



Transport Capacity Plan Business Message Standard (BMS)

Release 3.1

1-May-2013, Issue 1



Document Summary

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| 08 Jul 2009 | Jean-Luc Champion, GS1 Global Office on behalf of Jaco Voorspuij, DHL | 09-000189 |

Business Requirements Document (BRAD) Reference

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

Document Change History

| Date of Change | Version | Changed By | Reason for Change | Summary of Change |
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| 08Dec2011 | BMS 3.0 issue 1.0 | Coen Janssen | TSD Development | See summary of changes |
| 1-May-2013 | BMS 3.1 issue 1 | Coen Janssen | BMS Release 3.1 | See summary of changes |

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1. Business Domain View

1.1. Problem Statement / Business Need

This BMS, Transport Capacity Plan, 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.

The Logistic Services Seller is responsible for developing the Transport Capacity Plan. He does this based on the Transport Capacity Requirements communicated to him by the Logistic Services Buyer.

NOTE: Please refer to BMS Transport Capacity Requirements for more information on this.

Given that the Logistic Services Seller will likely have numerous clients, he should evaluate capacity commitments to all buyers before determining whether they can support the capacity needs of each individual buyer. Based on a number of factors, the Logistic Services Seller may determine the need to allocate capacity from one client to another.

When analysing the forecast received from the Logistic Services Buyer, the Logistic Services Seller may combine the cargo (for multiple requirement lines) if they are for the same trade lane (i.e. origin/destination), forecast bucket, and service requirement level (e.g. refrigerated vs. general cargo).

1.2. Objective

This standard defines the transaction model and data model for the following business messages:

- Transport Capacity Plan

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) | |
| BMS eCom Domain Common Library Release 3.1 | The documented design of components that are used in multiple messages within the eCom domain. |
| BMS Shared Common Library Release 3.1 | The documented design of components that are used in multiple messages within the eCom domain and GDSN. |

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. Work Group

| Function | Name | Company / organisation |
|-------------------|-------------------|-----------------------------------|
| Work Group Chair | Fred Kempkes | Unilever |
| Work Group Chair | Jaco Voorspuij | DHL |
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| Work Group Member | Richard Chresta | GS1 Switzerland & UNCEFACT TGB3 |
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1.5.2. Development Team Members

| Function | Name | Organisation |
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| Standards Content Lead | Coen Janssen | GS1 Global Office |
| Technical Development Lead | Ewa Iwicka | GS1 Global Office |
| Peer Review | Eric Kauz | GS1 Global Office |

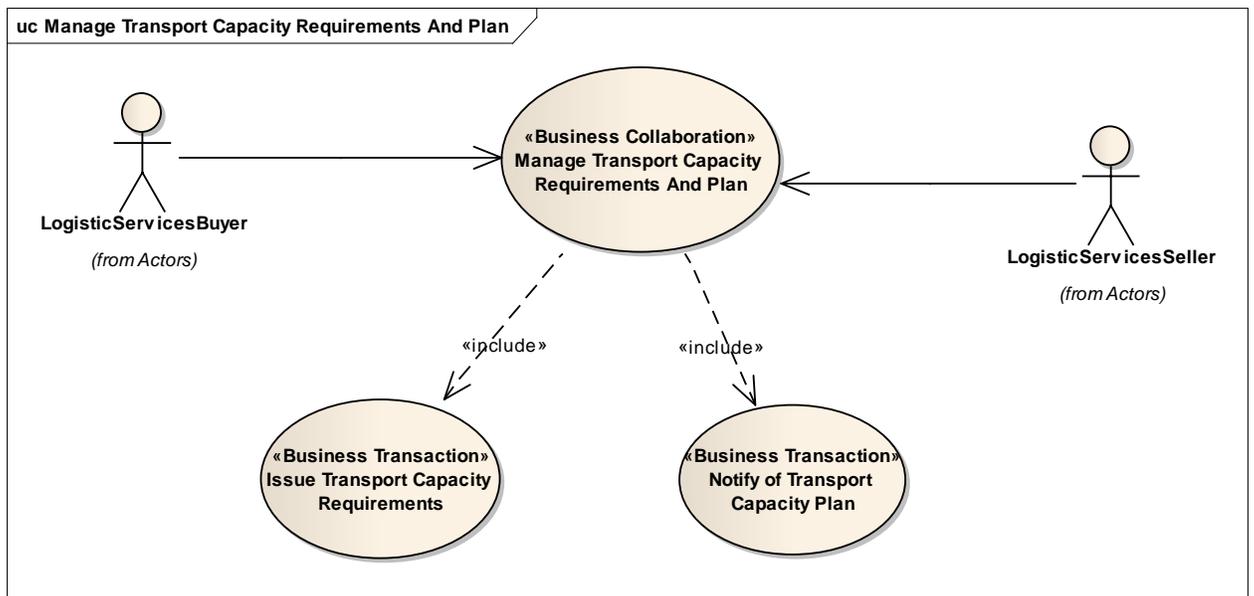
2. Business Context

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

3. Business Transaction View

3.1. Manage Transport Capacity Plan

Use Case Diagram



Use Case Description

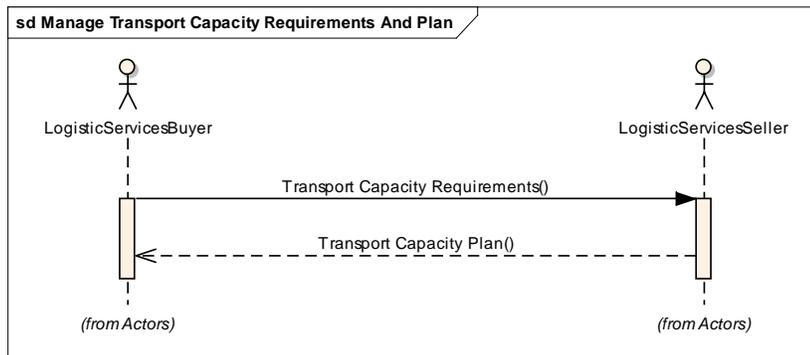
| Use Case ID | UC-1B |
|----------------------|--|
| Use Case Name | Notify of Transport Capacity Plan |
| Use Case Description | The purpose of this transaction is to enable the Logistic Service Seller to submit a transport capacity plan to the Logistic Service Buyer, identifying how they will support the transport capacity requirements. |
| Actors (Goal) | Logistic Service Buyer (LSB) Logistic Service Seller (LSS) |

| Use Case ID | UC-1B |
|----------------------|---|
| Performance Goals | |
| Preconditions | <p>The LSS has received the transport capacity requirements (capacity forecast) from the LSB.</p> <p>The trading partners have agreed upon:</p> <ul style="list-style-type: none"> ■ Timeframe that the transport capacity plan should be sent after receipt of transport capacity requirements. ■ Time Horizon of the information within the message ■ Forecast Buckets which organize the data based on the time horizon (<i>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</i>) <p>Partners have also pre-defined the freight terms, geographic scope of partnership, and distribution strategies to be utilized.</p> |
| Post conditions | The LSB has received the transport capacity plan. |
| Scenario | <p>Begins when... The LSS has received the transport capacity requirements</p> <p>Continues with...</p> <ul style="list-style-type: none"> ■ The LSS develops a transport capacity plan ■ The LSS sending the transport capacity plan to the LSB ■ The LSB receiving the transport capacity plan <p>Ends when... LSB has received the transport capacity plan</p> |
| Alternative Scenario | |
| Related Requirements | |
| Related Rules | |

Activity Diagram(s)

Not applicable

Sequence Diagram(s)

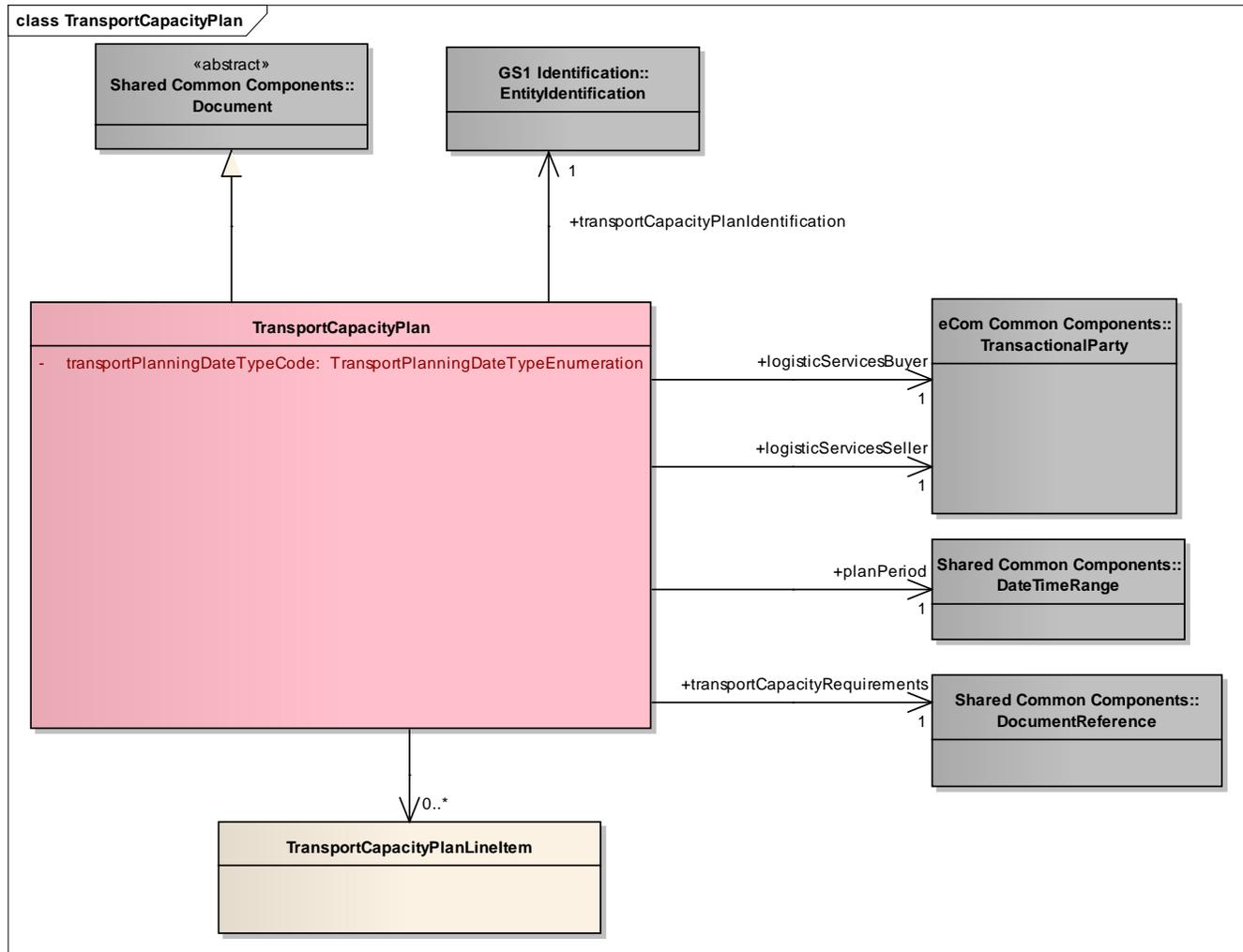


NOTE: Sending of the transport capacity plan is optional. When used it must be in reply to Transport Capacity Requirements.

4. Business Information View

4.1. Transport Capacity Plan

Class Diagram

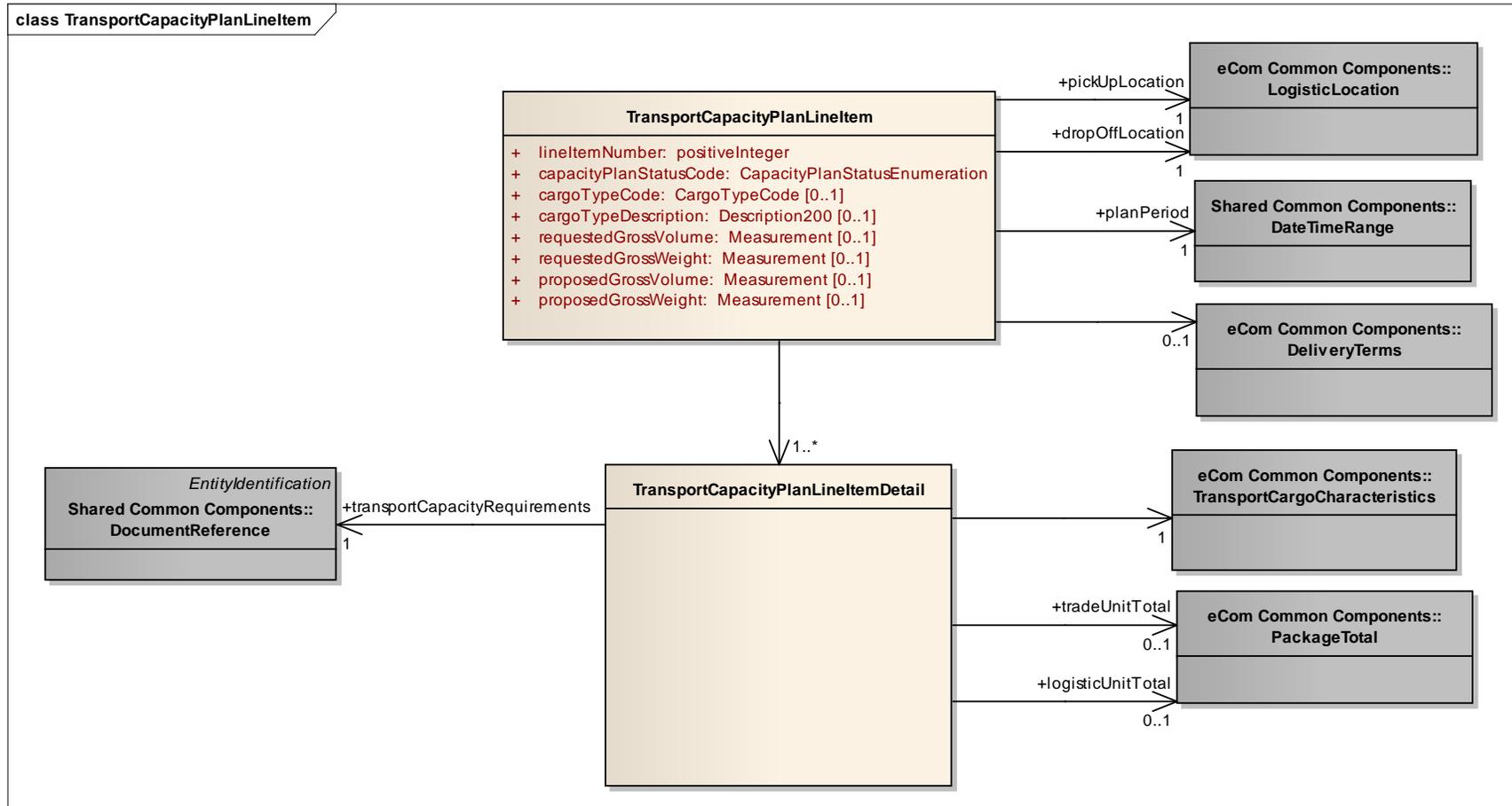


GDD Report

| Content | Attribute / Role | Datatype /Secondary class | Multipl icity | Definition | Requirements |
|-----------------------|-------------------------------------|--------------------------------------|------------------|---|--------------------------------------|
| TransportCapacityPlan | | | | Transport Capacity Plan is created by the Logistic Services Seller based on the Transport Capacity Requirements communicated to him by the Logistic Services Buyer. | |
| Generalization | | Document | | Used to specify basic information about the content of the message including version number, creation date and time. | BRAD Transport Planning - TCP2, TCP3 |
| Association | transportCapacityPlanIdentification | EntityIdentification | 1 | Provides the unique identification of the transport capacity plan. | BRAD Transport Planning - TCP1 |
| Association | logisticServicesBuyer | TransactionalParty | 1 | A party that purchases logistics services from another party | BRAD Transport Planning - TCP6 |
| Association | logisticServicesSeller | TransactionalParty | 1 | A party that provides logistics services to another party. | BRAD Transport Planning - TCP7 |
| Association | planPeriod | DateTimeRange | 1 | The period to which the plan applies. | BRAD Transport Planning - TCP4 |
| Association | transportCapacityRequirements | DocumentReference | 1 | Reference to the transport capacity requirements message on which the plan has been based. | BRAD Transport Planning - TCP8 |
| Association | | TransportCapacityPlanLineItem | 0..* | Specifies the transport capacity plan on detail level. | BRAD Transport Planning - TCP9 |
| Attribute | transportPlanningDateTypeCode | TransportPlanningDateTypeEnumeration | 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 - TCP5 |

4.2. Transport Capacity Plan Line Item

Class Diagram



GDD Report

| Content | Attribute / Role | Datatype /Secondary class | Multiplcity | Definition | Requirements |
|--------------------------------------|------------------|---------------------------|-------------|---|--------------|
| <u>TransportCapacityPlanLineItem</u> | | | | Specifies the planned transport capacity allocation for a given route and cargo type. | |



| Content | Attribute / Role | Datatype /Secondary class | Multiplcity | Definition | Requirements |
|-------------|------------------------|-------------------------------------|-------------|--|---------------------------------------|
| Association | planPeriod | DateTimeRange | 1 | The period to which the transport capacity plan line item applies. | BRAD Transport Planning - TPL8 (TPS1) |
| Association | dropOffLocation | LogisticLocation | 1 | The location where the goods need to be delivered. | BRAD Transport Planning - TPL7 (TCL1) |
| Association | pickUpLocation | LogisticLocation | 1 | The location where the goods need to be collected. | BRAD Transport Planning - TPL7 (TCL1) |
| Association | | DeliveryTerms | 0..1 | The applicable legal, customs, financial and insurance terms for the delivery of the goods. | BRAD Transport Planning - TPL3 |
| Association | | TransportCapacityPlanLineItemDetail | 1..* | Details on the transport capacity requirements on which the plan is based. | BRAD Transport Planning - TPL9 |
| Attribute | lineItemNumber | positiveInteger | 1..1 | Provides the line number associated to the line item. | BRAD Transport Planning - TPL1 |
| Attribute | capacityPlanStatusCode | CapacityPlanStatusEnumeration | 1..1 | Code specifying the degree to which the requested capacity can be supported. | BRAD Transport Planning - TPL4 |
| Attribute | cargoTypeCode | CargoTypeCode | 0..1 | Code specifying the classification of a type of cargo for example hazardous cargo. | BRAD Transport Planning - TPL2 |
| Attribute | cargoTypeDescription | Description200 | 0..1 | Free text specifying the classification of a type of cargo. | BRAD Transport Planning - TPL2 |
| Attribute | requestedGrossVolume | Measurement | 0..1 | The requested transport capacity expressed as the volume of the goods, calculated by multiplying the maximum length, width, and height of the packaged goods. | BRAD Transport Planning - TPL5 |
| Attribute | requestedGrossWeight | Measurement | 0..1 | The requested transport capacity expressed as the weight of the goods, including the weight of transport packaging, and potentially the weight of any transport equipment. | BRAD Transport Planning - TPL5 |
| Attribute | proposedGrossVol | Measurement | 0..1 | The proposed transport capacity expressed as the volume of the | BRAD Transport |

| Content | Attribute / Role | Datatype /Secondary class | Multipli city | Definition | Requirements |
|--|--------------------------------|-------------------------------|---------------|---|--|
| | ume | | | goods, calculated by multiplying the maximum length, width, and height of the packaged goods. | Planning - TPL6 |
| Attribute | proposedGrossW eight | Measurement | 0..1 | The proposed transport capacity expressed as the weight of the goods, including the weight of transport packaging, and potentially the weight of any transport equipment. | BRAD Transport Planning - TPL6 |
| TransportCapacityPlanLineItemDetail | | | | Specifies the requested transport capacity allocation for a given route and cargo type. | |
| Association | | TransportCargoCharacteristics | 1 | Aggregate information on the goods to be transported. | BRAD Transport Planning - TRD2, TRD3, TRD4, TRD6 |
| Association | logisticUnitTotal | PackageTotal | 0..1 | The total number of logistic units to be transported. | BRAD Transport Planning - TRD5 |
| Association | tradeUnitTotal | PackageTotal | 0..1 | The total number of trade units (e.g. cases) to be transported. | BRAD Transport Planning - TRD5 |
| Association | transportCapacity Requirements | DocumentReference | 1 | Reference to the related transport capacity requirements line item. | BRAD Transport Planning - TRD1 |

4.3. Enumerations & codes (message specific classes only)

4.3.1. Capacity Plan Status Enumeration

| Value | Description |
|---------------------------|--|
| ACCEPTED_IN_FULL | The full amount of the requested capacity can be supported. |
| ACCEPTED_PARTIAL | A partial amount of the requested capacity can be supported (i.e. "shortage"). For example, the requested capacity is 500 CBM, but the accepted capacity is 250 CBM). |
| ACCEPTED_EXCESS_AVAILABLE | The full amount of the requested capacity can be supported, and there is additional capacity available. For example, the requested capacity is 500 CBM. The accepted capacity is 500 CBM, and there is still 250 CBM of capacity of available. |
| REJECTED | The requested capacity cannot be supported. |

4.3.2. Common codes / enumerations

Please refer to BMS eCom Domain Common for the following codelists:

- TransportPlanningDateTypeCode
- CargoTypeCode

5. Business Message Examples

5.1. 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.

| TransportCapacityPlan | |
|---|---------------------|
| creationDateTime | 2009-12-14T12:00:00 |
| documentStatusCode | ORIGINAL |
| documentActionCode | ADD |
| transportPlanningDateTypeCode | DELIVERY_DATE |
| EntityIdentification (+transportCapacityPlanIdentification) | |
| entityIdentification | PLAN1234 |
| TransactionalParty (+logisticServicesBuyer) | |
| gln | 1234567890123 |
| TransactionalParty (+logisticServicesSeller) | |
| gln | 9876543212345 |
| DateTimeRange (+planPeriod) | |
| beginDate | 2010-01-01 |

| | |
|--|------------------|
| endDate | 2010-06-30 |
| DocumentReference (+transportCapacityRequirements) | |
| entityIdentification | RQMT1234 |
| TransportCapacityPlanLineItem | |
| lineItemNumber | 1 |
| capacityPlanStatusCode | ACCEPTED_IN_FULL |
| cargoTypeCode | 12 |
| requestedGrossWeight | 50 KGM |
| requestedGrossVolume | 9.22 CBM |
| proposedGrossWeight | 50 KGM |
| proposedGrossVolume | 9.22 CBM |
| LogisticLocation(+pickUpLocation) | |
| unLocationCode | US LAX |
| LogisticLocation(+dropOffLocation) | |
| unLocationCode | US EWR |
| DateTimeRange(+planPeriod) | |
| beginDate | 2010-01-01 |
| endDate | 2010-01-07 |
| DeliveryTerms | |
| incotermsCode | CFR |
| LogisticLocation | |
| unLocationCode | US RDG |
| TransportCapacityPlanLineItemDetail | |
| 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 |
| DocumentReference (+transportCapacityRequirements) | |
| entityIdentification | RQMT1234 |

| | |
|----------------|---|
| lineItemNumber | 1 |
|----------------|---|

6. Implementation Considerations

Not applicable

7. Appendices

Not applicable

8. Summary of Changes

8.1. BMS Release 3.0

| Change | BSD Version | Associated CR Number |
|-----------------|-------------|----------------------|
| Initial Version | 1.0 | N/A |

8.2. BMS Release 3.1

No work requests. Indirect changes due to upgrade to new Shared and eCom Common libraries.