



Business Message Standard (BMS) Transport Capacity Requirements

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Business Requirements Document (BRAD) Reference

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Transport Planning	March 2011	1.0

Document Change History

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08Nov2011	1.0	Coen Janssen	Public Review	Updated chapter 2	

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Table of Contents

1. Business Domain View	4
1.1. Problem Statement / Business Need	4
1.2. Objective.....	4
1.3. Audience.....	4
1.4. References	5
1.5. Acknowledgements	5
1.5.1. BRG Work Group.....	5
1.5.2. Design Team Members.....	5
2. Business Context	6
3. Additional Technical Requirements Analysis.....	6
3.1. Technical Requirements (optional)	6
4. Business Transaction View	7
4.1. Use Case Diagram – Manage Transport Capacity Plan	7
4.2. Use Case Description – Issue Transport Capacity Requirements.....	7
4.3. Activity Diagram(s) – Issue Transport Capacity Requirements	8
4.4. Sequence Diagram(s) – Manage Transport Capacity Plan	8
5. Information Model (Including GDD Report)	9
5.1. Transport Capacity Requirements	9
5.1.1. GDD Report - Transport Capacity Requirements.....	9
5.1.2. Class Diagram - Transport Capacity Requirements	11
5.1.3. GDD Report - Transport Capacity Requirements Line Item.....	12
5.1.4. Class Diagram - - Transport Capacity Requirements Line Item.....	13
5.2. Enumerations & Codes (message specific classes)	14
6. Business Document Examples.....	14
6.1. Example 1	14
7. Implementation Considerations	15
8. Testing	15
8.1. Pass / Fail Criteria.....	15
8.2. Test Data	15
9. Adherence to Architectural Principles	16
10. Summary of Changes.....	18

1. Business Domain View

1.1. Problem Statement / Business Need

This BMS, Transport Capacity Requirements, is part of the global GS1 standard for transport planning, enabling Logistic Services Buyers to share capacity forecasts for transportation equipment required by trade lane, origin and destination with Logistic Services Sellers. In this way, Logistic Services Sellers can anticipate the demand for transportation capacity, and can measure their ability to support projected volumes. By providing this visibility to Logistic Services Sellers, the seller will have a reduced need to react to equipment requirements at a moment's notice, easing capacity constraints, improving the efficiency of equipment deployment and utilization, and ultimately taking out unnecessary cost in the supply chain.

In the Transport Capacity Requirements message the Logistic Services Buyer will define their transportation capacity requirements by developing a forecast based on aggregated demand covering extended periods of time. (*i.e. product/order forecasts are rolled up and extended to shipment forecasts*). These requirements should take into consideration seasonality, promotions, production capacities, as well as other factors. As a shipping horizon gets closer, the transport capacity forecasts may become more detailed. The transportation capacity requirement message is sent to the Logistic Services Seller.

Subsequently, the Logistic Services Seller will analyse the capacity requirements and measure their ability to support the projected volumes, developing a transport capacity plan, which is sent to the Logistic Services Buyer. The Transport Capacity Plan is described in a separate BMS.

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
Modeler	Coen Janssen, Mark van Eeghem	GS1 Global Office
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

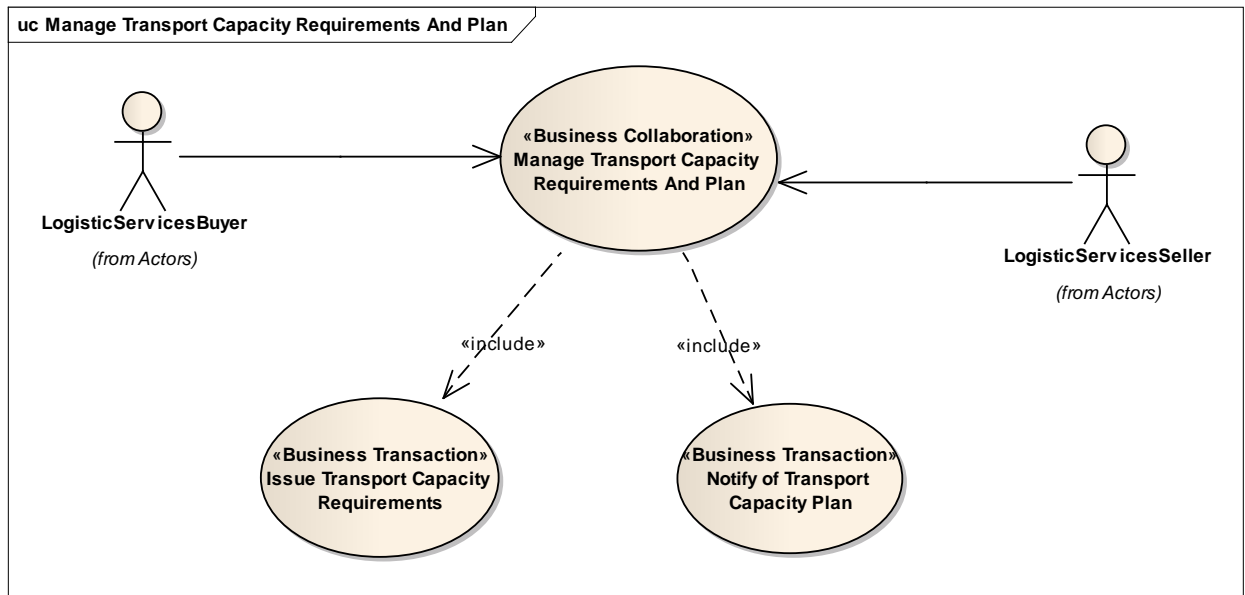
3.1. Technical Requirements (optional)

Number	Statement	Rationale
	Not applicable	

4. Business Transaction View

4.1. Use Case Diagram – Manage Transport Capacity Plan

Figure 4-1 Use Case Diagram



4.2. Use Case Description – Issue Transport Capacity Requirements

Use Case ID	UC-1A
Use Case Name	Issue Transport Capacity Requirements
Use Case Description	The purpose of this transaction is to define and share transportation capacity requirements based on aggregated demand (i.e. product/order forecasts rolled up and extended to shipment forecasts).
Actors (Goal)	Logistic Services Buyer (LSB) Logistic Services Seller (LSS)
Performance Goals	
Preconditions	<p>The LSB has developed the capacity requirements (based on an aggregation of product/order forecasts) into shipment forecast information.</p> <p>The trading partners have agreed upon:</p> <ul style="list-style-type: none"> Message schedule or frequency (weekly, monthly, yearly, etc...) Time Horizon of the information within the message Forecast Buckets which organize the data based on the time horizon (e.g. data in message that is for 3-4 months prior to shipment – “buckets” are per month; 2 months prior – “buckets” are per week; 1 month prior – “buckets” are by week for weeks 3& 4, and by day for weeks 1 & 2)
Post conditions	The LSS has received the transport capacity requirements.

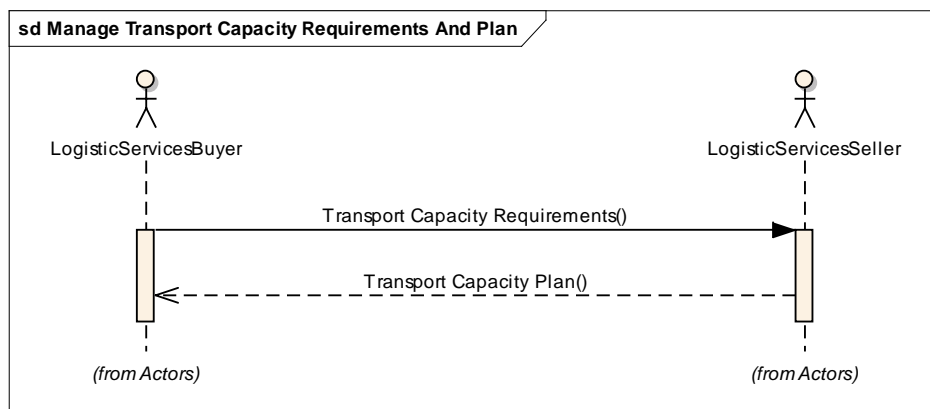
Use Case ID	UC-1A
Scenario	<p>Begins when...The LSB has developed a transport capacity requirement (forecast) to be communicated to the LSS based on the agreed upon schedule.</p> <p>Continues with...</p> <ul style="list-style-type: none"> ■ The LSB issuing the transport capacity requirements ■ The LSS receiving the transport capacity requirements <p>Ends when... The LSS has received the transport capacity requirements and begins the process of developing transportation capacity plans.</p>
Alternative Scenario	
Related Requirements	<p>Activities:</p> <p>LSB - Prepares transportation capacity forecasts, taking into consideration seasonality, promotions, production capacities, as well as other factors. As shipping horizon gets closer, transportation forecasts become more detailed.</p> <p>For example:</p> <ul style="list-style-type: none"> ■ 3-4 months prior to shipment: forecasts are declared for the month ■ 2 months prior to shipment: forecasts are declared per week ■ 1 month prior to shipment: forecasts are declared by day for weeks 1 & 2, and by month week for weeks 3 & 4 <p>LSS – Analyzes volume forecasts and measures ability to support the projected volumes. As the time horizon for shipping draws closer, the LSS begins development of transport plans. If the LSS has responsibility for carrier relationships, the LSS also begins the process of booking with specific carriers.</p>
Related Rules	

4.3. Activity Diagram(s) – Issue Transport Capacity Requirements

Not applicable

4.4. Sequence Diagram(s) – Manage Transport Capacity Plan

Figure 4-2 Sequence Diagram



NOTE: Sending of the transport capacity plan is optional. When used it must be in reply to Transport Capacity Requirements.

5. Information Model (Including GDD Report)

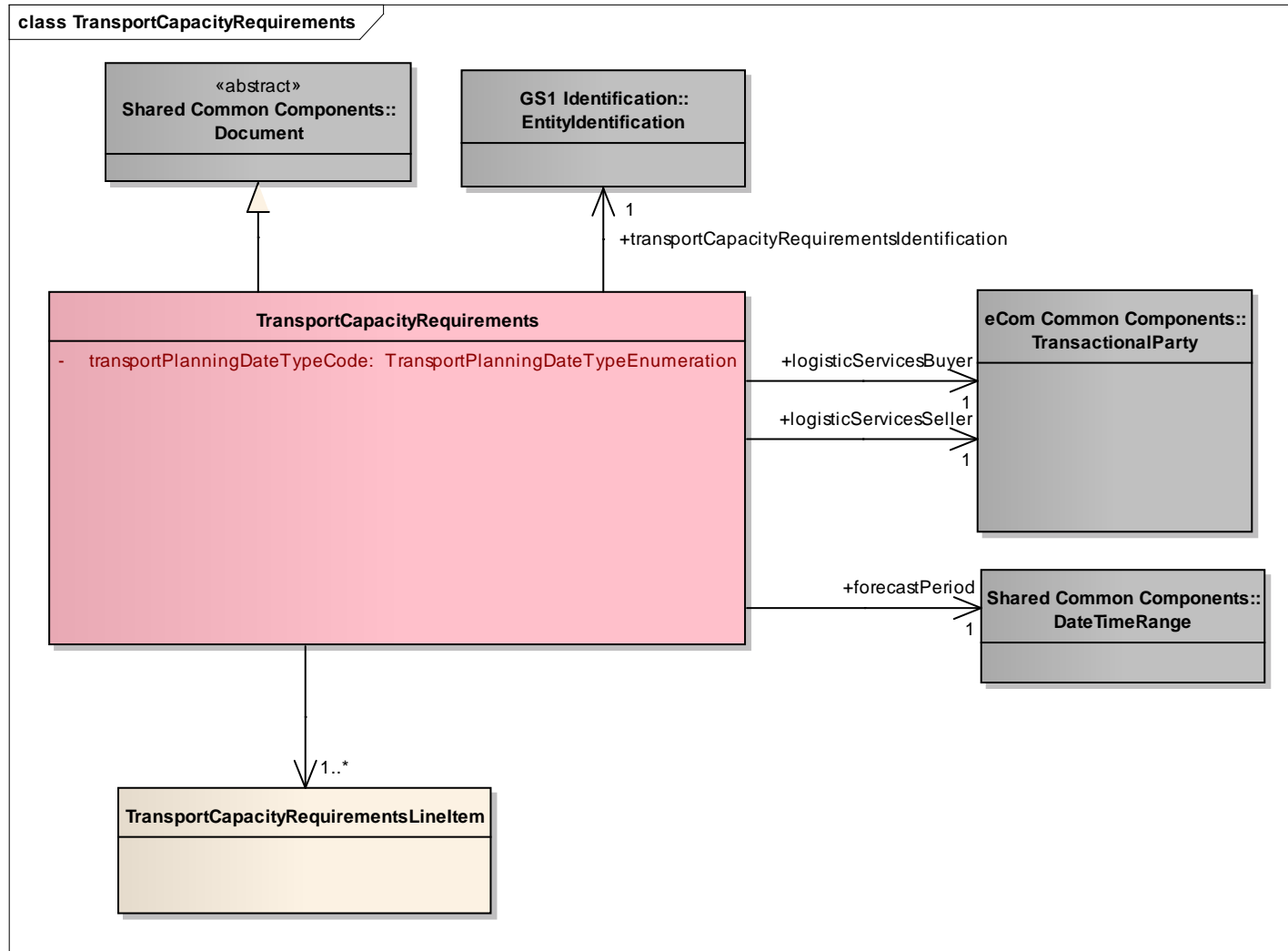
5.1. Transport Capacity Requirements

5.1.1. GDD Report - Transport Capacity Requirements

Content	Attribute / Role	Datatype /Secondary class	Multi plici ty	Definition	Requirements
TransportCapacityRequirements				Transport Capacity Requirements enables the Logistic Services Buyer to define their transportation capacity requirements by developing a forecast based on aggregated demand covering extended periods of time.	
Generalization		Document		Used to specify basic information about the content of the message including version number, creation date and time.	BRAD Transport Planning - TRH2, TRH3
Association	transportCapacityRequirementsIdentification	EntityIdentification	1..1	Provides the unique identification of the transport capacity requirements.	BRAD Transport Planning - TRH1
Association	logisticServicesBuyer	TransactionalParty	1..1	A party that purchases logistics services from another party.	BRAD Transport Planning - TRH6
Association	logisticServicesSeller	TransactionalParty	1..1	A party that provides logistics services to another party.	BRAD Transport Planning - TRH7
Association	forecastPeriod	DateTimeRange	1 ..1	The period to which the forecast applies.	BRAD Transport Planning - TRH4
Association		TransportCapacityRequirementsLineItem	1..*	Specifies the projected transport capacity requirements on detail level.	BRAD Transport Planning - TRH8

Content	Attribute / Role	Datatype /Secondary class	Multi plici ty	Definition	Requirements
Attribute	transportPlanningDateType Code	TransportPlanningDateT ypeEnumeration	1..1	Code specifying the type of date used for transport planning, i.e. the delivery date or the pick-up date.	BRAD Transport Planning - TRH5

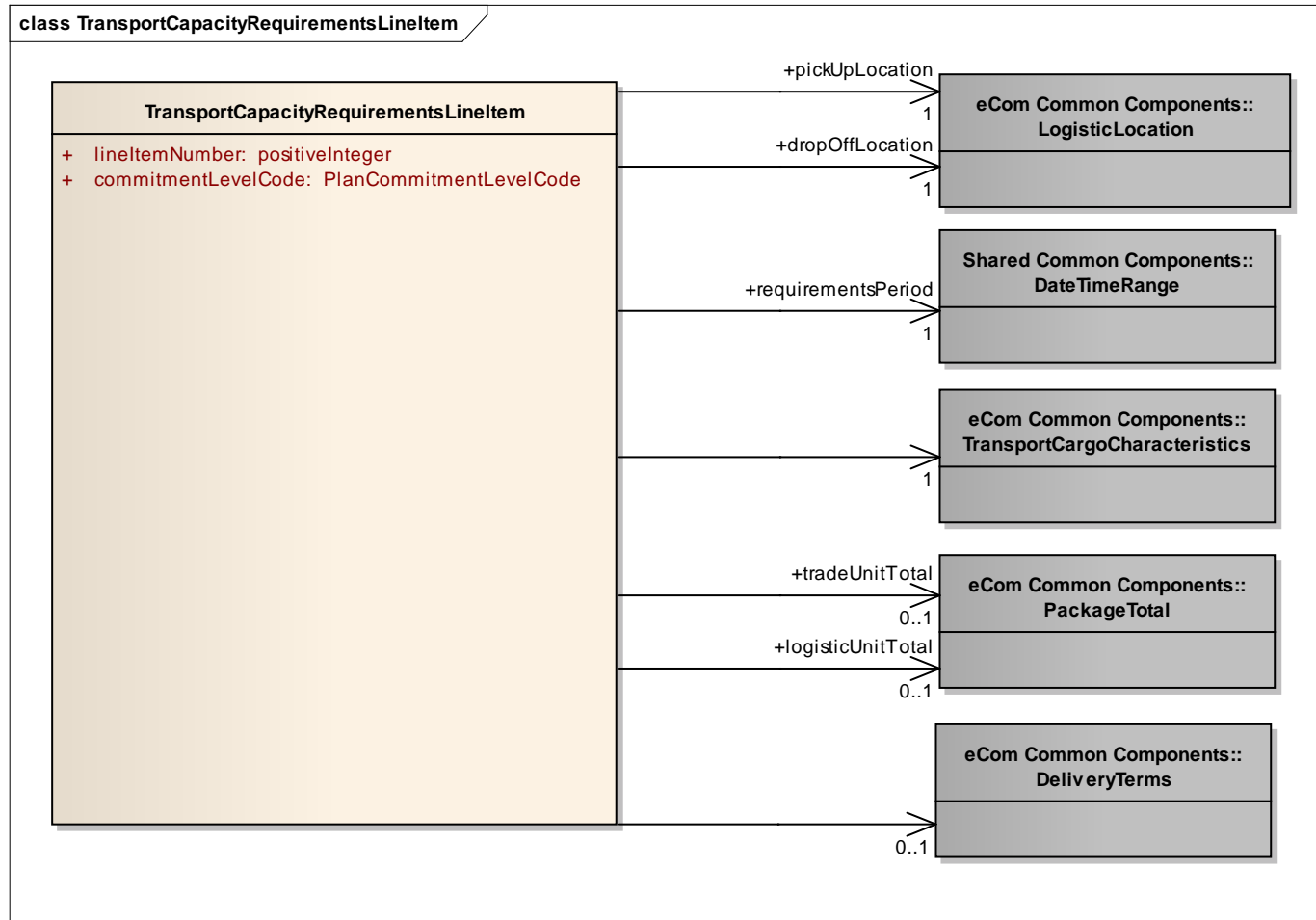
5.1.2. Class Diagram - Transport Capacity Requirements



5.1.3. GDD Report - Transport Capacity Requirements Line Item

Content	Attribute / Role	Datatype /Secondary class	Multipl icity	Definition	Requirements
TransportCapacityRequirementsLineItem				Specifies the projected transport capacity requirements for a given route and cargo type.	
Association		TransportCargoCharacteristics	1..1	Aggregate information on the goods to be transported.	BRAD Transport Planning - RLI2, RLI3, RLI5, RLI6, RLI7
Association	logisticUnitTotal	PackageTotal	0..1	The total number of logistic units to be transported.	BRAD Transport Planning - RLI9
Association	tradeUnitTotal	PackageTotal	0..1	The total number of trade units (e.g. cases) to be transported.	BRAD Transport Planning – RLI8
Association		DeliveryTerms	0..1	The applicable legal, customs, financial and insurance terms for the delivery of the goods.	BRAD Transport Planning - RLI4
Association	pickUpLocation	LogisticLocation	1 ..1	The location where the goods need to be collected.	BRAD Transport Planning - RLI10 (LOC1, LOC2)
Association	dropOffLocation	LogisticLocation	1..1	The location where the goods need to be delivered.	BRAD Transport Planning - RLI10
Association	requirementsPeriod	DateTimeRange	1..1	Defines the start and end dates of the planning time bucket.	BRAD Transport Planning - RLI11 (TRS1)
Attribute	lineItemNumber	positiveInteger	1..1	Provides the line number associated to the Line Item.	BRAD Transport Planning - RLI1
Attribute	commitmentLevelCode	PlanCommitmentLevelCode	1..1	Code specifying the level of commitment for this grouping or bucket of transport requirements.	BRAD Transport Planning - TRS2

5.1.4. Class Diagram - - Transport Capacity Requirements Line Item



5.2. Enumerations & Codes (message specific classes)

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

- TransportPlanningDateTypeCode
- PlanCommitmentLevelCode

6. Business Document Examples

6.1. Example 1

A Logistic Service Buyer, ABC_Company identified by GLN 1234567890123, is providing a forecast of capacity requirements for 6 months to Logistics_International identified by GLN 9876543212345.

TransportCapacityRequirements	
creationDateTime	2009-12-12T12:00:00
documentStatusCode	ORIGINAL
documentActionCode	ADD
transportPlanningDateTypeCode	DELIVERY_DATE
EntityIdentification (+transportCapacityRequirementsIdentification)	
entityIdentification	RQMT1234
TransactionalParty (+logisticServicesBuyer)	
gln	1234567890123
TransactionalParty (+logisticServicesSeller)	
gln	9876543212345
DateTimeRange (+forecastPeriod)	
beginDate	2010-01-01
endDate	2010-06-30
TransportCapacityRequirementsLineItem	
lineItemNumber	1
commitmentLevelCode	PLANNED
LogisticLocation(+pickUpLocation)	
unLocationCode	US LAX
LogisticLocation(+dropOffLocation)	
unLocationCode	US EWR
DateTimeRange(+requirementsPeriod)	
beginDate	2010-01-01
endDate	2010-01-07
TransportCargoCharacteristics	
cargoTypeCode	12

cargoTypeDescription	Furniture
totalGrossWeight	50 KGM
totalGrossVolume	9.22 CBM
totalItemQuantity	75
totalPackageQuantity	5
LogisticUnitTotal (+tradeUnitTotal)	
packageTypeCode	CS
totalPackageQuantity	25
LogisticUnitTotal (+logisticUnitTotal)	
packageTypeCode	200
totalPackageQuantity	25
DeliveryTerms	
incotermsCode	CFR
LogisticLocation	
unLocationCode	US RDG

7. Implementation Considerations

Not applicable

8. Testing

This section describes the testing criteria for business solutions.

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"/>	
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"/>	

#	AG Principle	BSD Adherence Statement	Does BSD Adhere?	Comment
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
Initial Version	1.0.0	