

Sharing of train tracking and Estimated Time of Arrival (ETA) information

CEF Action nr. 2016-EU-TA-0185-S
AGREEMENT No INEA/CEF/TRAN/A2016/1367683



Electronic exchange of Estimated Time of Arrival information



Co-financed by the European Union
Connecting Europe Facility



**Boosting International
Rail Freight**

Sector Statement on Rail Freight Corridors

Brussels, 20 May 2016

Supported by the Chairs of the Management Boards of the nine Rail Freight Corridors:


- In June 2016 IMs and RUs agreed in Rotterdam to make information on estimated time of arrival available to their contract partners, including terminals and combined transport operators
- From 2017-2019 Hupac, Kombiverkehr, Merciatilia, Lineas and RCA implemented this agreement under the ELETA project using Artificial Intelligence and based on data from the RNE Train Information System (TIS)
- Many practical difficulties in contractual conditions were overcome. The experience resulted in simplification of these conditions and them being embedded in the **TAF-TSI** legal context.
- Data sharing between the rail sector and its terminals was made obligatory under the **Implementing Regulation (EU) 2017/2177 on access to service facilities and rail-related services**

Legal context for rail freight terminals



Telematics Applications for Freight -Technical Specifications for Interoperability (TAF-TSI)

4.2. Functional and technical specifications of the subsystem

...In addition to the provisions from the chapter 4 and its sub-chapters every stakeholder may exchange the messages according to Chapters 4.2.2.3 (only during operation or preparation of train operation), 4.2.4.2, 4.2.4.3, 4.2.5.2, 4.2.6.3 and 4.2.6.4 with other stakeholders involved in the same freight service, under the condition that the stakeholders are identifiable.

4.2.1.2. Train Running Forecast message

...In the case of combined transport under contractual agreement the LRU/ResponsibleRU shall ensure the 'Train Running Forecast' message is provided to the Terminal Operator.

4.2.3.3. Train Ready message

...In the case of combined transport the Terminal Operator shall send a 'train ready' message to the RU every time a wagon set is ready to start. The RU providing traction to the IM entry point shall send the 'train ready' message to the RU operating the train service on the IM network.

4.2.5.2 Train Running Interruption message

...In the case of combined transport under contractual agreement the LRU/Responsible RU shall ensure the 'Train Running Forecast' message is provided to the Terminal Operator.

4.2.6.2 ETA/ETI calculation

Remark on combined transport: For the Intermodal units on a wagon, the wagon ETIs are also ETIs for the Intermodal units. Regarding the ETAs for Intermodal units it should be noticed, that the RU is not in the position to calculate such an ETA or TrainETA beyond the public IM network. Therefore the RU can only deliver ETIs related to the RU operating in the terminal that will provide an ETA or TrainETA to the Arrival Terminal Operator. Based on this ETA and TETA, the Terminal Operator will provide an ETPick-up to the Combined Transport Operator, who will provide the final customer (such as freight forwarders, logistics service providers...) with the same ETP.

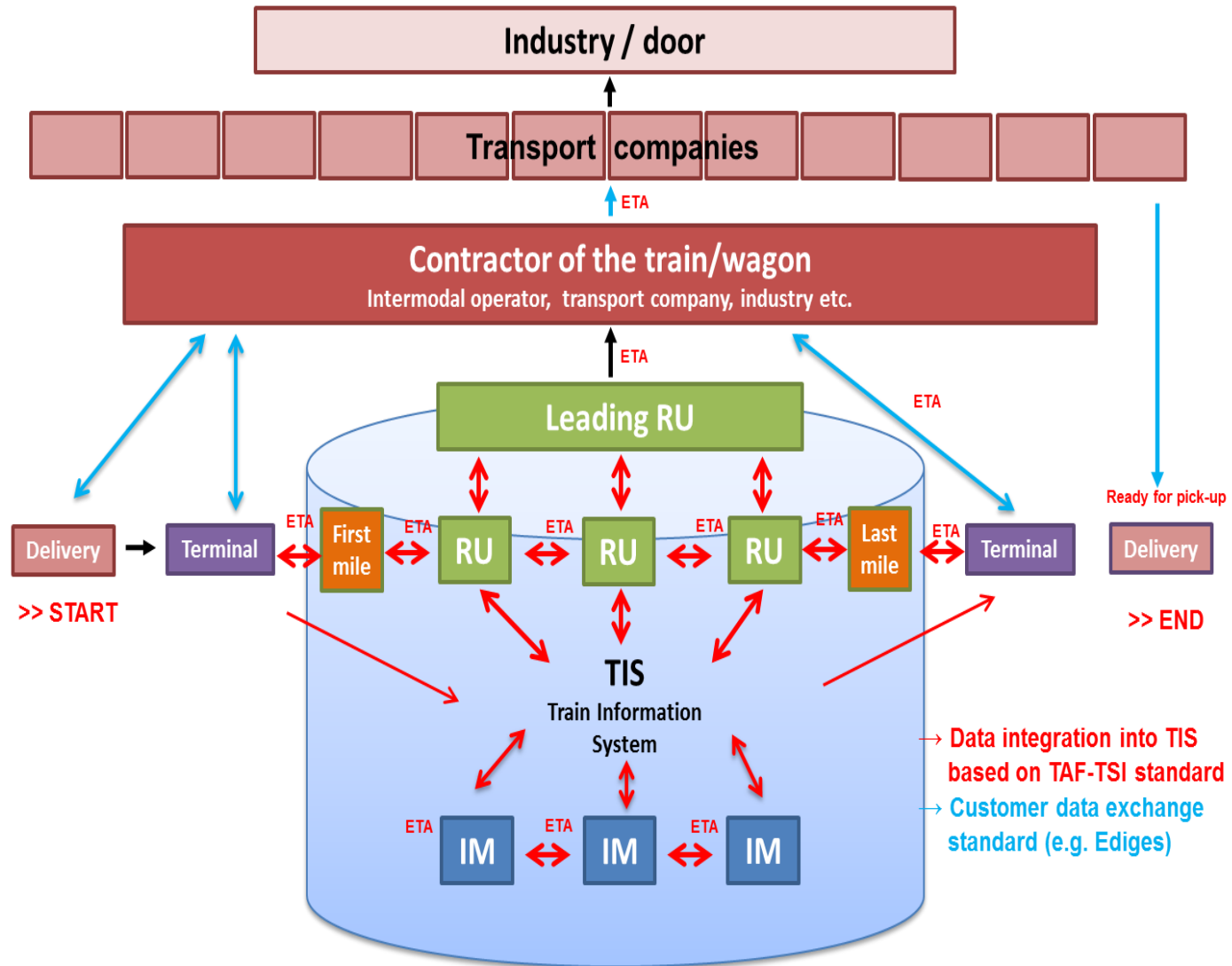
Legal context for rail freight terminals



Implementing Regulation (EU) 2017/2177 on access to service facilities and rail-related services

Article 7.3

Where relevant, operators of service facilities, infrastructure managers and applicants shall cooperate to ensure efficient operation of trains from and to service facilities. In the case of trains using rail freight terminals, including those in maritime or inland ports, this cooperation shall include the exchange of information on train tracking and tracing and, where available, the estimated time of arrival and departure in the event of delays and disturbances.

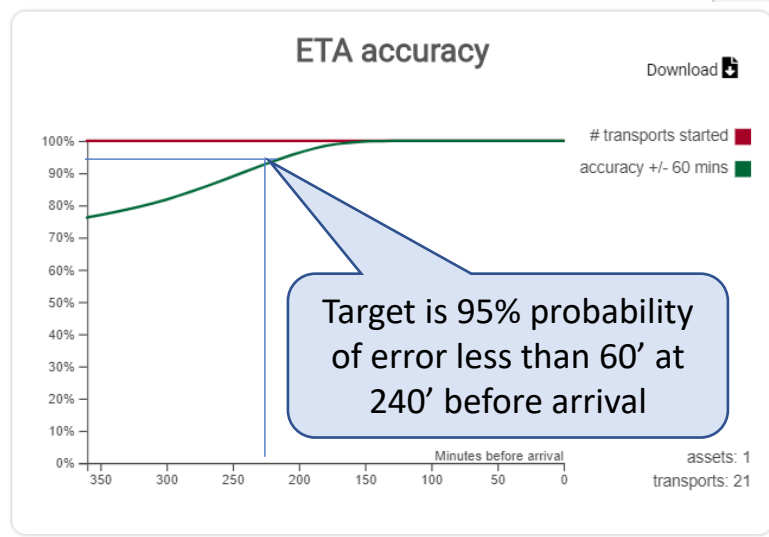


ETAs sent to terminals must be of adequate accuracy (and reliability)



- *What is accuracy?*
- *What is reliability?*
- *What is adequate?*

Definitions in sector handbook TAF-TSI



2020-08-31_40040_000005911979

GENERAL STATUS	ACTIVITY STATUS	DESTINATION
Late	Completed	Delayed 1h 5min

FROM IT 1702 MILANO SMISTAMENTO TO BE 1980 ZEEBRUGGE-ROOSTER F

PLANNED TIME OF DEPARTURE Aug 31, 2020 - 04:38 UTC+02:00 PLANNED TIME OF ARRIVAL Sep 1, 2020 - 08:55 UTC+02:00

ACTUAL TIME OF DEPARTURE Aug 31, 2020 - 04:13 UTC+02:00 ACTUAL TIME OF ARRIVAL Sep 1, 2020 - 10:00 UTC+02:00

RADIUS 500m

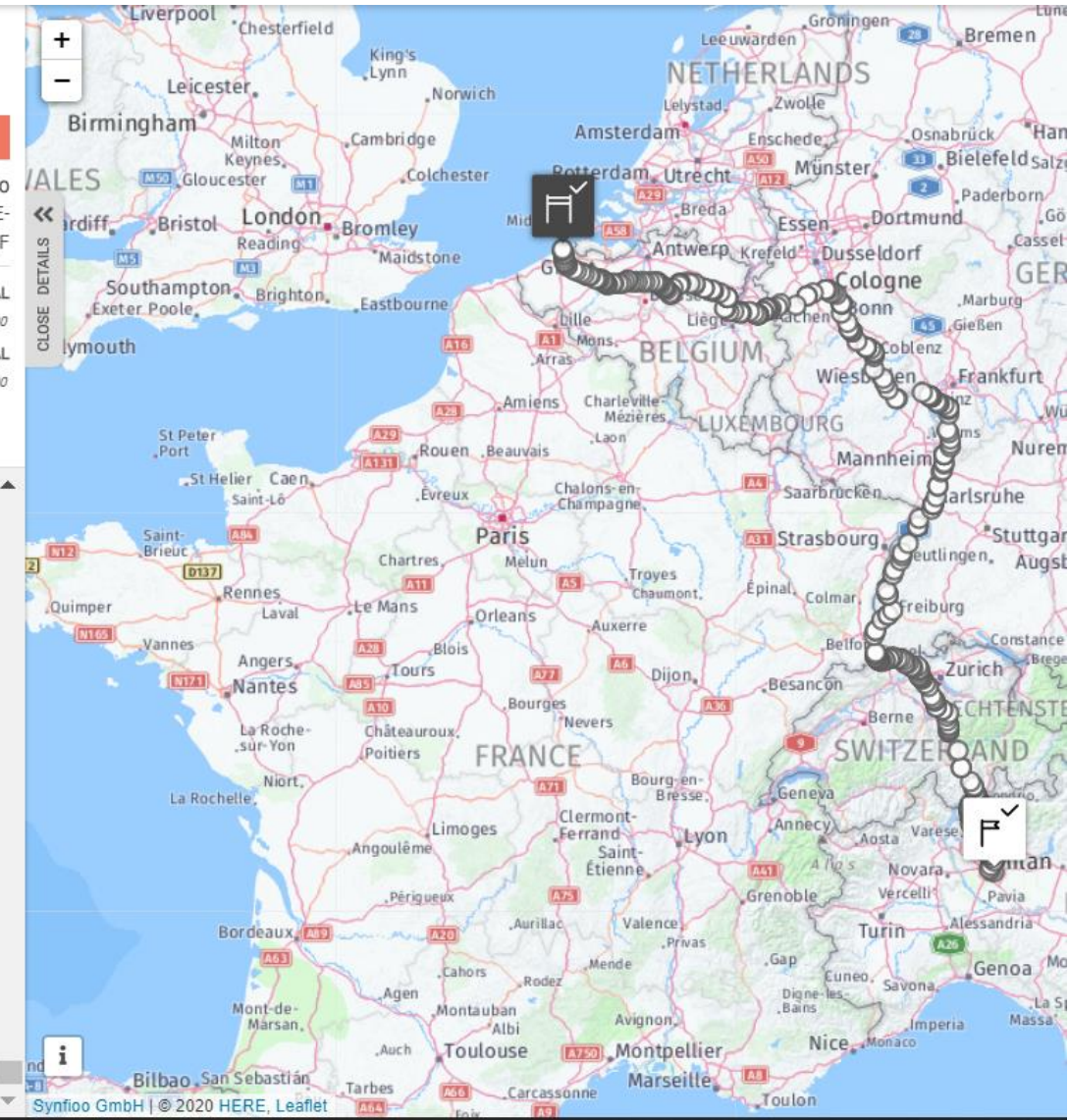
BE 743 LISSEWEGE
Delayed 1h 5min

ASSET: 40040
CARRIER: ELETA

PLANNED ARRIVAL Sep 1, 2020 - 08:55 UTC+02:00
ACTUAL ARRIVAL Sep 1, 2020 - 10:00 UTC+02:00

BE 1980 ZEEBRUGGE-ROOSTER F
Delayed 1h 5min

ASSET: 40040
CARRIER: ELETA



Data-sharing with terminals








- In 2 directions:
 1. ETA info **to** the terminals
 2. Train status info **from** the terminals to IMs and RUs
- Various message formats are being used in Terminal Operating Systems (TOS), which are not (yet) TAF-TSI compliant
- RNE, UIRR, Hupac, Port of Rotterdam and DB-DUSS are making a practical start by using TIS as platform

Initiating data-sharing with terminals



Activity 3: Initiating data sharing with terminals including the rollout of real-time information and ETA (first/last mile)

Activity number	Activity name	Indicative start date	Indicative end date	Included - Milestone Number
3	Initiating data sharing with terminals including the rollout of real-time information and ETA (first/last mile)	01/01/2020	31/12/2021	M10-M11

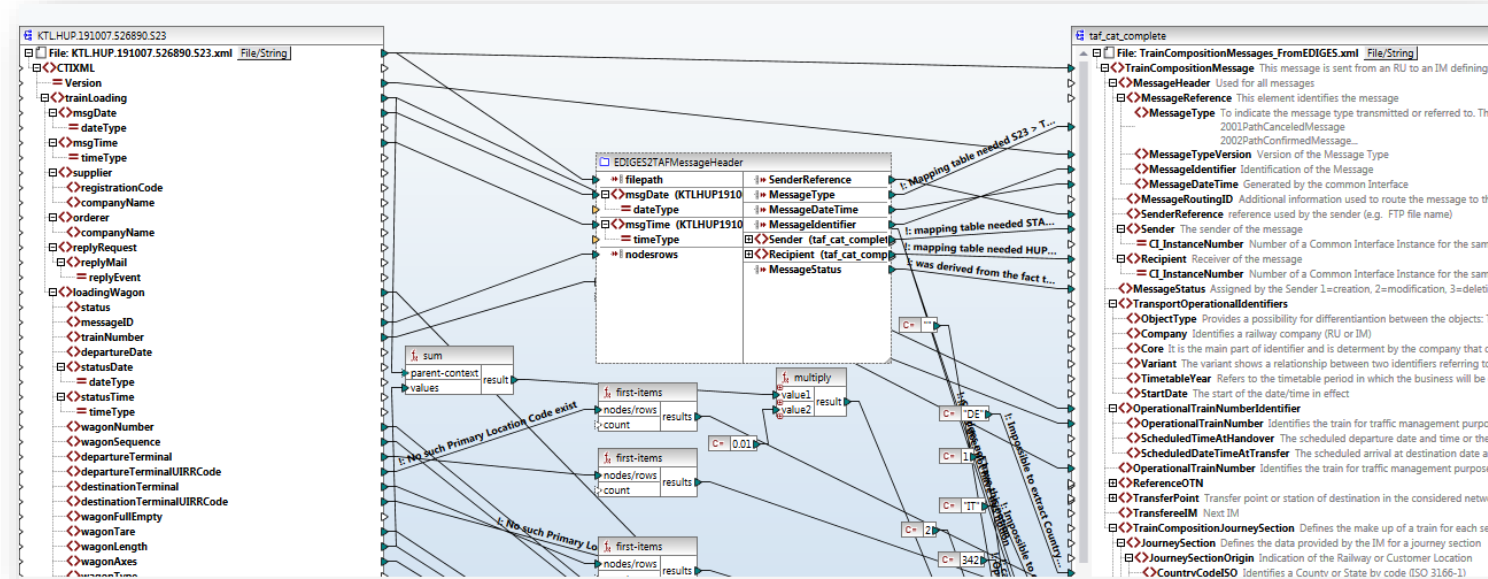
Sub-activity number	Activity name	Indicative end date	Included - Milestone Number
3.1	Catalogue of existing real-time information available at terminals (timestamps, data structure...) and EDI messaging system (e.g. EDIGES)	30/06/2020	M10 
3.2	Integration of the terminals into RNE reference files (technical solution)	31/12/2020	M10 
3.3	Mapping of terminal messaging system (focus on EDIGES) to TAF-TSI format	31/12/2020	M10 
3.4	Setting up pilots on data sharing between TIS and terminal operation systems: <ul style="list-style-type: none"> Demonstrator 1 – Hupac Demonstrator 2 – Port of Rotterdam Demonstrator 3 - DUSS 	31/12/2021	M11  

3.5

Communication and dissemination (new added)

The mapping exercise with the good help of ERA

- Essentially the data for the TAF messages is available in the TOS
 - EDIGES S34 to TAF TrainRunning message
 - EDIGES S36 to TAF TrainRunningForecast message
- Primary Location code by IM and Subsidiary Location code based on UIRR terminal code with code 57 for terminal as a type in the Subsidiary Location code.



Work in progress....

Demonstrator 1 – Hupac

Terminal -> RNE

Terminal IT system: WOLF

Message Format: EDIGES

Which messages cover Forecast and Train running information: EDIGES (ERA confirmed that they are transferable to TAF TSI xml)

How will be these messages transform to TAF TSI xml: in RNE CI via mapping tool

Is any mapping in CI necessary ?: yes, and it is possible to set up

How many trains will be provided by Terminal?: 700 trains/week

RNE -> Terminal

IT system: TIS

Message Format: TAF TSI xml

Which message covers Train running and Forecast information:

TrainRunningInformationMessage

TrainRunningForecastMessage

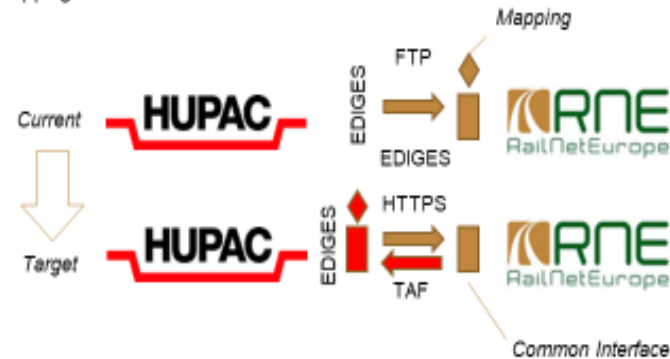
How will be these messages transform to TAF TSI xml: no need

Is any mapping in CI necessary ?: no

How many trains will be provided to Terminal?: All trains going through the more than 30 PLC delivered by PoR

When we can start to send messages? :

When will be CI setup on Terminal side?:





Thank you for your attention!

Ad Toet

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