

Business Message Standard (BMS)

for

Goods Requirements

**BRG: Plan
IRT: Upstream Standards**

BMS Release: 2.1

Document Version: 0.1.5

Date: 12.10.2005



Change Request Reference

Refer to Change Request (CR) Number(s):	CR04-000211
CR Submitter(s):	Regenald Kramer
Date of CR Submission to GSMP:	05.11.2004

Business Requirements Document (BRAD) Reference

BRAD Title:	BRAD Upstream Standards – Demand & Supply Signals
BRAD Date:	01.11.2004
BRAD Version:	0.1.0

Document Summary

Document Number:	P4CL: 7563
Document Title:	Goods Requirements
Owner:	BRG: Plan IRT: Upstream Standards Chairperson: Fred Kempkes
Status:	(check one box) <input type="checkbox"/> DRAFT <input checked="" type="checkbox"/> Approved
BMS Template Version:	1.2
Targeted BMS Publication Version	2.1

Document Change History

Note: During development include revisions in history. Upon Approval, eliminate revisions and include only delta from previous version.

Date of Change	Version	Changed By	Reason for Change	Summary of Change	Model Build #
20.12.2004	0.0.1	Coen Janssen	Initial Draft		
12.01.2005	0.0.2	CJ	Review		
20.01.2005	0.0.3	CJ	Review		
14.02.2005	0.0.4	CJ	Motion to public review	Changed name of message from material requirements into goods requirements. Several corrections.	
07.04.2005	0.1.0	CJ	Public review comments	Typos in chapter 6.2.2	
24.05.2005	0.1.1	CJ	Peer review comments		
14.06.2005	0.1.2	CJ	XML develop-	Moved GoodsRequire-	

			ment	mentsLineItem to Common Library.	
13.07.2005	0.1.3	CJ	Technical Development Public Review	Several cosmetic changes. Functional change, see paragraph 1.10.	
12.10.2005	0.1.4	John Ryu	Build Master QA	Cosmetic Change to Document, no change to model. See section 1.10	BSD P4CL: 7563 MDL P4CL: 7559
25.04.2007	0.1.5	Giovanni Biffi	Editorial Changes	Minor Editorial Changes to the Document	N/A

Business Message Standard

Table of contents

Chapter	Page
1 Business Solution	1
1.1 Executive Overview	1
1.1.1 Problem Statement / Business Need.....	1
1.1.2 Objective.....	1
1.1.3 Audience.....	1
1.1.4 Artefacts	1
1.1.5 References	1
1.1.6 Acknowledgements	1
1.1.6.1 IRT Members	1
1.1.6.2 BRG Members	2
1.1.6.3 ITRG Members	2
1.1.6.4 Design Team Members	2
1.2 Business Context	3
1.3 Additional Technical Requirements Analysis	3
1.3.1 Technical Requirements (optional).....	3
1.4 Business Transaction View	3
1.4.1 Business Transaction NET REQUIREMENTS	4
1.4.2 Business Transaction Use Case Diagram.....	4
1.4.3 Use Case Description.....	4
1.4.4 Business Transaction Activity Diagram(s)	5
1.4.5 Business Transaction Sequence Diagram(s) (optional)	5
1.4.6 Business Transaction CONSUMPTION FORECAST	5
1.4.7 Business Transaction Use Case Diagram.....	5
1.4.8 Use Case Description.....	6
1.4.9 Business Transaction Activity Diagram(s)	7
1.4.10 Business Transaction Sequence Diagram(s) (optional)	7
1.5 Information Model (including GDD Report)	8
1.5.1 Data Description	8
1.5.2 GDD Report.....	9
1.5.3 Class Diagrams	11
1.5.4 Code Lists.....	12
1.6 Business Document Example	13

Business Message Standard

Table of contents

1.7 Implementation Considerations 15

1.8 Testing 15

 1.8.1 Pass / Fail Criteria 15

 1.8.2 Test Data 16

1.9 Appendices 16

1.10 Summary of Changes 16

2 Technical Solution Design 17

1 Business Solution

1.1 Executive Overview

1.1.1 Problem Statement / Business Need

(States the business need, establishing the context for the business transactions and information requirements.)

In several business scenarios the buyer needs to communicate his Goods Requirements to the seller. This can be needed in traditional order driven scenarios and is definitely needed in supplier managed scenarios. The Goods Requirements communicated by the buyer can be gross or net (= gross requirements -/- inventory).

1.1.2 Objective

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

(Above is standards text for the objective.)

1.1.3 Audience

(List of expected internal and external users of the BMS expressed as stakeholder.)

- Manufacturers
- Suppliers
- Logistic Service Providers

1.1.4 Artefacts

(List of the artefacts that are used as either an input to the process or an output from the process, also indicating the different states that the artefact takes during the process.)

Artefact name	State	Artefact / State description
None		

1.1.5 References

	Reference Name	Description
[Ref1]	BMS Common Library for Version 2.1 Publication Release	The documented design of components that are used in multiple messages.
[Ref2]	BRAD Upstream Standards - Demand & Supply Signals 0.1.0	

1.1.6 Acknowledgements

(List of the individuals—and their companies—who participated in the creation, review and approval of this BMS.)

1.1.6.1 IRT Members

Function	Name	Company / organisation
IRT Chair	Fred Kempkes	Unilever

IRT Participant	Kevin Zeng	Procter & Gamble
IRT Participant	Stephen Bell	CPG Market
IRT Participant	Roland Dachs, Olivier Grienenberger, Don Reed	Crown Cork
IRT Participant	Arthur Doldersum	SCA
IRT Participant	James Kimber	General Mills, Inc.
IRT Participant	Kristen Halwachs	UCCnet
IRT Participant	Nicola Comiotto, Menno Smit	Nestlé
IRT Participant	Pawel Solowinski	Kappa Packaging
IRT Participant	Peter Broend, Johannes Lundgren	Novozymes
IRT Participant	Paul Moodey	Johnson & Johnson
IRT Participant	Wouter Crul	Nspyre
IRT Participant	Thierry Baillif, Gabriel Galeazzi	Firmenich
IRT Participant	Jan Peter Klijn	Royal Sens
IRT Participant	Yasushi Kiyama	Ajinomoto Co.
IRT Participant	Georges Socquet	Givaudan

1.1.6.2 BRG Members

Function	Name	Company / organisation
BRG Manager	Tom Heist	GS1 Head Office
BRG Chair	Fred Kempkes	Unilever Bestfoods Europe
BRG Member	Mutsuo Fukada	GS1 Japan
BRG Member	Roman Strand	GS1 Germany
BRG Member	Ricardo Toshio Yague	GS1 Brazil
BRG Member	David Ferrell	Wal-Mart Stores
BRG Member	Victoria M. Kendzierski	Thomson
BRG Member	Murray Pratt	Kraft Foods
BRG Member	Larry Roth	Kimberly-Clark
BRG Member	Robert Rzepka	Worldwide Retail Exchange
BRG Member	Thomas Stenftenagel	Procter & Gamble

1.1.6.3 ITRG Members

Function	Name	Company / organisation
ITRG Chair		
ITRG Member	Stef Spaan	GS1 Netherlands

1.1.6.4 Design Team Members

Function	Name	Organisation
Modeller	Coen Janssen	GS1 Netherlands

Business Solution Design

XML Technical Designer		
EANCOM Technical Designer	Marco Schuyt	GS1 Netherlands
Peer Reviewer	Eric Kauz	GS1 Head Office

1.2 Business Context

(Note: The context of the business)

Context Category	Value(s)
Industry	All, Consumer Packaged Goods All
Geopolitical	All, Global, Europe, Unites States, Japan, UK Global
Product	All, Direct Materials, Food, Non-Food, Hard lines, Apparel All
Process	All, Order (Direct To Consumer), Order (Direct Store Delivery), Order, Pay (Self Billing), Deliver (Direct Store Delivery) Plan
Official Constraints	None, Value Added Tax, Sales Tax None
Roles	Buyer, Seller, Ship From, Ship To, Payer Payee, Data Source, Data Recipient Buyer, Seller
System Capabilities	All, EANCOM, XML, AIDC, EPC-network EANCOM, XML

If no value use, the default of "All" except for Official Constraints where default is "None".

(Process, Geopolitical, Industry, User Role (Retailer, Supplier, etc.))

If context cannot be specified, select from the context classification code list in the GDD.).

1.3 Additional Technical Requirements Analysis

1.3.1 Technical Requirements (optional)

(User Interface, Security, Performance, Quality, etc.)

Number	Statement	Rationale
1.		

1.4 Business Transaction View

1.4.1 Business Transaction NET REQUIREMENTS

1.4.2 Business Transaction Use Case Diagram

Detailed Use Case for generic use of the message. Focuses on commands associated with business solution.

Note: Each Use Case shall be given a consecutive paragraph number (e.g., 2.4.1) and heading.)

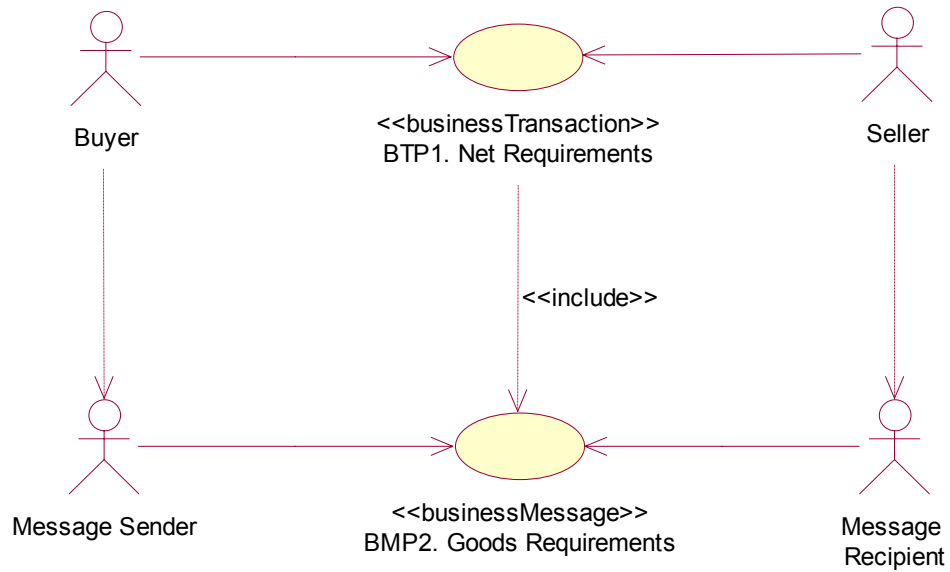


Figure 1 – Use Case Diagram: Business Transaction

1.4.3 Use Case Description

Use Case ID	BTP1		
Use Case Name	Net Requirements		
Use Case Description	The buyer communicates his net requirements to the seller.		
Actors (Goal)	Buyer: To send the net requirements. Seller: To receive the net requirements.		
Performance Goals			
Preconditions	Net Requirements: CALCULATED		
Post conditions	Net Requirements: COMMUNICATED		
Scenario	Begins when: Buyer has calculated his net requirements.		
	Continues with:		
	Step #	Actor	Activity Step
	1.	Buyer	Sends Goods Requirements message to the Seller.
	2.	Seller	Receives Goods Requirements Message

Business Solution Design

	Ends when:		
Alternative Scenario	<i>(any alternatives to the above scenario)</i>		
	Step #	Actor	Activity Step
	1.		
	2.		
Business Transaction Rules	1.	For communicating the consumption forecast use the goodsRequirementsType with value NET_REQUIREMENTS	

1.4.4 Business Transaction Activity Diagram(s)

(Note: Activity diagrams are optional. The business process modeller shall determine the use and number of activity diagrams included in the BMS. Each activity diagram shall be given a consecutive paragraph number (e.g., 2.4.1) and heading.)

1.4.5 Business Transaction Sequence Diagram(s) (optional)

(Note: Sequence diagrams are optional. The business process modeller shall determine the use and number of sequence diagrams included. Each sequence diagram shall be given a consecutive paragraph number (e.g., 2.5.1) and heading.)

1.4.6 Business Transaction CONSUMPTION FORECAST

1.4.7 Business Transaction Use Case Diagram

Detailed Use Case for generic use of the message. Focuses on commands associated with business solution.

Note: Each Use Case shall be given a consecutive paragraph number (e.g., 2.4.1) and heading.)

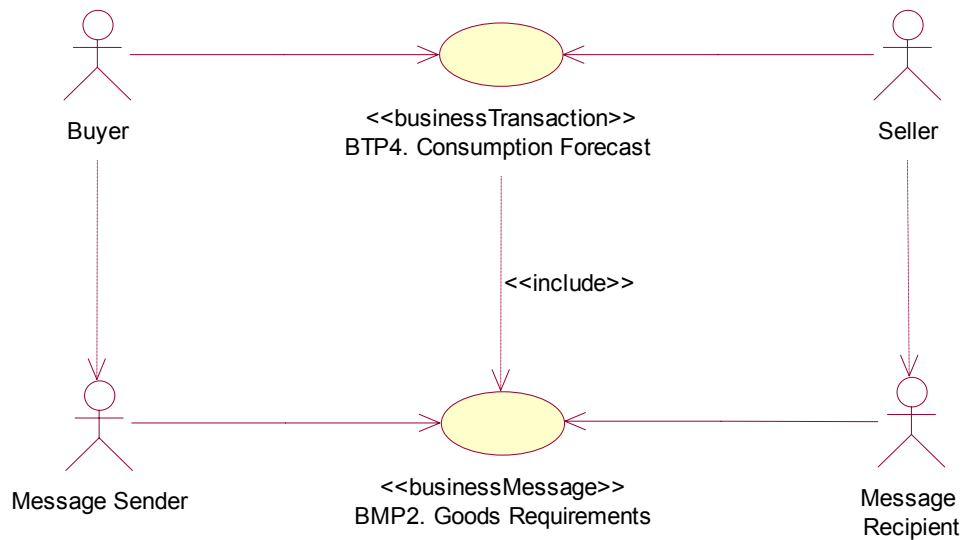


Figure 2 – Use Case Diagram: Business Transaction

1.4.8 Use Case Description

Use Case ID	BTP4		
Use Case Name	Consumption Forecast		
Use Case Description	The buyer communicates his forecasted consumption to the seller.		
Actors (Goal)	Buyer: To send the consumption forecast. Seller: To receive the consumption forecast.		
Performance Goals			
Preconditions	Consumption Forecast: CALCULATED		
Post conditions	Consumption Forecast: COMMUNICATED		
Scenario	Begins when: Buyer has calculated his forecasted consumption.		
	Continues with:		
	Step #	Actor	Activity Step
	1.	Buyer	Sends Goods Requirements message to the Seller.
	2.	Seller	Receives Goods Requirements Message
	Ends when:		
Alternative Scenario	(any alternatives to the above scenario)		
	Step #	Actor	Activity Step
	1.		

Business Solution Design

	2.		
Business Transaction Rules	1.	For communicating the consumption forecast use the goodsRequirementsType with value GROSS_REQUIREMENTS	

1.4.9 Business Transaction Activity Diagram(s)

(Note: Activity diagrams are optional. The business process modeller shall determine the use and number of activity diagrams included in the BMS. Each activity diagram shall be given a consecutive paragraph number (e.g., 2.4.1) and heading.)

1.4.10 Business Transaction Sequence Diagram(s) (optional)

(Note: Sequence diagrams are optional. The business process modeller shall determine the use and number of sequence diagrams included. Each sequence diagram shall be given a consecutive paragraph number (e.g., 2.5.1) and heading.)

Business Solution Design

1.5 Information Model (including GDD Report)

1.5.1 Data Description

Class (ABIE)	Attribute (BBIE)	Association (ASBIE)	Secondary Class	Related Requirement
GoodsRequirements				
	goodsRequirementsType			
	structureType			
		<<is a>>	Document	[ref2] {7.2.1-2 +3} {7.6.1-2 +3}
		goodsRequirementsIdentification	EntityIdentification	[ref2] {7.2.1-1} {7.6.1-1}
		Buyer	PartyIdentification	[ref2] {7.2.1-5} {7.6.1-5}
		Seller	PartyIdentification	[ref2] {7.2.1-6} {7.6.1-6}
		goodsRequirementsPlanner	Contact	[ref2] {7.2.1-10} {7.6.1-10}
			GoodsRequirementsItemLocationInformation	
GoodsRequirementsItemLocationInformation				
			TradeItemIdentification	[ref2] {7.2.1-12} {7.6.1-12}
		shipTo	PartyIdentification	[ref2] {7.2.1-7} {7.6.1-7}
		shipFrom	PartyIdentification	[ref2] {7.2.1-8} {7.6.1-8}
		inventoryLocation	PartyIdentification	[ref2] {7.2.1-9} {7.6.1-9}
			GoodsRequirementsLineItem	[ref2] {7.2.1- 4, 11, 13, 14, 15, 16, 17, 18, 19, 20} {7.6.1-4, 11, 13, 14, 15, 16, 17, 18, 19}

Business Solution Design

1.5.2 GDD Report

Class (ABIE)	Attribute (BBIE)	Association (ASBIE)	Secondary Class	Official Dictionary Entry Name	Definition	Multi- plicity
GoodsRequirements					Contains the Goods Requirements from the buyer to the seller for given trade items and locations for specific time periods.	
	goodsRequirement-type				Contains the type of Goods Requirements, gross or net.	1..1
	signatureType				Contains the type of grouping and sequence of the business document.	1..1
		<<is a>>	Document		No definition required.	1..1
		goodsRequirementsIdentification	EntityIdentification		Contains the unique identifier of the business document.	1..1
		buyer	PartyIdentification		Contains the identification of the party that is buying the goods.	1..1
		seller	PartyIdentification		Contains the identification of the party that is selling the goods.	1..1
		goodsRequirementsPlanner	Contact		Contains the name or ID of the person or department responsible for the planning at the buyer side.	0..1
			GoodsRequirementsItemLocationInformation			1..*
GoodsRequirementsItemLocationInformation					Contains the Goods Requirements for given trade items and locations for specific time periods.	
			TradeItemIdentification		Contains the identification of the item for which the goods requirements are specified.	1..1

Business Solution Design

Class (ABIE)	Attribute (BBIE)	Association (ASBIE)	Secondary Class	Official Dictionary Entry Name	Definition	Multiplicity
		shipTo	PartyIdentification		Contains the identification of the location whereto the required goods will be delivered.	1..1
		shipFrom	PartyIdentification		Contains the identification of the location wherefrom the required goods will be delivered.	0..1
		inventoryLocation	PartyIdentification		Identification of the physical place at the receiving side where the items are to be stored.	0..1
			GoodsRequirementsLineItem		Contains the required quantities per time bucket.	1..*

1.5.3 Class Diagrams

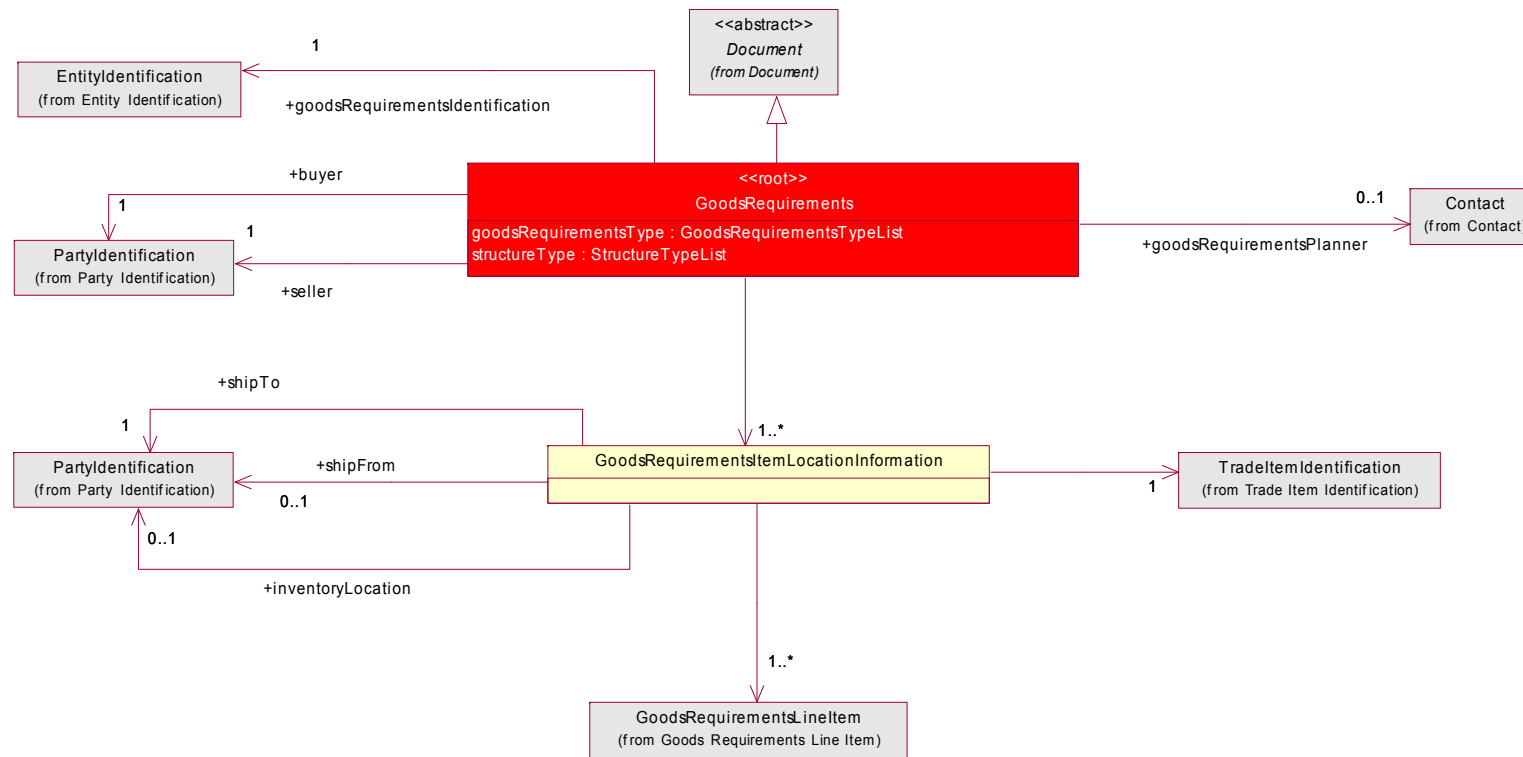


Figure 3 – Class Diagram: Business Document

Business Solution Design

1.5.4 Code Lists

Code List Name	Code List Description
GoodsRequirementsTypeList	
Code Name	Code Description
ACTUAL_SALES	Actual goods sales
FORECAST	Forecasted goods sales
GROSS_REQUIREMENTS	Planned material consumption
NET_REQUIREMENTS	Planned material consumption corrected for available inventory

1.6 Business Document Example

The following is an example of a gross requirements message. The message is sent out on February 9th at 11 AM. The message is identified with the unique identifier 2005001. The content owner is the sending party, in this case the manufacturer (Buyer 8712345678913).

The gross requirements are sent by the manufacturer (Buyer 8712345678913) to the material supplier (Seller 8812345678903).

For informational purposes the manufacturer includes the name of his material requirements planner (Mr. Kramer).

The gross requirements are for two delivery sites, X (Ship To 8712345670009) and Y (Ship To 8712345678951).

The gross requirements are for one item, A (GTIN 08712345678906).

For item A and delivery site X the gross requirements are:

- Week February 11-17: 1000 units, of which 500 units have already been received.
- Week February 18-25: 200 units.

The contract to be used for the requirements in week February 11-17 (2004000012) was issued by the business unit of the material supplier (content owner 8712345678999). Within the contract line 23 refers to this item.

For the requirements in week February 18-25 no contract has been specified.

For item A and delivery site Y the gross requirements are:

- Week February 11-17: 300 units.
- Week February 18-25: 1200 units.

The contract used for the requirements in week February 11-17 (2004000012) is the same as for delivery site X.

For the requirements in week February 18-25 no contract has been specified.

GoodsRequirements	
- creationDateTime	2005-02-09T11.00.00
- documentStatus	ORIGINAL
- goodsRequirementsType	GROSS_REQUIREMENTS
- structureType	ITEM_BY_LOCATION
EntityIdentification (+goodsRequirementsIdentification)	
- uniqueCreatorIdentification	2005001
PartyIdentification (+contentOwner)	
- gLN	8712345678913
PartyIdentification (+seller)	
- gLN	8812345678903
PartyIdentification (+buyer)	
- gLN	8712345678913
Contact (+goodsRequirementsPlanner)	
MultiDescription (+personOrDepartmentName)	
- description (language, text)	EN, Kramer

Business Solution Design

GoodsRequirementsItemLocationInformation *1	
PartyIdentification (+shipTo)	
- gLN	8712345670009
TradeItemIdentification	
- gTIN	08712345678906
GoodsRequirementsLineItem *1.1	
- lineItemNumber	1
- timeBucketSize	WEEK
- requiredQuantity (value, unitOfMeasure)	1000
TimeOrDateTimePeriod (+requirementsPeriod)	
TimePeriod	
- startDate	2005-02-11
- endDate	2005-02-17
DocumentOrDocumentLineReference (+purchaseConditions)	
DocumentLineReference	
- lineItemNumber	23
DocumentReference	
TypedEntityIdentification	
- entityType	PURCHASE_CONDITIONS
EntityIdentification	
- uniqueCreatorIdentification	2004000012
PartyIdentification (+contentOwner)	
- gLN	8712345678999
RequiredQuantitySpecification	
- quantitySpecificationType	CUMULATIVE_QUANTITY_RECEIVED
- specificQuantity (value, unitOfMeasure)	500
GoodsRequirementsLineItem *1.2	
- lineItemNumber	2
- timeBucketSize	WEEK
- requiredQuantity (value, unitOfMeasure)	1200
TimeOrDateTimePeriod (+requirementsPeriod)	
TimePeriod	
- startDate	2005-02-18
- endDate	2005-02-25
GoodsRequirementsItemLocationInformation *2	
PartyIdentification (+shipTo)	
- gLN	8712345678951
TradeItemIdentification	

Business Solution Design

- gTIN	08712345678906
GoodsRequirementsLineItem *2.1	
- lineItemNumber	1
- timeBucketSize	WEEK
- requiredQuantity (value, unitOfMeasure)	300
TimeOrDateTimePeriod (+requirementsPeriod)	
TimePeriod	
- startDate	2005-02-11
- endDate	2005-02-17
DocumentOrDocumentLineReference (+purchaseConditions)	
DocumentLineReference	
- lineItemNumber	23
DocumentReference	
TypedEntityIdentification	
- entityType	PURCHASE_CONDITIONS
EntityIdentification	
- uniqueCreatorIdentification	2004000012
PartyIdentification (+contentOwner)	
- gLN	8712345678999
GoodsRequirementsLineItem *2.2	
- lineItemNumber	2
- timeBucketSize	WEEK
- requiredQuantity (value, unitOfMeasure)	1200
TimeOrDateTimePeriod (+requirementsPeriod)	
TimePeriod	
- startDate	2005-02-18
- endDate	2005-02-25

1.7 Implementation Considerations

None

1.8 Testing

1.8.1 Pass / Fail Criteria

Unit testing criteria for business solution.

Nu m b e r	Test Criteria	Related Re- quirement	Design Element	Pass Criteria	Fail Criteria
1	Reflects a specific	BRAD	Message, role,	Result which deter-	Result which shows

Business Solution Design

Number	Test Criteria	Related Requirement	Design Element	Pass Criteria	Fail Criteria
	business requirement from a related BRAD. For example: When goods are ordered, the buyer requires an answer from the suppliers that the order has been received.	Name.Version. Req #	attribute	mines that requirement has been satisfied: For example: Seller is able to create and send an Order Receipt Acknowledgement.	that requirement has not been satisfied: For example: Buyer does not receive the Order Receipt Acknowledgement.
2					
3					

1.8.2 Test Data

Attribute	Value
Attribute Name. For example "orderQuantity"	Valid value associated with the attribute. For example "5".

1.9 Appendices

1.10 Summary of Changes

(Details changes to BMS for each version by BMS Section)

Change	BMS Version	Associated CR Number
GoodsRequirementsLineItem (Common Library): <ul style="list-style-type: none">Association to DocumentReference (+purchaseConditions) was changed into DocumentOrDocumentLineReference (+purchaseConditions).	0.1.3	n/a
<ul style="list-style-type: none">Updated Footer with copyright.Section 1.5.4 Code List was inserted in correct alphabetical order.Acknowledgement section removed EAN and replaced with GS1.Assigned P4CL Unique ID: 7563	BSD Document Version 0.1.4	

2 Technical Solution Design

This section provides the specifications for the standards content ITRG approves. It is called the Technical Solution Design (TSD).

The Technical Solution Design contains:

- TSD Zip file Table of Contents
- Business Message Standard Section Technical Level GDD Report
- XSD (XML Schema Documents)
- XML Instance File and HTML Form View (XML and HTML files containing sample data specified in Section 1.6)

In the process of approving the Technical Solution Design, the ITRG will be provided the following artefacts:

- Any relevant Business Requirements Analysis Document (BRAD)
- Any relevant Business Requirements Document (BRD)
- Section 1 of Business Message Standard (Business Solution Design)
- Comment Resolution Template from Technical Public Review
- XML Test Report
- Change Request
- Other informative or reference documents