
**Electronic data interchange for
administration, commerce and transport
(EDIFACT) — Application level syntax
rules (Syntax version number: 4) —**

Part 1:

Syntax rules common to all parts, together with
syntax service directories for each of the parts

*Échange de données informatisées pour l'administration, le commerce et le
transport (EDIFACT) — Règles de syntaxe au niveau de l'application
(Numéro de version de syntaxe: 4) —
Partie 1: Règles de syntaxe communes à toutes les parties, et annuaires de
syntaxe pour chacune des parties*



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

This part of ISO 9735 was prepared by the UN/ECE Trade Division (as UN/EDIFACT) and was adopted, under a special "fast-track procedure", by Technical Committee ISO/TC 154, *Documents and data elements in administration, commerce and industry*.

Together with ISO 9735-2, this part of ISO 9735 cancels and replaces ISO 9735:1988 (amended and reprinted in 1990) and Amendment 1:1992.

Whereas this part supersedes the earlier publications, and shall use a version number of "4" in the mandatory data element 0002 (Syntax version number) in the segment UNB (Interchange header), interchanges continuing to use the syntax defined in the earlier published versions shall use the following Syntax version numbers, in order to differentiate them from each other and from this part:

ISO 9735:1988 — *Syntax version number: 1*

ISO 9735:1988 (amended and reprinted in 1990) — *Syntax version number: 2*

ISO 9735:1988 (amended and reprinted in 1990) plus Amendment 1:1992 — *Syntax version number: 3*

ISO 9735 consists of the following parts, under the general title *Electronic data interchange for administration, commerce and transport (EDIFACT) — Application level syntax rules (Syntax version number: 4)*:

- *Part 1: Syntax rules common to all parts, together with syntax service directories for each of the parts*
- *Part 2: Syntax rules specific to batch EDI*
- *Part 3: Syntax rules specific to interactive EDI*
- *Part 4: Syntax and service report message for batch EDI (message type - CONTRL)*
- *Part 5: Security rules for batch EDI (authenticity, integrity and non-repudiation of origin)*
- *Part 6: Secure authentication and acknowledgement message (message type - AUTACK)*
- *Part 7: Security rules for batch EDI (confidentiality)*
- *Part 8: Associated data in EDI*
- *Part 9: Security key and certificate management message (message type - KEYMAN)*
- *Part 10: Security rules for interactive EDI*

Further parts may be added in the future.

Annexes A, B and C form an integral part of this part of ISO 9735.
Annexes D and E are for information only.

Introduction

This part of ISO 9735 includes the rules at the application level for the structuring of data in the interchange of electronic messages in an open environment, based on the requirements of either batch or interactive processing. These rules have been agreed by the United Nations Economic Commission for Europe (UN/ECE) as syntax rules for Electronic Data Interchange for Administration, Commerce and Transport (EDIFACT) and are part of the United Nations Trade Data Interchange Directory (UNTDID) which also includes both batch and interactive Message Design Guidelines.

This part of ISO 9735 may be used in any application, but messages using these rules may only be referred to as EDIFACT messages if they comply with other guidelines, rules and directories in the UNTDID. For UN/EDIFACT, messages shall comply with the message design rules for batch or interactive usage as applicable. These rules are maintained in the UNTDID.

Communications specifications and protocols are outside the scope of this part of ISO 9735.

A previous version of ISO 9735 was published in 1988 as a single part. The current version of ISO 9735 consists of multiple parts and incorporates enhancements to extend its application.

This part of ISO 9735 is a re-draft of corresponding sections in the previous version of ISO 9735. It consists of the rules common to all parts of ISO 9735, and includes the definitions and service directories for all parts.

The basic syntax rules specified in this part remain unchanged from the previous version, with the exception that the coverage of character repertoires has been extended, and two new techniques have been introduced (the provision for 'dependency notes' and the introduction of a service repetition character, to support the capability of permitting multiple occurrences (repeats) of stand-alone and/or composite data elements). Both of these techniques are used in other parts of the current version of ISO 9735, and are available for specification in EDIFACT messages which utilise this International Standard.

In addition, enhancements have been made to the batch interchange, group, and message header segments (UNB; UNG; and UNH).

Character repertoires: Because of the widening use of ISO 9735, it has become necessary to extend its coverage to include all character repertoires covered by ISO 8859, Parts 1-9 (*Information processing — 8-Bit single – byte coded graphic character sets*); the code extension techniques covered by ISO 2022 (with certain restrictions on its use within an interchange); and partial use of the techniques covered by ISO/IEC 10646-1.

Dependency notes: These provide a formal notation to express relationships in EDIFACT message, segment and composite data element specifications.

Repeating data elements: The specification of multiple occurrences of a message within a group or within an interchange; a group within an interchange; and a segment group and/or a segment within a message, which existed in the previous version of ISO 9735, has been extended in the current version. The additional capability for the specification of multiple occurrences of a stand-alone data element and/or of a composite data element within a segment has been introduced.

UNB - Interchange header segment: This segment has been enhanced to permit the identification of the service code list directory version number; identification of the character encoding scheme; and internal sub-identification of the sender and recipient. In addition, to conform to year 2000 requirements, the date format in this segment has been extended.

UNG - Group header segment: This segment has been re-named and its function changed to permit one or more message types and/or packages to be contained in the group. As a result, certain data elements, which are now redundant, have been marked for deletion. In addition, to conform to year 2000 requirements, the date format in this segment has been extended.

UNH - Message header segment: This segment has been enhanced to permit the identification of a message subset; of a related message implementation guideline; and of a related scenario.

An addition has been made to permit the prevention of collision, by use of the UGH/UGT segment group. This technique shall be used in a message specification when it is not otherwise possible to ensure unambiguous identification of each message segment upon receipt.

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Electronic data interchange for administration, commerce and transport (EDIFACT) — Application level syntax rules (Syntax version number: 4) —

Part 1:

Syntax rules common to all parts, together with syntax service directories for each of the parts

1 Scope

This part of ISO 9735 specifies common syntax rules for the formatting of batch and interactive messages to be interchanged between computer application systems. It includes the definitions and service directories for all parts comprising ISO 9735.

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2 Conformance

ISO 9735-1:1998

Conformance to a standard means that all of its requirements, including all options, are supported. If all options are not supported, any claim of conformance shall include a statement which identifies those options to which conformance is claimed.

Data that is interchanged is in conformance if the structure and representation of the data conforms to the syntax rules specified in this International Standard.

Devices supporting this International Standard are in conformance when they are capable of creating and/or interpreting the data structured and represented in conformance with the standard.

Conformance shall be based on this part, and at least either ISO 9735-2 or ISO 9735-3.

When identified in this International Standard, provisions defined in related standards shall form part of the conformance criteria.

3 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 9735. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 9735 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 639:1988, *Code for the representation of names of languages*.

ISO/IEC 646:1991, *Information technology — ISO 7-bit coded character set for information interchange*.

ISO/IEC 2022:1994, *Information technology — Character code structure and extension techniques*.

ISO/IEC 2382-1:1993, *Information technology — Vocabulary — Part 1: Fundamental terms*.

ISO 2382-4:1987, *Information processing systems — Vocabulary — Part 04: Organization of data*.

ISO 6093:1984, *Information processing — Representation of numerical values in character strings for information interchange*.

ISO/IEC 6429:1992, *Information technology — Control functions for coded character sets*.

ISO 6523:1984, *Information technology — Structure for the identification of organizations*.

ISO 8601:1988, *Data elements and interchange formats — Information interchange — Representation of dates and times*.

ISO 9735-2:1998, *Electronic data interchange for administration, commerce and transport (EDIFACT) — Application level syntax rules (Syntax version number: 4) — Part 2: Syntax rules specific to batch EDI*.

ISO 9735-3:1998, *Electronic data interchange for administration, commerce and transport (EDIFACT) — Application level syntax rules (Syntax version number: 4) — Part 3: Syntax rules specific to interactive EDI*.

ISO/IEC 10646-1:1993, *Information technology — Universal Multiple-Octet Coded Character Set (UCS) — Part 1: Architecture and Basic Multilingual Plane*.

4 Definitions

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For the purposes of this International Standard, the definitions in annex A apply.

5 Service characters

ISO 9735-1:1998

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The service characters are the component data element separator, data element separator, release character, repetition separator, and segment terminator.

The component data element separator, data element separator, repetition separator, and segment terminator delineate various syntax structures as defined in clause 7.

The purpose of the release character is to allow the use of a character that would otherwise be interpreted as a service character. The character immediately following the release character in a interchange shall not be interpreted as a service character.

When used, the release character is not counted in the length of the data element value.

NOTE - Using default service characters shown below, 10?+10=20 appearing in a data transfer shall be interpreted on receipt as 10+10=20. A question mark in a data element value is represented in transfer as ??.

5.1 Default service characters

The default service characters reserved for use in this International Standard are:

Name	Graphic Representation	Functionality
Colon	:	component data element separator
Plus sign	+	data element separator
Question mark	?	release character
Asterisk	*	repetition separator
Apostrophe	'	segment terminator

5.2 UNA, service string advice

The conditional service string advice (UNA) provides the capability to specify the service characters used in the interchange (see annex B). The UNA service string advice shall be used if the service characters differ from the defaults (see clause 5.1). Its use is optional if the default characters are used.

When used, the service string advice shall appear immediately before the interchange header segment.

6 Character repertoires

The character encoding specified in basic code table of ISO/IEC 646 (7-bit coded character set for information interchange) shall be used for the interchange service string advice (if used) and up to and including the composite data element S001 'Syntax identifier' in the interchange header.

The character repertoire used for the characters in an interchange shall be identified from the code value of data element 0001 in S001 'Syntax identifier' in the interchange header (see Annex D). The character repertoire identified does not apply to objects and/or encrypted data.

The default encoding technique for a particular repertoire shall be the encoding technique defined by its associated character set specification.

If the default option is not used, a code value for the data element 0133 'Character encoding, coded' in the interchange header shall be used.

Code extension technique (ISO/IEC 2022) may only be used in an interchange after the composite data element S001 'Syntax identifier' in the interchange header.

The code extension technique and its target graphic characters shall only be used for:

- plain language (textual) data elements, with a representation of alphabetic or alphanumeric.

The technique shall not be used, for example, for any:

- segment tag, or
- service character, or
- data element with a representation of numeric.

Characters used to indicate code extension shall not be counted in the length of a data element, and shall not be used as service characters.

In calculating data element length, one graphic character shall be counted as one character, irrespective of the number of bytes/octets required to encode it.

7 Syntax structures

The definitions in this clause specify logical syntax structures. Rules to be applied for their usage are defined in clause 8.

7.1 Interchange structure

An interchange shall be started either by a service string advice or by an interchange header, shall be identified by an interchange header, shall be terminated by an interchange trailer, and shall contain at least one group, or one message or one package. There may be more than one group or message and/or package within an interchange, each identified by its own header and terminated by its own trailer. Messages within an interchange or within a group may comprise one or more message types.

An interchange shall contain only:

- Messages, or
- Packages, or
- Messages and Packages, or
- Groups containing messages, or
- Groups containing packages, or
- Groups containing messages and packages.

7.2 Group structure

A group is a conditional structure which is located between the interchange header and trailer and which comprises one or more messages and/or packages.

A group shall be started and identified by a group header, shall be terminated by a group trailer, and shall contain at least one message or package.

7.3 Message structure

A message comprises an ordered set of segments (see annex E). Segments may be grouped. Each segment's position, status, and maximum number of occurrences shall be stated in the message specification.

A given segment within a message specification shall have a status of mandatory or conditional.

A message specification shall ensure unambiguous identification of each message segment upon receipt. Identification shall be possible on the basis of the segment tag (or the segment tag plus the anti-collision segment group identification in the UGH and UGT segments) and the segment's position in the transferred message. Identification shall not depend on a segment's status or maximum number of occurrences.

A message shall be started and identified by a message header, shall be terminated by a message trailer, and shall contain at least one additional segment.

7.4 Segment group structure

A segment group comprises an ordered set of segments: a trigger segment and at least one more segment or segment group. The trigger segment shall be the first segment in the segment group, shall have a status of mandatory and a maximum number of occurrences of one. Each segment group's position, status, and maximum number of occurrences within the message structure shall be stated in the message specification.

A segment group may contain one or more dependent segment groups. When a segment group is contained within and directly subordinate to another segment group, the subordinate segment group is referred to as the child, and the other segment group is referred to as the parent.

A given segment group within a message specification shall have a status of mandatory or conditional.

7.5 Segment structure

A segment comprises an ordered set of stand-alone data elements and/or composite data elements, each of which are permitted to repeat, if so stated in the segment specification. Each stand-alone or composite data

element's position, status and maximum number of occurrences within the segment structure shall be stated in the segment specification. A segment shall be started and identified by a segment tag which references a specific segment specification. A segment shall contain at least one data element in addition to the segment tag.

A given data element within a segment specification shall have a status of mandatory or conditional.

7.6 Segment tag structure

A segment tag is a simple data element.

Segment tags starting with the letter "U" (e.g. UNB, UIH) shall be reserved for service segments.

7.7 Composite data element structure

A composite data element comprises an ordered set of two or more component data elements. Each component data element's position and status within the composite data element structure shall be stated in the composite data element specification.

A given component data element within a composite data element specification shall have a status of mandatory or conditional.

7.8 Simple data element structure

A simple data element contains a single data element value.

A simple data element is used either as a stand-alone data element or as a component data element. A stand-alone data element occurs in a segment outside a composite data element. A component data element occurs within a composite data element.

Each simple data element's data value representation shall be stated in the data element specification.

7.9 Package structure

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A package shall be started and identified by an object header, shall be terminated by an object trailer, and shall contain one object.

8 Inclusion and exclusion

The rules in this clause shall be applied when a message is prepared for transfer. Under these rules, in certain circumstances, segment groups, segments, data elements, and characters within a data element value, shall be present, while in other circumstances shall be omitted.

8.1 Determination of presence

A simple data element is considered present if its data element value contains at least one character.

A composite data element is considered present if at least one of its component data elements is present.

A segment is considered present if its segment tag is present.

A segment group is considered present if its trigger segment is present.

8.2 Inclusion of segment groups

A mandatory segment group which is not contained within another segment group shall be present.

A mandatory child segment group shall be present if its parent segment group is present.

A single occurrence of a segment group having a status of mandatory is sufficient to satisfy the mandatory requirement.

8.3 Exclusion of segment groups

If a segment group is omitted, all of its segments and any dependent segment groups contained within it, regardless of their status, shall also be omitted.

8.4 Inclusion of segments

Segments shall appear in the order stated in the message specification.

A segment shall be terminated by a segment terminator.

A mandatory segment which is not in a segment group shall be present.

A mandatory segment contained in a segment group shall be present if the segment group is present.

A single occurrence of a segment having a status of mandatory is sufficient to satisfy the mandatory requirement.

Using a fictitious segment tag of ABC as an example, a mandatory segment defined as containing only conditional data elements for which no data is present at the time of transfer, shall be transferred in the form ABC'.

8.5 Exclusion of segments

A conditional segment for which only the segment tag is present shall be omitted in its entirety.

8.6 Inclusion of data elements

Data elements shall appear in the order stated in the segment specification.

Adjacent non-repeating data elements in the same segment shall be separated by a data element separator.

Adjacent occurrences of the same repeating data element in a segment shall be separated by a repetition separator.

Adjacent component data elements in the same composite data element shall be separated by a component data element separator.

A mandatory stand-alone data element in a segment shall be present if the segment is present.

A mandatory composite data element in a segment shall be present if the segment is present.

A mandatory component data element in a composite data element shall be present if the composite data element is present.

A single occurrence of a repeating data element having a status of mandatory is sufficient to satisfy the mandatory requirement.

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8.7 Exclusion of data elements

In the figures in the following sub-clauses, "Tag" represents a segment tag, "DE" represents a composite data element or stand-alone data element, and "CE" represents a component data element. The default service characters are used.

8.7.1 Exclusion of composite data elements and stand-alone data elements

If a non-repeating composite data element or stand-alone data element is omitted and is followed by another composite data element or stand-alone data element in the same segment, its position shall be indicated by retention of the data element separator which would normally follow it. This rule also applies if all occurrences of a repeating data element are omitted.

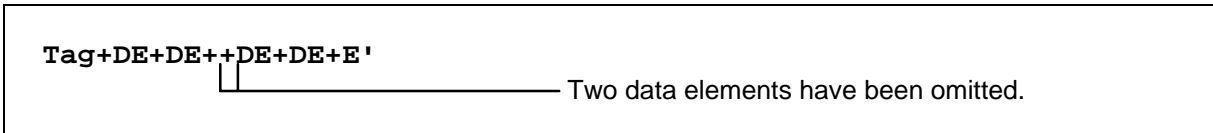


Figure 1 - Exclusion of non-repeating data elements within a segment

If one or more non-repeating composite data elements or stand-alone data elements at the end of a segment are omitted, the data element separators which would normally follow them shall also be omitted.

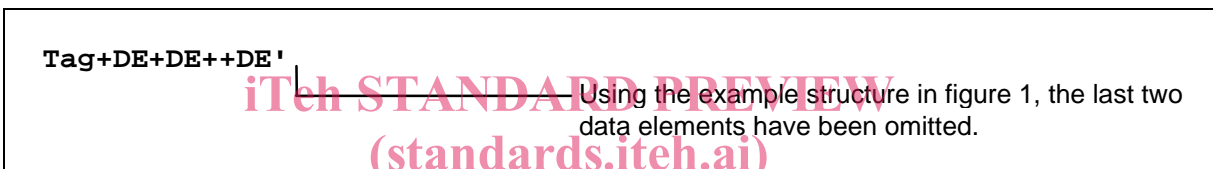


Figure 2 - Exclusion of non-repeating data elements at the end of a segment

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8.7.2 Exclusion of component data elements

If a component data element is omitted and is followed by another component data element in the same composite data element, its position shall be indicated by retention of the component data element separator which would normally follow it.

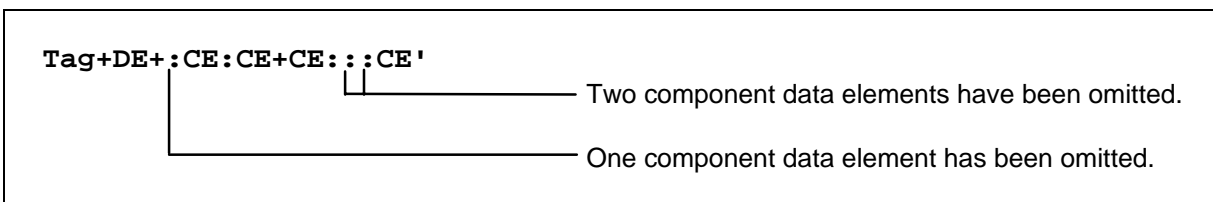


Figure 3 - Exclusion of component data elements within a composite data element

If one or more component data elements at the end of a composite data element are omitted, the component data element separators which would normally follow them shall also be omitted.

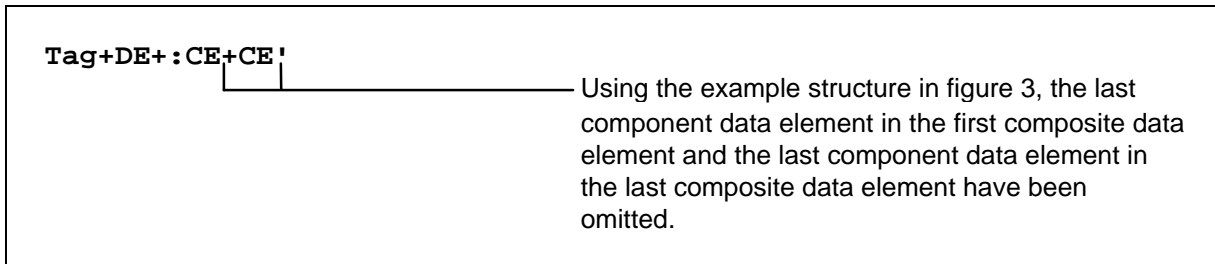


Figure 4 - Exclusion of component data elements at the end of a composite data element

8.7.3 Exclusion of occurrences of repeating data elements

The position of an occurrence of a repeating data element may be significant, for example, to transfer array data.

In such a case, if an occurrence of a repeating data element is omitted and is followed by another occurrence of the same repeating data element, its position shall be indicated by retention of the repetition separator which would normally follow it.



Figure 5 - Exclusion of occurrences within a repeating data element

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If one or more occurrences of a repeating data element at the end of a repeating data element are omitted, the repetition separators which would normally follow them shall also be omitted.

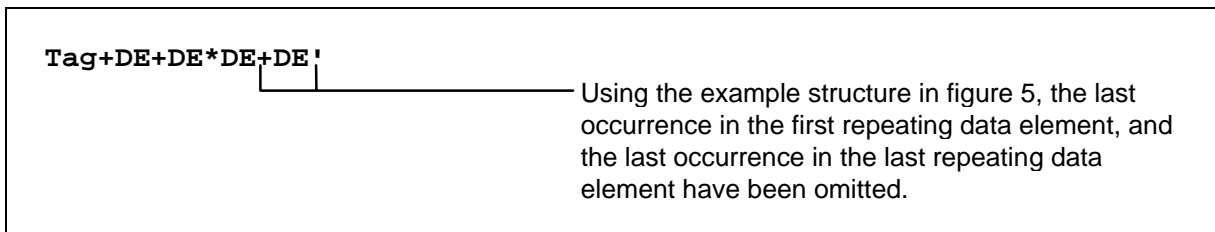


Figure 6 - Exclusion of occurrences at the end of a repeating data element

9 Suppression of characters within data elements

In variable length data elements, insignificant characters shall be suppressed (i.e. omitted from the transfer), while significant characters shall be present.

9.1 Insignificant characters

In variable length numeric data elements, leading zeroes shall be suppressed. Nevertheless, a single zero before a decimal mark is allowed. In variable length alphabetic and alphanumeric data elements, trailing spaces shall be suppressed.

9.2 Significant zeroes

Significant zeroes shall not be suppressed. A single zero may be significant, for example, to indicate a temperature or tax rate. Trailing zeroes following the decimal mark may be significant to indicate precision.

9.3 Significant spaces

Significant spaces shall not be suppressed. Leading and embedded spaces may be significant. A data element value containing only space(s) shall not be allowed.

10 Representation of numeric data element values

For the purposes of this standard, the representation of numeric data element values shall be any of the representations as specified by ISO 6093 (which excludes the use of triad separators), with the following exceptions:

- The encoding specified in ISO/IEC 646 shall not be required.
- For variable length numeric fields, the rules for suppression apply (see clause 9).
- The space character and plus sign shall not be allowed.
- The length of a numeric data element value shall not include the minus sign (-), the decimal mark (. or ,), or the exponent mark (E or e) and its exponent.
- When a decimal mark is transferred, there shall be at least one digit after the decimal mark.

The full stop or the comma is allowed to represent the decimal mark for a single numerical value.

Examples using decimal marks:

	ISO 9735-1:1998
Allowed (full stop):	2 and 2,00 and 0.5 and .5
Not allowed (full stop):	1. and 0. and .
Allowed (comma):	2 and 2,00 and 0,5 and ,5
Not allowed (comma):	1, and 0, and ,

11 Dependency notes

11.1 General

If required, dependency notes shall be used in the message, segment specification, or composite data element to express relationships.

In a dependency note, a list is defined as two or more entities (where an entity can be a segment group; a segment; a composite data element; a stand-alone data element or a component data element).

Any entity may be subject to more than one dependency note.

11.2 Dependency notes in the message specification

Dependency notes in the message specification are used to describe the relationship between segments, between segment groups, or between segments and segment groups. These entities shall be at the same hierarchical level and within the same parent structure.

11.3 Dependency notes in the segment specification

Dependency notes in the segment specification are used to describe the relationship between stand-alone data elements, between stand-alone data elements and composite data elements, or between composite data elements. These entities shall be in the same segment.