



Orient/East-Med Corridor

Rail Freight Corridor Rhine-Danube

**Train Performance Management
Rules of Procedure**

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TPM related abbreviations and Glossary

Term	Explanation
AA	Authorised Applicants
AB	Allocation Body In this document, only the term Infrastructure Manager (IM) is applied. It refers to IMs and also – if applicable – to Allocation Bodies (ABs).
AG	Advisory Group
CAP	Corridor Action Plan
Connecting point	A point in the network where a Corridor cross another Corridor and it is possible to shift the services applied for from one Corridor to the other.
C-OSS	A joint body designated or set up by the RFC organisations for Applicants to request and to receive answers, in a single place and in a single operation, regarding infrastructure capacity for freight trains crossing at least one border along the freight Corridor (EU Regulation No 913/2010, Art. 13). The Corridor One-Stop Shop
CTT	Contracted Time Table: It defines the planned route and planned time of a train run. It's delivered by the IMs to the TIS system with UIC message 2090 and merged into international timetable by the TIS tool.
Data Quality (DQ)	For the purpose of the present document, it's meant as data availability, reliability, completeness and validity.
Dedicated capacity	Capacity which has to be foreseen by the Corridor Organisations to fulfil the requirements of Regulation 913/2010. It refers to pre-arranged paths and reserve capacity.
EXBO	Executive Board
Feeder and outflow path	Any path/path section prior to reaching an operation point on RFC (feeder path) or any path/path section after leaving the RFC at an operation point (outflow path). The feeder and/or outflow path may also cross a border section which is not a part of a defined RFC.
Handover point	Location where the transfer of responsibility for the wagons, engine(s) and the load of a train goes from one RU to another RU. Regarding a train running, the train is taken over from one RU by the other RU, which owns the path for the next journey section.
IM	Infrastructure Manager
Interchange point	Location where the transfer of responsibility for the train goes from one IM to another IM.
International rail traffic	All traffics which crosses minimum one border.
Key Performance Indicators (KPI)	Performance factor with which the progress regarding important objectives can be measured within an organization.
Train Performance Management (TPM)	Procedure that defines processes for regular monitoring, analysing and improving of international train runs.

Management Board (MB)	Representatives of the IMs on the corridor with the function of government.
PCS	Path Coordination System, formerly known as Pathfinder, developed by RailNetEurope (RNE). Main working tool for Corridor path requests management.
Punctuality	Strict adherence of the actual time to the timetable and threshold for rail transport.
OBI	Oracle Business Intelligence
Other primary lines	High capacity lines which can be assigned to any existing corridor, connecting important nodes from departure to destination points.
Overlapping section	National infrastructure sections where two or more Corridors share the same infrastructure.
PaP	Pre-arranged path
Quality	Indicating the effectiveness of a product complying with the existing requirements.
RA	Running Advice: it delivers the actual time at a specific point / status and the deviation from the planned time at that point. It's sent by the IMs to the TIS system by the UIC message 2002.
Reserve capacity (RC)	Capacity – e.g. Pre-arranged paths still available or additional paths created during the running timetable period for ad-hoc market needs (Art. 14(5) Regulation 913/2010).
RNE	Rail Net Europe (association set up by a majority of European Rail Infrastructure Managers and Allocation Bodies)
Railway Undertaking Advisory Groups (RAG)	Group of Railway Undertaking (RU) representatives which should be contacted by the Corridor in order to get feedbacks concerning corridor tasks. This feedback and RU proposals must be taken into consideration.
RU	Railway Undertaking
Stakeholder	For the purpose of the present document: RFCs, Infrastructure Managers, RUs, Terminal Managers, authorized applicants and any other involved party
TAF/TAP TSI	Technical Specifications for Interoperability for Telematics Applications for Freight / Passengers
Terminal	The installation provided along the freight corridor which has been specially arranged to allow either the loading and / or the unloading of goods onto / from freight trains as well as forming and reforming of trains (shunting yards).
Terminal Advisory Groups (TAG)	Group of terminal representatives which should be contacted by the Corridor in order to get feedbacks concerning corridor tasks. This feedback and terminal proposals must be taken into consideration.
Third parties	All other external partners (e.g. terminals) who are not constituted as RU or IM.
TM WG	RFC7 Traffic Management WG
TPM Coordinator (CPC)	Person who ensures the overall coordination of Rail Freight Performance Managers along RFC7 to improve the punctuality and the performance of the corridor
TPM Coordination	Subordinated to the TM WG

Train Information System (TIS)	A web-based application that supports international train management by delivering real-time train data concerning international passenger and freight trains. The relevant data is processed directly from the Infrastructure Managers' systems. TIS is the data provider system for TPM.
Trains-group	A group of different train numbers related to the same transport (belonging to the same final client).

1. Introduction

The aim of the present document is to set up an overall framework of standard procedures supporting traffic and performance management along the Rail Freight Corridor Orient/East-Med and Rhine-Danube. Based on the encouragement of RFC OEM and RFC RD on cross corridor cooperation, the Management Board of both Corridor decided to strengthen their cooperation within the WGs. As a result of this expansion, in order to eliminate the parallel processes, TPM tasks and workflows are merged together in a joint WG. This Handbook refers to the details of these common handled activities.

This document describes the basic processes needed to carry out a regular activity of quality monitoring and analysis by RFC OEM and RFC RD. In particular, such processes are intended to fulfil the requirements stated in the following articles of the Regulation:

- » Art.9: Measures for implementing the freight corridor plan
 1. The management board shall draw up an implementation plan (...) This plan shall include:
 - C) the objectives for the freight corridors, in particular in terms of performance of the freight corridor expressed as the quality of the service (...)
- » Art.17: Traffic management in the event of disturbance
 1. The management board shall adopt common targets for punctuality and/or guidelines for traffic management in the event of disturbance to train movements on the freight corridor.
 2. (...)
- » Art.19: Quality of service on the freight corridor
 1. (...)
 2. The management board shall monitor the performance of rail freight services on the freight corridor and publish the results of this monitoring once a year.
 3. The management board shall organise a satisfaction survey of the users of the freight corridor and shall publish the results of it once a year.

According to the point 4.2.3.4.4 of the 995/2015 EU Commission Regulation “The infrastructure manager and the railway undertaking must have processes in place to monitor the efficient operation of all the services concerned.”

The main approach of the present document can be described according to the following principles:

- The document shall mainly describe the processes of performance management and connected issues (information needed, expected outputs, actors, pre-requisites, tools). In order to optimise the processes in each Corridor, some flexibility is left to decisions to be taken by the RFCs.
- As it is clear from the above-mentioned articles of the Regulation, EU law requires the RFCs to put in place the process phases related to the monitoring and analysis of the quality of the traffic. It does not, however, prescribe the planning and

implementation of corrective actions for quality improvement. Nevertheless this document includes such possible approaches.

Rules of Procedure is a practical application of the main principles described in the RNE 'Guidelines for Train Performance Management on Rail Freight Corridors', which was used as a reference document.

Benefits and added values of introducing TPM:

- Improved customer satisfaction (RUs and end customers)
- Optimizing the capacity of the infrastructure and improve stability of timetable
- Optimizing the feedback process from operation to planning area
- International approach for punctuality analysis to improve the quality of train performance
- Establishing regular international cooperation and common procedures between IMs, RUs and Terminals
- Getting an overview of international trains, providing a complete and reliable monitoring
- Identifying weak points and find solutions with involved partners
- Creating a network of experts dedicated to improve the quality on the corridor
- Introducing and maintaining a common approach in the Coordination

In accordance with the RFC OEM and RD Implementation Plan the Traffic Management WG and Performance WG of RFC OEM and the Operations and Performance WG of RFC RD (hereinafter together referred to as: WGs) have to perform the following tasks:

- Harmonization of traffic management between IMs & Terminals in case of disturbance
- Priority rules for trains
- Performance objectives
- Train Performance Management incl.
 - Data Quality Management

2. Train Performance Management in general

The train performance management process of RFC OEM and RD is composed of 5 main phases as shown on the picture below.

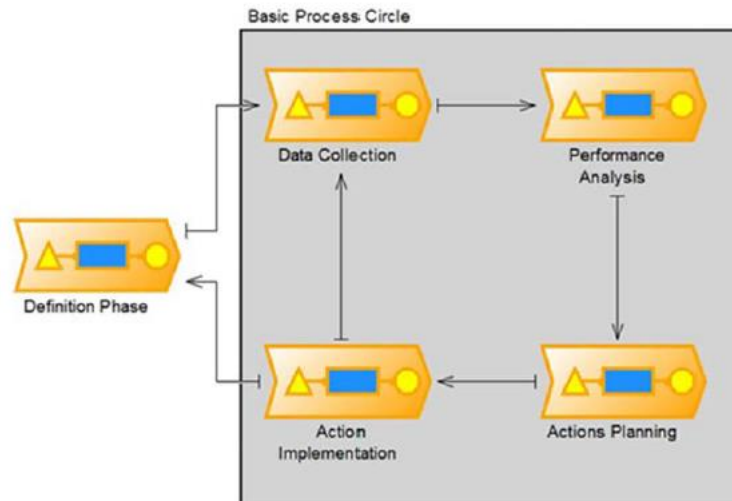


Figure 1. Overall process map

Definition phase

The aim of this phase is to set the principles that will be the basis for the following phases. The RFCs together with RNE check the technical possibilities and agree on the main monitoring principles.

In particular, the following topics will be dealt with:

- Indicators to be monitored
- Sample of trains to be monitored
- Geographical principles
- Frequency of monitoring
- Involvement of actors
- Data confidentiality issue

Data collection

The data collection process starts at the IM national level, where all train runs are monitored and recorded in the IM's domestic system and sent to TIS in real time. TIS processes all the received messages and stores the consolidated information in the TIS database. Performance reports are generated by using an interface tool (OBI) that, using the TIS database, allows the generation of simple and user-friendly reports.

Performance analysis

The goal of this phase is the regular investigation of rail freight transport performance on the Corridor through the processing and analysis of the data provided during the data collection phase.

The analysis shall consist of two different steps:

- As a first step, the data coming from the data collection phase should be processed to have understandable, usable information (situation as-is);

- As a second step, the report provided by the first step shall be used for an in-depth analysis comparing the state of the performance with the pre-defined targets (situation as-should-be) and, in case of non-compliance with the targets, to find out the reasons for bad performance.

Actions planning

The further planning of any analysis phase-based actions depends on the kind and location of the weaknesses/problems identified in the previous phases. The goal of this phase is to delineate the Action Plans (corridor and/or national) defining the measures to be implemented to improve overall corridor performance.

Action implementation

To improve overall corridor performance, the efficient internal implementation processes should be defined to ensure a sustainable follow-up to the proposed Action Plan implementation.

3. Train Performance Management on RFC level

This chapter contains organizational structure and processes for train performance management on RFC OEM and RD.

3.1. TPM processes on RFC level

Several different reports to analyse the RFC performance are available in OBI (see chapter 5). These reports can be used for the basic analyses and identification of the main weak points. The OBI reports can help to examine which origins, points, trains or sections have the highest impact on the overall performance and to analyse the possible reasons.

In case the RFC reports are not sufficient for the detailed analyses, a deeper investigation in the national IM tools might be needed.

Based on the results of the analysis, further activities to be done within the IMs, by the WGs or involving other stakeholders shall be proposed and reported to RFC bodies.

The definition of improvement measures and activities shall be done jointly involving all relevant parties (IMs, RUs, terminals) affected by the identified weak points. If needed, dedicated meetings with concerned parties will be organized in order to set up and coordinate an action plan for specific points or areas. Other RFCs may be involved, if their support is necessary.

3.2. TPM organisation set-up on RFC level

The WGs are responsible for the complete TPM process on RFC level. If necessary, specific bi- or multilateral groups can be addressed or even established to support the WG.

The Management Board shall receive information by the WG about the KPIs and supervise the activities and improvement measures proposed by the WG. It will be addressed if support for the implementation of the agreed measures or improvement of data quality in the TIS is needed.

If needed, RFC Advisory Groups (RUs and terminals) will be asked to assist the WG with analyses, identification of bottlenecks and action planning. They are informed about ongoing activities and will be actively involved in solving specific problems along the corridor.

3.2.1. RFC WG for Train Performance Management (TM WG)

The WGs consists of representatives of each partner IM of the RFCs (IM Performance Manager) and, if required, of a permanent staff member of the RFC (e.g. MB). The WGs leader is appointed by the MB. RUs and terminals can also be either directly involved in the meetings of the WG or at bi- / multilateral level (see 3.2.4) or in dedicated task forces or other dedicated meetings or groups. The form of the group will be decided on a case-by-case basis for the specific border or IM related issues.

The WGs are responsible for the complete train performance management process as described in chapter 2 of this handbook. The crucial role of the group is in the Definition phase, where the RFC-specific monitoring principles are defined.

The WGs can directly execute all the phases of the TPM process, or tasks can be delegated to specific bilateral or multilateral WGs.

If proposals done by the WGs to IMs, RUs, terminals, bi- or multilateral WGs are not followed up, the WGs escalate to the Management Board of the corridor. The Management Board can decide which actions should be taken to ensure performance improvements.

3.2.2. RFC TPM Leader

The WG Leader is also the RFC TPM Leader and is responsible for the organization and the chair of the WG meetings and act as a contact person for the RFC TPM related questions within RFC organisation and eventually also to the external bodies, e.g. RAGs, TAGs, etc. He/she coordinates the feedback towards the MB and ensures that the proper actions to implement MB decisions are taken.

He/she represents the RFC within the RNE PM WG (see chapter 6).

3.2.3. IM Performance Manager

The IM Performance Manager is the IM representative in the WGs and responsible for KPI analysis, punctuality monitoring, progress report and in charge of making proposals for improvement measures within his/her IM network. He/she is also responsible for the deep investigation within national IM system, if needed.

3.2.4. Bi- and multilateral WGs

The bi- or multilateral WGs between IMs focus on performance improvements in the cross-border context. They receive information and proposals from the WGs, analyse the reports in depth to find out reasons for bad performance, agree on corrective measures and report back to the WGs on the results. They can involve RUs and terminals. These WGs can also be involved by the WG for dedicated workshops. In case the bi-/ multilateral WGs identify issues which need to be treated on a higher level, TM WG can be addressed for support.

4. Technical basis for RFC TPM

4.1. TIS and OBI

All information collected in TIS is stored in the data warehouse. Based on the data stored in the data warehouse, several different reports are built and can be accessed by the TIS users concerned via Oracle Business Intelligence (OBI).

Access to OBI is given to the IM Performance Managers of each participating IM, to the RU Performance Managers and also to the RFC TPM leaders.

The OBI manual can be found in a separate document as Annex 1.

Information from IMs' national systems might be used where a more in-depth analysis is needed (e.g. to find out the reasons of bad performances).

4.2. Monitoring principles

In the below chapters, the main principles needed the regular monitoring of RFC performance are described.

4.2.1. Indicators to be monitored

In the first place, the WGs monitor the punctuality of international freight trains running on the Corridor according to the KPIs defined in the RNE document 'Key Performance Indicators of Rail Freight Corridors' and uses the basic reports provided by RNE. Further different indicators can be monitored and are available in performance reports. The detailed information about the reports can be found in Chapter 5.

4.2.2. Trains to be monitored

The WGs monitor international freight trains running on the Corridor

The conditions for trains being included in RNE reports are the followings:

- international trains for which at least one running advice is available are included in the reports;
- a train is considered as international, if crossing at least one state border. National trains are out of scope of RFC performance reports;
- trains running on RFC – defined as all trains that are passing at least one pair of points defined in the Basic point list of the RFC.

4.2.3. Geographical principles

To cover the specificities and to fulfil the needs of the Corridor, two main point lists need to be defined. It is also possible to create separate lists for specific needs of the Corridor and IMs.

Basic RFC point list:

- Used to identify the RFC related trains
- The list of pair points (section) which needs to be included in train run

Detailed RFC point list:

- Used to identify the most important locations on RFC (e.g. RFC entry, RFC exit)
- The list of all points belonging to RFC

4.2.4. Frequency of monitoring

Depending on the needs of each RFC, the monitoring can be based on daily, monthly, quarterly or yearly frequency.

5. RNE Reporting portfolio

RNE as a service provider develops and maintains several different types of reports, as defined and needed by the RFCs. The full list of available reports, including their detailed descriptions, is available in OBI or can be provided on request. For each report, a detailed raw data report is also available to enable detailed investigations.

In the chapters below, just a few examples of available and frequently used reports are provided and described.

5.1. RFC punctuality report

The main purpose of this report is to show the overall performance on the chosen RFC over the chosen time period. Several parameters can be optionally chosen to make the report very flexible.

It provides detailed information about important performance indicators at main RFC locations, such as number of trains, punctuality, amount of delays and their delay causes.

This report is available for the different timeframes:

- daily
- monthly
- quarterly
- yearly

5.2. RFC monthly punctuality report – Management Summary

The main purpose of this report is to show the overall performance on the chosen RFC, excluding the commercially sensitive information from Standard RFC punctuality report. Based on the agreement between RFCs, this report is published monthly by each RFC.

5.3. Point oriented report

This report enables the detailed performance analyses in a specific point, e.g. in border stations.

Report provides detailed information about the amount of trains in the selected point, their punctuality, the delay causes and dwell time analyses.

5.4. RFC punctuality overview report

This report displays punctuality of RFC related trains in important locations with different punctuality thresholds (e.g. 5 minutes, 30 minutes, 1 hour, 2 hours, 6 hours, etc.).

5.5. Dashboard report

The purpose of this report is to show the basic performance figures for the chosen border section area – defined as Dashboard – during chosen month, considering all RFC related trains passing the predefined stations.

5.6. Traffic flow report

In case a deeper focus on specific traffic flows is needed, this report can be used. It provides the basic performance information, as punctuality and delay figures, for the pre-defined trains in predefined locations.

5.7. Customized reports

RFCs, IMs, RUs, terminals, bi-/multilateral WG or other parties may request specific adaptations of the available standard reports or completely customized reports.

Requests shall be addressed to RNE Train Performance Management Manager. The feasibility will be checked within RNE PM WG, which will also decide about the priority in case of the several parallel new requests. Implementation costs may arise and if this is the case, it will be communicated to the applicant beforehand.

6. RNE/RFC Cooperation in Train Performance Management

The responsibility for the development and the technical maintenance of the tools needed to provide TPM-related services lies within RNE. In order to ensure sufficient quality of these services to carry out successful and reliable performance management tasks, the RNE Performance Management WG and the RNE Data Quality WG were established.

6.1. RNE Performance Management WG

The RNE PM WG is composed of representatives from IMs and RFCs and was established to:

- Serve as platform for networking and experience sharing within the TPM area
- Define the TPM and reporting related guidelines and processes
- Define and manage RNE reporting portfolio – OBI:
 - Standard services,
 - Additional services, etc.
- Serve as an OBI and reporting expert group and service provider:
 - for RFC WGs TPM,
 - for RUs,
 - for RFC/RNE KPI Coordination group, etc.
- Define the requirements and monitors the correctness and reliability of OBI reports
- Take care of defining the reports needed for RFC KPIs and the monitoring of their correctness
- Become the Reporting Change Control Board (Reporting CCB) - Decision taking instance about OBI new requirements and budget spending
- Decide on fundamental upgrades or changes of the technical architecture.