



The Global Language of Business

Performance Measurement Business Message Standard (BMS)

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1 Business Domain View

1.1 Introduction

Message Definition

The Performance Measurement message allows trading partners to identify goals for the measures that they wish to share, as well as exchange the values for those measures.

Principles

The scope of the message includes key measures of Sales, Operations, Supply Chain, and Data Accuracy performance, including any of the following specific measures:

Sales

1. Sales Growth (%)
2. Share (%)
3. Retail Item Gross Margin (%)
4. Retail Gross Profit Margin (%)
5. Forecast Accuracy (%)
6. Markdown (%)

Supply Chain

7. Out of Stock (%)
8. Service Level / Fill Rate (%)
9. Order to Delivery Cycle Time (Hours)
10. On Time Delivery (%)
11. Finished Goods Inventory Cover (Days)

Operations

12. Order Item /Quantity Change (%)
13. Invoice Accuracy (%)
14. On Time Payment (%)
15. Unsaleables (%)

Data Accuracy

16. Item Master Data Accuracy (%)
17. Item Data Synchronisation (%)

1.2 References

Reference Name	Description
Trading Partner Performance Management – BRAD Issue 1.0.0	Provide the definitions, formulas, and examples for the 17 core measures.

Reference Name	Description
New Ways of Working Together Initiative (NWWT)	NWWT is a joint project of Procter & Gamble, J.M. Smucker Co., Coca-Cola, Wegmans Food Markets, Safeway, Kroger, Oracle and a number of industry associations. One of the group's initiatives has been to use common goals and common measures to drive opportunities for growth and avoid issues that could lead to disruptions. Several of the TPPM core measures were based on the Common Goals and Common Measures identified in the NWWT initiative.
VICS Collaborative Planning Forecasting and Replenishment (CPFR®), Global Commerce Initiative Recommendation, June 30, 2001	A not-for-profit association with a mission to take a global leadership role in the development of business guidelines and specifications; facilitating implementation through education and measurement, resulting in the improvement of the retail supply chain efficiency and effectiveness, which meet or exceed customer and consumer expectations. GS1 US is the secretariat to the Voluntary Interindustry Commerce Solutions Association.
BMS eCom Common Library 3.5.1	The documented design of components that are used in multiple messages. In the eCom Domain.
BMS Shared Common Library 3.5.1	The documented design of components that are used in both the eCom Domain and GDSN

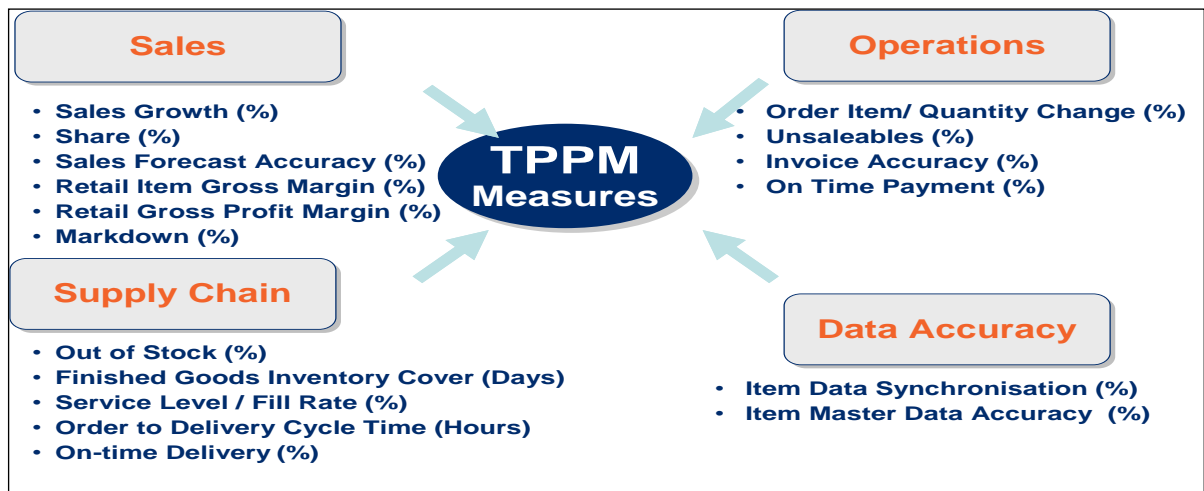
2 Business Context

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

3 Business Transaction View

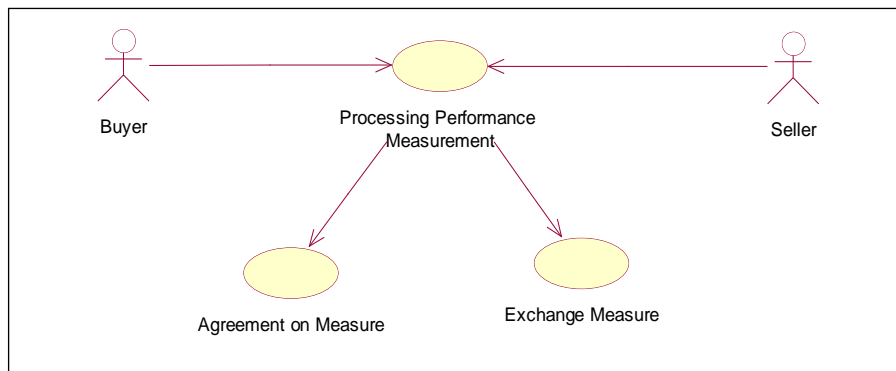
The Buyer and Seller utilize standardised calculation methods and nomenclature to describe the performance of their trading relationship, and explicitly identify the levels of detail, time period and other parameters used. Performance may be evaluated relative to goals that the Buyer and Seller have shared, utilizing the same level of detail, time period, and parameters as the results data. Further root cause analysis is done where needed.

Figure 3-1 TPPM Measures



3.1 Business Transaction - Processing Performance Measurement

Use Case Diagram



Use Case Definition

Use Case ID	UC-1
Use Case Name	Processing Performance Measurement
Use Case Description	The objective is for a pair of trading partners to elaborate upon operational conditions and key metrics that would identify business issues or achievements.
Actors (Goal)	Performance Measurement is a two-actor system involving a collaborative effort between a buyer and a seller across one or more locations. The lead actor in the collaboration depends upon the scenario most appropriate to the trading partner's business situation.
Performance Goals	The ability to exchange performance goals and results.
Preconditions	A collaboration agreement and joint business plan must be in place. If goals are to be exchanged, they must be prepared and received by the trading partners.

Use Case ID	UC-1														
Post conditions	<p>Successful Condition: Trading partners review their performance and take corrective action when necessary.</p> <p>Unsuccessful Condition: Operational activities and key metrics are not exchanged, preventing trading partners from reviewing their performance.</p>														
Scenario	<p>Begins with the receipt of data by one of the Actors</p> <p>Continues with...</p> <table><tr><th>Step #</th><th>Actor</th><th>Activity Step</th></tr><tr><td>1</td><td>Buyer, Seller</td><td>Calculates performance results.</td></tr><tr><td>2</td><td>Buyer, Seller</td><td>Transmits Performance Measurement message</td></tr><tr><td>3</td><td>Buyer, Seller</td><td>Reviews performance relative to goals (if provided).</td></tr></table> <p>Ends with corrective action to improve performance, if required.</p>			Step #	Actor	Activity Step	1	Buyer, Seller	Calculates performance results.	2	Buyer, Seller	Transmits Performance Measurement message	3	Buyer, Seller	Reviews performance relative to goals (if provided).
Step #	Actor	Activity Step													
1	Buyer, Seller	Calculates performance results.													
2	Buyer, Seller	Transmits Performance Measurement message													
3	Buyer, Seller	Reviews performance relative to goals (if provided).													
Alternative Scenario	Not Applicable														
Related Requirements	Not Applicable														
Related Rules	Not Applicable														

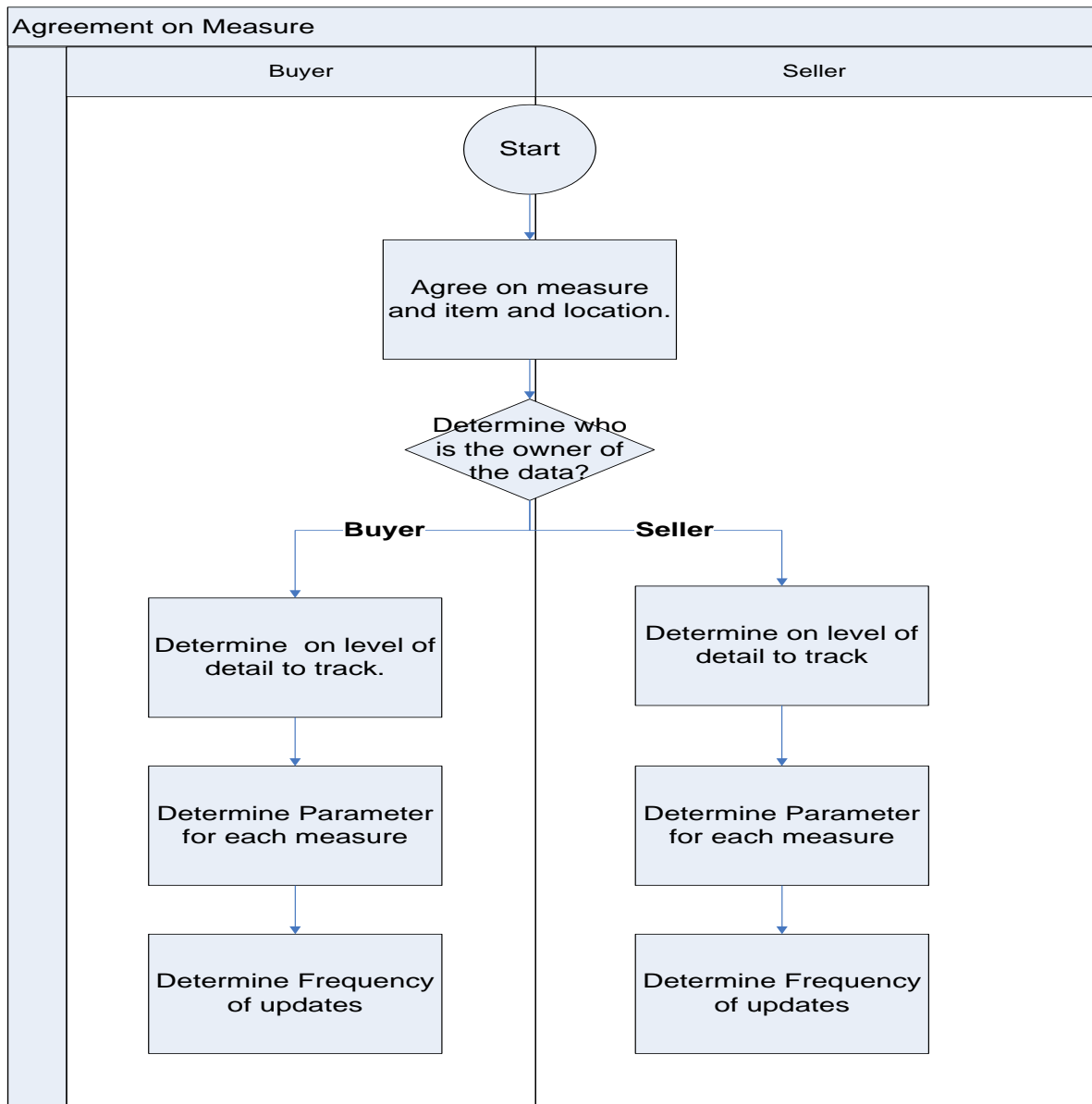
3.2 Business Process - Agreement on Measure

Use Case Definition

Use Case ID	UC-1.1
Use Case Name	Agreement on Measure
Use Case Description	The objective is for a pair of trading partners to agree on which measure to track.
Actors (Goal)	Performance Measurement is a two-actor system involving a collaborative effort between a buyer and a seller across one or more locations. The lead actor in the collaboration depends upon the scenario most appropriate to the trading partner's business situation.
Performance Goals	The ability to agree on the measure selection.
Preconditions	A collaboration agreement and joint business plan must be in place. There must be an agreement from buyer and seller to process Performance Measurement.
Post conditions	<p>Successful Condition: Trading partners agree to the measure and plan to exchange the information.</p> <p>Unsuccessful Condition: Trading partners cannot agree to the measure.</p>

Use Case ID	UC-1.1		
Scenario	Begins with the precondition with an agreement from and seller to process performance measurement. Continues with...		
	Step #	Actor	Activity Step
	1	Joint	Agree on measure with item and location
	2	Decision	Determine who is the owner of the data?
	3	Buyer, Seller	Determine on level of detail to track
	4	Buyer, Seller	Determine parameters for each measure
	5	Buyer, Seller	Determine frequency of updates.
	Ends with plans to exchange this information.		
Alternative Scenario	Receive Performance Measurement Message without measure results data.		
Related Requirement	Not Applicable		
Related Rule	Not Applicable		

Activity Diagram



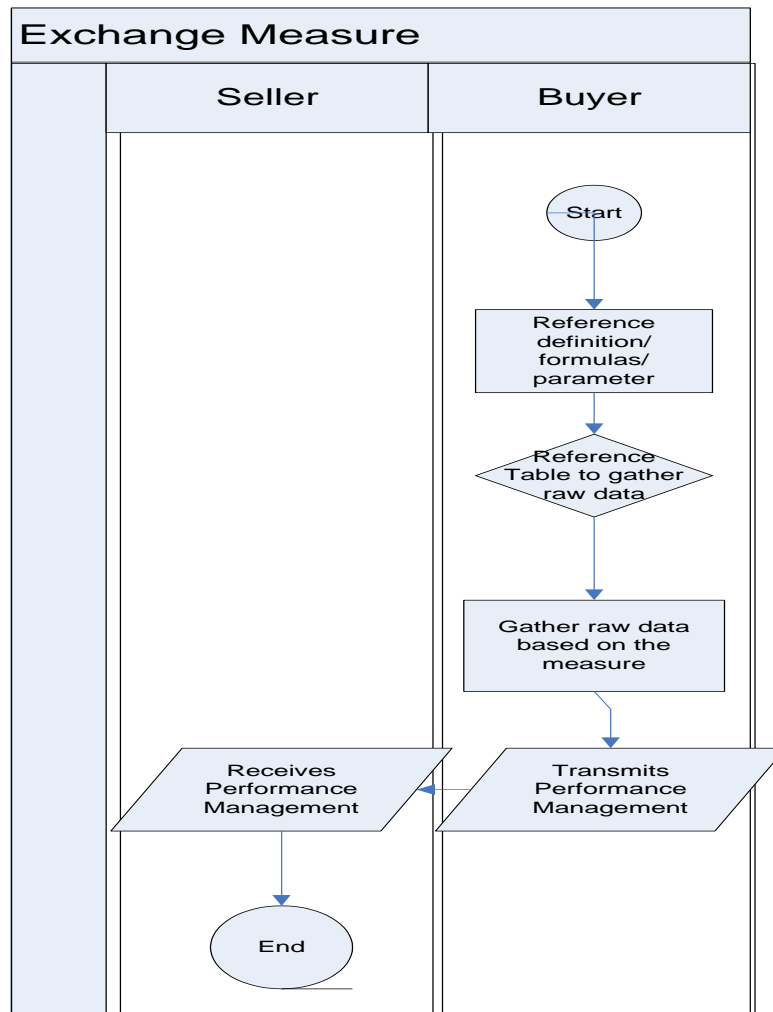
3.3 Business Process - Exchange Measure

Use Case Definition

Use Case ID	UC-1.2
Use Case Name	Exchange Measure
Use Case Description	The objective is for a pair of trading partners to exchange measure information.
Actors (Goal)	Performance Measurement is a two-actor system involving a collaborative effort between a buyer and a seller across one or more locations. The lead actor in the collaboration depends upon the scenario most appropriate to the trading partner's business situation.
Performance Goals	The ability to exchange performance goals and results.
Preconditions	There must be an agreement on which measure is to be exchanged.

Use Case ID	UC-1.2																
Post conditions	<p>Successful Condition: Trading partners can exchange measure information.</p> <p>Unsuccessful Condition: Trading partners cannot exchange measure information.</p>																
Scenario	<p>Begins with the agreement on measure to be exchanged In the example below the Buyer is the data source. Continues with...</p> <table border="1"> <thead> <tr> <th>Step #</th><th>Actor</th><th>Activity Step</th></tr> </thead> <tbody> <tr> <td>1</td><td>Buyer</td><td>Reference definition/ formulas/ parameter</td></tr> <tr> <td>2</td><td>Buyer</td><td>Determine what raw data is needed</td></tr> <tr> <td>3</td><td>Buyer, Seller</td><td>Gather raw data and calculate measure result</td></tr> <tr> <td>4</td><td>Buyer</td><td>Transmit measure result via Performance Measurement</td></tr> </tbody> </table> <p>Ends with Seller receiving the Performance Measurement Message which contains the measures.</p>		Step #	Actor	Activity Step	1	Buyer	Reference definition/ formulas/ parameter	2	Buyer	Determine what raw data is needed	3	Buyer, Seller	Gather raw data and calculate measure result	4	Buyer	Transmit measure result via Performance Measurement
Step #	Actor	Activity Step															
1	Buyer	Reference definition/ formulas/ parameter															
2	Buyer	Determine what raw data is needed															
3	Buyer, Seller	Gather raw data and calculate measure result															
4	Buyer	Transmit measure result via Performance Measurement															
Alternative Scenario	Not Applicable																
Related Requirement	Not Applicable																
Related Rule	Not Applicable																

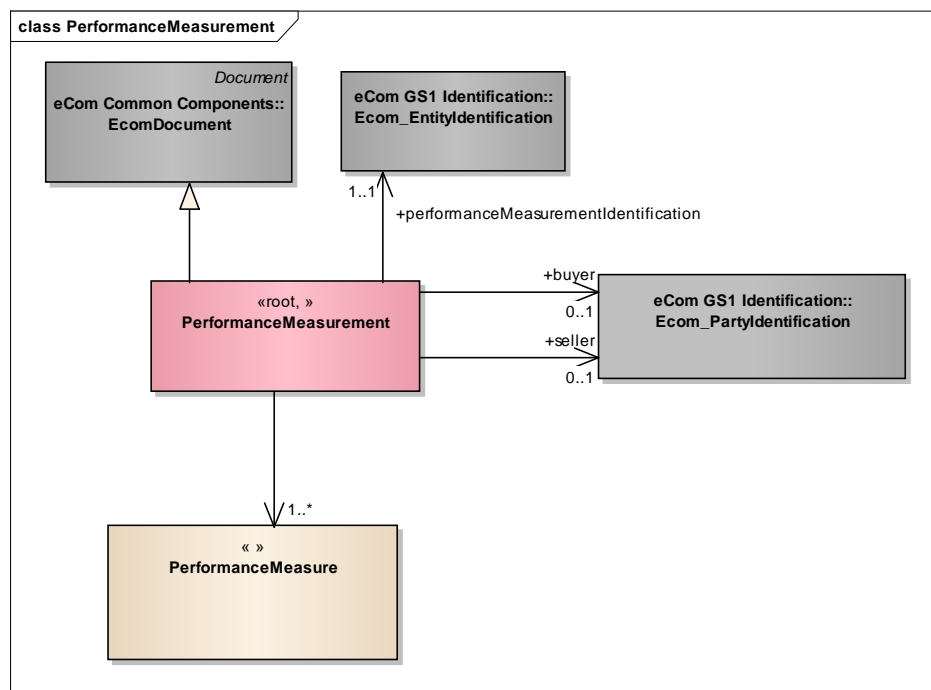
Activity Diagram



4 Business Information View

4.1 Performance Measurement

Class diagram



GDD report

The content of the PerformanceMeasurement class, its structure and component definitions can be accessed in the Global Data Dictionary:
http://apps.gs1.org/GDD/bms/Version3_3/Pages/bieDetails.aspx?semanticURN=urn:gs1:gdd:bie:PerformanceMeasurement

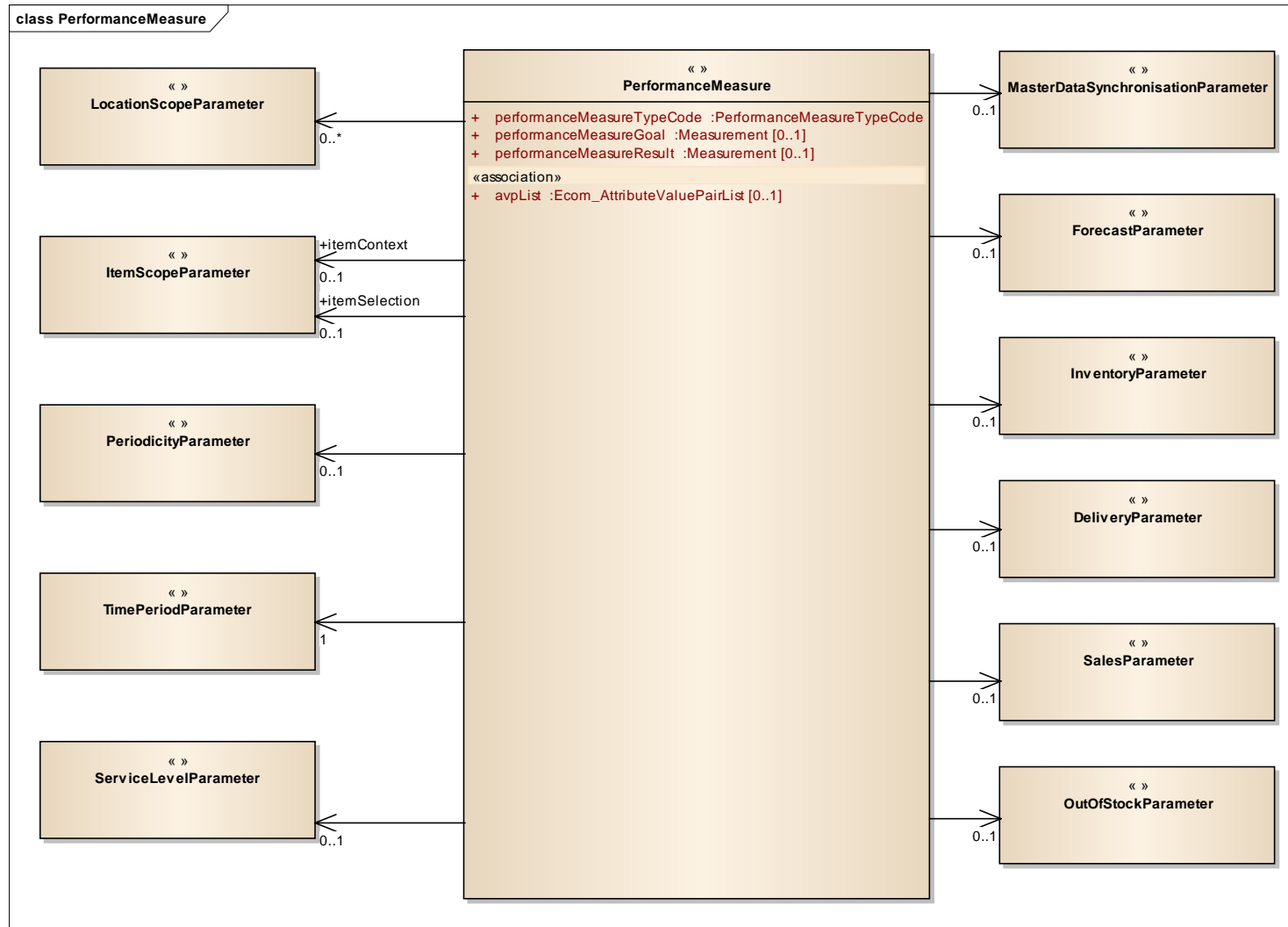
Content	Attribute / Role	Datatype / Secondary class	Multiplicity	Definition	Requirements
PerformanceMeasurement				Provides the performance measurement details with the performance measure and related parameters.	
Association		PerformanceMeasure	1..*	Provides the performance measures.	
Generalization		EcomDocument		Basic information about the content of the message including version number, creation date and time.	WR 14-000110
Association	seller	Ecom_PartyIdentification	0..1	Party, which sells products or services to a buyer.	WR 15-000314
Association	performanceMeasurementIdentification	Ecom_EntityIdentification	1..1	The unique identification of the Performance Measurement.	WR 15-000314
Association	buyer	Ecom_PartyIdentification	0..1	Party, which buys products or services from a seller.	WR 15-000314



Note: Reference Shared Common Library Business Message (BMS) Release 3.5.1 and eCom Domain Common Library Business Message (BMS) Release 3.5.1 for all common information.

4.2 Performance Measure

Class Diagram



GDD Report

The content of the PerformanceMeasure class, its structure and component definitions can be accessed in the Global Data Dictionary:

http://apps.gs1.org/GDD/bms/Version3_3/Pages/bieDetails.aspx?semanticURN=urn:gs1:gdd:bie:PerformanceMeasure

Content	Attribute / Role	Datatype / Secondary class	Multiplicity	Definition	Requirements
PerformanceMeasure				Provides the performance measure and related parameters.	
Association	itemSelection	ItemScopeParameter	0..1	Identifier that indicates the scope of the data being communicated in terms of the item (product) dimension	
Association		OutOfStockParameter	0..1	Provides the parameter related to out of stock measurements.	
Association		ServiceLevelParameter	0..1	Provides the parameters related to service level.	
Association		LocationScopeParameter	0..*	Provides the parameter related to location scope.	
Association		MasterDataSynchronisationParameter	0..1	Provides the parameter related to master data synchronisation.	
Association		SalesParameter	0..1	Provides the parameter related to sales.	
Association		PeriodicityParameter	0..1	Provides the periodicity parameter information.	
Association		DeliveryParameter	0..1	Provides the delivery parameter associated to the performance measure.	
Association		TimePeriodParameter	1..1	Provides the time period associated with the specified performance measure.	
Association	itemContext	ItemScopeParameter	0..1	Identifier of the range of items over which the share is being measured.	
Association		ForecastParameter	0..1	Provides the parameter related to forecast.	
Association		InventoryParameter	0..1	Provides the related inventory parameter information.	
Attribute	performanceMeasureTypeCode	PerformanceMeasureTypeCode	1..1	Specifies the type of performance measure.	
Attribute	performanceMeasureGoal	Measurement	0..1	Provides the ability for trading partners to identify goals for the measures that that they wish to share.	

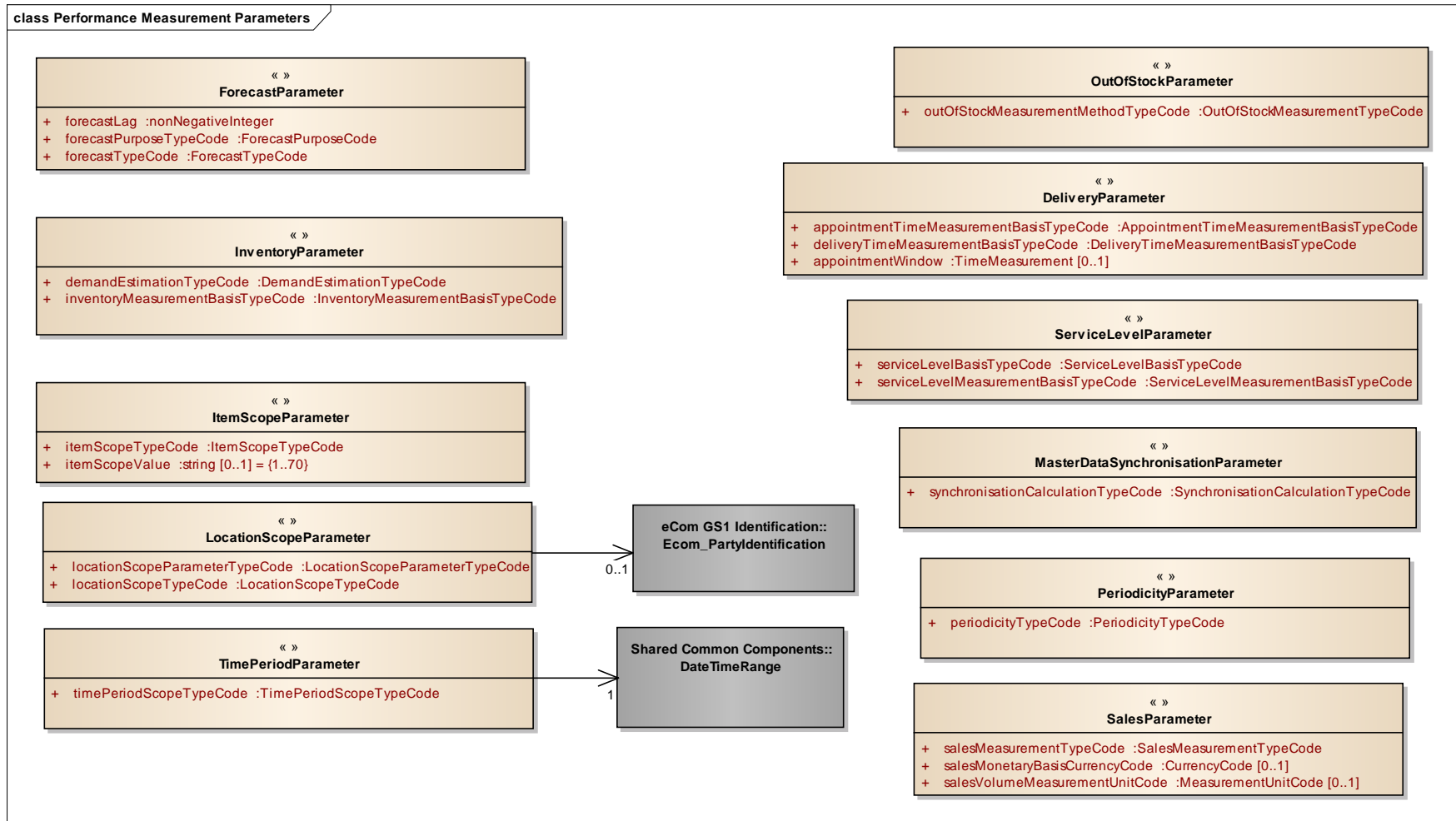
Content	Attribute / Role	Datatype / Secondary class	Multiplicity	Definition	Requirements
Attribute	performanceMeasureResult	Measurement	0..1	Provides the ability for trading partners to identify results for the measures that they wish to share.	
Attribute	avpList	Ecom_AttributeValuePairList	0..1	Temporary attributes introduced between minor versions.	WR 14-000110



Note: Reference Shared Common Library Business Message (BMS) Release 3.5.1 and eCom Domain Common Library Business Message (BMS) Release 3.5.1 for all common information.

4.3 Performance Measurement Parameters

Class Diagram



GDD Report

The content of the PerformanceMeasurementParameters class, its structure and component definitions can be accessed in the Global Data Dictionary:

http://apps.gs1.org/GDD/bms/Version3_3/Pages/bieDetails.aspx?semanticURN=urn:gs1:gdd:bie:PerformanceMeasurementParameters

Content	Attribute / Role	Datatype / Secondary class	Multiplicity	Definition	Requirements
DeliveryParameter				Provides the delivery parameter information.	
Attribute	appointmentTimeMeasurementBasisTypeCode	AppointmentTimeMeasurementBasisTypeCode	1..1	Specifies whether an on-time delivery calculation considers the appointment date time to be the latest time that the delivery can arrive (the default option), or the center of a delivery window that allows delivers before or after the appointment time by an amount indicated by the Appointment Window parameter	
Attribute	deliveryTimeMeasurementBasisTypeCode	DeliveryTimeMeasurementBasisTypeCode	1..1	Indicates the source of the date to be used to determine whether a delivery was on-time (the original P.O. need-by date, the first scheduled appointment date or the last scheduled appointment date).	
Attribute	appointmentWindow	TimeMeasurement	0..1	The number of minutes before or after the appointment time that a delivery can arrive and still be considered on time, if the Appointment Time Measurement Basis is set to "Appointment Window."	
ForecastParameter				Provides the parameter related to forecast.	
Attribute	forecastLag	nonNegativeInteger	1..1	Specifies the minimum age of a forecast that is to be compared with actual sales for accuracy measurement.	
Attribute	forecastPurposeTypeCode	ForecastPurposeCode	1..1	Specifies whether the forecast is for the amount sold, received or shipped.	
Attribute	forecastTypeCode	ForecastTypeCode	1..1	Specifies whether the forecast pertains to all items in the period, only item/location combinations on promotion during the period, or non-promoted items.	
InventoryParameter				Provides the inventory parameter information.	

Content	Attribute / Role	Datatype / Secondary class	Multiplicity	Definition	Requirements
Attribute	demandEstimationTypeCode	DemandEstimationTypeCode	1..1	Specifies the technique used to estimate demand when measuring inventory cover.	
Attribute	inventoryMeasurementBasisTypeCode	InventoryMeasurementBasisTypeCode	1..1	Indicator of whether the inventory included in an inventory cover calculation includes inbound (pipeline) inventory.	
ItemScopeParameter				Provides the item scope parameter information.	
Attribute	itemScopeTypeCode	ItemScopeTypeCode	1..1	Specifies the type of item scope (brand, category, etc.) of a goal or measure value.	
Attribute	itemScopeValue	String70	0..1	Identifier that indicates the scope of the data being communicated in terms of the item (product) dimension.	
LocationScopeParameter				Provides the parameter related to location scope.	
Association		Ecom_PartyIdentification	0..1	Identifier that indicates the scope of the data being communicated in terms of the location (organization/geography) dimension.	WR 15-000314
Attribute	locationScopeParameterTypeCode	LocationScopeParameterTypeCode	1..1	Determines the role of a facility or group of facilities specified in the performance measurement. Depending on the measure selected, multiple location scope selections may be required to fully identify the range of facilities that should be included.	
Attribute	locationScopeTypeCode	LocationScopeTypeCode	1..1	Specifies the type of location scope (store, region, chain) of a goal or measure value.	
MasterDataSynchronisationParameter				Provides the parameter related to master data synchronisation.	
Attribute	synchronisationCalculationTypeCode	SynchronisationCalculationTypeCode	1..1	Indicates whether the item data synchronization percentage calculation was based on the total number of items, or the incremental number of items synchronised.	
OutOfStockParameter				Provides the parameter related to out of stock measurements.	
Attribute	outOfStockMeasurementMethodTypeCode	OutOfStockMeasurementTypeCode	1..1	Specifies the technique used to measure the out of stock percentage being reported.	

Content	Attribute / Role	Datatype / Secondary class	Multiplicity	Definition	Requirements
PeriodicityParameter				Provides the parameter related to periodicity.	
Attribute	periodicityTypeCode	PeriodicityTypeCode	1..1	Specifies the time unit of measure of a result.	
SalesParameter				Provides the parameter related to sales.	
Attribute	salesMeasurementTypeCode	SalesMeasurementTypeCode	1..1	Indicates whether the values used in the calculation are on a volume (unit) basis, or value (monetary) basis.	
Attribute	salesMonetaryBasisCurrencyCode	CurrencyCode	0..1	Indicates the sales measurement currency.	
Attribute	salesVolumeMeasurementUnitCode	Measurement	0..1	Indicates the sales volume unit of measure.	
ServiceLevelParameter				Provides the parameters related to service level.	
Attribute	serviceLevelBasisTypeCode	ServiceLevelBasisTypeCode	1..1	Indicator of the basis for which a Service Level is to be calculated – in terms of the percentage of orders filled 100%, the percentage of order lines filled 100%, or the percentage volume of product filled vs. ordered	
Attribute	serviceLevelMeasurementBasisTypeCode	ServiceLevelMeasurementBasisTypeCode	1..1	Indicates whether a fill rate / service level calculation is based upon the quantity shipped or quantity received.	
TimePeriodParameter				Provides the time period parameter for the performance measure type.	
Association		DateTimeRange	1..1	Provides the time period format.	
Attribute	timePeriodScopeTypeCode	TimePeriodScopeTypeCode	1..1	Specifies the type of time period of a goal or measure value.	



Note: Reference Shared Common Library Business Message (BMS) Release 3.5.1 and eCom Domain Common Library Business Message (BMS) Release 3.5.1 for all common information.

4.4 Enumerations (message specific)

Not applicable

4.5 Code Lists

Class	Codelist	GDD Link
PerformanceMeasure	PerformanceMeasureTypeCode	http://apps.gs1.org/GDD/Pages/clDetails.aspx?semanticURN=urn:gs1:qdd:cl:PerformanceMeasureTypeCode
DeliveryParameter	AppointmentTimeMeasurementBasisTypeCode	http://apps.gs1.org/GDD/Pages/clDetails.aspx?semanticURN=urn:gs1:qdd:cl:AppointmentTimeMeasurementBasisTypeCode
DeliveryParameter	DeliveryTimeMeasurementBasisTypeCode	http://apps.gs1.org/GDD/Pages/clDetails.aspx?semanticURN=urn:gs1:qdd:cl:DeliveryTimeMeasurementBasisTypeCode
ForecastParameter	ForecastPurposeCode	http://apps.gs1.org/GDD/Pages/clDetails.aspx?semanticURN=urn:gs1:qdd:cl:ForecastPurposeCode
ForecastParameter	ForecastTypeCode	http://apps.gs1.org/GDD/Pages/clDetails.aspx?semanticURN=urn:gs1:qdd:cl:ForecastTypeCode
InventoryParameter	DemandEstimationTypeCode	http://apps.gs1.org/GDD/Pages/clDetails.aspx?semanticURN=urn:gs1:qdd:cl:DemandEstimationTypeCode
InventoryParameter	InventoryMeasurementBasisTypeCode	http://apps.gs1.org/GDD/Pages/clDetails.aspx?semanticURN=urn:gs1:qdd:cl:InventoryMeasurementBasisTypeCode
ItemScopeParameter	ItemScopeTypeCode	http://apps.gs1.org/GDD/Pages/clDetails.aspx?semanticURN=urn:gs1:qdd:cl:ItemScopeTypeCode
LocationScopeParameter	LocationScopeParameterTypeCode	http://apps.gs1.org/GDD/Pages/clDetails.aspx?semanticURN=urn:gs1:qdd:cl:LocationScopeParameterTypeCode
LocationScopeParameter	LocationScopeTypeCode	http://apps.gs1.org/GDD/Pages/clDetails.aspx?semanticURN=urn:gs1:qdd:cl:LocationScopeTypeCode
MasterDataSynchronisationParameter	SynchronisationCalculationTypeCode	http://apps.gs1.org/GDD/Pages/clDetails.aspx?semanticURN=urn:gs1:qdd:cl:SynchronisationCalculationTypeCode
OutOfStockParameter	OutOfStockMeasurementTypeCode	http://apps.gs1.org/GDD/Pages/clDetails.aspx?semanticURN=urn:gs1:qdd:cl:OutOfStockMeasurementTypeCode
PeriodicityParameter	PeriodicityTypeCode	http://apps.gs1.org/GDD/Pages/clDetails.aspx?semanticURN=urn:gs1:qdd:cl:PeriodicityTypeCode
SalesParameter	SalesMeasurementTypeCode	http://apps.gs1.org/GDD/Pages/clDetails.aspx?semanticURN=urn:gs1:qdd:cl:SalesMeasurementTypeCode
SalesParameter	CurrencyCode	http://apps.gs1.org/GDD/Pages/clDetails.aspx?semanticURN=urn:gs1:qdd:cl:CurrencyCode
ServiceLevelParameter	ServiceLevelBasisTypeCode	http://apps.gs1.org/GDD/Pages/clDetails.aspx?semanticURN=urn:gs1:qdd:cl:ServiceLevelBasisTypeCode
ServiceLevelParameter	ServiceLevelMeasurementBasisTypeCode	http://apps.gs1.org/GDD/Pages/clDetails.aspx?semanticURN=urn:gs1:qdd:cl:ServiceLevelMeasurementBasisTypeCode
TimePeriodParameter	TimePeriodScopeTypeCode	http://apps.gs1.org/GDD/Pages/clDetails.aspx?semanticURN=urn:gs1:qdd:cl:TimePeriodScopeTypeCode



Note: Refer to the Global Data Dictionary (GDD) for the code values.

5 Business Message Examples

5.1 Example 1

Test Data 1

Performance Measure Type	Sales Growth (%)	Share (%)	Retail Item Gross Margin (%)	Retail Gross Profit Margin (%)	Invoice Accuracy (%)	Item Master Data Accuracy (%)	Item Data Synchronization (%)
Example Description	Sales by unit volume of the 500gr size box of SmartBite Low-Fat Snack Crackers (GTIN 010672 021971 35) grew by 13% in the week ending 23 March 2009 at Value Mart store #32 (GLN 098823 498831 3) as compared with the same period last year.	The goal for LaundryCorp's share of Value Mart's Fabric Softener subclass for Fiscal Q3 of 2009 (ending in July) in its French stores is 43% in monetary sales terms.	Value Mart's gross margin for items in the carbonated soft drink category in January 2009 was 26.7%, compared to the goal of 25%.	Value Mart's Gross Profit Margin for GPC category Drinks (verify) was 31% in 2008.	The accuracy of LaundryCorp's invoices to Value Mart in July 2009 were 86%.	The accuracy of master data elements synchronized with ValueMart across all grocery department items and suppliers was 92% in December 2008.	The percentage of LaundryCorp's items that were synchronized to Value Mart in the week ending 14-Mar-2009 was 91%, vs. a goal of 99%.
Item Selection Scope Value	010672 021971 35	<Not Specified>	06-20	Drinks		04	<Not Specified>
Item Selection Scope Type	GTIN	TRADING_RELATIONSHIP	CLASS	GPC		DEPARTMENT	TRADING_RELATIONSHIP
Item Context Scope Value		07-33-77					
Item Context Scope Type		SUBCLASS					TRADING_RELATIONSHIP

Performance Measure Type	Sales Growth (%)	Share (%)	Retail Item Gross Margin (%)	Retail Gross Profit Margin (%)	Invoice Accuracy (%)	Item Master Data Accuracy (%)	Item Data Synchronisation (%)
Location Selection Scope Value	0988234988313 (Store #32's GLN)	FR	"Value Mart Stores"	"Value Mart Stores"	098823498003 (Value Mart's GLN)	098823498003 (Value Mart's GLN)	7003443100003 (LaundryCorp's GLN)
Location Selection Scope Type	GLN	COUNTRY	CHAIN	CHAIN	Supplier	GLN	Supplier
Location Scope Parameter Type	LOCATION_SELECTION	LOCATION_SELECTION	LOCATION_SELECTION	LOCATION_SELECTION	LOCATION_SELECTION	LOCATION_SELECTION	LOCATION_CONTEXT
Time Period Value Start	17-Mar-2009	01-May-09	1-Jan-2009	01-Jan-08	1-Jul-2009	01-Dec-08	08-Mar-09
Time Period Value End	23-Mar-2009	31-Jul-09	31-Jan-2009	31-Dec-08	31-Jul-2009	31-Dec-08	14-Mar-09
Time Period Scope Type	WEEK	FISCAL_QUARTER	CALENDAR_MONTH	CALENDAR_YEAR	CALENDAR_MONTH	CALENDAR_MONTH	WEEK
Periodicity Type							
Sales Measurement Type	VOLUME_BASIS	MONETARY_BASIS					
Sales Volume Unit of Measure Value	EA						
Sales Monetary Basis Currency Code		EUR					
Inventory Measurement Basis Type							
Demand Estimation Type							
Synchronisation Calculation Type							TOTAL_ITEMS
Delivery Time Measurement BasisType							



Performance Measure Type	Sales Growth (%)	Share (%)	Retail Item Gross Margin (%)	Retail Gross Profit Margin (%)	Invoice Accuracy (%)	Item Master Data Accuracy (%)	Item Data Synchronization (%)
<i>Appointment Time Measurement Basis Type</i>							
<i>OOS Measurement Method Type</i>							
<i>Forecast Type Code</i>							
<i>Forecast Purpose Code</i>							
<i>Forecast Lag</i>							
<i>Service Level Measurement Basis Type</i>							
<i>Service Level Basis Type</i>							
<i>Performance Goal</i>	<Not Specified>	43 %	25 %	<Not Specified>	<Not Specified>	<Not Specified>	99 %
<i>Performance Result</i>	13 %	<Not Specified>	26.7 %	31 %	86 %	92 %	91 %

Test Data 2

Performance Measure Type	Order Item/Quantity Change (%)	Service Level / Fill Rate (%)	Order to Delivery Cycle Time (Hours)	On-time Delivery (%)	Finished Goods Inventory Cover (Days)
<i>Example Description</i>	The percentage of Value Mart orders that LaundryCorp had to be change before shipment month-to-date was 20%, vs a goal of 10%.	The supplier's service level to the retail DC identified by GLN 0377076379213 was 98.3% in the week ending 07 March, compared to the goal of 97%.	The average order-to-delivery cycle time for direct-to-store shipments from LaundryCorp's Detergent Plant to Value Mart was 96 hours in February 2009.	The goal for on-time delivery performance of LaundryCorp's shipments to Value Mart's Northeastern DC is 95% for Fiscal Year 2009, based upon the first appointment time and a 2 hour delivery window.	For the week ending 14-Mar-2009, Value Mart had 12 days of forecasted inventory cover of the 500gr size box of SmartBite Low-Fat Snack Crackers (GTIN 0037998274532 5) at its Northeastern DC.

Performance Measure Type	Order Item/Quantity Change (%)	Service Level / Fill Rate (%)	Order to Delivery Cycle Time (Hours)	On-time Delivery (%)	Finished Goods Inventory Cover (Days)
Item Selection Scope Value		<Not Specified>	<Not Specified>		00379982745325
Item Selection Scope Type		TRADING_RELATIONSHIP	TRADING_RELATIONSHIP		GTIN
Item Context Scope Value					
Item Context Scope Type					
Location Selection Scope Value	1. "Value Mart Stores" 2. "Laundry Corp"	1. 0377076379213 2. 0377076379223 (Vendor Location GLN) 3. 0377076379223 (Customer Destination GLN) 4. 0377076379233 (Shipping Location GLN)	1. <not Specified> 2. 7003443100323 (LaundryCorp Detergent Plant's GLN)	1. 0988234982093 (Value Mart Northeastern DC's GLN) 2. 7003443100003 (LaundryCorp's GLN)	0988234982093 (Value Mart Northeastern DC's GLN)
Location Selection Scope Type	1. CHAIN 2. SUPPLIER	1. GLN 2. GLN 3. GLN 4. GLN	1. STORE 2. GLN	1. GLN 2. GLN	GLN
Location Scope Parameter Type	1. LOCATION_SELECTION 2. LOCATION_CONTEXT	1. LOCATION_SELECTION 2. VENDOR_LOCATION 3. CUSTOMER_DESTINATION_LOCATION 4. SHIPPING_LOCATION	1. LOCATION_SELECTION 2. LOCATION_CONTEXT	1. LOCATION_SELECTION 2. LOCATION_CONTEXT	LOCATION_SELECTION
Time Period Value Start	01-Apr-09	01-Mar-09	01-Feb-09	01-Aug-08	08-Mar-09
Time Period Value End	06-Apr-09	07-Mar-09	28-Feb-09	31-Jul-09	14-Mar-09
Time Period Scope Type	MONTH_TO_DATE	WEEK	CALENDAR_MONTH	FISCAL_YEAR	WEEK
Periodicity Type			HOURLY		
Sales Measurement Type					
Sales Volume Unit of Measure Value					
Sales Monetary Basis Currency Code					
Inventory Measurement Basis Type					ON_HAND_ONLY

Performance Measure Type	Order Item/Quantity Change (%)	Service Level / Fill Rate (%)	Order to Delivery Cycle Time (Hours)	On-time Delivery (%)	Finished Goods Inventory Cover (Days)
Demand Estimation Type					FORECAST_BASIS
Synchronisation Calculation Type					
Delivery Time Measurement Basis Type				FIRST_APPOINTMENT_DATE_TIME	
Appointment Time Measurement Basis Type				APPOINTMENT_WINDOW	
OOS Measurement Method Type					
Forecast Type Code					
Forecast Purpose Code					
Forecast Lag					
Service Level Measurement Basis Type		RECEIVED_QUANTITY			
Service Level Basis Type		VOLUME			
Performance Goal	10 %	97 %	<Not Specified>	95 %	<Not Specified>
Performance Result	20 %	98.3 %	96 Hours	<Not Specified>	12 Days

Test Data 3



Performance Measure Type	Forecast Accuracy (%)	Out-of-stock (%)	Unsaleables (%)	On Time Payment (%)	Markdown (%)
Example Description	The four-week lagged unit POS forecast accuracy for the 500gr size box of SmartBite Low-Fat Snack Crackers (GTIN 003799827453 25) across all stores was 78% in the week ending 14-Mar-2009.	The estimated average out-of-stock rate for grocery items at Value Mart Store #32 in Fiscal Month 12 (based on sales data analysis) was 8%.	The percentage of unsaleable items that Value Mart has received year-to-date from LaundryCorp is 0.9%, vs a goal of 1.0%.	The percentage of LaundryCorp invoices that Value Mart paid on time in the first calendar quarter of 2009 was 100%.	The Markdown percentage of LaundryCorp's items at Value Mart in the week ending 14-Mar-2009 was 2%.
Item Selection Scope Value	003799827453 25	04	<Not Specified>		<Not Specified>
Item Selection Scope Type	GTIN	DEPARTMENT	TRADING_RELATIONSHIP		TRADING_RELATIONSHIP
Item Context Scope Value					
Item Context Scope Type					
Location Selection Scope Value	0988234980003 (Value Mart's GLN)	0988234988313 (Store #32's GLN)	0988234980003 (Value Mart's GLN)	1. 0988234980003 (Value Mart's GLN) 2.700344310000 (LaundryCorp's GLN)	<Not Specified>
Location Selection Scope Type	GLN	GLN	GLN	1. GLN 2. GLN	Supplier
Location Scope Parameter Type	LOCATION_SELECTION	LOCATION_SELECTION	LOCATION_SELECTION	1. LOCATION_SELECTION 2. LOCATION_CONTEXT	LOCATION_SELECTION
Time Period Value Start	08-Mar-09	27-Jun-09	01-Jan-09	01-Jan-09	08-Mar-09
Time Period Value End	14-Mar-09	31-Jul-09	06-Apr-09	31-Mar-09	14-Mar-09
Time Period Scope Type	WEEK	FISCAL_MONTH	YEAR_TO_DATE	CALENDAR_QUARTER	WEEK
Periodicity Type					
Sales Measurement Type	VOLUME_BASIS				
Sales Volume Unit of Measure Value	EA				

Performance Measure Type	Forecast Accuracy (%)	Out-of-stock (%)	Unsaleables (%)	On Time Payment (%)	Markdown (%)
Sales Monetary Basis Currency Code					
Inventory Measurement Basis Type					
Demand Estimation Type					
Synchronisation Calculation Type					
Delivery Time Measurement BasisType					
Appointment Time Measurement Basis Type					
OOS Measurement Method Type		SALES_DATA_ANALYSIS			
Forecast Type Code	TOTAL				
Forecast Purpose Code	SALES_FORECAST				
Forecast Lag	4				
Service Level Measurement Basis Type					
Service Level Basis Type					
Performance Goal	<Not Specified>	<Not Specified>	1 %	<Not Specified>	<Not Specified>
Performance Result	78 %	8 %	0.9 %	100 %	2 %

Message Example

This example is based on parts of the three sets of test data provided in paragraphs 6.1 - 6.3.

Attribute	Value
PerformanceMeasurement	
purchaseConditionsCurrencyCode	EUR
Document	
creationDateTime	2010-01-09T11:00:00
documentStatus	ORIGINAL
EntityIdentification (+performanceMeasurementIdentification)	
entityIdentification	2011001
PartyIdentification (+contentOwner)	
gln	8712345678913
PartyIdentification (+seller)	
gln	8812345678903
PartyIdentification (+buyer)	
gln	8712345678913
PerformanceMeasure	
performanceMeasureTypeCode	SALES_GROWTH
performanceMeasureGoal	
performanceMeasureResult	13 (measurementUnitCode = P1)
ItemScopeParameter (+itemContext)	
itemScopeTypeCode	
itemScopeValue	
ItemScopeParameter (+itemSelection)	
itemScopeTypeCode	GTIN
itemScopeValue	0106720219715
LocationScopeParameter	
locationScopeParameterTypeCode	LOCATION_SELECTION
locationScopeTypeCode	GLN
PartyIdentification	
gln	0988234988137
TimePeriodParameter	
timePeriodScopeTypeCode	WEEK
DateTimeRange	
beginDate	2009-03-17
endDate	2009-03-23
SalesParameter	
salesMeasurementTypeCode	VOLUME_BASIS
salesMonetaryBasisCurrencyCode	
salesVolumeMeasurementUnitCode	EA
PerformanceMeasure	

Attribute	Value
performanceMeasureTypeCode	SHARE
performanceMeasureGoal	43 (measurementUnitCode = P1)
performanceMeasureResult	
ItemScopeParameter (+itemContext)	
itemScopeTypeCode	SUBCLASS
itemScopeValue	07-33-77
ItemScopeParameter (+itemSelection)	
itemScopeTypeCode	TRADING_RELATIONSHIP
itemScopeValue	
LocationScopeParameter	
locationScopeParameterTypeCode	LOCATION_SELECTION
locationScopeTypeCode	COUNTRY
PartyIdentification	
gln	00000000000000
additionalPartyIdentification	ValueMart France (BUYER_ASSIGNED_IDENTIFIER_FOR_A_PARTY)
TimePeriodParameter	
timePeriodScopeTypeCode	FISCAL_QUARTER
DateTimeRange	
beginDate	2009-05-01
endDate	2009-07-31
SalesParameter	
salesMeasurementTypeCode	MONETARY_BASIS
salesMonetaryBasisCurrencyCode	EUR
salesVolumeMeasurementUnitCode	
PerformanceMeasure	
performanceMeasureTypeCode	RETAIL_ITEM_GROSS_MARGIN
performanceMeasureGoal	25 (measurementUnitCode = P1)
performanceMeasureResult	26.7 (measurementUnitCode = P1)
ItemScopeParameter (+itemContext)	
itemScopeTypeCode	
itemScopeValue	
ItemScopeParameter (+itemSelection)	
itemScopeTypeCode	CLASS
itemScopeValue	06-20
LocationScopeParameter	
locationScopeParameterTypeCode	LOCATION_SELECTION
locationScopeTypeCode	CHAIN
PartyIdentification	
gln	00000000000000

Attribute	Value
additionalPartyIdentification	Value Mart Stores (BUYER_ASSIGNED_IDENTIFIER_FOR_A_PARTY)
TimePeriodParameter	
timePeriodScopeTypeCode	CALENDER_MONTH
DateTimeRange	
beginDate	2009-01-01
endDate	2009-01-31
PerformanceMeasure	
performanceMeasureTypeCode	ITEM_DATA_SYNCHRONISATION
performanceMeasureGoal	99 (measurementUnitCode = P1)
performanceMeasureResult	91 (measurementUnitCode = P1)
ItemScopeParameter (+itemContext)	
itemScopeTypeCode	TRADING_RELATIONSHIP
itemScopeValue	
ItemScopeParameter (+itemSelection)	
itemScopeTypeCode	TRADING_RELATIONSHIP
itemScopeValue	
LocationScopeParameter	
locationScopeParameterTypeCode	LOCATION_CONTEXT
locationScopeTypeCode	SUPPLIER
PartyIdentification	
gln	7003443100003
TimePeriodParameter	
timePeriodScopeTypeCode	WEEK
DateTimeRange	
beginDate	2009-03-08
endDate	2009-03-14
MasterDataSynchronisationParameter	
synchronisationCalculationTypeCode	TOTAL_ITEMS
PerformanceMeasure	
performanceMeasureTypeCode	FILL_RATE
performanceMeasureGoal	97 (measurementUnitCode = P1)
performanceMeasureResult	98.3 (measurementUnitCode = P1)
ItemScopeParameter (+itemContext)	
itemScopeTypeCode	
itemScopeValue	
ItemScopeParameter (+itemSelection)	
itemScopeTypeCode	TRADING_RELATIONSHIP
itemScopeValue	
LocationScopeParameter	
locationScopeParameterTypeCode	LOCATION_SELECTION

Attribute	Value
locationScopeTypeCode	GLN
PartyIdentification	
gln	0377076379213
LocationScopeParameter	
locationScopeParameterTypeCode	VENDOR_LOCATION
locationScopeTypeCode	GLN
PartyIdentification	
gln	0377076379225
LocationScopeParameter	
locationScopeParameterTypeCode	CUSTOMER_DESTINATION_LOCATION
locationScopeTypeCode	GLN
PartyIdentification	
gln	0377076379225
LocationScopeParameter	
locationScopeParameterTypeCode	SHIPPING_LOCATION
locationScopeTypeCode	GLN
PartyIdentification	
gln	0377076379232
TimePeriodParameter	
timePeriodScopeTypeCode	WEEK
DateTimeRange	
beginDate	2009-03-01
endDate	2009-03-07
ServiceLevelParameter	
serviceLevelBasisTypeCode	VOLUME
serviceLevelMeasurementBasisTypeCode	RECEIVED_QUANTITY

6 Implementation Considerations

6.1 User Guide

The Functional User Guide contains more information about the structure and content of the Performance Measurement message: http://www.gs1.org/docs/ecom/xml/3/3.4/eCom-Trade_messages.html#PerformanceMeasurement

6.2 Message Specific Considerations

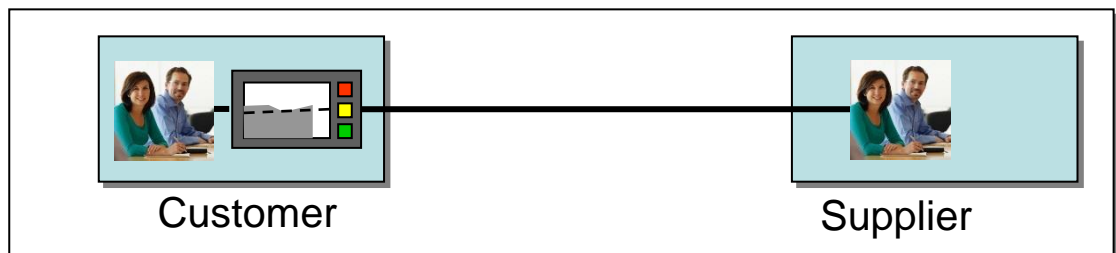
6.2.1 Information Systems Deployment

There are multiple deployment options for trading partner performance management. Before starting an initiative, a buyer and seller need to select that approach that efficiently meets their mutual business requirements, enhances their ability to collaborate, leverages their existing

technology capabilities while remaining agile enough to meet evolving demands, and allows all this to happen in a secure environment.

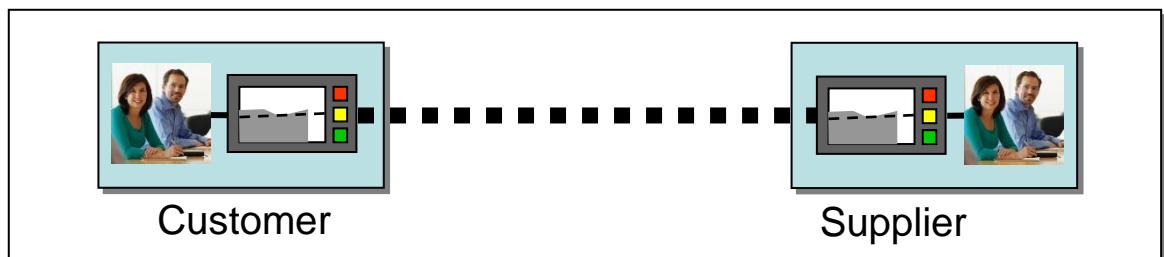
6.2.1.1 Supplier Extranet

A retailer can set up a supplier extranet, and allow manufacturer users to log in, review information and perform tasks on the retailer's site. The extranet model has the advantage of offering access to manufacturers of any size - they do not need any in-house IT or planning applications to participate. However, a manufacturer has to work with each retailer that has an extranet separately, and often must cope with widely varying capabilities, navigation paradigms and user expectations. Manufacturers that depend on retailers' extranets cannot easily aggregate data across all of their customers to understand demand patterns and anomalies. Special attention to security is called for to address access to the extranet, encryption of data in transit and restricted access within the extranet application such that supplier information is not accessible by competitors.



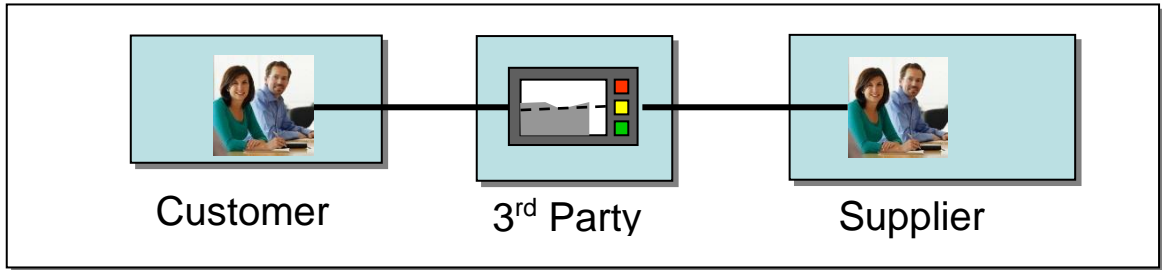
6.2.1.2 Message Interchange

Some companies exchange data through business-to-business transactions sets, using EDI, XML or flat file formats. The company-to-company model offers the advantage of standards based messages, and uses each company's own enterprise applications to analyze and act on the data. Companies can also combine this data across trading partners to get market-level insights. However, this approach also demands that a company invest in a B2B communications infrastructure, and have applications that can deal with large volumes of consumer demand data. The company-to-company approach also must overcome batch data synchronization delays, and subtle differences in each company's user views. With the public Internet as the transport mechanism for B2B messages, it is important that the data be transported in a manner that is both secure and provides confirmation of delivery. The AS2 specification is a widely adopted solution.



6.2.1.3 Hosted/On-Demand

The hosted/on-demand model collects data from multiple retailers and makes it available to multiple manufacturers through a public exchange or private service. The hosted model combines the benefits of ease of access of the extranet model with the data aggregation and single point of access of the company-to-company model. However, the hosted model raises issues of data ownership and payment, security and competitive positioning. Some retailers also do not allow their data to be hosted by a third party, limiting the potential for the hosted model to become universal.



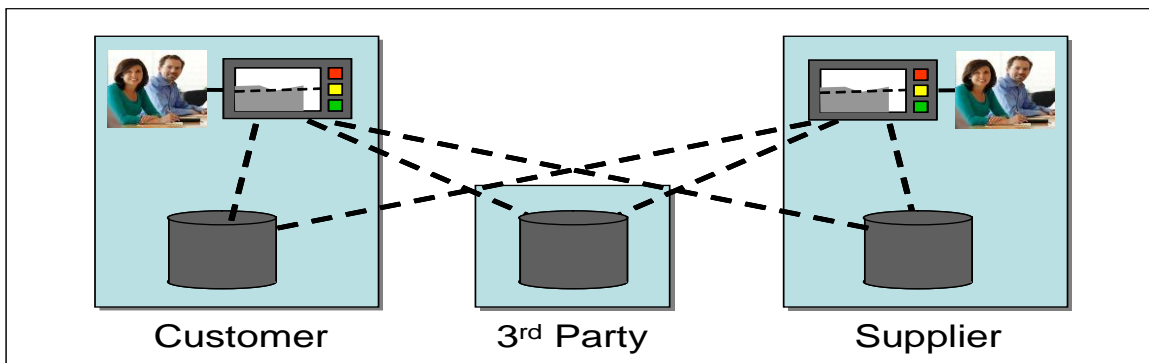
6.2.1.4 Distributed

An emerging alternative is to leave the measure data at its source (whether manufacturer, retailer or distributor) rather than forwarding it to a partner or a shared service. Users access the data in place when they review their scorecard or other performance management application. Technology is responsible for requesting the values from their distributed sources, and assembling any views that combine them.

The advantage of the distributed approach is that the data can remain wherever it was originally produced. If a combination of customer, supplier and third-party sources own this data, the services fetch the only the results requested, rather than transferring the large volumes of transaction data needed to calculate the measures. The distributed approach also always presents the user with the latest results, based on the original source for the data.

To be effective, distributed measures would most likely utilize Service Oriented Architecture (SOA) technology that can hide the complexity of sending off multiple requests to diverse data sources from the user consuming the information.

The potential disadvantages of the distributed approach are 1) the potential delay in assembling the results in near real time from disparate sources spread across a wide-area network, and 2) the likelihood that users will want to review the underlying data that caused specific results to be reported, necessitating ad hoc transfers of voluminous transaction data.



6.2.1.5 Hybrid

Realistically, most companies will have to accommodate multiple models. For example, a retailer may operate an extranet for smaller suppliers, while sending B2B transaction data to larger ones. Manufacturers may need to access extranets for retailers who do not offer message interchange as an option. In this complex environment, the use of standards is vital.

6.2.2 Measure and Data Transmission

When companies begin to exchange results data, they have two options:

- Calculate the results based upon the underlying data, and share those.
- Share the underlying data, and allow each party to calculate the results.

Each option has advantages and disadvantages. Sharing the underlying data gives trading partners the greatest flexibility in generating aggregate measures in any number of business contexts. They

also provide the best basis for investigating the conditions that caused inadequate or exceptional performance. However, this data sharing approach places a demand on each participating organization to be able to store the data, run the calculations on a consistent basis, and maintain the master data that determines which items belong in which calculations on a synchronized basis with their trading partner. Use of the GS1 Global Data Synchronization Network (GDSN) is practically essential in this scenario, but even it only covers item master data. Location and time (calendar) master data must also be synchronized.

Sharing the measure results themselves assures that all trading partners are looking at the same values at any given time, and lowers the minimum IT requirements for participation in a performance management initiative. However, sharing the results alone can make it difficult to interpret the values reported, or investigate how to address issues as they occur.

The best option is to share both the measure results and the underlying data used to calculate them. This approach allows trading partners to check whether their own local calculations still line up with those their customer or supplier has made – meaning their master data and methods are aligned.

7 Summary of Changes

Any change in the GS1 standards is done based on the Work Request (WR) submitted by the GS1 User Companies or Member Organisations. All Work Requests are documented in the Work Request system available on the GS1 website: <http://wr.gs1.org>. The system is accessible to registered users. New visitors need to register first, to be able to access it. WRs can be searched by the number referenced in tables below, see: Search Work Requests. The number starts with the two last digits of the year when it was submitted, followed by the consecutive number within that year.



Note: WRs submitted earlier than February 2012 should be searched in Old Change Requests.

7.1 BMS Release 3.0

Change	BSD Version	Associated CR Number
Updated the BMS to be compliant with MR3.0, and added Performance Measurement Identification and Appointment Window to meet the requirements of the CRQ	1.0.0	10-201 10-258
For Publication <ul style="list-style-type: none"> Added Copyright R in GS1 Logo Changed Status to Approved Removed year reference in footer copyright statement Replaced Section 10 with updated AG Principles 	1.0.0	Not Applicable

7.2 BMS Release 3.1

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

7.3 BMS Release 3.2

Change	Associated WR
<p>Added Attribute Value Pair at the root, line item and sub line item levels</p> <div><div>class PerformanceMeasurement- maintenance view</div><div><div>«root, »</div><div>PerformanceMeasurement</div><div><div>maintenance</div><div>Change: (Verified) 3.2 changed generalisation from Document to eComDocument class to include AVP (WR 14-110)</div></div></div></div>	<p>14-000110</p>

Change	Associated WR
<p>Added Attribute Value Pair at the root, line item and sub line item levels</p> <div> <p>class PerformanceMeasure - maintenance view</p> <pre> classDiagram class PerformanceMeasure { <<abstract>> +performanceMeasureTypeCode :PerformanceMeasureTypeCode +performanceMeasureGoal :Measurement [0..1] +performanceMeasureResult :Measurement [0..1] +«association» avpList :Ecom_AttributeValuePairList [0..1] } PerformanceMeasure < -- maintenance </pre> <p><i>maintenance</i></p> <p>Change: (Verified) 3.2 added +avpList (WR 14-110)</p> </div>	14-000110

7.4 BMS Release 3.3

Change	Associated WR
<ul style="list-style-type: none"> Created Ecom_EntityIdentification class and changed association from the previous EntityIdentification Created Ecom_PartyIdentification class and changed association from the previous PartyIdentification <div> <p>class PerformanceMeasure - maintenance view</p> <pre> classDiagram class PerformanceMeasure { <<abstract>> +performanceMeasureTypeCode :PerformanceMeasureTypeCode +performanceMeasureGoal :Measurement [0..1] +performanceMeasureResult :Measurement [0..1] +«association» avpList :Ecom_AttributeValuePairList [0..1] } PerformanceMeasure < -- maintenance class Ecom_EntityIdentification { +performanceMeasureIdentification :PerformanceMeasure } class Ecom_PartyIdentification { +buyer :PerformanceMeasure +seller :PerformanceMeasure } PerformanceMeasure "1" -- "1..1" Ecom_EntityIdentification : +performanceMeasureIdentification PerformanceMeasure "1" -- "0..1" Ecom_PartyIdentification : +buyer PerformanceMeasure "1" -- "0..1" Ecom_PartyIdentification : +seller </pre> <p><i>maintenance</i></p> <p>Change: (Verified) 3.2 changed generalisation from Document to eComDocument class to include AVP (WR 14-110) Change: (New) 3.3 changed association from EntityIdentification to Ecom_EntityIdentification (WR 15-314) Change: (New) 3.3 changed associations from PartyIdentification to Ecom_PartyIdentification (WR 15-314)</p> </div>	15-000314 Make GS1 identification keys optional in GS1 EDI XML
<p>Created Ecom_PartyIdentification class and changed association from the previous PartyIdentification</p> <div> <p>class Performance Measurement Parameters - maintenance view</p> <pre> classDiagram class LocationScopeParameter { <<abstract>> +locationScopeParameterTypeCode :LocationScopeParameterTypeCode +locationScopeTypeCode :LocationScopeTypeCode } LocationScopeParameter < -- maintenance class Ecom_PartyIdentification { +buyer :PerformanceMeasurementParameters +seller :PerformanceMeasurementParameters } LocationScopeParameter "1" -- "0..1" Ecom_PartyIdentification : +buyer LocationScopeParameter "1" -- "0..1" Ecom_PartyIdentification : +seller </pre> <p><i>maintenance</i></p> <p>Defect: (New) 3.3 changed associations from PartyIdentification to Ecom_PartyIdentification (WR 15-314)</p> </div>	15-000314 Make GS1 identification keys optional in GS1 EDI XML

7.5 BMS Release 3.4

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

7.6 BMS Release 3.5

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

7.7 BMS Release 3.5.1

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

8 Appendices

Not Applicable

9 Acknowledgements

9.1 Work Group

Function	Name	Company / organisation
Co-chair	Rossner (Pottier), Natascha	GS1 France
Co-chair	Schmidt, Tom Eric	August Storck KG
Member	Bemrose, Jonathan	R&R Ice Cream
Member	Bodemer, Petra	dm-drogerie markt GmbH + Co. KG
Member	Boikanyo, Rebhone	GS1 South Africa / Consumer Goods Council of South Africa
Member	Canada, ON	M3B 3L1
Member	Carlson, Jim	General Mills, Inc.
Member	Chresta, Richard	GS1 Switzerland
Member	Cook, Don	Wal-Mart Stores, Inc.
Member	Cox, Marc	Philips Electronics N.V.
Member	Darnell, David	Systrends
Member	De Flou, Nele	GS1 Belgium & Luxembourg
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Member	Foerderer, Klaus	GS1 Germany
Member	Gathmann, Stefan	GS1 Ireland
Member	Grangard, Anders	GS1 Global Office
Member	Harpell, Eileen	GS1 Community Room Staff
Member	Hand, Phil	JDA Software
Member	Herregodts, Kurt	GS1 Belgium & Luxembourg
Member	Kempkes, Fred	Unilever N.V.
Member	Kernan, Brendan	GS1 Ireland
Member	Kidd, Robin	Nestle
Member	Krid, Anne-Claire	GS1 France
Member	Lanoue, Tom	General Mills, Inc.
Member	Laur, Rita	GS1 Canada

Function	Name	Company / organisation
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Member	Moberg, Dale	Axway
Member	Montes de Oca, Alejandra	GS1 Mexico
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Member	Peelen, Esther	GS1 Netherlands
Member	Pelekies, Andreas	GS1 Germany
Member	Perrier, Patricia	GS1 France
Member	Przybilla, Christian	GS1 Germany
Member	Pujol, Xavier	GS1 Spain
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Member	Repetto, Mirko	GS1 Italy
Member	Robba, Steven	1WorldSync Holdings, Inc.
Member	Rosell, Pere	GS1 Spain
Member	Rosenberg, Steven	GS1 US
Member	Schmid, Sue	GS1 Australia
Member	Schneider, Christian	GS1 Switzerland
Member	Sehorz, Eugen	GS1 Austria
Member	Sharma, Vishal	General Mills, Inc.
Member	Shimazaki, Ayako	GS1 Japan
Member	Sion, Emilie	GS1 France
Member	Souza, Nadia	GS1 Brasil
Member	Strand, Roman	GS1 Germany
Member	Tan, Milton	GS1 Malaysia
Member	Tompsett, Simon	Waitrose
Member	Trelle, Ute	1WorldSync Holdings, Inc.
Member	Tse, Steve	GS1 Hong Kong
Member	Tyson, Betty	Knouse Foods Cooperative, Inc
Member	Van den Bergh, Senne	GS1 Belgium & Luxembourg
Member	Van der Eijk, Pim	OASIS - Sonnenglanz Consulting BV
Member	Veldhuis, Saskia	Procter & Gamble Co.
Member	Welch, Shan	GS1 UK
Member	Westerkamp, Jan	GS1 Netherlands
Member	Wilson, Mary	GS1 US
Member	Windsperger, Bekki	Best Buy Co., Inc.
Member	Yang, Shaopeng	GS1 China
Member	Yusdiar, Dani	GS1 Indonesia
Member	Zwanziger, Greg	SUPERVALU

9.2 Development Team Members

Function	Name	Organisation
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Technical Development Lead	Miklos Bolyky	GS1 Global Office
Peer Review	Mark Van Eeghem	GS1 Global Office