DES150: Electronic Data Interchange (EDI) Specification

Abstract

This document is part of the Technical Interface Specification (TIS) for Direct Trader Input (DTI) to CHIEF and for Inventory system linking. It defines the EDIFACT message interface to be used between CHIEF and the CSPs. It specifies the formats and application protocol rules for the messages and service segments used in the CHIEF messages.

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1. Introduction

1.1 Scope

This document is part of the Technical Interface Specification (TIS) for Direct Trader Input (DTI) to CHIEF and for Inventory system linking. It defines the EDIFACT message interface to be used between CHIEF and the CSPs. It specifies the formats and application protocol rules for the messages and service segments used in the CHIEF messages.

The scope, contents and structure of the TIS are described in Reference [1]. CHIEF provides two parallel interfaces for DTI, one screen based for human use and one EDIFACT message based for package and system use.

This document defines the EDIFACT message interface to be used between CHIEF and the CSPs. Its objective is to act, with the other TIS documents, as the technical component of the 'Interchange Agreement' between HMRC and the Trade for on-line CHIEF Electronic Data Interchange (EDI).

The TIS is a definition of the interface between CHIEF and the CSPs, not a definition of the interface to the end system packages. It is therefore the CSP that is the 'end system' with which CHIEF sets up the transport and overlying session connections.

This document identifies the CHIEF message set and its use in message exchanges together with the use of service messages and service segments. It also defines the application protocol rules for the service messages and service segments used by CHIEF.

The EDI messages supported by the CHIEF applications are specified in other TIS documents (see References [4], [5], [6] and [7]).

1.2 Relationship with other TIS Documents

This document relates to other TIS documents as follows:

a. **Overview** (see Reference [1]) contains a general introduction to the TIS, the overall architecture and the contents of the other TIS documents. This includes some general background material on EDIFACT, and such knowledge is assumed here.

b. **Session Control** (see Reference [2]) specifies the way in which sessions are established for EDI (or HCI) message exchange.

c. **EDI for Imports** (see Reference [4]) gives an overview of the handling of Imports by CHIEF and specifies the EDI message interface.

d. **EDI for Exports** (see Reference [5]) gives an overview of the handling of Exports by CHIEF and specifies the EDI message interface.

e. **EDI for Consignment and Movement Control** (see Reference [6]) provides the EDI messages for Import inventory and Export consolidation of consignments and controlling movements.

f. **EDI for Requests and Reports** (see Reference [7]) provides the EDI message interface for information requests and reports for Imports and Exports, and recommended report layouts.

g. **Data Element Definitions** (see Reference [8]) provides the definitions of the data elements used in the EDI messages.

1.3 Requirement

In business terms the requirement is to enable traders to submit electronic declarations to CHIEF for all the Import and Export procedures. For frontier declarations the trade require interactive response times whereas for supplementary declarations batched input may be preferred. To meet this requirement CHIEF provides an interactive EDIFACT message based interface. The CSPs can pass the interactive interface on to traders; they can also provide a batch interface. Customs EDCS supports a batch interface via email.

In addition, the CSPs are provided with an EDIFACT message interface to CHIEF for inventory linking and the receipt of reports for delivery to the trade.

The EDIFACT message interface exists alongside a Human Computer Interface (HCI) (see Reference [3]) supporting interactive screen dialogues, though not all of the transactions are permitted on both interfaces.

1.4 Document Structure

The document is structured as follows:

a. Section 2 EDI OVERVIEW gives an overview of EDIFACT as a syntax for Electronic Data Interchange (EDI) and how it is used interactively within the CHIEF architecture.

b. Section 3 EDI CLIENT SESSIONS describes the mechanisms for the exchange of EDI messages within a client session.

c. Section 4 APPLICATION MESSAGES identifies the EDIFACT messages that are used by CHIEF and the rules for their exchange.

d. Section 5 MESSAGE DEFINITIONS defines the messages used by CHIEF which are not defined in other TIS documents.

1.5 Conventions in the Specification

1.5.1 Data Format

The EDIFACT data element formats are specified more rigorously than the standard EDIFACT conventions permit. In particular, the level B character set includes lower case letters but many alphabetic data elements are restricted to upper case letters only.

Data format specification is of the form:

    <character-set>..<length>

where:

'..' is optional and means variable up to the given <length>. It should be noted that variable length fields can be compressed by removing leading and trailing spaces and leading non-significant zeros if numeric.

Possible <character sets> are:

N - digits only ie. 0-9.

n - numeric ie. 0-9, '.' or ',' for decimal mark, '-' if negative. The length of the field defines the maximum number of significant digits and excludes the sign and decimal mark if permitted for the data element.

A - capital letters only.

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a - capital letters and special characters, namely:

.,-()/'+:=?!"%&*;<> and space

(ie. the level B character set except for the lower case letters and the digits 0-9).

t - text (ie. the full level B character set).

Combinations of these character sets can be specified (e.g. A1N3).

It should be noted that 'a' and 'n' have the same definition as used in EDIFACT element specifications when the character set is level A. The additional CHIEF character sets can be mapped onto the EDIFACT definitions as follows:

N => n or an;

A => a or an;

t => an.

The CHIEF <length> specifications must be compatible with the EDIFACT element definitions:

a. <u>EDIFACT Variable Length</u>. The CHIEF specification can be shorter and variable or fixed. If fixed, the values permitted by CHIEF must not be compressible by EDIFACT rules, eg. no leading zeros if EDIFACT 'n'.

b. <u>EDIFACT Fixed Length</u>. The CHIEF specification must be of the same fixed length.

1.5.2 Transaction Flows

(Sub-)transaction flows are depicted thus:

```
      End User    |     Inventory System      |         CHIEF
   REQUEST-->-- |-------------------------    ---o-->-------
                |A single phase Transaction      |      |
                |consisting of a request       action 1  action 2
                |followed by a response          |      |
                |within a few (say 3)            |      |
                |seconds.                        |      |
   RESPONSE A-< |-------------------------    ---      |
                |                                       |
   RESPONSE B-< |-------------------------    ----------<---|
                |                                       |

                |A subsequent transaction               |
                |spawned from the previous        flow to the
                |transaction for immediate         subsequent
                |processing (ie. occurring        transaction
                |within a few seconds of        triggered by the
                |the completion of the            previous one
                |previous transaction).

                |Further subsequent
                |transactions as required.
```
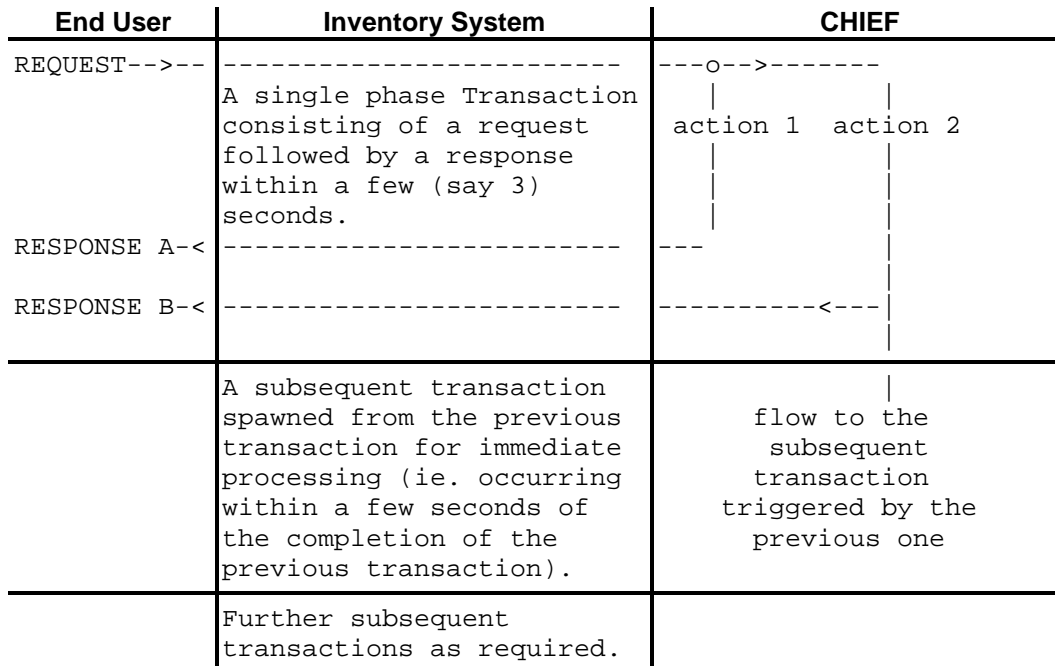
The following conventions are used in the flow diagrams:

`--<--,` `-->--`	Horizontal flow with direction indicated by arrows.

`|     |`
`| or ^`
`|     |`
	Vertical flow from top to bottom except where indicated.

`- - - -`	Broken flow need not be via an Inventory system (eg. CIE).
`[    ]`	Optional data/action.
`{    }`	Only fields that differ from those in the request are returned in the response.

`->--?`
`     |`
`Condition`
`     |`
	The flow continues beyond the condition if the condition is true.

`->--o--` `     |`	Choice of flow (one of the paths is taken as determined by a condition annotated on the path).
`(xref)`	Choice of previous/subsequent sub-dialogues.
`(a)`	Link to a subsequent transaction within a sub-dialogue.

The handling of errors is not shown either for failures of protocol or syntax or for data validation errors (e.g. invalid consignment/entry reference). Such errors will be notified by means of a CONTRL or UKCTRL response.
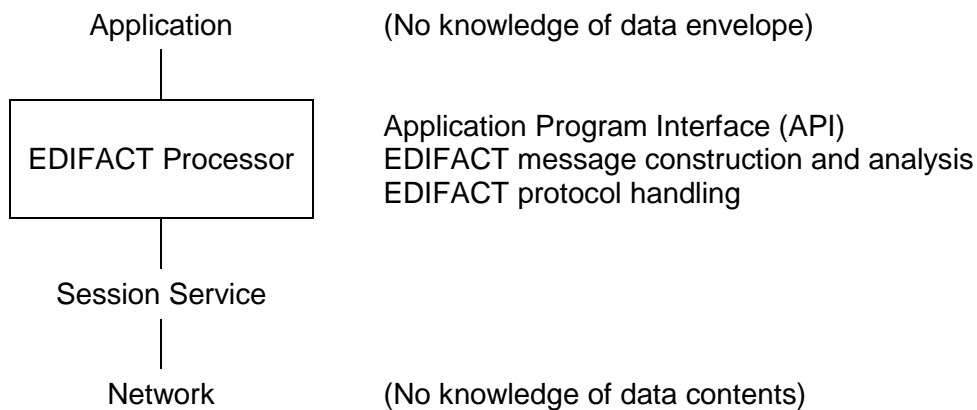
End of section 1

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2. EDI Overview

This section gives an overview of EDIFACT as a syntax for Electronic Data Interchange (EDI) and how it is used interactively within the CHIEF architecture.

2.1 Introduction to EDIFACT

While EDIFACT itself is a syntax definition, its messages can only be exchanged within an actual IT environment. The physical network, the application structure and the supporting system software together define the environment in which EDIFACT messages can be generated, exchanged and analysed. This section describes the principles, the next the implementation aspects.

An 'EDIFACT processor' can be considered as itself consisting of three layers:

a.   An upper layer interfacing with the true application.

b.   A central layer concerned with message construction and analysis.

c.   A lower layer concerned with protocol control.

Application   (No knowledge of data envelope)

EDIFACT Processor   Application Program Interface (API)
                                        EDIFACT message construction and analysis
                                        EDIFACT protocol handling

Session Service

Network   (No knowledge of data contents)

This section looks at the lower protocol layer. This is the application-to-application dialogue.

Section 4 outlines the upper layer – the message set. The central layer, the processor itself, is an essentially mechanical process which is, once message contents and protocol are defined, transparent to this external interface definition. Note that once some general guidelines are established – such as agreeing the message set – progress on protocol and contents can proceed largely independently

2.2 Overall Architecture

In the CHIEF architecture, the provider of a processing function is termed the **server** and the user is termed the **client**. It is the client that initiates the connection and the overlying **client session** (see Section 3.1) in order to access a **service**. On the CHIEF/CSP interface the servers for Import/ Export declarations are on CHIEF and the servers for report delivery are provided by the CSPs.

As described in Reference [1], CHIEF offers two complementary services to the Trade:

a.   EDI messaging – designed for machine users, device independent and EDIFACT encoded. This is defined in this document.

b.   The Human Computer Interface (HCI) – designed for human users, device dependent and ICAB-02 encoded. This is used for screen-based entries and enquiries and is described in Reference [3].

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These two services are supported by a common transport service. On CHIEF the data is also presented to the application in the same way so that, for the bulk of processing, the application is unaware whether it is processing an EDI or HCI transaction.

2.3 EDIFACT and an Interactive Service

CHIEF offers an interactive EDIFACT service where an on-line connection is maintained between CHIEF and the CSP for the duration of a client session. As such it utilises the same underlying interfaces (and works in a similar software environment) as the HCI.

The CHIEF specification uses standard EDIFACT messages exchanged within a client session (see Section 3). There is no requirement to batch messages for transfer within a client session. The equivalent information to that contained in the interchange segments (UNB, UNZ) for identifying the source (client) and destination (server) is established with the client session.

There are no consequent changes at the user segment or element/code list level, the same UNSM (UN Standard Message) (e.g. generated in a standard EDIFACT environment by a package) can be relayed onto the CHIEF Interactive EDIFACT service simply by extracting it from its enclosing interchange segments.

2.4 Transfers, Phases and Transactions

Once a client session as defined above has been set up then **transfers** can take place. In the case of the CHIEF interactive service there is only one message in the transfer.

The CHIEF strategy for transfer acknowledgement is described in Section 3. An enquiry and the response is called a phase (or message-pair). A phase implies acknowledgement at the application level – not the acknowledgement in a lower layer (e.g. transport). Thus on CHIEF each message has its own defined rules for transmission and acknowledgement.

A sequence of phases complete a transaction – the unit of application defined work which in its final phase results in a set of consistent changes in the database. In general, EDI transactions are defined to be single phase, for example, the input of a CUSDEC message and the output of the subsequent CUSRES response – human interaction is normally required before a transaction need be multi-phase. A sequence of transactions may be required to complete a business function, for example, the clearance of an inventory linked import entry (see Section 4.2).

2.5 The Lower Layers

The CHIEF/CSP interface is ISO Transport Services RFC 1006 over TCP /IP. TCP port 102 must be used. See the relevant Interchange Agreement between CHIEF and each end system and http://tools.ietf.org/html/rfc1006.

The ISO/CCITT higher level layers (OSI session, presentation, and application) continue unchanged without knowledge of the fact that they are running on a TCP/IP network.

End of section 2

3. EDI Client Sessions

This section describes the mechanisms for the exchange of EDIFACT messages within a client session.

3.1 Client Session Set Up

The CHIEF session service is defined in Reference [2]. How it is used by the EDI interface is summarised below. The session initiator is termed the client, the provider of the service to which it connects is termed the server. The CHIEF/CSP interface is symmetrical – which end is the server depends on the type of service (see Section 3.4).

For an end-user session, the client system is responsible for authenticating the user before establishing a session with the required service. The start session request contains the information that the server requires to authorize access to the system and to establish the required operating clearance.

3.2 Data Transfer within a Client Session

Within the client session, data is transferred in the form of EDIFACT messages. A transfer consists of a single EDIFACT message. The transaction definition specifies the EDIFACT message type to be used for each enquiry and response message. If any errors are detected in an enquiry message the server returns an error response message. If any error is detected by the client in a response message it is treated as a system failure – logging diagnostic information for investigation and aborting the client session.

EDIFACT service segments (shown below) are used to define each message. UNH and UNT are used to frame each message transmitted within the session. UNS is used to separate sections of a message.

When the message is being sent to a server for onward delivery (e.g. a report to a CSP), the message is further enclosed within UNB and UNZ segments with the destination for final delivery identified in the UNB segment.

Segment	Title	CHIEF Use
UNB	Interchange Header	Identifies the destination for onward delivery of the enclosed message. Not used in client sessions with end-users.
UNH	Message Header	Identifies the type of message that follows.
UNS	Section Control	Sections are required in message definitions where the same segment can occur in different places within the message definition (e.g. NAD in CUSDEC).
UNT	Message Trailer	Required by the syntax rules to mark the end of the message that started with a UNH.
UNZ	Interchange Trailer	Required by the syntax rules to mark the end of the interchange that started with a UNB.

The CHIEF use of the service segments is specified in the message definitions in Section 5 and References [4], [5], [6] and [7].

It should be noted that CHIEF does not make use of the MESSAGE REFERENCE NUMBER in the UNH and UNT segments – within the context of a client session the reference is not required. However, the reference in the UNT is checked against that in the corresponding UNH and the reference is returned in the CONTRL or UKCTRL message when it is used as the response.

Note that within an interactive EDI client session, CHIEF regards receipt of unexpected service segment (e.g. UNB or UNZ within an end-user session) as a protocol violation.

3.3 Client Session Termination

Normal termination involves the client sending an End Session command. The client must however allow for receiving a Forced End from the server at any time and the client can Abort at any time. The commands are defined in Reference [2].

3.4 Classes of EDI Services

Reference [2] identifies a number of services that are provided by CHIEF and the CSPs for EDI transactions. These services together with the client session concurrency that each can support is defined in the Interchange Agreements.

These services can be classified as follows:

a.   Services supporting interactive transactions from end-users (or packages/systems working on their behalf), e.g. traders entering CUSDEC based declarations to CHIEF.

b.   Services supporting the onward delivery to end-users of unsolicited reports/broadcasts generated by another system, e.g. broadcasts and reports originating in CHIEF for delivery to traders by a CSP.

c.   Services supporting inter-system transactions, e.g. the service provided by CHIEF to support inventory messages such as the goods arrival notification derived from a berthing.

3.5 Character Sets

The character set used is defined by the application and is assumed to be carried transparently by the lower layers. According to the standard (see Reference [12]) this can be either by private agreement or by use of EDIFACT options. EDIFACT offers 'Level A' (no lowercase) or 'Level B' (ISO 646 subset) options and a UNA 'Service String Advice' segment to specify non-standard separators. The CHIEF character set and its use is given below.

a.   The UNA Service Advice segment is not used.

b.   The level B character set is a subset of ISO 646. This permits use of the upper and lower case alphabetic characters, the numerals 0 to 9, the space character and the following special characters:

. , - ( ) / ' + : = ? ! " % & * ; < >

In addition, the characters below have the associated functions:

Name	Character code	Use
IS 4	1/12	Segment terminator
IS 3	1/13	Data element separator
IS 1	1/15	Component data element separator

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3.6 Retransmission and Recovery

The underlying protocols used by CHIEF ensure that messages passed to the session layer are either delivered or the session connection is aborted. There is no requirement for the application to retransmit messages within a client session.

The application in the client is responsible for recovery when the underlying session aborts or the client application fails. Such failures can occur when the client is unsure whether a transaction has completed in the server system (committing data to its database) or not.

The client application is responsible for recovery, repeating the transaction as required. The transaction can be repeated in a restarted client session or in a different client session.

It is recommended that the client application uses DECLN-UCR (mandatory for Supplementary Declarations), since that enables CHIEF to detect a repeated transaction and respond with a repeat CUSRES thereby avoiding the creation of duplicate entries.

3.7 Priority

Although there is a business case for more than one class of service offering different turn-round times (e.g. Supplementary declarations are less critical than the transactions involved in clearing goods at the frontier), all CHIEF EDI and HCI traffic runs at the same priority in the same TP service. Though EDIFACT offers a Processing Priority Code at the interchange level CHIEF uses a single priority message service (and no use of 'expedited data').

3.8 Progressive Transfer

The Syntax Implementation Guidelines (Reference [11]) allows successive transmissions to be used to upgrade or amend the previously transmitted data or to add new items.

Such transfers are not used on CHIEF, which requires a complete entry retransmission for amendment.

3.9 Security

Interactive EDI transactions occur within a client session. The same access security checks apply for EDI and HCI client sessions.

The method of connection at the transport level and below ensures that any possible misdirection can be ignored at the application level. Any security requirements must be taken into account in agreeing the physical interface between CHIEF and the CSPs. This interface is detailed in the Interchange Agreement between CHIEF and each end system as specified by HMRC.

3.10 Training

As defined in Reference [2], a client session is established for a purpose which is either operational or training. Within a training client session, training data can be created and maintained, with training data displayed in preference to operational data. CHIEF does not allow any access to training data within an operational client session.

Since the forwarding of reports for onward delivery involves updating queues within CHIEF, only training data can be forwarded within a training client session and only operational data within an operational client session.

A server is required to handle data according to the rules for the purpose of the client session (e.g. to ensure that training output is clearly marked as a TRAINING SPECIMEN). As well as only forwarding training data for onward delivery within a training client session, CHIEF also sets the test indicator in the UNB segment.

Any resulting secondary actions, such as automatic clearance, will also run in the specified purpose.

End of section 3

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4. Application Messages

Sections 2 and 3 examined how messages are exchanged – this section identifies the EDIFACT messages that are used by CHIEF to exchange information.

4.1 Design Principles

a.   The reference versions of the EDIFACT standard and its supporting directories used are those ratified and published by the United Nations in September 1991 (Directory 912), January 2000 (Directory 00A) and May 2004 (Directory 04A).

b.   All messages with UNSM names are defined as proper subsets of the UNSM definitions (see Reference [9]).

c.   All CHIEF bespoke messages are defined using standard segments (see Reference [9]) and comply with the EDIFACT Syntax Implementation Guidelines (see Reference [11]) and related documentation.

d.   In many cases CHIEF data item definitions are more constrained than the data element, as defined in Reference [9], onto which they are mapped in terms of their maximum length and the permitted character sets. The data format specification used by CHIEF is defined in Section 1.5.1.

e.   In some cases HMRC defines specific code lists or specific extensions to existing code lists. These are identified in Reference [8] or in the UK Tariff (see Reference [13]).

f.   Where conditional segments or elements are not used by CHIEF message definitions, they are not necessarily identified in the specifications. It should be noted that a message must conform to the segment definition by including separators to indicate absent elements. It should also be noted that CHIEF rejects messages that contain segments or elements that are not included in the CHIEF specification.

4.2 Business Functions

A business function may be simple, such as sending a system broadcast, or complex such as the pre-lodgement of an inventory linked entry and its subsequent processing through to clearance. A business function is achieved by one or more transactions. The transactions involved in completing the business function can be between different clients and servers and be defined for use at the HCI or EDI or both (e.g. an HCI request to reprint an entry).

The transactions that achieve the business function occur in a sequence defined by the application design. This sequence can be depicted by a flow diagram showing the messages within each transaction and the order of the transactions.

The transaction flows for the processing of import and export entries by CHIEF are defined in References [4], [5], [6] and [7]. The conventions used in these diagrams are specified in Section 1.5.2.

The transactions identified in the flow diagrams are those that occur in client sessions at the CHIEF system interface. The processing of one transaction can generate the input message (e.g. the data of a report) of another transaction. Such a message is output by the application processing a transaction and, as a result of successful completion of the transaction, the message is spooled and queued for the client of a session in which the delivery transaction is to occur. The logical business requirement is satisfied by the generation of the message – the subsequent transaction is part of the physical realisation of the interface (cf. standard print spoolers).

4.3 Message Types used by CHIEF

In a traditional system once the transactions have been designed the contents of messages and the syntax of their fields are a purely internal matter. EDIFACT conformance implies not just an enveloping syntax but the use of UN Standard Messages (UNSMs) made up of standard segments containing elements that use standard code lists.

UNSM's fall into two groups – applications specific for customs use and non-applications specific (called service messages). The CHIEF 'message set' is built from these – with subsets defined as required - and augmented by bespoke messages for the CHIEF specific interface with CSPs (see Section 4.3.2) or where the necessary details cannot be fitted into UNSMs.

CHIEF messages were originally subsets of the EDIFACT Directory 912 Version 2 messages and the Imports Inventory messages continue in that form. Exports Inventory messages utilise EDIFACT Directory 00A version D. The declaration, response and report messages utilise EDIFACT Directory 04A version D. The appropriate UNTDID Directory for each message is identified in the following message lists.

Transactions are formed from these messages. The progress of an entry from initial declaration transaction (EDI or HCI) to clearance/finalisation involves a sequence of these transactions together with interactions at the CHIEF HCI. The transactions and the sequence in which they can occur are defined in References [4], [5], [6] and [7].

4.3.1 UN Standard Messages

The UNSMs (see Reference [9]) are:

CUSDEC (04A)	"Message to permit the transfer of data from a declarant to a Customs administration for the purpose of meeting legislative and/or operational requirements in respect of the declaration of goods for import, export or transit."
CUSRES (04A)	"Message to permit the transfer of data from a Customs administration to the sender of customs data. It may also be used by Customs to transmit electronic Customs clearance of goods".
CONTRL (04A)	"Message syntactically acknowledging or rejecting, with error indication, a received interchange, functional group or message." See Section 5.3.

4.3.1.1 CUSDEC

Subsets of CUSDEC are specified in References [4], [5], [6] and [7] for the different types of import and export declaration that CHIEF supports. Their overall design is endorsed by HMRC as reflecting the UK Customs position. CUSDEC is sent as an input message from a client representing a trader in a CSP system to CHIEF. A CUSDEC message is required for each export or import declaration or information request.

If the CUSDEC message is syntactically incorrect CHIEF responds with a CONTRL message (see Section 5.3). Otherwise CHIEF responds after processing with a CUSRES message, either indicating acceptance or rejection. In all cases the response completes the transaction, though, depending on circumstances, further messages (eg. Inventory Update) may result. Following an error response, the end user is responsible for correcting the declaration/request and resubmitting it to CHIEF.

CUSDEC is also used as an output message for Export accompanying documents (SAD Copy 3 and EAD).

4.3.1.2 CUSRES

CUSRES is used as the response to a CUSDEC message when CHIEF has created an entry for a valid declaration, when an information request has been received or for (most) report messages that CHIEF sends to CSPs for onward delivery to a trader either as an EDI message or a formatted print. Subsets of CUSRES are defined as required by the different types of import and export declaration supported by CHIEF. Their overall design is endorsed by HMRC in that it reflects the UK Customs policy position.

An 'Error CUSRES' message (see Section 5.4) is returned when the declaration is rejected by the entry processing application (i.e. for a validation error or a FEC challenge).

As stated in Section 3.2, any error in a response message is treated as a system failure.

4.3.2 UKC Bespoke Messages

Bespoke messages are defined for the CHIEF specific interface for DTI and Inventory system linking to support such functions as inventory amendment and the output of reports to traders.

The bespoke message types are:

UKCTRL (912) The message acknowledging, or rejecting with an error indication, a received inventory or report message (see Section 5.2).

UKCIUM (912) The message which CHIEF sends to inform an Inventory system of the consignment details which have been declared to CHIEF and the status and current route assigned to the entry (Imports, Reference [6]).

UKCIRM (912) The message which an Inventory system sends to inform CHIEF of the arrival of the goods and the match status of the details sent by CHIEF in a UKCIUM message with those defined for the consignment (Imports, Reference [6]).

UKCINF (00A) The message which CHIEF sends to an Inventory system to report Licence Usage (Imports and Exports, Reference [7]).

UKCINV (00A) The message which CHIEF sends to an Inventory system or an Inventory system sends to CHIEF for movement control and related enquiries (Exports, References [6] and [7]).

UKCRES (04A) The amendment report message that CHIEF sends to CSPs for onward delivery to a trader either as an EDI message or a formatted print. Similar to CUSRES but with minor extensions (Imports and Exports, Reference [7]).

End of section 4

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5. Message Definitions

This section defines the use by CHIEF of those error response messages common to other volumes of the TIS. It assumes a working knowledge of the EDIFACT standard (see Reference [12]) and the relevant message definitions and the message diagrams below use EDIFACT conventions.

5.1 Conventions used in the Message Definitions

5.1.1 Message Branching Diagrams

The message diagrams follow the standard EDIFACT format and include the UNH/UNT service segments that bound each message, as defined in Reference [9].

Segments can be mandatory or conditional, signified by M or C beneath the segment name; the number following gives the maximum occurrences possible for that segment. For mandatory segments the minimum number is one; for conditional it is zero.

5.1.2 Message Specification Tables

The message specifications detail how the CHIEF data elements are mapped to the elements of an EDIFACT message. A given message specification can cover many variants with the data elements that can occur for a particular variant detailed in an associated data element table.

The data elements, as specified in Reference [8], are mapped onto standard EDIFACT segments identifying the specific data element, optionally within a composite and specifying any associated qualifier codes. The Responsible Agency (DE 3055) is only used when the coding is not as defined for the EU Harmonised SAD.

The tables are defined in the order in which the segments occur within the message definition and the elements occur within the segments.

The columns of the tables are used as follows:

1. The first column identifies the section of the message (i.e. H - header, D - detail, S - summary) and the segment group in which the segment occurs.

2. The 'Data Element' columns identify the EDIFACT Segment; the Composite/Simple Elements; and the Components of a compound element.

3. .The 'Value' column gives the required literal value (in quotes) of an element (qualifier, code list, responsible agency) or the CHIEF data element name (see Reference [8]). Elements that are not used are identified by the null literal "".

4. The 'Notes' column, as well as giving general information, is used to detail the presence ("M" if mandatory or "C" if conditional or optional).

It should be noted that:

a. Elements and segments are omitted from a message when they do not contain data and are not required to support a subordinate segment.

b. Occurrences of a segment may be transmitted in any order.

c. Where data is mapped into a composite that can repeat within a segment (CST only), the composites have positional significance.

d. CHIEF will ignore a repeating, optional or conditional segment where no data is supplied in any of the fields irrespective of the field condition (mandatory, optional, conditional) i.e., CHIEF will not verify and report errors when there are mandatory fields within such segments.

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5.2 UKCTRL

The UKCTRL message can be sent by a CHIEF or by a CSP server as an acknowledgement or error response to an EDIFACT message from a client. It is never used as an input message from a client.

If any error is detected by the client in a response message it is treated as a system failure – logging diagnostic information for investigation and aborting the client session.

A UKCTRL message is not enclosed in an interchange and is not used to reject or acknowledge at the interchange level or functional group level. Where CHIEF uses the interchange framing segments (see Section 3.2) there is only one enclosed message.

Where UKCTRL is used as a positive acknowledgement only the UCX segment is present; where it is used to report errors then UCR and UCD segments are also present.

5.2.1 Branching Diagram

The branching diagram for the UKCTRL is:

```
         _____
         |      |      |
        UNH   Gr.1   UNT
        M 1   M 1    M 1
              UCM
              M 1
           ____|____
           |        |
          UCX      Gr.2
          M 1      C999
                   UCR
                   M 1
                    |
                   Gr.3
                   C 5
                   UCD
                   M 1
                    |
                   FTX
                   C 1
```

5.2.2 Message Specification

Section Group	Data Element			Value	Notes
	UNH	0062		SYS-MRN	M
		S009	0065	"UKCTRL"	M
			0052	"1"	M
			0054	"912"	M
			0051	"UK"	M
			0057	"109100"	M
H1	UCM	S012	0062	MSG-MRN	M Input Message Reference
			0068	MSG-SYS-CAR	C
		S009	0065	MSG-TYPE	M Input Message Identifier
			0052	MSG-VSN	M
			0054	MSG-REL-NO	M
			0051	MSG-CNTR-AGNCY	M
			0057	MSG-ASG-CODE	M
H1	UCX	0083		ACTION-CODE	M Message Level Action and Error Codes
		0085		MSG-ERROR-CODE	C
H2	UCR	0096		SEG-NO	M Segment Error Indication
		0085		SEG-ERROR-CODE	C
H3	UCD	S011	0098	ELEMENT-NO	M Data Element Indication
			0104	COMPONENT-NO	C
			0085	DATA-ERROR-CODE	C
H3	FTX	4451		"AAO"	M
		4453		""	
		C107		""	
		C108	4440	DATA-ERROR-TXT	O
	UNT	0074		Number of segments	M
		0062		SYS-MRN	M

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5.3 CONTRL

The CONTRL message is used as the rejection response to an Import or Export declaration or request (CUSDEC) for reporting low level syntax errors (e.g. missing segments, elements too long), security problems (e.g. transaction not permitted) and irrecoverable application failures. Application detected errors, including character set and format errors in data elements, are reported in an error CUSRES (see Section 5.4).

5.3.1 Branching Diagram

The branching diagram for the declaration rejection subset of the CONTRL message is:

```
     _____
    |      |      |         |
   UNH    UCI   Gr.1       UNT
   M 1    M 1    M 1       M 1
                 UCM
                 M 1
                  |
                 Gr.2
                 C999
                 UCS
                 M 1
                  |
                 UCD
                 C99
```
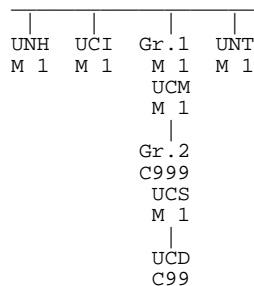
5.3.2 Message Specification

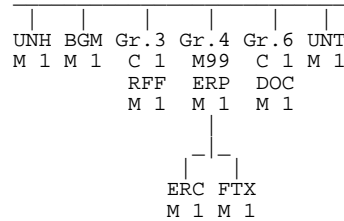| Section Group	Data Element			Value	Notes
	UNH	0062		SYS-MRN	M
		S009	0065	"CONTRL"	M
			0052	"4"	M
			0054	"1"	M
			0051	"UN"	M
		0068		SYS-CAR	O – value from CUSDEC if supplied (see Note a).
H0	UCI	0020		"DTICHIEFEDI"	M
		S002	0004	AGENT-ROLE	M
		S003	0010	"CHIEF"	M
		0083		"4"	M – this level and all lower levels rejected
H1	UCM	0062		MSG-MRN	M)
		S009	0065	MSG-TYPE	M)
			0052	MSG-VSN	M) – Elements supplied if in the CUSDEC (see Note a).
			0054	MSG-REL-NO	M)
			0051	MSG-CNTR-AGNCY	M)
			0057	MSG-ASG-CODE	M)
		0083		ACTION-CODE	M
		0085		MSG-ERROR-CODE	C)
		0135		SEG-TAG	C) – If error in UNH or UNT
		S011	0098	ELEMENT-NO	C)
			0104	COMPONENT-NO	C)
for each segment with an error					
H2	UCS (999)	0096		SEG-NO	M
		0085		SEG-ERROR-CODE	C – only supplied when there are no data errors
for each data element with an error					
H2	UCD (99)	0085		DATA-ERROR-CODE	M
		S011	0098	ELEMENT-NO	M
			0104	COMPONENT-NO	C
	UNT	0074		SEG-CNT	M
		0062		SYS-MRN	M

Notes:

a. The reflected data element may be truncated, have non-EDIFACT characters replaced by "!", or be a single "!" if the element is missing (and mandatory).

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5.4 Error CUSRES

The 04A CUSRES message is used as the rejection response (from processing) to an Import or Export declaration or request.

5.4.1 Branching Diagram

```
        _____
        |     |     |     |     |     |
       UNH   BGM  Gr.3  Gr.4  Gr.6   UNT
       M 1   M 1   C 1   M99   C 1   M 1
                   RFF   ERP   DOC
                   M 1   M 1   M 1
                          |
                        _ | _
                        |   |
                       ERC  FTX
                       M 1  M 1
```

5.4.2 Message Specification

Section Group	Data Element			Value	Notes
	UNH	0062		SYS-MRN	M
		S009	0065	"CUSRES"	M
			0052	"D"	M
			0054	"04A"	M
			0051	"UN"	M
			0057	"109" + HMRC-ASG-CODE	M – value from CUSDEC
		0068		SYS-CAR	O – value from CUSDEC if supplied
H0	BGM	C002	1001	MESSAGE-CODE	M – value from CUSDEC
			1131	""	
			3055	"109"	M
			1000	RESPONSE-CRRN	C – Not currently output
		C106		""	
			1225	"27"	M
H3	RFF	C506	1153	"ABO"	
			1154	DECLN-UCR	C
			1156	DECLN-PART-NO	C
H4	ERP (99)	C701	1049	""	M
			1052	ELEMENT-NO	C
			1054	COMPONENT-NO	C
		C853	9166	SEG-TAG	C
			1050	SEG-NO	M
			1159	"5"	
H4	ERC	C901	9321	ERROR-CODE	M
			1131	""	
			3055	"109"	
H4	FTX	4451		"AAO"	
		4453		""	
		C107		""	
		C108	4440	ERROR-TXT	M
H6	DOC	C002	1001	"960"	
		C503	1004	TDR-OWN-REF-ENT	C
	UNT	0074		SEG-CNT	M
		0062		SYS-MRN	M

End of section 5

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6. Glossary and references

6.1 Glossary

See USM 102 – CHIEF glossary and abbreviations

6.2 References

Ref No.	Title	Document reference
1.	TIS : OVERVIEW	DES 110
2.	TIS : SYSTEM CONNECTION AND SESSION CONTROL	DES 111
3.	TIS : HUMAN COMPUTER INTERFACE (HCI) GUIDE	DES 214
4.	TIS : EDI FOR IMPORTS	DES 205
5.	TIS : EDI FOR EXPORTS	DES 208
6.	TIS : EDI FOR CONSIGNMENT AND MOVEMENT CONTROL	DES 242
7.	TIS : EDI FOR REQUESTS AND REPORTS	DES 222
8.	TIS : DATA ELEMENT DEFINITIONS	DES 209
9.	UNITED NATIONS TRADE DATA INTERCHANGE DIRECTORY (UNTDID) (http://www.unece.org/trade/untdid/d04a/d04a.zip or earlier equivalent)	UNECE
10.	UN/EDIFACT INTERACTIVE MESSAGE DESIGN GUIDELINES (http://www.unece.org/trade/untdid/download/r1237.pdf)	UNECE
11.	UN/EDIFACT SYNTAX IMPLEMENTATION GUIDELINES (http://www.unece.org/trade/untdid/texts/d423.htm)	UNECE
12.	ISO 9735-3:2002 EDIFACT APPLICATION LEVEL SYNTAX RULES (http://www.gefeg.com/jswg/v41/data/v41-9735-3.pdf equivalent to the formal ISO 9735-3 publication)	UN/CEFACT
13.	INTEGRATED TARIFF OF THE UNITED KINGDOM	HMRC

End of section 6

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Appendices

Appendix A: Document control

Document version history:

Version	Date	Change Reference	Comments
			For previous history, see version 3.2 (BT).
3.3	07/12/2009		Removed BT logo and BT specific details
4.0	06/03/2012	EARS 17668016	Transposed on to Aspire Crown Copyright template. As a result no sidelining is shown. Clarification of the CHIEF handling of repeating EDIFACT segments when no data is supplied (5.1.2 new sub-para (d))
			.

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