

Co-Active

D3.1 – WP3 Business and Contractual Management CREL Ontology

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EXECUTIVE SUMMARY

Conceptually, the Co-Active project addresses the general enrichment of the 'one-stop-shop' capability as initiated in the IT2Rail project and further completes the scope of functionality by addressing post-sale business transactions, and an underlying payment-settlement solution for co-modally retailed products and services.

The Co-Active project is broken down into several Work Packages (WPs). The present document belongs to work package number 3 (WP3), Business and Contractual Management.

The travel and transport industry involves today many business players including but not limited to companies in charge of the retail of product and services, to companies delivering the transport service, to transport authorities in charge of the regulation of the transport and to the end-customer (either individual or corporate customer). The objective, and this is already the trend of the market, is a move to the collaborative delivery and consumption of transport services rather than individual ownership and independent key players. Furthermore, the new breed of multimodal and co-modal travellers leads to a growing collaboration of the transport industry actors

The cooperation between those actors is based on many contractual arrangements that include especially bi-lateral or multi-lateral agreements.

The purpose of the WP3 is a general analysis of these contractual arrangements in the perspective of the collaboration of the business players through the Shift2Rail IP4 'one-stop-shop' capability.

There is no intention to redefine or alter the existing business models and business rules on which the collaboration of the business players is based but rather to identify the conditions under which the IP4 Regulatory Framework will support their management.

The WP3 work package includes the following deliverables:

- D3.1. CREL Ontology.
- D3.2. CREL Specifications.
- D3.3. FREL Ontology.
- D3.4. FREL Specifications.

This document, WP3 D3.1 Core Release Ontology, is focused on the identification of the roles of the business players in the perspective of the S2R-IP4 ecosystem and the definition of the concepts required for describing and semantically annotating the data that will support the regulatory framework. This ontology is based on the elements captured in the analysis conducted in document D3.2

Note that the governance of the S2R-IP4 Interoperability Framework (IF) managed in the GoF4R project may participate in the review of the WP3 ontology.



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Grant Agreement No. 730846



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1. INTRODUCTION

The travel and transport industry involves today many business players including but not limited to companies in charge of the retail of product and services, to companies delivering the transport service, to transport authorities in charge of the regulation of the transport and to the end-customer (either individual or corporate customer).

Within this context, Co-Active WP3 work package is dedicated to a general analysis of the contractual arrangements in the perspective of the collaboration of the business players through the Shift2Rail IP4 'one-stop-shop' capability.

The WP3 specification (refer to document D3.2) is focused on the analysis on the most common business agreement in the passenger transport industry and the analysis of their impact on the S2R-IP4 ecosystem. The elements and concepts captured during this analysis are listed in the present document.

This document is structured as follows:

- Chapter 1 and 2 are general introductions.
- Chapter 3 is a reminder of the S2R general glossary.
- Chapter 4 details the terms used to qualify the roles of the business players along the WP3 deliverables and highlight the relations between those business players.
- Chapter 5 is focused on the definition of the concepts required to describe and semantically annotate the data that will support the technical workflows that will choreography the business agreement in the ecosystem.

REFERENCED DOCUMENTS

Reference Number	Title	Revision	Date
H2020-S2RJU-2015-01/H2020-S2RJU-CFM-2015-01-1	Shift2Rail-IP4: Co-Active Grant Agreement N° 730846	N.A	08/08/16
Shift2Rail Glossary	Shift2Rail Glossary	0.5	12/02/2018

Table 1: Referenced Documents



Grant Agreement No. 730846



GLOSSARY

Refer to Shift2Rail Glossary (2nd document referred above).

BUSINESS PLAYERS

IDENTIFICATION

This table lists the terms used to qualify the roles of the business players along the WP3 deliverables. Note that they are also referenced in the Shift2Rail Glossary.

Role	Description
Customer	Role of a Person who makes the payment for an offer and is a party (a person or an organization) to a contractual agreement concluded with a Travel Service Provider. The Customer buys offer(s) in the name of and for the benefit of Passenger(s). The Customer (a person) may also have the Passenger role. The customer may be an individual or an organization (corporate customer).
Distributor	This actor is distributing the Travel Service Provider transport products and services to Retailers for the purposes of shopping, booking and Ticket Sales.
IF Operator	Interoperability Framework operator. The company(ies) in charge of the IF operation. In a Production environment, the companies may be funded by many different means including charges to Eco-system members, but may also receive Government subsidies from Transport Ministries: the configuration of the funding is part of the work of the GOF4R project which is developing the models for Interoperability Framework Governance A Composite or leading company, IF Authority may represent many of the several companies operating the framework, for Governance Purposes.
IF Authority	Company leading the operation of the IF.
Issuer	An organization issuing Entitlement, Token and Embodiment Token and Embodiment issuing managed by the TSP. Entitlement issuing may be managed by the retailer, even if authorised by the TSP.
Merchant	Wholesaler or retailer who may buy goods from any or all sources for resale to anyone and everyone for profit. This actor is receiving the payment in a transportation sale. It may or may not be in charge of the payment apportionment. Difference with Distributor and retailer is the following: <ul style="list-style-type: none"> • A Distributor does not sell transport (only a distribution service, to a TSP, or IT services to Retailers). • A Retailer may sell transport services on behalf of a TSP without receiving payment from the Customer (the Customer Credit Card gets approval on behalf of the TSP Merchant ID) in which case the TSP credits the Retailer with Commission; or, may, as a



	Merchant Retailer take payment directly from the traveller/customer, and then apportion or redistribute the payment (minus any commission earned) to the TSP(s) who's products/services have been sold.
Passenger	The person actually traveling the Itinerary when he/she is transported (on-board a vehicle).
Payment Service Provider	This actor has a qualified financial status (recognised by Bank Card entities such as Visa and MasterCard) and may be used by Retailers to obtain payment from the Customer for the travel entitlements s/he wishes to purchase.
Retailer	<p>This actor is helping to provide the customer with Offers for the products and services he or she may require for his or her Travel Requirements. The aim is to make a sale of such products/services if selected by the customer.</p> <p>A retailer may have a direct link with some TSP's own reservation/distribution systems.</p> <p>A Retailer may be the provider and operator of a Travel Companion, since it helps to cement loyalty to its Retailing Services amongst its customers. However it is not obliged to. In the case it does not provide a Travel Companion, it either has a direct Interface with the Customer on a standard web site or mobile web site, or it can deal with inputs from a Travel Companion produced by someone else who is able to implement the retailer web services (if the Retailer has any!).</p> <p>The retailer manages the TCW (TC Wallet).</p>
Service Provider	Role of an Organization offering Service(s), especially but not exclusively on transportation.
Ticket Controlling Organization (TCO)	A Ticket Controlling Organization is any organization charged with inspection of passengers' tickets. Managed by TSO, TSP companies.
Transport Service Provider (TSP)	This actor is offering the customer its fare products for purchase (Travel Shopping and Booking and Ticketing). It also provides the travel service corresponding to the fare product (Booking and Ticketing, Trip Tracker & Business Analytics).
Travel Companion Provider (TC Provider)	<p>The TC might be provided by a TC provider which does not Retailer, but which implements the TC, and which must implement each Retailer's choice of: Travel Shopper, Booking and Ticketing Orchestrator, After Sales Orchestrator, and any Sales Reporting and Financial Reconciliation Services, according to the IP4 ecosystem specifications.</p> <p>The TC Provider does NOT deliver Travel Shopper or Booking and Ticketing orchestration services, but must implement the choice of TS, BT as chosen by each Retailer</p> <p>The TC provider manages the TCW (TC Wallet). The TC provider when dealing with several retailing entities may manage different instances of</p>

	TCW and segregate the data between the retailing entities.
Travel Service Provider	<p>A Travel Service Provider is a company providing travel services. Travel includes “transport” (on-board vehicles) and possibly services which are not transport but connected to it – either at the beginning or during the travel, like the access to a lounge or trip tracking – or at the end of the trip, like the access to a sky resort.</p> <p>The Travel Service Provider offers the customers its Products (including Fare Products) for purchase (through Travel Shopping and Ticketing). It is also responsible for the travel service corresponding to the purchased offer.</p>
Travel Service Operator (TSO)	The TSO could be named also TOC: “Transport Operating Carrier”, the company running the vehicles used for transport.
Traveller	<p>The Traveller (see also “Passenger” when on-board a vehicle) is the person making a travel in accordance with the terms and conditions of the entitlement(s).</p> <p>Includes individuals and but also groups, families and escorts.</p>

Table 2: Business Players

RELATIONS BETWEEN BUSINESS PLAYERS

The following figure illustrates the relations between business players.

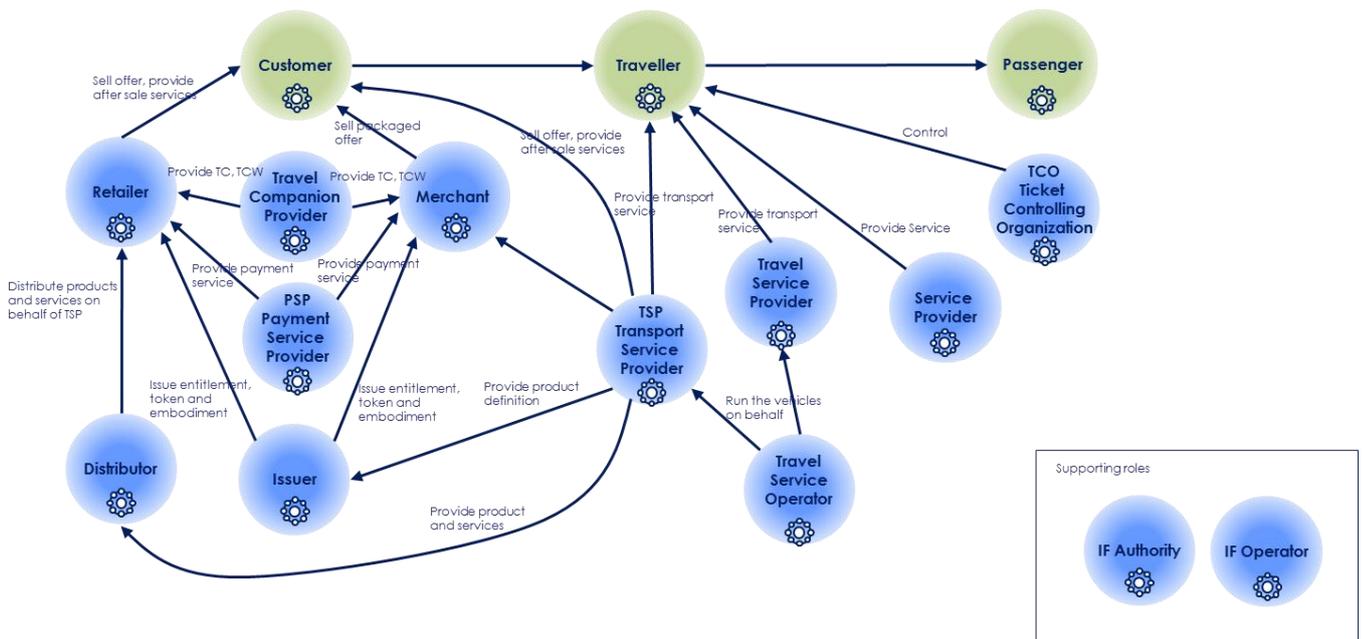


Figure 1: Relations between Business Players

REGULATORY FRAMEWORK CONCEPTS

This chapter is focused on the definition of the concepts required to describe and semantically annotate the data that will support the technical workflows that will choreograph the business agreement in the ecosystem.

Note that the concepts already registered in the S2R glossary are not mentioned here.

Concept	Description
Apportionment Model	Support for Clearing and Settlement workflows. Logic for revenue apportionment, typically percentage, fixed price, distance based, effective price of the travel episode, concession levels...
B2B claim	Support for Claim Management Services in the CMMP. The claim details and status that allows the systems of the plaintiff and the defendant to manage automatically the dispute workflow.
Commission Level	Support for Clearing and Settlement workflows. Definition of commissions between parties, typically percentage, service fees.
Compensation Discount	Related to possible compensations in case of cancellation or delay. Reflects the discount obtained by a customer related to compensation.
Compensation Reason	Related to possible compensations in case of cancellation or delay... Indicates the circumstances which lead to the compensation.
Complaint Period	Passenger should, not later than within a Complaint Period (e.g. two months) from the date on which the journey was taken, submit a claim to Customer Service. Support the customer claim global workflow as it will surely be captured at the retail channel (Travel Companion) and submitted to the convenient Transport Service Provider.
Complaint point of contact	Claim point of contact. Support the customer claim global workflow as it will surely be captured at the retail channel (Travel Companion) and submitted to the convenient Transport Service Provider.
Corporate Agreement	Link between the Corporate Customer and the employees. Enable the management of such a link by the various processes.
Customer consent	Support for GDPR compliant implementation. Recording that customer explicitly agrees with the terms of the Privacy Policy.
Customer Preferred Language	In the S2R-IP4 ecosystem, the interaction with the Customer is largely based on the Travel Companion, the use of sale agencies or voice calls being probably limited to the management of complex customer queries and supported by the Retailer or Transport Service Provider facilities. The concept of Customer Preferred Language shall be registered in the Customer details so that the on line services could be automatically configured, the redirection to service desks could be done by selecting the adequate spoken language, the term and conditions

Concept	Description
	could be made available in the desired language...
Customer Service Details	Within the context of S2R-IP4, a pan-European multi-tenant ecosystem, the task of answering Customer queries seems to be a collaborative work. Typically the Retailer that delivered the Entitlement will not be able to process any queries. Therefore, any Itinerary Offer shall include Customer Service Details data so that the Retailer/Merchant managing the TC channel is able to redirect the queries to the convenient customer service.
Defective Ticket, Altered Ticket and Damaged Ticket	Annotation recorded in the Itinerary Offers and supporting the exchange workflows in case of defective ticket: possibility of the exchange, financial conditions, channel
Disability situation	Proof of eligibility registered (presumably in the Travel Companion Wallet, TCW) and processed by the systems. Document which states the kind and level of disability.
Discount model	Support for Clearing and Settlement workflows. Definition of potential impact on apportionment, typically capping.
Distribution Agreement / Geographic Areas	Retail authorized area part of distribution agreement.
Distribution Agreement / Market	Market authorized for retail part of distribution agreement (typically airport, train station, on street booths network).
Distribution Agreement / Retailer Identity	Retailer details potentially referenced in distribution agreement.
Evaluation Criteria	Integrated in the offers proposed by the Transport Service Providers in order to support the Shopping process. Typical criteria would include: carbon footprint, schedule flexibility, services such as luggage transfer or meal selection, loyalty program, safety, convenience.
Explicit agreement and confirmation	Support for GDPR compliant implementation. Confirmation that the Customer will only enter information about himself and that such information is true.
General Terms and Conditions of Travel	General Terms and Conditions shall be available at purchase time. This is especially critical because with the pan-European perspective, the obligations may differ between the location of the purchase and the location of the travel.
Group Travel detail	Details on traveller group in the perspective of the discount policies and especially the storage at the TCW so that the system can use the details during the workflows.
Incentive	Incentives included in agreements signed by business players when joining the ecosystem. Typically the proposal of reduced operation fees during a given period. The concept of Incentive is added to the

Concept	Description
	annotations of the agreements recorded at the CMMP in order to define the associated details and allow their processing during the Shopping and Ticketing workflows.
Interoperability Structure	In case of an interoperable scheme joining the ecosystem, details of the scheme so that the systems can discover the interoperability cases through dedicated annotations. Interoperability Structure can be introduced for this in the Itinerary Offer Items or in the business rules registered at the CMMP.
Involuntary refund.	Refund associated with circumstances when the Transport Service Provider is unable to deliver the service or to provide the expected level of service (flight or train schedule which leads to unacceptable delay).
Least Product Exchange Date	Concepts present in the Itinerary Offer annotations in order to support the exchange workflows.
Liability for Personal Injury	The term and conditions managed at each Transport Service Provider shall be available to the Customer during the Shopping/Booking/Ticketing processes. The concept of Liability for Personal Injury should be introduced in the semantic data made available as part of the terms and conditions included in the Itinerary Offers.
Lost Property Terms	In the context of S2R-IP4 ecosystem, the concept of Lost Property Terms should be introduced so that the systems and especially the Travel Companion shall be able to process it and assist the Customer in the retrieval of the property.
Lost Ticket, Stolen Ticket and Mislaid Ticket	Annotation recorded in the Itinerary Offers and supporting the exchange workflows when applicable: possibility of the exchange, financial conditions, channels.
Luggage Policy	The conditions related to checked and carry-on baggage shall be made available to the Customer at Shopping and Booking time. Therefore, the concept of Luggage Policy shall be introduced in the Itinerary Offer in order to be processed during the various workflows and to be made available to the Customer.
Method of refund	They are several methods of refunds can be paid such as cash, cheque, credit or debit card, voucher, etc. The refundable amount may be chosen or defined by the customer (preferences) or dictated by the payment means used during the ticket purchase.
Non-Transport-Service	Details of non-transport services available for cross selling and registered at the Contractual Management Market Place (CMMP) in order to be available to retailers during the Shopping and Booking process. The perspective is to offer cross-selling at a global level in the S2R-IP4 ecosystem and hence foster the integration of business players

Concept	Description
	and maximize the value of the delivered interoperability.
Operation model	Support for Clearing and Settlement workflows. Definition of the financing of the IF operation, typically fees charged by the central body in charge of the operation of the Interoperability Framework.
Park and Ride	Details on combination of park and travel in the perspective of the discount policies and especially the storage at the TCW so that the system can use the details during the workflows.
Penalty Fare or Fine amount	Available as part of the general conditions at booking time and later in case of the Customer has been fined in the travel history at the TC.
Penalty Payment Expiry Date	Available as part of the general conditions for potential offender information.
Product Exchange Fee	Concepts present in the Itinerary Offer annotations in order to support the exchange workflows.
Product Exchange Rate	Concepts present in the Itinerary Offer annotations in order to support the exchange workflows.
Product Exchanged Source.	Concepts present in the Itinerary Offer annotations in order to support the exchange workflows.
Proof of Identity	Proof of eligibility registered (presumably in the Travel Companion Wallet, TCW) and processed by the systems. Document such as a passport, Nation ID Card, Driver Licence, Photo.
Property Damage	In order to enable the management of the potential damages to the Customer property across the ecosystem, the concept of Property Damage should be defined. It should especially integrate the nature of the damages and the conditions of compensation that are proposed by the Transport Service Providers.
Refund Expiry	A ticket may not be subject to refund after a specified period following the ticket' validity.
Refund payee	Person to whom refund will be made. The refund is made generally to the person named in the ticket, the company for a corporate customer or the person who paid the ticket.
Refund Payer	By whom ticket will be refunded. Refunds include both who reimburses the client but also the impact of sales amount distributed amongst the business actors.
Refund regulatory	Refunds will be subject to Government laws, rules and regulations or orders of the country in which the ticket was originally purchased and the country in which the refund is being made. Country in which the travel is performed may also be taken into account.
Right to be forgotten.	Support for GDPR compliant implementation. Management customer permission to manage the personal data.

Concept	Description
S2R-IP4 Exchange Rates.	Exchange Rate guaranteed by the S2R-IP4 ecosystem during billing process that will be carried out by the Clearing & Settlement.
Settlement Audit	Support for Clearing and Settlement side reconciliation processes. Audit data produced during the settlement process.
Shared Customer Record	The decision to be a 'global S2R-IP4' customer will be up to the Customer herself/himself and the business players that 'owns' the Customer details (they may not agree on sharing the customer details). The Shared Customer Record details the conditions under which the information can be shared between the business players.
Shared Loyalty Program	Global loyalty program allows a given Customer to bring home 'points' when travelling on any network part of the S2R-IP4 pan-European system. The semantic data would support the accumulation of global loyalty points that could be used by the systems at purchase and travel time.
Tax	Detail of the Taxes that make up the total price to be paid in each Itinerary Offer Item. This information will be available to the Customer and especially included in the receipts. Also available and integrated in the billing transactions so that it can be stored by the convenient party and submitted to the local authority when applicable and as the result of the Clearing and Settlement.
Tax Structure	As the tax structure varies depending on the area and the Service provider defines the details of the tax so that the Travel Experts and the Retailer system can collaborate and interpret the various tax natures and breakdown.
Test Statuses	Support for the framework certification process. The services in the registry are annotated with Test Statuses such as test, preproduction, production so that the certification process can be carried out without breaking anything for either party.
Travel and Event	Details on purchased non-transport events in the perspective of the discount policies and especially the storage at the TCW so that the system can use the details during the workflows.
Travel Conditions and Services	Travel conditions and services proposed by each Transport Service Provider participating to the combined travel shall be available to the Customer at booking time.
Travel Frequency	Details on travel frequency in the perspective of the discount policies and especially the storage at the TCW so that the system can use the details during the workflows.
Travel Units Earned	Details on accumulated travel units in the perspective of the discount policies and especially the storage at the TCW so that the system can use the details during the workflows.

Concept	Description
Traveller/Passenger Obligations	Passenger obligations shall be available at purchase time. This is especially critical because with the pan-European perspective, the obligations may differ between the location of the purchase and the location of the travel.
TSP Settlement Currency	Agreed currency for a settlement to a given TSP that may be part of the Itinerary Offer item or integrated into the body of the Clearing & Settlement.
Voluntary refund	Refund requested by a customer when part of the ticket has not been used.
Welfare	Proof of eligibility registered (presumably in the Travel Companion Wallet, TCW) and processed by the systems. Document which defines aids or discount paid by welfares (e.g. situation related to unemployment).

Table 3: Regulatory Framework Concepts