Framework for setting up a Freight Corridor Traffic Management System

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Content

Abbreviations and Glossary

RFC	Rail Freight Corridor
MB	Rail Freight Corridor Management Board
IM	Infrastructure Manager
RU	Railway Undertaking
AG	Advisory Group
TIS	Train Information System (formerly Europtirails)
TAF/TAP TSI	Technical Specifications for Interoperability for Telematic Applications for Freight / Passengers
UIC	Union Internationale des Chemins de Fer
TCCCom	Traffic Control Centres Communication
PaP	Pre-arranged path

Change history

VERSION	AUTHOR	DATE	CHANGES
Final 2012	Traffic Management Project Group	5/12/2012	Approval by the GA
updated	Simona Di Loreto	31/10/2012	Annexes added
V20120522	Traffic Management sub-group (OAS)	5/06/2013	Complete revision – name changed
Final 2013	Simona Di Loreto, Ian Cleland	22/07/2013	Editing

Foreword

The present document's aim is to set up an overall framework of standard procedures and tools supporting traffic management along the Rail Freight Corridors (RFCs). These procedures fulfil the requirements contained in the Freight Regulation (EU Reg. 913/2010) in Articles 16, 17 and 19 (see Part 1 for details).

The Member States´ Governments, with the support of national Infrastructure Managers and capacity Allocation Bodies, are legally responsible for the fulfilment of the Regulation's requirements. Nevertheless, as RailNetEurope RNE has been active for years in many of the fields covered by the Regulation and carrying out with many of the tasks that the Regulation assigns to stakeholders, RNE has decided to become a 'service provider of choice'. This document forms one of the services that RNE offers to the Corridor Organisations and their member IMs. It has been formulated within the framework of an *ad hoc* Work Package (Traffic Management WP), carried out by a working group set up for that purpose.
The first outcomes of the project were delivered in 2012 and updated in 2013.
The provisions of the Freight Regulation that concern traffic management, create a complex framework, linking the strategy for traffic management with other important tasks of RFCs without mandating specific rules. The approach followed by the working group consists of two stages that are illustrated in the two parts of this document.

Part 1, the *"Check-list for setting up a Corridor Traffic Management System"* contains an analysis of the legal requirements set by the Freight Regulation and of the items that the RFCs will have to deal with when putting in place their strategies, rules and tools for traffic management along the corridors to comply with the Regulation. The check-list is not intended to set recommendations as to how to fulfil the Regulation but it is meant to be used by the RFCs as to the process of drafting their own traffic management framework.

Generally for the standard traffic management business, bilateral or multilateral cross-border communication or traffic management agreed procedures already exist. In these cases, many of the tasks listed in the check-list may be fulfilled already or not relevant. However, some RFCs may find that their border interfaces are not covered by current arrangements or might choose to replace existing agreements with something more compliant with the Regulation or more efficient. In this case, the RFCs may use the proposals described in Part 2 of the *Guidelines.*

Part 2 of this document - *"Suggested procedures for setting up a Corridor Traffic Management System"* - contains proposals on how to answer the questions listed in the check-list in cases where the requirements of the Regulation are not yet fulfilled, in the Corridor´s bodies´ opinion, by the existing procedures or agreements. Figure 1 explains this approach schematically.
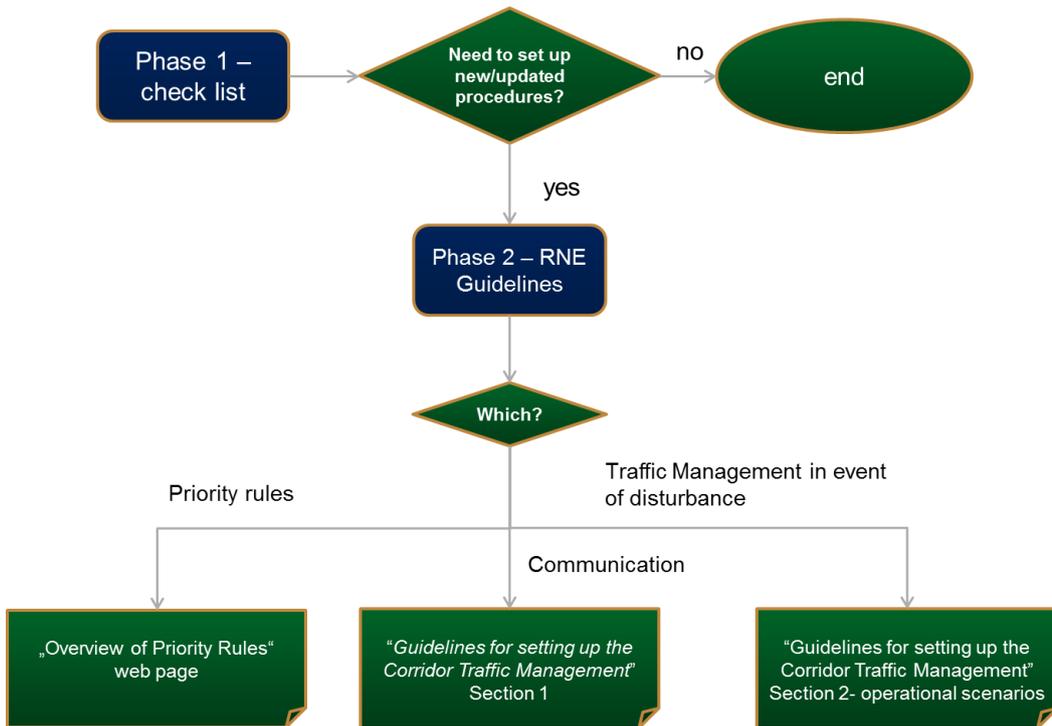
Figure 1 Setting up of the Freight Corridor Traffic Management System

This document does not deal with the issue of priority rules in operation. However, as is also explained in Part 1 (Section 2.5), the RFCs will have to deal with this aspect because the Freight Regulation contains provisions regarding the topic (Art.17). In order to support the RFCs in this task, RNE has provided them with an overview of the priority rules applied at national level (*link to webpage*).

Section 1 of the *Guidelines* contains recommendations for setting up coordination of the traffic management procedures along the corridor as provided for in Art. 16 of the Freight Regulation and draft *Guidelines for Traffic Management in event of disturbance* as required by Art.17.

PART 1

Check-list for setting up a Corridor Traffic Management System

1 Relevant requirements of the EU Regulation 913/2010

1.1 Article 16 - Traffic management

1. The management board of the freight corridor shall put in place procedures for coordinating traffic management along the freight corridor. The management boards of connected freight corridors shall put in place procedures for coordinating traffic along such freight corridors.
2. The infrastructure managers of the freight corridor and the advisory group referred to in Article 8(7) shall put in place procedures to ensure optimal coordination between the operation of the railway infrastructure and the terminals.

1.2 Article 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. Each infrastructure manager concerned shall draw up priority rules for the management between the different types of traffic in the part of the freight corridors within the responsibility of that infrastructure manager in accordance with the common targets and/or guidelines referred to in paragraph 1 of this Article. Those priority rules shall be published in the network statement referred to in Article 3 of Directive 2001/14/EC.
3. The principles for establishing the priority rules shall at least provide that the train path referred to in Article 14(3) and (4) allocated to freight trains which comply with their scheduled time in the working timetable shall not be modified, as far as possible. The principles for establishing the priority rules shall aim at minimizing the overall network recovery time with regard to the needs of all types of transport. For this purpose, infrastructure managers may coordinate the management between the different types of traffic along several freight corridors.

1.3 Article 19 - Quality of service on the freight corridor

1. The management board of the freight corridor shall promote compatibility between the performance schemes along the freight corridor, as referred to in Article 11 of Directive 2001/14/EC.
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.

2 Check-list

Comprises a list of topics to be checked by the RFCs in order to put in place their Corridor Traffic Management strategy and/or system to comply with the Regulation´s requirements (Section 1 above).
The following checks have to be performed either by the RFCs themselves or by any other body or working group appointed by them. It is important to stress that the for traffic management strategy should be linked to related matters such as the planning and follow-up (after-sales) phase of the train service process. A summary of all relevant items in this section and the following ones, can be found in the Annex (Section 5).

2.1 Article 16.1

Requirement: The management board of the freight corridor shall put in place procedures for coordinating traffic management along the freight corridor. The management boards of connected freight corridors shall put in place procedures for coordinating traffic between such freight corridors.

Questions to be answered:

- Do bilateral procedures exist currently between IM members of your Corridor?
  - If so these procedures have to be collated for each IM and reviewed.
  - These procedures must include (see also Part 2):
    - Relevant trains, including the definition of the "Corridor trains"
    - List of events that initiate coordination procedure
    - Type of information passed
    - Definition phase
    - Procedures and players involved
  - If no procedure exists: suggest to the IMs that they should set up such procedures based on the RNE Guidelines (see Part 2).

- If your corridor is connected to other corridors.
  - Do bi-lateral procedures exist between your corridor and neighbouring ones?
  - If no procedure exists: both management boards must establish these based on the RNE Guidelines.

In addition to bilateral procedures, does a document exist such as the "Guidelines for Corridor Traffic Management" to coordinate traffic management along the corridor (on the basis of the RNE Guidelines)? If not, will it be created?

2.2 Article 16.2

Requirement: The infrastructure managers of the freight corridor and the advisory group referred to in Article 8(7) shall put in place procedures to ensure optimal coordination between the operation of the railway infrastructure and the terminals.

Question to be answered:

How do the procedures operate for train services to and from private terminals served by each IM member of the corridor? (the "Terminals Advisory Group's" opinion about these procedures should be obtained)

2.3 Article 17.1

Requirement: 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.

Questions to be answered:

- Has the MB adopted common targets for punctuality (see also below)?
- Has the MB adopted Guidelines for traffic management in the event of disturbance (integrated with or separated from the Guidelines referred to in the section related to Article 16.1)?
- Have these Guidelines been drafted according to the RNE Guidelines (cf. Part 2)?
- If yes, do they establish operational scenarios in case of disturbance (see Section 3 of RNE Guidelines)?
- Do the Guidelines for Corridor Traffic Management make it possible to reach the punctuality targets?

Article 17.1 is also linked with Article 19 of the regulation (cf. 2.4).

2.4   Article 19

Quality of service on the freight corridor
1. The management board of the freight corridor shall promote compatibility between the performance schemes along the freight corridor, as referred to in Article 11 of Directive 2001/14/EC.
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.

Therefore, the following items must be taken into account as well:
The management board of the corridor must adopt punctuality targets and monitor performance.
RNE has provided Guidelines for Freight Corridor Punctuality Monitoring ([Guideline - Punctuality Monitoring](#)) to help the management board choose the KPIs, implement train performance management, and monitor performance

2.5   Article 17.2 and 17.3

Requirement: Each infrastructure manager concerned shall draw up priority rules for the management between the different types of traffic in the part of the freight corridors within the responsibility of that infrastructure manager in accordance with the common targets and/or guidelines referred to in paragraph 1 of this Article. Those priority rules shall be published in the network statement referred to in Article 3 of Directive 2001/14/EC.

The principles for establishing the priority rules shall at least provide that the train path referred to in Article 14(3) and (4) allocated to freight trains which comply with their scheduled time in the working timetable shall not be modified, as far as possible. The principles for establishing the priority rules shall aim at minimising the overall network recovery time with regard to the needs of all types of transport. For this purpose, infrastructure managers may coordinate the management between the different types of traffic along several freight corridors.

Foreword:

All IMs have priority rules and normally these rules are published at national level.
RNE has compiled an overview of all the priority rules and systems of member IMs networks – *link to webpage*).

Questions to be answered:

The Corridor managing board must verify:
- Are there any updates since the RNE overview was published?
    - If so: please ask the relevant IM(s) to follow the procedure to update their own information in the overview (*link to webpage*)
- Are the rules applied effectively? (experience may show that actual operational rules may vary from those mandated)
- Are Corridor trains considered in the national priority rules in line with the Regulation requirements?
- If not, RFCs should check how this can be achieved without having an impact on the overall network´s performance

3 Summary of the procedures/rules required by the Regulation (to be laid down in appropriate Guidelines, Handbooks or other relevant documents – see other RNE documents for the RNE recommendations)

The RFCs should ensure that the following procedures and principles are described in at least one Corridor or national document:

- Coordination procedures for traffic management along the corridor
- Coordination procedures with terminals concerning traffic management
- Traffic Management in case of disturbance
- Principles establishing priority rules

4 Additional items

The following topics are proposed by the RNE working group as optional items to be checked by RFC bodies:

TRAFFIC MANAGEMENT (Art.16)
- Items relevant to the general Traffic Management strategy:
  - Have common targets for punctuality been set (case 1)? if not, are the corridor guidelines for traffic management (if any) effective (case 2)?
    - If case 1, how is the link between the targets (delay threshold, measurement, and identification …) and operational practice defined? Are there any procedures to measure whether the targets have been reached, to improve practice or, if necessary, to set more realistic targets? How does the RFC assess whether the targets fit with customers' requests?
    - If case 2, how is the link between the guidelines and the results of the customer survey defined? How does the RFC measure that procedures are in accordance with customers' requests
  - How is the reserved capacity connected to the traffic management strategy?
  - How does the corridor define, implement and monitor a priority policy between track possessions and train operations in case of late running, or short notice need for train operation or possession?
  - How are allocated but not used paths measured, for national and international trains? How are these results communicated and acted upon?
  - Does a customer satisfaction survey exist?
  - Through which process are the results of the survey linked to KPI definition?

- Organisation/procedures:
  - How do the corridor rules define and manage the relationship between
    - the operational office of the RFC (if existing) and the RU/AA
    - the operational office of the RFC (if existing) and the corridor IM
  - How are delayed trains managed: e.g. IM re-use of reserve capacity, identifying and creating new paths…)
  - At what level are operations managed? : on a procedural level only, or at a real-time operational level ?
  - Have documents containing rules on all these topics been compiled, coordinated and distributed?

- Tools:
    - How do traffic managers define and recognize a train running under PaP or non-PaP in the tools they use?
    - Are TAF/TAP TSI requirements integrated into the Corridor´s operating procedures and tools?
    - How is a daily list of trains defined as corridor international trains, national or international paths, PaP and non-PaP identified and communicated to IMs?
    - How is TIS "real time" data integrated into the tools used by traffic managers in each IM?
    - How are data exchanges between corridor IMs and with other corridors defined?

TRAFFIC MANAGEMENT IN CASE OF DISTURBANCE (Art.17.1)

- Items relevant to Traffic Management in case of disturbance:
    - If operational scenarios are identified they have to be developed according to Section 5 of Part II of the Guidelines
    - If operational scenarios do not exist:
        - How else is the strategy for diversionary routes (maps, network of people to involve …) defined and managed in the event of unavailability of the corridor itself
    - How are delayed trains managed: IM re-use of reserve capacity, identifying and creating new paths…)

PRIORITY RULES (Article 17.2/3)

- How does the Corridor make sure that operating rules keep a punctual PAP train on time?
- How are failures to achieve this measured?

5 Annex - Summary of tasks concerning freight corridor traffic management

- Identify main route and other relevant lines such as feeder lines and cross links

- Identify diversionary routes, via which trains could be re-routed

- Define operational scenarios:
  - o "Normal scenario" when trains are operated as planned (a threshold beyond which a delay is considered abnormal –so that a different scenario must apply- must be defined
  - o "Disturbed scenario" ….
  - o "Service interruption" ….

- Set traffic management priority criteria:
  - o Mapping of existing rules (country by country)
    - ▪ Common principles
    - ▪ Differences
  - o Common principles to be defied and described
  - o Mapping of available supporting tools
  - o Listing and description of future supporting tools

- Communication
  - o Partner identification: description of the different decision-making levels
    - ▪ who-is-talking-to-whom
  - o Contents of the communication
  - o Flows & procedures
  - o IT supporting tools

DEFINITION PHASE

to be periodically reconsidered depending on the OPERATIONAL PHASE outcomes

OPERATIONAL PHASE
Train Operation Performance Management

- o Traffic monitoring
  - o Define criteria for the monitored sample of trains:
    - sample consistency: x % of the total amount of planned trains or x % of the total amount of operated trains
    - freights and/or also passenger services
    - sample commercial representativeness (e.g.: corresponding to the RUs' market share on that corridor)
    - business relations (from A to B, from .. to ..)
    - service sub-categories (HS, LD passengers, Regional, Rolling-Highway, Combined, Conventional)
  - o Definition of data quality standards
    - availability
    - completeness
    - reliability
  - o Definition of monitoring points (at least origin, border stations and destination)
  - o Mapping of available reporting tools
  - o Definition of future tool requirements and improvements
  - o Definition of future tools
  - o Reporting
    - Selection of reports' addressees
    - definition of reports' contents
    - definition of reports' periodicity
    - description of applied procedures

- o Punctuality Performance Management
  - o Definition of punctuality targets, different by service type (based on the performances identified by Traffic Monitoring)
  - o Definition of relevant players
    - IMs, RUs, Terminals
  - o Setting up of confidentiality contracts (mandatory requirement)
  - o Detection of operational bottlenecks
  - o Identification of future measures/actions
  - o Milestone fixing
  - o Reporting
    - selection of reports' addressees
    - definition of reports' contents
    - definition of reports' periodicity
    - description of applied procedures
  - o Definition of to-be-applied escalation procedure

AFTERSALES PHASE
Customer Satisfaction Measuring

- Definition of criteria for the measuring of Customer Satisfaction
  - Definition of target-groups:
    - RUs
    - Terminals
    - Others (e.g.: the so called "applicants")
  - Periodicity for the CS survey
  - Definition of contents for the CS survey

  - Definition of the type of quality that has to be measured:
    - Quality of provided information:
      - Accessibility/availability
      - Completeness
      - Reliability
      - Promptness
    - Quality of infrastructure
      - Index of infrastructure failure
      - Fulfilment of planned maintenance slot
      - Other
    - Quality of the Punctuality Performance Management process
      - Level of RUs' involvement
      - Suitability of adopted actions
      - Quality of provided <<punctuality report>>
        - Completeness
        - Periodicity
        - Reliability

NB: some matters of QUALITY, such as Timetabling (e.g.: competitiveness of journey times with road, stopping time at borders, etc.) are out-of-scope for Traffic Management guidelines.

PART 2

Suggested procedures for setting up aCorridor Traffic Management System

1 Introduction

1.1 General considerations

Part 2 is aimed to provide RFCs with support in the cases where they decide, having completed the checks listed in Part 1, that they need to put in place new coordination procedures for traffic management.

To provide this support, the working group author of this document has analysed the means by which the requirements of the Freight Regulation could be fulfilled and to what extent already-existing traffic management rules and procedures could be aligned with each other.

The conclusion of this analysis is that the main field of action for the described task is standardisation of communication procedures. Accurate knowledge about the state of traffic is the basis for taking corrective management decisions, both for RUs and IMs, and for assessing the possible development of the situation in case of disturbances.

The recommendation regarding communication procedures and their coordination is described in Section 2.

The main strategy is to improve already-existing means in order to ensure that all communication needs are fulfilled, and that the used tools are integrated and user-friendly to the maximum extent possible.

The coordination of rules for decision-making processes is considered less effective as these are neither strictly necessary nor easy to harmonise. However, the working group has made a general proposal in this field (Section 3).

Section 4 describes the tools that should be used as support when implementing both the communication and traffic management coordination procedures:

- Train Information System (TIS): a web-based application monitoring international traffic in real time and providing historical information through its reporting function; not all relevant parties are currently using this tool, but a roll-out to other partners is planned;
- Traffic Control Centres Communication (TCCCom) Guidelines: the TCCCom project aimed to improve the communication between cross-border dispatching centres. The current outcomes of the project consist of, among other things:
  - A tool providing a multilingual exchange system
  - The results of three pilot tests carried out on bi-lateral connections.

For further information about individual IT tools, reference to the appropriate documentation should be made[1].

As mentioned in the foreword, the procedures suggested in the present document must only be considered mandatory where no rules exist or where these represent an improvement to the existing situation.

Therefore, the proposed coordination procedure should be applied only if no coordination procedures are in place or they are not working well currently. It is not intended that effective existing channels of bilateral communication should be replaced by new procedures.

Finally, with reference to traffic management, it is recommended to apply the presented tools and procedures only to all cross-border traffic.

The coordination procedures should be activated when a traffic disturbance occurs, namely an incident and/or an unplanned line closure.

In order not to overload the dispatching centres with communication requests, which sometimes are not justified by the situation conditions and threshold have to be set according to which the communication and/or the traffic management procedures should be activated.

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[1] For TIS: http://www.rne.eu/tis.html; for TCCCom: http://www.rne.eu/tcc-communication.html

Harmonisation along corridors and between corridors is not necessarily advisable due to their different characteristics.

Therefore, this document does not specify thresholds and conditions. The Corridor Organisations are free to make their own choices, provided that, where possible, thresholds and conditions should be harmonised.

However, it is possible to list events and quantifiable issues that trigger the procedures (Section 1.2).

Section 1.3 illustrates the principle of the preliminary definition phase.

1.2   List of events that trigger the conditions and thresholds for coordination procedures

The following circumstances have to be taken into account when assessing whether an incident and/or an unplanned line closure justifies switching on/off the procedures described in these Guidelines:

- Incident:
  - Causing delay
  - Causing cancellations/rerouting
    - Number of affected trains
    - Actual or predicted delay expressed in actual minutes or in average minutes
    - Number of affected IMs, when known
    - Time of the day
    - Characteristics of the line section
    - Capacity availability in the networks
- Line closures –unplanned
  - Diversionary routes availability
  - Time of the day
  - Duration
  - Reason
  - Partial or total closure.

When an exceptional traffic/event is taking place, the above procedures shall always be initiated.

1.3   Definition phase

The Corridor Organisations have to set parameters that define the pre-requisites to trigger the use of the procedures illustrated in these Guidelines:

- Thresholds and conditions for starting the procedures presented in this document:

  For example:
- Corridor X decides that the threshold to activate the process is as follows:
  - Duration of line closure is more than 3 hours and/or
  - Capacity reduction is more than 30%

- Corridor Y decides that the threshold to activate the process is as follows:
  - Average of delay minutes
    - 15´during the day
    - 30´ during the night
    - and/or
  - Number of affected trains is more than 20

In future, thresholds and conditions will also be the object of TAF/TAP TSI messages, therefore co-ordination between Traffic Management and TAF/TAP TSI is essential.

- Operational scenarios (see Section 3)
- Description of the involvement of the RUs in the decision-making process and of any other stakeholder involved in the traffic chain (such as airports, harbours, terminals ...) – see also Section 5
- Specific procedures and players involved, where necessary (see Section 2.2).

2 Coordination of communication procedures

2.1 Foreword

When one of the circumstances described above occurs, the communication procedures described in these Guidelines have to be activated.

Section 2.2 presents some general rules about the subjects that are considered mandatory and those that are optional.

The general aims of the procedure should always be kept in mind in order to assess correctly the need for information flows between partners. These general aims are:

- To make traffic management easier;
- To make it possible to take corrective measures as early as necessary.

The partners involved in the procedures should be the border stations and/or the dispatching centres, depending on the circumstances (Section 2.3).

The timing of the information flows also depends on the circumstances, namely the traffic density of the lines.

Section 2.4 illustrates the messages that should/can be used in the communication flows.

2.2 Type of information

Not all information concerning the traffic should be considered mandatory.

- Mandatory information:
  - Disturbances with a large impact on rail traffic.
  - Line interruption, including forecast of reactivation
  - Heavy capacity reduction (for lines, stations and shunting yards), including forecast of duration.

In such cases the information exchange with neighbouring IMs MUST be activated.

- Non mandatory information:
  - Disturbances without any impact or only negligible consequences for the traffic.
  - Line interruption with small impact on the traffic
  - Low capacity reduction
  - Any additional information that can help traffic management by the neighbouring IM.

In such cases the information exchange with neighbouring IMs MAY be activated.

The definition of 'small' and 'large' depends on the decisions regarding thresholds and conditions taken during the definition phase.

2.3 Procedures and players involved

A detailed description of the procedures and of the players involved is not included here because this depends on the national rules and on the impact of the events. For example, the involvement of national or regional traffic control centres depends on the level of the disturbance; the involvement of planning departments depends on the individual internal rules of the IMs.

In any case, the activation of the procedure is the responsibility of the IM who has first acknowledged the problem, regardless of the ownership of the relevant infrastructure.

Information must be provided both to the neighbouring IM and to a subsequent affected IM, if required by the circumstances. The affected national RUs must be informed by the IMs as well.

Coordination between RUs is required in order to provide IMs with the necessary set of information.

2.4 Catalogue of messages and communication flow rules

The exchange of information shall be based on the use of template messages. Several data catalogues already exist; therefore, it is recommended to make use of such catalogues (see also below).
Messages defined in these catalogues are to be filled in and read by the staff of Train Control Centres (TCC), according to the national rules and/or bilateral processes already in place and/or the operational scenarios (see Section 3), if applicable.

These messages contain the information needed to carry out the most important processes for train operations. These are, in the first instance, processes related to train running (for instance: traffic regulation and resource deployment) but also to planning and quality control. Where planning is concerned, however, this only applies in the case of alterations at short notice to current train-path utilisation.

2.4.1 Communication flows

In this Section, the various information cases are listed.
An essential distinction is made between
- train-related information (primary statement always concerns an individual train) and
- event-related information (primary statement always concerns a specified event, for instance strike or bomb threat).

Train-related messages by turn are divided into
- those that are not to be replied to by the recipient (unidirectional messages) and
- those that require a reply from the recipient (bidirectional messages).

As explained in more detail in Section 4, currently, different IT tools are supporting communication procedures.

- TIS (using TAF TSI and UIC messages)
- TCCCom. (using its own catalogue of messages)

However, it is important to stress that the two systems have a completely different approach so that the content and use of the information within them cannot be considered as identical.
TIS is a data exchange system automatically fed by national systems while TCCCom is a 'manual' communication tool.

It is recommended, whatever procedure is chosen for the information exchange, that it uses communication tools in the following order:

- where available, use of automatically created and transferred messages, namely TIS messages; the catalogue of messages can be found in the relevant documents (link to TIS and to TAP/TAF TSI Guidelines)
- if the above are not available, use of TCCCom (manual messages supported by an automatic IT tool); the catalogue of messages can be found in the relevant documents (link to TCCCom documents)
- use of other communication tools/process (phone, fax ...).

2.4.2 Train-related information

This section covers the cases in which the information exchange is related to a single train.

2.4.3 The messages listed here are available in the systems that are indicated and details on their use can be found in the related documentation.

Message	UIC	TAP/TAF	TCCCom	none
Actual Train running information	X	X		
Train cancellation	X		X	
Forecast information	X	X	X	
Train running in advance (running early)			X	
Accepting train running in advance (early-running train)				X
Speed restriction of the train (relevant for other network – related to rolling stock and traction)			X	
Change of train number (only if relevant for other IM)			X	
Change in routing (on national level for passenger trains)			X	
Re-routing of the train (change of handover point)			X	
Answer re-routing of the train (change of border point)				X
Train run interrupted	X	X	X	
Request for actual location, forecast and status	X	X	X	
Answer on actual location, forecast and status	X	X	X	

Table 1 – list of train-related available messages

Network-related information

This section covers the cases in which the information exchange is not related to a single train, but to a specific situation, e.g. a strike, accident, etc.

Message	UIC	TAP/TAF	TCCCom	none
Incident advice			X	
Advance notice			X	
System breakdown – fallback mode in place			X	
Direct communication needed			X	

Table 2 – list of network-related available messages

3   Coordination procedures: operational scenarios

This section illustrates the proposal on how to fulfil the requirement of the Regulation providing for the setting up of Guidelines for traffic management in case of disturbance.

It applies to all cross-border trains, not only to trains running on freight corridors and consists of the setting up of pre-defined, section-by-section operational scenarios in terms of the availability of diversionary routing, which represent options that the IMs can take when a disturbance occurs. The aim is to provide both neighbouring IMs and the customer RUs with a range of predictable actions they can expect from the IM.

The scenarios should be described in written bilateral or multi-lateral agreements between IMs and scenarios have to be defined on the basis of information regarding the routes' technical features; the chosen scenario should be announced to the relevant RUs in time for them to be aware of operational features and required resources.

The key principle in the definition of the scenarios is that corridor pre-arranged path trains will keep to their original routing as much as possible.

Coordination between RUs is required in order to provide the IMs with the necessary information.

TAF TSIs already cover procedures for RU/RU and IM/RU relations, and therefore they are out of the scope of these guidelines.

The definition of each scenario must include at least the following items:

- Description of the scenario (for example, time of the day, infrastructure characteristics, type of disturbance)
- Pre-defined diversionary routes, depending on:
  - Current timetable
  - Safety certification
  - Technical equipment and restrictions
- Timeframe to inform the RUs
- Available capacity on pre-defined diversionary routes.

Currently, similar agreements are already in force along several border sections. More details can be provided by the IMs and can be asked for *via* the RNE Operation and After-Sales WG (RNE OAS WG).

4 Supporting tools

4.1 Overview

The working group has analysed the current availability of tools supporting communication and data collection connected with international rail traffic management. The conclusion of the analysis is that no new tool is needed and that existing IT tools, namely TIS and TCCCom, comply with the purposes of these Guidelines, provided that the agreed improvements are applied and that some additional functions are implemented. For example, a new function in TIS could help to solve the problem of Contracted Timetables at border (CTTs) that do not fit. Details can be found in Section 4.2.

Standard means of communication shall be used (as explained in Section 3) to put in place the procedure. As far as the IT tools are concerned, the following developments are considered necessary:

- ☐ SHORT TERM: use of TIS and/or TCCCom (with improvements)
- ☐ MEDIUM TERM: TCCCom integrated in TIS
- ☐ LONG TERM: integrated platform for all systems (for the purposes of this document called IEP – Integrated European Platform)

The long-term perspective is illustrated by Figure 2:

- ☐ IEP: 'Integrated European Platform'
- ☐ Procedures, times, players, and rules have already been defined in the systems that the WG proposes to integrate, therefore they are not specified here
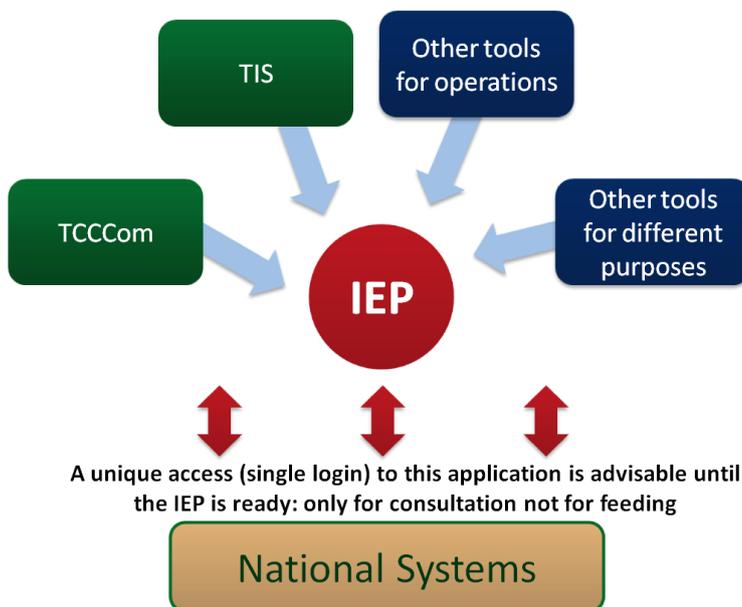

Figure 2 Overview of traffic management supporting system – 'to-be situation' – proposed by Traffic Management WG

4.2 Examples of possible improvements in TIS

One of the most recurrent problems in the management of international rail traffic is 'not matching' train path timetables at borders.

In the reporting phase (*ex post*), international timetables' quality can be measured so that troubles experienced are evident and a suitable measure can be evaluated, for example within the corridor performance management process.

During operations (in real time), when problems must be solved in order to allow a smooth flow of international trains, until now the consistency of contracted timetables has not been checked.

Currently, operational staff are not supported by any 'warning function' that would pre-check whether the timetables fit together when the train is getting closer to the border.

Prompt information about international trains and ensuring the management of the train by the subsequent cooperating RU, could avoid congestion at border stations and allow a better coordination of resources as well as the optimisation of network capacity.

A means to achieve this goal is the implementation in TIS of a warning function: this would pre-check the international trains' timetables (when they are sent to TIS by the IMs' systems) and highlight cases where there is a mismatch; this information would be sent immediately to the concerned IMs.

The IMs should draw up a list of relevant contact persons to whom this information should be addressed and who are expected to take the necessary corrective actions.

Whenever possible, relevant RUs whose trains have mismatched timetables should be informed in order to allow proper coordination with the cooperating partner and, as a result, re-plan resources.

In case of re-routing *via* an alternative border, if a train re-numbering occurs and national numbers are used, their linking together is possible only if the trains´ number correspondence is known.

5 Involvement of Railway Undertakings, Terminal Managers and Corridor Management Advisory Boards

As required by the regulation, the Working Group has identified the extent of involvement in traffic management procedures by other stakeholders associated with the activity of the freight corridors, i.e. the Railway Undertakings and Terminal Managers (who are represented by the respective Advisory Groups) and the Corridor Management Board:

- The contribution by the RUs and Terminal Managers is very important to ensure efficient traffic management
- As far as the RUs are concerned, the exchange of information is fully covered by the TAF/TAP TSI rules
- Terminal Managers should also be involved in the exchange of information. Their access to the IMs' IT Tools (TIS, TCCCom) is considered to be useful and perhaps advisable, but should not be mandatory. The question whether the use of such tools should be free also plays a role
- In compliance with the Regulation, the Corridor Management Boards have to approve/validate general Corridor Guidelines drawn up on the basis of this document
- For efficiency purposes, specific technical rules required by this document (operational scenarios, thresholds and so on) must be dealt with at the operational level.