Full Service Model Initiative

February 2017
Agenda

1. What FSM is about
2. How FSM works in detail
3. How to get started with FSM
Market needs for one-stop-shop distribution services: Customers expect easy and seamless travel solutions

- Customers expect simple solutions for traveling

- Rise of digital services increases expectations towards travel and distribution service providers

- Ultimate goal: seamless travel solutions

⇒ Cooperation between travel and distribution service providers is necessary
In recent years market demands have driven increasing numbers of interconnections in railway distribution with a variety of solutions ...

Historically, the national railways defined the national standards
- Distribution was organised by the respective national railway or its distribution partners on a national level
- These starting conditions are still inherent in many of today’s systems and processes. These are working well within the initial context ...

... but:
- Lack of enough multi-carrier offers/ bookings
- Seamless sales process not covered (info/ offer/ booking/ settlement, etc.)
To overcome those diverse proprietary solutions a group of railways and distribution service providers initiated Full Service Modell

Full Service Model (FSM)

... is an Industry Initiative founded in 2013 aiming at developing an Open IT Specification

... enables B2B data exchange along the online distribution value chain

... relies on and goes upon European ticketing and distribution regulation (TAP-TSI)

... complements costly individual bilateral IT-solutions between distributors and rail service provider

... follows a step-wise approach, i.e. it focuses on rail products in the beginning so as to manage complexity

... considers at the same time the context of multi-modality and allows, future enhancements in the direction of other modes of transport
FSM simplifies distribution as it complements diverse individual and bilateral distribution solutions between business partners

What FSM is about

... the goal of FSM is to offer an alternative to the patchwork of individual and bilateral IT-solutions

... FSM provides specifications that can be implemented in every distribution IT-system

... FSM co-exists with other IT-solutions, companies can choose if they want to apply FSM specifications or any other IT-solutions

... FSM can be used for any distribution business model, that is, the content / the offer remains unchanged

FSM functions like a common language - companies can learn it, they can offer or order translation services, and they can continue speaking diverse other languages too
To meet market demands, we need to improve the connectivity in rail distribution

Today’s situation

Heterogenous standards

Challenges

- Complex IT legacy
- No support for seamless multi-carrier offers
- Travel agents need detailed rail distribution expertise in order to provide customers with appropriate offers

Due to a limited use of state-of-the-art IT solutions, international ticket distribution is technically comparatively complex and the resulting cost of sales is high.
FSM approach: provide improved interoperability by specifying standardised B2B IT interfaces

FSM interface specifications

- Innovative basis to interconnect rail distribution systems
- As a result, this will reduce the boundaries of the current ecosystem
- Framework enables maximum choice of business models
- Thus, railways retain control of their own distribution strategies, while customers benefit from improved service and choice
- Business relationship based on commercial agreements
While respecting different business models of companies the objective of FSM is to facilitate journey planning and booking for customers.

- Generic IT framework allows application to and control of various business agreements/rules
- Distributed IT ecosystem based on standardised interfaces
- Supports also alternative business and architecture models, encapsulated by content aggregators
- Decoupled booking, customer payment and fulfilment possible
- Provides for horizontal (i.e. multi-carrier) and vertical (i.e. add-on products) combination logic over all sales channels, including self-served channels

Customers get an easier and faster access to end-to-end journey information as well as ways of booking on a diversity of distribution channels.

*Retailers may have both a direct relationship with the travel service provider or indirect using the service of a distributor.
Example: Multi-carrier distribution calculated on horizontal combination rules which are based on commercial agreements

Customers wants to go from A (Frankfurt) to B (Vienna) and chooses between various booking platforms/ distributors providing competing user interfaces and product ranges (based on bilateral agreements with content providers).

The distributors calculate viable journeys to identify the service providers concerned.*

The service providers send back suitable offers (based on itinerary, actual availabilities of fares/ seats and passengers preferences).

It will be possible to define offers freely combinable (e.g. „Sparpreis+Standard C“) or such dependent on each other (e.g. „Euro-Spar RSP-A +Euro-Spar RSP-B“).

* The Passenger Rights Regulation applies
FSM is based on six key principles

**Collaborative**
17 Partners

**Customer-focused**
One-Stop-Shops: access to best value for money offering

**Interoperable**
Web connectivity of existing distribution processes

**Exhaustive**
Complete distribution value chain and ultimately multi-modal

**Business-neutral**
Agnostic to diversity of business models across Europe

**Open**
"Plug-and-play" IT standards
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FSM specifies an online interface between rail distribution players to improve customer access to rail tickets.
**FSM defines how to communicate during all distribution processes...**

<table>
<thead>
<tr>
<th>Reference Data</th>
<th>Journey Planning</th>
<th>Offer</th>
<th>Booking</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Consistent description of infrastructure, transport services, etc.</td>
<td>▪ First step leading to a list of Itineraries and/or Journeys</td>
<td>▪ Describes the interactions between a Distributor and one or several Rail Service Providers</td>
<td>▪ Booking ensures that distributed transactions are executed consistently and completely</td>
</tr>
<tr>
<td>▪ Reference Data enables consistent and uniform Journey and Passenger data</td>
<td>▪ Calculates list of Segments including Stop Places and Vehicles</td>
<td>▪ Consists of ‘Build Request Offer’, ‘Create Offer’ and ‘Create Total Offer’</td>
<td>▪ Abstracts from specifics of Products or contractual obligations</td>
</tr>
<tr>
<td>▪ FSM will enable the emergence of a competitive market of journey planning applications</td>
<td>▪ FSM will enable the emergence of a competitive market of journey planning applications</td>
<td>▪ Consists of ‘Book Offer’, ‘Revoke Offer’, ‘Preliminary Book Offer’</td>
<td></td>
</tr>
</tbody>
</table>

*Note: capital letters indicate defined FSM concepts*
... and FSM addresses several supporting process steps for which there are no multilateral solutions yet

### Payment
- The handling of customer payment is fully decoupled from rail service providers
- Main modes of payment are credit card, mobile device, settlement of invoice and cash
- No assumption on when the payment occurs

### Fulfilment
- Fulfilment is about issuing and handing over a Ticket
- It ensures the materialisation of a contract between the Passenger and the Carrier
- Link to Booking ensured by Offer data and status of booking operation

### After Sales
- After booking operations (e.g. cancel, refund, upgrade, exchange)
- Online operations reusing the booking components
- Pre- and in-journey information services on basis of customer profiles

### Revenue Protection
- Check the validity of a passenger’s ticket, protecting the revenues
- A fully interoperable online process could be implemented by members
- Independent from the method of fulfilment

### Back Office
- Consists of Accounting and Settlement
- Invoice-based accounting of individual services is foreseen
- A booking may directly start accounting procedures
- Process independent on customer payment and ticket issuing

Note: capital letters indicate defined FSM concepts
FSM covers the business processes between all players interacting to satisfy the needs of the customers.

FSM process view

<table>
<thead>
<tr>
<th>Customer</th>
<th>Distributors</th>
<th>Rail Service Providers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Itinerary</td>
<td>European Time Table</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reference Data</td>
</tr>
<tr>
<td></td>
<td>Offers creation</td>
<td>RSP-A</td>
</tr>
<tr>
<td></td>
<td>Request Offers</td>
<td>RSP-B</td>
</tr>
<tr>
<td></td>
<td>Combine Offers</td>
<td>RSP-C</td>
</tr>
<tr>
<td></td>
<td>Offer updates and selection</td>
<td>Request customer information</td>
</tr>
<tr>
<td></td>
<td></td>
<td>RSP-A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Book Offer</td>
</tr>
</tbody>
</table>

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At design level the workflows and activities provide a common model of both computational and organisational processes.

- The activity diagram provides an overview on the sales process:
  - **Shopping** consisting of journey planning and offering
  - **Booking**
  - **Customer payment**
  - **Fulfilment**

- The most complex process is offering:
  - **User profile**
  - **Subscribed services**
  - **Price indication and forecast**
  - **Cache of offers**
  - **Creation, completion and adjustment of offers**
FSM provides business neutral xml-messages enabling the data exchange between distributors and rail companies.

**Examples**

**Offering: 1 Passenger – 2 Segments**

**Distributor Request:**

- SEG 1: Stockholm -> Jönköping
- SEG 2: Jönköping -> Göteborg

**RSP Result:**

- BOOKING
- CSI 1
- PAX 1: John Doe

### Simplified XML

Offer Request Oring Response

```xml
<rsp.offering.messages:OfferingParameters>
  <offering:itinerary id="xml_id_itinerary_01" DIST_ID="DIST_111_01">
    <journeyplan:ServiceTypeID>XXX-TRAIN</journeyplan:ServiceTypeID>
    <journeyplan:Segment id="xml_id_segment_01" DIST_ID="DIST_111">
      <journeyplan:ServiceModeId>XXX-DAILY_REGULAR_SERVICE</journeyplan:ServiceModeId>
      <journeyplan:RouteTypeID>XXX-SINGLE_TRAIN</journeyplan:RouteTypeID>
      <journeyplan:TrainPathTypeID>XXX-HIGH_SPEED</journeyplan:TrainPathTypeID>
    </journeyplan:Segment>
    <journeyplan:ServiceAvailabilityId>XXX-DAY_TIME</journeyplan:ServiceAvailabilityId>
    <journeyplan:Origin StopPlaceTypeID="XXX-RAILSTATION" StopPName="Stockholm Centralstation" IsBorderPoint="false" BorderP">
      <infrastructure:ScheduledStopPoint ScheduledStopPointId="XXX" INFRAstructure:ArrivalTime="2001-12-31T12:00:00">infra</infrastructure:ScheduledStopPoint>
      <infrastructure:CheckInTime="2001-12-31T12:00:00">infra</infrastructure:CheckInTime>
      <infrastructure:CloseOfBoarding="2001-12-31T12:00:00">infra</infrastructure:CloseOfBoarding>
      <infrastructure:EffectiveDeparture="2001-12-31T12:00:00">infra</infrastructure:EffectiveDeparture>
      <infrastructure:GeoPoint SRSName="WGS84" Longitude="11">infra</infrastructure:GeoPoint>
    </journeyplan:Origin>
</rsp.offering.messages:OfferingParameters>
```

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Full Service Model Initiative

18
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For implementation issues you can draw on a wide arrange of deliverables:

- Business and functional requirements
- UML-Diagrams
- Specifications
- XSDs

Interface Specification

Offering and Booking

```xml
<xs:schema targetNamespace="http://www.w3.org/2001/XMLSchema"
  xmlns:xs="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified" refAttributes="true">

  <xs:element name="personne">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="nom" type="xs:string" />
        <xs:element name="prenom" type="xs:string" />
        <xs:element name="date_naissance" type="xs:date" />
        <xs:element name="etablissement" type="xs:string" />
        <xs:element name="num_tel" type="xs:string" />
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:schema>
```
The FSM deliverables are online available for download

- The FSM deliverables can be found on the following URL-address: tsga.eu/fsm
- To download the documents please get registered
- For questions regarding the FSM initiative and the implementation of FSM please contact: fsm@tsga.eu
- The FSM initiative will set-up a process for change requests. With your registration you get automatically informed on any relevant information on FSM
FSM has been initiated by the following companies and been supported by a variety of institutions

FSM Team

FSM Members

Advisors¹

• DG MOVE
• ERA
• EPF
• UITP
• EPTO
• UIC
• IATA
• Hit Rail
• EuRail

FSM Sounding Board²

¹) ETTSA (European Technology & Travel Services Association), ECTAA (European Travel Agents’ and Tour Operators’ Associations)
²) Members of the TAP TSI Steering Committee plus representatives of other modes of transport