Key Performance Indicators of Rail Freight Corridors

Version 2.0

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Version control

VERSION	AUTHOR	DATE	CHANGES
0.1	Project team	2015-06-17	Creation of the first draft
0.2	Project team	2015-09-04	Creation of the second draft
0.3	Project team	2015-11-10	Creation of the third draft
1.0	Project team	2015-12-03	Approval by the RNE General Assembly
1.1	Zita Árvai, RNE RFC Senior Manager and Project Manager	2017-02-20	
1.2	RNE-RFC KPI Expert Group	2017-03-02	
1.3	RNE-RFC KPI Expert Group	2017-10-06	
1.3	RNE Managing Board	2017-11-10	
2.0	RNE General Assembly	2017-12-06	Fine-tuning of the way of calculation of KPIs Correction of market development KPI for measuring the impact of the RFCs on allocated capacity New KPIs: - Commercial speed of PaPs - Volume of requested RC - Volume of requests for RC Publication of KPI figures on the RNE website New name: RNE/RFC KPI Coordination Group New workflow Main, commonly agreed principles for introducing new KPIs

Content

Glossary/Abbreviations

Glossary/abbreviation	Definition
CID	Corridor Information Document according to Article 18 of Regulation (EU) 913/2010.
Corridor OSS (C-OSS)	A joint body designated or set up by the RFC 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 RFC (Article 13 of Regulation (EU) 913/2010).
Corridor Organisation	Governance structure of a Rail Freight Corridor according to Article 8 of Regulation (EU) 913/2010.
Contracted Timetable (CTT)	It defines the planned route and planned time of a train run. It is delivered by the IMs to the TIS system with message 2090 and merged into an international timetable by the TIS.
Framework for Capacity Allocation (FCA)	Regulation (EU) 913/2010 requires the Executive Board of the Rail Freight Corridor to define the framework for the allocation of the infrastructure capacity on the Rail Freight Corridor. The framework specifies procedures, time limits and any information needed to apply and use a PaP on a Rail Freight Corridor.
Key Performance Indicator (KPI)	A measurable value that demonstrates how effectively a company or an organisation is achieving its key business objectives.
MB	Management Board of a RFC according to Article 8 (2) of Regulation (EU) 913/2010.
Oracle Business Intelligence (OBI)	A tool normally used to conduct data analysis and to create reports in RNE.
Path Availability Management Tool (PAMT)	Standard PCS report that is available only for RFCs. It contains basic information (timetable, PaP requests, distances, running days, K value, network PaP information) about the published and requested Pre-Arranged Path on a particular RFC. The content of the report is based on the date of issue. Archive reports are not supported.
Path Coordination System (PCS)	A path coordination and allocation system for international passenger and freight rail transport designed, developed and operated by RNE.
Pre-arranged Path (PaP)	A pre-constructed path on a Rail Freight Corridor according to Regulation (EU) 913/2010. A PaP may be offered either on a whole RFC or on sections of the RFC forming an international path request crossing one or more international borders.
Freight Regulation	Regulation (EU) 913/2010 concerning a European rail network for competitive freight.
Rail Freight Corridor (RFC)	A Corridor organised and set up in accordance with Regulation (EU) 913/2010.

Reserve Capacity (RC)	Capacity – e.g. Pre-arranged paths – kept available during the running timetable period for ad-hoc market needs (Article 14 (5) Regulation (EU) 913/2010).
Running Advice (RA)	It delivers the actual time at a specific point or status and the deviation from the planned time at that point. It is sent by the IMs to the TIS system with message 2002.
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.

1. Background, scope and target group of this document

1.1 Background

Article 19 (2) of Regulation (EU) 913/2010 (hereinafter: Freight Regulation) requires the Management Board (MB) of the Rail Freight Corridors (hereinafter: RFCs) to *monitor the performance of rail freight services on the freight corridor and publish the results of this monitoring once a year*.

The RFCs are free to choose their own Key Performance Indicators (KPIs) to fulfil this requirement of the Freight Regulation. However, in order to facilitate data processing and data provision for the calculation of the KPIs of the RFCs, as well as to reduce the workload both for the RFCs and RNE, it is advisable to ensure a certain degree of harmonisation of the used KPIs. Therefore, RNE implemented a project named 'Key Performance Indicators of Rail Freight Corridors', with the aim to collect information from the RFCs about their currently used and planned KPIs and to compare these data in order to identify potential for a common approach, harmonisation in this area, which is considered as a proposal for the RFCs. An overall harmonisation regarding the KPIs would be rather difficult to achieve for the time being. The RNE/RFC High Level Group agreed to this approach and suggested that a common approach and a set of KPIs applicable to all RFCs shall be developed, while allowing the RFCs to develop and monitor any further individual KPIs as well. The project started with the approval of the project in October 2014 and finished with the provision of these guidelines in December 2015.

The development of further commonly applicable KPIs was triggered by the Rotterdam Sector Statement signed in 2016 by the IMs. One of the priority projects defined on the basis of this document is to monitor the quality of freight services with implemented and shared KPIs. The sector developed certain proposals out of which those which are feasible and agreed have been added to the list of commonly applicable KPIs in the end of 2017.

1.2 Scope and target group of this document

These guidelines provide recommendations for using a set of KPIs commonly applicable to all RFCs.

These guidelines address all levels of RNE and the corridor organisations.

This document does not deal with the monitoring of other KPIs defined in the RNE manual for Cooperation in Train Performance Management, which document remains valid.

2. Documentation relevant for these Guidelines

» Regulation (EU) No 913/2010 concerning a European network for competitive freight,
» Handbook on Regulation concerning a European network for competitive freight (DG MOVE working document),
» Report on the results of the survey 'Key Performance Indicators of Rail Freight Corridors'.

3. Principles for KPIs commonly applicable to all RFCs

3.1 Decision-making body on the KPIs

The RFCs already have their own internal rules for the decision-making procedure concerning the KPIs they intend to apply. These internal rules remain valid. The appointment of this decision-making body shall remain within the sole responsibility of the RFCs, although there should be some coordination among them.

Taking into consideration the Framework for Capacity Allocation (FCA) developed in accordance with Article 14 of the Freight Regulation, the Executive Board is also a decision-making body in the definition of the KPIs used for monitoring the capacity allocation procedure.

3.2 Selection of KPIs

The selection of the KPIs shall remain within the responsibility of the dedicated decision-making body/bodies of the RFCs, nevertheless, the FCA shall be taken into consideration as well. No overall harmonisation is necessary, however, it is recommended to use the set of KPIs applicable to all RFCs as well, as defined in these Guidelines.

The KPIs of the RFCs may include a set of commonly agreed KPIs (see point 3.6) and additional, individual KPIs. The set of KPIs listed in the FCA is mandatory as the FCA is considered to be a legally binding document. However, the RFCs still have the mandate to define additional KPIs to those included in the FCA for capacity allocation.

3.3 Place of publication of the description of the KPIs

The description of the KPIs (including definition, calculation formula, targets, source of data and data processing tool, publication of the results, etc.) should be published in the same place in one single document, if possible, and the other RFC documents should only include reference to this document in terms of the KPIs. It is recommended that this document is the Implementation Plan, which is also part of the Corridor Information Document (CID), and the description of the KPIs should be added as an annex to Book 5. The advantage is that the main body of the document will remain stable, while the technical features can be more easily updated in the annex concerned.

3.4 Source of data for the calculation of the KPIs

In order to use the same quality of data and to reduce the overall efforts of the RFCs and RNE, the same IT tools shall be used for the calculation of the commonly applicable KPIs where possible. In this case the data are provided by PCS and TIS, while the data processing tool is RNE OBI. If the necessary data are not available in RNE IT tools, the RFCs collect the data (e.g. via their IMs from the IMs' IT tools) and do the calculation themselves. It should be avoided in any case that (too much) manual calculation is necessary, every calculation shall be automatised to the best possible extent.

3.5 Business areas

The KPIs described in point 3.6 of these Guidelines monitor the performance of the RFCs in the following business areas:
- » Capacity management: meaning the performance of the RFC in constructing, allocating and selling the capacity of the RFC (in line with Article 13 and 14 of the Freight Regulation), monitored in terms of:

- o Volume of offered capacity
- o Volume of requested capacity
- o Volume of requests
- o Volume of pre-booked capacity
- o Number of conflicts

The KPIs included in this area correspond to the KPIs listed in the applicable version of the harmonised FCA.

» Operations: meaning the performance of the traffic running along the RFCs monitored in terms of punctuality and volume of traffic, namely:
- o Punctuality at origin
- o Punctuality at destination
- o Number of train runs

» Market development: the capability of the RFC in meeting the market demands will be monitored in terms of:
- o Traffic volume
- o Ratio of the capacity allocated by the C-OSS and the total allocated capacity

3.6 Set of KPIs commonly applicable to all RFCs

Business area	KPI	Calculation formula	Source of data	Data processing tool	Timeframe	Timing	Comments
Capacity management	Volume of offered capacity	Km*days offered	PCS	PAMT (done by the C-OSS) (back-up calculation by RNE OBI)	Timetable year	At X-11 and at X-2	Km: PaP km between operation points without feeder and outflow sections X-11: Publication of PaPs X-11 – X-10.5: Correction phase X-2: Publication of reserve capacity for ad-hoc traffic In case of common offers on overlapping sections, an RFC may publish one KPI for the offered capacity where it is the leading RFC and one KPI for the offered capacity where it is not the leading RFC provided that the second value is perceived to be significant by the RFC concerned.

Business area	KPI	Calculation formula	Source of data	Data processing tool	Timeframe	Timing	Comments
Capacity management	Volume of requested capacity	Km*days requested	PCS	PAMT (done by the C-OSS) (back-up calculation by RNE OBI)	Timetable year	At X-8	Km: PaP km between operation points without feeder and outflow sections X-8: Deadline for submitting path requests in the annual timetabling process
	Volume of requests	Number of PCS dossiers submitted	PCS	PAMT (done by the C-OSS) (back-up calculation by RNE OBI)	Timetable year	At X-8	X-8: Deadline for submitting path requests in the annual timetabling process
	Volume of capacity (pre-booking phase)	Km*days (pre-booking phase)	PCS	PAMT (done by the C-OSS) (back-up calculation by RNE OBI)	Timetable year	At X-7.5	Km: PaP km between operation points without feeder and outflow sections Length of FlexPaP cannot be predefined X-7.5: Deadline for treatment of PaP requests for the annual timetable by the C-OSS

Business area	KPI	Calculation formula	Source of data	Data processing tool	Timeframe	Timing	Comments
Capacity management	Number of conflicts	Number of PCS dossiers submitted to the C-OSS which are in conflict with at least one other PCS dossier for PaPs on the same RFC	PCS	PAMT (done by the C-OSS) (back-up calculation by RNE OBI)	Timetable year	At X-8	X-8: Deadline for submitting path requests in the annual timetabling process Requests on PaPs are counted, not requested PaPs.
	Volume of requested RC	Km*days requested	PCS	PAMT (done by the C-OSS) (back-up calculation by RNE OBI)	For the given timetable year	X+12	
	Volume of requested RC	Number of PCS dossiers requested	PCS	PAMT (done by the C-OSS) (back-up calculation by RNE OBI)	For the given timetable year	X+12	
	Commercial speed of PaPs	Average of the commercial speed of the PaPs on the O/D pair	PCS	PAMT (done by the C-OSS) (back-up calculation	Timetable year	X-10.5	To be able to understand the evolution of the quality of the PaPs in terms of commercial speed from one year to another.

Business area	KPI	Calculation formula	Source of data	Data processing tool	Timeframe	Timing	Comments
		concerned per direction		by RNE OBI)			On predefined O/Ds per RFC (or on adjacent RFCs), the running time of all PaPs covering the entire O/D is taken, and the speed is calculated taking into account the length of the O/D axis.
Operations	Punctuality at origin	The calculation formula of this KPI corresponds to that of KPI 2 in the RNE Manual 'Cooperation in Train Performance Management'.

The calculation is done both with 30-minute and 15-minute punctuality threshold. | TIS | RNE OBI | Timetable year | In January after the timetable year concerned | It is recommended, but not obligatory to use the same sample of trains as for KPI2 in the Manual Cooperation the RNE Manual 'Cooperation in Train Performance Management'.

'Origin' is considered as RFC entry

RFC entry means the first TIS point on the RFC point list in the train run.

Also calculated per month and per direction |
| | Punctuality at destination | The calculation formula of this KPI corresponds to | TIS | RNE OBI | Timetable year | In January after the timetable | It is recommended, but not obligatory to use the same sample of trains as for KPI2 in the Manual |

		that of KPI 1 in the RNE Manual 'Cooperation the RNE Manual 'Cooperation in Train Performance Management'. The calculation is done both with 30-minute and 15-minute punctuality threshold.				year concerned	Cooperation in the RNE Manual 'Cooperation in Train Performance Management'. 'Destination' is considered as RFC exit RFC exit means the last TIS point on the RFC point list in the train run. Also calculated per month and per direction
	Number of train runs	Total number of train runs having a RA on selected pairs of border points	TIS	RNE OBI	Timetable year	In January after the timetable year concerned	Train sample: all international freight trains Points: pairs of border points selected by the RFCs Only in case of trains having a CTT and 1 or more RA Also calculated per border, per month and per direction

Business area	KPI	Calculation formula	Source of data	Data processing tool	Timeframe	Timing	Comments
Market development	Traffic volume	Number of train runs with a RA on selected border points	IMs' national tools	Done by RFCs/IMs	Timetable year	In January after the timetable year concerned	No locos and service trains should be considered One IM per border point should provide the data to the RFC The RFC should provide the data to RNE
	Ratio of the capacity allocated by the C-OSS and the total allocated capacity	Number of trains allocated in the yearly timetable by the C-OSS per RFC border/the total number of allocated international freight trains in the yearly timetable per RFC border (data are provided per IM)	PCS for the nominator IMs' national tools for the denominator	Done by RFC/IMs	Timetable year	In December before the start of the timetable year	Allocated train runs for the timetable year concerned

Each RFC may define any other additional KPIs specific for the RFC concerned in all of the three business areas, or in any other business areas.

3.7 Targets/thresholds

Currently, no commonly applicable targets/thresholds are defined. However, each RFC is free to define its own targets.

3.8 Provision of results

The RFCs shall fill in the form (see Annex 1) in order to inform RNE about which KPIs out of the those described in Point 3.6. they intend to apply and to provide RNE with the necessary data for the calculation of the KPI concerned. The data for calculation has to be sent to RNE 2 months before the time of calculation of the KPI at the latest.

The results of those KPIs which are calculated by RNE by using RNE OBI will be available one day after the given times (see Point 3.6) in form of raw data (.xls files), which will be available in OBI for download.

3.9 Publication of results

The decision on the way and time of publication of the results of the KPIs remains with the RFCs. However, it is advisable to mention them in the Annual Report or in the performance report (under Article 19.2 of the Freight Regulation) of the RFC. The KPI for number of trains might only be used for RFC-internal purposes.

The RNE/RFC High Level Group decided that the figures of the commonly applicable RFC KPIs in point 3.6 shall also be published on the RNE website after the KPIs have been approved by the RFC MBs.

4. RNE/RFC KPI Coordination Group

The RNE/RFC KPI Coordination Group has obtained the mandate for the following tasks:

» Definition of the strategic approach to KPIs,
» Coordination of the use of the KPIs commonly applicable to all RFCs (e.g. dissemination of these Guidelines to the relevant experts within the corridor organisation, submission of necessary data to RNE to calculate the KPIs, etc.),
» Steering the revision of the KPIs described in point 3.6 in terms of business areas, definition, calculation formula, etc. on a yearly basis where the KPIs and their technical details are defined by the relevant RNE working groups or the C-OSS Community and the related reports are defined by the RNE Performance Management Working Group,
» Update of these Guidelines when necessary,
» Providing exchange of information between the setting up / amendment of KPIs monitoring capacity management in the FCA and in these Guidelines, so that they are in line with each other in order to avoid double work both for the RFCs and for RNE in terms of monitoring and reporting.

This group shall consist of:

» at least one representative per RFC (it is advisable that this person has relevant experience in the field of Train Performance Management or capacity management of the RFCs),

> » if required, relevant experts in PCS, TIS and OBI at RNE

The coordination of this group is under the responsibility of the RNE RFC Senior RFC Manager and Project Manager. The group shall meet at least once a year.

5. Workflow for development of new commonly applicable KPIs

The workflow for the development of KPIs is displayed in Annex 2 of this Guideline. The main elements are as follows:

> » technical discussions shall take place exclusively in the RNE WGs concerned or in the C-OSS Community, in order to avoid duplication of efforts,
> » the relevant RNE WGs are responsible for the definition of the requested KPIs, while the RNE Performance Management WG takes care of defining the reports needed for these KPIs and the monitoring of their correctness,
> » the RNE/RFC KPI Coordination Group does not carry out any technical work, but acts as coordinator of the above-described process and as a strategic platform for the overall RFC KPI topic.

The main, commonly agreed principles for introducing new KPIs in this Guideline are as follows:

The RNE/RFC KPI Coordination Group shall

> » define the benefit/added value of each KPI,
> » investigate the technical feasibility by doing test calculations on volunteering RFCs,
> » identify potential bottlenecks (process and/or IT gaps),
> » investigate the possibilities in terms of if and how potential bottlenecks might be overcome,
> » investigate the need for human resources for data provision and reporting.

New KPIs can be added to this Guideline if

> » the KPI will actually benefit international rail freight business,
> » the calculation is technically possible,
> » the results are satisfactory for all parties concerned,
> » human resources are available for regular data provision and reporting.

6. Provision of reports for other, individual KPIs

6.1 Requesting reports about other KPIs related to Operations

As far as KPIs related to Train Performance Management are concerned, reports about any KPIs other than those described in point 3.6 shall be requested from RNE in accordance with the procedure described in the RNE manual for 'Cooperation in Train Performance Management'.

6.2 Requesting reports about other KPIs related to Capacity management

RNE will try to fulfil any other requests related to KPI reports on capacity management issues. Normally, 'the first come – first served' principle is applied. However, due to the fact that the

number of such requests cannot be envisaged, it might happen that in the future conflicts occur between certain requests, preventing the delivery of the report in due time.

Therefore, the following prioritization will be applied in case of conflicts:

Criteria	Scores		
	0	1	2
New KPI (new report)	Yes	No	-
Priority	Low	Medium	High
Complexity of development	Complex	Medium	Easy

Total score = New KPI (or not) + Priority + Complexity of development.

The request with the highest score will be fulfilled earlier. If more than one request has the same score, the request requiring a shorter processing time will get priority over requests with longer processing time.

In the medium or long-term, a similar and more sophisticated approach as described in the RNE manual for 'Cooperation in Train Performance Management' can be developed to improve the procedure for requesting and providing individual reports from PCS. When such procedure takes effect, the procedure described in this point of these Guidelines will not be valid anymore.

Annexes

Annex 1 – Data submission form

Annex 2 – Workflow for development of commonly applicable KPIs

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