EUROPEAN
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FOR RAILWAYS

Moving Europe towards a sustainable and
safe railway system without frontiers.

Electronic reservation of seats/berths and electronic production of travel documents - exchange of messages

Telematics TSI - Technical Document - B5

Version 4.0

Contents

A. Document management

A.1 Document properties

- File name: ERA_TD_B5.docx
- Subject and document type: Telematics TSI - Technical Document - B5
- Author: ERA
- Version: 4.0

A.2 Change management

Updates to this technical document shall be subject to Change Control Management procedure managed by the Agency pursuant:

- the applicable requirements in the reference TSI
- Art. 23(2) of the Agency Regulation

If necessary, working groups are created in line with Art. 5 of the Agency Regulation.

A.3 Configuration management

 A new version of the document will be created if new changes are considered following the Change Control Management Process led by ERA.

More specifically:

- if there is a change in the requirements which influences the implementation
- if information is added to or deleted from the technical document
- adding test cases to the field checking in messages or databases.

Modifications will have to be highlighted, so they can be easily identified.

Disclaimer:

Specific legal references to technical documents and legal acts shall be revised after the enter into force of the Telematics TSI. In some sections this text can be highlighted.

A.4 Availability

The version in force of this document is available on Agency's Gitlab repository. Any printed copy is uncontrolled.

A.5 Application and actors in the scope

Date of entry into force of reference TSI.

This document applies to all the actors in the scope of the reference TSI.

A.6   Document history

Table 1 - Document history

Version	Date	Comments
1.1	04.05.2011	First release
1.2	01.02.2013	Textual errors discovered during TAP TSI phase one Description of element 52E changed
1.3	10.02.2015	Usage of the 4 defined more precisely Usage of the element 52A defined in case of application of a reservation fee Element 41H must be delivered
		State diagram in Appendix A introduced Original cancellation date in Confirmation partial cancellation Elements 73F Partial price 6, 88, 89 specified
1.4.3	11.11.2022	New added appendix B
1.4.5	08.11.2023	document split in two annexes A.1 and A.2
4.0	10.06.2025	Initial version for Telematics TSI

B. Acronyms, definitions and external references

B.1 Acronyms

Table 2 - Acronyms

Acronym	Full text
API	Application Programming Interface
CAS	Central Administration Service
CCB	Change Control Board
CCM	Change Control Management
CR	Change Request
EC	European Commission
EN	European Norm
ENEE	European Railway Location Database
ERA	European Union Agency for Railways also called "the Agency"
ERADIS	Interoperability and Safety database managed by the European Union Agency for railways
ERATV	European Register of Authorised Types of Vehicles
EVR	European Vehicle Register
EU	European Union
FRS	Functional Requirements Specification
IC	Interoperability Constituent
HCI	Human Computer Interface
IM	Infrastructure Manager
INF	Infrastructure
ILU	Intermodal Loading Unit
ILURD	Intermodal Loading Unit Reference Database
ISO	International Organisation for Standardisation
OC	Organisation Code
OCR	Organisation Code Register
OSJD	Organisation for Co-operation between Railways
PLC	Primary Location Code
RICS	Railway Interchange Coding System
RINF	Register of Infrastructure
RSRD	Rolling Stock Reference Database
RU	Railway Undertaking
SLA	Service Level Agreement
SLC	Subsidiary Location Code
SRM	Stakeholder Relationship Management Tool
TAF	Telematics Applications for Freight

TAP	Telematics Applications for Passenger
TD	Technical Document
TSI	Technical Specification for Interoperability
UIC	International Union of Railways (Union Internationale des Chemins de Fer)
WIMO	Wagon and Intermodal Unit Operating Database
WP	Working Party

B.2   Definitions

Terms contained in this document are defined in the ERA Ontology.

B.3   External references

The referenced documents listed in Table 2 are indispensable for the application of this document:

- For dated references, only the edition cited applies;
- For undated references, if any, the latest edition of the referenced document (including any amendments) applies.

Table 2 Reference documents

ID	Title	Doc ID, Edition	Date	Author/ Publisher
[1]	ERA Technical Document B.11: Layout for electronically issued rail passenger tickets			ERA
[2]	ERA TAP TSI Technical Document B.12: Digital security elements for rail passenger ticketing			
[3]	ISO 4217:2015 - Codes for the representation of currencies and funds, August 2001	-	2015	ISO
[4]	ISO 3166:2020 - Codes for the representation of names of countries and their subdivisions	-	2020	ISO

1   Introduction

The present document belongs to the set of Technical Documents described in APPENDIX C - LIST OF REFERENCED STANDARDS AND TECHNICAL DOCUMENTS - of the COMMISSION REGULATION (EU) No XXX/2025 Technical specification relating to the telematics subsystem of the rail system in the European Union for interoperability of data sharing in rail transport and repealing Regulations (EU) No 454/2011 and (EU) No 1305/2014

2   Summary

This Technical Document describes the regulations and procedures to be observed when exchanging messages between a Distributor/Issuer (e.g. RU or ticket vendor) that issues travel tickets and reservation tickets and the electronic system of the Attributor (RU) which manages the necessary data for the issue of these tickets, in particular the inventories of seats available for reservation and fares, subject to an availability management. It is supplemented by the following two Technical Documents:

- ERA Telematics TSI Technical Document B.11 which describes the ticketing layouts that applies to all the travel documents prepared electronically
- ERA Telematics TSI Technical Document B.12 which describes the standard for security elements (e.g. barcodes for home-printed) tickets to be used in international or national carriage by train.

Additional Technical Documents are likely to be added when the open points left in the COMMISSION REGULATION (EU) No XXX/2025 – "Technical specification for interoperability relating to the subsystem 'telematics applications for passenger services' of the trans-European rail system" will be closed. The arrangements contained in these Technical Documents enable a Distributor/Issuer (e.g. RU or ticket vendor) to reserve seats from an inventory managed by an Attributor (another RU) and to issue any travel document (in particular seat reservations and combined tickets) produced electronically from data transmitted by the electronic system of the Attributor (another RU).

3   Use cases covered in this document

The document covers the use cases for the communication between the distributor and the attributor. This comprises the following use cases:

1. Request / reply of availability for product(s) or fare quota(s)
2. Request / reply for a reservation
3. Request / reply for a partial cancellation
4. Request / reply for a full cancellation

The preconditions for the communication between distributor and attributor are:

1. Distributor and Attributor have concluded a commercial agreement.

2. The distributor has access to the full product catalogue of the attributor to know for which products a reservation (e.g. for seat allocation, yield managed fares), thus a communication between the distributor and the attributor is necessary to obtain this product.
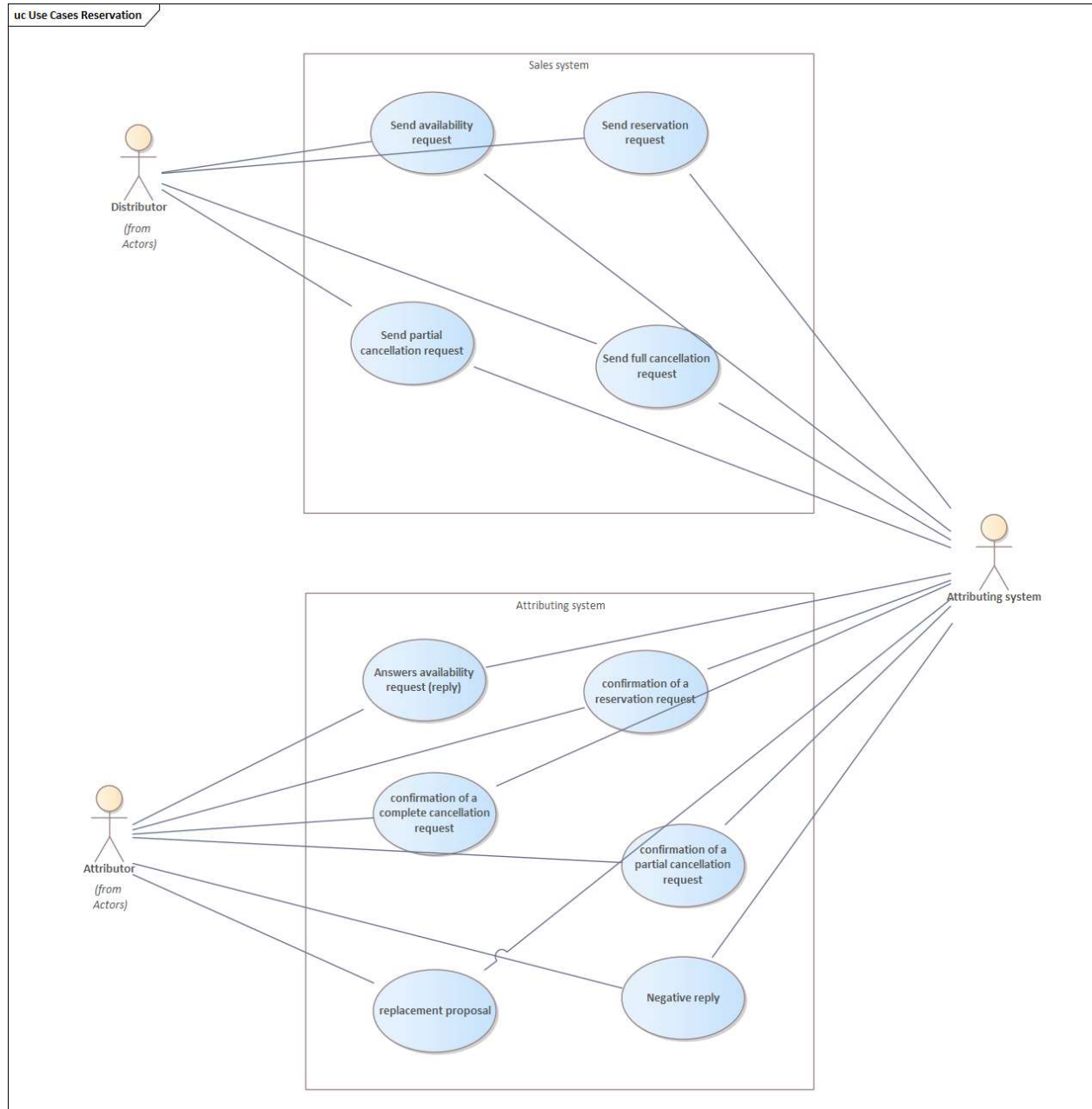

Figure 1 - Use case reservation

4   Organisation of the document

This Technical Documents covers multiple technical implementations for the above-mentioned use cases. To simplify the use of the document these separate descriptions have been split into annexes. Each annex contains the use cases covered, message specification and the exchange protocol.

Note: It is recommended to start new implementation projects according to the annexes B.1 or B.2, as the annexes A.1 and A.2 are not further developed.

Annex A.1 Data exchange for reservations using binary formats/queues messages.

This covers the exchange for reservations, partial cancellations and cancellations as well as offers for reservations. Reservations can thereby represent pure seat allocation but may also include the ticket or supplements.

Annex A.2 Data exchange for reservations using xml/soap messages.

This covers the exchange for reservations, partial cancellations and cancellations as well as offers for reservations. Reservations can thereby represent pure seat allocation but may also include the ticket (e.g. IRT or train linked tickets) or supplements.

Annex B.1 Data Exchange for reservations using Open sales and distribution model (OSDM) messages

This covers the exchange for reservations, partial cancellations and cancellations as well as offers for reservations. Reservations can thereby represent pure seat allocation but may also include the ticket (e.g. IRT or train linked tickets) or supplements.

The annex covers a subset of functions of the broader standard OSDM, strictly necessary to achieve interoperability.

Annex B.2 Data Exchange for reservations using OMSA messages

This covers the exchange for reservations, partial cancellations and cancellations as well as offers for reservations. Reservations can thereby represent pure seat allocation but may also include the ticket (e.g. IRT or train linked tickets) or supplements.

The annex covers a subset of functions of the broader standard OMSA, strictly necessary to achieve interoperability.

The functional differences are described below in the feature matrix:

Table 3 - Feature matrix

Feature	Covered in A.1	Covered in A.2	Covered in B.1 (OSDM)	Covered in B.2 (OMSA)
Getting availability/offers	mandatory	mandatory	mandatory	mandatory
Booking an offer	mandatory	mandatory	mandatory	mandatory
Confirmation of the booking	implicit	implicit	mandatory	mandatory

Reconciliation of failed transactions	mandatory	mandatory	mandatory	mandatory
Getting a refund offer	optional	optional	Included	Included
Booking exchange offers	not included	not included	Included	Included
Getting refund	mandatory	mandatory	Mandatory	mandatory
Booking an exchange offer	not included	not included	Included	Included
Partial cancellation	Optional	Optional	Included	Included
Reimbursement	not included	not included	Included	Proposed
Compensation	not included	not included	Included	Partially
Personalized tickets / e-ticket	not included	included	Included	Referred-to
Extended prebooking time	not included	not included	Included	Included
Reservation fees	not included	not included	Included	Referred to (e.g. NeTEx)
Search booking	not included	not included	Included	Not included
Seat change	not included	not included	Included	Included
Release of a booking (cancellation of a booking by a third party with a second step to refund the money) Refund conditions of the time of release apply.	not included	not included	Included	Included

Table 4 - Product matrix

Covered rail products	Covered in A.1	Covered in A.2	Covered in B.1 (OSDM)	Covered in B.2 (OMSA)
Reservation of places (seats, berths, car carriage)	included	included	Included	Included
Reservation including a ticket for the train (admission with mandatory reservation, IRT)	included	included	Included	Included
Reservation including a supplement for the train	included	included	Included	Included
Train bound tickets (tickets linked to a specific train on a part of the route) (admission)	not included	not included	Included	Included
Passes (admission)	not included	not included	Included	Included (purchase products, cards)
Ancillaries	Meals can be included	Meals can be included	Included	Included
Reduced tickets (reduction cards, ..)	Included with limits	Included with limits	Included	Included
Bicycles reservation	included	included	Included	Included

5 Bibliography

Please refer to Section B.3.