



 **RNETIS**
Train Information System

UIRR Digitalization Workshop

Brussels, 14 December 2016



TAF TSI Business Process & Train Information System

TAF TSI Functions Grouped

Joint IM-RU Functions

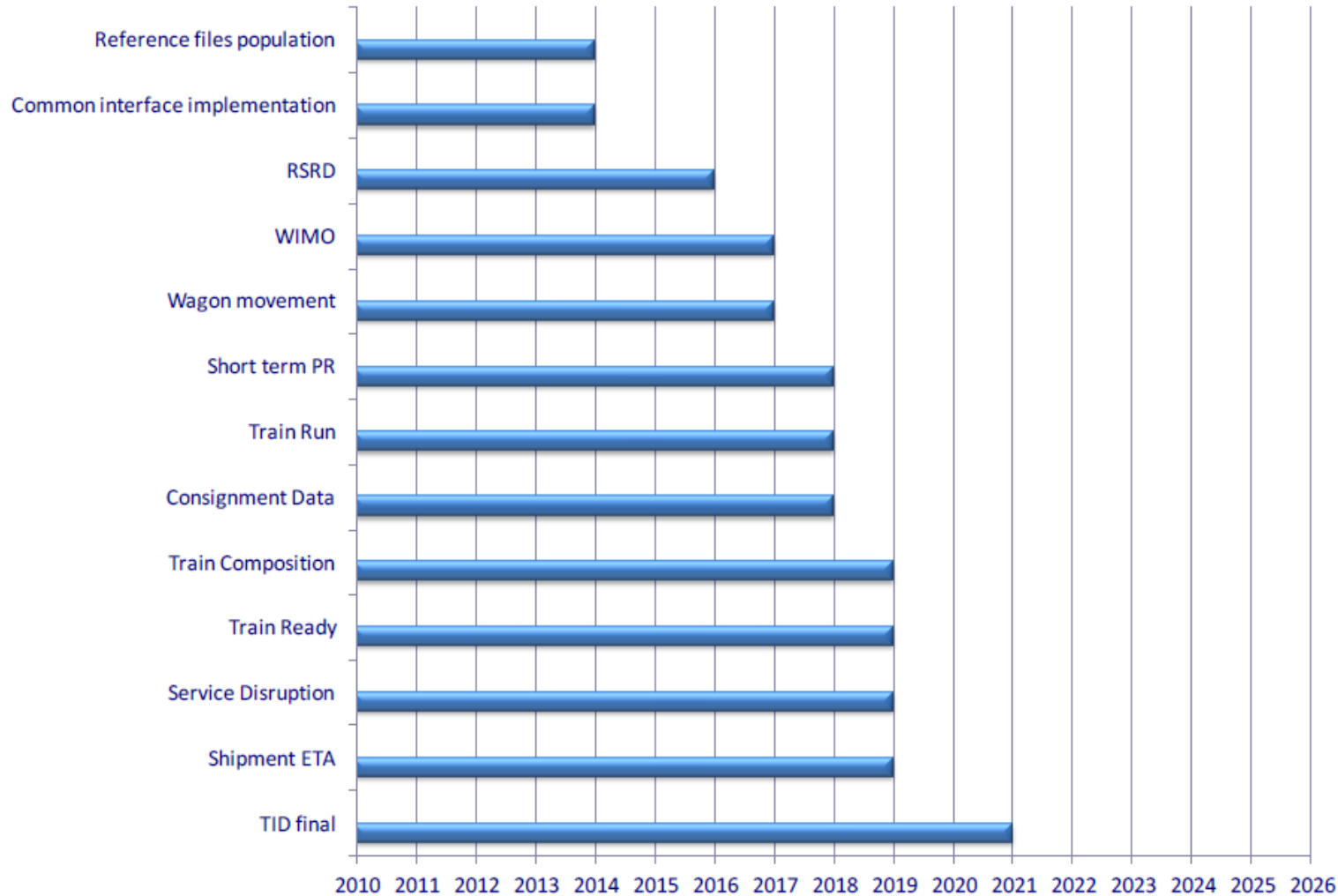
- Reference Files
- Common Interface
- Short Term Path Request
- Train Preparation
- **Train Running Information**
- **Train Forecast**
- Service Disruption
- Deviations from plan (TAP)
- (Train Identifiers)

RU (fright) Only Functions *

- Consignment Note Data
- WIMO
- Wagon Movement
- Shipment ETA

** Commercial part of TAP is not considered in the table*

TAF TSI Business Process & RNE Applications



Reference Files and Common Interface



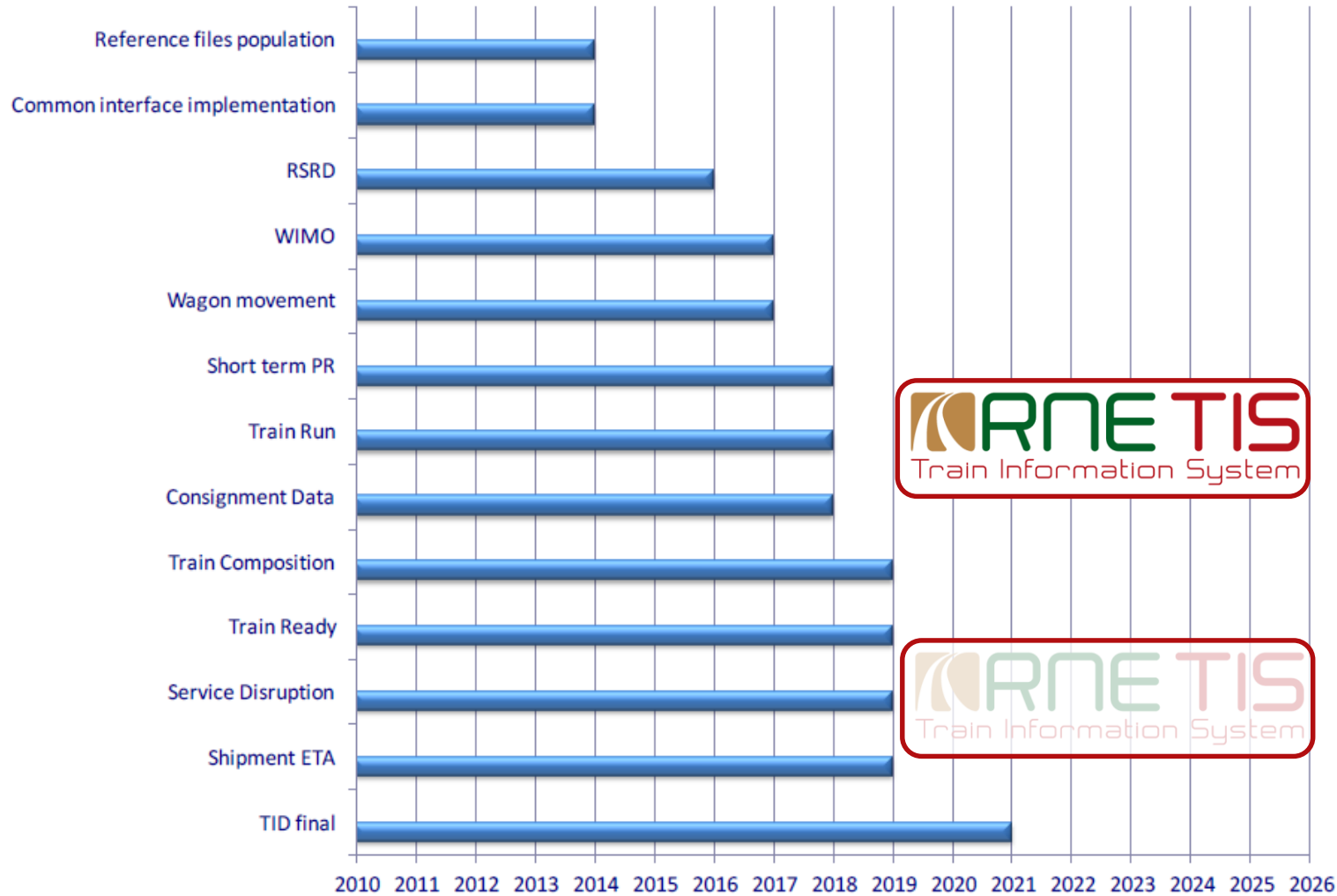
Short Term Path Request



Train Run & Service disruption?



TAF TSI Business Process & RNE Applications



TAF TSI Business Process & Train Information System

TIS data exchange function is available for the following TAFTSI messages

- Train Running Information
- Train Running Forecast
- Delay Reason

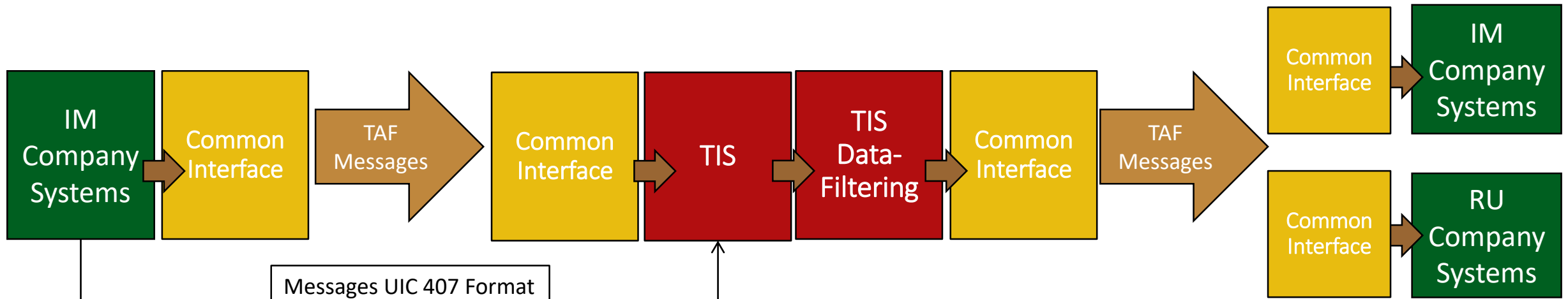
Beside Data Exchange TIS real-time information is available for desktops and tablets

- Real-time rail traffic data – e.g., forecast, running advice, delays
- Real-time information is visualised in the TIS graphical interface
- Accessible through standard web browsers

TAF TSI TIS data exchange function

TIS data exchange function features

- Raw data exchange based on TAF/TAP messages between IMs and RUs already in place
- Large and internationally-oriented RUs (such as SBB Cargo International, BLS Cargo, DB Schenker Rail, Eurostar...) have adopted the TIS interface
- Filtering function to select required information based on
 - company (IM, RU), mutual agreements between companies involved in the train run
 - functional criteria (points, incoming trains, outgoing trains, delayed trains, etc.)

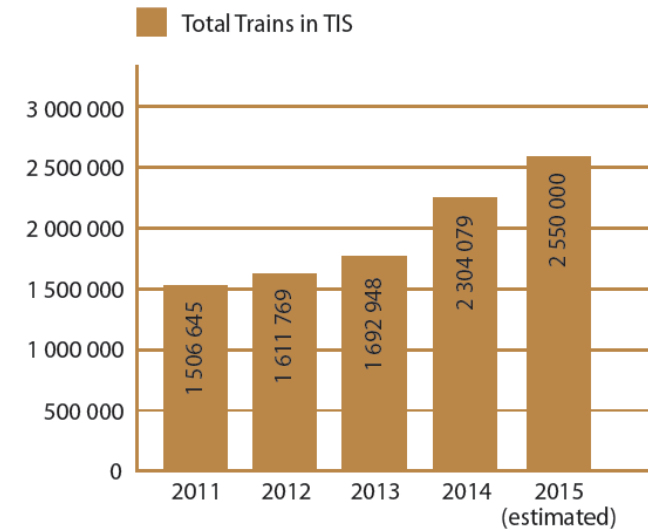


What is TIS?

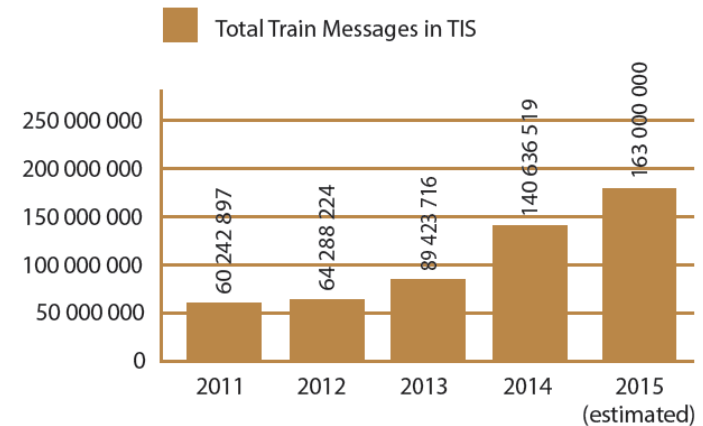
What is TIS?

The Train Information System (TIS) monitors international trains from origin to destination on the involved IMs' networks. It serves as information source for international performance reports and quality analysis and standardises the exchange of data between different players.

TIS also allows the identification of problems due to different national processes (for international trains) and triggers appropriate corrective actions. The relevant data is obtained directly from the Infrastructure Managers' systems.



Number of trains monitored



Number of trains messages

What is TIS?

TIS achievements

- 260 000 trains per month, 17 000 reporting points
- 23 IMs have joined TIS
- Processing/distribution of TAF TSI messages
 - 34 Million Train Running Information IN and OUT in 2015
 - 121 Million Train Forecast Information IN and OUT in 2015
 - 8 Million Train Delay Cause Message IN and OUT in 2015
- Reporting function for Train Performance Management (TPM) has been extended to the Rail Freight Corridors (RFCs)
- System performance and data quality have considerably improved
- Data quality has been significantly enhanced
- Access for terminal operators



What is TIS?

Technical Conditions

- Internet access
- Web browser
 - Chrome, Firefox, Internet Explorer or Safari

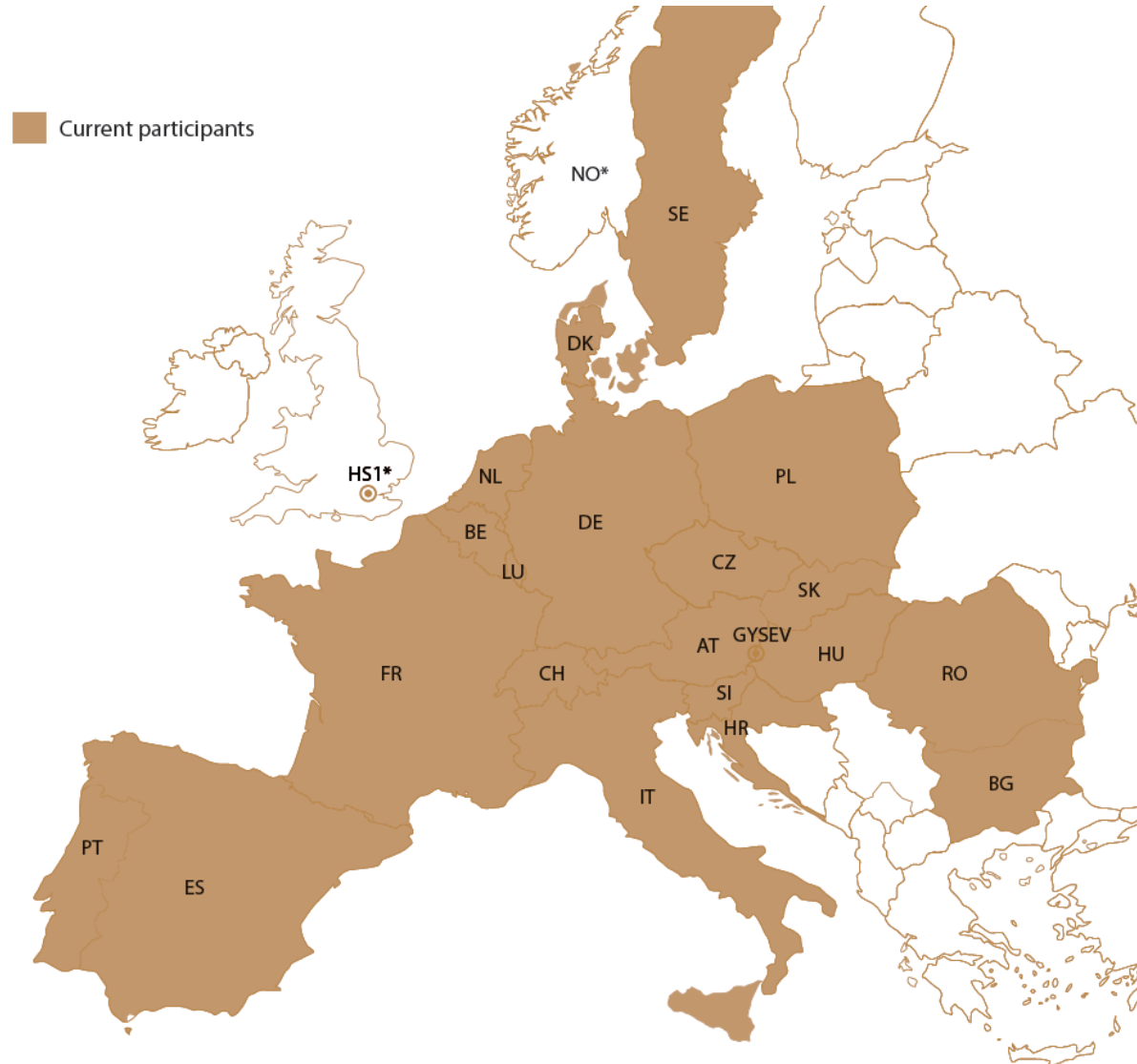
Contractual Conditions

- TIS user agreement
- Applicants are Infrastructure Managers (IM), Railway Undertakings (RU), Terminal Operators, Corridor Managers



TIS Roll-out

TIS roll-out



** implementation in progress*

Overview of TIS functions

Overview of TIS functions

The main goals of TIS are to help RUs and Terminals with their own production systems and to support IMs in the field of train run management. Additionally, TIS serves as a message broker for incoming trains.

RUs have unlimited access to their own trains and to those operated in cooperation through a data exchange agreement.

Terminals only have access to trains running to/from the Terminal if they have a data exchange agreement.

Overview of TIS functions

TIS real-time information is available for desktops and tablets

- Real-time rail traffic data – e.g., forecast, running advice, delays
- Real-time information is visualised in the TIS graphical interface
- Accessible through standard web browsers



TIS reporting function based on Oracle Business Intelligence (BI)

- Predefined reports and graphs (punctuality, delay causes, etc.)
- Customisable reports and graphs
- Information source for international Train Performance Management (TPM)



TIS data exchange function

- Raw data exchange based on TAF/TAP TSI messages and since 2012 TAF TSI messages
- Filtering function to select the required information
- TAF TSI pilot for the Common Interface (message exchange via CI)



Overview of TIS functions

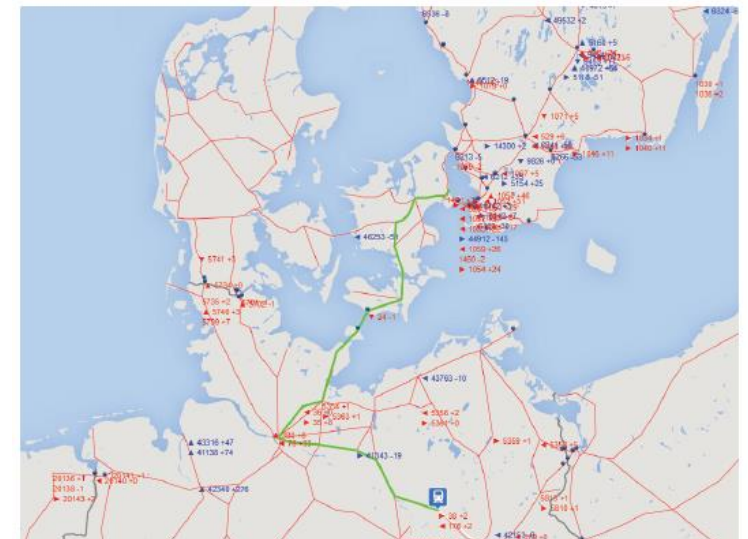
TIS real-time information function features

Real-time train traffic data via Internet (forecast, running advice, delays)

- Real-time train information in the TIS graphical interface shows real-time visualisation of International Trains (network overview, space-time diagrams, train run reports, etc.)
- Collection and exchange of railway traffic data from/with European traffic management systems
- TCCCom predefined messages translated into the recipient's language

International Train Number	Last Position	Status	Delta	From Point	GALLARATE 21/07/2015 20:44:00
40008	Prattein 22/07/2015 04:11:18	Run-through	+59	To Point	Maschen Rbf 22/07/2015 18:10:42

Point Name	Contracted TT	CTT PS	RTFC	Delta	Service Number	IM
GALLARATE	21/07/2015 20:44:00		21/07/2015 20:52:00	+8	40008	83
Laveno Mombello	21/07/2015 21:22:00		21/07/2015 21:38:30	+16	40008	83
LUINO	21/07/2015 22:22:00		21/07/2015 22:23:00	+61	40008	83
Laveno Mombello	21/07/2015 21:27:00		21/07/2015 22:28:30	+61	40008	83
Porto Valtravaglia	21/07/2015 21:37:00		21/07/2015 23:05:00	+88	40008	83
LUINO	21/07/2015 21:43:00		21/07/2015 23:13:00	+90	40008	83
*Colmegna	21/07/2015 22:27:52		21/07/2015 23:24:08	+56	40008	85
*Maccagno	21/07/2015 22:30:11		21/07/2015 23:26:02	+56	40008	85
Pino-Tronzano	21/07/2015 22:36:03		21/07/2015 23:30:06	+53	40008	85



Overview of TIS functions

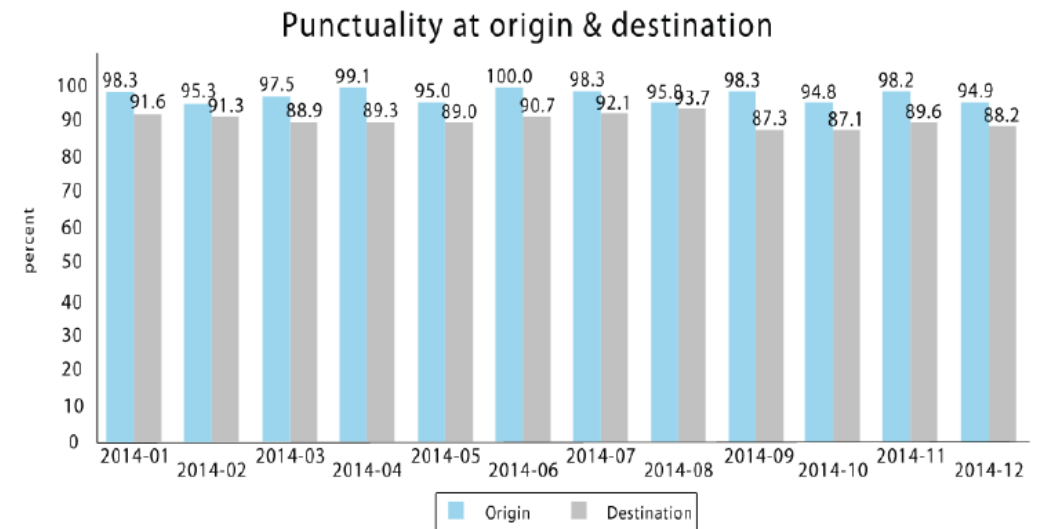
Benefits of TIS real-time information

- Optimisation of train disposition
- Optimisation of resource allocation (time, financial means, rolling stock and staff)
- Steering of the logistical chain
- Strong sales argument towards RU's customers: 'The RU knows the position of the train'

Overview of TIS functions

TIS reporting function features

- Serves as a source of information for international quality analysis for corridor-oriented Train Performance Management (TPM), including Performance Regimes
- Provides both pre-defined and customisable reports and graphs
- Enables scheduling of reports and graphs execution
- Accessible online to defined users
- Flexible and user-friendly application (based on Oracle Business Intelligence)



Overview of TIS functions

Benefits of TIS reporting function

- Analysis of performance
- Identification of areas with bottlenecks (capacity problems or technical problems on networks)
- Identification of appropriate corrective actions and feedback on their effectiveness
- Provision of statistical information about international traffic (for management decisions)

Overview of TIS functions

Benefits of TIS data exchange function

TIS is already compliant with TAF and TAP TSIs. It is viewed as a front-runner system for TAF and TAP: TAF standard has been in use in TIS production environment for every new data exchange since summer 2013.

For instance, average number of TAF/TSI messages in TIS per week in 2014:

- outbound: ½ million
- inbound: over 1 million

Thus the Rail Sector is already exchanging several million messages within the TAF/TAP TSI framework every month.

Price Model – included Services

Price Model

- **RU TIS usage of the Web Application**
 - The usage of TIS is free – € 0
 - RNE GA agreed that the usage is free in minimum until 2018

- **Data Exchange 7/24 support**
 - One time Set Up Fee – € 6.500
 - Monthly Maintenance Fee general – € 900
 - Monthly National Trains (Per IM) – € 390
 - Monthly Additional Interface – € 450

- **IM**
 - One time Set Up Fee – € 6.500
 - Monthly Maintenance Fee general (just for non RNE members) – € 900

Included Services

- Usage of the TIS Application
- User Service Desk (Business Hours)
- Detailed train run information

- TAF TSI data exchange for
 - planned train
 - current train runs
 - Delay reasons
- TAF TSI Common Interface compliant
- 24 hour maintenance of the interface
- 2 releases with new features per year
- Incident management (24h)
- Change management
- Software Updates
- Third Party Product Upgrades

How can you become a TIS user?

Free user accounts are offered by RNE to interested Railway Undertakings. The use of TIS is limited to RUs, Terminal Operators and IMs with international and national traffic.

In order to become a TIS User, please provide the following information to support.tis@rne.eu:

- Name, company and department
- Contact details (phone, e-mail, postal address)

More information about TIS can be found on our website at:

<http://tis.rne.eu>



Thank you!

The logo for RNETIS Train Information System. It features a stylized icon on the left consisting of three curved lines in shades of brown and gold. To the right of the icon, the text "RNETIS" is written in a large, white, sans-serif font. Below "RNETIS", the words "Train Information System" are written in a smaller, white, sans-serif font.

RNETIS
Train Information System