



TM P1 2014
Report of the project, including
“Guidelines for the cooperation and
communication between Traffic
control centres”

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Abbreviation and glossary

C-OSS – Corridor One Stop Shop

IM – Infrastructure Manager

OSS – One Stop Shop (IM single contact point)

RFC – Rail Freight Corridor

TCC – Traffic Control Centre

TCCCom – Traffic Control Centre communication – the tool integrated in TIS

TIS – Train Information System

WG – Working group

Change history

VERSION	AUTHOR	DATE	CHANGES
1.0	RNE	20/03/2015	First draft
2.0	Project Group	21/04/2015	Complete revision
2.1	RNE	08/07/2015	Messages revision
3	RNE TM WG	27/10/2015	Complete update
4	RNE TM WG	3/12/2015	Final version approved by RNE GA

Foreword

RNE has already launched the projects leading to the Improvement of the Communication between Traffic Control Centres:

- Integration TCCCom tool into TIS
- Operational guideline for the cooperation and communication between TCCs

All communication with the neighbouring TCCs depend on the different tool, which they are using in their daily traffic management business. This communication is not standardised with all partners. In some cases, the TCCs are not involved in the border communication and the procedures exist only on the border station level based on bilateral/multilateral agreements between IMs.

Generally, we can say that in the standard traffic management the agreed procedures exist. However, some IMs may find that their border communication is not covered by arrangements or might choose to replace existing agreements with something more efficient.

The aim of this Guideline is to set up a framework of standard procedures and tools supporting the daily traffic management. These procedures fulfil the requirements contained in the EU Regulation 913/2010 in Articles 16 and 17.

PART 1 - REPORT

1 Relevant requirements of the EU Regulation 913/2010

REGULATION (EU) No 913/2010 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 22 September 2010 concerning a European rail network for competitive freight requires the procedures for coordinating traffic management along the freight corridor in Articles 16 and 17:

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.

Article 17 – Traffic management in the event of disturbance

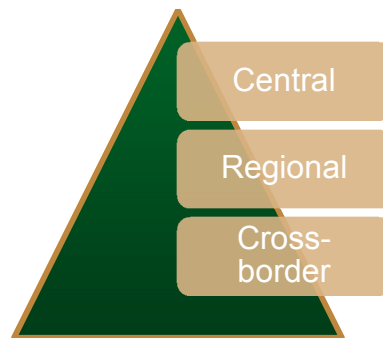
1. The management board shall adopt common targets for punctuality and/or guidelines for traffic management in the event of disturbance to train movements on the freight corridor.
2. (...)

2 Results of the data collection

2.1 Communication procedures

As the organizational schema of dispatching staff is different in every IM company, for the purposes of the communication between TCCs the WG defined three basic levels:

- 1) High level - Central
- 2) Medium level - Regional
- 3) Low level - Cross-border



Picture 1 - The hierarchy of TCCs – basic levels

The IMs were asked to provide information about the existing procedures in operation, specifically:

- » If the IMs have agreed communication procedures
- » If yes:
 - Are they applied on every RFC border
 - What kind of tool is used
 - What is the language
 - What are the main disadvantages of the procedure
- » If not, whether they planned to set up a procedure and what is the suggested tool.

Details can be found in the table 1 next page. The table collects the information about the communication between traffic control centres for the level 1 and 2 only. In general, it can be stated that the IMs have communication procedures, but they are not everywhere applied on every 3 levels.

IM	Do communication procedures exist?	yes						If not, do you plan to set up a procedure ?	Comments, further plans	
		Are they applied on every RFC border?	tool				Language			Problems
			E-mail	Phone	TCCCom	Other				
DB Netz	Yes	No		X	X		German	No English speaking staff 24/7	Shift Team 24/7 English speaking staff / TCCCOM	
Infrabel	Yes	No		X			Dutch, French	No standard communication Language problems Lack of procedures. TC mostly not involved in communication with the DB, where the communication generally happens on border station level.	Use of TCCCom	
MÁV	Yes	No			X			Language barrier	Generally there is not much communication between TCCs Plans: shift Team 24/7 English speaking staff / TCCCOM	
ÖBB	Yes	No	DB, SBB	others	future		DE, EN	Contact in EN depends on the presence of qualified staff on both sides	Use of TCCCom	
RFI	Different procedures depending on the border and on the concerned level	every border is covered by a self-standing procedure					Italian	language barrier	TIS TCCCom functionalities integrated in TIS)	

Table 1a – information on existing communication procedures (summary)

IM	Do communication procedures exist?	Yes					Language	Problems	If not, do you plan to set up a procedure?	Comments, further plans
		Are they applied on every RFC border?	Tool							
			E-mail	Phone	TCCCom	Other				
SBB	Yes	Yes	x	X		x	German, Italian, French		Currently, daily conference calls with the neighboring IMs	
SŽ-I	Yes	Yes		X			Slovenian, Italian, German, Croatian, Hungarian	Not standardised communication with all partners. Communication procedures only on border station level. Language barrier.	Use of TCCCom	
SŽDC	yes but not same level on all IM borders		Borders with: DE, PL, AT on regional or border station level	DE, SL on regional or central level	DE, AT, SK not much used, Plans to use it on regional level		CZ, DE, PL	Not standardised communication with all partners. TCC mostly not involved in communication, communication generally on border station level.	There is plan to involve regional TCC more in crossborder communication.	Generally written communication: - email - bilingual forms - TCCCom. - Regular phone conference not planned. - Phone communication can be used if necessary.

ŽSR	yes, only SZDC									
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Table 1b – information on existing communication procedures (summary)

2.2 Main problems

Describing the existing procedures in the cross-border communication, the IMs identified the main problems:

- No English speaking staff 24/7
- Not standardised communication with all partners, due to language problems or lack of procedures. TC mostly not involved in communication with the DB, where the communication generally happens on border station level.
- Language barrier
- Contact in EN depends on the presence of qualified staff on both sides
- Not standardised communication with all partners. TCC mostly not involved in communication, communication generally on border station level.
- Not standardised communication with all partners.

Generally, there is not too much communication between TCCs. The communication with the neighbouring IM exists mostly on border station levels.

3 Conclusions or Recommendations

According to the data and opinion collected during the project, the project group has established “Guidelines for the cooperation and communication between Traffic control centres”.

These guidelines will be updated when necessary following the ordinary RNE’s procedure.

These guidelines are not the guidelines for the usage of the TCCCom tool. Guidelines are describing the general rules for the communication between Traffic Control Centers. Messages mentioned in the Guidelines are not the TCCCom messages, but should be seen as the complex group of information fields, which should be provided for the relevant type of information. There are several possibilities, in which way this messages can be used for communication (in paper form, fax, e-mail, TCCCom tool, TAF or Tis message). The guideline is not describing, how the message should be exchanged. It is only describing, what should be the content of the message. TCCCom tool is only one of many possibilities, how this exchange can be done. The exact form how the information will be exchanged should be defined in the agreement between the users (on bilateral or RFC level).

PART 2 – GUIDELINES FOR THE COOPERATION AND COMMUNICATION BETWEEN TRAFFIC CONTROL CENTRES

1 Foreword

These Guidelines provide basic principles of the traffic management procedure in the communication between TCCs at every level. The procedure shall be covered by bilateral or multilateral arrangements. The procedure suggested in this document must only be applied if no procedures are in place or they are not working properly. It is not intended that existing bilateral communication should be replaced by the new procedure. In order not to overload the TCCs with communication requests, conditions and thresholds have to be defined.

These Guidelines are providing only general rules, with no exact reference to the existing tools (TIS or TCCCom). Messages mentioned here are general messages to be used in communication. These guidelines are not defining the exact way, in which they should be exchanged. However, different possibilities are mentioned (e.g. fax, TCCCom messages, TIS messages, TAF TSI messages, etc.).

The detailed specification, how the information exchange will be done should be agreed on bilateral or multilateral (e.g. RFC) level.

The provisions and rules described in these Guidelines are applicable and mandatory only for those IMs, who has agreed on the bilateral or multilateral (e.g. RFC) level to follow these Guidelines.

2 Type of information to be exchanged

The different types of information used to communicate problems related to traffic management has been defined and structured into the general messages. These information are needed to carry out the most important processes in train operation. The information can be grouped according to the item they are related (event or train) and to the direction of the information flow (unidirectional or bidirectional). Namely:

- » Item:
 - Train-related information - concerns an individual train. The train is defined by: train number, scheduled date at border point, planned border point, current RU, next RU.
 - Event-related information - concerns a specified event. The event is described by: items: date and time, line from, line to, start station, end Station, border station affected, estimated duration from, estimated duration to.
- » Direction:
 - unidirectional - those that are not replied to by the recipient
 - bidirectional - those that require a reply from the recipient

Messages	Item		Direction	
	Train related	Event related	Unidirectional	Bidirectional
Train delay	X		x	
Train cancellation	X		x	
Train speed restriction	X		x	
Change of train number	X			x
Running in advance	X			x
Re-routing	X			x
Train run interrupted	X		x	
Incident advice		x	x	
Advance notice		x	x	
System break down		x	x	
Serious problem - direct communication needed		x		x
Request for actual information about the train	x			x

Table 2 - List and features of the exchanged messages

3 Communication flow

3.1 When

Sending one of the above described messages is not mandatory and it is up to the bilateral agreements how and when to use them.

However, it is recommended to agree on bilateral or multilateral level, that messages listed below will be mandatory. When circumstances presented in the messages description (see annex 1) occur, these mandatory messages have to be sent to the involved partners, either always or under some conditions, as displayed in table 3.

Mandatory information	Conditions/ thresholds
Advanced notice	always
Incident advice	2 hours for passenger traffic; 6 hours for freight traffic
System breakdown	always
Request for direct communication needed	Always, answer within 60 minutes required; - a list of the contact with defined language and working time, when the person is available

Table 3 – Mandatory messages and related conditions

3.2 How

The exchange of the information shall be based on the use of template messages (Annex 1).

The exchange of messages can be performed using the most appropriate tool, depending on the circumstances:

- » Use of TCCCom tool – a multi-language tool, where the messages are filled manually in sender language and when send they are automatically translated to the recipient language
- » Use of other communication tool/procedures (predefined text for mail, phone ...) when the cases of urgency call for it.

It is advised, that IMs adopting these guidelines will define the Message usage table, where it will be indicated, which messages will be exchanged according to these guidelines, and which tool/method for exchange will be used. Example of Message usage table is displayed in the table below.

Message type	To be exchanged	Tool/Method to be used
Train delay	yes	TIS
Train cancellation	yes	TCCCom tool
Train speed restriction	yes	TCCCom tool
Change of train number	no	-
Running in advance	yes	TIS
Re-routing	yes	TCCCom tool
Train run interrupted	yes	TCCCom tool
Incident advice	yes	TCCCom tool
Advance notice	yes	TCCCom tool
System break down	yes	TCCCom tool
Serious problem - direct communication needed	yes	e-mail
Request for actual information about the train	yes	TIS

Table 4 - Example of Message usage table

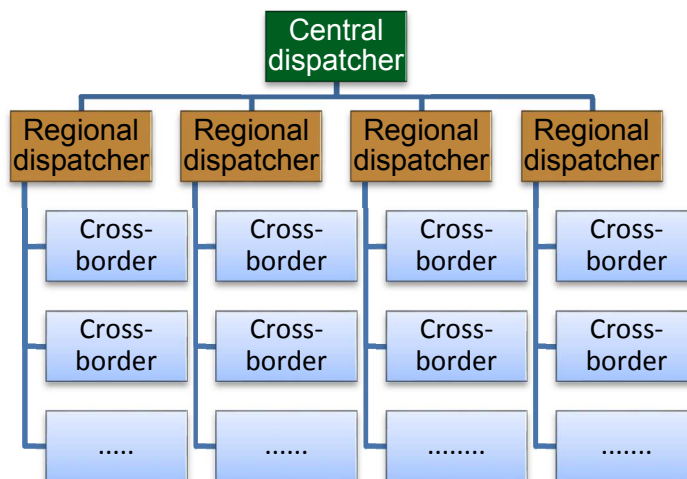
4 Who

4.1 General rules

Operational traffic management for a specific area is done by one responsible person – a **shift supervisor**. Each IM has appointed this supervisors on every available level.

Basically, there can be **3 levels** of traffic management within IM's network (Picture 2):

- 1) The **central dispatcher**: one dispatcher covers the whole network
- 2) The **regional dispatcher**: several dispatchers are responsible each for one region or a corridor.
- 3) The **cross-border dispatcher**: one dispatcher/traffic controller is responsible for operations in one border section.



Picture 2 – Example of communication procedure within IM's network – 3 levels organisation

Because of the different organisation structures within the IMs, it is not possible to fix a specific rules about which level in one IM communicates to/with which level of the other IM(s).

Therefore, when adopting these guidelines, IMs involved shall define the Contact matrix, where for each IM and IM's level the communication partners of the other IMs are displayed. The example, how Contact matrix can look like is displayed on the picture below.

Border section	IM 1			IM 2		
	IM	Level	Contact	IM	Level	Contact

Table 5 - Example of Contact matrix

4.2 Role of the C-OSS (if applicable on RFC level)

Some of the information described in these guidelines might be provided also to C-OSS, depending on their competencies and multilateral agreements on RFC level.

It is advised, that C-OSS should only have a receiver role for **event-related** messages, without possibility to send them. Concerning **train-related** messages it is not advised to envisage the sending of train-related messages to the C-OSS because it is not currently possible to identify the trains running on RFC paths (PaPs or RC paths) in the traffic control systems (national or international) and therefore it is not possible for the TCCs to know for which trains a message should be sent to a specific C-OSS.

The RFC shall decide in which circumstances the C-OSS should be informed and which messages he/she should receive from the TCCs. It is important that the RFC regulation of this issue is precise and states that the C-OSS is only informed but cannot contact the TCCs for more information. The C-OSS can inform the customers about traffic disturbances. For more information related to the received message, both the C-OSS and the customers shall contact the national OSS.

In case of overlapping sections (sections belonging to more than one RFC), all involved C-OSS can be informed, according to the rules applied by the involved RFCs.

Annex 1 – Messages templates

In this section, the different information cases are listed. Also the requirements when to exchange them are described for every case and the message to be used for their exchange is proposed.

1.1 Advanced notice

Usage: To inform about possible bad weather prognosis, planned system shut downs and planned industrial actions, inform about possible capacity and global consequences of it, train numbers - delayed, re-routed, cancelled. If the predictions come true, the message Incident Advice will be sent.

Direction: Unidirectional – only for information

Rules for exchange: Mandatory message. As soon as possible.

Advanced notice	
Event description	
Date /time	
Line from	
Line to	
Start station	
End station	
Border station affected	
Application date and time	
Estimated duration from	
Estimated duration to	
Bad weather	<input type="checkbox"/> Snow <input type="checkbox"/> Flood <input type="checkbox"/> Thunderstorm Others.....
System breakdown	<input type="checkbox"/> Telecoms network <input type="checkbox"/> IT Systems
Industrial actions	<input type="checkbox"/> IM <input type="checkbox"/> RU
Capacity consequences	Total closure <input type="checkbox"/> Capacity reduction <input type="checkbox"/>
Global consequences	
Delayed trains	Train Number Estimated Delay
Trains to be rerouted	Train number
Trains to be kept by previous IM	Train number
Cancelled trains	Train number

Table 1: Content of the Advanced notice message

1.2 Incident advice

- Usage: To inform about unexpected maintenance, accidents, bad weather and infrastructure failures, etc. and about capacity and global consequences of it ... trains delayed, re-routed, cancelled
- Direction: Unidirectional
- Rules for exchange: Mandatory message. As soon as possible.
- Thresholds: 2 hours for passenger traffic; 6 hours for freight traffic

Incident advice	
Event description	
Date/time	
Line from	
Line to	
Start station	
End station	
Border station affected	
Estimated duration of the incident	From: To:
Railway accident	<input type="checkbox"/>
Personal accident	<input type="checkbox"/>
Track obstruction	<input type="checkbox"/>
Unplanned maintenance	<input type="checkbox"/>
Malicious act	<input type="checkbox"/>
Fire	<input type="checkbox"/>
Infrastructure installation failure	<input type="checkbox"/> Track <input type="checkbox"/> Signalling equipment <input type="checkbox"/> Electric power supply equipment
Bad weather	<input type="checkbox"/> Snow <input type="checkbox"/> Flood <input type="checkbox"/> Thunderstorm Others.....
System breakdown	<input type="checkbox"/> Telecommunication network <input type="checkbox"/> IT System
Industrial actions	<input type="checkbox"/> IM <input type="checkbox"/> RU
Capacity consequences	Total closure <input type="checkbox"/> Capacity reduction <input type="checkbox"/>

Global consequences	
Delayed trains	Train number Estimated delay
Trains to be rerouted	Train number
Trains to be kept by previous IM	Train number
Cancelled trains	Train number

Table 2: Content of the Incident advice message

1.3 System break down

Usage: To inform about applying the fall back solutions instead of the standard cooperation and communication ...

Direction: Unidirectional

Rules for exchange: Mandatory message. The fall back solution must be agreed in advance

System break down	
Date/time	
Affected border points	Border point
Estimated duration of break down	
Fall-back mode applied	

Table 3: Content of the System break down message

1.4 Request for direct communication

Usage: In urgent cases, the direct communication between different dispatching centres may be needed. This message serve to inform next IM, that such communication is needed and it is proposing the languages, in which the communication could be held.

This message is useful only between the IMs, where the language barrier exists. The sending IM is listing the languages, in which communication is possible. The receiving IM is providing the phone number, which should be called for direct communication in specified language.

Direction: Bidirectional. Message can be used also as unidirectional, if IMs involved agreed, that sending IM will list the phone numbers and receiving IM will initiate the phone call to the relevant phone number.

Rules for exchange: Mandatory message. The answer is required in 60 minutes

Need for direct communication in same language	
Proposed language	List of languages
Telephone number/contact data	

Table 4: Content of the Request for direct communication message

1.5 Change of the train number

Usage: To inform next IM that expected train will arrive under different number than planned

Direction: Bidirectional

Rules for exchange: Only if relevant for the next IM. In case that the new train number is used at the border point. To be sent as soon as possible, before the border point.

Change of the train number	
Train identification	
Train number	
Scheduled date at border point	
Planned border point	
Current RU	
Next RU	
Train number	
Accepted	<input type="checkbox"/>
Train number	

Table 5: Content of the Change of the train number message

1.6 Request for actual information about the train

Usage: In order to not to wait to get the information, one could send a request to get information: Where is the train? Is it on time? When will it be at the border point?

Direction: Bidirectional. It is also used as an answer.

Rules of exchange: Threshold for sending the message must be defined and agreed

Request for actual information about the train	
Train identification	
Train number	
Scheduled date at border point	
Planned border point	
Current RU	
Next RU	
Actual point	
Information requested	<input type="checkbox"/>
Actual point	Name of the point
Actual status	
Information requested	<input type="checkbox"/>
Cancelled	<input type="checkbox"/>
Interrupted	<input type="checkbox"/>
On time	<input type="checkbox"/>
Running in advance
Delay
Estimated border time	
Information requested	<input type="checkbox"/>
Estimated border time	
Loco type	
Information requested	<input type="checkbox"/>
Loco type

Dangerous goods	
Information requested	<input type="checkbox"/>
Yes	<input type="checkbox"/>
No	<input type="checkbox"/>
Needed operations at border point	
Information requested	<input type="checkbox"/>
<input type="checkbox"/> Change of tail light	<input type="checkbox"/> Change of loco
<input type="checkbox"/> Change of composition	<input type="checkbox"/> Technical inspection
Minimum stopping time needed at border point	
Information requested	<input type="checkbox"/>
Minimum stopping time needed at border point

Table 6: Content of the Request for actual information about the train message

1.7 Rerouting of the train

Usage: To ask for permission to re-route the train through another handover point with the IM. The new handover point and new time for hand over must be proposed.

Direction: Bidirectional. It is also used as an answer. To agree or disagree with the proposal. In the answer, also new point or time for the border point can be proposed.

Rules for exchange: as soon as possible – before starting with the re-routing.

Rerouting of the Train	
Train identification	
Train number	
Scheduled date at border point	
Planned border point	
Current RU	
Next RU	
Border station	
Proposed border point
Accepted	<input type="checkbox"/>
Different border point
Time at border point	
Estimated time at border point	
Accepted	<input type="checkbox"/>
Different time at border point	

Table 7: Content of the Re-routing of the train message

1.8 Train cancellation

Usage: To inform IM that train run has been cancelled by the RU and should not be expected at the border

Direction: Unidirectional

Rules for exchange: To be send for every single train

Train cancellation	
Train identification	
Train number	
Scheduled date at border point	
Planned border point	
Current RU	
Next RU	
Reason	
Reason of cancellation	

Table 8: Content of the Train cancellation message

1.9 Train delay

Usage: To inform the next IM about current delay of the train and about new estimated time at the border point.

Direction: Unidirectional

Rules for exchange: The message is sent under specific conditions, which are agreed in order to reduce the volume of messages.

Train delay	
Train identification	
Train number	
Scheduled date at border point	
Planned border point	
Current RU	
Next RU	
Actual point	
Actual point	
Actual delay	
Delay reason	
Estimated time at border point	

Table 9: Content of the Train delay message

1.10 Train run interrupted

Usage: To inform immediately about the interruption but delay could not yet been forecasted. After this message, when the interruption situation is analysed and consequences are known, the further messages will follow, e.g. Train cancellation, Re-routing of the train, etc.

Direction: Unidirectional

Rules for exchange: as soon as possible

Train run interrupted	
Train identification	
Train number	
Scheduled date at border point	
Planned border point	
Current RU	
Next RU	
Actual point	
Interruption point	
Interruption time	

Table 10: Content of the Train run interrupted message

1.11 Train running in advance

Usage: This message indicates either approval or disapproval with running of the train in advance. Running in advance could be approved as proposed by other party, or the later handover time, as originally specified, could be proposed.

Direction: Bidirectional. It is also used as an answer.

Rules for exchange: threshold for sending the message must be defined and agreed.

Train running in advance	
Train identification	
Train number	
Scheduled date at border point	
Planned border point	
Current RU	
Next RU	
Forecast	
Accepted	<input type="checkbox"/>
Forecasted advance (minutes)	
Forecasted time at border	

Table 11: Content of the Train running in advance message

1.12 Train speed restriction

Usage: To inform the neighbour that the speed of the train is restricted due to train related reasons (not infrastructure) and therefore delays should be expected.

Direction: Unidirectional

Rules for exchange: As soon as possible. Before the border point at the latest.

Train speed restriction	
Train identification	
Train number	
Scheduled date at border point	
Planned border point	
Current RU	
Next RU	
Speed limit in km/h	
From point	
To point	
Speed limit (km/h)	
Cause of the speed restriction	
Loco	<input type="checkbox"/>
Wagon number(s)

Table 12: Content of the Train speed restriction message