

Call for Tender proposals - Terms of Reference

Capacity issue visualisation



Call for tenders to develop indicators and visuals to understand and share international capacity issues on corridor's routes and examine how they can help decision-making

Publication: 24.10.2022



Co-funded by
the European Union

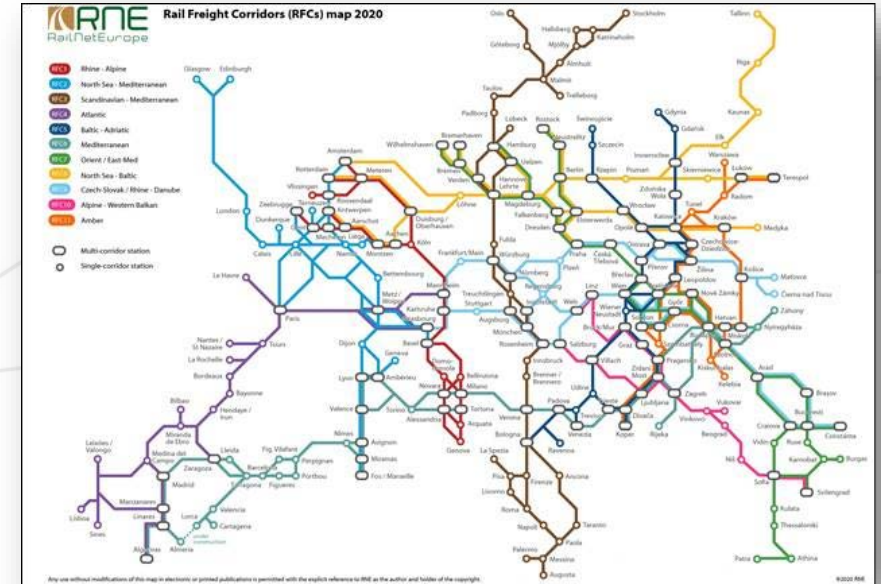
easier, faster, safer

Background information 1/2

THE RFC NORTH SEA-MED

Presentation of RFCs

- The Rail Freight Corridors (RFCs) were created by the 913/2010 EU regulation. Currently there are 11 corridors.
- ❖ Primary function of RFCs :
 - ❖ to coordinate infrastructure managers in order to elaborate **P**re-**a**rranged international **P**aths (PaPs) for freight trains and to administrate the railway undertakings requests for those PaPs,
 - ❖ to facilitate the international coordination process on TCRs (Temporary capacity restrictions [works]).
- ❖ Additional function (production) : to monitor train performance and to launch problem-solving processes where the RFC identify low quality in terms of performance.
- ❖ Additional function (support) : to manage legal, financial and communication matters related with the administration of the RFC.



913/2010 regulation :

<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32010R0913>

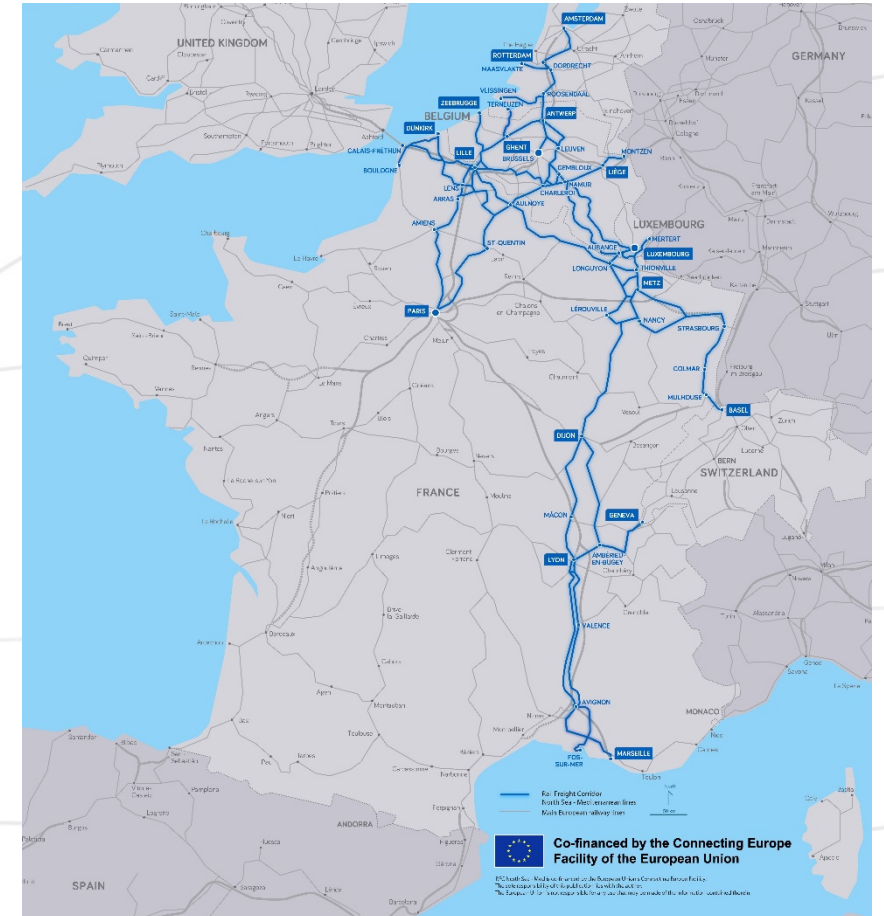
RNE presentation of RFCs

<http://rne.eu/rail-freight-corridors/rail-freight-corridors-general-information/>

The corridor North Sea - Med

- The RFC North Sea Med coordinates capacity issues mainly on :
 - ❖ the Benelux <> Switzerland/Italy routes & South of France routes (more than 90% of the Benelux traffic continues to Italy)
 - ❖ the Germany <> Spain routes,
 - ❖ the UK <> Benelux routes & South of Europe routes,
 - ❖ The Belgium <> North & Eastern Europe routes.
- Cooperation takes place with other corridors in order to coordinate appropriately the capacity on multi-corridor routes (RFC Atlantic, RFC Mediterranean, RFC Rhine-Alpine, RFC North Sea Baltic).

<https://www.rfc-northsea-med.eu/>



The corridor involved in various capacity issues

- ❖ A **catalogue of international paths** to be coordinated,
- ❖ The Railway Undertakings **real Origin – Destination routes**,
- ❖ **Capacity restrictions** due to works to be coordinated to keep a route open,
- ❖ The **remaining capacity** on alternative routes when rerouting is necessary especially on for international contingency management,
- ❖ The **deep structure of the capacity organization** i.e. the distribution of capacity between works, passenger trains and freight trains,
- ❖ A **multi-IM approach** with for instance different level of regular, cadenced timetable.
- ❖ ...

The corridor NSM governance

- The RFC North Sea Med is an EEIG (European Economic Interest Grouping)
- The Management Board is composed of the following entities :
 - INFRABEL (Belgium)
 - PRORAIL (Netherland)
 - SNCF Réseau (France)
 - CFL (Luxembourg)
 - ACF (Luxembourg)
 - SBB (Switzerland)
 - TVS (Switzerland)

More info :

https://www.rfc-northsea-med.eu/sites/rfc2.eu/files/telechargements/Annual_Report RFC NSM 2020 Web.pdf



Co-financed by the Connecting Europe Facility of the European Union



Background information 2/2

A PROOF OF CONCEPT (POC) IN 2020-21

The origin of project

On RFC routes, capacity issues are crucial. Capacity is necessary for the everyday rail freight business and will be necessary for organizing the modal shift and achieving the European Green Deal objectives.

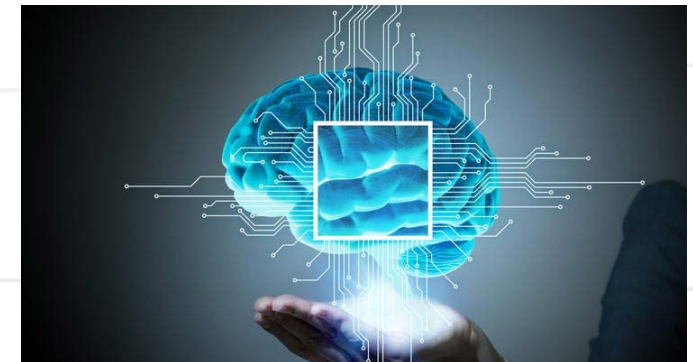
However, RFC North Sea Med (NSM) team found that it is very difficult to have an clear and trans-national view of this issue. It is very difficult to have full understanding of the remaining capacity which will allow the increase of the traffic in the upcoming years.

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 ?

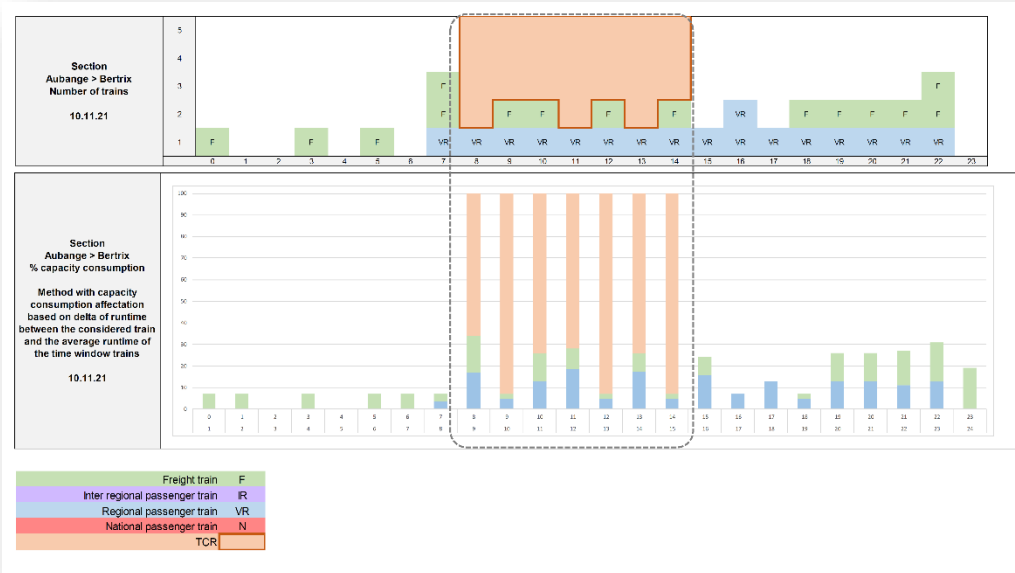
This POC has been held end of 2020 and **NSM have been able to demonstrate the viability of the concept of “Capacity intelligence”**. It also brought interesting feedbacks :

- 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 proposes to move from a POC to a consolidated and fully functional process, a Minimum Viable Capacity Intelligence process supporting the TTR deliverables.

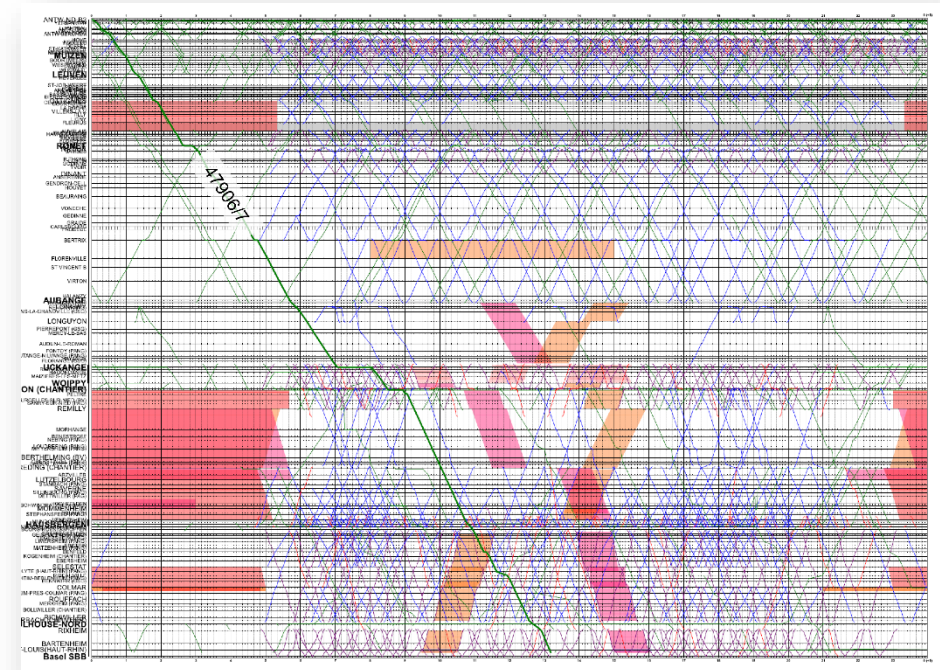


Collection of representations produced by the NSM POC

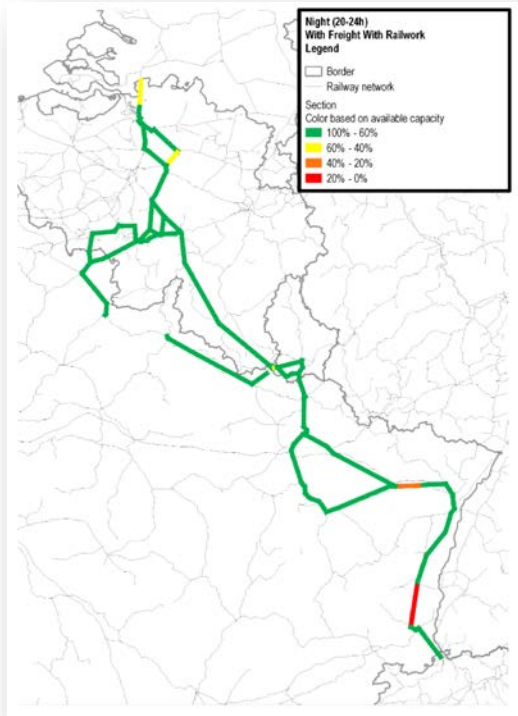


Capacity Model

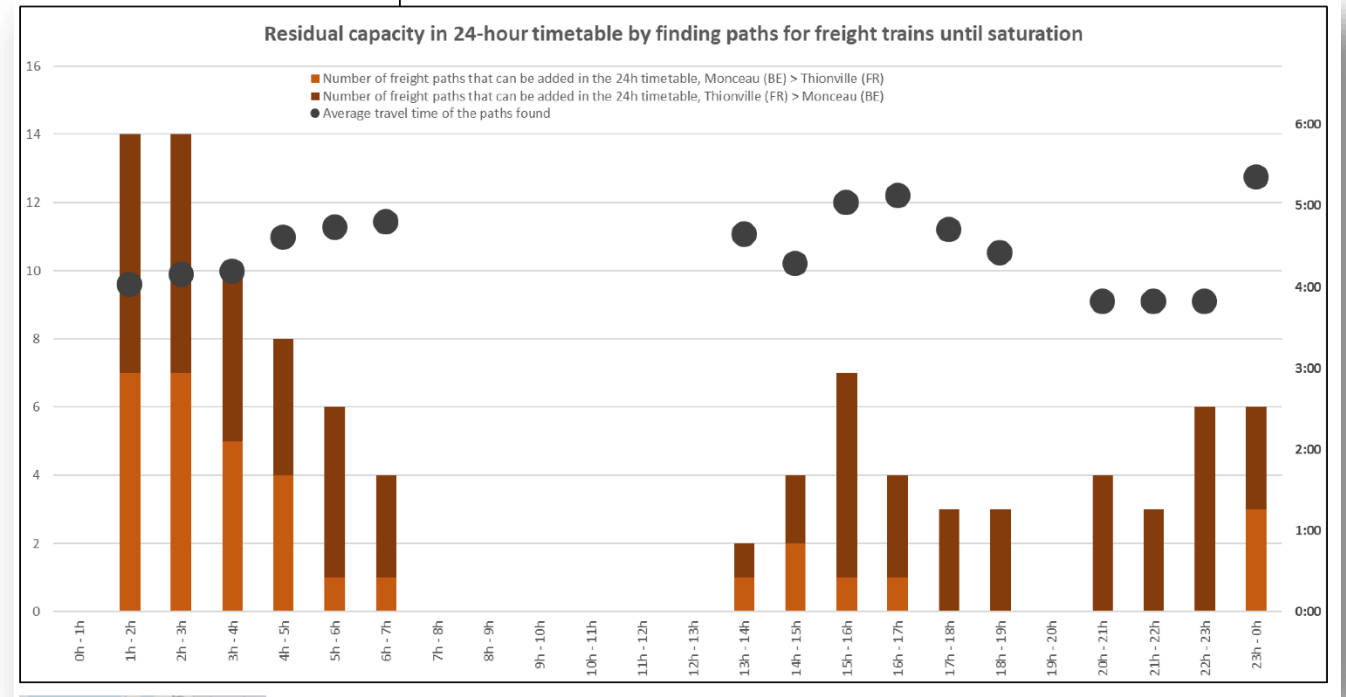
on Aubange > Bertrix section the 10 nov. 2021



Collection of representations produced by the NSM POC



**Map of critical sections
via « compression » analysis**
10 nov. 2021



**Residual capacity
via « path-search » analysis**
Between Namur (BE) and Thionville (FR), the 10 nov. 2021

A favourable context for capacity issues

Capacity issues are more and more at the heart of discussions:

1. track renewal challenges on all European networks. The TCRs capacity footprint and its impact on the remaining capacity for trains is getting more and more critical,
2. Secondly, this is linked to the European Green Deal Policy in favor of the modal shift for the benefit of both passengers and freight trains. The development of the rail traffic will mainly take place within a stable infrastructure framework. Therefore, a perfect knowledge of the capacity situation must avoid misconceptions and look at the real degree of latitude to accompany traffic growth,
3. Lastly, there is at a European level a major project to harmonize capacity processes. The Timetable Redesign projet (TTR*) governed by RailNetEurope. It initiates a entire reform of the timetable design and capacity allocation processes.

* <https://ttr.rne.eu/>

Call for tenders

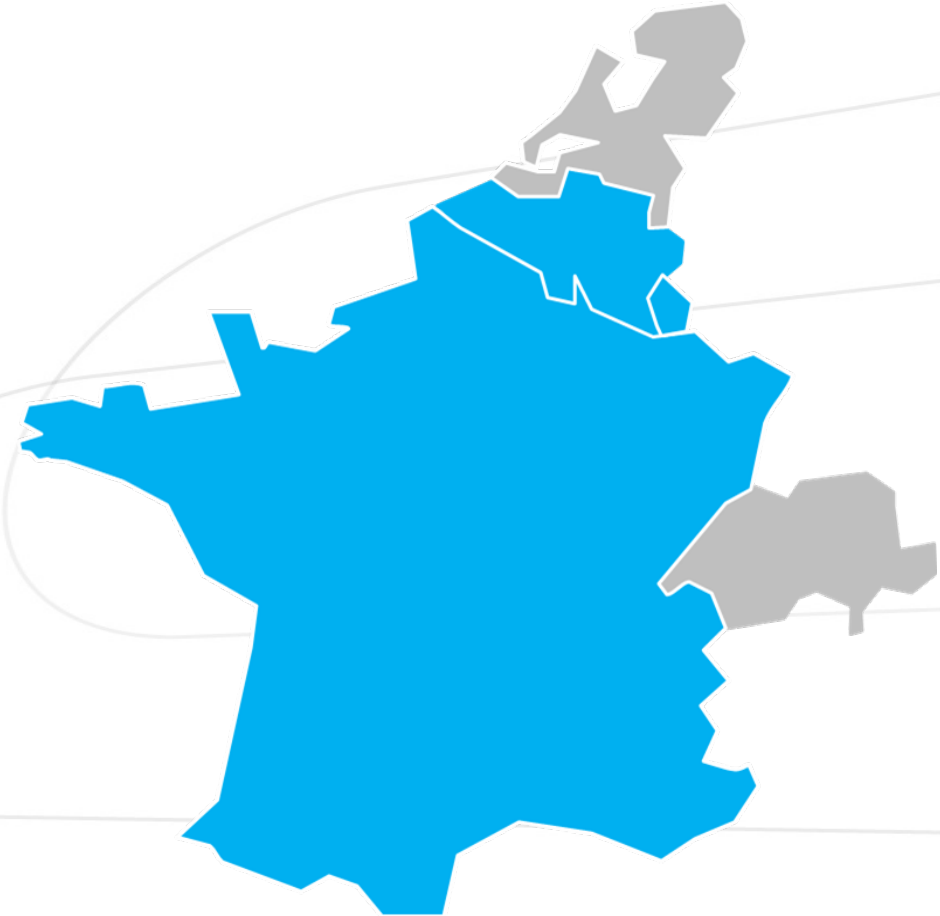
AVAILABLE DATA

Members and partners involved in the project

Data will be provided by 3 entities :

- Administration des chemins de fer luxembourgeois
- INFRABEL
- SNCF Réseau

The scope of the call for tenders only concerns Belgium, France and Luxembourg.



Data available (october/december 2022)

	2021 (Operated trains and TCRs)	2022	2023	2024	2025+
2h cadenced timetable /		FR : Yes BE : to be reconstituted via the annual timetable LU : to be reconstituted via the annual timetable	FR : Yes BE : to be reconstituted via the annual timetable LU : to be reconstituted via the annual timetable	FR : Yes BE : NO LU : NO	FR : Yes BE : NO LU : NO
24h timetable 365 Days	FR : Yes BE : Yes LU : Yes	FR : Yes BE : Yes LU : Yes (+ certified timetable + pre-operational timetable + real traffic for april 2022)	FR : Partly, Standard TCRs taken into account BE : Partly, TCRs partly taken into account LU : Partly, main TCRs taken into account for passenger trains only	FR : Partly (pre-2024 timetable in decemeber 2022 with santard TCRs) BE : NO LU : NO	FR : Yes (2026 + 2030 timetable simulation in decemeber 2022 with santard TCRs) BE : NO LU : NO
TCRs	FR : Yes BE : Yes LU : Yes	FR : Yes BE : Yes LU : Yes	FR : Yes BE : Yes LU : Yes	FR : Yes BE : Yes LU : NO	FR : Standard TCRs only BE : NO LU : NO

Call for tenders

EXPECTED TASKS AND DELIVERABLES

2 workpackages

- Workpackage 1

Production of visualizations to understand capacity issues

The first step is to merge Paths and TCRs database from different countries (France, Belgium and Luxembourg) in order to provide homogeneous KPIs on capacity issues, and solutions to visualize the results.

Main deliverables :

- International Paths and TCRS database
- Compendium of maps and Charts
- Memos and handbooks

- Workpackage 2

Test of the validity and relevance of the visualizations produced

Because the objective to help executives, managers and other stakeholders to make appropriate “capacity” decisions, the project includes tests with mirror groups of stakeholders to get feedback on the efficiency of the KPIs and visualizations.

Main deliverables :

- Feedback from mirror groups
- IT specifications

Workpackage 1

1. 4 international “Path & TCRs Databases” - TAF TAP TSI compliant

The consultancy will set up 4 international databases. The databases correspond to the merging of data from the Belgian, French and Luxembourgian timetables. They will include all paths (freight and passenger paths) and all available temporary capacity restrictions.

1.1 Database 1 : 2021 (operated timetable)

1.2 Database 2 : 2022 (planned timetable)

1.3 Database 3 : 2022 (operated timetable)

1.4 Database 4 : 2023 (planned timetable)

2. A memo on the database creation process

2.1 The consultant will produce a short memo collecting comments on the database merger process on any issues : processes, data quality, data provision by Ims, etc.

Workpackage 1

3. Compendium of capacity maps, Charts, Capacity Model and Capacity Supply

3.1 The state of the available capacity at a given moment

Based on the 2022 international timetable database set up during the previous stage (1.2), the consultant will implement its **methodology to assess and visualize the current available capacity at different scales** :

- On corridor sections
- On significant Origin – Destination traffic (5 O-D to be define)
- On junctions
- On interesting stations
- On border-points

Point of attention 1 : It is expected from the consultant to propose **a specific approach to visualize the TCRs capacity footprint** in order to help the decision making process, especially on TCRs sizing.

Workpackage 1

Point of attention 2 : The methodology to assess and visualize the capacity has to take into account the Proof of Concept experience (PoC) and Timetable Redesign project (TTR) useful deliverables.

Point of attention 3 : The outcomes must give a relevant view of what is the situation on a **“normal day” but also a view of the “annual situation”**. It means that the capacity partitioning differences between passengers paths, freight paths and temporary capacity restrictions all along the annual timetable must be taken into account.

It is asked to the consultant to propose what seems to be the most efficient solution for that, for instance, if the analysis should focus on only “several relevant days” or a “365 days analysis”.

Workpackage 1

3.2 A multi-annual vision of the capacity development :

- ◉ The consultant is invited to develop a methodology to make appropriate comparisons between 2 annual timetables. It is expected to be able to understand the extent of the changes between 2 timetables at a glance.
- ◉ For this, the consultant will use the 2022 and 2023 timetable (1.2 & 1.4)

Workpackage 1

3.3 A comparison between the planned timetable and the real situation

- The aim is to compare the planned paths and TCRs to the real traffic and trackworks and to give an appropriate analysis and visualization of changes that are operated the last month before the running period.
- It is asked for that to compare 3 databases for a single month. The “April 2022” period is proposed for that. However, it could be any other period which would seem more appropriate to the consultant*.
- The 3 databases to compare are the following ones :
 - April 2022 in the annual timetable certified in November 2022
 - April 2022 in the pre-operational timetable after
 - April 2022 in the real traffics and trackworks

**Generally speaking, the consultant is free to propose approaches that seem more relevant according to its expertise.*

Workpackage 1

3.4 Design an impact assessment process for a major timetable change vis-à-vis neighbouring countries.

- ◉ In case of a major timetable under design in one country, it could be useful to assess the impacts on neighbouring timetable(s). It is asked to the consultant to design such an assessment process : KPIs, visualisations, etc...
- ◉ The process is intended to assist in the evaluation of different timetable options and to feed the consultation of neighbouring countries with appropriate elements,
- ◉ The consultant is invited to take into account the PER* approach initiated by SNCF Réseau for medium-term planning.

*Plan d'exploitation de référence

Workpackage 1

3.5 Overview of IMs/ABs capacity processes

1. The consultancy will describe the capacity processes from long term (design) to short term (ad hoc path) for each of the 3 countries involved in the project (France, Belgium, Luxembourg),
2. The 3 national sets of processes will be put into perspective with the new processes described in TTR,
3. The description of the processes will give a specific focus on “decision” milestones during which specific capacity analysis could help executives to take appropriate decisions,
4. The description will also indicates the information which should be provided and discuss at each stage.

Workpackage 1

4. “Capacity Intelligence” Handbook

Following the previous stages, the consultant will wrap up its work in a handbook which explain its methodology to assess and visualize the capacity and the way it can be integrated into the IMs/ABs capacity processes:

- The memo has to be didactic for non-expert of capacity issues,
- It may indicate other existing methodologies that were not selected.

The memo is to be provided at the end of the workpackage 1 in the form of a handbook for Infrastructure Managers or Allocation Bodies, for implementation.

!/\\ If it is requested to the consultant to build on the PoC deliverables as well as the TTR deliverables, **the consultant is invited to propose new ideas or further develop certain concepts already developed**, if appropriate.

Workpackage 2

5. Mirror Groups report

5.1 After the workpackage 1, the consultant will organize mirror groups with partners :

- ◉ Departments in charge of capacity within the 3 involved Ims,
- ◉ Railway undertakings, terminals and industry associations such as UIRR, CER, RNE etc.,
- ◉ Ministries of transport, European Commission, etc.

Two main results are expected from those mirror groups :

- 1) to get a feedback on the comprehensibility of the capacity deliverables produced during the workpackage 1 and to adjust the deliverables accordingly,
- 2) to get a feedback on how those deliverables could find their right place in their decision making process.

In its response to the call for tenders, the consultant is invited to propose a draft methodology to organize the mirror groups in order to get the most fruitful and constructive feedback.

This methodology may be fine-tune during according to the outcomes of workpackage 1.

Workpackage 2

We foresee 4 groups but this can be challenged by the consultancy :

- ⦿ 2 groups from IMs departments,
- ⦿ 1 group of RUs and associations,
- ⦿ 1 group of institutional bodies.

At the end of this stage, the consultant will provide a report which will have to contain a least :

1. Its methodology and the organization of the mirror groups,
2. An summary report of the main feedback, food for thoughts, suggested improvements, etc... which will come out of the mirror groups,
3. An annex with minutes of any meetings with partners in this mirror group context.

Workpackage 2

6. IT recommendations

6.1 In the view of workpackage 1 and mirror groups, the consultancy will give its recommendations/specifications on how to improve the internationalization of database and “capacity tools” in a way that reinforce the IMs “beyond the border” view and help to address properly the cross-border coordination issue.

7. Conclusive report

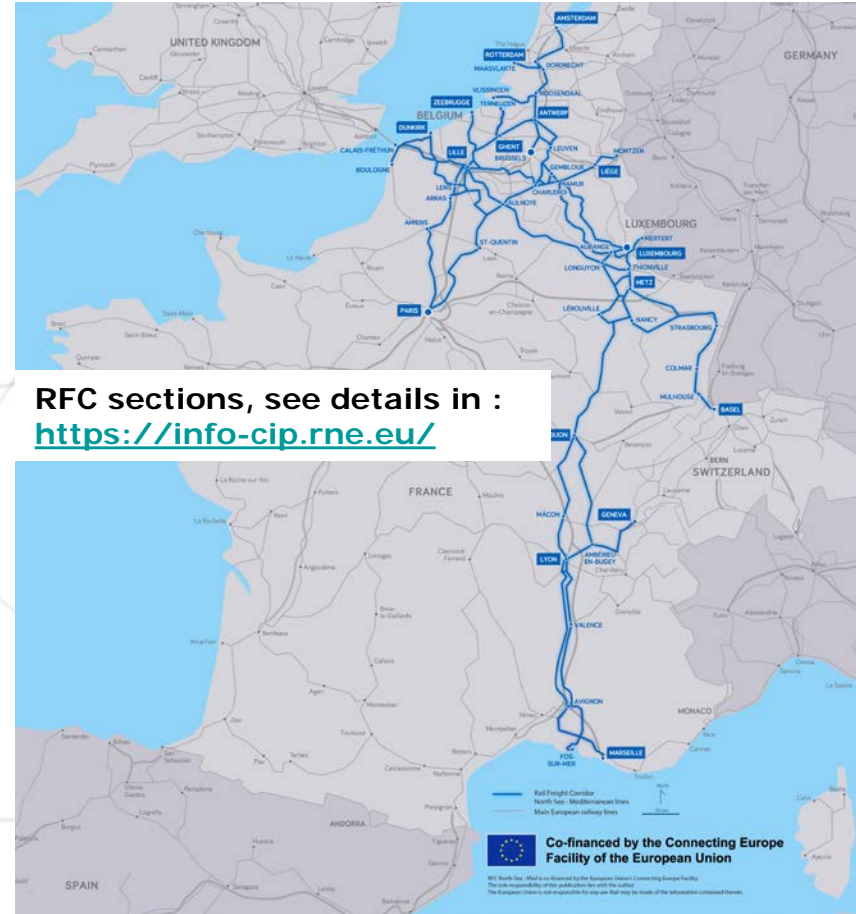
7.1 The consultancy will provide a exhaustive conclusive report that should give a complete overview of the work carried out. The report may link to deliverables already produced.

Call for tenders

PERIMETER

Sections which will be the subject of the maps & charts

- All the french, luxembourg and belgium sections of the RFC NSM
RFC sections, see details in :
<https://info-cip.rne.eu/>
- Additionnal sections :
 - Mons – Maubeuge section (via the Quevy Feignie border point)
 - The Hight speed line between the BE/NL Border + Eurotunnel border and Paris
- 5 routes (see 3.1) will have to be chosen in consultation between the consultancy and the steering committee.



Call for tenders

GOVERNANCE

Project follow-up

- **Project manager :**
 - RFC North Sea – Med Managing Director
- **Steering committee representatives**
 - ACF : Head of Paths Department
 - Infrabel : TTR project manager
 - SNCF Réseau : Freight mid and long term capacity manager
- **Frequency of monitoring meetings**
 - A 2h steering committee every 2 weeks
 - A 1h meeting with the project manager every additional week.

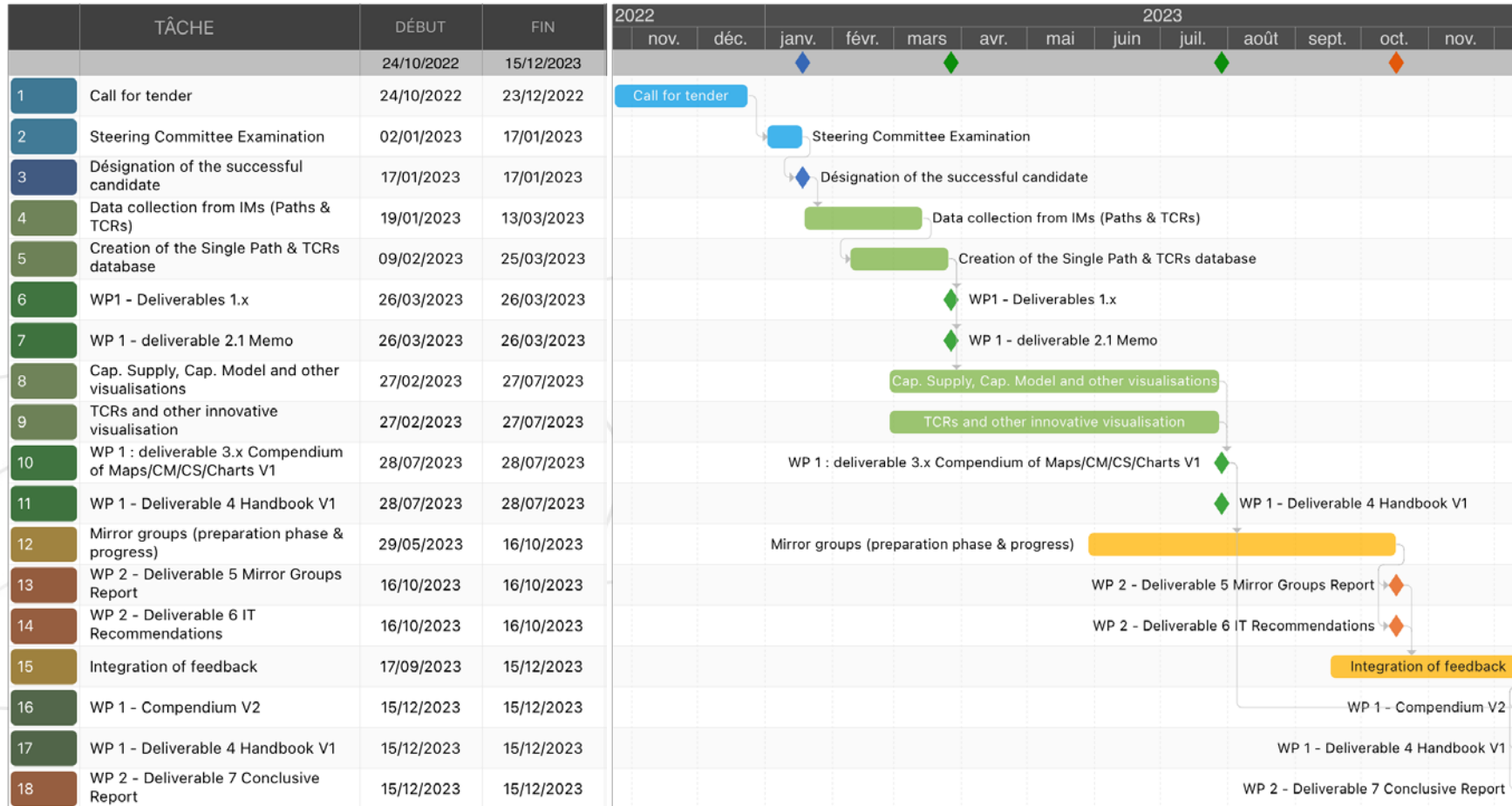
- ✓ Coordination meeting with RNE

The “capacity intelligence” project is part of a cluster of projects financed by the EU via the TTR project. The project manager will have to provide a regular state of play of its project. Except in exceptional cases, the consultancy won't have to participate to RNE Monitoring committees. However it may be asked to make an state of play via few slides or via a RNE template.

- ✓ Document sharing

Document sharing will be done via a specific TEAMS channel created on SNCF TEAMS platform

Provisional planning



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Contact

www.rfc-northsea-med.eu

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