GS1 Australia

Interchange Control Structure

Cross–Industry Implementation Guide

EANCOM 2002 Syntax 3

Based on UN/EDIFACT Directory D.01B Syntax 3

Compatible with EANCOM 1997 Interchange Control Structure

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Contributors

Name	Organization
Leon Plaksin	GS1 Australia
Troy Denyer	GS1 Australia
Tania Snioch	GS1 Australia
John Hearn	GS1 Australia
Sue Schmid	GS1 Australia

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1. Introduction

1.1. Purpose of this Document

This Implementation Guideline identifies the Service Segments required to envelope the EANCOM 97 and EANCOM 2002 messages.

1.2. Who Will Use this Document?

This document is intended for eCom industry specialists for assistance in implementing and supporting EANCOM EDI (Electronic Data Interchange). This document is applicable to all industry sectors implementing EANCOM in Australia.

2. Interchange structure and service segments

2.1. Pre-Requisite

Users of this guide are expected to have sound understanding of EANCOM.

2.2. When Would I Use This Guideline?

This guide is intended to be used during new EANCOM implementations, upgrading from older versions of EANCOM to the EANCOM 2002 Syntax 3 standard and for reference after implementation has occurred.

It is important to note that the interchange structure detailed on the following pages is structurally identical to that supported in EANCOM 1997. Therefore, organisations implementing messaging based on EANCOM 1997 are recommended to use this document as their interchange structure reference.

2.3. Interchange overview

An interchange is a communication between trading partners in a form of a structured set of messages in UN/EDIFACT format.

All EANCOM 2002 messages are based on the UN/EDIFACT directory D.01B, which was released by UN/CEFACT in 2001. All messages contained in this directory are approved as United Nations Standard Messages (UNSM).

The interchange structure in an UN/EDIFACT transmission is organised in several grouping levels. The service segments are the envelope of the groups. Segments starting with "UN" are called service segments. They constitute the envelope or the "packing" of the UN/EDIFACT messages.

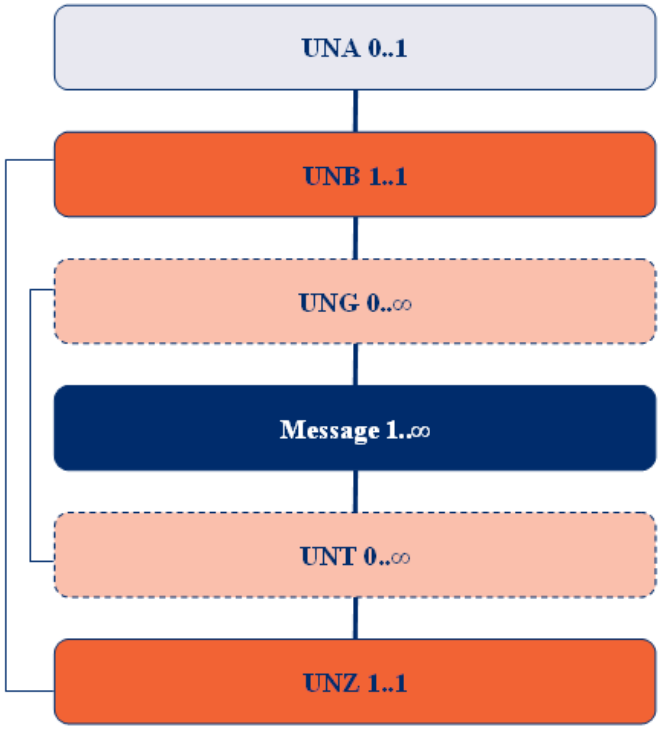
Service string advice: UNA

Interchange envelope: UNB..UNZ

Group envelope: UNG..UNE

Message envelope: UNH..UNT

The interchange can be represented like this:



The first service segment possible in an interchange is the UNA segment which defines the service characters being used in the interchange.

The second service segment, UNB, indicates the beginning of the interchange.

Next, UNG, indicates the beginning of a group of messages of the same type, for example invoices.

Note: Segments UNG..UNE are conditional. Within EANCOM the use of the UNG..UNE segments is not recommended as the grouping of identical message types is not considered to add significant value to an interchange (i.e. between UNB..UNZ).

The last service segment, UNH, indicates the beginning of a given message. UNH..UNT segment is specified in each individual Message Implementation Guide.

Each beginning service segment corresponds to an ending service segment.

Note: UNA is not a beginning segment and does not require an ending segment).

Interchange starts with the service segment interchange header (UNB) and ends with the service segment interchange trailer (UNZ).

2.4. Format of data elements

The following conventions apply are used in this document.

Character type:

a	Alphabetic characters
n	Numeric characters
an	Alpha-numeric characters

Size:

Fixed	All positions must be used.
Variable	Positions may be used up to a specified maximum.

Examples:

a3 : three alphabetic characters, fixed length
n3 : three numeric characters, fixed length
an3 : three alpha-numeric characters, fixed length
a..3 : up to three alphabetic characters
n..3 : up to three numeric characters
an..3 : up to three alpha-numeric characters

2.5. Status indicators

Segments in EANCOM can be of (M)andatory or (C)onditional status.

Additionally, there are five types of status with a Conditional status, whether for simple, component or composite data elements.

REQUIRED	**R**	Indicates that the entity is required and must be sent.
ADVISED	**A**	Indicates that the entity is advised or recommended.
DEPENDENT	**D**	Indicates that the entity must be sent in certain conditions, as defined by the relevant explanatory note.
OPTIONAL	**O**	Indicates that the entity is optional and may be sent at the discretion of the user.
NOT USED	**N**	Indicates that the entity is not used and should be omitted.

If a composite is flagged as ‘N’ all data elements within that composite will have blank status indicators assigned to them.

2.6. Character Set

In syntax version 3 character sets level A, B, C, D, E and F are supported. Within EANCOM the use of character set level A is recommended.

Character set level A (ISO 646 7-bit single byte code, with the exception of lower case letters and certain graphic character allocations) contains the following characters:

Letters (upper case)	A to Z	Equal sign	=	Opening parentheses	(
Numerals	0 to 9	Exclamation mark	!	Closing parentheses	)
Space character	<space>	Quotation mark	"	Oblique stroke (slash)	/
Full stop	.	Percentage sign	%	Semi-colon	;
Comma	,	Ampersand	&	Less-than sign	<
Hyphen/minus sign	-	Asterisk	*	Greater-than sign	>

The following sub-set of supplementary characters taken from character level C (ISO 8859–1) can also be used, but an agreement between trading partners is needed before using any of these characters:

Hash Sign	#
Commercial at	@
Left square bracket	[
Reverse solidus	\
Right square bracket	]
Circumflex accent	^
Grave accent	`
Left curly bracket	{
Vertical line	|
Right curly bracket	}

2.7. Segments

2.7.1. UNA – Service String Advice

Max Use	1
Usage	Conditional
Function	This segment informs the receiver of the interchange that a set of service string characters which are different to the default characters are being used.

Service String		Size	Status	Description
UNA1	Component data element separator	an1	M	Used as a separator between component data elements contained within a composite data element (default value: "**:**")
UNA2	Data element separator	an1	M	Used to separate two simple or composite data elements (default value: "**+**")
UNA3	Decimal notation	an1	M	Used to indicate the character used for decimal notation (default value:"**.**")
UNA4	Release character	an1	M	Used to restore any service character to its original specification (value: "**?**"). For example, 10?+10=20 means 10+10=20. Question mark is represented by "??"
UNA5	Reserved for future use	an1	M	(default value: *space*)
UNA6	Segment terminator	an1	M	Used to indicate the end of segment data (default value: " **'** ")

The recommended (default) character set for use in EANCOM is character set A (UNOA). Four characters, extracted from character set level A, have a special meaning and act as the default service characters.

When using the default set of service characters, the UNA segment need not be sent. If it is sent it must immediately precede the UNB segment.

The use of the UNA segment is **required** when using a character set other than level A.

Should trading partners agree to use any of the character sets from B to F (inclusive) and the default separators from UNOA, the UNA segment must be provided to explicitly state the default separator values.

Regardless of whether or not all of the service string characters are being changed, each data element within this segment must be filled, (i.e. if some default values are being used with user defined ones, both the default and user defined values must be specified).

When expressing the service string characters in the UNA segment it is not necessary to include any element separators.

Example:

UNA:+.? '

Note: In the example above there is a space character between "?" and " ' " (UNA5 element).

The UNA segment in the example above specifies that ":" will be used as component data element separator, "+" as data element separator, "." for decimal notation, "?" as a release character and " ' " as segment terminator.

2.7.2. UNB – Interchange header

Max Use	1
Usage	Mandatory
Function	This segment is used to envelope the interchange as well as identify both trading parties, (the party to whom the interchange is sent and the party who has sent the interchange).

		Size	Status	Description
S001	**SYNTAX IDENTIFIER**		M	Identification of the agency controlling the syntax and the version.
0001	Syntax identifier	a4	M	Must be one of the following: UNOA = UN/ECE level A – recommended (default) UNOB = UN/ECE level B UNOC = UN/ECE level C UNOD = UN/ECE level D UNOE = UN/ECE level E UNOF = UN/ECE level F
0002	Syntax version number	n1	M	When using any of the character sets A through F then the syntax version number (DE 0002) in the UNB segment must be set to 3. 3 = Syntax version number 3.
S002	**INTERCHANGE SENDER**		M	Identification of the sender of the interchange.
0004	Sender identification	an..35	M	Name or coded representation of the sender. Recommended – Global Location Number (GLN) (n13)[1]
0007	Partner Identification code qualifier	an..4	R	Must always be: 14 = GS1
0008	Address for reverse routing	an..14	O	Recommended – GLN (n13)
S003	**INTERCHANGE RECIPIENT**		M	Identification of the recipient of the interchange.
0010	Recipient identification	an..35	M	Name or coded representation of the sender. Recommended - GLN (n13)[1]
0007	Partner Identification code qualifier	an..4	R	Must always be: 14 = GS1
0014	Routing address	an..14	O	Recommended – GLN (n13)
S004	**DATE / TIME OF PREPARATION**		M	Date and time at which the interchange sender prepared the interchange (not necessarily the same as the date of contained messages).
0017	Date	n6	M	Date in the format of YYMMDD.
0019	Time	n4	M	Time in the format of HHMM.
0020	Interchange control reference	an..14	M	Unique reference identifying the interchange. Created by the interchange sender.

S005	**RECIPIENT'S REFERENCE PASSWORD**		O	The use of passwords must first be agreed bilaterally by the parties exchanging the interchange.
0022	Recipient's reference/password	an..14	M	Password/reference
0025	Recipient's reference/password qualifier	an2	O	EDIFACT code. AA = Recipient's reference/password is a reference BB = Recipient's reference/password is a password.
0026	**Application reference**	an..14	O	Message identification if the interchange contains only one type of message.
0029	**Processing priority code**	**a1**	O	Priority (A = Highest priority)
0031	**Acknowledgement request**	**n1**	O	Used to indicate whether an acknowledgement to the interchange is required (APERAK or CONTRL message). 1 = Requested
0032	**Communications agreement identification**	an..35	O	Identification of any underlying agreements which control the exchange of data. Must start with the letters 'EANCOM', the remaining characters within the data element being filled according to bilateral agreements.
0035	**Test indicator**	**n1**	O	1 = Interchange is a test.

[1] Principles of the GS1 System state that use of GLNs is mandatory for the identification of relevant parties. This is achieved by sending a GLN in 0004 in S002 and qualified with code 9 = GS1. Based on system limitations some organisations may be unable to supply and manage GLN's, hence mutually defined trading partner identifications have been allowed. This practice represents a deviation from the EANCOM recommendations and is seen as a short term solution to meet industry needs.

Notes:

DE 0001: The recommended (default) character set for use in EANCOM for international exchanges is character set A (UNOA). Should users wish to use character sets other than A, an agreement on which set to use should be reached on a bilateral basis before communications begin.

DE 0008: The address for reverse routing is provided by the interchange sender to inform the interchange recipient of the address within the sender's system to which responding interchanges must be sent. It is recommended that the GLN be used for this purpose.

DE 0014: The address for routing, provided beforehand by the interchange recipient, is used by the interchange sender to inform the recipient of the internal address, within the latter's systems, to which the interchange should be routed. It is recommended that the GLN be used for this purpose.

DE 0020: The interchange control reference number is generated by the interchange sender and is used to identify uniquely each interchange. Should the interchange sender wish to re-use interchange control reference numbers, it is recommended that each number be preserved for at least a period of three months before being re-used. In order to guarantee uniqueness, the interchange control reference number should always be linked to the interchange sender's identification (DE 0004).

DE 0026: This data element is used to identify the application, on the interchange recipient's system, to which the interchange is directed. This data element may only be used if the interchange contains only one type of message, (e.g. only invoices). The reference used in this data element is assigned by the interchange sender.

Example:

UNB+UNOA:3+9354876984522:14+9337553467341:14+071012:1000+INT131+++++EANCOMREF52'

This is an interchange sent from a trading partner with GLN 9354876984522 to trading partner with GLN 9337553467341 on the12th of October 2007 at 10 a.m. The interchange uses character set level A, syntax 3 and the control reference is INT131.

2.7.3. UNG segment – Functional Group Header

Max Use	9999
Usage	Conditional
Function	To start, identify and specify a functional group.

		Size	Status	Description
0038	**FUNCTIONAL GROUP IDENTIFICATION**	an..6	M	Identification of a message contained in the functional group, e.g. INVOIC.
S006	**APPLICATION SENDER'S IDENTIFICATION**		M	
0040	Sender identification	an..35	M	GLN (n13)
0007	Identification code qualifier	an..4	R	Must always be: 14 = GS1
S007	**INTERCHANGE RECIPIENT**		M	
0044	Recipient identification	an..35	M	GLN (n13)
0007	Identification code qualifier	an..4	R	Must always be: 14 = GS1
S004	**DATE / TIME OF PREPARATION**		M	
0017	Date	n6	M	Date in the format of YYMMDD.
0019	Time	n4	M	Time in the format of HHMM.
0048	**Functional group reference number**	an..14	M	Unique reference identifying the functional group. Created by the interchange sender.
0051	**Controlling agency**	an..2	M	Must always be: UN = UN/CEFACT
S008	**MESSAGE VERSION**		M	
0052	Message type version number	an..3	M	Must always be: D = UN/EDIFACT directory
0054	**Message type release number**	an..3	M	The value of this data element depends on the message type (Determined by element 0054 in UNH segment).
0057	**Association assigned code**	an..6	R	The value of this data element depends on the message type (Determined by element 0057 in UNH segment).
0058	**Application password**	an..14	D	The use of this data element depends on agreements between the trading partners.

Within EANCOM the use of the UNG..UNE segments is not recommended as the grouping of identical message types is not considered to add significant value to an interchange, (i.e. between UNB..UNZ).

2.7.4. UNH..UNT Message Header-Trailer

UNH..UNT segments are specified in each individual Message Implementation Guide (MIG) for a particular EANCOM message. For example, the Retail Industry EANCOM MIG for the Invoice (INVOIC) message will detail use of the UNH and UNT segments for that particular implementation.

2.7.5. UNE – Functional Group Trailer

Max Use	1
Usage	Conditional (must appear only if UNG is used)
Function	To end and check the completeness of a functional group.

		Size	Status	Description
0060	**Number of messages**	n..6	M	Number of messages in the group.
0048	**Functional group reference number**	an..14	M	Identical to DE 0048 in UNG segment.

Within EANCOM the use of the UNG..UNE segments is **not recommended** as the grouping of identical message types is not considered to add significant value to an interchange (i.e. between UNB..UNZ).

2.7.6. UNZ– Interchange Trailer

Max Use	1
Usage	Mandatory
Function	To end and check the completeness of an interchange.

		Size	Status	Description
0036	**Interchange control count**	n..6	M	If functional groups are used, this is the number of functional groups within the interchange. If functional groups are not used, this is the number of messages within the interchange.
0020	**Interchange control reference**	an..14	M	Identical to DE 0020 in UNB segment.

Example:
UNZ+5+INT131'

2.8. Examples

To assist with implementation of the Interchange Structure, below are some examples.

(1) An interchange containing two messages, no service string advice (UNA):

UNB+UNOA:3+9365897158533:14+9367909987612:14+071002:1000+3465'UNH+66025+DESADV:D:01B:UN:EAN007'<…>UNT+35+66025'UNH+66420+DESADV:D:01B:UN:EAN007'<…>UNT+26+66420' UNZ+2+3465'

Note: <…> signifies body of the message.

Sample Data Segment	Description
UNB+UNOA:3+9365897158533:14+9367909987612:14+071002:1000+3465'	Interchange header (Beginning of the interchange)
UNH+66025+DESADV:D:01B:UN:EAN007'	Message header.
<…>	Message body.
UNT+35+66025'	Message trailer.
UNH+66420+DESADV:D:01B:UN:EAN007'	Message header.
<…>	Message body.
UNT+26+66420'	Message trailer.
UNZ+2+3465'	Interchange trailer (End of the interchange)

The example above is an interchange sent from a trading partner with GLN 9365897158533 to a trading partner with GLN 9367909987612 on the 2nd of October 2007 at 10 a.m. The interchange uses character set level A, syntax 3. The interchange control reference is 3465 and does not contain the UNA segment.

(2) An interchange containing two messages and service string advice:

UNA:+.? 'UNB+UNOA:3+9365897158533:14+9367909987612:14+071002:1000+3466'UNH+66025+DESADV:D:01B:UN:EAN007'<…>UNT+35+66025'UNH+66420+DESADV:D:01B:UN:EAN007'<…>UNT+26+66420'UNZ+2+3466'

Sample Data Segment	Description
UNA:+.? '	Service string advice.
UNB+UNOA:3+9365897158533:14+9367909987612:14+071002:1000+3466'	Interchange header (Beginning of the interchange)
UNH+66025+DESADV:D:01B:UN:EAN007'	Message header
<…>	Message body
UNT+35+66025'	Message trailer
UNH+66420+DESADV:D:01B:UN:EAN007'	Message header
<…>	Message body
UNT+26+66420'	Message trailer
UNZ+2+3466'	Interchange trailer (End of the interchange)

The previous example is an interchange sent from a trading partner with GLN 9365897158533 to a trading partner with GLN 9367909987612 on the 2nd of October 2007 at 10 a.m. The interchange uses character set level A, syntax 3 and the control reference is 3466.

The interchange contains the UNA segment, which specifies that ":" will be used as component data element separator, "+" as data element separator, "." for decimal notation, "?" as a release character and " ' " as segment terminator.