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ISR International Service Reliability

Tracking and tracing of Freight Wagons in Europe

07/10/2016



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Introduction to RAILDATA

RAILDATA is a UIC Special Group established in 1995.

RAILDATA is managed by the General Assembly in which all members are represented.

RAILDATA services (operation, maintenance and development of new functions) are managed by special assemblies which are composed of representatives of involved RUs.

16 RUs are currently members of RAILDATA.

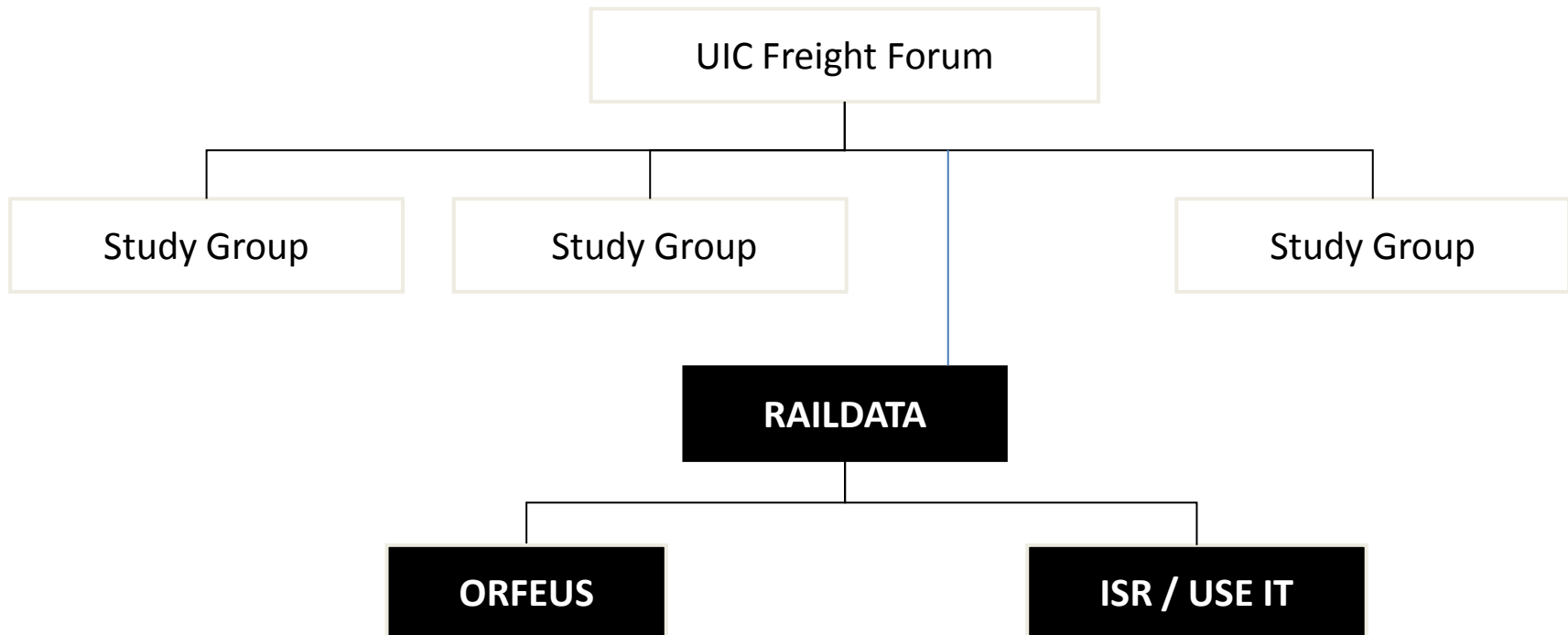
About 12 million messages are handled by the central system per month.



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Organisation



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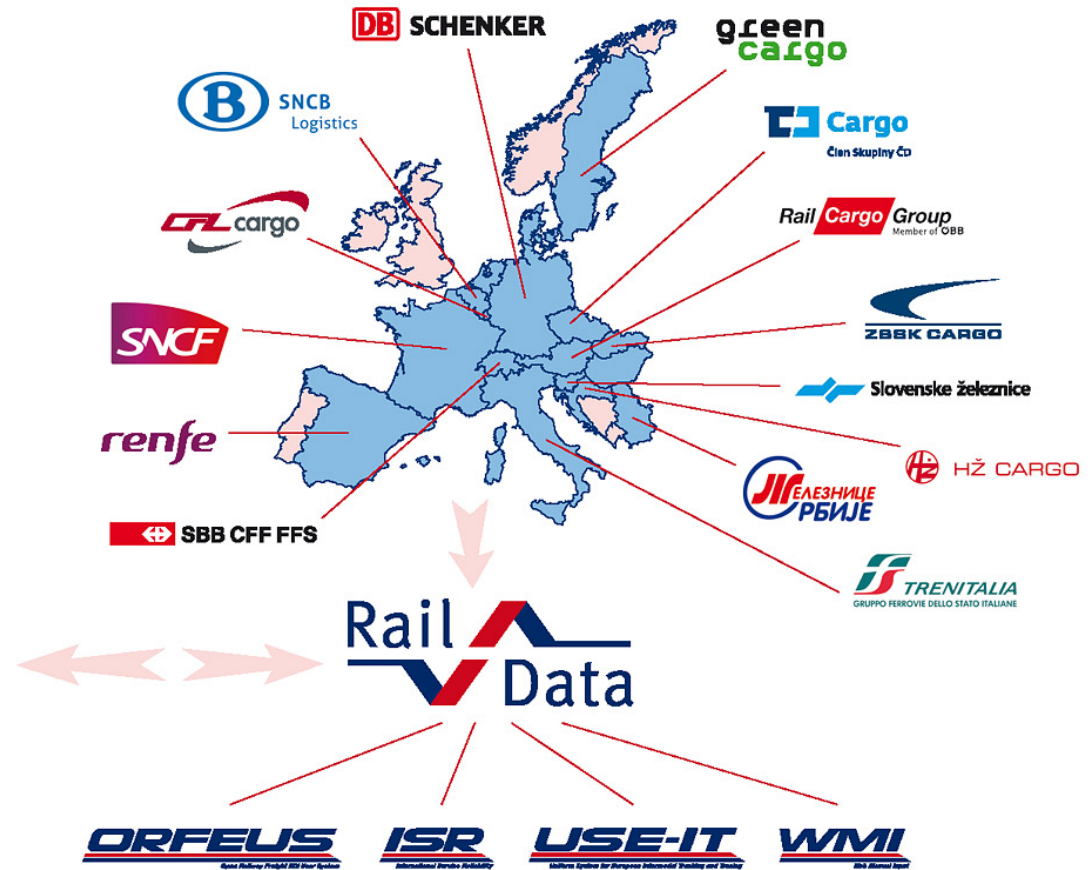




UIC Freight Forum



IT Study Group



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ISR: Get information about your wagon, anytime and anywhere

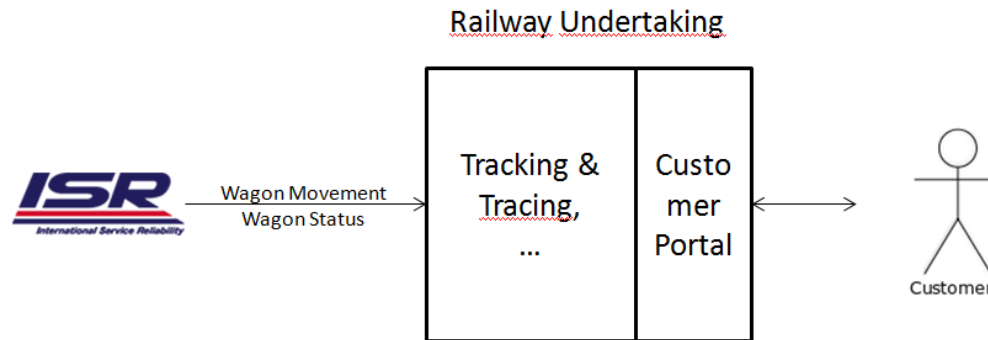


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The use case

Where are my wagons?



ISR

ISR allows the exchange of information about the movements of wagons through a central platform.

A close cooperation with ORFEUS allows to match the events to a Transport Description (TD).

After a transport was finished, a part of the transport description as well as the first and last event is used to create an Experienced Transport Plan (ETP). Based on ETP the calculation of Experienced Time of Arrival (ETA) is done.

An integration with TIS of RNE allows to match train events with wagon ones

The ISR information is available via
web user interface
web services
data forwarding.



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What is ISR?

The message broker ensures the reception of messages, their validation as well as format conversion and distribution.

All data like the wagon movement events and the transport description are stored in the central ISR database for the transport duration (max. 30 days).

Due to strict filtering rules, only RU can access the ISR database based on their role in the transportation. The relationship with the customers remains within each RU.

Currently exchanged events are as near to the reality as possible depending on the ability of the production system of each RU



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Who is in ISR?

The RUs
linked
to the ISR
system are
reporting
from...



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Events in ISR

- Create Transport Dossier - subset of consignment note data coming from ORFEUS
- Transport Created - reduced consignment note data set sent by enlarged WSM
- Left Origin - first departure of a wagon for a transport (loaded or empty)
- Arrival - (intermediate) arrival in a handling yard
- Departure - (intermediate) departure in a handling yard
- Reached Destination - last arrival of a wagon for a transport
- Border Crossing Advice – train left last station before border crossing
- Border Crossing Exit / Entry - wagon handed over / taken over to /from carrier
- Wagon Broken - transportation interrupted
- Wagon Repaired - continuation of transport
- Ready To Pull - wagon loaded at customer
- Pulled - wagon pulled from customer
- Passed Through - wagon in train has run through a station
- Wagon Refused - take over from previous carrier refused
- Delivered - to customer
- Free For Disposition - unloaded, waiting for task



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ISR and TAF TSI

Wagon status messages available in ISR respond to the TAF TSI « wagon movement » and « wagon interchange » requirements

What says TAF TSI

- *Wagon Release Notice Message*
- *Wagon Departure Notice Message*
- *Wagon Yard Arrival Message*
- *Wagon Yard Departure Message*
- *Wagon Exception Message*
- *Wagon Arrival Notice Message*
- *Wagon Delivery Notice Message*
- *Wagon Interchange Notice Message*
- *Wagon Received At Interchange Message*
- *Wagon Refused At Interchange Message*

😊 All available within ISR



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Content of the ISR database

Event information

- wagon number and status (loaded/empty)

- type, date/time and location of the event

- shipping information (from, via, to, (commercial and/or production data))

- consignment note reference

- general information about the message

 - identification of sender

 - message creation and processing date/time

Transport description handed over from ORFEUS

- shipping information (from, via, to, (commercial data))

- all criteria needed to define a transport flow (carriers, type of traffic, ...)

Experienced Transport Plans

- subset of the transport description

- first and last event of the experienced transport (what, where, when (weekday, train, average time))



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Last developments in ISR

Mileage Calculation

- some RUs do themselves
 - based on planned or real train run
 - for all wagons
 - the km for non-domestic wagons are forwarded in time to the CDS
- the CDS calculate
 - based on the movement events
 - for all wagons the RUs have demanded the service for
 - using km for relations
 - some RUs have delivered
 - calculated by OSM routing
 - the km are calculated and forwarded two days after the last transport event has happened



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Last developments in ISR

RTIS

Running Train Information System allows thanks to cooperation with Rail Net Europe (RNE) receiving of the Running Advice Messages from TIS.

It brings the possibility of

Wagon monitoring during the train run

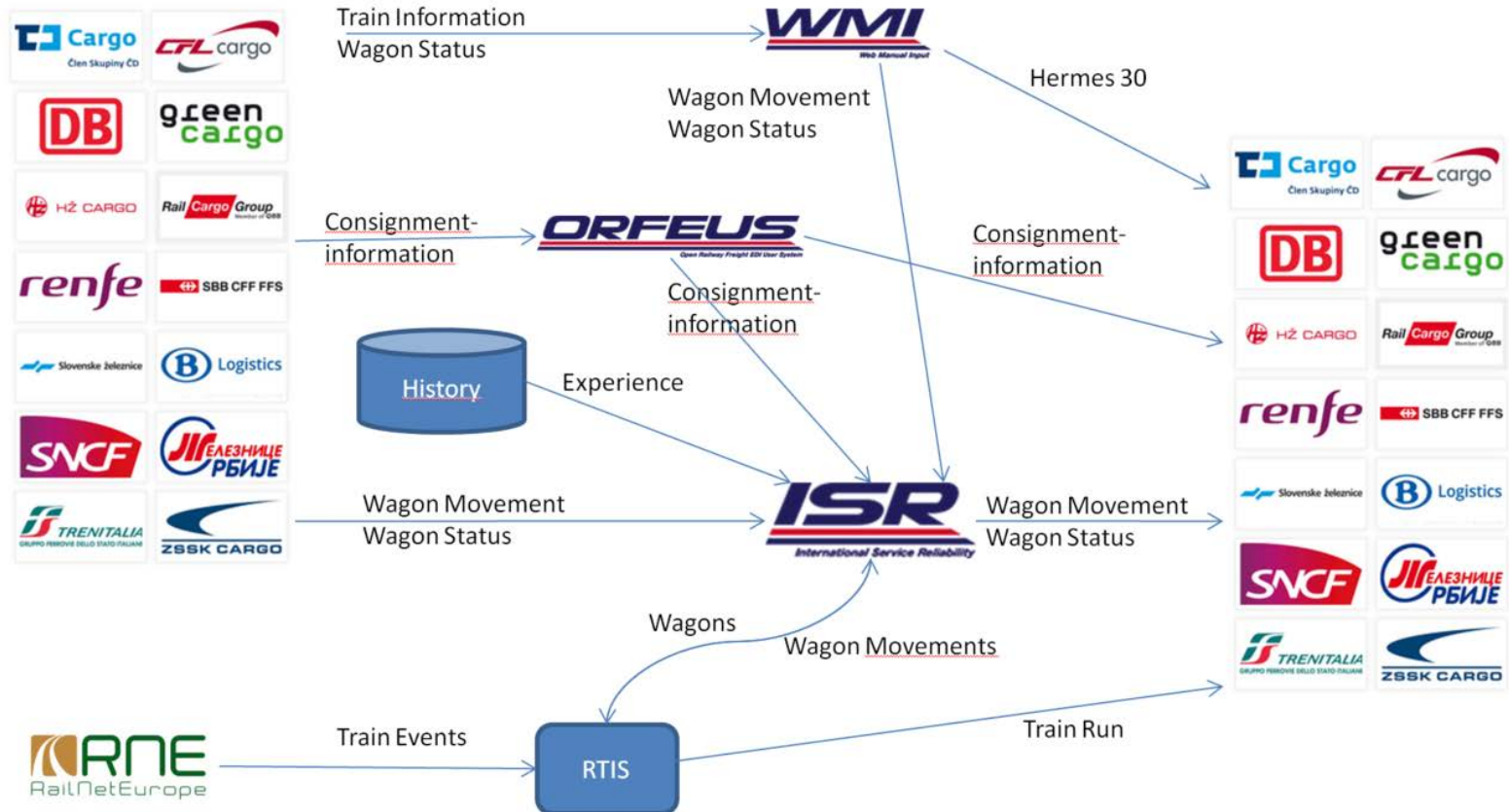
Better km calculation based on train status messages



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The Raildata big picture



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TrainEvents are sent as Running Advice Message (RAM) to RailData RTIS

Number	Ref. Date	Operating IM	Origin Dep. Time	Origin IM
44514	2016-09-09	0088	2016-09-09 05:36	0080

Country Code	Station Code	Station Name	Event Type	Event Description	Time	Delay
88	27243	ANTW-ND-C1	01	Arrival at terminating point	2016-09-09 10:17	-0060
88	27243	ANTW-ND-C1	01	Arrival at terminating point	2016-09-09 10:16	-0061
88	27151	Y.SCHIJN	05	Run-through	2016-09-09 10:13	-0060
88	21089	ANTWERPEN-NOORDERDOKKEN	05	Run-through	2016-09-09 10:09	-0059
88	21022	ANTW-OOST	05	Run-through	2016-09-09 10:04	-0058
88	27045	Y.O.BERCHEM	05	Run-through	2016-09-09 10:03	-0057
88	21600	LIER	05	Run-through	2016-09-09 09:50	-0056
88	21600	LIER	05	Run-through	2016-09-09 09:49	-0057
88	27557	Y.NAZARETH	05	Run-through	2016-09-09 09:46	-0057
88	37564	Y.N.AARSCHOT	05	Run-through	2016-09-09 09:18	-0060
88	37382	Y.O.AARSCHOT	05	Run-through	2016-09-09 09:14	-0061
88	31401	DIEST	05	Run-through	2016-09-09 09:04	-0055
88	31401	DIEST	05	Run-through	2016-09-09 09:04	-0055
88	31005	HASSELT	05	Run-through	2016-09-09 08:49	-0051
88	31005	HASSELT	05	Run-through	2016-09-09 08:46	-0054
88	31310	TONGEREN	05	Run-through	2016-09-09 08:23	-0051
88	31310	TONGEREN	05	Run-through	2016-09-09 08:23	-0051
88	31310	TONGEREN	05	Run-through	2016-09-09 08:23	-0051
88	46102	BOTZELAER	05	Run-through	2016-09-09 07:30	-0055
88	49015	MONTZEN-FRONTIERE	05	Run-through	2016-09-09 07:29	-0055
80	12691	Aachen West Pbf	04	Departure	2016-09-09 07:23	-0049
80	12691	Aachen West Pbf	03	Arrival	2016-09-09 06:19	-0042
80	12547	Aachen Hbf	05	Run-through	2016-09-09 06:11	-0044
80	14765	Stolberg (Rheinl) Gbf	05	Run-through	2016-09-09 05:59	-0044
80	02490	Eschweiler Hbf	05	Run-through	2016-09-09 05:57	-0042
80	13220	Düren Pbf	05	Run-through	2016-09-09 05:46	-0038
80	15327	Horrem	05	Run-through	2016-09-09 05:34	-0034
80	15468	Köln West Wf	05	Run-through	2016-09-09 05:14	-0035
80	13817	Köln Bonntor	05	Run-through	2016-09-09 04:54	-0049
80	68731	Gremberg Nord	05	Run-through	2016-09-09 04:45	-0052



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In RTIS, the train information are enriched with wagon information from ISR

Wagons

Alexander Martinez (Host)

Number	Ref. Date	Operating IM	Origin Dep. Time	Origin IM
44514	2016-09-09	0088	2016-09-09 05:36	0080

Number	IN Time	OUT Time
318027719919	2016-09-09 04:40	2016-09-09 10:17
318027720651	2016-09-09 04:40	2016-09-09 10:17
318027721246	2016-09-09 04:40	2016-09-09 10:17
318027721881	2016-09-09 04:40	2016-09-09 10:17
318839502040	2016-09-09 04:40	2016-09-09 10:17
318846706857	2016-09-09 04:40	2016-09-09 10:17
318846706972	2016-09-09 04:40	2016-09-09 10:17
318846708390	2016-09-09 04:40	2016-09-09 10:17
318846710305	2016-09-09 04:40	2016-09-09 10:17
318847721582	2016-09-09 04:40	2016-09-09 10:17
318847722663	2016-09-09 04:40	2016-09-09 10:17
318847774466	2016-09-09 04:40	2016-09-09 10:17
318847777279	2016-09-09 04:40	2016-09-09 10:17
318847890148	2016-09-09 04:40	2016-09-09 10:17
318847891021	2016-09-09 04:40	2016-09-09 10:17
318847892276	2016-09-09 04:40	2016-09-09 10:17
318847892482	2016-09-09 04:40	2016-09-09 10:17
318847893233	2016-09-09 04:40	2016-09-09 10:17
318847893787	2016-09-09 04:40	2016-09-09 10:17
318847893928	2016-09-09 04:40	2016-09-09 10:17
338078322280	2016-09-09 04:40	2016-09-09 10:17
338078363367	2016-09-09 04:40	2016-09-09 10:17
338079330183	2016-09-09 04:40	2016-09-09 10:17
338706596230	2016-09-09 04:40	2016-09-09 10:17
338706596305	2016-09-09 04:40	2016-09-09 10:17
338779321771	2016-09-09 04:40	2016-09-09 10:17
378078462520	2016-09-09 04:40	2016-09-09 10:17



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Wagons are shown in ISR

Wagons number [Options](#)
Consignement note [Download](#)
 Commercial Shipping CC Commercial Shipping station Running Number
Shipping
 Shipping CC Shipping station
Destination
 Destination CC Destination station
From (DD.MM.YYYY hh:mm) **to (DD.MM.YYYY hh:mm)**
Status of wagon : empty loaded

	Wagon and Status	Event timestamp	Event Type	Event Info				Consignement note			Transit CC	Type	Shipping Info			
				CC	Station	Station Name	Train	CC	Station	Number			CC	Station	CC	Station
	318027719919 0	08.09.2016 13:00	CreateTransportDossier	80	155655	GREMBERG		80	155655	767517		C/C	80	155655	88	940023
	318027719919 0	08.09.2016 15:15	Pulled	80	151092	GREMBERG SUEDESEITE	RFSAM3	80	155655	767517		C/P	80	155655	88	940023
	318027719919 0	08.09.2016 15:19	Arrival	80	151092	GREMBERG SUEDESEITE	RFSAM3	80	155655	767517		C/P	80	155655	88	940023
	318027719919 0	09.09.2016 04:40	Departure	80	151092	GREMBERG SUEDESEITE	44514	80	155655	767517		C/P	80	155655	88	940023
	318027719919 0	09.09.2016 06:17	Arrival	80	151993	AACHEN WEST	44514	80	155655	767517		C/P	80	155655	88	940023
	318027719919 0	09.09.2016 07:23	HandedOver	80	151993	AACHEN WEST	44514	80	155655	767517		C/P	80	155655	88	940023
	318027719919 0	09.09.2016 07:29	TakenOver	88	490151	MONTZEN-FRONTIERE	44514	80	155655	767517		C/P	80	155655	88	940023
	318027719919 0	09.09.2016 08:12	HandOverAdvice	80	152009	AACHEN WEST	44514	80	155655	767517		C/P	80	155655	88	940023
	318027719919 0	09.09.2016 09:18	PassedThrough	88	375642	Y.N.AARSCHOT	44514	80	155655	767517		C/P	80	155655	88	940023
	318027719919 0	09.09.2016 10:13	Arrival	88	272435	Antwerpen-Noord-Bundel C	44514	80	155655	767517		C/P	80	155655	88	940023



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Wagons are shown in ISR

Information		Wagon status	Transport description	current ETP
CONSIGNMENT NOTE	Consignment country	80	80	
	Consignment station code	156655	156655	
	Consignment number	767517	767517	
	Contract number		660010	
	Start (weekday + Time)	Thu 08.09 at 00:00	Thu 08.09 at 13:00	Thu 16.00
	C Shipping country	80	80	80
FROM	P Shipping country	80		80
	C Shipping station code	156655	156655	156655
	P Shipping station code	156655		151092
	C Shipping station name	GREMBERG	GREMBERG	
	P Shipping station name	GREMBERG		
TO	C Destination country		88	88
	P Destination country	88		88
	C Destination station code		940023	940023
	P Destination station code	940023		982850
	C Destination station name		GENT SIFFERDOK	
P Destination station name	GENT SIFFERDOK			
VIA	Route information	80 50 4	80 50 0	80 50 0
CARRIERS	Access Information RU / Stat / Pos / Acc	2180 0 01 1 2188 1 02 1	2180 0 01 1 2188 1 02 1	2180 0 01 1 2188 1 02 1
	Containers		N	N
TRANSPORT	NHM		992200	
	RID		N	



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Last developments in ISR

Web Data Interface

IT support for RUs which do not wish to implement a complex IT System.

A device to generate the appropriate message for partners via a web interface .

Functionality:

- Receive, update, create and forward Train Pre-advice message (HERMES 30 format)
- Generate XLS file (Wagon List basis)
- Message download
- Different possibilities for data displaying
- System administration
- Wagon Status Message creation using the data from Train Pre-advice

New functionalities are being developed following the members' demands.



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RAILDATA and digitalization

- ORFEUS and ISR provided RAILDATA members with a huge contribution to the digitalization
- Today RAILDATA members by using ISR channels provide digital information end-to-end on the freight tracking and tracing
- RAILDATA is already connected to the main interoperability interoperable connectors (Common Interface) and integrated Infrastructure Managers data flows
- RAILDATA works with different sector groups to support the implementation of interoperability and to provide a full support to the Freight Railway Undertakings for this issue.
- Since the end of 2014 a dedicated Special Assembly on interoperability has been created within RAILDATA to support and coordinate the Freight RUs. This group is open to all RU's



Summary

RAILDATA covers a big part of wagon related data exchange in Europe.

RAILDATA supports business processes in freight transport.

RAILDATA is involved in interoperability and digitalization implementation process.

RAILDATA offers the TAF TSI compliant solutions.

RAILDATA represents new standards and technologies.

RAILDATA is open for newcomers.



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Our partners

ERA : strong partnership for TAF TSI deployment

UIC : deep cooperation with UIC Freight Forum, IT Study Group, Wagon Users Study Group

HITRAIL : lately, signature of a cooperation agreement. Strong will to set up a real synergy between our two groups to support RU for TAF TSI roll out

UIP : cooperation on wagon mileage and on RSRD : common definition of data for RSRD

RNE : interchange of data with TIS, usage of CI and CRD

CIT : common work on CIM Consignment note design (ECN, ...)



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Thank you for attention!

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