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

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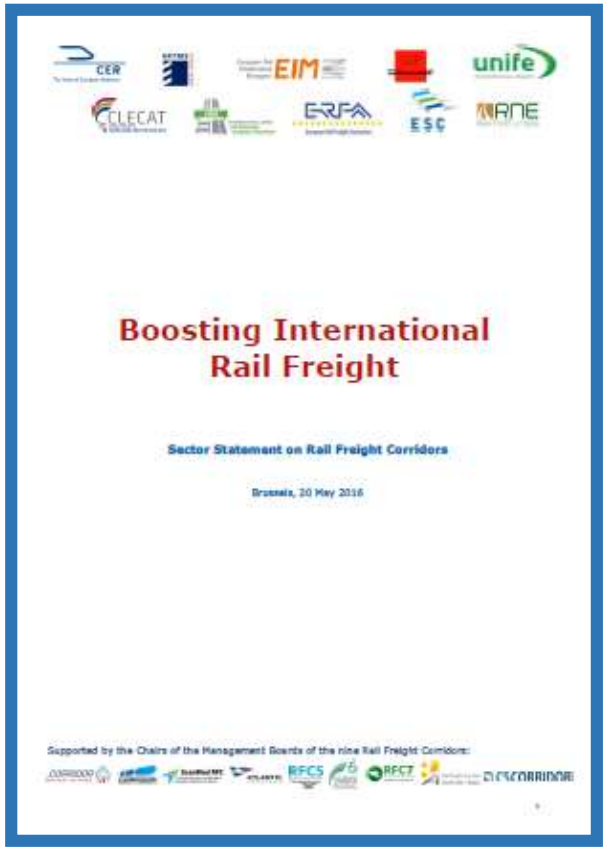
AGREEMENT No INEA/CEF/TRAN/A2016/1367683

ELETA

Electronic exchange of Estimated Time of Arrival information

Co-financed by the European Union
Connecting Europe Facility

In 2016 the sector agreed to share information, because it wants to boost international rail freight



A. Making rail freight a more attractive option

2. In order to improve operational efficiency of the logistics chain, the sector representatives commit themselves to implementing the TAF TSI functions according to the Masterplan and working toward a common ICT architecture wherever possible. IMs will integrate international traffic management information (e.g. via TIS) with national systems. Under the protection of confidentiality clauses, IMs and RUs agree to make information on estimated time of arrival available (for handover points and final destination) to their contract partners, including terminals and intermodal operators for optimizing the use of resources such as rolling stock and terminal capacity, and to provide freight forwarders and shippers with up-to-date information about the status of their freight and an estimated time of arrival.

- Sharing data makes rail freight more attractive
- Rail freight is increasingly part of an intermodal logistics chain

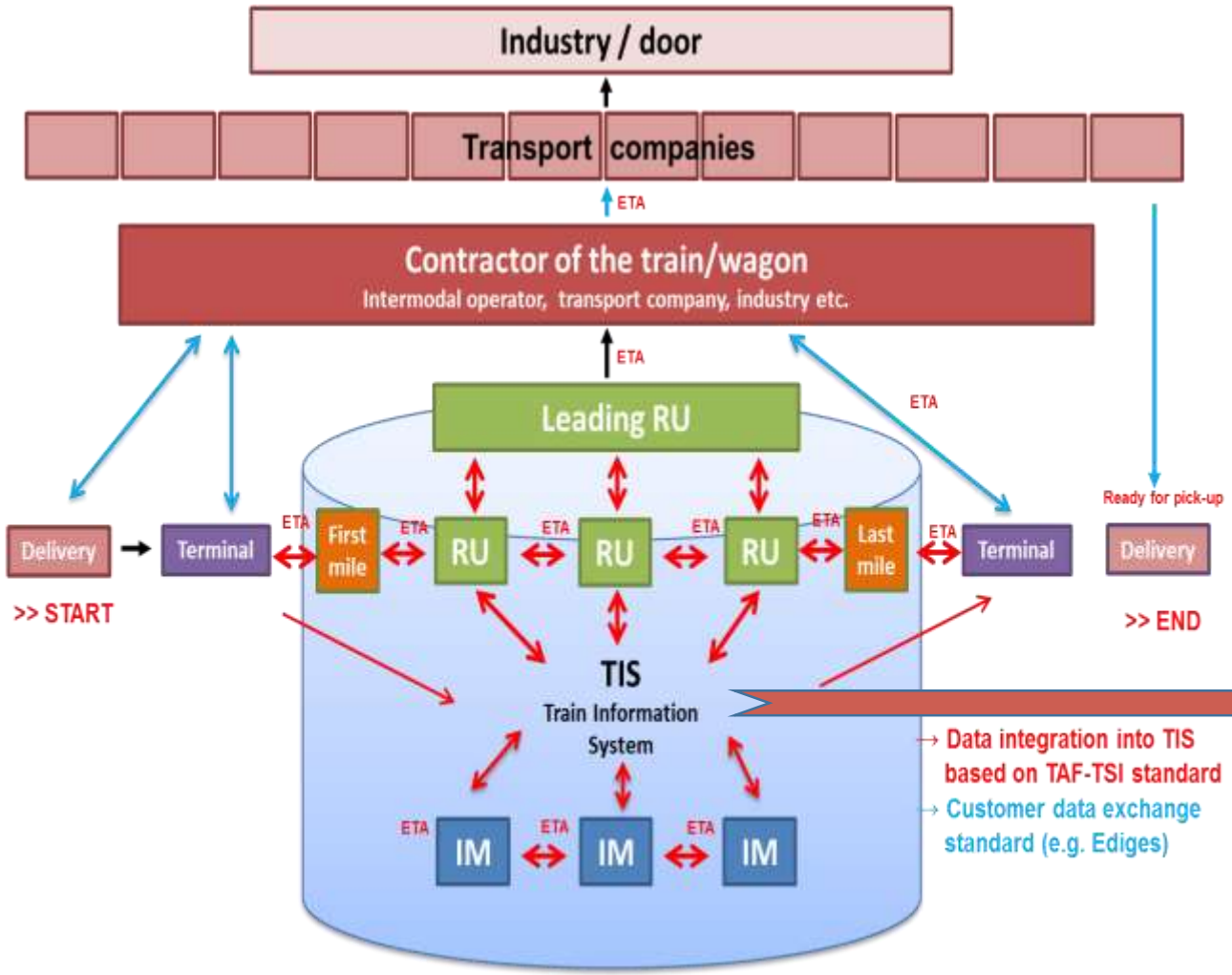
The information, which customers need, exists but is not accesible.

The focus was on information exchange within the rail system

(TAF-TSI –Telematic Applications for Freight-Technical Specifications for Interoperability)

ELETA made a start with:

- Intermodal operators in leading role
- Intermodal shuttle trains
- Based on TIS (Train Information System)


Industry / door
Transport companies
ETA
Contractor of the train/wagon
Intermodal operator, transport company, industry etc.
ETA
Leading RU
ETA
Delivery
Terminal
ETA
First mile
ETA
RU
ETA
RU
ETA
RU
ETA
Last mile
ETA
Terminal
Ready for pick-up
Delivery
>> START
>> END
TIS
Train Information System
ETA
IM
ETA
IM
ETA
IM
→ Data integration into TIS based on TAF-TSI standard
→ Customer data exchange standard (e.g. Ediges)


Closing Time
Departure at Terminal
IM Entry
Hand-over Point
IM Exit
Arrival at Terminal
Ready for pick-up

Key ELETA challenges:

1. Defining and authorising the information flow between stakeholders

2. Computing the ETA's

- TIS User Agreements as basis for contractual terms
- TIS as principle data source
- Use-cases defined (in cooperation with ERA)

- Tender procedure for computation of ETA's; contracts with Hacon and Synfioo
- Implementation on 22 services with monitoring of 200 trains/week and 9 months testing

Initial testing with 12 trains with additional testing of 10 trains in total ca. 200 train services /week

Line	
Direction A	**Direction B**
1a. Busto-Antwerpen	1b. Antwerpen-Busto
2a. Busto-Rotterdam	2b. Rotterdam-Busto
3a. Busto-Ludwigshafen	3b. Ludwigshafen-Busto
4a. Novara-Rotterdam	4b. Rotterdam-Novara
5a. Linz-Rotterdam	5b. Rotterdam-Linz
6a. Wolfurt-Rotterdam	6b. Rotterdam-Wolfurt
7a. Pomezia-Duisburg	7b. Duisburg-Pomezia
8a.1 Verona-München	8b.1 München-Verona
8a.2 München-Köln	8b.2 Köln-München
9a. Barcelona-Ludwigshafen	9b. Ludwigshafen-Barcelona
10a. Milano-Zebrugge	10b. Zebrugge-Milano
11a. Antwerpen-Basel	11b. Basel-Antwerpen
12a. Novara-Valenton	12b. Valenton-Novara

Line	
Direction A	**Direction B**
13a. Trieste-München (via Tarvisio-Salzburg)	13b. München-Trieste
14a. Wien-Bludenz	14b. Bludenz-Wien
15a. Busto-Bologna	15b. Bologna-Busto
16a. Antwerp Combinant-Barcelona El Morrot	16b. Barcelona El Morrot-Antwerp Combinant
17a. Antwerp-Malmö	17b. Malmö-Antwerp
18a. Antwerp-Madrid	18b. Madrid-Antwerp
19a. München-Verona	19b. Verona-München
20a. Ludwigshafen-Verona	20b. Verona-Ludwigshafen
21a. Dourges-Toulouse-Perpignan	21b. Perpignan-Toulouse-Dourges
22a. Antwerpen-Mouguerre	22b. Mouguerre-Antwerpen

Computation of ETA's by ICT service providers

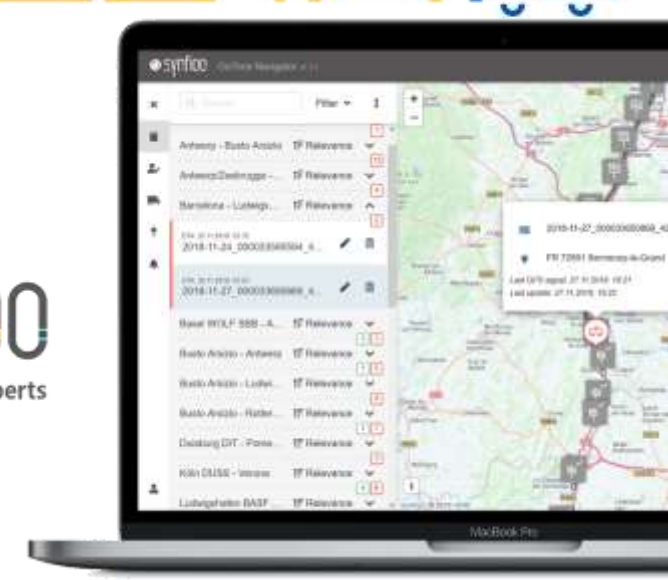
ELETA

Key features:

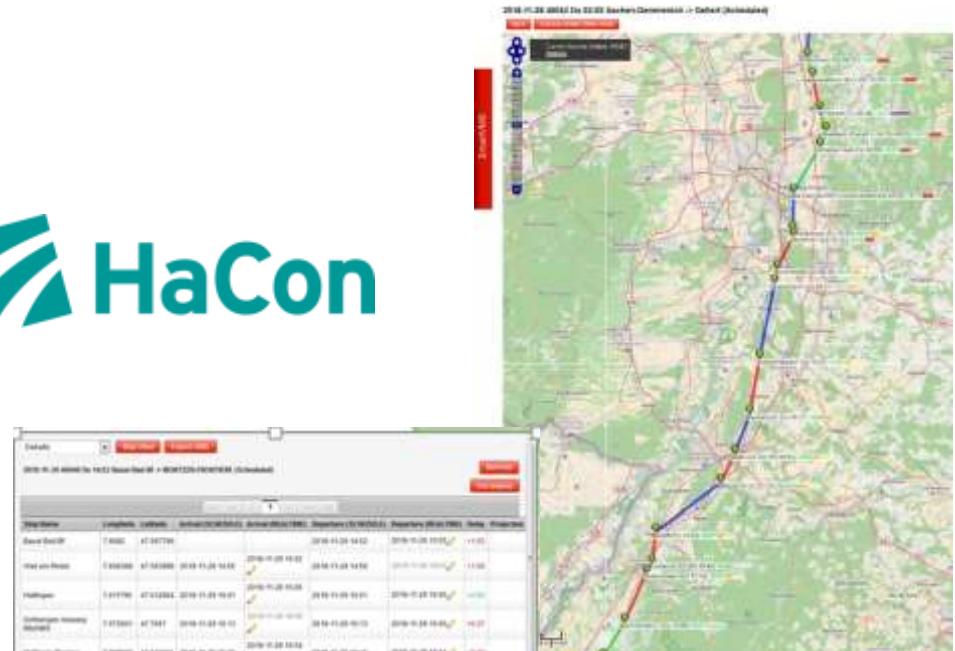
- Computation of ETA using information from different sources including TIS with AI/Machine learning

- Comparison of ETA's and assessment of accuracy

synfioo
The ETA Experts



HaCon



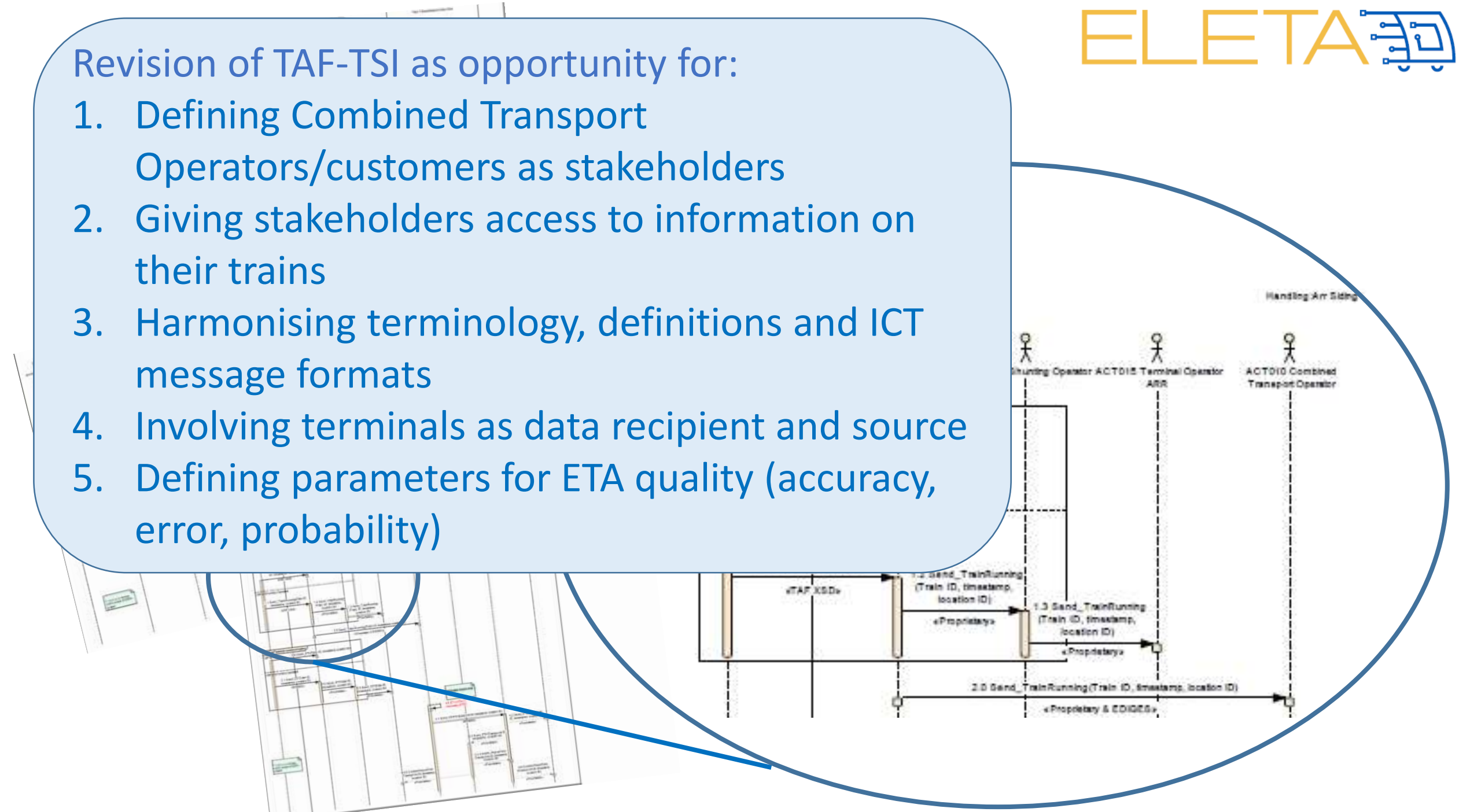
Learning by doing - Experiences from 2 years

- The willingness to exchange information is ample
- TIS is a viable data source for customers wishing to compute the ETA's for their trains
- TIS/RNE contractual framework is effective, but (too) laborious
- Absence of unique (international) train numbers causes a lot of extra work
- There is need for harmonisation of definitions, terms and messages

Artificial Intelligence and TIS data enable customers to compute an ETA with sufficient reliability for planning onward operations in the logistic chain (+/- 60 minutes with 95% probability).

Revision of TAF-TSI as opportunity for:

1. Defining Combined Transport Operators/customers as stakeholders
2. Giving stakeholders access to information on their trains
3. Harmonising terminology, definitions and ICT message formats
4. Involving terminals as data recipient and source
5. Defining parameters for ETA quality (accuracy, error, probability)



Thank you for your attention

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