data, timetable information, etc.
Based on the feasibility study, PCS shall be prepared for the integration to the capacity broker. The integration might happen by using simple data base connection or APIs, depending on the later decided implementation details.

Subtasks:
4.4.1 Upgrading common European Path Coordination System (PCS)
Adjusting existing and creation of new views in PCS, Adjusting existing processes and implementing new processes according to TTR process description, Extending the PCS schema according to the recent TAF/TAP TSI changes
4.4.2 Ready for integration of common European Capacity Broker
Feasibility check for the integration, preparation of the integration of the common European Capacity Broker

4.5 National implementation of IT packages "Capacity Supply/Request/Modification“ Infrabel - Infrabel
The goal of the IT developments included in the joint DCM funding project for Infrabel consists in delivering essential building blocks for the future implementation of TTR, and a general quality increase in the capacity management on Infrabel’s network.
The overall goal of TTR in this phase is to take the necessary steps in terms of management of capacity and the aligned processes to increase quality and overall efficiency. To achieve this, Infrabel foresees the development of several necessary IT-elements.
These fall into two major categories:

» The first category consists of the development of roadmaps and modules in our national planning tool, to allow the management of all paths in one timetable tool (today there is a different tool for short term and long term planning). In addition, the automation of path selection for RUs will be investigated via a PoC. On top of this, developments in our planning tool are foreseen to increase the level of detail concerning local capacity, the detection of erroneous timetables, the availability of schematic views of planned paths and the overall improvement of automated conflict detection.
» The second category consists of the use of our simulation tool calculation engine to automate the detection of overlapping paths when planning and to serve as a first step for the automatic creation of paths by the planning tool.

Subtasks:
4.5.1 Integration of all national (BE) train planning activities in one tool: phase 1
First steps of the integration of LT train path creation in the national (BE) planning application: business case, study, market analysis, improvement of traject runtime calculation, use of calendar instead of Infrabel internal concept of train path validity
4.5.2 National (BE) Proof of concept Click & Ride
Proof of Concept for the national (BE) implementation of a basic Click&Ride solution based on the pre-arranged path definition
4.5.3 Linking simulation national (BE) tool for conflict detection
Linking national (BE) simulation tool for conflict detection
4.5.4 Simulation as a service core national (BE) development
National (BE) Development of a simulation as a service core development
4.5.5 National (BE) Improvements for timetabling
BE-wide Possibility to define timetables at the lowest level (switch level). Generate a report concerning discontinuous timetables. Improve the communication process to the RU in case of trains impacted by work possessions
4.5.6 Planning on a new schematic "map"
Possibility to create/modify/visualise train path and work possession on a new schematic map.
4.5.7 National (BE) Improvements related to conflict and overlap detection
National (BE) Improvement of detection of conflicts and overlapping between train path/work possession and traffic limitation, line not usable for freight, limitation due to PC codification; improvement of Infrabel internal processes to officialise work possession, starting from the work request; publication to the RU's
4.5.8 Manage the national (BE) transport plan and annual service within the same application used for rolling planning
Integrating the management of the national (BE) transport plan and annual service into UPM by adding multiple other essential functionalities

4.6 Adaptation of existing (legacy) systems of SZCZ – PCS regarding Path Coordination system – SZCZ
The IT tool KADR is certified by ERA as TSI compliant application. The IT tool KADR (name of a tool of the Czech Infrastructure Manager) is the application for critical infrastructure of Správa železnic. The tool contains information about all allocated paths. This information is further transmitted to all applications of Správa železnic, IT tools of railway undertakings and the IT tool for passenger information. KADR is used by Správa železnic to process ad hoc path requests including capacity allocation.
The IT tool “www KADR” is used by railway undertakings to place path requests and enable to fulfil all other steps defined in TAF TSI process PathRequest. Railway undertakings with own IT systems send and receive to IT tool KADR all information and messages used in process PathRequest using TSI messages via Common Interface. TAF TSI message according XSD 2.2 is used.

A change request of TAF/TAP TSI CCB concerning Train object Modelling (TOM) created new objects "Route and "Reference TrainID", which changes fundamentally the data communication between all participants of the data exchange process PathRequest. Therefore, it is necessary to update the data structure of the IT tool KADR together with the data communication with railway undertakings to comply with the agreed change requests.
RNE uses for the communication with the IT tool PCS the messages PathCoordinationMessage and ObjectInfoMessage. The IT tool KADR will be updated and enabled to receive, process and send the PathCoordinationMessage and the ObjectInfoMessage according to the use cases defined by PCS RNE. A further issue is the RNE PCS object Dossier identified by the identifier CaseReference. SŽ does not use this object in its existing data communication with railway undertakings. Therefore, the existing data and process model of the IT tool KADR has to be updated to enable the operation with object Dossier. The process model of the IT tool KADR will be updated to enable railway undertakings without own IT tool to place international PathRequest without RNE PCS. RNE PCS uses for the data communication TAF TSI XSD in version 3.X. This version includes the new element LocoIdent which needs to be updated in the IT tool KADR.

In KADR TAF TSI process PathAlteration has not yet been implemented - i.e. path modification caused by the RU. The IT tool KADR will be developed to implement the process PathAlteration including the data communication with the IT

tools of railway undertakings. A business logic supports the responsible employee of Správa železnic to identify paths that shall be modified for reasons caused by Správa železnic. Solutions of PathAlteration process may be the cancellation of the path, the rerouting of the path or substitution (in case of passenger transport). All operations will be possible in bulk processing. Railway undertakings with own IT tool will be informed using TAF TSI communication version 3.x in line with the process PathAlteration. Railway undertakings without own IT tool will be informed in the user interface of wwwKADR including the possibility to react on a draft created by Správa železnic. The output of PathAlteration process will be saved into the database of the IT tool KADR and will be transmitted to other applications of Správa železnic via internal data communication. If public passenger traffic is affected than this information is transmitted into state information system about timetables CISJR (name of a tool of the Czech Infrastructure Manager) and into the IT tool for passengers.

Subtasks:
4.6.1 Implementation of new TSI TAF objects Route and Reference TRID into process model of IT tool KADR
- Implementation of new objects ""Route"" a ""reference TRID""
- Update of user interface of IT tool KADR with new object
- Update of IT communication with railway undertakings to XSD schema of TAF TSI TAF 3.x"

4.6.2 Communication between RNE IT tool PCS and IT tool KADR via TAF messages 3.x
- update of data and process model regarding TAF TSI implementation in IT tool PCS RNE
- Implementation of object CaseReference in use cases defined by IT tool PCS RNE
- Implementation of paths PathCoordinationMessage and ObjectInfoMessage in use cases defined by IT tool PCS RNE
- update of user interface of IT tool KADR with functions necessary for data communication with PCS
- Implementation of updated structure of LocoIdent - update of user interface of IT tool KADR with functions necessary for data communication with PCS
- Implementation of updated structure of LocoIdent"

4.6.3 Adaption of IT tool KADR in Path alteration process caused by infrastructure works according TAF TSI process
- implementation of process PathAlteration according to TSI TAF for Path affected by infrastructure works into IT tool KADR
- bulk processing of paths modified from infra works on selected section
- bulk processing of paths with substitute transport on selected section
- write of paths modified in PathAlteration process into database of IT tool KADR and
- fixed lock of construction in IT tool KADR"

4.6.4 Implementation of company role ‘Applicant’ into process model of IT tool KADR
- implementation of type of company ""Applicant into process and data model of IT tool KADR
- definition of activities that are to be done by Applicant of Railway Undertaking based on process step in Path request process.
- update of functions of Railway Undertakings because of implementation of functions of Applicant
- update of IT tool KADR a and data communication because of needs of Applicant and Railway Undertaking"

4.6.5 deleted - Implementation of new TSI TAF objects Route and Reference TRID into process model of IT tool KANGO
- Implementation of new objects ""Route"" a ""reference TRID""
- Update of user interface of IT tool KANGO with new object
- Update of IT communication with railway undertakings to XSD schema of TAF TSI TAF 3.x" - deleted

4.6.6 Update of national (CZ) IT tool KADR regarding functions necessary for communication with Applicant via Common interface,
Creation of new user interface to national (CZ) application KADR for configuration of data communication with applicants via TAF TSI messages PathRequestMessage, PathDetailMessage)(by a responsible user of SZCZ. Responsible user of SZCZ will be able to define data communication with applicants

4.7 Border Harmonization Tool (MVP) - DB InfraGO
The task 4.7 of work package 4 covers a new tool for border harmonization processes that will make the harmonization of the international railway traffic on border-crossings easier. Especially in the context of the TTR implementation this function is definitely needed. The central goal of TTR is a further harmonization of European timetabling processes and for reaching this goal the timetable harmonization at the borders is essential.
Border harmonization is a key aspect of timetabling. In Europe, there are no common standardized processes for international traffic harmonization (passenger and freight), and even more so, the border time communication is not digitalized at an adequate level. Currently, multilateral and bilateral meetings are held, calls or mails are exchanged among the Infrastructure Managers (IMs) about those border times.
IMs mostly have singular harmonization processes with their neighbouring IMs. One IM often has individual (border-specific) data structure with one neighbour which is different to other border points with other neighbours creating a huge complexity.

RNE provides some individual solutions for planners like the PCS (Path Coordination System) and a storage place for COBRA files (= Excel File used for manual European border harmonization). Still, the information exchange remains manual where borders are concerned. The aim of this task is to generate a joint data space showing the information to all interested parties independent from the way of data provision.

Overall, an IT solution for a very complex manual process should be developed, to reduce the huge workload for every national timetabling department and make the harmonization of international traffic on the borders easier and faster. The final result will be an IT Tool in which all IMs can store their data for border harmonization creating an European overview and making coordination much easier.
A pilot with RNE, Infrabel and DB InfraGO is conducted in this project. The output shall be rolled out to IMs already interested such as Banedanmark, ProRail, CFL, SNCF, RFI, ÖBB, SZCZ and ADIF.

Subtasks:
4.7.1 Conception of the IT-Tool
- Design user interface
- Definition background software
- Definition function for tool elements
- Definition interface for all tool functions (only where needed) to TAF/TAP
- Development procedure and function for data exchange with Excel "
4.7.2 IT Development and Test
IT Tool Development:
- Implementing a new tool (including new entities)
- Integration with BigData, esp. focused on border points (including regular data synchronization function)
- Implementation of needed workflows, consistency checks and notifications function
- Border harmonization function, including TAF/TAP TSI communication related to status set
- Data Import/Export via Excel File; User authentication; Connection to Common Interface

Test IT-Functions:
- Work Procedure
- Test TAF/TAP Interfaces
- Test RNE Interfaces
- Test IM Interfaces
- Test Excel Import/Export "
4.7.3 IT Tool Usage for preparation of ATT 2024
- Usage for preparation of ATT 2024
- Postprocessing (if needed)
- Evaluation of the tool and review "

Demarcation to other CEF projects:
» The risk of overlaps with other ongoing EU projects is minimal because all staff costs are closely monitored through periodic reports.
» Task 4.1 The personnel cost for Capacity management IT – Team (DCM) will be financed under CEF TA. All other developments and implementation for TTR DCM (e.g. Rail Capacity Broker, ECMT, ...) are covered by the 21-EU-TG-DCM IMP 22_24.
» All other Tasks are dedicated CO-Beneficiary tasks without any overlapping to RNE projects.

Work package WP5 – TTR Capacity Broker (Short Term / Ad Hoc) and Capacity Production

Work Package Number	WP5	**Lead Beneficiary**	1 - RNE
Work Package Name	TTR Capacity Broker (Short Term / Ad Hoc) and Capacity Production		
Start Month	1	**End Month**	48

Objectives
Involved beneficiaries » RNE » DB InfraGO

» SNCF Réseau
» SZCZ
» Infrabel
» SBB (associated partner)

Objectives
The following objectives shall be reached:
» Functional requirements are ready for the Capacity Broker (RNE)
» Tender documentation, including the evaluation criteria, is ready (RNE)
» The contract is signed with the supplier (RNE)
» Implementation of the TAF/TAP TSI object model (RNE)
» Administration of the users and the national particularities (RNE)
» Train parameters are available (RNE)
» New Case Reference can be created (RNE)
» Created objects are editable (RNE)
» Planned Transport Identifiers can be assigned to the objects (RNE)
» Workflow is presented to the users (RNE)
» Short-term ad hoc path request for individual train runs is implemented (RNE)
» Timetable quality check constraints are implemented (RNE)
» Automatic path construction constraints are stored for the IMs (RNE)
» Sequential negotiation algorithm is implemented (RNE)
» Alpha, beta and production versions are released (RNE)
» UAT is performed (RNE)
» Change requests are handled during the implementation (RNE)
» Performance report is prepared after the production release (RNE)
» Studies on automatisation (simulation, study tool, run calculation tool) (SNCF Réseau)
» Interface DB (Legacy Systems) - workflow for international, automated train paths (DB InfraGO)
» Automatic construction of timetable for one day requests in IT tool KADR including data communication with PCS (SZCZ)
» Simulation as a service POC click & ride (Infrabel)

Anticipated effects:
» Simple and quick international booking tool for short term/ad hoc requests
» Timetable quality check, so that Applicants receive a harmonised offer
» Reduced work load for path planning due to automated harmonisation
» Down to market approach

Links to other WPs
WP 4, 6 (Data exchange)

Description

Overall WP description
Work Package 5 is about the implementation of the Capacity Broker and its link to the national booking tools. The scope of the Capacity Broker and the implementation of the IM will be the following:
» Short-term ad hoc path request for individual train runs
» Booking paths for train runs from 24/48 hours to 7/14 days before the train run
» Trains without dangerous goods
» Trains with a single running day

The Capacity Broker will perform a negotiation among the connected IMs that are involved in the train run. There are certain constraints that have an effect on this negotiation. The following variables will be stored.
» Average path construction time
» Reservation time of the offer
» Synchronisation time on the borders

The tool will check the time constraints of the integrated IMs, as well as the content of the times desired by the Applicants and will start a sequential communication based on that. Once the IMs have provided their offer, the tool will perform a timetable quality check, so that the Applicants receive a harmonised offer. To enable this check, IMs will publish their border synchronisation times in the Capacity Broker. They can be set up per border, so that full customisation is possible.

The Capacity Broker itself will not check the reservation time, because this task shall be performed by the IMs. However, the tool will show this information on the screen and indicate it to the customer. The tool will also present the estimated time of arrival of the IM's offer.

Tasks:
5.1 Capacity Broker (MVP:STAH) - RNE
Before the publication of the tendering document, RNE shall prepare the functional requirements for the Capacity Broker. It shall contain all the necessary details that will make it feasible for applicants to prepare an offer. Technical details can be clarified during the implementation in an agile manner.
Selection and evaluation criteria shall be available by the publication of the tender. RNE shall prepare those materials in line with the planned implementation, so that only qualified applicants could be selected to ensure a high quality implementation. The selection and evaluation criteria will be published in advanced to all applicants, so that they are aware of the selection process.
During the tender, the contract proposal shall be prepared by RNE as for any other RNE IT implementation. Then, the template can be checked with the selected applicant and it can be signed to kick-off the implementation.
Before the preparation of any views, it is relevant to have this new domain well-defined. As for any other RNE IT implementation, it must respect the existing TAF/TAP TSI standards. The object model (including case reference, train, path request, path and route) shall be implemented and the necessary links amongs objects shall be stored.
The TAF/TAP TSI model brings also the structure of locations and parameters that shall be respected in the implementation. It means code lists, codings and formats. E.g., the locations to be stored with Primary Location Codes, possibility to have multiple times per location in line with the existing time qualifier codes, and the default mandatory/ optional train parameters.
Apart from the common available train parameters, each IM has the option to publish their national particularities. It can be either a network-specific parameter (on path or on location level), but it can be some nationally available specific value for a code list (e.g., train activity type). Some parts of the reference data are also national specific, so it's part of the national particularity. E.g., loco types shall be published by the IMs and those shall be stored as reference data in the Capacity Broker.
Further reference data shall be also available in the tool, such as users, agencies with their company codes and infrastructure data. Wherever it is possible synchronization shall be applied from a central reference database, e.g., from CRD or RNE's BigData.
The Front End of the application is where the Applicants will mostly interact with the tool. To provide a good user experience, several views shall be presented to them.
The Leading Applicant will first create a Case Reference that will have all the links to the Train ID, Route objects and Path Request objects. The more detailed the creation wizard, the easier is the whole implementation. It's essential that all of the details can be fulfilled by the Leading Applicant right during the creation phase.
As the workflow management and the acceptance will happen beyond the case referene level, the control view shall be implemented in a proper way. Please note that the Leading Applicant will have the chance to make an acceptance decision per running day inside the offered paths.
» Basic data and control: showing the participating agencies, their status on the different objects and the status of the objects
» Timetable views: overview of the business (key points), detailed journey overview, path request, path views
» Any other views: administration views, comparison views

To have a presentation of the objects is one thing, but the tool shall provide an editing opportunity of all the information. There cannot be anything in the Case Reference or in any linked object that cannot be edited right after the creation. During the booking process, of course, there are limitations, but those are coming from the workflow related access control rules.
The MVP implementation of the Capacity Broker is focusing on the Short-term ad-hoc path request for individual train runs. During the preparation workshops, the workflow was clarified, taken into account the TAF/TAP TSI standards.
The workflow has the following basic steps:
1. Open
2. Harmonization
3. Plausibility check
4. Path Elaboration
5. Acceptance
6. Waiting for confirmation
7. Booked
8. Closed

Even it has several steps, the process can be rather fast. However, it can have several iterations, in case the requests or the offers have quality issues.
Depending on the type of the request and on the involved applicants/RUs, it can even skip some of the steps. Those options shall be all implemented. E.g.,
» Harmonization can be skipped, if there is not any involved applicant or involved RU
» Acceptance step can be skipped, if the Leading Applicant chose to run a pre-accepted process
The workflow of the path request process contains the major steps of the booking process. However, there are steps, where more details are necessary. The negotiation algorithm shall cover those. The steps from the path request submission until it's presented to the Leading Applicant in the Acceptance phase. So, mainly it's about path request check, coordinating the offers among the IMs and confirming the final path details.
It was agreed by the participants that the path construction shall happen in a sequential order, and first one shall be the one where the train has its origin.
Then the tool coordinates the timetables with a special focus on the border areas. As the timetable quality constraints are stored in the tool, it's possible to have quality check on the offers and run the iteration as long as there is a harmonized offer, or it's rejected by the IMs.

As the communication shall follow the TAF/TAP TSI standards, everything shall be sent via TAF/TAP TSI messages, such as:
» Path Request Message
» Path Coordination Message
» Path Details Message
» Receipt Confirmation
» Error Message
» Path Confirmed Message
» Path Details Refused Message

The documentation is essential before the implementation, but even during the implementation. We expect to have frequent deploys for the internal tests, so that the RNE team can check the implementation status and adjust the requirements immediately.
However, we also expect to have an Alpha version, where all the UI functionalities are available.

The Beta version shall have then also the interface support, so that the testing can start with the IMs.

During the implementation the change requests shall be tracked and included in the development, just like as the results of the UATs.

At the end, this booking shall be a machine-to-machine process between RNE and the IMs. Therefore, the performance of the application is essential. It shall be monitored, but also the frequency of usage.

Subtasks:
5.1.1 Preparation for the implementation
Preparing the functional requirements, tender documentation, evaluation criteria and the signed contract
5.1.2 Preparation of the backend of the common European Capacity Broker
The Capacity Broker domain is prepared with the TAF/TAP TSI object model, train parameters network specific parameters
5.1.3 Implementation of the necessary views of the common European UI
The creation of a case reference and further views for: timetable, control and administration
5.1.4 Implementation of the Short-term ad-hoc path request process for individual train runs
Implementing the workflow for this process type, including the acceptance options for the Leading Applicant
5.1.5 Implementation of the Common European Sequential Negotiation Algorithm
Storing the national path construction time constraints and applying the sequential negotiation algorithm using TAF/TAP TSI messages
5.1.6 Release and sector change management
Preparing the releases, performing the UATs and managing the change requests during the implementation
5.1.7 Common European PCS Capacity Broker upgrades, phase 1
PCS is a system uses by several hundreds of users for requesting and allocating capacity. A steady upgrade of the system is required to maintain a seamless and efficient user experience from Infrastructure Managers/Allocation Bodies as well as Applicant perspectives and potentially Rail Freight Corridors. For that purpose, several PCS groups provide their input as Change Requests (CRs). Additionally, changes in the TAF and TAP TSI standards require regular updates of the system to ensure its compliance with the standard to fulfill the needs for integrated capacity planning in Europe.
5.1.8 Integration of MVP Short Term Ad Hoc (STAH) into Common European PCS CB - phase 1, including upscale

The Minimum Viable Product (MVP) Short Term Ad Hoc (STAH) aimed to enable Infrastructure Managers to provide paths created in an automated way, ensure automatic international harmonization, and provide paths to applicants within hours of request. The Common component was the stand-alone first instance of Capactiy Broker based on MVP principle, which will be further developed to enable upscale. The coverage of the processes for the entire running timetable will be enabled in PCS Capacity Broker.
5.1.9 Integration of MVP Border Harmonization Tool (BHT) into Common European PCS CB - phase 1, including upscale
The Minimum Viable Product (MVP) Border Harmonization Tool (BHT) aimed to digitalize the long manual processes for international harmonization of paths and to enable the use of TAF TAP TSI standard for exchange data regarding the operation times at the borders which further automatizes the process. After a successful test run, the respective functionalities will be integrated into the new PCS Capacity Broker. Additional users will be introduced and have the chance to expand functionalities to cover their need.

5.2 Interface DB (Legacy Systems) – DB InfraGO
The operational short term/ad-hoc automated DB Netz-system for intra-national path requests shall be adapted to work with the RNE TTR Capacity Broker via a TAF / TAP compliant interface and extended to process international path requests.
For that purpose, both the automated system and the legacy DB InfraGO-systems for time-table management shall be enabled to process TAF / TAP requests, both for national and international paths.
In the first stage an API between DB InfraGO and RNE is established to allow the automated train path creation for valid requests between DB InfraGO and a second IM (SBB Infra) with sequential negotiating of the handover-times.
The DB InfraGO-part of the train path shall be created in the automated DB-system and held in the legacy DB-systems until the path of the second IM is created and the applicant decides to accept the offer or decline.
This directly benefits RU in need of short-term cross-border paths between Germany and Switzerland, using the handover-points Basel or Schaffhausen.
Indirectly it benefits all RU by accelerating TAF/TAP-compatibility of DB InfraGO-systems.
In the second stage the API between DB InfraGO and RNE shall be extended to enable all involved IMs to check the request for validity and feasibility before train path creation and negotiation of handover-times and thus give direct feedback on the shortcomings to the applicant.

Subtasks:
5.2.1 TAF / TAP compliant interface between RNE and DB InfraGO
Interface between RNE and DB shall be TAF / TAP compliant, such that a path request being issued in RNE booking portal and split for DB InfraGO part can be received and answered by DB InfraGO. Interface shall also be connected to workflow management within DB InfraGO
5.2.2 Workflow for international automated train paths
For automated creation of international train paths a new workflow shall be generated in order to be able to match the requirements of an international path request concerning response and reservation times
5.2.3 Legacy system enablement
The legacy systems have to be enabled to match the requirements of an international path request concerning reservation times
5.2.4 Extension of interface between RNE and IMs for information on validation of the path request
The interface shall be extended in order to allow transporting information on the validation of the path request
5.2.5 Validation of path request
Each path request received via the interface shall be validated in order to make sure, that the path request is valid and feasible. If a path request is not valid or feasible, the shortcomings shall be stated precisely.

5.3 (PLACEHOLDER) Interface SBB (Legacy Systems)
The implementation of this task is financed by SBB and therefore not part of this funding project.

Subtasks:
5.3.1 TAF / TAP compliant interface between RNE and DB InfraGO
Interface between RNE and DB InfraGOshall be TAF / TAP compliant, such that a path request being issued in RNE booking portal and split for DB InfraGOpart can be received and answered by DB. Interface shall also be connected to workflow management within DB InfraGO
5.3.2 Workflow for international automated train paths
For automated creation of international train paths a new workflow shall be generated in order to be able to match the requirements of an international path request concerning response and reservation times
5.3.3 Legacy system enablement

The legacy systems have to be enabled to match the requirements of an international path request concerning reservation times
5.3.4 Extension of interface between RNE and IMs for information on validation of the path request
The interface shall be extended in order to allow transporting information on the validation of the path request
5.3.5 Validation of path request Each path request received via the interface shall be validated in order to make sure, that the path request is valid and feasible. If a path request is not valid or feasible, the shortcomings shall be stated precisely.
5.3.6 Generalization of the approach for any neighbouring RIM
For each participating neighbouring RIM the master data and the business rules, which apply for the border harmonization, shall be implemented If a path request is not valid or feasible, the shortcomings shall be stated precisely.

5.4 Automatisation preparation SNCF Reseau – SNCF Réseau
The task is to prepare a proof of concept for automated short-term ad hoc requests, including demo. This shall demonstrate the capability of an IT tool to answer to short-term ad hoc requests and find a commercial route within residual capacity. This will be a prototype only, preparing a possible future implementation.
In detail, the following activities shall be performed:
» Workshop to define the new process and detail the project work package breakdown
» Design and development of a studies environment (create, read, update, delete)
» Development of a path finding algorithm
» Development of a running time calculation algorithm
» Development of an algorithm for calculating energy saving running time
» Design and development of algorithms to emulate the functioning of signalling systems
» Design and development of pathfinding algorithms in residual capacity
» Design and development of a results analysis module
» Design and implement the whole process on a line study case in theoretical capacity
» Design and development of rerouting algorithm in complex station
» Connexion with legacy ordering tool
» Connexion with legacy billing tool
» Add new lines according to needs and data quality progress
» Frame study of the real time tool, taking in consideration disruptions and disturbances

Subtasks:
5.4.1 Supporting short term allocation (simulation, study national (FR) tool)
POC of a simulation and study national (FR) tool: research and proposal of commercial route in the residual capacity, prospective studies
5.4.2 Supporting short term allocation (run calculation national (FR) tool)
POC of a Run calculation national (FR) tool, scenario proposal, and generation of a pre-order
5.4.3 TAF/TAP TSI for Short Term / Ad hoc Capacity at national (FR) level
Enhancing the national (FR) Information Systems in the context of TSI Observations and TSI Acceptance/Rejection processes
5.4.4 Rolling Stock national (FR) dependencies between trains at Stations and Platforms "Enchainement"
SNCF Réseau study and POC initiative to make a proposal for improving the TAF/TAP TSI messages and processes in order to manage the dependency between the train path, the positioning of trains in a station and the technical train movements required between two commercial runs (called “Enchainements” in French).
5.4.5 Operational TAF/TAP TSI
This project aims at enhance the real-time performance in operations of the national Common Interface (FR) and creating or upgrading TAF/TAP TSI messages for Train running info and forecast or Service disruption information (enhancement of new use cases). The lessons learned shall be prepared and shared with other IMs via respective RNE channels (WG, …) and ERA.

5.5 Adaptation of existing (legacy) systems of SZCZ regarding automatic construction of Timetable SZCZ - SZCZ
The IT tool KADR the ERA certified and TSI compliant application, for path allocation.
Higher amount of ad hoc path requests in instant capacity, mainly for freight traffic, require reduced time for processing of path requests. For this reason, Správa železnic starts with the automation of PathRequest processing. In the future, path requests shall be processed automatised. If path requests fulfil preconditions for automatised construction, such a path shall be constructed automatically. This procedure will also apply to harmonised international path requests.
The following task shall be implemented:
» Automatic construction of the timetable for one day requests in IT tool KADR including data communication with RNE PCS
» Processing of harmonised international path requests received from IT tool RNE PCS using TAF TSI messages.
» Transmitting of automatised Path into IT tool RNE PCS using TAF TSI messages"

Subtasks:
5.5.1 Automatical construction of Timetable for one day requests in IT tool KADR including data communication with PCS
- automatised path construction of one day path requests in instant capacity
- processing of harmonised international path requests received from IT tool PCS RNE using TSI TAF messages.
- transmitting of automatised Path into IT tool PCS RNE using TSI TAF messages"

5.5.2 Update of national (CZ) IT systems of SZCZ in area of Capacity Allocation (Update of national (CZ) IT tool KADR)
"The project is to update and adjust the national (CZ) IT system of SZCZ in the area of Capacity Allocation. IT tool KADR will be updated to enable TT construction and processing of path requests in annual timetable process"

5.6 Automatic construction of Timetable Infrabel
The goal of the IT developments included in the joint DCM funding project for Infrabel consists in delivering essential building blocks for the future implementation of TTR, and a general quality increase in the capacity management on our network.
Infrabel foresees the creation of a PoC for the automatic creation of paths, using the calculation engine of our simulation tool. This is a necessary step to be able to be linked to the Capacity Broker system as defined in the TTR IT landscape.

Subtasks:
5.6.1 Simulation as a service POC click & ride
POC for national (BE) automated train planning for short-term traffic via digital twin
5.6.2 National (BE) Exception Based Flow Management
This project aims to modernise the core of the traffic management system in BE at Infrabel by focusing on automatization in terms of traffic forecasts, incident handling and internal and external information exchange.
5.6.3 National (BE) Green Wave Driver Advisory
This projects aims to develop the calculation of the ideal speed profile and forwarding it to the driver's cabin in order to achieve a "green wave" (a.o. energy savings)
5.6.4 National (BE) Digiform Mobile
This project aims to develop a national (BE) tool for the handling of safety procedures between Signal Box & Train Drivers in accordance with OPE TSI

5.7 Development of a national (IT) IT system to manage and send interruptions occurring on RFI network to the TIS Incident Management Tool, RFI
RFI aims to develop a national (IT) IT tool with an automated and integrated protocol for the exchange of incident events, capable of notifying to TIS IMT (Train Information System – Incident Management Tool) in real time the relevant descriptions/causes associated with impacted international trains consistent with the requirements of TIS IMT.The new national (IT) IT tool managed by RFI will be able to automatically exchange data with TIS using TAF/TAP TSI messages."

5.8 Capacity production - traffic management and monitoring, RNE
Common Systems improvements in respect to traffic management and monitoring based on Capcity Regulation

Subtasks:
5.8.1 Common European Train Information System (TIS) Developments - Phase 1
Allow various railway stakeholders as they are described by TAF TSI to access TIS in order to simplify visibility and data sharing ; Identify Terminals in TIS with Subsidiary Location Codes (SLC) and involve them in the Train Run ; Enable TIS to accept users with valid interest into the transport service operation or into the monitoring of goods and passengers for statistical purposes; Wagon and Container association to exisiting trains ; Optimized and modernized TIS mobile App ; Further optimize the linking/unlinking of trains through machine learning ; TIS new versions and releases - PHASE 1
5.8.2 ETMN P2 - European Traffic Management project 2 - RNE TIS adapted to meet the needs of the ETMN concept - phase 1
"Adapt TIS according to the ETMN P2 Technical&Functional specifications:
Handover points(stations) between IMs identifiable;
Train composition available(based on user);
""Train search"" adaptation for recognition of words without customary spelling(local and english) both recognizable"
5.8.3 Language Tool Tablet - development and further upgrade - phase 1
The improvement of variables defined for the Predefined messages and PDMs for traffic managers
5.8.4 Network ETA - Network train running forecast information implementation to the common European TIS managed by RNE

Develop a forecasting module in the common European TIS managed by RNE by a selected IT company ; Adapt TIS to exchange forecast accuracy and disruption information with interested parties.
5.8.5 Performance Review - phase 1
" New Regulation requires performance review/KPIs on six Performance Areas:
1. Infrastructure and equipment
2. Infrastructure Capacity
3. Traffic Management
4. Disruption management and crisis management
5. Deployment and performance of digital services, tools and interfaces
6. Compliance with regulation / regulatory oversight"
5.8.6 TIS Performance Monitoring
One of the main goals of the railway sector is the monitoring function. To reflect the outputs of various studies and projects, the RNE TIS is required to support the sector in performance measurement and provide them with relevant performance outputs. Adaptations in TIS will be needed to align the performance monitoring concepts used in reports with the figures presented in TIS. Adaptation of TIS Performance Monitoring Concepts
5.8.7 PM Tool Europerformance - phase 1
Conduct benchmarking and define performance indicators.

Demarcation to other CEF projects:
» Task 5.1 Early Development of PCS - Capacity Broker (Scheme) will be financed under AT 2018-EU-TM-0063-S (TAF TTR) until 12/21. Tender procedure and preparatory works and developments for the full Capacity Broker system after 12/21 shall be covered by CEF TA. The Capacity Broker Minimum Viable Product – Short Term Ad Hoc (MVP:STAH) will be financed under this project.
» Task 5.3 is a mirrow task of Task 5.2 managed and financed by SBB
» All other Tasks are dedicated CO-Beneficiary tasks without any overlapping to RNE projects.

Work package WP6 – Digital Infrastructure data/Interfaces

Work Package Number	WP6	**Lead Beneficiary**	1 - RNE
Work Package Name	Digital Infrastructure data/Interfaces		
Start Month	1	**End Month**	48

Objectives

Involved beneficiaries
» RNE
» DB InfraGO
» SNCF Réseau
» SZCZ
» Infrabel

Objectives
This WP focuses on the initiative to create a single digital infrastructure system that will be able to serve all railway players by providing different data representation based on business needs. This system is envisioned to be a central place for digital railway infrastructure data within the railway sector and act as the cornerstone of a multitude of other systems within the railway sector, especially in the areas of sales, capacity planning and operations.
Currently, within RNE, there is a Big Data framework that contains digital railway network infrastructure used only by RNE IT systems and is available to RNE Members only. The idea behind the Digital Infrastructure Information System is to merge several systems that exist now and that contain parts of the digital infrastructure data such as CRD, Geo Editor, CIP, Rail Facilities Portal (and potentially RINF in the future after Joint Sector Group (JSG) CG1 provides a feasibility study) into one single system with different presentation layers to fulfil various legal regulations.
» The system must comply with the same legal requirements that are currently fulfilled by the RNE systems to be replaced: (all)
o TAF/TAP TSI Regulation for CCS CRD
o EC Regulation for Rail Facilities Portal
o Various regulations for CIP

o Internal RNE regulations for Big Data (Framework Agreement and Geo Editor Membership Regulation)
o Various EU and member states' laws for Network Statement and Corridor Information Documents
» To replace several existing systems: This system should replace several existing systems by merging their data and functions into one consistent entity. (all)
» To lower the operating and managing costs by providing more added values to the end users. (all)
» To be designed and built using the latest technologies to ensure stable operation in the following 3-5 years without risk of technological depreciation. (all)
» To ensure higher level of cybersecurity than the existing systems (all)
» Connect IM legacy systems (all)
» Implement digital twin concept (SNCF Réseau)
» Ensure the alignment and consistency of French location points with European standards (SNCF Réseau)
» Data quality improvement (SNCF Réseau)
» TAF TAP TSI Operational update (SNCF Réseau)
» Building the digital twin of the infrastructure (DB Netz)
» TAF/TA-compliant interface (DB Netz)
» Providing description of infrastructure from IT tool DYPOD via railML format using Common Interface (SZCZ)
» Quality improvement of the infrastructure description repositories (Infrabel)
» Link infra database to simulation tool (Infrabel)
» TAF/TAP-compliant interface + Common Interface (Train ID, TAF TCM) (Infrabel)

Anticipated effects:
The basic entity of the Digital infrastructure Information System will be TAF/TAP TSI Primary Location, consequently all systems connected to it will be (and are already now) based on it. The unique primary location's identifier – PLC will be used as an entity reference between this system and other connected systems also making them TAF/TAP TSI-compliant. This WP6 will focus not only on the implementation of the new Big Data 2.0 – Digital Infrastructure Information System but also on ensuring proper data migration from the existing affected systems and their representation in the new one.
The benefits of the Digital Infrastructure Information System are multiple and range from the economic to the operational. We can mention just a few of them:
» Shared data
By connecting the data from currently isolated systems, we increase the functionality of each of them and the systems that use their data. RNE and external business applications will also benefit from the merging.
» Shared system infrastructure
By merging the current different systems in one (larger) system, their dedicated resources will be reduced, lowering the operating and managing costs. The number of servers, maintenance operations and upgrades will be significantly reduced, allowing the liberated budget and human resources to be dedicated to other areas, increasing the business value of the systems.
» Common functions and process
In every system, there are several common functions that are necessary but do not add business value to the system. Some of them could be data backup, access control or cybersecurity. By using a single system these functions could be centralised, not only requiring less resources but creating a standard process for the common administrative functions that would make it easier to manage and deploy. By updating the security level, the data will be safer against the new threats of the digital world than they currently are.
» Increased Data Granularity
As it will be mentioned during the initial study, one of the main reasons behind this enabler is the need to provide all railway actors with a meso representation of the network topology that currently is not present in RNE systems.
The goal of the system will be to offer the digital railway infrastructure data in both macro and meso level to the other systems, depending on their needs. This will be done by creating a data structure compatible with TAF TAP regulations and providing different exchange methods for data provisions by the entities responsible for the data. This should be reflected in the data model description.
» Time dimension
By time dimension we refer to the possibility of using the data as it was or as it will be in a specific time. This is accomplished by providing a validity period to each element of the data model.
In the RNE Big Data framework this already exist, as a validity period is present for primary locations, segments, sections, and their parameters. The goal will be to incorporate it in any new element that is needed and to create the adequate process to make it easy for IMs to maintain.

Links to other WP
WP 2, 3, 4, 5 (Data exchange)

Description
Overall WP description Tasks: 6.1 Placeholder - Digital Infrastructure Information System ready to be used - RNE This task is implemented within RNE Technical Assistance, and the financing is not part of this grant agreement. Subtasks: 6.1.1 [Digital Infrastructure Information] CRD Go-Live Migrate from CRD to the new developed system, switching the data and the operative of CRD 6.1.2 [Digital Infrastructure Information] Geo Editor Go-Live Migrate from Geo Editor to the new developed system, switching the data and the operative of Geo Editor 6.1.3 [Digital Infrastructure Information] CIP Go-Live Migrate from CIP to the new developed system, switching the data and the operative of CIP 6.1.4 [Digital Infrastructure Information] RFP Go-Live Migrate from RFP to the new developed system, switching the data and the operative of RFP 6.1.5 [Digital Infrastructure Information System] Migrating other sector systems integration Migrate the exsting sector applications integration from Big Data to new Big Data 2.0 aka Digital Infrastructure Information System 6.1.6 [Digital Infrastructure Information] RINF Linking Design and implement the process to link the Digital Infrastructure Information system with RINF so this external database becomes a data source of the new system 6.2 [Digital Infrastructure Information] Building the digital twin of the infrastructure DB InfraGO - DB InfraGO This task is part of the work necessary to lay the foundations for the capacity planning process consistent to TTR. To create the prototypes Capacity Strategy, Capacity Model and Capacity Supply the relevant infrastructure data must be provided. This will be done according to EU regulatory requirements. The current IT systems and processes atDB InfraGO do not allow for the delivery of infrastructure at the quality / granularity needed for the Capacity Model in such an early process stage. Thus, (1) new functions must be designed and developed and (2) infrastructure data must be prepared Remark: function (2) is likely not to be finished in the present CEF II call, but in subsequent calls, and therefore not yet part of the deliverables. Subtasks: 6.2.1 National (DE) Virtual layer for infrastructure data "While trying to establish the connection to the national (DE) systems it has become obvious, that the data points, which have to be integrated into the digital twin of the infrastructure because of being essential for the calculation of the time of travel with ETCS, may be used for the annual planning horizon but for a projection into the future – and thus for the capacity supply – the possible data quality and consistency of the data may not be guaranteed by the actual legacy national (DE) system. In order to work around this problem, the definition of a new infrastructure model especially being able to guarantee for consistency of data over time has been started. Therefore, the DB InfraGO has engaged external expertise by BCG Platinion to get a better view on the problem. Particulatr attention should be given to ensure data quality in RINF as European source of infrastructure data to be reused by common European tools." 6.2.2 National (DE) IT supported detection of narrow points within the infrastructure The detection of narrow points within the infrastructure is crucial to ensure a safe railway system. Therefore European Standards (EN 15273) as well as DB InfraGO directives (Ril 458.0102) have been implemented to standardize the calculation. Within the task the experts of DB InfraGO shall be enabled to use IT support for the calculation and thus gain productivity while ensuring the compliance with aforementioned standards and directives. The IT support shall include a graphical user interface for the choice of data sets (infrastructure and structure clearance), the definition and display of different type gauges (e.g. conductor rail gauge, electrification clearance gauge), the calculation algorithm for narrow points, a display of narrow points as well as reporting functions for narrow points in different formats." 6.3 [Digital Infrastructure Information] Building the digital twin of the infrastructure SNCF Reseau – SCNF Réseau To enable a seamless dialogue, internal reference systems should be harmonized with the European localization model.To allow industrial and standardized dialogue on train positioning, it is important to set up the data repository carrying the locations (whether primary or secondary) in an approach to European standards (CRF, RINF integrated). The use of infrastructure data is currently made via multiple sources, with no assurance of quality and consistency with regard to

exchange standards. It is therefore important to rationalize the data approach and to ensure that it can be used at the European level by putting in place the process of collection, verification, control and correction before its use.
The task is to
» implement and use a repository of reference data: infrastructure editor, locations, routes, rolling stock, interoperable and in European format (interfaced CRD/RINF).
» Connect PLC (TAF/TAP) and Operational Points (RINF) - to ensure the alignment and consistency of French location points with European standards
» Define Location Codes (PLC/SLC) - to ensure the Deployment of TAF/ TAP reference file (location) in Company applications.

In addition, this will improve the quality of the infrastructure description repositories on the Freight network (priority given to Freight Corridors and Freight Service railroad tracks).

Subtask:
6.3.1 National (FR) Digital twin
Implementation and use of a reference data repository: infrastructure editor, locations, routes, rolling stock, in order to create consistent traffic simulations as expected in capacity allocation processes (TTR & TAF-TAP TSI).
6.3.2 National (FR) Connectiong of PLC (TAF/TAP) and Operational Points (RINF), PLC
Ensure the alignment and consistency of French location points with European standards
6.3.3 National (FR) Location (PLC/SLC)
Deployment of TAF/ TAP reference file (location) in national (FR) applications
6.3.4 Quality improvement of the national (FR) infrastructure description repositories
Quality improvement of the national (FR) infrastructure description repositories on the freight network (priority given to freight corridors and freight service railroad tracks)

6.4 Placeholder - TAF/TAP TSI compliant interface to RNE systems ready to be used by other co-beneficiaries - RNE
This task is implemented within RNE Technical Assistance, and the financing is not part of this grant agreement.

Subtasks:
6.4.1 Tender Procedure for CI
Prepare the tender documentation and launh the tender procedure that will result in the supplier selection
6.4.2 CI common European development
Common European Design, implementation and testing and improvements of the CI
6.4.3 RNE Infrastructure for common European IT Systems (RIS, CIS, NCI, New Common Interface) The aim of the task is: upgrade, implementation, and operation of RNE Railway Information System (RIS); Operation, and Promotion of RNE Charging Information system (CIS); Operation, and Promotion of Digitalisation of Network Statements and Corridors Information Documents (NCI); New Common Interface implementation, and operation

6.5 TAF/TAP TSI compliant interface DB Netz - DB Netz
A new continuous and automated planning process means, that all affected interfaces must be identified and adapted. All interfaces are intended to ensure a digitized and interoperable exchange of information with RU, other IMs and RNE. To do so and as a pre-condition for the prototypes, affected interfaces must be identified and the necessary data exchange must be identified and ensured. In this context, the input and output formats must also be defined, and their precise structure must be described. Finally, the TAF/TAP-TSI structure must be considered, and a new system architecture must be designed. All activities and new concepts must be coordinated with internal and external stakeholders.

The output of this task an interfaces concept, which defines all required interfaces to internal systems as well as to RU, other IM and RNE IT and the definition of a new system architecture.

Subtasks:
6.5.1 Concept of Interfaces
Identification of all required interfaces to internal systems as well as to RU, other IM and RNE IT and Definition of an new system architecture

6.6 TAF/TAP compliant interface SNCF Reseau - SNCF Réseau
The core objective of this task is the development of a TAF/TAP TSI compliant interface for communication between the stakeholders. The implementation shall happen step by step together with SNCF Reseau’s customers RUs. To enable end-to-end processing of the path order, without rejection or error, it is important to standardize and harmonize the rolling stock reference system with the European standard. It is also important to take advantage of this opportunity to rethink SNCF Réseau’s data storage logic and make it resilient and accessible.

SNCF Reseau shall therefore implement the following

» TAF/TAP compliant interface – Path Details, TCR Message, Path Request
» TAF/TAP compliant interface – rolling stock reference system

Subtasks:
6.6.1 TAF/TAP compliant interface - Path Details, Path Request
Implementation of Path Details, Path Request
6.6.2 TAF/TAP compliant interface - rolling stock reference system
Enhancement of rolling stock reference system into line with the European reference systems

6.7 Common Interface Operation SNCF Reseau
This task aims at implementing additional data flows, relying on the information contained in TAF-TAP messages. For ingoing messages, the information is aimed at being used in the SNCF Réseau systems. For outgoing messages, this information could be used to be sent to TIS, RUs and Station Managers, depending on the message. The flows that have been identified at the moment are:
» sending Path Section Notification messages, in the current use case needed for TIS (replacement of Train Failure messages)
» sending Change of Track Messages
» Translating GSM-R messages into TAF-TAP “Train Ready” messages, to be the integrated in our IT systems like regular TAF-TAP messages.

SNCF Réseau aims at using the delay causes which are included in Train (Not) Ready and Train Running Interruption message sent by the RU. Those delay causes would be proposed to the IM dispatcher to accelerate the publication of delay causes in operations (less work from the dispatcher), and reduce the number of errors, since the RU is the best actor to give the information as they have a central role when they generate Train Not Ready and Train Running Interruption messages.

The correspondence between internal delay causes and the delay cause nomenclature used for TAF-TAP messages is currently handled through files that are manually integrated in multiple applications. Consolidating this in a central database will guarantee that delay causes handled in our systems (emitting delay cause messages, receiving and handling delay causes in Train Ready and Train Running Interruption messages) will be done in a consistent manner.
ERA is taking over the responsibility from UIC in determining the company codes. In doing so, the format of those codes is evolving. SNCF Reseau will be adapting its IT systems which rely on this information, to ensure consistent operation when those new codes are delivered by ERA.
The number of companies using TAF-TAP messaging, and the number of TAF-TAP data flows that we are offering in our data service catalogue is increasing at a very high rate, and this is projected to increase further in the 5 next years. This means that TAF-TAP messaging is increasingly a central part of railway operations, which means adapting our architecture to support more messages, guarantee availability, monitor the flows…
Guaranteeing a high quality of service is therefore very important, and our architecture needs to evolve to adapt to the new constraints.
Also, the multiple companies who have implemented a Common Interface regularly identify new security risks around CI implementation, and implementation evolutions are needed to cover them.

The following aspects shall be implemented:
» [Common Interface Operation] TAF-TAP TSI flows
Development and production of new TAF-TAP TSI flows, including pilots (Train Running Status Report, Change of Track…)
» [Common Interface Operation] Enhancement of existing operational flows
Integration of TOM and SLC identifiers, enhancement of the TRI flow with non-PR/PLC locations, feedback on flows implemented in CEF 1, etc.)
» [Common Interface Operation] Train Delay Cause
Accelerate the publication of Train Delay Cause by exploiting the causes of delay from Train Ready and Train Running Interruption messages
» [Common Interface Operation] International reference data
Industrialization of international reference data
» [Common Interface Operation] TAF-TAP TSI Architecture
Optimization of IM’s TAF-TAP components architecture: SSI, Monitoring...

Subtasks:
6.7.1 National (FR) Common Interface Operation] TAF-TAP TSI flows
National (FR) Development and production of new TAF-TAP TSI flows, including pilots (Train Running Status Report, Change of Track...)

6.7.2 National (FR) Common Interface Operation] Enhancement of existing operational flows
Integration of TOM and SLC identifiers, enhancement of the TRI flow with non-PR/PLC locations, feedback on flows implemented in CEF 1, etc.)
6.7.3 National (FR) Common Interface Operation] Train Delay Cause
Accelerate the national (FR) publication of Train Delay Cause by exploiting the causes of delay from Train Ready and Train Running Interruption messages
6.7.4 National (FR)Common Interface Operation] International reference data
National (FR) Industrialisation of international reference data
6.7.5 National (FR) Common Interface Operation] TAF-TAP TSI architecture
Optimisation of national (FR) TAF-TAP components architecture: SSI, monitoring...

6.8 Adaptation of existing (legacy) systems of Správa železnic regarding infrastructure description communication - SZCZ
The IT tool DYPOD (name of a tool of the Czech Infrastructure Manager) is the application of Správa železnic containing information about infrastructure restriction defined in the Network Statement of Správa železnic. In 2022 information in DYPOD shall be published in the railML format 3.2. The format railML is used by RNE as format for transmission of information about infrastructure description for use in RNE tools.

The IT tool DYPOD will be developed to enable proactive transmission of infrastructure description from DYPOD in railML format 3.2 into system of RNE and systems of railway undertakings via Common Interface.

Subtasks:
6.8.1 Providing of description of infrastructure from IT tool DYPOD via railML format using Common Interface
- providing of information from IT tool DYPOD into IT tool of RNE in format railML 3.2 via Common Interface
- proactive transmission of data from IT tool DYPOD in case of change of information stored in IT tool DYPOD"

6.9 [Digital Infrastructure Information] Building the digital twin of the infrastructure Infrabel
INT (Infrabel Network Topology) is the unique source of necessary and coherent infrastructure data for the Infrabel planning IT landscape. The current infrastructure model used by INT, allows for only one future validity period at a time. This is sufficient for real-time traffic management and short term planning but does not allow for planning of trains and works further in the future.
Allowing multiple validity periods in INT will allow all stakeholders to have a correct and detailed view of the infrastructure that will be in use at certain time. This is necessary to improve the correctness of simulations, and to enable Infrabel to avoid conflicts between train paths and works caused by this omission. It is a necessary step to avoid having to recalculate train plannings when certain infrastructure elements have arrived at the end of their validity period.

This task consists of developments (and related activities like analysis, testing etc.) in INT, allowing for:
» the possibility to define a period of validity on the level of each infrastructure component;
» the possibility to create an infrastructure version for each important infrastructure modification.
In a later phase (not in scope of this funding) those data will be used in UPM. This will allow the planning of train paths and works on a future date taking into account the infrastructure that will be available at that future date.

To be clear, it remains the responsibility of the entity responsible for maintaining and building the infrastructure to deliver all the necessary data to INT. This task only includes the development of the module and the structuring of the data. The input of the data itself is out of scope.

Currently, the infrastructure information of the simulation system is inserted manually, which can lead to errors and loss of time. This project enables the automatic load of the source (microscopic) infrastructure database for planning. This will be a required step for having a more dynamic link between the planning system and the simulation system. Both systems need to be on the same source to be able to make the first steps in automated planning.

Subtasks:
6.9.1 Versioning national (BE) infrastructure base component
Possibility to define a period of validity on the level of each national (BE) infrastructure component. Possibility to create an infrastructure version for each important infrastructure modification.
6.9.2 Link national (BE) infra database to the simulation tool
Ensure the alignment and consistency of national (BE) location points managed by Infrabel with digital twin

6.10 TAF/TAP compliant interface - Infrabel
Implementation of an automized link from RNE PCS to the Infrabel booking system (Book IN) and long-term planning system (Roman) shall enable to automatically integrate international path requests. Both BookIN and PCS path requests

have to be transferred manually in the dedicated planning tool today. With the further development of the UPM planning tools, the goal is to import the paths requests directly in the Path planning systems via the BookIn portal.
Infrabel uses the "Colt" system to plan the long term TCRs. Connection with RNE TCR tool is actually "supported" via the usage of adapted Excel sheets imports. This is time consuming and not error free. Target will be that Colt can communicate the TCR data flow by the use of new TAP/TAP TCR Messages over the CI (Common Interface). TCR tool will receive all necessary data about announcements of Major and High TCR according to the Annex 7 deadlines, and intermediate updates will be delivered too.

Infrabel INT platform has to deliver information about PLCs (Primary Location Codes) and Segments (connection between two PLCs) to RNE Big data system. The interface will automatically update data of new and/or decommisoned infrastucture. This dataflow will feed the infrastructure content that will be used in ECMT, both to generate a Capacity Model and Capacity supply. Datastream should use common Interface connection ports and be executed "on the fly".

Infrabel planning systems that have a range of X-18 and even beyond should be able to exchange capacity product messages (new defined messages based on the existing TAF TAP TSI messages) over common interface towards the ECMT. Applicants should be able to generate capacity models on a certain (inter)national route based on all the received data, originating from the IMs, even taking in account the possibility to generate variants in case of temporary capacity restrictions. Besides the range to aliment a capacity model (between X-18 and till X-11, envisaged) capacity products referring to Annual, Rolling Planning and Ad-Hoc process must be connected with the Capacity Supply of the ECMT, to deliver and updated and error free capacity supply. The ECMT Capacity Models and Supplies need a consistent stream of positive and negative capacities (TCRs, TCR windows) to deliver reliable content. This can only be achieved by the development of a powerful interface.
TCR that occur during the year are managed in the UPM tool, both TCR related info and impact on train paths (rerouting, replacements, cancellations). Now Infrabel is lacking an interfaced communication towards the RNE TCR tool to exchange all relevant TCR messages. Work must be done manually, after exchanging the output format of the UPM capacity planning tool into a format that the RNE TCR tool can import. There is risk of errors and delayed input. To allow a constant update of the TCR information enable clients and other IM to always have a up to date source of information on TCRs via the TCR-tool and ECMT, we need to develop an interface using common interface and TCR messages protocols.

Subtasks:
6.10.1 PCS link with Infrabel booking tool
Interface between PCS and Infrabel booking and planning tools (download only)
6.10.2 Interface TCR tool long term
Auto transfer long term planned TCRs to RNE tool in order to optimise international TCR coordination and publication
6.10.3 Interface infra data with ECMT
Auto connect location data to RNE big data
6.10.4 interface planning tool with ECMT
Auto connection planning tool with RNE cap model and supply visualisation tool
6.10.5 Interface planning tool with TCR-tool (all)
Auto connection planning tool with RNE TCR tool (all phases)

6.11 Common Interface Operation Infrabel - Infrabel
In order to participate in the single digital infrastructure system, Infrabel has on the one hand listed all projects currently linking national tools to international timetable tools and on the other hand aims at basing all exchange of information on TAF/TAP TSI standards.
Scheduled developments to bring our current exchanges to the TAF/TAP TSI standards by linking to the Common Interface and allowing our national tools to use and generate the necessary information, include the study and creation of PoC to start using the EU train ID in our national planning tools, the optimisation of the train composition message according to national needs, the general connections of our national planning tools to the Common Interface and the study on how we can best automate the exchange of location data via CI.
The building of interfaces with the international RNE tools are also foreseen. For this reason, Infrabel shall:
» connect its booking tool with PCS via CI.
» connect its TCR planning tools (long term and short term) with the RNE TCR tool, in order to optimise publication and international coordination of TCRs, and
» take the necessary steps to link its tools to the new ECMT tool, in order to connect its infrastructure database, its path planning tool and its TCR planning tool to ECMT, in order to strive for a better visibility of available capacity throughout the timetable process on an international level.

A last element foresees in the optimisation of the use of our infrastructure data, by introducing different versions/validity

periods of infrastructure availability in two steps, in order to better plan capacity based on actual state of the network. This will also include the use of these infrastructure availabilities in our simulation tool, in order to have a level playing field in terms of used infrastructure detail for all planning tools, and to be able to properly connect them in the future.

Subtasks:
6.11.1 EU Train ID
Prepare the Infrabel traffic management tool for the use of the Train ID
Prepare the Infrabel capacity planning tool for the use of the Train ID
6.11.2 TAF TCM (container)
Introduction in our Train Compo system of our national particularity: level container (ITU).
6.11.3 Common Interface
Prepare the common interface to wider usage
6.11.4 Reference Data automatisation
Automate exchange of location data to international platform based on international standards

6.12 Development of the national IT tool to exchange data with RIS and to update the RINF
Implementation of a national system to manage and send RFI infrastructure data to the IT components (CIP, GeoEditor, CRD and RFP) of RIS and to update the RINF

Subtasks:
6.12.1 Implementation of a national (IT) system (MRC-CIP) to store, manage, and send RFI data to RINF
"A national (IT) system to store, manage, and send RFI data to RINF will be developed by following the steps below:
- Drafting the IT concept for the national (IT) system;
- Transforming the draft paper into a final concept;
- Implementing the national (IT) IT solution to manage and send RFI data to RINF (including the related deployment).
This national system will also be used primarily to update the RINF. Data in RINF would be intended to be reused by common European tools managed by RNE"
6.12.2 Development of a national (IT) tool (MRC-CRD/RFP) to manage and send infrastructure data to RINF "A national (IT) tool to manage and send RFI infrastructure data to CRD and RFP RINF will be implemented by following the steps below:
- Drafting the IT concept for the national (IT) tool;
- Transforming the draft paper into a final concept;
- Implementing the national (IT) infrastructure management tool to send RFI data to RINF;
- Developing an extension of the national (IT) tool to manage and send RFI rail facilities data to RINF "
6.12.3 Extension of a national (IT) system (MRC-GeoEditor) to acquire, update, manage, and send RFI network topology data to RINF "A national (IT) system to acquire, update, manage, and send RFI network topology data to RINF will be implemented by following the steps below:
- Drafting the national (IT) IT concept for the digitalized system;
- Transforming the draft paper into a final concept;
- Implementing the national (IT) system to manage and send RFI data to RINF."

Demarcation to other CEF projects:
» Task 6.1 RIS developments are financed by 3 different funding action namely (AT 2018-EU-TM-0063-S (TAF TTR), DG Move Rail Facilities Portal (RFP) and RNE CEF TA 21) the separation of funds is based on functionalities of the RIS system this means interfaces – common components systems in TAF TTR, interface connection to Rail Facilities Portal from DG Move RFP project, all Rail Freight Corridor related tasks are funded via this CEF TA 21. No cost for this task shall apply in this funding project.
» Task 6.4 Activities are complementary with Co-Beneficiary activities. For sake of completness (showing full picture) the task is added but fully financed under 21-AT-TG-RNE CEF TA.
» All other Tasks are dedicated CO-Beneficiary tasks without any overlapping to RNE projects.

STAFF EFFORT

Staff effort per participant

Grant Preparation (Work packages - Effort screen) — Enter the info.

Participant	WP1	WP2	WP3	WP4	WP5	WP6	Total Person-Months
Total Person-Months	0.00	0.00	0.00	0.00	0.00	0.00	0.00

LIST OF DELIVERABLES

Deliverables

Grant Preparation (Deliverables screen) — Enter the info.

The labels used mean:

Public — fully open (⚠ automatically posted online)
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Deliverable No	Deliverable Name	Work Package No	Lead Beneficiary	Type	Dissemination Level	Due Date (month)
D1.1	D1.1.1 Kick-off meeting	WP1	1 - RNE	R — Document, report	SEN - Sensitive	5
D1.2	D1.1.2 Closing meeting	WP1	1 - RNE	R — Document, report	SEN - Sensitive	48
D1.3	D1.2.1 Final Financial Report	WP1	1 - RNE	R — Document, report	SEN - Sensitive	48
D1.4	D1.3.1 Project Technical Report Period1	WP1	1 - RNE	R — Document, report	SEN - Sensitive	14
D1.5	D1.3.2 Project Technical Report Period2	WP1	1 - RNE	R — Document, report	SEN - Sensitive	26
D1.6	D1.3.3 Project Technical Report Period3	WP1	1 - RNE	R — Document, report	SEN - Sensitive	36
D1.7	D1.4.1 Plan for the Exploitation and Dissemination of Results (PEDR)	WP1	1 - RNE	R — Document, report	SEN - Sensitive	12
D1.8	D1.4.2 Project Webpage	WP1	1 - RNE	DEC —Websites, patent filings, videos, etc	PU - Public	8
D1.9	D1.5.1 Overview of technical coordination meetings held	WP1	1 - RNE	R — Document, report	SEN - Sensitive	48
D1.10	D1.3.4 Personal cost records report Q1	WP1	1 - RNE	R — Document, report	SEN - Sensitive	4
D1.11	D1.3.5 Personal records report Q2	WP1	1 - RNE	R — Document, report	SEN - Sensitive	7
D1.12	D1.3.6 Personal records report Q3	WP1	1 - RNE	R — Document, report	SEN - Sensitive	10
D1.13	D1.3.7 Personal records report Q4	WP1	1 - RNE	R — Document, report	SEN - Sensitive	13

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D1.14	D1.3.8 Personal records report Q5	WP1	1 - RNE	R — Document, report	SEN - Sensitive	16
D1.15	D1.3.9 Personal records report Q6	WP1	1 - RNE	R — Document, report	SEN - Sensitive	19
D1.16	D1.3.10 Personal records report Q7	WP1	1 - RNE	R — Document, report	SEN - Sensitive	22
D1.17	D1.3.11 Personal records report Q8	WP1	1 - RNE	R — Document, report	SEN - Sensitive	25
D1.18	D1.3.12 Personal records report Q9	WP1	1 - RNE	R — Document, report	SEN - Sensitive	28
D1.19	D1.3.13 Personal records report Q10	WP1	1 - RNE	R — Document, report	SEN - Sensitive	31
D1.20	D1.3.14 Personal records report Q11	WP1	1 - RNE	R — Document, report	SEN - Sensitive	34
D1.21	D1.3.15 Personal records report Q12	WP1	1 - RNE	R — Document, report	SEN - Sensitive	37
D1.22	D1.3.16 Personal records report Q13	WP1	1 - RNE	R — Document, report	SEN - Sensitive	40
D1.23	D1.3.17 Personal records report Q14	WP1	1 - RNE	R — Document, report	SEN - Sensitive	43
D1.24	D1.3.18 Personal records report Q15	WP1	1 - RNE	R — Document, report	SEN - Sensitive	46
D1.25	D1.3.19 Personal records report Q16	WP1	1 - RNE	R — Document, report	SEN - Sensitive	48
D1.26	D1.3.20 Project Technical Report Period4	WP1	1 - RNE	R — Document, report	SEN - Sensitive	48
D2.1	D2.1.1.1 Functional requirements for ECMT	WP2	1 - RNE	R — Document, report	SEN - Sensitive	1
D2.2	D2.1.2.1 Adjusted/new forms for creation and editing of the CNA, TCRs and Capacity Model objects	WP2	1 - RNE	DEC —Websites, patent filings, videos, etc	SEN - Sensitive	7

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Deliverable No	Deliverable Name	Work Package No	Lead Beneficiary	Type	Dissemination Level	Due Date (month)
D2.3	D2.1.2.2 Adjusted object model of ECMT with the new attributes and the links to Variants	WP2	1 - RNE	DATA — data sets, microdata, etc	SEN - Sensitive	5
D2.4	D2.1.4.1 Import template and import function for importing CNA, Capacity Model objects and intended capacity volume	WP2	1 - RNE	DATA — data sets, microdata, etc	SEN - Sensitive	5
D2.5	D2.1.3.3 Overview of the CNAs is implemented	WP2	1 - RNE	DEC —Websites, patent filings, videos, etc	SEN - Sensitive	3
D2.6	D2.1.5.3 The formula for calculating the TCR impact on traffic in % is implemented	WP2	1 - RNE	DATA — data sets, microdata, etc	SEN - Sensitive	36
D2.7	D2.1.3.2 Calculation logic of the TCR duration overview	WP2	1 - RNE	DATA — data sets, microdata, etc	SEN - Sensitive	12
D2.8	D2.1.3.1 Capacity Model views (section, line, network) are implemented	WP2	1 - RNE	DEC —Websites, patent filings, videos, etc	SEN - Sensitive	8
D2.9	D2.1.5.1 Workflow is implemented for CNA harmonization	WP2	1 - RNE	DEC —Websites, patent filings, videos, etc	SEN - Sensitive	15
D2.10	D2.1.5.2 Workflow is implemented for linking CNAs to Capacity Model	WP2	1 - RNE	DEC —Websites, patent filings, videos, etc	SEN - Sensitive	12
D2.11	D2.1.6.1 Interface connection is established between ECMT and the TCR Tool	WP2	1 - RNE	DEC —Websites, patent filings, videos, etc	SEN - Sensitive	10

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Deliverable No	Deliverable Name	Work Package No	Lead Beneficiary	Type	Dissemination Level	Due Date (month)
D2.12	D2.1.6.2 TCRs are imported (CRUD) from the TCR tool to ECMT using TAF/TAP TSI messages	WP2	1 - RNE	DATA — data sets, microdata, etc	SEN - Sensitive	12
D2.13	D2.1.6.3 ECMT XSD is published for capacity model	WP2	1 - RNE	DATA — data sets, microdata, etc	SEN - Sensitive	13
D2.14	D2.1.6.4 CI configuration with the partner IMs	WP2	1 - RNE	DEC —Websites, patent filings, videos, etc	SEN - Sensitive	48
D2.15	D2.1.6.5 Capacity model objects are imported (CRUD) from the IM's national system to ECMT using TAF/TAP TSI messages	WP2	1 - RNE	DATA — data sets, microdata, etc	SEN - Sensitive	48
D2.16	D2.2.1.1 Study for Modelisation and implementation of capacity bands, rolling-planning requests on dedicated multi-annual offer	WP2	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	15
D2.17	D2.3.1.1 IT concept (feasibility study)	WP2	3 - RFI	R — Document, report	SEN - Sensitive	12
D2.18	D2.3.2.1 Final concept	WP2	3 - RFI	R — Document, report	SEN - Sensitive	18
D2.19	D2.3.3.1 Development , including testing phase and related interface with IT Common tool	WP2	3 - RFI	DEM — Demonstrator, pilot, prototype	SEN - Sensitive	48
D2.20	D2.4.1.1 concept new planning process	WP2	2 - DB InfraGO	R — Document, report	SEN - Sensitive	48

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Deliverable No	Deliverable Name	Work Package No	Lead Beneficiary	Type	Dissemination Level	Due Date (month)
D2.21	D2.4.2.1 Concept of rules and logics	WP2	2 - DB InfraGO	R — Document, report	SEN - Sensitive	36
D2.22	D2.4.2.2 Concept of IT algorithms	WP2	2 - DB InfraGO	R — Document, report	SEN - Sensitive	48
D2.23	D2.4.3.1 Short-term: Delivery of Interim-Capacity Model 2025 (according to agreed scope and legal basis)	WP2	2 - DB InfraGO	DEM — Demonstrator, pilot, prototype	SEN - Sensitive	19
D2.24	D2.4.3.2 Long-term: Processes and required IT for an automated KNK-implementation	WP2	2 - DB InfraGO	DEM — Demonstrator, pilot, prototype	SEN - Sensitive	48
D2.25	D2.5.1.1 Single international “path & TCRs Database” TAF TAP TSI compliant	WP2	7 - RFC NS-M	DATA — data sets, microdata, etc	SEN - Sensitive	15
D2.26	D2.5.1.2 Feedback from the database merging process	WP2	7 - RFC NS-M	R — Document, report	SEN - Sensitive	16
D2.27	D2.5.1.3 Compendium of capacity maps & Charts + TTR Capacity Model and Supply	WP2	7 - RFC NS-M	DEM — Demonstrator, pilot, prototype	SEN - Sensitive	22
D2.28	D2.5.1.4 Description of the process to produce those maps, charts, capacity model & supply and its connection to the National IM process	WP2	7 - RFC NS-M	R — Document, report	SEN - Sensitive	24
D2.29	D2.5.2.1 Feedbacks from users and decision-makers via mirror groups	WP2	7 - RFC NS-M	R — Document, report	SEN - Sensitive	22
D2.30	D2.5.2.2 Specifications for IT Tools	WP2	7 - RFC NS-M	R — Document, report	SEN - Sensitive	24

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Deliverable No	Deliverable Name	Work Package No	Lead Beneficiary	Type	Dissemination Level	Due Date (month)
D2.31	D2.6.1.1 Delivery of the software component that enables the integration	WP2	5 - INFRABEL	R — Document, report	SEN - Sensitive	12
D2.32	D2.7.1.1 Status report TTR@Infrabel 2022	WP2	5 - INFRABEL	R — Document, report	SEN - Sensitive	12
D2.33	D2.7.1.2 Status report TTR@Infrabel 2023	WP2	5 - INFRABEL	R — Document, report	SEN - Sensitive	24
D2.34	D2.7.1.3 Status report TTR@Infrabel 2024	WP2	5 - INFRABEL	R — Document, report	SEN - Sensitive	36
D2.35	D2.1.6.6 Report on the development according to the technical specification (phase 1)	WP2	1 - RNE	R — Document, report	SEN - Sensitive	48
D2.36	D2.1.6.7 Report on the developments	WP2	1 - RNE	R — Document, report	SEN - Sensitive	48
D2.37	D2.2.2.1 "Deployment of enhanced TCR tool with supervision functionality "	WP2	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	48
D2.38	D2.2.3.1 Implementation of timetable redesign capacity scenario process	WP2	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	48
D2.39	D2.2.4.1 Integration of ECTS-Related infrastructure objects into GAIA repository	WP2	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	48
D2.40	D2.2.5.1 Upgradation of legacy information systems for TSI observations integration	WP2	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	48
D2.41	D2.7.1.4 Status report TTR@Infrabel 2025	WP2	5 - INFRABEL	R — Document, report	SEN - Sensitive	48

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D2.42	D2.7.3.1 Development of new common interface	WP2	5 - INFRABEL	R — Document, report	SEN - Sensitive	48
D2.43	D2.7.4.1 Modification of the PCS link to reach PCS CB compliancy	WP2	5 - INFRABEL	R — Document, report	SEN - Sensitive	48
D2.44	D2.7.5.1 Analysis of TSI telematic related functions	WP2	5 - INFRABEL	R — Document, report	SEN - Sensitive	48
D2.45	D2.8.1.1 Delivery of updated version of IT tools - DYPOD and ETD	WP2	6 - SZCZ	R — Document, report	SEN - Sensitive	48
D2.46	D2.7.2.1 Final report on usage EU train ID	WP2	5 - INFRABEL	R — Document, report	SEN - Sensitive	48
D3.1	D3.1.1.1 Functional requirements for the TCR Tool	WP3	1 - RNE	R — Document, report	SEN - Sensitive	9
D3.2	D3.1.2.1 Adjusted object model of TCR Tool with the new attributes	WP3	1 - RNE	DATA — data sets, microdata, etc	SEN - Sensitive	48
D3.3	D3.1.3.1 New/adjusted forms for creation, and editing of the TCR objects	WP3	1 - RNE	DEC —Websites, patent filings, videos, etc	SEN - Sensitive	48
D3.4	D3.1.4.1 Adjusting the import template and function for importing TCR objects	WP3	1 - RNE	DATA — data sets, microdata, etc	SEN - Sensitive	48
D3.5	D3.1.5.1 Impact assessment calculation feature for TCRs	WP3	1 - RNE	DEC —Websites, patent filings, videos, etc	SEN - Sensitive	48

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Deliverable No	Deliverable Name	Work Package No	Lead Beneficiary	Type	Dissemination Level	Due Date (month)
D3.6	D3.1.6.1 Notification logic related to the object changes	WP3	1 - RNE	DEC —Websites, patent filings, videos, etc	SEN - Sensitive	48
D3.7	D3.1.6.2 Workflow is implemented for TCR consultation	WP3	1 - RNE	DEC —Websites, patent filings, videos, etc	SEN - Sensitive	48
D3.8	D3.1.6.3 Adjusting the publication function and workflow	WP3	1 - RNE	DEC —Websites, patent filings, videos, etc	SEN - Sensitive	48
D3.9	D3.1.6.4 Messages for searching TCRs	WP3	1 - RNE	DEC —Websites, patent filings, videos, etc	SEN - Sensitive	48
D3.10	D3.1.7.1 TCR Tool XSD is published for TCRs	WP3	1 - RNE	DATA — data sets, microdata, etc	SEN - Sensitive	18
D3.11	D3.1.7.2 CI configuration with partner IMs	WP3	1 - RNE	DEC —Websites, patent filings, videos, etc	SEN - Sensitive	48
D3.12	D3.1.7.3 TCR objects are imported (CRUD) from the IM's national system to TCR Tool using TAF/TAP TSI messages	WP3	1 - RNE	DATA — data sets, microdata, etc	SEN - Sensitive	48
D3.13	D3.1.7.4 Setting GeoEditor parameters required for TCR coordination with partner IMs	WP3	1 - RNE	DATA — data sets, microdata, etc	SEN - Sensitive	24
D3.14	D3.2.1.1 Acceptance note	WP3	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	36
D3.15	D3.2.1.2 Acceptance note	WP3	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	48

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Deliverable No	Deliverable Name	Work Package No	Lead Beneficiary	Type	Dissemination Level	Due Date (month)
D3.16	D3.3.1.1 IT concept (feasibility study) for a national digitalised tool	WP3	3 - RFI	R — Document, report	SEN - Sensitive	6
D3.17	D3.3.1.2 Final concept for a national digitalised tool	WP3	3 - RFI	R — Document, report	SEN - Sensitive	12
D3.18	D3.3.1.3 "Development of a national digitalised tool , including testing phase and related interface with IT central tool"	WP3	3 - RFI	DEM — Demonstrator, pilot, prototype	SEN - Sensitive	18
D3.19	D3.3.2.1 IT concept (feasibility study) for interface with central IT tool	WP3	3 - RFI	R — Document, report	SEN - Sensitive	6
D3.20	D3.3.2.2 Final concept for interface with central IT tool	WP3	3 - RFI	R — Document, report	SEN - Sensitive	12
D3.21	D3.3.2.3 Development , including testing phase and related interface with IT central tool	WP3	3 - RFI	DEM — Demonstrator, pilot, prototype	SEN - Sensitive	18
D3.22	D3.4.1.1 Possibility to manage long term Temporary Capacity Restrictions in the Infrabel planning tool	WP3	5 - INFRABEL	R — Document, report	SEN - Sensitive	12
D3.23	D3.4.1.2 Publication of the approved TCRs to the RUs and the ability to signal the importance of each TCR in accordance with RNE guidelines	WP3	5 - INFRABEL	R — Document, report	SEN - Sensitive	36

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D3.24	D3.4.2.1 Development customization algorithm platform	WP3	5 - INFRABEL	R — Document, report	SEN - Sensitive	36
D3.25	D3.4.3.1 Development Customization in the TCR planning tool	WP3	5 - INFRABEL	R — Document, report	SEN - Sensitive	24
D3.26	D3.4.3.2 Development further customizations in the algorithm platform	WP3	5 - INFRABEL	R — Document, report	SEN - Sensitive	36
D3.27	D3.4.4.1 First study with integrator based on the algorithm	WP3	5 - INFRABEL	R — Document, report	SEN - Sensitive	36
D3.28	D3.4.4.2 Development of the software that enables Infrabel to start own studies	WP3	5 - INFRABEL	R — Document, report	SEN - Sensitive	48
D3.29	D3.5.1.1 Acceptance protocol	WP3	6 - SZCZ	R — Document, report	SEN - Sensitive	48
D3.30	D3.5.2.1 Acceptance protocol	WP3	6 - SZCZ	R — Document, report	SEN - Sensitive	48
D3.31	D3.4.5.1 Go-live of said improvements relating the operational planning of infrastructure works	WP3	5 - INFRABEL	R — Document, report	SEN - Sensitive	48
D3.32	D3.5.3.1 Acceptance protocol	WP3	6 - SZCZ	R — Document, report	SEN - Sensitive	48
D4.1	D4.1.1.1 Functional requirements for ECMT	WP4	1 - RNE	R — Document, report	SEN - Sensitive	22
D4.2	D4.1.2.1 Adjusted object model of ECMT with the new attributes and the links to Variants	WP4	1 - RNE	DATA — data sets, microdata, etc	SEN - Sensitive	36

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Deliverable No	Deliverable Name	Work Package No	Lead Beneficiary	Type	Dissemination Level	Due Date (month)
D4.3	D4.1.2.2 New/adjusted forms for creation and editing of the capacity supply objects	WP4	1 - RNE	DEC —Websites, patent filings, videos, etc	SEN - Sensitive	36
D4.4	D4.1.4.1 Adjusting the import template and function for importing capacity supply objects	WP4	1 - RNE	DEC —Websites, patent filings, videos, etc	SEN - Sensitive	36
D4.5	D4.1.5.1 Adjusted form for creating and editing TCRs	WP4	1 - RNE	DEC —Websites, patent filings, videos, etc	SEN - Sensitive	48
D4.6	D4.1.5.2 Impact assessment feature for TCRs	WP4	1 - RNE	DEC —Websites, patent filings, videos, etc	SEN - Sensitive	48
D4.7	D4.1.5.3 Adjusted Capacity Supply chart	WP4	1 - RNE	DEC —Websites, patent filings, videos, etc	SEN - Sensitive	48
D4.8	D4.1.5.4 Network view is implemented	WP4	1 - RNE	DEC —Websites, patent filings, videos, etc	SEN - Sensitive	48
D4.9	D4.1.5.5 Capacity Model views are generated from selected Capacity Supply dataset	WP4	1 - RNE	DEC —Websites, patent filings, videos, etc	SEN - Sensitive	48
D4.10	D4.1.5.6 Summary of the changes between selected dates are presented in ECMT	WP4	1 - RNE	DEC —Websites, patent filings, videos, etc	SEN - Sensitive	48
D4.11	D4.1.5.7 Feasibility study result is published in the Capacity Supply	WP4	1 - RNE	DEC —Websites, patent filings, videos, etc	SEN - Sensitive	48

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D4.12	D4.1.5.8 Default presentation options are applied on the Feasibility study result objects	WP4	1 - RNE	DEC —Websites, patent filings, videos, etc	SEN - Sensitive	48
D4.13	D4.1.5.9 Path details from each process type (New path request, Late path request, Rolling Planning, Ad-hoc) can be published by the IMs in ECMT	WP4	1 - RNE	DEC —Websites, patent filings, videos, etc	SEN - Sensitive	48
D4.14	D4.1.5.10 Default presentation options are applied on the path details according to their process type and train type	WP4	1 - RNE	DEC —Websites, patent filings, videos, etc	SEN - Sensitive	48
D4.15	D4.1.5.11 Workflow for updating the allocated capacity supply objects is implemented	WP4	1 - RNE	DEC —Websites, patent filings, videos, etc	SEN - Sensitive	48
D4.16	D4.1.6.1 ECMT XSD is published for capacity supply	WP4	1 - RNE	DATA — data sets, microdata, etc	SEN - Sensitive	48
D4.17	D4.1.6.2 CI configuration with the partner IMs	WP4	1 - RNE	DEC —Websites, patent filings, videos, etc	SEN - Sensitive	48
D4.18	D4.1.6.3 Capacity supply objects are imported (CRUD) from the IM's national system to ECMT using TAF/TAP TSI messages	WP4	1 - RNE	DATA — data sets, microdata, etc	SEN - Sensitive	48
D4.19	D4.2.1.1 Acceptance note	WP4	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	12

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D4.20	D4.2.1.2 Acceptance note	WP4	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	36
D4.21	D4.2.1.3 Acceptance note	WP4	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	48
D4.22	D4.2.2.1 Acceptance note	WP4	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	12
D4.23	D4.2.2.2 Acceptance note	WP4	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	36
D4.24	D4.2.2.3 Acceptance note	WP4	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	48
D4.25	D4.2.3.1 Acceptance note	WP4	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	12
D4.26	D4.2.3.2 Acceptance note	WP4	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	36
D4.27	D4.2.3.3 Acceptance note	WP4	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	48
D4.28	D4.2.4.1 Acceptance note	WP4	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	12
D4.29	D4.2.4.2 Acceptance note	WP4	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	36
D4.30	D4.2.4.3 Acceptance note	WP4	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	48
D4.31	D4.2.5.1 Process	WP4	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	12
D4.32	D4.2.5.2 Acceptance note	WP4	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	36
D4.33	D4.2.5.3 Acceptance note	WP4	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	48
D4.34	D4.3.1.1 IT concept (feasibility study) for a national digitalised tool	WP4	3 - RFI	R — Document, report	SEN - Sensitive	12

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Deliverable No	Deliverable Name	Work Package No	Lead Beneficiary	Type	Dissemination Level	Due Date (month)
D4.35	D4.3.1.2 Final concept for a national digitalised tool	WP4	3 - RFI	R — Document, report	SEN - Sensitive	18
D4.36	D4.3.1.3 "Development of a national digitalised tool , including testing phase and related interface with IT Common tool"	WP4	3 - RFI	DEM — Demonstrator, pilot, prototype	SEN - Sensitive	48
D4.37	D4.3.2.1 IT concept (feasibility study) for a national digitalised tool	WP4	3 - RFI	R — Document, report	SEN - Sensitive	12
D4.38	D4.3.2.2 Final concept for a national digitalised tool	WP4	3 - RFI	R — Document, report	SEN - Sensitive	18
D4.39	D4.3.2.3 "Development of a national digitalised tool , including testing phase and related interface with IT Common tool"	WP4	3 - RFI	DEM — Demonstrator, pilot, prototype	SEN - Sensitive	48
D4.40	D4.4.1.1 PCS process types are implemented in line with the TTR process description	WP4	1 - RNE	DEC —Websites, patent filings, videos, etc	SEN - Sensitive	24
D4.41	D4.4.1.2 Compliance of the PCS XSD with the TAF/TAP TSI	WP4	1 - RNE	R — Document, report	SEN - Sensitive	24
D4.42	D4.4.2.1 Feasibility study for the integration to the capacity broker	WP4	1 - RNE	R — Document, report	SEN - Sensitive	30
D4.43	D4.4.2.2 PCS is ready for integration to the capacity broker	WP4	1 - RNE	R — Document, report	SEN - Sensitive	34
D4.44	D4.5.1.1 The validated roadmap for the	WP4	5 - INFRABEL	R — Document, report	SEN - Sensitive	18

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Deliverable No	Deliverable Name	Work Package No	Lead Beneficiary	Type	Dissemination Level	Due Date (month)
	integration of all train planning activities into one state-of-the-art tool					
D4.45	D4.5.1.2 Improving trajectory runtime calculation in UPM.	WP4	5 - INFRABEL	R — Document, report	SEN - Sensitive	36
D4.46	D4.5.2.1 An analysis outlining the technical and functional requirements of the PoC	WP4	5 - INFRABEL	R — Document, report	SEN - Sensitive	10
D4.47	D4.5.2.2 Implementation of a functional Proof of Concept	WP4	5 - INFRABEL	R — Document, report	SEN - Sensitive	18
D4.48	D4.5.3.1 Delivery of the software component	WP4	5 - INFRABEL	R — Document, report	SEN - Sensitive	24
D4.49	D4.5.3.2 Delivery of customizations	WP4	5 - INFRABEL	R — Document, report	SEN - Sensitive	36
D4.50	D4.5.4.1 Delivery of first version that works with the planning tool for the transport plan	WP4	5 - INFRABEL	R — Document, report	SEN - Sensitive	12
D4.51	D4.5.4.2 Delivery of customizations	WP4	5 - INFRABEL	R — Document, report	SEN - Sensitive	24
D4.52	D4.5.5.1 The timetable planners will receive a report of all discontinuous timetables.	WP4	5 - INFRABEL	R — Document, report	SEN - Sensitive	6
D4.53	D4.5.5.2 Possibility to define timetables at the lowest level (switch level).	WP4	5 - INFRABEL	R — Document, report	SEN - Sensitive	48
D4.54	D4.5.6.1 Use of the macroview INT data on multiple UPM maps	WP4	5 - INFRABEL	R — Document, report	SEN - Sensitive	48

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Deliverable No	Deliverable Name	Work Package No	Lead Beneficiary	Type	Dissemination Level	Due Date (month)
D4.55	D4.5.7.1 Creating a search for freight train routes that avoid forbidden line sections	WP4	5 - INFRABEL	R — Document, report	SEN - Sensitive	18
D4.56	D4.5.7.2 Use of the PC codification on the routefinder map	WP4	5 - INFRABEL	R — Document, report	SEN - Sensitive	18
D4.57	D4.5.7.3 Easier detection and resolution of conflicts and overlappings by means of new reports, better anomaly resolution and ergonomic improvements	WP4	5 - INFRABEL	R — Document, report	SEN - Sensitive	24
D4.58	D4.6.1.1 Acceptance protocol	WP4	6 - SZCZ	R — Document, report	SEN - Sensitive	48
D4.59	D4.6.2.1 Acceptance protocol	WP4	6 - SZCZ	R — Document, report	SEN - Sensitive	48
D4.60	D4.6.3.1 Acceptance protocol	WP4	6 - SZCZ	R — Document, report	SEN - Sensitive	24
D4.61	D4.6.4.1 Acceptance protocol	WP4	6 - SZCZ	R — Document, report	SEN - Sensitive	24
D4.62	D4.6.5.1 Acceptance protocol	WP4	6 - SZCZ	R — Document, report	SEN - Sensitive	48
D4.63	D4.7.1.1 Design for user interface with IT tool elements	WP4	2 - DB InfraGO	R — Document, report	SEN - Sensitive	2
D4.64	D4.7.1.2 Definition of background software	WP4	2 - DB InfraGO	R — Document, report	SEN - Sensitive	4
D4.65	D4.7.1.3 Definition of IT Tool interfaces	WP4	2 - DB InfraGO	R — Document, report	SEN - Sensitive	6
D4.66	D4.7.2.1 Development of the IT Tool	WP4	2 - DB InfraGO	DEM — Demonstrator, pilot, prototype	SEN - Sensitive	12

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Deliverable No	Deliverable Name	Work Package No	Lead Beneficiary	Type	Dissemination Level	Due Date (month)
D4.67	D4.7.2.2 Test of the IT Tool	WP4	2 - DB InfraGO	DEM — Demonstrator, pilot, prototype	SEN - Sensitive	15
D4.68	D4.7.3.1 Pilot for usage test in ATT 2024 preparation	WP4	2 - DB InfraGO	DEM — Demonstrator, pilot, prototype	SEN - Sensitive	22
D4.69	D4.7.3.2 Evaluation and postprocessing of the IT Tool	WP4	2 - DB InfraGO	R — Document, report	SEN - Sensitive	24
D4.70	D4.5.8.1 The go live of developments related to managing the transport plan and annual service planning in one application	WP4	5 - INFRABEL	R — Document, report	SEN - Sensitive	48
D4.71	D4.6.6.1 Acceptance protocol)KADR Tool)	WP4	6 - SZCZ	R — Document, report	SEN - Sensitive	48
D5.1	D5.1.1.1 Functional requirements of the Capacity Broker	WP5	1 - RNE	R — Document, report	SEN - Sensitive	1
D5.2	D5.1.1.2 Tender documentation, evaluation criteria	WP5	1 - RNE	R — Document, report	SEN - Sensitive	1
D5.3	D5.1.1.3 Signed contract	WP5	1 - RNE	R — Document, report	SEN - Sensitive	5
D5.4	D5.1.2.1 Capacity Broker domain	WP5	1 - RNE	DATA — data sets, microdata, etc	SEN - Sensitive	36
D5.5	D5.1.2.2 Synchronization of reference data is implemented	WP5	1 - RNE	DATA — data sets, microdata, etc	SEN - Sensitive	36

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Deliverable No	Deliverable Name	Work Package No	Lead Beneficiary	Type	Dissemination Level	Due Date (month)
D5.6	D5.1.2.3 New Case Reference creation wizard	WP5	1 - RNE	DEC —Websites, patent filings, videos, etc	SEN - Sensitive	24
D5.7	D5.1.2.4 TT quality constraints	WP5	1 - RNE	DEC —Websites, patent filings, videos, etc	SEN - Sensitive	24
D5.8	D5.1.3.1 Timetable views inside the Case Reference	WP5	1 - RNE	DEM — Demonstrator, pilot, prototype	SEN - Sensitive	24
D5.9	D5.1.3.2 Control view of the Case Reference	WP5	1 - RNE	DEC —Websites, patent filings, videos, etc	SEN - Sensitive	24
D5.10	D5.1.3.3 Alpha release	WP5	1 - RNE	DEC —Websites, patent filings, videos, etc	SEN - Sensitive	18
D5.11	D5.1.3.4 Workflow	WP5	1 - RNE	DEC —Websites, patent filings, videos, etc	SEN - Sensitive	17
D5.12	D5.1.3.5 Administration views of the Capacity Broker	WP5	1 - RNE	DEC —Websites, patent filings, videos, etc	SEN - Sensitive	17
D5.13	D5.1.4.1 Inbound/outbound messaging	WP5	1 - RNE	DATA — data sets, microdata, etc	SEN - Sensitive	17
D5.14	D5.1.5.1 Common Interface configuration	WP5	1 - RNE	DATA — data sets, microdata, etc	SEN - Sensitive	17
D5.15	D5.1.6.1 Beta release	WP5	1 - RNE	DEC —Websites, patent filings, videos, etc	SEN - Sensitive	19

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Deliverable No	Deliverable Name	Work Package No	Lead Beneficiary	Type	Dissemination Level	Due Date (month)
D5.16	D5.1.6.2 UAT results and CR/fix plan	WP5	1 - RNE	R — Document, report	SEN - Sensitive	36
D5.17	D5.1.6.3 Production release	WP5	1 - RNE	DEC —Websites, patent filings, videos, etc	SEN - Sensitive	36
D5.18	D5.1.6.4 Performance report	WP5	1 - RNE	R — Document, report	SEN - Sensitive	36
D5.19	D5.2.1.1 Description of API	WP5	2 - DB InfraGO	R — Document, report	SEN - Sensitive	12
D5.20	D5.2.1.2 TAF / TAP compliant interface	WP5	2 - DB InfraGO	OTHER	SEN - Sensitive	48
D5.21	D5.2.2.1 Automated train path creation for international paths	WP5	2 - DB InfraGO	OTHER	SEN - Sensitive	48
D5.22	D5.2.3.1 Legacy systems ready for international train paths	WP5	2 - DB InfraGO	OTHER	SEN - Sensitive	48
D5.23	D5.2.4.1 Description of extended API	WP5	2 - DB InfraGO	R — Document, report	SEN - Sensitive	48
D5.24	D5.2.5.1 Extended Interface with validation of path request	WP5	2 - DB InfraGO	OTHER	SEN - Sensitive	48
D5.25	D5.4.1.1 Acceptance note	WP5	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	12
D5.26	D5.4.1.2 Acceptance note	WP5	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	36
D5.27	D5.4.2.1 Acceptance note	WP5	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	36
D5.28	D5.4.2.2 Acceptance note	WP5	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	48
D5.29	D5.5.1.1 Acceptance protocol	WP5	6 - SZCZ	R — Document, report	SEN - Sensitive	48

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Deliverable No	Deliverable Name	Work Package No	Lead Beneficiary	Type	Dissemination Level	Due Date (month)
D5.30	D5.6.1.1 Customization in software	WP5	5 - INFRABEL	R — Document, report	SEN - Sensitive	18
D5.31	D5.6.1.2 Test results of this PoC	WP5	5 - INFRABEL	R — Document, report	SEN - Sensitive	24
D5.32	D5.1.7.1 Description of requirements and release notes on PCS Capacity Broker upgrades	WP5	1 - RNE	R — Document, report	SEN - Sensitive	48
D5.33	D5.1.8.1 Description of requirements and release notes - Integration of MVP Short Term Ad Hoc (STAH) into PCS CB	WP5	1 - RNE	R — Document, report	SEN - Sensitive	48
D5.34	D5.1.9.1 Description of requirements and release notes - Integration of MVP Border Harmonization Tool (BHT) into PCS CB	WP5	1 - RNE	R — Document, report	SEN - Sensitive	48
D5.35	D5.4.3.1 Upgradation of legacy information systems for TSI observations integration	WP5	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	48
D5.36	D5.4.4.1 Implementation of standardized rolling stock dependencies management system	WP5	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	48
D5.37	D5.4.5.1 Expansion and enhancement of TAF-TAP message exchanges for telematics TSI	WP5	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	48
D5.38	D5.5.2.1 Delivery of updated version of IT tool KADR	WP5	6 - SZCZ	R — Document, report	SEN - Sensitive	48

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Deliverable No	Deliverable Name	Work Package No	Lead Beneficiary	Type	Dissemination Level	Due Date (month)
D5.39	D5.6.2.1 Go live of all TMS related web-apps	WP5	5 - INFRABEL	R — Document, report	SEN - Sensitive	36
D5.40	D5.6.3.1 Go live of of connection TMS-DAS / eDrive	WP5	5 - INFRABEL	R — Document, report	SEN - Sensitive	36
D5.41	D5.6.4.1 Final Delivery Report	WP5	5 - INFRABEL	R — Document, report	SEN - Sensitive	48
D5.42	D5.7.1.1 IT concept (draft and final) and development, including testing phase and related interface with RNE TIS IMT, of the national IT tool to manage and send data concerning disruptions on RFI network	WP5	3 - RFI	DEM — Demonstrator, pilot, prototype	SEN - Sensitive	48
D5.43	D5.8.1.1 Implementation report on the TIS developments	WP5	1 - RNE	R — Document, report	SEN - Sensitive	48
D5.44	D5.8.2.1 Implementation report on the ETMN P2	WP5	1 - RNE	R — Document, report	SEN - Sensitive	48
D5.45	D5.8.3.1 Report on the developments and upgrades of the Language Tool	WP5	1 - RNE	R — Document, report	SEN - Sensitive	48
D5.46	D5.8.4.1 Implementation report on Network ETA	WP5	1 - RNE	R — Document, report	SEN - Sensitive	48
D5.47	D5.8.5.1 Report on the findings and the conept of KPIs	WP5	1 - RNE	R — Document, report	SEN - Sensitive	48

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Deliverable No	Deliverable Name	Work Package No	Lead Beneficiary	Type	Dissemination Level	Due Date (month)
D5.48	D5.8.6.1 Report on the deployment of TIS Performance Monitoring	WP5	1 - RNE	R — Document, report	SEN - Sensitive	48
D5.49	D5.8.7.1 Report on the deployment of PM Tool Europerformance	WP5	1 - RNE	R — Document, report	SEN - Sensitive	48
D6.1	D6.2.1.1 Defined infrastructure objects and attributes needed for the Capacity Model	WP6	2 - DB InfraGO	R — Document, report	SEN - Sensitive	18
D6.2	D6.2.1.2 Established connection between Capacity Model and infrastructure supply	WP6	2 - DB InfraGO	DEM — Demonstrator, pilot, prototype	SEN - Sensitive	48
D6.3	D6.3.1.1 Acceptance note	WP6	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	12
D6.4	D6.3.1.2 Acceptance note	WP6	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	36
D6.5	D6.3.1.3 Acceptance note	WP6	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	48
D6.6	D6.3.2.1 Acceptance note	WP6	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	12
D6.7	D6.3.2.2 Acceptance note	WP6	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	48
D6.8	D6.3.3.1 Acceptance note	WP6	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	12
D6.9	D6.3.3.2 Acceptance note	WP6	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	48
D6.10	D6.3.4.1 Acceptance note	WP6	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	12
D6.11	D6.3.4.2 Acceptance note	WP6	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	36
D6.12	D6.3.4.3 Acceptance note	WP6	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	48

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D6.13	D6.4.1.1 Technical specification of new CI	WP6	1 - RNE	R — Document, report	SEN - Sensitive	12
D6.14	D6.4.1.2 Common interface software package	WP6	1 - RNE	R — Document, report	SEN - Sensitive	34
D6.15	D6.5.1.1 concept of interfaces	WP6	2 - DB InfraGO	R — Document, report	SEN - Sensitive	36
D6.16	D6.6.1.1 Acceptance note	WP6	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	12
D6.17	D6.6.1.2 Acceptance note	WP6	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	48
D6.18	D6.6.2.1 Acceptance note	WP6	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	36
D6.19	D6.6.2.2 Acceptance note	WP6	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	36
D6.20	D6.6.2.3 Acceptance note	WP6	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	48
D6.21	D6.7.1.1 Acceptance note	WP6	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	12
D6.22	D6.7.1.2 Acceptance note	WP6	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	36
D6.23	D6.7.1.3 Acceptance note	WP6	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	48
D6.24	D6.7.2.1 Acceptance note	WP6	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	12
D6.25	D6.7.2.2 Acceptance note	WP6	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	36
D6.26	D6.7.2.3 Acceptance note	WP6	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	48
D6.27	D6.7.3.1 Acceptance note	WP6	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	36
D6.28	D6.7.3.2 Acceptance note	WP6	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	48

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D6.29	D6.7.4.1 Acceptance note	WP6	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	12
D6.30	D6.7.4.2 Acceptance note	WP6	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	48
D6.31	D6.7.5.1 Acceptance note	WP6	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	12
D6.32	D6.7.5.2 Acceptance note	WP6	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	36
D6.33	D6.7.5.3 Acceptance note	WP6	4 - SNCF RÉSEAU	R — Document, report	SEN - Sensitive	48
D6.34	D6.8.1.1 Acceptance protocol	WP6	6 - SZCZ	R — Document, report	SEN - Sensitive	24
D6.35	D6.9.1.1 Implementation of multiple periods of validity on the level of each infrastructure component in INT	WP6	5 - INFRABEL	R — Document, report	SEN - Sensitive	48
D6.36	D6.9.1.2 Implementation of the possibility to create different infrastructure versions for each important modification	WP6	5 - INFRABEL	R — Document, report	SEN - Sensitive	48
D6.37	D6.9.2.1 Analysis of import and additional requirements source database	WP6	5 - INFRABEL	R — Document, report	SEN - Sensitive	24
D6.38	D6.9.2.2 Delivery of the software components	WP6	5 - INFRABEL	R — Document, report	SEN - Sensitive	48
D6.39	D6.10.1.1 Development of the interface with PCS	WP6	5 - INFRABEL	R — Document, report	SEN - Sensitive	22

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D6.40	D6.10.1.2 Finalised Test of the interface with PCS	WP6	5 - INFRABEL	R — Document, report	SEN - Sensitive	24
D6.41	D6.10.2.1 Development of the interface LT with RNE TCR-tool	WP6	5 - INFRABEL	R — Document, report	SEN - Sensitive	34
D6.42	D6.10.2.2 Finalised Test of the interface LT with RNE TCR-tool	WP6	5 - INFRABEL	R — Document, report	SEN - Sensitive	36
D6.43	D6.10.3.1 Development of the interface INT with ECMT	WP6	5 - INFRABEL	R — Document, report	SEN - Sensitive	22
D6.44	D6.10.3.2 Finalised Test of the interface INT with ECMT	WP6	5 - INFRABEL	R — Document, report	SEN - Sensitive	24
D6.45	D6.10.4.1 Development of the interface planning - ECMT	WP6	5 - INFRABEL	R — Document, report	SEN - Sensitive	48
D6.46	D6.10.5.1 Development of the interface UPM-TCR-tool	WP6	5 - INFRABEL	R — Document, report	SEN - Sensitive	40
D6.47	D6.10.5.2 Finalised Test of the interface UPM-TCR-tool	WP6	5 - INFRABEL	R — Document, report	SEN - Sensitive	42
D6.48	D6.11.1.1 Study/analysis report	WP6	5 - INFRABEL	R — Document, report	SEN - Sensitive	12
D6.49	D6.11.1.2 Proof of Concept EU train ID in real time management tool	WP6	5 - INFRABEL	R — Document, report	SEN - Sensitive	24

Deliverables

Grant Preparation (Deliverables screen) — Enter the info.

The labels used mean:

Public — fully open (⚠ automatically posted online)
Sensitive — limited under the conditions of the Grant Agreement
EU classified —RESTREINT-UE/EU-RESTRICTED, CONFIDENTIEL-UE/EU-CONFIDENTIAL, SECRET-UE/EU-SECRET under Decision 2015/444

Deliverable No	Deliverable Name	Work Package No	Lead Beneficiary	Type	Dissemination Level	Due Date (month)
D6.50	D6.11.1.3 Proof of Concept EU train ID in capacity planning tool	WP6	5 - INFRABEL	R — Document, report	SEN - Sensitive	24
D6.51	D6.11.2.1 Study/analysis report	WP6	5 - INFRABEL	R — Document, report	SEN - Sensitive	12
D6.52	D6.11.2.2 Development of TCM with ITU container information	WP6	5 - INFRABEL	R — Document, report	SEN - Sensitive	36
D6.53	D6.11.3.1 Study/analysis report	WP6	5 - INFRABEL	R — Document, report	SEN - Sensitive	6
D6.54	D6.11.4.1 Study report	WP6	5 - INFRABEL	R — Document, report	SEN - Sensitive	24
D6.55	D6.11.3.2 Development of new connections (news partners)	WP6	5 - INFRABEL	R — Document, report	SEN - Sensitive	24
D6.56	D6.11.3.3 Development concerning exchange of new messages	WP6	5 - INFRABEL	R — Document, report	SEN - Sensitive	24
D6.57	D6.2.2.1 Graphical user interface for validation of detection algorithm and its demonstration to ERA	WP6	2 - DB InfraGO	R — Document, report	SEN - Sensitive	48
D6.58	D6.4.3.1 Collection of improvements for the application NCI, RIS, CIS and Common Interface, and Communication Plan of NCI, CIS Tool for 2025	WP6	1 - RNE	R — Document, report	SEN - Sensitive	48
D6.59	D6.12.1.1 IT concept (draft and final) and development of MRC-tool for rail facilities data, including testing phase and related	WP6	3 - RFI	DEM — Demonstrator, pilot, prototype	SEN - Sensitive	48

Deliverables

Grant Preparation (Deliverables screen) — Enter the info.

The labels used mean:

Public — fully open (⚠ automatically posted online)
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EU classified —RESTREINT-UE/EU-RESTRICTED, CONFIDENTIEL-UE/EU-CONFIDENTIAL, SECRET-UE/EU-SECRET under Decision 2015/444

Deliverable No	Deliverable Name	Work Package No	Lead Beneficiary	Type	Dissemination Level	Due Date (month)
	interface, to manage and send RFI data to RFP via RINF and to CRD via RINF					
D6.60	D6.12.2.1IT concept (draft and final) and development, including testing phase, of the digitalized system to manage and send RFI data to RINF	WP6	3 - RFI	DEM — Demonstrator, pilot, prototype	SEN - Sensitive	48
D6.61	D6.12.3.1 IT concept (draft and final) and development, including testing phase, of the digitalized system to manage and send RFI data to RINF	WP6	3 - RFI	DEM — Demonstrator, pilot, prototype	SEN - Sensitive	48

Deliverable D1.1 – D1.1.1 Kick-off meeting

Deliverable Number	D1.1	**Lead Beneficiary**	1 - RNE
Deliverable Name	D1.1.1 Kick-off meeting		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	5	**Work Package No**	WP1

Description
Kick-off meeting minutes (*.pdf, en)

Deliverable D1.2 – D1.1.2 Closing meeting

Deliverable Number	D1.2	**Lead Beneficiary**	1 - RNE
Deliverable Name	D1.1.2 Closing meeting		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP1

Description
Closing meeting minutes (*.pdf, en)

Deliverable D1.3 – D1.2.1 Final Financial Report

Deliverable Number	D1.3	**Lead Beneficiary**	1 - RNE
Deliverable Name	D1.2.1 Final Financial Report		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP1

Description
Consolidated FFR (*.pdf, en)

Deliverable D1.4 – D1.3.1 Project Technical Report Period1

Deliverable Number	D1.4	**Lead Beneficiary**	1 - RNE
Deliverable Name	D1.3.1 Project Technical Report Period1		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	14	**Work Package No**	WP1

Description
Prepared and approved report (*.pdf, en)

Deliverable D1.5 – D1.3.2 Project Technical Report Period2

Deliverable Number	D1.5	**Lead Beneficiary**	1 - RNE
Deliverable Name	D1.3.2 Project Technical Report Period2		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	26	**Work Package No**	WP1

Description
Prepared and approved report (*.pdf, en)

Deliverable D1.6 – D1.3.3 Project Technical Report Period3

Deliverable Number	D1.6	**Lead Beneficiary**	1 - RNE
Deliverable Name	D1.3.3 Project Technical Report Period3		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	36	**Work Package No**	WP1

Description
Prepared and approved report (*.pdf, en)

Deliverable D1.7 – D1.4.1 Plan for the Exploitation and Dissemination of Results (PEDR)

Deliverable Number	D1.7	**Lead Beneficiary**	1 - RNE
Deliverable Name	D1.4.1 Plan for the Exploitation and Dissemination of Results (PEDR)		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	12	**Work Package No**	WP1

Description
Prepared and approved report (*.pdf, en)

Deliverable D1.8 – D1.4.2 Project Webpage

Deliverable Number	D1.8	**Lead Beneficiary**	1 - RNE
Deliverable Name	D1.4.2 Project Webpage		
Type	DEC —Websites, patent filings, videos, etc	**Dissemination Level**	PU - Public
Due Date (month)	8	**Work Package No**	WP1

Description
Project webpage implemented - screenshot (*.pdf)

Deliverable D1.9 – D1.5.1 Overview of technical coordination meetings held

Deliverable Number	D1.9	**Lead Beneficiary**	1 - RNE
Deliverable Name	D1.5.1 Overview of technical coordination meetings held		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP1

Description
Prepared and approved report (*.pdf, en)

Deliverable D1.10 – D1.3.4 Personal cost records report Q1

Deliverable Number	D1.10	**Lead Beneficiary**	1 - RNE
Deliverable Name	D1.3.4 Personal cost records report Q1		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	4	**Work Package No**	WP1

Description
Prepared and approved report (*.pdf, en)

Deliverable D1.11 – D1.3.5 Personal records report Q2

Deliverable Number	D1.11	**Lead Beneficiary**	1 - RNE
Deliverable Name	D1.3.5 Personal records report Q2		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	7	**Work Package No**	WP1

Description
Prepared and approved report (*.pdf, en)

Deliverable D1.12 – D1.3.6 Personal records report Q3

Deliverable Number	D1.12	**Lead Beneficiary**	1 - RNE
Deliverable Name	D1.3.6 Personal records report Q3		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	10	**Work Package No**	WP1

Description
Prepared and approved report (*.pdf, en)

Deliverable D1.13 – D1.3.7 Personal records report Q4

Deliverable Number	D1.13	**Lead Beneficiary**	1 - RNE
Deliverable Name	D1.3.7 Personal records report Q4		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	13	**Work Package No**	WP1

Description
Prepared and approved report (*.pdf, en)

Deliverable D1.14 – D1.3.8 Personal records report Q5

Deliverable Number	D1.14	**Lead Beneficiary**	1 - RNE
Deliverable Name	D1.3.8 Personal records report Q5		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	16	**Work Package No**	WP1

Description
Prepared and approved report (*.pdf, en)

Deliverable D1.15 – D1.3.9 Personal records report Q6

Deliverable Number	D1.15	**Lead Beneficiary**	1 - RNE
Deliverable Name	D1.3.9 Personal records report Q6		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	19	**Work Package No**	WP1

Description
Prepared and approved report (*.pdf, en)

Deliverable D1.16 – D1.3.10 Personal records report Q7

Deliverable Number	D1.16	**Lead Beneficiary**	1 - RNE
Deliverable Name	D1.3.10 Personal records report Q7		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	22	**Work Package No**	WP1

Description
Prepared and approved report (*.pdf, en)

Deliverable D1.17 – D1.3.11 Personal records report Q8

Deliverable Number	D1.17	**Lead Beneficiary**	1 - RNE
Deliverable Name	D1.3.11 Personal records report Q8		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	25	**Work Package No**	WP1

Description
Prepared and approved report (*.pdf, en)

Deliverable D1.18 – D1.3.12 Personal records report Q9

Deliverable Number	D1.18	**Lead Beneficiary**	1 - RNE
Deliverable Name	D1.3.12 Personal records report Q9		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	28	**Work Package No**	WP1

Description
Prepared and approved report (*.pdf, en)

Deliverable D1.19 – D1.3.13 Personal records report Q10

Deliverable Number	D1.19	**Lead Beneficiary**	1 - RNE
Deliverable Name	D1.3.13 Personal records report Q10		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	31	**Work Package No**	WP1

Description
Prepared and approved report (*.pdf, en)

Deliverable D1.20 – D1.3.14 Personal records report Q11

Deliverable Number	D1.20	**Lead Beneficiary**	1 - RNE
Deliverable Name	D1.3.14 Personal records report Q11		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	34	**Work Package No**	WP1

Description
Prepared and approved report (*.pdf, en)

Deliverable D1.21 – D1.3.15 Personal records report Q12

Deliverable Number	D1.21	Lead Beneficiary	1 - RNE
Deliverable Name	D1.3.15 Personal records report Q12		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	37	Work Package No	WP1

Description
Prepared and approved report (*.pdf, en)

Deliverable D1.22 – D1.3.16 Personal records report Q13

Deliverable Number	D1.22	Lead Beneficiary	1 - RNE
Deliverable Name	D1.3.16 Personal records report Q13		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	40	Work Package No	WP1

Description
Prepared and approved report (*.pdf, en)

Deliverable D1.23 – D1.3.17 Personal records report Q14

Deliverable Number	D1.23	Lead Beneficiary	1 - RNE
Deliverable Name	D1.3.17 Personal records report Q14		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	43	Work Package No	WP1

Description
Prepared and approved report (*.pdf, en)

Deliverable D1.24 – D1.3.18 Personal records report Q15

Deliverable Number	D1.24	Lead Beneficiary	1 - RNE
Deliverable Name	D1.3.18 Personal records report Q15		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	46	Work Package No	WP1

Description
Prepared and approved report (*.pdf, en)

Deliverable D1.25 – D1.3.19 Personal records report Q16

Deliverable Number	D1.25	**Lead Beneficiary**	1 - RNE
Deliverable Name	D1.3.19 Personal records report Q16		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP1

Description
Prepared and approved report (*.pdf, en)

Deliverable D1.26 – D1.3.20 Project Technical Report Period4

Deliverable Number	D1.26	**Lead Beneficiary**	1 - RNE
Deliverable Name	D1.3.20 Project Technical Report Period4		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP1

Description
Prepared and approved report (*.pdf, en)

Deliverable D2.1 – D2.1.1.1 Functional requirements for ECMT

Deliverable Number	D2.1	**Lead Beneficiary**	1 - RNE
Deliverable Name	D2.1.1.1 Functional requirements for ECMT		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	1	**Work Package No**	WP2

Description
Prepared and approved report (*.pdf, en)

Deliverable D2.2 – D2.1.2.1 Adjusted/new forms for creation and editing of the CNA, TCRs and Capacity Model objects

Deliverable Number	D2.2	**Lead Beneficiary**	1 - RNE
Deliverable Name	D2.1.2.1 Adjusted/new forms for creation and editing of the CNA, TCRs and Capacity Model objects		
Type	DEC —Websites, patent filings, videos, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	7	**Work Package No**	WP2

Description
Electronic data file

Deliverable D2.3 – D2.1.2.2 Adjusted object model of ECMT with the new attributes and the links to Variants

Deliverable Number	D2.3	**Lead Beneficiary**	1 - RNE
Deliverable Name	D2.1.2.2 Adjusted object model of ECMT with the new attributes and the links to Variants		
Type	DATA — data sets, microdata, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	5	**Work Package No**	WP2

Description
Electronic data file

Deliverable D2.4 – D2.1.4.1 Import template and import function for importing CNA, Capacity Model objects and intended capacity volume

Deliverable Number	D2.4	**Lead Beneficiary**	1 - RNE
Deliverable Name	D2.1.4.1 Import template and import function for importing CNA, Capacity Model objects and intended capacity volume		
Type	DATA — data sets, microdata, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	5	**Work Package No**	WP2

Description
Electronic data file

Deliverable D2.5 – D2.1.3.3 Overview of the CNAs is implemented

Deliverable Number	D2.5	**Lead Beneficiary**	1 - RNE
Deliverable Name	D2.1.3.3 Overview of the CNAs is implemented		
Type	DEC —Websites, patent filings, videos, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	3	**Work Package No**	WP2

Description
Electronic data file

Deliverable D2.6 – D2.1.5.3 The formula for calculating the TCR impact on traffic in % is implemented

Deliverable Number	D2.6	**Lead Beneficiary**	1 - RNE
Deliverable Name	D2.1.5.3 The formula for calculating the TCR impact on traffic in % is implemented		
Type	DATA — data sets, microdata, etc	**Dissemination Level**	SEN - Sensitive

Due Date (month)	36	Work Package No	WP2

Description
Electronic data file

Deliverable D2.7 – D2.1.3.2 Calculation logic of the TCR duration overview

Deliverable Number	D2.7	Lead Beneficiary	1 - RNE
Deliverable Name	D2.1.3.2 Calculation logic of the TCR duration overview		
Type	DATA — data sets, microdata, etc	Dissemination Level	SEN - Sensitive
Due Date (month)	12	Work Package No	WP2

Description
Electronic data file

Deliverable D2.8 – D2.1.3.1 Capacity Model views (section, line, network) are implemented

Deliverable Number	D2.8	Lead Beneficiary	1 - RNE
Deliverable Name	D2.1.3.1 Capacity Model views (section, line, network) are implemented		
Type	DEC —Websites, patent filings, videos, etc	Dissemination Level	SEN - Sensitive
Due Date (month)	8	Work Package No	WP2

Description
Electronic data file

Deliverable D2.9 – D2.1.5.1 Workflow is implemented for CNA harmonization

Deliverable Number	D2.9	Lead Beneficiary	1 - RNE
Deliverable Name	D2.1.5.1 Workflow is implemented for CNA harmonization		
Type	DEC —Websites, patent filings, videos, etc	Dissemination Level	SEN - Sensitive
Due Date (month)	15	Work Package No	WP2

Description
Electronic data file

Deliverable D2.10 – D2.1.5.2 Workflow is implemented for linking CNAs to Capacity Model

Deliverable Number	D2.10	Lead Beneficiary	1 - RNE
Deliverable Name	D2.1.5.2 Workflow is implemented for linking CNAs to Capacity Model		

Type	DEC —Websites, patent filings, videos, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	12	**Work Package No**	WP2

Description
Electronic data file

Deliverable D2.11 – D2.1.6.1 Interface connection is established between ECMT and the TCR Tool

Deliverable Number	D2.11	**Lead Beneficiary**	1 - RNE
Deliverable Name	D2.1.6.1 Interface connection is established between ECMT and the TCR Tool		
Type	DEC —Websites, patent filings, videos, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	10	**Work Package No**	WP2

Description
Electronic data file

Deliverable D2.12 – D2.1.6.2 TCRs are imported (CRUD) from the TCR tool to ECMT using TAF/TAP TSI messages

Deliverable Number	D2.12	**Lead Beneficiary**	1 - RNE
Deliverable Name	D2.1.6.2 TCRs are imported (CRUD) from the TCR tool to ECMT using TAF/TAP TSI messages		
Type	DATA — data sets, microdata, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	12	**Work Package No**	WP2

Description
Electronic data file

Deliverable D2.13 – D2.1.6.3 ECMT XSD is published for capacity model

Deliverable Number	D2.13	**Lead Beneficiary**	1 - RNE
Deliverable Name	D2.1.6.3 ECMT XSD is published for capacity model		
Type	DATA — data sets, microdata, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	13	**Work Package No**	WP2

Description
Final XSD (*.xsd, en)

Deliverable D2.14 – D2.1.6.4 CI configuration with the partner IMs

Deliverable Number	D2.14	**Lead Beneficiary**	1 - RNE
Deliverable Name	D2.1.6.4 CI configuration with the partner IMs		
Type	DEC —Websites, patent filings, videos, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP2

Description
Final XSD (*.xsd, en)

Deliverable D2.15 – D2.1.6.5 Capacity model objects are imported (CRUD) from the IM's national system to ECMT using TAF/TAP TSI messages

Deliverable Number	D2.15	**Lead Beneficiary**	1 - RNE
Deliverable Name	D2.1.6.5 Capacity model objects are imported (CRUD) from the IM's national system to ECMT using TAF/TAP TSI messages		
Type	DATA — data sets, microdata, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP2

Description
Electronic data file

Deliverable D2.16 – D2.2.1.1 Study for Modelisation and implementation of capacity bands, rolling-planning requests on dedicated multi-annual offer

Deliverable Number	D2.16	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D2.2.1.1 Study for Modelisation and implementation of capacity bands, rolling-planning requests on dedicated multi-annual offer		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	15	**Work Package No**	WP2

Description
Study for Modelisation and implementation of capacity bands, rolling-planning requests on dedicated multi-annual offer [fr, *.pdf]

Deliverable D2.17 – D2.3.1.1 IT concept (feasibility study)

Deliverable Number	D2.17	**Lead Beneficiary**	3 - RFI
Deliverable Name	D2.3.1.1 IT concept (feasibility study)		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	12	**Work Package No**	WP2

Description
prepare a detailed concept description [IT, *.pdf]

Deliverable D2.18 – D2.3.2.1 Final concept

Deliverable Number	D2.18	Lead Beneficiary	3 - RFI
Deliverable Name	D2.3.2.1 Final concept		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	18	Work Package No	WP2

Description
prepare the final concept to be implemented [IT, *.pdf]

Deliverable D2.19 – D2.3.3.1 Development , including testing phase and related interface with IT Common tool

Deliverable Number	D2.19	Lead Beneficiary	3 - RFI
Deliverable Name	D2.3.3.1 Development , including testing phase and related interface with IT Common tool		
Type	DEM — Demonstrator, pilot, prototype	Dissemination Level	SEN - Sensitive
Due Date (month)	48	Work Package No	WP2

Description
Documentation of the implementation of the IT tool and connection with Common IT [IT, *.pdf]

Deliverable D2.20 – D2.4.1.1 concept new planning process

Deliverable Number	D2.20	Lead Beneficiary	2 - DB InfraGO
Deliverable Name	D2.4.1.1 concept new planning process		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	48	Work Package No	WP2

Description
Prepared concept

Deliverable D2.21 – D2.4.2.1 Concept of rules and logics

Deliverable Number	D2.21	Lead Beneficiary	2 - DB InfraGO
Deliverable Name	D2.4.2.1 Concept of rules and logics		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	36	Work Package No	WP2

Description
Prepared concept

Deliverable D2.22 – D2.4.2.2 Concept of IT algorithms

Deliverable Number	D2.22	Lead Beneficiary	2 - DB InfraGO
Deliverable Name	D2.4.2.2 Concept of IT algorithms		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	48	Work Package No	WP2

Description
Prepared concept

Deliverable D2.23 – D2.4.3.1 Short-term: Delivery of Interim-Capacity Model 2025 (according to agreed scope and legal basis)

Deliverable Number	D2.23	Lead Beneficiary	2 - DB InfraGO
Deliverable Name	D2.4.3.1 Short-term: Delivery of Interim-Capacity Model 2025 (according to agreed scope and legal basis)		
Type	DEM — Demonstrator, pilot, prototype	Dissemination Level	SEN - Sensitive
Due Date (month)	19	Work Package No	WP2

Description
Data Model in ECMT, alternatively PDF document in English language

Deliverable D2.24 – D2.4.3.2 Long-term: Processes and required IT for an automated KNK-implementation

Deliverable Number	D2.24	Lead Beneficiary	2 - DB InfraGO
Deliverable Name	D2.4.3.2 Long-term: Processes and required IT for an automated KNK-implementation		
Type	DEM — Demonstrator, pilot, prototype	Dissemination Level	SEN - Sensitive
Due Date (month)	48	Work Package No	WP2

Description
IT up-and-running for active KNK delivery

Deliverable D2.25 – D2.5.1.1 Single international “path & TCRs Database” TAF TAP TSI compliant

Deliverable Number	D2.25	Lead Beneficiary	7 - RFC NS-M

Deliverable Name	D2.5.1.1 Single international “path & TCRs Database” TAF TAP TSI compliant		
Type	DATA — data sets, microdata, etc	Dissemination Level	SEN - Sensitive
Due Date (month)	15	Work Package No	WP2

Description
Database

Deliverable D2.26 – D2.5.1.2 Feedback from the database merging process

Deliverable Number	D2.26	Lead Beneficiary	7 - RFC NS-M
Deliverable Name	D2.5.1.2 Feedback from the database merging process		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	16	Work Package No	WP2

Description
Prepared and approved report (*.pdf, en)

Deliverable D2.27 – D2.5.1.3 Compendium of capacity maps & Charts + TTR Capacity Model and Supply

Deliverable Number	D2.27	Lead Beneficiary	7 - RFC NS-M
Deliverable Name	D2.5.1.3 Compendium of capacity maps & Charts + TTR Capacity Model and Supply		
Type	DEM — Demonstrator, pilot, prototype	Dissemination Level	SEN - Sensitive
Due Date (month)	22	Work Package No	WP2

Description
Compendium of maps and charts (EN)

Deliverable D2.28 – D2.5.1.4 Description of the process to produce those maps, charts, capacity model & supply and its connection to the National IM process

Deliverable Number	D2.28	Lead Beneficiary	7 - RFC NS-M
Deliverable Name	D2.5.1.4 Description of the process to produce those maps, charts, capacity model & supply and its connection to the National IM process		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	24	Work Package No	WP2

Description
Prepared and approved report (*.pdf, en)

Deliverable D2.29 – D2.5.2.1 Feedbacks from users and decision-makers via mirror groups

Deliverable Number	D2.29	**Lead Beneficiary**	7 - RFC NS-M
Deliverable Name	D2.5.2.1 Feedbacks from users and decision-makers via mirror groups		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	22	**Work Package No**	WP2

Description
Prepared and approved minutes (*.pdf, en)

Deliverable D2.30 – D2.5.2.2 Specifications for IT Tools

Deliverable Number	D2.30	**Lead Beneficiary**	7 - RFC NS-M
Deliverable Name	D2.5.2.2 Specifications for IT Tools		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	24	**Work Package No**	WP2

Description
Prepared and approved report (*.pdf, en)

Deliverable D2.31 – D2.6.1.1 Delivery of the software component that enables the integration

Deliverable Number	D2.31	**Lead Beneficiary**	5 - INFRABEL
Deliverable Name	D2.6.1.1 Delivery of the software component that enables the integration		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	12	**Work Package No**	WP2

Description
Software documentation (*.pdf,en)

Deliverable D2.32 – D2.7.1.1 Status report TTR@Infrabel 2022

Deliverable Number	D2.32	**Lead Beneficiary**	5 - INFRABEL
Deliverable Name	D2.7.1.1 Status report TTR@Infrabel 2022		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	12	**Work Package No**	WP2

Description
Report (*.pdf, en)

Deliverable D2.33 – D2.7.1.2 Status report TTR@Infrabel 2023

Deliverable Number	D2.33	**Lead Beneficiary**	5 - INFRABEL
Deliverable Name	D2.7.1.2 Status report TTR@Infrabel 2023		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	24	**Work Package No**	WP2

Description
Report (*.pdf, en)

Deliverable D2.34 – D2.7.1.3 Status report TTR@Infrabel 2024

Deliverable Number	D2.34	**Lead Beneficiary**	5 - INFRABEL
Deliverable Name	D2.7.1.3 Status report TTR@Infrabel 2024		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	36	**Work Package No**	WP2

Description
Report (*.pdf, en)

Deliverable D2.35 – D2.1.6.6 Report on the development according to the technical specification (phase 1)

Deliverable Number	D2.35	**Lead Beneficiary**	1 - RNE
Deliverable Name	D2.1.6.6 Report on the development according to the technical specification (phase 1)		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP2

Description
Prepared and approved report (*.pdf, en)

Deliverable D2.36 – D2.1.6.7 Report on the developments

Deliverable Number	D2.36	**Lead Beneficiary**	1 - RNE
Deliverable Name	D2.1.6.7 Report on the developments		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP2

Description
Prepared and approved report (*.pdf, en)

Deliverable D2.37 – D2.2.2.1 "Deployment of enhanced TCR tool with supervision functionality "

Deliverable Number	D2.37	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D2.2.2.1 "Deployment of enhanced TCR tool with supervision functionality "		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP2

Description
Prepared and approved report (*.pdf, en or fr)

Deliverable D2.38 – D2.2.3.1 Implementation of timetable redesign capacity scenario process

Deliverable Number	D2.38	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D2.2.3.1 Implementation of timetable redesign capacity scenario process		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP2

Description
Prepared and approved report (*.pdf, en or fr)

Deliverable D2.39 – D2.2.4.1 Integration of ECTS-Related infrastructure objects into GAIA repository

Deliverable Number	D2.39	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D2.2.4.1 Integration of ECTS-Related infrastructure objects into GAIA repository		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP2

Description
Prepared and approved report (*.pdf, en or fr)

Deliverable D2.40 – D2.2.5.1 Upgradation of legacy information systems for TSI observations integration

Deliverable Number	D2.40	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D2.2.5.1 Upgradation of legacy information systems for TSI observations integration		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP2

Description
Prepared and approved report (*.pdf, en or fr)

Deliverable D2.41 – D2.7.1.4 Status report TTR@Infrabel 2025

Deliverable Number	D2.41	**Lead Beneficiary**	5 - INFRABEL
Deliverable Name	D2.7.1.4 Status report TTR@Infrabel 2025		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP2

Description
Report (*.pdf, en)

Deliverable D2.42 – D2.7.3.1 Development of new common interface

Deliverable Number	D2.42	**Lead Beneficiary**	5 - INFRABEL
Deliverable Name	D2.7.3.1 Development of new common interface		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP2

Description
Release notes (pdf, fr;nl)

Deliverable D2.43 – D2.7.4.1 Modification of the PCS link to reach PCS CB compliancy

Deliverable Number	D2.43	**Lead Beneficiary**	5 - INFRABEL
Deliverable Name	D2.7.4.1 Modification of the PCS link to reach PCS CB compliancy		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP2

Description
Release notes (pdf, fr;nl)

Deliverable D2.44 – D2.7.5.1 Analysis of TSI telematic related functions

Deliverable Number	D2.44	**Lead Beneficiary**	5 - INFRABEL
Deliverable Name	D2.7.5.1 Analysis of TSI telematic related functions		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP2

Description
Release notes (pdf, fr;nl)

Deliverable D2.45 – D2.8.1.1 Delivery of updated version of IT tools - DYPOD and ETD

Deliverable Number	D2.45	**Lead Beneficiary**	6 - SZCZ
Deliverable Name	D2.8.1.1 Delivery of updated version of IT tools - DYPOD and ETD		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP2

Description
Prepared and approved report (*.pdf, cz)

Deliverable D2.46 – D2.7.2.1 Final report on usage EU train ID

Deliverable Number	D2.46	**Lead Beneficiary**	5 - INFRABEL
Deliverable Name	D2.7.2.1 Final report on usage EU train ID		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP2

Description
Study report (pdf, fr;en;nl)

Deliverable D3.1 – D3.1.1.1 Functional requirements for the TCR Tool

Deliverable Number	D3.1	**Lead Beneficiary**	1 - RNE
Deliverable Name	D3.1.1.1 Functional requirements for the TCR Tool		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	9	**Work Package No**	WP3

Description
Prepared and approved report (*.pdf, en)

Deliverable D3.2 – D3.1.2.1 Adjusted object model of TCR Tool with the new attributes

Deliverable Number	D3.2	**Lead Beneficiary**	1 - RNE
Deliverable Name	D3.1.2.1 Adjusted object model of TCR Tool with the new attributes		
Type	DATA — data sets, microdata, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP3

Description
Electronic data file

Deliverable D3.3 – D3.1.3.1 New/adjusted forms for creation, and editing of the TCR objects

Deliverable Number	D3.3	**Lead Beneficiary**	1 - RNE
Deliverable Name	D3.1.3.1 New/adjusted forms for creation, and editing of the TCR objects		
Type	DEC —Websites, patent filings, videos, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP3

Description
Electronic data file

Deliverable D3.4 – D3.1.4.1 Adjusting the import template and function for importing TCR objects

Deliverable Number	D3.4	**Lead Beneficiary**	1 - RNE
Deliverable Name	D3.1.4.1 Adjusting the import template and function for importing TCR objects		
Type	DATA — data sets, microdata, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP3

Description
Electronic data file

Deliverable D3.5 – D3.1.5.1 Impact assessment calculation feature for TCRs

Deliverable Number	D3.5	**Lead Beneficiary**	1 - RNE
Deliverable Name	D3.1.5.1 Impact assessment calculation feature for TCRs		
Type	DEC —Websites, patent filings, videos, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP3

Description
Electronic data file

Deliverable D3.6 – D3.1.6.1 Notification logic related to the object changes

Deliverable Number	D3.6	**Lead Beneficiary**	1 - RNE
Deliverable Name	D3.1.6.1 Notification logic related to the object changes		
Type	DEC —Websites, patent filings, videos, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP3

Description

Electronic data file

Deliverable D3.7 – D3.1.6.2 Workflow is implemented for TCR consultation

Deliverable Number	D3.7	**Lead Beneficiary**	1 - RNE
Deliverable Name	D3.1.6.2 Workflow is implemented for TCR consultation		
Type	DEC —Websites, patent filings, videos, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP3

Description
Electronic data file

Deliverable D3.8 – D3.1.6.3 Adjusting the publication function and workflow

Deliverable Number	D3.8	**Lead Beneficiary**	1 - RNE
Deliverable Name	D3.1.6.3 Adjusting the publication function and workflow		
Type	DEC —Websites, patent filings, videos, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP3

Description
Electronic data file

Deliverable D3.9 – D3.1.6.4 Messages for searching TCRs

Deliverable Number	D3.9	**Lead Beneficiary**	1 - RNE
Deliverable Name	D3.1.6.4 Messages for searching TCRs		
Type	DEC —Websites, patent filings, videos, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP3

Description
Electronic data file

Deliverable D3.10 – D3.1.7.1 TCR Tool XSD is published for TCRs

Deliverable Number	D3.10	**Lead Beneficiary**	1 - RNE
Deliverable Name	D3.1.7.1 TCR Tool XSD is published for TCRs		
Type	DATA — data sets, microdata, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	18	**Work Package No**	WP3

Description
Final XSD (*.xsd, en)

Deliverable D3.11 – D3.1.7.2 CI configuration with partner IMs

Deliverable Number	D3.11	Lead Beneficiary	1 - RNE
Deliverable Name	D3.1.7.2 CI configuration with partner IMs		
Type	DEC —Websites, patent filings, videos, etc	Dissemination Level	SEN - Sensitive
Due Date (month)	48	Work Package No	WP3

Description
Final XSD (*.xsd, en)

Deliverable D3.12 – D3.1.7.3 TCR objects are imported (CRUD) from the IM's national system to TCR Tool using TAF/TAP TSI messages

Deliverable Number	D3.12	Lead Beneficiary	1 - RNE
Deliverable Name	D3.1.7.3 TCR objects are imported (CRUD) from the IM's national system to TCR Tool using TAF/TAP TSI messages		
Type	DATA — data sets, microdata, etc	Dissemination Level	SEN - Sensitive
Due Date (month)	48	Work Package No	WP3

Description
Electronic data file

Deliverable D3.13 – D3.1.7.4 Setting GeoEditor parameters required for TCR coordination with partner IMs

Deliverable Number	D3.13	Lead Beneficiary	1 - RNE
Deliverable Name	D3.1.7.4 Setting GeoEditor parameters required for TCR coordination with partner IMs		
Type	DATA — data sets, microdata, etc	Dissemination Level	SEN - Sensitive
Due Date (month)	24	Work Package No	WP3

Description
Electronic data file

Deliverable D3.14 – D3.2.1.1 Acceptance note

Deliverable Number	D3.14	Lead Beneficiary	4 - SNCF RÉSEAU

Deliverable Name	D3.2.1.1 Acceptance note		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	36	Work Package No	WP3

Description
Acceptance certificate issues by SNCF IT Board confirming the Evolution of the work planning applications and processes (Publication of work planning M-36, classification and impact of work) [fr, pdf]

Deliverable D3.15 – D3.2.1.2 Acceptance note

Deliverable Number	D3.15	Lead Beneficiary	4 - SNCF RÉSEAU
Deliverable Name	D3.2.1.2 Acceptance note		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	48	Work Package No	WP3

Description
Acceptance certificate issues by SNCF IT Board confirming the Evolution of the work planning applications and processes (Publication of work planning M-36, classification and impact of work) [fr, pdf]

Deliverable D3.16 – D3.3.1.1 IT concept (feasibility study) for a national digitalised tool

Deliverable Number	D3.16	Lead Beneficiary	3 - RFI
Deliverable Name	D3.3.1.1 IT concept (feasibility study) for a national digitalised tool		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	6	Work Package No	WP3

Description
Prepared and approved report (*.pdf, it)

Deliverable D3.17 – D3.3.1.2 Final concept for a national digitalised tool

Deliverable Number	D3.17	Lead Beneficiary	3 - RFI
Deliverable Name	D3.3.1.2 Final concept for a national digitalised tool		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	12	Work Package No	WP3

Description
Prepared and approved report (*.pdf, it)

Deliverable D3.18 – D3.3.1.3 "Development of a national digitalised tool , including testing phase and related interface with IT central tool"

Deliverable Number	D3.18	**Lead Beneficiary**	3 - RFI
Deliverable Name	D3.3.1.3 "Development of a national digitalised tool , including testing phase and related interface with IT central tool"		
Type	DEM — Demonstrator, pilot, prototype	**Dissemination Level**	SEN - Sensitive
Due Date (month)	18	**Work Package No**	WP3

Description
Documentation of the implementation of the IT tool and connection with central IT

Deliverable D3.19 – D3.3.2.1 IT concept (feasibility study) for interface with central IT tool

Deliverable Number	D3.19	**Lead Beneficiary**	3 - RFI
Deliverable Name	D3.3.2.1 IT concept (feasibility study) for interface with central IT tool		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	6	**Work Package No**	WP3

Description
Prepared and approved report (*.pdf, it)

Deliverable D3.20 – D3.3.2.2 Final concept for interface with central IT tool

Deliverable Number	D3.20	**Lead Beneficiary**	3 - RFI
Deliverable Name	D3.3.2.2 Final concept for interface with central IT tool		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	12	**Work Package No**	WP3

Description
Prepared and approved report (*.pdf, it)

Deliverable D3.21 – D3.3.2.3 Development , including testing phase and related interface with IT central tool

Deliverable Number	D3.21	**Lead Beneficiary**	3 - RFI
Deliverable Name	D3.3.2.3 Development , including testing phase and related interface with IT central tool		
Type	DEM — Demonstrator, pilot, prototype	**Dissemination Level**	SEN - Sensitive
Due Date (month)	18	**Work Package No**	WP3

Description

implementation of the IT tool and connection with central IT

Deliverable D3.22 – D3.4.1.1 Possibility to manage long term Temporary Capacity Restrictions in the Infrabel planning tool

Deliverable Number	D3.22	**Lead Beneficiary**	5 - INFRABEL
Deliverable Name	D3.4.1.1 Possibility to manage long term Temporary Capacity Restrictions in the Infrabel planning tool		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	12	**Work Package No**	WP3

Description
Release notes (pdf, fr;nl)

Deliverable D3.23 – D3.4.1.2 Publication of the approved TCRs to the RUs and the ability to signal the importance of each TCR in accordance with RNE guidelines

Deliverable Number	D3.23	**Lead Beneficiary**	5 - INFRABEL
Deliverable Name	D3.4.1.2 Publication of the approved TCRs to the RUs and the ability to signal the importance of each TCR in accordance with RNE guidelines		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	36	**Work Package No**	WP3

Description
Release notes (pdf, fr;nl)

Deliverable D3.24 – D3.4.2.1 Development customization algorithm platform

Deliverable Number	D3.24	**Lead Beneficiary**	5 - INFRABEL
Deliverable Name	D3.4.2.1 Development customization algorithm platform		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	36	**Work Package No**	WP3

Description
Software documentation (*.pdf,en)

Deliverable D3.25 – D3.4.3.1 Development Customization in the TCR planning tool

Deliverable Number	D3.25	**Lead Beneficiary**	5 - INFRABEL
Deliverable Name	D3.4.3.1 Development Customization in the TCR planning tool		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	24	**Work Package No**	WP3

Description
Software documentation (*.pdf,en)

Deliverable D3.26 – D3.4.3.2 Development further customizations in the algorithm platform

Deliverable Number	D3.26	**Lead Beneficiary**	5 - INFRABEL
Deliverable Name	D3.4.3.2 Development further customizations in the algorithm platform		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	36	**Work Package No**	WP3

Description
Software documentation (*.pdf,en)

Deliverable D3.27 – D3.4.4.1 First study with integrator based on the algorithm

Deliverable Number	D3.27	**Lead Beneficiary**	5 - INFRABEL
Deliverable Name	D3.4.4.1 First study with integrator based on the algorithm		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	36	**Work Package No**	WP3

Description
Report (*.pdf, en)

Deliverable D3.28 – D3.4.4.2 Development of the software that enables Infrabel to start own studies

Deliverable Number	D3.28	**Lead Beneficiary**	5 - INFRABEL
Deliverable Name	D3.4.4.2 Development of the software that enables Infrabel to start own studies		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP3

Description
Software documentation (*.pdf,en)

Deliverable D3.29 – D3.5.1.1 Acceptance protocol

Deliverable Number	D3.29	**Lead Beneficiary**	6 - SZCZ
Deliverable Name	D3.5.1.1 Acceptance protocol		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP3

Description
Acceptance protocol issued by the 3rd party supplier (*.pdf, cz)

Deliverable D3.30 – D3.5.2.1 Acceptance protocol

Deliverable Number	D3.30	**Lead Beneficiary**	6 - SZCZ
Deliverable Name	D3.5.2.1 Acceptance protocol		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP3

Description
Acceptance protocol issued by the 3rd party supplier (*.pdf, cz)

Deliverable D3.31 – D3.4.5.1 Go-live of said improvements relating the operational planning of infrastructure works

Deliverable Number	D3.31	**Lead Beneficiary**	5 - INFRABEL
Deliverable Name	D3.4.5.1 Go-live of said improvements relating the operational planning of infrastructure works		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP3

Description
Report (*.pdf, en)

Deliverable D3.32 – D3.5.3.1 Acceptance protocol

Deliverable Number	D3.32	**Lead Beneficiary**	6 - SZCZ
Deliverable Name	D3.5.3.1 Acceptance protocol		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP3

Description
Acceptance protocol issued by the 3rd party supplier (*.pdf, cz)

Deliverable D4.1 – D4.1.1.1 Functional requirements for ECMT

Deliverable Number	D4.1	**Lead Beneficiary**	1 - RNE
Deliverable Name	D4.1.1.1 Functional requirements for ECMT		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	22	**Work Package No**	WP4

Description
Prepared report (*.pdf, en)

Deliverable D4.2 – D4.1.2.1 Adjusted object model of ECMT with the new attributes and the links to Variants

Deliverable Number	D4.2	**Lead Beneficiary**	1 - RNE
Deliverable Name	D4.1.2.1 Adjusted object model of ECMT with the new attributes and the links to Variants		
Type	DATA — data sets, microdata, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	36	**Work Package No**	WP4

Description
Electronic data file

Deliverable D4.3 – D4.1.2.2 New/adjusted forms for creation and editing of the capacity supply objects

Deliverable Number	D4.3	**Lead Beneficiary**	1 - RNE
Deliverable Name	D4.1.2.2 New/adjusted forms for creation and editing of the capacity supply objects		
Type	DEC —Websites, patent filings, videos, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	36	**Work Package No**	WP4

Description
Electronic data file

Deliverable D4.4 – D4.1.4.1 Adjusting the import template and function for importing capacity supply objects

Deliverable Number	D4.4	**Lead Beneficiary**	1 - RNE
Deliverable Name	D4.1.4.1 Adjusting the import template and function for importing capacity supply objects		
Type	DEC —Websites, patent filings, videos, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	36	**Work Package No**	WP4

Description
Electronic data file

Deliverable D4.5 – D4.1.5.1 Adjusted form for creating and editing TCRs

Deliverable Number	D4.5	**Lead Beneficiary**	1 - RNE
Deliverable Name	D4.1.5.1 Adjusted form for creating and editing TCRs		
Type	DEC —Websites, patent filings, videos, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP4

Description
Electronic data file

Deliverable D4.6 – D4.1.5.2 Impact assessment feature for TCRs

Deliverable Number	D4.6	**Lead Beneficiary**	1 - RNE
Deliverable Name	D4.1.5.2 Impact assessment feature for TCRs		
Type	DEC —Websites, patent filings, videos, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP4

Description
Electronic data file

Deliverable D4.7 – D4.1.5.3 Adjusted Capacity Supply chart

Deliverable Number	D4.7	**Lead Beneficiary**	1 - RNE
Deliverable Name	D4.1.5.3 Adjusted Capacity Supply chart		
Type	DEC —Websites, patent filings, videos, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP4

Description
Electronic data file

Deliverable D4.8 – D4.1.5.4 Network view is implemented

Deliverable Number	D4.8	**Lead Beneficiary**	1 - RNE
Deliverable Name	D4.1.5.4 Network view is implemented		
Type	DEC —Websites, patent filings, videos, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP4

Description
Electronic data file

Deliverable D4.9 – D4.1.5.5 Capacity Model views are generated from selected Capacity Supply dataset

Deliverable Number	D4.9	**Lead Beneficiary**	1 - RNE
Deliverable Name	D4.1.5.5 Capacity Model views are generated from selected Capacity Supply dataset		
Type	DEC —Websites, patent filings, videos, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP4

Description
Electronic data file

Deliverable D4.10 – D4.1.5.6 Summary of the changes between selected dates are presented in ECMT

Deliverable Number	D4.10	**Lead Beneficiary**	1 - RNE
Deliverable Name	D4.1.5.6 Summary of the changes between selected dates are presented in ECMT		
Type	DEC —Websites, patent filings, videos, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP4

Description
Electronic data file

Deliverable D4.11 – D4.1.5.7 Feasibility study result is published in the Capacity Supply

Deliverable Number	D4.11	**Lead Beneficiary**	1 - RNE
Deliverable Name	D4.1.5.7 Feasibility study result is published in the Capacity Supply		
Type	DEC —Websites, patent filings, videos, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP4

Description
Electronic data file

Deliverable D4.12 – D4.1.5.8 Default presentation options are applied on the Feasibility study result objects

Deliverable Number	D4.12	**Lead Beneficiary**	1 - RNE
Deliverable Name	D4.1.5.8 Default presentation options are applied on the Feasibility study result objects		
Type	DEC —Websites, patent filings, videos, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP4

Description
Electronic data file

Deliverable D4.13 – D4.1.5.9 Path details from each process type (New path request, Late path request, Rolling Planning, Ad-hoc) can be published by the IMs in ECMT

Deliverable Number	D4.13	**Lead Beneficiary**	1 - RNE
Deliverable Name	D4.1.5.9 Path details from each process type (New path request, Late path request, Rolling Planning, Ad-hoc) can be published by the IMs in ECMT		
Type	DEC —Websites, patent filings, videos, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP4

Description
Electronic data file

Deliverable D4.14 – D4.1.5.10 Default presentation options are applied on the path details according to their process type and train type

Deliverable Number	D4.14	**Lead Beneficiary**	1 - RNE
Deliverable Name	D4.1.5.10 Default presentation options are applied on the path details according to their process type and train type		
Type	DEC —Websites, patent filings, videos, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP4

Description
Electronic data file

Deliverable D4.15 – D4.1.5.11 Workflow for updating the allocated capacity supply objects is implemented

Deliverable Number	D4.15	**Lead Beneficiary**	1 - RNE
Deliverable Name	D4.1.5.11 Workflow for updating the allocated capacity supply objects is implemented		
Type	DEC —Websites, patent filings, videos, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP4

Description
Electronic data file

Deliverable D4.16 – D4.1.6.1 ECMT XSD is published for capacity supply

Deliverable Number	D4.16	Lead Beneficiary	1 - RNE
Deliverable Name	D4.1.6.1 ECMT XSD is published for capacity supply		
Type	DATA — data sets, microdata, etc	Dissemination Level	SEN - Sensitive
Due Date (month)	48	Work Package No	WP4

Description
Final XSD (*.xsd, en)

Deliverable D4.17 – D4.1.6.2 CI configuration with the partner IMs

Deliverable Number	D4.17	Lead Beneficiary	1 - RNE
Deliverable Name	D4.1.6.2 CI configuration with the partner IMs		
Type	DEC —Websites, patent filings, videos, etc	Dissemination Level	SEN - Sensitive
Due Date (month)	48	Work Package No	WP4

Description
Final XSD (*.xsd, en)

Deliverable D4.18 – D4.1.6.3 Capacity supply objects are imported (CRUD) from the IM's national system to ECMT using TAF/TAP TSI messages

Deliverable Number	D4.18	Lead Beneficiary	1 - RNE
Deliverable Name	D4.1.6.3 Capacity supply objects are imported (CRUD) from the IM's national system to ECMT using TAF/TAP TSI messages		
Type	DATA — data sets, microdata, etc	Dissemination Level	SEN - Sensitive
Due Date (month)	48	Work Package No	WP4

Description
Electronic data file

Deliverable D4.19 – D4.2.1.1 Acceptance note

Deliverable Number	D4.19	Lead Beneficiary	4 - SNCF RÉSEAU
Deliverable Name	D4.2.1.1 Acceptance note		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	12	Work Package No	WP4

Description

Acceptance certificate issues by SNCF IT Board confirming the Implementation of a service platform to showcase the capacity offer and commercial response using national tools [fr, pdf]

Deliverable D4.20 – D4.2.1.2 Acceptance note

Deliverable Number	D4.20	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D4.2.1.2 Acceptance note		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	36	**Work Package No**	WP4

Description
Acceptance certificate issues by SNCF IT Board confirming the Implementation of a service platform to showcase the capacity offer and commercial response using national tools [fr, pdf]

Deliverable D4.21 – D4.2.1.3 Acceptance note

Deliverable Number	D4.21	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D4.2.1.3 Acceptance note		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP4

Description
Acceptance certificate issues by SNCF IT Board confirming the Implementation of a service platform to showcase the capacity offer and commercial response using national tools [fr, pdf]

Deliverable D4.22 – D4.2.2.1 Acceptance note

Deliverable Number	D4.22	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D4.2.2.1 Acceptance note		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	12	**Work Package No**	WP4

Description
Acceptance certificate issues by SNCF IT Board confirming the Upgrading of national ordering existing tools [fr, pdf]

Deliverable D4.23 – D4.2.2.2 Acceptance note

Deliverable Number	D4.23	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D4.2.2.2 Acceptance note		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	36	**Work Package No**	WP4

Description
Acceptance certificate issues by SNCF IT Board confirming the Upgrading of national ordering existing tools [fr, pdf]

Deliverable D4.24 – D4.2.2.3 Acceptance note

Deliverable Number	D4.24	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D4.2.2.3 Acceptance note		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP4

Description
Acceptance certificate issues by SNCF IT Board confirming the Upgrading of national ordering existing tools [fr, pdf]

Deliverable D4.25 – D4.2.3.1 Acceptance note

Deliverable Number	D4.25	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D4.2.3.1 Acceptance note		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	12	**Work Package No**	WP4

Description
Acceptance certificate issues by SNCF IT Board confirming the Implementation of a service platform to showcase the capacity offer and commercial response using national tools [fr, pdf]

Deliverable D4.26 – D4.2.3.2 Acceptance note

Deliverable Number	D4.26	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D4.2.3.2 Acceptance note		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	36	**Work Package No**	WP4

Description
Acceptance certificate issues by SNCF IT Board confirming the Implementation of a service platform to showcase the capacity offer and commercial response using national tools [fr, pdf]

Deliverable D4.27 – D4.2.3.3 Acceptance note

Deliverable Number	D4.27	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D4.2.3.3 Acceptance note		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP4

Description
Acceptance certificate issues by SNCF IT Board confirming the Implementation of a service platform to showcase the capacity offer and commercial response using national tools [fr, pdf]

Deliverable D4.28 – D4.2.4.1 Acceptance note

Deliverable Number	D4.28	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D4.2.4.1 Acceptance note		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	12	**Work Package No**	WP4

Description
Acceptance certificate issues by SNCF IT Board confirming the Upgrading of national ordering existing tools [fr, pdf]

Deliverable D4.29 – D4.2.4.2 Acceptance note

Deliverable Number	D4.29	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D4.2.4.2 Acceptance note		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	36	**Work Package No**	WP4

Description
Acceptance certificate issues by SNCF IT Board confirming the Upgrading of national ordering existing tools [fr, pdf]

Deliverable D4.30 – D4.2.4.3 Acceptance note

Deliverable Number	D4.30	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D4.2.4.3 Acceptance note		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP4

Description
Acceptance certificate issues by SNCF IT Board confirming the Upgrading of national ordering existing tools [fr, pdf]

Deliverable D4.31 – D4.2.5.1 Process

Deliverable Number	D4.31	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D4.2.5.1 Process		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	12	**Work Package No**	WP4

Description
Acceptance certificate issues by SNCF IT Board confirming the Acceptance-Refusal Process [fr, pdf]

Deliverable D4.32 – D4.2.5.2 Acceptance note

Deliverable Number	D4.32	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D4.2.5.2 Acceptance note		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	36	**Work Package No**	WP4

Description
Acceptance certificate issues by SNCF IT Board confirming the Acceptance-Refusal Messages [fr, pdf]

Deliverable D4.33 – D4.2.5.3 Acceptance note

Deliverable Number	D4.33	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D4.2.5.3 Acceptance note		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP4

Description
Acceptance certificate issues by SNCF IT Board confirming the Acceptance-Refusal Messages [fr, pdf]

Deliverable D4.34 – D4.3.1.1 IT concept (feasibility study) for a national digitalised tool

Deliverable Number	D4.34	**Lead Beneficiary**	3 - RFI
Deliverable Name	D4.3.1.1 IT concept (feasibility study) for a national digitalised tool		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	12	**Work Package No**	WP4

Description
Prepared and approved report (*.pdf, it)

Deliverable D4.35 – D4.3.1.2 Final concept for a national digitalised tool

Deliverable Number	D4.35	**Lead Beneficiary**	3 - RFI
Deliverable Name	D4.3.1.2 Final concept for a national digitalised tool		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	18	**Work Package No**	WP4

Description

Prepared and approved report (*.pdf, it)

Deliverable D4.36 – D4.3.1.3 "Development of a national digitalised tool , including testing phase and related interface with IT Common tool"

Deliverable Number	D4.36	**Lead Beneficiary**	3 - RFI
Deliverable Name	D4.3.1.3 "Development of a national digitalised tool , including testing phase and related interface with IT Common tool"		
Type	DEM — Demonstrator, pilot, prototype	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP4

Description
implementation of the IT tool and connection with central IT

Deliverable D4.37 – D4.3.2.1 IT concept (feasibility study) for a national digitalised tool

Deliverable Number	D4.37	**Lead Beneficiary**	3 - RFI
Deliverable Name	D4.3.2.1 IT concept (feasibility study) for a national digitalised tool		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	12	**Work Package No**	WP4

Description
Prepared and approved report (*.pdf, it)

Deliverable D4.38 – D4.3.2.2 Final concept for a national digitalised tool

Deliverable Number	D4.38	**Lead Beneficiary**	3 - RFI
Deliverable Name	D4.3.2.2 Final concept for a national digitalised tool		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	18	**Work Package No**	WP4

Description
Prepared and approved report (*.pdf, it)

Deliverable D4.39 – D4.3.2.3 "Development of a national digitalised tool , including testing phase and related interface with IT Common tool"

Deliverable Number	D4.39	**Lead Beneficiary**	3 - RFI
Deliverable Name	D4.3.2.3 "Development of a national digitalised tool , including testing phase and related interface with IT Common tool"		
Type	DEM — Demonstrator, pilot, prototype	**Dissemination Level**	SEN - Sensitive

Due Date (month)	48	Work Package No	WP4

Description
implementation of the IT tool and connection with Common IT

Deliverable D4.40 – D4.4.1.1 PCS process types are implemented in line with the TTR process description

Deliverable Number	D4.40	Lead Beneficiary	1 - RNE
Deliverable Name	D4.4.1.1 PCS process types are implemented in line with the TTR process description		
Type	DEC —Websites, patent filings, videos, etc	Dissemination Level	SEN - Sensitive
Due Date (month)	24	Work Package No	WP4

Description
Electronic data file

Deliverable D4.41 – D4.4.1.2 Compliance of the PCS XSD with the TAF/TAP TSI

Deliverable Number	D4.41	Lead Beneficiary	1 - RNE
Deliverable Name	D4.4.1.2 Compliance of the PCS XSD with the TAF/TAP TSI		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	24	Work Package No	WP4

Description
Prepared and approved report (*.pdf, en)

Deliverable D4.42 – D4.4.2.1 Feasibility study for the integration to the capacity broker

Deliverable Number	D4.42	Lead Beneficiary	1 - RNE
Deliverable Name	D4.4.2.1 Feasibility study for the integration to the capacity broker		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	30	Work Package No	WP4

Description
Prepared and approved report (*.pdf, en)

Deliverable D4.43 – D4.4.2.2 PCS is ready for integration to the capacity broker

Deliverable Number	D4.43	Lead Beneficiary	1 - RNE
Deliverable Name	D4.4.2.2 PCS is ready for integration to the capacity broker		
Type	R — Document, report	Dissemination Level	SEN - Sensitive

Due Date (month)	34	Work Package No	WP4

Description
Prepared and approved report (*.pdf, en)

Deliverable D4.44 – D4.5.1.1 The validated roadmap for the integration of all train planning activities into one state-of-the-art tool

Deliverable Number	D4.44	Lead Beneficiary	5 - INFRABEL
Deliverable Name	D4.5.1.1 The validated roadmap for the integration of all train planning activities into one state-of-the-art tool		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	18	Work Package No	WP4

Description
Report (pdf, fr/nl)

Deliverable D4.45 – D4.5.1.2 Improving trajectory runtime calculation in UPM.

Deliverable Number	D4.45	Lead Beneficiary	5 - INFRABEL
Deliverable Name	D4.5.1.2 Improving trajectory runtime calculation in UPM.		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	36	Work Package No	WP4

Description
Release notes (pdf, fr;nl)

Deliverable D4.46 – D4.5.2.1 An analysis outlining the technical and functional requirements of the PoC

Deliverable Number	D4.46	Lead Beneficiary	5 - INFRABEL
Deliverable Name	D4.5.2.1 An analysis outlining the technical and functional requirements of the PoC		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	10	Work Package No	WP4

Description
Report (pdf, en)

Deliverable D4.47 – D4.5.2.2 Implementation of a functional Proof of Concept

Deliverable Number	D4.47	Lead Beneficiary	5 - INFRABEL
Deliverable Name	D4.5.2.2 Implementation of a functional Proof of Concept		

Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	18	**Work Package No**	WP4

Description
Demo of PoC (, en)

Deliverable D4.48 – D4.5.3.1 Delivery of the software component

Deliverable Number	D4.48	**Lead Beneficiary**	5 - INFRABEL
Deliverable Name	D4.5.3.1 Delivery of the software component		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	24	**Work Package No**	WP4

Description
Software documentation (*.pdf,en)

Deliverable D4.49 – D4.5.3.2 Delivery of customizations

Deliverable Number	D4.49	**Lead Beneficiary**	5 - INFRABEL
Deliverable Name	D4.5.3.2 Delivery of customizations		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	36	**Work Package No**	WP4

Description
Software documentation (*.pdf,en)

Deliverable D4.50 – D4.5.4.1 Delivery of first version that works with the planning tool for the transport plan

Deliverable Number	D4.50	**Lead Beneficiary**	5 - INFRABEL
Deliverable Name	D4.5.4.1 Delivery of first version that works with the planning tool for the transport plan		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	12	**Work Package No**	WP4

Description
Software documentation (*.pdf,en)

Deliverable D4.51 – D4.5.4.2 Delivery of customizations

Deliverable Number	D4.51	**Lead Beneficiary**	5 - INFRABEL
Deliverable Name	D4.5.4.2 Delivery of customizations		

Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	24	Work Package No	WP4

Description
Software documentation (*.pdf,en)

Deliverable D4.52 – D4.5.5.1 The timetable planners will receive a report of all discontinuous timetables.

Deliverable Number	D4.52	Lead Beneficiary	5 - INFRABEL
Deliverable Name	D4.5.5.1 The timetable planners will receive a report of all discontinuous timetables.		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	6	Work Package No	WP4

Description
Release notes (pdf, fr;nl)

Deliverable D4.53 – D4.5.5.2 Possibility to define timetables at the lowest level (switch level).

Deliverable Number	D4.53	Lead Beneficiary	5 - INFRABEL
Deliverable Name	D4.5.5.2 Possibility to define timetables at the lowest level (switch level).		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	48	Work Package No	WP4

Description
Release notes (pdf, fr;nl)

Deliverable D4.54 – D4.5.6.1 Use of the macroview INT data on multiple UPM maps

Deliverable Number	D4.54	Lead Beneficiary	5 - INFRABEL
Deliverable Name	D4.5.6.1 Use of the macroview INT data on multiple UPM maps		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	48	Work Package No	WP4

Description
Release notes (pdf, fr;nl)

Deliverable D4.55 – D4.5.7.1 Creating a search for freight train routes that avoid forbidden line sections

Deliverable Number	D4.55	Lead Beneficiary	5 - INFRABEL

Deliverable Name	D4.5.7.1 Creating a search for freight train routes that avoid forbidden line sections		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	18	**Work Package No**	WP4

Description
Release notes (pdf, fr;nl)

Deliverable D4.56 – D4.5.7.2 Use of the PC codification on the routefinder map

Deliverable Number	D4.56	**Lead Beneficiary**	5 - INFRABEL
Deliverable Name	D4.5.7.2 Use of the PC codification on the routefinder map		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	18	**Work Package No**	WP4

Description
Release notes (pdf, fr;nl)

Deliverable D4.57 – D4.5.7.3 Easier detection and resolution of conflicts and overlappings by means of new reports, better anomaly resolution and ergonomic improvements

Deliverable Number	D4.57	**Lead Beneficiary**	5 - INFRABEL
Deliverable Name	D4.5.7.3 Easier detection and resolution of conflicts and overlappings by means of new reports, better anomaly resolution and ergonomic improvements		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	24	**Work Package No**	WP4

Description
Release notes (pdf, fr;nl)

Deliverable D4.58 – D4.6.1.1 Acceptance protocol

Deliverable Number	D4.58	**Lead Beneficiary**	6 - SZCZ
Deliverable Name	D4.6.1.1 Acceptance protocol		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP4

Description
Acceptance protocol issued by the 3rd party supplier (*.pdf, cz)

Deliverable D4.59 – D4.6.2.1 Acceptance protocol

Deliverable Number	D4.59	**Lead Beneficiary**	6 - SZCZ

Deliverable Name	D4.6.2.1 Acceptance protocol		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP4

Description
Acceptance protocol issued by the 3rd party supplier (*.pdf, cz)

Deliverable D4.60 – D4.6.3.1 Acceptance protocol

Deliverable Number	D4.60	**Lead Beneficiary**	6 - SZCZ
Deliverable Name	D4.6.3.1 Acceptance protocol		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	24	**Work Package No**	WP4

Description
Acceptance protocol issued by the 3rd party supplier (*.pdf, cz)

Deliverable D4.61 – D4.6.4.1 Acceptance protocol

Deliverable Number	D4.61	**Lead Beneficiary**	6 - SZCZ
Deliverable Name	D4.6.4.1 Acceptance protocol		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	24	**Work Package No**	WP4

Description
Acceptance protocol issued by the 3rd party supplier (*.pdf, cz)

Deliverable D4.62 – D4.6.5.1 Acceptance protocol

Deliverable Number	D4.62	**Lead Beneficiary**	6 - SZCZ
Deliverable Name	D4.6.5.1 Acceptance protocol		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP4

Description
Acceptance protocol issued by the 3rd party supplier (*.pdf, cz)

Deliverable D4.63 – D4.7.1.1 Design for user interface with IT tool elements

Deliverable Number	D4.63	**Lead Beneficiary**	2 - DB InfraGO
Deliverable Name	D4.7.1.1 Design for user interface with IT tool elements		

Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	2	**Work Package No**	WP4

Description
Prepared and approved report (*.pdf, en)

Deliverable D4.64 – D4.7.1.2 Definition of background software

Deliverable Number	D4.64	**Lead Beneficiary**	2 - DB InfraGO
Deliverable Name	D4.7.1.2 Definition of background software		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	4	**Work Package No**	WP4

Description
Prepared and approved report (*.pdf, en)

Deliverable D4.65 – D4.7.1.3 Definition of IT Tool interfaces

Deliverable Number	D4.65	**Lead Beneficiary**	2 - DB InfraGO
Deliverable Name	D4.7.1.3 Definition of IT Tool interfaces		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	6	**Work Package No**	WP4

Description
Prepared and approved report (*.pdf, en)

Deliverable D4.66 – D4.7.2.1 Development of the IT Tool

Deliverable Number	D4.66	**Lead Beneficiary**	2 - DB InfraGO
Deliverable Name	D4.7.2.1 Development of the IT Tool		
Type	DEM — Demonstrator, pilot, prototype	**Dissemination Level**	SEN - Sensitive
Due Date (month)	12	**Work Package No**	WP4

Description
Prototype of the IT-Tool

Deliverable D4.67 – D4.7.2.2 Test of the IT Tool

Deliverable Number	D4.67	**Lead Beneficiary**	2 - DB InfraGO
Deliverable Name	D4.7.2.2 Test of the IT Tool		

Type	DEM — Demonstrator, pilot, prototype	**Dissemination Level**	SEN - Sensitive
Due Date (month)	15	**Work Package No**	WP4

Description
Tested prototype of the IT-Tool

Deliverable D4.68 – D4.7.3.1 Pilot for usage test in ATT 2024 preparation

Deliverable Number	D4.68	**Lead Beneficiary**	2 - DB InfraGO
Deliverable Name	D4.7.3.1 Pilot for usage test in ATT 2024 preparation		
Type	DEM — Demonstrator, pilot, prototype	**Dissemination Level**	SEN - Sensitive
Due Date (month)	22	**Work Package No**	WP4

Description
Pilot for usage of the IT Tool during preparation of ATT 2024

Deliverable D4.69 – D4.7.3.2 Evaluation and postprocessing of the IT Tool

Deliverable Number	D4.69	**Lead Beneficiary**	2 - DB InfraGO
Deliverable Name	D4.7.3.2 Evaluation and postprocessing of the IT Tool		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	24	**Work Package No**	WP4

Description
Prepared and approved report (*.pdf, en)

Deliverable D4.70 – D4.5.8.1 The go live of developments related to managing the transport plan and annual service planning in one application

Deliverable Number	D4.70	**Lead Beneficiary**	5 - INFRABEL
Deliverable Name	D4.5.8.1 The go live of developments related to managing the transport plan and annual service planning in one application		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP4

Description
Release notes (pdf, fr;nl)

Deliverable D4.71 – D4.6.6.1 Acceptance protocol)KADR Tool)

Deliverable Number	D4.71	**Lead Beneficiary**	6 - SZCZ
Deliverable Name	D4.6.6.1 Acceptance protocol)KADR Tool)		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP4

Description
Acceptance protocol issued by the 3rd party supplier (*.pdf, cz)

Deliverable D5.1 – D5.1.1.1 Functional requirements of the Capacity Broker

Deliverable Number	D5.1	**Lead Beneficiary**	1 - RNE
Deliverable Name	D5.1.1.1 Functional requirements of the Capacity Broker		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	1	**Work Package No**	WP5

Description
Prepared and approved report (*.pdf, en)

Deliverable D5.2 – D5.1.1.2 Tender documentation, evaluation criteria

Deliverable Number	D5.2	**Lead Beneficiary**	1 - RNE
Deliverable Name	D5.1.1.2 Tender documentation, evaluation criteria		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	1	**Work Package No**	WP5

Description
Tender documents (*.pdf, en)

Deliverable D5.3 – D5.1.1.3 Signed contract

Deliverable Number	D5.3	**Lead Beneficiary**	1 - RNE
Deliverable Name	D5.1.1.3 Signed contract		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	5	**Work Package No**	WP5

Description
Prepared and approved contract (*.pdf, en)

Deliverable D5.4 – D5.1.2.1 Capacity Broker domain

Deliverable Number	D5.4	**Lead Beneficiary**	1 - RNE
Deliverable Name	D5.1.2.1 Capacity Broker domain		
Type	DATA — data sets, microdata, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	36	**Work Package No**	WP5

Description
Electronic data file (*.SQL, en)

Deliverable D5.5 – D5.1.2.2 Synchronization of reference data is implemented

Deliverable Number	D5.5	**Lead Beneficiary**	1 - RNE
Deliverable Name	D5.1.2.2 Synchronization of reference data is implemented		
Type	DATA — data sets, microdata, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	36	**Work Package No**	WP5

Description
Electronic data file (*.SQL, en)

Deliverable D5.6 – D5.1.2.3 New Case Reference creation wizard

Deliverable Number	D5.6	**Lead Beneficiary**	1 - RNE
Deliverable Name	D5.1.2.3 New Case Reference creation wizard		
Type	DEC —Websites, patent filings, videos, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	24	**Work Package No**	WP5

Description
Electronic data file (*.HTML, en)

Deliverable D5.7 – D5.1.2.4 TT quality constraints

Deliverable Number	D5.7	**Lead Beneficiary**	1 - RNE
Deliverable Name	D5.1.2.4 TT quality constraints		
Type	DEC —Websites, patent filings, videos, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	24	**Work Package No**	WP5

Description
Electronic data file (*.HTML, en)

Deliverable D5.8 – D5.1.3.1 Timetable views inside the Case Reference

Deliverable Number	D5.8	**Lead Beneficiary**	1 - RNE
Deliverable Name	D5.1.3.1 Timetable views inside the Case Reference		
Type	DEM — Demonstrator, pilot, prototype	**Dissemination Level**	SEN - Sensitive
Due Date (month)	24	**Work Package No**	WP5

Description
Electronic data file (*.HTML, en)

Deliverable D5.9 – D5.1.3.2 Control view of the Case Reference

Deliverable Number	D5.9	**Lead Beneficiary**	1 - RNE
Deliverable Name	D5.1.3.2 Control view of the Case Reference		
Type	DEC —Websites, patent filings, videos, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	24	**Work Package No**	WP5

Description
Electronic data file (*.HTML, en)

Deliverable D5.10 – D5.1.3.3 Alpha release

Deliverable Number	D5.10	**Lead Beneficiary**	1 - RNE
Deliverable Name	D5.1.3.3 Alpha release		
Type	DEC —Websites, patent filings, videos, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	18	**Work Package No**	WP5

Description
Electronic data file (*.HTML, en)

Deliverable D5.11 – D5.1.3.4 Workflow

Deliverable Number	D5.11	**Lead Beneficiary**	1 - RNE
Deliverable Name	D5.1.3.4 Workflow		
Type	DEC —Websites, patent filings, videos, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	17	**Work Package No**	WP5

Description
Electronic data file (*.HTML, en)

Deliverable D5.12 – D5.1.3.5 Administration views of the Capacity Broker

Deliverable Number	D5.12	**Lead Beneficiary**	1 - RNE
Deliverable Name	D5.1.3.5 Administration views of the Capacity Broker		
Type	DEC —Websites, patent filings, videos, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	17	**Work Package No**	WP5

Description
Electronic data file (*.HTML, en)

Deliverable D5.13 – D5.1.4.1 Inbound/outbound messaging

Deliverable Number	D5.13	**Lead Beneficiary**	1 - RNE
Deliverable Name	D5.1.4.1 Inbound/outbound messaging		
Type	DATA — data sets, microdata, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	17	**Work Package No**	WP5

Description
Electronic data file (*.XML, en)

Deliverable D5.14 – D5.1.5.1 Common Interface configuration

Deliverable Number	D5.14	**Lead Beneficiary**	1 - RNE
Deliverable Name	D5.1.5.1 Common Interface configuration		
Type	DATA — data sets, microdata, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	17	**Work Package No**	WP5

Description
Electronic data file (*.HTML, en)

Deliverable D5.15 – D5.1.6.1 Beta release

Deliverable Number	D5.15	**Lead Beneficiary**	1 - RNE
Deliverable Name	D5.1.6.1 Beta release		
Type	DEC —Websites, patent filings, videos, etc	**Dissemination Level**	SEN - Sensitive
Due Date (month)	19	**Work Package No**	WP5

Description
Electronic data file (*.HTML, en)

Deliverable D5.16 – D5.1.6.2 UAT results and CR/fix plan

Deliverable Number	D5.16	Lead Beneficiary	1 - RNE
Deliverable Name	D5.1.6.2 UAT results and CR/fix plan		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	36	Work Package No	WP5

Description
Prepared and approved report (*.pdf, en)

Deliverable D5.17 – D5.1.6.3 Production release

Deliverable Number	D5.17	Lead Beneficiary	1 - RNE
Deliverable Name	D5.1.6.3 Production release		
Type	DEC —Websites, patent filings, videos, etc	Dissemination Level	SEN - Sensitive
Due Date (month)	36	Work Package No	WP5

Description
Electronic data file (*.HTML, en)

Deliverable D5.18 – D5.1.6.4 Performance report

Deliverable Number	D5.18	Lead Beneficiary	1 - RNE
Deliverable Name	D5.1.6.4 Performance report		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	36	Work Package No	WP5

Description
Prepared and approved report (*.pdf, en)

Deliverable D5.19 – D5.2.1.1 Description of API

Deliverable Number	D5.19	Lead Beneficiary	2 - DB InfraGO
Deliverable Name	D5.2.1.1 Description of API		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	12	Work Package No	WP5

Description
API is defined. Implementation according to “API first” guide line may start

Deliverable D5.20 – D5.2.1.2 TAF / TAP compliant interface

Deliverable Number	D5.20	**Lead Beneficiary**	2 - DB InfraGO
Deliverable Name	D5.2.1.2 TAF / TAP compliant interface		
Type	OTHER	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP5

Description
Interface can be tested via integration tests with broker

Deliverable D5.21 – D5.2.2.1 Automated train path creation for international paths

Deliverable Number	D5.21	**Lead Beneficiary**	2 - DB InfraGO
Deliverable Name	D5.2.2.1 Automated train path creation for international paths		
Type	OTHER	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP5

Description
Interface provides full functionality (I.e. automated train path creation is able to create train paths up to borders considering the relevant parameters for international train paths) and is production ready.

Deliverable D5.22 – D5.2.3.1 Legacy systems ready for international train paths

Deliverable Number	D5.22	**Lead Beneficiary**	2 - DB InfraGO
Deliverable Name	D5.2.3.1 Legacy systems ready for international train paths		
Type	OTHER	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP5

Description
Legacy system are enabled to deal with automatically created international train path.

Deliverable D5.23 – D5.2.4.1 Description of extended API

Deliverable Number	D5.23	**Lead Beneficiary**	2 - DB InfraGO
Deliverable Name	D5.2.4.1 Description of extended API		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP5

Description
API is defined. Implementation according to “API first” guide line may start

Deliverable D5.24 – D5.2.5.1 Extended Interface with validation of path request

Deliverable Number	D5.24	Lead Beneficiary	2 - DB InfraGO
Deliverable Name	D5.2.5.1 Extended Interface with validation of path request		
Type	OTHER	Dissemination Level	SEN - Sensitive
Due Date (month)	48	Work Package No	WP5

Description
TAF / TAP compliant interface of D5.1.1.2 is extended to allow for information on validation of the path request

Deliverable D5.25 – D5.4.1.1 Acceptance note

Deliverable Number	D5.25	Lead Beneficiary	4 - SNCF RÉSEAU
Deliverable Name	D5.4.1.1 Acceptance note		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	12	Work Package No	WP5

Description
Acceptance certificate issues by SNCF IT Board confirming POC and use of a simulation and study tool [fr, pdf]

Deliverable D5.26 – D5.4.1.2 Acceptance note

Deliverable Number	D5.26	Lead Beneficiary	4 - SNCF RÉSEAU
Deliverable Name	D5.4.1.2 Acceptance note		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	36	Work Package No	WP5

Description
Acceptance certificate issues by SNCF IT Board confirming POC and use of a simulation and study tool [fr, pdf]

Deliverable D5.27 – D5.4.2.1 Acceptance note

Deliverable Number	D5.27	Lead Beneficiary	4 - SNCF RÉSEAU
Deliverable Name	D5.4.2.1 Acceptance note		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	36	Work Package No	WP5

Description
Acceptance certificate issues by SNCF IT Board confirming POC and use of a run calculation tool [fr, pdf]

Deliverable D5.28 – D5.4.2.2 Acceptance note

Deliverable Number	D5.28	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D5.4.2.2 Acceptance note		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP5

Description
Acceptance certificate issues by SNCF IT Board confirming POC and use of a run calculation tool [fr, pdf]

Deliverable D5.29 – D5.5.1.1 Acceptance protocol

Deliverable Number	D5.29	**Lead Beneficiary**	6 - SZCZ
Deliverable Name	D5.5.1.1 Acceptance protocol		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP5

Description
Acceptance protocol issued by the 3rd party supplier (*.pdf, cz)

Deliverable D5.30 – D5.6.1.1 Customization in software

Deliverable Number	D5.30	**Lead Beneficiary**	5 - INFRABEL
Deliverable Name	D5.6.1.1 Customization in software		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	18	**Work Package No**	WP5

Description
Software documentation (*.pdf,en)

Deliverable D5.31 – D5.6.1.2 Test results of this PoC

Deliverable Number	D5.31	**Lead Beneficiary**	5 - INFRABEL
Deliverable Name	D5.6.1.2 Test results of this PoC		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	24	**Work Package No**	WP5

Description
Report (*.pdf, en)

Deliverable D5.32 – D5.1.7.1 Description of requirements and release notes on PCS Capacity Broker upgrades

Deliverable Number	D5.32	**Lead Beneficiary**	1 - RNE
Deliverable Name	D5.1.7.1 Description of requirements and release notes on PCS Capacity Broker upgrades		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP5

Description
Requirements description used for the development and release notes upon deployment of the features (.pdf; en)

Deliverable D5.33 – D5.1.8.1 Description of requirements and release notes - Integration of MVP Short Term Ad Hoc (STAH) into PCS CB

Deliverable Number	D5.33	**Lead Beneficiary**	1 - RNE
Deliverable Name	D5.1.8.1 Description of requirements and release notes - Integration of MVP Short Term Ad Hoc (STAH) into PCS CB		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP5

Description
Requirements description used for the development and release notes upon deployment of the features (.pdf; en)

Deliverable D5.34 – D5.1.9.1 Description of requirements and release notes - Integration of MVP Border Harmonization Tool (BHT) into PCS CB

Deliverable Number	D5.34	**Lead Beneficiary**	1 - RNE
Deliverable Name	D5.1.9.1 Description of requirements and release notes - Integration of MVP Border Harmonization Tool (BHT) into PCS CB		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP5

Description
Requirements description used for the development and release notes upon deployment of the features (.pdf; en)

Deliverable D5.35 – D5.4.3.1 Upgradation of legacy information systems for TSI observations integration

Deliverable Number	D5.35	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D5.4.3.1 Upgradation of legacy information systems for TSI observations integration		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP5

Description
Prepared and approved report (*.pdf, en or fr)

Deliverable D5.36 – D5.4.4.1 Implementation of standardized rolling stock dependencies management system

Deliverable Number	D5.36	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D5.4.4.1 Implementation of standardized rolling stock dependencies management system		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP5

Description
Prepared and approved report (*.pdf, en or fr)

Deliverable D5.37 – D5.4.5.1 Expansion and enhancement of TAF-TAP message exchanges for telematics TSI

Deliverable Number	D5.37	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D5.4.5.1 Expansion and enhancement of TAF-TAP message exchanges for telematics TSI		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP5

Description
Prepared and approved report (*.pdf, en or fr)

Deliverable D5.38 – D5.5.2.1 Delivery of updated version of IT tool KADR

Deliverable Number	D5.38	**Lead Beneficiary**	6 - SZCZ
Deliverable Name	D5.5.2.1 Delivery of updated version of IT tool KADR		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP5

Description
Prepared and approved report (*.pdf, cz)

Deliverable D5.39 – D5.6.2.1 Go live of all TMS related web-apps

Deliverable Number	D5.39	**Lead Beneficiary**	5 - INFRABEL
Deliverable Name	D5.6.2.1 Go live of all TMS related web-apps		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive

Due Date (month)	36	Work Package No	WP5

Description
Release notes (pdf, fr;nl)

Deliverable D5.40 – D5.6.3.1 Go live of of connection TMS-DAS / eDrive

Deliverable Number	D5.40	Lead Beneficiary	5 - INFRABEL
Deliverable Name	D5.6.3.1 Go live of of connection TMS-DAS / eDrive		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	36	Work Package No	WP5

Description
Release notes (pdf, fr;nl)

Deliverable D5.41 – D5.6.4.1 Final Delivery Report

Deliverable Number	D5.41	Lead Beneficiary	5 - INFRABEL
Deliverable Name	D5.6.4.1 Final Delivery Report		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	48	Work Package No	WP5

Description
Release notes (pdf, fr;nl)

Deliverable D5.42 – D5.7.1.1 IT concept (draft and final) and development, including testing phase and related interface with RNE TIS IMT, of the national IT tool to manage and send data concerning disruptions on RFI network

Deliverable Number	D5.42	Lead Beneficiary	3 - RFI
Deliverable Name	D5.7.1.1 IT concept (draft and final) and development, including testing phase and related interface with RNE TIS IMT, of the national IT tool to manage and send data concerning disruptions on RFI network		
Type	DEM — Demonstrator, pilot, prototype	Dissemination Level	SEN - Sensitive
Due Date (month)	48	Work Package No	WP5

Description
Completion report on implementation of the IT tool and connection with RNE TIS IMT (*.pdf, it)

Deliverable D5.43 – D5.8.1.1 Implementation report on the TIS developments

Deliverable Number	D5.43	Lead Beneficiary	1 - RNE

Deliverable Name	D5.8.1.1 Implementation report on the TIS developments		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	48	Work Package No	WP5

Description
"Implementation report (*.pdf, en)"

Deliverable D5.44 – D5.8.2.1 Implementation report on the ETMN P2

Deliverable Number	D5.44	Lead Beneficiary	1 - RNE
Deliverable Name	D5.8.2.1 Implementation report on the ETMN P2		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	48	Work Package No	WP5

Description
"Implementation report (*.pdf, en)"

Deliverable D5.45 – D5.8.3.1 Report on the developments and upgrades of the Language Tool

Deliverable Number	D5.45	Lead Beneficiary	1 - RNE
Deliverable Name	D5.8.3.1 Report on the developments and upgrades of the Language Tool		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	48	Work Package No	WP5

Description
"Implementation report (*.pdf, en)"

Deliverable D5.46 – D5.8.4.1 Implementation report on Network ETA

Deliverable Number	D5.46	Lead Beneficiary	1 - RNE
Deliverable Name	D5.8.4.1 Implementation report on Network ETA		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	48	Work Package No	WP5

Description
"Implementation report (*.pdf, en)"

Deliverable D5.47 – D5.8.5.1 Report on the findings and the conept of KPIs

Deliverable Number	D5.47	**Lead Beneficiary**	1 - RNE
Deliverable Name	D5.8.5.1 Report on the findings and the conept of KPIs		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP5

Description
"Implementation report (*.pdf, en)"

Deliverable D5.48 – D5.8.6.1 Report on the deployment of TIS Performance Monitoring

Deliverable Number	D5.48	**Lead Beneficiary**	1 - RNE
Deliverable Name	D5.8.6.1 Report on the deployment of TIS Performance Monitoring		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP5

Description
"Implementation report (*.pdf, en)"

Deliverable D5.49 – D5.8.7.1 Report on the deployment of PM Tool Europerformance

Deliverable Number	D5.49	**Lead Beneficiary**	1 - RNE
Deliverable Name	D5.8.7.1 Report on the deployment of PM Tool Europerformance		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP5

Description
"Implementation report (*.pdf, en)"

Deliverable D6.1 – D6.2.1.1 Defined infrastructure objects and attributes needed for the Capacity Model

Deliverable Number	D6.1	**Lead Beneficiary**	2 - DB InfraGO
Deliverable Name	D6.2.1.1 Defined infrastructure objects and attributes needed for the Capacity Model		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	18	**Work Package No**	WP6

Description
Described Features

Deliverable D6.2 – D6.2.1.2 Established connection between Capacity Model and infrastructure supply

Deliverable Number	D6.2	Lead Beneficiary	2 - DB InfraGO
Deliverable Name	D6.2.1.2 Established connection between Capacity Model and infrastructure supply		
Type	DEM — Demonstrator, pilot, prototype	Dissemination Level	SEN - Sensitive
Due Date (month)	48	Work Package No	WP6

Description
Described API, Mock-up, Data model

Deliverable D6.3 – D6.3.1.1 Acceptance note

Deliverable Number	D6.3	Lead Beneficiary	4 - SNCF RÉSEAU
Deliverable Name	D6.3.1.1 Acceptance note		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	12	Work Package No	WP6

Description
Acceptance certificate issues by SNCF IT Board confirming the Implementation and use of a repository of reference data [fr, pdf]

Deliverable D6.4 – D6.3.1.2 Acceptance note

Deliverable Number	D6.4	Lead Beneficiary	4 - SNCF RÉSEAU
Deliverable Name	D6.3.1.2 Acceptance note		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	36	Work Package No	WP6

Description
Acceptance certificate issues by SNCF IT Board confirming the Implementation and use of a repository of reference data [fr, pdf]

Deliverable D6.5 – D6.3.1.3 Acceptance note

Deliverable Number	D6.5	Lead Beneficiary	4 - SNCF RÉSEAU
Deliverable Name	D6.3.1.3 Acceptance note		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	48	Work Package No	WP6

Description

Acceptance certificate issues by SNCF IT Board confirming the Implementation and use of a repository of reference data [fr, pdf]

Deliverable D6.6 – D6.3.2.1 Acceptance note

Deliverable Number	D6.6	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D6.3.2.1 Acceptance note		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	12	**Work Package No**	WP6

Description
Acceptance certificate issues by SNCF IT Board confirming the Consistency of CRD/RINF/Internal reference systems [fr, pdf]

Deliverable D6.7 – D6.3.2.2 Acceptance note

Deliverable Number	D6.7	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D6.3.2.2 Acceptance note		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP6

Description
Acceptance certificate issues by SNCF IT Board confirming the Consistency of CRD/RINF/Internal reference systems [fr, pdf]

Deliverable D6.8 – D6.3.3.1 Acceptance note

Deliverable Number	D6.8	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D6.3.3.1 Acceptance note		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	12	**Work Package No**	WP6

Description
Acceptance certificate issues by SNCF IT Board confirming the Use of locations in internal IM applications, exploitation of data in external flows, Implementation of the locations reporting process on third party Ims [fr, pdf]

Deliverable D6.9 – D6.3.3.2 Acceptance note

Deliverable Number	D6.9	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D6.3.3.2 Acceptance note		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP6

Description
Acceptance certificate issues by SNCF IT Board confirming the Use of locations in internal IM applications, exploitation of data in external flows, Implementation of the locations reporting process on third party Ims [fr, pdf]

Deliverable D6.10 – D6.3.4.1 Acceptance note

Deliverable Number	D6.10	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D6.3.4.1 Acceptance note		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	12	**Work Package No**	WP6

Description
Acceptance certificate issues by SNCF IT Board confirming the Use of quality-assured infrastructure data describing the Freight network in the data repository [fr, pdf]

Deliverable D6.11 – D6.3.4.2 Acceptance note

Deliverable Number	D6.11	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D6.3.4.2 Acceptance note		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	36	**Work Package No**	WP6

Description
Acceptance certificate issues by SNCF IT Board confirming the Use of quality-assured infrastructure data describing the Freight network in the data repository [fr, pdf]

Deliverable D6.12 – D6.3.4.3 Acceptance note

Deliverable Number	D6.12	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D6.3.4.3 Acceptance note		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP6

Description
Acceptance certificate issues by SNCF IT Board confirming the Use of quality-assured infrastructure data describing the Freight network in the data repository [fr, pdf]

Deliverable D6.13 – D6.4.1.1 Technical specification of new CI

Deliverable Number	D6.13	**Lead Beneficiary**	1 - RNE
Deliverable Name	D6.4.1.1 Technical specification of new CI		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive

Due Date (month)	12	Work Package No	WP6

Description
Technical specification as part of the tender documentation [en, pdf]

Deliverable D6.14 – D6.4.1.2 Common interface software package

Deliverable Number	D6.14	Lead Beneficiary	1 - RNE
Deliverable Name	D6.4.1.2 Common interface software package		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	34	Work Package No	WP6

Description
Release notes, Installation manual [en, pdf]

Deliverable D6.15 – D6.5.1.1 concept of interfaces

Deliverable Number	D6.15	Lead Beneficiary	2 - DB InfraGO
Deliverable Name	D6.5.1.1 concept of interfaces		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	36	Work Package No	WP6

Description
Prepared concept

Deliverable D6.16 – D6.6.1.1 Acceptance note

Deliverable Number	D6.16	Lead Beneficiary	4 - SNCF RÉSEAU
Deliverable Name	D6.6.1.1 Acceptance note		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	12	Work Package No	WP6

Description
Acceptance note of Path Details, TCR Message, Path Request [fr, pdf]

Deliverable D6.17 – D6.6.1.2 Acceptance note

Deliverable Number	D6.17	Lead Beneficiary	4 - SNCF RÉSEAU
Deliverable Name	D6.6.1.2 Acceptance note		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	48	Work Package No	WP6

Description
Acceptance note of Path Details, TCR Message, Path Request [fr, pdf]

Deliverable D6.18 – D6.6.2.1 Acceptance note

Deliverable Number	D6.18	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D6.6.2.1 Acceptance note		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	36	**Work Package No**	WP6

Description
Use of rolling stock (in line with the European reference systems) in IM applications [fr, pdf]

Deliverable D6.19 – D6.6.2.2 Acceptance note

Deliverable Number	D6.19	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D6.6.2.2 Acceptance note		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	36	**Work Package No**	WP6

Description
Use of rolling stock (in line with the European reference systems) in IM applications [fr, pdf]

Deliverable D6.20 – D6.6.2.3 Acceptance note

Deliverable Number	D6.20	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D6.6.2.3 Acceptance note		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP6

Description
Use of rolling stock (in line with the European reference systems) in IM applications [fr, pdf]

Deliverable D6.21 – D6.7.1.1 Acceptance note

Deliverable Number	D6.21	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D6.7.1.1 Acceptance note		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	12	**Work Package No**	WP6

Description

Acceptance certificate issued by SNCF IT Board confirming the Implementation and use of new TSI TAF TAP messages [fr, pdf]

Deliverable D6.22 – D6.7.1.2 Acceptance note

Deliverable Number	D6.22	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D6.7.1.2 Acceptance note		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	36	**Work Package No**	WP6

Description
Acceptance certificate issued by SNCF IT Board confirming the Implementation and use of new TSI TAF TAP messages [fr, pdf]

Deliverable D6.23 – D6.7.1.3 Acceptance note

Deliverable Number	D6.23	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D6.7.1.3 Acceptance note		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP6

Description
Acceptance certificate issued by SNCF IT Board confirming the Implementation and use of new TSI TAF TAP messages [fr, pdf]

Deliverable D6.24 – D6.7.2.1 Acceptance note

Deliverable Number	D6.24	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D6.7.2.1 Acceptance note		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	12	**Work Package No**	WP6

Description
Acceptance certificate issued by SNCF IT Board confirming the Use of TOM and SLC identifiers in IM's applications [fr, pdf]

Deliverable D6.25 – D6.7.2.2 Acceptance note

Deliverable Number	D6.25	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D6.7.2.2 Acceptance note		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	36	**Work Package No**	WP6

Description
Acceptance certificate issued by SNCF IT Board confirming the Use of TOM and SLC identifiers in IM's applications [fr, pdf]

Deliverable D6.26 – D6.7.2.3 Acceptance note

Deliverable Number	D6.26	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D6.7.2.3 Acceptance note		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP6

Description
Acceptance certificate issued by SNCF IT Board confirming the Use of TOM and SLC identifiers in IM's applications [fr, pdf]

Deliverable D6.27 – D6.7.3.1 Acceptance note

Deliverable Number	D6.27	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D6.7.3.1 Acceptance note		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	36	**Work Package No**	WP6

Description
Acceptance certificate issued by SNCF IT Board confirming the Implementation and use of new TSI TAF TAP messages [fr, pdf]

Deliverable D6.28 – D6.7.3.2 Acceptance note

Deliverable Number	D6.28	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D6.7.3.2 Acceptance note		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP6

Description
Acceptance certificate issued by SNCF IT Board confirming the Implementation and use of new TSI TAF TAP messages [fr, pdf]

Deliverable D6.29 – D6.7.4.1 Acceptance note

Deliverable Number	D6.29	**Lead Beneficiary**	4 - SNCF RÉSEAU
Deliverable Name	D6.7.4.1 Acceptance note		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive

Due Date (month)	12	Work Package No	WP6

Description
Acceptance certificate issued by SNCF IT Board confirming the Use to European standards in IM's applications [fr, pdf]

Deliverable D6.30 – D6.7.4.2 Acceptance note

Deliverable Number	D6.30	Lead Beneficiary	4 - SNCF RÉSEAU
Deliverable Name	D6.7.4.2 Acceptance note		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	48	Work Package No	WP6

Description
Acceptance certificate issued by SNCF IT Board confirming the Use to European standards in IM's applications [fr, pdf]

Deliverable D6.31 – D6.7.5.1 Acceptance note

Deliverable Number	D6.31	Lead Beneficiary	4 - SNCF RÉSEAU
Deliverable Name	D6.7.5.1 Acceptance note		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	12	Work Package No	WP6

Description
Acceptance certificate issued by SNCF IT Board confirming the Delivery of all the technical files describing the IT solution for supervision, maintenance [fr, pdf]

Deliverable D6.32 – D6.7.5.2 Acceptance note

Deliverable Number	D6.32	Lead Beneficiary	4 - SNCF RÉSEAU
Deliverable Name	D6.7.5.2 Acceptance note		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	36	Work Package No	WP6

Description
Acceptance certificate issued by SNCF IT Board confirming the Delivery of all the technical files describing the IT solution for supervision, maintenance [fr, pdf]

Deliverable D6.33 – D6.7.5.3 Acceptance note

Deliverable Number	D6.33	Lead Beneficiary	4 - SNCF RÉSEAU
Deliverable Name	D6.7.5.3 Acceptance note		
Type	R — Document, report	Dissemination Level	SEN - Sensitive

Due Date (month)	48	Work Package No	WP6

Description
Acceptance certificate issued by SNCF IT Board confirming the Delivery of all the technical files describing the IT solution for supervision, maintenance [fr, pdf]

Deliverable D6.34 – D6.8.1.1 Acceptance protocol

Deliverable Number	D6.34	Lead Beneficiary	6 - SZCZ
Deliverable Name	D6.8.1.1 Acceptance protocol		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	24	Work Package No	WP6

Description
Acceptance protocol issued by the 3rd party supplier (*.pdf, cz)

Deliverable D6.35 – D6.9.1.1 Implementation of multiple periods of validity on the level of each infrastructure component in INT

Deliverable Number	D6.35	Lead Beneficiary	5 - INFRABEL
Deliverable Name	D6.9.1.1 Implementation of multiple periods of validity on the level of each infrastructure component in INT		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	48	Work Package No	WP6

Description
Report Electronic data file [*.pdf, en]

Deliverable D6.36 – D6.9.1.2 Implementation of the possibility to create different infrastructure versions for each important modification

Deliverable Number	D6.36	Lead Beneficiary	5 - INFRABEL
Deliverable Name	D6.9.1.2 Implementation of the possibility to create different infrastructure versions for each important modification		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	48	Work Package No	WP6

Description
Report Electronic data file [*.pdf, en]

Deliverable D6.37 – D6.9.2.1 Analysis of import and additional requirements source database

Deliverable Number	D6.37	Lead Beneficiary	5 - INFRABEL

Deliverable Name	D6.9.2.1 Analysis of import and additional requirements source database		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	24	Work Package No	WP6

Description
Report (*.pdf, en)

Deliverable D6.38 – D6.9.2.2 Delivery of the software components

Deliverable Number	D6.38	Lead Beneficiary	5 - INFRABEL
Deliverable Name	D6.9.2.2 Delivery of the software components		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	48	Work Package No	WP6

Description
Software documentation (*.pdf,en)

Deliverable D6.39 – D6.10.1.1 Development of the interface with PCS

Deliverable Number	D6.39	Lead Beneficiary	5 - INFRABEL
Deliverable Name	D6.10.1.1 Development of the interface with PCS		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	22	Work Package No	WP6

Description
Report (*.pdf of xsd)

Deliverable D6.40 – D6.10.1.2 Finalised Test of the interface with PCS

Deliverable Number	D6.40	Lead Beneficiary	5 - INFRABEL
Deliverable Name	D6.10.1.2 Finalised Test of the interface with PCS		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	24	Work Package No	WP6

Description
Report (*.pdf of log)

Deliverable D6.41 – D6.10.2.1 Development of the interface LT with RNE TCR-tool

Deliverable Number	D6.41	Lead Beneficiary	5 - INFRABEL
Deliverable Name	D6.10.2.1 Development of the interface LT with RNE TCR-tool		

Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	34	**Work Package No**	WP6

Description
Report (*.pdf of xsd)

Deliverable D6.42 – D6.10.2.2 Finalised Test of the interface LT with RNE TCR-tool

Deliverable Number	D6.42	**Lead Beneficiary**	5 - INFRABEL
Deliverable Name	D6.10.2.2 Finalised Test of the interface LT with RNE TCR-tool		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	36	**Work Package No**	WP6

Description
Report (*.pdf of log)

Deliverable D6.43 – D6.10.3.1 Development of the interface INT with ECMT

Deliverable Number	D6.43	**Lead Beneficiary**	5 - INFRABEL
Deliverable Name	D6.10.3.1 Development of the interface INT with ECMT		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	22	**Work Package No**	WP6

Description
Report (*.pdf of xsd)

Deliverable D6.44 – D6.10.3.2 Finalised Test of the interface INT with ECMT

Deliverable Number	D6.44	**Lead Beneficiary**	5 - INFRABEL
Deliverable Name	D6.10.3.2 Finalised Test of the interface INT with ECMT		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	24	**Work Package No**	WP6

Description
Report (*.pdf of log)

Deliverable D6.45 – D6.10.4.1 Development of the interface planning - ECMT

Deliverable Number	D6.45	**Lead Beneficiary**	5 - INFRABEL
Deliverable Name	D6.10.4.1 Development of the interface planning - ECMT		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive

Due Date (month)	48	Work Package No	WP6

Description
Report (*.pdf of xsd)

Deliverable D6.46 – D6.10.5.1 Development of the interface UPM-TCR-tool

Deliverable Number	D6.46	Lead Beneficiary	5 - INFRABEL
Deliverable Name	D6.10.5.1 Development of the interface UPM-TCR-tool		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	40	Work Package No	WP6

Description
Report (*.pdf of xsd)

Deliverable D6.47 – D6.10.5.2 Finalised Test of the interface UPM-TCR-tool

Deliverable Number	D6.47	Lead Beneficiary	5 - INFRABEL
Deliverable Name	D6.10.5.2 Finalised Test of the interface UPM-TCR-tool		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	42	Work Package No	WP6

Description
Report (*.pdf of log)

Deliverable D6.48 – D6.11.1.1 Study/analysis report

Deliverable Number	D6.48	Lead Beneficiary	5 - INFRABEL
Deliverable Name	D6.11.1.1 Study/analysis report		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	12	Work Package No	WP6

Description
Report (pdf, en/fr/nl)

Deliverable D6.49 – D6.11.1.2 Proof of Concept EU train ID in real time management tool

Deliverable Number	D6.49	Lead Beneficiary	5 - INFRABEL
Deliverable Name	D6.11.1.2 Proof of Concept EU train ID in real time management tool		
Type	R — Document, report	Dissemination Level	SEN - Sensitive
Due Date (month)	24	Work Package No	WP6

Description
Report (*.pdf of log)

Deliverable D6.50 – D6.11.1.3 Proof of Concept EU train ID in capacity planning tool

Deliverable Number	D6.50	**Lead Beneficiary**	5 - INFRABEL
Deliverable Name	D6.11.1.3 Proof of Concept EU train ID in capacity planning tool		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	24	**Work Package No**	WP6

Description
Report (*.pdf of log)

Deliverable D6.51 – D6.11.2.1 Study/analysis report

Deliverable Number	D6.51	**Lead Beneficiary**	5 - INFRABEL
Deliverable Name	D6.11.2.1 Study/analysis report		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	12	**Work Package No**	WP6

Description
report (pdf, en/fr/nl)

Deliverable D6.52 – D6.11.2.2 Development of TCM with ITU container information

Deliverable Number	D6.52	**Lead Beneficiary**	5 - INFRABEL
Deliverable Name	D6.11.2.2 Development of TCM with ITU container information		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	36	**Work Package No**	WP6

Description
Report (*.pdf of xsd)

Deliverable D6.53 – D6.11.3.1 Study/analysis report

Deliverable Number	D6.53	**Lead Beneficiary**	5 - INFRABEL
Deliverable Name	D6.11.3.1 Study/analysis report		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	6	**Work Package No**	WP6

Description

Report (*.pdf of log)

Deliverable D6.54 – D6.11.4.1 Study report

Deliverable Number	D6.54	**Lead Beneficiary**	5 - INFRABEL
Deliverable Name	D6.11.4.1 Study report		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	24	**Work Package No**	WP6

Description
Report (pdf, en/fr/nl)

Deliverable D6.55 – D6.11.3.2 Development of new connections (news partners)

Deliverable Number	D6.55	**Lead Beneficiary**	5 - INFRABEL
Deliverable Name	D6.11.3.2 Development of new connections (news partners)		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	24	**Work Package No**	WP6

Description
Report (*.pdf of log)

Deliverable D6.56 – D6.11.3.3 Development concerning exchange of new messages

Deliverable Number	D6.56	**Lead Beneficiary**	5 - INFRABEL
Deliverable Name	D6.11.3.3 Development concerning exchange of new messages		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	24	**Work Package No**	WP6

Description
Report (*.pdf of log)

Deliverable D6.57 – D6.2.2.1 Graphical user interface for validation of detection algorithm and its demonstration to ERA

Deliverable Number	D6.57	**Lead Beneficiary**	2 - DB InfraGO
Deliverable Name	D6.2.2.1 Graphical user interface for validation of detection algorithm and its demonstration to ERA		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP6

Description

Software documentation (*pdf, german)

Deliverable D6.58 – D6.4.3.1 Collection of improvements for the application NCI, RIS, CIS and Common Interface, and Communication Plan of NCI, CIS Tool for 2025

Deliverable Number	D6.58	**Lead Beneficiary**	1 - RNE
Deliverable Name	D6.4.3.1 Collection of improvements for the application NCI, RIS, CIS and Common Interface, and Communication Plan of NCI, CIS Tool for 2025		
Type	R — Document, report	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP6

Description
Report, IT tool (*.pdf, eng)

Deliverable D6.59 – D6.12.1.1 IT concept (draft and final) and development of MRC-tool for rail facilities data, including testing phase and related interface, to manage and send RFI data to RFP via RINF and to CRD via RINF

Deliverable Number	D6.59	**Lead Beneficiary**	3 - RFI
Deliverable Name	D6.12.1.1 IT concept (draft and final) and development of MRC-tool for rail facilities data, including testing phase and related interface, to manage and send RFI data to RFP via RINF and to CRD via RINF		
Type	DEM — Demonstrator, pilot, prototype	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP6

Description
implementation of the IT tool and connection with RNE tool via RINF

Deliverable D6.60 – D6.12.2.1IT concept (draft and final) and development, including testing phase, of the digitalized system to manage and send RFI data to RINF

Deliverable Number	D6.60	**Lead Beneficiary**	3 - RFI
Deliverable Name	D6.12.2.1IT concept (draft and final) and development, including testing phase, of the digitalized system to manage and send RFI data to RINF		
Type	DEM — Demonstrator, pilot, prototype	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP6

Description
Implementation of the IT tool and connection with RNE tool via RINF

Deliverable D6.61 – D6.12.3.1 IT concept (draft and final) and development, including testing phase, of the digitalized system to manage and send RFI data to RINF

Deliverable Number	D6.61	**Lead Beneficiary**	3 - RFI
Deliverable Name	D6.12.3.1 IT concept (draft and final) and development, including testing phase, of the digitalized system to manage and send RFI data to RINF		
Type	DEM — Demonstrator, pilot, prototype	**Dissemination Level**	SEN - Sensitive
Due Date (month)	48	**Work Package No**	WP6

Description
Implementation of the IT tool and connection with RNE tool via RINF

LIST OF MILESTONES

Milestones

Grant Preparation (Milestones screen) — Enter the info.

Milestone No	Milestone Name	Work Package No	Lead Beneficiary	Means of Verification	Due Date (month)
1	MS1 Kick off meeting	WP1	1 - RNE	RNE GA approval	6
2	M02 Personal cost records provided	WP1	1 - RNE	Cinea approval	48
3	MS3 TTR program compliance report	WP1	1 - RNE	RNE GA approval	48
4	M4 Joint Capacity Model in place	WP2	1 - RNE	RNE GA approval	48
5	M5 Innovative Capacity Objects study implemented	WP2	4 - SNCF RÉSEAU	Study report approved by the management of SNCF RESEAU	24
6	M6 Phase 1: Feasability study for an IT concept	WP2	3 - RFI	Evaluation of the draft technical papers by General management and confirmation given to the Ministry as well	12
7	M7 Phase 2: Final IT concept	WP2	3 - RFI	Evaluation of the final technical papers by General management and confirmation given to the Ministry as well	18
8	M8 Phase 3: Development of IT solution	WP2	3 - RFI	Real operational testing on field, including connection with central IT by General management and confirmation given to the Ministry as well	48
9	M9 Final concept	WP2	2 - DB InfraGO	Approved (by Steering Committee) final draft concept	48
10	M10A Concept of rules and logics	WP2	2 - DB InfraGO	Approved (by Steering Committee) final draft on rules and logic	36
11	M10B Concept of IT algorithms	WP2	2 - DB InfraGO	Approved (by Steering Committee) final draft on IT algorithms	48

Milestones

Grant Preparation (Milestones screen) — Enter the info.

Milestone No	Milestone Name	Work Package No	Lead Beneficiary	Means of Verification	Due Date (month)
12	M11 Short-term: Creation of Capacity Model 2025	WP2	2 - DB InfraGO	Capacity Model either in ECMT or published as document (depending on scope to be agreed)	18
13	M12 Long-term: national Modules prepared	WP2	2 - DB InfraGO	Ability to start delivering an automated KNK, IT functionality can be tested/in operation	46
14	M13 Long-term: Module “Coordination with neighbour-IMs”	WP2	2 - DB InfraGO	IT functionality can be tested/in operation or IT-supported alignment process between respective responsibles of all IMs in place	48
15	M15 Capacity intelligence compendium of maps and charts	WP2	7 - RFC NS-M	RFC Management Board approval	22
16	M16 Capacity Intelligence approach Conclusive report	WP2	7 - RFC NS-M	RFC Management Board approval	24
17	M17 Delivery of the software component that enables the integration	WP2	5 - INFRABEL	Finalisation of assignment approved by TTR Project Board	12
18	M18 Status report TTR@Infrabel 2022	WP2	5 - INFRABEL	Report approved by TTR Project Board	12
19	M19 Status report TTR@Infrabel 2023	WP2	5 - INFRABEL	Report approved by TTR Project Board	24
20	M20 Status report TTR@Infrabel 2024	WP2	5 - INFRABEL	Report approved by TTR Project Board	36
21	M21 Functional requirements approved	WP3	1 - RNE	Approval by TCR WG/CCB	17
22	M22 Deliverables fully implemented on Common side	WP3	1 - RNE	Approval by TCR WG/CCB	48
23	M23 Interface established with national systems	WP3	1 - RNE	Approval by TCR WG/CCB	48
24	M24 Deliverables fully implemented	WP3	1 - RNE	Approval by TCR WG/CCB	48
25	M25 Annex VII Standards	WP3	4 - SNCF RÉSEAU	Approved Status report by the management of SNCF RESEAU	48

Milestones

Grant Preparation (Milestones screen) — Enter the info.

Milestone No	Milestone Name	Work Package No	Lead Beneficiary	Means of Verification	Due Date (month)
26	M26 Phase 1: Feasibility study for an IT concept	WP3	3 - RFI	Evaluation of the draft technical papers by General management and confirmation given to the Ministry as well	6
27	M27 Phase 2: Final IT concept	WP3	3 - RFI	Evaluation of the final technical papers by General management and confirmation given to the Ministry as well	12
28	M28 Phase 3: Development of IT solution	WP3	3 - RFI	Real operational testing on field: check by General management and confirmation given to the Ministry as well	18
29	M29 Possibility to manage long term Temporary Capacity Restrictions in the Infrabel planning tool	WP3	5 - INFRABEL	Steering Committee approval	12
30	M30 Publication of the approved TCRs to the RUs and the ability to signal the importance of each TCR in accordance with RNE guidelines	WP3	5 - INFRABEL	Steering Committee approval	36
31	M31 Development customization algorithm platform	WP3	5 - INFRABEL	Finalisation of assignment approved by TTR Project Board	36
32	M32 Development Customization in the TCR planning tool	WP3	5 - INFRABEL	Finalisation of assignment approved by TTR Project Board	24
33	M33 Development further customizations in the algorithm platform	WP3	5 - INFRABEL	Finalisation of assignment approved by TTR Project Board	36
34	M34 First study with integrator based on the algorithm	WP3	5 - INFRABEL	Finalisation of assignment approved by TTR Project Board	36
35	M35 Development of the software that enables Infrabel to start own studies	WP3	5 - INFRABEL	Finalisation of assignment approved by TTR Project Board	48

Milestones

Grant Preparation (Milestones screen) — Enter the info.

Milestone No	Milestone Name	Work Package No	Lead Beneficiary	Means of Verification	Due Date (month)
36	M36 Acceptance protocol	WP3	6 - SZCZ	Protocol issued by the SZCZ general management	48
37	M37 Acceptance protocol	WP3	6 - SZCZ	Protocol issued by the SZCZ general management	48
38	M38 Functional requirements approved	WP4	1 - RNE	Approval by ECMT CCB	24
39	M39 Deliverables fully implemented	WP4	1 - RNE	Approval by RNE GA	48
40	M40 B2B Platform, Upgrading IS, B2B Platform, Acceptance-Refusal Process	WP4	4 - SNCF RÉSEAU	Approved Status report by the management of SNCF RESEAU	48
41	M41 Phase 1: Feasability study for an IT concept	WP4	3 - RFI	Evaluation of the draft technical papers by General management and confirmation given to the Ministry as well	12
42	M42 Phase 2: Final IT concept	WP4	3 - RFI	Evaluation of the final technical papers by General management and confirmation given to the Ministry as well	18
43	M43 Phase 3: Development of IT solution	WP4	3 - RFI	Real operational testing on field: check by General management and confirmation given to the Ministry as well	48
44	M44 The validated roadmap for the integration of all train planning activities into one state-of-the-art tool	WP4	5 - INFRABEL	Validated report by director Chief Client Officer	18
45	M45 Improving trajectory runtime calculation in UPM.	WP4	5 - INFRABEL	Steering Committee approval	36
46	M46 An analysis outlining the technical and functional requirements of the PoC	WP4	5 - INFRABEL	Validated report by TTR Project Board	10

Milestones

Grant Preparation (Milestones screen) — Enter the info.

Milestone No	Milestone Name	Work Package No	Lead Beneficiary	Means of Verification	Due Date (month)
47	M47 Implementation of a functional Proof of Concept	WP4	5 - INFRABEL	Steering Committee approval	18
48	Delivery of the software component	WP4	5 - INFRABEL	Finalisation of assignment approved by TTR Project Board	24
49	M49 Delivery of customizations	WP4	5 - INFRABEL	Finalisation of assignment approved by TTR Project Board	36
50	M50 Delivery of first version that works with the planning tool for the transport plan	WP4	5 - INFRABEL	Finalisation of assignment approved by TTR Project Board	12
51	M51 Delivery of customizations	WP4	5 - INFRABEL	Finalisation of assignment approved by TTR Project Board	24
52	M52 The timetable planners will receive a report of all discontinuous timetables.	WP4	5 - INFRABEL	Steering Committee approval	6
53	M53 Possibility to define timetables at the lowest level (switch level).	WP4	5 - INFRABEL	Steering Committee approval	48
54	M54 Use of the macroview INT data on multiple UPM maps	WP4	5 - INFRABEL	Steering Committee approval	48
55	M55 Creating a search for freight train routes that avoid forbidden line sections	WP4	5 - INFRABEL	Steering Committee approval	18
56	M56 PC codification and forbidden line section detection	WP4	5 - INFRABEL	Steering Committee approval	18
57	M57 Easier detection and resolution of conflicts and overlappings by means of new reports, better anomaly resolution and ergonomic improvements	WP4	5 - INFRABEL	Steering Committee approval	24

Milestones

Grant Preparation (Milestones screen) — Enter the info.

Milestone No	Milestone Name	Work Package No	Lead Beneficiary	Means of Verification	Due Date (month)
58	M58 Acceptance protocol D4.6.1.1	WP4	6 - SZCZ	Protocol issued by the SZCZ general management	48
59	M59 Acceptance protocol D4.6.2.1	WP4	6 - SZCZ	Protocol issued by the SZCZ general management	48
60	M60 Acceptance protocol D4.6.3.1	WP4	6 - SZCZ	Protocol issued by the SZCZ general management	24
61	M61 Acceptance protocol D4.6.4.1	WP4	6 - SZCZ	Protocol issued by the SZCZ general management	24
62	M62 Acceptance protocol D4.6.5.1	WP4	6 - SZCZ	Protocol issued by the SZCZ general management	24
63	M63 Conception of the IT Tool	WP4	2 - DB InfraGO	Finalisation of assignment report (approved by RNE GA)	6
64	M64 Development and test of the IT tool	WP4	1 - RNE	Finalisation of assignment report (approved by RNE GA)	18
65	M65 Usage and evaluation of the IT tool	WP4	2 - DB InfraGO	Finalisation of assignment report (approved by RNE GA)	24
66	M66 Functional requirements approved	WP5	1 - RNE	DCM WG approval	18
67	M67 Signature of contract	WP5	1 - RNE	RNE GA approval	12
68	M68 Alpha version of the web application	WP5	1 - RNE	DCM WG approval	18
69	M69 Beta version of the web application and interface	WP5	1 - RNE	DCM WG approval	19
70	M70 WSDL is published by RNE	WP5	1 - RNE	DCM WG approval, ERA verification	36
71	M71 Production version of the web application and interface	WP5	1 - RNE	DCM WG approval	36

Milestones

Grant Preparation (Milestones screen) — Enter the info.

Milestone No	Milestone Name	Work Package No	Lead Beneficiary	Means of Verification	Due Date (month)
72	M72 Updated system and approved performance report	WP5	1 - RNE	RNE GA approval	36
73	M73 Description of API is done	WP5	1 - RNE	Approval by RNE and DB developers/ management.	12
74	M74 TAF / TAP compliant interface and automated train path creation	WP5	1 - RNE	Integration tests (i.e. test cases for international path requests) with broker are successful concerning the API to DB Netz	48
75	M75 Description of extended API is done	WP5	1 - RNE	Approval by RNE and DB developers/ management.	48
76	M76 API extension for information on validation	WP5	1 - RNE	Integration tests (i.e. test cases for international path requests including valid and non valid requests) with broker are successful concerning the API to DB Netz	48
77	M77 Simulation and study tool	WP5	4 - SNCF RÉSEAU	Approved Status report by the management of SNCF RESEAU	36
78	M78 Run calculation tool	WP5	4 - SNCF RÉSEAU	Approved Status report by the management of SNCF RESEAU	48
79	M79 Acceptance protocol	WP5	6 - SZCZ	Protocol issued by the SZCZ general management	48
80	M80 Customization in software	WP5	5 - INFRABEL	Study report approved by Project Board	18
81	M81 Test results of this PoC	WP5	5 - INFRABEL	Finalisation of assignment approved by Project Board	24
82	M82 Defined infrastructure objects and attributes needed for the KNK implementation	WP6	2 - DB InfraGO	EPIC for IT-development of the described features	18

Milestones

Grant Preparation (Milestones screen) — Enter the info.

Milestone No	Milestone Name	Work Package No	Lead Beneficiary	Means of Verification	Due Date (month)
83	M83 Established connection between KNK and infrastructure supply	WP6	2 - DB InfraGO	Active interface beween capacity planning tool and infrastructure data source	48
84	M84 Repository of reference data	WP6	4 - SNCF RÉSEAU	Approved Status report by the management of SNCF RESEAU	48
85	M85 Consistency between French and European standard	WP6	4 - SNCF RÉSEAU	Approved Status report by the management of SNCF RESEAU	48
86	M86 Locations	WP6	4 - SNCF RÉSEAU	Approved Status report by the management of SNCF RESEAU	48
87	M87 Infrastructure description	WP6	4 - SNCF RÉSEAU	Approved Status report by the management of SNCF RESEAU	48
88	M88 New CI implemented and approved by CCS CCB	WP6	1 - RNE	Approved by CCS CCB	36
89	M89A First draft of a concept	WP6	2 - DB InfraGO	Approved (by steering committee) First draft of a concept	24
90	M89B Final concept	WP6	2 - DB InfraGO	Approved (by steering committee) Final concept	48
91	M90 First TAF/TAP TSI Standard Messages (Capacity)	WP6	4 - SNCF RÉSEAU	Approved Status report by the management of SNCF RESEAU	48
92	M91 Rolling stock description	WP6	4 - SNCF RÉSEAU	Approved Status report by the management of SNCF RESEAU	48
93	M92 New Flows	WP6	4 - SNCF RÉSEAU	Approved Status report by the management of SNCF RESEAU	48
94	M93 Enhancement of existing flows	WP6	4 - SNCF RÉSEAU	Approved Status report by the management of SNCF RESEAU	48
95	M94 Train Delay Cause	WP6	4 - SNCF RÉSEAU	Approved Status report by the management of SNCF RESEAU	48

Milestones

Grant Preparation (Milestones screen) — Enter the info.

Milestone No	Milestone Name	Work Package No	Lead Beneficiary	Means of Verification	Due Date (month)
96	M95 International Data Reference	WP6	4 - SNCF RÉSEAU	Approved Status report by the management of SNCF RESEAU	48
97	M96 Architecture	WP6	4 - SNCF RÉSEAU	Approved Status report by the management of SNCF RESEAU	48
98	M97 Acceptance protocol	WP6	6 - SZCZ	Protocol issued by the SZCZ general management	24
99	M98 Implementation of multiple periods of validity on the level of each infrastructure component in INT	WP6	5 - INFRABEL	TTR project board approval	48
100	M99 Implementation of the possibility to create different infrastructure versions for each important modification	WP6	5 - INFRABEL	TTR project board approval	48
101	M100 Analysis of import and additional requirements source database	WP6	5 - INFRABEL	Study report approved by Project Board	24
102	M101 Delivery of the software components	WP6	5 - INFRABEL	Finalisation of assignment approved by Project Board	48
103	M102 Development of the interface with PCS	WP6	5 - INFRABEL	Approval TTR TAF/TAP Steering Committee	22
104	M103 Finalised Test of the interface with PCS	WP6	5 - INFRABEL	Approval TTR TAF/TAP Steering Committee	24
105	M104 Development of the interface LT with RNE TCR-tool	WP6	5 - INFRABEL	Approval TTR TAF/TAP Steering Committee	34
106	M105 Finalised Test of the interface LT with RNE TCR-tool	WP6	5 - INFRABEL	Approval TTR TAF/TAP Steering Committee	36
107	M106 Development of the interface INT with ECMT	WP6	5 - INFRABEL	Approval TTR TAF/TAP Steering Committee	22

Milestones

Grant Preparation (Milestones screen) — Enter the info.

Milestone No	Milestone Name	Work Package No	Lead Beneficiary	Means of Verification	Due Date (month)
108	M107 Finalised Test of the interface INT with ECMT	WP6	5 - INFRABEL	Approval TTR TAF/TAP Steering Committee	24
109	M108 Development of the interface planning - ECMT	WP6	5 - INFRABEL	Approval TTR TAF/TAP Steering Committee	48
110	M109 Development of the interface UPM-TCR-tool	WP6	5 - INFRABEL	Approval TTR TAF/TAP Steering Committee	40
111	M110 Finalised Test of the interface UPM-TCR-tool	WP6	5 - INFRABEL	Approval TTR TAF/TAP Steering Committee	42
112	M111 Study/analysis report	WP6	5 - INFRABEL	Approval TTR TAF/TAP Steering Committee	12
113	M112 Proof of Concept EU train ID in real time management tool	WP6	5 - INFRABEL	Approval TTR TAF/TAP Steering Committee	24
114	M113 Proof of Concept EU train ID in capacity planning tool	WP6	5 - INFRABEL	Approval TTR TAF/TAP Steering Committee	24
115	M114 Study/analysis report	WP6	5 - INFRABEL	Approval TTR TAF/TAP Steering Committee	12
116	M115 Development of TCM with ITU container information	WP6	5 - INFRABEL	Approval TTR TAF/TAP Steering Committee	36
117	M116 Study/analysis report	WP6	5 - INFRABEL	Approval TTR TAF/TAP Steering Committee	6
118	M119 Study report	WP6	5 - INFRABEL	Approval TTR TAF/TAP Steering Committee	24
119	M117 Development of new connections (news partners)	WP6	5 - INFRABEL	Approval TTR TAF/TAP Steering Committee	24
120	M118 Development concerning exchange of new messages	WP6	5 - INFRABEL	Approval TTR TAF/TAP Steering Committee	24
121	M120 Status report & Project implementation detailed plan agreed	WP2	4 - SNCF RÉSEAU	"Management approval with clear status report	48

Milestones

Grant Preparation (Milestones screen) — Enter the info.

Milestone No	Milestone Name	Work Package No	Lead Beneficiary	Means of Verification	Due Date (month)
				and agreement on a detailed schedule, ressources and a list of tasks. "	
122	M121 Status report & Project implementation detailed plan agreed	WP2	4 - SNCF RÉSEAU	"Management approval with clear status report and agreement on a detailed schedule, ressources and a list of tasks. "	48
123	M122 Status report TTR@Infrabel 2025	WP2	5 - INFRABEL	Report approved by TTR Project Board	48
124	M123 The implementation report	WP2	5 - INFRABEL	Formal approval steerco	48
125	M124 The study report	WP2	5 - INFRABEL	Formal approval steerco	48
126	M125 Development report	WP2	5 - INFRABEL	Formal approval steerco	48
127	M126 The study report	WP2	5 - INFRABEL	Formal approval steerco	48
128	M127 Contract with the supplier	WP2	6 - SZCZ	Contract with the supplier (*.pdf, cz)	48
129	M128 Formalisation of go-live of said improvements relating the operational planning of infrastructure works	WP3	5 - INFRABEL	Steering Committee approval	48
130	M129 Acceptance protocol	WP3	6 - SZCZ	Protocol issued by the SZCZ general management	48
131	M130 Progress report	WP4	5 - INFRABEL	Formal approval steerco	48
132	M131 Acceptance protocol D4.6.6.1	WP4	6 - SZCZ	Protocol issued by the SZCZ general management	48
133	M132 Contracts with the supplier	WP4	6 - SZCZ	Contracts with the supplier (*.pdf, cz)	48
134	M133 Implementation progress report	WP5	5 - INFRABEL	Formal approval steerco	31
135	M134 The validation list	WP5	5 - INFRABEL	Formal approval steerco	32
136	M135 Start Pilot	WP5	5 - INFRABEL	Formal approval steerco	48

Milestones

Grant Preparation (Milestones screen) — Enter the info.

Milestone No	Milestone Name	Work Package No	Lead Beneficiary	Means of Verification	Due Date (month)
137	M136 Development of the IT solution	WP5	3 - RFI	Real operational testing on field	48
138	M137 T4R Language tool upgrade	WP5	1 - RNE	Project team approval	39
139	M138 The implementation of the tool	WP5	1 - RNE	RNE GA approval	41
140	M139 Software Release and its demoversion to ERA	WP6	2 - DB InfraGO	Acceptance protocol approved by DB InfraGO terminating the assignment	48
141	M140 Report of Data/RIS CCB, CCS CCB, RNE CIS Change Control Board, RNE NS & CID WG	WP6	1 - RNE	Approval of Big Data/RIS CCB, CCS CCB, RNE CIS Change Control Board,RNE NS & CID WG	48
142	M141 IT concept (draft and final) and development of an IT solution to store, manage and send RFI data to RINF ready	WP6	3 - RFI	Real operational testing on field; check by General management and confirmation given to the Ministry as well	48

LIST OF CRITICAL RISKS

Critical risks & risk management strategy

Grant Preparation (Critical Risks screen) — Enter the info.

Risk number	Description	Work Package No(s)	Proposed Mitigation Measures
1	Financial Risk	WP5, WP2, WP3, WP1, WP4, WP6	Financing of Action has been agreed and is ensured by RNE Members so the financial risk can be considered to be very low
2	Delay during development of procedures and specifications for common functional requirements	WP5, WP2, WP3, WP1, WP4, WP6	RNE workings groups are already in place and activities are well defined IMs/RFC have defined specific project groups for implementing the tasks

Critical risks & risk management strategy

Grant Preparation (Critical Risks screen) — Enter the info.

Risk number	Description	Work Package No(s)	Proposed Mitigation Measures
3	Acceptance and implementation of results by competent stakeholders	WP5, WP2, WP3, WP1, WP4, WP6	The main stakeholders, the European rail Infrastructure Managers, are Members of RNE and are constantly being informed about the Action through RNE information channels (RNE GA for IMs/ABs, RFCs)
4	Delay by some IMs in implementing agreed results	WP5, WP2, WP3, WP1, WP4, WP6	The main stakeholders, European rail Infrastructure Managers, are Members of RNE and are constantly being informed about the Action through RNE information channels (RNE GA for IMs/ABs, RFCs)

ANNEX 1

Connecting Europe Facility (CEF)

Description of the action (DoA)

Part B

(CEF Transport Standard)

Version 2.0
27 June 2022

IMPORTANT NOTICE

What is the Description of the Action (DoA)?

The Description of the Action (DoA) is the Annex of the Grant Agreement which contains the details of how the project will be carried out. For EU framework partnerships for grants (FPAs) this Annex is called Action Plan.

It consists of 2 parts, which must be generated from the submitted proposal:

- Part A contains structured tables with project information
- Part B is a narrative description on the work to be carried out.

Part A is generated by the IT system. It is based on the information which you enter into the Portal Grant Preparation screens.

Part B (+ annexes) must be uploaded on the Grant Preparation Documents screen.

⚠ Make sure that Part B is synchronised with the information entered into the screens. Make sure that any changes are agreed with us.

TECHNICAL DESCRIPTION (PART B)

COVER PAGE

Part B of the Application Form must be downloaded from the Portal Submission System, completed and then assembled and re-uploaded as PDF in the system.

***Note:** Please read carefully the conditions set out in the Call document (for open calls: published on the Portal). Pay particular attention to the award criteria; they explain how the application will be evaluated.*

The term 'project' used in this application form and other documents is synonymous to the term 'action' used in the CEF Regulation 2021/1153.

PROJECT	
Project name:	Digital Capacity Management Implementation 2022-2024
Project acronym:	DCM IMP 22_24 (Draft ID - SEP-210804882)
Coordinator contact:	Harald Reisinger, RailNetEurope
Starting date	1/1/2022
Duration	48

TABLE OF CONTENTS

PROJECT SUMMARY

Project summary
The overall objective of this project '**Digital Capacity Management – Implementation 22-24** [DCM IMP 22_24]' (**a study without physical interventions**) is to continue the Europe-wide implementation of the programme 'Timetabling Redesign for a Smart Capacity Management' (TTR) which was launched as a project in 2014 with the overall aim to increase international rail attractiveness and efficiency, so that rail can increase its competitiveness and market share on the European transport market. This new project intends to continue the valuable work started by previous EU-funded actions. It will do so by: » Supporting rail stakeholders in implementing the agreed and committed activities in the frame of the programme 'TTR for a Smart Capacity Management' » Implementing an additional market-oriented application for Short Term Path requests – the so-called 'Automated Short Term Path Request' at international level (reduction of lead time from 2-3 weeks to 1-2 days) » Adjusting Infrastructure Manager's (IM) legacy systems to allow cross-border data exchange, to facilitate integrated infrastructure capacity and traffic management

- Supporting rail stakeholders in developing common Telematics Reference Files, merging the existing Telematic Application Freight and Technical Specifications for Interoperability (TAP and TAF TSI) Reference File sets to be used in the telematics framework and by other registers managed by the European Rail Agency (ERA) or the rail sector.
- Supporting Infrastructure Managers and Railway Undertakings in implementing and ensuring the compliance of the rail system and its sub-systems with the TAP and TAF TSI.

0. PROJECT DESCRIPTION

Project description, scope and objectives

Overall objective

'**Digital Capacity Management – Implementation 22-24** [DCM IMP 22_24]' (a study without physical interventions) aims to continue the Europe-wide implementation of the programme 'TTR for a Smart Capacity Management' which was launched as a project in 2014 with the overall aim to increase international rail attractiveness and efficiency, so that rail can increase its competitiveness and market share on the European transport market.

This new project intends to continue the valuable work started by previous EU-funded actions. It will do so by:

- Supporting rail stakeholders in implementing the agreed and committed activities in the frame of the programme 'TTR for a Smart Capacity Management'
- Implementing an additional market-oriented application for Short Term Path requests – the so-called 'Automated Short Term Path Request' at international level (reduction of lead time from 2-3 weeks to 1-2 days)
- Adjusting Infrastructure Manager's (IM) legacy systems to allow cross-border data exchange, to facilitate integrated infrastructure capacity and traffic management
- Supporting rail stakeholders in developing common Telematics Reference Files, merging the existing Telematic Application Freight and Technical Specifications for Interoperability (TAF and TAP TSI) Reference File sets to be used in the telematics framework and by other registers managed by the European Rail Agency (ERA) or the rail sector.
- Supporting Infrastructure Managers and Railway Undertakings in implementing and ensuring the compliance of the rail system and its sub-systems with the TAF and TAP TSI.

General description and context

Location

The project facilitates implementation in several countries namely Germany, Belgium, France, Italy, Czech Republic and Switzerland. The dataflow via RNE central systems can be seen as cross-border activities. Furthermore, one activity (capacity strategy), outside the scope of this Grant Agreement, will be implemented by the RFC North Sea Med covering the Netherlands, Belgium, Luxembourg, France and Switzerland.

Specific objectives

The key aim is to continue the Europe-wide implementation of the programme 'TTR for a Smart Capacity Management'. The programme is structured into 'preconditions' which shall define the legal/process framework as well as commercial conditions and the TTR components with their respective process implementations and IT tools. In addition, the project tasks shall be adjusted and take in consideration Traffic Management and Train Performance Management in line with the Draft REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on the use of railway infrastructure capacity in the single European railway area, amending Directive 2012/34/EU and repealing Regulation (EU) No 913/2010 [DRAFT CR].**Work Packages**

The whole TTR programme is an innovation in rail business as deals with issues like big data; European data exchange and an automated algorithm for the optimisation of capacity, all combined, allowing for the first time in European history to allocate cross-border paths without manual interventions. In order to facilitate this achievement, plenty of different specialised legacy systems of different IMs need to be harmonised, updated or newly established.

WP1 Project Management

This Work Package contains activities dealing with the overall management of the application to ensure compliance with grant agreement and achievement of specific objectives.

WP2 TTR Capacity Strategy/Model

The WP TTR Capacity Strategy/Model is a major requirement to enable integrated infrastructure capacity and traffic management since it facilitates the collection of information and general principles to be used further in the capacity planning and capacity allocation process on a European scale; it supports the

harmonisation of cross-border capacity planning, it provides an overview of the available capacities on a European scale and enables and facilitates partitioning of capacity into different categories (works, stable traffic, dynamic traffic).

WP3 Temporary Capacity Restriction Tool

The WP on Temporary Capacity Restrictions (TCRs) enhances the unified implementation of the provisions set in Annex VII of the Directive 2012/34/EU and therefore fully complies with the objective to enhance transport services. It is also a major requirement to enable integrated infrastructure capacity and traffic management since it contributes to the unified clustering and impact calculation of TCRs and provides a unified method to evaluate the planned and real TCR consumption at European level.

WP4 TTR Capacity Supply/allocation

The WP on TTR capacity supply/allocation is the key process/outcome of the TTR programme ensuring smart and quick allocation of optimised paths within the European rail network, which therefore is in full compliance with 'integrated infrastructure capacity and traffic management'. It encompasses the process phase Capacity Planning and all request methods, i.e. Annual, Rolling Planning and Short Term Requests.

WP5 TTR Capacity Broker (Short Term/Ad Hoc) and Capacity Production

The WP on the TTR Capacity Broker is highly innovative, since the key objective is to allow automatic path construction and a sequential negotiation algorithm between IMs to enable short term paths for international trains on short notice before the train run (now 2-3 weeks – goal: 1-2 days), thus providing an important part of the Short Term Requests.

WP6 Digital Infrastructure Data/Interfaces

The WP Digital Infrastructure Data/Interfaces is a major requirement to enable integrated infrastructure capacity and traffic management since it facilitates harmonised communication and data in order to enable cross-border capacity and traffic management. Furthermore, the current WP aims to upgrade existing systems with the latest technologies to ensure stable operation in the following years without a risk of technological obsolescence.

Expected outcomes and results

- The objective of ensuring smooth and efficient path allocation processes and obtaining good and reliable train paths by making use of appropriate IT tools will be measured by the number of Path Requests and Path Offers coordinated through PCS. This information will be presented to the RNE Timetabling Working Group and will be verified by the RNE General Assembly (RNE GA).
- Different visualisation possibilities of the capacities will be created in order to satisfy the needs of various stakeholders (e.g. Regulatory Bodies, Applicants, Infrastructure Managers, Allocation Bodies etc.). This information will be presented to the RNE Timetabling Working Group and will be verified by the RNE GA.
- Different Capacity Model variants will be created for the same period to facilitate the pre-planning of capacities. This information will be presented to the RNE Timetabling Working Group and will be verified by the RailNetEurope General Assembly (RNE GA).
- The unified implementation of the provisions set in Annex VII of the Directive 2012/34/EU will be facilitated. TCRs are published in line with Annex VII of the Directive 2012/34/EU.
- Using only the Capacity Broker, Applicants can book paths for international trains on short notice before the trains run (Germany, Switzerland, Belgium, Czech Republic).
- Increased interoperability through the application of standardised cross-border messaging will be measured by the volume of TAF and TAP TSI messages sent through the following RNE applications and company systems: TIS, PCS, TCR tool, and TAF CC (common components). This report will be presented to the RNE General Assembly and the TIS Change Control Board and will be made available to the TAF TSI Steering Committee and the European Railway Agency (ERA).
- Increased interoperability through using the TAF and TAP TSI Reference Files and message exchange by IMs and RUs: this Action will increase the usage of TAF and TAP within the rail sector and its effect is not limited to the direct co-beneficiaries of the Action. The TAF TSI Joint Sector Groups and the European Railway Agency (ERA) issue a report twice a year regarding the rollout of the different TAF and TAP functions, which will provide an overview of the progress and success of the Action.
- The project is in line with DRAFT CR on the use of railway infrastructure capacity in the single European railway area.

6. TIMING

6.1 Timetable

Timetable

Fill in the timetable for the project (using either the template available on Portal Reference Documents or a Gantt chart which respects the minimum requirements set out in the template) and attach it to your Application Form (annex 5 to Part B).

DCM IMP 22_24		2022												2023												2024												2025											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mär	Apr	Mai	Jun	Jul	Aug	Sep	Okt	Nov	Dez	Jän	Feb	Mär	Apr	Mai	Jun	Jul	Aug	Sep	Okt	Nov	Dez	Jän	Feb	Mär	Apr	Mai	Jun	Jul	Aug	Sep	Okt	Nov	Dez
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
WP1	Project management																																															
1.1	General project management, RNE						M01																																									
1.2	Financial project coordination, RNE																																														
1.3	Technical reporting, RNE																																														M02
1.4	Dissimination activities, RNE																																														
1.5	Technical coordination, RNE																																														M03
WP2	TTR Capacity Strategy/Model																																														
2.1	Joint capacity model, RNE																																														
2.1.1	Preparation for the implementation																																														
2.1.2	Implementation of the necessary objects																																														
2.1.3	Implementation of the necessary views																																														
2.1.4	Adjusting the import function of ECMT																																														
2.1.5	Implementing the workflows																																														
2.1.6	Establishing the interface connections																																														M04
2.1.7	Release and change management																																														
2.1.8	"ECMT/TCR Tools Fusion" Phase 1, RNE																																														
2.1.9	Common developments on ECMT for Capacity Supply incl. developments in the future tool, RNE																																														
2.2	National implementation of IT packages "Capacity Model" (including TCRs, TAF/TAP TSI interfaces), SNCF Réseau																																														
2.2.1	Study for Modelisation and implementation of capacity bands, rolling-planning requests on dedicated multi-annual offer																								M05																							
2.2.2	TCR after X-36 (Supervision tool "Macro Ordonnancement" & Ordo)																																														M120
2.2.3	National (FR) Capacity Strategy (TCR before X-36)																																														
2.2.4	Data - ETCS infrastructure update																																														
2.2.5	TAF/TAP TSI for national (FR) Capacity																																														
2.3	National implementation of IT packages "Capacity Model" RFI																																														
2.3.1	National (IT) IT concept (feasibility study)												M06																																			
2.3.2	Final national (IT) concept																		M07																													
2.3.3	National (IT) Development																																														M08

2.4	**National implementation of IT packages "Capacity Model" DB InfraGO**																																																
2.4.1	Concept of a new automated continuous planning process																																																M09
2.4.2	Concept of new rules, logics and algorithms for a new capacity planning																																			M10A												M10B
2.4.3	Prototype national (DE) Capacity Model																	M11																													M12		M13
2.5	**CAPACITY INTELLIGENCE (MVP), RFC NS-M**																																																
2.5.1	Production of visualisations to understand capacity issues																																																
2.5.2	Test of the validity and relevance of the visualisations produced																					M15		M16																									
2.6	**Development Digital twin for long term capacity planning optimisation, Infrabel**																																																
2.6.1	Simulation national (BE) tool support for long term planning tool												M17																																				
2.7	**TTR process implementation, Infrabel**																																																
2.7.1	Adaption national (BE) processes to international TTR process												M18												M19												M24												M122
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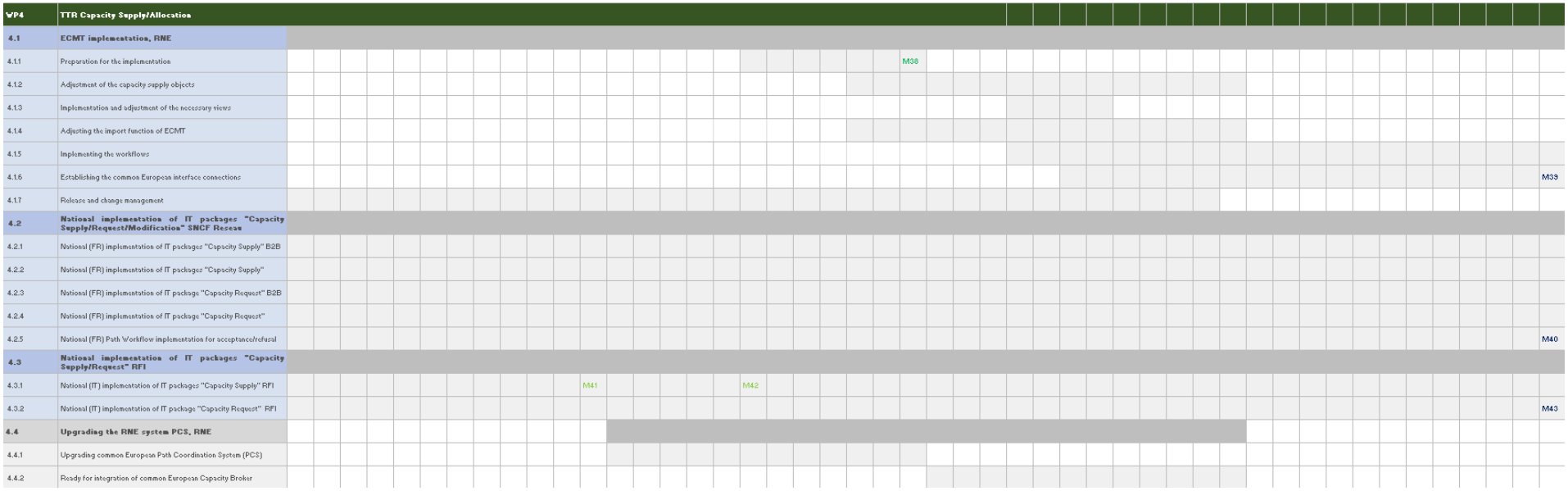

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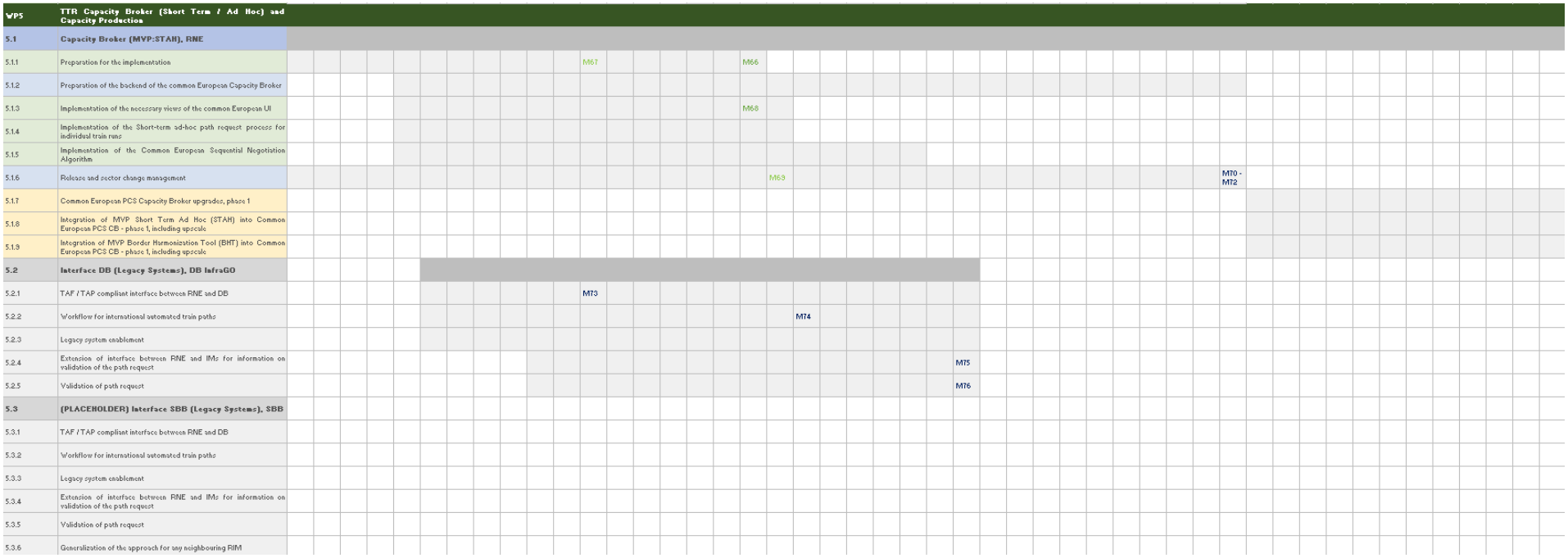

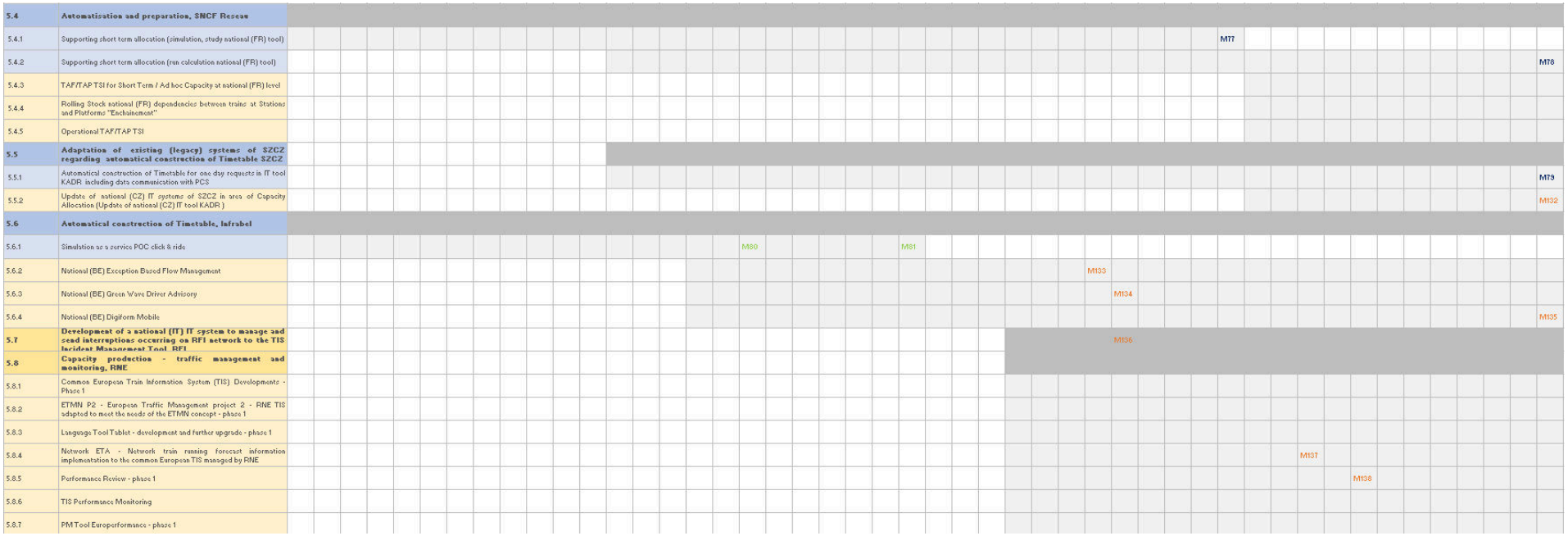

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(blue)	PROLONGED TASK
(yellow)	ADJUSTED TASK
(grey)	NO CHANGES
(green)	FINISHED TASK

ANNEXES

LIST OF ANNEXES

Subcontracting table — *mandatory (n/a for Lump Sum and Unit Grants)*

SUBCONTRACTING TABLE

Subcontracting

Give details on subcontracted action tasks (if any).

Subcontracts must be awarded using your usual purchasing practices – provided that they ensure best value for money and no conflict of interests. If you are a 'contracting authority/entity' within the meaning of the EU Directives on public procurement, you must also comply with the applicable national law on public procurement.

***Note:** The coordinator remains fully responsible for the coordination tasks, even if they are delegated to someone else. Coordinator tasks cannot be subcontracted.*

Task number to be subcontracted (follow the numbering in the grant agreement)	**Name of task to be subcontracted**	**Description** (Describe briefly the part of the task to be subcontracted and indicate the BEN/AE responsible)	**Estimated Costs** (EUR)
2.1.2	Implementation of the necessary objects RNE	Creation of Capacity Model objects, CNAs, TCR part	**150 000,00**
2.1.3	Implementation of the necessary views RNE	Section view, line view, network view, TCR duration overview	
2.1.4	Adjusting the import function of ECMT RNE	Intended capacity line, CNAs, Capacity Model objects and TCRs can be imported	
2.1.5	Implementing the workflows RNE	Harmonisation function for the Applicants for their CNAs, connection between CNA and the Capacity Model	
2.1.6	Establishing the interface connections RNE	TCR Tool and ECMT are connected, ECMT is connected to the national systems of the IMs	
2.1.7	Release and change management RNE	Preparing the releases, performing the UATs and managing the change requests during the implementation	
2.1.8	"ECMT/TCR Tools Fusion" Phase 1, RNE	The TCR Tool was developed to collect, coordinate, and publish the Temporary Capacity Restrictions (TCRs) considering Annex VII of Directive 2012/34/EU. European Capacity Management Tool (ECMT) is the tool for IMs and RUs, which helps IMs in the coordination and	**922 019,00**

		publication of their capacity models and capacity supply plans, and submission of the capacity needs announcements (CNAs) for Applicants. The tool was initially developed to support the pilots, and on this basis started to be further developed to support all the capacity functionalities defined by TTR and later the Capacity Regulation. The new tools should provide centra workflows to enable cross border planning, coordination, and harmonization. In addition, the new tool will be based on TAF TAP TSI communication.	
2.1.9	Common European developments on ECMT for Capacity Supply incl. developments in the future tool, RNE	The current version of ECMT supports only the basic functionality of the Capacity Supply. Some functionalities not feasible to be developed in CEF II TA 2021 were shifted to this call. In addition, the Capacity Supply handbook (following the draft capacity regulation) is currently being created with the aim of approval in May 2024. Some additional developments to support stakeholders' needs are expected to be implemented into the current version of the ECMT before a new tool (Fusion) is developed.	**50 000,00**
2.2.2.	TCR after X-36 (Supervision tool “Macro Ordonnancement” & Ordo) SNCF Reseau	External supplier: This project aims to implement at SNCF Reseau a new supervision tool of capacity impacts of works to produce the Capacity Model (for further deployment of Temporary Capacity Restrictions (TCRs) messages to transmit restrictions capacities on the different time horizons).	**520 000,00**
2.2.3	National (FR) Capacity Strategy (TCR before X-36) SNCF Reseau	External supplier: First steps of national (FR) Implementation of a Capacity strategy tool for TCR before X-36	**1 240 000,00**
2.2.4.	Data - ETCS infrastructure update SNCF Reseau	External supplier: The project is a global initiative to model the infrastructure objects of the European Train Control System (ECTS) for SNCF Réseau in its infrastructure repository and its data provision in the timetables and train paths tool for run time calculation and conflict detection. EU-Rail are working on the creation and update of the standard / norm.	**400 000,00**
2.2.5	TAF/TAP TSI for national (FR) Capacity SNCF Reseau	External supplier: Improve existing national (FR) information systems to ensure continuity of capability processes from upstream to deployment of TAF-TAP TSI	**1 076 044,00**
2.3.1	National (IT) IT concept (feasibility study)	External supplier: Drafting the national (IT) IT concept for a Long-Term planning (Capacity Model)	**148 679,32**

	RFI		
2.3.2	Final national (IT) concept RFI	External supplier: Transform the draft paper into a Final national (IT) concept	**201 891,03**
2.3.3	National (IT) Development RFI	External supplier: Finetuning of the national (IT) IT solution for long-term planning and related deployment of the long-term capacity planning tool.	**2 794 775,95**
2.4.3	Prototype national (DE) Capacity Model DB InfraGO	External Service Provider - SMA: Creation and delivery of interim national (DE) Capacity Model 2025 Preparation of delivery of an automated national (DE) Capacity Model prototype As one of the pre-steps to an automated national (DE) Capacity Model prototype, preparation of the KNK, by implementing the processes and IT features for its automated pre-construction	**3 204 781,00**
2.5.1	Production of visualisations to understand capacity issues RFC NSM	External service provider: The initial step is to gather a database of paths and TCRs from different countries (France, Belgium and Luxembourg involved in the MVP) in order to provide homogeneous KPIs on capacity issues, and solutions to visualise the results.	**224 000,00**
2.5.2	Test of the validity and relevance of the visualisations produced RFC NSM	External service provider: Because the objective is to feed the decision-making process, the project includes tests with mirror groups of stakeholders to get feedback on the efficiency of the KPIs and visualisations.	**96 000,00**
2.6.1	Simulation) tool support for long term planning tool Infrabel (100%)	Allowing simulations to prepare national (BE) Capacity Strategy and Model	**56 000,00**
2.7.1	Adaption national (BE) processes to international TTR process Infrabel (4,6%)	General project management, internal studies and preparation, communication to and interaction with stakeholders	**99 823**
2.7.2	National (BE) Capacity Management Support - EU Train ID Infrabel (30%)	Roadmap use of EU Train ID, Additional reporting and testing is needed to be able to implement nationally (BE) the use of the EU train ID in operations at Infrabel. The testing and analysis scheduled foresees in the preparation of this.	**52 500,00**
2.7.3	National (BE) Capacity	Developments related to a new version of Common Interface, RNE will install a new	**22 500,00**

	Management Support -Common Interface Infrabel (30%)	Common Interface in 2024. This new CI is intended to be the interface of the future for all TAF TAP TTR data exchanges (and Telematics). Infrabel will analyse the national (BE) impact, install the new CI and migrate the existing TAF TAP TSI flows.	
2.7.4	National (BE) Capacity Management Support -PCS TSI Compliant Infrabel (30%)	Additional developments for the TAF TAP TSI compliant PCS-link, to allow the national (BE) link to function with the migration from PCS EC (legacy system) to PCS CB (new system).	**72 606,00**
2.7.5	National (BE) Capacity Management Support -TSI Telematics Infrabel (30%)	Studies and national (BE) developments related to TSI Telematics, TSI Telematic asks Infrabel to be able to process the following functions: - Object Identifier, - Common Interface, - Temporary Capacity restriction, - Common Reference Files (RINF) - Train Preparation (Train Ready, TCM TAP TAF) - Train Movement (ETA) - Strategic Capacity Concerning studies and developments are scheduled.	**30 000,00**
2.8	Update of national (CZ) IT systems of SZCZ in the area of Infrastructure data, SZCZ	• "The project aims to update and adjust the national (CZ) IT system of SZCZ in the area of Infrastructure data: • Update of national (CZ) IT tool DYPOD regarding display of infrastructure data transmitted to RINF; • Update of national (CZ) tool ETD in area of primary locations update - Update of national (CZ) IT tool ETD managed by SZCZ in the area of infrastructure data for ETCS timetable construction - Analysis of further development of national (CZ) IT tool ETD regarding SZCZ infrastructure description on meso and micro level;	**285 429,00**
3.1.2	Adjustment of the TCR objects RNE	Adjusting the creation and editing of minimum sector specifications for the TCR objects and ensuring compliance with applicable EU law (SERA Directive, Capacity Regulation, OPE TSI, RINF andTSI Telematics)	**800 000,00**

3.1.3	Implementation of adjustments to the necessary views RNE	List view, Gantt view, Map view	
3.1.4	Adjusting the import function of common European TCR tool RNE	TCR objects (IT developments to optimize/adjust the import function of TCR tool)	
3.1.5	Implementing the workflows RNE	Coordination with IMs and consultation of applicants workflow; TCR publication workflow,	
3.1.6	Establishing the common European interface connection RNE	National systems of IMs are connected to the common European TCR tool to exchange data on TCRs; TCR tool is connected to the ECMT to provide input for Capacity Model and Supply	
3.1.7	Release and change management RNE	Preparing the releases, performing the UATs and managing the change requests during the implementation	
3.2.1	Evolution of the work planning national (FR) applications to the standards of Annex VII SNCF Reseau	External service provider: Evolution of the work planning national (FR) applications to the standards of Annex VII of the EU/2012/34 directive, in particular: classification and traffic impact of work	**1 957 989,00**
3.3.1	Development of a national digitalised tool for TCR RFI	External service provider: Interpretation and evaluation of needed technical requirements and subsequent first draft of IT concept definition. Architecture design of the IT solution, evaluation of needed resources. Step by step deployment as prescheduled through releases, including interfaces with IT architecture. Checking of functionalities, corrections to be applied if needed	**965.920,18**
3.3.2	Implement interfaces between legacy systems and TCR RFI	External service provider: Interpretation and evaluation of needed technical requirements and subsequent first draft of IT concept definition. Architecture design of the IT solution, evaluation of needed resources. Step by step deployment as prescheduled through releases, including interfaces with IT architecture. Checking of functionalities, corrections to be applied if needed	**965.920,18**
3.4.1	First steps of the implementation of TCR in the national (BE) planning tool	Possibility to manage long-term temporary capacity restrictions in the national (BE) planning tools managed by Infrabel. Possibility to elaborate draft and final offer. Publication of the coordinated TCRs for	**165 000,00**

	Infrabel (30%)	consultation of the RU and determining the importance of the TCR in compliance with the RNE guidelines	
3.4.2	National (BE) TCR indicator capacity usage Infrabel (100%)	Development customisation algorithm platform to enable when a TCR is planned in the national (BE) planning tool for works, an online call to the Algorithm platform will be triggered to get an indication how much impact it will have on the capacity.	**26 000,00**
3.4.3	National (BE) TCR calculator capacity usage Infrabel (50%)	This project includes the development of the customization in the national (BE) TCR planning tool to be able to use the algorithm platform. During this development, we will also continuously improve the indicators of the algorithm platform.	**55 500,00**
3.4.4	National (BE) TCR optimisation maintenance windows Infrabel (100%)	Study and development of national (BE) software to enable Infrabel to calculate up front on which places TCRs can be implemented without (or with minimal) impact on the traffic.	**165 000,00**
3.5.1	Update of data structure of IT tool CSV regarding infrastructure restriction because of IT tool TCR RNE SZCZ	- Update of data structure of IT tool CSV according to TCR tool - update of user interface of national (CZ) IT tool CSV with information requested by TCR tool - update of internal data communication from IT tool CSV to IT tool DOMIN with information requested by RNE TCR tool	**30 000,00**
3.5.2	Adaptation of IT tool DOMIN regarding data communication with IT tool TCR RNE via TSI TAF messages SZCZ	- update of data structure of IT tool DOMIN with information used in TCRResponseMessage - analysis of TCR content and internal format of Správa železnic used for transmission of information about infrastructure restrictions - update of data structure of IT tool DOMIN with information used in long term planning of maintenance works for transmission into TCR tool - update of internal data communication from IT tool CSV to IT tool DOMIN with information requested by TCR tool - update of user interface of wwwDOMIN to display additional information used in TCR tool about (planned and unexpected) infrastructure restriction - update of user interface of wwwDOMIN to enter additional information used in TCR tool in case of unexpected infrastructure restriction. - communication between IT tool DOMIN and TCR via Common Interface using TCRMessage, TCRResponseMessage a TCRCanceledMessage	**60 000,00**

3.5.3	Updates of national (CZ) IT tools SZCZ in area of identification of object with infrastructure restriction SZCZ	"The project aim is to update national (CZ) applications managed by SZCZ to enable better identification of object with infrastructure restriction for purpose of TCRs, including impacted infrastructure characteristics. Update of national (CZ) IT tool DOMIN regarding identification of object with infrastructure restriction; Update of national (CZ) IT tool ETD regarding identification of object with infrastructure restriction; Update of module of national (CZ) IT tool KADR for purpose of TCR identification; Update of national (CZ) IT tool CSV regarding identification of object with infrastructure restriction for purpose of TCR"	**274 308,96**
4.1.1	Preparation for the implementation RNE	Preparing the functional requirements for developments	**1 300 000,00**
4.1.2	Adjustment of the capacity supply objects RNE	Adjusting the creation and editing of capacity supply objects (pre-planned paths, paths, capacity bands, TCRs)	
4.1.3	Implementation and adjustment of the necessary views RNE	Network view, new capacity supply chart	
4.1.4	Adjusting the import function of ECMT RNE	Capacity supply objects and TCRs	
4.1.5	Implementing the workflows RNE	Path details update and feasibility study result workflow; TCR impact assessment	
4.1.6	Establishing the common European interface connections RNE	ECMT is connected to the national systems of the IMs to synchronise capacity supply	
4.1.7	Release and change management RNE	Preparing releases, performing the UATs and managing change requests during the implementation	
4.2.1	National (FR) implementation of IT packages ‘Capacity Supply’ B2B SNCF Réseau	External service provider: B2B platform aiming to provide RUs with a clear view of the national (FR) applications submitted	**1 035 000,00**
4.2.2	National (FR) implementation of IT	External service provider: Upgrading of national (FR) existing ordering tools to	**2 250 000,00**

	packages 'Capacity Supply' SNCF Réseau	ensure: synchronisation, homogenisation, merge IS, interoperability	
4.2.3	National (FR) implementation of IT package 'Capacity Request' B2B SNCF Réseau	External service provider: B2B platform aiming to provide RUs with a clear view of the national (FR) applications submitted	**1 035 000,00**
4.2.4	National (FR) implementation of IT package 'Capacity Request' SNCF Réseau	External service provider: Upgrading of national (FR) existing ordering tools to ensure: synchronisation, homogenisation, merge IS, interoperability	**2 250 000,00**
4.2.5	National (FR) Path Workflow implementation for acceptance/refusal SNCF Réseau	External service provider: National (FR) Implementation of the 'path workflow' associated with the acceptance-refusal process and the corresponding TSI messages	**2 430 000,00**
4.3.1	National (IT) implementation of IT packages "Capacity Supply" RFI	Interpretation and evaluation of needed technical requirements and subsequent first draft of national (IT) IT concept definition. Architecture design of the national (IT) IT solution, evaluation of needed resources. Step by step deployment as prescheduled through releases, including interfaces with common European IT architecture. Checking of functionalities, corrections to be applied if needed	**1 572 673,15**
4.3.2	National (IT) implementation of IT package "Capacity Request" RFI	Interpretation and evaluation of needed technical requirements and subsequent first draft of national (IT) IT concept definition. Architecture design of the national (IT) IT solution, evaluation of needed resources. Step by step deployment as prescheduled through releases, including interfaces with common European IT architecture. Checking of functionalities, corrections to be applied if needed	**1 572 673,15**
4.4.1	Upgrading common European Path Coordination System (PCS) RNE	Adjusting existing and creation of new views in PCS, adjusting existing processes and implementing new processes according to TTR process description, extending the PCS schema according to the recent TAF/TAP TSI changes	**1 100 000,00**
4.4.2	Ready for integration of common European Capacity Broker RNE	Feasibility check for the integration, preparation of the integration of the common European Capacity Broker	
4.5.1	Integration of all national (BE) train	First steps of the integration of LT train path creation in the national (BE) planning	**1 759 800,00**

	planning activities in one tool: phase 1 Infrabel (30%)	application: business case, study, market analysis, improvement of traject runtime calculation, use of calendar instead of Infrabel internal concept of train path validity	
4.5.2	National (BE) Proof of concept Click & Ride Infrabel (72%)	Proof of Concept for the national (BE) implementation of a basic Click&Ride solution based on the pre-arranged path definition	**286 427,00**
4.5.3	Linking simulation national (BE) tool for conflict detection Infrabel (100%)	Linking national (BE) simulation tool for conflict detection	**165 000,00**
4.5.4	Simulation as a service core national (BE) development Infrabel (100%)	National (BE) Development of a simulation as a service core development	**141 000,00**
4.5.5	National (BE) Improvements for timetabling Infrabel (20%)	BE-wide Possibility to define timetables at the lowest level (switch level). Generate a report concerning discontinuous timetables. Improve the communication process to the RU in case of trains impacted by work possessions	**199 620,80**
4.5.7	National (BE) Improvements related to conflict and overlap detection Infrabel (16%)	National (BE) Improvement of detection of conflicts and overlapping between train path/work possession and traffic limitation, line not usable for freight, limitation due to PC codification; improvement of Infrabel internal processes to officialise work possession, starting from the work request; publication to the RU's	**499 460,00**
4.5.8	Manage the national (BE) transport plan and annual service within the same application used for rolling planning Infrabel (10%)	Integrating the management of the national (BE) transport plan and annual service into UPM by adding multiple other essential functionalities	**334 450,80**
4.6.1	Implementation of new TSI TAF objects Route and Reference TRID into process model of IT tool KADR SZCZ	- Implementation of new objects ‘Route’ a ‘Reference TRID’ - Update of user interface of IT tool KADR with new objects - Update of IT communication with Railway Undertakings to XSD schema of TAF TSI TAF3.x	**90 000,00**
4.6.2	Communication between RNE IT tool PCS and IT tool KADR via TAF messages 3.x	update of data and process model regarding TAF TSI implementation in IT tool PCS RNE - Implementation of object CaseReference in use cases defined by IT tool PCS RNE - Implementation of paths	**140 000,00**

	SZCZ	PathCoordinationMessage and ObjectInfoMessage in use cases defined by IT tool PCS RNE - update of user interface of IT tool KADR with functions necessary for data communication with PCS - Implementation of updated structure of LocoIdent	
4.6.3	Adaption of IT tool KADR in path alteration process caused by infrastructure works according to TAF TSI process SZCZ	- implementation of process PathAlteration according to TAF TSI for path affected by infrastructure works into IT tool KADR - bulk processing of paths modified from infra works on selected section - bulk processing of paths with substitute transport on selected section - write of paths modified in PathAlteration process into database of IT tool KADR and - fixed lock of construction in IT tool KADR	**140 000,00**
4.6.4	Implementation of company role 'Applicant' into process model of IT tool KADR SZCZ	- implementation of type of company 'Applicant' into process and data model of IT tool KADR - definition of activities that are to be done by Applicant of Railway Undertaking based on process step in path request process. - update of functions for Railway Undertakings because of implementation of functions for Applicant - update of IT tool KADR and data communication because of needs of Applicant and Railway Undertaking	**110 000,00**
~~**4.6.5**~~	~~Implementation of new TAF TSI objects Route and Reference TRID into process model of IT tool KANGO~~	~~- Implementation of new objects 'Route' and 'Reference TRID'~~ ~~- Update of user interface of IT tool KANGO with new objects~~ ~~- Update of IT communication with Railway Undertakings to XSD schema of TAF TSI TAF 3.x~~	~~0,00~~
4.6.6	Update of national (CZ) IT tool KADR regarding functions necessary for communication with Applicant via Common interface, SZCZ	Creation of new user interface to national (CZ) application KADR for configuration of data communication with applicants via TAF TSI messages PathRequestMessage, PathDetailMessage)(by a responsible user of SZCZ. Responsible user of SZCZ will be able to define data communication with applicants	**80 000,00**
5.1.2	Preparation of the backend of the common European Capacity Broker RNE	The Capacity Broker domain is prepared with the TAF/TAP TSI object model, train parameters, network specific parameters	**450 000,00**
5.1.3	Implementation of the necessary views of the UI RNE	The creation of a case reference and further views for: timetable, control and administration	

5.1.4	Implementation of the short-term, ad hoc path request process for individual train runs RNE	Implementing the workflow for this process type, including the acceptance options for the Leading Applicant	
5.1.5	Implementation of the Sequential Negotiation Algorithm RNE	Storing the national path construction time constraints and applying the sequential negotiation algorithm using TAF/TAP TSI messages	
5.1.6	Release and change management RNE	Preparing the releases, performing the UATs and managing the change requests during the implementation	
5.1.7	Common European PCS Capacity Broker upgrades, phase 1 RNE	PCS is a system uses by several hundreds of users for requesting and allocating capacity. A steady upgrade of the system is required to maintain a seamless and efficient user experience from Infrastructure Managers/Allocation Bodies as well as Applicant perspectives and potentially Rail Freight Corridors. For that purpose, several PCS groups provide their input as Change Requests (CRs). Additionally, changes in the TAF and TAP TSI standards require regular updates of the system to ensure its compliance with the standard to fulfill the needs for integrated capacity planning in Europe.	**1 299 280,00**
5.1.8	Integration of MVP Short Term Ad Hoc (STAH) into Common European PCS CB - phase 1, including upscale RNE	The Minimum Viable Product (MVP) Short Term Ad Hoc (STAH) aimed to enable Infrastructure Managers to provide paths created in an automated way, ensure automatic international harmonization, and provide paths to applicants within hours of request. The central component was the stand-alone first instance of Capactiy Broker based on MVP principle, which will be further developed to enable upscale. The coverage of the processes for the entire running timetable will be enabled in PCS Capacity Broker.	**348 597,00**
5.1.9	Integration of MVP Border Harmonization Tool (BHT) into Common European PCS CB - phase 1, including upscale RNE	The Minimum Viable Product (MVP) Border Harmonization Tool (BHT) aimed to digitalize the long manual processes for international harmonization of paths and to enable the use of TAF TAP TSI standard for exchange data regarding the operation times at the borders which further automatizes the process. After a successful test run, the respective functionalities will be integrated into the new PCS Capacity Broker. Additional users will be introduced and have the chance to expand functionalities to cover their need.	**135 608,00**

5.4.1	Supporting short term allocation (simulation, study national (FR) tool) SNCF Réseau	External service provider: POC of a simulation and study national (FR) tool: research and proposal of commercial route in the residual capacity, prospective studies	**3.219.532,00**
5.4.2	Supporting short term allocation (run calculation national (FR) tool) SNCF Réseau	External service provider: POC of a Run calculation national (FR) tool, scenario proposal, and generation of a pre-order	**5.259.532,00**
5.4.3	TAF/TAP TSI for Short Term / Ad hoc Capacity at national (FR) level SNCF Réseau	External service provider: Enhancing the national (FR) Information Systems in the context of TSI Observations and TSI Acceptance/Rejection processes	**763.925,00**
5.4.4	Rolling Stock national (FR) dependencies between trains at Stations and Platforms "Enchainement" SNCF Réseau	External service provider: SNCF Réseau study and POC initiative to make a proposal for improving the TAF/TAP TSI messages and processes in order to manage the dependency between the train path, the positioning of trains in a station and the technical train movements required between two commercial runs (called “Enchainements” in French).	**284.000,00**
5.4.5	Operational TAF/TAP TSI SNCF Réseau	External service provider: This project aims at enhance the real-time performance in operations of the national Common Interface (FR) and creating or upgrading TAF/TAP TSI messages for Train running info and forecast or Service disruption information (enhancement of new use cases). The lessons learned shall be prepared and shared with other IMs via respective RNE channels (WG, …) and ERA.	**272.000,00**
5.5.1	Automatic construction of timetable for one-day requests in IT tool KADR including data communication with PCS SZCZ	- automatised path construction of one day path requests in instant capacity - processing of harmonised international path requests received from IT tool PCS RNE using TAF TSI messages. - transmitting of automatised Path into IT tool PCS RNE using TAF TSI messages	**150 000,00**
5.5.2	Update of national (CZ) IT systems of SZCZ in area of Capacity Allocation (Update of national (CZ) IT tool KADR) SZCZ	"The project is to update and adjust the national (CZ) IT system of SZCZ in the area of Capacity Allocation. IT tool KADR will be updated to enable TT construction and processing of path requests in annual timetable process"	**815 512,26**

5.6.1	Simulation as a service POC click & ride Infrabel (100%)	POC for automated train planning for short-term traffic via digital twin	**101 000,00**
5.6.2	National (BE) Exception Based Flow Management Infrabel (75%)	This project aims to modernise the core of the traffic management system in BE at Infrabel by focusing on automatization in terms of traffic forecasts, incident handling and internal and external information exchange.	**836 841**
5.6.3	National (BE) Green Wave Driver Advisory Infrabel (75%)	This project aims to develop the calculation of the ideal speed profile and forwarding it to the driver's cabin in order to achieve a "green wave" (i.e. energy savings)	**557 894**
5.6.4	National (BE) Digiform Mobile Infrabel (50%)	This project aims to develop a national (BE) tool for the handling of safety procedures between Signal Box & Train Drivers in accordance with OPE TSI	**398 496**
5.7	Development of a national (IT) IT system to manage and send interruptions occurring on RFI network to the TIS Incident Management Tool, RFI	"RFI aims to develop a national (IT) IT tool with an automated and integrated protocol for the exchange of incident events, capable of notifying to TIS IMT (Train Information System – Incident Management Tool) in real time the relevant descriptions/causes associated with impacted international trains consistent with the requirements of TIS IMT. The new national (IT) IT tool managed by RFI will be able to automatically exchange data with TIS using TAF/TAP TSI messages."	**301 204,95**
5.8.1	Common European Train Information System (TIS) Developments - Phase 1 RNE	Allow various railway stakeholders as they are described by TAF TSI to access TIS in order to simplify visibility and data sharing ; Identify Terminals in TIS with Subsidiary Location Codes (SLC) and involve them in the Train Run ; Enable TIS to accept users with valid interest into the transport service operation or into the monitoring of goods and passengers for statistical purposes; Wagon and Container association to existing trains ; Optimized and modernized TIS mobile App ; Further optimize the linking/unlinking of trains through machine learning ; TIS new versions and releases - PHASE 1	**2 257 339,00**
5.8.2	ETMN P2 - European Traffic Management project 2 - RNE TIS adapted to meet the needs of the ETMN concept - phase 1 RNE	Adapt TIS according to the ETMN P2 Technical & Functional specifications: Handover points(stations) between IMs identifiable; Train composition available(based on user); "Train search" adaptation for recognition of words without customary spelling(local and English) both recognizable	

5.8.3	Language Tool Tablet - development and further upgrade - phase 1 RNE	The improvement of variables defined for the Predefined messages and PDMs for traffic managers	
5.8.4	Network ETA - Network train running forecast information implementation to the common European TIS managed by RNE RNE	Develop a forecasting module in the common European TIS managed by RNE by a selected IT company; Adapt TIS to exchange forecast accuracy and disruption information with interested parties.	
5.8.5	Performance Review - phase 1 RNE	New Regulation requires performance review/KPIs on six Performance Areas: 1. Infrastructure and equipment 2. Infrastructure Capacity 3. Traffic Management 4. Disruption management and crisis management 5. Deployment and performance of digital services, tools and interfaces 6. Compliance with regulation / regulatory oversight	
5.8.6	TIS Performance Monitoring RNE	One of the main goals of the railway sector is the monitoring function. To reflect the outputs of various studies and projects, the RNE TIS is required to support the sector in performance measurement and provide them with relevant performance outputs. Adaptations in TIS will be needed to align the performance monitoring concepts used in reports with the figures presented in TIS. Adaptation of TIS Performance Monitoring Concepts	
6.2.1	National (DE) Virtual layer for infrastructure data DB InfraGO	While trying to establish the connection to the national (DE) systems it has become obvious, that the data points, which have to be integrated into the digital twin of the infrastructure because of being essential for the calculation of the time of travel with ETCS, may be used for the annual planning horizon but for a projection into the future – and thus for the capacity supply – the possible data quality and consistency of the data may not be guaranteed by the actual national (DE) system. In order to work around this problem, the definition of a new infrastructure model especially being able to guarantee for consistency of data over time has been started. Therefore, the DB InfraGO has engaged external expertise by BCG Platini on to get a better view on the problem. Particular attention should be given to ensure data quality in RINF as European source of infrastructure data to be reused by common European tools.	**5 095 550,00**

6.2.2	National (DE) IT supported detection of narrow points within the infrastructure DB InfraGO	External supplier: The detection of narrow points within the infrastructure is crucial to ensure a safe railway system. Therefore European Standards (EN 15273) as well as DB InfraGO directives (Ril 458.0102) have been implemented to standardize the calculation. Within the task the experts of DB InfraGO shall be enabled to use IT support for the calculation and thus gain productivity while ensuring the compliance with aforementioned standards and directives. The IT support shall include a graphical user interface for the choice of data sets (infrastructure and structure clearance), the definition and display of different type gauges (e.g. conductor rail gauge, electrification clearance gauge), the calculation algorithm for narrow points, a display of narrow points as well as reporting functions for narrow points in different formats.	**1 200 000,00**
6.3.1	National (FR) Digital twin SNCF Réseau	External service provider: Implementation and use of a reference data repository: infrastructure editor, locations, routes, rolling stock, to create consistent traffic simulations as expected in capacity allocation processes (TTR & TAF-TAP TSI).	**3.384.179,00**
6.3.2	National (FR) connection of PLC (TAF/TAP) and Operational Points (RINF), PLC SNCF Réseau	External service provider: Ensure the alignment and consistency of French location points with European standards	**534 600,00**
6.3.3	National (FR) Location (PLC/SLC) SNCF Réseau	External service provider: Deployment of TAF/ TAP reference file (location) in national (FR) applications	**858 276,00**
6.3.4	Quality improvement of the national (FR) infrastructure description repositories SNCF Réseau	External service provider: Quality improvement of the national (FR) infrastructure description repositories on the freight network (priority given to freight corridors and freight service railroad tracks)	**2 835 000,00**
6.4.2	CI common European development RNE	Common European Design, implementation and testing and improvements of the CI	**800 000,00**
6.4.3	RNE Infrastructure for common European IT Systems (RIS, CIS, NCI, New Common Interface)	The aim of the task is: upgrade, implementation, and operation of RNE Railway Information System (RIS); Operation, and Promotion of RNE Charging Information system (CIS); Operation, and Promotion of Digitalisation of Network	**312 000,00**

	RNE	Statements and Corridors Information Documents (NCI); New Common Interface implementation, and operation	
6.6.1	TAF/TAP-compliant interface - Path Details, Path Request SNCF Réseau	External service provider: Implementation of Path Details, Path Request	**1.372.639,00**
6.6.2	TAF/TAP-compliant interface - rolling stock reference system SNCF Réseau	External service provider: Enhancement of rolling stock reference system into line with the European reference systems	**631 800,00**
6.7.1	[National (FR) Common Interface Operation] TAF-TAP TSI flows SNCF Réseau	External service provider: National (FR) Development and production of new TAF-TAP TSI flows, including pilots (Train Running Status Report, Change of Track...)	**1 295 600,00**
6.7.2	[National (FR) Common Interface Operation] Enhancement of existing operational flows SNCF Réseau	External service provider: Integration of TOM and SLC identifiers, enhancement of the TRI flow with non-PR/PLC locations, feedback on flows implemented in CEF 1, etc.)	**1 754 800,00**
6.7.3	[National (FR) Common Interface Operation] Train Delay Cause SNCF Réseau	External service provider: Accelerate the national (FR) publication of Train Delay Cause by exploiting the causes of delay from Train Ready and Train Running Interruption messages	**557 600,00**
6.7.4	[National (FR)Common Interface Operation] International reference data SNCF Réseau	External service provider: national (FR) Industrialisation of international reference data	**483 800,00**
6.7.5	[National (FR) Common Interface Operation] TAF-TAP TSI architecture SNCF Réseau	External service provider: Optimisation of national (FR) TAF-TAP components architecture: SSI, monitoring...	**762 600,00**
6.8.1	Providing of description of infrastructure from IT tool DYPOD via railML format using Common Interface SZCZ	- providing of information from IT tool DYPOD into IT tool of RNE in format railML 3.2 via Common Interface - proactive transmission of data from IT tool DYPOD in case of change of information stored in IT tool DYPOD	**20 000,00**

6.9.1	Versioning national (BE) infrastructure base component Infrabel (10%)	Possibility to define a period of validity on the level of each national (BE) infrastructure component. Possibility to create an infrastructure version for each important infrastructure modification.	**302 769,40**
6.9.2	Link national (BE) infra database to the simulation tool Infrabel (50%)	Ensure the alignment and consistency of national (BE) location points managed by Infrabel with digital twin	**120 500,00**
6.12.1	Implementation of a national (IT) system (MRC-CIP) to store, manage, and send RFI data to RINF RFI	A national (IT) system to store, manage, and send RFI data to CIP will be developed by following the steps below: - Drafting the IT concept for the national (IT) system; - Transforming the draft paper into a final concept; - Implementing the national (IT) IT solution to manage and send RFI data to CIP (including the related deployment). This national system will be used primarily to update the RINF. Data in RINF would be intended to be reused by common European tools managed by RNE	**581.243,00**
6.12.2	Development of a national (IT) tool (MRC-CRD/RFP) to manage and send infrastructure data to RINF RFI	A national (IT) tool to manage and send RFI infrastructure data to RINF will be implemented by following the steps below: - Drafting the IT concept for the national (IT) tool; - Transforming the draft paper into a final concept; - Implementing the national (IT) infrastructure management tool to send RFI data to RINF); - Developing an extension of the national (IT) tool to manage and send RFI rail facilities data to RINF.	**2.032.354,00**
6.12.3	Extension of a national (IT) system (MRC-GeoEditor) to acquire, update, manage, and send RFI network topology data to the RINF RFI	A national (IT) system to acquire, update, manage, and send RFI network topology data to RINF will be implemented by following the steps below: - Drafting the national (IT) IT concept for the digitalized system; - Transforming the draft paper into a final concept; - Implementing the national (IT) system to manage and send RFI data to RINF.	**1.363.870,00**
Total			79.353.733,14

HISTORY OF CHANGES		
VERSION	PUBLICATION DATE	CHANGE
1.0	01.09.2021	Initial version (new MFF).
2.0	27.07.2022	Updates based on GAP assessment, Adjustment project description (2 page)
3.0	15.09.2022	Finalisation adjustment of GANTT chart, shortening,
4.0	19.10.2022	Updating Infrabel figures for subcontracting
5.0	02.12.2024	Prolongation

ANNEX 1

DETAILED BUDGET BREAKDOWN PER REPORTING PERIOD

	Estimated eligible costs (per budget category)												Estimated EU contribution			
	Direct costs										Indirect costs	Total costs	EU contribution to eligible costs			Total requested EU contribution
	A. Personnel costs			B. Subcontracting costs	C. Purchase costs					D. Other cost categories	E. Indirect costs		Funding rate %	Maximum EU contribution	Requested EU contribution	
	A.1 Employees (or equivalent) A.2 Natural persons under direct contract A.3 Seconded persons		A.4 SME owners and natural person beneficiaries		C.1 Travel and subsistence			C.2 Equipment	C.3 Other goods, works and services	D.1 Financial support to third parties						
					Travel	Accommodation	Subsistence									
Forms of funding	Actual costs	Unit costs (usual accounting practices)	Unit costs	Actual costs	Actual costs	Actual costs	Actual costs	Actual costs	Actual costs	Actual costs	Flat-rate costs					
	a1	a2	a3	b	c1a	c1b	c1c	c2	c3	d1a	e = flat-rate * (a1 + a2 + a3 + b + c1a + c1b + c1c + c2 + c3 + d1a)	f = a+b+c+d+e	U	g = f * U%	h	m
Reporting period 1																
1 - RNE	3 909 022.00	0.00	0.00	9 924 843.00	0.00	0.00	0.00	0.00	25 000.00	0.00	0.00	13 858 865.00	50	6 929 432.50	6 929 432.50	6 929 432.50
2 - DB InfraGO	34 408 715.00	0.00	0.00	9 500 331.00	0.00	0.00	0.00	0.00	653 500.00	0.00	0.00	44 562 546.00	50	22 281 273.00	22 281 273.00	22 281 273.00
3 - RFI	425 000.00	0.00	0.00	12 501 204.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12 926 204.90	50	6 463 102.45	6 463 102.45	6 463 102.45
4 - SNCF RÉSEAU	6 819 514.85	0.00	0.00	38 463 916.00	180 000.00	0.00	0.00	0.00	0.00	0.00	0.00	45 463 430.85	50	22 731 715.43	22 731 715.43	22 731 715.43
5 - INFRABEL	21 738 315.00	0.00	0.00	6 448 188.00	109 500.00	0.00	0.00	10 000.00	0.00	0.00	0.00	28 306 003.00	50	14 153 001.50	14 153 001.50	14 153 001.50
6 - SZCZ	0.00	0.00	0.00	2 195 250.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2 195 250.25	50	1 097 625.13	1 097 625.12	1 097 625.12
7 - RFC NS-M	180 000.00	0.00	0.00	320 000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	500 000.00	50	250 000.00	250 000.00	250 000.00
8 - SBB																
Total	67 480 566.85	0.00	0.00	79 353 733.15	289 500.00	0.00	0.00	10 000.00	678 500.00	0.00	0.00	147 812 300.00		73 906 150.01	73 906 150.00	73 906 150.00

START (DETAILED BUDGET TABLE PER WP)

PROJECT DATA	
Project number:	**SEP-210804882**
Project acronym:	**DCM IMP 22_24**

Work package name	Funding Rate
WP1-Project Management	50%
WP2-TTR Capacity Strategy/Model	50%
WP3-Temporary Capacity restriction t	50%
WP4-TTR Capacity Supply/allocation	50%
WP5-TTR Capacity Broker (Short Term	50%
WP6-Digital Infrastructure data/Interf	50%

Participant name
RNE
Infrabel
SNCF Réseau
DB InfraGO
RFI
SZCZ
RFC NSM
SBB CFF FFS [associated partner - 3rd co

DETAILED BUDGET TABLE PER WP

PROJECT DATA	
Project number:	SEP-210804882
Project acronym:	DCM IMP 22_24

BUDGET BREAKDOWN PER WORK PACKAGE AND PARTICIPANT

Reporting period can be added/deleted as needed

2022 2023 2024

Work Package	Participant	Reporting period 1	Reporting period 2	Reporting period 3	Reporting period 4	Reporting period 5	Total costs	Funding rate (for work package)	EU contribution
WP1-Project Management	RNE	900 000,00					**900 000,00**	50%	**450 000,00**
WP2-TTR Capacity Strategy/Model	RNE	1 301 656,00					**1 301 656,00**	50%	**650 828,00**
WP3-Temporary Capacity restriction	RNE	1 050 000,00					**1 050 000,00**	50%	**525 000,00**
WP4-TTR Capacity Supply/allocation	RNE	3 095 000,00					**3 095 000,00**	50%	**1 547 500,00**
WP5-TTR Capacity Broker (Short Term/Ad hoc)	RNE	5 812 209					**5 812 209,00**	50%	**2 906 104,50**
WP6-Digital Infrastructure data/Interfaces	RNE	1 700 000					**1 700 000,00**	50%	**850 000,00**
WP2-TTR Capacity Strategy/Model	Infrabel	2 820 386					**2 820 386,40**	50%	**1 410 193,20**
WP3-Temporary Capacity restriction	Infrabel	1 022 338					**1 022 337,74**	50%	**511 168,87**
WP4-TTR Capacity Supply/allocation	Infrabel	16 102 734					**16 102 733,74**	50%	**8 051 366,87**
WP5-TTR Capacity Broker (Short Term/Ad hoc)	Infrabel	2 757 639					**2 757 638,71**	50%	**1 378 819,36**
WP6-Digital Infrastructure data/Interfaces	Infrabel	5 602 906					**5 602 906,41**	50%	**2 801 453,21**
WP2-TTR Capacity Strategy/Model	SNCF Réseau	4 045 056					**4 045 056,00**	50%	**2 022 528,00**
WP3-Temporary Capacity restriction	SNCF Réseau	2 000 000					**2 000 000,00**	50%	**1 000 000,00**
WP4-TTR Capacity Supply/allocation	SNCF Réseau	10 000 000					**10 000 000,00**	50%	**5 000 000,00**
WP5-TTR Capacity Broker (Short Term/Ad hoc)	SNCF Réseau	11 698 775					**11 698 775,00**	50%	**5 849 387,50**
WP6-Digital Infrastructure data/Interfaces	SNCF Réseau	17 719 600					**17 719 600,00**	50%	**8 859 800,00**
WP2-TTR Capacity Strategy/Model	DB InfraGO	29 616 042					**29 616 042,00**	50%	**14 808 021,00**
WP4-TTR Capacity Supply/allocation	DB InfraGO	100 000					**100 000,00**	50%	**50 000,00**
WP5-TTR Capacity Broker (Short Term/Ad hoc)	DB InfraGO	3 900 000					**3 900 000,00**	50%	**1 950 000,00**
WP6-Digital Infrastructure data/Interfaces	DB InfraGO	10 946 504					**10 946 504,00**	50%	**5 473 252,00**
WP2-TTR Capacity Strategy/Model	RFI	3 263 939					**3 263 939,00**	50%	**1 631 969,50**
WP3-Temporary Capacity restriction	RFI	2 029 502					**2 029 502,00**	50%	**1 014 751,00**
WP4-TTR Capacity Supply/allocation	RFI	3 263 939					**3 263 939,00**	50%	**1 631 969,50**
WP5-TTR Capacity Broker (Short Term/Ad hoc)	RFI	326 205					**326 205,00**	50%	**163 102,50**
WP6-Digital Infrastructure data/Interfaces	RFI	4 042 620					**4 042 620,00**	50%	**2 021 310,00**
WP2-TTR Capacity Strategy/Model	SZCZ	285 429					**285 429,00**	50%	**142 714,50**
WP3-Temporary Capacity restriction	SZCZ	364 309					**364 309,00**	50%	**182 154,50**
WP4-TTR Capacity Supply/allocation	SZCZ	560 000					**560 000,00**	50%	**280 000,00**
WP5-TTR Capacity Broker (Short Term/Ad hoc)	SZCZ	965 512					**965 512,00**	50%	**482 756,00**
WP6-Digital Infrastructure data/Interfaces	SZCZ	20 000					**20 000,00**	50%	**10 000,00**
WP2-TTR Capacity Strategy/Model	RFC NSM	500 000					**500 000,00**	50%	**250 000,00**
WP5-TTR Capacity Broker (Short Term/Ad hoc)	SBB CFF FFS [affiliated member - 3rd country]	0					**0,00**	0%	**0,00**
Total		**147 812 300,00**	**0,00**	**0,00**	**0,00**	**0,00**	**147 812 300,00**		**73 906 150,00**

Summary per work package

Row Labels	Reporting period_1	FP RP_1	Reporting	FP RP_2	Reporting	FP RP_3	Reporting	FP RP_4	Reporting	FP RP_5	Sum of Total costs	Sum of EU contribution
WP1-Project Management	900 000	100%		0%		0%		0%		0%	900 000	450 000
WP2-TTR Capacity Strategy/Model	41 832 508	100%		0%		0%		0%		0%	41 832 508	20 916 254
WP3-Temporary Capacity restriction	6 466 149	100%		0%		0%		0%		0%	6 466 149	3 233 074
WP4-TTR Capacity Supply/allocation	33 121 673	100%		0%		0%		0%		0%	33 121 673	16 560 836
WP5-TTR Capacity Broker (Short Term/Ad hoc)	25 460 340	100%		0%		0%		0%		0%	25 460 340	12 730 170
WP6-Digital Infrastructure data/Interfaces	40 031 630	100%		0%		0%		0%		0%	40 031 630	20 015 815
Grand Total	**147 812 300**	**100%**		**0%**		**0%**		**0%**		**0%**	**147 812 300**	**73 906 150**

Summary per Participant

Row Labels	Reporting period_1	Sum of Total costs	Sum of EU contribution
RNE	13 858 865	13 858 865	6 929 433
Infrabel	28 306 003	28 306 003	14 153 002
SNCF Réseau	45 463 431	45 463 431	22 731 716
RFI	12 926 205	12 926 205	6 463 103
SZCZ	2 195 250	2 195 250	1 097 625
RFC NSM	500 000	500 000	250 000
SBB CFF FFS [affiliated member - 3rd country]	-	-	-
DB InfraGO	44 562 546	44 562 546	22 281 273
Grand Total	**147 812 300**	**147 812 300**	**73 906 150**

#	EU CONTRIBUTION	TOTAL COSTS
ENCODE VALUE FROM EGRANTS	73906150	147812300
DIFFERENCE	0	**147812300**

ANNEX 2

ESTIMATED BUDGET FOR THE ACTION

	Estimated eligible[1] costs (per budget category)											Estimated EU contribution[2]			
	Direct costs										Indirect costs	Total costs	EU contribution to eligible costs			Maximum grant amount[6]
	A. Personnel costs			B. Subcontracting costs	C. Purchase costs					D. Other cost categories	E. Indirect costs[3]		Funding rate %[4]	Maximum EU contribution[5]	Requested EU contribution	
	A.1 Employees (or equivalent) A.2 Natural persons under direct contract A.3 Seconded persons		A.4 SME owners and natural person beneficiaries	B. Subcontracting	C.1 Travel and subsistence			C.2 Equipment	C.3 Other goods, works and services	D.1 Financial support to third parties	E. Indirect costs					
Forms of funding	Actual costs	Unit costs (usual accounting practices)	Unit costs[7]	Actual costs	Travel: Actual costs	Accommodation: Actual costs	Subsistence: Actual costs	Actual costs	Actual costs	Actual costs	Flat-rate costs[8]					
	a1	a2	a3	b	c1a	c1b	c1c	c2	c3	d1a	e = flat-rate * (a1 + a2 + a3 + b + c1a + c1b + c1c + c2 + c3 + d1a)	f = a+b+c+d+e	U	g = f * U%	h	m
1 - RNE	3 909 022.00	0.00	0.00	9 924 843.00	0.00	0.00	0.00	0.00	25 000.00	0.00	0.00	13 858 865.00	50	6 929 432.50	6 929 432.50	6 929 432.50
2 - DB InfraGO	34 408 715.00	0.00	0.00	9 500 331.00	0.00	0.00	0.00	0.00	653 500.00	0.00	0.00	44 562 546.00	50	22 281 273.00	22 281 273.00	22 281 273.00
3 - RFI	425 000.00	0.00	0.00	12 501 204.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12 926 204.90	50	6 463 102.45	6 463 102.45	6 463 102.45
4 - SNCF RÉSEAU	6 819 514.85	0.00	0.00	38 463 916.00	180 000.00	0.00	0.00	0.00	0.00	0.00	0.00	45 463 430.85	50	22 731 715.43	22 731 715.43	22 731 715.43
5 - INFRABEL	21 738 315.00	0.00	0.00	6 448 188.00	109 500.00	0.00	0.00	10 000.00	0.00	0.00	0.00	28 306 003.00	50	14 153 001.50	14 153 001.50	14 153 001.50
6 - SZCZ	0.00	0.00	0.00	2 195 250.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2 195 250.25	50	1 097 625.13	1 097 625.12	1 097 625.12
7 - RFC NS-M	180 000.00	0.00	0.00	320 000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	500 000.00	50	250 000.00	250 000.00	250 000.00
8 - SBB																
Σ consortium	67 480 566.85	0.00	0.00	79 353 733.15	289 500.00	0.00	0.00	10 000.00	678 500.00	0.00	0.00	147 812 300.00		73 906 150.01	73 906 150.00	73 906 150.00

[1] See Article 6 for the eligibility conditions. All amounts must be expressed in EUR (see Article 21 for the conversion rules).
[2] The consortium remains free to decide on a different internal distribution of the EU funding (via the consortium agreement; see Article 7).
[3] Indirect costs already covered by an operating grant (received under any EU funding programme) are ineligible (see Article 6.3). Therefore, a beneficiary/affiliated entity that receives an operating grant during the action duration cannot declare indirect costs for the year(s)/reporting period(s) covered by the operating grant, unless they can demonstrate that the operating grant does not cover any costs of the action. This requires specific accounting tools. Please immediately contact us via the EU Funding & Tenders Portal for details.
[4] See Data Sheet for the funding rate(s).
[5] This is the theoretical amount of the EU contribution to costs, if the reimbursement rate is applied to all the budgeted costs. This theoretical amount is then capped by the 'maximum grant amount'.
[6] The 'maximum grant amount' is the maximum grant amount decided by the EU. It normally corresponds to the requested grant, but may be lower.
[7] See Annex 2a 'Additional information on the estimated budget' for the details (units, cost per unit).
[8] See Data Sheet for the flat-rate.

DATA SHEET

1. General data

Project summary:

Project summary
The overall objective of this project 'Digital Capacity Management – Implementation 22-24 [DCM IMP 22_24]' (a study without physical interventions) is to continue the Europe-wide implementation of the programme 'TTR for a Smart Capacity Management' which was launched as a project in 2014 with the overall aim to increase international rail attractiveness and efficiency, so that rail can increase its competitiveness and market share on the European transport market. This project intends to continue the valuable work started by previous EU-funded actions. It will do so by: » Supporting rail stakeholders in implementing the agreed and committed activities in the frame of the programme 'TTR for a Smart Capacity Management' » Implementing an additional market-oriented application for Short Term Path requests – the so-called 'Automated Short Term Path Request' at international level (reduction of lead time from 2-3 weeks to 1-2 days) » Adjusting IM legacy systems to allow cross-border data exchange, to facilitate integrated infrastructure capacity and traffic management » Supporting rail stakeholders in developing common Telematics Reference Files, merging the existing TAF and TAP Reference File sets to be used in the telematics framework and by other registers managed by the ERA or the rail sector. » Supporting Infrastructure Managers and Railway Undertakings in implementing and ensuring the compliance of the rail system and its sub-systems with the TAP and TAF TSI.

Keywords:

- Digital Capacity Management, TTR, TAF/TAP TSI, Timetable, PCS, Capacity Broker

Project number: 101079600

Project name: Digital Capacity Management Implementation 2022-2024

Project acronym: 21-EU-TG-DCM IMP 22_24

Call: CEF-T-2021-SIMOBGEN

Topic: CEF-T-2021-SIMOBGEN-NEWTECH-STUDIES

Type of action: CEF Project Grants

Granting authority: European Climate, Infrastructure and Environment Executive Agency

Grant managed through EU Funding & Tenders Portal: Yes (eGrants)

Project starting date: fixed date: 1 January 2022

Project end date: 31 December 2025

Project duration: 48 months

Consortium agreement: Yes

2. Participants

List of participants:

N°	Role	Short name	Legal name	Ctry	PIC	Total eligible costs (BEN and AE)	Max grant amount	Entry date	Exit date
1	COO	RNE	RAILNETEUROPE-VEREINIGUNG ZUR FORDERUNG DES INTERNATIONALEN VERKEHRS AUF DER EISENBAHNINFRASTRUKTUR	AT	899409512	13 858 865.00	6 929 432.50		
2	BEN	DB InfraGO	DB INFRAGO AG	DE	999426794	44 562 546.00	22 281 273.00		
3	BEN	RFI	RETE FERROVIARIA ITALIANA	IT	999434360	12 926 204.90	6 463 102.45		

N°	Role	Short name	Legal name	Ctry	PIC	Total eligible costs (BEN and AE)	Max grant amount	Entry date	Exit date
4	BEN	SNCF RÉSEAU	SNCF RESEAU	FR	996525621	45 463 430.85	22 731 715.43		
5	BEN	INFRABEL	INFRABEL SA	BE	983319847	28 306 003.00	14 153 001.50		
6	BEN	SZCZ	SPRAVA ZELEZNIC STATNI ORGANIZACE	CZ	996456460	2 195 250.25	1 097 625.12		
7	BEN	RFC NS-M	RAIL FREIGHT CORRIDOR NORTH SEA-MEDITERRANEAN	LU	888405444	500 000.00	250 000.00		
8	AP	SBB	SCHWEIZERISCHE BUNDESBAHNEN SBB	CH	996523875	0.00	0.00		
Total						147 812 300.00	73 906 150.00		

Coordinator:

– RAILNETEUROPE-VEREINIGUNG ZUR FORDERUNG DES INTERNATIONALEN VERKEHRS AUF DER EISENBAHNINFRASTRUKTUR (RNE): from 1 January 2022 to present

3. Grant

Maximum grant amount, total estimated eligible costs and contributions and funding rate:

Total eligible costs (BEN and AE)	Funding rate (%)	Maximum grant amount (Annex 2)	Maximum grant amount (award decision)
147 812 300.00	50	73 906 150.00	73 906 150.00

Grant form: Budget-based

Grant mode: Action grant

Budget categories/activity types:

- A. Personnel costs
  - A.1 Employees, A.2 Natural persons under direct contract, A.3 Seconded persons
  - A.4 SME owners and natural person beneficiaries
- B. Subcontracting costs
- C. Purchase costs
  - C.1 Travel and subsistence
  - C.2 Equipment
  - C.3 Other goods, works and services
- D. Other cost categories
  - D.1 Financial support to third parties
- E. Indirect costs

Cost eligibility options:

- Standard supplementary payments
- Average personnel costs (unit cost according to usual cost accounting practices)
- Country restrictions for subcontracting costs
- Travel and subsistence:
  - Travel: Actual costs

- Accommodation: Actual costs
- Subsistence: Actual costs

- Equipment: full costs only

- Costs for providing financial support to third parties (actual cost; max amount for each recipient: EUR 60 000.00)

- Indirect cost flat-rate: 0% of the eligible direct costs (categories A-D, except volunteers costs and exempted specific cost categories, if any)

- VAT: No

- Country restrictions for eligible costs

- Other ineligible costs

Budget flexibility: Yes (no flexibility cap)

4. Reporting, payments and recoveries

4.1 Continuous reporting (art 21)

Deliverables: see Funding & Tenders Portal Continuous Reporting tool

4.2 Periodic reporting and payments

Reporting and payment schedule (art 21, 22):

Reporting					Payments	
Reporting periods			Type	Deadline	Type	Deadline (time to pay)
RP No	Month from	Month to				
					Initial prefinancing	30 days from entry into force/ financial guarantee (if required) – whichever is the latest
1	1	48	Periodic report	60 days after end of reporting period	Final payment	90 days from receiving periodic report

Prefinancing payments and guarantees:

Prefinancing payment		Prefinancing guarantee		
Type	Amount	Guarantee amount	Division per participant	
Prefinancing 1 (initial)	36 953 075.00	n/a	1 - RNE	n/a
			2 - DB InfraGO	n/a
			3 - RFI	n/a
			4 - SNCF RÉSEAU	n/a
			5 - INFRABEL	n/a
			6 - SZCZ	n/a
			7 - RFC NS-M	n/a

Reporting and payment modalities (art 21, 22):

Mutual Insurance Mechanism (MIM): No

Restrictions on distribution of initial prefinancing: The prefinancing may be distributed only if the minimum number of beneficiaries set out in the call condititions (if any) have acceded to the Agreement and only to beneficiaries that have acceded.

Interim payment ceiling (if any): 90% of the maximum grant amount

No-profit rule: Yes

Late payment interest: ECB + 3.5%

Bank account for payments:

AT142011128235216200

Conversion into euros: Double conversion

Reporting language: Language of the Agreement

4.3 Certificates (art 24):

Certificates on the financial statements (CFS):

Conditions:

Schedule: interim/final payment, if threshold is reached

Standard threshold (beneficiary-level):

- financial statement: requested EU contribution to costs ≥ EUR 325 000.00

4.4 Recoveries (art 22)

First-line liability for recoveries:

Beneficiary termination: Beneficiary concerned

Final payment: Coordinator

After final payment: Beneficiary concerned

Joint and several liability for enforced recoveries (in case of non-payment):

Limited joint and several liability of other beneficiaries — up to the maximum grant amount of the beneficiary

Joint and several liability of affiliated entities — n/a

5. Consequences of non-compliance, applicable law & dispute settlement forum

Suspension and termination:

Additional suspension grounds (art 31)

Additional termination grounds (art 32)

Applicable law (art 43):

Standard applicable law regime: EU law + law of Belgium

Dispute settlement forum (art 43):

Standard dispute settlement forum:

EU beneficiaries: EU General Court + EU Court of Justice (on appeal)

Non-EU beneficiaries: Courts of Brussels, Belgium (unless an international agreement provides for the enforceability of EU court judgements)

6. Other

Specific rules (Annex 5): Yes

Standard time-limits after project end:

Confidentiality (for X years after final payment): 5

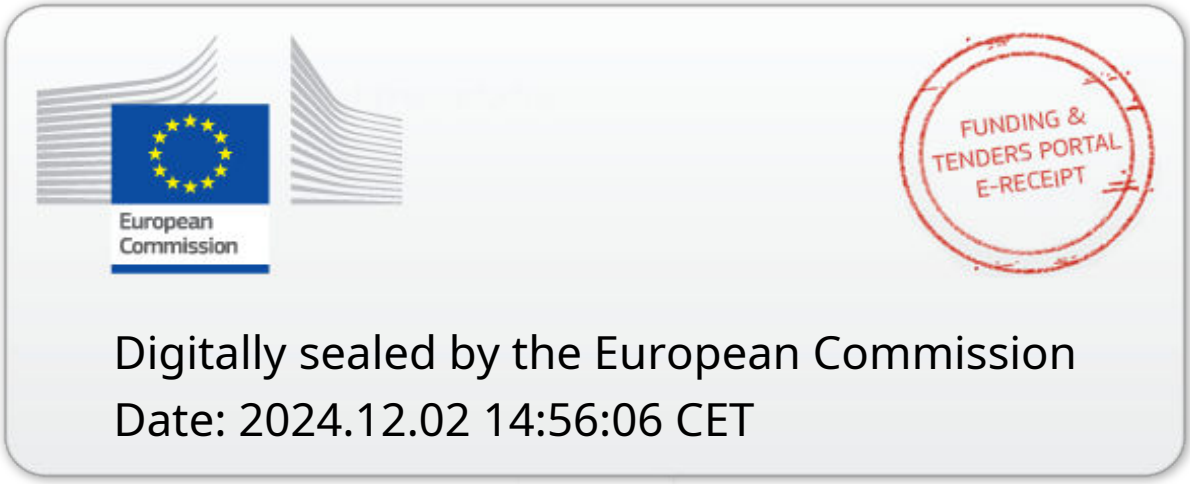
Record-keeping (for X years after final payment): 5 (or 3 for grants of not more than EUR 60 000)

Reviews (up to X years after final payment): 5 (or 3 for grants of not more than EUR 60 000)

Audits (up to X years after final payment): 5 (or 3 for grants of not more than EUR 60 000)

Extension of findings from other grants to this grant (no later than X years after final payment): 5 (or 3 for grants of not more than EUR 60 000)

Impact evaluation (up to X years after final payment): 5 (or 3 for grants of not more than EUR 60 000)



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Nejméně jeden z podpisů nelze ověřit.

Ověření platnosti zajišťovacích prvků provedeno k 20.12.2024 09:33:03.757

Podepsal(a): EUROPEAN COMMISSION

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Podrobnosti o certifikátu

SN: 660862747298009142807362633871991440505734410485

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Ověřovací doložka změny datového formátu dokumentu podle § 69a zákona č. 499/2004 Sb.

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UUID původní komponenty: 81158a2b-b2e0-462e-af48-4d78a90e60e6

Jméno a příjmení osoby, která změnu formátu dokumentu provedla:

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Subjekt, který změnu formátu provedl: Správa železnic, státní organizace

Datum vyhotovení ověřovací doložky: 20.12.2024 09:33:11

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