Standard Business Document Header (SBDH) Version 1.3

Technical Implementation Guide

Issue 1, July-2007

Document Summary

Document Item	Current Value
Document Title	Standard Business Document Header (SBDH) Version 1.3 Technical Implementation Guide
Date Last Modified	July-2007
Current Document Issue	Issue 1
Status	Approved
Document Description	This document contains guidelines for implementation of SBDH with GS1 XML.

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Log of Changes in Issue 1

Issue No.	Date of Change	Changed By	Summary of Change
1	July-2007	Dipan Anarkat	1st Issue

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1. Introduction

1.1. Purpose

This Standard Business Document Header (SBDH) Technical Implementation Guide clarifies the function, design and implementation considerations of the [SBDH]. The document can be used by technical implementers that need knowledge to implement the SBDH in their environment. It can also be used to educate others in the organization of the advantages of adopting the [SBDH].

The Standard Business Document Header Technical Implementation Guide is to supplement [SBDH] so that the implementer understands not only the technical details but also practical ways to use the SBDH and guidelines on its appropriate use.

This guide also demonstrates the benefits of one common document header that enables integration of documents between internal applications, enterprise applications, and business-to-business infrastructure by providing a consistent interface between applications. This consistent interface also enables any application to determine the logical routing requirements and/or the logical processing requirements of a document based on the information contained in the SBDH.

Other benefits include the ability to:

- Leverage one common SBDH across all vendors, providing vendors with a common standard for integration development

- Leverage one common SBDH for any standard or file structure, such as EDI, XML or proprietary file structures

- Easily identify business documents without searching the business document for identifying information

- Route data through multiple applications using the information in the SBDH

- Identify the automated process required for a specific business document

- Save parsing time and effort

- Maintain the association of the document and its originator for business and legal reasons

- Eliminate the different proprietary approaches that have been developed to route and process data

1.2. Audience

This document is intended to serve as an implementation guide for business and technical people who will implement GSMP XML standards using SBDH. Also, the implementation guide will be used by the following related GS1 entities and user communities that have unique requirements for the usage of SBDH within their standards / business process;

- EPCGlobal

- GDSN

1.3. Pre-requisite

[SBDH] contains information about the usage of all elements of SBDH. This guide only covers those parts of the UN/CEFACT [SBDH] that are relevant to its implementation in the GS1 world.

As a pre-requisite it is expected that the user has read and understood [SBDH].

1.4.   Process

The [SBDH]standard provides a document header which identifies key data about a specific business document. Since [SBDH] standardizes the data presentation, the data elements within the SBDH can be easily located and leveraged by multiple applications. Software vendors can develop functionality in their applications that rely on the existence and location of the essential data used to manage the routing of business documents and also systematically determine the documents processing requirements.

The SBDH is a business document header and should not be confused with a transport header. The SBDH is created before the transport routing header is applied to the document and is retained after the transport header is removed. Although the SBDH is not the transport header, data in the SBDH can be used by transport applications to determine the routing header since it does contain the sender, receiver and document details. It can also be used by the business applications to determine the appropriate process to perform on the business document.

[SBDH] has built in flexibility by the use of both mandatory data elements and additional optional elements. The mandatory elements are essential in identifying any business document for routing or processing, such as the Sender, Receiver, Document Type, Standard and Version, and Date/Time of the documents creation. Optional elements provide additional functionality that can be used if required. This additional functionality can be used to:

■   Send EDI, XML or other file types as attachments

■   Secure business documents with encryption while leaving the SBDH unencrypted and available to perform its routing functions

■   Describe attachments in a Manifest

■   Sent the business document within the SBDH or sent it as a separate MIME part

■   Distribute a document to a specific receiver or to multiple receivers

1.5.   Document Conventions

The keywords MUST, MUST NOT, REQUIRED, SHALL, SHALL NOT, SHOULD, SHOULD NOT, RECOMMENDED, MAY and OPTIONAL, when they appear in this document, are to be interpreted as described in [RFC2119] as quoted here:

■   **MUST:** This word, or the terms "REQUIRED" or "SHALL", means that the definition is an absolute requirement of the specification.

■   **MUST NOT:** This phrase, or the phrase "SHALL NOT", means that the definition is an absolute prohibition of the specification.

■   **SHOULD:** This word, or the adjective "RECOMMENDED", means that there may exist valid reasons in particular circumstances to ignore a particular item, but the full implications must be understood and carefully weighed before choosing a different course.

■   **SHOULD NOT:** This phrase, or the phrase "NOT RECOMMENDED", means that there may exist valid reasons in particular circumstances when the particular behavior is acceptable or even useful, but the full implications should be understood and the case carefully weighed before implementing any behavior described with this label.

■   **MAY:** This word, or the adjective "OPTIONAL", means that an item is truly optional. One vendor may choose to include the item because a particular marketplace requires it or because the vendor feels that it enhances the product while another vendor may omit the same item. An implementation which does not include a particular option MUST be prepared to interoperate with another implementation which does include the option, though perhaps with reduced functionality. In the same vein an implementation which does include a particular

option MUST be prepared to interoperate with another implementation which does not include the option (except, of course, for the feature the option provides.)

When used in this way, these terms will always be shown in ALL CAPS; when these words appear in ordinary typeface they are intended to have their ordinary English meaning.

2. Overview

Information in the SBDH can be categorized into the following 4 categories

■ Document Routing

■ Document Identification

■ Document Processing Context

■ Payload

Document Routing information is captured in the 'Sender' and 'Receiver' data structures of SBDH. It is used to identify the message sender and message receiver using unique identifiers for the trading partners and optionally with additional contact information details.

Document Identification information is captured in the 'DocumentIdentification' data structure of SBDH. It is used to identify the actual business document payload content enclosed inside SBDH. This information will be used by the middleware to identify and route the message to the appropriate business application without having to open or parse the business document payload.

Document Processing Context is captured in the 'BusinessScope' data structure of SBDH. It is used to provide parameters for processing the business document in the context of a business choreography exchange.

Payload is the container area provided in SBDH to include the business document payload. The payload area can be used to hold any kind XML content. It is also possible to have encrypted and/or digitally signed XML content in the payload area. This is the area where the actual business information content of the message is included.
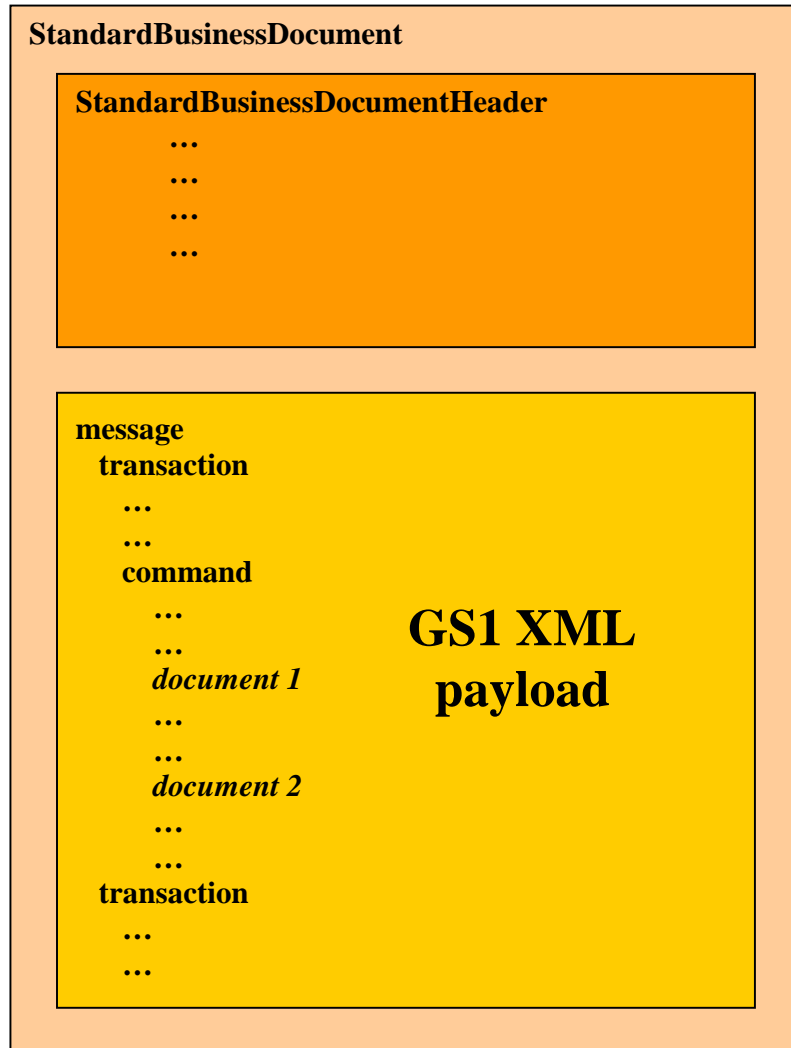
3. General Guidelines

The following section provides general guidelines on the usage of the [SBDH] data elements with GS1 XML standards and the XML standards of its sub-entities and affiliates. These guidelines are not supposed to be an exhaustive description of [SBDH] elements. For full details of the element see the [SBDH] for details.

3.1. GS1 XML Message Construction using SBDH

Section 3.6 of [SBDH] lists the various ways in which it may be used when packaging the payload content with the header information. With GS1 XML messages, SBDH is an integral part of the XML instance and must be packaged as such. The GS1 XML payload content MUST be included inside the 'StandardBusinessDocument' root element. As per the 'StandardBusinessDocumentHeader.xsd', the payload object is placed in the XML instance where the element 'xs:any' element occurs. This particular method of using the SBDH is also commonly known as the 'Enveloping' method/use of SBDH. Figure 3-1 demonstrates the concept;

Figure 3-1 Enveloping' Method/Use of SBDH

StandardBusinessDocument

StandardBusinessDocumentHeader
    …
    …
    …
    …

message
  transaction
    …
    …
   command
     …
     …
     document 1
     …
     …
     document 2
     …
     …
  transaction
    …
    …

GS1 XML payload

A.1

✅ **Note:** See Appendix A for an example of a GS1 XML document using SBDH.

3.2. SBDH Tags

The table below contains rules that are applicable for all GS1 XML standards messaged using SBDH.

XSD Element / Attribute	XSD Type	Occ	GS1 Usage Guidelines
StandardBusinessDocument	StandardBusinessDocument		This is the root element of the SBDH data structure. **[R1]** The 'StandardBusinessDocument' element MUST be used as the root element of all GS1 XML messages.
| StandardBusinessDocumentHeader	StandardBusinessDocument Header	0..1	The UN/CEFACT standard, containing information about the routing and processing of the business document. It also identifies the message set that is sent together with on SBDH and the version number of the document(s) contained. **[R2]** Header information MUST be provided using the 'StandardBusinessDocumentHeader' element even though the use of this element is optional.
--| HeaderVersion	string	1..1	Version number of the SBDH standard used **[R3]** The value of the 'HeaderVersion' element MUST be set to '1.0'. This is the version number of the standard.
--| Sender	Partner	1..*	Sender of the message, party representing the organization which created the standard business document. **[R4]** The 'Sender' tag MUST be used exactly only once with GS1 XML messages, even though it can occur multiple times. If there is a requirement to use the 'Sender' block more than once with GS1 XML standards, such a requirement should be addressed through the use of the GSMP Change Request system.
----| Identifier	PartnerIdentification	1..1	A unique identification key for the Sender party **[R5]** The value of the 'Identifier' element of 'PartnerIdentification' type MUST be a GLN. The use of GLN as the identifier is mandatory with GS1 standards. Example: 8712345000004
----| *Authority*	string	0..1	Authority agency of the identification key **[R6]** The 'Authority' attribute, although optional, MUST be used and its value MUST be set to 'EAN.UCC'. See section 5.2 for more details on the use of the token 'EAN.UCC' instead of 'GS1'
----| ContactInformation	ContactInformation	0..*	Name of the contact person or department for the sending Party **[R7]** The element 'ContactInformation', although optional, SHOULD be used, if possible.

XSD Element / Attribute	XSD Type	Occ	GS1 Usage Guidelines
------| Contact	string	0..1	Name of contact person or department **[R8]** The element 'Contact', although optional, SHOULD be used, if possible. Example: Delysha Burnet
------| EmailAddress	string	0..1	**[R9]** The element 'EmailAddress, although optional, SHOULD be used, if possible. Example: Delysha.Burnet@CompanyXYZ987.com
------| FaxNumber	string	0..1	**[R10]** A number format agreed upon between the 'Sender' and 'Receiver' SHOULD be used. Number format expressed using [RFC3966] 'The tel URI for Telephone Numbers' MAY be used. See section 5.1 'International telephone number format' for recommended options on formatting telephone/fax numbers. Example: tel:+31.235.3311.87
------| TelephoneNumber	string	0..1	**[R10]** A number format agreed upon between the 'Sender' and 'Receiver' SHOULD be used. Number format expressed using [RFC3966] 'The tel URI for Telephone Numbers' MAY be used. See section 5.1 'International telephone number format' for recommended options on formatting telephone/fax numbers. Example: tel:+31.235.3311.69
------| ContactTypeIdentifier	string	0..1	Role of the identifier. [Example: SELLER
--| Receiver	Partner	1..*	Receiver of the message, party representing the organization which receives the standard business document. **[R11]** The 'Receiver' tag MUST be used exactly only once with GS1 XML messages, even though it can occur multiple times
----| Identifier	PartnerIdentification	1..1	A unique identification key for the receiving party **[R5]** The value of the 'Identifier' element of 'PartnerIdentification' type MUST be a GLN. The use of GLN as the identifier is mandatory with GS1 standards. Example: 8712345000005
----| *Authority*	string	0..1	Authority agency of the identification key **[R6]** The 'Authority' attribute, although optional, MUST be used and its value ***must*** be set to 'EAN.UCC'. For legacy reasons and to support existing implementations of GS1 XML standards, the token 'EAN.UCC' has been used. At a future date when a new major version of GS1 XML standards will be created (version 3.0) all references to the token 'EAN.UCC' associated with GS1 XML standards and document shall be replaced with the token 'GS1'
----| ContactInformation	ContactInformation	0..*	Name of the contact person or department for the Sender Party **[R7]** The element 'ContactInformation', although optional, SHOULD be used, if possible.

XSD Element / Attribute	XSD Type	Occ	GS1 Usage Guidelines
------| Contact	string	0..1	Name of contact person or department **[R8]** The element 'Contact', although optional, SHOULD be used, if possible. Example: Delysha Burnet
------| EmailAddress	string	0..1	**[R9]** The element 'EmailAddress, although optional, SHOULD be used, if possible. Example: Delysha.Burnet@CompanyXYZ987.com
------| FaxNumber	string	0..1	**[R10]** A number format agreed upon between the 'Sender' and 'Receiver' SHOULD be used. Number format expressed using [RFC3966] 'The tel URI for Telephone Numbers' MAY be used. See section 'International telephone number format' for recommended options on formatting telephone/fax numbers. Example: tel:+31.235.3311.87
------| TelephoneNumber	string	0..1	**[R10]** A number format agreed upon between the 'Sender' and 'Receiver' SHOULD be used. Number format expressed using [RFC3966] 'The tel URI for Telephone Numbers' MAY be used. See section 'International telephone number format' for recommended options on formatting telephone/fax numbers. Example: tel:+31.235.3311.69
------| ContactTypeIdentifier	string	0..1	Role of the identifier Example: BUYER
--| DocumentIdentification	DocumentIdentification	1..1	Identification information for the document
----| Standard	String	1..1	The name of the document standard contained in the payload **[R12]** The value of the element 'Standard' MUST be set to the value 'EAN.UCC'. For more details on the significance of the token 'EAN.UCC' see **[R6]**

XSD Element / Attribute	XSD Type	Occ	GS1 Usage Guidelines
----| **TypeVersion**	String	1..1	Version information of the document included in the payload of SBDH. This is the 'complete' version of the document itself and is different than the 'HeaderVersion'. **[R13]** The value of the element 'TypeVersion' MUST be set the version number of the root schema of the XML business document contained in the payload of the message. Every GS1 standard schema has version information in the 'xsd:version' attribute of the 'xsd:schema' tag of the schema and also in the schema annotation tag. The SBDH specification requires that all documents sent with one header have the same version number. To comply with this requirement; **[R14]** Only business documents belonging to the same BMS publication release and having the same version number MUST be included in the payload if sending more than one document type. Example: 2.1
----| **InstanceIdentifier**	String	1..1	Description which contains reference information which uniquely identifies this instance of the Standard Business Document (SBD) between the 'Sender' and the 'Receiver'. This identifier identifies this document as being distinct from others. Example: MSG-1645000099
----| **Type**	String	1..1	This element identifies the type of the document **[R15]** The value of the 'Type' element of 'DocumentIdentification' element MUST be set to the name of the XML element that defines the root of the business document. This is the name of the global XML element declared in the root schema for the business document in consideration. **[R16]** If there is a business need to send multiple types of documents, then the multiple types MUST be business documents related to each other and having the same version identifier. Example; invoice, debitCreditAdvice, tradeItemDocument **[R17]** If sending multiple types, the value of the 'Type' element of the 'DocumentIdentification' element MUST be a list of comma separated values (CSV) of the multiple types. Example: multiShipmentOrder, tradeItemDocument

XSD Element / Attribute	XSD Type	Occ	GS1 Usage Guidelines
----| MultiType	boolean	0..1	Flag to indicate that there is more than one type of business document in the payload of the SBDH **[R18]** The value of the 'MultiType' element of 'DocumentIdentification' element MUST be set to 'true' if sending multiple types of business document, else either the element may be skipped or if included then the value MUST be set to 'false'
----| CreationDateAndTime	String	1..1	Date and time of the SBDH document creation. **[R19]** The value of the 'CreationDateAndTime' element MUST be set to the date and time when the 'document originating application' or the parser created the document. This value will typically be populated by the trading partner and will typically differ from the time stamping of the message by the communications software. Example: 2006-03-23T01:00:78.000+02:00
--| Manifest	Manifest	0..1	
----| NumberOfItems	integer	1..1	
----| ManifestItem	ManifestItem	1..*	
------| MimeTypeQualifierCode	MimeTypeQualifier (string)	1..1	
------| UniformResourceIdentifier	anyURI	1..1	
------| Description	string	0..1	
------| LanguageCode	Language (string)	0..1	
--| BusinessScope	BusinessScope	0..1	Description of the complete business environment in which the SBDH and SBD will be processed. The business scope provides a basis to determine which rules are applicable to the transaction involving the enclosed business documents.
----| Scope	Scope	0..*	
------| Type	string	1..1	
------| InstanceIdentifier	string	1..1	
------| Identifier	string	0..1	
----| ScopeInformation	Scope	0..*	This is an abstract element with a substitution group. The element will be substituted by any one of the other elements that have the same substitution group. From the perspective of this implementation guide, these are the elements shown below

XSD Element / Attribute	XSD Type	Occ	GS1 Usage Guidelines
------| **BusinessService**	BusinessService		This element substitutes the element 'ScopeInformation' when used
-------| **BusinessServiceName**	string	0..1	
-------| **ServiceTransaction**	string	0..1	
---------| *TypeOfServiceTransaction*	string	0..1	
---------| *IsNonRepudiationRequired*	string	0..1	
---------| *IsAuthenticationRequired*	string	0..1	
---------| *IsNonRepudiationOfReceiptRequired*	string	0..1	
---------| *IsIntegrityCheckRequired*	string	0..1	
---------| *IsApplicationErrorResponseRequested*	string	0..1	
---------| *TimeToAcknowledgeReceipt*	string	0..1	
---------| *TimeToAcknowledgeAcceptance*	string	0..1	
---------| *TimeToPerform*	string	0..1	
---------| *Recurrence*	string	0..1	
-------| **CorrelationInformation**	string	0..1	Co-relates requesting document information with the responding document information This element substitutes the element 'ScopeInformation' when used
---------| **RequestingDocumentCreationDateTime**	dateTime	0..1	
---------| **RequestingDocumentInstanceIdentifier**	string	0..1	
---------| **ExpectedResponseDateTime**	dateTime	0..1	

4. Context Specific Guidelines

This section contains guidelines/rules which are specific to a particular business process or GS1 entity or service.

4.1. GDSN Guidelines

4.1.1. How to Use SBDH Tags in GDSN

This section describes how to use and populate the SBDH tags when used with GDSN Messages. All the general GS1 rules for SBDH population apply to GDSN messages. If a GDSN rule has been defined, it overrides any general GS1 rule defined earlier.

Firstly, it is important to note that the 'Envelope' header information used in v1.3 of EAN.UCC XML standard has been deleted from v2.x of EAN.UCC XML standards for GDSN. Figure 4-1 provides a mapping from the 'Envelope' header used earlier to the newer 'SBDH' header.

Figure 4-1 Mapping from the 'Envelope' Header to the Newer 'SBDH' header
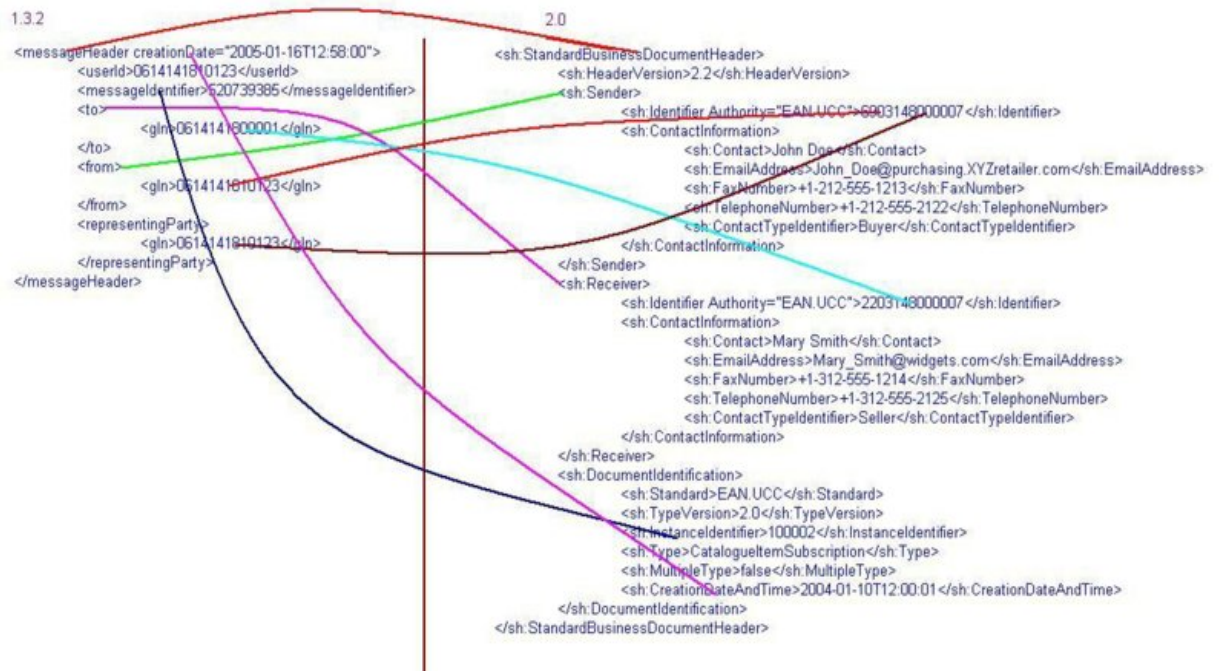
A.2

4.1.2. SBDH specialization in GDSN

- **[GDSN-R1]** For GDSN Network Messages (according to the Task Group Agreement) only 1 document type MUST be included in the XML message. This rule yields the following rule;

- **[GDSN-R1.1]** The 'MultiType' element of 'DocumentIdentification' element MUST be used and value MUST always be set to '**false**'.

- **[GDSN-R2]** The 'BusinessScope' element and its child elements/attributes MUST be used for GDSN Response messages only.

- **[GDSN-R2.1]** Only 1 occurrence of the 'Scope' element MUST be used

■ **[GDSN-R2.2]** Only 1 occurrence of the 'CorrelationInformation' element MUST be used

Response SBDH Sample with Business Scope included

```
<sh:StandardBusinessDocumentHeader>
      <sh:HeaderVersion>1.0</sh:HeaderVersion>
      <sh:Sender>
            <sh:Identifier Authority="EAN.UCC">0614141810017</sh:Identifier>
      </sh:Sender>
      <sh:Receiver>
            <sh:Identifier Authority="EAN.UCC">2116990776066</sh:Identifier>
      </sh:Receiver>
      <sh:DocumentIdentification>
            <sh:Standard>EAN.UCC</sh:Standard>
            <sh:TypeVersion>2.0.2</sh:TypeVersion>
            <sh:InstanceIdentifier>11128210773015440</sh:InstanceIdentifier>
            <sh:Type>GDSNResponse</sh:Type>
            <sh:CreationDateAndTime>2005-04-06T04:57:57</sh:CreationDateAndTime>
      </sh:DocumentIdentification>
      <sh:BusinessScope>
            <sh:Scope>
                  <sh:Type>GDSN</sh:Type>
                  <sh:CorrelationInformation>
      <sh:RequestingDocumentInstanceIdentifier>11128210773015440</sh:RequestingDocumentIns
tanceIdentifier>
                  </sh:CorrelationInformation>
            </sh:Scope>
      </sh:BusinessScope>
</sh:StandardBusinessDocumentHeader>
```

■ **[GDSN-R2.3]** 'ContactInformation' element of 'Partner' type, used by the 'Sender' and 'Receiver' elements **must not** be used.

4.2. EPCGlobal Guidelines

Currently, SBDH is used only in the EPCIS standard. The following rules apply for usage of [SBDH] with EPCIS XML messaging.

The XML binding for the Core Event Types data definition module includes an optional EPCISHeader element, which may be used by industry groups to incorporate additional information required for processing within that industry. The core schema includes a "Standard Business Document Header" as a required component of the EPCISHeader element. Industry groups MAY also require some other kind of header within the EPCISHeader element in addition to the SBDH. The XSD schema for the Standard Business Document Header may be obtained from the UN/CEFACT website at: http://www.unece.org/cefact/.

When the Standard Business Document Header is included, the following values SHALL be used for those elements of the SBDH schema specified below.

SBDH Field (XPath)	Value
HeaderVersion	1.0
DocumentIdentification/Standard	EPCglobal
DocumentIdentification/TypeVersion	1.0
DocumentIdentification/Type	As specified in the table below

The value for DocumentIdentification/Type SHALL be set according to the following table, which specifies a value for this field based on the kind of EPCIS document and the context in which it is used.

Document Type and Context	Value for DocumentIdentification/Type
EPCISDocument used in any context	Events
EPCISMasterData used in any context	MasterData
EPCISQueryDocument used as the request side of the binding in Section 11.3	QueryControl-Request
EPCISQueryDocument used as the response side of the binding in Section 11.3	QueryControl-Response
EPCISQueryDocument used in any XML binding of the Query Callback interface (Sections 11.4.2 – 11.4.4)	QueryCallback
EPCISQueryDocument used in any other context	Query

The AS2 binding for the Query Control Interface (Section 11.3) also specifies additional Standard Business Document Header fields that must be present in an EPCISQueryDocument instance used as a Query Control Interface response message.

In addition to the fields specified above, the Standard Business Document Header SHALL include all other fields that are required by the SBDH schema, and MAY include additional SBDH fields. In all cases, the values for those fields SHALL be set in accordance with SBDH. An industry group MAY specify additional constraints on SBDH contents to be used within that industry group, but such constraints SHALL be consistent with the specifications herein.

5. Additional Information

5.1. International telephone number format

The [SBDH] elements 'FaxNumber' and 'TelephoneNumber', currently should be formatted in a way that is commonly agreed upon or understood between the 'Sender' and 'Receiver' party. It is a common practice to format the number using a local format. To further improve the interoperability and clarity of contact information data an international standard format for telephone number should be used. The International Telecommunications Union (ITU) and the Internet Engineering Task Force (IETF) 'de jure' standards bodies have a standard/recommendation on the format to be used for telephone numbers. Although, this implementation guide refrains from standardizing any rules for telephone number format, optionally it is recommended that the URI format for telephone numbers as specified in [RFC3966] should be used. [RFC3966] is based upon [ITU-T E.123] which is used as the starting point for standardization of telephone number formats. A URI notation adds more specificity and clarity and is more recognizable by software as it standardizes the telephone number string in a machine and human readable format.

Examples:

- **tel:+1-201-555-0123**: This URI points to a phone number in the United States. The hyphens are included to make the number more human readable; they separate country, area code and subscriber number.

- **tel:7042;phone-context=example.com**: The URI describes a local phone number valid within the context "example.com".

■ **tel:863-1234;phone-context=+1-914-555**: The URI describes a local phone number that is valid within a particular phone prefix.

5.2. The use of the token 'EAN.UCC' instead of 'GS1'

For legacy reasons and to support existing implementations of GS1 XML standards, the token 'EAN.UCC' has been recommended for the [SBDH] elements 'Authority' and 'Standard'. At a future date when a new major version of GS1 XML standards will be created (version 3.0) all references to the token 'EAN.UCC' associated with GS1 XML standards and document shall be replaced with the token 'GS1'. Since these guidelines have been formulated after the adoption and implementation of GS1 XML in the user community, the token 'EAN.UCC' currently in use must be used.

5.3. Next version of UN/CEFACT SBDH specification

At the time of writing of this guideline document UN/CEFACT Applied Technologies Group 2 (ATG2) had initiated a number of new working groups by submission of the project proposals to the UN/CEFACT Forum Management Group (FMG). Most of these new projects have been endorsed by the FMG and work has begun. One of the projects is the new version of the Standard Business Document Header.

Some of the objectives of this project are:

■ Bring [SBDH] into Core Components Technical Specification (CCTS) version 3.0 compliance

■ Submit SBDH content to the Trade and Business Processes Group (TBG) for formal approval of the content and additional harmonization

■ Submission of the SBDH methodology and processing part to the UN/CEFACT Core Component Message Assembly (CCMA) group and cooperation with Techniques and Modeling Group (TMG), because ATG2 has identified that many aspects are syntax independent and have an impact in the message assembly

■ XML syntax serialization of the CCTS based [SBDH] according to the XML Naming and Design Rules (XMLNDR) version 3.0. In short create the new SBDH schemas.

■ Further direction of the [SBDH]

In brief the purpose of this project is to create a new version of the SBDH specification and related XML schemas that are harmonized with all other methodologies and specifications from UN/CEFACT. The current [SBDH] is a standalone specification and is not compliant with the in-development CCTS and XMLNDR version 3.0 specifications. Since this project is work in progress it has no bearing on this implementation guide which is based on the currently adopted [SBDH]. At some future date when the GS1 user community is ready to implement the then new version of the SBDH specification, only then will GS1 adopt the new version of the SBDH specification.

5.4. Serialization

Serialization actually is the requirement for sequencing/choreography of messages in a particular business process to determine processing order of messages. There's a need for serialization of GS1 XML messages in the upstream business processes being implemented by GUSI trading partners. The question asked is if [SBDH] provides any support for serialization of messages.

SBDH is a simple header and does not provide a mechanism for identifying sequencing information at the header level. An example of serialization is, a newer order in the sequence replaces the older in the message choreography between 2 trading partners. Sequencing requires business intelligence at payload level / backend application system and is a characteristic of the business process rather than transaction management at the middleware. In short Serialization is dependant on the business process and should be handled in the business document rather than the header/envelope. If

requirement for serialization is to handle changes to documents exchanged earlier, it may be more appropriate to handle such changes using the document status attributes.

Not all business processes need sequencing; e.g.; CPFR (Collaborative Planning Forecast and Replenishment). Forecast messages may be received out of order without any kind of sequencing. Additionally, depending on the transport protocol and middleware used, it is difficult to ensure FIFO (First In First Out) sequencing of messages received.

[SBDH] provides a 'Correlation' block, the data attributes of which can be used in certain scenarios to mimic a sequencing kind of behavior. Although, it does not really do sequencing, it can be used in a request / response messaging scenario to relate a logical sequencing with other messaging criteria like 'Time to Acknowledgement', 'Security', 'Non Repudiation', etc…

Sequencing of messages in a business process is driven by business requirements. As such any requirements for sequencing should be handled at the business document level. Only if there is a real business need to have sequencing at the envelope level, then the requirement needs to be explored further.

5.5. Multiple Trading Partner Identification

[SBDH] allows for the possibility of identifying multiple trading partners/ or applications via the use of the 'ender / Receiver (1..*)', (Identifier, Authority) element. Currently, the use of multiple trading partner identification schemes has been prohibited when [SBDH] is used with GS1 XML standards. There are 2 main reasons for this;

■ GS1 has been mandated that GLN is the key to be used for party identification within all GS1 XML standards

■ Currently no GS1 business requirements have been expressed that require the use of multiple Sender/Receiver parties or multiple identification schemes

If there is an expressed business need to support multiple trading partner identification within SBDH, then the business requirements need to be submitted to GS1 via the CR (Change Request) System.

5.6. Message Grouping

Multiple messages can be grouped and enclosed with the SBDH envelope as it allows for inclusion of any payload content. Multiple document types can also be grouped together with in the same XML message enclosed within the SBDH header. It is recommended that only logically related multiple document types within the same business process should be grouped together. When multiple types are grouped the SBDH element 'MultipleType' should be set to true and the value of the 'Type' element should be the type identifiers for the multiple document types included in the message.

5.7. Transport Protocol Options

In certain business processes / messages business drivers may require the use of a specific transport protocol like HTTPS or email. SBDH is agnostic / independent of the message transport protocol used.

However, with GS1 XML standards, 'AS2' is the transport protocol of choice. GS1 strongly recommends the use of AS2 although it does not mandate it. Within the GDSN network, the use of AS2 transport protocol for messaging is mandated. Optionally, data pools may also support other transport protocols.

With GS1 XML, any transport protocol may be used for messaging and the should be based on the business drivers within the business process, like trading partner agreements, business rules, security, non-repudiation, etc … If there is a need within any particular GS1 user community to 'officially' support a particular transport protocol, then such should be expressed to GS1 with the use of its CR System.

6. References

1. [RFC2119] Key words for use in RFCs to Indicate Requirement Levels

   In many standards track documents several words are used to signify the requirements in the specification. These words are often capitalized. This document defines these words as they should be interpreted in IETF documents.

   http://www.ietf.org/rfc/rfc2119.txt

2. [SBDH] Standard Business Document Header specification

   http://www.gs1.org/services/gsmp/kc/ecom/xml/xml_sbdh.html

3. [ITU-T E.123] Notation for national and international telephone numbers, e-mail addresses and Web addresses

   This Recommendation applies specifically to the printing of national and international telephone numbers, electronic mail addresses and Web addresses on letterheads, business cards, bills, etc. Regard has been given to the printing of existing telephone directories. The standard notation for printing telephone numbers, E-mail addresses and Web addresses helps to reduce difficulties and errors, since this address information must be entered exactly to be effective.

   http://www.itu.int/rec/T-REC-E.123-200102-I/en

4. [RFC3966] The tel URI for Telephone Numbers

   This document specifies the URI (Uniform Resource Identifier) scheme "tel". The "tel" URI describes resources identified by telephone numbers.

   http://www.rfc-editor.org/rfc/rfc3966.txt

A.   Example 1: GS1 XML Document with SBDH

```xml
<?xml version="1.0" encoding="utf-8"?>
<sh:StandardBusinessDocument xmlns:sh="http://www.unece.org/cefact/namespaces/StandardBusinessDocumentHeader"
xmlns:eanucc="urn:ean.ucc:2" xmlns:gdsn="urn:ean.ucc:gdsn:2" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:schemaLocation="http://www.unece.org/cefact/namespaces/StandardBusinessDocumentHeader
../Schemas/sbdh/StandardBusinessDocumentHeader.xsd urn:ean.ucc:2 ../Schemas/RegistryCatalogueItemProxy.xsd">
  <sh:StandardBusinessDocumentHeader>
    <sh:HeaderVersion>1.0</sh:HeaderVersion>
    <sh:Sender>
      <sh:Identifier Authority="EAN.UCC">6903148000007</sh:Identifier>
      <sh:ContactInformation>
        <sh:Contact>John Doe</sh:Contact>
        <sh:EmailAddress>John_Doe@purchasing.XYZretailer.com</sh:EmailAddress>
        <sh:FaxNumber> tel:+1-212-555-1213</sh:FaxNumber>
        <sh:TelephoneNumber> tel:+1-212-555-2122</sh:TelephoneNumber>
        <sh:ContactTypeIdentifier>Buyer</sh:ContactTypeIdentifier>
      </sh:ContactInformation>
    </sh:Sender>
    <sh:Receiver>
      <sh:Identifier Authority="EAN.UCC">2203148000007</sh:Identifier>
      <sh:ContactInformation>
        <sh:Contact>Mary Smith</sh:Contact>
        <sh:EmailAddress>Mary_Smith@widgets.com</sh:EmailAddress>
        <sh:FaxNumber>tel:+1-312-555-1214</sh:FaxNumber>
        <sh:TelephoneNumber> tel:+1-312-555-2125</sh:TelephoneNumber>
        <sh:ContactTypeIdentifier>Seller</sh:ContactTypeIdentifier>
      </sh:ContactInformation>
    </sh:Receiver>
    <sh:DocumentIdentification>
      <sh:Standard>EAN.UCC</sh:Standard>
      <sh:TypeVersion>2.1</sh:TypeVersion>
      <sh:InstanceIdentifier>100002</sh:InstanceIdentifier>
      <sh:Type>RegistryCatalogueItem</sh:Type>
      <sh:MultipleType>false</sh:MultipleType>
      <sh:CreationDateAndTime>2006-01-10T12:00:01.000-05:00</sh:CreationDateAndTime>
    </sh:DocumentIdentification>
  </sh:StandardBusinessDocumentHeader>
  <eanucc:message>
    <entityIdentification>
      <uniqueCreatorIdentification>MSG-123-20060110</uniqueCreatorIdentification>
      <contentOwner>
        <gln>0012345000359</gln>
      </contentOwner>
    </entityIdentification>
    <eanucc:transaction>
      <entityIdentification>
        <uniqueCreatorIdentification>MSG-123-20060110</uniqueCreatorIdentification>
        <contentOwner>
          <gln>0012345000359</gln>
        </contentOwner>
      </entityIdentification>
      <command>
        <eanucc:documentCommand>
          <documentCommandHeader type="ADD">
```

```xml
            <entityIdentification>
                <uniqueCreatorIdentification>MSG-123-20060110</uniqueCreatorIdentification>
                <contentOwner>
                    <gln>0012345000359</gln>
                </contentOwner>
            </entityIdentification>
        </documentCommandHeader>
        <documentCommandOperand>
            <gdsn:registryCatalogueItem creationDateTime="2006-12-10T12:00:01.000-05:00"
documentStatus="ORIGINAL" xsi:schemaLocation="urn:ean.ucc:2 ../Schemas/RegistryCatalogueItemProxy.xsd">
                <contentVersion>
                    <versionIdentification>2.1</versionIdentification>
                </contentVersion>
                <documentStructureVersion>
                    <versionIdentification>2.1</versionIdentification>
                </documentStructureVersion>
                <registryCatalogueItemIdentification>
                    <uniqueCreatorIdentification>WG-000001</uniqueCreatorIdentification>
                    <contentOwner>
                        <gln>0012345000010</gln>
                    </contentOwner>
                </registryCatalogueItemIdentification>
                <registryCatalogueItemState state="IN_PROGRESS" />
                <catalogueItemClassification classificationCategoryCode="DIY" />
                <catalogueItemReference>
                    <gtin>06110123456784</gtin>
                    <dataSource>0012345000010</dataSource>
                    <targetMarket>
                        <targetMarketCountryCode>
                            <countryISOCode>US</countryISOCode>
                        </targetMarketCountryCode>
                        <targetMarketSubdivisionCode>
                            <countrySubDivisionISOCode>US-CA</countrySubDivisionISOCode>
                        </targetMarketSubdivisionCode>
                    </targetMarket>
                </catalogueItemReference>
                <sourceDataPool>0045645000764</sourceDataPool>
            </gdsn:registryCatalogueItem>
        </documentCommandOperand>
    </eanucc:documentCommand>
  </command>
 </eanucc:transaction>
 </eanucc:message>
</sh:StandardBusinessDocument>
```