



Business Message Standard (BMS) Item Data Notification

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Business Requirements Document (BRAD) Reference

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Upstream Standards Master Data Alignment	11 May 2005	0.0.6

Document Change History

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21-Nov-2011	1.0.0	Coen Janssen	Public Review	See chapter 10	n/a

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1. Business Domain View

1.1. Problem Statement / Business Need

The current situation in the upstream supply chain of the CPG industry is that all manufacturers and suppliers are faced with different business processes and data interchanges when they move into more integrated relationships. Different business processes and approaches create a barrier to the scalability of integration efforts whilst also imposing many costs: the time and money spent making transactions; the delays caused by the need for corrections; plus inevitable information gaps and misunderstandings.

Both parties should obtain benefits from integration, among them reduced inventory and a reduction in re-work and waste. One example is that suppliers should have better visibility of forecasted production and can improve their reaction to changes.

A key part of this integration is the alignment of master data between buyer and seller.

Item Master Data is a set of data, which describes the specifications and structures of each item involved in Supply Chain Processes. Each set of data can uniquely be identified by a Global Trade Item Number (GTIN).

The transaction can be established by either the manufacturer or the supplier. Only one party will initiate the transaction. Which of both parties initiates the transaction needs to be agreed upon in the Integration Agreement; changes in item master data need to be commonly agreed & realised by the party initially initiating the transaction, i.e. the message flow will only be in one direction in order to ensure data alignment.

Master data will be aligned each time information changes or new information is added. There is no need for a response message during the alignment of master data between buyer and seller.

The “Master Data Alignment” building block has three elements

1. Identifying and clarifying, between the two parties, the coding for items.
2. Agreeing on the attributes to be shared about each item for example specifications, logistical handling information, packaging format.
3. Ongoing alignment of the item and attribute data so that suppliers and manufacturers are working off a common and current understanding of this important base information. One challenge facing all trading relationships is maintaining accuracy and the distribution of base item data given the rapid changes to specifications and logistics information that can arise.

Item information will be composed of “**General Item information**” which is relationship independent and “**Specific Item information**” which is relationship dependent item data.

General Item Information

General item information allows the identification and clarification of general, i.e. relationship independent item coding between trading partners, the agreement on the attributes to be shared about each item as well as the alignment of item information between trading partners.

Specific Item Information

Specific item information (relationship dependent) allows the identification and clarification of relationship specific item coding between trading partners, the agreement on the attributes to be shared about each item as well as the alignment of item information between trading partners.

It contains those relationship specific item related parts of the overall (and mostly paper based) Integration Agreement, which might change often and therefore make sense to be exchanged electronically to ensure alignment between both parties while limiting manual effort.

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

- CPG Manufacturers
- Material Suppliers

1.4. References

Reference Number	Reference Name	Description
[Ref1]	BRAD for Upstream Master Data Alignment – Version 0.0.6	The documented design of components that are used in multiple messages.
[Ref2]	eCom Domain Common Library Release 3	MR3.0
[Ref3]	Shared Common Library	MR3.0

1.5. Acknowledgements

1.5.1. Work Group

Function	Name	Company / organisation
Chair eCom BRG	Edison, Carol	General Mills, Inc.
Chair MR3 Subteam	Spaan, Stef	GS1 Netherlands
Member	Backert, Veronique	Dilicom
Member	Blankenstein, Kyra	GS1 Netherlands
Member	Bradley, Ardetha	Georgia Pacific
Member	Burke, Miriam	Procter & Gamble Co.
Member	Chatagnier, Isabelle	GS1 France
Member	Childs, Justin	GS1 Global Office
Member	Chresta, Richard	GS1 Switzerland
Member	Cox, Marc	Philips Electronics N.V.
Member	De Flou, Nele	GS1 Belgium & Luxembourg
Member	Denyer, Troy	GS1 Australia
Member	Dicks, Arne	GS1 Germany
Member	Dodd, Marilyn	3M Company
Member	Duvinger, Karina	GS1 Sweden
Member	Earleywine, Sarah	IDEA (US)
Member	Fedoseev, Sergey	GS1 Russia
Member	Foerderer, Klaus	GS1 Germany
Member	Foxvog, Douglas	DERI, National Univ. of Ireland
Member	Fransen, Wim	EskoArtwork
Member	Gathmann, Stefan	GS1 Ireland
Member	Gilbert, Jean-Christophe	GS1 France
Member	Grangard, Anders	GS1 Global Office
Member	Herrick, Lisa	GS1 Global Office
Member	Hill, Douglas	GS1 Denmark
Member	Hoberg, Peter	Consafe Lodistics
Member	Iwicka, Ewa	GS1 Global Office
Member	Jin Soon, Tan	GS1 Singapore
Member	Joest, Holger	SA2 Worldsync GmbH
Member	Kempkes, Fred	Unilever N.V.
Member	Kidd, Robin	Nestle
Member	Kille, Grant	SA2 Worldsync GmbH
Member	Kozovic, Vladimir	GS1 Serbia
Member	Krid, Anne-Claire	GS1 France

Function	Name	Company / organisation
Member	Lai, Keith	GS1 Australia
Member	Laur, Rita	GS1 Canada
Member	Lazarkova, Galya	GS1 Austria
Member	Lenman, Mia	GS1 Sweden
Member	Lockhead, Sean	GS1 Global Office
Member	Maniero, Ana Paula	GS1 Brasil
Member	Maree, Eric	Accenture Supply Chain Services
Member	Martinko, Michal	Hewlett-Packard
Member	McLeod, Ed	Procter & Gamble Co.
Member	Melcher, Jeff	The Exchange (AAFES)
Member	Montes de Oca, Alejandra	GS1 Mexico
Member	Moritz, Marcus	GS1 Germany
Member	Mugnier, Norbert	Dilicom
Member	Narbaïts-Jauréguy, Corinne	GS1 France
Member	Noyes, Debra	Johnsonville Sausage, Inc
Member	Picoito, Joao	GS1 Portugal
Member	Plaksin, Leon	GS1 Australia
Member	Popper, Bret	Kraft Foods
Member	Post, Valerie	Link Snacks Inc, Jack Links Beef Jerky
Member	Pottier, Natascha	GS1 France
Member	Pujol, Xavier	GS1 Spain
Member	Repetto, Mirko	GS1 Italy
Member	Robba, Steven	SA2 Worldsync GmbH
Member	Rosell, Pere	GS1 Spain
Member	Rosenberg, Steven	GS1 US
Member	Ryu, John	GS1 Global Office
Member	Schmidt, Tom Eric	August Storck KG
Member	Schneider, Christian	GS1 Switzerland
Member	Sedano Acosta, Federico	GS1 Argentina
Member	Sharma, Vishal	General Mills, Inc.
Member	Sharratt, Jon	Target Corporation
Member	Shimazaki, Ayako	GS1 Japan
Member	SION, Emilie	GS1 France
Member	Smith, Matthew	Bunnings Group Limited
Member	Sobrino, Gabriel	GS1 Netherlands
Member	Strand, Roman	GS1 Germany
Member	Takahashi, Akira	Data Applications Co, Ltd
Member	Tomassi, Gina	PepsiCo, Inc.

Function	Name	Company / organisation
Member	Trelle, Ute	SA2 Worldsync GmbH
Member	Voorspuij, Jaco	DHL
Member	Welch, Shan	GS1 UK
Member	Westerkamp, Jan	GS1 Netherlands
Member	Windsperger, Bekki	Best Buy Co., Inc.

1.5.2. Design Team Members

Function	Name	Organisation
Modeller	Eric Kauz / Coen Janssen / Mark van Eeghem	GS1 Global Office
XML Technical Designer	Dipan Anarkat	GS1 Global Office
Peer Reviewer	John Ryu / Eric Kauz	GS1 Global Office

2. Business Context

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

3. Additional Technical Requirements Analysis

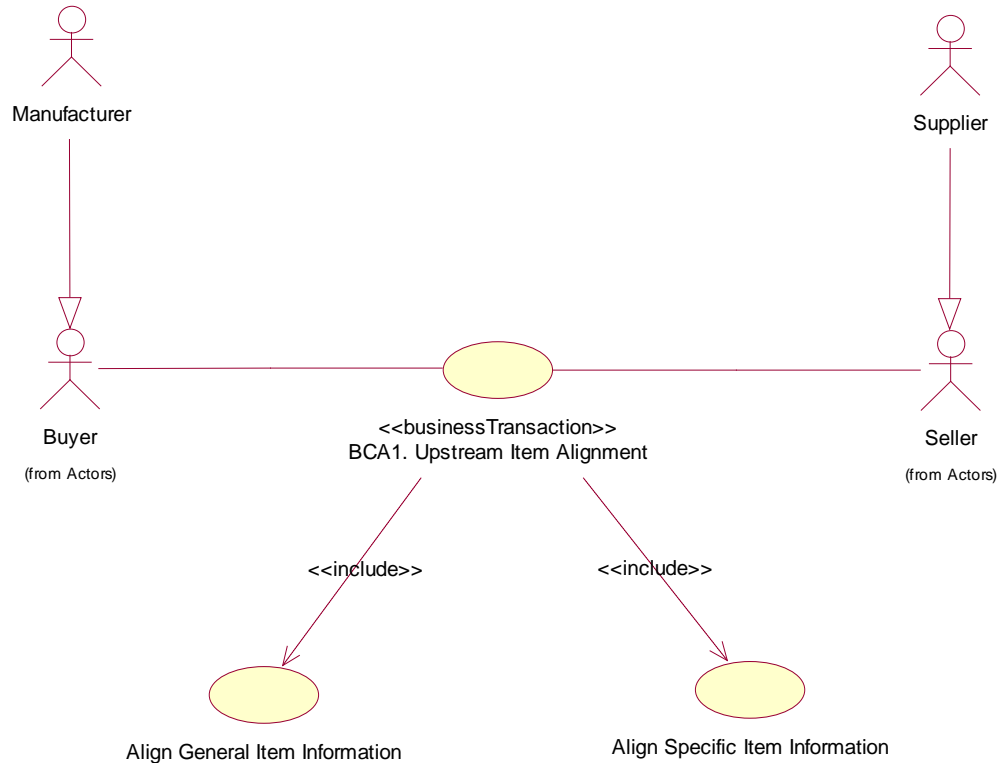
Not Applicable

3.1. Technical Requirements (optional)

Number	Statement	Rationale
	Not Applicable	

4. Business Transaction View

4.1. Business Transaction Use Case Diagram



4.2. Use Case Description

Use Case ID	BCA1
Use Case Name	Upstream Item Alignment
Use Case Description	<p>The data interchange for Item Alignment includes the item information messages. Item information can be composed of "General Item information" which is relationship independent and "Specific Item information" which is relationship dependent item data.</p> <p>Manufacturer and supplier will commonly agree on item information to be shared and drive the process of exchanging these data. While both parties need to agree on item master data, it is understood that only one party, i.e. manufacturer or supplier, will send the item information messages and that the information flow will be in one direction only in order to ensure alignment.</p>
Actors (Goal)	<p>Buyer: to align item information with the seller.</p> <p>Seller: to align item information with the buyer.</p>

	<p>Sender: to send the item information to the receiver. Sender could be buyer or seller.</p> <p>Receiver: to receive the item information. The receiver could be the buyer or seller.</p>												
Preconditions	INTEGRATION AGREEMENT IS IN PLACE ITEM DATA ARE ASSEMBLED AND AGREED												
Post conditions	ITEM DATA IS ALIGNED.												
Scenario	<p>Begins when the sender generates the item information.</p> <p>Continues with...</p> <table><tr><th>Step #</th><th>Actor</th><th>Activity Step</th></tr><tr><td>1</td><td>Sender</td><td>Sends the Item Data Notification.</td></tr><tr><td>2</td><td>Receiver</td><td>Receives the Item Data Notification.</td></tr><tr><td>3</td><td>Receiver</td><td>Integrates item information into own systems.</td></tr></table> <p>Ends when the receiver has integrated the item information in own systems.</p>	Step #	Actor	Activity Step	1	Sender	Sends the Item Data Notification.	2	Receiver	Receives the Item Data Notification.	3	Receiver	Integrates item information into own systems.
Step #	Actor	Activity Step											
1	Sender	Sends the Item Data Notification.											
2	Receiver	Receives the Item Data Notification.											
3	Receiver	Integrates item information into own systems.											
Alternative Scenario	None												
Related Requirements	Not Applicable												
Related Rules	Not Applicable												

4.3. Business Transaction Activity Diagram(s)

Not Applicable

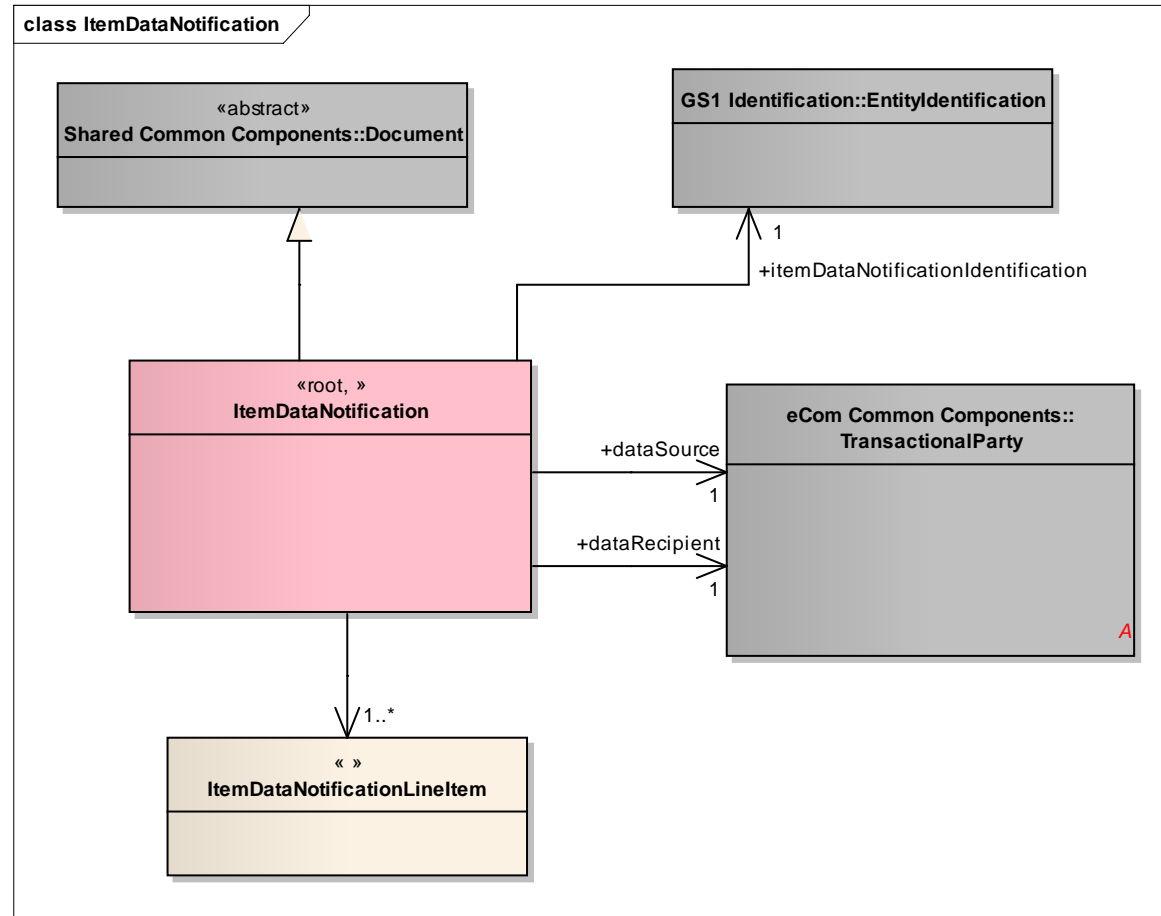
4.4. Business Transaction Sequence Diagram(s)

Not Applicable

5. Information Model (Including GDD Reports)

5.1. Item Data Notification

Figure 5-1 Class Diagram: Item Data Notification

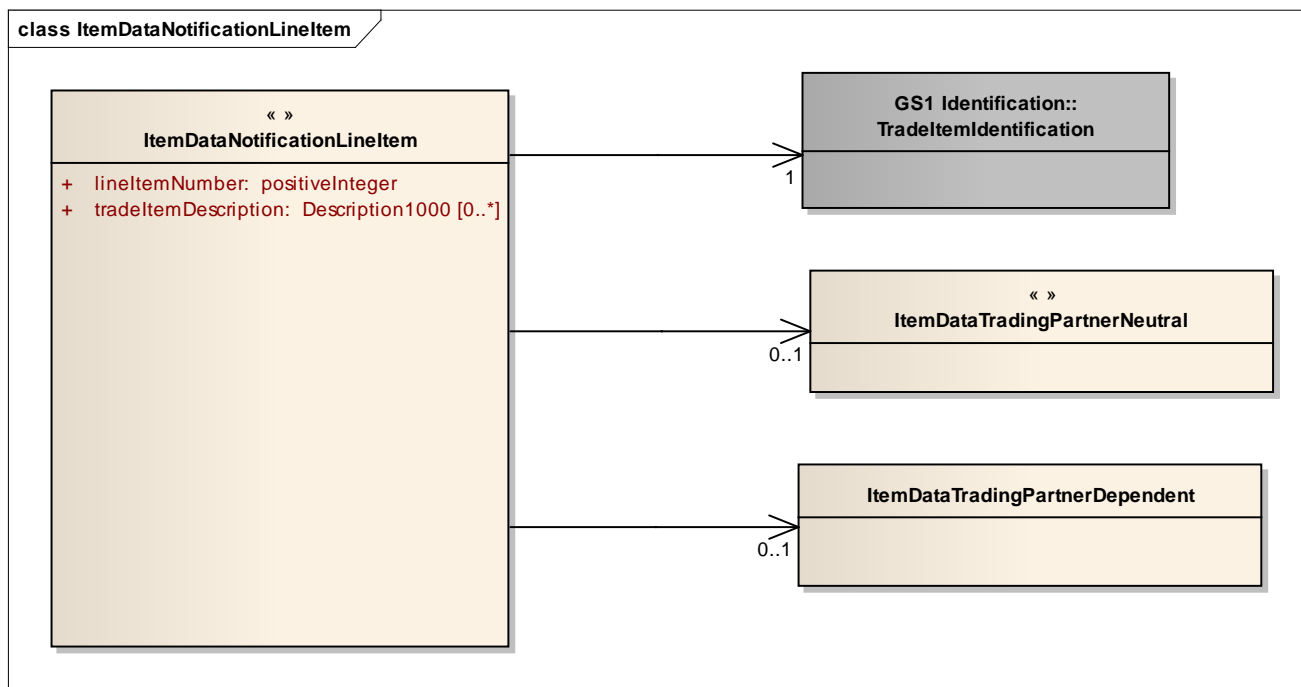


GDD Report

Content	Attribute / Role	Datatype /Secondary class	Multi plicity	Definition	Requirements
ItemDataNotification				A message used to align master data including relationship dependent and relationship independent in a peer to peer environment.	
Association		ItemDataNotificationLineItem	1..*	The detail level of an Item Data Notification message.	
Association	sender	TransactionalParty	1..1	The party who sends the item information.	
Association	itemDataNotificationIdentification	EntityIdentification	1..1	The unique identifier for the Item Data Notification message.	
Association	receiver	TransactionalParty	1..1	The party who receives the item information.	
Generalization		Document		Used to specify basic information about the content of the message including version number, creation date and time.	

5.2. Item Data Notification Line Item

Figure 5-2 Class Diagram: Item Data Notification Line Item



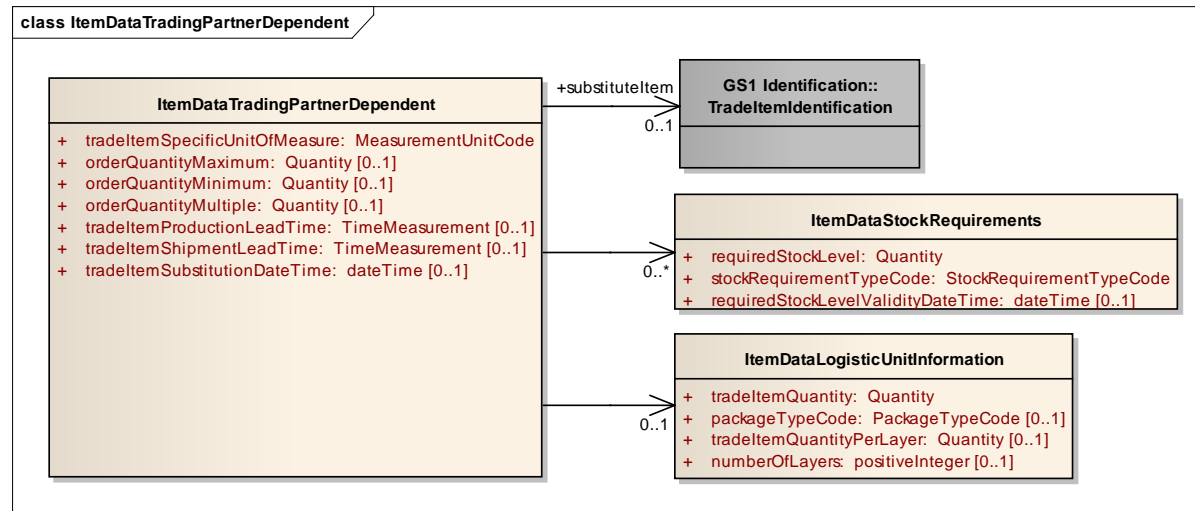
GDD Report

Content	Attribute / Role	Datatype /Secondary class	Multi plicit y	Definition	Requirements
ItemDataNotificationLineItem				The detail level of an Item Data Notification message.	
Association		TradeItemIdentification	1..1	Contains the identification of the trade item.	

Content	Attribute / Role	Datatype /Secondary class	Multi plicit y	Definition	Requirements
Association		ItemDataTradingPartnerNeutral	0..1	Trade Item Data that has values that does not differ based on the relationship between trading partners.	
Association		ItemDataTradingPartnerDependent	0..1	Trade Item Data that has values that can differ depending on the relationship between trading partners.	
Attribute	lineItemNumber	positiveInteger	1..1	Provides the line number associated to the Item Data Notification Line Item.	
Attribute	tradeItemDescription	description1000	0..*	Additional information necessary to communicate to the industry to help define the product.	

5.3. Item Data Trading Partner Dependent

Figure 5-3 Class Diagram: Item Data Trading Partner Dependent



GDD Report

Content	Attribute / Role	Datatype /Secondary class	Multi plicit y	Definition	Requirement s
ItemDataTradingPartnerD ependent				Trade Item Data that has values that can differ depending on the relationship between trading partners.	
Association	substituteltem	TradeltemIdentification	0..1	A trade item which can replace a given item for a specified period of time.	
Association		ItemDataLogisticUnitInformation	0..1	The logistical packaging details for the trade item.	
Association		ItemDataStockRequirements	0..*	The stock level details for the trade item.	

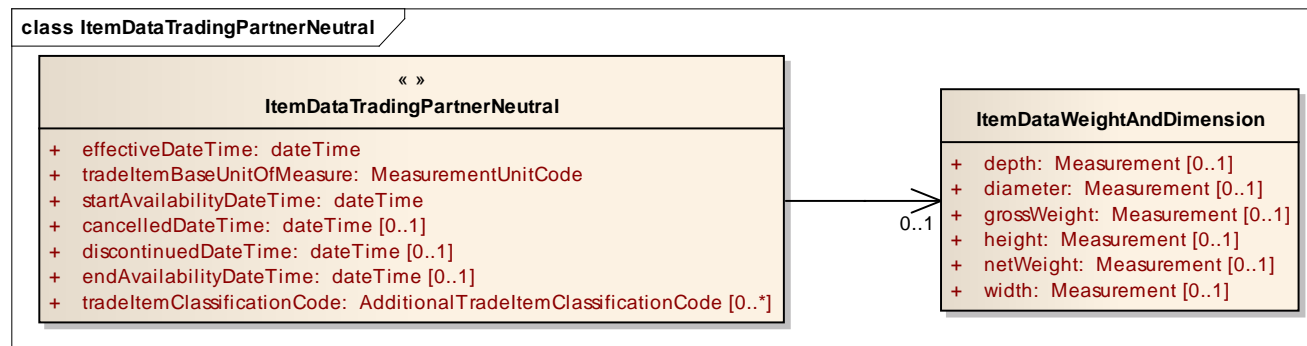
Content	Attribute / Role	Datatype /Secondary class	Multi plicit y	Definition	Requirement s
Attribute	tradeItemSpecificUnitOf Measure	MeasurementUnitCode	1..1	The Unit of Measure (EDIFACT code list 6411) associated with a specific instance of the trade item. This unit of measure will override the relationship independent Unit of Measure.	
Attribute	orderQuantityMaximum	Quantity	0..1	The maximum quantity of the trade item that can be ordered. A number or a count. This value can represent the total number of units ordered over a set period of time with multiple orders.	
Attribute	orderQuantityMinimum	Quantity	0..1	Represent an agreed to minimum quantity of the trade item that can be ordered. A number or a count. This applies to each individual order. Can be a fixed amount for all customers in a target market.	
Attribute	orderQuantityMultiple	Quantity	0..1	The order quantity multiples in which the trade item may be ordered. If the Order Quantity Minimum is 100, and the Order Quantity Multiple is 20, then the trade item can only be ordered in quantities which are divisible by the Order Quantity Multiple of 20.	
Attribute	tradeItemProductionLead Time	TimeMeasurement	0..1	The normal delivery time measured from receipt of order by the seller until trade item is shipped by the seller in the case where the product is not in stock.	

Content	Attribute / Role	Datatype /Secondary class	Multi plicit y	Definition	Requirement s
Attribute	tradeItemShipmentLeadTime	TimeMeasurement	0..1	The normal delivery time measured from receipt of order by the seller until trade item is shipped by the seller in the case where the product is in stock.	
Attribute	tradeItemSubstitutionDateTime	dateTime	0..1	The date on which an item will be replaced by a substitute item.	
ItemDataStockRequirements				A logical grouping of data detailing the stock level of an item which must be adhered to.	
Attribute	requiredStockLevel	Quantity	1..1	The stock level of an item which must be adhered to.	
Attribute	stockRequirementTypeCode	StockRequirementTypeCode	1..1	The type of stock requirement that must be adhered to. For example, safety stock, maximum stock.	
Attribute	requiredStockLevelValidityDateTime	dateTime	0..1	The point in time (date) as of which a required stock level (for example safety or maximum) is valid.	
ItemDataLogisticUnitInformation				A logical grouping of information regarding an item of any composition established for transport and/or storage which needs to be managed through the supply chain.	
Attribute	packageTypeCode	PackageTypeCode	0..1	The package Type (for example case, display) associated with the item contents of a single despatch unit.	
Attribute	tradeItemQuantity	Quantity	1..1	The number of trade items contained in the logistic unit.	

Content	Attribute / Role	Datatype /Secondary class	Multi plicit y	Definition	Requirement s
Attribute	tradeItemQuantityPerLayer	Quantity	0..1	The number of trade items contained on a single layer of a pallet. Only used if the pallet has no GTIN. It indicates the number of trade items placed on a pallet layer according to supplier or retailer preferences.	
Attribute	numberOfLayers	positiveInteger	0..1	The number of layers that a pallet contains. Only used if the pallet has no GTIN. It indicates the number of layers that a pallet contains, according to supplier or retailer preferences.	

5.4. Item Data Trading Partner Neutral

Figure 5-4 Class Diagram: Item Data Trading Partner Neutral



GDD Report

Content	Attribute / Role	Datatype /Secondary class	Multiplicity	Definition	Requirements
ItemDataTradingPartnerNeutral				Trade Item Data that has values that does not differ based on the relationship between trading partners.	Renamed from RelationshipIndependentItemData
Association		ItemDataWeightAndDimension	0..1	The dimension and weight attributes for a trade item.	
Attribute	effectiveDateTime	dateTime	1..1	Date as of which the information of the master data is valid.	
Attribute	tradeItemBaseUnitOfMeasure	MeasurementUnitCode	1..1	The default Unit of Measure used for the full order to pay process.	
Attribute	startAvailabilityDateTime	dateTime	1..1	Date as of which the trade item is available.	
Attribute	cancelledDateTime	dateTime	0..1	Date on which the cancellation of the launch of a trade item (that was never and will never be manufactured) is made.	
Attribute	discontinuedDateTime	dateTime	0..1	Date as of which the trade item is no longer to be manufactured.	
Attribute	endAvailabilityDateTime	dateTime	0..1	Date from which onwards the trade item will no longer be available.	
Attribute	tradeItemClassificationCode	AdditionalTradeItemClassificationCode	0..*	Code specifying the product class of the trade item according to a specific classification scheme. The classification scheme needs to be indicated as a coded value as well.	
ItemDataWeightAndDimension				Logical grouping of dimension and weight attributes for a trade item.	

Content	Attribute / Role	Datatype /Secondary class	Multiplicity	Definition	Requirements
Attribute	depth	Measurement	0..1	The measurement from front to back of the trade item. Measurements are relative to how the customer normally views the trade item. Needs to be associated with a valid UOM.	
Attribute	diameter	Measurement	0..1	The measurement of the diameter of the trade item at its largest point. For example, 165 “mmt”, value – mmt, diameter. Has to be associated with valid UOM.	
Attribute	grossWeight	Measurement	0..1	Used to identify the gross weight of the trade item. The gross weight includes all packaging materials of the trade item. At pallet level the trade item GrossWeight includes the weight of the pallet itself. For example, “200 gm”, value – total pounds, total grams, etc. Has to be associated with a valid UOM.	
Attribute	height	Measurement	0..1	The measurement of the height of the trade item. The vertical dimension from the lowest extremity to the highest extremity, including packaging. At a pallet level the trade item height will include the height of the pallet itself. Measurements are relative to how the customer normally views the trade item. Needs to be associated with a valid UOM.	
Attribute	netWeight	Measurement	0..1	Used to identify the net weight of the trade item. Net weight excludes any packaging materials. Has to be associated with a valid UoM	

Content	Attribute / Role	Datatype /Secondary class	Multiplicity	Definition	Requirements
Attribute	width	Measurement	0..1	The measurement from left to right of the trade item. Measurements are relative to how the customer normally views the trade item. Needs to be associated with a valid UoM.	

5.5. Code Lists



Note: Reference Shared Common Library Business Message (BMS) Release 3.0.0 and eCom Domain Common Library Business Message (BMS) Release 3.0.0 for all Code Lists

Class	Codelist	Referenced in
ItemDataTradingPartner Dependent ItemDataTradingPartner Neutral	MeasurementUnitCode	Shared Common Library Business Message (BMS) Release 3.0.0
ItemDataStockRequirements	StockRequirementTypeCode	eCom Domain Common Library Business Message (BMS) Release 3.0.0
ItemDataLogisticUnitInformation	PackageTypeCode	eCom Domain Common Library Business Message (BMS) Release 3.0.0
ItemDataTradingPartner Neutral	AdditionalTradeItemClassificationCode	Shared Common Library Business Message (BMS) Release 3.0.0

6. Business Document Example

Not available

7. Implementation Considerations

Not Applicable

8. Testing

8.1. Pass / Fail Criteria

Not Applicable

8.2. Test Data

ItemDataNotification	
creationDateTime	24.05.2004, 18:12
documentStatusCode	ORIGINAL
EntityIdentification(+itemDataNotificationIdentification)	
entityIdentification	44337788
TransactionalParty(+dataSource)	
gln	4322311000004
TransactionalParty(+dataRecipient)	
gln	5412345000013
ItemDataNotificationLineItem	
lineItemNumber	1

TradeItemIdentification	
gtin	40000156710929
tradeItemDescription	Ingredient ABC
ItemDataTradingPartnerDependent	
tradeItemSpecificUnitOfMeasure	KGM
orderQuantityMaximum	CS 100
orderQuantityMinimum	CS 5
orderQuantityMultiple	CS 5
tradeItemProductionLeadTime	DAY 15
tradeItemShipmentLeadTime	DAY 20
tradeItemSubstitutionDateTime	24.05.2005, 18:12
TradeItemIdentification(+substituteItem)	
gtin	40000156710998
ItemDataStockRequirements	
requiredStockLevel	CS 5
stockRequirementTypeCode	SAFETY_STOCK
requiredStockLevelValidityDateTime	24.05.2005, 18:12
ItemDataLogisticUnitInformation	
tradeItemQuantity	5
packageTypeCode	CS
tradeItemQuantityPerLayer	4
numberOfLayers	4
ItemDataTradingPartnerNeutral	
effectiveDateTime	01.01.2004, 18:12
tradeItemBaseUnitOfMeasure	CS
startAvailabilityDateTime	01.02.2004
cancelledDateTime	24.05.2004, 18:12
tradeItemClassificationCode	10005267
ItemDataWeightAndDimension	
depth	CMT 20
diameter	CMT 12
grossWeight	KGM 1.5
height	CM 10
netWeight	KGM 1.5
width	CMT 10

9. Appendices

Glossary of Terms

TERM	DESCRIPTION
Direct Materials	Raw materials and packaging materials directly used by the manufacturer in production and packaging.
Logistic Unit	Unit of any composition made up for the purposes of transport and/or storage and which must be managed throughout the entire supply chain.
Maximum Stock	The amount able to store at a maximum at the storage location.
Minimum Stock	See safety stock
Safety Stock	The amount necessary to meet immediate customer demand (short term).
Substitution Item	The item that replaces the original item because of not being available or successions.

10. Summary of Changes

Change	BSD Version	Associated CR Number
Update for Major release 3.0: updated to reflect changes in modelling methodology.	1.0.0	n/a

11. Adherence to Architectural Principles

#	Architectural Principles	Does Business Message Specification (BMS) Adhere?	Comment
1.	The requirements in the BMS maintain the GS1 keys as the primary, mandatory identifiers.	<input checked="" type="checkbox"/>	
2.	The requirements in the BMS do not alter the formats of primary identifiers and comply with data elements as defined in the Global Data Dictionary.	<input checked="" type="checkbox"/>	
3.	The requirements stated in the BMS are backwards compatible according to the stated scope in the document. The document scope explicitly states whether requirements included in document are backwards compatible.	<input checked="" type="checkbox"/>	
4.	All business requirements contained in the BMS 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"/>	
5.	The business requirements contained in the BMS do 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"/>	
6.	The business requirements take into consideration the potential impact of the standard, especially with respect to implementation and maintenance. Any potential known impact is documented in the BMS.	<input checked="" type="checkbox"/>	
7.	The business requirements take into consideration the potential scalability of the standard. Any potential known impact to scalability is documented in the BMS.	<input checked="" type="checkbox"/>	
8.	The business requirements take 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 in the BMS.	<input checked="" type="checkbox"/>	
9.	The business requirements in the BMS do 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"/>	
10.	The business requirements in the BMS do not create duplications with existing GS1 components. If there are potential duplications, these are documented within the BMS with a stated rationale for the duplication.	<input checked="" type="checkbox"/>	
11.	The business requirements in the BMS do not impose implicit or explicit restrictions of any technology.	<input checked="" type="checkbox"/>	

#	Architectural Principles	Does Business Message Specification (BMS) Adhere?	Comment
12.	The business requirements in the BMS take into account a global perspective. All local (Industry or Geopolitical) requirements have a suitable rationale to explain why they cannot be handled globally. For example, a Boolean indicator of a specific regulation as opposed to a generic code list covering multiple regulations.	<input checked="" type="checkbox"/>	