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UN/EDIFACT MESSAGE AND CODE HANDBOOK

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Submitted by the UN/EDIFACT Steering Group (ESG)*

The Meeting of Experts is expected to:
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Version 1.0

UN/EDIFACT

MESSAGE AND CODE HANDBOOK

Best Practices for Designers

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Comments

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General Introduction

The Message and Code Handbook (MACH) is a set of guidelines and best practices for Message Designers and Technical Assessment Groups. The MACH aims to bridge the gap between the Message Design Rules (MDRs) and the production of a message according to the Rules for Presentation of Standardised Message and Directories Documentation (TRADE/WP.4/R.1023 and its subsequent revisions). The guidance contained within the MACH is based upon several years experience of UN/EDIFACT message design and assessment. By documenting advice which was previously only provided verbally, it is hoped that the MACH will raise the level of quality and understanding of the UN/EDIFACT standard. Improving the quality of the source language will also make it easier for external parties to translate the directories into other languages; an important consideration for a global standard.

One of the main objectives of the MACH is to transfer a larger degree of responsibility for message quality to the message submittor. This cannot be accomplished without detailed guidance. The UN/EDIFACT process has done much to ensure quality assurance at the end of the message development cycle, but this has occasionally resulted in a procedural bottleneck in the latter stages. By transferring knowledge (and with it more responsibility) to the message developer, it is hoped that there will be a lower Data Maintenance Request rejection rate in the future. The local Technical Assessment Group (TAG) and the Joint Technical Assessment Group (JTAG) will still be available to provide hands-on advice but there should be fewer DMRs requiring resolution, leading potentially to faster production of directories. In the context of empowerment, the UN/EDIFACT Working Group (EWG) will assume the task of producing UN/EDIFACT directories, so this step of re-addressing the balance of quality is seen as an important one.

The MACH is divided into three parts, each dealing with a significant area of message design:

Part 1 - *Guidelines on when to design a message* - provides a better understanding for the context in which a new batch EDI message should be designed. It also explains the common usage of batch EDI message features such as message type, document/message name, message function, etc.

Part II - *Preparing Message Boilerplates* - aims to establish consistent criteria for deciding what information to state in each of the sections of the message boilerplate. Through the use of examples to illustrate good practice it has been possible to answer the six classic analytical questions with respect to boilerplates: the who, when, why, where, what and how.

Part III - *Guidelines for Code Names and Definitions* - is a comprehensive set of guidelines for developing names and definitions for UN/EDIFACT Code Values. Traditionally, the development of codes has been the Achilles' heel of the UN/EDIFACT process since there has been very little guidance in this area. Each year a high percentage of code requests is referred to JTAG for resolution based upon the fact that the name of the code does not match the description. The aim of the set of guidelines in part III is to reduce significantly the percentage rate of code rejection.

Required Reading

Each part of the Message and Code Handbook makes reference to specific documents which will aid the understanding of those individual parts. However, on a general basis, knowledge of the following UN/EDIFACT documents is assumed as a prerequisite to the whole handbook:

I. The EDIFACT Syntax (ISO 9735)
II. The Batch EDI Message Design Rules (TRADE/WP.4/R.840/Rev.4)
III. The Interactive EDI Message Design Rules (TRADE/WP.4/GE.1/R.1237)
IV. Rules for Presentation of Standardised Message and Directories Documentation (TRADE/WP.4/R.1023/Rev.3)
V. Technical Assessment Checklist (Batch and Interactive)
VI. The UN/EDIFACT Directory

PART I - GUIDELINES ON WHEN TO DESIGN A MESSAGE

1. Background

Part I of the Message and Code Handbook - *Guidelines on when to design a message* - provides a better understanding for the context in which a new batch EDI message should be designed. It also provides guidance on the common usage of batch EDI message features such as message type, document/message name, message function, etc.

1.1 Requirements Analysis

The primary purpose of the UN/EDIFACT process is to provide standard messages to users to cover their information exchange needs. In theory, taking into account the diversity of information exchange supporting all kinds of business, the number of messages that may be standardised, if not infinite, is great. However, the design approach adopted by UN/EDIFACT of using generic rather than specific data structures promotes reusability and hence helps to limit the number of potential messages. This decision was taken in order to ensure that the UN/EDIFACT standard is not merely a collection of disparate structures corresponding to specific requirements. Rather, the generic approach is based upon shared common exchange structures and allows for the design of fewer structures to support a wide range of requirements thus reducing the maintenance work load

The generic approach does not only apply to the structural components of the message (segments, composite data elements and simple data elements) but also to the messages themselves. These generic principles, which are in place to provide universal and multi-sectoral use, include, but are not limited to, prohibiting the duplication (or overlap) of function and prohibiting the duplication of data structure names.

As part of the generic approach, message design should follow some basic consistency principles:

- reusability of UN/EDIFACT data structures in a message;
- reusability of UN/EDIFACT data structures across message versions;
- a consistent relationship between user data and the corresponding UN/EDIFACT data structures;
- a consistent way of handling and processing the messages.

The reusability of UN/EDIFACT data structures, except for messages, is already largely covered through common use of supporting directories.

The reusability of UN/EDIFACT data structures across message versions is largely achieved via the version/release procedures and the maintenance rules which relate to upwards compatibility.

Consistency in the relationship between user data and UN/EDIFACT data structures is addressed by the Message Design Rules and initiatives like the harmonisation of Message Implementation Guides (MIGs). Nevertheless, it will take time to be fully achieved and a degree of care is required to avoid disturbing the installed user base.

Consistency in the way that messages are designed is an issue that has been partially addressed by the Message Design Rules. More guidance is required in order to achieve the ultimate goal that, as far as possible, one piece of user data can be captured by one and only one UN/EDIFACT data structure (segment, composite or data element). Similarly, a set of user data (for example, person identification details, allowance or charge description, contact and communication information) should always be handled using the same segment or segment group.

A set of recommended best design practices in the Technical Assessment Checklist may considerably improve data consistency, ease the technical assessment phase and ease the message design phase by solving some basic issues. For example, there is no clear guidance on when to design a new message instead of reusing an existing one. Also, there is a lack of consistency in the way that messages are changed, deleted and acknowledged. Additionally, there is no common guidance on the way in which key processing attributes (business function, business activity, data processing activity, usage case, occurrence of usage case) are provided. On this latter point, the UN/EDIFACT directory set illustrates that a full range of solutions exists:

- messages which are limited to a sub-sector (e.g. container handing within the transport sector);
- messages with a limited functional scope (e.g. the container messages);
- messages with a very wide scope (e.g. GESMES, APERAK);
- messages which are bi-directional;
- messages which are uni-directional (e.g. all request and all response messages);
- messages which cover several processing activities (e.g. original, change, deletion, response, acknowledgement);
- messages which are limited to one processing activity (e.g. ORDERS, ORDCHG, ORDRSP).

In some cases, this diversity in message design may be based on well defined business requirements but, unfortunately, it is often the result of inconsistent design practices, inconsistent usage of existing structures and variable interpretations of the rules and guidelines. The fact that the rules have been open to interpretation and that there are significant gaps in the provision of guidance are issues that contribute most to the extent of the diversity.

1.2 References

Business and Information Modelling Framework (Trade/WP.4/1995/CRP.21)

2. Message Functionality

Consistent guidelines for the design of batch UN/EDIFACT messages can be provided by drawing comparisons between the design philosophies of UN/EDIFACT and Business and Information Modelling (BIM). In order to make the comparison, though, it is necessary first of all to provide terms and definitions to explain the terminology being used, and then to describe BIM and UN/EDIFACT independently.

(Note that for readers who are familiar with UN/EDIFACT and BIM design philosophies and terminology, it is possible to move directly to the guidelines in section 2.5.)

2.1 Terms and definitions

The following terms and definitions are applicable to section two:

TERM	**DEFINITION**
Function	The function of an object is its main goal. The function can be viewed as an attribute either of an object, or of an entity (e.g. function of a message).When identified by its business function (e.g. ordering function), however, the function can be seen as an entity.
Message function	Description of the intended use of a message. It is generally equivalent to the business function which makes use of it or which generates it (such as ordering, order; invoicing, invoice; etc.). The information content of the message (insurance claim notification, directory definition, etc.) may also add clarification to the description of the message function.
Business function	A business function is a set of activities performed in order to achieve a goal in a business environment. The name of the business function is generally a verb which corresponds to an action (e.g. ordering, invoicing, paying, etc.).
Activity	An activity is an elementary action which has a limited goal from a business or data processing view point.
Data processing function	A data processing function is a set of activities performed in order to achieve a goal in a data processing environment, e.g. receiving data, storing data, retrieving data, checking data. A data processing function is independent of the type of business which is performed.
Message type	A message type identifies an EDI message specification in a given standard.
Message	A message is a set of data which is formatted according to a message type. It often has a document equivalent. It may correspond to either a class of documents (e.g. orders) or a sub-class (e.g. blanket order).

TERM	DEFINITION
Message profile	A message profile is the way in which a message type is used in a given business or data processing context.

2.2 Business and information modelling principles

A business or data process can be represented by a series of decomposition diagrams in a model. A decomposition diagram describes activities at a given level of abstraction. In IDEF0, the modelling methodology referred to by UN/EDIFACT, all sets of actions irrespective of the level of decomposition are considered as activities.

In the context of the Message and Code Handbook (MACH), a distinction is made between activities at the lower level of decomposition and activities at higher levels of decomposition. Only those at the lower level of decomposition will be designated as activities; those at the higher level will be designated either as sub-functions or functions.

An activity, then, should be considered as the lower level decomposition of a process. The basic criteria for an activity is that it should:

- occur over a period of time,
- have an identified purpose,
- create some kind of output.

A sub-function is a set of activities which is not considered as a stand alone set of information with significance from a business or data processing perspective. The basic criteria for a sub-function is that it should:

- occur over a period of time,
- have an identified purpose,
- not create by itself any kind of output (only the component activities do),
- be an intermediate level of decomposition which, as such, has no particular business relevance.

A function is a set of activities or sub-functions which is considered as a stand alone set of information with significance from a business perspective. Therefore, in a given business, a function is generally considered as one of the main parts of the business process and it is usually referred to by most of the parties involved in the business. The basic criteria for a named process is that it should:

- occur over a period of time,
- have an identified purpose,
- not create by itself any kind of output (only the component activities do),
- be at a level of decomposition which has a business relevance.

In most cases, especially in an EDI context, a decomposition diagram combines business activities and data processing activities. The diagram’s main goal is to describe the information flows and activities needed to support business.

2.3 UN/EDIFACT principles

The UN/EDIFACT standard includes the following concepts for batch EDI messages:

Concept	**Description**	**Segment/ Data Element**
Interchange	A sequence of messages.	UNB-UNZ
Application reference	Identification of the application area. (The reference is usually assigned the same code as the message type if all messages of the interchange are of the same type.)	UNB/0026
Acknowledgement request	Code specified by the sender requesting an acknowledgement of the interchange (by the use of a CONTRL message).	UNB/0031
Message	The message is the basic EDI unit. In most cases, it is considered as equivalent to an electronic document.	UNH-UNT
Message type	The message type is the standard specification of the format (content and structure) of the message	UNH/S009
Document/message name and number	A message or document name is used to specify the business usage of the message type (e.g. hire invoice as opposed to a sales invoice). The message or document can also be identified by a number.	BGM
Message function	Code indicating the data processing operation on the message (such as cancellation, deletion, original, request, response, etc.).	BGM/1225
Response type	Code specifying the type of acknowledgement required or transmitted.	BGM/4343

The **interchange** is the communication between partners in the form of a structured set of messages and service segments starting with an interchange control header (UNB) and ending with an interchange control trailer (UNZ).

The **application reference** is used to identify the application which will process the message. It is not the identification of a software or implementation component (hardware or software) but rather the application domain to which the message processing belongs (invoicing, ordering).

The **acknowledgement request** is used to identify whether the interchange is to be syntactically acknowledged. If requested, a CONTRL message will be returned

indicating the receipt of the interchange and the correctness (from a syntax point of view) of the contained messages and/or groups.

The **message** is the data set which is interchanged at a given time for a specific purpose. It is formatted in accordance with the message type to which it corresponds. In the same way as a paper document, it can be transmitted in several steps. As it is a processing unit, it can support several data processing operations (cancellation, change, re-transmission, etc.). Notably, these operations, except for the transmission sequence, cannot be specified using the UNH segment only. A full identification and specification of these operations requires the use of the BGM segment. As a consequence, the use of the UNH segment without the BGM segment in a message type is normally not sufficient to support all data processing operations in the message and may result in a misuse of the concepts and data of the UNH segment.

The **Document/message name** (BGM) is a further specification of the usage of the message type. As the BGM segment has its own identification number which is different from the message number, it enables the distinction between the message, which is transmission oriented, and the document, which is business and application oriented. It also enables the distinction and identification of the different operations on a document. The message number can change for each operation while the document number often remains the same.

The **message function** is used to specify the data processing operations on the message (e.g. original, cancellation, deletion, re-transmission, etc.). The basic idea is that the message or document remains as a stand alone business entity but may evolve during the process depending on the data processing operations made on it. A version-release mechanism should be used in order to trace the message life cycle in a logical manner.

The current definition of the **response type** in the BGM segment is ambiguous. It combines two concepts: the type of document which is expected in response to the message; and the type of response the current transmission of the message relates to in the message life cycle. The response type data element should be limited to the first case. The second case should be covered by data element 1001/1000 in BGM as it is indicates potential usage profiles (response or acknowledgement) of the message type. It is linked to the original message but this can be achieved using specific reference mechanisms such as the Common access reference (data element 0068) which was defined for this purpose.

2.4 Comparisons between BIM and UN/EDIFACT

Through the comparison of the concepts from Business and Information Modelling with those in UN/EDIFACT a set of equivalencies and best practices can be identified.

1. The concept of *application* and *message type* in UN/EDIFACT is very close to the concept of *function*. In most cases, a function has a single basic data model which is common to all flows between the activities of the function. This means that all the flows of the function have more or less the same structure

and sometimes a degree of similarity in content. As a consequence, a function should, in most cases, require only one message type. Depending on the level of genericity of the message type and the level of specificity of the function, several functions may use the same message type.

2. The concept of *message function* in UN/EDIFACT is very close to the concept of *activity* and *flow*. Therefore, all the attributes of the message/document (especially in BGM) should be used to identify the different flows between the activities of the function and the data processing operations which are performed on them.

In summary, a standard message should correspond to a business function. The message function should be equivalent to the purpose or goal of the business function. Furthermore, a flow between two activities should be identified as a document (data elements 1001/1000 in the BGM segment) and a data processing operation on the document should be identified using data element 1225 in the BGM segment.

2.5 Guidelines

The following set of guidelines assists in the determination of when to design a new batch EDI message.

1 A message type should correspond to a business function; in principle, there should be only one message type per business function. The identification of a business function is subjective and is finally to be agreed upon by the users and those involved in the business. Note, however, that a business function is not an activity, but it can be decomposed into activities.

2 Two message types may have the same or a similar structure. The basic criteria in the design of a message type is not its structure but rather the function to which it corresponds. Message types with similar structures may be an indication of similarities at business function level. Similar message types may be combined in a more generic message type supporting several business functions if it is agreeable to parties involved in the business domains. Merging of message types should not result in business ambiguities (business organisation or processing difficulties).

3 The BGM segment should be used to enable the identification of the different message profiles and the different operations on the message. The new version of the message design rules stipulates that a message must be specified with a BGM segment.

4 The function of the message type should be the same as the description of the business function(s).

5 The functional (or business) profiles of use of the message type corresponding to documents or business flows should be identified using data elements 1001/1000 in the BGM segment.

6 The various data processing operations for the message should be identified

using data element 1225 in BGM.

7 Data elements 1225/4343 should not be used to specify whether or not the message is a response, nor what type of response it is. The response is a business usage case of the message type and should be identified by using data elements 1001/1000.

8 The response type data element (BGM/4343) should be limited to the identification of the type of document which is expected in response to the message

PART II - PREPARING MESSAGE BOILERPLATES

1. Background

1.1 Assumptions

Part II of the Message and Code Handbook - *Preparing Message Boilerplates* - has been written according to the following assumptions:

- There is currently very little guidance about how to prepare the content of the message boilerplate.
- The absence of written guidance means that it is more difficult to manage a high level of consistency in the boilerplates.
- Message Design (MD) Groups invest a lot of time and effort in the development of boilerplates - the provision of guidance will help to reduce this development time and establish the quality level.
- Groups which prepare Message Implementation Guidelines (MIGs) will benefit from boilerplates which are well written and precise.
- Boilerplates which are written precisely in the English language will be easier to translate into other languages.
- Parties who were not involved in the initial message design will have a greater understanding of how the message (including all components) was intended to be used.

1.2 Problem Analysis

The number of messages being added to the UN/EDIFACT directory is steadily increasing and so too is the number of new message design groups. With these increases, it is very important to document the practices used to prepare boilerplates and also to highlight some of the common mistakes that are made. By preparing a set of guidelines a level of quality is established. Conversely, the absence of guidelines places the emphasis on groups remembering what has been done before and thus makes it more difficult to maintain a high quality level.

One of the main areas of confusion in preparing message boilerplates is deciding what text to put into each of the sections, since some of the sections are very closely related. This has led to the problem where, for example, vital information is difficult to find or not available in some messages.

1.3 References

The only reference relating to boilerplate documentation is in regard to the layout of each of the sections: *Rules for Presentation of Standardised Message and Directories Documentation (TRADE/WP.4/R.1023/Rev.3).*

2. Overview

UN/EDIFACT Message Boilerplates are divided into sections in accordance with the criteria specified in the *Rules for Presentation of Standardised Message and Directories Documentation*. However, rather than describe the content of each section (some of which simply contain standard text), only those sections which cause most difficulty for the message design groups and technical assessment groups have been covered within this report. These are the:

- Functional Definition section
- Field of Application section
- Message Terms and Definitions section
- Principles section
- Data Segment Clarification section

Examples have been provided to describe how to prepare the content for each section. In some cases 'imperfect' examples have been selected from the message boilerplates, as well as model examples, in order to illustrate a point. It should be noted that the imperfect examples are a reflection of the lack of guidance provided so far rather than any other factor.

3. The Functional Definition Section

This section relates to section 1.1 of the standard message boilerplate layout as shown in the *Rules for Presentation of Standardised Message and Directories Documentation.*

There are two main conclusions from an analysis of the Functional Definition sections of all of the messages in the directory. Firstly, the large majority of the Functional Definitions are of a good standard since they are concise and leave no room for misinterpretation. Secondly, it is possible to identify three problems from the analysis of the 'imperfect' Functional Definition sections. The three problems are:

- failing to state the parties responsible for sending or receiving the message (or stating the information in a different section).
- placing text in the Functional Definition which would be better placed in the Principles section (such as the relationship to other messages).
- stating terms and definitions in the Functional Definition which would be better placed in the section dedicated to terms and definitions.

These three problems are part of the wider issue of not knowing where in the boilerplate to state information about different aspects of a message. The best way of solving these problems (and the overall issue) is to provide more guidance about what should be stated in each particular section in the message. This part of the report is focused on improving the Functional Definition section.

3.1 A simple format for the Functional Definition section

A corollary of the conclusions from the analysis is that it is possible to offer guidance about what constitutes a good functional definition. At its most basic, the functional definition should state the party which sends the message, the party which receives the message and the purpose of the message (i.e. what it is for). This leads to a simple default formula:

'The [*state full Message name*] message is sent between the [*state sender(s)*] and the [*state receiver(s)*] for the purpose of [*state function(s)*].'

Obviously, there are many variations of the same formula which can be used and the order of the information is unimportant. However, the maxim remains the same: state the sender(s), the receiver(s) and the function(s) of the message. For example, if there are multiple senders, receivers and sub-functions, then three simple statements will suffice:

'The [*state full Message name*] message can be sent by the [*state senders*]. It can be received by [*state receivers*]. It is used for the purpose of [*list functions*].'

3.2 Extracts from a sample of Functional Definition sections

The following tables show a sample of Functional Definition sections extracted from EDIFACT messages. The first table provides a set of model Functional Definitions which obey the formula given above. By contrast, the second table provides a set of imperfect Functional Definitions along with suggestions for improvement.

Message	**Model extract from Functional Definition section**	**Comments**
CUSDEC	This Customs Declaration Message (CUSDEC) permits 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. The message may also be used, for example: - to transmit data from an exporter in one country to an importer in another country; - to transmit consignment data from one customs authority administration to another; - to transmit data from a customs authority to other government agencies and/or interested administrations; - to transmit data from a declarant to the appropriate data collection agency on the movement of goods between statistical territories.	Good example of a functional definition for a message with multiple related functions.
CREADV	A Credit Advice is sent by the Account Servicing Financial Institution to the Account Owner to inform the Account Owner that its account has been or will be credited for a specified amount on the date indicated, in settlement of the referenced business transaction(s).	A good 'text book' example.
IFTIAG	The International Forwarding and Transport Dangerous Cargo List Message is a message: - from the party acting on behalf of the carrier for the gathering of the dangerous goods information of the cargo in a certain port or place of call or loading, - to the party acting on behalf of the carrier in the next port or place of call or discharge, conveying the information relating to one conveyance or voyage of a means of transport such as a vessel, train, truck or barge, on the dangerous goods being carried on board - irrespective of the operations that will take place in the next port of call.	A good functional definition since it follows the formula: *state sender, state receiver, state function.*
PAYDUC	The Payroll Deductions Advice is sent by a party (usually an employer or its representative) to a service providing organisation, to detail payments by payroll deductions, on behalf of employees, made to the service providing organisation.	A good functional definition. The text in parentheses helps the reader to understand, through the use of examples, which type of party can act as the sender.

In order to understand better how to prepare good Functional Descriptions it is necessary also to analyse the imperfect examples. Where appropriate, guidance is given regarding how to improve the imperfections, though there is no intention to apply the guidelines retroactively.

Message	Imperfect example of Functional Description section	Comments
INSPRE	The Insurance Premium message is used by communicating parties to notify the recipient about premiums due from a client. All information needed to produce a detailed request for payment can be sent.	This functional description would benefit greatly from examples of the communicating parties. (See PAYDUC above.) In addition, several uses of the message are given in the Principles section - these would be better placed in the Functional Definition section.
PAXLST	This Passenger List Message (PAXLST) permits the transfer of passenger/crew data from a Customs, Immigration or other designated authority in the country of departure to the appropriate authorities in the country of arrival of the means of transport. Where national privacy legislation permits, and with the agreement of all parties involved, this message may also be exchanged between carriers and Customs, Immigration, Police or any designated authorities. This transfer of data may occur upon departure from the sending agency and prior to arrival of the vessel/ flight at the receiving agency. This is to permit the designated authority at the place of destination to screen this data and take timely decisions related to the clearance of passengers and crew. The transfer of data may also occur prior to departure, carriers may transmit passenger listings to customs and immigration for pre-arrival clearance. Endorsement of this message by the Customs Cooperation Council does not necessarily mean endorsement by national Immigration or Police authorities, nor does it place any obligations on parties to apply the message.	The first two paragraphs are, without a doubt, well placed within the functional description. However, the latter three paragraphs would be better placed within the Principles section of the message boilerplate.
QALITY	A message to enable the transmission of the results of tests performed to satisfy a specified product or process requirement. The content includes, but is not limited to, test data and measurements, statistical information, and the testing methods employed.	There is no mention of the sender or recipient.

3.3 Summary

To summarise thus far: The Functional Definition states *who* the message is for and *why* it was designed (the purpose).

4. Field of Application Section

This section relates to section 1.2 of the standard message boilerplate layout as shown in the *Rules for Presentation of Standardised Message and Directories Documentation.*

The Field of Application section is used to indicate *where* a message can be used. Since UN/EDIFACT has an international focus, messages are designed to cover international requirements. The majority of messages are also defined to be independent of business or industries, with the intention being to cover as wide a range of requirements as possible. Therefore a default text can be stated in the Field of Application section of the boilerplate. From an analysis of the D.95A Message Directory, 81 messages out of the 101 messages listed contain the default text only. The remaining 20 messages contain different wording either in addition to the default, or instead of the default text.

4.1 Default text

The default text is:

'The [*state message name*] may be applied for both national and international trade[1]. It is based on universal practice and is not dependent on the type of business or industry.'

4.2 Variations of the default

From the analysis of the 20 messages that do not conform to this simple default, all but one can be considered to be valid variations on a theme. The variations come in several guises:

- Several messages (e.g. CONDRO, CONDRA) may be applicable to many sectors but have been designed by one particular industry sector (e.g. the Construction sector) with examples from that industry. This clarification is stated for the benefit of the user.
- Several messages (e.g. INSPRE, PRPAID) have also indicated the name of the sector for which the message was designed (e.g. insurance).

4.3 Deviation from the default

The one message with a Field of Application section that has information in addition to the default or variations thereof, is CONAPW. It could be argued that much of the information (all but the final paragraph) is about *who* can use the message which is more pertinent to the Functional Definition section.

[1] Note: In some messages, the word 'transactions' or 'applications' is used instead of the word 'trade'.

4.4 Summary

To summarise thus far: The Functional Definition section states *who* the message is for and *why* it was designed (the purpose). The Field of Application section states *where* the message is applicable for use.

5. The Principles Section

This section relates to section 1.3 of the standard message boilerplate layout as shown in the *Rules for Presentation of Standardised Message and Directories Documentation.*

The Principles section is closely related to the Functional Definition section. In fact, the distinction between the sections has become blurred over the years, so much so that some messages contain text in the Principles section that should be in the Functional definition and vice versa. The problem is mainly due to the fact that there has been no guidance on how to make the distinction.

The first step to making the distinction between the sections clearer has already been covered in this paper through defining the contents of the Functional Definition. The contents of the Principles section is more difficult to define clearly, as there are more variables involved. However, from an analysis of the directories, there is a common set of guidelines that can be determined.

This common set of guidelines (shown below) leads to the conclusion that the Principles section should be used to provide information about what considerations dictated the message design, and when the message should be sent, not in terms of time but in terms of the pre-conditions that must be satisfied prior to message transmission. The relationship with other messages may also be stated - often it is one of the conditions that one message must be sent in response to another.

5.1 Guidelines for preparing the Principles section

1. If the message is related to, or sent as a response to, another message or transaction, then the relationship should be stated.

   Note that in the vast majority of cases, the relationship between messages stated in the Principles section is described textually. However, the relationship between messages is sometimes, though infrequently, shown as a simple illustration of message flows. If this latter technique is used then the diagram should be ‘high-level’ rather than a complex scenario model, since it is much more difficult to reach international agreement on complex scenario information. From a practical presentation point of view, the message flow diagram shall be limited to the use of ASCII characters. (For an example of a high level message flow diagram, refer to the BAPLIE message or the ITRGRP message.)

Message	Model extract from the Principles section
CONDRA	'CONDRA will refer to the message CONDRO, previously received by the business parties….'
BANSTA	'A BANSTA message may cover the response given to any previously sent message, such as a commercial or payment instruction, a request for information etc. This message provides a means to report on errors and inconsistencies found in the original message at application level.'
IFTMCS	'The party providing the transport services will send an instruction contract status message, usually after receipt of the instruction message.'

2. State the relationship (e.g. one-to-one, one-to-many) between the main entities in the message. Also, identify whether one or more business transactions can be sent per message.

Message	Model extract from the Principles section
CUSDEC	'The design principles adopted allow for referencing one or more commercial documents pertaining to the same declaration and for the grouping of document lines into a single customs item.'
DEBADV	A Debit Advice may cover the financial settlement of one or more commercial trade transactions, such as invoices, credit notes, debit notes, etc.
IFTDGN	'A Dangerous goods message may contain several consignments. A consignment may contain several goods items/ dangerous goods classes. Each goods item can only contain one dangerous goods class.'
INSPRE	'The Insurance Premium Message refers to one single insurance contract.'
RECECO	'One credit cover may relate to one or more line covers. One credit cover may relate to one or more order covers. For each distinct period there is only one line cover. One credit cover must relate to only one buyer. One credit cover must relate to one seller.'
SANCRT	'A certificate may cover several product items. A certificate should however be limited to product items of the same type or category.'

3. State any design considerations of a related nature that have been specifically excluded. (Note: This technique is often employed when distinguishing between messages used in different domains or messages that are of a similar, though distinct, nature.)

Message	Model extract from the Principles section
BANSTA	'It [BANSTA] is not intended to report on syntactical errors or to provide a non-repudiation response.'
CONDRA	'CONDRA is the EDIFACT message to administer the exchange of engineering/ CAD files. The message itself does not consist of any engineering or graphical information. This information will be transferred within files written….'
CREADV	'It [CREADV] is not intended for use in securities trading.'
IFTSTA	Data requirements for tracking equipment where equipment is not associated with a consignment (such as repair container) are NOT addressed in this message.
REQDOC	Its [REQDOC] use should be limited to requesting documents for which there is no other more specific message already provided (e.g. Request for Quotation).

4. State any business or legal principles that need to be explicitly obeyed. (Note: It is often more appropriate to state legal and business information in an Interchange Agreement.)

Message	Model extract from the Principles section

Message	Model extract from the Principles section
COMDIS	'If part of the invoice is disputed, then as a consequence the whole invoice is disputed.'
IFTMCS	'The message can replace the actual contractual document such as for instance a Waybill, under those circumstances where there are no legal or other restrictions.
PAYMUL	'The only way to modify a Multiple Payment Order message is to cancel the whole message or part thereof (e.g. by the use of the FINCAN message).'
REMADV	'Where remittance advice relates to a dispute, the message: - does not necessarily relate to one settlement date - is not necessarily a notice for a payment to be made'
SANCRT	'Inclusion of standard endorsements or generic textual declarations in the certificate is discouraged. It is recommended that these and other certification protocol requirements be accounted for outside the certificate in individual trading partner agreements.'

5. State conformance requirements to officially recognised codes of practice.

Message	Model extract from the Principles section
DOCAMA	'Unless otherwise specified, the documentary credit amendment is subject to the Uniform Customs and Practices for Documentary Credits, International Chamber of Commerce, Paris, France, which are in effect on the date of origination.'

6. If the message is intended to work in conjunction with the exchange of associated data (e.g. external objects) then this should be stated, along with an indication of the cross-referencing techniques used.

Message	Model extract from the Principles section
CONDRA	'CONDRA is the EDIFACT message to administer the exchange of engineering/ CAD files. The message itself does not consist of any engineering or graphical information. This information will be transferred within files written in existing standard graphical exchange formats or native formats, referred to within the message as external file reference to identify each of these files. The nature of the engineering files and its content is not relevant for the syntax of the EDIFACT message.

5.2 Pitfalls in preparing the Principles section

There are a number of potential pitfalls that should be avoided when stating the Principles section in message documentation. By avoiding the pitfalls, Message Designers and TAGs lower the level of maintenance that may be required, lower the level of duplication and raise the level of understanding. The pitfalls are shown below along with some examples which illustrate the point.

1. Do not specify how often (i.e. in terms of time) the message should be sent. Instead specify when the message should be sent in terms of the pre-conditions that must be satisfied prior to message transmission.

Good Example	Rationale
The message is transmitted upon arrival of the goods, or where national legislation permits, prior to the arrival of the conveyance.	By relating the message to the conditions of 'arrival of goods' or, 'where national legislation permits, prior to the arrival of the conveyance' the circumstances which lead to the transmission of the message are clear.

Imperfect Example	Rationale
The message can be sent once or twice per day depending upon the circumstances.	The circumstances for sending the message are not provided. It is better to relate the message to business flows or actions.

2. Do not include the tags or names of directory items (segments, data elements, code values) in the Principles section.

Imperfect Example	Rationale
Goods item information can be related to the corresponding containers by linking the goods item group (GID) to the container details group(s) (EQD) by means of the SGP segment.	Duplication of information in data segment clarification section. From a maintenance perspective, it is easy to overlook the principles section if the message structure is changed, thus leading to conflicting information.

3. Do not include segment group numbers in the Principles section. This also applies to the Data Segment Clarification section.

Good Example	Rationale
The Insurance Premium Payment message structure is as follows: a. general information valid for the whole message b. information about the involved parties c. information about paid, partly paid or not paid insurance premiums d. total amounts valid for the whole message.	If it is important to give a high-level overview of the message design principles then, for maintenance reasons, it is better not to refer to segment group numbers.

Imperfect Example	Rationale
Identification of administrative information concerning the interchange partners (Gr. 2)	Segment group numbers should only be stated in the data segment clarification section and the segment table. If the message structure is modified then the message designer would have to make major changes in the boilerplate if the segment group numbers are stated in multiple places.

4. Do not list Terms and Definitions in the Principles section.

(Note: Until recently there has not been a section within the boilerplate dedicated to the purpose of stating terms and definitions specific to the clarification of the message text. However, this facility will be available in section 3.2 - 'Message Terms and Definitions'- of the next revision of the *Rules for Presentation of Standardised Message and Directories Documentation*.)

Imperfect Example	**Rationale**
'A number of generic transport terms are used in this specification, to be described as: * MODE OF TRANSPORT: The method of transport used for the conveyance of goods or persons, e.g. by rail, by road, by sea. * MEANS OF TRANSPORT: The vehicle used for the transport of goods or persons, e.g. aircraft, truck, vessel.'	In order to make the distinction clear about what should and what should not go into the Principles section, all Terms and Definitions should be placed in the relevant section in the Boilerplate (i.e. section 3.2 - Message Terms and Definitions).

5. Only state the function(s) of the message in the Principles section when both of the following conditions apply:

- the function(s) have already been stated in the Functional Definition(s) section, and
- the function(s) are stated only in order to understand what considerations dictated the message design, when the message is to be transmitted or, if appropriate, the relationship with other messages.

(Note that this leads to the tenet that the prime section for stating function(s) is in the Functional Definition and that the function(s) may only be repeated to aid textual understanding.)

Good example	**Rationale**
When using the message for requesting catalogue data only one catalogue may be referenced.	The function of the message is stated in order to explain a design principle. (Note: This example assumes that the function of requesting catalogue data has been stated already in the Functional Definition.)

Imperfect example	**Rationale**
Typical uses of the Request for Document Message are to request information from a data base (e.g. requesting a copy of a test certificate), requesting catalogue data, and requesting statements of account.	As the text is only stating the uses of the message (and not the design considerations), it is information that would be better placed in the Functional Definition section.

6. Only state the sending and receiving parties of the message in the Principles section when both of the following conditions apply:

- the parties have already been stated in the Functional Definition(s) section, and
- the parties are stated only in order to understand what considerations dictated the message design, when the message is to be transmitted or, if appropriate, the relationship with other messages.

(Note that this leads to the tenet that the prime section for stating parties is in the Functional Definition and that they may only be repeated to aid textual understanding.)

Good example	**Rationale**
A buyer may order one or more goods items or services.	One of the principles of design is that one or more goods items or services may be ordered. The party (buyer) is being stated only as a means to aid the understanding of the design principles. (Note: The example assumes that the party - buyer - has been stated in the Functional Definition section.)

Imperfect example	**Rationale**
Receiving parties are: Solicitor Sending parties are: Magistrates courts, Courts of Appeal.	The Functional Description should be used to indicate who the message users are. The Principles section should indicate when the message is to be used and the design considerations involved.

5.3 Summary

To summarise thus far: The Functional Definition section states *who* the message is for and *why* it was designed (the purpose). The Field of Application section states *where* the message is applicable for use. The Principles section states *what* design constraints were applied in the design of the message and *when* it should be sent (in terms of the pre-conditions that must be completed prior to message transmission).

6. Message Terms and Definitions

This section relates to section 3.2 of the standard message boilerplate layout as shown in the *Rules for Presentation of Standardised Message and Directories Documentation.*

The Message Terms and Definitions section is a new section that has been added to the message boilerplate. The section was designed as a result of the fact that several message boilerplates contain a set of terms and definitions in the Principles section as there was no other alternative. The new section is dedicated specifically for the definition of specialist terms which are used within the other sections of the boilerplate.

The suggested format for Message Terms and Definitions is as follows:

- State the terms in alphabetical order,
- On the first line, state the name of the term in uppercase characters followed by the colon character,
- On the next line, state the definition of the term.

This results in the layout:

NAME OF TERM:
Definition of term used within the message boilerplate.

For example:

MEANS OF TRANSPORT:
The vehicle used for the transport of goods or persons, e.g. aircraft, truck, vessel.

7. The Data Segment Clarification Section

This section relates to section 4.1 of the standard message boilerplate layout as shown in the *Rules for Presentation of Standardised Message and Directories Documentation.*

The Data Segment Clarification section of the boilerplate is the key to understanding *how* segments extracted from the UN/EDIFACT segment directory can fulfil the Functional Definition of the message in accordance with the criteria stipulated in the Principles section.

The most frequent problem in the Data Segment Clarification section stems from the fact that the segment function as stated in the segment directory is extracted for use in a particular message along with the segment tag and name. The first step towards improving the quality of message documentation is to prohibit the practice of extracting the segment function verbatim (or a slight variation of it) from the directory without adding anything to it. Segments necessarily have a generic description in the segment directory, but when they are chosen for use in a particular message it follows that they are chosen for a reason. If this reason is not indicated in the message boilerplate (in the Data Segment Clarification section) then vital contextual information is lost. In the case where the segments are non-repeating, the exact use of the segment should be indicated. In the case of repeating segments, examples of use should be provided. Note that the segment function may be extracted from the segment directory for use in the Data Segment Clarification section, but only when additional contextual information (such as an example) is added.

7.1 Introductory text

The first paragraph for the Data Segment Clarification section is standard text which appears in every UN/EDIFACT message:

Standard first paragraph in Data Segment Clarification section:

This section should be read in conjunction with the Branching Diagram and the Segment Table which indicate mandatory, conditional and repeating requirements.

In the vast majority of cases the standard first paragraph is followed by the description of each segment and segment group stated in the order in which they are specified in the segment table.

However, in several messages - such as AUTHOR, BANSTA and CREMUL - the introductory first paragraph is followed by an overview of how the message is structured. This is a useful technique if the message has several definable sections or parts to it. *However, if this technique is employed there should be no reference to segment group numbers for maintenance reasons* (i.e. if a new segment group is added to the message, then the textual references to the groups may be overlooked, thereby leading to inaccuracy). Instead, segment groups should be referenced by stating the intent of the segment group. For example, a segment group in the header section, whose prime intent is to provide names and addresses, should be referred to as 'The Name and Address segment group in the header section.' A segment group in the detail section of a message whose primary intent is to give line item information should be referred to as 'The Line Item details segment group in the detail section.' Often, it is the trigger segment that provides the information about the general intent of the segment group.

The example shown below is an extract from the Data Segment Clarification Section of the AUTHOR message. If a new segment group was added between group 1 and 2, much of the text below would have to be altered because segment group numbers are quoted. It would therefore be better to refer to the intent of the segment group rather than to the segment group numbers.

Extract from the Data Segment Clarification section of the AUTHOR message:

This section should be read in conjunction with the Branching Diagram and the Segment Table which indicate mandatory, conditional and repeating requirements.

The following semantic principles applying to the message are intended to facilitate the understanding of the message.

The Authorization message is structured in three levels: A, B, and C.

Level A Segment Groups 1, 2, 3 and 9 contains general data related to the whole message.

Level B Segment Groups 4 and 5 contains data identifying the message or transaction to be authorized.

Level C Segment Groups 6 to 8 contains the authorization.

The structure of the message is designed to allow several B levels, each B level being followed by its related C levels.

Where a choice of code or text is given, only the code element should be used wherever possible.

7.2 Guidelines for describing segment groups

An analysis of the UN/EDIFACT message directory indicates that segment groups are generally well described. The following points are evident from the analysis:

- The key is to keep the description simple and to provide a high level summary of how the segments in the group may be used. The description should not be so general that it is without value and should not be at the level of specificity normally found in Message Implementation Guidelines. The description should be

a balance between these two extremes.

- Introduce the statement of the segment group description with: 'A group of segments to specify …' or 'A group of segments to indicate…' or a similar variation.
- For maintenance reasons, do not refer to other segment groups by quoting the segment group number. Instead, refer to another segment group by stating the general intent (or purpose) of the group. For example, a segment group in the header section, whose prime intent is to provide names and addresses, should be referred to as 'The Name and Address segment group in the header section.'
- It is not always necessary to give an indication of the use of each segment in the segment group since many groups are quite large and the individual descriptions of the segments, immediately following the segment group description, will provide more detail. However, an overview of the main segments is useful.
- If an overview of the segments is required within the segment group description, it is recommended the segments are described in the order in which they are specified in the segment group as shown in the segment table.
- If a segment group is only used under certain conditions, then these conditions should be made known.

Segment Group	**Message**	**Model description of segment group in Data Segment Clarification section**	**Analysis**
Segment group 1: NAD-CTA-COM	COMDIS	A group of segments identifying the name and address of the parties involved in the transaction and their contacts.	A simple example of how to describe perhaps the most common grouping of segments in UN/EDIFACT messages. The description of each of the individual segments following the segment group description will provide examples of use.
Segment group 7: DGS-FTX-MEA-SG8	COSTCO	A group of segments to specify dangerous goods details related to the goods item. One goods item may be in different dangerous goods classes.	Note that the second sentence provides a useful reminder of a design principle which relates directly to the segment group being described.
Segment group 8: QTY-GIN-DTM	INVRPT	A group of segments providing package quantities with package identification and relevant date/time information.	Simple high level description of a segment group.

7.3 Guidelines for describing segments

1. The description of a segment should not be so general that it is without value and should not be at the level of specificity normally found in Message Implementation Guidelines. The description should be a balance between these two extremes.

Segment	Message	Model description of a segment in Data Segment Clarification section	Analysis
TDT, Details of transport	VESDEP	A segment to identify the transport details of the departing vessel.	The description is at the correct information level. If the description had omitted 'of the departing vessel', vital information would have been lost, thus rendering it meaningless.
ATT, Attribute	SUPMAN	A segment providing the member's sex or marital status details.	Written at the correct level of specificity. There would have been no clarity if the description had instead stated: 'A segment specifying members' attributes'.

2. If a segment is specified as non-repeating (i.e. with a maximum number of occurrences of one) the description in the Data Segment Clarification section should state exactly the intended purpose of the segment.

All of the following examples are of non-repeating segments.

Segment	Message	Model description of a non-repeating segment in Data Segment Clarification section	Analysis
DTM, Date/ time/ period	BANSTA (position 0030)	A segment specifying the date and, if required, the time the message is created.	There is no ambiguity about how this segment is to be used.
DTM, Date/ time/ period	BANSTA (position 0410)	A segment identifying the validation date/ time.	This example and the previous example illustrate another reason for giving examples. Segments can be specified in more than one place in a message.
IMD, Item description	SAFHAZ	A segment identifying a hazardous component of a substance.	The description of IMD in the segment directory is: 'To describe an item in either an industry or free format.' If this was simply copied into the SAFHAZ message, the user would have no idea how to use the segment.
RFF, Reference	DOCADV	A segment identifying the documentary credit number.	Good description - exact.
PAI, Payment Instructions	REMADV	A segment specifying the conditions, guarantee, method and channel of payment for the Remittance Advice.	The function of PAI as stated in the segment directory is: 'To specify the instructions for payment.' Its use in REMADV is made very clear by the additional context information in the Data Segment Clarification section.

3. If a segment is specified as repeating (i.e. with a maximum number of occurrences of more than one) the description in the Data Segment Clarification section should provide examples of the intended usage of the segment. (Note: Do not state actual code values, code names or definitions verbatim as these may change - rather give the intent of the code.)

All of the following examples are of repeating segments

Segment	**Message**	**Model description of a repeating segment in Data Segment Clarification section**	**Analysis**
NAD, Name and address	CALINF	A segment to identify a name and address of a party, such as: - message sender - message recipient - ordering customer/principal - ordering customer agent	The message design group has provided clear examples which will assist whichever group implements the message. Note that the examples do not list code value names but they are given in such a way that makes it easy for the implementor to reconcile with the code list.
PAI, Payment instructions	ORDERS	A segment requesting or confirming conditions of payment, guarantee and method of payment for the whole order. An example of the use of this segment is to specify that a documentary credit will be used.	Good description.
RFF, Reference	CODECO (Position 0040)	A segment to express a reference which applies to the entire message, such as: - reference to previous message - container announcement reference number	Good description - exact.
RFF, Reference	CODECO (Position 0070)	A segment to provide a reference for the liner service, such as: - conference - marketing organization - syndicate - vessel sharing agreement	Examples provide good context information. The user can distinguish between how to use this repeating segment from how to use the same segment type in position 0040 (see above) which also repeats.
CTA, Communica-tion contact	IFTDGN	A segment to identify a communication number of a person or department to whom communication should be directed, e.g. e-mail number, telefax number, telephone number.	Even though the main text is the same as the segment directory, the examples provide added value.

The imperfect examples provided in the next table are shown in order substantiate the fact that examples of segment usage greatly improve the description of segments in the data segment clarification section.

Segment	**Message**	**Imperfect description of a repeating segment in the Data Segment Clarification section**	**Analysis**

Segment	Message	Imperfect description of a repeating segment in the Data Segment Clarification section	Analysis
DTM, Date/ time/ period	WKGRDC	A segment specifying the relevant date or time.	Statement of the obvious.
CTA, Contact information	IFTCCA	A segment to identify a person or department to whom communication should be directed.	This description is identical to the directory description - it therefore adds nothing.
NAD, Name and address	RDRMES	A segment to identify the relevant parties.	No added value. Examples would provide more indication of context.
MOA, Monetary amount	CONEST	The monetary amount component is recorded in this segment.	No added value.

4. When describing segments, other than the trigger segment, within a segment group, an explicit reference to the trigger segment is not enough on its own to provide contextual information for the segment in question. Examples should also be provided in accordance with the guidelines above.

   Rationale: The message design rules and syntax stipulate that the trigger segment is mandatory and starts a segment group. Therefore, by definition, all segments within a group must relate to the trigger segment. Merely referring to the trigger segment does not describe how the non-trigger segment may be used.

All of the following examples are extracted from descriptions of non-trigger segments (in the Data Segment Clarification section) which are specified in segment groups:

Segment	Message	Model description of a non-trigger segment in a segment group (extracted from the Data Segment Clarification section)	Analysis
DTM, Date/ time/ period	APERAK	A segment to specify the date and time of the referenced document/message.	This segment comes after the trigger segment RFF which is used to provide the document reference number. The purpose of the segment is clear without making an explicit reference to RFF.
LOC, Place/location identification	CONDPV	A segment giving more specific location information of the party specified in the NAD segment e.g. internal site/building number.	This is a valid reference to the trigger segment as it is supplemented by an example of how the LOC segment itself is used.
DTM Date/ time/ period	CONDRO	Date of a reference quoted in the previous RFF segment, e.g. project date or message/document date.	This is a valid reference to the trigger segment as it is supplemented by an example of how the DTM segment itself is used.
LOC, Place/location identification	CUSEXP	A segment identifying place/location relevant to the express consignment, e.g. country of consignment, place of loading/unloading.	The express consignment details are specified in the trigger segment CNI. The description of LOC refers to the consignment information (without mentioning CNI) and gives an example of usage.

The imperfect examples provided in the next table are shown in order to substantiate the fact that if the description of a non-trigger segment does not provide examples of how it is to be used but merely includes a reference to the trigger segment of the group then the result is less than satisfactory.

Segment	Message	Imperfect description of a non trigger segment in a segment group (extracted from the Data Segment Clarification section).	Analysis
COM, Communica-tion contact	ORDERS	A segment to identify a communications type and number for the contact specified in the CTA segment.	The description of COM does not give an indication of how it is used.
FTX, Free text	CREEXT	A segment providing free text instruction relating to the associated INP segment.	No information is provided other than what can be deduced. Examples would help.

7.4 Combining the segment group and segment descriptions

The following text is extracted from the Data Segment Clarification section of the COARRI message. It shows how the segment group description, combined with the descriptions of each segment contained within the group, gives an overall picture of the use of the segment group.

Extract from the COARRI message

Segment group 1: TDT-RFF-LOC-DTM
A group of segments to indicate the main carriage means of transport.

TDT, Details of transport
A segment identifying the voyage of the vessel relevant to the message (main transport).

RFF, Reference
A segment identifying a relevant reference number, such as:
- shipping
- syndicate
- marketing organization
- conference code

LOC, Place/location identification
A segment to identify a location related to the means of transport, such as:
- place of departure/arrival (terminal within the port)

DTM, Date/time/period
A segment identifying a date/time related to the arrival or departure of the vessel, such as:
- estimated date/time of arrival/departure

7.5 Dividing the message structure into sections

A message may be divided into sections. Normally, if a message is sectionalised it is divided into the Header, Detail and Summary sections. However, several messages (such as CUSDEC) contain more than three sections.

Irrespective of the number of message sections used, each must be introduced. This is accomplished by a mandatory section heading and a mandatory statement preceding the first segment of each section. This is stated in the format:

'[Section name] section

Information to be provided in the [section name] section.'

An example is shown below.

Extract from Orders message

4.1.1 Header section

Information to be provided in the Header section:

0010 | UNH, Message header
A service segment starting and uniquely identifying a message.
The message type code for the Purchase order message is ORDERS.

Note: Purchase order messages conforming to this document must contain the following data in segment UNH, composite S009:

Data element 0065 ORDERS
0052 D
0054 95A
0051 UN

0020 BGM, Beginning of message
……

Refer to the *Rules for Presentation of Standardised Message and Directories Documentation* for precise information about the layout.

7.6 A word of caution

It is a good general indicator that if the description of a segment is merely copied from the segment directory to the boilerplate, then it will provide no added meaning about its context or usage within a particular message. However, it is very difficult (and almost definitely a waste of message design resources) to try to write a unique description for each segment type that is specified in every message. If this approach was adopted then it would lead to the opposite extreme where message designers and technical assessment groups are required to make up a description just for the sake of it, leading to a work of fiction rather than fact. It is necessary to reach a balanced approach to improve the documentation. This is largely provided by the proposal that mandates the provision of examples to show how a segment is to be used.

7.7 Summary

To summarise thus far: The Functional Definition section states *who* the message is for and *why* it was designed (the purpose). The Field of Application section states *where* the message is applicable for use. The Principles section states *what* design constraints were applied in the design of the message and *when* it should be sent (in terms of the pre-conditions that must be completed prior to message transmission). The Data Segment Clarification section states *how* the segments extracted from the segment directory can fulfil the Functional Definition in accordance with the criteria stipulated in the Principles section.

8. Conclusion

The main objective of Part II is to establish consistent criteria for deciding what information to state in the sections of the message boilerplate. From the study of message directories it has been possible to identify a set of guidelines for the preparation of each of the main sections and, through the use of examples, to illustrate good practice. It has also been possible to answer the six classic analytical questions with respect to boilerplates: the who, when, why, where, what and how. The answers to these questions have been determined from what is evident in messages already published in the UN/EDIFACT directories.

The adoption of guidelines for preparing the contents of message boilerplates will have the following advantages:

- A reduction in message development time.
- An increase in the level of quality and consistency for message documentation.
- Better judgement criteria for Technical Assessment Groups.
- Improved source material for translation to other languages.
- Improved source material for the preparation of Message Implementation Guidelines.

It is hoped that these advantages will also lead to a reduction in the time it takes to approve messages for publication in UN/EDIFACT directories.

PART III - GUIDELINES FOR CODE NAMES & DEFINITIONS

Part III - Guidelines for Code Names and Definitions

1. Background

1.1 Assumptions

Part III of the Message and Code Handbook - *Guidelines for Code Names and Definitions* - has been developed according to the following assumptions:

- There are more codes submitted to the UN/EDIFACT process than any other type of Data Maintenance Request (DMR).
- The Joint Technical Assessment Group (JTAG) reviews more unresolved code values than any other type of unresolved DMR.
- There is less guidance regarding code allocation (naming and defining) than any other item that is submitted to the UN/EDIFACT directory set.
- The most quoted item from the Technical Assessment Checklist (TAC) by Regional TAGs is 'The code name does not match the code description'.
- Increasingly, industry sectors are beginning to circumvent the UN/EDIFACT process and allocate codes locally, within Message Implementation Guidelines (MIGs), rather than undergo a 12 - 18 month approval cycle.

1.2 Problem Analysis

Without doubt the naming and defining of code values is an art, not a science. Therefore, there is a degree of subjectivity involved. This is acceptable, but only if there is a high level of consistency in the decision making. At a recent JTAG meeting 539 regionally unresolved Data Maintenance Requests (DMRs) were discussed, of which 78% were code values. So, clearly, there is a problem.

Until recently, there has been almost a total lack of guidance on providing names and definitions for code values which inevitably means that the Regional TAGs are assuming most of the responsibility for codes rather than sharing the responsibility more equally with the code submittor. The lack of guidance also means that the quality of code names and definitions is not fully considered at the beginning of the process, but rather at the end.

The objective of this part of the Message and Code Handbook is to address the reasons why there is such a high rejection rate, then to offer guidelines, based on existing international standards, that should reduce this figure significantly.

1.3 References

(i) Code Data Maintenance Requests for D.96.A, D.96B and D.97A
(ii) The D.96B UN/EDIFACT Directory Set
(iii) ISO 11179-4, Rules and guidelines for the formulation of data definitions
(iv) Conventions for data elements and codes (Trade/WP.4/R.765/Add.1)
(vi) ISO 704 - Principles and methods of terminology

2. The Technical Assessment Checklist for Codes

For ease of reference the Technical Assessment Checklist (TAC) table that is used by Regional TAGs to assess a New Code or Code Change Request (table IIIH) is shown below together with the General Checklist (table I) that is applicable to all types of DMR. Both tables have been extracted from version 5.4 of the TAC and together they form the majority of guidance provided thus far to message designers on code allocation.

Each of the check list items is explained below. The level of detail provided per checklist item is roughly in proportion to the percentage of DMRs rejected for failing it. More attention has been given to Checklist items that frequently result in DMRs being repaired at JTAG. The Checklist item that is the most frequently quoted reason for rejection is described more fully in Annex A.

Technical Assessment Checklist Table III.H - New Code or Code Change Request

Ref.	Checklist Item	Explanation	Percentage of code DMRs sent to JTAG for non-compliance	Comments
III.H 1	Is it indicated which data element the code is intended for?	Without identification of the data element for which the code has been submitted it is impossible to assess the requirement for, or the suitability of, the code	Very low - emphasis of review is on originating region.	
III.H 2	Is the requested code for a class 1 or 2 code as defined in R.765?	For maintenance reasons, only Class 1 and 2 codes are eligible for inclusion in the UN/EDIFACT Code List Directory. Class 1: Service data element code lists (0001/ 0999) Class 2: User data element code lists, maintained by EDIFACT There are two other classes of codes recognised, but not maintained, by EDIFACT: Class 3: User data element code lists included in international code lists, issued as ISO international standards & UNECE Recommendations, endorsed by WP.4; Class 4: Proprietary code lists (industry or sector code sets) maintained by parties other than EDIFACT, ISO or UN/ECE.	Low - emphasis of review is on the originating region.	All qualifier data elements have Class 2 code lists. The majority of coded data elements NOT followed by 1131 and 3055 have Class 2 code lists. The majority of coded data elements followed by 1131 and 3055 have Class 4 code lists.

Technical Assessment Checklist Table III.H - New Code or Code Change Request

Ref.	Checklist Item	Explanation	Percentage of code DMRs sent to JTAG for non-compliance	Comments
III.H 3	Does the code name and description match the data element function as specified by its name and description?	The name and description of a data element provides a degree of context, or domain information, for the code list that is associated with that data element. The name and description of the code value can also provide contextual information. All code values for a data element must therefore be in the same domain.	Medium - many DMRs that fall into this category are solved in the originating region. However, it is the second highest reason for a code DMR being rejected by other regions and being sent to JTAG for further review.	The TAG of the originating region reviews a code DMR, discusses different data elements for which the code may be suitable and decides upon a data element (either the original requested data element or a different one). The essence of the discussion (and any alternatives considered) is conveyed to the other TAGs to assist them in their analysis. It is important that better descriptions and names are provided for data elements. The new Message Design Rules should assist in this area.
III H 4	Is the 2 character alphabetic country code added to the front of the code value name for a national agency code entry in DE 3055 (Code list responsible agency)?	The code values for data element 3055 provide the names of agencies, often in abbreviated form, and probably contain more acronyms than any other code list. Although all acronyms are expanded, the country in which the agency is based is not immediately obvious. In order to avoid confusion, therefore, the country code is stated alongside the agency name.	Very low - emphasis of review is on originating region	

Technical Assessment Checklist Table III.H - New Code or Code Change Request

Ref.	Checklist Item	Explanation	Percentage of code DMRs sent to JTAG for non-compliance	Comments
III.H 5	Is the name of the code consistent with the description?	If the submitted code value has a name that is inconsistent with its description then it is open to misinterpretation because of ambiguity. The code value will therefore not be used correctly which will inevitably lead to another DMR being submitted at a later stage. Poorly defined codes are likely to lead a problem of duplication or overlapping of functionality with other codes.	High - This is the most quoted reason for rejection of code DMRs. The TAG of the Originating Region repairs many names and definitions, but inconsistency is not always noticed, so other TAGs reject many DMRs on this basis.	More guidelines are required for message designers so that: • higher quality codes are submitted, and • TAGs have better judgement criteria. More information about the changes made by the originating region (see comment on III H 3 above) when a DMR is repaired would assist all TAGs. See Annex A for an analysis of selected code value submissions that have been revised by JTAG for failing this check list item.
III.H 6	Is it true that the requested code entry does not duplicate an existing code value within the code set?	This check list item is to ensure that the data element for which the code DMR has been submitted does not have other code values that can be used to perform the same function as the submitted DMR.	Very low - emphasis of review is on originating region	The addition of synonyms to the description of a code value will assist in reducing this error. Often different regions, and industry sectors, have different names for the same entity. Therefore, if the code is identified with a synonym, the possibility of duplication is reduced.
III.H Guide-line 1	Does the code entry only have one function?	There is a degree of subjectivity associated with this check list item, but it is a useful check for ambiguity. In general , if TAGs notice the word ‘and’ between two terms in a code name or definition that is not part of a proper name (or noun), then it is often an indication that the code is representing two functions rather than one. If this is proven to be the case, then TAGs recommend the creation of two code values, one for each function.	Low - emphasis of review is on originating region	The guidelines for writing definitions and names should indicate when the use of ‘and’ is likely to indicate multiple functionality. See section 3.1

Technical Assessment Checklist Table I - General

Ref	Checklist Item	Explanation	Percentage of code DMRs sent to JTAG for non-compliance	Comments
I.1	Is the DMR form submitted in English?	English is the working language for UN/EDIFACT documentation.	Very low. Occasionally a well known term within a particular industry in a region is accepted by the originating region, but is not known in other regions.	It is hoped that, by providing better guidelines for code value names and definitions, it is possible to improve the quality of the documentation. This will in turn assist in the translation of the directories to other languages.
I.2	Is the form complete, including the business need?	This is a consistency check. The business need often provides additional background information to assist in the assessment of DMRs.	Low.	The main reason is that the DMR would be rejected for this check is that the TAG is not clear as to how or why the code is to be used, and without a business reason, cannot accurately determine if the code is correct.
I.3	If required, are attached documents provided?	Does not often apply to code submissions.	Zero.	
I.4	If the DMR applies to a directory, is it the current draft directory?	It is important, for assessment reasons, to indicate the directory which was used when requesting a DMR so that TAGs can check the validity of the request.	Low.	

Technical Assessment Checklist Table I - General

Ref	Checklist Item	Explanation	Percentage of code DMRs sent to JTAG for non-compliance	Comments
I.5	Are acronyms or abbreviations defined?	This check list item is used to remove ambiguity in names and definitions. Even if an abbreviation is widely known within a particular sector, the code list will often be used by a wide range of sectors so it is important to be precise.	Low - emphasis of review is on originating region	The guiding principle is to expand the abbreviation or acronym on the first occurrence by providing the full text in parentheses after the acronym. If the acronym first occurs in the code value name, then occasionally this may mean that the name will be very long (i.e., over 70 characters). In this case the acronym or abbreviation should be expanded in the definition. If a code name or description contains several acronyms, it may be confusing to the reader to expand all of the acronyms on first occurrence. In this case all of the acronyms or abbreviations should be explained in a note to the code value which is published alongside the description.
I.6	Has the DMR received a log number assigned by the submitting RT secretariat?	This is a procedural check to ensure that all DMRs are registered with the secretariat.	Zero - emphasis of review is on originating region.	
I.7	Are all related DMRs submitted?	When TAG assesses a DMR for a new coded data element it is necessary to assess the code values that are submitted for the data element in order to understand how the data element is to be used.	Low - emphasis of review is on originating region	
I.8	Is TAG satisfied that the DMR meets the stated business requirements?	This is a matter of judgement but if the business need conflicts with the code request then the code value may not perform the function for which it is intended.	Low - emphasis of review is on originating region	

Technical Assessment Checklist Table I - General

Ref	Checklist Item	Explanation	Percentage of code DMRs sent to JTAG for non-compliance	Comments
I.9	Is it true that the phrase 'self explanatory' is not used as or within a definition?	Many terms, when used widely within an industry sector, are so ubiquitous that they require little or no explanation. When placed in code lists that are referred to by many user sectors, the terms are not as obvious, so definitions are the only way of understanding them.	Low - emphasis of review is on originating region.	
I.10	Is it true that names and texts do not contain a '/'?	This is an infamous guideline because it has been misunderstood by message design groups and TAGs. The original reason for the guideline was to remove ambiguity from the standard since often a slash implies multiple functionality. Since there has been a degree of confusion it is necessary to provide some clarity.	Low - there has been so much confusion surrounding this issue (owing to unclear guidelines) that message designers now avoid using '/'.	The guideline should be: The use of the '/' character within code names or definitions is only permitted in proper names or proper nouns. '/' should always be translated to mean 'or'. Note that the expression 'and/or' whilst acceptable within message boilerplates should not be allowed in code names or definitions (unless it is part of a proper name or proper noun). The expression 'A and/or B' means 'A or B, or both'.

3. Naming and Defining Codes

One of the major problems found in code value assessment is that the name contains conceptual information which is not evident from the definition, or vice versa. This is covered in detail in Annex A. By following the guidelines within this section for formulating the code value definitions and then applying the same guidelines for the code value name, it is possible to eliminate many inconsistencies. In order to assist with the consistency check between code value names and definitions, a table of checklist questions is also provided.

It is understood that there are code value names and definitions which come from industry sectors that cannot subject to alteration for legal reasons, such as a selection of Customs codes. From a pragmatic viewpoint, this is an exception that the UN/EDIFACT process has to live with if it is to reflect user community requirements. However, in the vast majority of code value submissions this is not the case.

3.1 Code value definitions

Code value definitions should:

- *state the essential meaning of the concept;*
- *be unique within the code list in which it appears;*
- *be concise;*
- *be stated in the singular;*
- *state what the concept is, not only what it is not;*
- *be stated as a descriptive phrase or sentence(s);*
- *use internationally agreed terms and definitions where possible;*
- *not simply restate the code value name in a different word order, nor state only a synonym of the code value name;*
- *not include examples;*
- *only provide context limitations, or restrictions of use, when absolutely necessary;*
- *only refer to a party when absolutely necessary;*
- *only refer to an industry sector, administrative sector or business function when absolutely necessary;*
- *limit the use of 'and' to a restricted set of conditions (described below), otherwise it may be an indication of multiple functionality;*
- *use '/' in a proper term only;*
- *limit the use of 'or' to a restricted set of conditions (described below), otherwise it may be an indication of multiple functionality;*
- *where possible, expand acronyms on first occurrence.*

Each of these principles for code value definitions is described in more detail below through the use of examples.

Part III - Guidelines for Code Names and Definitions

I *State the essential meaning of the concept*

All primary characteristics of the concept represented should appear in the definition at the relevant levels of specificity for the context. The inclusion of non-essential characteristics should be avoided. The level of detail necessary is dependent upon the needs of the system user and environment. (ISO 11179-4)

If a multiple-word term is being defined it is not necessary to define every word contained in the term. Instead, the multiple-word term should be treated as a single piece of information and it should be defined as such.

Example:	Recommended maintenance quantity
Good definition:	Recommended quantity of an article which is required to meet an agreed level of maintenance.
Poor definition:	To indicate the recommended quantity of an article which is required to support an agreed level of organisational and intermediate maintenance to a usage pattern and period.
Reason:	Definition contains information that is more specific than the name implies. The reference in the definition to organisational and intermediate maintenance leads to the questions: what is organisational and intermediate maintenance and can the code value be used for any other type of maintenance? The definition also includes mention of a usage pattern or period which also potentially limits the use of the code value.

II *be unique within the code list in which it appears*

Two code values with the same name or with the same definition will lead to confusion upon implementation.

III. *be concise*

The definition should be brief and comprehensive. Extraneous qualifying phrases such as ‘for the purposes of this data dictionary,’ shall be avoided. (ISO 11179-4).

Example:	Drum deposit
Good definition:	Deposit paid on a returnable drum
Poor definition:	The charge relating to the packaging of a product in a container drum when the drum is expected to be returned and has value when empty.

IV *be stated in the singular*

(An exception to this guideline is made if the concept itself is plural.)

Example:	Agency approved price
Good definition:	Provides an indication to the receiving party that the price has been approved by an agreed agency.
Poor definition:	Provides an indication to the receiving party that the prices have been approved by an agreed agency.

V. state what the concept is, not only what it is not

(An exception to this guideline is made if the concept itself is negative.)

Example:	Tooling charge
Good definition:	Item or service relates to a tooling charge, not to the direct provision of goods.
Poor definition:	Charge does not relate to the direct provision of goods.

Example:	Not found
Good definition:	The goods notified to be missing have not been found.
Reason:	The concept of ‘not found’ is itself negative.

VI. be stated as a descriptive phrase or sentence(s)

A phrase is necessary to form a precise definition that can be readily understood.

Example	Agent name
Good definition:	Name of party authorised to act on behalf of another party.
Poor definition:	Representative name.
Reason:	The good definition provides clear understanding which will aid implementation.

(The above example has been extracted from ISO 11179-4.)

VII. use internationally agreed terms and definitions where possible.

Some code value definitions and names contain terms that have been extracted from internationally agreed code lists or may have some legally binding significance. If this is the case then these terms should always be used in preference to redefining the term in question. However, since UN/EDIFACT is a multi-sectoral standard some terms, if removed from their original context and placed in the wider UN/EDIFACT context, may be confused with other terms in the same code list. In this latter case it may be necessary to modify the original definition accordingly.

VIII. not simply restate the code value name in a different word order, nor state only a

synonym of the code value name.

Simply restating the words of the name in a different order or stating only a synonym of a code value name as the definition is not acceptable. As stated above, the definition should be stated as a descriptive phrase or sentence. Note that if synonyms of the code name are required then they may be added after the full definition in the format:

Synonym: alternative code value name.

Example:	Cargo operating temperature
Good definition:	The temperature at which the cargo is to be kept while it is under transport.
Poor definition:	Operating temperature of cargo.

Example:	Export licence
Good definition:	Permit issued by a government authority permitting exportation of a specified commodity subject to specified conditions as quantity, country of destination, etc. Synonym: Embargo permit.
Reason:	A full definition provides meaning to the code name. If the definition for the code value name ‘Export licence’ had been only ‘Embargo permit’ without the supporting text then confusion would arise.

IX. not include examples

Examples within code value definitions often limit the scope of how a code value can be used and may lead to misunderstanding.

X. only provide context limitations, or restrictions of use, when absolutely necessary

(‘Context’ is defined in the Oxford English Dictionary as: ‘parts that precede or follow a passage or word and fix its meaning’. If context information is very detailed it can impose unnecessary limitations.)

It is often possible to increase the potential usage of a code by removing inessential or extrinsic characteristics from the code value definition, yet still retain the original business requirement. It is perfectly valid to refer to a context if it is necessary for the understanding of the definition (i.e. it is an essential part of the definition), or if it is necessary to distinguish from another code value. In the latter case it is necessary to state the context in both the code value name and definition.

Example:	Requested cancellation date, latest
Good definition:	The latest date on which cancellation may be requested by a party.
Poor definition:	The latest date on which cancellation of a payment order may be requested by a party.
Reason:	The poor definition suggests a limitation of context to 'cancellation of a payment order' which is not implied in the code value name. By removing the reference to the payment order the definition better reflects the name. Note that if, in the unlikely circumstances, it was necessary to differentiate between the cancellation of a payment order and the cancellation of other types of document, then the code value name should be amended to include reference to the payment order and the poor definition would be acceptable.

XI. only refer to a party when absolutely necessary

One of the checks performed by TAG is to ensure that when a party is referred to within a code value, it is truly limited in scope to that party. If it is possible for the code value to be used by many parties, then reference to one particular party is an unnecessary limitation.

It is perfectly valid to refer to a party if it is necessary for the understanding of the definition (i.e. it is an essential part of the definition), or if it is necessary to distinguish from another code value. For example, a data element called 'Reference type, coded' may contain a code value for a reference generated by a seller and a code value for a reference generated by a buyer. In this example, the party type should be stated in the code value names and definitions.

Example:	Inventory status advice
Good definition:	Advice of stock on hand
Poor definition:	Advice of stock on hand provided by warehouse.
Reason:	Parties other than the warehouse may provide the inventory status advice. If the code value name was 'Inventory status advice from warehouse', and this was a concept that had to be distinguished from a more general concept, then the latter definition would be correct.

XII. only refer to an industry sector, administrative sector or business function when absolutely necessary

If it is possible for the code value to be used within many sectors, then reference to one particular sector would be an unnecessary limitation. It is perfectly valid to refer to a sector if it is necessary for the understanding of the definition, or if it is necessary to distinguish from another code value. For example, in a data element called 'Tax type, coded' it may be necessary to have a code for taxes applicable in the Customs sector and another code to indicate taxes applicable in the Transportation sector. In this example, the sector should be stated in the code value names and in the

definitions.

XIII. limit the use of 'and' to the following conditions, otherwise it may be an indication of multiple functionality:

a in a proper term (name or noun).

b between words or terms that are to be taken jointly (i.e. as a conjunction) when the terms are not synonyms of each other, each term relates directly to the other, and no obvious generic noun can be substituted in place of the terms. A good test if two terms are stated in a definition is to try to remove one of the terms. If the remaining term completely satisfies the requirements, then one of the terms is not required. If, on the other hand, the remaining term is rendered incomplete, ineffective or meaningless, then it is necessary to have each. For example, many instructions are comprised of two parts and the removal of one part will not allow the instruction to be completed.

Acceptable example:	Combined certificate of value and origin
Reason:	The combined certificate of value and origin is one concept; it is indivisible.

Unacceptable example:	Purchase order and invoice reference
Reason:	The purchase order reference is conceptually different to the invoice reference; two code values should be defined rather than one.

Acceptable example:	Replace item detail and summary only
Reason:	There is no generic term that can be used in place of 'detail and summary'. If one of the terms is removed the remaining term does not satisfy the requirements.

Acceptable example:	Call-off delivery
Good definition:	Document or message to provide split quantities and delivery dates referring to a previous delivery instruction.
Reason:	Both 'split quantities and delivery dates' must be present in order to satisfy the requirements.

XIV. use '/' in a proper term only

The use of '/' in anything other than a proper term (name or noun) is often an indication that the code value is multi-functional, hence two code values should be submitted rather than one.

XV. limit the use of 'or' to the following conditions, otherwise it may be an indication of multiple functionality:

a in a proper term (name or noun)

b between alternatives, where each alternative relates directly to the other, the alternatives form a complete set of available options, and there is no obvious generic noun that can be substituted in their place. (Note: Replacing specific terms with the very generically bland term 'details' is not recommended as a good practice.)

It is not acceptable to use 'or' between synonyms since if each term means the same thing then one is redundant - if each term is slightly different, then two codes are preferred to one.

Example 1:	Documentary credit notification
Acceptable definition:	Document or message issued by an advising bank in order to transmit a documentary credit to a beneficiary, or to another advising bank.
Reason:	The phrase 'Document or message' indicates two equally valid alternatives which are conceptually alike, not synonymous, and there is no obvious generic noun that can be used in their place. Likewise, the phrase '…to a beneficiary, or to another advising bank' is acceptable for the same reasons.

Example 2:	Purchase amount
Acceptable definition:	The cost of buying goods or services
Reason:	There is no obvious generic noun that can be used in place of 'goods or services'.

Example 3:	Payment plan reference
Poor definition:	A number which uniquely identifies a progress payment or a payment plan such as a milestone payment plan or any other plan related payment.
Good definition:	A number which uniquely identifies a payment plan.
Reason:	Payment plan and progress payment are synonyms (if not then two codes should be created).

XVI. where possible, expand acronyms on first occurrence.

The preferred method is to expand the acronym on first occurrence. Therefore, if the acronym first appears within the code value name, then it should be expanded immediately after the acronym, in parentheses. However, if this leads to the code value name being greater than 70 characters, then the acronym should be expanded in the definition. If a code value name or definition contains several acronyms then it is considered to be better practice to add a note to the code value so that each acronym can be expanded therein.

3.2 Code value names

In checking that the code value name is consistent with the definition, use the following guidelines:

(a) If the definition must refer to a given party (e.g. buyer identification number) in order to distinguish between a similar type of code value for a different party (e.g. seller identification number), then it is also necessary to mention the party in the code value name.

(b) If the definition limits usage of a code to a given user sector (e.g. customs fee) in order to distinguish between a similar type of code value for a different sector (e.g. transportation fee), then it is also necessary to mention the sector in the code value name.

(c) If the code value definition is stated in the singular, then the code value name should be in the singular.

(d) If the code value definition is stated with a limitation in context that acts as a means to differentiate from another code value (for example, ‘within a container’, ‘on a piece of equipment’) then it is necessary to repeat the context in the code value name.

(e) Code value names should, where possible, contain the most significant words first. Good example: ‘Order quantity’. Bad example: ‘Date of estimate’.

Annex A - Analysis of selected code value submissions

An analysis of a subset of codes from three recent JTAG meetings has been made by studying the codes submitted, followed by the JTAG response and then the amended code that is entered into the directory. This is shown in Table A.1 below. The examples are included merely to illustrate a point - not as a means to justify a previous JTAG decision, but rather to explain it. Part III of the Message and Code Handbook has been developed largely as a result of the problems identified in Table A.1.

Table A.1 Analysis of selected code value submissions

Data Element	Requested Code Value Name	Requested Code Value Definition	Problems identified by JTAG	Amendments suggested by JTAG
1153	Progress payment or payment plan reference	A number which uniquely identifies a progress payment or a payment plan such as a milestone payment plan or any other plan related payment.	Name and definition both relate to two concepts - progress payment, and payment plan reference - thereby indicating multiple functionality. Definition quotes examples which limit the use of the code value.	Change name to: 'Payment plan reference' Change definition to: A number which uniquely identifies a payment plan.
2005	Repair turnaround time	Provides the number of periods necessary to turnaround a given repair.	Definition makes mention of 'the number of periods' which is conceptually different to providing the repair turnaround time as indicated by the name.	Change definition to: 'Provides the period of time necessary to turnaround a given repair.
4183	Final settlement	Provides an indication that the settlement will not be subject to further adjustment.	Definition makes mention of 'providing an indication' which is not what the name is referring to, otherwise the name would be 'final settlement indication'.	Change definition to: 'The settlement will not be subject to further adjustment.'
5025	Damage cost	Cost incurred by repair of the damage of equipment.	Definition relates to the cost of the *repair* of the damage, whereas the name does not make any mention of repair. Definition only relates to damage repair cost *of equipment* which is a limitation of context that the name does not imply.	Change name to: 'Damage Repair Cost' Change definition to: Cost incurred by repair of the damage.
6063	Total sales	Total sales is the summation of total quantity sales to wholesalers and retailers.	The definition is more limiting in context than the name owing to the reference to wholesalers and retailers. First three words of definition are superfluous.	Change definition to 'The summation of total quantity sales.'
6063	Transferred	Inventory that has been moved from one inventory category to another (e.g. Quantity on order to quantity received).	Definition implies a context - inventory categories - that is not implied by the (more generic) name. The example in the definition, given in parentheses, is limiting.	Change definition to: 'Inventory that has been moved from one inventory category to another.' Change name to: 'Inventory category transfer'

Table A.1 Analysis of selected code value submissions

Data Element	Requested Code Value Name	Requested Code Value Definition	Problems identified by JTAG	Amendments suggested by JTAG
6063	Recommended maintenance quantity	To indicate the recommended quantity of an article which is required to support an agreed level of organisational and intermediate maintenance to a usage pattern and period.	Definition contains information that is contextually more specific than the name implies. The reference in the definition to organisational and intermediate maintenance leads to the questions: what is organisational and intermediate maintenance? and can the code value be used for any other type of maintenance? The definition also includes mention of a usage pattern or period which also potentially limits the use of the code value.	Change definition to: "Recommended quantity of an article which is required to meet an agreed level of maintenance".
6145	Damage dimensions	Dimensions of the damaged area on a piece of equipment.	Definition is more restrictive (by referring to the context of equipment) than the name.	Change definition to: "Dimensions of the damaged area".
7161	Airbag charge	A charge for surrounding a product with an airbag to reduce the risk of damage within a container.	Definition is more limiting in context than the name since it refers to the airbag's use within a container.	Change definition to "A charge for surrounding a product with an airbag".
7161	Inland transportation	The transportation charge relating to the inland segment of an intermediate journey.	Definition makes mention of 'an intermediate journey' which is more contextually limiting than the name implies.	Change definition to: "The transportation charge relating to the inland segment of a journey".
7273	Carrier loads from the ground (at departure)	Carrier is to load the cargo in the equipment from the ground.	Name suggests that the action can only performed 'at departure'. The definition makes no mention of this restriction in context.	Change name to "Carrier loads from the ground".

Part III

- Guidelines for Code Names and Definitions