

**TAP TSI**

Telematics Applications for Passenger Services  
Technical Specifications for Interoperability



Project co-funded by the  
European Commission

# TAP IMPLEMENTATION GUIDES OVERVIEW

**Project:** TAP Phase One

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Owner: TAP Phase One Project Team

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# 1 Progress History

## 1.1 Document Location

This document will be uploaded to the “TAP TSI/TAP Retail activities/Retail general interest” folder of the project extranet (members’ area).

## 1.2 Revision History

Date of delivery: 13 May 2012

Revision date	Previous revision date	Summary of Changes	Changes marked
2012-04-21		First issue	None
2012-05-04	2012-04-21	Incorporation of team remarks	
2012-05-13	2012-05-04	Final editing	

## 1.3 Approvals

This document requires the following approvals.

Name/ Entity	Title/ Remark	Approval	Date of Issue	Version
Project Team	Project Manager, Work Stream Leaders, Project Assistant	Done	11 May 2012	1.0
TAP Steering Committee	Chairs, members and alternates		15 May 2012	1.0

## 1.4 Distribution

This document is distributed to:

Name/ Entity	Title/ Remark	Date of Issue	Version
DG MOVE, ERA	Official recipients of the TAP Phase One deliverables	13 May 2012	1.0
TAP Steering Committee	Chairs, members and alternates	13 May 2012	1.0
Project Team; UIC and Ticket Vendor project coordinators	All members of the Project Team and the coordinators involved in the Grant Agreement between DG MOVE and UIC	13 May 2012	1.0
Interested public	On <a href="http://tap-tsi.uic.org">http://tap-tsi.uic.org</a> following TAP Steering Committee approval	tbd	

## **1.5 Document maintenance**

This document is maintained by the Governance Entity.

Any stakeholder detecting errors or needing clarifications can contact the Governance Entity (e-mail address to be defined).

Until the Governance Entity is operational, stakeholders are invited to contact the following e-mail address: [tap-tsi@uic.org](mailto:tap-tsi@uic.org).

Proposals for additions or updates can be sent to the same e-mail addresses, and will undergo the Change Control Management process described in chapter 4.

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### **3 Purpose of this document**

Commission Regulation (EU) No 454/2011, “TAP TSI”, requires for its application a quantity of other documents, apart the Regulation itself. Such extensive set of documents could lead to confusion for the interested actors (all European Railway Undertakings, Infrastructure Managers and third party ticket vendors), especially those who are not members of rail sector representative bodies.

The scope of this document is to provide an overview of the TAP TSI, what it is, to whom it applies, which documents define in detail its implementation etc.), while of course the said documents describe in much deeper detail the corresponding section of the Regulation.

The TAP TSI must be implemented in three phases:

- Phase One: detailed IT specifications, governance and master plan
- Phase Two: development
- Phase Three: deployment.

This document, in its present release, is a deliverable of Phase One, as are also other documents of the TAP “library” referenced here. As such, it focuses especially on the initial stages of the TAP, with indications on how to put it into operation. This document, as all the others, will be the object of periodical updates according to the Change Control Management process described in Chapter 4. In the future releases, the prescriptions for the initial development will of course disappear, but the implementation guides and an overview of them will always remain necessary, at least for the use of the new companies that will be started in future in force of the liberalisation process.

For this reason all implementation guides have a section dedicated to actors that present themselves for the first time on the European rail scenario, and are therefore especially in need of guidance.

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## 4 TAP library and its maintenance

The term “TAP library” is used here to designate the set of documents that constitute the Regulation itself and the other documents necessary for its correct implementation. The TAP library consists basically of two sets of documents:

- the legal ones
- the complementary ones.

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### 4.1 TAP legal documents

The legal part of the TAP library consists of the following documents:

- A) Commission Regulation (EU) No 454/2011 of 5 May 2011 on the technical specification for interoperability relating to the subsystem ‘telematics applications for passenger services’ of the trans-European rail system (TAP TSI)
- B) Eleven ERA Technical Documents referenced in the Regulation, labelled B.1 to B.10 and B.30
- C) Directory of Passenger Code Lists used in the TAP TSI and its Technical Documents.

Those three types of documents are explained below in more detail and widely referenced in the single implementation guides. All of them can be downloaded from the website of the European Rail Agency at <https://www.era.europa.eu/Document-Register/Pages/TAP-TSI.aspx>.

#### 4.1.1 Regulation (EU) No 454/2011

The Regulation has an official text, composed of only 8 articles, and the following annexes:

- Annex I: the main part of the Regulation, with all the Basic Parameters, the implementation rules and the glossary. As defined in the glossary itself, a Basic Parameter “means any regulatory, technical or operational condition which is critical to interoperability and requires a decision in accordance with the procedure laid down in Article 21(2) before any development of draft TSIs by the joint representative body”
- Annex II: list of open points. An open point is a type of data provision where a European standard is deemed necessary, but there was no such standard available at the time of writing the TAP. The open points will be gradually filled up and will correspondingly disappear from annex II.
- Annex III: list of technical Documents referenced in the TSI (see point B below)
- Annex IV: list of tariffs meant for international or foreign sales (a further detail of the Basic Parameter 4.2.2).

#### 4.1.2 Technical Documents

The 11 Technical Documents (TDs) published together with the Regulation are:

- “Annex B.1 - Computer Generation and Exchange of Tariff Data Meant for International or Foreign Sales – Non Reservation Tickets” ; Reference: ERA/TD/2009-04/INT
- Annex B.2 - Computer Generation and Exchange of Tariff Data Meant for International and Foreign Sales – Integrated Reservation Tickets (IRT) ; Reference: ERA/TD/2009-05/INT
- Annex B.3 - Computer Generation and Exchange of Data Meant for International or Foreign Sales – Special Offers; Reference: ERA/TD/2009-06/INT
- Annex B.4 - Implementation guide for EDIFACT messages covering timetable data exchange; Reference: ERA/TD/2009-07/INT
- Annex B.5 - Electronic reservation of seats/berths and electronic production of travel documents - exchange of messages; Reference: ERA/TD/2009-08/INT
- Annex B.6 - Electronic seat/berth reservation and electronic production of transport documents - transport documents (RCT2 standard) ; Reference: ERA/TD/2009-09/INT
- Annex B.7 - International rail ticket for home printing; Reference: ERA/TD/2009-10/INT
- Annex B.8 - Standard numerical coding for Railway Undertakings, Infrastructure Managers and other companies involved in rail transport chains; Reference: ERA/TD/2009-11/INT
- Annex B.9 - Standard numerical coding of locations; Reference: ERA/TD/2009-12/INT
- Annex B.10 - Electronic reservation of assistance for persons with reduced mobility - Exchange of messages; Reference: ERA/TD/2010-01/INT
- Annex B.30 - Schema - messages/datasets catalogue needed for the RU/IM communication of TAP TSI; Reference: ERA/TD/2009-13/INT

At the time of closure of TAP Phase One, most of the Technical Documents are still in the initial version 1.1 published on 5 May 2011. TDs B.1, B.4 and B.7 have instead been upgraded to version 1.1.1 with the new baseline of 8 March 2012 (see Chapter 4.3.1 for the meaning of baseline).

### 4.1.3 Directory of Passenger Code Lists

A code list is an enumeration of allowed values for a specific data type, centrally stored and available both in human readable and computer readable format to all TAP actors.

All code lists of interest for the TAP are collected in a “Directory of passenger code lists for the ERA Technical Documents used in TAP TSI”; Reference: ERA/TD/2009-14/INT. This document too has been upgraded to version 1.1.1 with the new baseline of 8 March 2012.

A group of other legal documents, though not being part of the TAP library, have relevance for the TAP TSI and should be known by anybody interested in complying with the TAP. They are:

- Directive 2008/57/EC of the European Parliament and of the Council of 17 June 2008 on the interoperability of the rail system within the Community
- Regulation (EC) No 1371/2007 of the European Parliament and of the Council of 23 October 2007 on rail passengers’ rights and obligations

- Commission Decision 2008/164/EC of 21 December 2007 concerning the technical specification of interoperability relating to ‘persons with reduced mobility’ in the trans-European conventional and high-speed rail system (PRM TSI).

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## 4.2 TAP complementary documents

The term “complementary documents” is used here to designate the set of documents, including this one, that have been created as deliverables of TAP Phase One to support the TAP implementation, but that don’t have force of law [decision still under way].

They consist of the following documents:

- TAP Implementation Guides Overview (this document)
- Timetables Implementation Guide
- Tariffs Implementation Guide
- Reservation Implementation Guide
- Direct Fulfilment Implementation Guide
- Indirect Fulfilment Implementation Guide
- Implementation Guide for the Communication between Railway Undertakings and Infrastructure Managers (RU/IM Implementation Guide)
- TAP Retail Architecture Description
- TAP Retail Architecture Economic Evaluation
- Governance Proposal
- Master Plan Report.

More details on those documents are provided in the next chapters of this document. All of them will be available for download from the website of the TAP project at <http://tap-tsi.uic.org/>, once they have been approved.

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## 4.3 Change Control Management

All the above documents will be in future the object of possible updates.

Two different procedures are designed for the update of the TAP legal documents and of the complementary ones.

### 4.3.1 Update of the TAP legal documents (ERA process)

A common process is defined for the Change Control Management of both Telematics Applications, the TAP and the TAF. The process is led by the European Railway Agency, in its role as system authority for Telematics Change Control Management (CCM), with the contribution of the sector’s and other representatives.



The process is based on the concept of baseline, defined as a stable kernel in terms of system functionality, performance and other non-functional characteristics.

The definition of a new baseline necessarily implies that significant changes (enhancements) are brought to the above mentioned kernel: an enhancement may consist in adding a new function, keeping the functionality of the previous baseline unchanged, or may consist in changing some functionality, performance or non-functional characteristics of the previous baseline.

The Change Control Management consists of the management of activities, which allow moving from one baseline release to another one. This is done on the basis of Change Requests, that can be submitted to the ERA by any of the following recognised organisations:

- Each of the representative bodies listed by the RISC (Rail Interoperability and Safety Committee) in its meeting of the 07/10/2009 (see 04/881-DV01EN02) :
  - Union of European Railway Industries (UNIFE)
  - Community of European Railways and Infrastructure Companies (CER)
  - European Infrastructure Managers (EIM)
  - International Association in Public Transport (UITP)
  - International Union of Private Wagons (UIP)
  - International Union of Combined Road-Rail Transport Companies (UIRR)
  - European Rail Freight Association (ERFA)
  - European Transport Federation (ETF)
  - Autonome Lokomotivführer-Gewerkschaften Europas (ALE)
  - European Passengers Train and Traction Operating Lessors' Association (EPTTOLA)
- Each of the additional following parties :
  - The National Safety Authorities (representing the Member States)
  - The European Commission
  - The International Union of Railways (UIC)
  - Ticket Vendors representative body.

In addition, Change Requests can be internally originated by the ERA e.g. as a consequence of the process of drafting or updating the TSI's or safety recommendations, or in general in the scope of its activities.

Any actor subject to the TAP who has reasons to propose a change request (CR) can address it to its own representative body. For an efficient work involving the relevant expertise it is anyway recommended that all CRs should go first through the Governance Entity.

#### **4.3.2 Update of the TAP complementary documents (Governance process)**

The Governance Entity (see Chapter 5.2 below), in addition to supporting the ERA CCM process, will have to maintain and update the complementary documents.

It will do so by means of its internal structure, consisting of Service Management Groups and Expert Working Groups to study technical matters where specific expertise is needed.

More details on the change management service provided by the Governance Entity can be found in the mentioned “TAP governance proposal” document.

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## 5 Actors of the TAP, rights & obligations

Scope of this chapter is the definition of the TAP perimeter and of the actors having a role in it.

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### 5.1 TAP perimeter

The TAP applies to all transport services offered to passengers by European licensed Railway Undertakings and their daughter companies.

The geographical scope of the TAP is the trans-European rail system as defined in Article 2(a) of Directive 2008/57/EC. With regard to rail passenger services operated from or to third countries, compliance with the requirements of the TAP is subject to the availability of information from actors outside the EU unless bilateral agreements provide information exchange compatible with the TSI.

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### 5.2 TAP actors

The actors having a role in the TAP are:

- The European licensed Railway Undertakings, and their representative bodies CER, EPTO, UIC, UITP
- The European licensed Infrastructure Managers, and their representative bodies CER, EIM, UIC
- The Station Managers
- The third party Ticket Vendors, and their representative bodies ECTAA, ETTSA
- The rail passengers, and their representative body EPF
- The Authorised Public Bodies (public authorities having a statutory obligation or right to provide members of the public with travel information, and also public authorities which are responsible for the enforcement of Regulation (EC) No 1371/2007)
- The European institutional bodies DG MOVE, ERA.

Their specific rights and/or obligations are indicated when applicable in each of the legal and complementary documents listed in Chapter 4.

The actors that need to be uniquely identified to implement data exchanges with other actors have to receive a Company code compliant with Technical Document B.8. The codes are attributed by the International Union of Railways following instructions given at <http://www.uic.org/spip.php?article311>.

For the development and subsequent operation of the TAP TSI a joint TAP/TAF entity (“Governance Entity”) will be created, with involvement at different levels of the above actors. Details of the composition and tasks of the entity are provided in the mentioned “Governance proposal” document.

### **5.3 Investments safeguard**

The Directive 2008/57/EC on the interoperability of the rail system states among others “When developing new TSIs the aim should always be to ensure compatibility with the existing authorised system”.

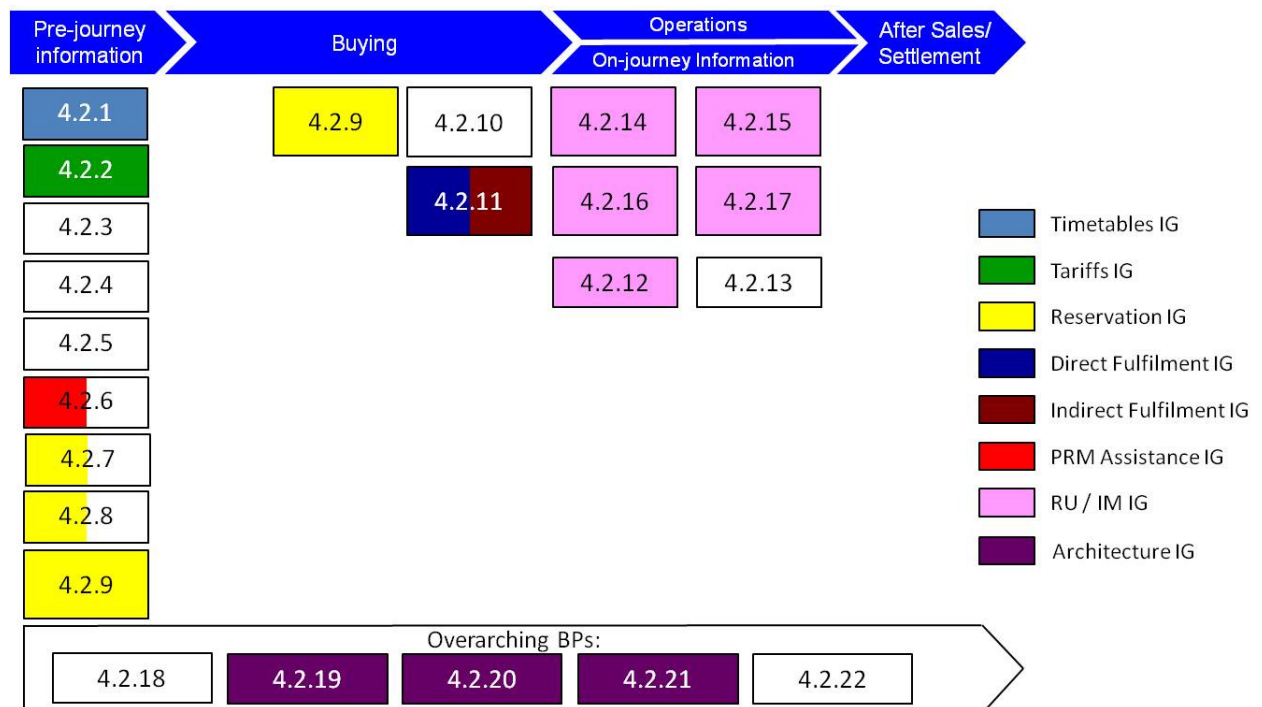
For this reason the drafting of the TAP TSI has been based on standards already existing in the rail sector. These have been incorporated into the ERA Technical Documents supporting the TAP TSI.

Those standards have given birth in the past to IT systems currently used by many European RUs; reference to such systems is made in each retail Implementation Guide - only for informative purposes - to let other actors that are possibly interested know what already exists.

## 6 TAP prescriptions

### 6.1 Coverage of the Basic Parameters

The Implementation Guides delivered at the end of TAP Phase One cover in dedicated way part of the TAP Basic Parameters (BPs), as shown in the following figure:



Basic Parameters 4.2.3, 4.2.4, 4.2.5 and first processes of Basic Parameters 4.2.6, 4.2.7 and 4.2.8 only set obligations for all RUs to publish information relating to generic conditions of carriage or specific ones (luggage, bicycles, etc.).

That information is to be managed locally by each RU, do not require any interoperability between RUs and do not have supporting Technical Documents, therefore a dedicated Implementation Guide is not needed.

It can only be noticed that the TAP, apart from the obligations clearly stated in terms of content to be published and deadlines for doing so, also requires to “comply with web content accessibility guidelines which take into account the needs of people with auditory and/or visual impairment”.

Such guidelines can be found on <http://www.w3.org/WAI/Resources/>.

Basic Parameter 4.2.10 only contains processes which are still open points, therefore an Implementation Guide cannot be established yet.

Basic Parameter 4.2.13 concerns the information provision in the vehicle area, an activity that is uniquely in the responsibility of the carrier operating the vehicle, without any

interoperability requirement (differently from BP 4.2.12, Information provision in the station area, where an interaction is needed between the RU and the Infrastructure Manager or Station Manager). Also in this case therefore there is no need for an Implementation Guide, and the technical specifications are those provided by the Commission Decision 2008/164/EC, already mentioned in Chapter 4, in particular its section 4.2.2.8.

Basic Parameter 4.2.18 can be considered the core of the TAP, because it summarises the actions that ensure interoperability:

- make available up-to-date, coherent, accurate and complete data at the appropriate time and in the appropriate format
- where information is used to meet the requirements of several BPs at the same time, ensure that the information shared between those BPs is used in a coherent manner
- where information is provided by several actors addressed by the TSI, ensure that the parts of the common data or information provided are up-to-date, coherent, accurate, complete and compatible
- where reference data is used to meet the requirements of the TSI, guarantee the coherence between the reference data and the data or information used in the BPs.

Prescriptions aimed at guaranteeing all the above types of compatibility are repeated throughout the Implementation Guides listed in Chapter 4.2, wherever relevant for the specific content, but do not need a separate IG.

Basic Parameter 4.2.22 concerns connections with other modes of transport:

- For timetables there is a suggestion (but not obligation :“should” instead of “shall”) to use the European Norms “Transmodel”, “IFOPT” and “SIRI”, still partly under development
- For tariffs the standard is still an open point

Therefore it seems premature to draft an Implementation Guide for this Basic Parameter.

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## 7 Architectural aspects

The TAP Architecture is based on the concept of resources (files, interfaces, endpoints or data elements) that an actor produces and other actors consume.

The actors make available and access the resources with the help of the following common components:

- Registry, a central component of the architecture whose main purpose is to play the role of an address book where users can find the location of a resource;
- Common Repository Domain (CRD - Central Reference Data) - listing in machine readable format the rail locations used in the data exchange
- Retail Reference Database, listing in machine readable format all objects of specific interest for the retail sector;
- Data Quality Management (DQM) tool, a specialised resource producer that provides an interface and/or service to perform quality checks and generate quality reports and logs on resources.

These common components will be procured by the Governance Entity mentioned in Chapter 5.2.

The detailed description of the TAP Retail Architecture is provided in the “TAP Retail Architecture Description” document.

The detailed description of the TAP RU/IM Architecture is given in Chapter 6 of the “Implementation Guide for the Communication between Railway Undertakings and Infrastructure Managers (RU/IM Implementation Guide).