UN/EDIFACT
INTERACTIVE EDI
MESSAGE DESIGN GUIDELINES
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SECTION 1
INTRODUCTION,
DEFINITION OF TERMS
AND REFERENCES
1. INTRODUCTION

1.1 Document Purpose

1.1.1 This documentation forms a set of internationally agreed rules and guidelines for the interactive electronic interchange of structured data, that relate to trade in goods and services, between independent computerised information systems.

1.1.2 The environments for interactive EDI (I-EDI) and “batch” EDI differ. I-EDI involves an automatic exchange of defined and structured data, between pairs of co-operating processes, in a timely manner using query and response processing.

1.1.3 Within the broader context of I-EDI, this document provides guidelines and rules for the development of Interactive EDIFACT messages within the UN/ECE EDIFACT international standards environment.

1.2 Document Structure

1.2.1 This document is divided into 3 sections.

1.2.2 Section 1 is this section, containing the Introduction, Definition of Terms and References.

1.2.3 Section 2 contains the “Overview” of EDI Message Design

1.2.4 Section 3 provides “Guidelines and Rules” for Interactive Message Design

1.3 Guidelines and Rules

1.3.1 One of the key requirements before organisations can exchange administrative, commercial and transport information between their computer applications, is agreement on the content and structure of the information to be transmitted.

1.3.2 In UN/EDIFACT, this is achieved by developing United Nations Standard Messages (UNSMs), for both national international batch use, and United Nations Standard Interactive Messages (UNSIMs) for both national and international interactive use.

1.3.3 These guidelines and rules relate to work carried out by the United Nations Economic Commission for Europe, Working Party Number 4 (UN/ECE/WP.4) and the International Organisation for Standardisation (ISO), known as EDIFACT (Electronic Data Interchange for Administration, Commerce and Transport).

1.3.4 At the regional level, the work of the UN/ECE is supported by UN/EDIFACT Rapporteur’s Advisory and Support Teams (RTs).

1.3.5 Most UN/EDIFACT RTs will have available (or will have access to) a database (known as a UN/EDIFACT database) which normally contain both the current UN/EDIFACT Draft Directories for batch and interactive use. Any user requiring information regarding UN/EDIFACT directories should contact their regional EDIFACT Secretariat.

1.3.6 These guidelines and rules are intended for:

a) those who want to submit a draft message for registration as a new UNSIM.

To achieve this status:

there must be no existing UNSIM having a function identical to the proposed draft;
the proposer(s) of the draft message need to accept that the message may be the subject of joint development, if other the proposed draft message and its contents shall ideally be designed for interactive international use;
sectors and/or rapporteurs’ teams indicate interest in participating in the development of the message.

b) those who wish to propose an amendment to an existing UNSIM by means of a “Data Maintenance Request”

and

c) use by RTs for technical assessment.
1.3.7 Many sections of this document are divided into subsections. All sub-sections under the heading of “Rules” (Section 3) must be observed by message designers. Correct application of the rules will be verified during the course of the technical assessment of messages submitted for consideration as UNSIMs.

1.3.8 Rules are accompanied by explanatory text. The numbered rules shall be used by technical assessment groups to test the validity of new messages.

1.3.9 The sub-sections under the heading of “Guidelines” (Section 2) are provided as further clarification to the UNSIM message design process, and may detail additional message design concepts which may be applied at the discretion of message designers. The “Overview” sub-sections contents will not be used by technical assessment groups to reject messages.
1.4 Definitions

The terms are classified alphabetically; an identifier is added at the end of the definition, in square brackets, to facilitate the comparison between different linguistic versions. Many definitions are taken from ISO 9735.

**BUSINESS**
A series of structured activities or processes each having a clearly understood purpose, involving more than one party and directed towards some collectively defined goal, extending over a period of time. In particular, it is not limited to trade or commerce. [1]

**CODE LIST**
The complete set of data element values of a coded simple data element. [2]

**COMPONENT DATA ELEMENT**
A simple data element used within composite data element. [3]

**COMPOSITE DATA ELEMENT**
An identified, named and structured set of functionally related component data elements, as described in a composite data element specification. In transfer, a composite data element is a specific ordered set of one or more component data element(s) in conformance with a composite data element specification. [4]

**DATA ELEMENT**
A unit of data described in a data element specification. Data elements are either simple data elements, stand-alone data elements, component data elements or composite data elements. [5]

**DIALOGUE**
A two-way conversation between an initiator and a responder within an I-EDI transaction. It is formally composed of a pair of interchanges. [6]

**INTERACTIVE-EDI (I-EDI)**
The exchange of pre-defined and structured data, within a dialogue, which conforms to the syntax of UN/EDIFACT WD 9735 (Parts 1&3) for some business purpose, between pairs of co-operating processes, in a timely manner. [7]

**I-EDI TRANSACTION**
An instance of a scenario. It consists of one or more dialogues. [8]

**FUNCTIONAL DEFINITION**
A functional definition is a unique free text statement which describes the use, purpose, and type of information to be conveyed in a message, segment/segment group or data element. [9]

**INITIATOR**
The application which starts the dialogue and/or transaction. [10]

**INTERCHANGE**
A sequence of messages, of the same or of different types, starting with the interchange header (or with the service string advice if used), and ending with the interchange trailer. [11]

**MESSAGE**
An identified, named and structured set of functionally related segments, covering the requirements for a specific type of transaction (e.g. invoice), as described in a message specification; a message starts with a message header and ends with a message trailer. In transfer, a message is a specific ordered set of segments in conformance with a message specification. [12]

**NAME**
A name is a unique free text identification applied to messages, segments, data elements, or codes. [13]

**RESPONDER**
An application replying to an initiator. [14]

**SCENARIO**
A formal specification of a class of business activities having the same business goal. [15]

**SEGMENT**
An identified, named and structured set of functionally related composite data elements and/or stand-alone data elements, described in a segment specification; a segment starts with the segment tag and ends with the segment terminator. [16]
SEGMENT GROUP
A identified hierarchical set of segments and/or segment groups within a message. [17]

SIMPLE DATA ELEMENT
A data element containing a single data element value. There are two uses of a simple data element: within a composite data element (component data element); and within a segment outside a composite data element (stand-alone data element). [18]

STAND-ALONE DATA ELEMENT
A simple data element used within a segment without being in a composite data element. [19]

STATE
The situation of an application system at a particular point in time.[20]

TAG
A unique code for the identification of a message, segment, or data element. [21]

TRIGGER SEGMENT
A trigger segment is a mandatory, non-repeatable segment which starts a segment group. [22]

UNSIM
A message may be referred to as an interactive UN/EDIFACT standardised message only if it complies with the rules and directories in the United Nations Trade Data Interchange Directory (UNTDID), of which this document is a part, and if it has been approved by the United Nations Economic Commission for Europe (UN/ECE) as a Status 2 message. [23]
1.5 Related Documentation

1.5.1 UN/EDIFACT documentation is published and maintained by the United Nations Economic Commission for Europe, Working Party Number 4 (UN/ECE/WP.4) and the International Organisation for Standardisation (ISO).

1.5.2 Related documentation describing the I-EDI business, scenario, and technical aspects should be understood in order to place the interactive message design rules and guideline specifications herein into proper perspective.

1.5.3 Within the context of UN/EDIFACT, the major relevant documents are:

Guidelines & Rules
- UN/EDIFACT WD 9735 EDIFACT Syntax Rules Parts 1,2 and 3
- UN/EDIFACT Message Guidelines Design and Rules (Trade/WP.4/R.840/Rev. 2)
- The UN/EDIFACT Rapporteur' Procedures & Message Documentation Rules
- Recommendations to UN/ECE WP.4 GE.1 on Interactive EDI Within the Context of UN/EDIFACT (Trade/WP.4/R.942)

Directories
- UNTDED: The United Nations Trade Data Element Directory (ISO 7372)
- UNTDID: The United Nations Trade Interchange Directory (which is the current UN/EDIFACT Standards Directory Set), which comprises:
  - EDMD EDIFACT Messages Directory
  - EIMD EDIFACT Interactive Messages Directory
  - ESDD EDIFACT Segments Directory
  - EISD EDIFACT Interactive Segments Directory
  - EDCD EDIFACT Composite Data Elements Directory
  - EICD EDIFACT Interactive Composite Data Elements Directory
  - EDED EDIFACT Data Elements Directory (part of the UNTDED, United Nations Trade Data Element Directory, also released as ISO 7372)
  - EIDD EDIFACT Interactive Data Elements Directory
  - EDCL EDIFACT Codes List Directory
- UN/EDIFACT Draft Directory Set which includes:
  - TRMD Draft Messages Directory
  - TIMD Draft Interactive Messages Directory
  - TRSD Draft Segments Directory
  - TISD Draft Interactive Segments Directory
  - TRCD Draft Composite Data Elements Directory
  - TICD Draft Interactive Composite Data Elements Directory
  - TRED Draft Data Elements Directory
  - TIED Draft Interactive Data Elements Directory

1.5.4 Should message designers not be familiar with these publications, they should consult their national committee/organisation for the Facilitation of International Trade Procedures, or the standardisation organisation in the country responsible for the dissemination of UN/EDIFACT standards, or their regional RT.

1.5.5 All of the documents in the above list are important to message designers, with the UN/EDIFACT CD 9735 EDIFACT Syntax Rules being the proposed international standard for formatting data elements and segments into messages.

1.6 Status of UN/EDIFACT Messages and Directories

1.6.1 Once approved within the UN/ECE WP.4, both messages and directories are accorded a certain status, the meaning of which follows.

1.6.2 Interactive messages can have one of three status levels as follows:
   a) Status 0 - a UN/EDIFACT Interactive Message under Development
   b) Status 1 - a UN/EDIFACT Draft Interactive Message Recommendation
   c) Status 2 - a UNSIM Interactive Message Recommendation

1.6.3 Published UN/EDIFACT directories have one of two designations:
a) Status “S” represents a Standards Directory and
b) Status “D” represents a Draft Directory.

1.6.4 UN/EDIFACT directories are published regularly. Full details can be obtained via regional RT Secretariats, or direct from the UN/ECE WP.4 Secretariat.

1.6.5 The documentation for Status 0 messages is self supporting and is not included in any directory. This documentation refers to a specific draft directory and, when relevant, includes any new segment or amended data elements, as well as new values for coded data elements.

1.7 UN/EDIFACT Standard Message Definition

1.7.1 A UN/EDIFACT Standard Interactive Message (known as a UNSIM) is one which has been approved, published, and which is maintained by the UN/ECE. In this case, the message type, version number, the release number and the controlling agency used in all UNSIM message headers are allocated and controlled only by the UN/ECE. In this documentation the term message(s) can refer to an interactive message at any status.
SECTION 2

I-EDI MESSAGE DESIGN

OVERVIEW
2. **I-EDI MESSAGE DESIGN OVERVIEW**

2.1 **Relationships Between Scenarios and Interactive Messages**

2.1.1 An interactive business transaction is described by a **scenario**. Scenarios describe the relationships and information exchanges between the parties to an interactive business transaction, and the states through which the transaction progresses.

2.1.2 I-EDI Messages are identified in scenarios as the data transferred between two parties which cause a transition of state.

2.1.3 Designers should be familiar with the development of scenarios and the modelling techniques recommended to support scenario and interactive message development.

2.2 **The Building Blocks of I-EDI Messages**

2.2.1 The basic building blocks of I-EDI messages are:

   a) data elements for use in interactive segments, and/or as components of interactive composite data elements;
   
   b) interactive composite data elements;
   
   c) interactive segments (which can be used individually, or as part of segment groups within a message);
   
   d) the structure of the interactive message itself, detailing the order of the interactive segments and/or segment groups.

2.3 **Design of New UN/EDIFACT I-EDI Messages - UNSIMs**

2.3.1 The objective of the design process is to meet interactive data interchange requirements with the minimum of complexity and redundancy. The aim should be:

   a) to support a business requirement which can be generically defined within the scope of a scenario.

   Note: Generic message design should be held as a goal to be achieved for I-EDI messages, but the scope of the term “generic” is likely to be aligned to an I-EDI business case. For example, a scenario developed for interactive passenger reservations would provide the scope for messages to meet the business requirements of users of that scenario. It would, therefore, be designed to be generic across sectors in the industries to which that I-EDI Scenario applied, (e.g. Rail, Air, Ferry, Car Rental, Hotel, Coach, Tour Operators, etc.). This approach allows UN/EDIFACT I-EDI messages to provide the flexibility, standardisation and efficiency needed to meet the I-EDI business need.

   b) to be concise, efficient and simple in terms of function and design.

   Note: Simplicity is a major objective in interactive message design. Over complication creates difficulties in user comprehension, and an unacceptable overhead in the translation process.

2.3.2 I-EDI Messages are described in the UN/EDIFACT Draft Interactive Messages Directory (TIMD). This directory along with the following UN/EDIFACT directories should be utilised as a starting point in developing a new interactive message:

   a) TISD Draft Interactive Segments Directory
   
   b) TICD Draft Interactive Composite Data Elements Directory
   
   c) TIED Draft Interactive Data Elements Directory

   Additionally, it is recommended that other appropriate directories, such as the batch Composite Data Element and Simple Data Element Directories, (TRCD and TRED) should also be utilised if data elements already exist within them which meet the requirements of the designer.

2.3.3 When an I-EDI message is needed, developers should first check whether a UNSIM exists which has been designed for the function in question. If one does exist, they may find that it does not totally meet their requirements, in which case they can request a change or addition to it.

2.3.4 If no such message exists, developers may then submit a “New UNSIM Request” covering the function they require, to the local RT secretariat for processing under RT procedures.
It is recommended that the initial step in I-EDI message design is a business process and data modelling exercise. Output from the business process and data modelling exercise provides the information to begin designing the overall structure of the message.

### 2.4 Designing a New UNSIM

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Analyse business requirements for all relevant communications with business partners.</td>
</tr>
<tr>
<td>2</td>
<td>Model the key aspects of the business environment.</td>
</tr>
<tr>
<td>3</td>
<td>Determine if a scenario exists which covers these key aspects.</td>
</tr>
<tr>
<td>4</td>
<td>If no scenario exists use the business and process models to develop a scenario for the business requirement.</td>
</tr>
<tr>
<td>5</td>
<td>Identify the I-EDI messages needed to satisfy the business function(s) of the scenario.</td>
</tr>
<tr>
<td>6</td>
<td>If I-EDI messages exist in the UN/EDIFACT Draft Interactive Messages Directory (TIMD) which satisfy the business functions, they should be used. If I-EDI messages exist which, if revised, will satisfy the business requirements, then RT procedures should be followed to request the necessary revisions.</td>
</tr>
<tr>
<td>7</td>
<td>If I-EDI messages do not exist in the UN/EDIFACT Draft Interactive Messages Directory (TIMD) which satisfy, or may be revised to satisfy the business functions and it is determined that a new UNSIM is required, a “new UNSIM Request” form should be completed and submitted immediately to the relevant RT Secretariat.</td>
</tr>
<tr>
<td>8</td>
<td>Begin detailed new UNSIM message development in accordance with the Rules and Guidelines specified herein.</td>
</tr>
</tbody>
</table>
SECTION 3
GUIDELINES AND RULES FOR
INTERACTIVE MESSAGE DESIGN
3. GUIDELINES AND RULES FOR INTERACTIVE MESSAGE DESIGN

3.1 Interchange Structure

3.1.1 WD 9735-3 illustrates the hierarchical structure of an interactive UN/EDIFACT transaction.

3.2 Design of Simple Data Elements

3.2.1 General

3.2.1.1 Simple Data Elements are described in the UN/EDIFACT Draft Interactive Data Elements Directory (TIED) and the UN/EDIFACT Draft Data Elements Directory (TRED).

3.2.1.2 After completion of modelling, and after determining that no existing simple data element fulfils the business requirements, an existing simple data element may be suitable for modification or a new simple data element can be designed.

3.2.1.3 To meet I-EDI business requirements, it may be necessary to develop specific simple data elements rather than generic simple data elements which require a qualifier data element to make them usable.

3.2.2 Tag

3.2.2.1 A simple data element is allocated a unique four character code.

Rule 1.: A Simple Data Element shall be allocated a unique four character code. (See TDED conventions).

3.2.3 Functional Definition

3.2.3.1 A simple data element has a unique functional definition (within the UNTDID), which describes the simple data element.

Rule 2.: The functional definition shall reflect the complete purpose of the interactive simple data element.

3.2.4 Naming Conventions

3.2.4.1 A simple data element has a unique name which describes the function of the simple data element in general terms.

3.2.4.2 In order to keep simple data element names consistent throughout the UN/EDIFACT Draft Interactive Data Elements Directory (TIED) several conventions are used. The following rules are specified below and will be used when technically assessing new data elements for I-EDI within UN/EDIFACT.

Rule 3.: Simple data elements that are used to qualify a segment or a composite data element shall have the word “qualifier” placed at the end of the name, and have a variable length up to three characters, specified (an..3).

Rule 4.: Simple data elements (other than qualifiers) which are specified for code values of alphanumeric type with a variable length up to three characters (an..3) shall have the word “coded” placed at the end of the name.

Rule 5.: Simple data elements specified for code values of alphanumeric type with a variable length exceeding three characters (e.g. an..17) shall have the word “identification” placed at the end of the name.

3.2.5 Format

3.2.5.1 Every simple data element has a format. The format may be alphabetic, numeric, or alphanumeric. The length may be either fixed or variable. Where practical, the standard lengths for categories of data element should be followed, for example, the convention for new clear language data elements is to specify a length of an..17, an..35, or an..70.
3.2.6 Data Element Categories

3.2.6.1 There are three categories of simple data elements:

a) data elements, which have a specific meaning and require no qualification;
b) data elements which are qualified to give them a more specific meaning.

This type of data element is associated with another data element, in a composite data element. The component data elements together, give a specific meaning.;
c) qualifiers, which give other data elements a specific meaning.

Except for segment qualifiers, these are always components of a composite data element type.

3.2.7 Explicit Qualification

3.2.7.1 The following rule shall apply to the explicit qualification of simple data elements in I-EDI.

Rule 6.: A simple data element that requires explicit qualification to give a more specific meaning, shall be part of an interactive composite data element.

3.2.8 Implicit Qualification

3.2.8.1 A simple data element type may be implicitly qualified by the functional definition(s) of the interactive message type, interactive segment type and/or interactive composite data element type to which it belongs. Additionally, it may be qualified by its position within an interactive segment or interactive composite data element, in which case an explanatory note will clarify the qualification.

An example of positional qualification is in a segment which has two identical stand-alone data elements, e.g. place/location identification, which are the place of departure and arrival respectively. No qualification other than their position being necessary to determine which element represents which function.

3.2.9 Data Element Design

3.2.9.1 Having identified all of the simple data elements required to satisfy the function of the interactive message under development, designers need to ascertain whether the required simple data elements are included in the current UN/EDIFACT Draft Interactive Data Elements Directory (TIED), by taking the following steps:

Rule 7.: If the required simple data element is found in the current UN/EDIFACT Draft Interactive Data Elements Directory (TIED), or other appropriate directories, and exactly meets the users’ requirements, it shall be specified for use;

Rule 8.: If the required simple data element is found, but it appears that its name, description and/or its format/representation does not exactly meet the users’ requirements, the RT procedures shall be followed to request amendment to the element in question;

Rule 9.: If the required simple data element is not found a “New Simple Data Element Request” must be submitted under the Rapporteur Change Request procedures, with reference to UNTDED as necessary.

In the case of coded data elements:

Rule 10.: If the required coded data element is found and required code value is present in its associated code list, then the element shall be specified for use.

Rule 11.: Any submission or request for a new interactive simple data element must include details of the composite data element or the segment for which it is intended.

Rule 12.: If the required coded data element is found, but the required code value is not present, a “New Code Request” shall be submitted.

Rule 13.: If a “New Data Element” request has been submitted for a coded element, a code request for each code value required for the data element must be submitted, or an existing external code list specified.
3.2.10 Amendment of Existing Functional Definition

3.2.10.1 Any amendment to the functional definition of a interactive simple data element must enhance the existing definition. The basic intent of the interactive simple data element must be unchanged.

**Rule 14.** Amendments to the interactive simple data element structure must be reflected in the functional definition and vice versa.

3.3 Design of Composite Data Elements

3.3.1 General

3.3.1.1 Interactive composite data elements are described in the Draft Interactive Composite Data Elements Directory (TICD).

3.3.1.2 After completion of modelling, and after determining that no existing interactive composite data element fulfils the business requirements, an existing composite data element can be modified or a new interactive composite data element can be designed. Output from the business and data modelling process should provide a message designer with the information to begin designing the overall structure of the interactive composite data element.

3.3.2 Tag

**Rule 15.** An interactive composite data element will be allocated a unique four character alphanumeric code beginning with the character “E”, e.g. E123.

Note: Composite data element tags starting with the character “S” are reserved for UN/EDIFACT service segment composite data element types.

3.3.3 Functional Definition

3.3.3.1 An interactive composite data element has a unique functional definition, which describes the purpose of the composite data element.

**Rule 16.** The functional definition shall reflect the complete purpose of the interactive composite data element.

3.3.4 Naming Conventions

3.3.4.1 An interactive composite data element has a unique name which describes the function of the composite data element in general terms.

3.3.5 Structure

3.3.5.1 An interactive composite data element has a unique structure that fulfils the business function.

**Rule 17.** A new Interactive composite data element shall not contain a complete and identical set of components present in an existing interactive composite data element.

3.3.5.2 To create an interactive composite data element structure, two or more simple data elements are put together in a prescribed sequence.

3.3.5.3 The component data elements of an interactive composite data element relate to the stated functional definition of the interactive composite data element in which they will be used.

**Rule 18.** All interactive composite data elements must be prescribed with an indication of the status of all of its component simple data elements ("M" = Mandatory or "C" = Conditional).

3.3.6 Composite Data Element Design

3.3.6.1 Interactive composite data elements should be developed to meet the interactive composite data element type functional definition by including the most efficient use of simple data elements, with the minimum use of qualifiers. To do this, it may be necessary to develop specific interactive composite data elements rather than qualified generic interactive composite data elements.

3.3.6.2 When an interactive composite data element requires qualification to produce a precise meaning, a qualifying simple data element may be defined within the interactive composite data element. The qualifier
relates to the whole content of the interactive composite data element when it is placed as the first component data element.

3.3.6.3 An interactive composite data element may contain a single simple data element type that is prescribed a finite number of times.

3.3.6.4 There may be multiple occurrences of a component data element(s) specified within an interactive composite data element to satisfy the business requirement.

3.3.6.5 Having identified all of the interactive composite data elements required to satisfy the function of the interactive message under development, designers need to ascertain whether the required interactive composite data elements are included in the current UN/EDIFACT Draft Interactive Composite Data Elements Directory (TICD). Having searched the current UN/EDIFACT Draft Interactive Composite Data Elements Directory (TICD) or other appropriate directories:

Rule 19.: If the required interactive composite data element is found in the current UN/EDIFACT Draft Interactive Composite Data Elements Directory (TICD) or other appropriate directory, and exactly meets the users’ requirements, it shall be specified for use;

Rule 20.: If the required interactive composite data element is found, but it appears that its name, description and/or its format/representation does not exactly meet the users’ requirements, the RT procedures shall be followed to request amendment to the element in question;

Rule 21.: If the required interactive composite data element is not found a “New interactive Composite Data Element Request” must be submitted under the Rapporteur Change Request procedure.

Rule 22.: Any submission or request for a new interactive composite data element must include the tag of the segment(s) for which it is intended.

3.3.7 Component Element Placement

3.3.7.1 When designing interactive composite data elements, the following rule shall apply to the placement of the component simple data elements within the composite.

Rule 23.: Mandatory component data elements shall be placed at the beginning of the interactive composite data element structure. Conditional component simple data elements shall be placed following any mandatory component simple data elements. This rule does not necessarily apply to qualifiers.

3.3.8 Explicit Qualification

3.3.8.1 Both the whole composite data element and its component data elements may be explicitly qualified. Because qualifiers are strictly positional, placing rules based on the mandatory or conditional status of the qualifier cannot apply.

Rule 24.: If an interactive composite data element of three or more component data elements is to be explicitly qualified (i.e. the complete set of component simple data elements contained in an interactive composite data element), then the qualifier shall be placed at the beginning of the set as a component data element.

Rule 25.: Qualifiers of component data elements always follow their associated data element, overriding mandatory/conditional placing (Rule 23).

3.3.9 Implicit Qualification

3.3.9.1 An interactive composite data element may be implicitly qualified by the functional definition of the message and/or segment to which it belongs. Additionally, it may be qualified by its position within a segment, in which case an explanatory note will clarify the qualification.

3.3.10 Amendment of Existing Structure

3.3.10.1 Addition and deletion of simple data elements and/or interactive composite data elements to or from an existing interactive segment structure requires data maintenance request(s) be submitted using the UN/EDIFACT procedures.
Rule 26.: The addition of a component data element to an interactive composite data element must
be to the end of the interactive composite data element. The only exceptions to this are:

a) if a mandatory component data element is approved for insertion in an interactive
composite data element, or:

b) if the component data elements 1131 or 3055 need to be inserted between a coded/clear
pair of component data elements in an existing interactive composite data element.

If either of the amendments are approved, a new tag must be assigned and the original
composite data element shall be marked for deletion. Deletions from and additions to
existing interactive composite data element structures requires data maintenance request(s)
to be submitted using the UN/EDIFACT procedures.

3.3.11 Amendment of Existing Functional Definition

3.3.11.1 Any amendment to the functional definition of an interactive composite data element must enhance
the existing definition. The basic intent of the interactive composite data element must be unchanged.

Rule 27.: Amendments to the interactive composite data element structure must be reflected in the
functional definition and vice versa.

3.4 Design of Segment Types

3.4.1 General

3.4.1.1 Interactive segments are described in the Draft Interactive Segments Directory (TISD).

3.4.1.2 After completion of modelling, and after determining that no existing interactive segment fulfils the
business requirements, an existing interactive segment can be modified or a new interactive segment can be
designed. Output from the business and data modelling process should provide a message designer with the
information to begin designing the overall structure of the interactive segment.

3.4.2 Tag

3.4.2.1 The interactive segment tag is used to identify the interactive segment in a message.

Note: 3 alpha character segment codes starting with the letter “U” (e.g. “UIB, UIH”), are
reserved for use by ISO 9735 and shall not be specified for use in user data interactive segments.

Rule 28.: An interactive segment tag shall be allocated with a unique three letter code but shall not
start with the letter ‘U’. The segment tag shall be unique across both batch and interactive
directories.

3.4.3 Functional Definition

3.4.3.1 An interactive segment has a unique functional definition, describing the purpose of the interactive
segment.

Rule 29.: The functional definition shall reflect the complete purpose of the interactive segment.

3.4.4 Naming Conventions

3.4.4.1 An interactive segment has a unique name which describes the business use of the interactive segment.

3.4.5 Structure

3.4.5.1 An interactive segment has a unique structure that fulfils the business function of the interactive
segment.

Rule 30.: A new interactive segment shall not contain a complete and identical set of components
present in an existing interactive segment.

3.4.5.2 To create an interactive segment structure one or more simple data elements and/or interactive
composite data elements are put together in a prescribed sequence.

3.4.5.3 Simple data elements and interactive composite data elements in an interactive segment relate to the
stated functional definition of the interactive segment.
3.4.6 Segment Design

3.4.6.1 Interactive segments should be composed of one or more efficiently grouped, interactive composite data elements and/or stand-alone data elements and developed to be generic when possible. However, to meet business requirements, it may be necessary to develop specific interactive segments rather than qualified generic segments.

3.4.6.2 Having identified all of the interactive segments required to satisfy the function of the interactive message under development, designers need to ascertain whether the required interactive segments are included in the current UN/EDIFACT Draft Interactive Segment Directory (TICD). Having searched the current UN/EDIFACT Draft Interactive Segment Directory (TICD):

Rule 32.: If the required interactive segment is found in the current UN/EDIFACT Interactive Segment Directory (TISD), and exactly meets the users’ requirements, it shall be specified for use;

Rule 33.: If the required segment is found, but it appears that its name, description and/or its format/representation does not exactly meet the users’ requirements, the RT procedures shall be followed to request amendment to the segment in question;

Rule 34.: If the required segment is not found, a “New Interactive Segment Request” must be submitted under the Rapporteur Change Request procedures, with reference to UNTDED as necessary.

Rule 35.: Any submission or request for a new interactive segment shall include the message name(s) for which the interactive segment is intended.

3.4.7 Data Element Placement

3.4.7.1 The positioning of stand-alone data elements and interactive composite data elements within interactive segments is important to the efficient processing of interactive messages. Therefore, the following rule will be used in the design of new interactive segments for interactive EDI.

Rule 36.: Mandatory stand-alone data elements and mandatory interactive composite data elements shall be placed before conditional elements in the same interactive segment. (Segment qualifiers are exempt from this rule.)

3.4.8 Repetition of Data Elements

3.4.8.1 An interactive composite data element(s) and/or stand-alone data element(s) may repeat within an interactive segment to satisfy the business requirements, by using the repetition separator or multiple occurrences of the same element.

Rule 37.: All elements in an interactive segment must be prescribed with an indication as the maximum number of allowed repeats.

3.4.9 Explicit Qualification

3.4.9.1 When an interactive segment requires qualification to give it a more specific meaning, a qualifier stand-alone data element is placed as the first data element in the interactive segment. The qualifier relates to the whole content of the interactive segment.

Rule 38.: When used to qualify an interactive segment the qualifier stand-alone data element shall be placed as the first data element in the interactive segment.

3.4.10 Implicit Qualification

3.4.10.1 An interactive segment may be implicitly qualified by the functional definition of the message to which it belongs. Additionally, it may be qualified by its position within a message, in which case an explanatory note will clarify the qualification.
3.4.11 Amendment of Existing Structure

**Rule 39.** The addition of a stand-alone data element or a composite data element to an segment shall result in the stand-alone data element or composite data element being added to the end of the segment. The only exceptions to this rule are:

- **a)** if a mandatory stand-alone data element or mandatory composite data element is approved for insertion in an interactive segment;
- **b)** if a stand-alone data element marked for deletion after three years is replaced by its substitute.

If either of the above amendments is approved, a new interactive segment code will be assigned. If amendment a) is approved then the original data element shall be marked for deletion.

3.4.11.1 Addition and deletion of stand-alone data elements and/or composite data elements to or from an existing interactive segment structure requires data maintenance request(s) be submitted using the UN/EDIFACT procedures.

3.4.12 Amendment of Existing Functional Definition

3.4.12.1 Any amendment to the functional definition of an interactive segment must enhance the existing definition. The basic intent of the segment must be unchanged.

**Rule 40.** Amendments to the interactive segment structure must be reflected in the functional definition vice versa.

3.4.13 Special Use of a Segment

3.4.13.1 An interactive segment tag may be sent followed immediately by the interactive segment terminator when all components are conditional and the segment tag carries all the information required for the function, e.g., an application level acknowledge or a trigger segment (see 3.6.11.1).

3.5 Design of Segment Groups

3.5.1 General

3.5.1.1 An interactive message structure may require that segments be grouped to reflect hierarchical relationships in the data. These segment groups will include subordinate segments and/or segment groups.

3.5.2 Tag

3.5.2.1 A segment group does not have a tag.

3.5.3 Functional Definition

3.5.3.1 A segment group has a functional definition, within an interactive message, describing the purpose of the segment group. This functional definition should be placed in the message documentation.

3.5.4 Naming Conventions

3.5.4.1 A segment group does not have a name and is not catalogued in an I-EDI directory.

3.5.5 Structure

3.5.5.1 Segment groups reflect the required relationship between subordinate interactive segment and/or segment groups.

3.5.5.2 The first segment in a segment group must appear only once per occurrence of the group, and is designated as the “trigger” segment for the group which it heads.

**Rule 41.** Every group shall start with a non-repeating mandatory trigger segment.

**Rule 42.** A segment group nested within another segment group shall be headed by its own trigger segment, and cannot be entered other than via the group which precedes it.
Rule 43.: A segment group and all interactive segments of a segment group must be prescribed with an indication of their status (“M” = Mandatory or “C” = Conditional).

3.5.6 Segment Group Design

3.5.6.1 Interactive segment groups should be composed of one or more efficiently grouped interactive segments.

3.5.6.2 Segment groups shall be numbered sequentially from the first group within the message.

3.5.7 Implicit Qualification

3.5.7.1 A trigger segment is the top of the hierarchical relationship between itself and the subordinate interactive segment types and/or segment groups and qualifies the function of the group.

3.5.8 Amendment of Existing Functional Definition

3.5.8.1 Any amendment to the functional definition of an interactive segment group must enhance the existing definition. The basic intent of the segment group must be unchanged.

Rule 44.: Amendments to an interactive segment group structure must be reflected in the functional definition and vice versa.
3.6 Design of Message Types

3.6.1 General

3.6.1.1 Interactive messages are described in the UN/EDIFACT Draft Interactive Messages Directory (TIMD).

3.6.1.2 After completion of modelling, and after determining that no existing interactive message fulfils the current business requirements for I-EDI, an existing interactive message can be modified or a new interactive message can be designed. Output from the business process and data models should provide a message designer with the information to begin designing the overall structure of the interactive message.

3.6.2 Tag

3.6.2.1 Interactive message tags shall be unique and should indicate the business intent of the message name.

Rule 45.: An interactive message type shall be allocated a code of six alphabetical characters. The message tag shall be unique across both batch and interactive directories.

3.6.3 Functional Definition

3.6.3.1 An interactive message has a business purpose. This purpose relates to the context of the scenario(s) in which the interactive message is used.

3.6.3.2 An interactive message has a unique definition, describing the purpose of the message.

Rule 46.: The message definition shall reflect the complete purpose of the interactive message.

3.6.3.3 Interactive message construction allows the capability to perform or convey a variety of functions. Likewise, one or more interactive messages may be required to fulfil a single business purpose, and a single interactive message may have more than one function. (see Interactive Dialogue Header, UIH, in WD 9735-03)

3.6.4 Naming Conventions

3.6.4.1 An interactive message has a unique name which provides an indication of the business purpose and the name should include at least one key word which expresses the main business function or purpose of the interactive message type.

3.6.4.2 The name of the interactive message should be meaningful to persons not necessarily connected with the business area for which the message is designed.

Rule 47.: A new interactive message shall be assigned a unique name which should convey the business intent. The message name shall be unique across both batch and interactive directories.

3.6.5 Structure

3.6.5.1 The structure of an interactive message should reflect the logical and hierarchical data relationships required to satisfy the business purpose. All existing interactive message types (with emphasis placed on those referenced as part of the same I-EDI scenario) should be taken into consideration when designing interactive messages to avoid the creation of multiple messages of similar functionality.

Rule 48.: An interactive message must start with the I-EDI message header UIH segment, and end with the I-EDI message trailer UIT segment. (see UN/EDIFACT CD 9735)

Rule 49.: A proposed new interactive message shall not duplicate the functionality of an existing message previously developed for the same scenario.

Rule 50. At least one additional interactive segment shall appear between the header (UIH) and trailer (UIT) segments. To create the interactive message structure, a number of interactive segments and/or segment groups are put together in a sequential structure. This structure defines the sequence in a message.

3.6.5.2 In an interactive message the explicit purpose of each particular segment should be indicated in the message documentation.
3.6.5.3 For each segment and segment group in the interactive message structure a status is given in the message documentation. The status for an interactive segment or segment group is marked with “M” if its use is mandatory within the message structure or “C” if its use is conditional within the message structure. If “C” is specified for the segment or segment group, the conditions which the interactive segment or segment group(s) should appear may also be specified in the message documentation for clarity. Careful consideration should also be given by message designers as to the use of mandatory interactive segments within a message structure. In addition, designers should recognise that the use of conditional interactive segments may be expressed as mandatory at the user implementation guide level.

Rule 51.: All segment groups, segments and data elements in an interactive message must be prescribed with an indication of their status (“M” = Mandatory or “C” = Conditional).

Rule 52. If any conditions are attached to the use of any segment or segment group within an interactive message, those conditions shall be specified in the appropriate message documentation.

3.6.6 Message Design

3.6.6.1 Every effort should be made to ensure that interactive messages are generically designed for use by all users of an interactive scenario.

3.6.6.2 When creating an interactive message structure, search the Draft Interactive Segments Directory (TISD) to identify the appropriate segments to convey the user data in the message structure.

3.6.6.3 Having identified the interactive message(s) required to satisfy the function under development, designers need to ascertain whether the required interactive message(s) are included in the current UN/EDIFACT Draft Interactive Message Directory (TIMD). Having searched the current UN/EDIFACT Draft Interactive Message Directory (TIMD):

Rule 53.: If the required message is found in the current UN/EDIFACT Interactive Message Directory (TIMD), and exactly meets the users’ requirements, it shall be specified for use;

Rule 54.: If a message is found, but it appears that its name, description and/or its format/representation does not exactly meet the users’ requirements, the RT procedures shall be followed to request amendment to the message in question;

Rule 55.: If the required message is not found a “New Interactive Message Request” must be submitted under the Rapporteur Change Request procedures, with reference to UNTDED as necessary.

Rule 56. The contents of the current Draft Directories shall be used as the starting point for the development of an interactive message.

3.6.7 Placement of Segments and Segment Groups

3.6.7.1 Although segment and segment group placement is not regulated, it is good practice to place stand-alone segments first in messages and segment groups.

3.6.8 Repetition of Segments and Segment Groups

3.6.8.1 Indication shall be provided in the interactive message documentation as to how many times a segment or segment group can be repeated.

Rule 57.: All segments and/or segment groups in an interactive message must be prescribed with an indication as to the maximum number of repetitions allowed.

3.6.9 Segment Type Collision

3.6.9.1 Segment collision problems may occur when:
   a) Two or more segments with identical segment tags appear in an message structure with no mandatory segment with a different tag intervening between them, or
   b) Two or more segments with identical segment tags appear in an message with no mandatory segment group triggered by a segment with a different tag intervening.

Rule 58. Interactive messages shall be designed without segment collision.
3.6.10 Amendment of Existing Functional Definition

3.6.10.1 Any amendment to the functional definition of an interactive message must enhance the existing definition. The basic intent of the interactive message must be unchanged.

Rule 59.: Amendments to the interactive message structure must be reflected in the functional definition and vice versa.

3.6.11 Special Segment Usage

3.6.11.1 It should be noted that only a segment defined as being mandatory in the message and as containing only conditional data elements may be transferred using the segment tag followed by the segment terminator, where there are no data values present (see 3.4.13.1).