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## Report

### *8<sup>th</sup> status report about the implementation progress of the TAP TSI (2021)*

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## Acronyms

**Table 1: Table of abbreviations**

<i>Acronyms</i>	<i>Definition</i>
API	Application programming interface
CEF	Connecting Europe Facility
CER	Community of European Railway and Infrastructure Companies
CRD	Central reference database
CSG	Common support group
DI	Degree of Implementation
EC	European Commission
EIM	European Rail Infrastructure Managers
ERA	European Union Agency for Railways (also referred to as Agency)
GIS	Geographical Information system
IM	Infrastructure Manager
INEA	Innovation and Networks Executive Agency
MCT	Minimum connecting time
JSG	Joint Sector Group (sector cluster in charge of following TAF Implementation)
NCP	National Contact Point
PM <sup>2</sup>	Official Project Management Methodology of the European Commission
RISC	Rail Interoperability and Safety Committee
RNE	Rail Net Europe
RU	Railway Undertaking
SM	Station Manager
TAP	Telematics applications for passengers
TAF	Telematics Applications for Freight
TSGA	TAP TSI Services Governance Association
TSI	Technical Specification for Interoperability
TV	Ticket vendor
UIC	Union Internationale des Chemins de fer
UNIFE	Association of the European Rail Industry

## Reference documents

**Table 2: Table of reference documents**

<i>Ref. N°</i>	<i>Title</i>	<i>Reference</i>	<i>Version</i>
(1)	TAP TSI ANNEX B.62 TAP MASTER PLAN	TAP TSI Master Plan	06.12.2013
(2)	TAP TSI consolidated Master Plan		28.04.2013
(3)	NOTE TO ERA EXECUTIVE DIRECTOR: Assessment of TAP TSI implementation by the European Railway Agency	Ares(2015)5967753	21.12.2015
(4)	Report of the TAP TSI Implementation for 2021 - RU/IM Telematics Joint Sector Group (JSG)		January 2022

## Reference legislation

**Table 3: Table of reference legislation**

<i>Ref. N°</i>	<i>Document Reference</i>	<i>Title</i>	<i>Last Issue</i>
[1]	Directive 2008/57/EC	Interoperability of the rail system	17.06.2008
[2]	TAP TSI Regulation No 454/2011	Commission Regulation (EU) No 454/2011 of 11 May 2011 on the technical specification for interoperability relating to the telematics applications for passenger's subsystem of the rail system in the European Union	11.05.2011
[3]	Regulation (EU) 2016/796	REGULATION (EU) No 2016/796 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 11 May 2016 on the European Union Agency for Railways and repealing Regulation (EC) No 881/2004	11.05.2016
[4]	Directive (EU) 2016/797	Directive of the European Parliament and of the Council of 11 May 2016 on the interoperability of the rail system within the European Union	11.05.2016
[5]	CEF Regulation	Regulation (EU) No 1316/2013 of the European Parliament and of the Council of 11 December 2013 establishing the Connecting Europe Facility, amending Regulation (EU) No 913/2010 and repealing Regulations (EC) No 680/2007 and (EC) No 67/2010	11.12.2013

## 1 ABSTRACT

The report shows the implementation progress in 2021 of the TAP TSI implementation in the European rail sector. The actors of the European rail sector – subject to the implementation of the TAP TSI – have to implement this TSI in accordance with the Master Plan and to report about the implementation progress in the co-operation group for the TAP TSI implementation. The affected actors are the railway undertakings, the infrastructure managers and the ticket vendors. Furthermore, there is a common organisation – the TAP TSI Services Governance Association (TSGA) – responsible for the reporting of the implementation progress of the regulatory functions of the TAP TSI.

Furthermore, this report contains the reporting about a subset of the TAP TSI basic parameters for retail functions, mainly for the reservation, ticketing, tariffs/fares and timetables. The subset of these retail functions has been agreed in the TAP TSI co-operation group on 17 October 2017.

To evaluate the current degree of implementation for every function, the data provided is compared to the baseline defined in the TAP TSI Master Plan delivered by the European Rail Sector in 2012.

The monitoring of the implementation takes as baseline:

1. The consolidated Master Plan – the implementation of the individual TAP TSI functions by the railway undertakings, the ticket vendors and the infrastructure managers – has been submitted by the European rail sector on 28<sup>th</sup> April 2013. A total of 40 companies, RUs, IMs and groups – representing a total of over 70 licensed railways - have submitted their plans in time for the consolidation exercise performed by the TAP TSI project team between January and April 2013. The target dates are based on the corresponding TAP-TSI function to be implemented and they were set when 80% or more of the respondents indicated a final implementation.

The following key findings per TAP TSI regulatory function can be highlighted:

- The TAP TSI governance body has been set-up and the TSGA is established, staffed and operational
- The setup of the TAP TSI architecture is in place, comprising:
  - the setup of the TAP TSI registry
  - the setup of the TAP TSI Retail reference database
  - the setup of the TAP TSI Data quality tool
- The usage of the TSGA services is limited

The 8<sup>th</sup> report contains as well the implementation report of the individual railway undertakings about the implementation progress of the following TAP TSI retail functions:

**Table 4: TAP TSI retail functions of the 8<sup>th</sup> reporting session**

Activity	TAP TSI basic parameter	Responsible
8.1 Sending request to agreed RU`s in B5 format	TAP BP 4.2.9.1	RU, TV
8.2 Answering reservation requests from agreed RU`s and agreed 3 <sup>rd</sup> parties in B5 format	TAP BP 4.2.9.2	RU
8.3 Sending reservation requests for bicycle carriage to agreed RU`s in B5 format	TAP BP 4.2.7.2	RU, TV
8.4 Answering reservation requests for bicycle carriage from agreed RU`s and agreed 3 <sup>rd</sup> parties in B5 format	TAP BP 4.2.7.3	RU
8.5 Sending reservation requests for car carriage to agreed RU`s in B5 format	TAP BP 4.2.8.2	RU, TV

8.6 Answering reservation requests for car carriage from agreed RU`s and agreed 3 <sup>rd</sup> parties in B5 format	TAP BP 4.2.8.3	RU
9.1 Issuing value paper tickets for international and foreign sales in B6 format	TAP BP 4.2.11.1	RU, TV
9.2 Accepting value paper tickets for international and foreign sales in B6 format	TAP BP 4.2.11.1	RU
9.1 Issuing home printed tickets for international and foreign sales in B7 format	TAP BP 4.2.11.2	RU, TV
9.2 Accepting home printed tickets for international and foreign sales in B7 format	TAP BP 4.2.11.2	RU
10.1 Sending PRM assistance reservation requests via IT communication to agreed RU`s, IM's and SM's in B10 format	TAP BP 4.2.6.2	RU, TV
10.2 Answering PRM assistance reservation requests via IT-communication from agreed RU`s and agreed 3 <sup>rd</sup> parties in B10 format	TAP BP 4.2.3	RU
Exchange of timetable data in B4 format	TAP BP 4.2.1	RU
Exchange of NRT tariff/fare data in B1 format	TAP BP 4.2.2	RU
Exchange of IRT tariff/fare data in B2 format	TAP BP 4.2.2	RU
Exchange of special tariff/fare data in B3 format	TAP BP 4.2.2	RU
Delivery of timetable data, tariff data to TSGA	TAP TSI TD B.60	RU
Registration at TSGA	TAP TSI TD B.60	RU, TV
Subscription for timetable data, tariff data, public keys at TSGA	TAP TSI TD B.60	RU, TV

## 2 Introduction

This 8<sup>th</sup> Status Report is delivered in accordance with Commission Regulation (EU) No 454/2011 of 11 May 2011 on the Technical Specification for Interoperability relating to the Telematics Applications for Passenger subsystem of the rail system in the European Union [2].

In particular, Article 23 of Regulation EC 2016/796 [2] attributes to the European Railway Agency the task to assist the European Commission in the implementation of the Community legislation and oversee the implementation of the Regulation to determine whether the agreed objectives and deadlines have been achieved. ERA has the task to provide an assessment report to the TAP TSI steering committee referred to in Section 7.3 of the TAP TSI. Furthermore, the European Commission (EC) issued a letter on 21.12.2015 (2) describing the tasks expected to be carried out by the Agency for the Assessment of TAP TSI [2] implementation.

On this basis, the Agency launched on 31<sup>st</sup> May 2016 the Co-operation Group for the Implementation of Telematics Applications for passengers. The Co-operation Group performs the following tasks:

- To assess the reports from the sector (companies, NCPs and RBs) about the TAP TSI [2] implementation.
- To compare the data received with the content of the TAP TSI Master Plan [1] and assess the progress of implementation to determine whether the objectives pursued and deadlines have been achieved.
- To use Key Performance Indicators (KPIs) previously agreed between the Agency and the Rail Sector to assess the evolution of the deployment of the system and report once per year to the European Commission and to the TAP TSI Steering Committee.
- To perform a dissemination campaign to NCPs and assist them to follow-up the TAP TSI [2] implementation at national level.

All these activities are performed in close cooperation with the different stakeholders, who will provide implementation reports.

### 2.1 Reporting structure

The reporting takes into account the different reporting procedures, depending on the nature of the information to be reported and the responsibilities for the implementation of the TAP TSI. There are 4 different reporting streams – reporting procedures for certain business areas of the regulation - in the TAP TSI reporting:

1. The reporting about the implementation of the **conditions of carriage** by the individual passenger railway undertakings
2. The reporting about the implementation of the **regulatory functions** by the TAP TSI governance body (TSGA)
3. The reporting about the implementation of the **retail functions** by the individual passenger railway undertakings and the ticket vendors
4. The implementation of the **RU/IM-functions** by the individual passenger railway undertakings

“**Conditions of carriage**” means the implementation of the publication of the conditions of carriage and certain accessibility conditions by the railway undertakings. This obligation is specified in the TAP TSI basic parameters 4.2.4, 4.2.5, 4.2.7, 4.2.6 and 4.2.8. The basic parameter had to be implemented 6 months after the publication of the TAP TSI, means until the 11.11.2011.

“**Regulatory functions**” means those functions which cover the central functions of the TAP TSI and have to be implemented by the TAP TSI governance body (TSGA). Those functions are – beside of the setup of the TAP TSI governance - the TAP TSI architecture including registry, the retail reference database and the data



quality tool. The functionalities are specified in the TAP TSI technical document B.60<sup>1</sup> and have to be implemented by the TSGA.

**“Retail functions”** means those functions which cover functions such as timetable data exchange, tariff data exchange or fulfilment and have to be implemented individually by the passenger railway undertakings and the ticket vendors. These functions are described in TAP TSI chapter 4 and have to be implemented following the TAP TSI Master Plan<sup>2</sup>.

**“RU/IM functions”** are those functions for planning and booking of train paths and information during the operation and the functions related to “information in the stations” and “information on-board”. They have to be implemented by the railway undertakings, infrastructure managers according to the TAP TSI Master Plan.

The following table shows an overview about the different reporting streams for the TAP TSI.

**Table 5: Reporting streams for TAP TSI**

	<b>Conditions of Carriage</b>	<b>Regulatory functions</b>	<b>Retail basic parameters</b>	<b>RU/IM basic parameters</b>
TAP TSI Basic parameter	4.2.4.1, 4.2.5.1, 4.2.7.1, 4.2.6.1, 4.2.8.1	TAP TSI chapter 7.3	Remaining TAP TSI functions	4.2.15, 4.2.16, 4.2.17
Implementation plan specified in	TAP TSI regulation 454/2011	TAP TSI Technical document B.62	TAP TSI Master Plan	TAP TSI Master Plan
Implementation date	11.11.2011	31.10.2014	Milestones according TAP TSI Master Plan	Milestones according TAP TSI Master Plan
Who has to implement the function(s)	Passenger railway undertakings	TSGA	Passenger railway undertakings, ticket vendors	Infrastructure managers, railway undertakings
Who has to report to ERA	None (data will be collected automatically by the Agency)	TSGA	RU’s via Common support group (CSG), ticket vendors via ET TSA/ECTAA	RU’s, IM’s via Joint sector group (JSG)
Publication by	ERA			
Report	Report about the implementation of the conditions for carriage	Status report for the TAP TSI retail functions		Status report for the TAF TSI functions
Report frequency	Annual			

## 2.2 Reporting procedures

As shown in the Table 5 there are four different reporting streams in place. Each stream has a different procedure for the reporting, including the involved actors, the procedure and the scope. These differences have to be respected in the reporting for the TAP TSI implementation progress.

<sup>1</sup> [https://www.era.europa.eu/sites/default/files/filesystem/tap/baseline\\_1.4.0\\_archive/era\\_technical\\_document\\_tap\\_b\\_60\\_final.pdf](https://www.era.europa.eu/sites/default/files/filesystem/tap/baseline_1.4.0_archive/era_technical_document_tap_b_60_final.pdf)

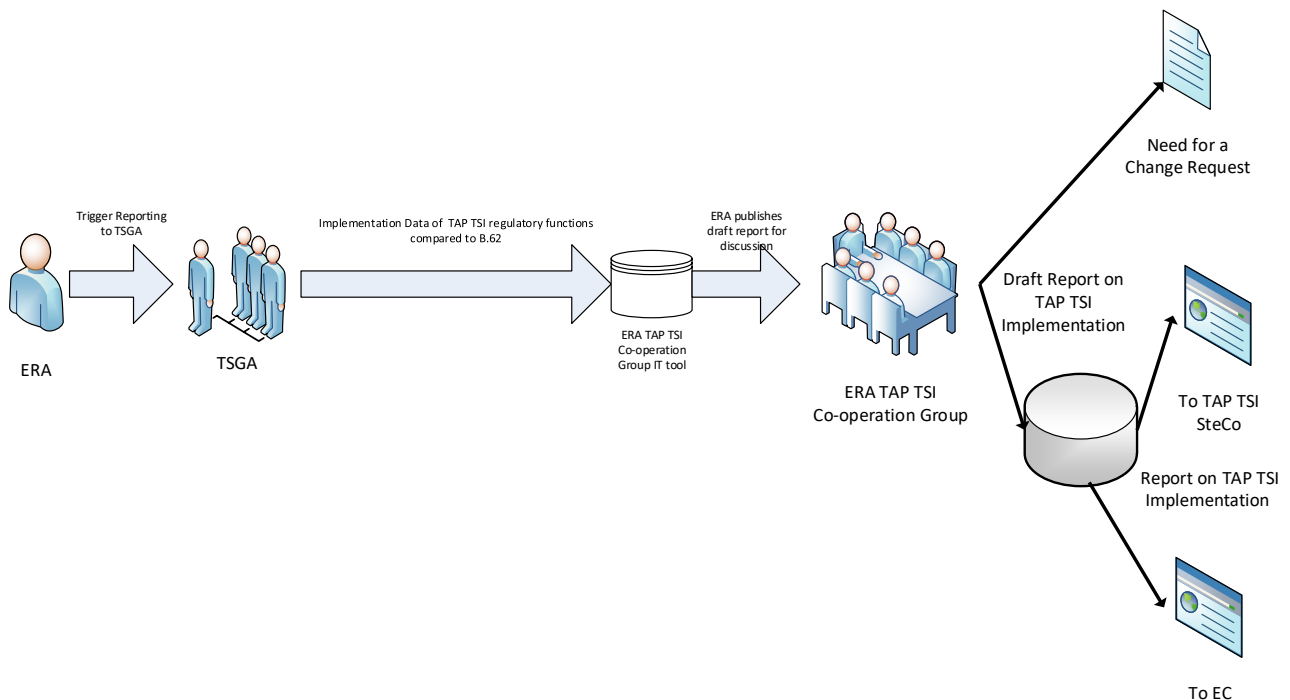
<sup>2</sup> [https://www.era.europa.eu/sites/default/files/activities/docs/tap\\_master\\_plan\\_delivery\\_en.pdf](https://www.era.europa.eu/sites/default/files/activities/docs/tap_master_plan_delivery_en.pdf)

### 2.2.1 Reporting for the conditions of carriage

Reporting of the implementation of the conditions of carriage is done by ERA. Once per year, ERA is checking the websites of passenger railway undertakings across EU, analysing conditions of carriage and the accessibility conditions. ERA uses the list of passenger railway undertakings for the reporting which has been delivered by the NCP's of the member states or which are publicly known. The report is delivered by ERA once per year to the European Commission.

### 2.2.2 Reporting for the regulatory functions

The reporting procedure (workflow) for regulatory functions is shown at the following picture:

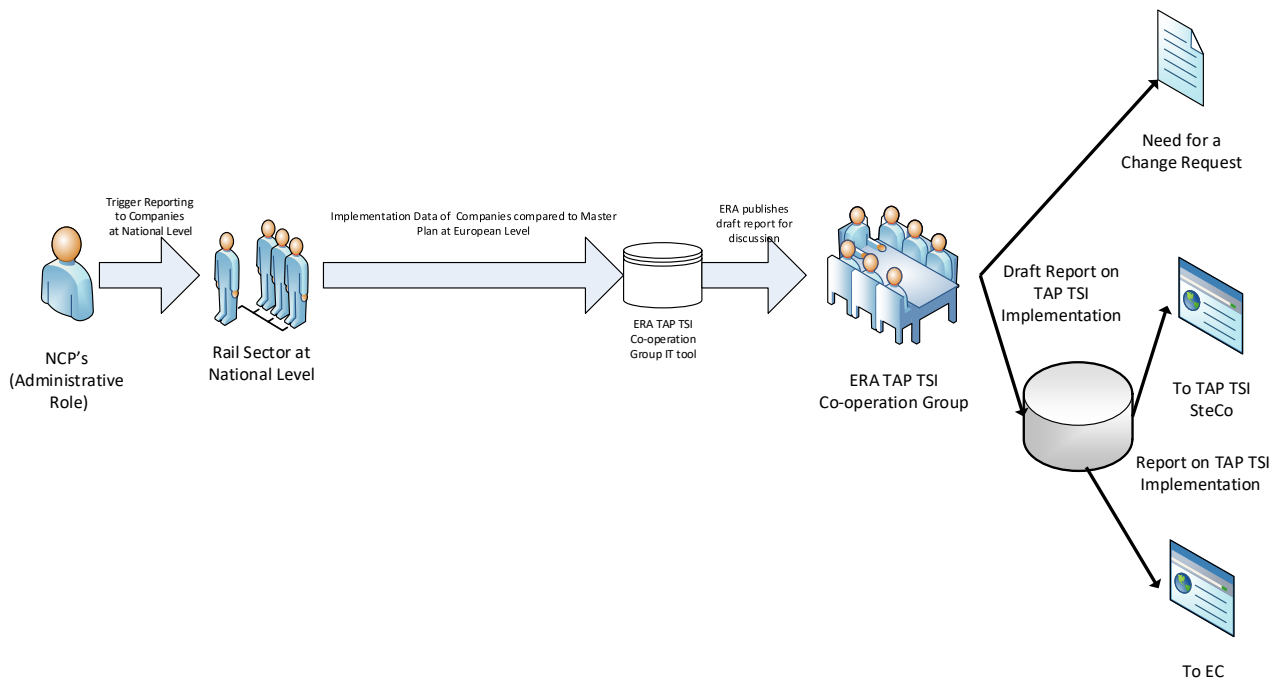


**Figure 1: ERA TAP TSI Implementation Cooperation Group process for regulatory functions**

The process is triggered by ERA to TSGA to request with a predefined questionnaire a report about the implementation progress for the regulatory functions of the TAP TSI. The request is sent 3 months before the TAP TSI co-operation group to the TSGA. The report will be sent back from TSGA to ERA and incorporated in the IT-tool and the implementation progress report for the working party. After the discussion in the TAP TSI co-operation group two additional weeks are given for further remarks. Then, the implementation progress will be incorporated in the report about the TAP TSI implementation and it is delivered by the Agency to the TAP TSI Steering Committee and the European Commission.

### 2.2.3 Reporting for TAP TSI retail basic parameters

The diagram below shows the process allowing ERA to perform the above listed activities for the TAP TSI retail basic parameters:



**Figure 2: ERA TAP TSI Implementation Cooperation Group process for retail basic parameters.**

The process is triggered by the NCP's keeping the list of passenger railway undertakings up-to date. A questionnaire is drafted by ERA and CSG, based on agreed KPI's to evaluate the evolution of TAP TSI retail basic parameters. The common support group (CSG) will deliver 3 months before the TAP TSI co-operation group meeting an e-mail contacting all the companies of the reporting list and launching the reporting. The questionnaire is provided as electronic form on a website. The companies have 1 month to report. Once the reporting is concluded, the tool is close and the CSG will elaborate an implementation report with the sector's view on the implementation. At the same time, the raw data will be delivered to the Agency for uploading the data on the Agency GIS Implementation tool and for drafting the complementary Agency status report for discussion in the TAP TSI co-operation group. The content of the Agency report is discussed and amended during the TAP TSI co-operation group meeting giving two additional weeks for further remarks. Once is concluded the allegation period, the report is delivered by the Agency to the European Commission and to the TAP TSI Steering Committee.

The ticket vendors (TV) are subject to the reporting of the implementation progress of some TAP TSI retail basic parameters as well. These basis parameters are mainly those for the usage of the data delivered by the railway undertakings. The process for ticket vendors is the similar one as for the passenger railway undertakings: The TV are invited to submit their implementation data to their stakeholder organisations ETTSA and ECTAA. They will compile a report based on the data received from their members.

TAP retail functions will be monitored first twice a year to better compile progress of implementation but after a year of monitoring this decision will be revised.

#### **2.2.4 Reporting for TAP TSI RU/IM basic parameters**

For the TAP TSI RU/IM-communication basic parameters, the process existing for TAF TSI (described in the following picture) is followed.

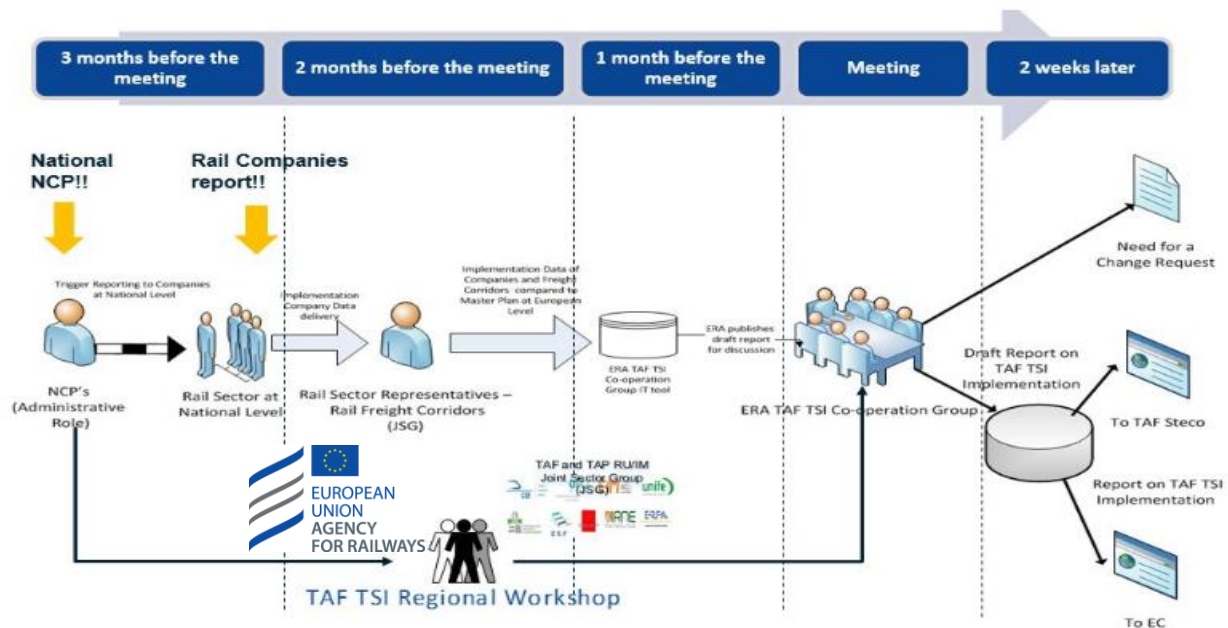


Figure 3: ERA TAF TSI Implementation Cooperation Group process for RU/IM basic parameters.

For the reporting of the RU/IM basic parameters the co-operation group for the implementation of the TAF TSI is in charge of the reporting for the TAP TSI as well. The NCPs will trigger the reporting exercise keeping up to date the list of companies stored in the JSG reporting tool taking part in the reporting exercise. This task is performed 1 month before the campaign starts. Then, the JSG will deliver 3 months in advance of the TAP TSI co-operation group an e-mail contacting all the companies of the reporting list and launching the reporting. The reporting is provided as electronic form on the JSG tool. The companies have 1 month to report. Once the reporting is concluded, the tool is close and the JSG will elaborate an implementation report with the sector's view over the implementation. At the same time, the raw data will be delivered to the Agency for uploading the data on the Agency GIS Implementation tool and for drafting the complementary Agency status report. Both reports should be made available for the members of the TAF TSI Implementation Cooperation Group at least 2 weeks before the meeting for discussion within the mirror groups. The content of the Agency report is discussed and amended during the meeting giving two additional weeks for further remarks. Once the allegation period is concluded, the report is delivered by the Agency to the European Commission and to the TAF TSI Steering Committee. Thereby, this reporting about the TAF TSI basic parameters is not in the scope of the current report about the TAP TSI implementation progress.

TAP TSI RU/IM functions were monitored until 2018 twice a year to better compile progress of implementation. Since 2019 only one report per year will be delivered.

### 2.2.5 Further steps after the reporting

After the reporting of the progress for the TAP TSI implementation further steps have to be done by ERA. ERA has to inform the EC about the results of this monitoring and has to advise the EC about the possible changes needed. For the common part TAP and TAF, the report will be as well submitted to the TAP TSI Steering Committee. In a multimodal context, ERA has to guarantee that any of the actions taken do not create additional obstacles for multimodal environment.

The Agency delivers the reports also to the Member States through the Rail Interoperability and Safety Committee (RISC).

### 3 Context

The context of the reporting of the implementation progress of the TAP TSI is based on two legal documents: the TAP TSI Master Plan (TAP TSI technical document B.62) (1), covering the implementation timetable for the TAP TSI regulatory services and the TAP TSI consolidated Master Plan covering the implementation dates of the specific functions for the TAP TSI for each actor (e.g. RU, IM, ticket vendor)

The final version of the TAP-TSI Master Plan (1), establishing the implementation timeline for the regulatory functions of the Regulation, was submitted to the DG MOVE and ERA on 11<sup>th</sup> May 2012. This Master Plan contains the milestones for the implementation of the regulatory functions of the TAP TSI ecosystem, which must be implemented in common by the affected actors. These functions must be provided to all actors affected by the TAP TSI.

Based on the submission of the TAP TSI Master Plan for the regulatory functions ERA has submitted on 31<sup>st</sup> October 2012 a recommendation about a revised TAP TSI to the European commission. The revised TAP TSI has been published on the official journal of the EU on 6<sup>th</sup> December 2013 as EC 1273/2013. The TAP TSI Master Plan has been annexed to the TSI as technical document B.62. Therefore, the TAP TSI Master Plan is legally binding for the implementation of the regulatory functions of the TAP TSI.

On the other hand, the undertakings have submitted their individual implementation plans to the TAP TSI project team until end 2012. The consolidated Master Plan document summarises the consolidation of the individual TAP TSI implementation plans established by RUs, IMs and SMs in 2012 and 2013. Overall, 40 RUs, IMs and groups – representing a total of over 70 licensed railways - have submitted their plans in time for the consolidation exercise performed by the TAP TSI project team between January and April 2013. The target dates are based on the corresponding TAP-TSI function to be implemented.

The reporting for the implementation of the TAP TSI functions by the actors is two folded: the reporting for the RU-IM communication and the reporting for the retail functions. Latter one has been assigned to the co-operation group for the implementation of the TAF TSI. Most of the RU/IM-functions are common with the TAF TSI and therefore the reporting has been centralised in the co-operation for the implementation of the TAF TSI, considering the milestones set-out in the TAP TSI Master Plan.

In order to collect the data and to boost the involvement of the higher possible number of companies, the European Railway Agency has closely worked with the European Rail Sector to set-up the appropriate mechanism to collect the data concerning the deployment of the above-mentioned functions. Indeed, on the RU/IM functions, the European Rail Sector grouped through the sector cluster Joint Sector Group (JSG) and the Agency has set-up two IT tools to collect and visualize the data submitted by the European rail companies, Infrastructure Managers, Railway Undertakings and Wagon Keepers. For this purpose, the companies submit their information about the progress of implementation of the RU-IM-communication basic parameters to the JSG IT tool through a Web service available for all the companies registered. For TAP TSI this reporting process is assigned to the TAF TSI co-operation group.

For the TAP TSI retail basic parameters a similar process has been applied. The data are collected by the Common support group (CSG) and the Agency uses the same tool for the reporting of the TAP TSI retail basic parameters.

For the reporting the **number of registered companies on 5<sup>th</sup> November 2021 was 248 (241 railway undertakings and 6 ticket vendors)**, whereas 206 companies have submitted their contact details to be contacted for the questionnaire, raising the rate of the contacted companies to the registered ones from 63% for the report 2020 to 83% for the current report.

The scope of the present report is to inform about the deployment of the functions that were scheduled to be implemented by 2<sup>nd</sup> half 2017 in the Master Plan (1) delivered by the sector for the implementation of the TAP TSI [2] system. This report provides information about the implementation of the following functions:

- TAP TSI architecture:

- Registry
- Retail reference database
- Data quality tool
- Governance

To have a common approach for all companies' contributors submitting implementation information, **an optional common criterion has been agreed with the representatives of the rail sector to assess the degree of implementation of TAP TSI functions.** This criterion is based on the standard division in project phases of IT projects defined in the methodology for project management in use at the European Commission (PM<sup>2</sup>). Assuming that project phases are divisions within a project where extra control is needed to effectively manage the completion of a major deliverable, then it may be ideally assimilated each of **the 22 TAP TSI retail functions** identified in the TAP TSI Master Plan (1) to an individual IT reference implementation project.

Within every individual IT reference implementation project, we use percentages of completion as early indicators to track the progress made each period of one year (n-3, n-2, and n-1, n) over a 4-year time span. This will allow raising warnings to prevent delays in the implementation of a particular function.

Therefore, considering the above-mentioned assumptions, every function implementation may be considered as an individual project to be split in the following reference phases:

- **Initiating Phase:** This phase may comprise those processes performed to define a new project or a new phase of an existing project by obtaining authorization to start the project or phase. This phase includes typically the following activities:
  - Feasibility Study
  - Business Case
  - Gathering of Technical and Functional Requirements

These activities may correspond in an "optional" reference implementation to a Degree of Implementation (DI) between 0% and 25% for a particular function. If the DI is achieved at the beginning of the timeframe for the deployment of such a function, deadline minus ideally three years (deadline-3), the implementation of this function can be deemed on time.

- **Planning Phase:** this phase includes typically those activities required to establish the scope of the project, refine the objectives, and define the course of action required to attain the objectives that the project was undertaken to achieve:
  - Resource Planning
  - Project Work Planning (Working Break Down Structure)
  - Migration Planning
  - Outsourcing Plan
  - Risk Management Planning

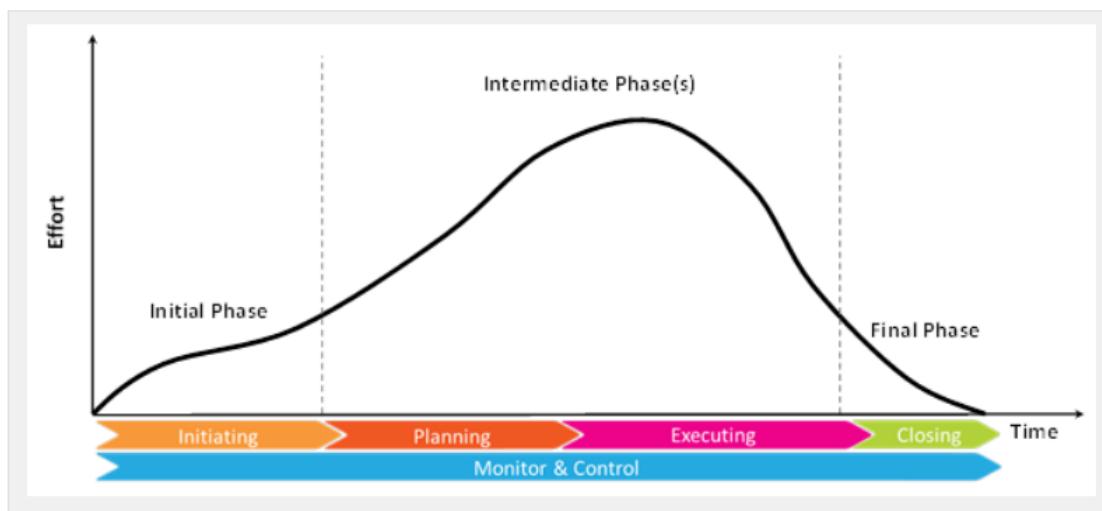
These activities may correspond in an "optional" reference implementation to a Degree of Implementation (DI) between 25% and 50% for a particular function. If the DI is achieved within the deadline minus ideally two years (deadline-2) period, the implementation of this function could be deemed to be on time.

- **Executing Phase:** this phase may comprise those processes performed to complete the work defined in the project management plan to satisfy the project specifications. This phase includes activities such as:
  - Procurement
  - Executing
  - Testing (User Acceptance and system Integration)
  - Training and Education

These activities may correspond in an “optional” reference implementation to a Degree of Implementation (DI) between 50% and 75% for a particular function. If the DI is achieved within the deadline minus ideally one year (deadline-1) period, the implementation of this function could be deemed to be on time.

- **In Production & Monitor & Control:** this phase may comprise those processes performed to finalise all activities across all phases to formally close the project. Therefore, it may include the delivery of the product/service, in the context of the TAP TSI [2] deployment, the delivery of the IT system implementing a particular TAP TSI [2] function moving to production environment. These activities correspond in an “optional” reference implementation to a Degree of Implementation (DI) between 75% and 100% for a particular function. If the DI is achieved within the deadline minus ideally one year (deadline-1) period, the implementation of this function could be deemed to be on time.

The above explained phases are summarised in the following diagram explaining the expected commitment of resources made for every phase of the project.



**Figure 4: PM<sup>2</sup> project lifecycle.**

Nevertheless, the different activities to be developed in the framework of a project to implement a particular TAP TSI [2] function should be adapted to the particular situation in every company. Therefore, every project may be assimilated, in a voluntary basis, to the addition of the four phases aforementioned (Initiating, Planning, Executing and Closing) establishing an optional comparable reference implementation to assess the progress of the implementation per company.

In conclusion, in the context of the Co-operation Group for TAP TSI Implementation there are two ways to report about the implementation of a particular TAP TSI function compared to the TAP TSI Master Plan (1):

- on one hand, companies may declare the final delivery of a particular TAP TSI function within the deadline set out in the TAP TSI Master Plan (1); in this case the implementation of this function will be deemed to be on time, and thus DI = 100% -> Green colour on the map;
- on the other hand, companies may declare the Degree of Implementation (DI) for every function taking into account the optional methodology aforementioned based on different phases for the project. In this case, the declared Degree of Implementation will be colour-coded and displayed as follows:
  - Project not launched: 0% or no data -> Blue colour on the map.

- Initiating Phase accomplished:  $DI < 25\%$  -> Red colour on the map.
- Planning Phase accomplished:  $25\% \leq DI < 50\%$  -> Orange colour on the map.
- Executing Phase accomplished:  $50\% \leq DI < 75\%$  -> Light Green colour on the map.
- In Production & Monitor & Control accomplished:  $75\% \leq DI \leq 100\%$  -> Green colour on the map.



## 4 Analysis

### 4.1 Implementation of the regulatory functions

The regulatory functions of the TAP TSI have been implemented in full by TSGA, as seen in the picture below.

**Table 6: Milestones for TAP TSI regulatory functions (as of 18/12/2019)**

<i>Milestone</i>	<i>Planned date</i>	<i>Actual date</i>	<i>Degree of fulfilment</i>
Setup of the TSGA	30/09/2013	31/12/2016	100%
Setup of the Retail reference database	01/10/2014	31/08/2019	100%
Setup of the TAP TSI registry	01/10/2014	31/08/2019	100%
Setup of the Data quality tool	01/10/2014	31/08/2019	100%

### 4.2 Implementation of the functions according to the original consolidated TAP TSI Master Plan

The milestones for the TAP TSI consolidated Master Plan for the implementation of the individual functions of the TAP TSI are shown in Figure 5: TAP TSI Master Plan for the retail functions.

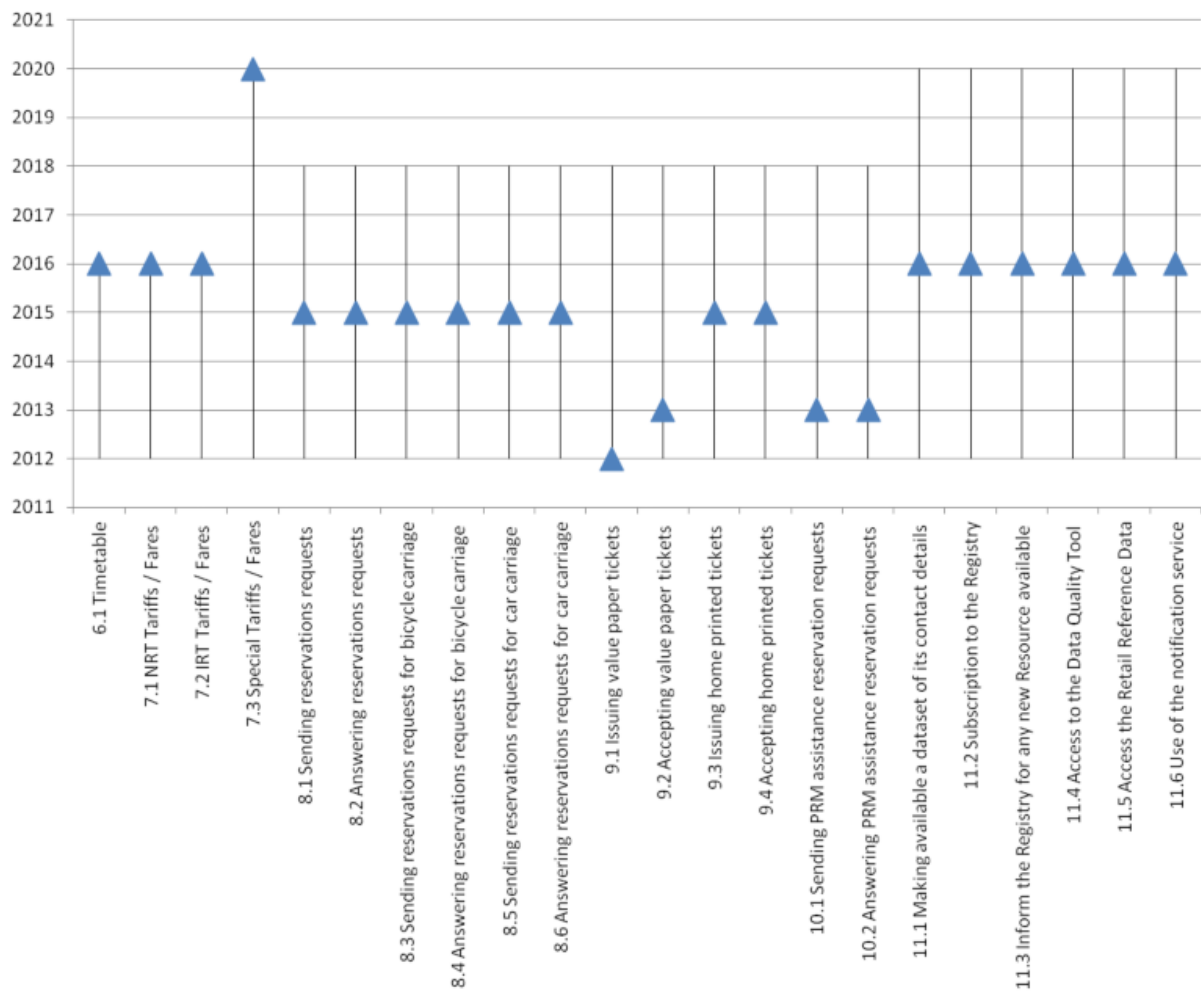


Figure 5: TAP TSI Master Plan for the retail functions

#### 4.2.1 Process for the questionnaire

For the collection of the progress report for the implementation of the TAP TSI retail functions, ERA has drafted a questionnaire, based on the decisions in the TAP TSI co-operation group meeting from (13 October 2021). The calendar for the data collection and analysis has been agreed in last meeting and it was done as follows:

#	Step	Date
1	ERA will send the request to update PM's	30.09.2021
2	Update TAP TSI RU/TV PM list	05.11.2021
3	CSG send the questionnaire to ERA	N/A
4	ERA/JSG/CSG/ET TSA triggers reporting session	15.11.2021
5	Opening JSG/CSG tool for reporting	15.11.2021 – 10.12.2021

6	Analysing data for report	January 2022
7	Preparing JSG/CSG or ETTSA/ECTAA report	February 2022
8	Harmonising analysis with ERA	22 February 2022
9	Presenting TAP TSI implementation report at ERA co-operation group	09 March 2022
10	Publishing implementation report	31 May 2022

**Table 7: Reporting schedule for TAP TSI basic parameters (8<sup>th</sup> reporting)**

In the meeting of the TAP TSI co-operation group on 13 October 2021 it has been agreed to report about the following TAP TSI retail basic parameters as described in Table 4: TAP TSI retail functions of the 8th reporting session.

The reporting has been for the first time executed using the survey tool EUSurvey. The existing survey has been migrated to the new tool, using the same questions as in the previous reporting sessions to allow to compare the results of the several reporting sessions. The questionnaire has been published for the first time in several languages. For this purpose, the English questionnaire has been translated using machine translation tools into Spanish, Hungarian, Italian and German. The translations have been reviewed by NCPs of the member states Spain, Hungary, Italy and Germany, before publication of the questionnaire.

During the migration of the questionnaire to EUSurvey, one question of the previous reports has been forgotten: “Accepting value paper tickets for international and foreign sales in B6 format (TAP TSI basic parameter 4.2.11.1.)”, which is not further analysed in this report. The question must be added again to the questionnaire for the following reports.

It has been further agreed not to collect the market shares of the railway undertakings, because of the uncertainty and the significant reduction of travelling due to the COVID-19 crisis, the marked shares for 2021 are still not reliable and the existing market shares from 2019 were taken.

For the processing of the received data the following procedure has been applied:

1. Some undertakings have reported their data as well for undertakings belonging to the same group. Therefore the data delivered from DB AG have been copied to the undertakings S-Bahn Berlin GmbH, S-Bahn Hamburg, DB Regio AG, DB Fernverkehr AG, DB RegioNetz Verkehr GmbH, DB ZugBus Regionalverkehr Alb-Bodensee GmbH, S-Bahn Stuttgart, UBB Usedomer Bäderbahn GmbH
2. Some undertakings reported to use equivalent UIC leaflets to fulfil some basic parameters. In these cases it has been assumed, that the ERA technical documents have been fulfilled.

The reporting campaign was held in November/December 2021. **51** companies reported to the report. The results of the reporting have been presented in the TAP TSI co-operation group meeting on 10 March 2021.

Since the previous reporting 27% of the invited RUs have answered (-13%). The weighting factor based on passenger-km at European level coming from the NCPs and EC data have been used, based on the marked shares from the TAP TSI implementation report 2020. The calculation is considered reliable. The responding companies have covered the 63,6% of the European passenger-km rate, as almost in each member state the main RUs have replied. The market share has significantly decreased (-17%), as also the absolute number of companies replying (-32). The reason for the lower amount of participating companies is mainly, that due to the withdrawal of the United Kingdom, no companies from UK are included in the list.

Because of the Covid-19 pandemic situation it was not possible to get for 2021 reliable market share figures of the individual contributing rail actors per member state. Therefore the data from the previous report have been used.

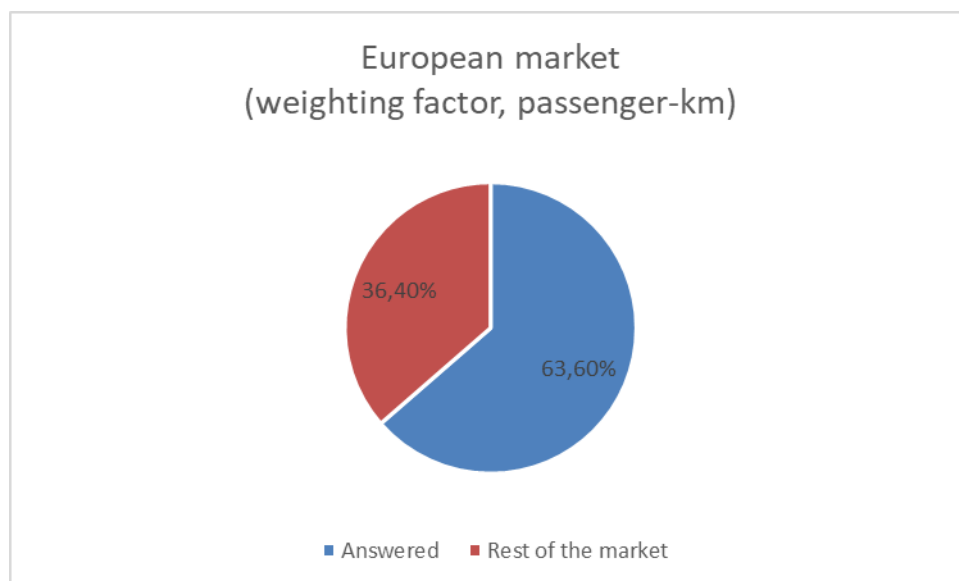
The report reflects the state of play for the implementation of the TAP TSI end of 12/2021.

#### **4.2.2 Results of the reporting for the TAP TSI retail basic parameters to be implemented by railway undertakings**

The following chapter shows the results of the analysis of the data reported by the railway undertakings concerning the implementation of the TAP TSI retail basic parameters.

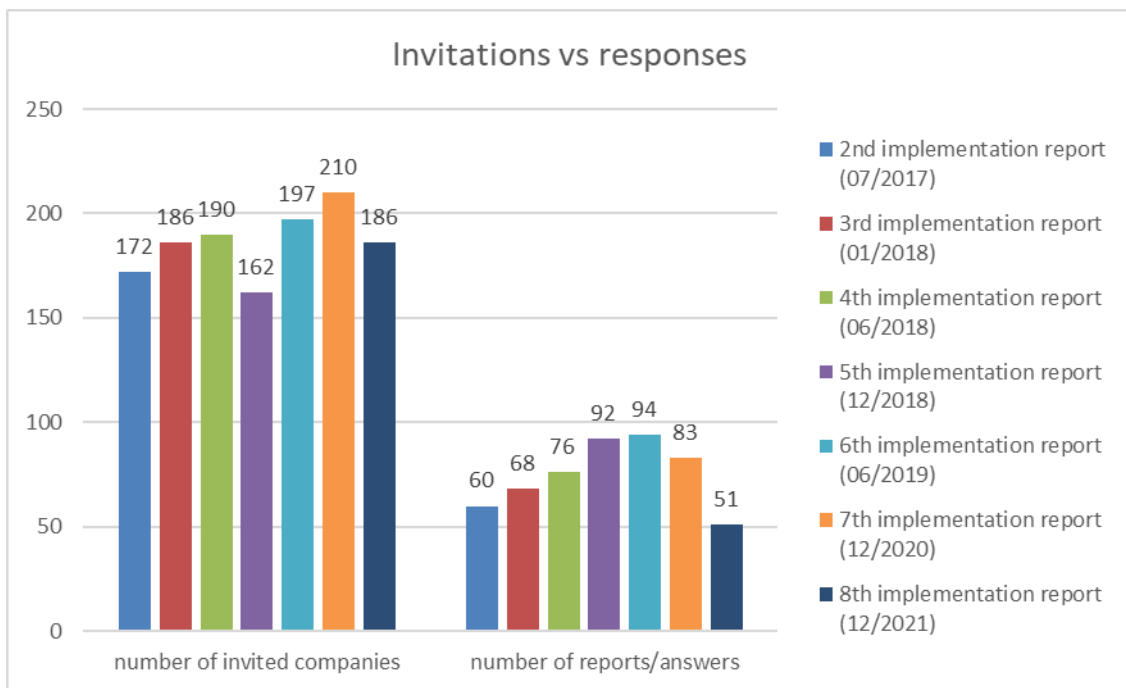
This 8<sup>th</sup> reporting is using the weighting factor based on *passengerkm* to secure better view of the status of the TAP implementation across Europe. The weighting factor has been calculated through the 2015 public service obligation market share data per company in each country and the *passengerkm* per country (source of data: European Commission – Statistical Pocketbook 2017). All reporting results for TAP TSI retail basic parameters are presented graphically through Chapter 4.2.2, considering both absolute number of companies and weighting factor (market share of companies according to *passengerkm*), shown in brackets in each graph.

If market share of responsive companies would be considered, then 60% of European market share is covered with this TAP implementation report, as shown at following diagram:



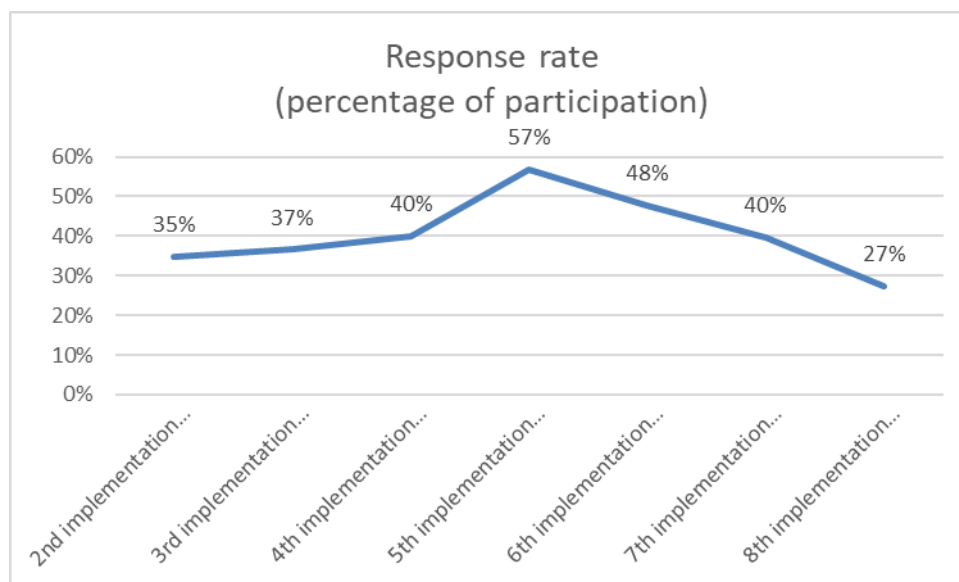
**Figure 6: Reporting session 2021 participation per weighting factor (market shares according to passenger-km)**

The following diagram shows the answer rate of the questionnaire.



**Figure 7: Number of invitations and responses per implementation report**

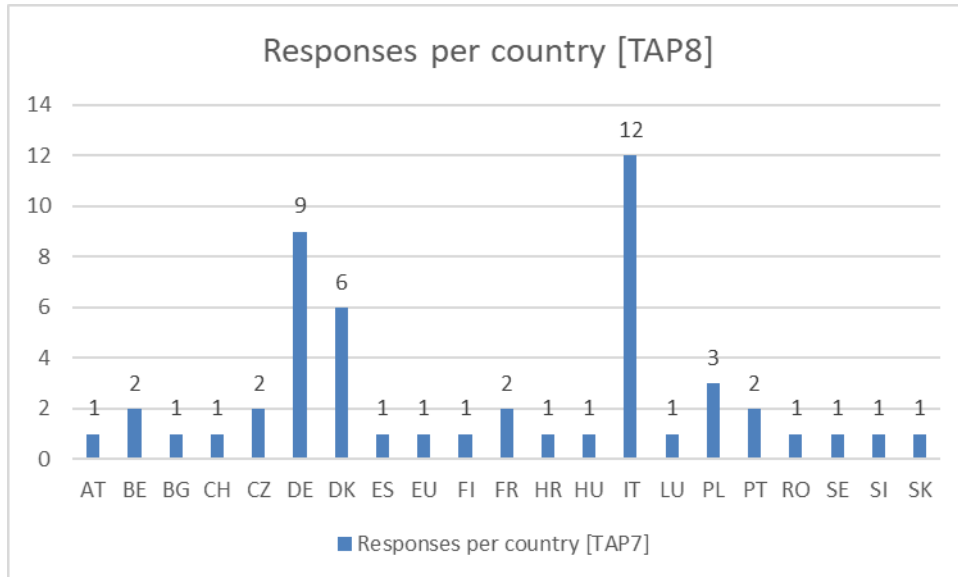
The response rate, calculated as number of received reports in relation to the number of companies invited, is shown at the following diagram:



**Figure 8: Evolution of response rate vs invited companies**

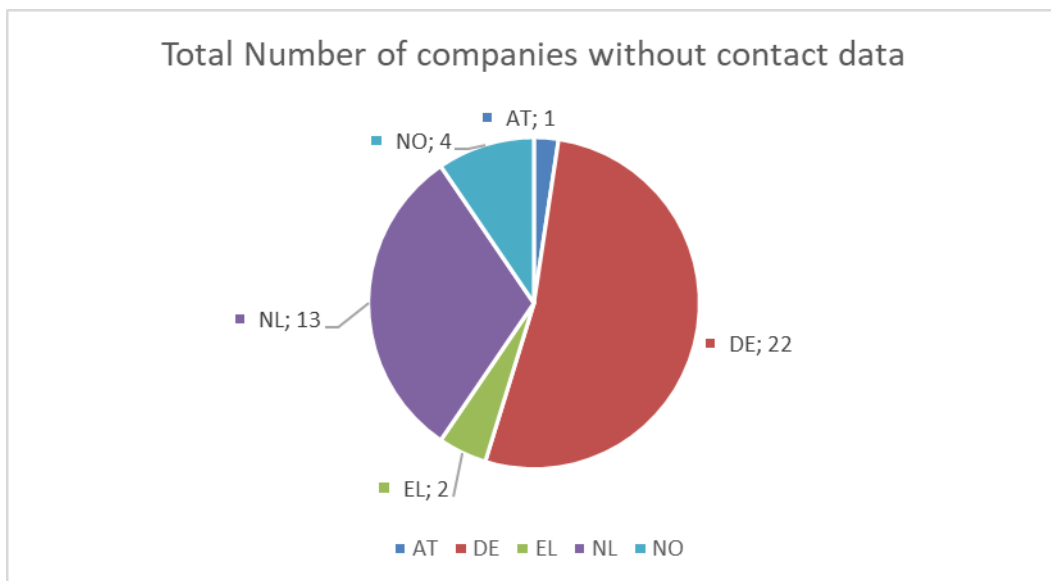
Between 2<sup>nd</sup> and 6<sup>th</sup> reporting session the number of responses was slowly increasing by 8 per reporting session, similar as overall answer rate increased from 35% (2<sup>nd</sup> report) to 48% (6<sup>th</sup> report). Unfortunately for the 8<sup>th</sup> report the response rate has been reduced to 27% even the number of companies contacted for the report, has not been significantly increased. However, the overall number of responses and overall answer rate should be improved by focusing on the member states which did not provide any feedback on invitation or did not provide any contact data for existing RUs, which are obliged to TAP implementation.

The following diagram shows the distribution of answers concerning the request. The RUs from 20 countries (19 member states plus Switzerland plus one company reporting for whole EU) have submitted their responses to the implementation progress of the TAP TSI retail basic parameters.



**Figure 9: Number of responses per country**

The following diagram shows the number of companies which didn't provide any contact data via NCP network, so those companies could not receive any invitation to provide the report. In the following data there is a potential to secure better response rate for future reporting sessions, through NCP cooperation. By comparing the market share of responsive companies with the number of companies responded, it is reasonable to conclude that majority of companies without contact data being available belong to small RUs.



**Figure 10: Number of TAP obliged companies without contact data provided**

The following diagram shows the distribution of the invitations and the answers received per country (EU member states + Switzerland and Norway).

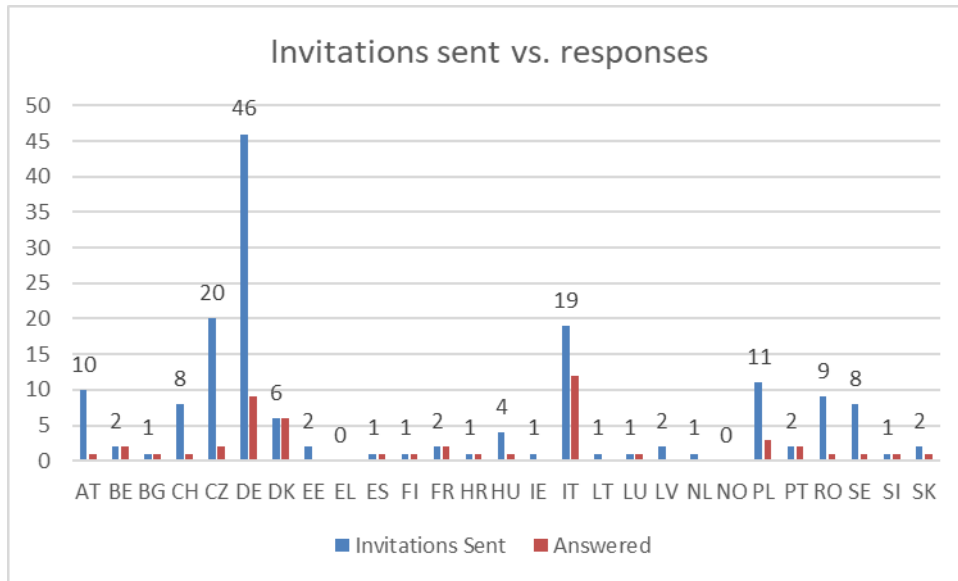
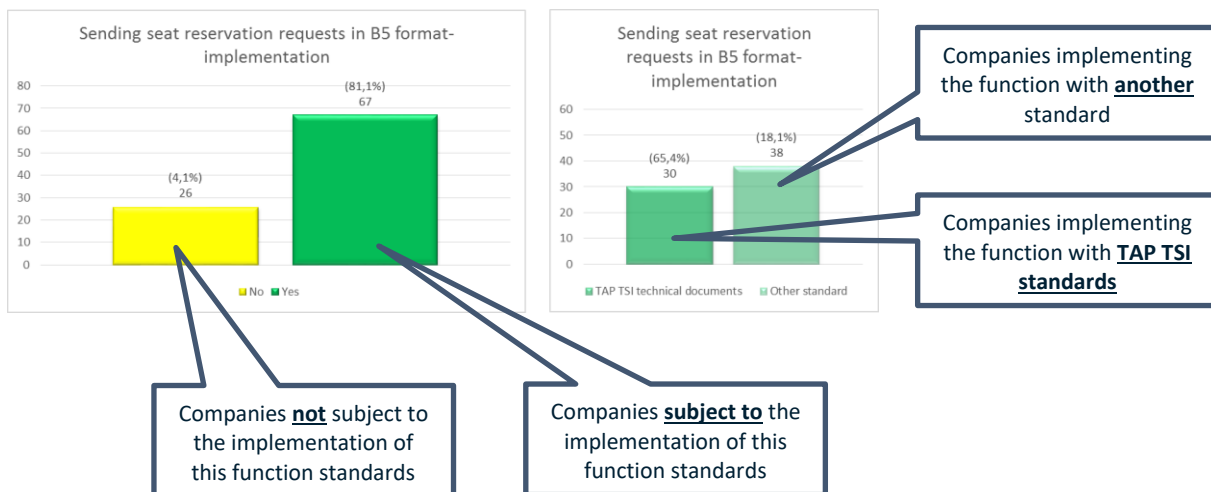


Figure 11 - Invitations and responses per country

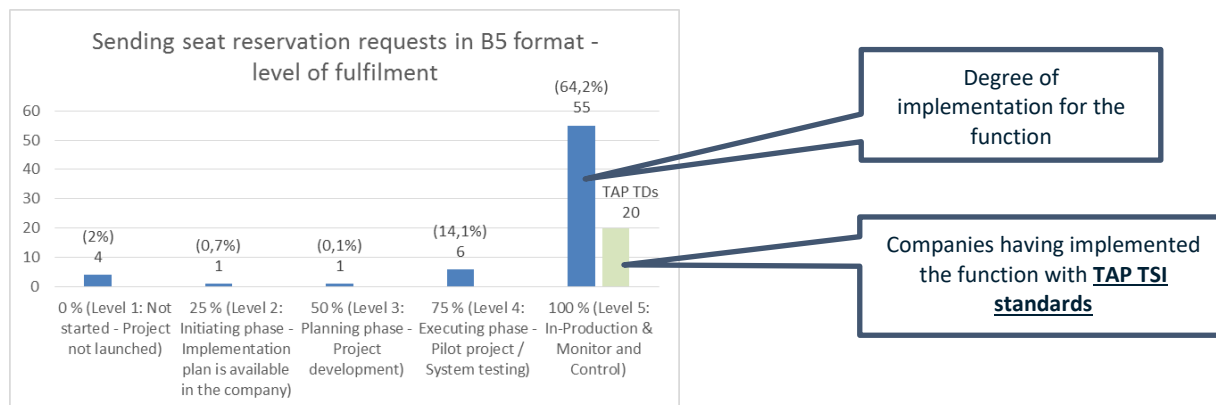
**Explanation of the diagrams about the implementation progress per function:**

For the explanation of the implementation progress of the TAP TSI basic parameters, the same diagrams are used to make the results comparable. The values shown in the diagrams are explained in as follows:

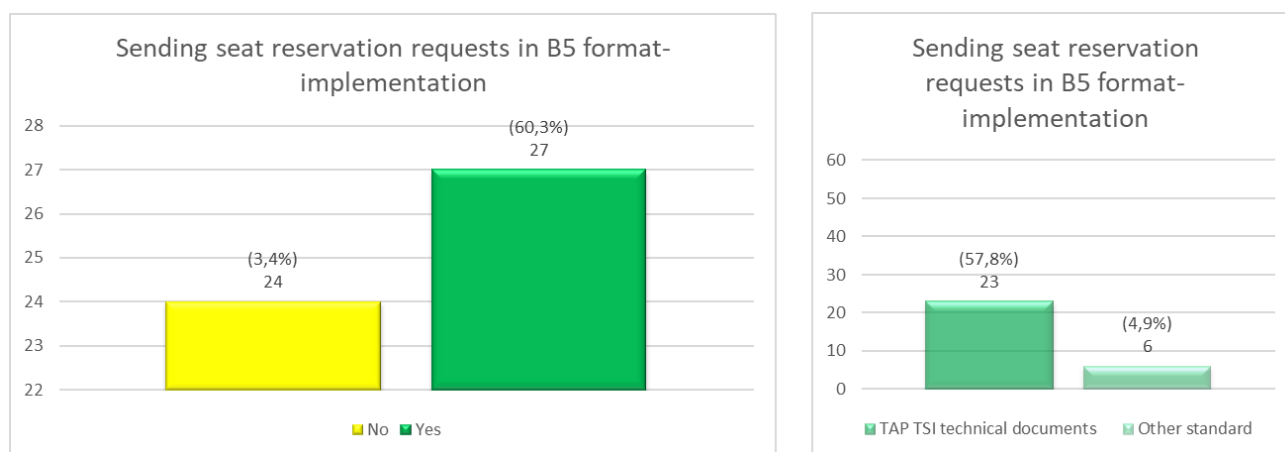
The first diagram shows the companies subject to the implementation of a specific TAP TSI function and the standards used or planned to be used for the implementation.



The second diagram shows the progress of the implementation of a specific function depending on the state of the implementation project. The number of completed implementations using TAP TSI technical documents is shown.



#### 4.2.2.1 Sending reservation requests from agreed RU`s and agreed 3<sup>rd</sup> parties in B5 format (TAP TSI basic parameter 4.2.9.1)

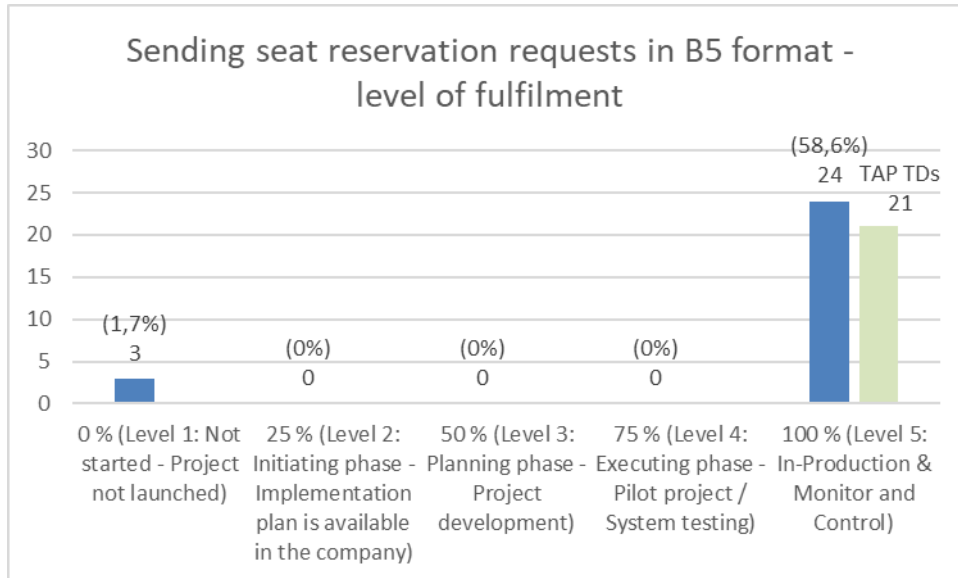


**Figure 12: Sending seat reservation requests in B5 format: subject to the implementation (Y/N), [number of responses (% based on European passenger per km factor)]<sup>3</sup>**

27 companies confirmed, that they are subject to implement this basic parameter. Companies not subject to the implementation of this basic parameter stated, that they either have no seat reservation system at all (e.g. for local traffic operation only) or they are using direct links to the systems of those other railway undertakings for seat reservation.

<sup>3</sup> 1 RU declared implementation by using both TAP TSI technical documents and other standards.



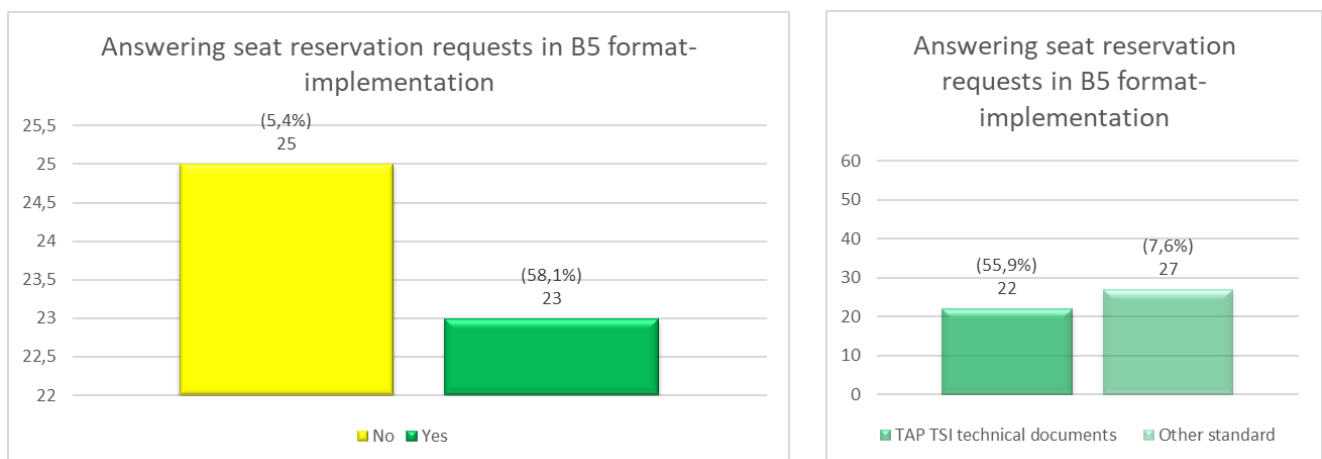


**Figure 13: Sending seat reservation requests in B5 format – level of fulfilment, [number of responses % based on European passenger per km factor]**

The implementation status of the function “Sending reservation requests” is low, considering number of companies. Only 21 European companies have fully implemented the function according to TAP TSI standards.

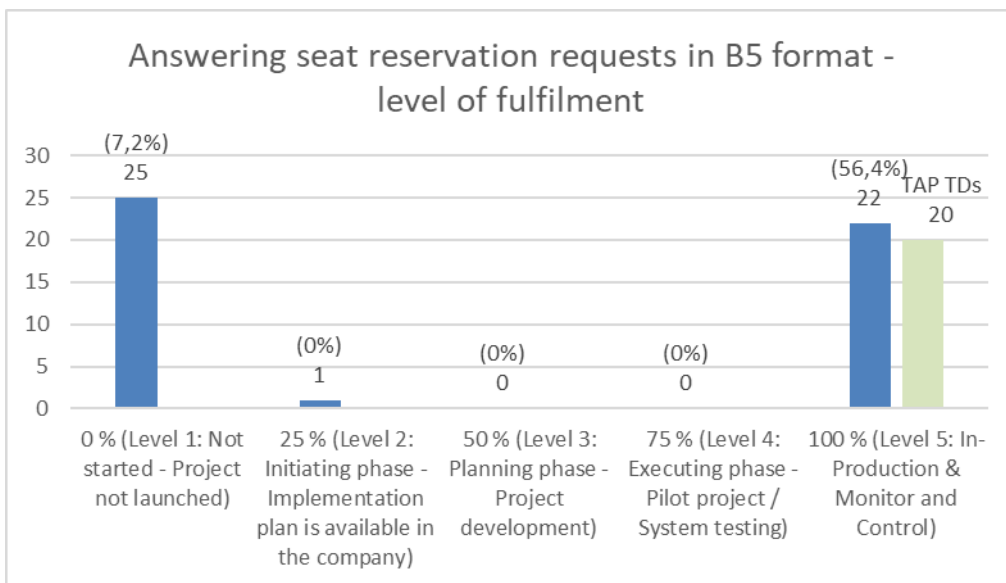
However, considering market shares of companies, the implementation level looks better than observing just absolute number of companies. 60% of European railway market declared to be subject of implementation and 58% are part of implementation process according to TAP TSI standards.

**4.2.2.2 Answering reservation requests from agreed RU`s and agreed 3<sup>rd</sup> parties in B5 format (TAP TSI basic parameter 4.2.9.2)**



**Figure 14: Answering seat reservation requests in B5 format: subject to the implementation (Y/N), [number of responses % based on European passenger per km factor]**

23 companies reported that they are subject to implementation of this function. 22 out of them have implemented the function using TAP TSI standards.



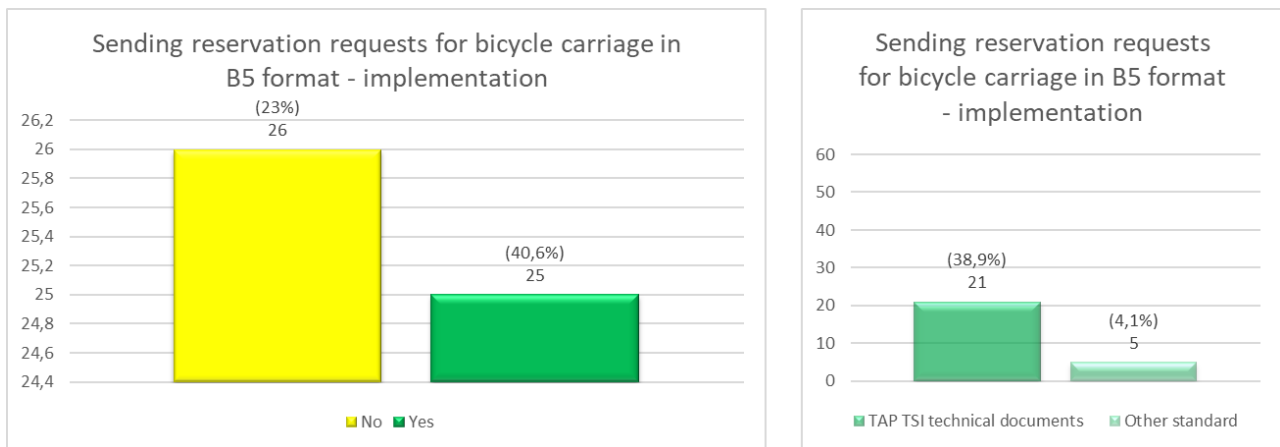
**Figure 15: Answering seat reservation requests in B5 format – level of fulfilment, [number of responses (% based on European passenger per km factor)]**

The main problems of the implementation of the TAP TSI basic parameter “Answering seat reservation request” are the dependency on other reservation systems, possible technical limitations and stability of the TAP TSI baseline. Other problems, such as need of internal IT redesign less emphasized.

The implementation status of the function “Answering seat reservation requests” for those companies is low, considering number of companies. 22 companies have reported that they are subject to the implementation this function and that they have fully implemented this function according to TAP TSI technical documents.

Most of the other companies are not offering seat reservations in their trains and therefore do not implement the function to answer to reservation messages.

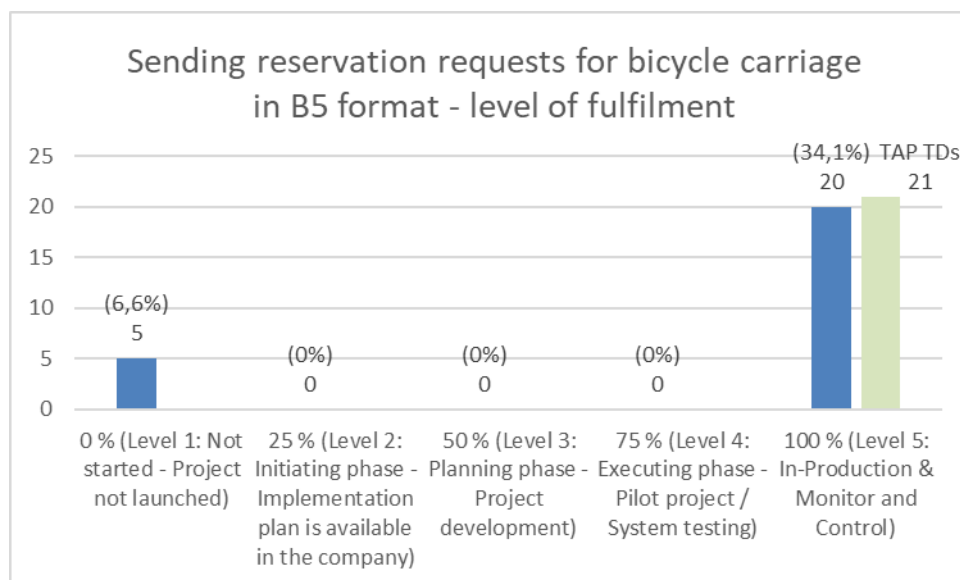
**4.2.2.3 Sending reservation requests for bicycle carriage to agreed RU's in B5 format (TAP TSI basic parameter 4.2.7.2.)**



**Figure 16: Sending reservation requests for bicycle carriage in B5 format: subject to the implementation (Y/N), [number of responses % based on European passenger per km factor]**

Only 25 companies confirmed that they are subject to implement this basic parameter. Companies not subject to the implementation of this basic parameter stated, that they either have no bicycle reservation system at all (e.g. for local traffic operation only) or they are using direct links to the systems of those other railway undertakings for seat reservation.

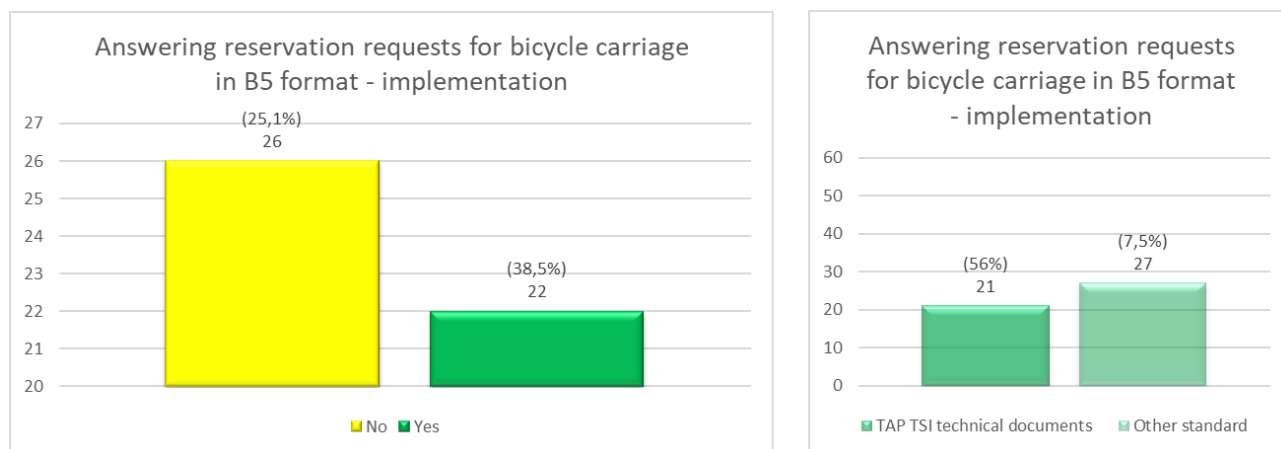
The implementation of the sending reservation request for bicycle carriage by other standards is marginal both in absolute number of companies (5) and in market share number (4%).



**Figure 17: Sending reservation requests for bicycle carriage in B5 format – level of fulfilment, [number of responses (% based on European passenger per km factor)]**

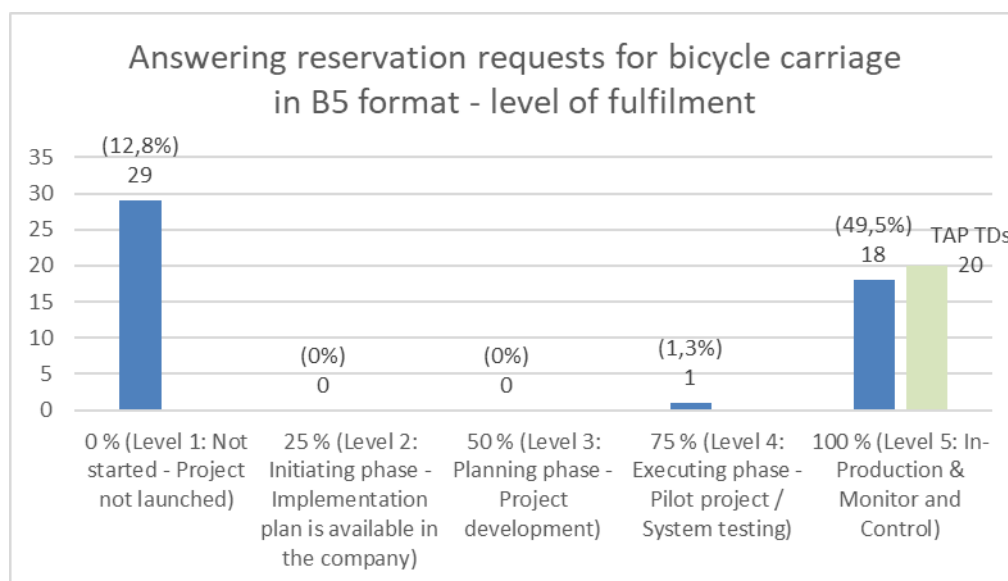
All 21 companies which reported full implementation of this function declared that they have fully implemented it in accordance to TAP TSI technical documents.

#### 4.2.2.4 Answering reservation requests for bicycle carriage from agreed RU's and agreed 3<sup>rd</sup> parties in B5 format (TAP TSI basic parameter 4.2.7.3.)



**Figure 18: Answering reservation requests for bicycle carriage in B5 format: subject to the implementation (Y/N), [number of responses (% based on European passenger per km factor)]**

Only 22 companies confirmed that they are subject to implement this basic parameter. Companies not being subject to the implementation of this basic parameter stated, that they either have no bicycle reservation system at all (e.g. for local traffic operation only) or they are using direct links to the systems of those other railway undertakings for seat reservation.



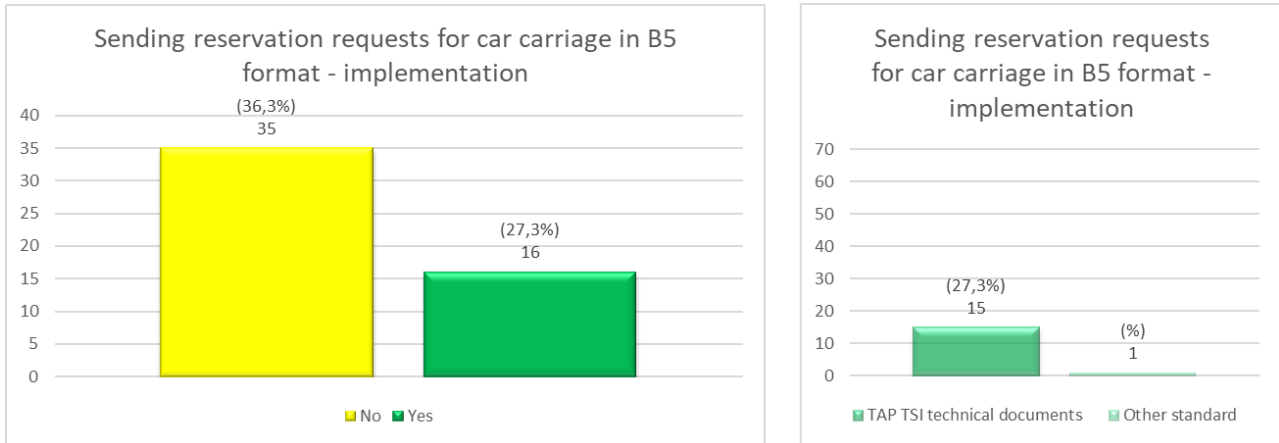
**Figure 19: Answering reservation requests for bicycle carriage in B5 format – level of fulfilment, [number of responses (% based on European passenger per km factor)]**

The main problems of the implementation of the TAP TSI basic parameter “Answering reservation request for bicycle carriage” are the dependency on other reservation systems, the possible technical limitations and the stability of the TAP TSI baseline. Further problems are minor ones.

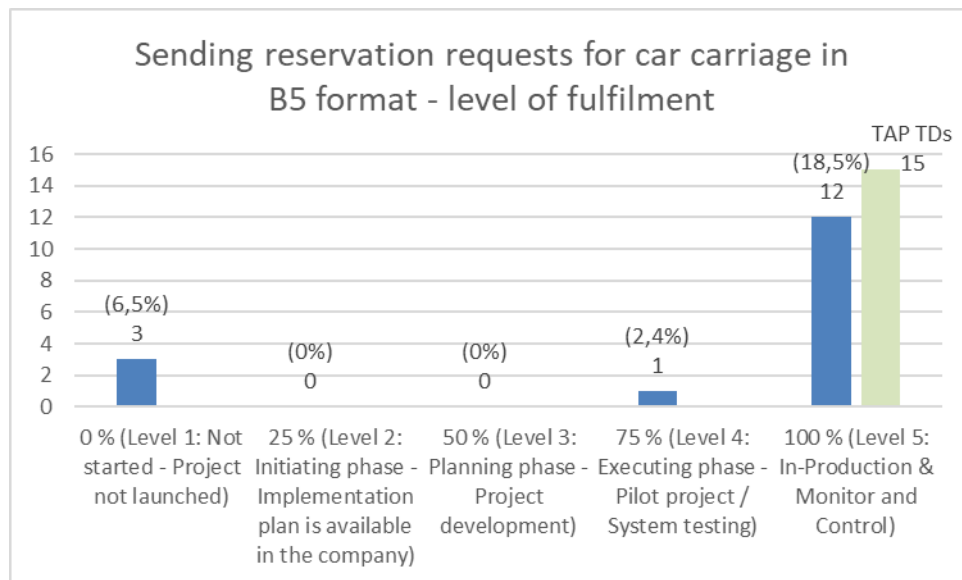
Although only 22 companies have reported that they are subject to the implementation of this function, the implementation level from perspective of market shares looks better than observing just absolute number of companies.

Most of the other companies are not offering bicycle reservations in their trains and do not implement the function to answer to reservation messages.

**4.2.2.5 Sending reservation requests for car carriage to agreed RU's in B5 format (TAP TSI basic parameter 4.2.8.2.)**



**Figure 20: Sending reservation requests for car carriage in B5 format: subject to the implementation (Y/N), [number of responses (% based on European passenger per km factor)]**



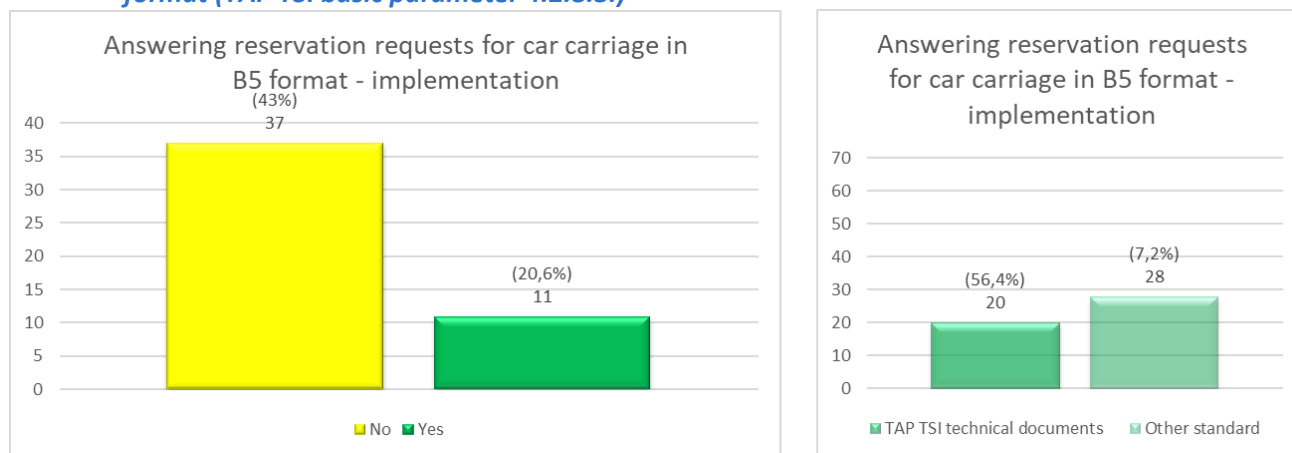
**Figure 21: Sending reservation requests for car carriage in B5 format – level of fulfilment, [number of responses (% based on European passenger per km factor)]**

The main problems of the implementation of the TAP TSI basic parameter “Sending reservation request for car carriage” are dependency on other reservation systems, lack of financial resources and possible technical limitations.

The implementation status of the function “Sending reservation requests for car carriage” is low, considering number of companies. Considering market shares of companies, 27% of European railway market declared to be subject of implementation and 27% are part of implementation process according to TAP TSI standards.

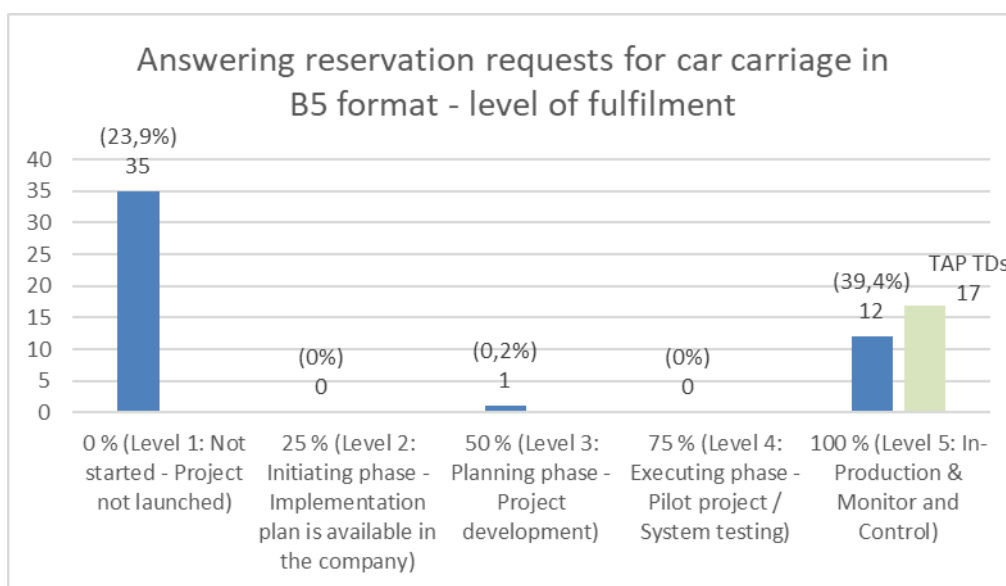
Most of the other companies are not offering car reservations for their trains at all (e.g. no operation of car-carrying trains, regional trains only) and have not implemented a reservation system including the reservation request for cars in their distribution systems.

**4.2.2.6 Answering reservation requests for car carriage from agreed RU`s and agreed 3rd parties in B5 format (TAP TSI basic parameter 4.2.8.3.)**



**Figure 22: Answering reservation requests for car carriage in B5 format: subject to the implementation (Y/N), [number of responses (% based on European passenger per km factor)]**

Only 11 companies reported to be subject to implementation of this basic parameter, where 20 of them are using TAP TSI standards, while 28 companies declared usage of other standards.



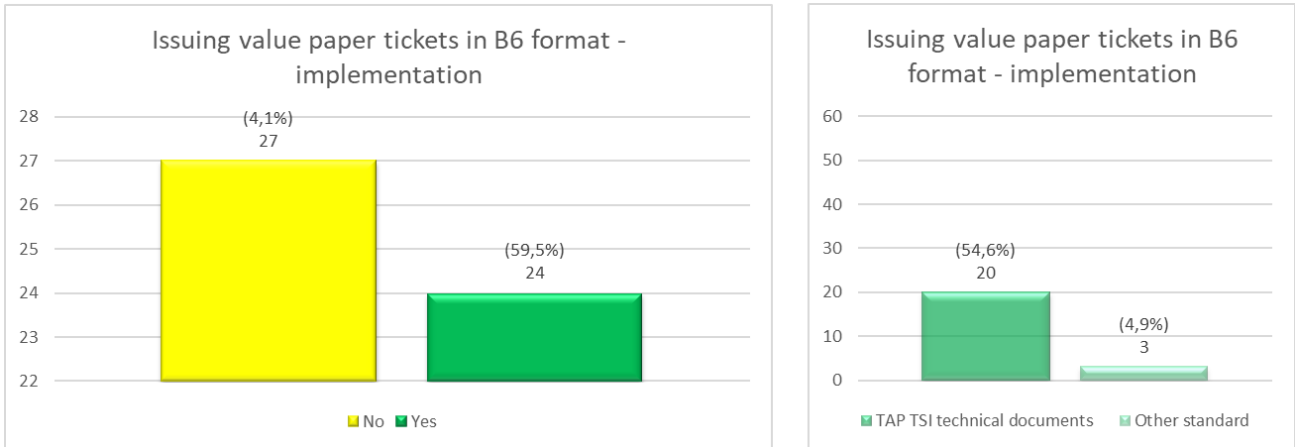
**Figure 23: Answering reservation requests for car carriage in B5 format – level of fulfilment, [number of responses (% based on European passenger per km factor)]**

The main problems of the implementation of the TAP TSI basic parameter “Answering reservation request for car carriage” are dependency on other reservation systems, possible technical limitations, lack of financial resources and stability of the TAP TSI baseline.

The implementation status of the function “Answering reservation requests for car carriage” is low, considering number of companies. Considering market shares of companies, 20% of European railway market declared to be subject of implementation and 56% are part of implementation process according to TAP TSI standards. This function is fully implemented by 17 companies. Most of the other companies are not offering

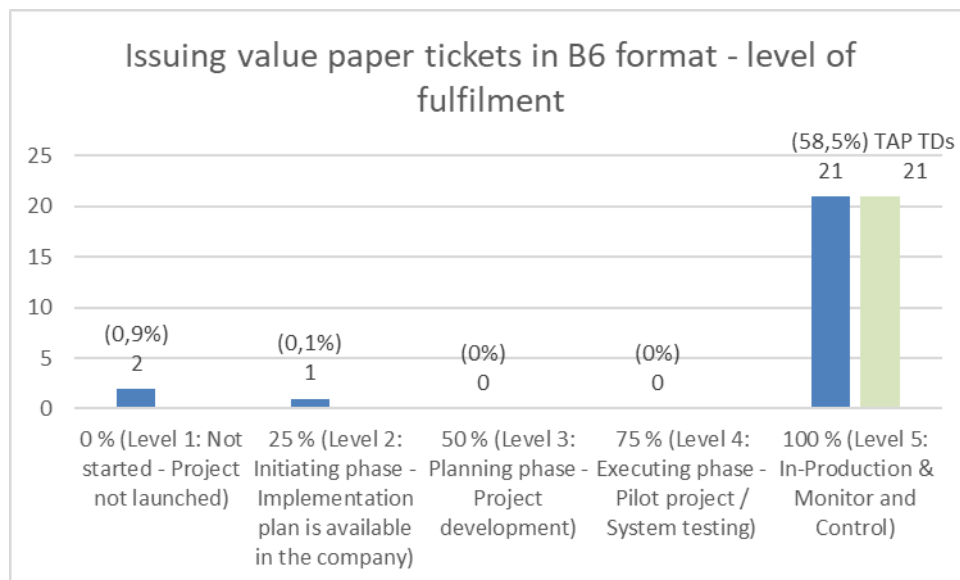
car carriage reservations in their trains and do not implement the function to answer to reservation messages.

**4.2.2.7 Issuing value paper tickets for international and foreign sales in B6 format (TAP TSI basic parameter 4.2.11.1.)**



**Figure 24: Issuing value paper tickets in B6 format: subject to the implementation (Y/N), [number of responses (% based on European passenger per km factor)]**

24 companies reported they are subject to the implementation of this basic parameter. 20 of these companies are using TAP TSI technical documents to issue value paper tickets. RUs in the following member states reported to use standards other than TAP TSI to issue value paper tickets: AT, CZ, SK, IT and PL. It must be elaborated for which purposes (e.g. domestic tickets, regional cross-border traffic and manually issued international tickets) those other standards are allowed to be used for international ticketing.



**Figure 25: Issuing value paper tickets in B6 format – level of fulfilment, [number of responses (% based on European passenger per km factor)]**

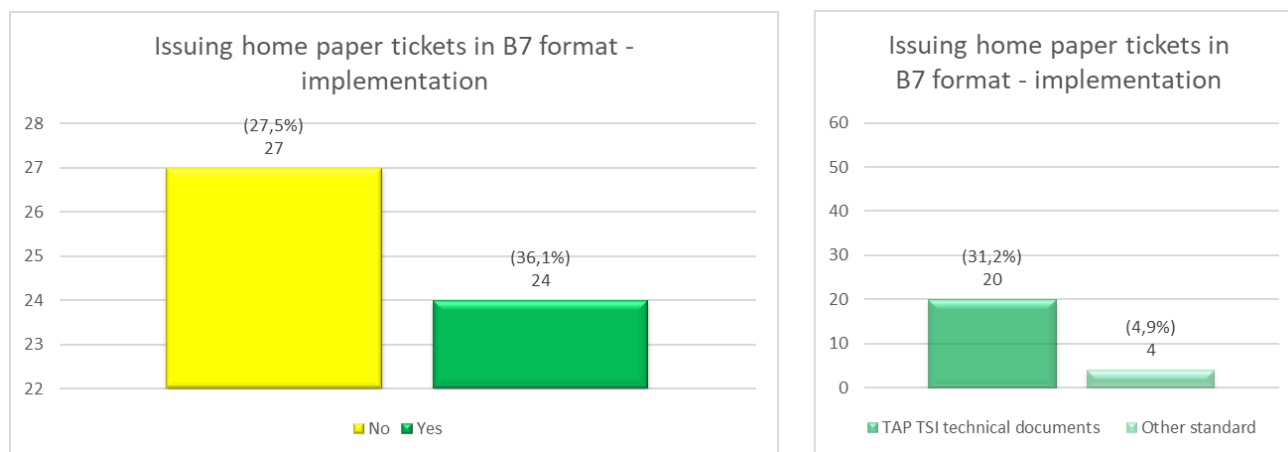
In terms of market shares, marginal part of railway market declared any problems regarding the implementation of the TAP TSI basic parameter “issue value paper tickets”. The biggest share of declared problems belongs to the need for internal IT redesign.

The implementation status of the function “Issuing value paper tickets for international and foreign sales in B6 format” is low, considering absolute number of companies. However, considering market shares of companies, the implementation level looks better as 60% of European railway market declared to be subject of implementation and 55% are part of implementation process according to TAP TSI standards.

**4.2.2.8 Accepting value paper tickets for international and foreign sales in B6 format (TAP TSI basic parameter 4.2.11.1.)**

The basic parameter was not included in the questionnaire and no implementation progress can be reported.

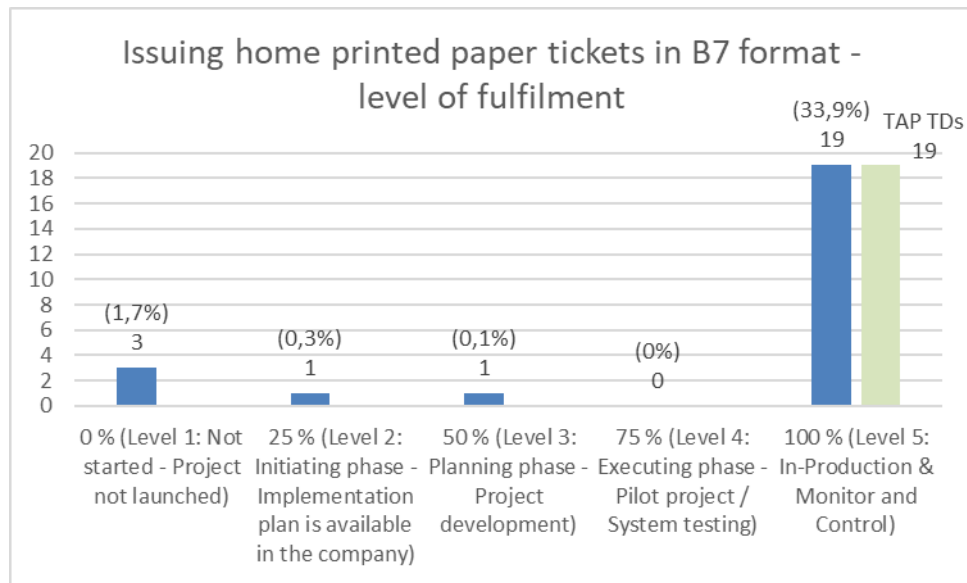
**4.2.2.9 Issuing home printed tickets for international and foreign sales in B7 format (TAP TSI basic parameter 4.2.11.2.)**



**Figure 26: Issuing home paper tickets in B7 format: subject to the implementation (Y/N), [number of responses (% based on European passenger per km factor)]<sup>4</sup>**

<sup>4</sup> 1 RU declared implementation by using both TAP TSI technical documents and other standards.





**Figure 27: Issuing home paper tickets in B7 format – level of fulfilment, [number of responses (% based on European passenger per km factor)]**

In terms of market shares, very small part of railway market declared any problems regarding the implementation of the TAP TSI basic parameter “issuing home paper tickets in B7 format”. RUs declared various problems in similar weight. One of declared problems is “Stability of TAP TSI baseline documents” but this problem has to be checked in detail, because only few changes were introduced in the documents since the publication of the TAP TSI in 2011.

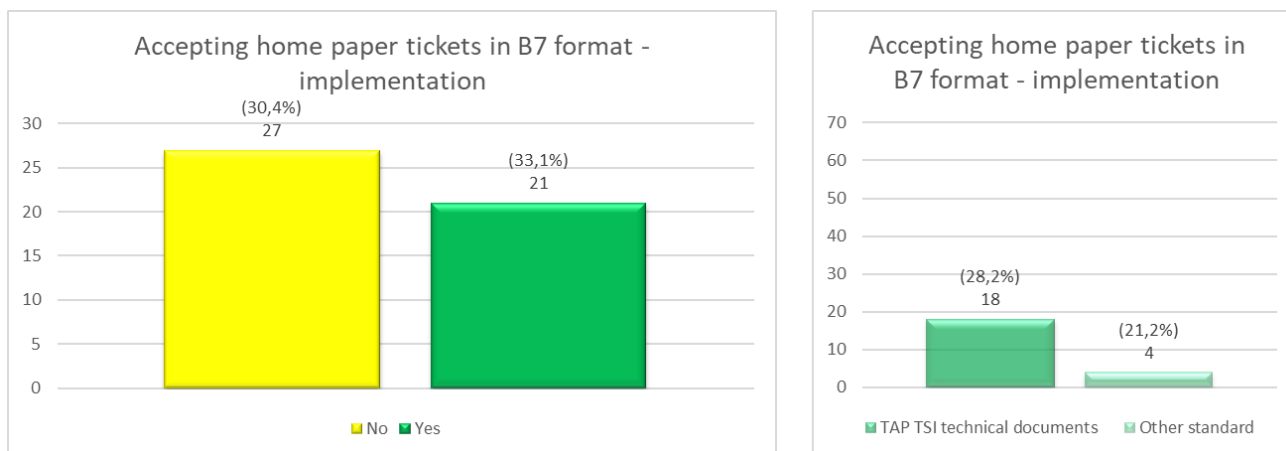
The implementation status of the function “Issuing home printed tickets for international and foreign sales in B7 format” is low, considering number of companies. 36% of European railway market declared to be subject of implementation and 31% are part of implementation process according to TAP TSI standards.

From companies which declared not to be subject of implementation, most of them declared they are not offering home printed tickets. However, the implementation of the acceptance of those tickets by both parties has to be part of a commercial agreement between them.

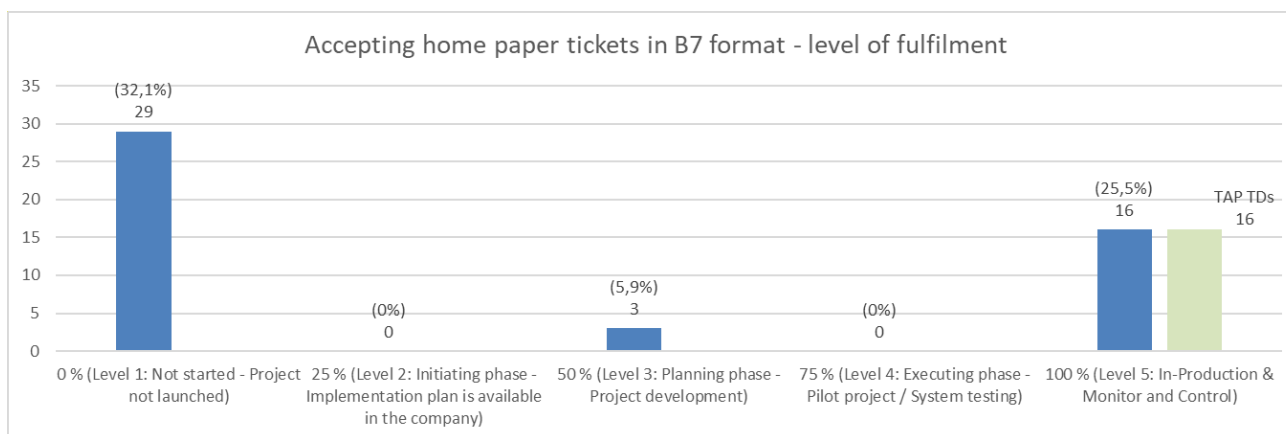
Those tickets are widely not issued by several undertakings due to the following reasons:

- Currently we do not adopt this ticketing method.
- local passenger railway undertaking and does not sell international tickets at all

**4.2.2.10 Accepting home printed tickets for international and foreign sales in B7 format (TAP TSI basic parameter 4.2.11.2.)**



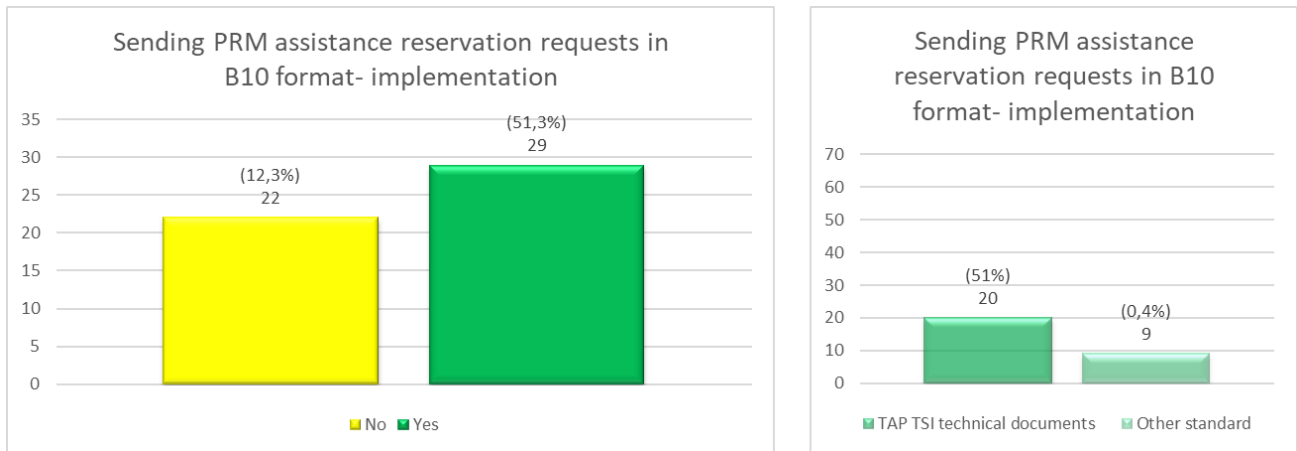
**Figure 28: Accepting home paper tickets in B7 format: subject to the implementation (Y/N), [number of responses (% based on European passenger per km factor)]**



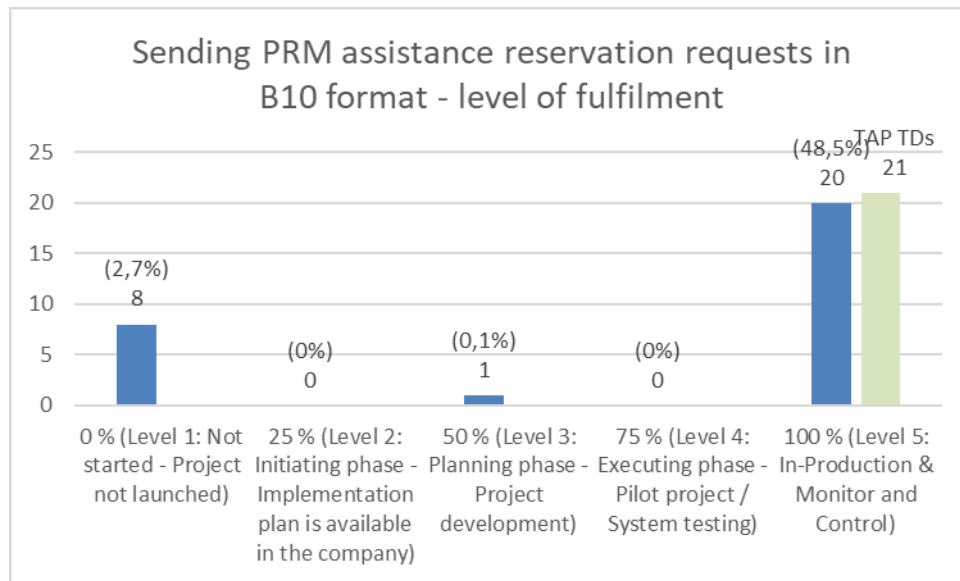
**Figure 29: Accepting home paper tickets in B7 format – level of fulfilment, [number of responses (% based on European passenger per km factor)]**

The main problems of the implementation of the TAP TSI basic parameter “accepting home printed tickets” are dependency on other reservation systems and need for internal IT redesign. The implementation status of the function “Accepting home printed tickets for international and foreign sales in B7 format” is good, considering the number of RUs being subject to implementation of this function according to TAP TSI documents and according to level of fulfilment. Considering market shares of companies, the implementation level analysis showed that 33% of European railway market declared to be subject of implementation and 28% are part of implementation process according to TAP TSI standards. Most of the RUs which declared not to be subject of implementation are not accepting home printed tickets. However, the implementation of the acceptance of those tickets has to be part of a commercial agreement between the parties.

**4.2.2.11 Sending PRM assistance reservation requests via IT communication to agreed RU`s, IM's and SM's in B10 format (TAP TSI basic parameter 4.2.6.2.)**



**Figure 30: Sending PRM assistance reservation requests in B10 format: subject to the implementation (Y/N), [number of responses (% based on European passenger per km factor)]**

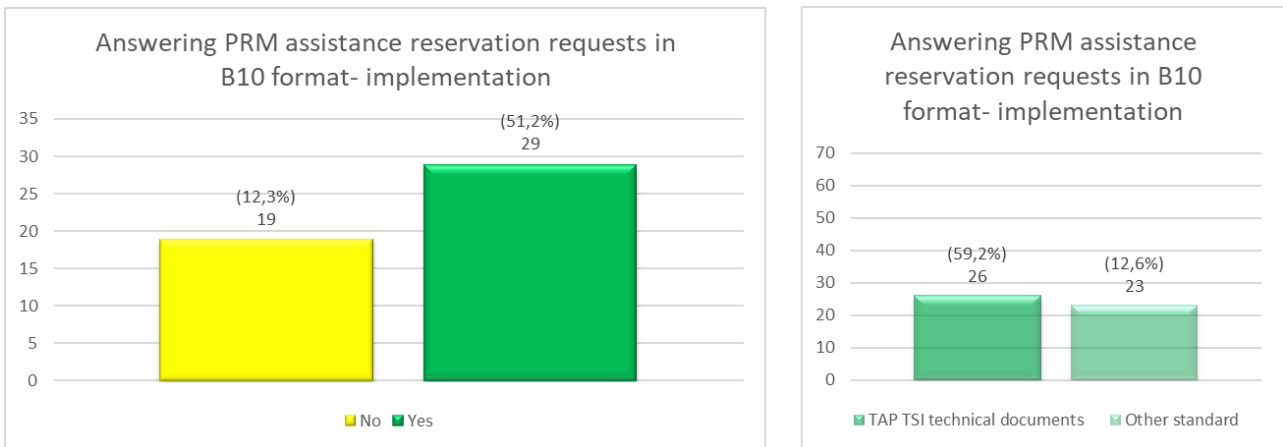


**Figure 31: Sending PRM assistance reservation requests in B10 format: level of fulfilment, [number of responses (% based on European passenger per km factor)]**

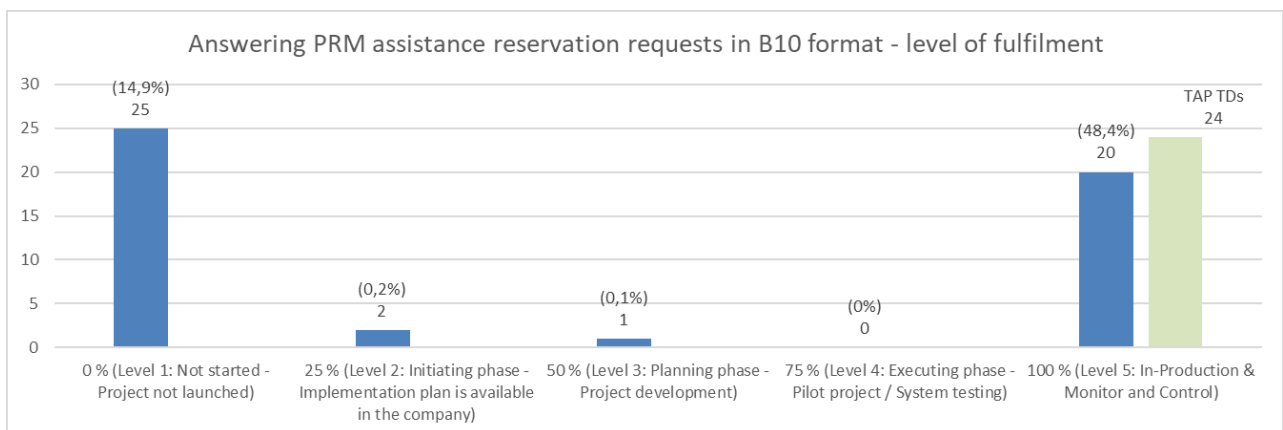
The function “Sending PRM assistance reservation requests via IT communication to agreed RU`s, IM's and SM's in B10 format” has been fully implemented by 29 companies (51% of European market).

51% of European railway market declared to be subject of implementation and 51% are part of implementation process according to TAP TSI standards.

**4.2.2.12 Answering PRM assistance reservation requests via IT-communication from agreed RU's and agreed 3<sup>rd</sup> parties in B10 format (TAP TSI basic parameter 4.2.3.)**



**Figure 32: Answering PRM assistance reservation requests in B10 format: subject to the implementation (Y/N), [number of responses (% based on European passenger per km factor)]**

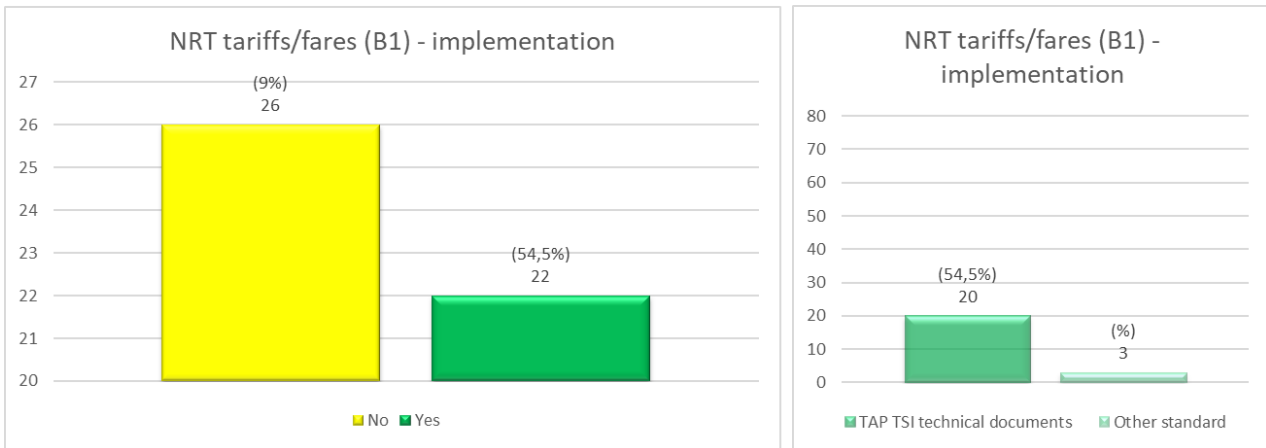


**Figure 33: Answering PRM assistance reservation requests in B10 format – level of fulfilment, [number of responses (% based on European passenger per km factor)]**

The function “Sending PRM assistance reservation requests via IT communication to agreed RU’s, IM’s and SM’s in B10 format” has been fully implemented by 29 companies (51% of European market).

51% of European railway market declared to be subject of implementation and 59% are part of implementation process according to TAP TSI standards.

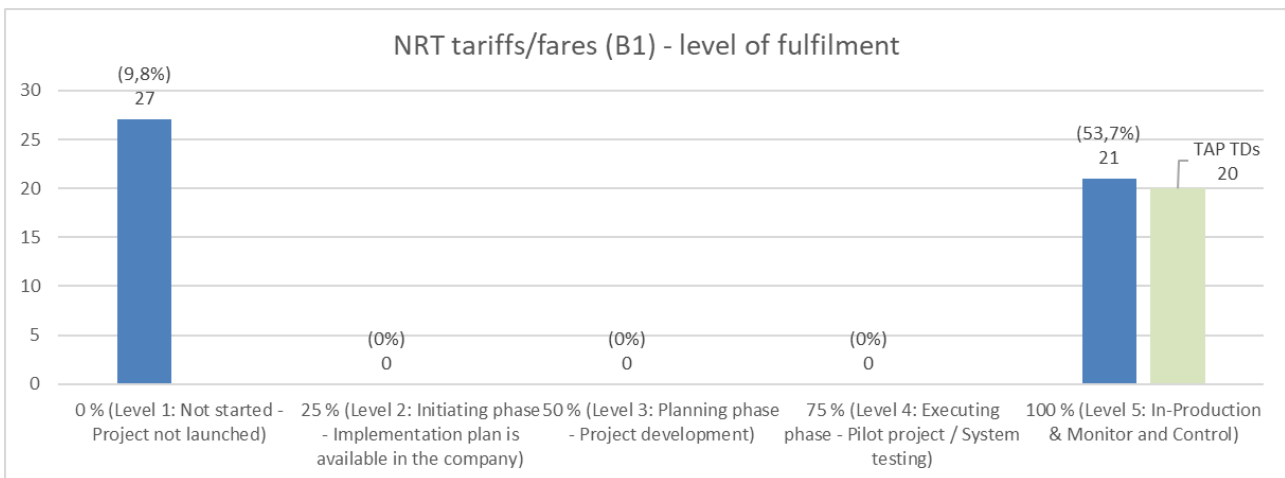
4.2.2.13 NRT tariffs/fares (TAP TSI basic parameter 4.2.2)



**Figure 34: NRT tariffs/fares (B1): subject to the implementation (Y/N), [number of responses (% based on European passenger per km factor)]**

22 companies are subject to the exchange of data for the NRT fares. 20 are using the TAP TSI standards and 3 other standards. It has to be elaborated, which standards are used as ‘other standards’.

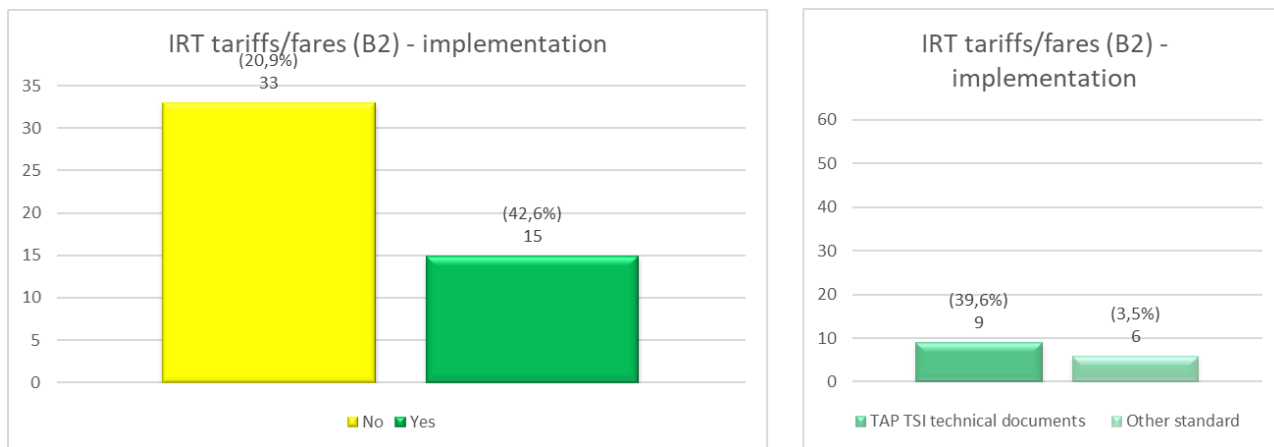
Considering market shares of companies, 55% of European railway market declared to be subject of implementation and 55% are part of implementation process according to TAP TSI standards.



**Figure 35: NRT tariffs/fares (B1) – level of fulfilment, [number of responses (% based on European passenger per km factor)]**

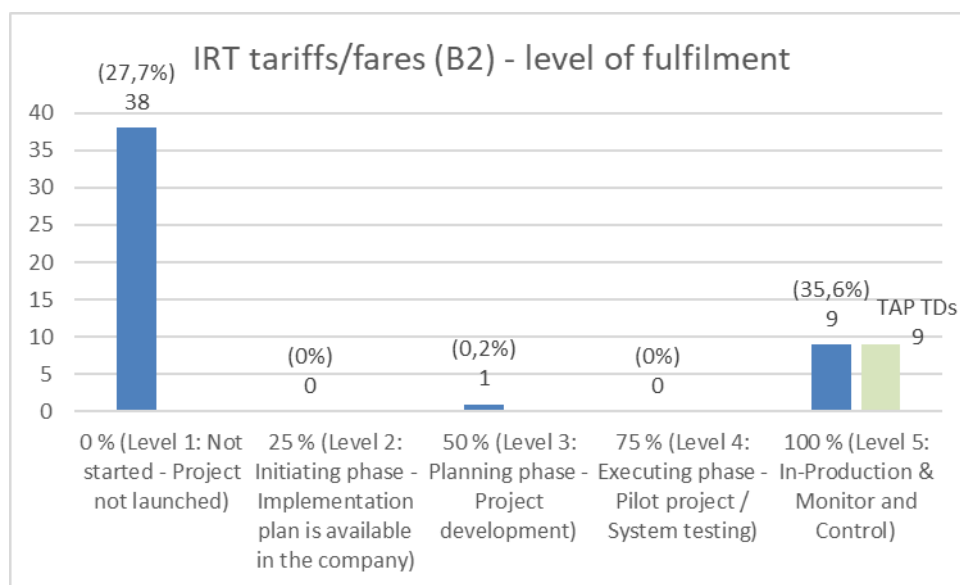
The main declared problems of the implementation of the TAP TSI basic parameter “publication of NRT tariffs/fares” are stability of need for internal IT redesign, dependency on other retail systems and technical limitations.

**4.2.2.14 IRT tariffs/fares (TAP TSI basic parameter 4.2.2)**



**Figure 36: IRT tariffs/fares (B2): subject to the implementation (Y/N), [number of responses (% based on European passenger per km factor)]**

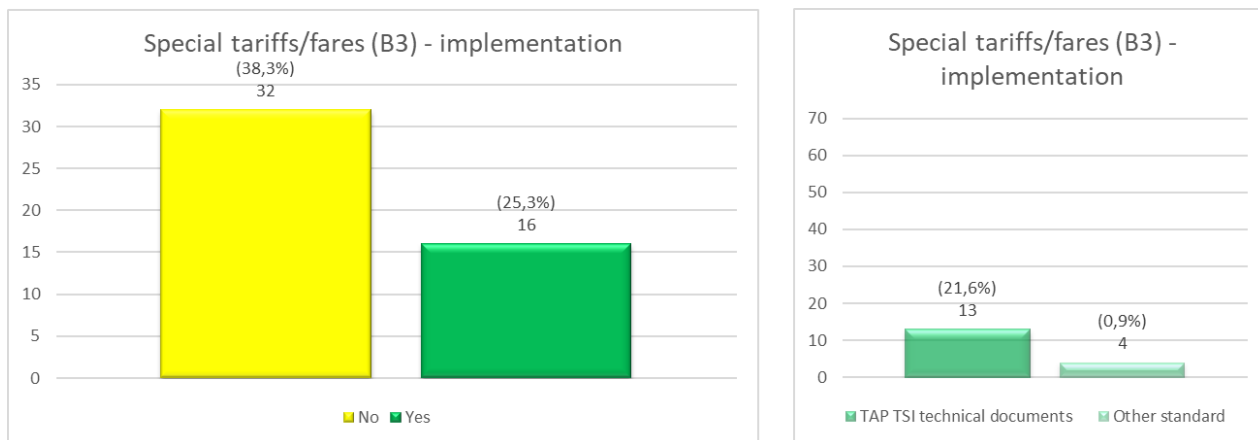
15 companies are subject to the exchange of data for the IRT fares. 9 are using the TAP TSI standards and 6 other standards. Considering market shares of companies, 43% of European railway market declared to be subject of implementation and 40% are part of implementation process according to TAP TSI standards.



**Figure 37: IRT tariffs/fares (B2) – level of fulfilment, [number of responses (% based on European passenger per km factor)]**

The main problems of the implementation of the TAP TSI basic parameter “publication of IRT tariffs/fares” are stability of the TAP TSI documents and lack of financial resources.

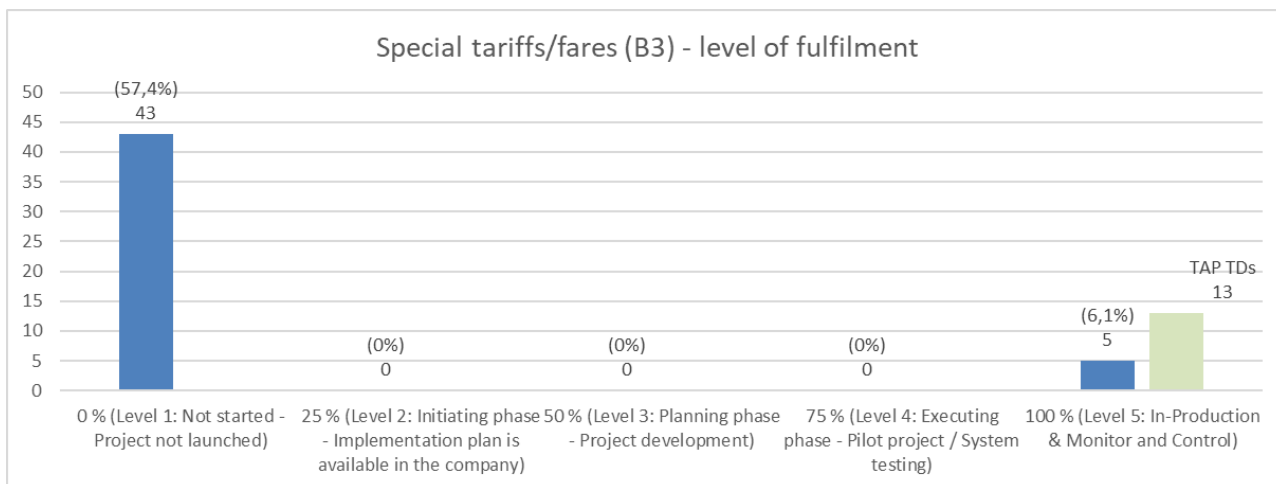
**4.2.2.15 Special tariffs/fares (TAP TSI basic parameter 4.2.2)**



**Figure 38: Special tariffs/fares (B3): subject to the implementation (Y/N), [number of responses (% based on European passenger per km factor)]**

According to the TAP TSI master plan, the implementation of this function was foreseen in 2021. According to the reported figures, 16 railway undertakings reported to be subject of implementation of this function – 13 according to TAP TSI documents and 4 according to other standards. 76 companies reported they are not subject of implementation of this function.

Considering market shares of companies, the implementation level analysis showed that 25% of European railway market declared to be subject of implementation and marginal 22% are part of implementation process according to TAP TSI standards.

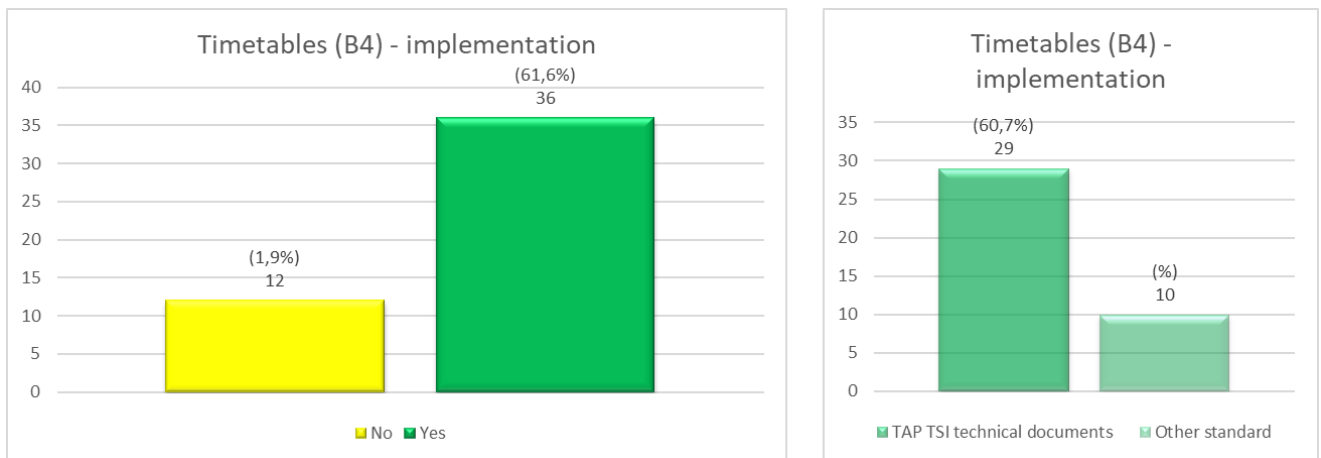


**Figure 39: Special tariffs/fares (B3): level of fulfilment, [number of responses (% based on European passenger per km factor)]**

The main problems of the implementation of the TAP TSI basic parameter “publication of special tariffs/fares” are classified as ‘other’, out of possible options offered by the reporting questionnaire. Also, 2 RUs declared they don’t see benefits in implementation of this function.

The implementation of this basic parameter with “Other standards” should be elaborated in more detail, which standards are in use.

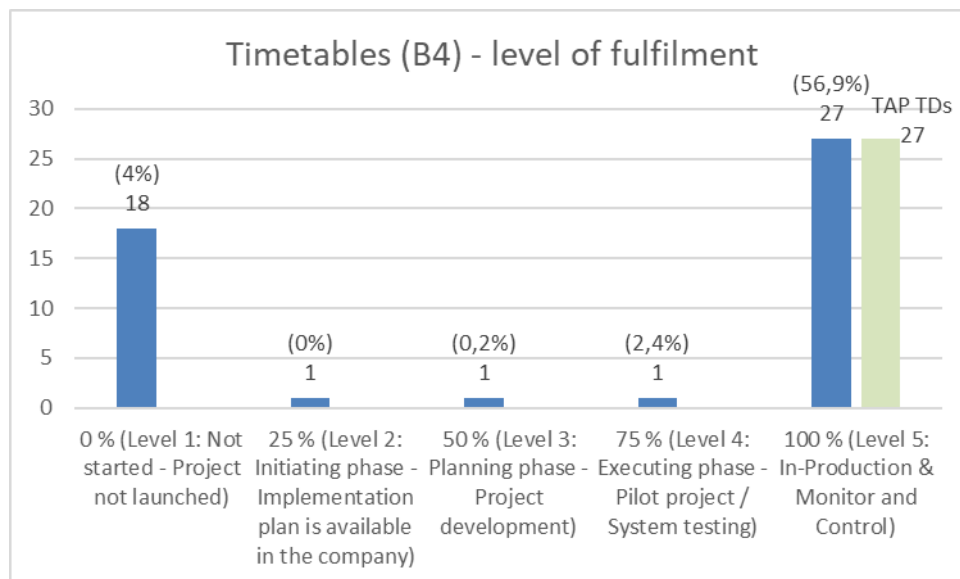
4.2.2.16 Timetables (TAP TSI basic parameter 4.2.1)



**Figure 40: Timetables (B4): subject to the implementation (Y/N),**  
 [number of responses (% based on European passenger per km factor)<sup>5</sup>

Great majority of the reporting companies stated that they are subject to implementation of the basic parameter to provide TAP TSI timetable data. 29 of them are using the TAP TSI standards and only 10 their own specifications.

Considering market shares of companies, the implementation level also looks good as 78% of European railway market declared to be subject of implementation and 74% are part of implementation process according to TAP TSI standards.



**Figure 41: Timetables (B4) – level of fulfilment,**  
 [number of responses (% based on European passenger per km factor)]

The implementation progress of the timetable data provision by the railway undertakings is good. 64 railway undertakings confirmed to be already in production and 9 confirmed to be in the system testing phase.

<sup>5</sup> 33 RUs (14% of market) declared implementation by using both TAP TSI technical documents and other standards.



The main declared problems of the implementation of the TAP TSI basic parameter “publication of timetable data” are stability of the TAP TSI baseline, dependency on other reservation system and technical limitations.

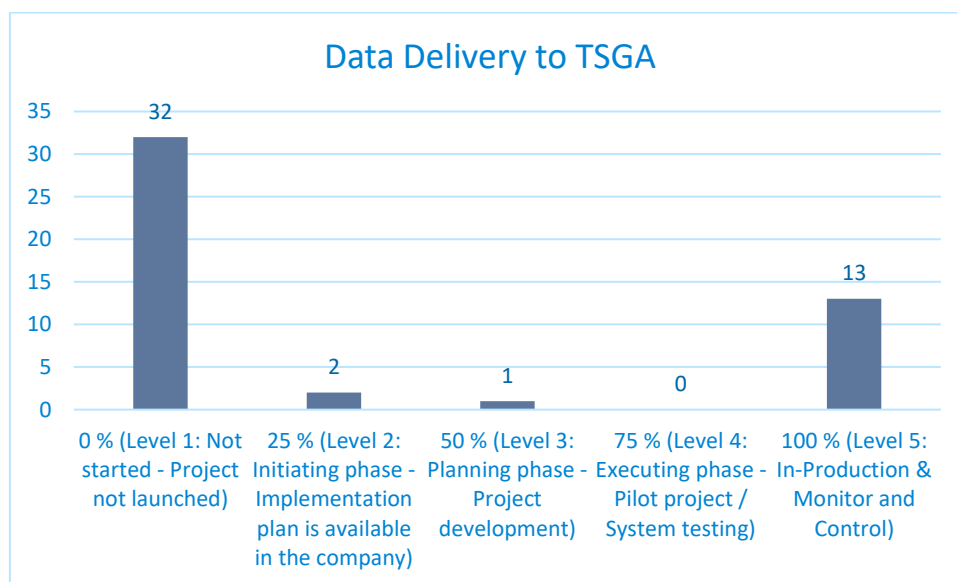
The problem “Dependency on other retail systems” has to be elaborated in more detail: the provision of timetable data does not need any interaction with other IT-systems and the problem is not evident at all. The problem “Stability of TAP TSI baseline documents” has to be checked in detail, because only few changes were introduced in the documents since the publication of the TAP TSI in 2011.

#### 4.2.2.17 Common sector tools

The usage of common sector tools, used by the railway undertakings, has not been analysed in this report.

#### 4.2.2.18 Delivery of timetable data, tariff data to TSGA

This question concerning the implementation of the functions for TSGA has been used in the questionnaire for the first time. The question has been raised to the railway undertakings, to collect information about the usage of TSGA to deliver the data for the access by 3<sup>rd</sup> parties.



**Figure 42 - Implementation of data delivery to TSGA**

The Figure 42 - Implementation of data delivery to TSGA shows the number of the implementing companies per member state delivering data to TSGA. In some member states one leading company deals with the data provision to TSGA, such as in DK and DE.

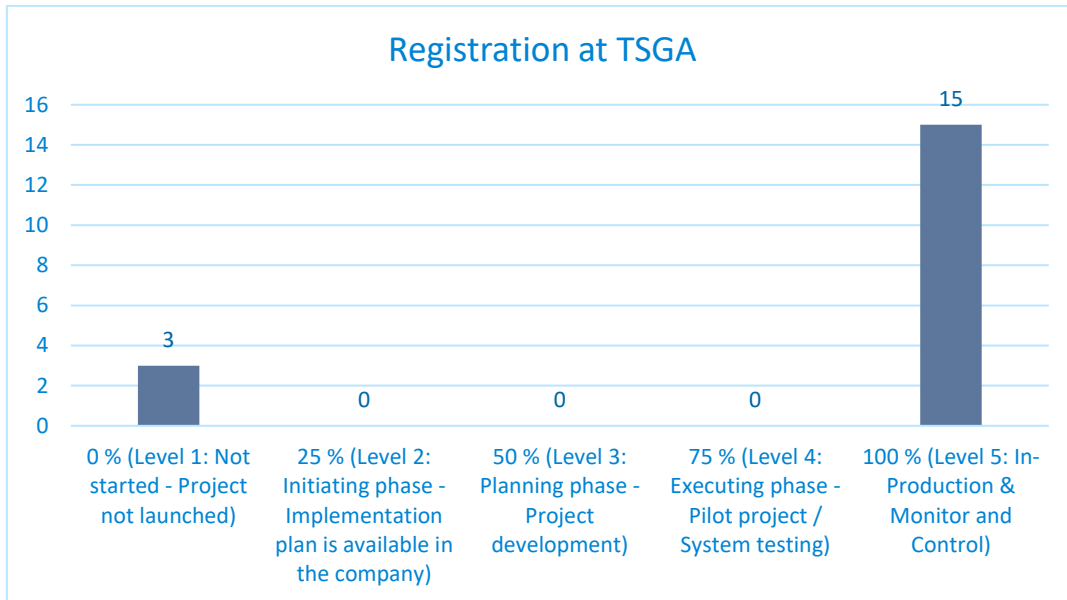
Many undertakings submitted as well the problems in the implementation of the access to TSGA. The problems raised are the following ones:

- No benefit seen for the participation in TSGA
- The participation in TSGA is still under discussion
- Technical problems
- Regional transport operator, not involved in international ticketing

The figures delivered above, are not in line with the figures of TSGA (see further in this report Table 10: Implementation progress of data deliveries to TSGA). Some member states in the Figure 42 (e.g. HU, CZ, PL) are not shown in the data provided by TSGA. The figures have to be discussed with TSGA, to elaborate, where the discrepancies between both tables come from.

**4.2.2.19 Registration at TSGA**

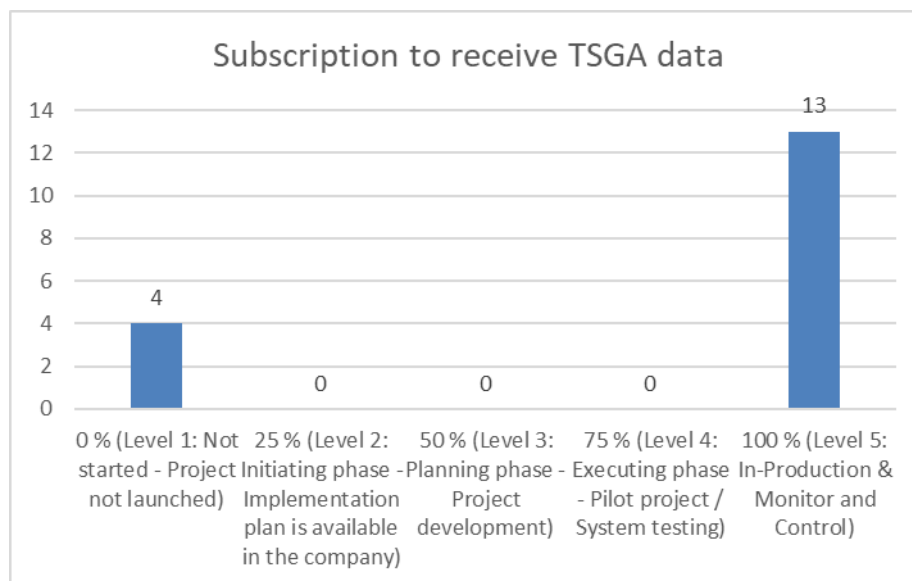
This question concerning the implementation of the functions for TSGA has been used in the questionnaire for the first time. The question has been raised to the railway undertakings and ticket vendors, if they have been registered at TSGA to receive data from other railway undertakings.



**Figure 43 - Registration at TSGA**

The Figure 43 - Registration at TSGA shows the number of the companies per member state which have registered at TSGA. The figures delivered above, are not in line with the figures of TSGA (see Table 10: Implementation progress of data deliveries to TSGA).

#### 4.2.2.20 Subscription for timetable data, tariff data, public keys at TSGA



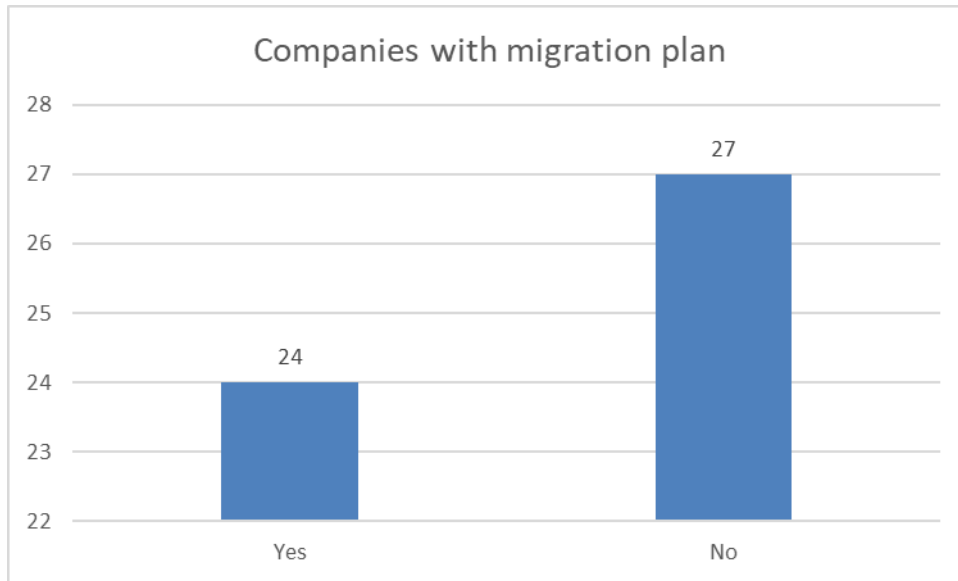
**Figure 44 - Subscription for data deliveries**

The Figure 44 - Subscription for data deliveries shows the number of the railway undertakings per member state registered for the data delivery from TSGA. The number of the registered railway undertakings is similar to the undertakings, which have been registered at TSGA, but are as well not in line with the figures of TSGA (see Table 10: Implementation progress of data deliveries to TSGA).

#### 4.2.3 Implementation of alphanumeric company codes

The TAF and the TAP TSI have been modified within the change control management process in 2020 to allow the usage of alphanumeric company codes instead of the current numeric company codes. There is a fixed deadline for the 31.12.2025 in place when all actors addressed by the TAF/TAP TSI have to use alphanumeric company codes.

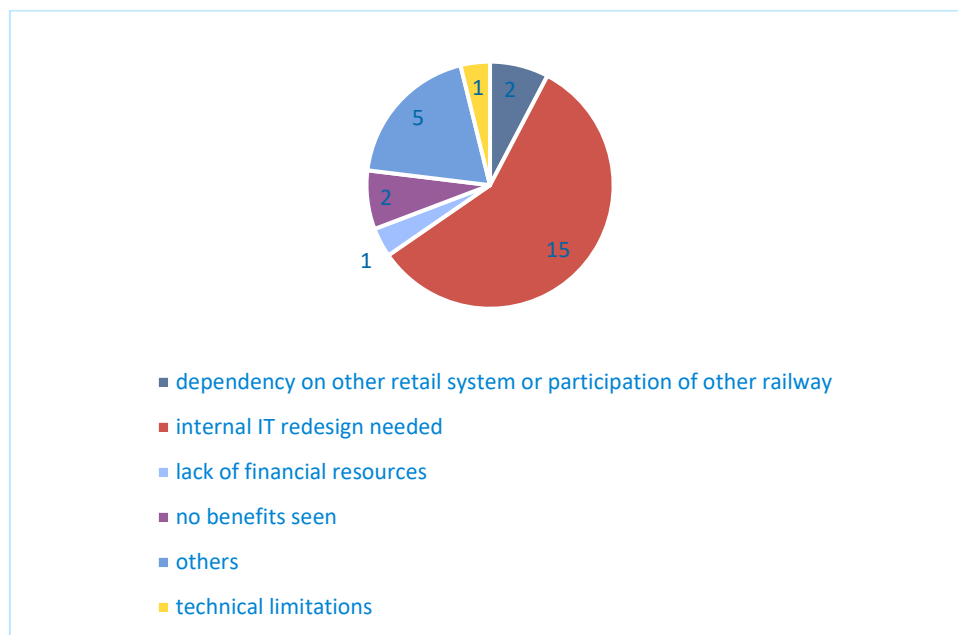
To monitor the migration towards the usage of alphanumeric company codes, the TAP TSI questionnaire contained the question about the ongoing migration towards the alphanumeric company code for the first time. The answers should allow the close monitoring of the ongoing migration.



**Figure 45 - Companies with migration plan**

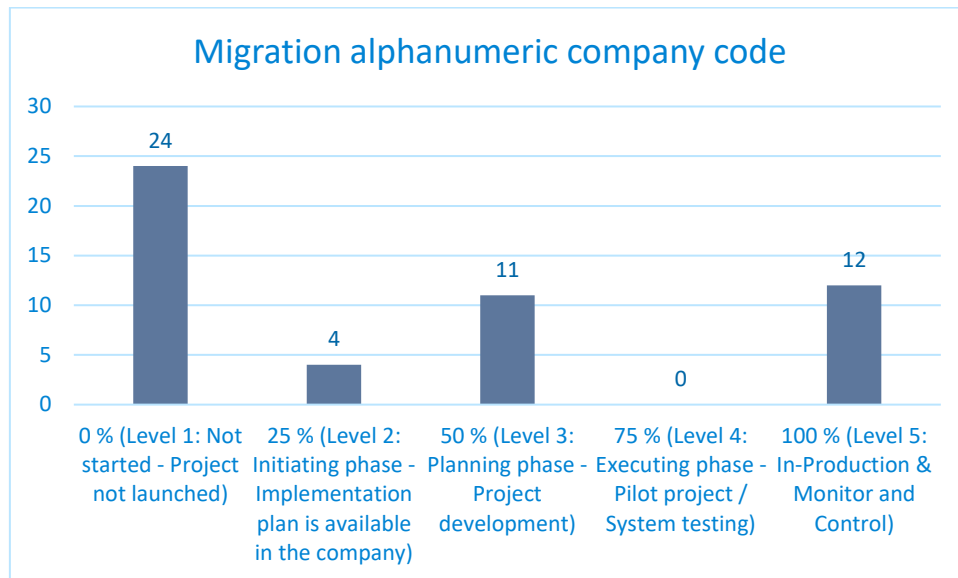
24 companies reported to have already a migration plan in place, where 27 companies have not yet established such a plan.

The 26 reasons for not yet started are distributed according to Figure 46 - Reasons having not yet started the migration to alphanumeric company codes in absolute numerical terms. The main reason is the internal IT redesign needed.



**Figure 46 - Reasons having not yet started the migration to alphanumeric company codes**

The following figure shows the project phases of the different companies concerning the migration towards the alphanumeric company code. 12 companies reported, to have already migrated their systems to be able to process alphanumeric company codes.



**Figure 47 - Migration to alphanumeric company code**

The undertakings reported the following dates for the operational use of company codes.

**Table 8 dates for operational use of alphanumeric company codes**

<i>Date for operational use of alphanumeric company codes</i>	<i>Number of companies</i>
31.12.2021	1
01.07.2022	1
31.12.2022	1
10.12.2023	1
31.12.2023	1
01.01.2024	1
31.12.2024	2
30.06.2025	1
30.11.2025	1
31.12.2025	14

#### **4.2.4 Results of the reporting for the TAP TSI retail basic parameters to be implemented by ticket vendors**

ERA received 2 reports from ticket vendors, which reflect very low level of implementation. The main reason for non-implementation is the reluctance of RUs to themselves use TAP TSI based standard APIs and the low quality of data provided for timetables and minimum connection times (MCTs) in TSGA.

Despite the fact of the small number of respondents, the ticket vendors represent a wide range of geographical territory with diverse business models and scale of market share.

The answers for each question are briefly described as it follows.

Two of the two reporting companies or associations reported about their engagement with TSGA:

- one TV reported to have registered their membership in TSGA, subscribed to receive notifications about the data set changes in operational use.

- The 2<sup>nd</sup> undertaking reported that the project to register at TSGA and to subscribe to TSGA notifications has not been started and they have no planned date. The percentage of implementation is 0%. They commented "RUs are using their own distribution channels and systems in their dealings with third party ticket vendors. In the absence of any request to use TAP-TSI based APIs by RUs, TVs have no reason to implement TAP-TSI."

Ticketing - Issuing value paper tickets for international and foreign sales in B6 format is not scheduled at all in any of the asked companies so they are at 0% fulfilment. The reasons are the following:

- RUs are using their own distribution channels and systems in their dealings with third party ticket vendors. In the absence of any request to use TAP-TSI based APIs by RUs, TVs have no reason to implement TAP-TSI.
- We only offer e-tickets and digital travel passes. We never sell, offer or create paper tickets or travel passes in any form. Therefore, we don't have any paper stock.

Issuing home printed tickets for international and foreign sales in B7 format is not implemented at all by any ticket vendor.

Reservation - Sending PRM assistance reservation requests via IT communication to agreed RU`s, IM's and SM's in B10 format is not planned by none of the asked companies. They are at 0% level fulfilment.

Sending requests to agreed RU`s in B.5 format is also not planned and implemented at all as well as for Sending requests for bicycle carriage to agreed RU`s in B.5 format and Sending requests for car carriage to agreed RU`s in B.5 format. It has been commented that, "RUs are using their own distribution channels and systems in their dealings with third party ticket vendors. In the absence of any request to use TAP-TSI based APIs by RUs, TVs have no reason to implement TAP-TSI."

#### ***4.2.5 Results of the reporting for the TAP TSI RU/IM basic parameters to be implemented by railway undertakings***

The reporting about the progress of the RU/IM functions for passenger railway undertakings is covered in the co-operation group for the implementation monitoring of the TAF TSI. However, the passenger railway undertakings have to implement the RU/IM functions for the TAP TSI as well.

According to the agreements in the TAF TSI implementation co-operation group, the passenger railway undertakings have reported about the implementation progress for the following functions:

- Implementation of company code
- Implementation of the common interface
- Train Running Information

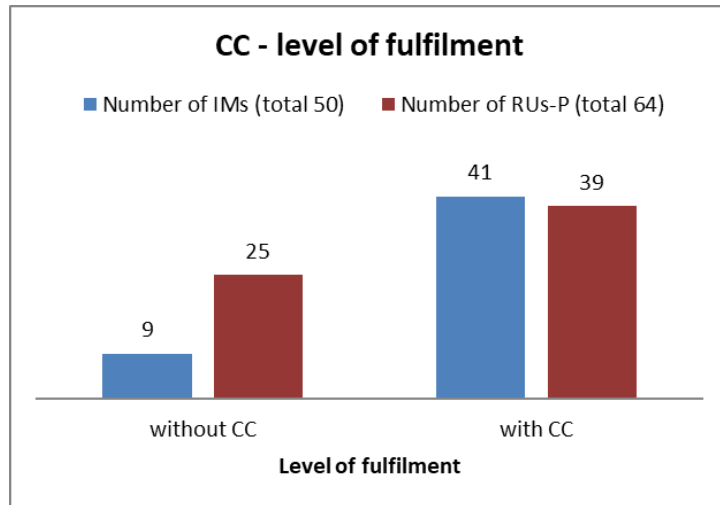
The TAF TSI RU/IM reporting session followed the same schedule as presented in Table 7: Reporting schedule for TAP TSI basic parameters (8th reporting). Overall 44 passenger railway undertakings in Europe sent answers through questionnaire to the Joint Sector Group (JSG).

The following chapters were taken from the report of the Joint sector group. More information can be found in the report for the TAF TSI implementation.

##### ***4.2.5.1 Common Reference Files - Company Code (all companies)***

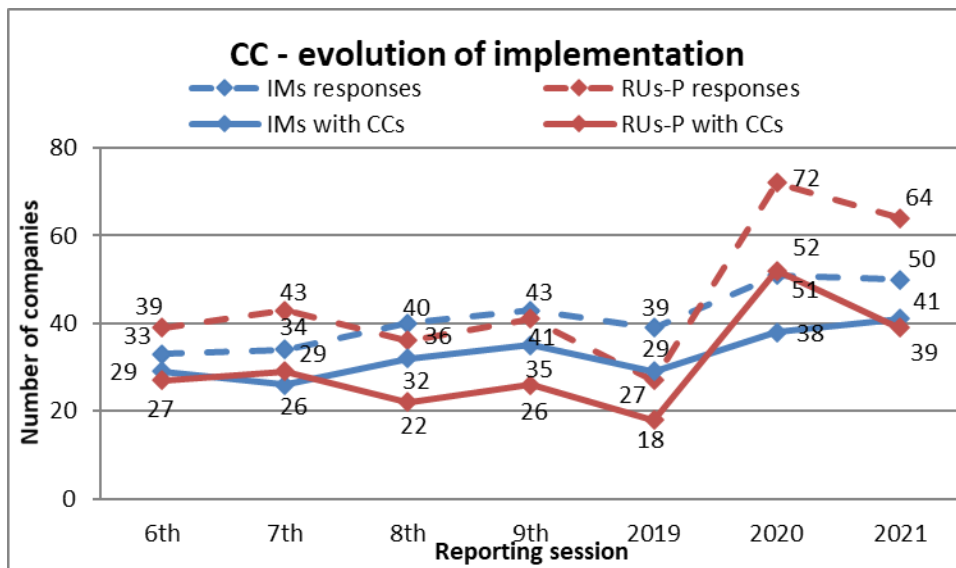
The Target Implementation Milestone for realisation of the Company Code Function (CC) for RUs according to the TAP TSI Masterplan was 2015.

The bar chart below (Figure 48 - Common Reference Files - Company Codes (CC)) is indicating the existence and use of company codes as part of the Common Reference Files for IMs and RUs-P. For CCs only two predefined percentage steps exist, because either a company does have an own CC or not. Most of companies having replied to the query possess a CC.



**Figure 48 - Common Reference Files - Company Codes (CC)**

According to Figure 49 - Evolution of responses and implementation for Company Codes, the number of companies with CCs has increased for IMs and decreased for RUs-P.



**Figure 49 - Evolution of responses and implementation for Company Codes**

#### 4.2.5.2 Common Interface Implementation (all companies)

The Target Implementation Milestone for realisation of the Common Interface Function (CI) for RUs according to the TAP TSI Masterplan was 2015.

Figure 50 - Common Reference Files – Common Interface (CI) summarises the feedback related to the availability of CI and shows a difference in level of fulfilment between IMs and RUs-P. The CI is completely implemented by 23 IMs and 8 RUs-P.

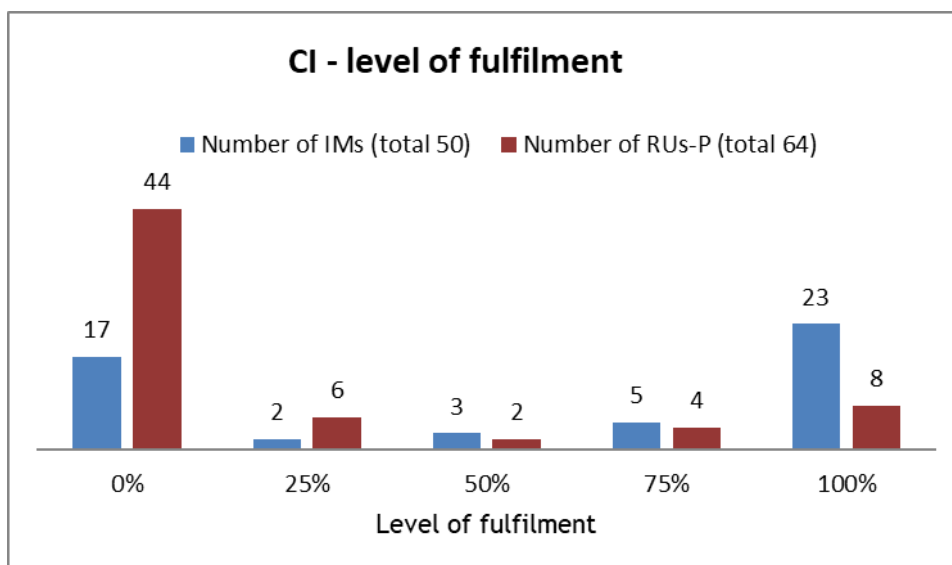


Figure 50 - Common Reference Files – Common Interface (CI)

Figure 51 - Evolution of responses and implementation for Common Interfaces shows the development of complete implementation of the CI and the number of responses per company type. There is a positive evolution of CI in production for IMs and a negative one for RUs-P up to December 2021.

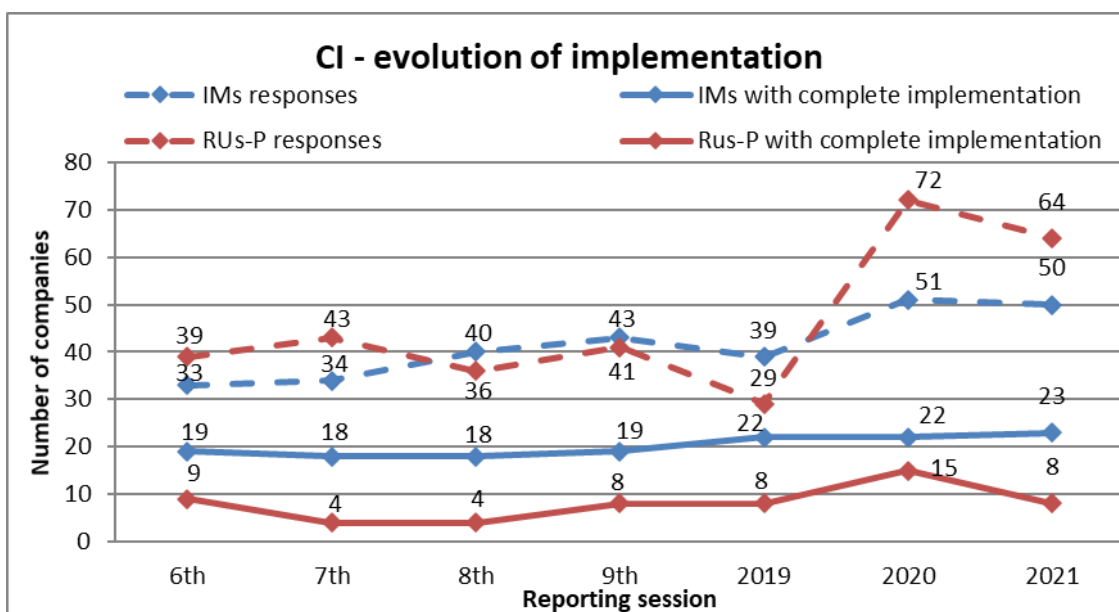


Figure 51 - Evolution of responses and implementation for Common Interface

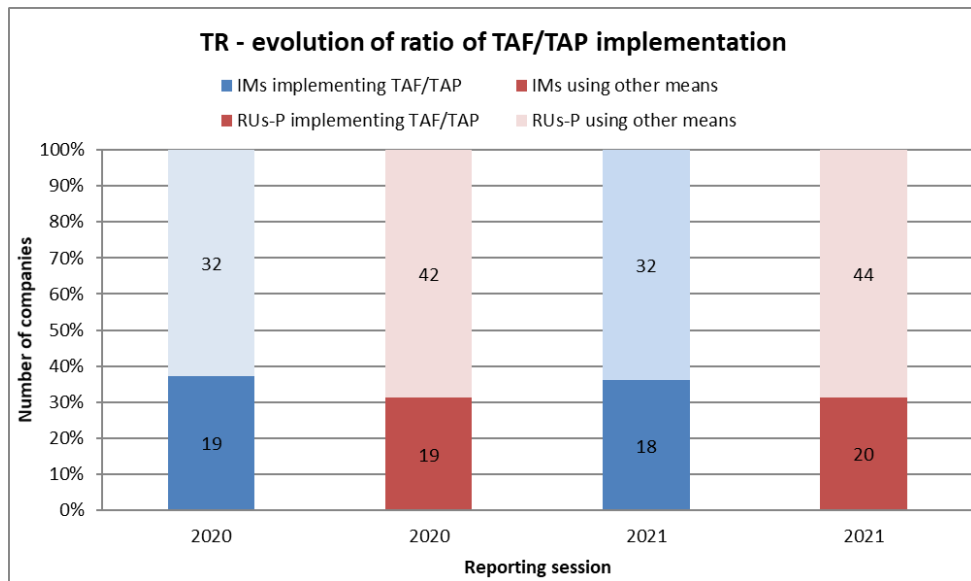
#### 4.2.5.3 Train Ready (IMs and RUs-P)

The Target Implementation Milestone for realisation of the Train Ready Message (TR) for RUs according to the TAP TSI Masterplan was 2018.

About one third of IMs and RUs-P stated implementing the Train Ready function using the respective TAP message, which is like the previous reporting period. Companies using other means of implementation in accordance with the TSIs remain out of consideration.

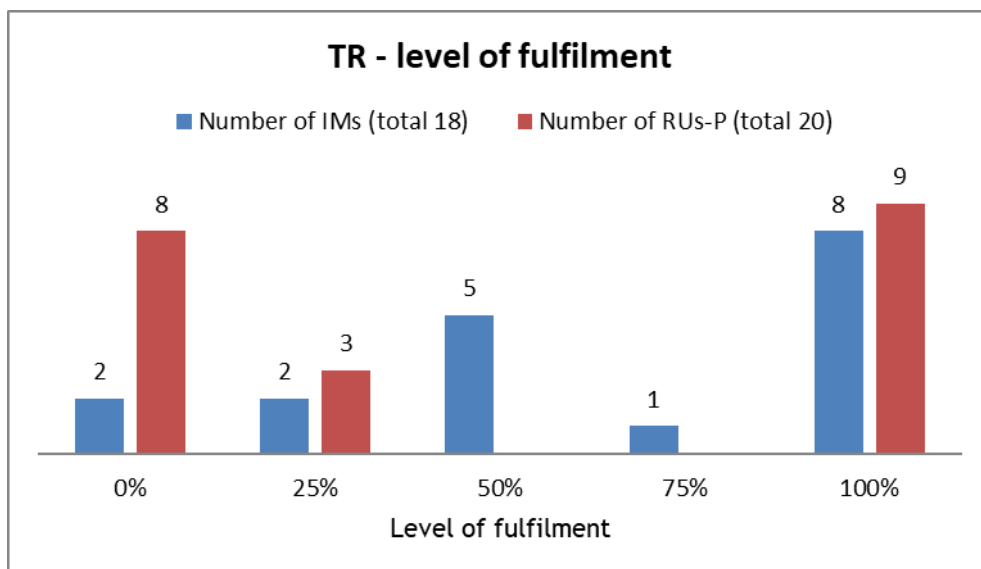
Regardless of the higher participation in the 2021 survey, the share of TAF/TAP messages for TR implementation remains quite similar.





**Figure 52 - Train Ready (TR)**

The level of fulfilment of Figure 53 - Train Ready (TR) shows 8 IMs and 9 RUs-P with 100% implementation of the TR message.



**Figure 53 - Train Ready (TR)**

The development of complete implementation and the number of responses per company type of the TAF message TR since 2019, when it was reported for the first time, is shown in diagram 22. The evolution of TR in production for IMs and RUs-P went down since last year.

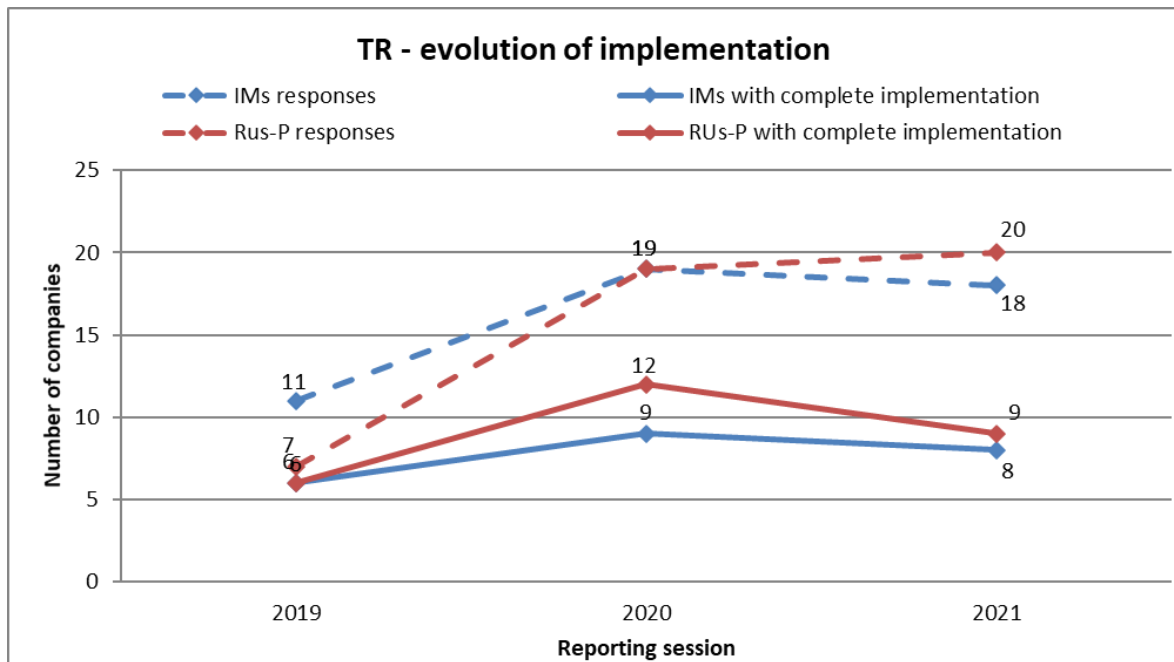


Figure 54 - Evolution of responses and implementation for Train Ready

#### 4.2.5.4 Train Running Information (IMs and RUs-P)

The Target Implementation Milestone for realisation of the Train Running Information message (TRI) for RUs according to the TAP TSI Masterplan was end of 2018. This monitoring concerns only one aspect of the TAF TSI basic parameter 'Train running forecast', the Train Running Information message. The Train Information System (TIS) is a common sector tool managed by RNE. Messages sent by IMs to TIS or messages received by RUs from TIS through traditional interfaces are considered as 75 % fulfilment. TAF messages sent or received by Common Interface are counted as 100 % fulfilment.

Figure 55 - Train Running Information (TRI) indicates 26 IMs and 14 RUs-P with 100 % level of fulfilment. 25 companies which do not have fully implemented TRI declared to use TIS according to their feedback to the survey.

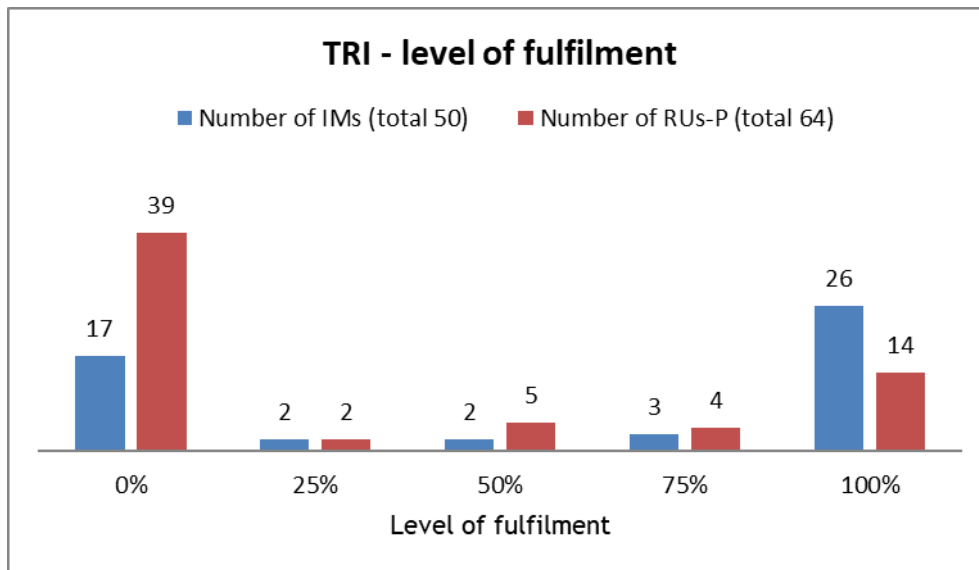


Figure 55 - Train Running Information (TRI)

Regarding Figure 56 - Evolution of responses and implementation for Train Running Information, the number of IMs and RUs-P having implemented completely the TRI increased for IMs while it decreased for RUs-P.

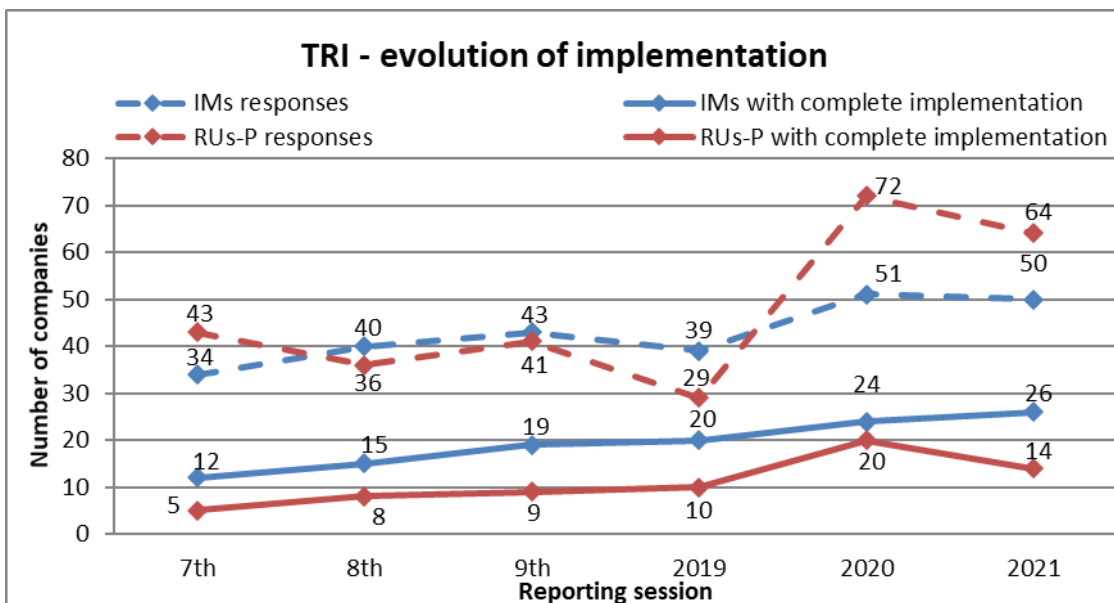


Figure 56 - Evolution of responses and implementation for Train Running Information

#### 4.2.5.5 Train Running Interruption Message (IMs and RUs-P)

The Target Implementation Milestone for realisation of the Train Running Interrupted Message (TRIM) according to the TAP TSI Masterplan was 2018.

The level of fulfilment of figure 58 shows 16 IMs and 7 RUs-P with complete implementation of the TRIM message. However, most companies have not yet started implementation.

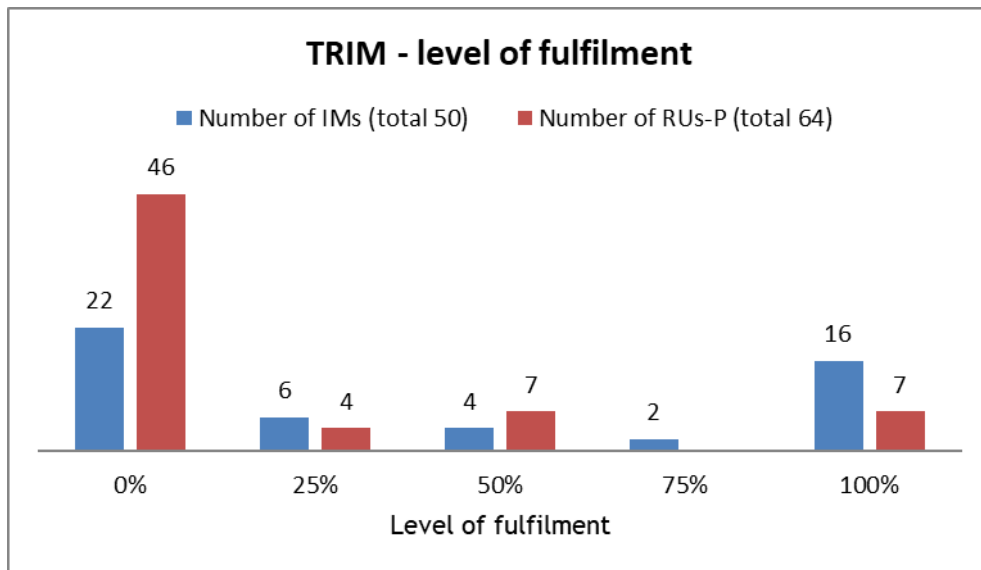


Figure 57 - Train Running Interruption Message (TRIM)

Figure 58 - Evolution of responses and implementation for Train Running Interruption Message indicates the positive evolution of implementation for TRIM at a relative low level compared to the number of participating companies.

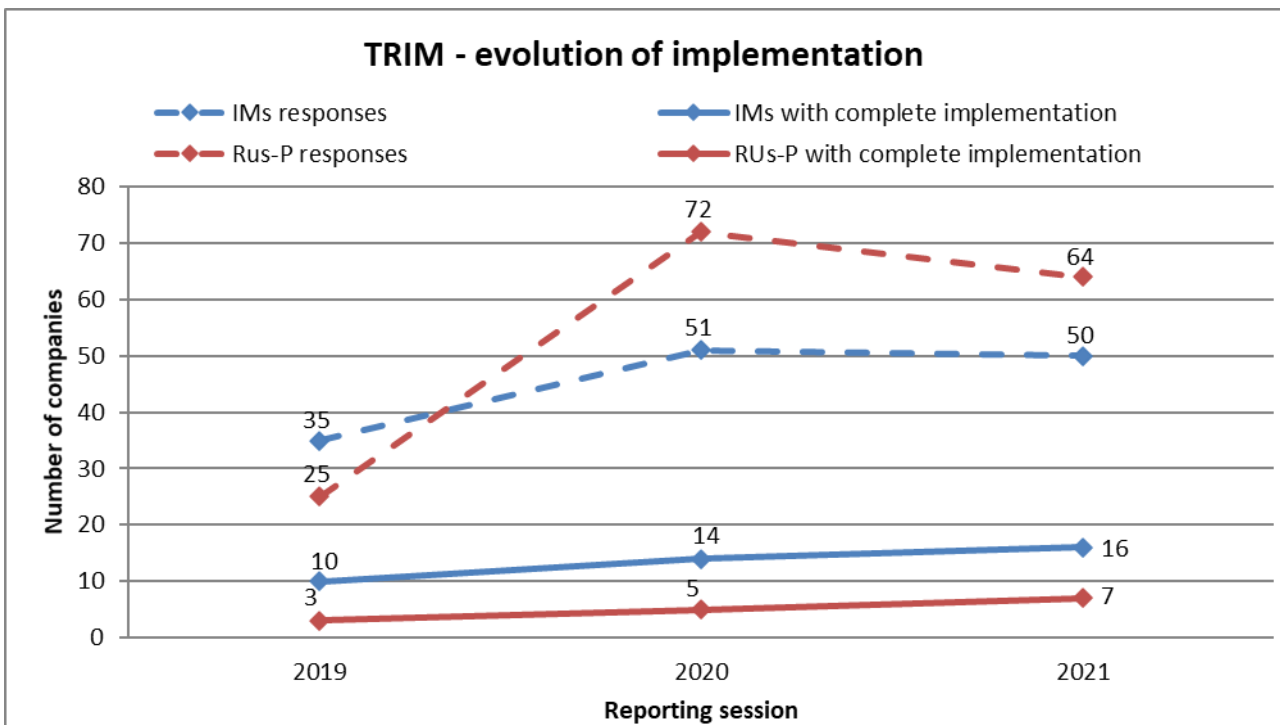


Figure 58 - Evolution of responses and implementation for Train Running Interruption Message

#### 4.2.5.6 Train Running Forecast (IMs and RUs-P)

The Target Implementation Milestone for realisation of the Train Running Forecast (TRF) according to the TAP TSI Masterplan was 2018.

TRF is reported to be fully implemented end of 2021 by 15 IMs and 5 RUs-P.

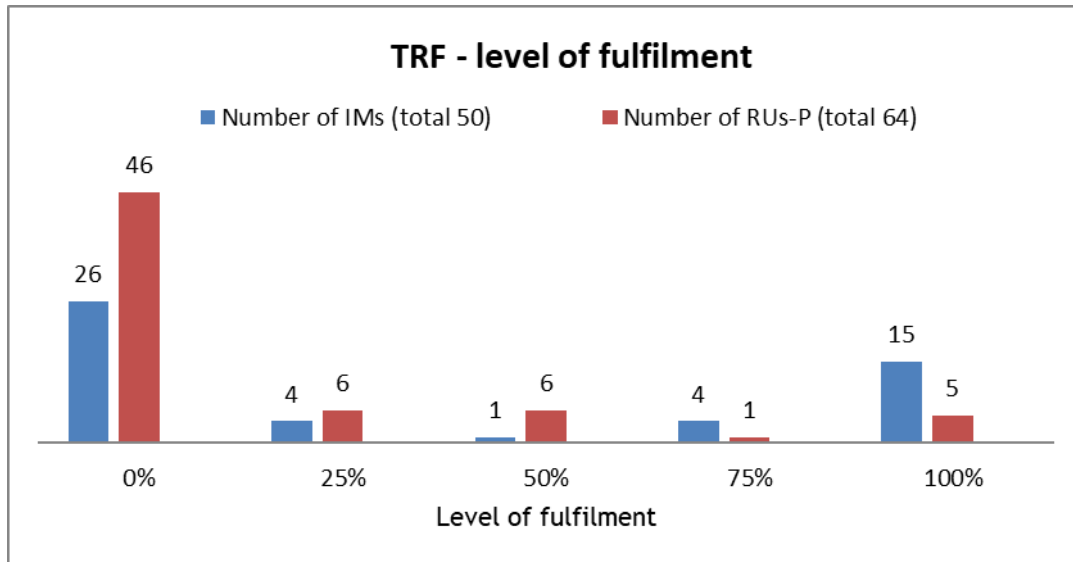


Figure 59 - Train Running Forecast (TRF)

Following a higher participation of IMs and RUs-P, complete implementation of the TRF function remains stable or shows a higher level than the previous year.

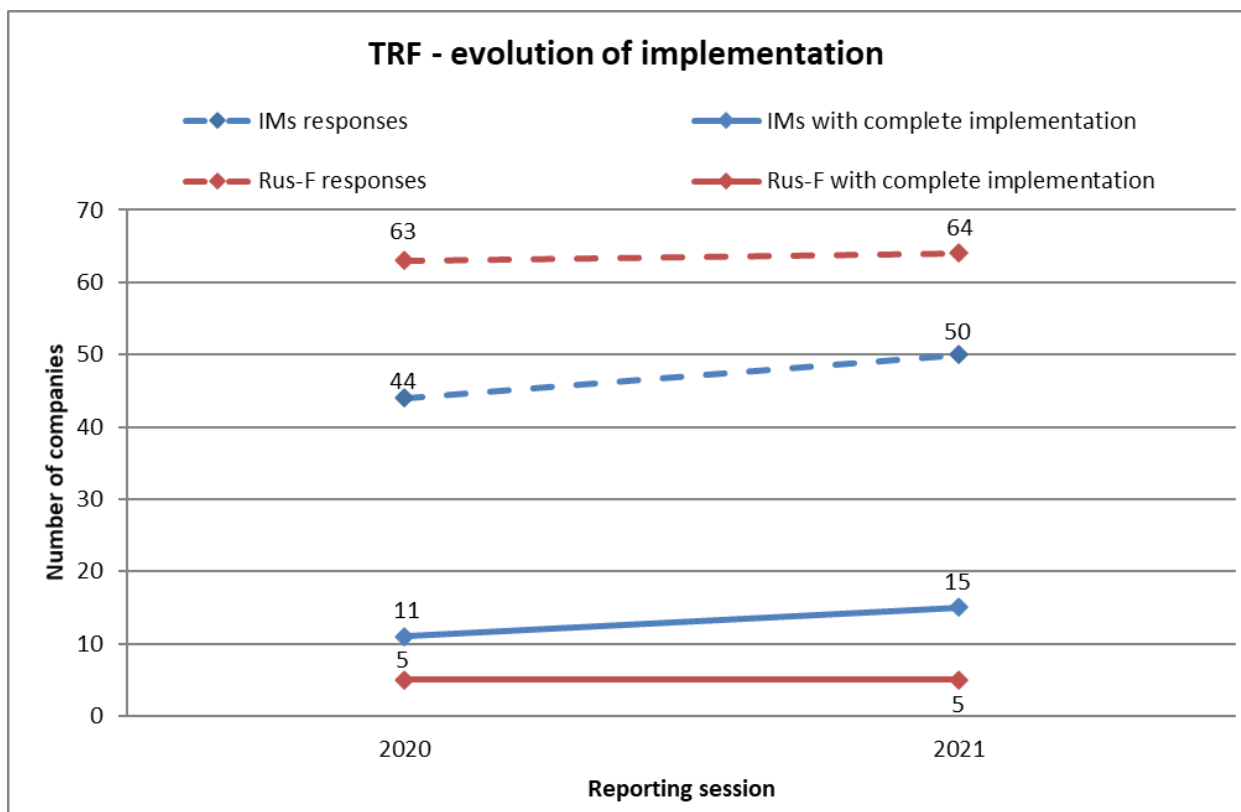


Figure 60 - Evolution of responses and implementation for Train Running Forecast

### 4.3 Publication of the conditions of carriage and access conditions

Not elaborated for this report.

### 4.4 Evolution of TAP TSI regulatory functions at European level

The implementation of the TAP TSI regulatory function has been achieved in Europe. The following table shows the progress of the implementation, compared with the previous five reports published by ERA. The following table is created by comparing previous TSGA reports.

**Table 9: Progress of implementation of TAP TSI regulatory functions**

Milestone	Planned date	Degree of fulfilment 01.09.2016	Degree of fulfilment 01.07.2017	Degree of fulfilment 26.03.2018	Degree of fulfilment 19.06.2018	Degree of fulfilment 19.12.2018	Degree of fulfilment 19.12.2019
Setup of the TAP TSI governance body	01/10/2013	75%	100%	100%	100%	100%	100%
Setup of the Retail reference database	01/10/2014	N/A	50 %	50 %	50 %	50 %	100%
Setup of the TAP TSI registry	01/10/2014	N/A	50 %	50 %	50 %	50 %	100%
Setup of the Data quality tool	01/10/2014	N/A	25 %	50 %	50 %	50 %	100%

The implementation of the TAP TSI regulatory functions setup of the governance and the regulatory functions (retail reference database, registry, data quality tool) has been achieved by TSGA since 2019.

Now the aim of the report is to follow the implementation progress of the service consumption of the services, provided by TSGA. For this purpose, ERA has asked TSGA to provide ERA with the figures for the consumption of the services of TSGA. For this purpose, TSGA has provided to ERA the following Table 10: Implementation progress with the data, which have been delivered by the railway undertakings.

**Table 10: Implementation progress of data deliveries to TSGA**

TSGA Registered Countries	Company	Nr. of Retail locations	Nr. of Retail locations as Railway Station	Linked CRD locations to Railway Stations	Nr. of companies in TSGA	Type	Subscribe to receive notifications about reference data of other companies	Data format provided	Nr. of Timetable updates since 2022-01-01
AT	Westbahn	2179	1972		1	Data Provider	no	GTFS	

BE	SNCB	593	582		1	Data Provider	no	SKDUPD	
DK	DSB	1019	564	137	1	Member	yes	SKDUPD	99
FR	SNCF	7525	7227	3555	1	Member	yes	SKDUPD	99
DE	DB	8881	8057	5010	1	Member	yes	SKDUPD	34
IT	TI	3102	2989	2477	1	Member	yes	SKDUPD	
LU	CFL	212	169	70	1	Member	yes	SKDUPD	43
NL	NS	473	468	370	1	Member	yes	SKDUPD	15
SE	Snälltaget	805	707		1	Data Provider	no	SKDUPD	
CH	SBB	25684	11700	1807	1	Member	yes	SKDUPD	
<b>Total</b>		<b>50473</b>	<b>34435</b>	<b>13426</b>	<b>10</b>				<b>290</b>

As it can be seen from the table there is an overall use of the services of TSGA by railway undertakings within EU.

- Overall, 10 undertakings have delivered their data, 3 of them as data providers, the other 7 as members of TSGA.
- Overall, 50473 railway locations have been delivered, but not all stations are linked to stations in CRD
- Not all retail locations seem to be railway stations, in some countries, e.g. Switzerland it seems that much more locations, such as bus stations have been delivered

## 4.5 Evolution of TAP TSI retail functions at Member state level

The chapter will be amended if there will be sufficient number of reliable data with which it will be possible to distinguish the difference between stable changes and temporary trends in specific basic parameters.

## 4.6 Analysis of problems

In the questionnaire the railway undertakings have been asked to provide data about the problems for the implementation of the TAP TSI basic parameters, subject to the reporting.

The following problems were asked in the questionnaire:

- The dependency on other retail system or on participation of other railway undertakings
- Internal IT redesign needed
- Lack of financial resources
- Technical limitations
- Stability of [TAP TSI] baseline documents
- No benefits seen
- Other

These answers were analysed in more detail by ERA. It has been analysed:

- a) which functions are affected by the problems
- b) which member states are mostly affected

**Table 11: Problems for TAP TSI implementation per member state and problem scope**

<i>Function</i>	<i>Dependency on other retail system</i>	<i>Internal IT redesign needed</i>	<i>Lack of financial resources</i>	<i>No benefits seen</i>	<i>Stability of TAP documents</i>	<i>Technical limitations</i>	<i>Other</i>
Answer Bike Reservation	IT, PT	ES, IT	BG			ES, IT, PT, SL	CZ, DK, IT, PL
Answer Car Reservation			BG	HR		HR	CZ, FR, IT, PL
Answer Seat Reservation	CZ, IT, PT		BG	IT			IT, PL
B10 Answer	IT, CZ	HU	BG, PL	IT, HR			IT, PL
B10 Send	PT	HU		IT			IT, PL
B6 Acceptance							
B6 Issuing	EU (ticket vendors)		PL				
B7 Acceptance	IT, PT	ES	BG, RO	HR		FR, IT	CZ, DE, IT
B7 Issuing	PT		BG, PL				
Provide B1 data	IT		BG	IT		IT, PL	CZ, IT
Provide B2 data	IT	ES	BG	PL		IT	CZ, IT
Provide B3 data	IT		BG	CZ, HU, IT	PL	PL	DE, IT, PL
Provide B4 data			BG	HR, IT		PL	CZ, DE, IT
Send Bike reservation	PT	ES					PL
Send Car Reservation	AT, PT	ES					
Send Seat reservation	PT						

The analysis of the main problems has shown the following results:

The problems were reported from only 11 countries.

One of the main problems is the “dependency on other railway undertakings or distribution systems”. This is especially the case when reservation messages have to be exchanged. It has to be checked what is the reason for this problem. The reservation systems for seats, bikes and trains are using the TAP TSI standards for many reservation systems, based on UIC standards, now technical documents of the TAP TSI. If the systems are developed according to these standards, there should not be any issue with the dependency on other distribution systems. For the exchange of data (timetable, tariff), the problem cannot be understood, because the data can be exchanged without any interaction and dependency on other systems.

The lack of financial resources is a problem only in 3 countries and technical limitations have been reported by companies from 7 countries as a problem for the TAP TSI implementation.



The problem raised in previous reports about the “Stability of [TAP TSI] baseline documents” has been raised only by one member state, so it seems that the problem is largely solved.

## 5 Conclusions

The implementation of the TAP TSI is delayed significantly. The delay is visible in most of the covered reporting streams, the implementation of the TAP TSI retail basic parameters by the railway undertakings and ticket vendors as well.

The governance framework (TSGA) for the coordinated development of the TAP TSI implementation is in place and operational. Therefore, the first milestone to implement the TAP TSI governance has been achieved.

The implementation of the regulatory functions (TAP TSI registry, retail reference database, data quality tool) is achieved now. This means that the railway undertakings can start to implement the access to the TAP TSI registry services to provide their data and to have access to the data from other parties.

For the progress of the TAP TSI implementation for **regulatory functions** the following conclusions can be made:

- The figures delivered by the railway undertakings concerning the implementation of the regulatory functions, are not in line with the figures delivered by TSGA (see Table 10: Implementation progress of data deliveries to TSGA).

For the implementation of the TAP TSI retail basic parameters, in majority of cases, the implementation progress looks better when considering passenger market shares of railway undertakings (with applied weighting factor) than when considering absolute numbers of railway undertakings which declared full implementation of any of TAP TSI retail basic parameter. Therefore, major carriers of TAP TSI retail implementation are still railway undertakings with larger share of passenger market.

The impact of the withdrawal of UK from EU and their non-participation in the reporting process had an impact on the number of participating companies. 33 companies from UK did not participate in the survey in 2021.

For the progress of the TAP TSI implementation for **reservation basic parameters** the following conclusions can be made:

- For the reservation message exchange, either sending or receiving, there is a high level of implementation of those reservation messages used by incumbent railway undertakings. According to applied weighting factor, 76 % of the railway market is sending seat reservation requests and 74% is answering on seat reservations requests. The reservation requests/replies for bicycles are only supported by almost the same amount of undertakings as for the reservation of seats.
- The reservation request for car-carrying trains is supported by a marginal number of undertakings only.
- For the reservation requests for PRM assistance, 68 % of the railway market is both sending and answering on PRM assistance reservation requests.
- For the small and medium size railway undertakings who have not reported any degree of implementation, there is almost no intention to implement these functions. The explanation is in many cases that their trains are not subject to reservation (e.g. local trains only) and therefore there is no need to implement reservation messages, neither as railway undertaking nor as issuer of seat reservations.
- A further progress for these basic parameters is therefore difficult to predict.
- The main issues for the undertakings to implement the reservation functions are:
  - o Technical limitations of the documents
  - o No benefits seen
  - o Dependency on other reservation systems
  - o IT redesign

This is mainly caused by the fact, that many undertakings operate only on local lines and have no reservation system in place or operate trains where a reservation for seats, bikes or cars is possible.

For the progress of the TAP TSI implementation for **ticketing basic parameters** the following conclusions can be made:

- For the ticketing of international or foreign sales, either issuing or accepting, there is a high level of implementation of these functions for the incumbent railway undertakings. With the applied weighting factor, 63 % of the railway undertakings are issuing and 57 % of the railway undertakings are accepting tickets in value paper tickets in B6 format. For home printed tickets in B7 format 55 % of the railway undertakings are issuing and 52 % of the railway undertakings are accepting those tickets.
- For the small and medium size undertakings there are only few projects ongoing for the implementation of international ticketing, either on a value paper ticket or as home printed ticket.
- The main issues for the undertakings to implement the ticketing functions are:
  - o Dependency from other IT systems
  - o IT redesign of the own systems

For the progress of the TAP TSI implementation for **tariff data exchange basic parameters** the following conclusions can be made:

- The implementation of the tariff data exchange for the NRT- and the IRT-tariff data is low. This is maybe due to the fact that those tariffs are not offered by some RU's. Successful implementation for the NRT-tariff data has been declared by 54% of railway market (weighting factor applied) and only 45% for IRT-tariff data.
- Few companies with an EU market share of 7% are in the implementation process for IRT-tariff data.
- Based on the fact that these data are available in the TAP TSI format, it has to be checked how these data can be provided to the ticket vendors to allow them to implement the TAP TSI basic parameters concerning the tariff data exchange. The services of TSGA to have access to those data by the ticket vendors have to be taken into account.
- The implementation of the tariff data exchange according to the technical document B.3 has to be checked. The document is to our knowledge not implemented in the rail sector. Maybe there is a misunderstanding of the underpinning question in the questionnaire.
- The main issues for the undertakings to implement the tariff data functions are:
  - o Technical limitations of the documents
  - o Dependency on other IT systems
  - o IT redesign necessary
- For the exchange of special tariff data small and medium size railway undertakings see not benefit for the implementation.

For the progress of the TAP TSI implementation for **timetable data exchange basic parameters** the following conclusions can be made:

- For the timetable data exchange the implementation progress is very good: 73 % of the railway market has implemented this basic parameter, 73 % in operation and only 3 % in pilot testing phase.
- For the small and medium size undertakings there are only few projects ongoing for the implementation of timetable data exchange.
- Based on the fact that these data are available in the TAP TSI format, it has to be checked how these data can be provided to the ticket vendors to allow them to implement the TAP TSI basic parameters concerning the timetable data exchange. The services of TSGA to have access to those data by the ticket vendors have to be taken into account.
- The main issues for the undertakings to implement the ticketing functions are:
  - o Technical limitations of the documents
  - o IT redesign necessary

Based on the comments in the answers submitted by the participants the following conclusions can be made for the tool "EU Survey":

1. The mandatory answers should be verified if in some cases they can be replaced by voluntary ones
2. The questions offering single or multiple choices should be verified, if they should be modified to single choice or multiple ones
3. Questions should be formulated clearly, e.g. concerning timetable exchange obligations, to allow the respondents to answer correctly.

## 6 Recommendation / actions to be taken

### 6.1 Functions to be reported in the next report

During the TAP TSI Implementation Cooperation Group meeting held on 10 March 2021, it was agreed to report in 2021 about the same functions as reported in 2020.

Having regarded foreseen migration of the Company Code to alphanumerical format as from 1<sup>st</sup> of January 2026, it was further agreed that in the 2021 report the reporting entity will have the possibility to report progress on implementation of this change in its IT solutions. This will enable implementation monitoring and additionally support migration strategy laid down in the corresponding Agency opinion<sup>6</sup>.

### 6.2 Calendar for next reporting

In the frame of the TAP TSI Implementation Cooperation Group meeting held on 10 March 2022, it was agreed the following schedule to report about the implementation of TAP TSI functions: 14.11.2022 - 09.12.2022

#	Step	Date
1	ERA will send the request to update PM's	30.09.2022
	<b>Meeting TAP TSI ICG</b>	<b>12.10.2022</b>
2	Update TAP TSI RU/TV PM list	04.11.2022
3	CSG send the questionnaire to ERA	N/A
4	ERA/JSG/CSG/ETTSA triggers reporting session	14.11.2022
5	Opening JSG/CSG tool for reporting	14.11.2022 – 09.12.2022
6	Analysing data for report	January 2023
7	Preparing JSG/CSG report	February 2023
8	Harmonising analysis with ERA	t.b.c.
9	Approving report JSG	t.b.c.

<sup>6</sup> ERA/OPI/2020-14 Opinion of the European Union Agency for Railways to the European Commission regarding Change of company code to 4-letter-alphanumeric format

10	Presenting TAP TSI implementation report at ERA co-operation group	08.03.2023
11	Publishing implementation report	t.b.c.

*Figure 61: Reporting Schedule for the 2021 Reporting wave*

### 6.3 ERA recommendations for next reporting

ERA recommends the following actions to accelerate the TAP TSI implementation:

**Table 12: Proposed actions for TAP TSI implementation**

Who	Action	When
NCPs	The availability of the regulatory services, provided by TSGA, shall be communicated to the railway undertakings.	October 2022
Ticket vendors	The ticket vendors should establish the operational reporting procedure for the report of the implementation progress of the TAP TSI.	October 2022
NCP, ERA	Addressing the ticket vendors not organised in the European organisations ECTAA, EU Travel Tech	October 2022
CSG, ERA	The tool EU-survey, proposed for the new questionnaire, will support the translation of the questions	October 2022
NCPs, ERA	It should be checked if a translation of the questionnaire based on EU-survey may improve the response rate. The translation shall be provided by the NCP's, if they consider the translation as useful for an improved response rate.	October 2022
NCPs CZ, DE, NO, EL, SK, NL	It should be checked how to secure contact data from few countries which didn't deliver any contact data of their RUs.	October 2022
NCP, ERA, CSG, JSG	It should be discussed how to find out more or even how to measure the level of TAP TSI obligations awareness in Europe, between TAP project managers in obliged RUs. Possible solution could be in modifying the questionnaire with an adequate question.	October 2022
NCP, ERA, CSG, JSG	The identified problems shall be discussed in the next co-operation group in detail, taking into account the member states affected, the impact of these risks and issues on the further implementation of the TAP TSI. Additionally, ERA will contact the NCPs of countries regarding the details of reported problems in order to facilitate the problem resolution processes.	October 2022

## Annex 4 Responses contact list

**Table 13: Contacted railway undertakings with responses**

<i>Member State</i>	<i>Company name</i>	<i>Reporting Entity</i>
DE	Albtal-Verkehrs-Gesellschaft mbH	
SE	All Aboard AB	
DK	Arriva A/S	
SK	ARRIVA Mobility Solutions, s.r.o.	
BG	BDZ - Passenger Services	
IT	Busitalia Sita Nord s.r.l.	
CZ	České dráhy, a.s.	
PT	CP – Comboios de Portugal E. P. E.	
DE	DB Fernverkehr AG	DB AG
DE	DB Regio AG	DB AG
DE	DB RegioNetz Verkehr GmbH	DB AG
DE	DB ZugBus Regionalverkehr Alb-Bodensee GmbH	DB AG
DK	DSB	
EU	eu travel tech	
IT	Ferrovie del Gargano S.r.l.	
IT	FERROVIE UDINE - CIVIDALE	
PT	FERTAGUS	
IT	Grandi Treni Espressi SpA	
HR	HŽ Putnički prijevoz d.o.o.	
IT	Italo - Nuovo Trasporto Viaggiatori S.p.A.	
PL	Koleje Dolnośląskie S.A.	
PL	Koleje Mazowieckie - KM sp. z o.o.	
DK	Lokaltog	
HU	MÁV-Start Zrt.	
IT	Mercitalia Shunting e Terminal S.r.l.	
DK	Metro	
DK	Midtjyske Jernbaner	
DK	Nordjyske Jernbaner	
AT	ÖBB - Personenverkehr Aktiengesellschaft	
PL	PKP Szybka Kolej Miejska w Trójmieście Sp.z o.o.	

<i>Member State</i>	<i>Company name</i>	<i>Reporting Entity</i>
ES	RENFE VIAJEROS	
IT	SAD - Trasporto Locale Spa	
DE	S-Bahn Berlin GmbH	DB AG
DE	S-Bahn Hamburg	DB AG
DE	S-Bahn Stuttgart	DB AG
CH	SBB Personenverkehr	
RO	SC INTERREGIONAL CALATORI SRL	
IT	Sistemi Territoriali Spa	
BE	SNCB/NMBS	
FR	SNCF Mobilités - Voyageurs	
LU	Société Nationale des Chemins de Fer Luxembourgeois (SNCF)	
CZ	Správa železnic, státní organizace	
SI	SŽ Potniški promet d.o.o	
BE	THI Factory SA	
IT	Trasporto Ferroviario Toscano S.p.A.	
FR	Trenitalia France	
IT	Trenitalia S.p.A.	
IT	Trenitalia Tper S.c.a.r.l	
IT	Trenord S.r.l.	
DE	UBB Usedomer Bäderbahn GmbH	DB AG
FI	VR Company LTD	