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BUSINESS REQUIREMENTS SPECIFICATION
(BRS)

INTERNATIONAL FORWARDING AND TRANSPORT MESSAGES

BOOKING

FINAL AFTER PUBLIC REVIEW

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Version: 1.0

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Document History

Phase	Status	Date Last Modified
Draft development	Initial	09-JUL 2020

Figure 1: Booking Document History

Change Log

Date of Change	Version	Summary of Changes
July 2020	0.1	Initial Creation
July 2020	0.2	Following Internal review on call, updating the document to use the BRS template for T&L and to circulate on Cue.
July 2020	0.3	Changes following review feedback.
July 2020	0.4	Preparation for Public Review

Figure 2: Document Change Log

1.0 Preamble

Bookings form an integral part of the 'Buy-Ship-Pay' model where the transportation of goods is not only using available capacity offered by a Transport Service Provider but binds the supply chain together with a Transport Plan. This provides multiple interested parties with the planned movements of a consignment journey from which the delivery of service can be executed and measured.

The Booking process is not a single 'act' but (can) comprise a series of transactions over time between a Transport Service Buyer and the Transport Service Provider.

Today's omni-channel nature of booking processes uses a diverse range of means extending the core of EDI exchanges between a Transport Service Buyer and their Transport Service Provider. The accelerating use of digital channels such as neutral and branded portals, mobility Apps and APIs between buyer/provider platforms/systems, augment booking processes which can also deploy manual/semi-manual methods using voice / telephony with e-mail.

Transport and Logistics over the last two decades has transformed not only with drivers focussed on the eliminating paper and paper-orientated approaches to the business, but the booking process has, in the past, been under-utilized as an instrument to acquire relevant and potentially re-usable consignment data much earlier in the transportation cycle.

New booking models aligned with the provision of advance data for operational planning (e.g. defining a transport plan/route map) used to monitor and track performance supporting a culture of 'delivered as promised', with the omnipresent demand for earlier visibility, scrutiny and assessment of data for trade facilitation and regulatory compliance.

Consequently, this document outlines the key principles of the required Booking interactions necessary to assure fully effective Transport Plans can be executed and delivered, profitably, safely, securely and as promised.

2.0 References

- UN/CEFACT Multi Modal Transport Reference Data Model (UN/CEFACT – SHIP/MMT-RDM)
- UN/CEFACT Buy-Ship-Pay Reference Data Model BSP-RDM Version 1.0 (2019)
- International Forwarding and Transport Version 1.0 BRS of (2008)
- UN/EDIFACT messages (IFTMBF, IFTMBC)
- ITIGG Global Guidelines for the IFTM** P&R messages

3.0 Objective

The objective of this document is to outline the implementation of the Booking Process as applied to the transport movement of a consignment between the Transport Service Buyer and the Transport Service Provider prior to the transport documentation processes completed by the Shipping Instruction and Waybill.

The exchange of data in a standardized format reduces the integration effort between parties and ensures that the necessary data is applied consistently for space allocation and bookings without misinterpretation and is presented in the exact way to adhere to any local, financial, regulatory or business requirement without modification or re-entry.

The provision of the Booking in this way enables the data to be applied to and supplemented with the Shipping Instructions data to produce an electronic waybill.

This BRS is a subset of the International Forwarding and Transport BRS (2020)

4.0 Scope

4.1 Description

This BRS aims to develop a subset of the MMT RDM which is aligned to the global guideline for the UN/EDIFACT IFTMBF (Firm Booking Message) and IFTMBC (Booking Confirmation Message) supporting digitalization in the Transport and Logistics whilst remaining data exchange syntax agnostic.

4.2 Context

Context Category	Description
Business Process	Booking and space allocation: request and confirmation Buy-Ship-Pay / Logistics / Transport / Booking
Product Classification	All
Industry Classification	All
Geopolitical	Global
Official Constraints	None
Business Process Role	Transport Service Buyer and Transport Service Provider
Supporting Role	
System Capabilities	No Limitations

Figure 3: Context Categories for Bookings

5.0 Business Requirements Elaboration

5.1 Business Requirements List

The Booking information exchanges cover the transport movements (Shipping) comprising transport planning, and service requirements for consignments normally prior to the issuance of Shipping Instructions and a waybill.

Transport Service Providers should have allocations of space/capacity to accommodate booking requests from Transport Service Buyers, which may be specifically allotted for the Transport Service Buyer such as a Freight Forwarder, a Carrier or set aside for a specific geography.

Bookings comprise a series of business scenarios:

1. Booking Request from a Transport Service Buyer to its selected Transport Service Provider
2. Booking Response from the Transport Service Provider to the Transport Service Buyer.

For each of the scenario the following use cases apply:

1. Booking Request
 - 1.1. Request a new booking
 - 1.2. Amend a booking
 - 1.3. Cancel a booking
 - 1.4.
2. Booking Response
 - 2.1. Confirmed Booking
 - 2.2. Rejected Booking
 - 2.3. Split Booking

Note: acknowledging the increasing use of quotation requests and offers within the Booking process, this document assumes that the requirements for this process are aligned with the 'Buy' portion of the Buy-Ship-Pay model and as such is outside of the scope of this document.

Number	Business Requirement Statement	Business Transaction Name
A.1	To provide a new booking request from the Transport Service Buyer to the Transport Service Provider	Booking Request
A.2	To provide a booking confirmation from a Transport Service Provider to a Transport Service Buyer	Booking Confirmation
A.3	To provide an amendment from the Transport Service Buyer to an existing booking accepted by a Transport Service Provider	Booking Amendment
A.4	To provide a cancellation of an existing booking confirmed by a Transport Service Provider	Booking Cancellation
A.5	To provide booking rejected from a Transport Service Provider to the Transport Service Buyer	Booking Rejected
A.6	To provide a split booking confirmation from the Transport Service Provider to the Transport Service Buyer	Booking Split

Figure 4: Business Requirements List

Number	Data Requirement Statement
B1	The Booking should provide interoperability with the UN/CEFACT Multi-Modal Transport Reference Data Model (MMT RDM)
B2	A Booking shall only apply to one Consignment

Figure 5: Data Requirement Statement Template

5.2 Definition of Business Terms

The main terms are defined in the MMT RDM; the Booking is fully compliant with all of these definitions. The Booking refers to the following additional terms:

Term	Definition
Space Allocation	An allotment of capacity reserved for a Transport Service Buyer to book against. Examples include: an allotment, permanent booking, recurring reservation
Transport Service Buyer (Consignor or Forwarder)	The buyer of transport services as stipulated in a Transport Service Contract.
Transport Service Provider (Carrier or Forwarder)	The provider i.e. seller of transport services as stipulated in a Transport Service Contract.
Freight Forwarder	The party undertaking the forwarding of goods by provision of transport, logistics, associated formalities services etc.
Consignment	A consignment is a separately identifiable collection of Consignment Items (available to be) transported from one Consignor to one Consignee via one or more modes of transport as specified in one single transport service contractual document.
Shipment	A shipment is an identifiable collection of one or more Trade Items (available to be) transported together from the Seller (Original Consignor/Shipper), to the Buyer (Final/Ultimate Consignee).
Means of Transport	Particular aircraft, vehicle, vessel or other device used for the transport of goods or persons.

Figure 6: Definition of Terms

5.3 Business Requirements View

5.3.1 Overall Business Use Case, Partner View and Conceptual Model

To fulfil the terms of a Transport Service Contract with a customer, a Transport Service Buyer, such as a Freight Forwarder will in most cases make a booking for the goods to be transported with a Transport Service Provider such as an air or ocean carrier. The process can include the requests between Carriers, such as in Air Freight interline or code-share partners, and between a Consignor and their Freight Forwarder.

Firm Bookings can be made against a pre-arranged allocation of space i.e. reserved for the Transport Service Buyer, or as ad-hoc against a Transport Service Provider's capacity for a means of transport or across a route/trade lane.

As a pre-condition of making a Booking the Transport Service Provider may have agreements with the Transport Service Buyer to maintain a space allocation such as a specific allotment for the Transport Service Buyer to book into as it is reserved capacity for them. This allocation may also be offered as a Permanent Booking of space for repeated consignments (sometimes referred to as Recurring Bookings). The Firm Booking would then complete the 'provisional' Booking details with information close to or representative of the actual consignment.

When the Transport Service Buyer has sufficient details about the consignment prior to shipping across a complete or partial journey, Bookings can be created as new, amendments if they exist and cancelled. In each case the Transport Service Provider will need to evaluate the booking data against the transport route with available space (weight/volume/dims), service levels (e.g. product), special cargo requirements (e.g. temperature), regulatory compliance (e.g. embargo), standards conformance (e.g. dangerous), and profitability (e.g. revenue). In some cases, the booking will reference a price or rate quotation offer from the Transport Service Provider.

Data captured via the Booking process can be used to augment the Shipping Instruction and waybill data. Additionally, when goods are accepted as 'Ready for Carriage' by the Transport Service Provider, the accepted attributes such as weight and volume, security status can be used to amend an associated Booking.

A Booking amendment applies in cases where there is a deviation from the booking or planned transport and the Consignment requires rebooking to alternative Means of Transport.

The Booking process is concluded once the Transport Service Provider has evaluated the Booking Request and returns a Booking Confirmation to the Transport Service Buyer.

For new and amended Booking requests, the Transport Service Provider should respond with a booking confirmation representing the status of the Booking during their evaluation of the Booking details. The response can confirm that a Booking request is:

- Confirmed as 'accepted' i.e. firm booking where capacity is decremented accordingly
- Pending as 'hold' subject to further evaluations
- Conditionally Accepted subject to certain conditions being met
- Rejected as 'unable' to confirm.

For cancellation requests from the Transport Service Buyer to the Transport Service Provider who should confirm that the Booking (all segments and services) has been cancelled returning capacity back to the applicable allocation.

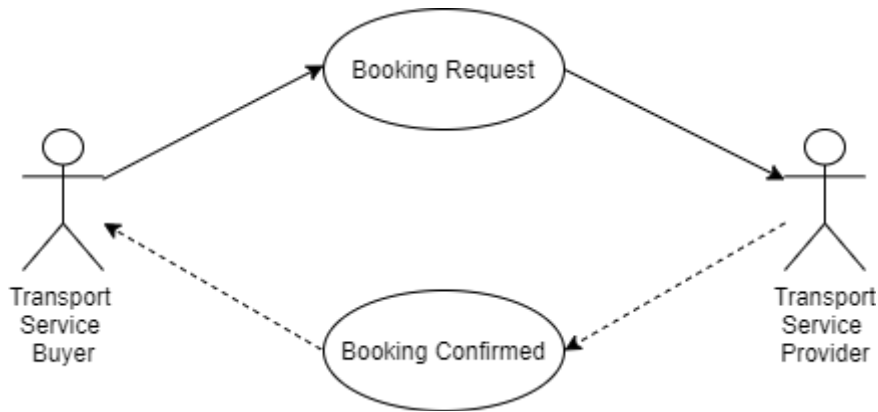
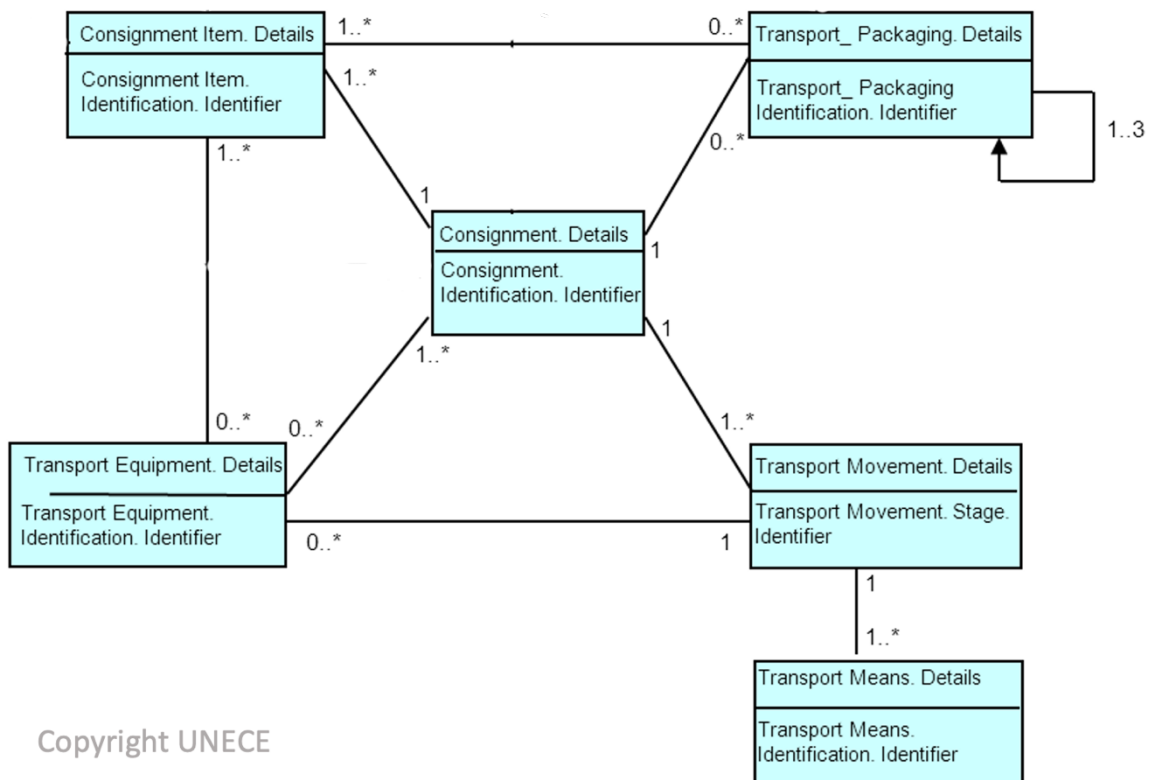


Figure 7: Overall Process Use Case Diagram

The following diagram describes the relationships between the highest-level Business Information Entities which are reused across the UN/CEFACT Buy/Ship/Pay, SCRDM and MMT Reference Data Models.

The Booking utilises some of these entities and relationships in the model.



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Figure 8a: MMT Entity Model

A Booking relates to only one consignment and includes the Transport Means and Movement details such as a flight number or vessel sailing identifier.

Figure 8b refer to the canonical data model, further details of which can be found in the MMT library publication.

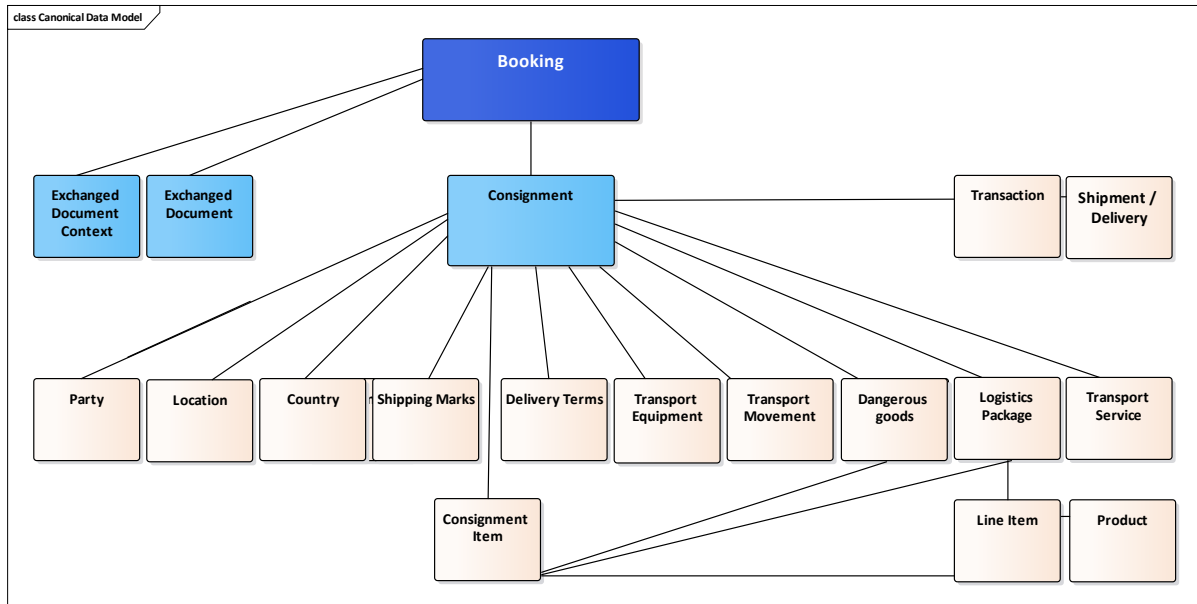


Figure 8b: Canonical Data Model - Booking

5.3.2 Booking Request (A1)

A.1 Booking Request	
General	
Name	Booking Request
Description	To provide a new booking request from the Transport Service Buyer to the Transport Service Provider for a single consignment.
Details	
Classified to Business Areas and Process Areas	Business Area: Multi-Modal Transport Process Area: Ship
Participants and their interests	Transport Service Buyer, Transport Service Provider
Stakeholders and their interests	Carrier, Forwarder, Consignor
Reference(s)	
Start / End Characteristics	

Pre-condition	<ul style="list-style-type: none"> • The Transport Service Buyer has a consignment to be transported and knows the mode of transport and the type of means of transport required for its transportation. • The consignment may be loaded into one or more specific pieces of transport equipment. • The Transport Service Provider has space allocated on a specific means of transport. • The Transport Service Buyer and the Transport Service Provider have a relationship.
Post-condition	<p>The Transport Service Provider has:</p> <ul style="list-style-type: none"> • Verified / validated the request • Acknowledged the request as received • Registered the Booking Request as ready for evaluation.
Begins When	The Transport Service Buyer sends a Booking Request to the Transport Service Provider
Ends When	The Transport Service Provider returns a Response back to the Transport Service Buyer.
Exceptions	The Booking exchange does not meet the minimum requirements to place a booking (error) so the Transport Service Provider cannot accept the Booking Request
Relationships	
Included Business Processes	Booking Amendment
Affected Business Processes	

Figure 9: Business Process Worksheet – Booking Request

5.3.3 Booking Confirmation (A2)

A.4 Booking Confirmation	
General	
Name	Booking Confirmation
Description	To provide a booking confirmation from a Transport Service Provider to a Transport Service Buyer
Details	
Classified to Business Areas and Process Areas	Business Area: Multi-Modal Transport Process Area: Ship
Participants and their interests	Transport Service Buyer, Transport Service Provider
Stakeholders and their interests	Carrier, Freight Forwarder, Consignor
Reference(s)	
Start / End Characteristics	
Pre-condition	<p>A Booking request or amendment has been accepted and registered as ready for evaluation by the Transport Service Provider.</p> <p>The Booking may be in a pending (hold) or conditional acceptance state, i.e. subject to change from the previous Booking Request.</p>
Post-condition	<ul style="list-style-type: none"> • Transport Service Buyer has come to a commercial agreement for the requested booking. • Transport Service Provider capacity has been reserved for the booked consignment. • Equipment has been reserved/assigned to the booking. • Inland transport if required has been reserved. • Safety and security requirements are met (pre-consignment). • Special service requests/conditions have been verified and ordered. • Transport Plan / Route Map and service (delivery) are defined. • Quote offer details have been applied to the booking if required. • Confirmed Booking aligned with the Shipping Instruction / Waybill?

	<ul style="list-style-type: none"> The Transport Service Provider confirms the booking to the Transport Service Buyer.
Begins When	Transport Service Provider evaluates a registered Booking Request.
Ends When	Transport Service Provider responds to the Transport Service Buyer with the Confirmed Booking status.
Exceptions	The Booking request cannot be confirmed and is set to a 'Pending' status requiring further assessment e.g. manual intervention.
Relationships	
Included Business Processes	Booking Request, Booking Amendment
Affected Business Processes	

Figure 10: Business Process Worksheet – Booking Confirmation

5.3.4 Booking Amendment (A3)

A.2 Booking Amendment	
General	
Name	Booking Amendment
Description	To provide an amendment from the Transport Service Buyer to an existing booking accepted by a Transport Service Provider
Details	
Classified to Business Areas and Process Areas	Business Area: Multi-Modal Transport Process Area: Ship
Participants and their interests	Transport Service Buyer, Transport Service Provider
Stakeholders and their interests	Carrier, Freight Forwarder, Consignor
Reference(s)	
Start / End Characteristics	
Pre-condition	A Booking made by a Transport Service Buyer with a Transport Service Provider exists. The changes required for the amendment are known by the Transport Service Buyer and/or Transport Service Provider.
Post-condition	The existing Booking is amended and replaced with the requested changes. Any external services have been amended with the replaced booking details. The Transport Service Provider has responded with the Booking Status to the Transport Service Buyer.
Begins When	Transport Service Provider registers a Booking Amendment Request
Ends When	Transport Service Provider responds to the Requestor with the amended Booking status
Exceptions	Booking/Consignment status disallows amendment. Confirmed Booking can no longer be transported by the applicable Means of Transport and requires the

	Transport Service Provider to reject the amendment request.
Relationships	
Included Business Processes	Booking Request
Affected Business Processes	

Figure 11: Business Process Worksheet – Booking Amendment

5.3.5 Booking Cancellation (A4)

A.4 Booking Cancellation	
General	
Name	Booking Cancellation
Description	To provide a cancellation of an existing booking confirmed by a Transport Service Provider
Details	
Classified to Business Areas and Process Areas	Business Area: Multi-Modal Transport Process Area: Ship
Participants and their interests	Transport Service Buyer, Transport Service Provider
Stakeholders and their interests	Carrier, Forwarder, Consignor
Reference(s)	
Start / End Characteristics	
Pre-condition	A Booking made by a Transport Service Buyer with a Transport Service Provider exists. The reasons for cancellation are known by the Transport Service Buyer and/or the Transport Service Provider.
Post-condition	The existing Booking is cancelled, and: <ul style="list-style-type: none"> • Previously reserved capacity adjusted by the Transport Service Provider. • Services/Equipment reserved are cancelled • Transport Plan/Route Map is cancelled • Commercial agreement between the Transport Service Buyer and the Transport Service Provider for this consignment is voided?

	<ul style="list-style-type: none"> Shipping Instruction / Waybill adjusted to reflect cancelled booking.
Begins When	Transport Service Provider registers a Booking Cancellation Request and/or from the Transport Service Buyer
Ends When	Transport Service Provider responds to the Requestor with the Cancelled Booking status.
Exceptions	Booking/Consignment status disallows Cancellation.
Relationships	
Included Business Processes	Booking Request
Affected Business Processes	

Figure 12: Business Process Worksheet – Booking Cancellation

5.3.6 Booking Rejected(A5)

A.5 Booking Rejected	
General	
Name	Booking Rejected
Description	To provide a booking (request) declined from a Transport Service Provider to a Transport Service Buyer
Details	
Classified to Business Areas and Process Areas	Business Area: Multi-Modal Transport Process Area: Ship
Participants and their interests	Transport Service Buyer, Transport Service Provider
Stakeholders and their interests	Carrier, Forwarder, Consignor
Reference(s)	
Start / End Characteristics	
Pre-condition	A Booking request or amendment has been accepted and registered ready for evaluation by the Transport Service Provider.
Post-condition	<ul style="list-style-type: none"> Transport Service Buyer has not come to a commercial agreement for the requested booking. Transport Service Provider capacity has not been reserved for the requested consignment.

	<ul style="list-style-type: none"> The Transport Service Provider declines the booking request responding to the Transport Service Buyer with the reason(s) for non-confirmation.
Begins When	Transport Service Provider evaluates a registered Booking request or amendment.
Ends When	Transport Service Provider responds to the Transport Service Buyer with the rejected/unconfirmed Booking status.
Exceptions	The Booking is in an 'unchangeable' state e.g. the consignment has already been manifested/shipped on the Means of Transport relative to the request.
Relationships	
Included Business Processes	Booking Request, Amendment
Affected Business Processes	

Figure 13: Business Process Worksheet – Booking Rejected

5.3.7 Booking Split (A6)

A.6 Booking Split	
General	
Name	Booking Split
Description	To provide a booking split confirmation from a Transport Service Provider to a Transport Service Buyer
Details	
Classified to Business Areas and Process Areas	Business Area: Multi-Modal Transport Process Area: Ship
Participants and their interests	Transport Service Buyer, Transport Service Provider
Stakeholders and their interests	Carrier, Forwarder, Consignor
Reference(s)	
Start / End Characteristics	
Pre-condition	A Booking split has been registered ready for evaluation by the Transport Service Provider.
Post-condition	<ul style="list-style-type: none"> The existing Booking is split (amended) and replaced with the evaluated changes.

	<ul style="list-style-type: none"> Any external services have been amended with the replaced split booking details. The Transport Service Provider has responded with the Booking Status to the Transport Service Buyer.
Begins When	Transport Service Provider registers a split booking
Ends When	Transport Service Provider splits the booking notifying the Transport Service Buyer of the status change.
Exceptions	
Relationships	
Included Business Processes	Booking Amendment, Booking Confirmation
Affected Business Processes	

Figure 14: Business Process Worksheet – Booking Split

5.4 Business Choreography View

5.4.1 Business Transaction View – Transactions and Authorized Roles

The primary Booking transactions covered by the scenarios comprise:

1. Booking Request
2. Booking Response

The following Business Transaction Worksheets describe these two scenarios.

Business Transaction Worksheet	
General	
Name	Booking Request
Description	<p>The Transport Service Buyer requests to Book a consignment from available space from a Transport Service Providers capacity.</p> <p>A Booking Request includes:</p> <ul style="list-style-type: none"> Request a new booking Amendment to an existing booking Cancellation of an existing booking.
Details	
Requesting Role	Transport Service Buyer

Responding Role	Transport Service Provider
Requesting Activity	Booking Request (new, amend, cancel)
Responding Activity	Booking Request Registered
Is Included in (Name of Business Collaboration)	Booking
Start / End Characteristics	
Affected Business Entities	Booking
Pre-condition	Booking Request is prepared by the Transport Service Buyer and knows the Transport Service Provider they wish to use
Post-condition	Booking Request is registered ready for evaluation by the Transport Service Provider
Begins When	Booking Request sent by the Transport Service Buyer
Ends When	Booking request is registered and acknowledged by the Transport Service Provider
Exceptions	<p>Booking request is non-compliant with minimum requirements and is rejected with an error.</p> <p>Booking request triggered by Transport Service Provider operational changes.</p>
Business Transaction Activity Details	
Business Transaction Pattern	Commercial Transaction
Requestor's Side	
Requesting Role	Transport Service Buyer
Requesting Business Action Name	The Transport Service Buyer prepares a booking request for a consignment and sends to the Transport Service Provider
Requesting Information Envelope Name	Booking Request / New, Amend, Cancel
Responder's Side	
Responding Role	Transport Service Provider
Responding Business Action	Receives and accepts the Booking Request, registering the request and acknowledging with a receipt status.
Responding Information Envelope Name	Booking Response / Acknowledged

Figure 15: Business Transaction Booking Request

Business Transaction Worksheet	
General	
Name	Booking Response
Description	<p>The Transport Service Provider evaluates a registered Booking Request from a Transport Service Buyer for a consignment against available space from its capacity and responds to the Transport Service Buyer.</p> <p>A Booking Response includes:</p> <ul style="list-style-type: none"> • Confirmation of booking as accepted, pending, conditionally accepted • Rejection of Booking • Split Booking.
Details	
Requesting Role	Transport Service Buyer
Responding Role	Transport Service Provider
Requesting Activity	Booking Request accepted/registered
Responding Activity	Booking Response
Is Included in (Name of Business Collaboration)	Booking
Start / End Characteristics	
Affected Business Entities	Booking
Pre-condition	Booking Request is registered by the Transport Service Provider.
Post-condition	The registered Booking Request is evaluated, and a response detailing the Booking Status is returned to the Transport Service Buyer from the Transport Service Provider.
Begins When	Booking Request is registered by the Transport Service Provider
Ends When	Booking Response has been sent by the Transport Service Provider
Exceptions	Booking Response required for operational change rather than from Transport Service Buyer request e.g. the Transport Service Provider splits the booking
Business Transaction Activity Details	
Business Transaction Pattern	Commercial Transaction

Requestor's Side	
Requesting Role	Transport Service Buyer
Requesting Business Action Name	The Transport Service Buyer request registered by the Transport Service Provider
Requesting Information Envelope Name	Booking Request / Registered
Responder's Side	
Responding Role	Transport Service Provider
Responding Business Action	Evaluates registered booking request returning the results to the Transport Service Buyer as a response to: <ul style="list-style-type: none"> • Confirm the request • Reject the request • Split the booking.
Responding Information Envelope Name	Booking Response / Confirmed, Rejected, Split

Figure 16: Business Transaction Booking Response

These Business Transactions are described in the following activity diagrams:

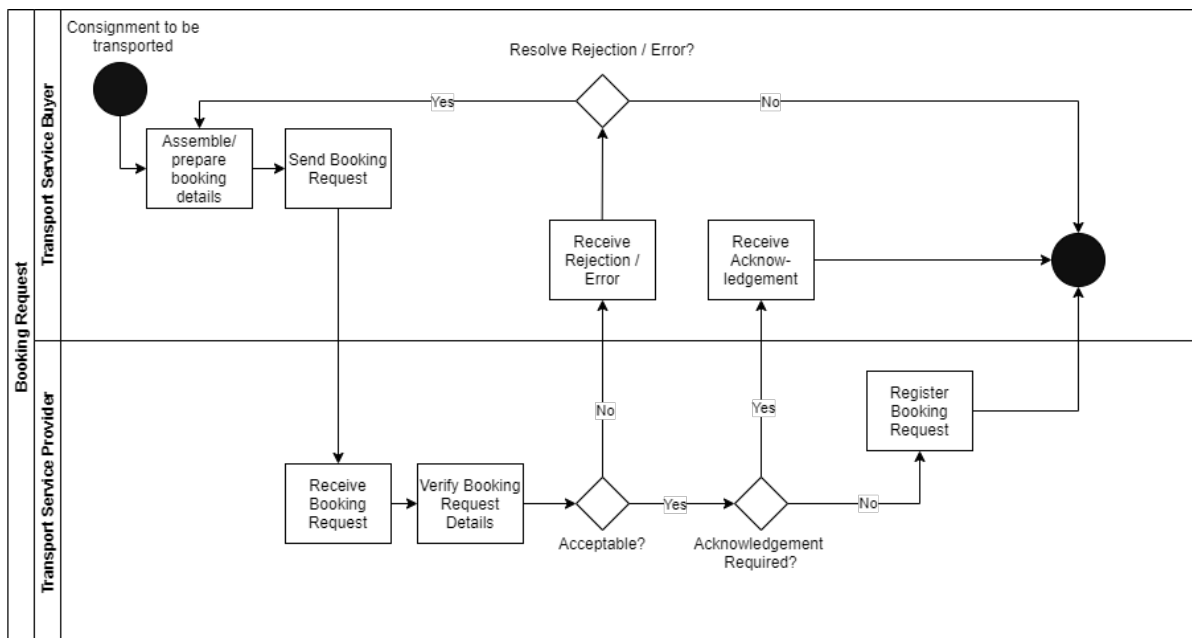


Figure 17: Business Transaction Activity Diagram – Booking Request

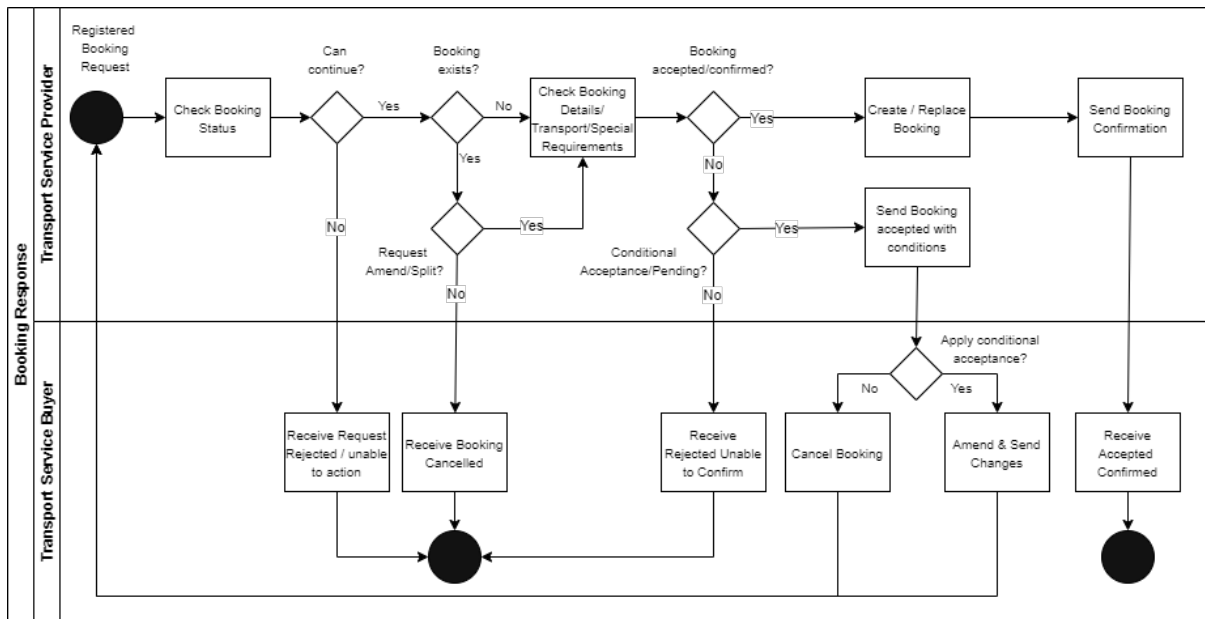


Figure 18: Business Transaction Activity Diagram – Booking Response