Business Message Standard (BMS) Replenishment Proposal

BMS Release: 3.0.0, BRG Name: eCom

Issue 1.0.0, 6-Jan-2012

Document Summary

Document Item	Current Value
Document Title	Business Message Standard (BMS)
BMS Name	Replenishment Proposal
BMS Release	3.0.0
BRG Name	eCom
Document Number	Issue 1.0.0
Date Last Modified	6-Jan-2012
Status	Approved
Owner	BRG: eCom
BMS Template Version	2.1

Change Request Reference

Date of CR Submission to GSMP:	CR Submitter(s):	Refer to Change Request (CR) Number(s):
20 –Aug-2008	John Ryu, GS1	08-000209
8- Aug – 2007	Eric Maree, Accenture	07-000309
05-Nov-2004	GS1	04-000211

Business Requirements Document (BRAD) Reference

BRAD Title:	BRD Date:	BRAD Version
BRAD Upstream Standards – Demand & Supply Signals	01-Nov-2004	0.1.0
Replenishment – Business Requirement Document	30-Mar-2004	1.0.0

Document Change History

Date of Change	Version	Changed By	Reason for Change	Summary of Change	Model Build #
21 – November-2011	Issue 1.0.0	Coen Janssen	Editorial changes	Noted in summary of change section	Not Applicable
6- January - 2012	Issue 1.0.0	John Ryu	Publication updates	Noted in summary of change section	Not Applicable

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1. Business Domain View

1.1. Problem Statement / Business Need

The replenishment process in broad sense addresses the business practice to exchange data between a buying party (e.g. buyer) and a supplying party (e.g. seller/supplier) related to the future demand of finished or semi-finished products, ingredients, packaging and raw materials.

Between retailer and manufacturer (the downstream supply chain) the data is basically based on future demand based on finished products and time series but it can also be restricted to actual sales date for a certain period of time. Feed-back from the manufacturer on his availability to deliver is required, where available inventories (of both sides) are taken in account.

Between manufacturer and material supplier (the upstream supply chain) the data is basically based on material requirements for production and the timing for it, and also the feedback from the material supplier on his availability to deliver and the schedule for delivery. Inventories (on both sides) are taken into account for the actual delivery schedule.

Based on the delivery schedule (replenishment proposal), a transport and shipping planning can be derived.

1.2. Objective

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

1.3. Audience

Anyone involved in the replenishment process with another party in the (extended) supply chain process. These parties basically are retailers, manufactures and suppliers of ingredients, packaging and raw materials. But can also be parties in between like wholesalers or logistic service providers managing warehouses.

1.4. References

	Reference Name	Description
[Ref1]	BMS eCom Domain Common Library Release 3.0.0	The documented design of components that are used in multiple messages within the eCom domain.
[Ref2]	BMS Shared Common Library Release 3.0.0	The documented design of components that are used in both the eCom domain and GDSN.
[Ref3]	BRAD Upstream Standards - Demand & Supply Signals 0.1.0	
[Ref4]	Replenishment – Business Requirement Document 1.0.0	

1.5. Acknowledgements

1.5.1. Work Group

Function	Name	Company / organisation
Chair eCom BRG	Edison, Carol	General Mills, Inc.
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Member	Childs, Justin	GS1 Global Office
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Member	Cox, Marc	Philips Electronics N.V.
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Member	Denyer, Troy	GS1 Australia
Member	Dicks, Arne	GS1 Germany
Member	Dodd, Marilyn	3M Company
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Member	Martinko, Michal	Hewlett-Packard
Member	McLeod, Ed	Procter & Gamble Co.
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Member	Post, Valerie	Link Snacks Inc, Jack Links Beef Jerky
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Member	Rosell, Pere	GS1 Spain
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Function	Name	Company / organisation
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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	Plan
System Capabilities	GS1 System
Official Constraints	None

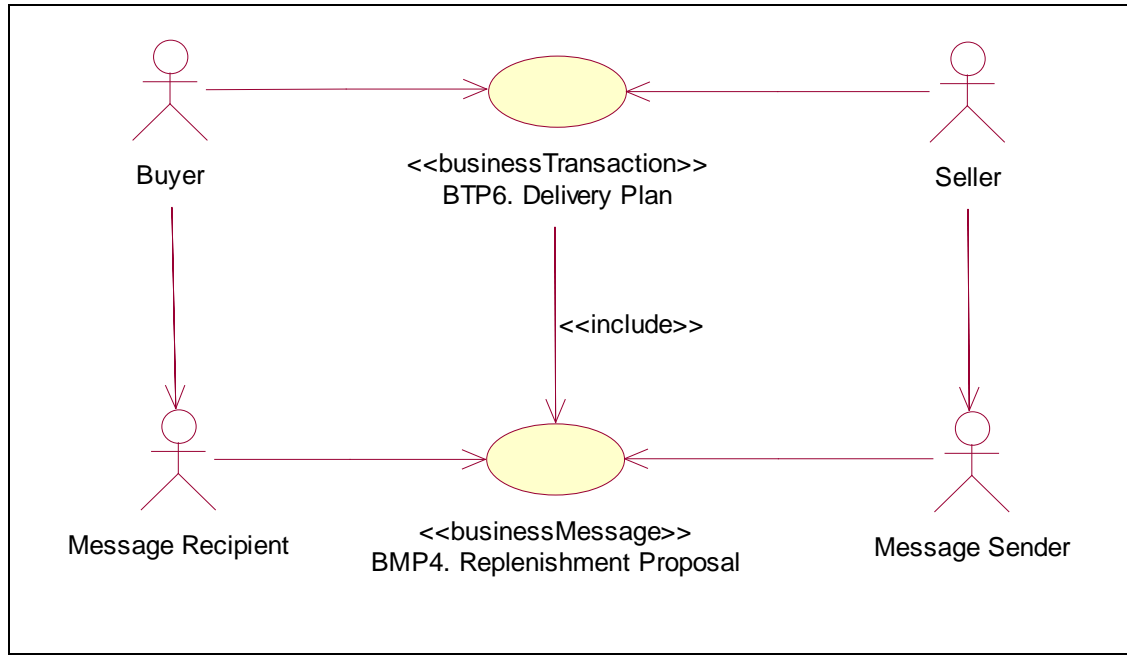# 3. Additional Technical Requirements Analysis

3.1. Technical Requirements

Not Applicable

4. Business Transaction View

4.1. Business Transaction Use Case Diagram

Figure 4-1 Use Case Diagram: Business Transaction

4.2. Use Case Description

Use Case ID	BTP6
Use Case Name	Delivery Plan
Use Case Description	The Delivery Plan is sent by the supplier and communicates to the buyer the quantities of which items will be delivered when & where by the supplier.
Actors (Goal)	Seller: To send the Delivery Plan. Buyer: To receive the Delivery Plan.
Performance Goals	
Preconditions	Delivery Plan: CALCULATED
Post conditions	Delivery Plan: COMMUNICATED
Scenario	**Begins when:** Seller has calculated the delivery plan. **Continues with**:

Step #	Actor	Activity Step
1.	Seller	Sends Replenishment Proposal message to the Buyer.
2.	Buyer	Receives Replenishment Proposal message

Ends when: Buyer receives Replenishment Proposal message

Alternative Scenario	Not Applicable
Guidelines	Not Applicable

4.3.   Business Transaction Activity Diagram(s)

Not Applicable

4.4.   Business Transaction Sequence Diagram(s)

Not Applicable

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5. Information Model (Including GDD Report)

5.1. GDD Report

5.1.1. GDD Report: Replenishment Proposal

Content	Attribute / Role	Datatype /Secondary class	Multiplicity	Definition	Requirements
ReplenishmentProposal				Contains the seller delivery or production plan for the buyer for given trade items and locations for specific time periods.	
Association	replenishmentProposalIdentification	EntityIdentification	1..1	Unique replenishment proposal number assigned by supplying party.	
Association	seller	TransactionalParty	1..1	Contains the identification of the party that is selling the goods.	
Association	buyer	TransactionalParty	1..1	Contains the identification of the party that is buying the goods.	
Association		ReplenishmentProposalItemLocationInformation	1..*	Contains the Replenishment Proposal for given trade items and locations for specific time periods.	
Association	additionalReferenceNumber	TransactionalReference	0..1	Assigned by buying party. Includes date and reference number.	replaced associated class, was TypedEntityIdentification
Association	replenishmentRequest	DocumentReference	0..1	Reference to the replenishment request on which the proposal has been based.	
Generalization		Document		Basic information about the content of the message including version number, creation date and time.	
Attribute	replenishmentProposalTypeCode	ReplenishmentProposalTypeEnumeration	1..1	Contains the type of replenishment plan. E.g. production or delivery.	renamed from replenishmentProposalDocumentTypeCode
Attribute	structureTypeCode	StructureTypeCode	1..1	Contains the type of grouping and sequence of the business document.	
ReplenishmentProposalItemLoc				Contains the Replenishment	

Content	Attribute / Role	Datatype /Secondary class	Multiplicity	Definition	Requirements
ationInformation				Proposal for a given trade item and location for specific time periods.	
Association		TransactionalTradeItem	1..1	Contains the identification of the trade item that will be delivered.	
Association	shipTo	TransactionalParty	1..1	Contains the identification of the location whereto the required goods will be delivered.	
Association	inventoryLocation	TransactionalParty	0..1	Identification of the physical place at the receiving side where the items are to be stored.	
Association	shipFrom	TransactionalParty	0..1	Contains the identification of the location wherefrom the required goods will be delivered.	
Association		ReplenishmentProposalLineItem	1..*	The planned delivery quantities per time bucket.	

5.1.2. GDD Report: Replenishment Proposal Line Item

Content	Attribute / Role	Datatype /Secondary class	Multiplicity	Definition	Requirements
ReplenishmentProposalLineItem				Contains the planned delivery quantities per time bucket.	
Association	periodOfReplenishment	DateTimeRange	1..1	Contains the start and end dates and optionally start and end times of the replenishment period.	
Association	proposedQuantitySpecification	QuantitySpecification	0..*	Contains additional quantity information for the time bucket. Example: In Transit, Produced.	
Association	purchaseConditions	DocumentReference	1..1	Contains a reference to the commercial agreement under which the goods are supplied.	
Attribute	lineItemNumber	positiveInteger	1..1	Provides the line number associated to the Replenishment Proposal Line Item.	
Attribute	proposedQuantity	Quantity	1..1	The number of units planned to be replenished.	

Content	Attribute / Role	Datatype /Secondary class	Multiplicity	Definition	Requirements
Attribute	planBucketSizeCode	PlanBucketSizeCode	1..1	Code describing the size of the planning period.	
Attribute	packageTypeCode	PackageTypeCode	0..1	Code specifying the kind of logistic unit in which the goods will be delivered.	

5.2. Class Diagrams

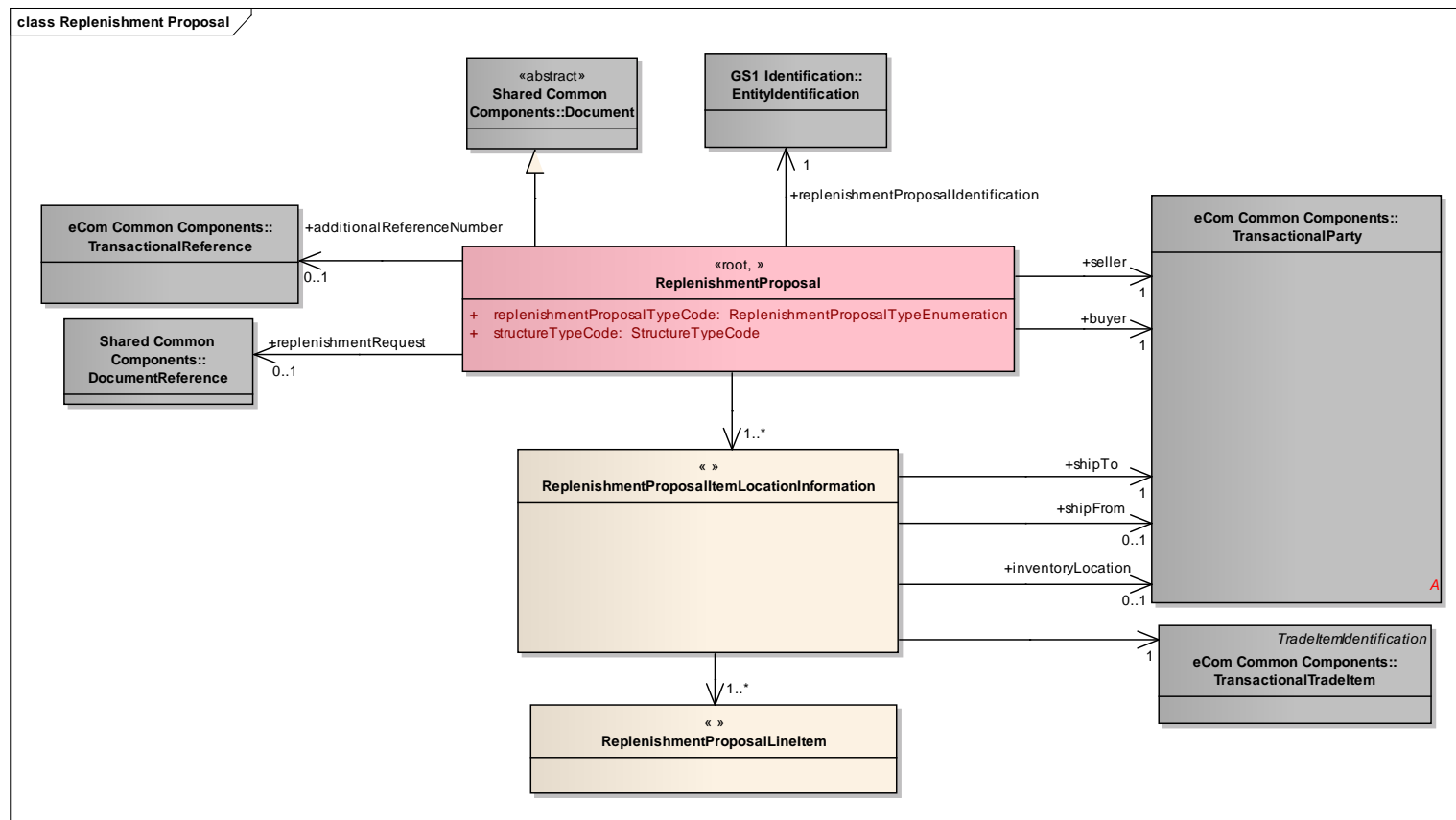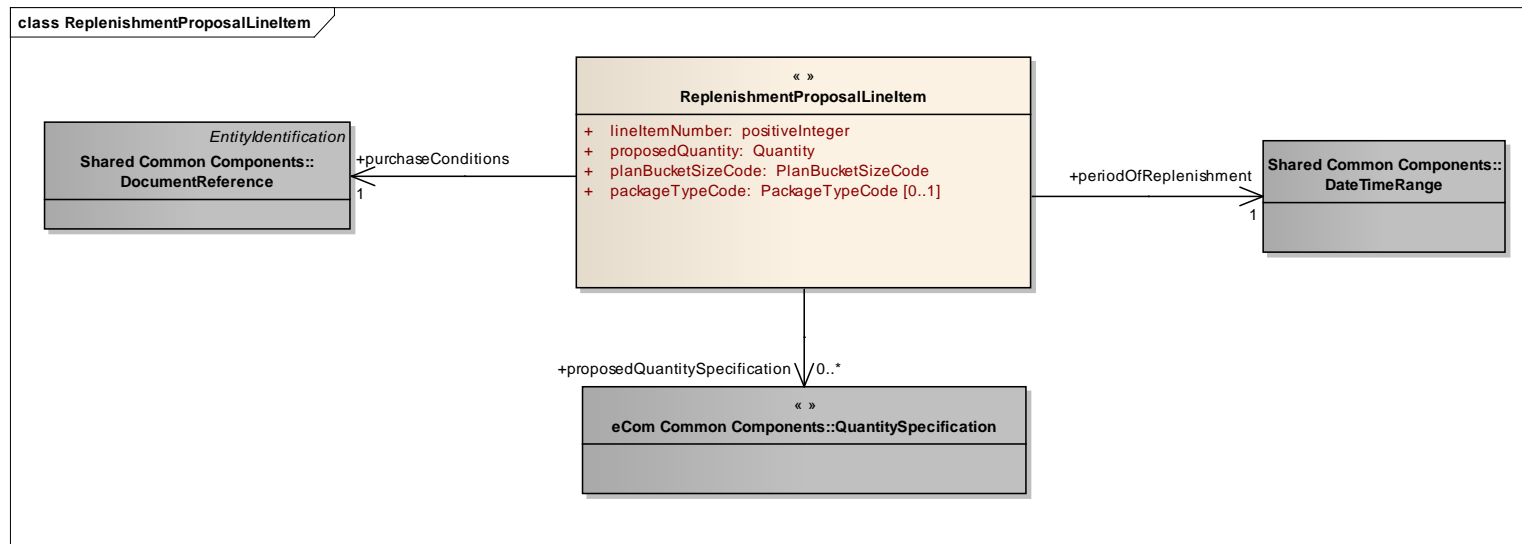**Figure 5-1** Class Diagram: Replenishment Proposal

Figure 5-2 Class Diagram: Replenishment Proposal Line Item

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 common information.

5.3. Code Lists

5.3.1. ReplenishmentProposalTypeEnumeration

Code Value	Code Name	Code Definition
ACTUAL_PRODUCTION	Actual production	Document contains quantities of goods manufactured in previous periods.
DELIVERY_PLAN	Delivery plan	Not Available
PRODUCTION_PLAN	Production plan	Not Available

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
ReplenishmentProposal	StructureTypeCode	eCom Domain Common Library Business Message (BMS) Release 3.0.0
ReplenishmentProposal LineItem	PlanBucketSizeCode	Shared Common Library Business Message (BMS) Release 3.0.0
ReplenishmentProposal LineItem	PackageTypeDescrip tionCode	eCom Domain Common Library Business Message (BMS) Release 3.0.0

6. Business Document Example

The following is an example of a delivery plan message. The message is send out on January 11th at 11 AM. The message is identified with the unique identifier 20050014. The content owner is the sending party, in this case the material supplier (Seller 8812345678901).

The delivery plan is sent by the material supplier (Seller 8812345678901) to the manufacturer (Buyer 8712345678911).

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

The delivery plan is for one delivery site (Ship to 8712345670001), one supplier site (Ship from 8712345678960). For one of the products there is a specific storage location specified (Inventory location 8712345670077). It has an additional seller assigned id (ROTTERDAM-01).

The delivery plan contains two items: Item A (GTIN 08712345678901) and item B (GTIN 08712345678920 and buyer item number AB77770004). Item A has two planned deliveries:

▪ on February 11th of 1000 units of which 500 units are in transit.

▪ on February 12th of 200 units.

The contract used for this product (2004000012) issued by the material supplier. Within the contract line 23 refers to this item.

Item B has one planned delivery on February 9th of 500 units. This needs to be delivered between 8 AM and 9 AM.

The contract used for this product (2004000012) issued by the material supplier. Within the contract line 25 refers to this item.

ReplenishmentProposal	
- creationDateTime	2005-01-11T11:00:00
- documentStatusCode	ORIGINAL
- replenishmentProposalTypeCode	DELIVERY_PLAN
- structureType	LOCATION_BY_ITEM
EntityIdentification (+replenishmentProposalIdentification)	
- entityIdentification	20050014
PartyIdentification (+contentOwner)	
- gln	8812345678901
TransactionalParty(+seller)	
- gln	8812345678901
TransactionalParty (+buyer)	
- gln	8712345678911
Contact	
- personName	KRAMER
- responsibility	Material requirements planner
ReplenishmentProposalItemLocationInformation *1	
TransactionalParty (+shipTo)	
- gln	8712345670001
TransactionalParty (+shipFrom)	
- gln	8712345678960
TransactionalTradeItem	
- gtin	08712345678901
ReplenishmentProposalLineItem *1.1	
- lineItemNumber	1
- planBucketSizeCode	DAY
- proposedQuantity (value, unitOfMeasure)	1000
DateTimeRange (+requirementsPeriod)	
- beginDate	2005-02-11
- endDate	2005-02-11
DocumentReference (+purchaseConditions)	
- lineItemNumber	23
EntityIdentification	
- entityIdentification	2004000012
TransactionalParty (+contentOwner)	

ReplenishmentProposal	
- gln	8812345678901
QuantitySpecification (+proposedQuantitySpecification)	
- quantitySpecificationType	IN_TRANSIT
- specificQuantity (value, unitOfMeasure)	500
ReplenishmentProposalLineItem *1.2	
- lineItemNumber	2
- planBucketSizeCode	DAY
- proposedQuantity (value, unitOfMeasure)	200
DateTimeRange (+requirementsPeriod)	
- beginDate	2005-02-12
- endDate	2005-02-12
DocumentReference (+purchaseConditions)	
- entityIdentification	2004000012
- lineItemNumber	2
PartyIdentification (+contentOwner)	
- gln	8812345678901
ReplenishmentProposalItemLocationInformation *2	
TransactionalParty (+shipTo)	
- gln	8712345670001
TransactionalParty (+shipFrom)	
- gln	8712345678960
TransactionalParty (+InventoryLocation)	
- gln	8712345670077
- additionalPartyIdentification	ROTTERDAM-01 (SELLER_ASSIGNED_IDENTIFIER_FOR_A_PARTY)
TransactionalTradeItem	
- gtin	08712345678920
- additionalTradeItemIdentification	AB77770004 (BUYER_ASSIGNED)
ReplenishmentProposalLineItem *2.1	
- lineItemNumber	3
- planBucketSizeCode	DAY
- proposedQuantity (value, unitOfMeasure)	500
DateTimeRange (+requirementsPeriod)	
- beginDate	2005-02-09T08:00:00
- endDate	2005-02-09T09:00:00
DocumentReference (+purchaseConditions)	
- entityIdentification	2004000012

ReplenishmentProposal	
- lineItemNumber	25
PartyIdentification (+contentOwner)	
- gln	8812345678901

7. Implementation Considerations

NOT APPLICABLE

8. Testing

8.1. Pass / Fail Criteria

NOT APPLICABLE

8.2. Test Data

NOT APPLICABLE

9. Appendices

NOT APPLICABLE

10. 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.	☒	
2.2	The GS1 Architecture shall leverage the use of GS1 Keys	The solution maintains the GS1 keys as the primary, mandatory identifiers.	☒	
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.	☒	
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.	☒	
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.	☒	
2.6	The GS1 Architecture shall enable security where appropriate	Security solutions are included where appropriate.	☒	
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.	☒	
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.	☒	

#	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.	☒	
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.	☒	`
3.3	The GS1 Architecture should promote seamless integration	The BSD promotes seamless integration with other GS1 Standards if in scope.	☒	
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.	☒	
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.	☒	
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.	☒	
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.	☒	
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.	☒	
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.	☒	
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.	☒	

#	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.	☒	

11. Summary of Changes

Change	BMS Version	Associated CR
For BMS Release 3.0.0 • Updated to reflect changes in modelling	Issue 3.0.0	Not Applicable
For Publication ■ Changed Status to Approved ■ Removed year reference in footer copyright statement ■ Replaced Section 10 with updated AG Principles	Issue 3.0.0	Not Applicable