



# Business Message Standard (BMS) Transport Capacity Booking and Response

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## Business Requirements Document (BRAD) Reference

BRAD Title:	BRAD Date:	BRAD Version
Transport Planning	March 2011	1.0

## Document Change History

Date of Change	Version	Changed By	Reason for Change	Summary of Change	Model Build #
November 8, 2011	1.0	Coen Janssen	Public Review	Renamed BMS and updated chapter 2	
November 28, 2011	1.0	Coen Janssen	XML development of increment 1	See section summary of changes.	

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# 1. Business Domain View

## 1.1. Problem Statement / Business Need

Transport Capacity Booking is the process to reserve space for estimated consignments or shipments. Typically the booking process covers a period of less than a week prior to actual shipments covered by capacity booking moving through the Logistics Network. The Logistic Services Buyer will send transport capacity booking requests to the Logistic Services Seller who will send back a booking response.

Capacity booking requests are used to reserve space *prior to the goods being ready for despatch*. At the point that the goods are actually ready to be moved and have been assigned a shipment or consignment identification, the Transport Execution process begins with the Transport Instruction message. The Transport Execution process is supported by separate Business Message Standards.

In cases where the Logistic Services Buyer and Logistic Services Seller share capacity forecasts, the capacity booking process will be used to drive the short-term Capacity Planning process of the Logistic Services Seller based on more detailed information from the Logistic Services Buyer in terms of quantities (volume, weights, pallets, trucks, etc..) than was shared during the capacity forecasting process. In this case the booking process “consumes” the long-term reservation of capacity expressed in the forecast. If all runs well, the total long-term forecasted capacity for the period should be close to the total capacity booked in the short-term capacity booking process for the same period. The forecasting process is supported by separate Business Message Standards.

## 1.2. Objective

To supply the detail design of the (specific) business transaction needed to meet the requirements of the referenced BRAD(s).

## 1.3. Audience

Implementers of the Business Message Standard.

## 1.4. References

Reference Name	Description
BRAD Transport Planning (GS1, 2011)	
Logistics Interoperability Model (GS1, 2007)	

## 1.5. Acknowledgements

The following is a list of individuals (and their companies) who participated in the creation, review and approval of this BMS.

### 1.5.1. BRG Work Group

Function	Name	Company / organisation
BRG Work Group Chair	Fred Kempkes	Unilever
BRG Work Group Chair	Jaco Voorspuij	DHL
BRG Work Group Member	Mia Lenman	GS1 Sweden
BRG Work Group Member	Richard Chresta	GS1 Switzerland & UNCEFACT TGB3
BRG Work Group Member	Jeff Melcher	Army & Air Force Exchange Service
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### 1.5.2. Design Team Members

Function	Name	Organisation
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XML Technical Designer	Dipan Anarkat	GS1 Global Office
EANCOM Technical Designer	Not applicable	
Peer Reviewer	Eric Kauz	GS1 Global Office
Process Manager	Jean-Luc Champion	GS1 Global Office

## 2. Business Context

Context Category	Value(s)
Industry	All
Geopolitical	All
Product	All
Process	Transport Management
System Capabilities	GS1 System
Official Constraints	None

## 3. Additional Technical Requirements Analysis

Not applicable

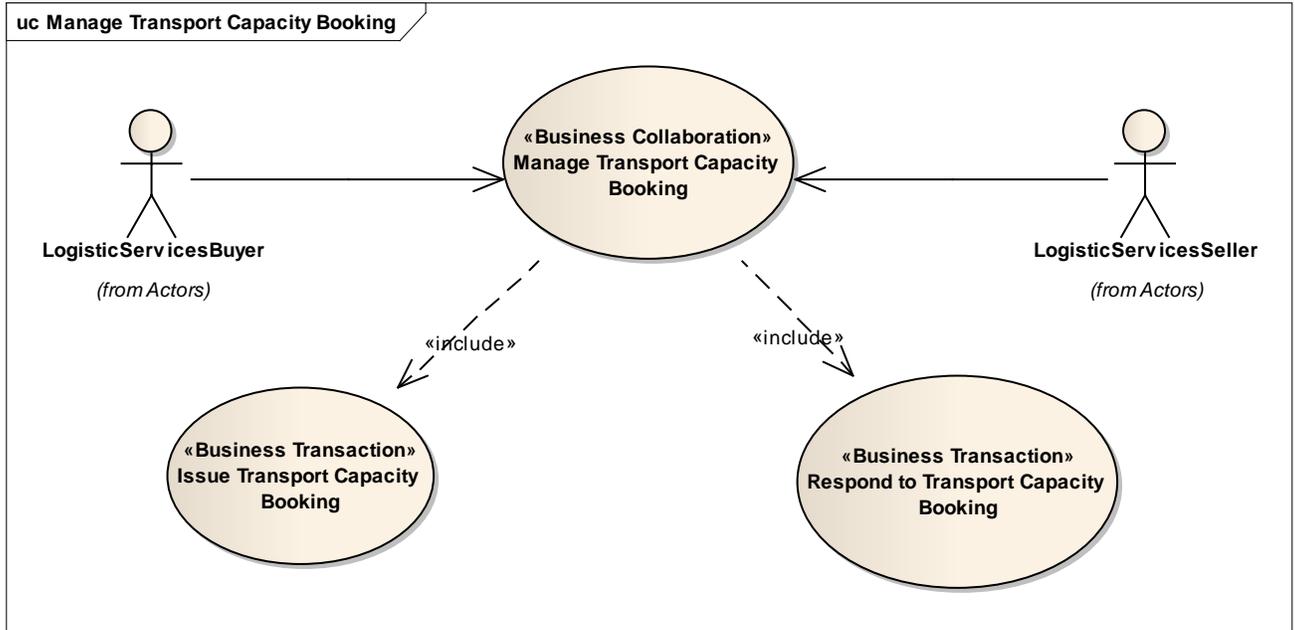
### 3.1. Technical Requirements (optional)

Number	Statement	Rationale
	Not applicable	

## 4. Business Transaction View

### 4.1. Use Case Diagram – Manage Transport Capacity Booking

Figure 4-1 Use Case Diagram



### 4.2. Use Case Description – Manage Transport Capacity Booking

Use Case ID	UC-2
Use Case Name	Manage Transport Capacity Booking
Use Case Description	The Logistic Services Buyer (LSB) requests the Logistics Services Seller (LSS) to reserve space on a means of transport for goods items to be transported together. The LSS may accept the booking, conditionally accept the booking, or reject the booking.
Actors (Goal)	Logistic Services Buyer (LSB) Logistic Services Seller (LSS)
Performance Goals	
Preconditions	The LSB and LSS have a relationship. The LSB has plans for goods items to be transported and knows: <ul style="list-style-type: none"> <li>■ The mode of transport</li> <li>■ The type of means of transport</li> </ul>

Use Case ID	UC-2
Post conditions	<p>The LSB and LSS may or may not have a commercial agreement on the requested space booking.</p> <p>An agreement has been made between the LSB and the LSS as to whether or not final transport instructions and/or transport arrangements are required and what will be the next steps to take in either case.</p>
Scenario	<p>The Logistics Service Buyer sends a request to the Logistic Service Seller to make a reservation for space for movement of goods items.</p> <p>The LSS checks the availability of space for the requested booking on the means of transport and either confirms the space booking or does not accept the space booking.</p>
Alternative Scenario	

Use Case ID	UC-2A
Use Case Name	Issue Transport Capacity Booking
Use Case Description	The Logistic Services Buyer requests the Logistic Services Seller to reserve space on a means of transport for goods items to be transported together.
Actors (Goal)	Logistic Services Buyer (LSB) Logistic Services Seller (LSS)
Performance Goals	
Preconditions	The LSB has goods items to be transported and knows: <ul style="list-style-type: none"> <li>■ The mode of transport</li> <li>■ The type of means of transport</li> </ul>
Post conditions	The LSS receives a booking request.
Scenario	The LSB sends a request to the LSS to reserve space on a means of transport for goods items to be transported together.
Alternative Scenario	

Use Case ID	UC-2B
Use Case Name	Respond to Transport Capacity Booking
Use Case Description	The Logistic Services Seller confirms space booking or does not accept the space booking
Actors (Goal)	Logistic Services Buyer (LSB) Logistic Services Seller (LSS)
Performance Goals	
Preconditions	The LSB and LSS have a relationship. The LSB has submitted a booking request to the LSS. In their interoperation agreement the LSB and LSS have agreed to use a response as mandatory step in the transport capacity booking process.
Post conditions	<p>The LSB and LSS may or may not have a commercial agreement on the requested space booking.</p> <p>An agreement has been made between the LSB and the LSS on the next steps.</p>

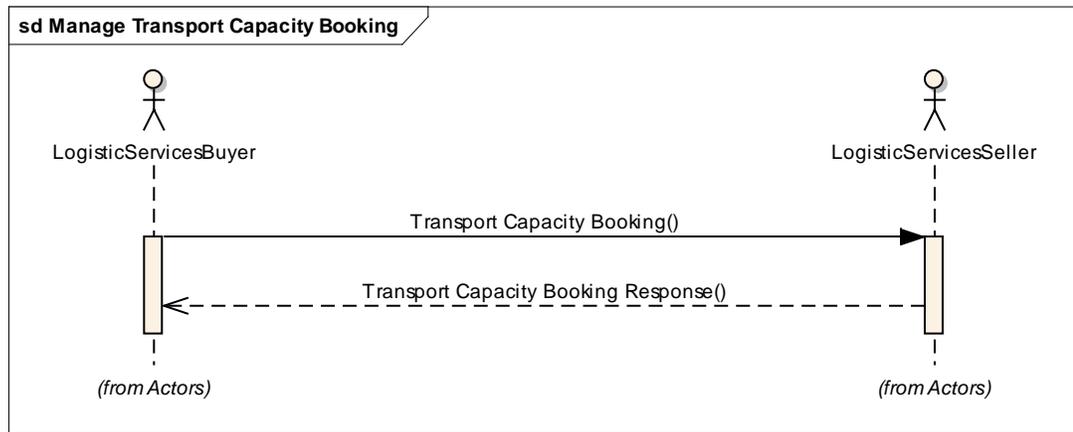
Use Case ID	UC-2B
Scenario	The LSS checks availability of the requested space booking on the means of transport and either confirms the space booking or does not accept the space booking The LSS sends the response to the LSB.
Alternative Scenario	

### 4.3. Activity Diagram(s) – Manage Transport Capacity Booking

Not applicable

### 4.4. Sequence Diagram(s) – Manage Transport Capacity Booking

Figure 4-2 Sequence Diagram



## 5. Information Model (Including GDD Report)

### 5.1. Transport Capacity Booking

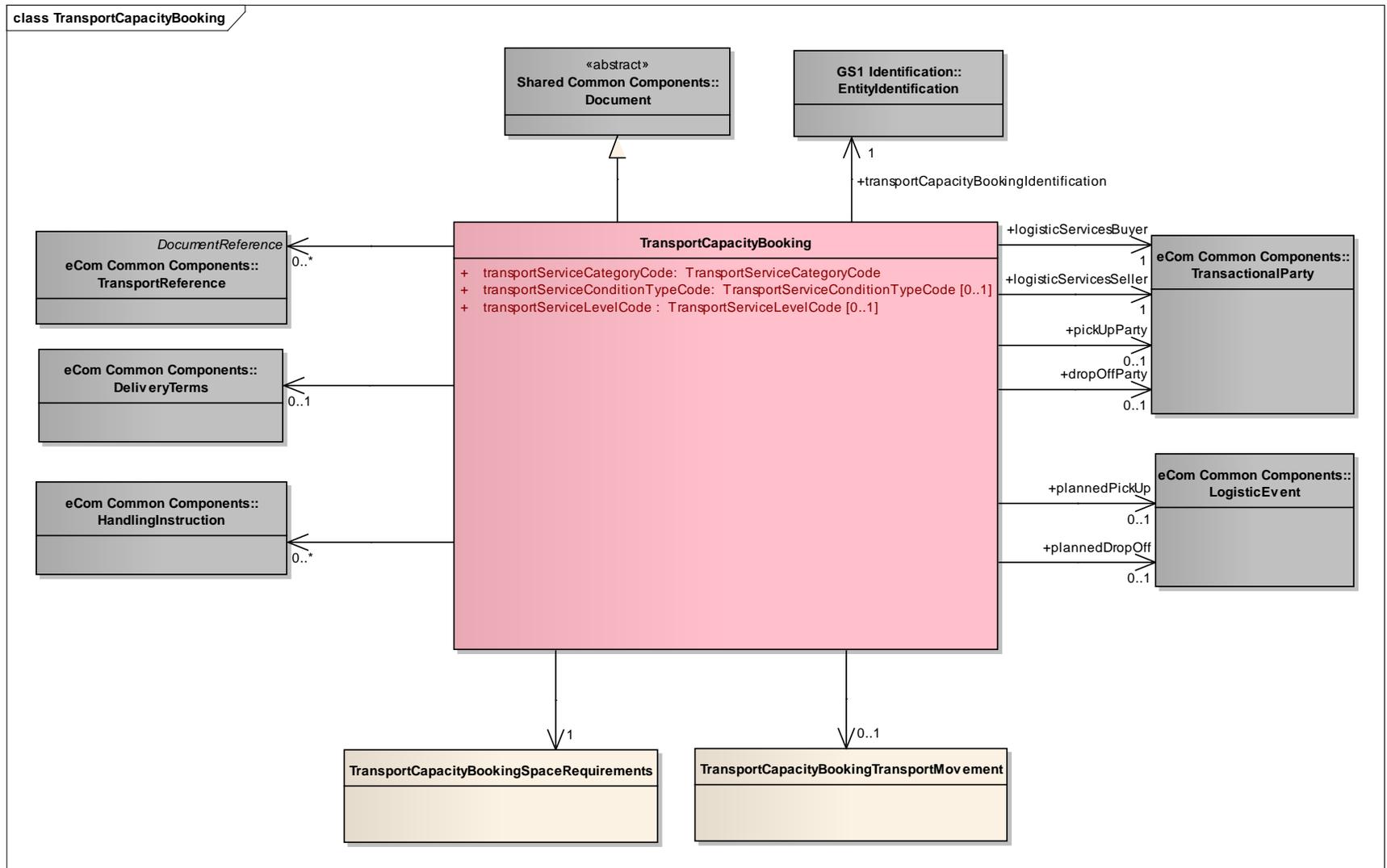
#### 5.1.1. GDD Report - Transport Capacity Booking

Content	Attribute / Role	Datatype /Secondary class	Multiplicity	Definition	Requirements
TransportCapacityBooking				The Transport Capacity Booking is sent by the Logistic Services Buyer to the Logistic Services Seller, to reserve transport resources for estimated consignments or shipments.	
Association		TransportCapacityBookingSpaceRequirements	1..1	Details on the booked transport space, such as volume, weight, transport equipment.	BRAD Transport Planning - BKH13
Association		TransportCapacityBookingTransportMovement	0..1	Details for the booked movement of the goods	BRAD Transport Planning - BKH14
Association	logisticServicesSeller	TransactionalParty	1..1	A party that provides logistics services to another party.	BRAD Transport Planning - BKH5
Association	logisticServicesBuyer	TransactionalParty	1..1	A party that purchases logistics services from another party.	BRAD Transport Planning - BKH4
Association	transportCapacityBookingIdentification	EntityIdentification	1..1	The identification of the transport capacity booking document.	BRAD Transport Planning - BKH1

Content	Attribute / Role	Datatype /Secondary class	Multiplicity	Definition	Requirements
Generalization		Document		Provides the generic document details for the transport capacity booking.	BRAD Transport Planning - BKH2, BKH3
Association	pickUpParty	TransactionalParty	0..1	The party where the goods will be collected	BRAD Transport Planning - BKH6, BKH7
Association	dropOffParty	TransactionalParty	0..1	The party where the goods will be delivered.	BRAD Transport Planning - BKH6, BKH7
Association	plannedPickUp	LogisticEvent	0..1	Details on the planned collection of the goods.	BRAD Transport Planning - BKH8
Association	plannedDropOff	LogisticEvent	0..1	Details on the planned delivery of the goods.	BRAD Transport Planning - BKH8
Association		HandlingInstruction	0..*	Instructions on the way to treat the goods during transport and storage.	BRAD Transport Planning - BKH9
Association		TransportReference	0..*	References to associated information in support of related business processes. For example: purchase order number, bank account number.	BRAD Transport Planning - BKH10
Association		DeliveryTerms	0..1	The applicable legal, customs, financial and insurance terms that have been agreed for a goods delivery.	BRAD Transport Planning - BKH11

Content	Attribute / Role	Datatype /Secondary class	Multi plicit y	Definition	Requirements
Attribute	transportServiceCate goryCode	TransportServiceCategoryCode	1..1	Code specifying the type of transport service that will be provided. For example: Courier service.	BRAD Transport Planning - BKH12
Attribute	transportServiceCon ditionTypeCode	TransportServiceConditionTypeCode	0..1	Code specifying the type of contractual conditions applicable to the transport service. For example: Port to port.	BRAD Transport Planning - BKH12
Attribute	transportServiceLeve lCode	TransportServiceLevelCode	0..1	Code specifying the service level requested for the transport service. For example: Express service.	BRAD Transport Planning - BKH12

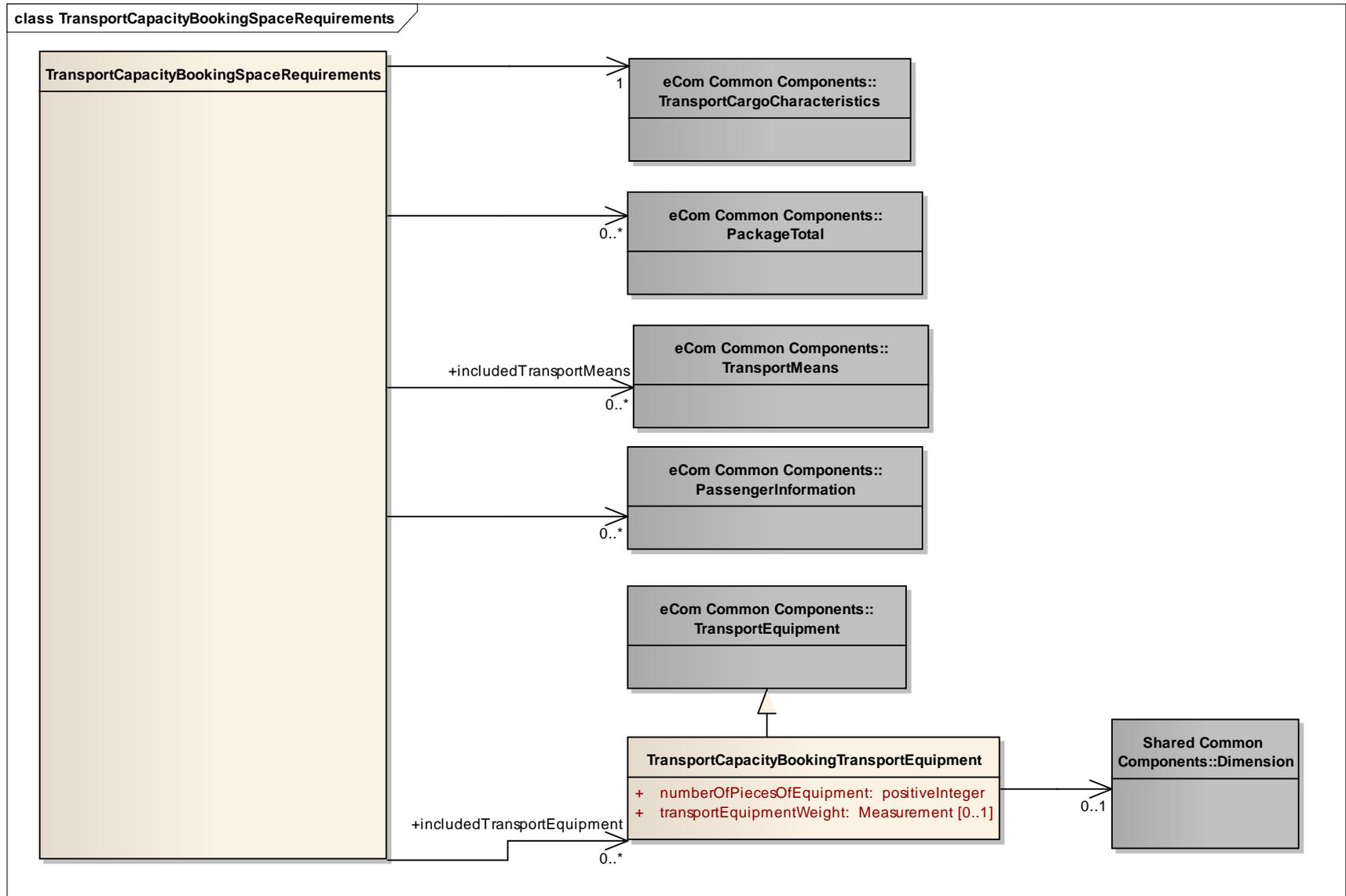
## 5.1.2. Class Diagram - Transport Capacity Booking



### 5.1.3. GDD Report - Transport Capacity Booking Space Requirements

Content	Attribute / Role	Datatype /Secondary class	Multi plicity	Definition	Requirements
TransportCapacityBookingSpace Requirements				Details on the booked transport space, such as volume, weight, transport equipment.	
Association		PassengerInformation	0..*	Information on passengers for which capacity is being booked.	BRAD Transport Planning - TBC6
Association		PackageTotal	0..*	Aggregate information per type of package to be transported.	BRAD Transport Planning - TBC3
Association		TransportCargoCharacteristics	1..1	Aggregate information on the goods to be transported.	BRAD Transport Planning - TBC1, TBC2
Association	includedTransportEquipment	TransportCapacityBookingTransportEquipment	0..*	Information on transport means to be transported as part of the cargo.	BRAD Transport Planning - TBC4
Association	includedTransportMeans	TransportMeans	0..*	Information on transport means to be transported as part of the cargo.	BRAD Transport Planning - TBC5
TransportCapacityBookingTransportEquipment				Information on transport means to be transported as part of the cargo.	
Generalization		TransportEquipment			
Association		Dimension	0..1	Dimensions for one piece of this type of transport equipment.	
Attribute	numberOfPiecesOfEquipment	positiveInteger	1..1	The total number of pieces of the specified type of transport equipment.	
Attribute	transportEquipmentWeight	Measurement	0..1	A measure of the mass for one piece of transport equipment.	

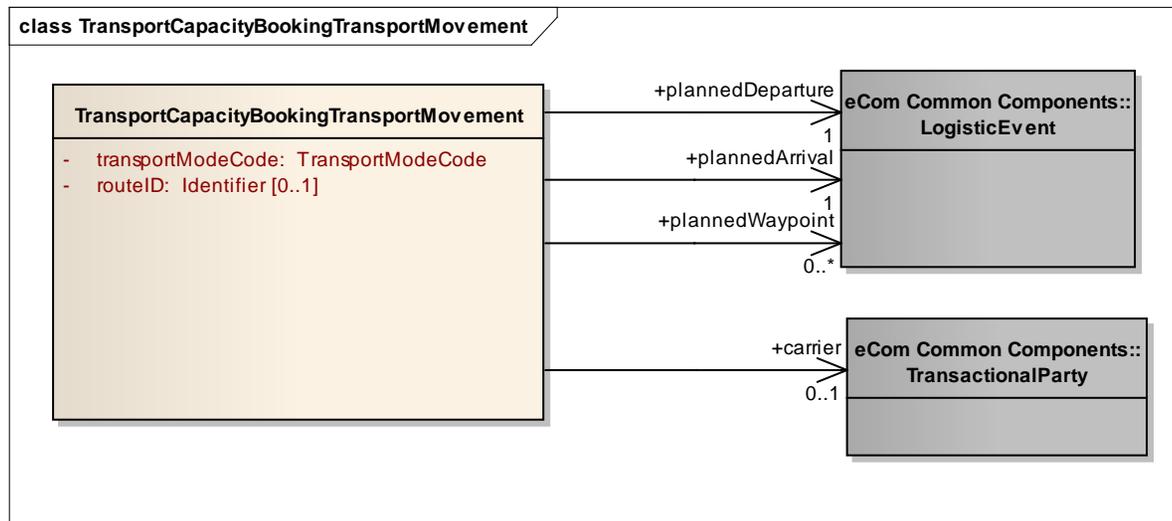
### 5.1.4. Class Diagram - Transport Capacity Booking Space Requirements



### 5.1.5. GDD Report - Transport Capacity Booking Transport Movement

Content	Attribute / Role	Datatype /Secondary class	Multi plicity	Definition	Requirements
TransportCapacityBookingT ransportMovement				Details of the booked movement of the goods, such as mode of transport, locations, departure, and arrival date(s) and time(s).	
Association	plannedWaypoint	LogisticEvent	0..*	An administrative procedure taking place at a specific location that may have an effect on the lead time of a transport movement, such as dangerous goods handling, customs clearance.	
Association	plannedArrival	LogisticEvent	1..1	The location and date and time on which the means of transport for this transport movement is scheduled to arrive.	BRAD Transport Planning - TBM3
Association	plannedDeparture	LogisticEvent	1..1	The location and date and time on which the means of transport for this transport movement is scheduled to depart.	BRAD Transport Planning - TBM2
Association	carrier	TransactionalParty	0..1	A party which physically transports goods from one place to another.	BRAD Transport Planning - new requirement
Attribute	transportModeCode	TransportModeCod e	1..1	Code specifying the transportation mode used for this transport movement.	
Attribute	routelD	Identifier	0..1	Unique identifier of the standard route that will be used for this transport movement.	BRAD Transport Planning - TBM1

## 5.1.6. Class Diagram - Transport Capacity Booking Transport Movement



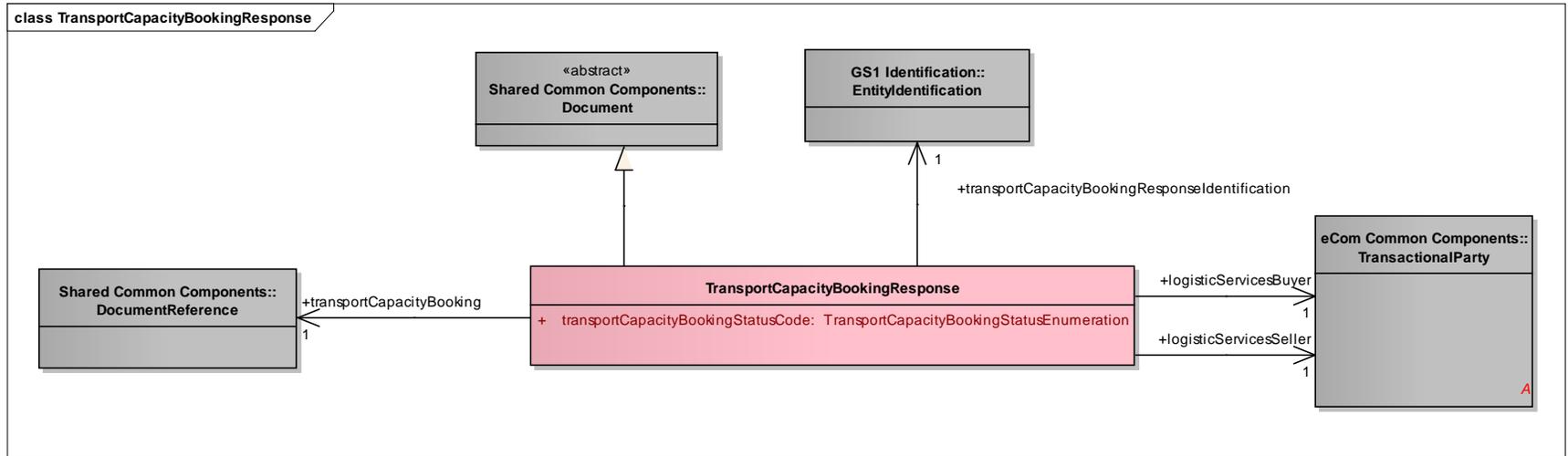
## 5.2. Transport Capacity Booking Response

### 5.2.1. GDD Report - Transport Capacity Booking Response

Content	Attribute / Role	Datatype /Secondary class	Multiplicity	Definition	Requirements
TransportCapacityBookingResponse				The Transport Capacity Booking Response is sent by the Logistic Services Seller to the Logistic Services Buyer, accepting or rejecting the Transport Capacity Booking.	
Association	logisticServicesSeller	TransactionalParty	1..1	A party that provides logistics services to another party.	BRAD Transport Planning - CBCH7

Content	Attribute / Role	Datatype /Secondary class	Multipl icity	Definition	Requireme nts
Generalization		Document		Provides the generic document details for the transport capacity booking confirmation.	BRAD Transport Planning - CBCH3, CBCH4
Association	logisticServicesBuyer	TransactionalParty	1..1	A party that purchases logistics services from another party.	BRAD Transport Planning - CBCH6
Association	transportCapacityBooking	DocumentReference	1..1	Reference to the Transport Capacity Booking document being confirmed.	BRAD Transport Planning - CBCH2
Association	transportCapacityBookingResponseIdentification	EntityIdentification	1..1	The identification of the transport capacity booking response document.	BRAD Transport Planning - CBCH1
Attribute	transportCapacityBookingStatusCode	TransportCapacityBookingStatusEnumeration	1..1	Code specifying the type of response. Example: ACCEPTED.	BRAD Transport Planning - CBCH5

## 5.2.2. Class Diagram - Transport Capacity Booking Response



## 5.3. Enumerations and codes (message specific)

### 5.3.1. Transport Capacity Booking Status Enumeration

Value	Description
BOOKING_ACCEPTED	The full amount of the requested capacity can be supported.
BOOKING_REJECTED	The requested capacity cannot be supported.

### 5.3.2. Common Codes / Enumerations

Please refer to the BMS eCom Domain Common for the following code lists:

- Transport Mode Code
- Transport Service Category Code
- Transport Service Condition Type Code
- Transport Service Level Code

## 6. Business Document Examples

### 6.1. Example 1

Logistic Service Buyer, CAB\_Manufacturing identified by GLN 1234567890123 sends a booking BOOK1234 in reference to the Transport Contract with reference 12345678 based on requirements of RQMT1234 to Logistics Service Seller XYZ\_Logistics, identified by GLN 9876543212345. The pickup party is company A, identified by GLN 1275432190141, the drop off party is company B, identified by GLN 4567891234533.

TransportCapacityBooking	
creationDateTime	2011-02-11T12:00:00
documentStatusCode	ORIGINAL
documentActionCode	ADD
transportServiceCategoryCode	60 (multimode)
EntityIdentification (+transportCapacityBookingIdentification)	
entityIdentification	BOOK1234
TransactionalParty (+logisticServicesBuyer)	
gln	1234567890123
TransactionalParty (+logisticServicesSeller)	
gln	9876543212345
TransactionalParty (+pickUpParty)	
gln	4567891234533
Contact	
personName	Mr Sven Ole Pedersen

departmentName	Log547
CommunicationChannel	
communicationChannelCode	TELEPHONE
communicationValue	+3227887827
CommunicationChannel	
communicationChannelCode	TELEPHONE
communicationValue	+32496123923
CommunicationChannel	
communicationChannelCode	TELEFAX
communicationValue	+3227887899
CommunicationChannel	
communicationChannelCode	EMAIL
communicationValue	svenole.pedersen@a.com
TransactionalParty (+dropOffParty)	
gln	22754321901233
Contact	
personName	Herr. Uwe Haas
departmentName	LOG
CommunicationChannel	
communicationChannelCode	TELEPHONE
communicationValue	+3237887827
LogisticEvent (+plannedPickUp)	
DateTimeRange (+logisticEventPeriod)	
beginDate	2011-02-17
beginTime	17:00:00
endTime	18:00:00
LogisticEvent (+plannedDropOff)	
DateOptionalTime (+logisticEventDateTime)	
date	2011-02-21
DeliveryTerms	
incotermsCode	DDP
<b>TransportCapacityBookingSpaceRequirements</b>	
TransportCargoCharacteristics	
cargoTypeDescription	Mobile Phones and Accessories
totalGrossWeight	4500 KGM
totalGrossVolume	40 CBM

## 6.2. Example 2

Booking from Company B to Company D ferry for second leg (Gothenburg-Kiel).

<b>TransportCapacityBooking</b>	
creationDateTime	2011-02-12T12:00:00
documentStatusCode	ORIGINAL
documentActionCode	ADD
transportServiceCategoryCode	10
transportServiceConditionTypeCode	36
EntityIdentification (+transportCapacityBookingIdentification)	
entityIdentification	BOOK1236
TransactionalParty (+logisticServicesBuyer)	
gln	9876543212345
TransactionalParty (+logisticServicesSeller)	
gln	1234567892316
LogisticEvent (+plannedPickUp)	
DateTimeRange (+logisticEventDateTime)	
date	2011-02-18
time	15:00:00
LogisticEvent (+plannedDropOff)	
DateOptionalTime (+logisticEventDateTime)	
date	2011-02-19
time	06:00:00
DeliveryTerms	
incotermsCode	DDP
<b>TransportCapacityBookingTransportMovement</b>	
transportModeCode	10
routeID	GOTKIE-17
LogisticEvent (+plannedDeparture)	
DateOptionalTime (+logisticEventDateTime)	
Date	2011-02-18
Time	17:00:00
LogisticEvent (+plannedArrival)	
DateOptionalTime (+logisticEventDateTime)	
date	2011-02-19
time	04:00:00
<b>TransportCapacityBookingSpaceRequirements</b>	
TransportCargoCharacteristics	

cargoTypeCode	4
cargoTypeDescription	Mobile Phones and Accessories
totalGrossWeight	4500 KGM
totalGrossVolume	40 CBM

### 6.3. Example 3

Response to the booking from Company B to Company D ferry for second leg (Gothenburg-Kiel).

TransportCapacityBookingResponse	
creationDateTime	2011-02-12T12:01:00
documentStatusCode	ORIGINAL
documentActionCode	ADD
transportCapacityBookingStatusCode	ACCEPTED
EntityIdentification (+transportCapacityBookingResponseIdentification)	
entityIdentification	BOOKRESP1236
DocumentReference (+transportCapacityBooking)	
entityIdentification	BOOK1236
TransactionalParty (+logisticServicesBuyer)	
Gln	9876543212345
TransactionalParty (+logisticServicesSeller)	
gln	1234567892316

## 7. Implementation Considerations

Not applicable

## 8. Testing

### 8.1. Pass / Fail Criteria

Not applicable

### 8.2. Test Data

Not applicable

## 9. Adherence to Architectural Principles

#	AG Principle	BSD Adherence Statement	Does BSD Adhere?	Comment
2.1	The GS1 Architecture shall be fully aligned to GS1 Strategy, Vision, & Mission	The solution in the BSD is aligned with the business problem as defined in the CR and BCD.	<input checked="" type="checkbox"/>	
2.2	The GS1 Architecture shall leverage the use of GS1 Keys	The solution maintains the GS1 keys as the primary, mandatory identifiers.	<input checked="" type="checkbox"/>	
2.3	The GS1 Architecture shall leverage the common GS1 Global Data Dictionary (GDD)	The solution does not alter the formats of primary identifiers and complies with data elements as defined in the Global Data Dictionary.	<input checked="" type="checkbox"/>	
2.4	The GS1 Architecture shall be forward-looking, provide for migration strategies and backward compatibility, and support adaptable and flexible solutions	The solution is backwards compatible according to the stated scope in the document. The solution takes into consideration the potential impact of the standard, especially with respect to implementation and maintenance. Any potential known impact is documented.	<input checked="" type="checkbox"/>	
2.5	The GS1 Architecture shall support business processes tied to trading partner needs, relevant, and committed to demonstrable business value	All business requirements contained in the related BRAD come from trading partners or representatives with a genuine intention to implement the standards when developed. All requirements are driven by the business needs of the trading partners.	<input checked="" type="checkbox"/>	
2.6	The GS1 Architecture shall enable security where appropriate	Security solutions are included where appropriate.	<input checked="" type="checkbox"/>	
2.7	The GS1 Architecture shall be consistent	The solution does not violate consistency of the data architecture within each layer and between each layer of the GS1 System. For example, requirements do not alter a key used across GS1 standards or alter a reusable object without applying this change across related standards.	<input checked="" type="checkbox"/>	
2.8	The GS1 Architecture shall be royalty-free	The solution supports this principle where possible. The solution may include the use of other standards organizations that may not be royalty free.	<input checked="" type="checkbox"/>	

#	AG Principle	BSD Adherence Statement	Does BSD Adhere?	Comment
3.1	The GS1 Architecture should promote the achievement of the best overall value at the lowest total cost of ownership	The solution promotes the achievement of the best overall value at the lowest total cost of ownership.	<input checked="" type="checkbox"/>	
3.2	The GS1 Architecture should promote scalability	The solution takes into consideration the potential scalability of the standard. Any potential known impact to scalability is documented.	<input checked="" type="checkbox"/>	
3.3	The GS1 Architecture should promote seamless integration	The BSD promotes seamless integration with other GS1 Standards if in scope.	<input checked="" type="checkbox"/>	
3.4	The GS1 Architecture should promote interoperability and compliance	The solution takes into consideration data and process interoperability. For example, any shared objects between interoperable messages must remain consistent. Any potential known impact to interoperability is documented.	<input checked="" type="checkbox"/>	
3.5	The GS1 Architecture should promote simplicity and standard interfaces	The solution does not threaten the standardisation of the interfaces of the GS1 System. Interfaces are not limited to references to technology but also include such ideas as business interfaces and process interfaces.	<input checked="" type="checkbox"/>	
3.6	The GS1 Architecture should avoid duplication	The solution does not create duplications with existing GS1 components. If there are potential duplications, these are documented with a stated rationale for the duplication.	<input checked="" type="checkbox"/>	
3.7	The GS1 Architecture should promote technology independence and a layered approach	The solution does not impose implicit or explicit restrictions of any technology.	<input checked="" type="checkbox"/>	
3.8	The GS1 Architecture should promote global cross-sector definitions and leverage the best of global and the best of local	The solution takes into account a global perspective.	<input checked="" type="checkbox"/>	
3.9	The GS1 Architecture shall leverage a common strategy for extensibility	This solution uses consistent and common, extensibility approaches, methodologies and technology where available and applicable.	<input checked="" type="checkbox"/>	

#	AG Principle	BSD Adherence Statement	Does BSD Adhere?	Comment
4.1	In support of a common GS1 Architecture, GS1 shall leverage work of other standards bodies wherever possible.	This solution utilizes works of other standards bodies wherever possible.	<input checked="" type="checkbox"/>	
4.2	In support of a common GS1 Architecture, GS1 shall strive to eliminate exceptions and variances wherever possible	The solution strives to eliminate exceptions and variances wherever possible and does not create new variances.	<input checked="" type="checkbox"/>	

## 10. Summary of Changes

Change	BSD Version	Associated CR Number
<ul style="list-style-type: none"> <li>■ In class diagram and GDD report for Transport Capacity Booking Response: Changed role name <code>transportCapacityBookingConfirmationIdentification</code> into <code>transportCapacityBookingResponseIdentification</code></li> <li>■ Corrected sample data in paragraphs 6.1 (wrong GLN format) and 6.3 (missing reference).</li> </ul>	1.0 (28-nov-2011)	