

# **SDMX-EDI SYNTAX AND DOCUMENTATION**

**(VERSION 2.1, DRAFT)**

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31	<b>1</b>	<b>SCOPE AND PURPOSE.....</b>	<b>10</b>
32	<b>2</b>	<b>CONFORMANCE.....</b>	<b>10</b>
33	<b>3</b>	<b>NORMATIVE REFERENCES .....</b>	<b>10</b>
34	<b>4</b>	<b>BACKGROUND DOCUMENTATION .....</b>	<b>10</b>
35	<b>5</b>	<b>STRUCTURE OF THE GUIDE .....</b>	<b>11</b>
36	<b>6</b>	<b>SDMX-EDI: THE STATISTICAL DATA AND METADATA EXCHANGE MESSAGE .....</b>	<b>11</b>
37	<b>6.1</b>	<b>Generic GESMES and the UN/EDIFACT Standards.....</b>	<b>12</b>
38	<b>7</b>	<b>FUNCTIONALITY OF SDMX-EDI AND POSSIBLE DATA EXCHANGE ACTIVITIES .....</b>	<b>13</b>
39	<b>7.1</b>	<b>SDMX-EDI Functionality .....</b>	<b>13</b>
40	<b>7.2</b>	<b>Reporting and Dissemination .....</b>	<b>14</b>
41	<b>8</b>	<b>THE STRUCTURE OF SDMX-EDI.....</b>	<b>16</b>
42	<b>8.1</b>	<b>SDMX-EDI: The Branching Diagram.....</b>	<b>16</b>
43	<b>8.2</b>	<b>Functionality, Segment Sections and Step-by-Step Implementation.....</b>	<b>17</b>
44	8.2.1	Data Update Message: Segment Structure and Purpose.....	21
45	8.2.2	Data and Attribute Update Message: Segment Structure and Purpose .....	25
46	8.2.3	Data and Attribute Delete Message.....	28
47	8.2.4	Structural Definitions Exchange Message: Segment Structure and Purpose.....	30
48	8.2.5	Code Lists.....	30
49	8.2.6	Statistical Concept definition.....	30
50	8.2.7	Key Family Definition .....	30
51	<b>9</b>	<b>SEGMENT BY SEGMENT REFERENCE GUIDE.....</b>	<b>38</b>

52	<b>9.1 Organisation of the Guide.....</b>	<b>38</b>
53	<b>9.2 Interchange Administration Section .....</b>	<b>41</b>
54	9.2.1 Scope .....	41
55	9.2.2 GESMES Segments Used .....	41
56	9.2.3 Features and Guidelines for Use .....	41
57	9.2.4 Interchange Administration: Segment Structure .....	41
58	Segment Type: UNB.....	43
59	<b>9.3 Message Administration Section .....</b>	<b>46</b>
60	9.3.1 Scope .....	46
61	9.3.2 GESMES Segments Used .....	46
62	9.3.3 Features and Guidelines for Use .....	46
63	9.3.4 Message Administration Section: Segment Structure .....	47
64	Segment Type: UNH.....	48
65	Segment Type: IDE .....	55
66	Segment Group: Group 3 (CTA-COM) .....	56
67	Segment Type: CTA .....	57
68	Segment Type: COM.....	58
69	<b>9.4 Code List Section.....</b>	<b>59</b>
70	9.4.1 Scope .....	59
71	9.4.2 GESMES Segments Used .....	59
72	9.4.3 Features and Guidelines for Use .....	59
73	9.4.4 Code List Section: Segment Structure .....	60
74	Segment Group: Group 4 (VLI-Group 7) .....	61
75	Segment Type: VLI .....	62
76	Segment Group: Group 7 (CDV-FTX) .....	63
77	Segment Type: CDV.....	64
78	Segment Type: FTX.....	65
79	<b>9.5 Statistical Concept Definition Section.....</b>	<b>66</b>
80	9.5.1 Scope .....	66
81	9.5.2 GESMES Segments Used .....	66
82	9.5.3 Features and Guidelines for Use .....	66

83	9.5.4	Statistical Concept Definition Section: Segment Structure .....	66
84	Segment Group:	Group 9 (STC-FTX) .....	67
85	Segment Type:	STC .....	68
86	Segment Type:	FTX.....	69
87	<b>9.6</b>	<b>Key Family Definition Section .....</b>	<b>70</b>
88	9.6.1	Scope .....	70
89	9.6.2	GESMES Segments Used .....	70
90	9.6.3	Features and Guidelines for Use .....	70
91	9.6.4	Key Family Definition Section: Segment Structure .....	71
92	Segment Group:	Group 10 (ASI-Group 11) .....	72
93	Segment Type:	ASI.....	73
94	Segment Type:	FTX.....	74
95	Segment Group:	Group 11 (SCD-ATT-Group 12) .....	75
96	Segment Type:	SCD.....	77
97	Segment Type:	ATT First occurrence - ref. to representation format.....	80
98	Segment Type:	ATT Second occurrence - ref. to usage status .....	83
99	Segment Type:	ATT Third occurrence - ref. to the attachment level .....	85
100	Segment Group:	Group 12 (IDE).....	87
101	Segment Type:	IDE .....	88
102	<b>9.7</b>	<b>Data Set Administration Section .....</b>	<b>91</b>
103	9.7.1	Scope .....	91
104	9.7.2	GESMES Segments Used .....	91
105	9.7.3	Guidelines For Use of Segments .....	91
106	9.7.4	Data Set Administration Section: Segment Structure .....	92
107	Segment Group:	Group 13 (DSI-STS-DTM).....	93
108	Segment Type:	DSI .....	94
109	Segment Type:	STS .....	96
110	Segment Type:	DTM (1st occurrence: data set extraction time stamp) .....	97
111	Segment Type:	DTM (2nd occurrence: reporting period) .....	98
112	<b>9.8</b>	<b>Array Structure and Data Section .....</b>	<b>100</b>
113	9.8.1	Scope .....	100
114	9.8.2	GESMES Segment Usage .....	100

115	9.8.3	Features and Guidelines for Use .....	101
116	9.8.4	Array Structure and Data Section: Segment Structure .....	101
117	Segment Group:	Group 14 (IDE-GIS-GIS) .....	102
118	Segment Type:	IDE .....	103
119	Segment Type:	GIS (first occurrence) .....	104
120	Segment Type:	GIS (second occurrence) .....	105
121	Segment Type:	ARR .....	106
122	<b>9.9</b>	<b>Attribute Section .....</b>	<b>114</b>
123	9.9.1	Scope .....	114
124	9.9.2	GESMES Segment Usage .....	114
125	9.9.3	Attribute Section: Segment Structure .....	115
126	Segment Group:	Group 20 (FNS-Group 21) .....	116
127	Segment Type:	FNS .....	117
128	Segment Group:	Group 21 (REL-Group 22) .....	118
129	Segment Type:	REL .....	119
130	Segment Group:	Group 22 (ARR-Group 23) .....	121
131	Segment Type:	ARR .....	122
132	Segment Group:	Group 23 (IDE-FTX-Group 24) .....	125
133	Segment Type:	IDE .....	126
134	Segment Type:	FTX .....	128
135	Segment Group:	Group 24 (CDV) .....	130
136	Segment Type:	CDV .....	131
137	<b>9.10</b>	<b>End of Message Administration Section .....</b>	<b>133</b>
138	Segment Type:	UNT .....	134
139	<b>9.11</b>	<b>End of Interchange Administration Section .....</b>	<b>135</b>
140	Segment Type:	UNZ .....	136
141	<b>10</b>	<b>DELETE MESSAGES .....</b>	<b>137</b>
142	<b>10.1</b>	<b>Rules and Techniques for Deletions .....</b>	<b>137</b>
143	10.1.1	Deletions of observations, time series, sibling groups and data sets .....	137
144	10.1.2	Deletions of attributes .....	138

145	<b>10.2</b>	<b>Comments on Deletions .....</b>	<b>140</b>
146	<b>11</b>	<b>MESSAGE ACKNOWLEDGEMENTS.....</b>	<b>141</b>
147	<b>12</b>	<b>TEXT IN UNCODED ATTRIBUTES: RULES AND CONSIDERATIONS.....</b>	<b>142</b>
148	<b>12.1</b>	<b>Character Set.....</b>	<b>142</b>
149	<b>12.2</b>	<b>Special Characters.....</b>	<b>142</b>
150	<b>12.3</b>	<b>Uncoded Attribute Values: Maximum Length of Text.....</b>	<b>142</b>
151	<b>13</b>	<b>EXAMPLE MESSAGES .....</b>	<b>143</b>
152	<b>13.1</b>	<b>Data Update Message.....</b>	<b>143</b>
153	<b>13.2</b>	<b>Data and Attribute Update Message.....</b>	<b>148</b>
154	<b>13.3</b>	<b>Key Family Definition Message .....</b>	<b>150</b>
155	<b>13.4</b>	<b>List of Concepts Dissemination Message .....</b>	<b>152</b>
156	<b>13.5</b>	<b>Code List Dissemination Message .....</b>	<b>153</b>
157	<b>14</b>	<b>APPENDIX: THE UN/EDIFACT SYNTAX.....</b>	<b>155</b>
158	<b>14.1</b>	<b>Introduction .....</b>	<b>155</b>
159	<b>14.2</b>	<b>EDIFACT Interchange and Message Structure.....</b>	<b>155</b>
160	<b>14.3</b>	<b>Purpose of the interchange and message envelope segments.....</b>	<b>156</b>
161	<b>14.4</b>	<b>Interpreting a Branching Diagram .....</b>	<b>157</b>
162	14.4.1	Interpretation of the Diagram.....	157
163	<b>14.5</b>	<b>EDIFACT Service Characters .....</b>	<b>158</b>
164		The service character set:.....	158
165		Segment and data element separators:.....	159
166		Release indicator:.....	159

167	<b>14.6</b>	<b>EDIFACT Truncation Rules.....</b>	<b>159</b>
168	<b>15</b>	<b>APPENDIX: CODE LISTS FOR OBSERVATION STATUS AND OBS. CONFIDENTIALITY</b>	
169		<b>162</b>	
170	<b>16</b>	<b>APPENDIX: FREQUENTLY ASKED QUESTIONS ABOUT SDMX-EDI .....</b>	<b>163</b>
171	<b>17</b>	<b>APPENDIX: MAP OF ISO 8859-1 (UNOC) CHARACTER SET (LATIN 1 OR “WESTERN”)</b>	
172		<b>166</b>	
173	<b>18</b>	<b>APPENDIX. EDIFACT CODE LISTS USED IN SDMX-EDI .....</b>	<b>167</b>
174			
175			



## 176    **1    SCOPE AND PURPOSE**

177        The scope of this guide is to document the use of SDMX-EDI; this documentation covers the use  
178        of the whole UN/EDIFACT GESMES message and also the way the message should be used in  
179        order to serve specific requirements.

180        The purpose of this guide is to:

181        explain the SDMX-EDI functions;

182        define the syntax and rules for the various segments of the Edifact version of the GESMES  
183        message

184        give some guidelines for developing the necessary applications.

## 185    **2    CONFORMANCE**

186        Chapters 9 and 10 of this document are normative, providing rules for how the SDMX-EDI  
187        message must be used in order to be conformant with SDMX. All other chapters and appendixes  
188        are non-normative.

## 189    **3    NORMATIVE REFERENCES**

190        The following referenced documents are indispensable for the application of this document. For  
191        dated references, only the edition cited applies. For undated references, the latest edition of the  
192        referenced document (including any amendments) applies.

193

194                The GESMES message is defined in UN/EDIFACT UNTDID D.99B and D.02A (URL:  
195                <http://www.unece.org/trade/untdid/>), UN/ECE

196

## 197    **4    BACKGROUND DOCUMENTATION**

198        The reader has to become familiar with the SDMX Information Model.

199        The exchange of data and metadata, using SDMX-EDI, is based on a set of statistical structure  
200        definitions, statistical concepts and code lists from which the coded statistical concepts take their  
201        values. These structural definitions are made available by each centre administrating SDMX-EDI  
202        data exchanges. For example, in the framework of the data exchanges within the European  
203        System of Central Banks (ESCB), the European Central Bank (ECB) has been circulating to its  
204        partners SDMX-EDI files containing the *ECB structural definitions (i.e. key family definitions, list  
205        of statistical concepts and code lists)*. Similarly, the Bank for International Settlements (BIS) has  
206        been disseminating to its partners the relevant structural definitions for their data exchanges.  
207        User communities of SDMX-EDI (e.g. BIS, ECB, Eurostat and all their partners) have agreed on  
208        using a basic set of common code lists. Thus, the exchanged SDMX-EDI messages are  
209        expected to look as similar as possible, not only from a syntactical point of view but also, to a  
210        great extent, semantically. For example, common code lists are used for the statistical concepts

"units", "unit multiplier", "observation status" (a piece of information "explaining" in a coded format the format of a single observations) and "observation confidentiality". Similarly, the identifier for the concept "frequency" is specified by most central institutions as "FREQ". Institutions using SDMX-EDI have to use this Guide in conjunction with the use of **a set of structural definitions**: either using structural definitions which have been already devised by a centre institution or -if new data flows are concerned- new (or additional) structural definitions need to be devised. When new structural definitions are created, it is strongly recommended first to go through the already existing structural definition files of central institutions in order to avoid creating completely new concepts or new code lists.

Though GESMES and EDIFACT provided the *syntax tools* to "describe" the contents of a message based on the SDMX-EDI data model, it is not necessary for the reader of this document to have a previous GESMES or EDIFACT background or experience. However, in order to fully understand the EDIFACT version of SDMX-EDI, **the knowledge of some basic EDIFACT principles** is a prerequisite: these are explained here in the corresponding [Appendix](#). Readers who are interested in getting a more general and global knowledge of GESMES can refer to the official GESMES documentation (*GESMES Version 2.1: Guidance to Users* and *GESMES Version 2.1: Reference Guide*).

## 5 STRUCTURE OF THE GUIDE

This User Guide provides a technical reference explaining the features and the rules of SDMX-EDI. The contents are illustrated in several ways:

- theory and examples showing the general structure of the message;
- theory and examples in a segment-by-segment reference guide chapter; this shows all alternative variants (for each segment) which can appear in a message;
- complete examples of messages oriented to practical implementation.

## 6 SDMX-EDI: THE STATISTICAL DATA AND METADATA EXCHANGE MESSAGE

SDMX-EDI is a message designed for the exchange of statistical information between organisations in a platform independent manner.

The message implements a **data exchange model** (SDMX INFORMATION Model) which provides for the exchange of time series identified through a multi-dimensional key and a variety of associated metadata. It employs an appropriate GESMES profile and, for the version described in this Guide, the EDIFACT syntax. Though GESMES is a generic statistical data model which affords sufficient flexibility to describe syntactically virtually any statistical data model, SDMX-EDI has a fixed syntax. This allows partner institutions to design and to build the applications needed to "read" and "write" SDMX-EDI messages, avoiding intermediate files and special translators; the design of the read/write applications is further simplified by eliminating genericity which is not needed when exchanging time series data. Due to the fixed syntax, in most cases, the rules used in SDMX-EDI are stronger and more restrictive than those in generic GESMES. However, the current design allows the possibility of future enhancements and progressive generalisation, if this is needed, upon agreement of the parties involved.

SDMX-EDI offers several features:

easy adaptation to any economic domain and flexible coverage of all types of economic - statistical data;  
 modern representation techniques: conceptually 'clean' multidimensional keys;  
 efficiency: it avoids the unnecessary repetition of information;  
 series keys without length restrictions;  
 easy introduction of new attributes;  
 attributes at various levels (observation, time series and 'higher');  
 exchange of 'rich' metadata, organised in a flexible and efficient manner;  
 suitability for two-way exchanging time series: i.e. for reporting and disseminating;  
 • a *paperless* dissemination of a whole statistical data base is possible: data, metadata, definitions, key structures and code lists can be electronically disseminated from the centre to other institutions;  
 suitability for stage-by-stage implementation: it could start with the essential parts (carrying the administrative and the numeric data) and later the whole message could be used;  
 easy implementation: no purchase of special software should be necessary;  
 • consistency with international standards (EDIFACT);  
 • wide user group: national central banks (NCBs) and national statistical institutes (NSIs), Bank for International Settlements (BIS), International Monetary Fund (IMF), OECD, EUROSTAT, European Central Bank (ECB);  
 consistency with the long-term goals of international institutions involved in statistical data exchange.

## 6.1 Generic GESMES and the UN/EDIFACT Standards

The goal of UN/EDIFACT-standardisation is to give to the exchanged data flow objects a structure whose elements can be understood and processed by software applications without human intervention. The first messages were created for commercial data exchange environments and concerned rather simple and static object types like invoices, purchase orders etc. Since then new sectors, such as statistics, with more complicated and varied data structures have joined the industry and it became evident that certain message types would have to be made generic to satisfy user requirements of those sectors without actually exploding the number of messages.

- GESMES is an acronym meaning Generic Statistical Message. It was developed by a group of European statistical organisations working within the international UN/EDIFACT standards body. GESMES has all the features required to exchange multi-dimensional arrays and time series data, including metadata (such as attributes and footnotes). The advantage of using GESMES, in preference to a proprietary data format, is that it is an internationally agreed standard which is both open and fully functional. It is not tied to the format and constraints of one particular application. In particular GESMES supports the exchange of:  
 metadata;  
 multi-dimensional arrays;

time series;

administration data.

In its generic form, it allows also the sending institution to use the data set structure it prefers.

GESMES was accepted as UN/EDIFACT Status 1 messages in 1995 and was first published in the UN/D95A directory. The statistical office of the European Union, EUROSTAT, who has lead the development of statistical UN/EDIFACT messages is implementing GESMES into the data flows between it and the Member States of the EEA (European Economic Area) and promoting the usage of the messages by other international organisations and by other sectors.

A description of the EDIFACT syntax is provided on the Appendix. For readers who are not familiar with the EDIFACT terminology and syntax, **it is strongly recommended that they familiarise themselves with the [Appendix](#) providing background on this subject.**

## 7 FUNCTIONALITY OF SDMX-EDI AND POSSIBLE DATA EXCHANGE ACTIVITIES

SDMX-EDI provides all different types of functionality required for 'two way' statistical data exchange; for example: between a national central bank (NCB) or a national statistical institute (NSI) and a central institution (e.g. BIS, IMF, Eurostat, ECB, OECD) or between any two institutions as long as they have made known to each other the semantics of the exchanged information (structural definitions). Of course, also a NCB or a NSI could act as a "centre" vis-à-vis other institutions by devising appropriate *structural definitions* (i.e. statistical concepts, code lists, key families) for the data exchanges it is going to administrate.

### 7.1 SDMX-EDI Functionality

The different levels of functionality allow partner institutions to implement SDMX-EDI in a phased approach:

- **Data update:** Exchange only observations (including the mandatory attribute "observation status").
- **Data and attribute update:** In addition to observations and observation status, the exchange could also comprise coded and uncoded attributes linked to the data on a data set, sibling group, time series and observation level.

- **Deletions:** send delete messages of observations and observation status;

in addition to observations and observation status, send delete messages for coded and uncoded attributes linked to the data on a data set, sibling group, time series and observation level.

and, in the longer-term:

- **Exchange of structural definitions:** Exchange of code lists, lists of statistical concepts and key family definitions.

## 7.2 Reporting and Dissemination

The *data update message* has been defined in order to identify the *minimum requirement for data reporting to a central institution (absolutely essential)*. However, it is expected that, over time, partner institutions develop the capability to also provide coded and uncoded attributes relating to the series they report, i.e. to provide the *data and attribute update message which is considered also as essential*. If they erroneously report observations (and attributes), partner institutions will also have to send a *data (and attribute) delete message* (the delete messages are in fact very similar to the ones used for updating).

Dissemination from a central institution may take the form of *complete databases*<sup>1</sup> (e.g. on a CD-ROM), or selected output, or the regular provision of *net updates and revisions*:

### **Complete Data bases:**

On a complete database, the receiving institution will find in the SDMX-EDI format:

- ***data and attribute update message(s)*** with the observation values and the values of the coded and uncoded attributes;
- ***a structural definition message***, which gives information about the statistical concepts, code lists and key families used in the data message(s);

Delete messages cannot be included, as in this case a complete replacement of the previous copy of the database is provided.

### **Updates and Revisions from a Centre:**

Updates and revisions disseminated by a centre enable receiving institutions to get only the information on observations and attributes that has changed in the database since a specific date. This also covers the dissemination of new series (or sibling groups) that have been added to the database, and deletions at the sibling group, series and observation level. In order to take full advantage of this option, receiving institutions have, of course, to be able to interpret *data and attribute update and delete messages*.

The use of the different messages<sup>2</sup> envisaged for SDMX-EDI is summarised in the following table, which also indicates the 'activity' (i.e. *write* or *read*) that partner institutions or the centre perform on the message for the different types of usage.

---

<sup>1</sup> A complete database: the whole [ETS](#) (including data, attributes, structural definitions) or a consistent subset of it.

<sup>2</sup> Actually, these are sub-messages of SDMX-EDI; each one of them reflects a selection of appropriate sections of SDMX-EDI in order to serve the desired activities and to support the corresponding functionalities. In this table the exchange of lists of data sets is not considered.

**Table 1. Activities and message types**

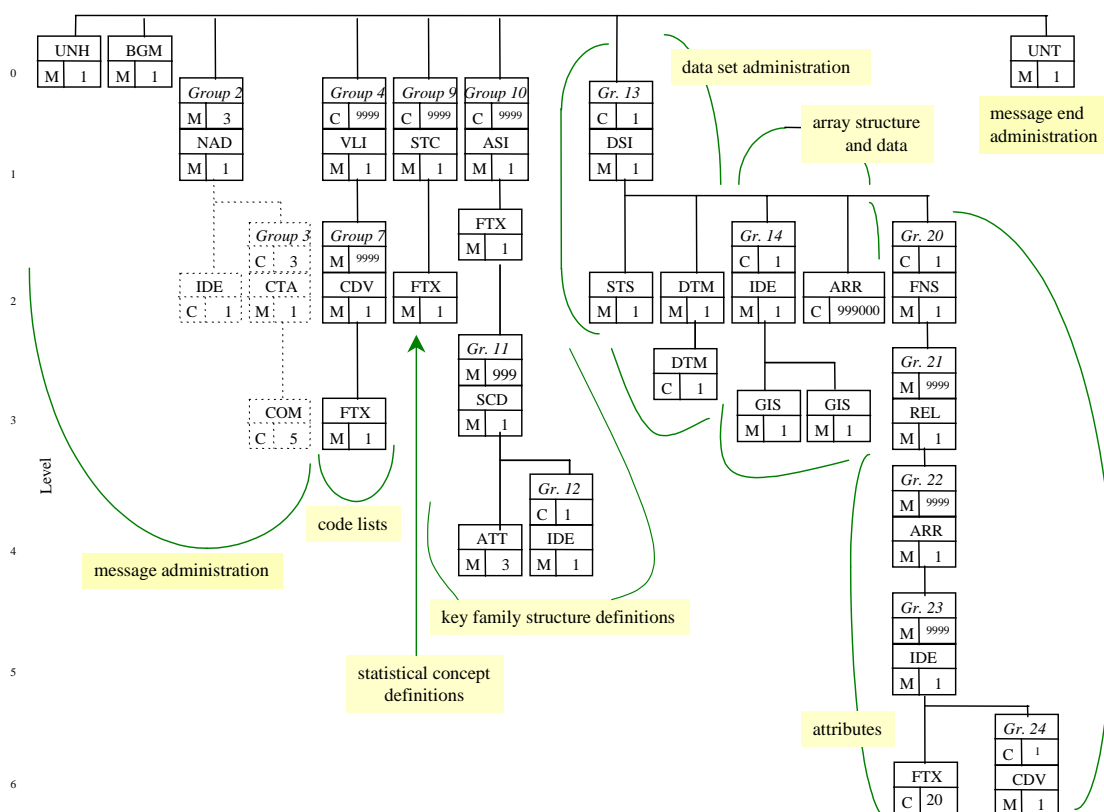
Activity	Message type	Part ner	Centre
'Simple' reporting to a centre	• Data update message	W	R
	• Data delete message	W	R
'Advanced' reporting to a centre, including information on coded and uncoded attributes	• Data/attribute update message	W	R
	• Data/attribute delete message	W	R
Full data base dissemination from a centre	Structural definitions message	R	W
	Data/attribute update message	R	W
Update/revision output from a centre, ad hoc or scheduled	• Data/attribute update message	R	W
	• Data/attribute delete message	R	W

## 8 THE STRUCTURE OF SDMX-EDI

A SDMX-EDI [interchange](#) (file) may contain several messages; each one of those messages comprises a sequence of *segments*, reflecting each one of them a small logical section of the message. Each [segment](#) starts with a unique 3 character identifier (segment tag). Segment identifiers which begin with UN are called *service segments* and are defined as a part of the EDIFACT syntax (ISO 9735). Other segments are called *user data segments* and are defined in the Segments Directory of the UN Trade Data Interchange Directory (UNTDID)<sup>1</sup>.

### 8.1 SDMX-EDI: The Branching Diagram

The most common way to present the contents of a GESMES message is to use its *branching diagram*. A branching diagram shows the segments which are included in the message (via their segment tags), their status (mandatory or conditional) and the maximum number of occurrences which are allowed; as the branching diagram describes a message and not the interchange file, the interchange header and trailer are not shown. The interpretation of a typical branching diagram is explained in the Appendix. Here is the branching diagram of a SDMX-EDI message including all its segments grouped in sections; each section reflects a functionality:



<sup>1</sup> [http://www.unece.org/trade/untddid/d99b/trmd/gesmes\\_c.htm](http://www.unece.org/trade/untddid/d99b/trmd/gesmes_c.htm)

The “conditional” status of the first segment of each section (e.g. VLI in Group 4, DSI in Group 13, FNS in Group 20) would turn into “mandatory” if the corresponding facility had to be used.

## 8.2 Functionality, Segment Sections and Step-by-Step Implementation

The segments of the previous diagram can be grouped in categories each one of them performing a logical task. In the list below the interchange header and trailer have been also included (numbered lines 1 and 10). The logical sections of the main body of a message are presented in the numbered lines 2-9:

Interchange administration (UNA and UNB segments)

Message administration (UNH, BGM, NAD+Z02, NAD+MR, NAD+MS segments)

Code lists (VLI, CDV, FTX segments)

Statistical concept definition (STC, FTX segments)

Key family definition (ASI, SCD, ATT, IDE segments)

Data set administration (DSI, STS, DTM segments)

Array structure (IDE, GIS, GIS segments)

Data (ARR segment)

Attributes (FNS, REL, ARR, IDE, FTX, CDV segments)

End of message administration (UNT segment)

<at this point, just after the “end of message administration”, more *messages [repetitions of the sequence of items 2-9]* can be present in the same interchange>

End of interchange administration (UNZ segment)

The table below indicates which of the sections above are necessary (and their order) in a message, according to the desired function of the message.<sup>1</sup>

---

<sup>1</sup> In this table the exchange of lists of data sets is not considered.



**Table 2. Data and Attribute Update Messages**

Type of message/data exchange:	ABSOLUTELY ESSENTIAL Data update message	Attribute update message	Data and attribute update message
Section	(ordered) sections which must be present		
Interchange administration segments	Yes	Yes	Yes
Message administration segments	Yes	Yes	Yes
Code lists			
Statistical concepts			
Key families			
Data set administration segments	Yes	Yes	Yes
Array structure segments	Yes	Yes	Yes
Data segment(s)	Yes		Yes
Attributes		Yes	Yes
End of message administration	Yes	Yes	Yes
End of interchange administration	Yes	Yes	Yes

**Example 1:**

A **Data Update message** has to have the sections (1) Interchange administration, (2) Message administration segments, (3) Data set administration segments, (4) Array structure, (5) data segment(s), (6) End of message administration and (7) End of interchange administration.

**Example 2:**

A **Data and Attribute Update message** (as it contains attributes), has to include also the *attributes section* (just before the *end of message administration*).

When the purpose of a message is to indicate to the receiver institution to *delete* objects, then according to what should be deleted, the following sections should be used:

**Table 3. Data and Attribute Delete Messages**

Type of message/data exchange:	Data delete	Attribute delete	Data and Attribute delete message
Section	(ordered) sections which must be present		
Interchange administration segments	Yes	Yes	Yes
Message administration segments	Yes	Yes	Yes
Code lists			
Statistical concepts			
Key families			

Data set administration segments	Yes	Yes	Yes
Array structure	Yes	Yes	Yes
Data segment(s)	Yes		Yes
Attributes		Yes	Yes
End of message administration	Yes	Yes	Yes
End of interchange administration	Yes	Yes	Yes

The list of segments indicated in this table is in principle the same as the previous one. But when deleting attributes, not all segments included in the *attributes* section are used (for further information see the *Delete Messages* chapter).

The following table indicates which sections have to be used in order to prepare structural messages (only for dissemination from the centre to the other partners):

**Table 4. Structural messages**

Type of message/data exchange:	Code lists	statistical concept definition	key family definition
Section	(ordered) groups of segments which must be present		
Interchange administration segments	Yes	Yes	Yes
Message administration segments	Yes	Yes	Yes
Code lists	Yes		
Statistical concepts		Yes	
Key families			Yes
Data set administration segments			
Array structure			
Data segment(s)			
Attributes			
End of message administration	Yes	Yes	Yes
End of interchange administration	Yes	Yes	Yes

**Remarks:**

In fact the distinction into different types of messages is artificial, just to facilitate the presentation and the correspondence to logical functionalities: the type of a message (e.g. Data update, Attribute update, Data and attribute update, Data delete etc.) is exclusively determined by the presence or not of the specific sections (and the setting of some parameters).

In the next sections of the chapter each type of message (e.g. data and attribute update) is further illustrated by presenting the function of the segments used within each section.

The branching diagrams presented in the rest of this chapter describe specific message types and therefore the branching diagrams reflect sub-sets of the full message. Moreover, as the emphasis is on how to support desired activities and to serve specific functionalities, the

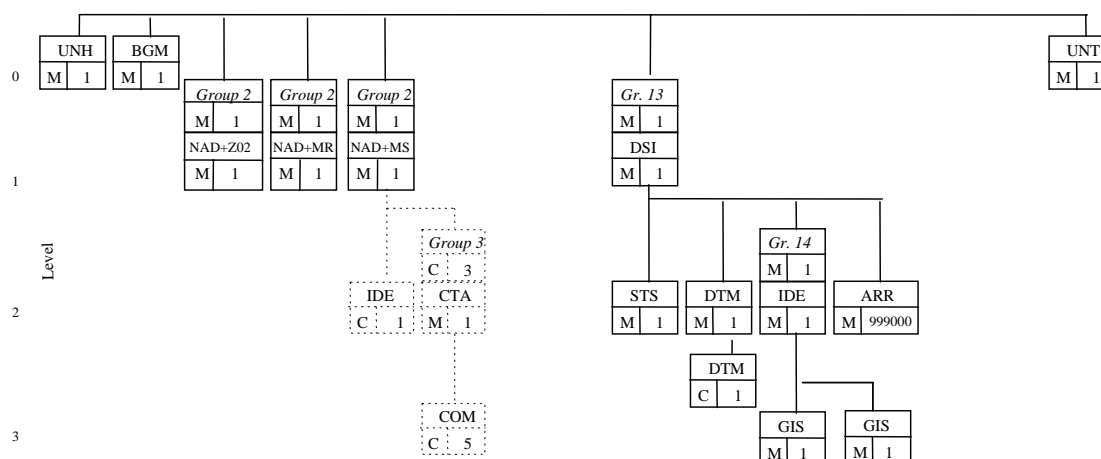
indicated segment status (mandatory/conditional) might be different here for some segments (vis-à-vis the full message) in order to indicate what is really needed per activity and desired functionality.

The reader going through the tables of the following sections of this chapter might find convenient also to refer (for each segment) to the analytical presentation of the *message sections* and *segments* of the next chapter; in this way, the details per segment presented in that chapter (“Segment by segment reference guide”) will enlighten the very brief (but global) overview given in this chapter. This would be the most efficient way for studying the whole guide.

### 8.2.1 Data Update Message: Segment Structure and Purpose

When the goal is the exchange of *observations* (and their associated *array cell attributes*) only, then the segments belonging to the *structural section* (key family definition) and to the *attributes section* are not used.

Therefore, the complete branching diagram collapses to the following one:



This diagram describes the absolutely essential parts of the message that every institution should be able to manage (write and read) at the first implementation phase. *All segments (apart from the ones in dotted lines) are presented here as mandatory because, indeed, they are all necessary in order to serve this functionality.*

The three NAD segments (NAD+Z02, NAD+MR, NAD+MS) are presented here separately for reasons of clarity.

A brief explanation of the segments used (and needed) in this simple message is presented in the following table:

Table 5. Data update message

Sections and segments of the message	Purpose
<b><u>interchange administration</u></b>	
UNAservice-characters	defines the service characters
UNB+syntax-identifier:syntax-version+sender-identification+receiver-identification+date-of-preparation:time-of-preparation+interchange-reference++application-reference(++++test indicator)'	interchange header
<b><u>message administration</u></b>	
UNH+message-reference-number+message-type:message-type-version:message-type-release:controlling-agency'	message identification
BGM+message-function'	message function (=74 for data/attr.)
NAD+Z02+organisation-id'	code list maintenance agency
NAD+MR+organisation-id'	receiver identification
NAD+MS+organisation-id'	sender identification
<b><u>data set administration</u></b>	
DSI+data-set-identifier'	data set identifier
STS+3+status-code'	update/replace (status-code=7)
DTM+date-time-type:date-time:date-time-format'	data set preparation date and time
DTM+date-time-type:date-time:date-time-format'	(and -conditional- reporting period)
<b><u>array structure and data</u></b>	
IDE+5+identifier'	key family identifier
GIS+AR3'	method to send data in the ARR segment
GIS+1:::symbol-used-for-missing-values'	symbol used for missing values
ARR++key:period:date-format:observation:obs-status:obs-confid.'	contains the numeric data; two methods can be used:
ARR++key:period:date-format:observation: obs-status:obs-confid.'	- a single observation per ARR segment...
...	
etc.	
or:	- or a time range with the corresponding observations;
ARR++key:start_date-end_date:time_range_format:observation: obs-status:obs-confid. + observation: obs-status:obs-confid. +... +observation: obs-status:obs-confid.'	
ARR++key:start_date-end_date:time_range_format:observation:obs-status:obs-confid. + observation: obs-status:obs-confid. +... +observation: obs-status:obs-confid.'	the ARR segment can appear up to 999000 times.
...etc.	
<b><u>end of message administration (message trailer)</u></b>	
UNT+number-of-segments+message-reference-number'	end of message control data
<b><u>end of interchange administration (interchange trailer)</u></b>	
UNZ+number-of-messages+interchange-reference'	end of interchange control data

### Example:

Let's assume that the National Bank of Belgium is sending the time series M:BE:PROD:GN:NS and Q:BE:PROD:GN:NS (belonging to a key family called ECB\_TESTPRICES) to the ECB.

For the monthly time series M:BE:PROD:GN:NS the following observations (together with their "status") are reported:

<u>Sep95</u>							<u>Oct95</u>
<u>Nov95</u>							<u>Dec95</u>
<u>Jan96</u>							
<u>Feb96</u>							<u>Mar96</u>
99.10 A	98.10 A	98.40 A	99.50 A	100.00 A	99.20 A	99.80 E C	

The flags A ("normal") and E ("estimate") are values for the Observation Status attribute which is attached next to each observation. The flag C (=confidential) is a value for the Observation Confidentiality attribute which can be attached next to the observation status to provide information about the confidentiality status of an observation. For more details about the usage of these code lists, please refer to the Appendix presenting the corresponding code lists.

For the quarterly series Q:BE:PROD:GN:NS the following data have to be sent:

<u>95q4</u>		<u>96q1</u>
98.67 A	99.67 A	

Using SDMX-EDI, these data have to be sent by the central bank of Belgium in the following file:

BE2=National Bank of Belgium, 4F0 = ECB (example codes for organisations involved)

```

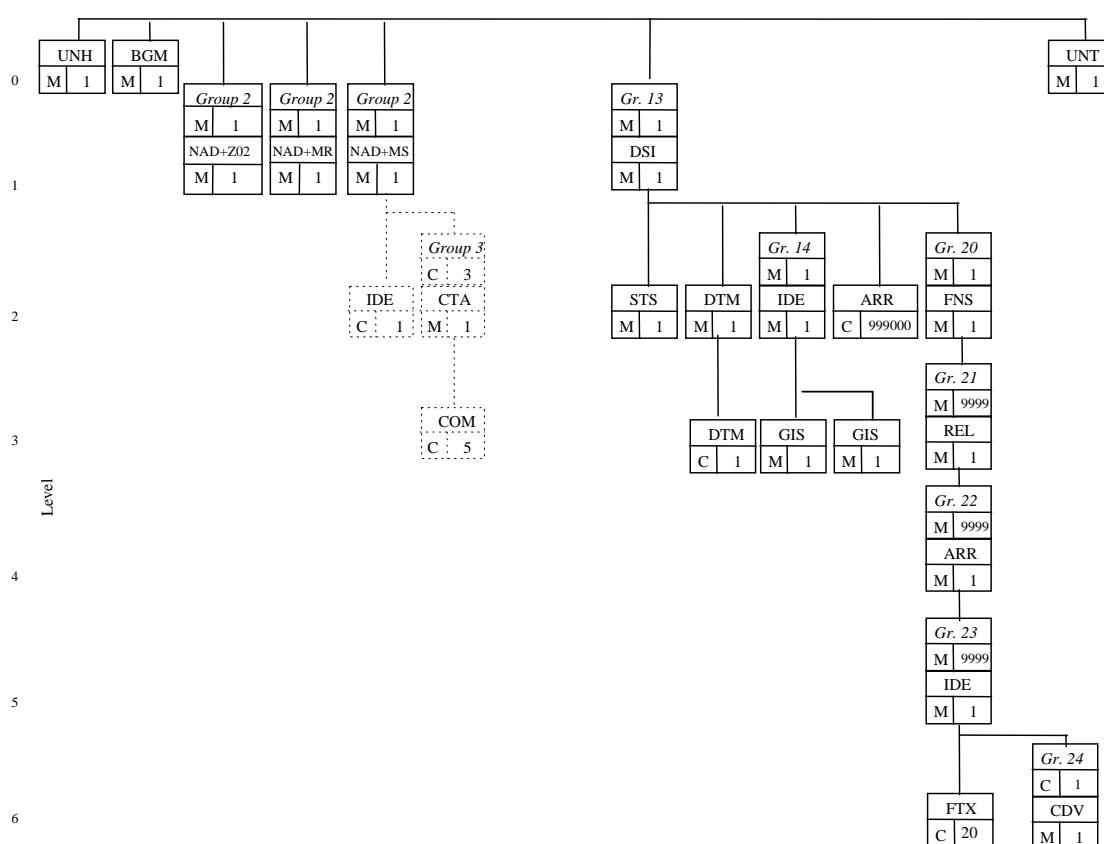
UNA:+. ? '
UNB+UNOC:3+BE2+4F0+970525:1539+IREF000001++SDMX-EDI '
UNH+MREF000001+GESMES:2:1:E6 '
BGM+74 '
NAD+Z02+ECB '
NAD+MR+4F0 '
NAD+MS+BE2 '
DSI+ECB_TESTPRICES '
STS+3+7 '
DTM+242:199705251539:203 '
IDE+5+ECB_TESTPRICES '
GIS+AR3 '
GIS+1:::- '
ARR++M:BE:PROD:GN:NS:199509199603:710:99.10:A+98.10:A+98.40:A+99.50:A+100.00:A+
99.20:A+99.80:E:C '
ARR++Q:BE:PROD:GN:NS:1995419961:708:98.67:A+99.67:A '
UNT+14+MREF000001 '
UNZ+1+IREF000001 '

```

490 In this example the non-fixed elements are underlined and it is obvious that, apart from the  
491 actual data, they provide mainly administrative information (e.g. BE2=central bank of Belgium,  
492 4F0=ECB, ECB\_TESTPRICES=key family identifier). For more explanations about the use of  
493 these segments, refer to the reference guide chapters of this document.

## 8.2.2 Data and Attribute Update Message: Segment Structure and Purpose

An institution reporting data can send, apart from observations, also additional information which helps the users of the exchanged time series to better understand their nature or their special characteristics (title, methodology, etc.). These pieces of information are called attributes and they can be either coded or uncoded. They are exchanged using the FNS segment and the segments which follow it. The branching diagram presented in the previous section is now enlarged, including also the set of segments which carry the attributes:



- Group 13 is presented here as mandatory: without this it is impossible to exchange observations and/or attributes;
- Group 14 is shown also as mandatory: for reporting *observations (with their associated observations flags)* it is obvious that it is needed (it provides information about the structure in the ARR segment following this Group); also, even if the message is used to report only attributes, Group 14 should be used (only the ARR segment which follows immediately after Gr.14 would not be needed in this case).
- Group 20 is shown as mandatory, as it is the Group carrying the attributes.
- If there is a need to exchange *both observations and attributes* then, apart from the essential Groups 13 and 14, the ARR segment which follows Group 14 and Group 20 must be present.

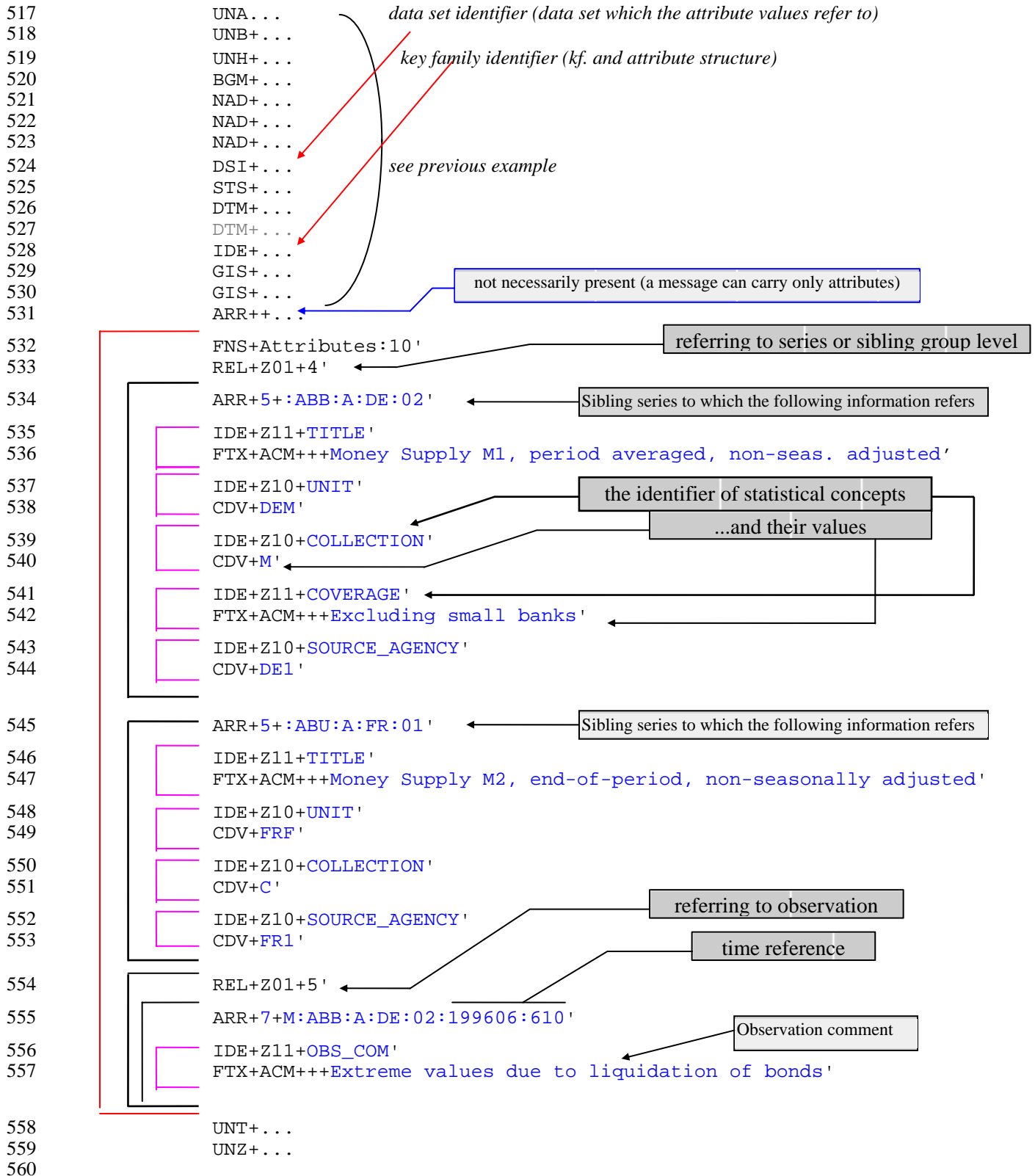
The following table highlights the use of segments when both data and attributes are reported.



**Table 6. Data and attribute update message**

Sections and segments of the message	Purpose
UNA UNB+... UNH+... BGM+... NAD+... NAD+... NAD+... DSI+... STS+... DTM+... DTM+... IDE+... GIS+... GIS+... ARR++...	<div style="position: relative; height: 150px;"> <span style="position: absolute; left: 50%; transform: translateX(-50%);">update/replace</span> </div> <p>as described in the previous table (see DATA UPDATE MESSAGE)</p>
<b>Attributes</b> FNS+general-attribute-identifier:identity-number-type' REL+Z01+array-scope' ARR+last-dimension-position+key-dimension:key-dimension:key-dimension-key:dimension etc.' IDE+Z10+coded-attribute-identifier' CDV+coded-attribute-value' IDE+Z10+coded-attribute-identifier' CDV+coded-attribute-value' etc. IDE+Z11+uncoded-attribute-identifier' FTX+ACM+++text' IDE+Z11+uncoded-attribute-identifier' FTX+ACM+++text' etc. ARR+last-dimension-position+key-dimension:key-dimension:key-dimension-key:dimension etc.' Etc.	<p>[segment introducing attributes]</p> <p>attribute scope</p> <p>dimension/key pointer</p> <p>attribute identifier (Z10=coded attr.) attribute code value</p> <p>attribute identifier attribute code value</p> <p>attribute identifier (Z11=uncoded) attribute text</p> <p>attribute identifier attribute text</p> <p>a new dimension/key pointer can follow</p> <p>new sets of segments 'IDE/CDV' and IDE/FTX can follow</p>
UNT+... UNZ+...	<p>as described in the previous table</p>

### Example:



For further explanations about the use of the attribute related segments, the reader can refer to the segment-by-segment reference guide chapters.

### 8.2.3 Data and Attribute Delete Message

The table and the structure presented in the previous section could be used also, apart from sending data or attributes, to delete objects (which had been made already available to the receiving institution in the past). This is done by using exactly the same structure (as in the Data and Attribute Update message) and...

- **flagging appropriately the message** using a different parameter in the STS segment;
- **in order to delete data:**
  - the ARR segment which follows Group 14 should not contain observations: its references are used simply to point to (existing, previously reported, via an interchange in the past) observations which should be deleted.

#### Example 1:

The segments ...  
STS+3+6 '  
...  
ARR++M:BE:PROD:GN:NS:199509199603:710 '  
...

inform the receiving institution that it should delete the monthly observations of the series M:BE:PROD:GN:NS from Sep95 to Mar96.

#### Example 2:

The segments ...  
STS+3+6 '  
...  
ARR++:BE:PROD:GN:NS '  
...

inform the receiving institution that it should delete the sibling group (assuming that the second dimension is the frequency) :BE:PROD:GN:NS and all associated attributes at this and at lower levels.

- or, in order to delete attributes:

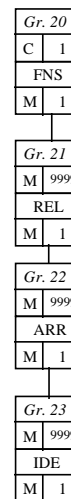
- FTX and CDV after Group 23 are not used (see diagram on the right) and the ARR segment (Group 22) is used exclusively to point the attributes which have to be deleted.

**Example:**

The segments

```
...
STS+3+6 '
...
FNS+Attributes:10 '
REL+Z01+4 '
ARR+5+ :ABB:A:DE:02 '
IDE+Z11+COVERAGE '
```

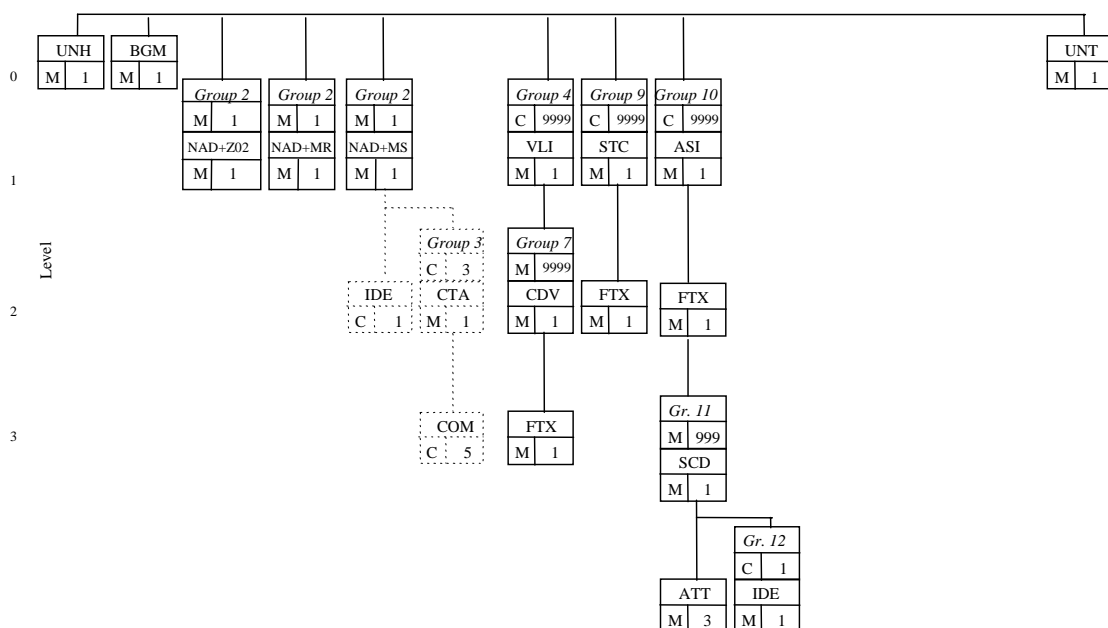
inform the receiving institution that it should delete the attribute referring to the Coverage of the sibling group :ABB:A:DE:02.



*A more extensive and detailed discussion on issues related to deletions is presented as a separate chapter (see page 137).*

## 8.2.4 Structural Definitions Exchange Message: Segment Structure and Purpose

The statistical data exchange system can become completely paperless, when the centre disseminates all structural data (concepts, key family definitions and code lists) using SDMX-EDI. In such a message, and in order to keep it clear, only structural (and administration) segments are included, as in the message below:



A structural message can contain one of the three sections (i.e. code lists, statistical concept definitions, key families), two of them or all three. Normally, all these three sections are used (in one or more messages) in order to provide statistical centres with the possibility to disseminate to their partners all structural definitions needed in an electronic form.

## 8.2.5 Code Lists

The segments relating to code lists (VLI, CDV, FTX) provide the facility to disseminate code lists for coded statistical concepts; they are used either as dimensions in a specific key family or as coded attributes.

## 8.2.6 Statistical Concept definition

The segments relating to the definition of statistical concepts (STC, FTX) are used to provide the link between a statistical concept identifier and its actual name.

## 8.2.7 Key Family Definition

The segments relating to the structure definition of a specific key family serve several purposes. They are used:

- to assign a key family identifier and a description to a key family;
- to define the statistical concepts used as dimensions in the key structure (information which is provided: position of each concept in the key, code value length and relevant code list);
- to define the exact structure of the ARR segment (which contains the numeric values of the message) for this particular key family;

31

ATT+3+5+:::AN $field-length$ '  
IDE+1+code-list-id'  
etc. (for all key family dimensions)

corresponding code list

(ii) time, time format, observation value, coded attributes at obs. level

(other ARR elements:) *time period* follows series key in the

SCD+1+TIME\_PERIOD++++:position-in-the-ARR-structure'

ARR

ATT+3+5+:::AN35'

structure  
then, *time format* follows

SCD+1+TIME\_FORMAT++++:position-in-the-ARR-structure'

then, the observation follows

ATT+3+5+:::AN3'

SCD+3+OBS\_VALUE++++:position-in-the-ARR-structure'

the observation status follows and:

ATT+3+5+:::AN15'

- it is one character long
- it is mandatory (=2)
- attached at the obs. level (=5)

SCD+3+OBS\_STATUS++++:position-in-the-ARR-structure'

ATT+3+5+:::AN1'

ATT+3+35+2:USS'

ATT+3+32+5:ALV'

### (iii) key family attributes

[~ for coded attributes]

**SCD+Z09+concept-identifier'** ATT+3+5+:::AN $field-length$ ' (or: "AN.. $max-field-length$ " for variable length)

**statistical concept identifier**  
(max) length of the attribute value  
mandatory or conditional status  
attachment level  
corresponding code list

ATT+3+35+usage-status-code:USS'

ATT+3+32+attachment-level-code:ALV'

IDE+1+code-list-id'

**SCD+Z09+concept-identifier'** ATT+3+5+:::AN $field-length$ ' (or: "AN.. $max-field-length$ " for variable length)

**statistical concept identifier**  
(max) length of the attribute value  
mandatory or conditional status  
attachment level  
corresponding code list

ATT+3+35+usage-status-code:USS'

ATT+3+32+attachment-level-code:ALV'

IDE+1+code-list-id'

etc. (for all coded attributes of the key family)

[~ for uncoded attributes]

SCD+Z09+concept-identifier'

statistical concept identifier  
max. length of the attribute value  
mandatory or conditional status  
attachment level

ATT+3+5+:::AN.. $max-field-length$ '

ATT+3+35+usage-status-code:USS'

ATT+3+32+attachment-level-code:ALV'

SCD+Z09+concept-identifier'

statistical concept identifier  
max. length of the attribute value  
mandatory or conditional status  
attachment level

ATT+3+5+:::AN.. $max-field-length$ '

ATT+3+35+usage-status-code:USS'

ATT+3+32+attachment-level-code:ALV'

etc. (for all uncoded attributes of the key family)

ASI+...etc. (key family definitions may follow for additional key families)

(as discussed in the previous

	<i>tables)</i>
UNT+...	
UNZ+...	



### Example:

```

UNA:+.? '
UNB+UNOC:3+4F0+BE2+970525:1539+IREF000001++SDMX-EDI '
UNH+MREF000001+GESMES:2:1:E6 '
BGM+73 '
NAD+Z02+ECB '
NAD+MR+BE2 '
NAD+MS+4F0 '

VLI+CL_FREQ+++Frequency '
CDV+A '
FTX+ACM+++Annual '
CDV+Q '
FTX+ACM+++Quarterly '
CDV+M '
FTX+ACM+++Monthly '
CDV+D '
FTX+ACM+++Daily '

VLI+CL_AREA+++Country or area '
CDV+BE '
FTX+ACM+++Belgium '
CDV+DK '
FTX+ACM+++Denmark '
...
CDV+US '
FTX+ACM+++United States '

VLI+CL_BOP_ITEM+++IMF Bal. of payments component '
CDV+100 '
FTX+ACM+++Current account; goods '
CDV+200 '
FTX+ACM+++Current account; services '
CDV+300 '
FTX+ACM+++Factor income '
...
CDV+995 '
FTX+ACM+++Financial account '
CDV+998 '
FTX+ACM+++Errors and omissions '

VLI+CL_BOP_DATA_TYPE+++Type of data '
CDV+1 '
FTX+ACM+++Stock at the beginning of the period '
CDV+2 '
FTX+ACM+++Credit flow '
CDV+3 '
FTX+ACM+++Debit flow '
CDV+4 '
FTX+ACM+++Net flow '
CDV+5 '
FTX+ACM+++Price valuation adjustment '
CDV+6 '
FTX+ACM+++Exchange rate adjustment '
CDV+7 '
FTX+ACM+++Reclassification, other adjustments and other revaluations '
CDV+8 '
FTX+ACM+++Stock at the end of the period '

```

Disseminating code lists

(1= Stock at the beginning of the period)

697 VLI+CL\_UNIT+++Unit '  
 698 CDV+BEF '  
 699 FTX+ACM+++Belgian franc '  
 700 CDV+DEM '  
 701 FTX+ACM+++Deutsche Mark '  
 702 ...  
 703 CDV+USD '  
 704 FTX+ACM+++US dollar '  
 705  
 706 VLI+CL\_UNIT\_MULT+++Unit multiplier '  
 707 CDV+6 '  
 708 FTX+ACM+++Millions '  
 709 CDV+9 '  
 710 FTX+ACM+++Billions ' etc.

Disseminating statistical concept definitions

711 [ STC+FREQ '  
 712 [ FTX+ACM+++Frequency '  
 713 [ STC+REF\_AREA '  
 714 [ FTX+ACM+++Reference country or area '  
 715 [ STC+BOP\_ITEM '  
 716 [ FTX+ACM+++IMF breakdown; balance of payments items (standard component) '  
 717 [ STC+DATA\_TYPE '  
 718 [ FTX+ACM+++Type of data '  
 719 [ STC+TITLE '  
 720 [ FTX+ACM+++Title '  
 721 [ STC+UNIT '  
 722 [ FTX+ACM+++Unit '  
 723 [ STC+UNIT\_MULT '  
 724 [ FTX+ACM+++Unit multiplier '  
 725 [ STC+TIME\_PERIOD '  
 726 [ FTX+ACM+++Time period or time range '  
 727 [ STC+TIME\_FORMAT '  
 728 [ FTX+ACM+++Time format '  
 729 [ STC+OBS\_VALUE '  
 730 [ FTX+ACM+++Observation value '  
 731 [ STC+OBS\_STATUS '  
 732 [ FTX+ACM+++Observation status '  
 733 [ STC+OBS\_CONF '  
 734 [ FTX+ACM+++Observation confidentiality '

Disseminating a key family's definition

736 [ ASI+BAL\_OF\_PAYM\_TEST '  
 737 [ FTX+ACM+++Bal. of payments k.f. for testing '  
 738  
 739 [ SCD+13+FREQ++++:1 '  
 740 [ ATT+3+5+:::AN1 '  
 741 [ IDE+1+CL\_FREQ '  
 742 [ SCD+4+REF\_AREA++++:2 '  
 743 [ ATT+3+5+:::AN2 '  
 744 [ IDE+1+CL\_AREA '  
 745 [ SCD+4+BOP\_ITEM++++:3 '  
 746 [ ATT+3+5+:::AN3 '  
 747 [ IDE+1+CL\_BOP\_ITEM '  
 748 [ SCD+4+DATA\_TYPE++++:4 '  
 749 [ ATT+3+5+:::AN4 '  
 750 [ IDE+1+CL\_BOP\_DATA\_TYPE '  
 751

First dimension is "frequency"  
 and it is one character long;  
 corresponding code list: CL\_FREQ

Second dimension of the series is "reference area"  
 and it is two characters long;  
 corresponding code list: CL\_AREA

Third dimension is "IMF BoP standard component"  
 and it is three characters long;  
 corresponding code list: CL\_BOP\_ITEM

Fourth dimension is "Type of data/position of transaction"  
 and it is one character long;  
 corresponding code list: CL\_BOP\_DATA\_TYPE

752

Other component elements in the ARR structure structure

753 SCD+1+**TIME\_PERIOD**++++: 5 '  
754 ATT+3+5+:::AN..35 '

*Fifth component element is time  
and it is a descr. up to 35 char. long;*

755 SCD+1+ **TIME\_FORMAT**++++: 6 '  
756 ATT+3+5+:::AN3 '

*Sixth component element is the time format  
and it is a number 3 char. long;*

757  
758 SCD+3+**OBS\_VALUE**++++: 7 '  
759 ATT+3+5+:::N15 '

*Seventh component element is the observation  
and it is a 15 char. long numeric field; -- observation attributes --*

760 SCD+3+**OBS\_STATUS**++++: 8 '  
761 ATT+3+5+:::AN1 '  
762 ATT+3+35+2:USS '  
763 ATT+3+32+5:ALV '  
764 IDE+1+CL\_OBS\_STATUS '

*Eighth component element is the observation status,  
it is one character long,  
it is mandatory (usage status=2),  
it is attached at the observation level (attachment level=5) and  
it takes its values from the CL\_OBS\_STATUS code list.*

765 SCD+3+**OBS\_CONF**++++: 9 '  
766 ATT+3+5+:::AN1 '  
767 ATT+3+35+1:USS '  
768 ATT+3+32+5:ALV '  
769 IDE+1+CL\_OBS\_CONF '

*Ninth component element is the observation confidentiality flag  
it is one character long,  
it is conditional (usage status=1),  
it is attached at the observation level (attachment level=5) and  
it takes its values from the CL\_OBS\_CONF code list.*

770

Disseminating same key family's definition of attributes

771 SCD+Z09+**TITLE** '  
772 ATT+3+5+:::AN..70 '  
773 ATT+3+35+2:USS '  
774 ATT+3+32+9:ALV '  
775 SCD+Z09+**UNIT** '  
776 ATT+3+5+:::AN..12 '  
777 ATT+3+35+2:USS '  
778 ATT+3+32+9:ALV '  
779 IDE+1+CL\_UNIT '

*"Title" is an attribute (=Z09) of the key family  
it can be up to 70 characters long  
it is mandatory (usage status=2) and  
it is attached at the sibling group level (attachment level=9)  
"Unit" is an attribute of this key family  
and it can be up to 12 characters long,  
it is mandatory (usage status=2),  
it is attached at the sibling group level (attachment level=9) and  
it takes its values from the CL\_UNIT code list*

780 SCD+Z09+**UNIT\_MULT** '  
781 ATT+3+5+:::AN..2 '  
782 ATT+3+35+2:USS '  
783 ATT+3+32+9:ALV '  
784 IDE+1+CL\_UNIT\_MULT '

*"Unit multiplier" is an attribute of the key family,  
it can be 1 or 2 positions long,  
it is mandatory (usage status=2),  
it is attached at the sibling group level (attachment level=9) and  
it takes its values from the CL\_UNIT\_MULT code list*

785 UNT+135+MREF000001 '

786 UNZ+1+IREF000001'

787 The example given above shows how a centre (e.g. the ECB, coded as 4F0) disseminates  
788 structural data to a central bank (e.g. to the National Bank of Belgium, coded as BE2). The  
789 dissemination of the concept definition (*segments starting with STC*) and of the code lists  
790 (*groups starting with VLI*) provide the receiver with some basic metadata; then, the dimensions  
791 are given (*first group of segments starting with ASI*) and the receiver can form the key structure  
792 of the example key family (BAL\_OF\_PAYM\_TEST):

793

794

FREQ:REF\_AREA:BOP\_ITEM:DATA\_TYPE

795

dimension value length in characters: 1 2 3 1

796 This is the structure of the key of the time series of the key family. E.g. a specific time series  
797 could be the monthly series (FREQ=M) referring to the *goods* (BOP\_ITEM=100) *balance*  
798 (type:net=4) of Belgium (REF\_AREA=BE); its key would be:  
799  
800 M:BE:100:4  
801 Additional information is provided by the attributes TITLE (uncoded), UNIT (coded) and  
802 UNIT\_MULT (coded) of the key family which for this series might take the values:  
803  
804 TITLE=*Merchandise trade balance*, UNIT=BEF, UNIT\_MULT=9

805    **9   SEGMENT BY SEGMENT REFERENCE GUIDE**

806       **9.1   Organisation of the Guide**

807           The segments are presented within separate sections like the ones presented in

Table 2. As it was earlier discussed, each section reflects a type of functionality (e.g. message administration). All sections are described in the following way:

## Scope

This defines the scope of the facility.

## GESMES segments used

This shows the branching diagram of GESMES with the relevant segments highlighted.

## Features and guidelines for usage

This explains the way the segments are used to implement the facility.

### For each segment

- data element sequence

This shows the sequence of data elements in the segment.

- data element usage rules

This is a table which defines:

- the **usage rules for the data element**, including its status:

mandatory:      *the data element must be present;*

conditional:    *the presence of the data element is conditional; the rules are explained in this table;*

optional:        *the data element is not processed and, if sent, is for documentary purposes only.*

its **format** (from the point of view of what the **generic GESMES syntax allows**): the notation used is: an=alphanumeric, n=numeric, “..” = no more than; e.g. an4=four character (exact) alphanumeric, an..4=up to four characters alphanumeric. This is useful for syntax checking vis-à-vis the general GESMES rules.

the **valid codes and their meaning (and/or concrete format specifications) in the SDMX-EDI context**, whenever there are references to code lists in the description of the segments, these refer to the code lists described in relevant documents or files provided by the data exchange centre institution. (see "Code lists" paragraph further below).

### Content and general usage rules of the segment

This provides a description of the role of the segment and rules in the context of SDMX-EDI.

- dependencies: This describes dependencies with other segments, apart from the ones within-the-group.

## Code lists

In some of the presented segments there are references to "code lists". Indeed, some "coded" elements need to take appropriate values from predefined code lists. These are given either as *concrete (mandatory for use)* code lists or as *recommendable* code lists or as *example* code lists.

846

847

848

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852     **9.2   Interchange Administration Section**

853     **9.2.1   Scope**

854         The administration data at the level of the interchange comprises the identification of the syntax  
855         version and character set used, the sender and receiver identification and the date and time of  
856         the preparation of the interchange.

857         The Interchange Administration has to be present in any interchange SDMX-EDI file.

858

859     **9.2.2   GESMES Segments Used**

860         This comprises the UNA and UNB segments. These segments are not a part of the message  
861         structure, they consist instead of the envelope header for the interchange, which can contain  
862         many GESMES messages.

863

864     **9.2.3   Features and Guidelines for Use**

865         One or more GESMES messages can be sent in one interchange.

866

867     **9.2.4   Interchange Administration: Segment Structure**

868         UNAservice-characters

869         UNB+syntax-identifier:syntax-version+sender-identification+         receiver-identification+date-of-  
870         preparation:time-of-preparation +interchange-reference++application-reference'





902 **Segment Type:** **UNB**

903 **Segment Type Name:** *Interchange header*

904 **Max. Number of Occurrences:** 1

905 **Status:** *Mandatory*

906 Data Element Sequence

907 UNB+syntax-identifier:syntax-version+sender-identification+ receiver-identification+date-of-

908 preparation:time-of-preparation +interchange-reference++application-reference++++test-

909 indicator'

910 Data Element Usage Rules

local name	usage rules	format	code values
syntax-identifier	<u>mandatory</u> this identifies the character set used in the interchange	an4	UNOC - (ISO 8859-1) this supports accented characters and the text can be in any European language except Greek
syntax-version	<u>mandatory</u> this is 3, which is the latest version of the syntax	n1	3
Sender-identification	<u>mandatory</u> it identifies the sender.	an..35	Central institution administrating the data exchange provides an appropriate code list for identifying partner organisations.
Receiver-identification	<u>Mandatory</u> it identifies the receiver	an..35	As above.
Date-of-preparation	<u>Mandatory</u> this is the date of preparation of the interchange the format is YYMMDD	n6	e.g. 970525 (Attn! when 2000, then YY will be 00)
Time-of-preparation	<u>Mandatory</u> this is the local time of preparation of the interchange the format is HHMM	n4	e.g. 0950
Interchange-reference-number	<u>mandatory</u> a unique reference which identifies the interchange, incl. a serial incremental number (see also usage rules below)	an..14	in SDMX-EDI the format is: IREFnnnnnn e.g. IREF000001
Application-reference	<u>mandatory</u>	an..14	SDMX-EDI
Test indicator	<u>conditional</u> if found, then the contents should not be used to update or modify databases, as the interchange serves	n1	1

	only testing purposes	
--	-----------------------	--

911 Content and General Usage Rules

912 This segment is the envelope header for one or more messages and contains administration and  
 913 routing information which can be used by a message transfer service. *UNOC:3* is the syntax  
 914 identifier referring to the character set used in the interchange (in SDMX-EDI it has been set  
 915 equal to UNOC:3 which allows the use of upper and lower case characters in the message,  
 916 including the accented Latin characters).

917 The *date-of-preparation* and *time-of-preparation* (fixed format for both together:  
 918 YYMMDD:hhmm) refers to the date and the local time that the interchange file was produced by  
 919 the system of the sender.

920 The *interchange reference number* is a serial (incremental by one) integer number produced by  
 921 the sender. It is strongly recommended, for each institution sending a file to a specific receiver,  
 922 to increment this counter by one (keeping in each sending institution different counters for each  
 923 receiving institution); this is the only safe way to detect not only duplicate interchanges but also  
 924 missing interchanges sent to a centre. The number part (full format: IREFnnnnnn) is six  
 925 characters long, starting with 000001, 000002, ...etc.; the value IREF999999 will be succeeded  
 926 by IREF000000 and then by IREF000001 (starting again from the beginning). A *test interchange*  
 927 should also be flagged with an interchange reference number incremented by one vis-à-vis the  
 928 previous interchange towards the same receiving institution.

929 **Important remark:** When a file contains live data, which are supposed to be used to update  
 930 receiver's live databases, the UNB segment ends with the element "++SDMX-EDI". However, for  
 931 files that should not be used by the receiver to update live databases (e.g. test files), the  
 932 segment must be terminated with the test indicator component (++++1).

933 Dependencies

934 The same *interchange reference number* has to appear also at the end of the message, in the UNZ  
 935 segment.

936  
 937 **Example 1 - exchange of live data:**

938 UNB+UNOC:3+BE2+4F0+950825:1236+IREF000006++SDMX-EDI '

939 In this example the values BE2 (=National Bank of Belgium) and 4F0 (=European Central Bank)  
 940 have been taken from a code list called CL\_ORGANISATION (commonly agreed and  
 941 administrated by the ECB, Eurostat/BoP and the BIS; other data exchange circuits may need to  
 942 define and use a different code list). The interchange file was produced on the 25th Aug. 1995  
 943 (at 12:36) and it is the 6th interchange of this institution via which it is sending data to the ECB.

944 **Example 2 - exchange of test data:**

945 UNB+UNOC:3+BE2+4F0+950825:1236+IREF000007++SDMX-EDI++++1 '

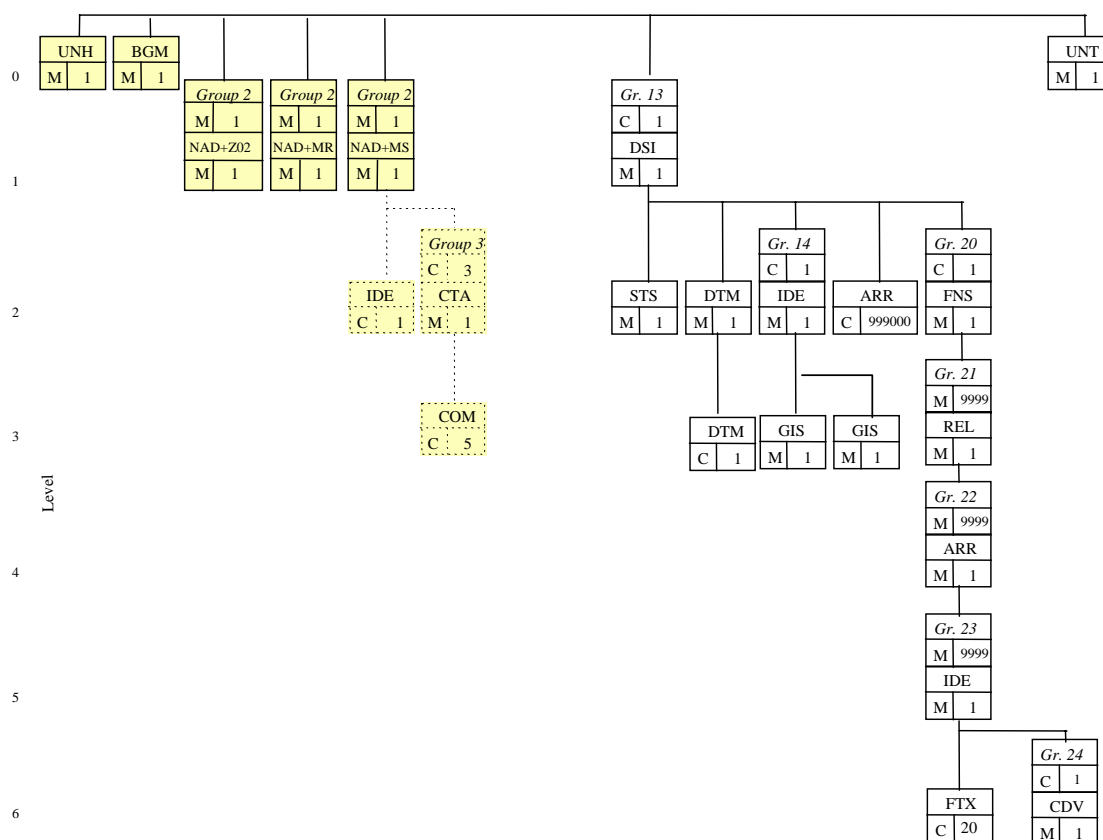
946 As before, but, due to presence of the test indicator (++++1), the contents of the interchange  
 947 should not be used to update or to modify databases at the receiving end as this interchange  
 948 serves only testing purposes.

## 9.3 Message Administration Section

### 9.3.1 Scope

This contains the administration data for the message (shaded boxes in the following branching diagram).

### 9.3.2 GESMES Segments Used



### 9.3.3 Features and Guidelines for Use

UNH identifies the message type and version.

BGM identifies the message purpose either as containing a data set (or references to a data set) or as containing structural data.

NAD three occurrences, one for the identification of the code list maintenance agency (NAD+Z02), one for the identification of the receiver (NAD+MR) and the third one for the identification of the sender (NAD+MS). The last one may trigger an IDE segment and/or Group 3 (CTA and possibly COM). The IDE segment provides a message identity (assigned by the sender) and Group 3, which can be repeated up to three times, provides detailed communication

965 information about the sender (if used by the sender, then the sending institution chooses its one,  
 966 two or three most relevant contact people).  
 967 The Message Administration Group is necessary in all types of messages (the three NAD  
 968 segments are mandatory).  
 969 An interchange can contain more than one messages; therefore, every message within the  
 970 interchange should carry a Message Administration Group.  
 971

#### 972 **9.3.4 Message Administration Section: Segment Structure**

973 **UNH+message-reference-number+message-type:message-type-version:message-type-**  
 974 **release:controlling-agency'**

975 **BGM+message-name'**

976 **NAD+Z02+organisation-id'** (code list maintenance agency identifier)

977 **NAD+MR+organisation-id'** (receiver identifier)

978 **NAD+MS+organisation-id'** (sender identifier)

979 **IDE+10+message-id'** (message identification provided by the sender)

980 **CTA+contact-function+contact-id:contact-name'** (contact information)

981 **COM+communication-number:communication-channel'** (com. number and type of  
 982 channel)  
 983

984

985 **Segment Type:** **UNH**

986 **Segment Type Name:** *Message Header*

987 **Max. Number of Occurrences:** *1*

988 **Status:** *Mandatory*

989

990 Data Element Sequence

991 UNH+message-reference-number+message-type:message-type-version:message-type-

992 release:controlling-agency'

993 Data Element Usage Rules

local name	usage rules	format	SDMX-EDI code values
message-reference-number	<u>mandatory</u> reference that must be unique within the interchange using a serial (incremental by one) integer number produced by the sender (see also rules below).	an..14	<i>format:</i> MREFnnnnnn
message-type	<u>mandatory</u>	an..6	GESMES
message-type-version	<u>mandatory</u>	an..3	2
message-type-release	<u>mandatory</u>	an..3	1
controlling agency	<u>mandatory</u>	an..2	E6

994

995 Content and General Usage Rules

996 This segment starts the message and contains data which identify the message type and a

997 unique reference which can be used to validate the integrity of the message. In SDMX-EDI the

998 only non-fixed element is the *message reference number*. The message reference number

999 (format: MREFnnnnnn) is a serial (incremental by one) integer number produced by the sender

1000 for each message in the current interchange (an interchange can include more than one

1001 message). The part of the pure number (nnnnnn) is six characters long, starting with

1002 MREF000001, MREF000002, ...etc.; no more than 999,999 messages can be included in one

1003 interchange. The first message reference number should be 000001.

1004 Dependencies

1005 The same message reference number has to appear also at the end of the message, in the UNT

1006 segment.

1007 **Example:**

1008 UNH+MREF000001+GESMES:2:1:E6'

1009 **Segment Type:** **BGM**

1010 **Segment Type Name:** *Beginning of Message*

1011 **Max. Number of Occurrences:** *1*

1012 **Status:** *Mandatory*

1013

1014 Data Element Sequence

1015 BGM+message-name'

1016 Data Element usage Rules

local name	usage rules	format	SDMX-EDI code values
message-name	<u>mandatory</u> <b>73</b> - statistical definitions this is used if the message contains only statistical definitions (e.g. structure definitions, code lists) and there are no data sets in the message (i.e. no occurrence of the DSI group) <b>74</b> - statistical data this is used to indicate that data and/or attributes are sent in the message or that the message contains delete references; therefore, the message contains the DSI group. <b>DSL</b> - data set list the message contains only a list of data set identifiers and the key family definitions that describe their structure.	an..3	<b>73</b> - statistical definitions  <b>74</b> - statistical data  <b>DSL</b> - data set list

1017

1018 Content and General Usage Rules

1019 This segment identifies the function of the message.

1020 Dependencies

1021 If the *message-name* has been set to 74, then the data set administration section has to be  
 1022 present and no structural sections (e.g. code lists, key family definition) should be included in the  
 1023 message. The reading applications should expect numeric data and/or attributes in this  
 1024 message. On the other hand, if the *message-name* has been set to 73, the data set  
 1025 administration section should not be present and the reading application should conclude that  
 1026 the message contains structural definitions (lists of concepts or code lists or key family  
 1027 definitions).



1028

1029

1030     **Example 1:**

1031     BGM+74'

1032     This message contains or it refers to data (observations) and/or attributes.

1033     **Example 2:**

1034     BGM+73'

1035     This message contains only code lists and/or statistical concept definitions and/or key family  
1036     definitions.

1037

1038	<b>Segment Group:</b>	<b>Group 2 (NAD)</b>
1039	<b>Max. Number of Occurrences:</b> 3	
1040	<b>Status:</b>	<i>Mandatory</i>
1041	<u>Content and General Usage Rules</u>	
1042	The NAD group is used to provide:	
1043	(1) the identity of the organisation maintaining the code lists and the key family definitions,	
1044	(2) the identity of the receiving organisation and	
1045	(3) the identity of the sending organisation (and, possibly, more information provided by	
1046	the sender).	
1047	Each piece of information is provided by a simple NAD segment (NAD+Z02+..., NAD+MR+...	
1048	and NAD+MS+... respectively). The third one (NAD+MS+...) might be followed by an IDE	
1049	segment and/or up to three occurrences of Group 3 (CTA-COM) which give further information	
1050	related to the sender.	

1051 **Segment Type:** **NAD** First occurrence - ref. to code lists administration agency

1052 **Segment Type Name:** *Name and Address*

1053 **Max. Number of Occurrences:** 1

1054 **Status:** *Mandatory*

1055 Data Element Sequence

1056 NAD+party-type+organisation-id'

1057 Data Element Usage Rules

local name	usage rules	format	SDMX-EDI code values
Party-type	<u>mandatory</u> Z02 indicates that this NAD segment refers to the party maintaining the default code lists	an..3	<b>Z02</b> (fixed) Maintenance agency for code lists and k.f. definitions
Organisation-id	<u>mandatory</u> the code list maintenance agency id is given here	an..35	Examples:  <b>BIS</b> <b>ECB</b> <b>EUROSTAT</b> <b>IMF</b>  <b>OECD</b>

1058 Content and General Rules

1059 This is used to provide the identity of the organisation maintaining the code lists and key family  
 1060 definition used in the message. The sending institution chooses appropriately this parameter in  
 1061 accordance with the guidelines of the centre whose statistical concepts, code lists and structures  
 1062 are used in the message. For a more extensive discussion on the practical role and the use of  
 1063 the "maintenance agency" concept, the reader is advised to refer to the paragraph on [central](#)  
 1064 [institutions](#).

1065 **Example 1 :**

1066 NAD+Z02+**EUROSTAT**'

1067 This is how the segment should be written if the message uses/refers to structural definitions  
 1068 administrated by Eurostat.

1069 **Example 2 :**

1070 NAD+Z02+**BIS**'

1071 **Example 3:**

1072 NAD+Z02+**ECB**'

1073

1074 **Segment Type:**                    **NAD**    **Second occurrence - reference to the message receiver**

1075        **Segment Type Name:**            *Name and Address*

1076        **Max. Number of Occurrences:** *1*

1077        **Status:**                                *Mandatory*

1078    Data Element Sequence

1079            NAD+party-type+organisation-id'

1080    Data Element Usage Rules

local name	usage rules	format	SDMX-EDI code values
Party-type	<u>mandatory</u> party-type is MR	an..3	<b>MR</b> - message receiver
Organisation-id	<u>mandatory</u> message receiver	an..35	A code value for identifying the receiving organisation; it is provided by the statistical centre administrating the data exchange.

1081

1082    Content and General Rules

1083            This is used to provide the identity of the receiving organisation.

1084        **Example:**

1085            NAD+MR+4F0'

1086            Here, the message is supposed to be sent to the European Central Bank (here coded as 4F0).

1087

1088

1089     **Segment Type:**                    **NAD**   **Third occurrence; reference to the message sender**

1090           **Segment Type Name:**         *Name and Address*

1091           **Max. Number of Occurrences:** *1*

1092           **Status:**                        *Mandatory (trigger)*

1093     Data Element Sequence

1094           NAD+party-type+organisation-id'

1095     Data Element Usage Rules

local name	usage rules	format	SDMX-EDI code values
party-type	<u>mandatory</u> party-type is MS	an..3	MS - message sender
organisation-id	<u>mandatory</u> message sender	an..35	A code value for identifying the sending organisation; the underlying code list is provided by the statistical centre administrating the data exchange.

1096

1097     Content and General Rules

1098           This is used to provide the identity of the sending organisation.

1099           **Example:**

1100           NAD+MS+BE2'

1101           The message is sent by the National Bank of Belgium (here coded as BE2).

1102

1103 **Segment Type:** **IDE**

1104 **Segment Type Name:** *Message identity*

1105 **Max. Number of Occurrences:** 1

1106 **Status:** *Conditional*

1107 Data Element Sequence

1108 IDE+*object-type+message-identity'*

1109 Data Element Usage Rules

local name	usage rules	format	SDMX-EDI code values
object-type	<u>mandatory</u> <i>object-type</i> is 10	an..3	10 - message context
message-identity	<u>mandatory</u> message identity assigned by the sender of the message (see also rules below)	an..35  (see also rules below)	free text  <i>E.g. Regular daily update, Regular monthly reporting, etc.</i>

1110

1111 Content and General Rules

1112 This message identity is provided by the sender. It is free text and in general it can be up to 35  
1113 characters long (e.g. "Daily update", "Monthly tape").

1114

1115 **Example 1:**

1116 IDE+10+Quarterly BoP reporting'

1117 The sender has identified this message as "Regular quarterly BoP reporting".

1118

1119

1120 **Segment Group:**

**Group 3 (CTA-COM)**

1121 **Max. Number of Occurrences:** 3

1122 **Status:**

*Conditional*

1123 *Content and General Usage Rules*

1124 Each occurrence of this group is used to provide details about a contact that is relevant to the  
 1125 sending organisation identified in the preceding NAD+MS segment. These details include the  
 1126 name of the contact and, optionally, contact numbers such as telephone, fax, e-mail.

1127 This Group is conditional. Certain data exchange circuits might find it useful and could agree to  
 1128 regularly use it in the exchanged messages.

1129 As Group 3 can be repeated three times, if the sender made use of it, he could choose the  
 1130 (maximum) three most relevant people whose details could be useful to the receiver.

1131

1132 **Segment Type:**

**CTA**

1133 **Segment Type Name:** *Contact information*

1134 **Max. Number of Occurrences:** 1

1135 **Status:** *Mandatory (trigger)*

1136 Data Element Sequence

1137 CTA+contact-function+contact-id:contact-name'

1138 Data Element Usage Rules

local name	usage rules	format	SDMX-EDI code values
contact-function	<u>mandatory</u> It identifies the function of the person (on the sending side) whose name follows	an..3	CC - responsible person for information production CP - responsible person for computer data processing CF - Head of unit for information production CE - Head of unit for computer data processing
contact-id	<u>optional</u> the identity of the contact (dept. id) as known in sender's side	an..17	e.g. BoP, M&B, EDP, ICSD etc.
contact-name	<u>mandatory</u> the name of the contact person	an..35	e.g. John Smith

1139

1140 Content and General Rules

1141 It identifies a contact name at the sending institution.

1142 **Example 1:**

1143 CTA+CC+:Mr John Smith'

1144 Mr. John Smith is the person responsible for the compilation and production of the data at the  
1145 sending institution.

1146 **Example 2:**

1147 CTA+CP+IS/BoP:Mr John Smith'

1148 Mr. John Smith is the person responsible for data computer processing at the IS/BoP unit in the  
1149 sending institution.

1150



1151 **Segment Type:** **COM**

1152 **Segment Type Name:** *Communication number and type of channel*

1153 **Max. Number of Occurrences:** 5

1154 **Status:** *Conditional*

1155 Data Element Sequence

1156 COM+communication-number:communication-channel'

1157 Data Element Usage Rules

local name	usage rules	format	SDMX-EDI code values
communication-number	<u>mandatory</u> Telephone or fax number or e-mail address etc.	an..512	e.g. 0049 69 1344 0
communication-channel	<u>mandatory</u>	an..3	EM - e-mail TE - telephone FX - fax XF - X.400

1158 Content and General Rules

1159 It provides a contact number for the person indicated in the preceding CTA segment and it  
1160 identifies the type of this number (communication channel).

1161 **Example 1:**

1162 COM+0049 69 13440:TE'

1164 **Example 2:**

1165 Combining with previous segments:

1166 NAD+MS+4F0'

1167 IDE+10+ECB-monthly disseminated aggr. data'

1168 CTA+CC+Money and Banking:Mr John Smith'

1169 COM+0049 69 13440:TE'

1170 COM+0049 69 13446000:FX'

1171 COM+jsmith@test.com:EM'

1172 CTA+CP+IS/M&B:Mr Klaus Roberts'

1173 COM+0049 69 1344888:TE'

1174 This example shows the use of the whole (conditional) group following NAD+MS. The ECB  
1175 (=4F0) provides info about the message contents (IDE segment) and people to contact  
1176 (CTA/COM segments).

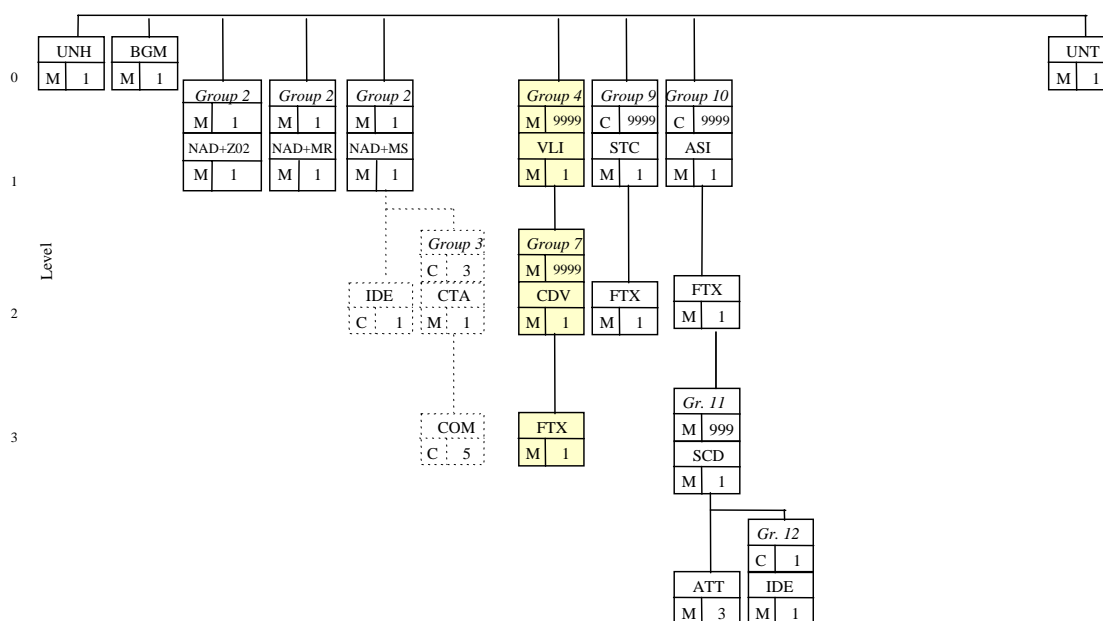
## 9.4 Code List Section

### 9.4.1 Scope

The dissemination of the code lists from the centre enables the receiving institutions to build tables with the possible values for all coded statistical concepts (dimensions used in key families and coded attributes). References to the code lists can be used by any of the data sets sent in other SDMX-EDI messages.

### 9.4.2 GESMES Segments Used

In SDMX-EDI data and attributes (DSI Group) cannot be mixed in the same message with the groups of segments carrying the structural definitions (i.e. code lists-VLI, statistical concepts-STC, key family definitions-ASI). Therefore, the following branching diagram presents a typical SDMX-EDI structural message carrying code lists, statistical concept definitions and key family definitions. The shaded boxes are the ones used for the exchange of code lists which is discussed in this section; that it is why Group 4 has been flagged here as mandatory.



### 9.4.3 Features and Guidelines for Use

The list is sent in Group 4. The list itself must be given a unique identifier and this is sent in the VLI segment. The individual code values are sent in the CDV segment (one code in each occurrence of a CDV segment) and their textual description is given in the FTX segment (one textual description for each occurrence of a CDV segment).

1202

1203     **9.4.4   Code List Section: Segment Structure**

1204         VLI+*code-list-id*+++*code-list-name*'

1205         CDV+*code-value*'

1206         FTX+ACM+++*textual-description*'

1207

1208	<b>Segment Group:</b>	<b>Group 4 (VLI-Group 7)</b>
1209	<b>Max. Number of Occurrences:</b>	9999
1210	<b>Status:</b>	<i>Conditional</i>
1211	<u><i>Content and General Usage Rules</i></u>	
1212	A group of segments containing a code list. It can be stored by the receiver on a metadata database (see also about alternative ways of organising structural definitions in Section 3.4.1.).	
1213		
1214		
1215		

1216 **Segment Type:** **VLI**

1217 **Segment Type Name:** *Value List Identification*

1218 **Max. Number of Occurrences:** 1

1219 **Status:** *Mandatory (trigger)*

1220

1221 Data Element Sequence

1222 VLI+code-list-id+++code-list-name'

1223 Data Element Usage Rules

local name	usage rules	format	SDMX-EDI code values
code-list-id	<u>mandatory</u> the identity of the code list	<a href="#">an..18</a>	Code list identifier as provided by a centre institution,  e.g.: CL_UNIT
code-list-name	<u>mandatory</u> the name of the code list	<a href="#">an..70</a>	Short description (name) of a code list provided by a centre institution,  e.g.: Units code list

1224

1225 Content and General Usage Rules

1226 The segment is used to provide a unique identifier and a name for a code list.

1227

1228 **Example 1:**

1229 VLI+CL\_ADJUSTMENT+++Adjustment code list'

1230 A code list called CL\_ADJUSTMENT will be given via the segments which follow (CDV, FTX).

1231

1232 **Example 2 :**

1233 VLI+CL\_ORGANISATION+++Organisation code list'

1234 A code list called CL\_ORGANISATION will be given via the segments which follow (CDV, FTX).

1235    **Segment Group:**    **Group 7 (CDV-FTX)**

1236    **Max. Number of Occurrences:**    9999

1237    **Status:**    *Mandatory*

1238    *Content and General Usage Rules*

1239    A group of segments containing the code values in a code list and their descriptions.

1240    The CDV segment occurs once for each code and the FTX segment once for each CDV.

1241 **Segment Type:** **CDV**

1242 **Segment Type Name:** *Code Value*

1243 **Max. Number of Occurrences:** *1*

1244 **Status:** *Mandatory (trigger)*

1245

1246 Data Element Sequence

1247 CDV+code-value'

1248 Data Element Usage Rules

local name	usage rules	Format	SDMX-EDI code values
code-value	<u>mandatory</u> the code value	<a href="#">an..18</a>	A code value from a code list provided by a centre institution.

1249

1250 Content and General Rules

1251 This is used to provide a code value.

1252 **Example:**

1253 CDV+[DK2](#)'

1254 This is a code value from the [CL\\_ORGANISATION](#) code list (mentioned in a [previous example](#)  
1255 when demonstrating VLI).

1256 **Segment Type:** **FTX**

1257 **Segment Type Name:** *Free Text (code value textual description)*

1258 **Max. Number of Occurrences:** 1

1259 **Status:** *Mandatory*

1260

1261 Data Element Sequence

1262 FTX+text-subject+++code-value-description'

1263 Data Element Usage Rules

local name	usage rules	format	SDMX-EDI code values
text-subject	<u>Mandatory</u> in SDMX-EDI: "statistical description"	an..3	<a href="#">ACM</a> (=statistical description)
code-value-description	<u>Mandatory</u> the text of the code value	an..350	The textual description of the meaning of a code value. Expression for maximum length: text:text:text:text:text where each "text" can be up to 70 characters long.

1264

1265 Content and General Rules

1266 This is used to provide the description of a code value.

1267 Each occurrence of this segment is used to provide the description of a code value. It can be up  
 1268 to (total) 350 characters long. However, if the description is longer than 70 characters (upper  
 1269 limit for a single component element), then the *text* should be split in (the maximum) 5  
 1270 component element-texts (each one of them not being longer than 70 characters and separated  
 1271 among them with a *component separator*). The reading applications should read the  
 1272 components of the received text and consider that they form a string which is the result of the  
 1273 added sub-strings. The writing applications should break the text into pieces of 70 characters or  
 1274 shorter; it does not matter whether a word is broken between two component elements or not  
 1275 (see also the [Appendix](#) on the EDIFACT syntax).

1276 Briefly, the code value description can be given as *free-text:free-text:free-text:free-text:free-text'*  
 1277 where *free-text* can be up to 70 characters long and can repeat up to five times. See also  
 1278 section 6.9.9.

1279 **Example:**

1280 FTX+ACM+++[Danmarks Nationalbank](#)'

1281 This is the description explaining the code value shown in the previous example demonstrating  
 1282 CDV.



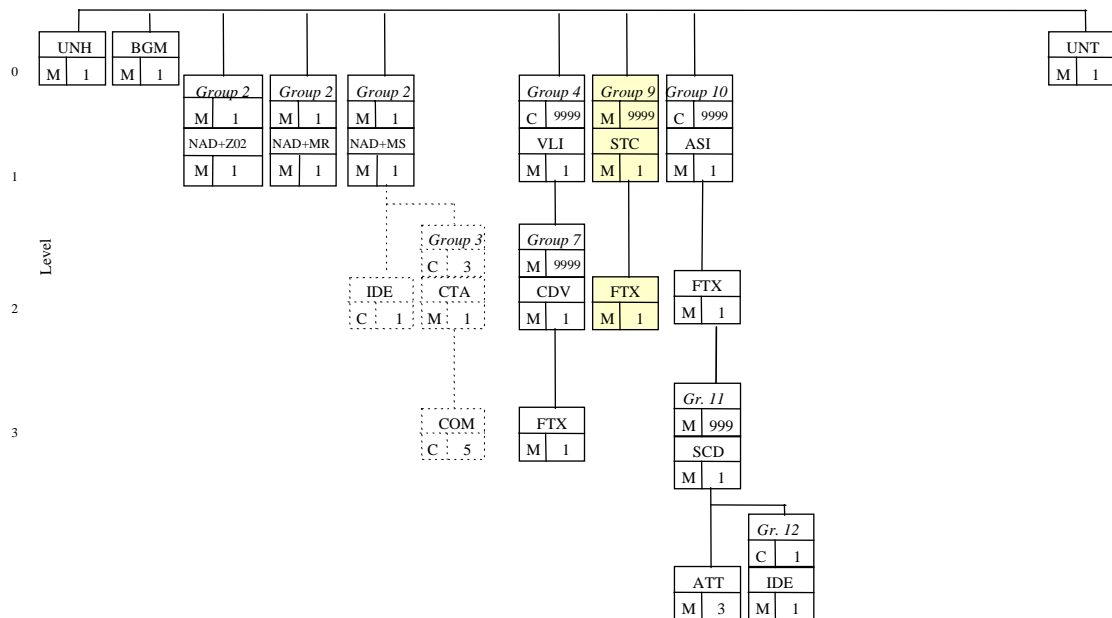
## 9.5 Statistical Concept Definition Section

### 9.5.1 Scope

This provides a list of the statistical concepts used by the partners together with their names.

### 9.5.2 GESMES Segments Used

In the following SDMX-EDI branching diagram the shaded boxes are used in the definition of the concepts. Group 9 is shown here as mandatory, as without it is not possible to disseminate statistical concept definitions.



### 9.5.3 Features and Guidelines for Use

A pair of segments is used; the first segment (STC) provides the identifier of the statistical concept and the second one (FTX) its name.

### 9.5.4 Statistical Concept Definition Section: Segment Structure

STC+concept-identifier'

FTX+ACM+++concept name'

repeats

1298		
1299	<b>Segment Group:</b>	<b>Group 9 (STC-FTX)</b>
1300	<b>Max. Number of Occurrences:</b> 9999	
1301	<b>Status:</b>	<i>Conditional</i>
1302	<u><i>Content and General Usage Rules</i></u>	
1303	A pair of segments describing a statistical concept.	

1304 **Segment Type:** **STC**

1305 **Segment Type Name:** *Statistical concept*

1306 **Max. Number of Occurrences:** *1*

1307 **Status:** *Mandatory (trigger)*

1308

1309 Data Element Sequence

1310 *STC+concept-identifier'*

1311 Data Element Usage Rules

local name	usage rules	format	SDMX-EDI code values
concept-identifier	<u>mandatory</u> the identifier of the statistical concept	<a href="#">an..18</a>	A statistical concept identifier as provided by a centre institution. e.g.: UNIT

1312

1313 Content and General Usage Rules

1314 The segment identifies the statistical concept.

1315

1316 **Example:**

1317 *STC+SOURCE\_AGENCY'*

1318 The *name* of a concept, whose identifier is SOURCE\_AGENCY, will be given in the FTX  
1319 segment which follows.

1320

1321 **Segment Type:** **FTX**

1322 **Segment Type Name:** *Free Text (name of the concept)*

1323 **Max. Number of Occurrences:** 1

1324 **Status:** *Mandatory*

1325

1326 Data Element Sequence

1327 FTX+text-subject+++code-label'

1328 Data Element Usage Rules

local name	usage rules	format	SDMX-EDI code values
text-subject	<u>mandatory</u> in SDMX-EDI: "statistical description"	an..3	<a href="#">ACM</a> (=stat.description)
code-label	<u>mandatory</u> name of the statistical concept	an..70	A name for the concept specified on the previously given STC segment.

1329

1330 Content and General Rules

1331 This is used to provide the name of the concept stated in the previous segment (STC).

1332 **Example:**

1333 FTX+ACM+++[Source agency](#)'

1334 This is the name of the concept shown in the previous example (see description for [STC](#)).

1335

1336

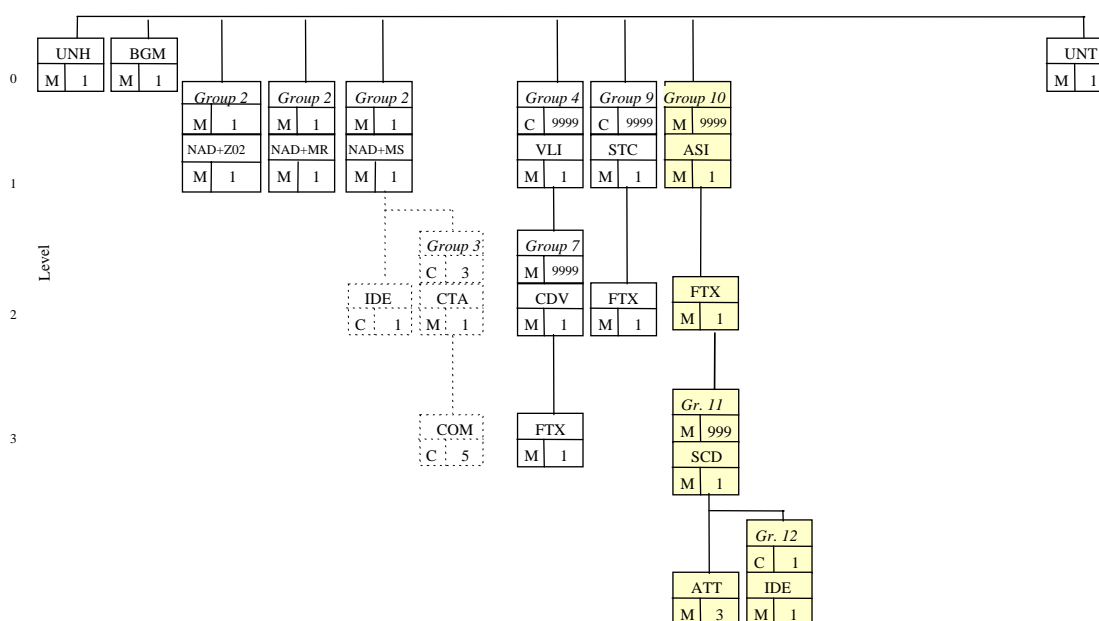
## 9.6 Key Family Definition Section

### 9.6.1 Scope

This section allows the organisation receiving the corresponding structural message to interpret key family definitions (which dimensions and at which positions) and the corresponding lists of relevant attributes. It is obvious that the key family definition could not contain structure components (i.e. a statistical concept) which have not been already described in the “exchanged” concepts (e.g. via Group 8): each concept id used in a key family definition should also become *known* to the partner institutions.

### 9.6.2 GESMES Segments Used

When the parties exchange key family definitions, they have to use Group 10 (the shaded boxes show the segments involved); that is why this group is shown here as mandatory:



### 9.6.3 Features and Guidelines for Use

A key family definition is reflected in one occurrence of the [ASI](#) segment. A [FTX](#) segment provides the name of the key family. Each structure component is identified as an occurrence of the [SCD](#) segment, in terms of the statistical concept identifier (and the position of the dimension in the key structure if the concept is a dimension). In general, a complete key family definition comprises:

the identification of all dimensions of this key family and also of all the other relevant observation component elements (**this structural information is needed for the interpretation of the ARR segment following Group 14 - not shown here - which holds the data to be exchanged**).

the identification of all the attributes (mandatory and non-mandatory) which are in use within this key family (SCD segment), the definition of their status and their attachment level;  
the description of the format of the values of the statistical concepts (ATT segment) and

the identification of the corresponding code list (IDE) if the statistical concept is coded.

#### 9.6.4 Key Family Definition Section: Segment Structure



1399    **Segment Group:**    **Group 10 (ASI-Group 11)**

1400    **Max. Number of Occurrences:**    9999

1401    **Status:**    *Conditional*

1402    *Content and General Usage Rules*

1403    Each occurrence of this group is used to provide the definition of a key family (its dimensions  
1404    and attributes). The key family may be new or it may already exist on the receiver's database, in  
1405    which case the definition in this group should replace the definition in the existing metadata  
1406    database.

1407 **Segment Type:** **ASI**

1408 **Segment Type Name:** *Array Structure Identification*

1409 **Max. Number of Occurrences:** *1*

1410 **Status:** *Mandatory (trigger)*

1411 *Content and General Usage Rules*

1412 This is used to identify the data set structure (i.e. array structure).

1413 *Data Element Sequence*

1414 *ASI+data-set-structure-identifier'*

1415 *Data Element Usage Rules*

Local name	usage rules	format	SDMX-EDI code values
Data-set-structure-identifier	<u>mandatory</u>	<a href="#">an..18</a>	the key family identifier

1416

1417 *Content and General Rules*

1418 This is used to provide the structure of the data set: in SDMX-EDI the identification of the data  
1419 set structure is provided by a "key family identifier".

1420 **Example:**

1421 *ASI+[ESCB\\_BAL\\_OF\\_PAYM01](#)'*



1422 **Segment Type:** **FTX**

1423 **Segment Type Name:** *Free Text (name of a key family)*

1424 **Max. Number of Occurrences:** 1

1425 **Status:** *Mandatory*

1426

1427 Data Element Sequence

1428 FTX+text-subject+++code-label'

1429 Data Element Usage Rules

local name	Usage rules	Format	SDMX-EDI code values
text-subject	<u>Mandatory</u> in SDMX-EDI: "statistical description"	an..3	<a href="#">ACM</a> (=stat.description)
code-label	<u>Mandatory</u> name of the statistical concept	an..70	The name (short description) of the key family specified on the previously given ASI segment.

1430

1431 Content and General Rules

1432 This is used to provide the name of the key family stated in the previously given segment (ASI).

1433 **Example:**

1434 FTX+ACM+++[ECB kf for BoP data](#)'

1435 This is the name of the key family shown in the previous example (see description for [ASI](#)).

1436

1437      **Segment Group:** **Group 11 (SCD-ATT-Group 12)**

1438      **Max. Number of Occurrences:** 999

1439      **Status:** *Conditional*

1440      *Content and General Usage Rules*

1441      This segment group identifies the statistical concepts of the key family and defines them as  
 1442      either dimensions or attributes. Dimensions must be coded, while attributes may be or not.  
 1443      In addition, it provides information required for the interpretation of the ARR segment following  
 1444      group 14:

- 1445      • time dimensions: "time period" ("To which periods do the data in the ARR segment relate?")  
 1446          and "time format" ("Do the data in the ARR segment relate to a single period or to a range  
 1447          and what is the frequency?")
- 1448      • array cells: observation value, the observation level attribute observation status (mandatory)  
 1449          and the observation level attributes observation confidentiality and observation pre-break  
 1450          (both conditional).

1451      These categories of definitions are elaborated below:

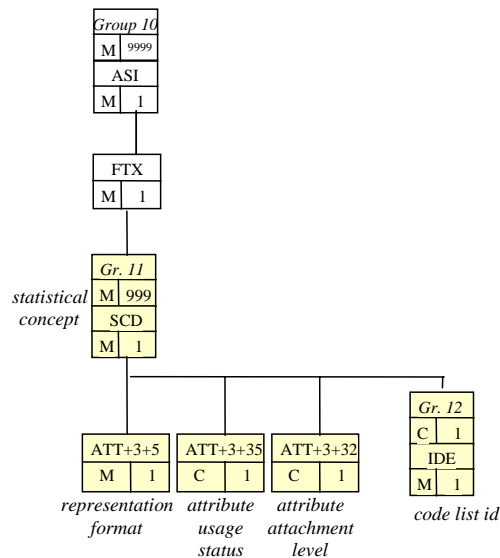
1452      Dimension: For each dimension of the key family, (1) its position in the key structure, (2) its  
 1453      representation (length of the code values and whether they are numeric or alphanumeric) and  
 1454      (3) the name of the relevant code list are provided.

1455      Time period, time format, observation value and "array" attributes: These are defined by their  
 1456      representation and their position in the array structure. Moreover, for the three observation level  
 1457      attributes ("array attributes": observation status, observation confidentiality, observation pre-  
 1458      break value), also the attachment level, their usage status and (but not for the "observation pre-  
 1459      break") the relevant code lists are provided.

1460      Attribute definitions: All attributes for the key family are defined with the information on

- 1461      • whether they are coded or uncoded
- 1462      • their usage status (mandatory or conditional)
- 1463      • their attachment level (data set, sibling series, time series or observation)
- 1464      • representation: field length (exact or maximum length) and the information whether they  
 1465          are numeric or alphanumeric
- 1466      • relevant code list (for coded attributes) .

1467      As the ATT segment is used for three different purposes (that it is why in the branching diagram  
 1468      it is shown that it can be repeated up to three times), for reasons of clarity in the following pages  
 1469      it is presented separately, for each one of its three usages. The diagram below provides a  
 1470      "zoom" view on the group:  
 1471



### Segment Structure

SCD+concept type+concept identifier++++:position in key (or array structure)  
 ATT+domain+type+:::format specification' (for the representation)  
 ATT+domain+type+code:code list qualifier' (for the usage status of attributes only)  
 ATT+domain+type+code:code list qualifier' (for the attachment level of attributes only)  
 IDE+object type+identifier' (code list for dimensions, coded attributes)

### Note

The examples for the various segments to be used in the key family definition section are derived from the example key family defined in the next paragraph. The examples are built up in such a way that the reader can with each added segment retain the overall view of the whole group. The complete section with required segments is then presented following the presentation of the IDE segment (group 12).

1490 **Segment Type:** **SCD**

1491 **Segment Type Name:** *Structure Component Definition*

1492 **Max. Number of Occurrences:** *1*

1493 **Status:** *Mandatory (trigger)*

1494 Data Element Sequence

1495 *SCD+concept-type+concept-identifier++++:position-in-key-structure'*

1496 Data Element Usage Rules

local name	usage rules	Format	SDMX-EDI code values
concept-type	<u>Mandatory</u>	an..3	1 - time 3 - array cell 13 - dimension "frequency" in key family's structure 4 - dimension in key family's structure (other than "frequency") Z09 - attribute
concept-identifier	<u>Mandatory</u> the identifier of the statistical concept	<a href="#">an..18</a>	Provided by centre institution.
position-in-key-structure	<u>Conditional</u> this gives the position of the statistical concept (as a dimension) in the key family structure (e.g. a value of 1 is the first position), if the concept is a dimension or element of the ARR structure.	an..6	1 - first position 2 - second position ... etc.

1497

1498 Content and General Rules

1499 It is used to identify the statistical concepts used in the key family, their type (dimension or  
 1500 attribute) and in the case of dimensions to define their position in the key structure. In addition,  
 1501 apart from the dimensions, it defines the array cell position in the ARR segments of the  
 1502 supplementary elements, i.e. time dimension, time format, observation, observation status (and  
 1503 confidentiality and observation pre-break, if used in the key family).

### Example:

Let's consider the definition of the following (example) key family:

Statistical Concept	Identifier	alphanum.(a n)	concept role	Position in the key / array struct. position
<b><i>DIMENSIONS:</i></b>				
Frequency	FREQ	an1	dimension	<b>1</b>
Reporting/ref. country	REF_AREA	an2	dimension	<b>2</b>
IMF Bal.of Paym.	BOP_ITEM	an3	dimension	<b>3</b>
Type of data	DATA_TYPE	an1	dimension	<b>4</b>
Time period	TIME_PERIOD	an..35	<i>time</i>	<b>5</b>
Time format	TIME_FORMAT	an3	<i>dimension</i>	<b>6</b>
Observation	OBS_VALUE	an..15	<i>time</i>	<b>7</b>
Observation status	OBS_STATUS	an1	<i>dimension</i>	<b>8</b>
Obs. confidentiality	OBS_CONF	an1	<i>observation</i>	<b>9</b>
Pre-break value	OBS_PRE_BREAK	an..15	<i>array cell</i>	<b>10</b>
<b><i>ATTRIBUTES:</i></b>				
Title	TITLE	an..70	attribute	-
Unit	UNIT	an..12	attribute	-
Unit multiplier	UNIT_MULT	an..2	attribute	-

(In this key family it has been assumed that the observation confidentiality and observation pre-break have been included in the array structure of the key family; this might not be the case for other key families)

The structure definition segments for this key family would be:

SCD+**13**+FREQ++++:1'... (corresponding ATT and IDE segments should follow) ...

SCD+**4**+REF\_AREA++++:2'

... (corresponding ATT and IDE segments should follow) ...

SCD+**4**+BOP\_ITEM++++:3'

... (corresponding ATT and IDE segments should follow) ...

SCD+**4**+DATA\_TYPE++++:4'

... (corresponding ATT and IDE segments should follow) ...

Other component elements (time dimension and array cells) present in the ARR segments for this particular key family:

SCD+**1**+TIME\_PERIOD++++:5'

(corresponding ATT segment should follow)

SCD+**1**+TIME\_FORMAT++++:6'

1527      *...(corresponding ATT segment should follow)...*

1528      SCD+3+OBS\_VALUE++++:7'

1529      *...(corresponding ATT segment should follow)...*

1530      SCD+3+OBS\_STATUS++++:8'

1531      *...(corresponding ATT and IDE segments should follow)...*

1532      SCD+3+OBS\_CONF++++:9'

1533      *...(corresponding ATT and IDE segments should follow)...*

1534      SCD+3+OBS\_PRE\_BREAK++++:10'

1535      *...(corresponding ATT segments should follow)...*

1536      Attributes used in this key family (**note that only concept-type and concept-identifier are**

1537      **used here**):

1538      SCD+Z09+TITLE'

1539      *...(corresponding ATT segments should follow)...*

1540      SCD+Z09+UNIT'

1541      *... (corresponding ATT and IDE segments should follow)...*

1542      SCD+Z09+UNIT\_MULT'

1543      *...(corresponding ATT and IDE segments should follow)...*

1544

1545 **Segment Type:** **ATT** **First occurrence - ref. to representation format**

1546 **Segment Type Name:** *Attribute*

1547 **Max. Number of Occurrences:** *1*

1548 **Status:** *Mandatory*

1549 Data Element Sequence

1550 *ATT+domain+type+:::format-specification'*

1551 Data Element Usage Rules

Local name	usage rules	format	SDMX-EDI code values
domain	<u>mandatory</u>	an..3	<b>3</b> - related to the key family definition
type	<u>mandatory</u>	an..3	<b>5</b> - representation
format-specification	<u>mandatory</u> this gives the format (numeric or alphanumeric and the length) of the code values (AN <i>n</i> =exact, AN.. <i>n</i> =up to <i>n</i> character long).	an..35	e.g. AN2 (=alphanumeric, exactly 2 char. long) AN..3 (=up to 3 characters long) etc.

1552

1553 Content and General Rules

1554 It is used to inform about the format of the values taken by all the statistical concepts used in the  
 1555 key family.

1556 **Example:**

1557 Considering again the previous example:

Statistical Concept	Identifier	alphanum. (an) or numeric (n)	Concept role	Position in the key / array struct. position
Frequency	FREQ	an1	Dimension	1
Reporting/ref. country	REF_AREA	an2	Dimension	2
IMF Bal.of Paym.	BOP_ITEM	an3	Dimension	3
Type of data	DATA_TYPE	an1	Dimension	4
Time period	TIME_PERIOD	an..35	<i>time</i>	5
Time format	TIME_FORMAT	an3	<i>dimension</i> <i>time</i>	6
Observation	OBS_VALUE	an..15	<i>dimension</i> <i>observation</i>	7
Observation status	OBS_STATUS	an1	<i>array cell</i>	8
Obs. confidentiality	OBS_CONF	an1	<i>array cell</i>	9

Pre-break value	OBS_PRE_BREAK	an..15	<i>array cell</i>	10
Title	TITLE	an..70	Attribute	-
Units	UNIT	an..12	Attribute	-
Unit multiplier	UNIT_MULT	an..2	Attribute	-

1558

1559

1560

1561

1562

The structure definition segments (SCD and the representation definition in ATT) would now look as follows:

SCD+13+FREQ++++:1'

**ATT+3+5+:::AN1'**

....

IDE segment to follow

SCD+4+REF\_AREA++++:2'

**ATT+3+5+:::AN2'**

....

IDE segment to follow

SCD+4+BOP\_ITEM++++:3'

**ATT+3+5+:::AN3'**

....

IDE segment to follow

SCD+4+DATA\_TYPE++++:4'

**ATT+3+5+:::AN1'**

....

IDE segment to follow

SCD+1+TIME\_PERIOD++++:5'

**ATT+3+5+:::AN..35'**

No further segments relating to  
TIME\_PERIOD

SCD+1+TIME\_FORMAT++++:6'

**ATT+3+5+:::AN3'**

No further segments relating to  
TIME\_FORMAT

SCD+3+OBS\_VALUE++++:7'

**ATT+3+5+:::AN..15'**

No further segments relating to OBS\_VALUE

SCD+3+OBS\_STATUS++++:8'

**ATT+3+5+:::AN1'**

....

Other ATT and IDE segments to follow

SCD+3+OBS\_CONF++++:9'

**ATT+3+5+:::AN1'**

....

Other ATT and IDE segments to follow

SCD+3+OBS\_PRE\_BREAK++++:10'

**ATT+3+5+:::AN..15'**

....

Other ATT segments to follow

SCD+Z09+TITLE'



**ATT+3+5+:::AN..70'**

....

SCD+Z09+UNIT'

**ATT+3+5+:::AN..12'**

....

SCD+Z09+UNIT\_MULT'

**ATT+3+5+:::AN..2'**

....

Other ATT segment to follow

Other ATT and IDE segments to follow

Other ATT and IDE segments to follow

1563

1564 **Segment Type:** **ATT** **Second occurrence - ref. to usage status**

1565 **Segment Type Name:** *Attribute*

1566 **Max. Number of Occurrences:** *1*

1567 **Status:** *Conditional*

1568 Data Element Sequence

1569 *ATT+domain+type+code:code-list-qualifier'*

1570 Data Element Usage Rules

Local name	usage rules	format	SDMX-EDI code values
Domain	<u>mandatory</u>	an..3	<b>3</b> - related to the key family definition
Type	<u>mandatory</u>	an..3	<b>35</b> - usage status
Code	<u>mandatory</u> this gives the status of the attribute; if it is mandatory, then it should be expected to have always a value	an..3	1 - conditional 2 - mandatory
Code-list-qualifier	<u>mandatory</u> this gives the code list from which the previous values are taken	an..3	USS – usage status

1571

1572 Content and General Rules

1573 It has to be used for all attributes (and only for the attributes). This applies to the attributes which  
 1574 are exchanged in the main ARR structure (attached next to the observation) and to the attributes  
 1575 which are exchanged using the FNS group. (So, it does not apply to the definition of the  
 1576 observation value, which, implicitly is mandatory)

1577 **Example:**

1578 Taking again the previous example, the structure definition segments (SCD and the  
 1579 representation and usage status definition in ATT) relating to the attributes only would now look  
 1580 as follows:

SCD+3+OBS\_STATUS++++:8'

ATT+3+5+:::AN1'

**ATT+3+35+2:USS'**

Usage status for **OBS\_STATUS** is mandatory

....

Other ATT and IDE segments to follow

SCD+3+OBS\_CONF++++:9'

ATT+3+5+:::AN1'

**ATT+3+35+1:USS'**

....

SCD+3+OBS\_PRE\_BREAK++++:10'

ATT+3+5+:::AN..15'

**ATT+3+35+1:USS'**

....

SCD+Z09+TITLE'

ATT+3+5+:::AN..70'

**ATT+3+35+2:USS'**

....

SCD+Z09+UNIT'

ATT+3+5+:::AN..12'

**ATT+3+35+2:USS'**

....

SCD+Z09+UNIT\_MULT'

ATT+3+5+:::AN..2'

**ATT+3+35+2:USS'**

....

Usage status for [OBS\\_CONF](#) is conditional

Other ATT and IDE segments to follow

Usage status for [OBS\\_PRE\\_BREAK](#) is conditional

Other ATT segment to follow

Usage status for [TITLE](#) is mandatory

Other ATT segment to follow

Usage status for [UNIT](#) is mandatory

Other ATT and IDE segments to follow

Usage status for [UNIT\\_MULT](#) is mandatory

Other ATT and IDE segments to follow

1581

1582

1583

1584 **Segment Type:** **ATT** **Third occurrence - ref. to the attachment level**

1585 **Segment Type Name:** *Attribute*

1586 **Max. Number of Occurrences:** *1*

1587 **Status:** *Conditional*

1588 Data Element Sequence

1589 *ATT+domain+type+code:code-list-qualifier'*

1590 Data Element Usage Rules

local name	usage rules	format	SDMX-EDI code values
domain	<u>Mandatory</u>	an..3	3 - related to the key family definition
type	<u>Mandatory</u>	an..3	32 - object link type (attachment level)
code	<u>Mandatory</u> this gives the attachment level of the attribute	an..3	1 - data set 4 - time series 5 - observation 9 - sibling group
code-list-qualifier	<u>Mandatory</u> this gives the code list from which the previous values are taken	an..3	ALV – attachment level

1591

1592 Content and General Rules

1593 It has to be used for all attributes (and only for the attributes). This applies to the attributes which  
1594 are exchanged in the main ARR structure (attached next to the observation) and to the attributes  
1595 which are exchanged using the FNS group. (So, it does not apply to the definition of the  
1596 observation value, which, implicitly relates to the observation level)

1597 **Example:**

1598 Using again the previous example, we assume that in this key family:

- 1599 • the “observation status”, the “observation confidentiality” and the “observation pre-break” are  
1600 defined at the observation level;
- 1601 • the “title” is defined at the sibling group level and
- 1602 • the “unit” and “unit multiplier” at the time series level.

1603 The structure definition segments (SCD and the representation, usage status and attachment  
1604 level definition in ATT) relating to the attributes only would now look as follows (dimensions and  
1605 the time dimensions do not carry an attachment level).  
1606

SCD+3+OBS\_STATUS++++:8'

ATT+3+5+:::AN1'

ATT+3+35+2:USS'

**ATT+3+32+5:ALV'**

Attachment of [OBS\\_STATUS](#) is at the observation level

....

IDE segment (identifying relevant code list) to follow

SCD+3+OBS\_CONF++++:9'

ATT+3+5+:::AN1'

ATT+3+35+1:USS'

**ATT+3+32+5:ALV'**

Attachment of [OBS\\_CONF](#) is at the observation level

....

IDE segment to follow

SCD+3+OBS\_PRE\_BREAK++++:10'

ATT+3+5+:::AN..15'

ATT+3+35+1:USS'

**ATT+3+32+5:ALV'**

Attachment of [OBS\\_PRE\\_BREAK](#) is at the obs. level

SCD+Z09+TITLE'

ATT+3+5+:::AN..70'

ATT+3+35+2:USS'

**ATT+3+32+9:ALV'**

Attachment of [TITLE](#) is at the sibling level

SCD+Z09+UNIT'

ATT+3+5+:::AN..4'

ATT+3+35+2:USS'

**ATT+3+32+4:ALV'**

Attachment of [UNIT](#) is at the time series level

....

IDE segment to follow

SCD+Z09+UNIT\_MULT'

ATT+3+5+:::AN..2'

ATT+3+35+2:USS'

**ATT+3+32+4:ALV'**

Attachment of [UNIT\\_MULT](#) is at the time series level

....

IDE segment to follow

1607		
1608	<b>Segment Group:</b>	<b>Group 12 (IDE)</b>
1609	<b>Max. Number of Occurrences:</b>	<b>1</b>
1610	<b>Status:</b>	<i>Conditional</i>
1611	<u><i>Content and General Usage Rules</i></u>	
1612	This group is used to identify the code list used by a coded statistical concept.	

1613 **Segment Type:** **IDE**

1614 **Segment Type Name:** *Identity*

1615 **Max. Number of Occurrences:** *1*

1616 **Status:** *Mandatory*

1617

1618 Data Element Sequence

1619 IDE+object-type+identifier'

1620 Data Element Usage Rules

local name	usage rules	format	SDMX-EDI code values
object-type	<u>mandatory</u>	an..3	1 - code list
Identifier	<u>mandatory</u> the identifier of the code list	<u>an..18</u>	Provided by centre institution.

1621

1622 Content and General Rules

1623 This contains the identifier of the code list of the statistical concept specified in the preceding  
 1624 SCD segment if this concept is coded.

1625 **Example 1:**

1626 IDE+1+CL\_FREQ'

1627 Note that this IDE should be preceded by a relevant SCD segment (and one or three ATT  
 1628 segments depending on whether the concept is a dimension or an attribute). For example, to  
 1629 introduce the previous segment, the following segments could precede:

1630 SCD+13+FREQ++++:1'

1631 ATT+3+5+:::AN1'

1632 Obviously, the IDE segment will not be used if the related statistical concept is uncoded.

1633

1634 **Example 2:**

1635 Referring to the example presented in the previous pages, the complete structure definition  
 1636 section (SCD and the representation, usage status and attachment level definition in ATT and  
 1637 conditional IDE segment) for dimensions, the time dimension, array cells and attributes would  
 1638 now look as follows:

1639

SCD+13+FREQ++++:1'

ATT+3+5+:::AN1'

IDE+1+CL\_FREQ'

SCD+4+REF\_AREA++++:2'

ATT+3+5+:::AN2'

**IDE+1+CL\_AREA\_EE'**

Concept: REF\_AREA (=reference area)

Code list [CL\\_AREA\\_EE](#) is used for  
[REF\\_AREA](#)

SCD+4+BOP\_ITEM++++:3'

ATT+3+5+:::AN3'

**IDE+1+CL\_BOP\_ITEM'**

SCD+4+DATA\_TYPE++++:4'

ATT+3+5+:::AN1'

**IDE+1+CL\_BOP\_DATA\_TYPE'**

SCD+1+TIME\_PERIOD++++:5'

ATT+3+5+:::AN..35'

SCD+1+TIME\_FORMAT++++:6'

ATT+3+5+:::AN3'

SCD+3+OBS\_VALUE++++:7'

ATT+3+5+:::AN..15'

SCD+3+OBS\_STATUS++++:8'

ATT+3+5+:::AN1'

ATT+3+35+2:USS'

ATT+3+32+5:ALV'

**IDE+1+CL\_OBS\_STATUS'**

SCD+3+OBS\_CONF++++:9'

ATT+3+5+:::AN1'

ATT+3+35+1:USS'

ATT+3+32+5:ALV'

**IDE+1+CL\_OBS\_CONF'**

SCD+3+OBS\_PRE\_BREAK++++:10'

ATT+3+5+:::AN..15'

ATT+3+35+1:USS'

ATT+3+32+5:ALV'

SCD+Z09+TITLE'

ATT+3+5+:::AN..70'

ATT+3+35+2:USS'

No IDE segment for TITLE, as it is  
uncoded

ATT+3+32+9:ALV'

SCD+Z09+UNIT'

ATT+3+5+:::AN..4'

ATT+3+35+2:USS'

ATT+3+32+4:ALV'

**IDE+1+CL\_UNIT'**



SCD+Z09+UNIT\_MULT'

ATT+3+5+:::AN..2'

ATT+3+35+2:USS'

ATT+3+32+4:ALV'

**IDE+1+CL\_UNIT\_MULT'**

1640

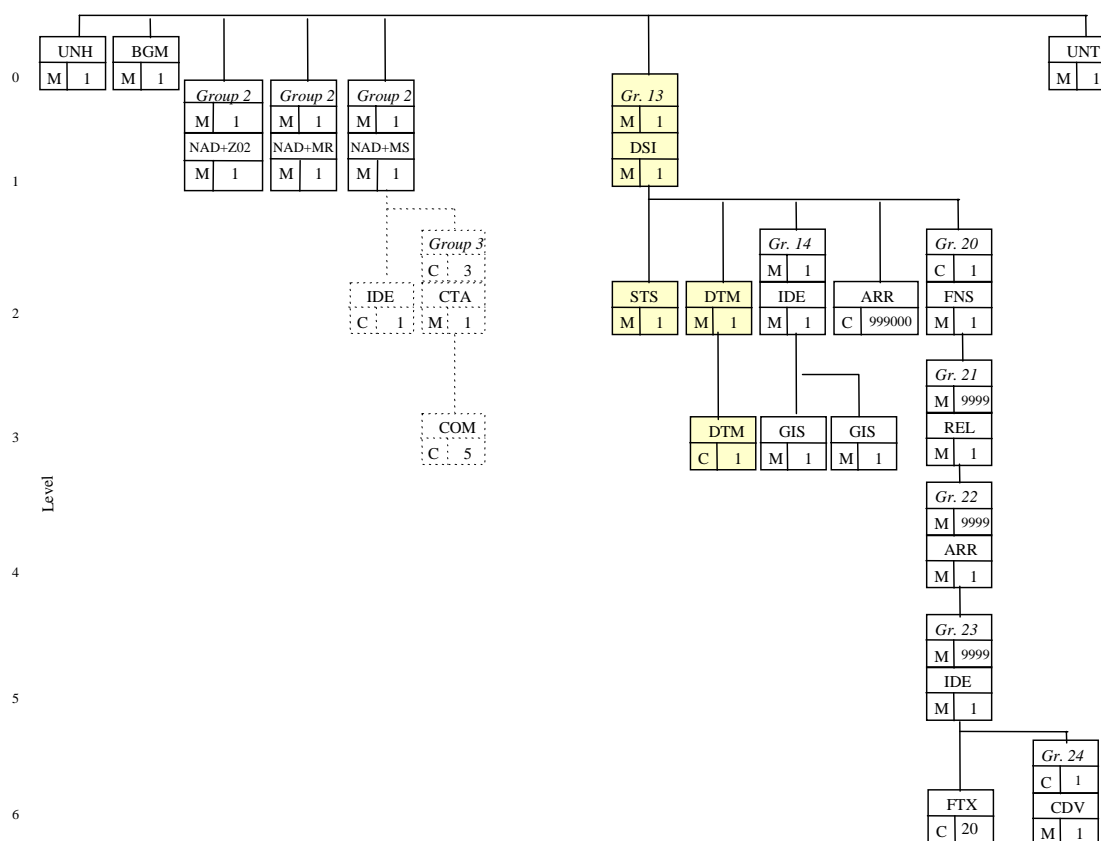
## 9.7 Data Set Administration Section

### 9.7.1 Scope

The Data set administration Section includes the identification of the data set, the action which has to be performed (update/replace or delete) and the included data and attribute values extraction date and time.

### 9.7.2 GESMES Segments Used

In this branching diagram the relevant boxes appear shaded and Group 13 is shown as mandatory.



### 9.7.3 Guidelines For Use of Segments

The data set identifier is indicated in the DSI segment. It is always present in messages carrying data and/or attributes (or containing instructions for deletions of data and/or attributes). This Group is not used in "structural messages" (containing e.g. key family definitions or code lists). Thus, if Group 13 is used by the sender, then the message should contain also data (or references to delete data) and/or attributes (or references for deleting attributes).

1660

1661 In the context of SDMX-EDI, it has been agreed that:

1662 an update or delete message can contain data or references to **only one key family** and to **one**  
1663 **data set**. Therefore, **the DSI segment can appear only once in a message**;

- 1664 • **if a message contains Group 13, it should not contain any structural data** (Groups 4 to  
1665 12 should not be present).

1666

#### 1667 9.7.4 Data Set Administration Section: Segment Structure

1668 [If group 13 is used:]

1669 DSI+*data-set-identifier*' (data set identification: *mandatory*)

1670 STS+*status-type+status-code*' (status of the message: *mandatory*)

1671 DTM+*date-time-type:date-time:date-time-format*'(1st DTM - data set extraction time stamp:  
1672 *mandatory*)

1673 DTM+*date-time-type:date-time:date-time-format*'(2nd DTM - reporting period: *conditional*)

1674

1675	<b>Segment Group:</b>	<b>Group 13 (DSI-STS-DTM)</b>
1676	<b>Max. Number of Occurrences:</b> 1	
1677	<b>Status:</b>	<i>Conditional</i>
1678		
1679	<u>Content and General Usage Rules</u>	
1680	In SDMX-EDI only one occurrence of this group is allowed in a message; Group 13 comprises	
1681	the segments:	
1682	<ul style="list-style-type: none"> <li>• <a href="#">DSI</a> (dataset identification)</li> </ul>	
1683	<ul style="list-style-type: none"> <li>• <a href="#">STS</a> (status)</li> </ul>	
1684	<ul style="list-style-type: none"> <li>• <a href="#">DTM</a> (first occurrence: date time of data set extraction)</li> </ul>	
1685	<ul style="list-style-type: none"> <li>• <a href="#">DTM</a> (second occurrence: reporting period; conditional segment)</li> </ul>	
1686		
1687	When this group is used in a message, this message should also contain:	
1688	<ul style="list-style-type: none"> <li>• Sufficient information (i.e. group 14) for the ARR structure identification</li> </ul>	
1689	and	
1690	<ul style="list-style-type: none"> <li>• observations and/or attributes</li> </ul>	
1691	<u>or</u>	
1692	in case of a “delete message”,	
1693	<ul style="list-style-type: none"> <li>• references to observations and/or attributes</li> </ul>	
1694		
1695		

1696 **Segment Type:** **DSI**

1697 **Segment Type Name:** *Data Set Identification*

1698 **Max. Number of Occurrences:** *1*

1699 **Status:** *Mandatory (trigger)*

1700 Data Element Sequence

1701 DSI+data-set-identifier'

1702 Data Element Usage Rules

local name	Usage rules	format	SDMX-EDI code values
Data-set-identifier	<u>Mandatory</u>	an..18	The data set identifier is specified and agreed between data exchange partners in the context of a data exchange agreement.

1703

1704 Content and General Usage Rules

1705 The DSI identifier describes the specific statistical context which the included data and/or  
1706 attribute values belong to. Guidelines concerning the use of the data set are provided by the  
1707 centre administrating the data exchange (see also Box 1 on next page).

1708 Implementation Remark

1709 It is recommended to partner institutions to build their database systems and filters with "data  
1710 set" intelligence, basing their design (when for example data files are received) on the DSI  
1711 identifier of the received message. The same applies for the extraction systems: it is better to  
1712 base the development of the "export" routines on the concept of a *data set (in general, a subset*  
1713 *of series belonging to the same key family) which needs to be extracted* and not on the  
1714 extraction of all series which belong to the same key family. One or more data sets (identification  
1715 of the data set is provided by the DSI segment) can follow the structural definitions for the same  
1716 key family (information provided by the key family identifier on the [IDE](#) segment). See also  
1717 discussion in Box 1.

1718

1719 **Example 1:**

1720 DSI+ECB\_BOP1'

1721 The reported data belong to the ECB\_BOP1 data set.

1722 **Example 2:**

1723 DSI+BIS\_MACRO'

1724 The reported data in the message belong to the BIS\_MACRO data set.

1725

### Box 1. DATA SET IDENTIFICATION

#### AND DISTINCTION OF SPECIAL REPORTS AND TARGET DATABASES

In SDMX-EDI the structure of the data is provided by the key family definition. A *data set* consists of series based on the same key family definition. And a data set *may* comprise *all* time series following the same key family definition; however, in general, data exchange arrangements between institutions may also stipulate the "grouping" of sibling groups and time series into different data sets as indicated in the examples below. Note that such different data sets or "groups" may be mutually exclusive or not (allowing in the latter case also the exchange of data and attribute vintages).

For reasons of simplicity and if no special distinction is needed, a common identifier might be used in the DSI segment (data set identifier) and the IDE segment (key family identifier in Group [IDE-GIS-GIS](#)), but this is not mandatory. In general, data exchange partners have to agree on the exact definition of each data set.

Here are some examples of exchanging multiple data sets (i.e. many data set identifiers involved) based on the same key family (i.e. using a single key family identifier):

- The receiver might prefer to receive data sets organised into tables or "reports" (a different message for each "report", e.g. the monthly report with monthly Balance of payments data and the quarterly report with quarterly Balance of payments data. This is an example for mutually exclusive data sets on the time series level.
- Two parties may agree to use the same key family for more than one data exchange projects: e.g. a key family definition may be relevant for two or three economic sub-domains and a "domain" distinction might be needed so that the receiver can forward the data sets to different data bases or production units if required.
- There may be a need to exchange vintages of time series and/or attributes compiled using different methodologies, timings or sources.
- A data flow based on a key family is regularly performed. However, based on the same key family definition, an experimental (pilot) data exchange project may be agreed for some time including additional sibling groups. In this case, most probably, the partners would prefer not to mix in the same receiving databases the data flows serving the new pilot data exchange with the ones belonging to the regular production arrangements.
- Quarterly and monthly data sets may be compiled and updated in different timings, leading therefore to non-comparable datasets that may need to be distinguished.

To illustrate the case, let us assume a key family called «MACRO\_VARS\_KF» which has been defined in such a way that it is used for both national accounts data and public finance data. The receiving institution has two separate production Units, one for national accounts and one for public finance data, and each one of them would like to receive only the message for which it is responsible. We assume that there is a group of reporting series needed to both areas and, thus, there is no way to split them into distinct groups basing the selection addressed to each unit on a "time series key" criterion (the two data sets are not mutually exclusive). The agreement could be to use two different messages as follows:

#### Message 1

```
...
DSI+MACRO_NAT_ACCS
'
...
IDE+5+MACRO_VARS_K
-'
```

#### Message 2

```
...
DSI+MACRO_PUB_FIN'
...
IDE+5+MACRO_VARS_KF
'
```

Thus, the receiving system should recognise and distinguish the incoming messages, forwarding them possibly to the database of the corresponding responsible Unit.

1748 **Segment Type:** **STS**

1749 **Segment Type Name:** *Status Report*

1750 **Max. Number of Occurrences:** *1*

1751 **Status:** *Mandatory*

1752 Data Element Sequence

1753 STS+status-type+status-code'

1754 Data Element Usage Rules

local name	usage rules	format	SDMX-EDI code values
status-type	<u>mandatory</u> this specifies the type of <i>status-code</i> used	an..3	<b>3</b> - data contents
status-code	this specifies the status identified by <i>status-type</i>	an..3	<b>7</b> - update or replace <b>6</b> - delete

1755

1756 Content and General Usage Rules

1757 This segment specifies the action expected to be performed on the contents of the message. As  
1758 in SDMX-EDI only one DSI (one reference to a data set) is allowed per message, **a message**  
1759 **can be used to instruct the receiver either to perform deletions or to update a receiving**  
1760 **database (these two actions cannot be mixed in the same message):** the action declared by  
1761 this status code affects the whole message:

1762 if the segment has been written as **STS+3+7'** then the (update) message should contain either  
1763 data (in the ARR segment following Group 14) or attributes (in Groups 20-24) or both;

1764 if the segment has been written as **STS+3+6'** then the (delete) message should contain either  
1765 references to delete data (in the ARR segment following Group 14) or references to delete  
1766 attributes (in Groups 20 to 23) or both.

1767 **Examples:**

1768 • STS+3+7'

1769 The contents of the message should be used to update the databases of the receiver and/or to  
1770 replace previously existing values (assuming that the test indicator of the interchange was not  
1771 used).

1772 • STS+3+6'

1773 The references in the ARR segments of the message are pointers for deletions which should be  
1774 performed in the databases of the receiver (of course the receiving end could implement  
1775 adequate security and control mechanisms, if desirable, in order to check or to prevent fully  
1776 automated deletions).

1777

1778 **Segment Type:** **DTM (1st occurrence: data set extraction time stamp)**

1779 **Segment Type Name:** *Date/Time/Period*

1780 **Max. Number of Occurrences:** *1*

1781 **Status:** *Mandatory*

1782 Data Element Sequence

1783 DTM+date-time-type:date-time:date-time-format'

1784 Data Element Usage Rules

local name	usage rules	format	SDMX-EDI code values
date-time-type	<u>mandatory</u>	an..3	242 - data set preparation date
date-time	<u>mandatory</u> date and local time of the extraction of the data set; its format is defined by <i>date-time-format</i>	an..35	format (in SDMX-EDI):  CCYYMMDDhhmm
date-time-format	<u>mandatory</u>	an..3	203 (=format: CCYYMMDDhhmm)

1785

1786

1787 Content and General Rules

1788 In general, DTM is used to present dates/time and periods. Its first occurrence in SDMX-EDI is  
 1789 used to present the data set "preparation date/time" (=242). The date format used is always the  
 1790 same (CCYYMMDDhhmm which is coded as 203 in EDIFACT). The sending institutions should  
 1791 provide in this segment the date/time at which the data set reported in the message was  
 1792 extracted from the internal data base system (local date and time of the sender).

1793 If the previously given STS segment indicated that the message will be used for deletions, then  
 1794 this date/time should be the date/time of the preparation of the message.

1795

1796

1797 **Example:**

1798 DTM+242:199702241345:203'

1799 The reported data set was extracted from the database of the sender at 13:45 (local time) on the  
 1800 24th February 1997.



1801 **Segment Type:** **DTM (2nd occurrence: reporting period)**

1802 **Segment Type Name:** *Date/Time/Period*

1803 **Max. Number of Occurrences:** *1*

1804 **Status:** *Conditional*

1805 Data Element Sequence

1806 DTM+date-time-type:date-time:date-time-format"

1807 Data Element Usage Rules

local name	usage rules	format	SDMX-EDI code values
date-time-type	<u>mandatory</u>	an..3	<a href="#">Z02</a> - reporting period
date-time	<u>mandatory</u>	an..35	Period or range with format depending on the value of the following element.
date-time-format	<u>mandatory</u>	an..3	for specific periods: 102 - for CCYYMMDD 602 - for CCYY 604 - for CCYYs 608 - for CCYYQ 610 - for CCYYMM 616 - for CCYYWW for period ranges: 711 - for CCYYMMDD-CCYYMMDD 702 - for CCYY-CCYY 704 - for CCYYs-CCYYs 708 - for CCYYQ-CCYYQ 710 - for CCYYMM-CCYYMM 716 - for CCYYWW-CCYYWW where: CC - century YY - year S - half-year (1,2) Q - quarter (1,2,3,4) MM - month in range 01-12 WW - week within a calendar year in the range 1-53 DD - day in month 01-31

1808

1809 Content and General Rules

1810 The second occurrence of DTM is conditional and is used to declare which is the reporting  
 1811 period (if relevant and/or requested by a centre institution). Obviously, if this segment is used,  
 1812 the period or period range given in this segment should be consistent with the contents (data)  
 1813 written in the message.

1814

1815

1816 **Example 1:**

1817 *The following segment says that the message contains data for 1992 (single period):*

1818 DTM+Z02:1992:602'

1819

1820 **Example 2:**

1821 *The following segment says that the message contains data from 1992 to 1993 (period range):*

1822 DTM+Z02:19921993:702'

1823

1824 **Example 3:**

1825 *The following segment says that the message contains data from 1995q1 to 1995q4 (period*  
1826 *range):*

1827 DTM+Z02:1995119954:708'

1828 .

1829

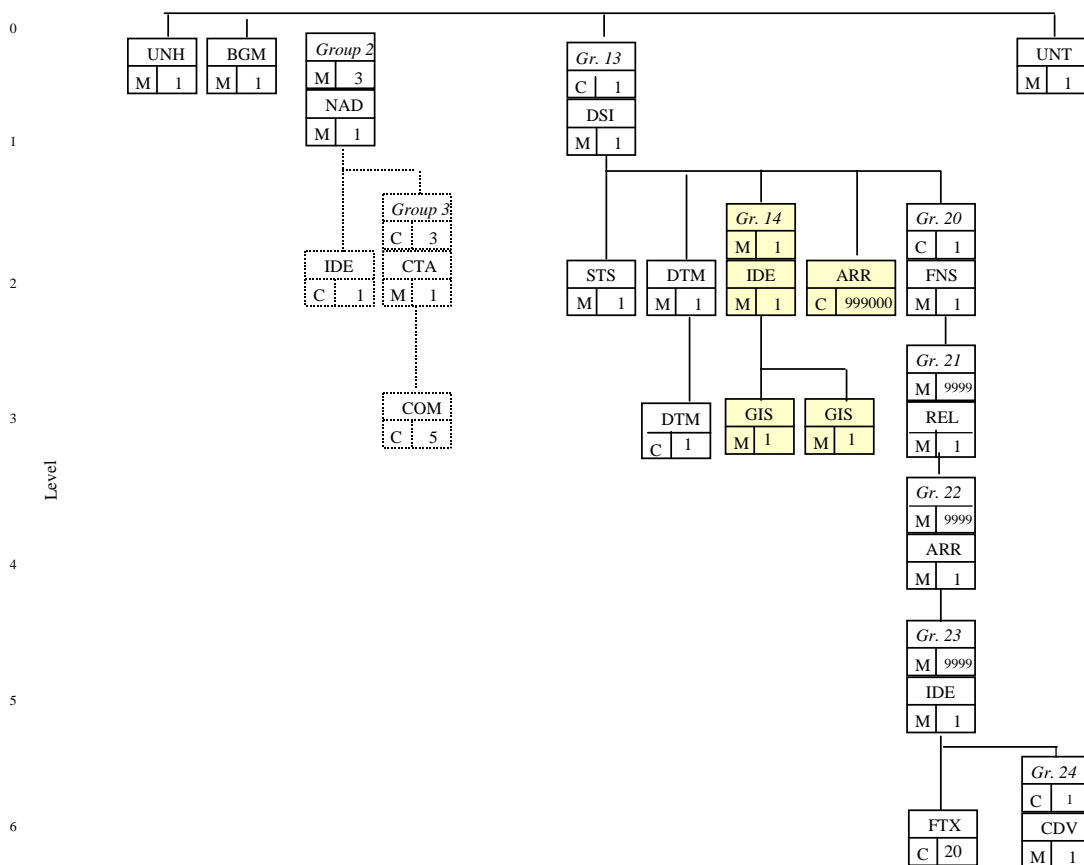
## 9.8 Array Structure and Data Section

### 9.8.1 Scope

The array data comprises the identification of the data set structure (IDE), the indication of the method used to place data values in the ARR segment (first occurrence of GIS), an indication about the character used for the missing values (second occurrence of GIS) and the data values (or references for deletions) in the ARR segment.

### 9.8.2 GESMES Segment Usage

In this branching diagram the shaded boxes (Group 14 and ARR) are the ones related to the *array structure* and the contained *data* (or references). Group 14 and the following ARR segment are shown here as mandatory to indicate that the *Array structure and data Section* is present.



### 9.8.3 Features and Guidelines for Use

The IDE segment provides the data set structure defining the expected sequence of data values in the ARR segment. In SDMX-EDI it is indicated by the key family identifier. The GIS segment (first occurrence) indicates which one of the four alternative ways of placing data in the ARR segment has been used (in SDMX-EDI it is always the same: AR3). The second occurrence of GIS is used to indicate the missing value character used. In SDMX-EDI the ARR segment contains the key, the numeric values and their corresponding status flags.

### 9.8.4 Array Structure and Data Section: Segment Structure

#### array structure

IDE+object-type+identity-number'

GIS+processing-indicator:list-qualifier:code-maintenance-agency:processing-value'

(GIS has to be present twice)

#### array data

ARR++array-cell-data:array-cell-data:array-cell-data:array-cell-data:array-cell-data:array-cell-data:etc.'

(the sequence just above is the generic expression; for further information, see p. 106 and the pages which follow)

1867	<b>Segment Group:</b>	<b>Group 14 (IDE-GIS-GIS)</b>
1868	<b>Max. Number of Occurrences:</b>	<i>1</i>
1869	<b>Status:</b>	<i>Mandatory</i>

1871 Content and General Usage Rules

- 1873 • [IDE](#) - array structure identification
- 1874 • [GIS](#) - message processing indicator
- 1875 • [GIS](#) - missing value indicator

1877 This group has to be present in all messages containing or referring to data and/or attributes  
1878 (including the case of a pure attribute update or delete message; the ARR segment which  
1879 follows Group 14 would not be present in this case).

1880

1881

1882 **Segment Type:** **IDE**

1883 **Segment Type Name:** *Identity*

1884 **Max. Number of Occurrences:** *1*

1885 **Status:** *Mandatory (trigger)*

1886

1887 Data Element Sequence

1888 IDE+object-type+identity-number'

1889 Data Element Usage Rules

local name	usage rules	format	SDMX-EDI code values
object-type	<u>Mandatory</u>	an..3	5 - data set structure
identity-number	<u>Mandatory</u> the identity of the data set structure	an..35	the key family identifier

1890

1891 Content and General Rules

1892 This segment is used to indicate the structure of the data set (e.g. how many dimensions, which  
1893 ones and in which order). This information is provided by the key family identifier.

1894 .

1895

1896 **Example 1:**

1897 IDE+5+ECB\_BOP1'

1898

1899 **Example 2:**

1900 IDE+5+BIS\_MACRO'

1901 **Segment Type:** **GIS (first occurrence)**

1902 **Segment Type Name:** *General Indicator*

1903 **Max. Number of Occurrences:** *1*

1904 **Status:** *Mandatory*

1905

1906 Data Element Sequence

1907 *GIS+processing-indicator'*

1908

1909 Data Element Usage Rules

local name	usage rules	format	SDMX-EDI code values
processing indicator	<u>mandatory</u>	an..3	<a href="#">AR3</a> - ARR usage method 3

1910

1911 Content and General Usage Rules

1912 This segment (first occurrence) is used to define how the data elements are used in the ARR  
1913 segment. In SDMX-EDI it is always AR3.

1914 **Example:**

1915 *GIS+AR3'*

1916 In SDMX-EDI the segment has to be written in this fixed format.

1917

1918

1919 **Segment Type:** **GIS (second occurrence)**

1920 **Segment Type Name:** *General Indicator*

1921 **Max. Number of Occurrences:** 1

1922 **Status:** *Mandatory*

1923

1924 Data Element Sequence

1925 GIS+processing-indicator::: processing-value'

1926

1927 Data Element Usage Rules

local name	usage rules	format	SDMX-EDI code values
processing indicator	<u>Mandatory</u>	an..3	1 - no data available
processing-value	<u>mandatory</u>	an..17	- dash; the symbol for missing values in SDMX-EDI

1928

1929 Content and General Usage Rules

1930 This segment (second occurrence) is used in SDMX-EDI to define which is the character used for  
1931 the missing values in the ARR segment. The reading applications should read this character,  
1932 parametrise it and, based on this, they should recognise the missing values in the ARR segment.

1933

1934 **Example:**

1935 GIS+1:::-'

1936 In SDMX-EDI this segment is written in this fixed format.

1937



1938	<b>Segment Type:</b>	<b>ARR</b>
1939	<b>Segment Type Name:</b>	<i>Array Information</i>
1940	<b>Max. Number of Occurrences:</b>	999000
1941	<b>Status:</b>	<i>Conditional</i>
1942	<u><i>Data Element Sequence in SDMX-EDI</i></u>	
1943	<i>"Single observation" technique:</i>	
1944	<i>ARR++series-key:period:time-format:observation:observation-status:obs.-confidentiality:obs-pre-break'</i>	
1945		
1946	<i>ARR++series-key:period:time-format:observation:observation-status:obs.-confidentiality: obs-pre-break'</i>	
1947	<i>(repeats)</i>	
1948		
1949	<i>"Time range" technique:</i>	
1950	<i>ARR++series-key:period-range:time-format:observation:observation-status:obs.-confidentiality:obs-pre-</i>	
1951	<i>break+</i>	
1952	<i>observation:observation-status:obs.-confidentiality:obs-pre-break +</i>	
1953	<i>etc.</i>	
1954	<i>observation:observation-status:obs.-confidentiality:obs-pre-break'</i>	
1955		
1956	<i>ARR++series-key:period-range:time-format:observation:observation-status:obs.-confidentiality:obs-pre-</i>	
1957	<i>break+</i>	
1958	<i>observation:observation-status:obs.-confidentiality:obs-pre-break+</i>	
1959	<i>etc.</i>	
1960	<i>observation:observation-status:obs.-confidentiality:obs-pre-break'</i>	
1961	<i>(repeats)</i>	

1962 Data Element Usage Rules

Local name	usage rules	Format	SDMX-EDI code values
Series-key	<u>mandatory</u> the key of the reported time series; the rules are detailed below	component elements separated by component separators	dimension values of the time series key delimited by component element separators
Period (or period-range)	<u>mandatory</u> the period (or period range) to which the reported observation(s) in this ARR segment correspond; the rules are detailed below	an..35	period or range of periods written in one of the foreseen formats. See <a href="#">Table 8. period and period range format codes</a>
Time-format	<u>mandatory</u> the rules are detailed below	an3	the code list for these values is presented in the table below
Observation	<u>mandatory for updating</u> [not used in "delete messages"] the rules are detailed below	an..15	a numeric observation or a missing value indicator
Observation-status	<u>mandatory for updating</u> [not used in "delete messages"] the rules are detailed below	an..35	A value taken from an observation status code list (e.g. <a href="#">CL_OBS_STATUS</a> with format <a href="#">an1</a> )
Observation-confidentiality	<u>Conditional</u> [not used in "delete messages"] the rules are detailed below	an..35	A value from an observation confidentiality code list (e.g. <a href="#">CL_OBS_CONF</a> with format <a href="#">an1</a> )
Pre-break-observation conditional	Conditional [not used in "delete messages"]	an..15	a numeric observation or a missing value indicator

1963

1964 The following rules and explanations refer only to reporting data (updating actions). The role and  
 1965 the use of the ARR segment in deletions are discussed later as a separate chapter.

1966

1967 Content and General Usage Rules When Reporting Data (for deletions see p.137)

1968

• Time series key

1969 A time series key is composed by values given to the (ordered) dimensions included in the key  
 1970 structure of a key family. The dimensions are reported separated by the component separator  
 1971 ":"(colon), e.g.:

1972

[Q:BE:100:4.](#)

1973 In each ARR segment only one time series key can be present (just after the ARR++  
 1974 characters), regardless of the technique used (single observation or time range). Within one  
 1975 message all time series keys used in the ARR segment have to belong to the same key family.

1976

• Periods, period ranges, time format and time format code list

1977 Period and time format have always to be given as a "pair" separated by the component  
 1978 separator ":" (colon).

1979

1980 Example: single monthly period: [199505:610](#) (= May 1995)

1981 *period range (quarterly):* **1994119962:708** (= 1994 Q1 to 1996 Q2)

1982 The table below indicates the formats for period specifications and the time format codes.

1983

1984

**Table 8. period and period range format codes**

Types for dates and specific periods			
Code	format	explanation	dates and specific periods: examples
203	CCYYMMDDhh mm	(for series with freq. higher than daily) year/month/day/hours/ minutes	199511210850 = 21 Nov. 1995 (08:50) date & format code: 199511210850:203
102	CCYYMMDD	(for daily and business series) year/month/day	19951121= 21 Nov. 1995 date & format code: 19951121:102
616	CCYYWW	(for weekly series) year/ week	199252= 52nd week of 1992 date & format code: 199252:616
610	CCYYMM	(for monthly series) year/month	199511= Nov. 1995 date & format code: 199511:610
608	CCYYQ	(for quarterly series) year/quarter	19953=1995q3 date & format code: 19953:608
604	CCYYS	(for half yearly series) year/semester	date & format code: 19951:604
602	CCYY	(for annual series) year	date & format code: 1995:602
Types for period ranges			
Code	format	explanation	period ranges: examples
711	CCYYMMDD CCYYMMDD	(for daily and business series) from year/month/day to year/month/day	1992110419930124=4Nov92-24Jan1993 date & format code: 1992110419930124:711
716	CCYYWW CCYYWW	(for weekly series) from year/week to year/week	199227199550= from week no.27 of 1992 to week no.50 of 1995 date & format code: 199227199550:716
710	CCYYMM CCYYMM	(for monthly series) from year/month to year/month	199208199511= from Aug92 to Nov95 date & format code: 199208199511:710
708	CCYYQCCYYQ	(for quarterly series) from year/quarter to year/quarter	1992319954= from 1992q3 to 1995q4 date & format code: 1992319954:708
704	CCYYS CCYYS	(for half yearly series) from half-year to half-year	1995219961= from 1995h2 to 1996h1 date & format code: 1995219961:704
702	CCYYCCYY	(for annual series) from year to year	19951996= from 1995 to 1996 date & format code: 19951996:702

1985

1986

1987

1988 **Data elements: observation and observation level attributes**

1989 Following the time series key and the time period and format indication the actual observations  
 1990 are reported as data elements. Each data element consists of at least 2 components: the  
 1991 **observation** itself and the mandatory (observation level) attribute "**Observation status**".  
 1992 Depending on the key family a third and a fourth component element may be added: the

(observation level) attribute "**Observation confidentiality**" and "[Pre-break observation](#)". Within the data element the components are separated by the component separator ":" (colon).

**Example:** Data element with 2 components:

1234.5:A (only [observation status](#))

Data element with 3 components:

1234.5:A:C (observation status + [confidentiality](#))

Data element with 4 components:

1234.5:B::1230.5 (observation status, confidentiality not given, [pre-break](#) observation)

Data element with 4 components:

1234.5:B:C:1230.5 (observation status, confidentiality and pre-break observation)

The *time format indication* and the *first data element with an observation* have to be separated with a component separator ":". The *individual data elements* that follow are then separated by the data element separator "+" (plus sign), which follows each data element. Due to the GESMES truncation rules the data element separator, following the last data element in the segment, is omitted and replaced by the segment terminator sign (' , single quote). The maximum number of data elements in an ARR segment is 9999, i.e. the overall maximum number of data element separators ("+") is 10,000 including the 2 immediately following the ARR statement. A time series with more than 9999 observations has to be split over more than 1 ARR segment. It is recommended that applications use the maximum number of data elements as a parameter.

**Example:** ...+[1234.5:A](#)+[234.6:B](#)+[3456.7:A](#)' (3 data elements followed by segment terminator)

### **Remarks, rules, special cases and recommendations concerning the handling of observation elements**

In SDMX-EDI this **maximum length** of the component element holding the observation is 15 positions. As a consequence the maximum number of significant figures for an observation is:

- ⇒ 15 for a positive integer
- ⇒ 14 for a positive decimal or a negative integer
- ⇒ 13 for a negative decimal

- Exclusively the point (".") is used as **decimal separator**.

**Scientific notation** may be used for both the observation and the observation pre-break, if agreed by the parties involved. To express a number in scientific notation<sup>1</sup>: omit any plus signs, as "+" is a reserved character in GESMES and may be misinterpreted; use "E" before the exponent; the value of the number before the "E" should be between -10 and 10; to express numbers between minus one and one preface the exponent with a negative sign.

Examples: The number 1,230,000 is written 1.23E6. The number 0.000001 is written as 1.0E-6.

<sup>1</sup> For more information on the rules applying see <http://www.ex.ac.uk/cimt/dictunit/enote.htm> (section on "E-format").

Again, in SDMX-EDI, the total length of the field should not exceed 15 characters.

**Pre-break observations** do not have an observation status.

A **missing value** is indicated using a dash ("-") (e.g. ...+-:H+...). The explanation of the absence of a value is provided by the observation status which follows. (Applications should be parameterised for this "missing observation" character, taking its value from the second occurrence of the GIS segment.)

If there are **unchanged or non-reported values** within a reported time range, the corresponding separators have still to be written; therefore a sequence "++" means that the observation which would be expected between the two plus signs is considered either as not reported or as unchanged vis-à-vis the last reported value (see also [examples below](#) when discussing the time range technique).

**Observations have always to be reported together with an observation status value.** If an observation changes and the status is not changed, both components have to be reported. Likewise, if the observation status changes and the observation remains unchanged, both components would have to be re-reported; the same would apply also if the observation confidentiality status changed (relevant for the key families in which this attribute might be used): all three elements have to be re-reported. **Similarly, if the observation confidentiality status or the pre-break observation changed, all component elements would have to be re-reported.** By not reporting, for a certain observation, neither an observation confidentiality attribute nor an observation pre-break value, the receiver should assume that for this period values (for the confidentiality status and pre-break) never existed or they cease to exist from now on.

#### **Example 1:**

On 10 March 1999 the segment ARR++M:YY:ZZ:199902:610:-7.9:E:C' was reported.

On 15 March 1999 the segment ARR++M:YY:ZZ:199902:610:-7.9:A:F' was reported.

The second time the sender resent the observation, because the status (from [E](#)stimate to [normal](#)) and the observation confidentiality (from "[C](#)onfidential" to "[F](#)ree") were modified.

#### **Example 2:**

On 10 March 1999 the segment ARR++M:YY:ZZ:199902:610:-7.9:E:C' was reported.

On 15 March 1999 the segment ARR++M:YY:ZZ:199902:610:-7.9:A' was reported.

The second time the sender sent the segment without the observation confidentiality value; in this case the receiver would need to decide how to interpret the fact that the confidentiality attribute was not reported: he could either delete the previously existing value (C) or leave it unchanged (i.e. continue to mark the observation as confidential).

#### **Example 3:**

On 10 April 1999 the segment ARR++M:FG:T1:199902:610:10:B:F:12' was reported.

On 15 April 1999 the segment ARR++M:FG:T1:199902:610:10:A:F' was reported.

Here it is assumed that in the first transmission (10-Apr-1999) the sending institution reported a break in series together with a pre-break value. In the second transmission it is now assumed

that the sending institution revised all back data, built a series without breaks and re-reported the same observation without the "break" flag and without the pre-break observation.

### **Time range and single observation technique**

With the **time range technique** the period and time format specification in the ARR segment are set to define a range of periods, which is then followed by a number of data elements, which has to exactly match the number periods in the defined time range.

Also, as it had been discussed earlier (see paragraph describing the data elements of the ARR segment):

- no more than 9,999 observations can be reported in the same ARR segment;
- **the first and the last observation of the range should be explicitly written in the segment:** in this way, the number of observations reported in an ARR segment should always be equal to the number of periods indicated by the time range (otherwise, the EDIFACT truncation rules would allow deviation from this principle).

### **Example 1. - time range technique**

ARR++M:YY:ZZ:199301199304:710:39.9:A+21.5:A+23.4:A+43.0:E'

This segment contains four observations (with their corresponding status) for the series M:YY:ZZ. The observation 39.9 (status: A) is for Jan.93, 21.5 (A) is for Feb.93, 23 (A) for Mar. 93 and the observation 43.0 (E) is for Apr.93.

⇒ With the **single observation technique** the period and time format specification are set to define a single time period, which is then followed by a single component data element for the observation and its attribute(s).

### **Example 2. - single period technique**

ARR++M:YY:ZZ:199301:610:39.9:A'

ARR++M:YY:ZZ:199302:610:21.5:A'

ARR++M:YY:ZZ:199303:610:23.4:A'

ARR++M:YY:ZZ:199304:610:43.0:E'

These four segments contain one observation each and they are equivalent to the single segment shown in the previous example.

The two techniques can be mixed in the same message (but, of course, not within the same ARR segment):

### **Example 3:**

the following set of segments is valid (and equivalent to the ones shown in examples 1 & 2):

ARR++M:YY:ZZ:199301:610:39.9:A'

ARR++M:YY:ZZ:199302199304:710:21.5:A+23.4:A+43.0:E'

and the following one (example 4) is also valid and an equivalent form of the previous set of segments:

2114 **Example 4:**

2115 ARR++M:YY:ZZ:199301199302:710:39.9:A+21.5:A'

2116 ARR++M:YY:ZZ:199303:610:23.4:A'

2117 ARR++M:YY:ZZ:199304:610:43.0:E'

2118

2119 The examples below (5, 6 and 7) show the use of the two techniques when "reporting"  
2120 **unchanged or non-reported observations** and their flags (it was discussed theoretically on a  
2121 [previous page](#)); of course, it makes sense to refer to reporting of *unchanged* observations only  
2122 when using the *time range technique*.

2123 **Example 5:**

2124 It is assumed that an institution has to report for the series M:YY:ZZ only data for Nov.92, Jan.93  
2125 and Apr.93 since only these data were revised or updated (the observation for April 1993 is an  
2126 estimate and it should be treated as confidential); for Dec92, Feb93 and Mar93 the data which  
2127 had been reported in the past remain still valid:

2128 *Series:* M:YY:ZZ

2129           Nov92   Dec93   Jan93           Feb93           Mar93           Apr93

2130           -7.9 (A) unchanged 37.8(A) unchanged unchanged 43 (E, C)

2131 When using the time range technique all separators (including the ones referring to the  
2132 unchanged observations) should be explicitly written; then, the sequence above is reported as:

2133 ARR++M:YY:ZZ:199211199304:710:-7.9:A++37.8:A+++43:E:C'

2134

2135 **Example 6:**

2136 The following three segments, written using the single observation technique, are equivalent to  
2137 the one presented just above (example 4):

2138 ARR++M:YY:ZZ:199211:610:-7.9:A'

2139 ARR++M:YY:ZZ:199301:610:37.8:A'

2140 ARR++M:YY:ZZ:199304:610:43:E:C'

2141

2142 **Example 7:**

2143 In the following segments, another way is shown to report the same data by mixing the two  
2144 techniques:

2145 ARR++M:YY:ZZ:199211199301:710:-7.9:A++37.8:A'

2146 ARR++M:YY:ZZ:199304:610:43:E:C'

2147

2148

2149 **Practical application of the two techniques:**

2150 In general, because of the elimination of redundant information, the *time range technique* is the  
2151 most preferred method for exchanging complete time series or databases: e.g. in the first  
2152 reporting of a new series to a centre institution or when a central institution disseminates a full  
2153 data base to other institutions.



The *single observation technique* is simple and efficient for reporting a single observation per series, for example in the updates and revisions context. It can be useful also in the case of series with sparse irregular observations; e.g. for some series with only some observations per year, it is sensible to report only these observations (e.g. using daily frequency with the single observation technique). Usually, this is a matter which will be administrated by the centre (e.g. if the observations are not too sparse, it might be preferable to keep a continuous track of the exchanged series using missing values in conjunction with the “cannot-exist” obs. status).

*In general*, both the *time range* and the *single observation* technique are equally valid.

### **The use of the Pre-break value attribute: examples**

The following examples correspond to [Example 1](#) and [2](#) previously shown. The difference is that here they also include a pre-break value.

#### **Example 1 - time range technique:**

ARR++M:YY:ZZ:199301199304:710:39.9:A+21.5:B::20.1+23.4:A+43.0:E'

The observation for Feb.93, which is a break, includes also **a pre-break-observation 20.1**.

#### **Example 2 - single period technique:**

ARR++M:YY:ZZ:199301:610:39.9:A'

ARR++M:YY:ZZ:199302:610:21.5:B::20.1'

ARR++M:YY:ZZ:199303:610:23.4:A'

ARR++M:YY:ZZ:199304:610:43.0:E'

The same as before, using the single period technique.



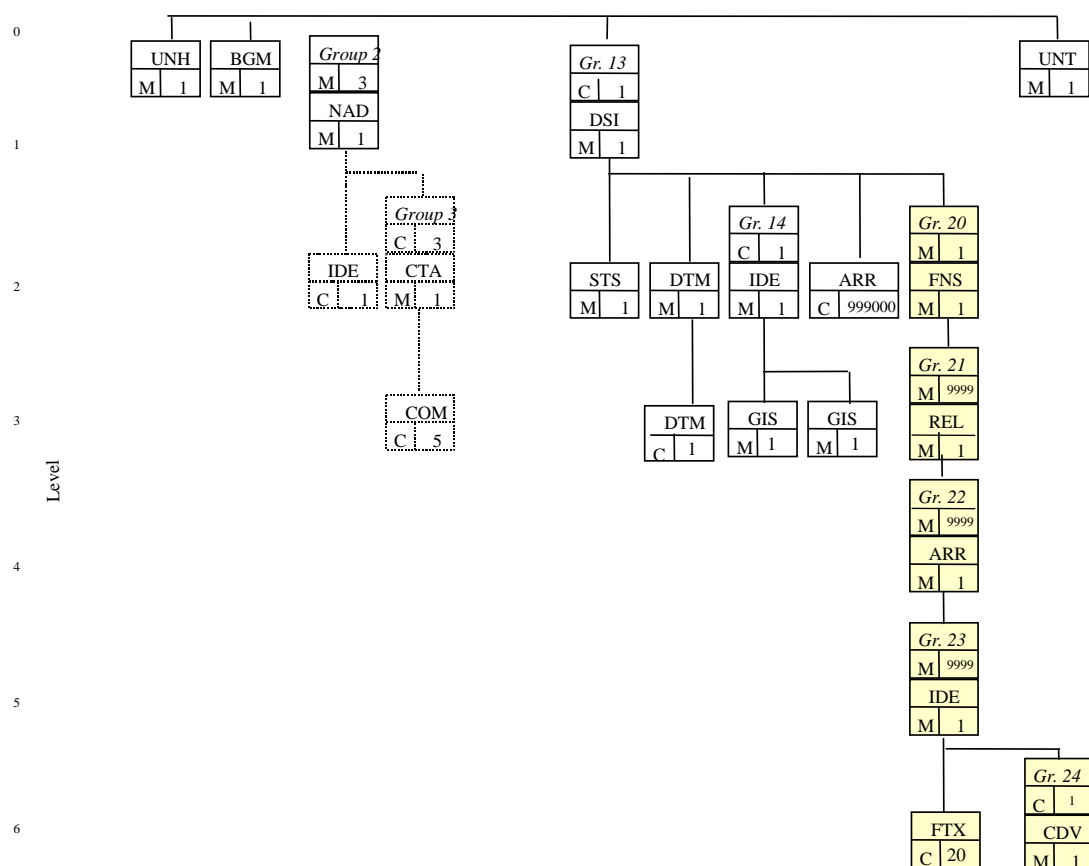
## 9.9 Attribute Section

### 9.9.1 Scope

An attribute is an object relating to (i) to an observation or (ii) to a time series or (iii) to a group of sibling series or to (iv) a data set. It provides information about the corresponding data (at that level), such as the measurement unit or the confidentiality status. An attribute can be coded (taking values from a code list) or uncoded (free text). The purpose of the segments included in the Attributes Section is to allow the exchange of attributes at the levels foreseen by the data model.

### 9.9.2 GESMES Segment Usage

The Attributes Section comprises all groups from Group 20 to 24 (they are shown shaded in the diagram below). These groups have to be used in order to exchange attributes (that it is why Group 20 is shown here as mandatory). Regardless of whether the message carries observations as well (in which case the ARR segment which follows Group 14 would be also used), Groups 13 and 14 need also to be used as they provide information about the relevant data set and key family.



2192 Guidelines for Usage

2193 Group 20 is used always in the Data and Attribute message (or in an “attribute only” update  
2194 message). It is used also when specific attributes need to be deleted.

2195 The attributes are all included in a set introduced by the [FNS](#) segment.

2196 The [REL](#) segment is used to define the scope of the attribute in terms of the object type to which  
2197 the attributes relate.

2198 The [ARR](#) segment defines the statistical objects to which the attributes relate.

2199 The [IDE](#) segment identifies the statistical concept.

2200 If the statistical concept is coded, then the [CDV](#) segment provides its value;

2201 If it is uncoded, then the [FTX](#) segment contains the textual value.

2202

2203

2204 **9.9.3 Attribute Section: Segment Structure**

2205

2206 *FNS+set-identifier:identity-number-type'*

2207 *REL+relationship-type+array-scope'*

2208 *ARR+last-dimension-position+array-cell-data:array-cell-data:array-cell-data:etc.'*

2209 *IDE+object-type+identifier'*

2210 *CDV+code-value' or*

2211 *FTX+text-subject+++text'*

2212

2213

2214

2215

2216    **Segment Group:** **Group 20 (FNS-Group 21)**

2217        **Max. Number of Occurrences:** 1

2218        **Status:** *Conditional*

2219    *Content and General Usage Rules*

2220        This group contains a set of attributes relevant to the specified data set and following the  
2221        specified key family definition in use throughout this message.

2222        The **examples** used for the segments relating to the FNS group on attributes are built up in such  
2223        a way that with each added segment the reader retains the overall view of the whole group. The  
2224        completed examples are then presented following the description of the CDV segment (Group  
2225        24).

2226 **Segment Type:** **FNS**

2227 **Segment Type Name:** *Footnote Set*

2228 **Max. Number of Occurrences:** *1*

2229 **Status:** *Mandatory (trigger)*

2230

2231 Data Element Sequence

2232 FNS+set-identifier:identity-number-type'

2233 Data Element Usage Rules

local name	usage rules	format	SDMX-EDI code values
set-identifier	<u>mandatory</u> the identity of the set of attributes	an..35	(any text) e.g.: <a href="#">Attributes</a>
identity-number-type	<u>mandatory</u> the object is "attribute" (=10)	an..3	<a href="#">10</a> - Attributes

2234

2235 Content and General Usage Rules

2236 This segment is used to identify the attribute set. In principle, the reading applications will use  
2237 the FNS segment to confirm that an attribute section starts, but they can ignore the *set-identifier*  
2238 given in the segment (it is enough to acknowledge the existence of the FNS segment).

2239

2240 **Example:**

2241 FNS+[Attributes:10](#)'

2242 In the examples which follow in the next few subsections, the FNS segment is not shown again,  
2243 as it has a constant format.

2244	<b>Segment Group:</b>	<b>Group 21 (REL-Group 22)</b>
2245	<b>Max. Number of Occurrences:</b>	9999
2246	<b>Status:</b>	<i>Conditional</i>
2247	<u><i>Content and General Usage Rules</i></u>	
2248	This group contains a specification of the scope of the attribute(s) (REL), followed by the	
2249		

2250 **Segment Type:** REL

2251 **Segment Type Name:** Relationship

2252 **Max. Number of Occurrences:** 1

2253 **Status:** Mandatory (trigger)

2254 Data Element Sequence

2255 REL+relationship-type+array-scope'

2256 Data Element Usage Rules

local name	usage rules	format	SDMX-EDI code values
relationship-type	<u>mandatory</u>	an..3	Z01 - relationship is with a statistical array
array-scope	<u>mandatory</u> this provides information about the scope of the attributes which follow; the attributes can refer to: - the data set identified in the DSI segment (=1); - series or sibling series level (=4); - observation level (=5)	an..3	1 - data set. 4 - specific combination of dimension values 5 - observation

2257 Content and General Usage Rules

2258 This is used to provide the scope of the footnote(s) or attribute(s).

2259 Dependencies

2260 The *array-scope* given here should be consistent with the contents of the Group 22-ARR  
 2261 segment which follow (until a new REL is found). If *array-scope*=4, then in the ARR segments  
 2262 (which follow the REL segment) the references should be to specific dimension values  
 2263 identifying either a time series or a sibling group (in the latter case the frequency would be  
 2264 wildcarded). If *array-scope*=5, then the references for the attributes will indicate attachments at  
 2265 the observation level (all dimensions plus time reference plus time-format). If *array-scope*=1,  
 2266 then the ARR segments which follow should not contain dimension values, but all dimensions  
 2267 should be wild-carded (attributes attached at the data set level).

2268 **Example 1 - attribute for a data set:**

DSI+ECB\_TEST' DSI is identical to IDE and identifies the data set ECB\_TEST

...

IDE+5+ECB\_TEST\_KF' Key family: ECB\_TEST\_KF

...

REL+Z01+1' Relationship is with the data set

2269 **Example 2 - attributes for sibling series:**

REL+Z01+4'

Array scope is "combination of dimension values"

...

ARR segment to follow

2270

2271 **Example 3 - attributes for a time series:**

REL+Z01+4'

Array scope is "combination of dimension values"

...

ARR segments to follow

2272

2273 **Example 4 - attribute for an individual observation:**

REL+Z01+5'

Array scope is "observation"

...

ARR segments to follow

2274

2275

2276	<b>Segment Group:</b>	<b>Group 22 (ARR-Group 23)</b>
2277	<b>Max. Number of Occurrences:</b>	9999
2278	<b>Status:</b>	<i>Conditional</i>
2279		
2280	<u><i>Content and General Usage Rules</i></u>	
2281	This group contains an ARR segment which defines the statistical objects to which the attributes	
2282	which follow refer.	
2283	Then, the name (identifier) of the attribute follows (in an IDE segment) and its value follows	
2284	which can be:	
2285	either text (FTX segment)	
2286	or a value from a code list (group 24, CDV)	
2287		
2288	The examples that are presented in this subsection include also relevant segments (e.g. REL)	
2289	which should precede the appearance of the segments of the group.	
2290		
2291		



2292

2293 **Segment Type:**

ARR

2294 **Segment Type Name:** *Array Information*2295 **Max. Number of Occurrences:** *1*2296 **Status:** *Mandatory (trigger)*

2297

2298 Data Element Sequence2299 *ARR+last-dimension-position+array-cell-data:array-cell-data:array-cell-data:etc.'*2300 Data Element Usage Rules

local name	usage rules	format	SDMX-EDI code values
Last-dimension-position	<u>Mandatory</u> this element is used to indicate the number of dimensions which are relevant for the attachment of the attribute: (a) <u>if the attribute qualifies a sibling group or a time series</u> , then the <i>position</i> indicates the number of dimensions in the key family. (b) <u>if the attribute qualifies an observation</u> , then the <i>position</i> should indicate the number of dimensions in the key family increased by two (additional dimensions: period, time format). (c) <u>if the attribute qualifies the whole data set (given by the data-set-identifier in the DSI segment)</u> , then the <i>position</i> should be set equal to zero.	an..12	This value can be:  (a) <b>the number of dimensions in the key family</b> (for attributes at sibling group or time series level)  (b) <b>the number of dimensions in the key family increased by two</b> (for the OBS_COM attribute)  (c) <b>0</b> - for attributes attached at the data set level (as identified by the DSI segment).
Array-cell-data	<u>Conditional</u> this contains dimension values which specify uniquely the position in the array to which the attribute relates: - wildcarding of one dimension is valid for the sibling group level - if <i>array-cell-data</i> refers to the time dimension value (the case of an observation), then both the period and periodicity must be specified in the sequence <i>period:time</i> format	an..35	see examples;  (not used for attributes attached at the data set level)

2301

2302

2303

2304 Content and General Usage Rules

2305 The segment is used to specify the values in the data set for which the attribute(s) are relevant.

2306 For attributes at the observation level, the *last-dimension-position* is the number of dimensions  
2307 plus two: the reason is that the conceptual dimension time (which is needed in order to address  
2308 the observation level) is represented in GESMES by two physical dimensions: period and time  
2309 format (see also examples).

2310 For attributes at the data set level, the *last-dimension-position* must be set equal to 0: this is the  
2311 method to wildcard all dimension values.

2312 This ARR segment plays an important role also in deletions of attributes (see p. 137).

2313

2314 **Example 1 - attribute for a data set:**

DSI+ECB_TEST'	It identifies the data set ECB_TEST
...	
IDE+5+ECB_TEST_KF'	Key family: ECB_TEST_KF
...	
REL+Z01+1'	Relationship is with the data set
<b>ARR+0'</b>	<b>Attached at the data set level</b>
...	IDE segments to follow

2315

2316 **Example 2 - attributes for sibling series:**

REL+Z01+4'	Array scope is "combination of dimension values"
<b>ARR+4+:XX:ZZ:CC'</b>	<b>attached to sibling group :XX:ZZ:CC</b>
...	IDE segments to follow

2317

2318 **Example 3 - attributes for a time series:**

REL+Z01+4'	Array scope is "combination of dimension values"
<b>ARR+4+M:XX:ZZ:CC'</b>	<b>attached to time series M:XX:ZZ:CC</b>
...	IDE segments to follow

2319

2320 **Example 4 - attribute for an individual observation:**

REL+Z01+5'	Array scope is "observation"
<b>ARR+6+M:XX:ZZ:CC:199606:610'</b>	<b>attached to obs. of June 1996 for series M:XX:ZZ:CC</b>
...	IDE segments to follow

2321 These attribute segments refer to the observation for [June 1996](#) of the series [M:XX:ZZ:CC](#).

2322 It is obvious that in this case we have to write ARR+6, because apart from the key family  
2323 dimensions (=4) the reading applications should expect *two more dimension references* which  
2324 are needed to refer to a specific period (the “199606” -date component- and the “610” -format  
2325 component-). **This is an important point to be taken into account when designing both the**  
2326 **writing and reading applications.**

2327

2328 **Segment Group:**

**Group 23 (IDE-FTX-Group 24)**

2329 **Max. Number of Occurrences:** 9999

2330 **Status:** *Conditional*

2331

2332 *Content and General Usage Rules*

2333 Each occurrence of this group is used to identify an attribute which relates to the object specified  
2334 in the preceding ARR segment. The attribute present in the IDE segment can be assigned as  
2335 value:

2336 either a text (FTX segment) for an uncoded attribute

2337 or a value from a code list (group 24, CDV) for a coded attribute

2338

2339 **Segment Type:**

**IDE**

2340 **Segment Type Name:** *Identity*

2341 **Max. Number of Occurrences:** 1

2342 **Status:** *Mandatory (Trigger)*

2343

2344 Data Element Sequence

2345 IDE+object-type+identifier'

2346 Data Element Usage Rules

local name	usage rules	format	SDMX-EDI code values
object-type	<u>mandatory</u> It indicates the type of the object	an..3	Z10 - <a href="#">coded attribute</a> Z11 - <a href="#">uncoded attribute</a>
identifier	<u>mandatory</u> the identity of the object	an..35	<a href="#">attribute identifier</a>

2347

2348 Content and General Rules

2349 Each occurrence of this segment is used to identify an attribute related to the object specified in  
2350 the preceding ARR segment.

2351 The *identifier* in this segment points

2352 either to the *text* in the FTX segment

2353 or to the *code-value* in Group 24 (CDV)

2354 which follow.

2355

2356

2357 **Example 1 - attribute for a data set:**

DSI+ECB\_TEST' It identifies the data set ECB\_TEST

...

IDE+5+ECB\_TEST\_KF' Key family: ECB\_TEST\_KF

...

REL+Z01+1' Relationship is with the data set

ARR+0' attached at the data set level

**IDE+Z10+UNIT'** **Coded attribute UNIT**

...

CDV segment to follow

2358      **Example 2 - attributes for sibling series:**

REL+Z01+4'	Array scope is "combination of dimension values"
ARR+4+:XX:ZZ:CC'	attached to sibling :XX:ZZ:CC
<b>IDE+Z10+AVAILABILITY'</b>	<b>Coded attribute AVAILABILITY</b>
...	CDV segment to follow
<b>IDE+Z11+TITLE'</b>	<b>Uncoded attribute TITLE</b>
...	FTX segment to follow

2359

2360      **Example 3 - attributes for a time series:**

REL+Z01+4'	Array scope is "combination of dimension values"
ARR+4+M:XX:ZZ:CC'	attached to time series M:XX:ZZ:CC
<b>IDE+Z10+COLLECTION'</b>	<b>Coded attribute COLLECTION</b>
...	CDV segment to follow
<b>IDE+Z11+COLL_DETAIL'</b>	<b>Uncoded attribute COLL_DETAIL</b>
...	FTX segment to follow

2361

2362      **Example 4 - attribute for an individual observation:**

REL+Z01+5'	Array scope is "observation"
ARR+6+M:XX:ZZ:CC:199606:610'	attached to obs. of June 1996 for series M:XX:ZZ:CC
<b>IDE+Z11+OBS_COM'</b>	<b>uncoded attribute OBS_COM</b>
...	FTX segment to follow

2363

2364

2365 **Segment Type:** **FTX**

2366 **Segment Type Name:** *Free Text*

2367 **Max. Number of Occurrences:** *20*

2368 **Status:** *Conditional*

2369 Data Element Sequence

2370 FTX+text-subject+++text:text:text:text:text'

2371 Data Element Usage Rules

local name	usage rules	format	SDMX-EDI code values
text-subject	<u>mandatory</u>	an..3	ACM - statistical description
text	<u>mandatory</u>	an..70	text value (of an uncoded attribute); it could continue with up to four more component element (up to five in total).
text (2nd comp.element)	<u>conditional</u>	an..70	(text could continue)
text (3rd comp.element)	<u>conditional</u>	an..70	(text could continue)
text (4th comp.element)	<u>conditional</u>	an..70	(text could continue)
text (5th comp.element)	<u>conditional</u>	an..70	(text could continue only using a new FTX segment)

2372 Content and General Usage Rules

2373 Each occurrence of this segment is used to provide the text value of an uncoded attribute. The

2374 overall allowed length of the text depends on the specification of the respective attribute in the

2375 key family definition. If the foreseen length is longer than 70 characters (upper limit for original

2376 text inside a single component element, not counting [release characters](#)), then the *text* should

2377 be split in (the maximum) 5 component element-texts (each one of them not being longer than

2378 70 characters and separated among them with a *component separator*). The reading

2379 applications should read the components of the received text and consider that they form a

2380 string which is the result of the added sub-strings. The writing applications should break the

2381 original text into pieces of 70 characters or shorter (it does not matter whether a word is broken

2382 between two component elements or not), keeping spaces as significant characters and adding

2383 release characters as required afterwards.

2384 Multiple FTX segments can be sent (up to 20, one below the other) and the reading applications

2385 should consider them as an ordered sequence of sections of the same text. As before, the use

2386 of a new FTX does not imply that this should be interpreted as *line feed*.

2387 The free text in FTX should respect the EDIFACT rules for the treatment of the characters used in

2388 the syntax (see also separate chapter on using [text in uncoded attributes](#)).

2389

2390 **Example 1 - coded attribute for a data set:**

2391

DSI+ECB_TEST'	It identifies the data set ECB_TEST
...	
IDE+5+ECB_TEST_KF'	Key family: ECB_TEST_KF
...	
REL+Z01+1'	Relationship is with the data set
ARR+0'	attached at the data set level
IDE+Z10+UNIT'	Coded attribute UNIT
...	CDV segment to follow

2392

2393

2394 **Example 2 - attributes for sibling series:**

2395

REL+Z01+4'	Array scope is "combination of dimension values"
ARR+4+:XX:ZZ:CC'	attached to sibling :XX:ZZ:CC
IDE+Z10+AVAILABILITY'	Coded attribute AVAILABILITY
...	CDV segment to follow
IDE+Z11+TITLE'	Uncoded attribute TITLE
<b>FTX+ACM+++MONETARY AGGREGATE</b>	<b>Attribute text value</b>
<b>M1'</b>	

2396

2397

2398 **Example 3 - attributes for a time series:**

2399

REL+Z01+4'	Array scope is "combination of dimension values"
ARR+4+M:XX:ZZ:CC'	attached to time series M:XX:ZZ:CC
IDE+Z10+COLLECTION'	Coded attribute COLLECTION
...	CDV segment to follow
IDE+Z11+COLL_DETAIL'	Uncoded attribute COLL_DETAIL
<b>FTX+ACM+++COLLECTED ON 2 LAST</b>	<b>Attribute text value</b>
<b>WORKING DAYS OF THE MONTH'</b>	

2400

2401

2402 **Example 4 - attribute for an individual observation:**

2403

REL+Z01+5'	Array scope is "observation"
ARR+6+M:XX:ZZ:CC:199606:610'	attached to obs. of June 1996 for series M:XX:ZZ:CC
IDE+Z11+OBS_COM'	Uncoded attribute OBS_COM
<b>FTX+ACM+++NEW</b>	<b>ACCOUNTING</b>
<b>METHOD'</b>	<b>Attribute text value</b>

2404



2405

2406

2407    **Segment Group:** **Group 24 (CDV)**

2408        **Max. Number of Occurrences:**    *1*

2409        **Status:** *Conditional*

2410

2411    *Content and General Usage Rules*

2412        This group provides the value of a coded attribute.

2413 **Segment Type:** **CDV**

2414 **Segment Type Name:** *Code value*

2415 **Max. Number of Occurrences:** *1*

2416 **Status:** *Mandatory*

2417

2418 Data Element Sequence

2419 CDV+code-value'

2420 Data Element Usage Rules

local name	usage rules	format	SDMX-EDI code values
code-value	<u>mandatory</u> a code value	an..18	attribute code value

2421

2422 Content and General Rules

2423 Each occurrence of this segment is used to assign a value to the attribute specified in the  
 2424 preceding IDE segment.

2425

2426 **Example 1 - attribute for a data set:**

DSI+ECB_TEST'	It identifies the data set ECB_TEST
...	
IDE+5+ECB_TEST_KF'	Key family: ECB_TEST_KF
...	
REL+Z01+1'	Relationship is with the data set
ARR+0'	Attached at the data set level
IDE+Z10+UNIT'	Coded attribute UNIT
<b>CDV+USD'</b>	<b>code value for US dollar</b>

2427 **Example 2 - attributes for sibling series:**

REL+Z01+4'	Array scope is "combination of dimension values"
ARR+4+:XX:ZZ:CC'	attached to sibling :XX: ZZ:CC
IDE+Z10+AVAILABILITY'	Coded attribute AVAILABILITY
<b>CDV+A'</b>	<b>code value: A</b> (=assumed to mean availability="free")
IDE+Z11+TITLE'	Uncoded attribute TITLE
FTX+ACM+++MONETARY AGGREGATE	attribute text value
M1'	

2428

**Example 3 - attributes for a time series:**

REL+Z01+4'	Array scope is "combination of dimension values"
ARR+4+M:XX:ZZ:CC'	attached to time series M:XX:ZZ:CC
IDE+Z10+COLLECTION'	Coded attribute COLLECTION
<b>CDV+A'</b>	<b>coded value for collection is A = "average of period"</b>
IDE+Z11+COLL_DETAIL'	Uncoded attribute COLL_DETAIL
FTX+ACM+++simple arithmetic mean of daily values'	attribute text value

2429

2430

**Example 4 - attribute for an individual observation:**

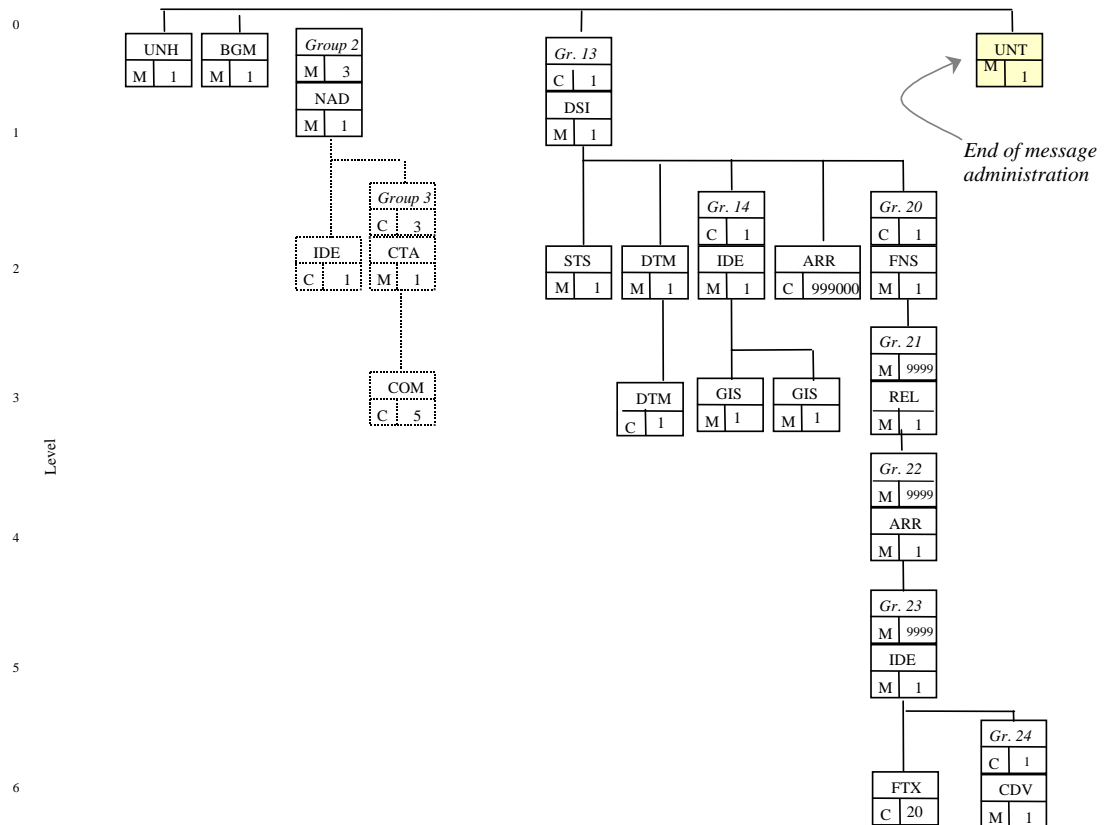
REL+Z01+5'	Array scope is "observation"
ARR+6+M:XX:ZZ:CC:199606:610'	attached to obs. of June 1996 for series M:XX:ZZ:CC
IDE+Z11+OBS_COM'	uncoded attribute OBS_COM
FTX+ACM+++NEW	ACCOUNTING attribute text value
METHOD'	

2431

## 2432 9.10 End of Message Administration Section

2433 The [UNT](#) segment ends the message and contains control count data that can be used to check  
2434 the integrity of the data received.

2435



2436

2437 **Segment Type:** **UNT**

2438 **Segment Type Name:** *Message Trailer*

2439 **Max. Number of Occurrences:** *1*

2440 **Status:** *Mandatory*

2441

2442 Data Element Sequence

2443 UNT+*number-of-segments*+*message-reference-number*'

2444 Data Element Usage Rules

local name	usage rules	format	SDMX-EDI code values
number-of-segments	<u>mandatory</u> this is a total count of all the segments contained in the message, including the UNH and the UNT segments	n..6	
message-reference-number	<u>mandatory</u> this is the same value as the <i>message-reference-number</i> in the UNH at the beginning of the message	an..14	Format in SDMX-EDI: <a href="#">MREFnnnnnn</a>

2445

2446 Content and General Usage Rules

2447 This segment ends the message and contains control data that can be used to validate message  
2448 integrity.

2449

2450

2451 **Example:**

2452 UNT+59+MREF000001'

2453 This message contains 59 segments and the UNH which started the message has a message-  
2454 reference-number of MREF000001

2455

2456      **9.11 End of Interchange Administration Section**

2457      The UNZ segment ends the interchange (UNZ) and contains control count data that can be used  
2458      to check the integrity of the messages received.

2459 **Segment Type:** **UNZ**

2460 **Segment Type Name:** *Interchange Trailer*

2461 **Max. Number of Occurrences:** *1*

2462 **Status:** *Mandatory*

2463

2464 Data Element Sequence

2465 UNZ+number-of-messages+interchange-reference'

2466 Data Element Usage Rules

local name	usage rules	format	SDMX-EDI code values
number-of-messages	<u>mandatory</u> this is a count of the number of messages (i.e. UNH/UNT pairs) that are in the interchange	n..6	
interchange-reference	<u>mandatory</u> this must be the same value that is placed in the <i>interchange-reference</i> in the UNB at the beginning of this interchange	an..14	Format: <b>IREFnnnnnn</b>

2467

2468

2469 Content and General Usage Rules

2470 This segment ends the interchange and it is put immediately following the last UNT of the last  
2471 message of the interchange. It contains a count of the number of messages in the interchange  
2472 and a reference number that can be used to validate the integrity of the interchange.

2473

2474

2475 **Example:**

2476 UNZ+3+IREF000006'

2477 There are three messages in the interchange and the value of the interchange-reference in the  
2478 UNB that relates to this UNZ is IREF000006

2479

## 2480 10 DELETE MESSAGES

2481 A SDMX-EDI message turns into a message containing *delete directives* when its STS segment  
2482 has been written as:

2483 STS+3+6'

2484 Once this segment has been found, the message is considered as a **delete message**. All its  
2485 ARR segments should then contain exclusively references to values of objects which should be  
2486 deleted; all references for deletion should refer exclusively to statistical objects belonging or  
2487 related to the data set indicated by the DSI segment of this message.

2488

### 2489 10.1 Rules and Techniques for Deletions

2490 References for deletions can appear in two different parts of a “delete” message and they are  
2491 discussed separately below:

#### 2492 10.1.1 Deletions of observations, time series, sibling groups and data sets

2493 These deletions are activated via references appearing in the main set of ARR segments  
2494 (FOLLOWING GROUP 14) of the message

2495 **Rule:** *numeric observations cannot be present in the ARR segments of the message.*

2496 **Deletion of specific observations and the corresponding observation flags (observation  
2497 status, observation confidentiality, observation pre-break);**

2498 *recommendation: deletions which could create conceptually unjustified “holes” within a time  
2499 series composed of continuous observations should be avoided;*

2500 e.g. if M:XXX:YYY and M:XXX:ZZZ are the keys of two series, then the segments

2501 ARR++M:XXX:YYY:199201:610' and

2502 ARR++M:XXX:ZZZ:199203:610'

2503 imply the deletion of the Jan92-observation (and the corresponding obs. flags) for the series  
2504 M:XXX:YYY and the deletion of the Mar93-observation (and the corresponding obs. flags) for the  
2505 series M:XXX:ZZZ

2506 **Deletion of ranges of observations and the corresponding observation flags (observation  
2507 status, observation confidentiality, observation pre-break);**

2508 *recommendation: deletions which could create conceptually unjustified “holes” within a time  
2509 series composed of continuous observations should be avoided;*

2510 e.g. if M:XXX:YYY is the key of the series, then the segment  
2511 ARR++M:XXX:YYY:199201199205:710'

2512 implies the deletion of the observations of the series (and its attributes) from Jan.1992 to  
2513 May.1992.

2514 **Deletion of a specific time series;**

2515 **Rule:** *dates/periods/time ranges cannot be present in segment;*



- 2516 e.g. if **M:BE:XXX:YYY** is the key of a series, then the segment
- 2517 **ARR++M:BE:XXX:YYY'**
- 2518 implies the deletion of this series and all its attribute values at all levels not higher than the time
- 2519 series level (incl. the coded and uncoded attribute values)
- 2520 **Deletion of a group of sibling series;**
- 2521 ***Rule:** dates/periods/time ranges cannot be present in segment;*
- 2522 e.g. if **:BE:XXX:YYY** is the key of the sibling group (second position: frequency wildcarded: for
- 2523 any frequency), then the segment
- 2524 **ARR++:BE:XXX:YYY'**
- 2525 implies the deletion of all series of the group (e.g. **Q:BE:XXX:YYY** and **M:BE:XXX:YYY**) and all
- 2526 their attribute values at all levels not higher than the sibling group level (incl. the coded and
- 2527 uncoded attribute values).
- 2528 **Deletion of a whole data set;**
- 2529 ***Rule:** dates/periods/time ranges cannot be present in segment;*
- 2530 In this case, the ARR segment should be written in the following way: **ARR+0'**
- 2531 This segment should imply the deletion of all series and all attribute values of the data set
- 2532 indicated by the DSI segment of the message.
- 2533 **10.1.2 Deletions of attributes**
- 2534 These deletions are activated via references appearing in the set of Group 21-ARR segments:
- 2535 ***Rule:** both the ARR and IDE segments should be present in a delete message, but CDV or FTX segments*
- 2536 *(which follow in a normal update message) cannot be present in this case.*
- 2537 **Deletions of specific observation comments (Obs\_Com) at the observation level**
- 2538 e.g. the segments
- 2539 **ARR+7+M:ABB:A:DE:S1:199606:610'**
- 2540 **IDE+Z11+OBS\_COM'**
- 2541 imply the deletion of the observation comment value for **Jun.96** for the series **M:ABB:A:DE:S1**.
- 2542 **Deletions of specific attributes at a series level;**
- 2543 e.g. the segments
- 2544 **ARR+5+M:ABB:A:DE:S1'**
- 2545 **IDE+Z11+COVERAGE'**
- 2546 imply the deletion of the value of the attribute **COVERAGE** for the series **M:ABB:A:DE:S1**.
- 2547 **Deletions of specific attributes at a sibling group level;**
- 2548 e.g. if in this key family the attribute **COVERAGE** has been defined at the sibling group level and
- 2549 frequency is the first dimension of the key family, then the segments
- 2550 **ARR+5+:ABB:A:DE:S1'**
- 2551 **IDE+Z11+COVERAGE'**
- 2552 imply the deletion of the value of the attribute **COVERAGE** for the sibling group **:ABB:A:DE:S1**.

2553       **Deletion of specific attributes at a data set level;**  
2554       e.g. if in this key family the attribute [OTHER\\_METH\\_EXPL](#) has been defined at the data set  
2555       level, then the segments  
2556       ARR+0'  
2557       IDE+Z11+[OTHER\\_METH\\_EXPL](#)'  
2558       imply the deletion of the text for the attribute [OTHER\\_METH\\_EXPL](#) .  
2559       **Remark:** it is assumed that, before writing the ARR/IDE pairs, appropriate settings have been  
2560       used for the REL segment: [REL+Z01+4](#)' for deleting time series' and sibling groups' attributes,  
2561       [REL+Z01+5](#)' for deleting observation comments and [REL+Z01+1](#)' for data set attributes'  
2562       deletions.

2563

## 2564 10.2 Comments on Deletions

2565 **Deletions** affect:

- 2566 • objects identified by the ARR segment which comes immediately after Group 14 (for deletion  
2567 of observations, series, sibling groups and data sets);
- 2568 • specific attribute values identified via references in the ARR segment of Group 22 (in  
2569 conjunction with a corresponding attribute identifier).

2570 **Deletion of observations** or ranges of observation should not create “holes” in a series  
2571 containing continuous observations or if these holes could not be conceptually justified. Usually,  
2572 an observation deletion is expected at the start or the end of a series. For example, should a  
2573 need arise to temporarily “delete” an observation in the middle of a series with continuous  
2574 observations (for example if the value is wrong and the correct one is not known yet), an  
2575 “update” instruction should be used instead: a “missing value” should be sent with an  
2576 appropriate missing value explanation flag (a value of the corresponding OBS\_STATUS attribute  
2577 indicating the reasoning for the reported missing value).

2578 **The deletion of a whole data set** can be initiated only by the centre which informs the receiving  
2579 ends in advance, using other administrative means, providing a timetable and describing the  
2580 concrete actions which should take place. The deletion of a data set implies the deletion of all  
2581 series included in the data set and of their corresponding attribute values at all levels  
2582 (observation, time series, sibling, data set). The key family, from which the data set took its  
2583 structure, is not affected by the deletion of the data set.

2584 **The deletion of structural definitions (e.g. key families) using automated means is not**  
2585 **foreseen.** If such a need arises, administrative guidance will be provided by the centre  
2586 administering the corresponding data exchange (if the institution administering the data  
2587 exchange is different from the institution devising the structural definitions used, a prior  
2588 consultation between the two central institutions might be needed).

2589    **11   MESSAGE ACKNOWLEDGEMENTS**

2590            SDMX-EDI does not currently support message acknowledgements.

2591            Message acknowledgement services provided by a centre may differ between centres.

## 12 TEXT IN UNCODED ATTRIBUTES: RULES AND CONSIDERATIONS

### 12.1 Character Set

In a SDMX-EDI message the upper case Latin character set, the service characters (: ' ? +), the dash (used in negative numbers and to denote missing values) and the dot (decimal point in numbers) are used; **text given as a value to an uncoded attribute can also use any character of the [standard character set](#) (e.g. lower case characters) and characters of the [extended set](#) (160-255), e.g. é, ñ, ê, ö, ç.** However, the use of the extended character set needs to be evaluated before being put in production, as it could create interoperability problems between partners' applications.

When a need arises to use another character set beyond Latin (e.g. Greek, Cyrillic, Japanese), then Latin characters should be used chosen according to the closest sound of the characters.

### 12.2 Special Characters

***Special non-alphanumeric characters in uncoded attributes should be used with caution:***

beyond the ANSI/ASCII code number 126, only the ANSI-accented-characters are allowed especially, control characters (coded in [positions 128 - 159](#)) must not be used inside a SDMX-EDI message, as they cause problems in applications.

The release character ("?" in SDMX-EDI) must precede any appearance of the SDMX-EDI service characters (+':?), but it should not precede decimal points; see also Appendix on the [EDIFACT](#) syntax. The [release character](#) should not be included in the character count for FTX component elements.

### 12.3 Uncoded Attribute Values: Maximum Length of Text

The length of the text that can be used in an uncoded attribute value is specified in the key family definition. This issue is discussed extensively on page 65 and 128 (providing also a number of examples): a FTX segment can contain up to 350 characters (broken down to five component elements of maximum 70 characters of original text each<sup>1</sup>). The general recommendation for uncoded attributes is not to use more than one FTX segment per uncoded attribute, therefore, the resulting string not to exceed 350 characters of original text in total.

---

<sup>1</sup> Release characters are not counted in the 70 characters so that a component element in an FTX segment may actually be longer than 70 characters, depending on the number of release characters that had to be inserted.

## 13 EXAMPLE MESSAGES

### 13.1 Data Update Message

Let us assume that the following data have to be sent by the National Bank of Belgium to the ECB:

**Key family: PRICES\_TEST\_DATA** - Monthly data for five time series

	M:BE:PROD:	M:BE:CONS:	M:BE:WHOL:	M:BE:WHOL:	M:BE:WHOL:
	GN:NS	GN:NS	GN:NS	RM:NS	RM:SA
Sep.95					
Oct.95	99.10 A	112.20 A	111.80 A	110.20 A	102.90 A
Nov.95	98.10 A	112.30 A	112.10 A	110.10 A	103.00 A
Dec.95	98.40 A	112.40 A	111.90 A	110.00 A	104.60 A
Jan.96	99.50 A	112.50 A	112.10 A	110.10 A	106.30 A
Feb.96	100.00 A	112.70 A	112.40 A	110.80 A	109.00 A
Mar.96	99.20 A	113.10 A	112.30 A	111.00 A	111.10 A
	99.80 A	113.80 A	112.00 A	110.10 A	109.80 A

**Key family: PRICES\_TEST\_DATA** - Quarterly data for five time series

Series key:	Q:BE:PROD:G	Q:BE:CONS:G	Q:BE:WHOL:	Q:BE:WHOL:	Q:BE:WHOL:
	N:NS	N:NS	GN:NS	RM:NS	RM:SA
95q4	98.67 A	112.40 A	112.03 A	110.07 A	104.63 A
96q1	99.67 A	113.20 A	112.23 A	110.63 A	109.97 A

**Key family: INT\_RATES\_KF**, series: D:BE:IR:MM:THRM (211 daily observations: 1/9/95 to 29/3/96)

01. Sep.95	4.31 A	11. Sep.95	4.22 A	...	...
02. Sep.95	(na) H	12. Sep.95	4.23 A	etc.	
03. Sep.95	(na) H	13. Sep.95	4.17 A	...	...
04. Sep.95	4.30 A	14. Sep.95	4.16 A	23. Mar.96	(na) H
05. Sep.95	4.32 A	15. Sep.95	4.16 A	24. Mar.96	(na) H
06. Sep.95	4.25 A	16. Sep.95	(na) H	25. Mar.96	3.31 A
07. Sep.95	4.25 A	17. Sep.95	(na) H	26. Mar.96	3.31 A
08. Sep.95	4.23 A	18. Sep.95	4.16 A	27. Mar.96	3.31 E
09. Sep.95	(na) H	...	...	28. Mar.96	3.32 F C
10. Sep.95	(na) H	...	...	29. Mar.96	3.33 F C

As it is shown on the table above the last two daily observations have been flagged as confidential.

2634 For the series [M:BE:IR:MM:THRM](#) the observation 4.10:A for February 1994 was revised and  
 2635 needs to be reported as well.

2636

2637 For the monthly series [M:BE:IR:MM:THRM](#) the following observations have also to be sent:

2638	<u>Sep.95</u>	<u>Oct.95</u>	<u>Nov.95</u>	<u>Dec.95</u>	<u>Jan.96</u>	<u>Feb.96</u>	<u>Mar.96</u>
2639	4.24 A	4.22 A	3.98 A	3.84 A	3.53 A	3.32 A	3.31 A

2640

2641 The following sequence of segments is a full interchange containing two messages (one for  
 2642 each key family) and performs the required reporting:

```

2643
2644
2645  UNA:+.? '
2646  UNB+UNOC:3+BE2+4F0+970613:0800+IREF000001++SDMX-EDI+++1 '
2647
2648  UNH+MREF000001+GESMES:2:1:E6 '
2649  BGM+74 '
2650  NAD+Z02+ECB '
2651  NAD+MR+4F0 '
2652  NAD+MS+BE2 '
2653  DSI+PRICES_TEST_DATA '
2654  STS+3+7 '
2655  DTM+242:199705281419:203 '
2656  IDE+5+PRICES_TEST_DATA '
2657  GIS+AR3 '
2658  GIS+1:::- '
2659  ARR++M:BE:PROD:GN:NS:199509199603:710:99.10:A+98.10:A+98.40:A+99.50:A+100.00:A+9
2660  9.20:A+99.80:A '
2661  ARR++Q:BE:PROD:GN:NS:1995419961:708:98.67:A+99.67:A '
2662  ARR++M:BE:CONS:GN:NS:199509199603:710:112.20:A+112.30:A+112.40:A+112.50:A+112.70
2663  :A+113.10:A+113.80:A '
2664  ARR++Q:BE:CONS:GN:NS:1995419961:708:112.40:A+113.20:A '
2665  ARR++M:BE:WHOL:GN:NS:199509199603:710:111.80:A+112.10:A+111.90:A+112.10:A+112.40
2666  :A+112.30:A+112.00:A '
2667  ARR++Q:BE:WHOL:GN:NS:1995419961:708:112.03:A+112.23:A '
2668  ARR++M:BE:WHOL:RM:NS:199509199603:710:110.20:A+110.10:A+110.00:A+110.10:A+110.80
2669  :A+111.00:A+110.10:A '
2670  ARR++Q:BE:WHOL:RM:NS:1995419961:708:110.07:A+110.63:A '
2671  ARR++M:BE:WHOL:RM:SA:199509199603:710:102.90:A+103.00:A+104.60:A+106.30:A+109.00
2672  :A+111.10:A+109.80:A '
2673  ARR++Q:BE:WHOL:RM:SA:1995419961:708:104.63:A+109.97:A '
2674  UNT+22+MREF000001 '
2675
2676
2677  UNH+MREF000002+GESMES:2:1:E6 '
2678  BGM+74 '
2679  NAD+Z02+ECB '
2680  NAD+MR+4F0 '
2681  NAD+MS+BE2 '
2682  DSI+INT_RATES_TEST '
2683  STS+3+7 '
2684  DTM+242:199705311400:203 '
2685  IDE+5+INT_RATES_KF '
2686  GIS+AR3 '
2687  GIS+1:::- '

```

*BE2=National Bank of Belgium, 4F0=ECB*  
see CL\_ORGANISATION code list

*interchange header*

*first message header*

*data set identifier*

*key family identifier*

*series key*

*time range technique*

*first message trailer*

*second message header*

*missing values*



```

2688  ARR++D:BE:IR:MM:THRM:1995090119960329:711:4.31:A+-:H+-:H+4.30:A+4.32:A+4.25:A+4.
2689  25:A+4.23:A+-:H+-:H+4.22:A+4.23:A+4.17:A+4.16:A+4.16:A+-:H+-:H+4.16:A+4.15:A+4.1
2690  4:A+4.15:A+4.44:A+-:H+-:H+4.32:A+4.24:A+4.25:A+4.27:A+4.30:A+-:H+-:H+4.24:A+4.23
2691  :A+4.17:A+4.16:A+4.30:A+-:H+-:H+4.25:A+4.25:A+4.24:A+4.22:A+4.20:A+-:H+-:H+4.20:
2692  A+4.21:A+4.26:A+4.23:A+4.25:A+-:H+-:H+4.26:A+4.20:A+4.21:A+4.22:A+4.20:A+-:H+-:H
2693  +4.15:A+4.14:A+-:H+4.12:A+4.11:A+-:H+-:H+4.10:A+4.11:A+4.06:A+4.04:A+4.04:A+-:H+
2694  -:H+-:H+4.01:A+4.00:A+3.98:A+4.00:A+-:H+-:H+3.95:A+3.91:A+3.94:A+3.91:A+3.90:A+-
2695  :H+-:H+3.87:A+3.84:A+3.86:A+3.92:A+3.91:A+-:H+-:H+3.96:A+3.92:A+3.91:A+3.92:A+3.
2696  93:A+-:H+-:H+3.90:A+3.89:A+3.88:A+3.75:A+3.79:A+-:H+-:H+3.79:A+3.81:A+3.79:A+3.8
2697  0:A+3.79:A+-:H+-:H+-:H+-:H+3.76:A+3.74:A+3.73:A+-:H+-:H+-:H+3.71:A+3.69:A+3.69:A
2698  +3.69:A+-:H+-:H+3.69:A+3.67:A+3.63:A+3.61:A+3.58:A+-:H+-:H+3.58:A+3.50:A+3.47:A+
2699  3.45:A+3.44:A+-:H+-:H+3.43:A+3.44:A+3.41:A+3.39:A+3.44:A+-:H+-:H+3.43:A+3.41:A+3
2700  .33:A+3.28:A+3.25:A+-:H+-:H+3.29:A+3.31:A+3.27:A+3.27:A+3.28:A+-:H+-:H+3.27:A+3.
2701  27:A+3.32:A+3.32:A+3.33:A+-:H+-:H+3.42:A+3.42:A+3.42:A+3.36:A+3.31:A+-:H+-:H+3.3
2702  4:A+3.35:A+3.31:A+3.32:A+3.31:A+-:H+-:H+3.30:A+3.30:A+3.31:A+3.30:A+3.29:A+-:H+-
2703  :H+3.34:A+3.31:A+3.31:A+3.31:A+3.31:A+-:H+-:H+3.32:A+3.31:A+3.32:A+3.31:A+3.31:A
2704  +:-:H+-:H+3.31:A+3.31:A+3.31:E+3.32:F+C+3.33:F+C'
2705  ARR++M:BE:IR:MM:THRM:199402:610:4.10:A'
2706  ARR++M:BE:IR:MM:THRM:199509199603:710:4.24:A+4.22:A+3.98:A+3.84:A+3.53:A+3.32:A+
2707  3.31:A'
2708  UNT+15+MREF000002'
2709
2710  UNZ+2+IREF000001'
2711
2712
2713

```

obs-confid (2nd -optional- attr.)

second message trailer

interchange trailer

In a completely realistic scenario, the *line feed* characters are not needed after the end of each segment and the whole interchange could be transmitted in only *one line*. This is shown below, in the following interchange:

```

2717  UNA:+.? 'UNB+UNOC:3+BE2+4F0+970613:0800+IREF000002++SDMX-
2718  EDI+++1'UNH+MREF000001+GESMES:2:1:E6'BGM+74'NAD+Z02+ECB'NAD+MR+4F0'NAD+MS+BE2'DSI+PRIC
2719  ES_TEST_DATA'STS+3+7'DTM+242:199705281419:203'IDE+5+PRICES_TEST_DATA'GIS+AR3'GIS+1:::-'
2720  ARR++M:BE:PROD:GN:NS:199509199603:710:99.10:A+98.10:A+98.40:A+99.50:A+100.00:A+99.20:A+
2721  99.80:A'ARR++Q:BE:PROD:GN:NS:1995419961:708:98.67:A+99.67:A'ARR++M:BE:CONS:GN:NS:199509
2722  199603:710:112.20:A+112.30:A+112.40:A+112.50:A+112.70:A+113.10:A+113.80:A'ARR++Q:BE:CON
2723  S:GN:NS:1995419961:708:112.40:A+113.20:A'ARR++M:BE:WHOL:GN:NS:199509199603:710:111.80:A
2724  +112.10:A+111.90:A+112.10:A+112.40:A+112.30:A+112.00:A'ARR++Q:BE:WHOL:GN:NS:1995419961:
2725  708:112.03:A+112.23:A'ARR++M:BE:WHOL:RM:NS:199509199603:710:110.20:A+110.10:A+110.00:A+
2726  110.10:A+110.80:A+111.00:A+110.10:A'ARR++Q:BE:WHOL:RM:NS:1995419961:708:110.07:A+110.63
2727  :A'ARR++M:BE:WHOL:RM:SA:199509199603:710:102.90:A+103.00:A+104.60:A+106.30:A+109.00:A+1
2728  11.10:A+109.80:A'ARR++Q:BE:WHOL:RM:SA:1995419961:708:104.63:A+109.97:A'UNT+22+MREF00000
2729  1'UNH+MREF000002+GESMES:2:1:E6'BGM+74'NAD+Z02+ECB'NAD+MR+4F0'NAD+MS+BE2'DSI+DAILY_INT_R

```

2730 ATES\_TEST' **STS**+3+7' **DTM**+242:199705311400:203' **IDE**+5+DAILY\_INT\_RATES\_TEST' **GIS**+AR3' **GIS**+1:::-  
 2731 ' **ARR**++D:BE:IR:MM:THRM:1995090119960329:711:4.31:A+-:H+-:H+4.30:A+4.32:A+4.25:A+4.25:A+4  
 2732 .23:A+-:H+-:H+4.22:A+4.23:A+4.17:A+4.16:A+4.16:A+-:H+-:H+4.16:A+4.15:A+4.14:A+4.15:A+4.  
 2733 44:A+-:H+-:H+4.32:A+4.24:A+4.25:A+4.27:A+4.30:A+-:H+-:H+4.24:A+4.23:A+4.17:A+4.16:A+4.3  
 2734 0:A+-:H+-:H+4.25:A+4.25:A+4.24:A+4.22:A+4.20:A+-:H+-:H+4.20:A+4.21:A+4.26:A+4.23:A+4.25  
 2735 :A+-:H+-:H+4.26:A+4.20:A+4.21:A+4.22:A+4.20:A+-:H+-:H+4.15:A+4.14:A+-:H+4.12:A+4.11:A+-  
 2736 :H+-:H+4.10:A+4.11:A+4.06:A+4.04:A+4.04:A+-:H+-:H+-:H+4.01:A+4.00:A+3.98:A+4.00:A+-:H+-  
 2737 :H+3.95:A+3.91:A+3.94:A+3.91:A+3.90:A+-:H+-:H+3.87:A+3.84:A+3.86:A+3.92:A+3.91:A+-:H+-:  
 2738 H+3.96:A+3.92:A+3.91:A+3.92:A+3.93:A+-:H+-:H+3.90:A+3.89:A+3.88:A+3.75:A+3.79:A+-:H+-:H  
 2739 +3.79:A+3.81:A+3.79:A+3.80:A+3.79:A+-:H+-:H+-:H+3.76:A+3.74:A+3.73:A+-:H+-:H+-:H+3.  
 2740 71:A+3.69:A+3.69:A+3.69:A+-:H+-:H+3.69:A+3.67:A+3.63:A+3.61:A+3.58:A+-:H+-:H+3.58:A+3.5  
 2741 0:A+3.47:A+3.45:A+3.44:A+-:H+-:H+3.43:A+3.44:A+3.41:A+3.39:A+3.44:A+-:H+-:H+3.43:A+3.41  
 2742 :A+3.33:A+3.28:A+3.25:A+-:H+-:H+3.29:A+3.31:A+3.27:A+3.27:A+3.28:A+-:H+-:H+3.27:A+3.27:  
 2743 A+3.32:A+3.32:A+3.33:A+-:H+-:H+3.42:A+3.42:A+3.42:A+3.36:A+3.31:A+-:H+-:H+3.34:A+3.35:A  
 2744 +3.31:A+3.32:A+3.31:A+-:H+-:H+3.30:A+3.30:A+3.31:A+3.30:A+3.29:A+-:H+-:H+3.34:A+3.31:A+  
 2745 3.31:A+3.31:A+3.31:A+-:H+-:H+3.32:A+3.31:A+3.32:A+3.31:A+3.31:A+-:H+-:H+3.31:A+3.31:A+3  
 2746 .31:E+3.32:F:C+3.33:F:C' **ARR**++M:BE:IR:MM:THRM:199402:610:4.10:A' **ARR**++M:BE:IR:MM:THRM:199  
 2747 509199603:710:4.24:A+4.22:A+3.98:A+3.84:A+3.53:A+3.32:A+3.31:A' **UNT**+15+**MREF000002**' **UNZ**+2+  
 2748 IREF000002'

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## 2761 13.2 Data and Attribute Update Message

2762 UNA:+.? ' interchange administration section

2763 UNB+UNOC:3+BE2+4F0+970926:1948+IREF000001++SDMX-EDI+++1 ' interchange administration section

2764 UNH+MREF000001+GESMES:2:1:E6 ' message administration section

2765 BGM+74 ' message administration section

2766 NAD+Z02+EMI ' message administration section

2767 NAD+MR+4F0 ' message administration section

2768 NAD+MS+BE2 ' message administration section

2769 IDE+10+Test message (26-Sep-97) ' data set administration section

2770 DSI+EMI\_TEST\_BOP ' data set administration section

2771 STS+3+7 ' data set administration section

2772 DTM+242:199709261948:203 ' data set administration section

2773 IDE+5+EMI\_TEST\_BOP ' array structure and data section

2774 GIS+AR3 ' array structure and data section

2775 GIS+1:::- ' array structure and data section

2776 ARR++M:BE:N:2:269:1:199610199703:710:2.51:A+2.55:A+2.62:A+2.73:A+2.84:A+2.92:E ' array structure and data section

2777 ARR++M:BE:S:3:982:2:199703199708:710:0.74:A+0.76:A+0.79:A+0.85:A+0.97:A+1.07:A ' array structure and data section

2778 ARR++M:BE:N:4:379:3:199706199710:710:4.36:A+4.47:A+4.71:A+4.59:A+3.73:F:C ' array structure and data section

2779 FNS+Attributes:10 ' attribute section

2780 REL+Z01+4 ' attribute section

2781 ARR+6+:BE:N:1:379:3 ' attribute section

2782 IDE+Z11+TITLE ' attribute section

2783 FTX+ACM+++Test virtual title ' attribute section

2784 IDE+Z10+UNIT ' attribute section

2785 CDV+BEF ' attribute section

2786 IDE+Z10+UNIT\_MULT ' attribute section

2787 CDV+6 ' attribute section

2788 ARR+6+M:BE:S:2:379:3 ' attribute section

2789 IDE+Z10+COLLECTION ' attribute section

2790 CDV+2 ' attribute section

2791 ARR+6+M:BE:N:2:379:2 ' attribute section

2792 IDE+Z10+COLLECTION ' attribute section

2793 CDV+C ' attribute section

2794 REL+Z01+5 ' attribute section

2795 ARR+8+M:BE:N:4:379:3:199705:610 ' attribute section

2796 IDE+Z11+OBS\_COM ' attribute section

2797 FTX+ACM+++Test virtual observation comment ' attribute section

2798 UNT+35+MREF000001 ' end of message administration

2799 UNZ+1+IREF000001 ' end of interchange administration

2800

2801       The message above contains data and attributes:

2802       • some numeric values (array structure and data section) are given for the series  
2803       M:BE:N:2:269:1, M:BE:S:3:982:2 and M:BE:N:4:379:3.

2804       • the text “Test virtual title” is assigned as TITLE to the sibling group “:BE:N:1:379:3” (here  
2805       “frequency” is assumed to be the first dimension and it is wild-carded); for the same sibling  
2806       group, the value “BEF” is assigned to the attribute UNIT and the value “6” to the attribute  
2807       UNIT\_MULT (unit multiplier).

2808       • the value “C” is assigned to the attribute COLLECTION for the series M:BE:S:2:379:3 and the  
2809       same attribute value also for the series M:BE:N:2:379:2.

2810       • the text “Test virtual observation comment” is assigned as OBS\_COM (observation comment)  
2811       for the May 1995 observation for the series M:BE:N:4:379:3.

### 13.3 Key Family Definition Message

In the previous example the objects which were used were referring to series which, of course, belong to a key family. So, let us assume that this key family's definition is reflected in the following table<sup>1</sup>:

**KEY FAMILY: Test key family ref. to balance of payments data**  
**KEY FAMILY MNEMONIC: EMI\_TEST\_BOP**  
**Release: 1.0, 26 Sep. 1997**

		Concept (mnemonic)	Concept name	Code list (mnemonic)	Code list name	code values: N / AN
	ORDER	KEY FAMILY DIMENSIONS				
	1	FREQ	Frequency	CL_FREQ	Frequency codelist	AN1
	2	REF_AREA	Reference area	CL_AREA_EE	Area codelist (EUROSTAT-BoP/EMI)	AN2
	3	ADJUSTMENT	Adjustment indicator	CL_ADJUSTMENT	Adjustment indicator codelist	AN1
	4	DATA_TYPE	BoP type/position	CL_DATA_TYPE	BoP type/position codelist	AN1
	5	BOP_ITEM	BoP item	CL_BOP_ITEM	BoP item codelist	AN3
	6	BASIS	Data basis	CL_BASIS	Data basis codelist	AN1
Attachment level	Status					
I. Attributes (attached to the observation in the message)						
Observation	M	OBS_STATUS	Observation status	CL_OBS_STATUS	Observation status codelist	AN1
Observation	C	OBS_CONF	Observation confidentiality	CL_OBS_CONF	Observation confidentiality codelist	AN1
II. Attributes (handled in the FNS group)						
Sibling	M	TITLE	Title	<uncoded>	<uncoded>	AN..70
Sibling	M	UNIT	Unit	CL_UNIT	Unit codelist	AN..12
Sibling	M	UNIT_MULTIPLIER	Unit multiplier	CL_UNIT_MULT	Unit multiplier codelist	AN..2
Sibling	M	DECIMALS	Decimals	CL_DECIMALS	Decimals codelist	AN1
Time series	M	COLLECTION	Collection indicator	CL_COLLECTION	Collection indicator codelist	AN1
Time series	M	AVAILABILITY	Availability	CL_AVAILABILITY	Organisation availability code list	AN1
Sibling	M	COMPIATION	Compilation explanations	<uncoded>	<uncoded>	AN..70
Observation	C	OBS_COM	Observation comment	<uncoded>	<uncoded>	AN..70
Time series	C	BREAKS	Explanation for breaks	<uncoded>	<uncoded>	AN..70
Sibling	C	AGG_EQUN	Aggregation equation used	<uncoded>	<uncoded>	AN..70
Other concepts used in the reporting/dissemination messages (message administration section)						
		ORGANISATION	Organisation	CL_ORGANISATION	Organisation codelist	AN3
Other concepts used in the Gesmes/CB key family dissemination message (advanced use)						
Advanced use (ASI group)		USAGE_STATUS	Usage status	USS	Usage status code list	AN1
Advanced use (ASI group)		ATTACHMENT_LEVEL	Attachment level	ALV	Attachment level code list	AN1

Each message referring to a key family, like the one presented in the previous example, has to comply with the corresponding key family definition.

The key family definition table which is presented above could be disseminated from the centre (e.g. ECB=4F0) to its partners (ZZZ=unspecified) using SDMX-EDI For this, the ASI group of segments is used. The structural definitions maintenance agency is assumed to be represented by the code EMI. The message below is the coded version of the previous table:

<sup>1</sup> This is just an example, it does not refer to any key family used in actual testing or reporting. Also, for reasons of simplicity, the TIME\_PERIOD and TIME\_FORMAT concepts are not shown in the table.

```

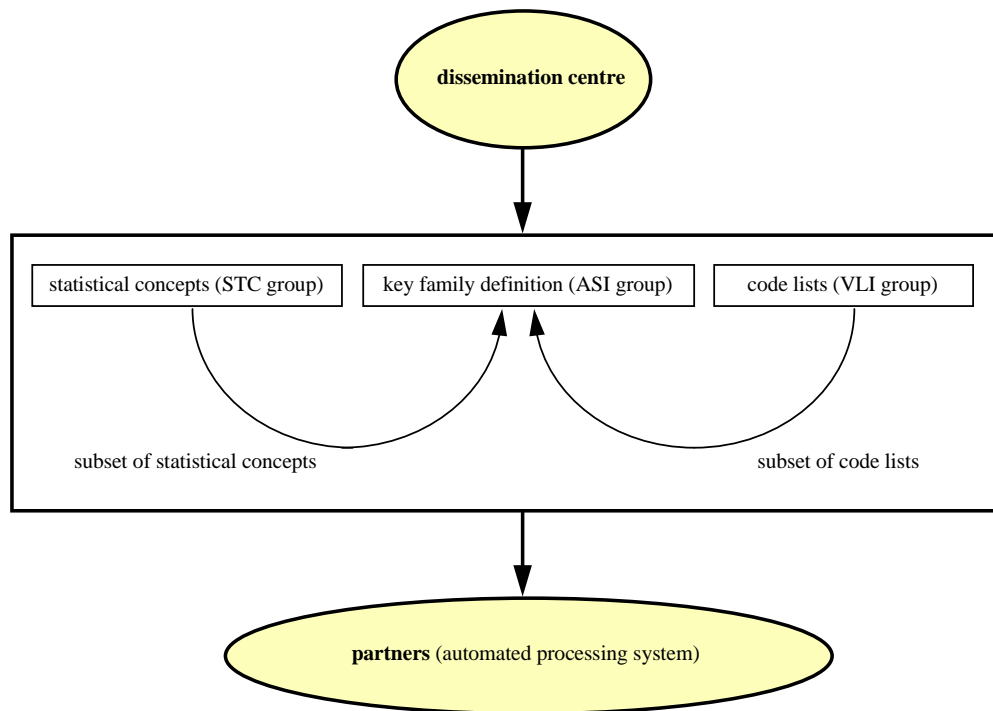
2825
2826 UNA:+.? '
2827 UNB+UNOC:3+4F0+ZZZ+970525:1539+IREF000003++SDMX-EDI '
2828 UNH+MREF000001+GESMES:2:1:E6 '
2829 BGM+73 '
2830 NAD+Z02+EMI '
2831 NAD+MR+ZZZ '
2832 NAD+MS+4F0 '
2833 IDE+10+Ad hoc message - example key family'
2834 ASI+EMI_TEST_BOP'
2835 FTX+ACM+++Test kf for BoP Statistics'
2836 SCD+13+FREQ++++:1'ATT+3+5+:::AN1'IDE+1+CL_FREQ'
2837 SCD+4+REF_AREA++++:2'ATT+3+5+:::AN2'IDE+1+CL_AREA_EE'
2838 SCD+4+ADJUSTMENT++++:3'ATT+3+5+:::AN1'IDE+1+CL_ADJUSTMENT'
2839 SCD+4+DATA_TYPE++++:4'ATT+3+5+:::AN1'IDE+1+CL_DATA_TYPE'
2840 SCD+4+BOP_ITEM++++:5'ATT+3+5+:::AN3'IDE+1+CL_BOP_ITEM'
2841 SCD+4+BASIS++++:6'ATT+3+5+:::AN1'IDE+1+CL_BASIS'
2842 SCD+1+TIME_PERIOD++++:7'ATT+3+5+:::AN..35'
2843 SCD+1+TIME_FORMAT++++:8'ATT+3+5+:::AN3'
2844 SCD+3+OBS_VALUE++++:9'ATT+3+5+:::AN..15'
2845 SCD+3+OBS_STATUS++++:10'ATT+3+5+:::AN1'ATT+3+35+2:USS'ATT+3+32+5:ALV'IDE+1+CL_OBS_STATU
2846 S'
2847 SCD+3+OBS_CONF++++:11'ATT+3+5+:::AN1'ATT+3+35+1:USS'ATT+3+32+5:ALV'IDE+1+CL_OBS_CONF'
2848 SCD+Z09+TITLE'ATT+3+5+:::AN..70'ATT+3+35+2:USS'ATT+3+32+9:ALV'
2849 SCD+Z09+UNIT'ATT+3+5+:::AN..12'ATT+3+35+2:USS'ATT+3+32+9:ALV'IDE+1+CL_UNIT'
2850 SCD+Z09+UNIT_MULTIPLIER'ATT+3+5+:::AN..2'ATT+3+35+2:USS'ATT+3+32+9:ALV'IDE+1+CL_UNIT_MU
2851 LT'
2852 SCD+Z09+DECIMALS'ATT+3+5+:::AN1'ATT+3+35+2:USS'ATT+3+32+9:ALV'IDE+1+CL_DECIMALS'
2853 SCD+Z09+COLLECTION'ATT+3+5+:::AN1'ATT+3+35+2:USS'ATT+3+32+4:ALV'IDE+1+CL_COLLECTION'
2854 SCD+Z09+AVAILABILITY'ATT+3+5+:::AN1'ATT+3+35+2:USS'ATT+3+32+4:ALV'IDE+1+CL_AVAILABILITY
2855 '
2856 SCD+Z09+COMPILATION'ATT+3+5+:::AN..70'ATT+3+35+2:USS'ATT+3+32+9:ALV'
2857 SCD+Z09+BREAKS'ATT+3+5+:::AN..70'ATT+3+35+1:USS'ATT+3+32+4:ALV'
2858 SCD+Z09+AGG_EQUN'ATT+3+5+:::AN..70'ATT+3+35+1:USS'ATT+3+32+9:ALV'
2859 SCD+Z09+OBS_COM'ATT+3+5+:::AN..70'ATT+3+35+1:USS'ATT+3+32+5:ALV'
2860 UNT+88+MREF000001'
2861 UNZ+1+IREF000003'
2862
2863

```

*These three elements should be also defined*

The partners could build fully automated systems by reading the key family definitions directly from SDMX-EDI messages, like the one above.

In fact, all three SDMX-EDI structural sections (each one could be in a different message), shown in the graph below, are needed in order to allow the centre to disseminate the complete key family definition in SDMX-EDI and the receiving institutions to make a paperless interpretation of the received time series data.



The receiver's system could be automated by "reading" the list of statistical concepts and the relevant code lists and linking them in the context of a key family definition message. The next two examples complete the whole example by providing the list of statistical concepts and the code lists.

### 13.4 List of Concepts Dissemination Message

The example message shown below contains the concepts which were used in building the previous key family.

```

UNA:+. ? '
UNB+UNOC:3+4F0+ZZZ+970525:1539+IREF000001++SDMX-EDI '
UNH+MREF000001+GESMES:2:1:E6 '
BGM+73 '
NAD+Z02+EMI '
NAD+MR+ZZZ '
NAD+MS+4F0 '
IDE+10+Statistical concepts-example list '
STC+REF_AREA'FTX+ACM+++Reference area'
STC+FREQ'FTX+ACM+++Frequency'
STC+ADJUSTMENT'FTX+ACM+++Adjustment indicator'
STC+DATA_TYPE'FTX+ACM+++BoP type/position'
STC+BOP_ITEM'FTX+ACM+++BoP item'
STC+BASIS'FTX+ACM+++Data basis'
STC+TIME_PERIOD'FTX+ACM+++Time period or range'
STC+TIME_FORMAT'FTX+ACM+++Time format code'
STC+OBS_VALUE'FTX+ACM+++Observation value'
STC+TITLE'FTX+ACM+++Title'
STC+UNIT'FTX+ACM+++Unit'
STC+UNIT_MULTIPLIER'FTX+ACM+++Unit multiplier'
  
```

2899 STC+**DECIMALS**'FTX+ACM+++Decimals'  
 2900 STC+**AVAILABILITY**'FTX+ACM+++Availability'  
 2901 STC+**COLLECTION**'FTX+ACM+++Collection indicator'  
 2902 STC+**AVAILABILITY**'FTX+ACM+++Availability'  
 2903 STC+**COMPILATION**'FTX+ACM+++Compilation explanations'  
 2904 STC+**BREAKS**'FTX+ACM+++Explanation for breaks'  
 2905 STC+**AGG\_EQU**'FTX+ACM+++Aggregation equation used'  
 2906 STC+**OBS\_COM**'FTX+ACM+++Observation comment'  
 2907 STC+**ORGANISATION**'FTX+ACM+++Organisation'  
 2908 UNT+49+MREF000001'  
 2909 UNZ+1+IREF000001'  
 2910  
 2911

### 13.5 Code List Dissemination Message

2913 The example message shown below contains the code lists. These lists should be used for  
 2914 giving values to the coded statistical concepts of a key family (according to its definition). The  
 2915 message below is for demonstration purposes only: the code lists shown are much shorter than  
 2916 their actual length (e.g. countries and other codes missing).

2917 UNA:+.? '  
 2918 UNB+UNOC:3+4F0+ZZZ+970525:1539+IREF000002++SDMX-EDI '  
 2919 UNH+MREF000001+GESMES:2:1:E6 '  
 2920 BGM+73 '  
 2921 NAD+Z02+**EMI** '  
 2922 NAD+MR+ZZZ '  
 2923 NAD+MS+4F0 '  
 2924 IDE+10+Message with example code lists '  
 2925 VLI+**CL\_FREQ**+++Frequency code list '  
 2926 CDV+**M**'FTX+ACM+++monthly '  
 2927 CDV+**Q**'FTX+ACM+++quarterly '  
 2928 VLI+**CL\_AREA\_EE**+++Area code list (EUROSTAT/ECB) '  
 2929 CDV+**4D**'FTX+ACM+++European Commission '  
 2930 CDV+**4F**'FTX+ACM+++European Monetary Institute '  
 2931 CDV+**5B**'FTX+ACM+++Bank for International Settlements '  
 2932 CDV+**BE**'FTX+ACM+++Belgium '  
 2933 CDV+**DK**'FTX+ACM+++Denmark '  
 2934 CDV+**FR**'FTX+ACM+++France '  
 2935 CDV+**GB**'FTX+ACM+++United Kingdom '  
 2936 CDV+**GR**'FTX+ACM+++Greece '  
 2937 CDV+**LU**'FTX+ACM+++Luxembourg '  
 2938 CDV+**NO**'FTX+ACM+++Norway '  
 2939 CDV+**US**'FTX+ACM+++United States of America '  
 2940 VLI+**CL\_ADJUSTMENT**+++Adjustment indicator code list '  
 2941 CDV+**N**'FTX+ACM+++neither seasonally or working day adjusted '  
 2942 CDV+**S**'FTX+ACM+++seasonally adjusted, not working day adjusted '  
 2943 CDV+**W**'FTX+ACM+++working day adjusted, not seasonally adjusted '  
 2944 CDV+**Y**'FTX+ACM+++working day and seasonally adjusted '  
 2945 VLI+**CL\_DATA\_TYPE**+++BoP type/position code list '  
 2946 CDV+**1**'FTX+ACM+++Stocks at the beginning of the period '  
 2947 CDV+**2**'FTX+ACM+++Credit flows '  
 2948 CDV+**3**'FTX+ACM+++Debit flows '  
 2949 CDV+**4**'FTX+ACM+++Net flows '  
 2950 CDV+**5**'FTX+ACM+++Price valuation adjustment '  
 2951 CDV+**6**'FTX+ACM+++Exchange rate adjustments '  
 2952 CDV+**7**'FTX+ACM+++Reclassification, other adjustments and other revaluations '  
 2953 CDV+**8**'FTX+ACM+++Stocks at the end of the period / Gross stocks '  
 2954 VLI+**CL\_BOP\_ITEM**+++BoP item code list '  
 2955 CDV+**269**'FTX+ACM+++Merchanting and other trade-related services '  
 2956 CDV+**379**'FTX+ACM+++Current transfers '  
 2957 CDV+**971**'FTX+ACM+++Freight transport by air and sea '  
 2958 CDV+**981**'FTX+ACM+++Other services '  
 2959 CDV+**982**'FTX+ACM+++Services not allocated '  
 2960 CDV+**991**'FTX+ACM+++Goods and services '



```

2961 VLI+CL_BASIS+++Data basis code list'
2962 CDV+1'FTX+ACM+++Transaction'
2963 CDV+2'FTX+ACM+++Cash'
2964 CDV+3'FTX+ACM+++Accruals'
2965 CDV+Z'FTX+ACM+++Other'
2966 VLI+CL_OBS_STATUS+++Observation status code list'
2967 CDV+A'FTX+ACM+++normal value'
2968 CDV+E'FTX+ACM+++estimated value'
2969 CDV+F'FTX+ACM+++forecast value'
2970 CDV+H'FTX+ACM+++missing, holiday or weekend'
2971 VLI+CL_OBS_CONF+++Observation confidentiality code list'
2972 CDV+F'FTX+ACM+++Free'
2973 CDV+C'FTX+ACM+++Confidential (and non-publishable)'
2974 VLI+CL_UNIT+++Unit code list'
2975 CDV+BEF'FTX+ACM+++Belgian Franc'
2976 CDV+DEM'FTX+ACM+++German Deutsche Mark'
2977 CDV+ITL'FTX+ACM+++Italian Lira'
2978 VLI+CL_UNIT_MULT+++Unit multiplier code list'
2979 CDV+6'FTX+ACM+++millions'
2980 CDV+9'FTX+ACM+++billions'
2981 VLI+CL_COLLECTION+++Collection indicator code list'
2982 CDV+C'FTX+ACM+++end of period'
2983 CDV+M'FTX+ACM+++average of observations through period'
2984 VLI+CL_ORGANISATION+++Organisation code list'
2985 CDV+BE2'FTX+ACM+++Banque Nationale de Belgique (Belgium)'
2986 CDV+DK2'FTX+ACM+++Danmarks Nationalbank (Denmark)'
2987 CDV+DE2'FTX+ACM+++Deutsche Bundesbank (Germany)'
2988 CDV+4F0'FTX+ACM+++European Central Bank (ECB)'
2989 CDV+5B0'FTX+ACM+++Bank for International Settlements (BIS)'
2990 CDV+4D0'FTX+ACM+++European Commission (Eurostat)'
2991 CDV+ZZZ'FTX+ACM+++Unspecified'
2992 VLI+USS+++Usage status code list'
2993 CDV+1'FTX+ACM+++Conditional'
2994 CDV+2'FTX+ACM+++Mandatory'
2995 VLI+ALV+++Attachment level code list'
2996 CDV+1'FTX+ACM+++Key family'
2997 CDV+4'FTX+ACM+++Time series'
2998 CDV+5'FTX+ACM+++Observation'
2999 CDV+9'FTX+ACM+++Sibling group'
3000 UNT+143+MREF000001'
3001 UNZ+1+IREF000002'

```

## 14 APPENDIX: THE UN/EDIFACT SYNTAX

### 14.1 Introduction

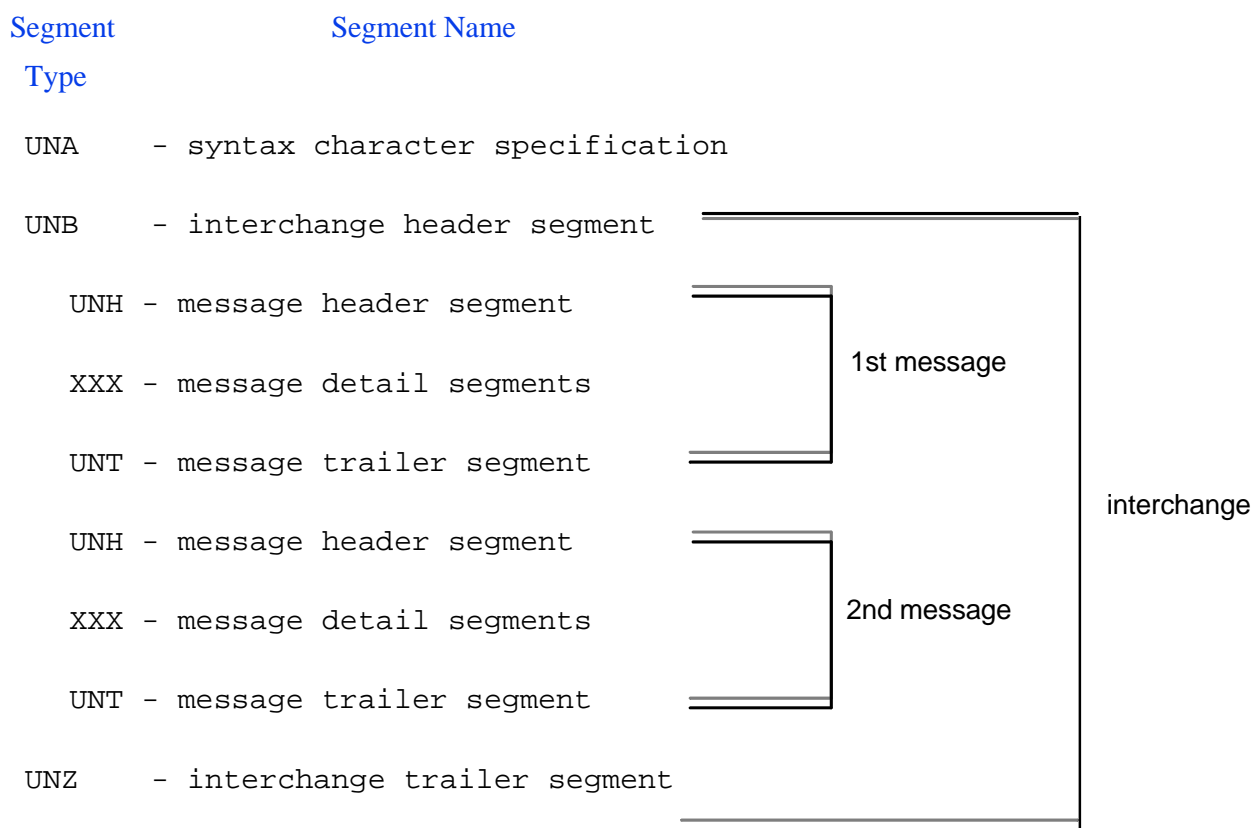
The specification of the EDIFACT syntax is contained in the ISO document ISO 9735 Reference number ISO 9735: 1988 (E). The latest version of this document is dated 1990-11-01.

This explanation given below is a simplified version of some of the sections of ISO 9735. The purpose of this explanation is to highlight the parts of ISO 9735 which are relevant to the use of GESMES explained in this guide. In general, if an organisation wishes to process a GESMES message directly from an application (rather than use a commercial EDIFACT translator), then particular attention should be given to the EDIFACT truncation rules (though, the “fixed” rules of SDMX-EDI incorporate and imply in fact these truncation rules).

Organisations are advised to read ISO 9735 if a fuller understanding of the EDIFACT syntax is required.

### 14.2 EDIFACT Interchange and Message Structure

The structure of an EDIFACT interchange is shown below.



3017 An EDIFACT interchange comprises a sequence of segments. Each segment has a unique 3  
 3018 character identifier. Segment identifiers which begin with UN are called "service segments" and  
 3019 are defined as a part of the EDIFACT Syntax (ISO 9735). Other segments are called User Data  
 3020 Segments and are defined in the Segments Directory of the UN Trade Data Interchange  
 3021 Directory (UNTDID).

### 3022 **14.3 Purpose of the interchange and message envelope segments**

#### 3023 UNA - Service String Advice

3024 In general, in GESMES, this segment is conditional and is only used if the sender wishes to define  
 3025 the service characters used in the interchange. Its use is advised unless a restricted character  
 3026 set is required (e.g. upper case only). **In SDMX-EDI this segment is mandatory** and the  
 3027 specified set is :+.? '  
 3028

#### 3029 UNB - Interchange Header

3030 This contains information which identifies the interchange, the sender, receiver, date and time of  
 3031 preparation and other optional data. An interchange can contain many messages.

#### 3032 UNH - Message Header

3033 This contains information which identifies the type and version number of the message that  
 3034 follows.

#### 3035 User Defined Segments

3036 This contains one or more segments that have been designed to support the business function  
 3037 required of the message (e.g. DTM, NAD, DSI etc.).

#### 3038 UNT - Message Trailer

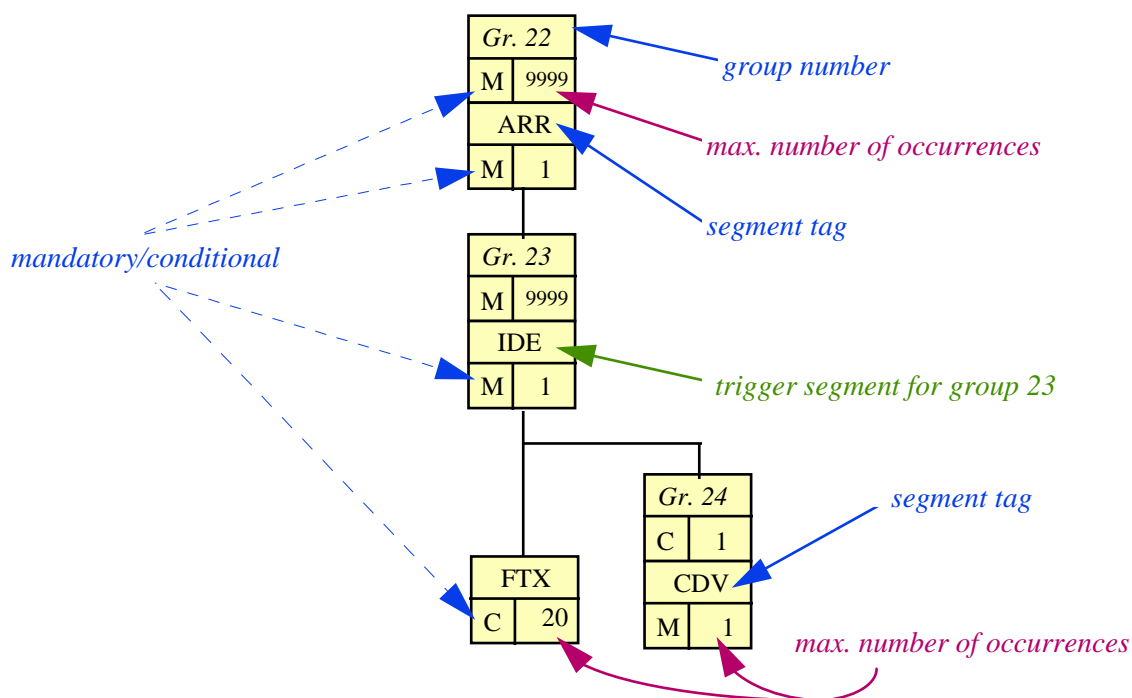
3039 This indicates the end of the message identified in the UNH and contains data which supports  
 3040 the checking of the integrity of the data in the message.

#### 3041 UNZ - Interchange Trailer

3042 This indicates the end of the interchange identified in the UNB, and contains data which  
 3043 supports the checking of the integrity of the interchange.  
 3044

## 14.4 Interpreting a Branching Diagram

An EDIFACT message can be represented in a diagrammatic form called a branching diagram. An extract from the branching diagram of SDMX-EDI is shown below.



Group 22 is the collection of segments which is used to assign values to an attribute(s) which is (are) attached at a level or object defined in the ARR segment (group 22); the attribute(s) is (are) identified in the IDE segment and its (their) value(s) is (are) given in the FTX (if the attribute is uncoded) or in the CDV segment (if it is coded). Group 22 can appear up to 9,999 times.

### 14.4.1 Interpretation of the Diagram

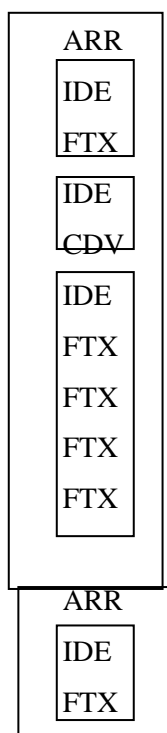
The diagram is interpreted hierarchically. The group number is not sent in the message, the existence of the group in a particular transmission is indicated by the existence of the first segment in the group - this is called the "trigger" segment. The trigger segment is always mandatory if the group is used and can only occur once for each occurrence of the group. The trigger segment for group 22 is the ARR segment. It is followed by between 1 and 9999 occurrences of group 23. Group 23 comprises between 1 to 20 occurrences of the FTX segment or 1 occurrence of the Group 24 (here it is not a "genuine" group as it comprises only one segment; in SDMX-EDI it is shown as a *group* for reasons of presentation consistency with generic GESMES, in which Group 24 includes more segments). An example sequence of segments is shown below.

3067 **Example:**

3068 The following ordered sequence of segments could be present in a message:

3069 **ARR, IDE, FTX, IDE, CDV, IDE, FTX, FTX, FTX, FTX, ARR, IDE, CDV.**

3070 This message contains 2 occurrences of Group 21; the first one contains three occurrences of Group 22 and the second one contains just one occurrence of Group 22. The sequence of these groups and segments (when reading/writing this message) is more clearly illustrated below:



3090 **14.5 EDIFACT Service Characters**

3091 (For a discussion concerning the use of control characters see Box 2, last section of this  
3092 Appendix)

3093 **The service character set:**

3094 The following service characters are used in EDIFACT:

- 3095 • Segment Terminator
- 3096 • Data Element Separator
- 3097 • Component Separator
- 3098 • Release Indicator
- 3099

3100 The characters that are used as separators are specified in the transmission (using the UNA  
3101 segment, first segment of the transmission). If they are not specified then the default characters  
3102 are used as specified in the EDIFACT syntax. These defaults are dependent upon the character  
3103 repertoire used. The defaults for the Level A character repertoire are:

3104 + the data element separator  
3105 : the component separator  
3106 ' the segment terminator  
3107 ? the release indicator

3108 These service characters are specified in the UNA segment of SDMX-EDI.

#### 3109 **Segment and data element separators:**

3110 A segment is terminated by the segment terminator.

3111 Each data element is terminated by a data element separator, except the last data element in  
3112 the segment, which is terminated by a segment terminator. The segment tag is separated from  
3113 the first data element in the segment by a data element separator.

3114 A component data element is terminated by a component separator, except for the last  
3115 component in a composite which is terminated by a data element separator. If the component  
3116 data element is the last data element in the segment then it is terminated by a segment  
3117 terminator.

#### 3118 **Release indicator:**

3119 The release indicator is used when it is necessary to transmit one of the separator, release or  
3120 terminator characters as data. It is sent immediately before the character to be released and is  
3121 valid for the following character only.

3122 e.g. consider the following text:

3123 *Is today's temperature more than +10 degrees?*

3124 This would be sent in an EDIFACT message as follows:

3125 *Is today?'s temperature more than ?+10 degrees??*

3126

### 3127 **14.6 EDIFACT Truncation Rules**

3128 The EDIFACT syntax uses truncation rules to eliminate redundant data. Software creating  
3129 EDIFACT messages must observe these rules. In order to explain them, the following segment is  
3130 used:

3131 TAG+DE1+CE1:CE2:CE3:CE4+DE3+DE4 '

3132 TAG *the segment tag (e.g. NAD)*

3133 DE *a data element*

3134 CE *a component element*

3135 + *the data element separator*

3136 : *the component separator*

3137 ' *the segment terminator*

3138 The truncation rules are:

3139 i) Leading zeros are eliminated from numeric data/component elements and trailing spaces  
3140 are eliminated from alphabetic or alphanumeric data/component elements if the  
3141 data/component element is defined as variable length.

3142

3143 ii) If no data exists for a data/component element then the relevant separator follows  
3144 immediately after the separator for the previous data/component element.


3145

3146 iii) A composite element is terminated after the last component element for which there are  
3147 data for the composite.

3148 TAG+DE1+CE1:CE2:CE3:CE4++DE4 '

3149  data element (DE3) is omitted  
(i.e. there are no data for DE3)

3151 TAG+DE1+CE1::CE3:CE4+DE3+DE4 '

3152  a component element (CE2) is omitted  
(i.e. there are no data for CE2)


3153

3154

3155

3156 iv) If all the component elements of a composite are omitted then this is indicated by the data  
3157 element separator.

3158 TAG+DE1+CE1:CE2+DE3+DE4 '

3159  the last two component elements (CE3, CE4) are omitted  
(i.e. there are no data for CE3 and CE4)

3161 TAG+DE1++DE3+DE4 '

3162  the composite element is omitted  
(i.e. there are no data for CE1, CE2, CE3, CE4)

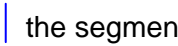
3163

3164

3165 v) The segment is terminated immediately after the last data element for which there are data.

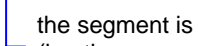
3166

3167 TAG+DE1+CE1:CE2+DE3 '

3168  the segment is terminated before the last data element  
(i.e. there are no data for DE4)

3169

3170 TAG+DE1+CE1:CE2 '

3171  the segment is terminated after the second component element of the composite  
(i.e. there are no data for CE3, CE4, DE3 and DE4)

3172

3173

3174

### Box 2. CONTROL CHARACTERS IN EDIFACT MESSAGES

- EDIFACT messages are simple, flat, text files.
- A whole message or a whole interchange (containing possibly several messages) can be written in one single line (as one very long string of characters) without any line feed character or other control characters.
- However, as without any *line feed* the messages are not well readable to the human eye, several institutions prefer *to insert a line feed at the end of each segment*.
- It has to be noted that in EDIFACT messages the control characters are not significant and they should not affect the "reading" or the interpretation of a message.  
(List of control characters: {from 0 to 0x1f and 0x7f to 0x9f})
- **Applications which "read" EDIFACT messages must ignore all control characters**, regardless of where such characters are located inside the incoming file.



3175

3176 **15 APPENDIX: CODE LISTS FOR OBSERVATION STATUS AND OBS. CONFIDENTIALITY**

3177 As a reference, the following two tables present the code lists for the observation status and the  
 3178 observation confidentiality attributes. It is strongly recommended in all implementations of  
 3179 SDMX-EDI to use these two code lists unchanged in order to guarantee interoperability when  
 3180 interpreting the body of the main ARR segments.

3181 **Code list for the Observation Status attribute (CL\_OBS\_STATUS)**

Code_Value	Code_Description
A	Normal value
B	Break
E	Estimated value
F	Forecast value
H	Missing value; holiday or weekend
L	Missing value; data exist but were not collected
M	Missing value; data cannot exist
P	Provisional value
S	Strike

3182 When more than one "condition" occurs for the same observation, then the next table should be  
 3183 used: it indicates the level of importance of each specific "event" (e.g. the information that an  
 3184 observation is a "break" is more important than it is an "estimate" and the flag B -rather than E-  
 3185 should be used).

3186

Observation status hierarchy	Relevant in conjunction with...	
	numeric values	missing values
<b>B</b> / break	Yes	Yes
<b>M</b> / undefined, data cannot exist		Yes
<b>L</b> / data not collected		Yes
<b>H</b> / holiday or weekend		Yes
<b>S</b> / strike	Yes	Yes
<b>F</b> / forecast value	Yes	
<b>E</b> / estimated value	Yes	
<b>P</b> / provisional value	Yes	
<b>A</b> / normal value	Yes	

3187

3188

3189

### Code list for the Observation Confidentiality attribute (CL\_OBS\_CONF)

Code_Value	Code_Description
C	Non-publishable and confidential
F	Free
N	Non-publishable, but non-confidential
R	Confidential statist. information due to identifiable respondents

## 16 APPENDIX: FREQUENTLY ASKED QUESTIONS ABOUT SDMX-EDI

### Which are the most important "quantitative" restrictions applying to a message?

More than one messages (UNH/UNT) can be present in the same file/interchange (UNB/UNZ).

If a message contains [statistical data and/or attributes](#), only one [DSI](#) Group (group no. 13) can be written inside this message. If a message contains [statistical definitions](#), then a DSI cannot be present and one or more repetitions of Groups [VLI](#) (no.4), [STC](#) (no.9) and [ASI](#) (no.10) can appear in the same message. See also below the paragraph on [message types](#).

A message can be either a "deletion" (parameter "[6](#)" in STS, see page 96) message or an "update" (parameter "[7](#)" in STS) message (not both).

A message can be (only one of the following three types):

a "structural" message (parameter in BGM segment equal to "[73](#)") containing code lists ([VLI](#)), concepts ([STC](#)) and/or key family definitions ([ASI](#));

a normal message containing data/attributes or instructions for deletions (parameter in BGM segment equal to "[74](#)", see page 49);

a data set list message (parameter in BGM segment equal to "[DSL](#)").

Maximum length of fields (SDMX-EDI limits):

- **Code lists.** Identifiers: [an..18](#), code list names: [an..70](#), code values: [an..18](#), code value descriptions: [an..350](#)
- **Statistical concepts.** Identifiers: [an..18](#), concept names: [an..70](#).
- **Key families** and data sets. Identifiers: [an..18](#), key family and data set names: [an..70](#).

In practice, an effort is made by centre institutions to keep the length of [series keys](#) no longer than 35 characters.

Up to [999,000](#) ARR segments (following Group 14) can be written in the same message.

In each ARR segment [only one time series key](#) can be present.

Up to [9,999](#) data elements can be written in the same ARR, i.e. a time series with more than 9,999 observations needs to be split over 2 or more ARR segments

Up to [15 positions](#) (n..15) can be used inside a data element for writing a numeric value (including the place needed for the minus sign for negative values and/or the decimal point; the plus sign for positive numbers must never be used).

3221 The only attributes which can be present in the main [ARR](#) segment are the [observation status](#)  
 3222 (mandatory coded attribute), the [observation confidentiality](#) (conditional coded attribute) and the  
 3223 [pre-break value](#) (conditional numeric field).

3224

3225 **Can an "update" and a "delete" message be present in the same interchange?**

3226 Yes.

3227

3228 **Is there a way to distinguish between "reporting new data" and "reporting corrections in**  
 3229 **previously reported data"?**

3230 SDMX-EDI is not equipped with a specific mechanism for this and it is left to the receiving  
 3231 application how to process the information contained in a SDMX-EDI interchange. Receiving  
 3232 applications could check - before "writing" on the reception databases - whether each received  
 3233 observation/attribute/time series/sibling group is a new one or a replacement of a previously  
 3234 existing observation/attribute/time series/sibling group. Nevertheless, if in a specific data  
 3235 exchange circuit this was required, the distinction could be served by the second (conditional)  
 3236 DTM segment which carries the "reporting period" information: for example, this segment could  
 3237 be used only in a message carrying new data (a reporting period could be anyway more relevant  
 3238 in this case).

3239

3240 **Can spaces be used at the end of strings in the FTX segment?**

3241 No, as this could cause interpretation problems: according to the EDIFACT rules, [insignificant](#)  
 3242 [trailing spaces are eliminated from alphabetic or alphanumeric component elements](#).

3243 For example, the segment

3244 FTX+ACM+++Test kf for BoP Statistics '

3245 is wrong, since it has redundant spaces at the end of the string.

3246

3247 **The terms "mandatory" and "conditional" are confusing.**

3248 Indeed, without referring to a specific context, it is not possible to explain the meaning of the  
 3249 adjectives mandatory and conditional: their meaning depends on the context in which they are  
 3250 used. The table below provides an overview of their specific meaning in each case.

3251

Context	"mandatory" attributes	"conditional" attributes	Remarks
Data model	The values of mandatory attributes have to become known to partners. From a statistical point of view they are considered <i>essential</i> pieces of information to interpret the data.	The values of conditional attributes have to become known to partners, <i>if</i> they are or <i>when</i> they become available. From a statistical point of view they are considered <i>important</i> pieces of information to interpret the data.	The definition about which attributes are mandatory and which ones are conditional is provided by the key family definition.
Exchange: Attributes exchanged using the FNS group	Attribute values are exchanged the first time and then again every time they change ("updates and revision" principle).		
Exchange: attributes exchanged as elements of the ARR segment (and defined at the observation level):  <ul style="list-style-type: none"> <li>- Observation Status</li> <li>- Observation Confidentiality</li> <li>- Pre-break value</li> </ul>	A value for the observation status attribute (OBS_STATUS) should be given with the exchange of every single observation, even if its value does not change. A need to update either the observation value or the observation status (or both) must imply (at least) the reporting of both the observation and the observation status.	Values for the observation confidentiality and/or the pre-break attributes are given when: <ul style="list-style-type: none"> <li>- it is relevant to provide such a value(s)</li> <li>- if the obs. value or the observation status change and a relevant value for the observation confidentiality and/or the pre-break observation should be kept</li> <li>- the values of the observation confidentiality and/or pre-break observation need to be updated</li> </ul>	A value for the observation status attribute (OBS_STATUS) should be given with the exchange of every single observation, even if its value does not change.
SDMX-EDI segments  EDIFACT segments	A segment is mandatory if it must be used in a message. Sometimes this depends on whether a previous segment or group is present. However, there are segments that must be present in any message (e.g. UNB, BGM).	A segment is conditional if there is the option not to use it. For example, for a message including numeric data (DSI and ARR present), there is the option to include or not to include the segments carrying attributes (FNS segment and other segments of the same group).	

3252

3253

3254

3255

3256

3257 **17 APPENDIX: MAP OF ISO 8859-1 (UNOC) CHARACTER SET (LATIN 1 OR “WESTERN”)**

3258

3259 Standard character set (decimal character codes 32-126):

	!	"	#	\$	%	&	'	(	)	*	+	,	-	.	/
0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
p	q	r	s	t	u	v	w	x	y	z	{		}	~	

3260

3261 Extended character set (decimal character codes 160-255):

	¡	¢	£	¤	¥	¦	§	¨	©	ª	«	¬	­	®	¯
°	±	²	³	´	µ	¶	·	¸	¹	º	»	¼	½	¾	¿
À	Á	Â	Ã	Ä	Å	Æ	Ç	È	É	Ê	Ë	Ì	Í	Î	Ï
Ð	Ñ	Ò	Ó	Ô	Õ	Ö	×	Ø	Ù	Ú	Û	Ü	Ý	Þ	ß
à	á	â	ã	ä	å	æ	ç	è	é	ê	ë	ì	í	î	ï
ð	ñ	ò	ó	ô	õ	ö	÷	ø	ù	ú	û	ü	ý	þ	ÿ

3262

3263 Code positions 128 - 159 are reserved for control purposes only (they should not be used in  
3264 messages).

3265

3266

3267

3268

3269 **18 APPENDIX. EDIFACT CODE LISTS USED IN SDMX-EDI**

3270 The table below contains the relevant EDIFACT code values used in SDMX-EDI segments.  
 3271 Please note that the provided code lists are not complete as they list only those values used in  
 3272 SDMX-EDI. The entries are sorted alphabetically by segment.

<b>ATT segment</b>	9017 - Attribute Qualifier (domain) 3 array structure component
<b>ATT segment</b>	Attribute Qualifier (type) 5 presentation 35 usage status 32 object link type (attachment level)
<b>ATT segment</b>	Attachment level code 1 data set 4 time series 5 observation 9 sibling group
<b>ATT segment</b>	Code list qualifier ALV attachment level USS usage status
<b>ATT segment</b>	Attribute status 1 conditional 2 mandatory
<b>BGM segment</b>	Message function 73 statistical definitions 74 statistical data DSL list of data sets
<b>COM segment</b>	3155 - Communication channel qualifier EM electronic mail TE telephone FX telefax XF X.400
<b>CTA segment</b>	3139 - Contact Function, Coded CP Responsible person for computer data processing CF Head of unit for information production CC Responsible person for information production CG Head of unit for information dissemination
<b>DTM segment</b>	2005 - Date/time/period qualifier 242 preparation date Z02 reporting period

<b>DTM segment</b>	<p>2379 - date/time/period format qualifier</p> <p>101 YYMMDD</p> <p>102 CCYYMMDD</p> <p>201 YYMMDDHHMM</p> <p>203 CCYYMMDDHHMM</p> <p>602 CCYY</p> <p>604 CCYY</p> <p>608 CCYYQ</p> <p>610 CCYYMM</p> <p>616 CCYYWW</p> <p>702 CCYY-CCYY</p> <p>704 CCYY-CCYY</p> <p>708 CCYYQ-CCYYQ</p> <p>710 CCYYMM-CCYYMM</p> <p>711 CCYYMMDD-CCYYMMDD</p> <p>716 CCYYWW-CCYYWW</p>
<b>FTX segment</b>	<p>4451 - Text Subject Qualifier</p> <p>ACM statistical description</p>
<b>IDE segment</b>	<p>Identification Qualifier</p> <p>1 value list</p> <p>4 code value</p> <p>5 data set structure</p> <p>10 message context</p> <p>Z10 coded attribute</p> <p>Z11 uncoded attribute</p>
<b>NAD segment</b>	<p>Party type</p> <p>MS Message sender</p> <p>MR Message receiver</p> <p>Z02 Maintenance agency for codes</p>
<b>REL segment</b>	<p>9141 - Relationship Qualifier</p> <p>Z01 the relationship is with a statistical array</p>
<b>SCD segment</b>	<p>7497 - Component function qualifier</p> <p>1 array time dimension</p> <p>3 array cell</p> <p>4 array dimension (other than time dimension)</p> <p>13 dimension is "frequency"</p> <p>Z09 attribute</p>
<b>STS segment</b>	<p>9011 - Status event, coded</p> <p>6 delete</p> <p>7 add and replace</p>
<b>VLI segment</b>	<p>3 Coded list</p>

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