

# TAP TSI

Telematics Applications for Passenger Services  
Technical Specifications for Interoperability



## Annex

Additional Project Team material  
initially intended for the extended  
SteCo session on 24 April



# Contents

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- RU/ IM: Phase One results and suggested way forward
  - Retail Specifications: Implementation Guides
  - Full-Service Model: Status update and suggested way forward

## Items covered in the following RU/ IM slides

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- Phase One deliverables and documents
- Alignment with TAF TSI
- Content of Implementation Guide
- Change Requests
- Common Elements
- Train Identification
- Request for SteCo approval of RU/ IM specific work post-May
- Request for SteCo approval of RU/ IM organisation in transition phase

# What was required – how do we deliver

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## List of deliverables

### Required content

Summary of ops. Mgt. systems issues and opportunities

Summary of options by TAF

System design and architecture

Process definition for reference files and quality management

Governance

Revised B.30 and Change Requests (CR)

### Deliverable containing the required content

Legacy Report (already delivered)

Overall Implementation Guide

Overall Implementation Guide (project plan and SLO for central functions not needed due to no change to TAF elements)

Overall Implementation Guide

Overall Implementation Guide (Functional RU/ IM part only)

XSD, Index of Code Lists and CR documents, annexed to Final Report

# Extensive collaboration with TAF to align the work and create the results

## TAP/ TAF alignment

### Expert Groups

#### **TAP EGs were staffed with**

- TAF WG Leaders
- Some experts participating both in TAF and TAP

### Alignment Meetings

#### **Dedicated Alignment meetings per function with**

- TAF WG and TAP EG Leader
- TAF Deployment Team
- RU/ IM Work stream leader

### Results

- Joint Message catalogue (most changes in TAF CCM)
- Joint Implementation Guide

# The main deliverable is a combined TAF and TAP RU/ IM message catalogue and Implementation Guide

## Main results of RU/ IM Work Stream

### Messages

- Combined TAF and TAP messages
  - Some extra-parts in TAP messages e.g. commercial traffic type, services on the train in Path Request
  - New for TAP only: Change of Track and Train Journey Modification
  - Messages are based on one message per train

### Implementation Guide

- Combined document for TAF and TAP and all RU/ IM content
- Showing common and differences for freight and passenger
  - Including architecture, prerequisites, processes, message and code lists description, use scenarios, functional governance
  - excluding Train Identification and Reference CI Specification PRR.

The current draft of the overall RU/ IM Implementation Guide is available on the extranet at [.../TAP TSI/RU\\_IM Expert Groups/All RU\\_IM EGs/RU IM Implementation Guide and Annexes](#)

# How the IG looks like – structure and example of TAF and TAP difference

## 2. Table of Contents

1. Document History.....
2. Table of Contents.....
3. Management Summary.....
4. Who should read what.....
Part A - Prerequisites.....
5. Background & Purpose of this Implementation Guide.....
6. RU/IM Architecture.....
7. End-to-End Processes (High level overview of the processes).....
8. Use of identifiers.....
9. Reference Data.....
10. Code Lists.....
11. Message Header for RU/IM.....
Part B - Planning of Trains.....
12. Short Term Path Request.....
Part C - Operation of Trains.....
13. Train Preparation.....
14. Train Running Information and Forecast.....
15. Service Disruption/Train Running Interrupted.....
16. Change of Track/Platform.....
17. Train Journey Modified.....
18. Delay Cause.....
19. Passengers information in station area and vehicle area.....
20. Train Location.....
Part D - Overall requirements.....
21. General remarks.....
22. Data quality.....
23. Functional Governance.....
24. Glossary.....
25. List of Appendices.....

## 16. Change of Track/Platform

<b>TAP TSI only</b> The section hereunder is relevant for TAP TSI only and has no impact on TAF.	<b>TAF TSI only</b> This section hereunder is relevant for TAF TSI only and has no impact on TAP.
<p>This message is needed to enable the Station Manager to fulfil passenger information requirements according to TAP BP 4.2.12. The SM shall inform the passenger about changes of track for train services. The information needs to be delivered to the SM.</p> <p><b>16.1 – Process triggering the message</b></p> <p>In case a train service shall not arrive or depart on the originally planned track/platform, the IM has to inform the RU and the SM (directly or via the RU) in due time before the arrival of a train (or before the departure at origin) for passengers information in station.</p> <p>Beside local agreement, the following message can also be optionally used.</p> <p>This message concerns the relevant information for passengers in stations, where to board a train. According to local circumstances, this is a track in platform (track adjacent to a platform) or a platform itself<sup>24</sup>. It does not cover the information on any other tracks on route of the running train.</p> <p>If the platform number is different to the track number the unique reference (track number) shall be used.</p>	[Not applicable.]

# To formalise the results, a number of Change Requests will be delivered for the Technical Documents and the Regulation's main text

Change Requests produced by RU/ IM

## CRs to Technical Docs

- B.8 to have mandatory company codes for specific actors
- B.9 to accommodate location codes as described in TAF and TAP
- B.30 to be updated with current new revised message catalogue, aligned with TAF; this includes new messages for
  - Train Journey Modification
  - Change of Track

## CRs to Main Text

- Correct error in BP 4.2.16 on storage of service disruption (store train running information instead) for Passenger Rights handling.
- Adapt glossary items (correction of errors and adding new terms)

→ Details will be explained in final report



# Common Elements can be used from/ together with the TAF community, when organisational questions are clarified with TAF

## Elements TAF & TAP

- Reference database is valid for both TAF and TAP RU/ IM  
→ No change required for RU/ IM
- External specifications of Common Interface
- Needed and awaited from CCG for summer 2012
- Leads to mandatory work for EG3 (and TAF WG1)

## Terms & Conditions

- Terms and conditions for the Common Repository Domain (location database<sup>1</sup>) are to be procured by future entity.
- CCG Common Interface is a possibility for individual RUs/ IMs, but terms and conditions still pending (not an issue for the Phase One project or the legislation, but for facilitating companies' individual plans)

→ No other common element /central component is necessary for implementation

1) The location database has been developed for TAF by CCG. It would fulfil the requirements for the common TAF and TAP location database.

# Train IDs have been analysed by TAP Experts and need to be worked on further before implementation (for TAP and TAF)

## Train Identification Issues and Options

### TrID Shortcomings<sup>1</sup>

- No identification of referenced train (see March Report for examples)
- Coach group ID
- Clear rules for variants



### Options

- Use of Reference Train Number (RTN) as in UIC leaflet 407; already possible in messages and described for transition period in Implementation Guide
  - this is already available
- **Possible future options tbd**
  - Continue using RTN
  - Remodel RTN to be used as Reference Train Identifier
  - Remodel Train ID to cover passenger needs
- Future work by common TAF/ TAP group required

→ Identification of trains can initially be done with existing IDs like train numbers and reference train numbers. Implementation of TrID should not be recommended before above shortcomings are clarified.

1) Identified by TAP Experts in the Train ID training session

# Some future work in RU/ IM required, both mandatory work to fulfil the regulation and to useful work to fulfil stakeholder requirements

TAF & TAP  
SteCos are  
asked to  
support this  
proposal

## Regulatory work

- Verify the external specifications of the CCG CI (foreseen to be available in summer 2012). Relevant for TAF and TAP
- Clarify stakeholder questions on deliverables
- Check/enhance messages for Short Term Path Request for
  - Annual Path Requests
  - One Stop Shops
  - Coach Group (through coaches)
- Code list maintenance

## Further recommended

- Create a wagon order message for passenger information
  - This is relevant for TAP only
- Enhance work on Train Identification (see also previous slide)
  - Create technical messages needed for TAF and TAP
  - to accommodate passenger specific requirements

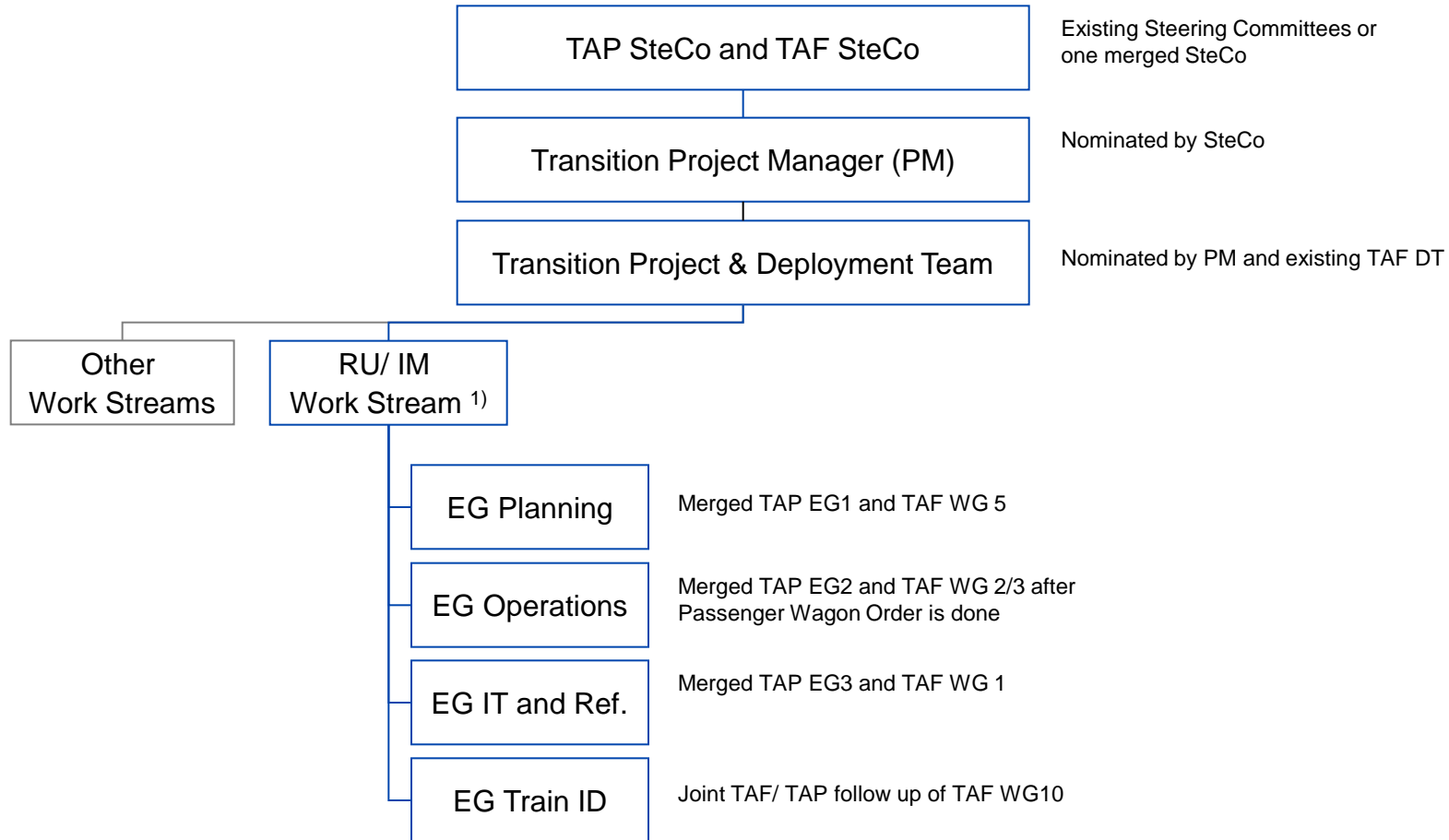
**Most points are valid for  
both TAF and TAP**

A common TAP and TAF RU/ IM organisation is helpful and suggested

# Before the future governance entity is in place, the work of TAF and TAP RU/ IM should be merged into a simple structure

TAF & TAP SteCos are asked to support this proposal

## Structure for transition phase, focus on RU/ IM (TAP Phase One team proposal)



1) RU EGs can be transferred into RU/ IM SMG of perpetual governance entity

# Contents

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- RU/ IM: Phase One results and suggested way forward
- Retail Specifications: Implementation Guides
- Full-Service Model: Status update and suggested way forward

## There will be a set of IGs to help actors comply with the TAP TSI

Implementation Guide	Addressed BPs	Addressed TDs
Schedules / Timetables	4.2.1	B.4
Tariffs / Fares	4.2.2	B.1, B.2, B.3
Reservation	4.2.7, 8, 9	B.5
Direct Fulfilment	4.2.11	B.6
Indirect Fulfilment	4.2.11	B.7
PRM Assistance Booking	4.2.6	B.10

There will be in addition an “Implementation Guides Overview” providing the reader with a general understanding of all documents and procedures relative to TAP TSI

# The IGs present a uniform structure

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All IGs have a common structure:

- Chapters 1 - 4: Document info (changes log, table of content, background documents, etc.)
- Chapter 5: Actors involved and their interaction, rights and obligations
- Chapter 6: Content of data/ messages, explanations on unclear points in the corresponding TDs or indications on how to apply them
- Chapter 7: Processes (how / when make available the data or send the messages according to the TAP)
- Chapter 8: Info on current situation (what the sector currently does to manage the same operations, i.e. exchanging data or messages)
- Chapter 9: Data quality requirements, reference to retail architecture
- Chapter 10: How new actors can make best use of the TAP TSI, reference to governance
- Appendices (glossary, operations flow charts, XML messages etc.)

# The IGs zoom in into what the actors must implement (1)

The IGs go to a deep level of technical detail, depending on the nature of the concerned information.

E.g. for reservation messages the prescriptions are at the bit level ...

Byte	hex display	ASCII display
0000	30 31 30 30 30 00 00 00 00 35 34 38 30 30 30 39 33	01000...54800093
0011	31 32 37 31 31 33 30 30 30 30 31 30 30 30 30 30 30	12711300001000000
0022	30 30 31 30 30 30 22 80 00 00 30 33 30 30 31 34 34	001000"_.0300144
0033	35 20 20 31 30 31 30 30 32 30 30 30 30 30 30 30	5 10100200000000
0044	30 32 30 30 35 34 36 30 31 31 30 35 31 39 37 30 32	02005460110519702
0055	30 34 44 45	04DE

The grey shows the Identity + Version code, and is the start of a phrase.

The sections (...) and ("\_..") are topographical labels.

The header phrase (2.2 of TD B.5) is marked in green.

The prefix is marked in yellow.

The Application text is the string not highlighted

The hex display in the middle is the hexadecimal representation of the message, which helps to see the real value of the topographical labels. The value 22 80 00 00 (in magenta) for the second topographical label corresponds to the bit sequence 0010 0010 1000 0000 0000 0000 0000 0000 and indicates that the 3<sup>rd</sup>, 7<sup>th</sup> and 9<sup>th</sup> optional elements in this application text are present, as in the example above.

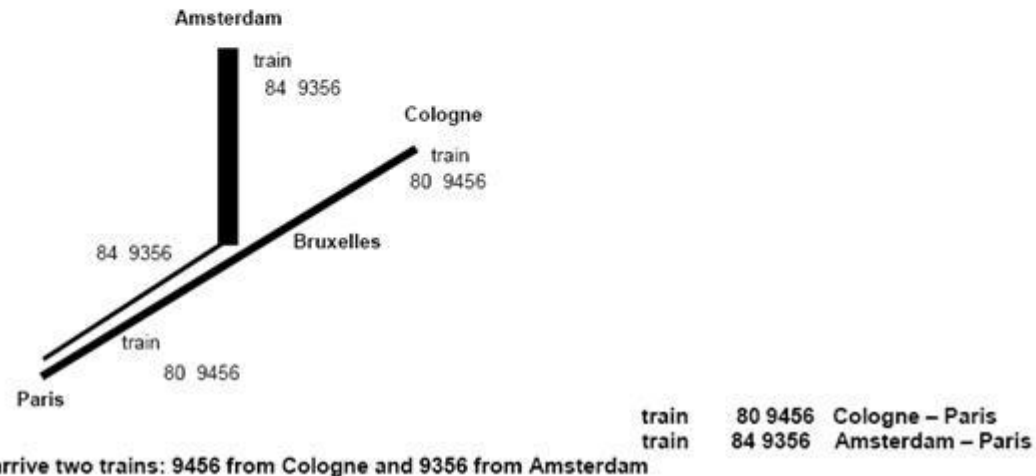


# The IGs zoom in into what the actors must implement (2)

... and for timetable data many examples show how to format the EDIFACT messages according to TD B.4

## 6.3.2.2 Joining to

Facts / situation	EDIFACT
train (37) 9356 from NS (84)	PRD+9356:::37+1184'
days of operation	POP+273:2003-12-15/2003-12-20::111101'
start station: Amsterdam	POR+8400058+*1656'
stop at Bruxelles	POR+8814001+1935*1943'
joins (8) train 80 9456	RFR+AUE:9456:::1080
to go together	RLS+13+8'
to Paris	POR+8727100+2105'



# The IGs incorporate expert knowledge from various perspectives

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- The IGs are being written with the active participation of experts from the Railway Undertakings and Ticket Vendors
- 44 representatives of RUs and TVs have been nominated as experts for the timetables group, 45 for the tariffs, 46 for the reservation and 41 for the fulfilment
- ERA officers are also taking part in the meetings and offering helpful advise and contributions, making recommendations what should be modified/ added/ eliminated
- The draft IGs have been steadily updated, ensuring alignment with the other Work Streams (architecture, governance, RU/ IM) as they evolve
- Every new draft release has been published on the project extranet for comments of experts not present at the meetings
- Change proposals can be taken into account until 6 May, by when the books will be closed for final review and editing

# The IGs will have to be maintained after Phase One

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- In the TAP Phases Two and Three the IGs will have to undergo an ongoing alignment with the other documents, in agreement especially with the results of the procurement activity of the governance body
- This will concern in particular the specifications on how to interact with the Central Resources Registry, the Data Quality Management Tool and the Retail Reference Database
- Updates will also be needed depending on possible acceptance of some CCM Change Requests (a few CRs propose deep changes in the Technical Documents)
- The very technical nature of the IGs and the fact that their content can rapidly evolve with technological advancement suggest that they should be kept at the level of operating specifications managed by the TAP governance body, and not considered legal documents subject to the time consuming process of CCM

# Contents

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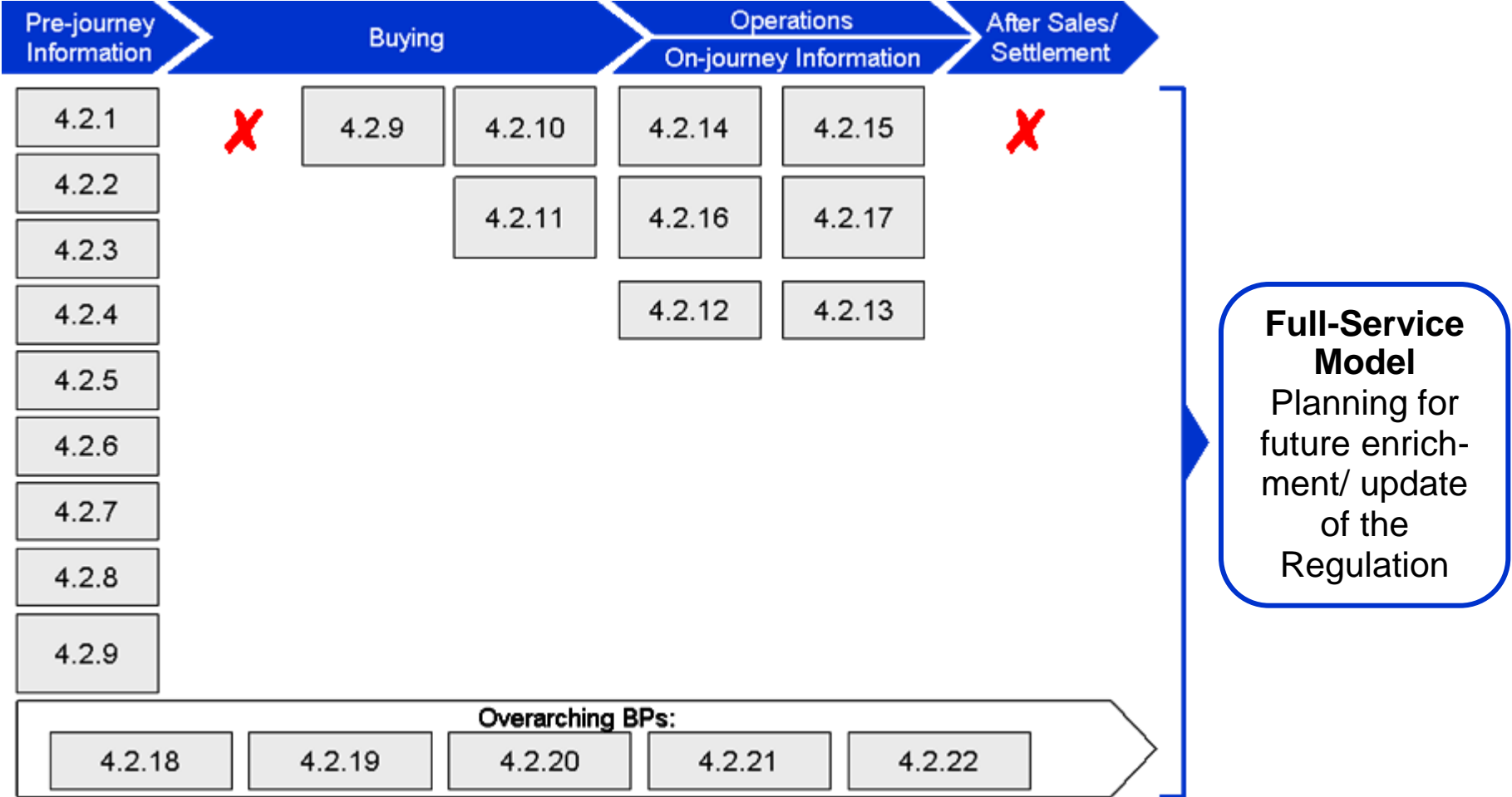
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# Background

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- Why do we need the Full Service Model (FSM)?
  - From the start it was clear that the TAP TSI regulation does not address all the stages of the end-to-end value chain for the European traveller
  - The Regulation will create the starting points
  - The FSM was conceived to identify the gaps remaining and to propose a way forward
  
- Identifying the gaps in the Regulation, FSM
  - started by mapping all the stages of the value chain
  - identified the requirements from the point of view of the traveller, the TVs and the RUs
  - compared these with the findings of the working groups to identify the gaps
  - prioritised the gaps

# Functional scope: The project covers most of the Basic Parameters (BPs) of Chapter 4 and also addresses gaps towards a full-service model



✗ = Indicative/ sample gaps, i.e. areas not addressed in 454/2011

Note: RU implementation of BPs 4.2.4, 4.2.5, 4.2.6.1, 4.2.7.1, 4.2.8.1 and 4.2.13 not covered by project

# FSM has generated impressive collaboration between RUs and TVs

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- TVs first had to develop a way of working together that had not existed before
- TVs and RUs had to learn to work together and agree methodologies to address the complex task of generating the wide scope of requirements
- FSM was formed with 39 members
  - 17 RU delegates + 22 TV delegates
  - Average attendance at monthly meetings 16 to 20 persons
- 4 sub groups were created to develop the FSM
  - Weekly teleconferences and meetings
  - RUs and TVs working closely together

# Mapping the requirements of Travellers, TVs and RUs against each stage of the value chain

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## **Traveller Stages**

1. Pre purchase customer information & decision support
2. Look - Timetables
3. Look - Fares and auto price
4. Purchase/Book
5. Ticket Fulfilment
6. Payment
7. Post-purchase customer support
8. Pre-journey information (delays, cancellations etc.)
9. In-journey customer information & support
10. Post-journey customer support

## **Enablement Stages**

1. Pre cursors for TVs and RUs
2. Settlement process
3. Back office activities
4. Supplier sales reporting / MI



# An example of a single linked set of requirements

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## Traveller Requirement

- *I want to be able to book multiple legs of a journey on multiple carriers in one shot.*

## TV Requirement

- *I need to rely on a 'provisional' reservation which will block a place which I can confirm once I have successfully blocked/ booked all the other legs of the customers desired trip. Should the booking of another leg fail, I would need to cancel (or NOT confirm) any other provisionally booked legs.*

## RU Requirement

- *I need to be able to accommodate the request within a reasonable time without blocking inventory until it is too late to resell if not confirmed.*

264 linked sets of requirements have been identified and are being prioritised and evaluated as part of the Gap Analysis

# Outline of deliverables from the TAP TSI Phase One in May 2012

- The FSM Work Stream has established a comprehensive analysis of requirements for a customer-centric rail distribution model:
  - The passenger perspective: user requirements before, during and after a journey
  - The TV perspective: business requirements to service passengers
  - The RU perspective: additional requirements to enable RUs for a customer-centric model
- The requirements analysis matrix captures several dimensions:
  - Discussion and commentary from RUs and TVs
  - A prioritisation for the entire list agreed between RUs and TVs (“MOSCOW” approach)
  - A gap analysis in relation to what TAP TSI delivers from Phase One to outline whether the requirement can be met, or what needs to be added to do so
- Formal phase 1 deliverables:
  - A requirements definition document of all requirements identified in the gap analysis and agreed as top priority
    - This is a first step to capture the complexity involved in FSM and provides a clear description and structure to serve as a basis for a future TV-RU collaboration
  - A forward plan for continuation of the development of the FSM specifications

# Full Service Model: The way beyond TAP TSI Phase One

- The FSM Work Stream has made considerable progress dealing with significant complexity and a large scope
- Ending the collaboration with Phase One would potentially curtail an opportunity for the rail sector and TVs to identify a commercially viable and innovative distribution framework for European consumers
- **Proposal** - to extend the FSM work and collaboration beyond Phase One:
  - Establish a committed working party between TVs and RUs
  - Intention: to expand the requirements definition into a specification document covering functional and non-functional aspects of the FSM
  - The outcome of the collaboration would be a guidance framework for stakeholders who intend to build out rail distribution in a deregulated and increasingly competitive industry environment
- Proposed next steps:
  - TVs (ETTSA/ ECTAA) to establish formal dialogue with interested RUs, facilitated by CER in the current project framework
  - Identify and address the necessary pre-cursors to underpin continued work on FSM