



SDMX-EDI :
SYNTAX AND DOCUMENTATION
(VERSION 1.0)



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180 1 SCOPE AND PURPOSE

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

184 The purpose of this guide is to:

185 explain the SDMX-EDI functions;

186 define the syntax and rules for the various segments of the Edifact version of the GESMES
187 message

188 give some guidelines for developing the necessary applications.

189 2 CONFORMANCE

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

193 3 NORMATIVE REFERENCES

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

197

198 The GESMES message is defined in UN/EDIFACT UNTDID D.99B and D.02A (URL:

199 <http://www.unece.org/trade/untdid/>), UN/ECE

200

201 4 BACKGROUND DOCUMENTATION

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

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

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

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

232 5 STRUCTURE OF THE GUIDE

233 This User Guide provides a technical reference explaining the features and the rules of SDMX-
234 EDI. The contents are illustrated in several ways:
235 theory and examples showing the general structure of the message;
236 theory and examples in a segment-by-segment reference guide chapter; this shows all
237 alternative variants (for each segment) which can appear in a message;
238 complete examples of messages oriented to practical implementation.
239

240 6 SDMX-EDI: THE STATISTICAL DATA AND METADATA EXCHANGE MESSAGE

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

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

255 SDMX-EDI offers several features:

256 easy adaptation to any economic domain and flexible coverage of all types of economic -
257 statistical data;
258 modern representation techniques: conceptually 'clean' multidimensional keys;
259 efficiency: it avoids the unnecessary repetition of information;
260 series keys without length restrictions;
261 easy introduction of new attributes;
262 attributes at various levels (observation, time series and 'higher');
263 exchange of 'rich' metadata, organised in a flexible and efficient manner;
264 suitability for two-way exchanging time series: i.e. for reporting and disseminating;
265 • a *paperless* dissemination of a whole statistical data base is possible: data, metadata,
266 definitions, key structures and code lists can be electronically disseminated from the centre to
267 other institutions;
268 suitability for stage-by-stage implementation: it could start with the essential parts (carrying the
269 administrative and the numeric data) and later the whole message could be used;
270 easy implementation: no purchase of special software should be necessary;
271 • consistency with international standards (EDIFACT);
272 • wide user group: national central banks (NCBs) and national statistical institutes (NSIs), Bank
273 for International Settlements (BIS), International Monetary Fund (IMF), OECD, EUROSTAT,
274 European Central Bank (ECB);
275 consistency with the long-term goals of international institutions involved in statistical data
276 exchange.
277

278 **6.1 Generic GESMES and the UN/EDIFACT Standards**

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

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

295 time series;
296 administration data.
297 In its generic form, it allows also the sending institution to use the data set structure it prefers.

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

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

306

307 **7 FUNCTIONALITY OF SDMX-EDI AND POSSIBLE DATA EXCHANGE ACTIVITIES**

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

315

316 **7.1 SDMX-EDI Functionality**

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

319 • **Data update**: Exchange only observations (including the mandatory attribute "observation
320 status").

321 • **Data and attribute update**: In addition to observations and observation status, the exchange
322 could also comprise coded and uncoded attributes linked to the data on a data set, sibling
323 group, time series and observation level.

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

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

328 and, in the longer-term:

329 • **Exchange of structural definitions**: Exchange of code lists, lists of statistical concepts and
330 key family definitions.

331

332 **7.2 Reporting and Dissemination**

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

340

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

343 **Complete Data bases:**

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

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

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

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

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

358 The use of the different messages² envisaged for SDMX-EDI is summarised in the following
359 table, which also indicates the 'activity' (i.e. *write* or *read*) that partner institutions or the centre
360 perform on the message for the different types of usage.

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

² 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.

361

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

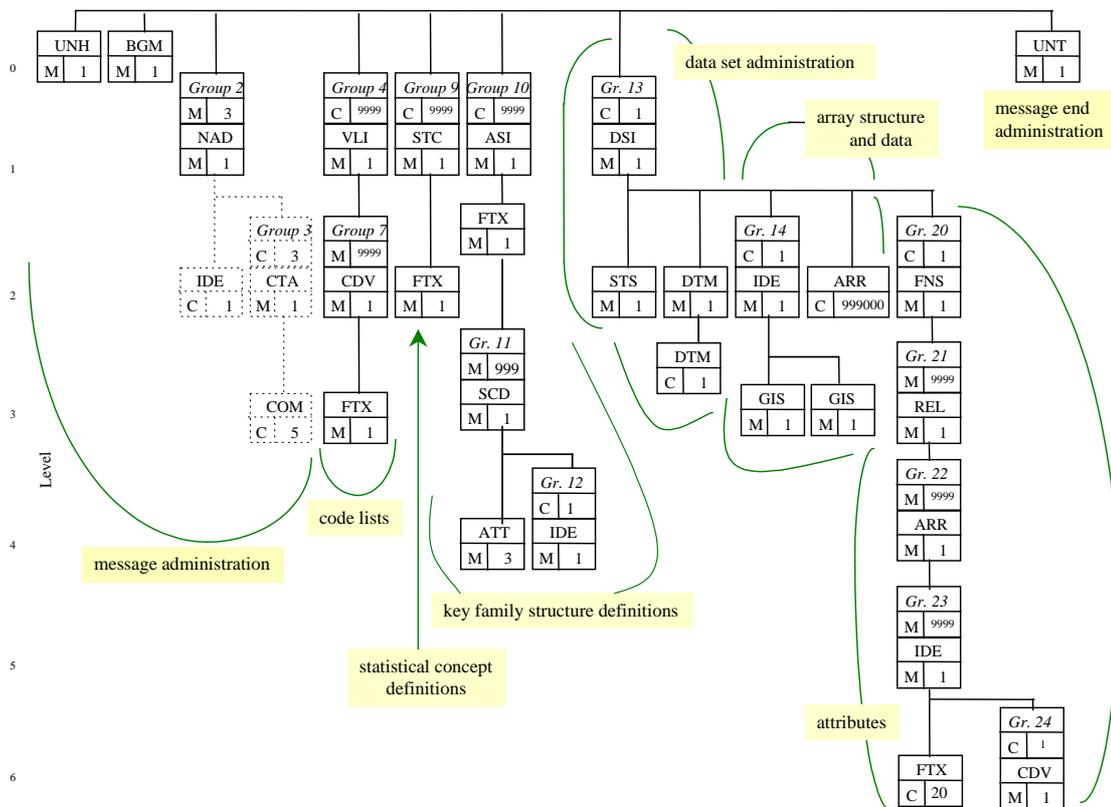
362

363 8 THE STRUCTURE OF SDMX-EDI

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

370 8.1 SDMX-EDI: The Branching Diagram

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



378

379

¹ http://www.unece.org/trade/untddid/d99b/trmd/gesmes_c.htm

380 The “conditional” status of the first segment of each section (e.g. VLI in Group 4, DSI in Group
381 13, FNS in Group 20) would turn into “mandatory” if the corresponding facility had to be used.

382 **8.2 Functionality, Segment Sections and Step-by-Step Implementation**

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

387 Interchange administration (UNA and UNB segments)

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

389 Code lists (VLI, CDV, FTX segments)

390 Statistical concept definition (STC, FTX segments)

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

392 Data set administration (DSI, STS, DTM segments)

393 Array structure (IDE, GIS, GIS segments)

394 Data (ARR segment)

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

396 End of message administration (UNT segment)

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

399 End of interchange administration (UNZ segment)

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

¹ In this table the exchange of lists of data sets is not considered.

402

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

403

404

Example 1:

405

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.

406

407

408

Example 2:

409

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

410

411

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:

412

413

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

414

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

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

420

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

421

Remarks:

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

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

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

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

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

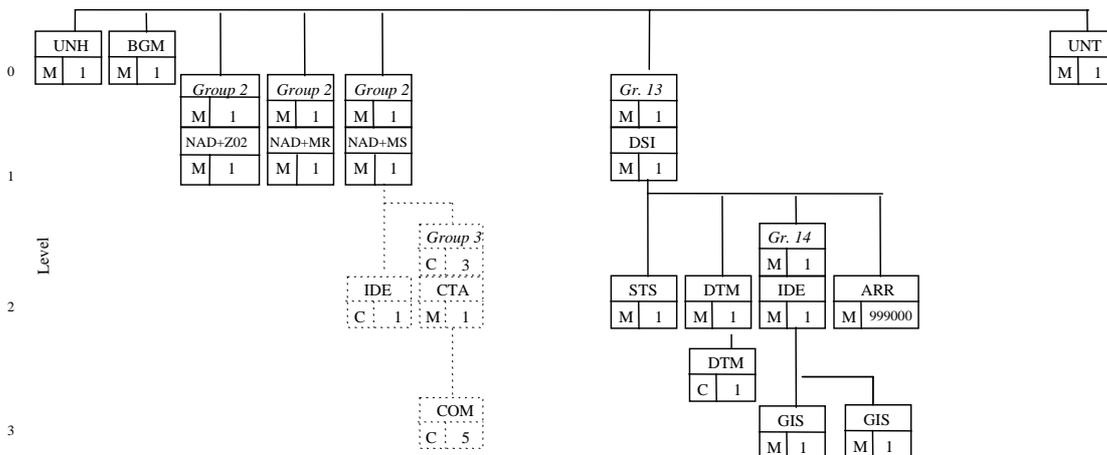
439

440 8.2.1 Data Update Message: Segment Structure and Purpose

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

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

445



446

447

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

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

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

Table 5. Data update message

Sections and segments of the message	Purpose
<u>interchange administration</u>	
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
<u>message administration</u>	
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
<u>data set administration</u>	
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)
<u>array structure and data</u>	
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.	
<u>end of message administration (message trailer)</u>	
UNT+number-of-segments+message-reference-number'	end of message control data
<u>end of interchange administration (interchange trailer)</u>	
UNZ+number-of-messages+interchange-reference'	end of interchange control data

457 **Example:**

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

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

462		<u>Sep95</u>						<u>Oct95</u>
463		<u>Nov95</u>						<u>Dec95</u>
464		<u>Jan96</u>						
465		<u>Feb96</u>						<u>Mar96</u>
466		99.10 A	98.10 A	98.40 A	99.50 A	100.00 A	99.20 A	99.80 E C

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

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

473		<u>95q4</u>						<u>96q1</u>
474		98.67 A	99.67 A					

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

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

```

477 UNA:+.? '
478 UNB+UNOC:3+BE2+4F0+970525:1539+IREF000001++SDMX-EDI '
479 UNH+MREF000001+GESMES:2:1:E6 '
480 BGM+74 '
481 NAD+Z02+ECB '
482 NAD+MR+4F0 '
483 NAD+MS+BE2 '
484 DSI+ECB_TESTPRICES '
485 STS+3+7 '
486 DTM+242:199705251539:203 '
487 IDE+5+ECB_TESTPRICES '
488 GIS+AR3 '
489 GIS+1:::- '
490 ARR++M:BE:PROD:GN:NS:199509199603:710:99.10:A+98.10:A+98.40:A+99.50:A+100.00:A+
491 99.20:A+99.80:E:C '
492 ARR++Q:BE:PROD:GN:NS:1995419961:708:98.67:A+99.67:A '
493 UNT+14+MREF000001 '
494 UNZ+1+IREF000001 '
  
```

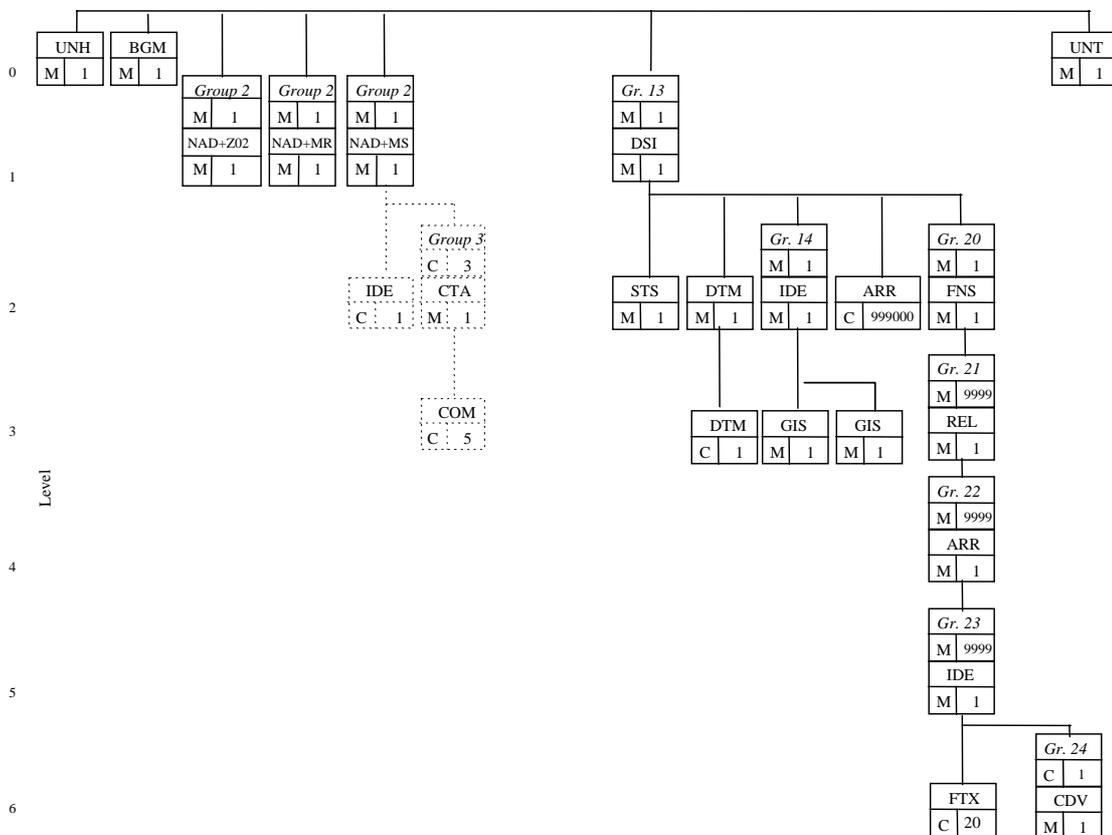
494 In this example the non-fixed elements are underlined and it is obvious that, apart from the
495 actual data, they provide mainly administrative information (e.g. BE2=central bank of Belgium,
496 4F0=ECB, ECB_TESTPRICES=key family identifier). For more explanations about the use of
497 these segments, refer to the reference guide chapters of this document.

498 **8.2.2 Data and Attribute Update Message: Segment Structure and Purpose**

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

505

506



- 507
- 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.
- 518

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+... update/replace DSI+... STS+... DTM+... DTM+... IDE+... GIS+... GIS+... ARR++...	as described in the previous table (see DATA UPDATE MESSAGE)
Attributes 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.	[segment introducing attributes] attribute scope dimension/key pointer attribute identifier (Z10=coded attr.) attribute code value attribute identifier attribute code value attribute identifier (Z11=uncoded) attribute text attribute identifier attribute text a new dimension/key pointer can follow new sets of segments 'IDE/CDV' and IDE/FTX can follow
UNT+... UNZ+...	as described in the previous table

520

Example:

521 UNA... *data set identifier (data set which the attribute values refer to)*
 522 UNB+... *key family identifier (kf. and attribute structure)*
 523 UNH+... *see previous example*
 524 BGM+...
 525 NAD+...
 526 NAD+...
 527 NAD+...
 528 DSI+...
 529 STS+...
 530 DTM+...
 531 DTM+...
 532 IDE+...
 533 GIS+...
 534 GIS+...
 535 ARR+...

not necessarily present (a message can carry only attributes)

536 FNS+Attributes:10' *referring to series or sibling group level*
 537 REL+Z01+4'

538 ARR+5+:ABB:A:DE:02' *Sibling series to which the following information refers*

539 IDE+Z11+TITLE'
 540 FTX+ACM+++Money Supply M1, period averaged, non-seas. adjusted'

541 IDE+Z10+UNIT'
 542 CDV+DEM' *the identifier of statistical concepts*

543 IDE+Z10+COLLECTION'
 544 CDV+M' *...and their values*

545 IDE+Z11+COVERAGE'
 546 FTX+ACM+++Excluding small banks'

547 IDE+Z10+SOURCE_AGENCY'
 548 CDV+DE1'

549 ARR+5+:ABU:A:FR:01' *Sibling series to which the following information refers*

550 IDE+Z11+TITLE'
 551 FTX+ACM+++Money Supply M2, end-of-period, non-seasonally adjusted'

552 IDE+Z10+UNIT'
 553 CDV+FRF'

554 IDE+Z10+COLLECTION'
 555 CDV+C'

556 IDE+Z10+SOURCE_AGENCY'
 557 CDV+FR1' *referring to observation*

558 REL+Z01+5' *time reference*

559 ARR+7+M:ABB:A:DE:02:199606:610' *Observation comment*

560 IDE+Z11+OBS_COM'
 561 FTX+ACM+++Extreme values due to liquidation of bonds'

562 UNT+...

563 UNZ+...

564

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

567 **8.2.3 Data and Attribute Delete Message**

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

572 • **flagging appropriately the message** using a different parameter in the STS segment;

573 • **in order to delete data:**

574 - the ARR segment which follows Group 14 should not contain observations: its
575 references are used simply to point to (existing, previously reported, via an interchange in
576 the past) observations which should be deleted.

577 **Example 1:**

578 The segments . . .
579 STS+3+6 '
580 . . .
581 ARR++M:BE:PROD:GN:NS:199509199603:710 '
582 . . .

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

586 **Example 2:**

587 The segments . . .
588 STS+3+6 '
589 . . .
590 ARR++:BE:PROD:GN:NS '
591 . . .

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

595 • or, in order to delete attributes:

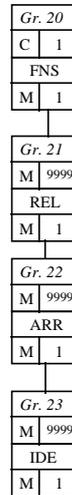
596 - FTX and CDV after Group 23 are not used (see diagram on the right)
 597 and the ARR segment (Group 22) is used exclusively to point the
 598 attributes which have to be deleted.

599 **Example:**

600 The segments

601 ...
 602 STS+3+6 '
 603 ...
 604 FNS+Attributes:10 '
 605 REL+Z01+4 '
 606 ARR+5+ :ABB:A:DE:02 '
 607 IDE+Z11+COVERAGE '

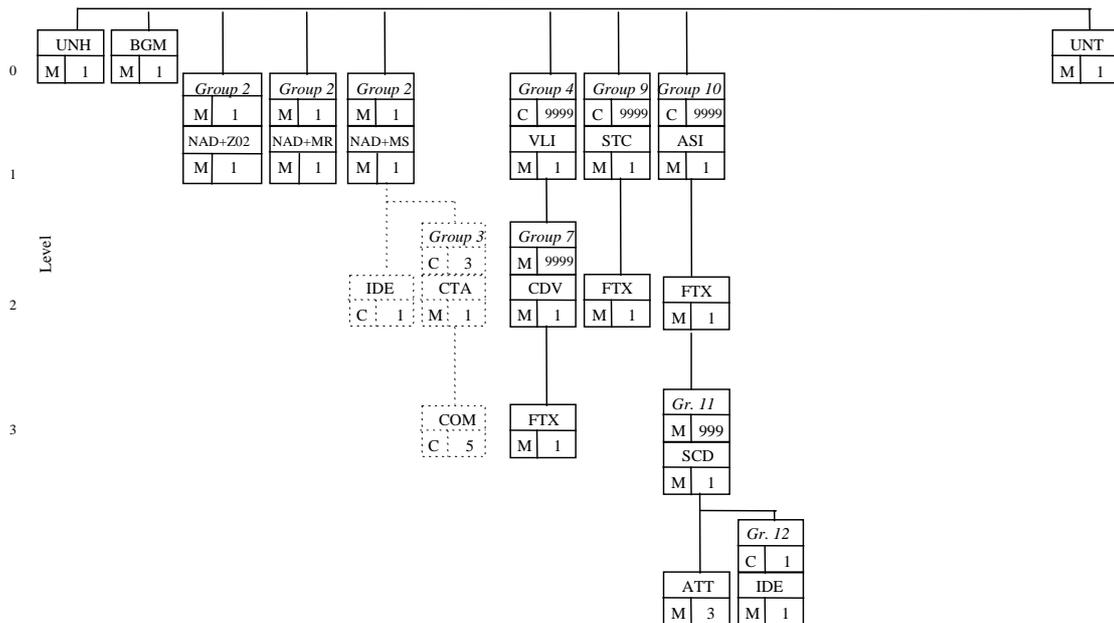
608 inform the receiving institution that it should delete the attribute referring
 609 to the Coverage of the sibling group :ABB:A:DE:02.



610 *A more extensive and detailed discussion on issues related to deletions is presented as a*
 611 *separate chapter (see page 136).*

612 8.2.4 Structural Definitions Exchange Message: Segment Structure and Purpose

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



617

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

622 8.2.5 Code Lists

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

626 8.2.6 Statistical Concept definition

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

629 8.2.7 Key Family Definition

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

632 to assign a key family identifier and a description to a key family;

633 to define the statistical concepts used as dimensions in the key structure (information which is
 634 provided: position of each concept in the key, code value length and relevant code list);

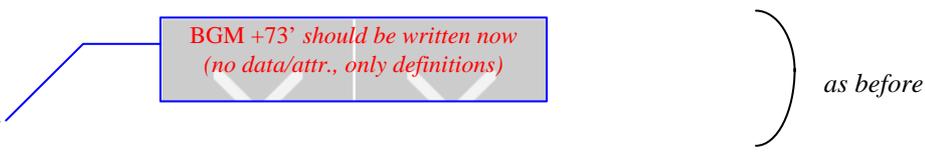
635 to define the exact structure of the ARR segment (which contains the numeric values of the
 636 message) for this particular key family;

637 to define the coded and uncoded attributes used in the key family (concept identifier, field length,
638 usage status and attachment level; also, relevant code list in the case of coded attributes).

639

640

Table 7. Structural data exchange message

Sections and segments of the message	Purpose
UNA UNB+... UNH+... BGM+... NAD+... NAD+... NAD+...	 <i>as before</i>
<u>code lists</u>	
VLI+code-list-id+++code-list-name '	Identifier of the code list
CDV+code-value '	code value
FTX+ACM+++code-value-description '	text description
CDV+code-value '	code value
FTX+ACM+++code-value-description '	text description
<i>etc.</i>	
VLI+code-list-id+++code-list-name '	Identifier of next code list
CDV+code-value '	code value
FTX+ACM+++code-value-description '	text description
CDV+code-value '	code value
FTX+ACM+++code-value-description '	text description
<i>etc.</i>	
<i>(etc. ...for other code lists)</i>	
<u>statistical concept definition</u>	
STC+concept-identifier '	statistical concept identifier
FTX+ACM+++concept-name '	concept name
STC+concept-identifier '	statistical concept identifier
FTX+ACM+++concept-name '	concept name
<i>etc.</i>	
<u>key family definition</u>	
ASI+key-family-identifier '	key family identifier
FTX+ACM+++key-family-name '	key family name
<i>(i) key structure (dimensions)</i>	
SCD+n+concept-identifier++++ : dimension-position-in-the-key '	<i>n=13 if dimension is FREQ, n=4 otherwise</i>
ATT+3+5+ : : ANfield-length '	
IDE+1+code-list-id '	corresponding code list
SCD+4+concept-identifier++++ : dimension-position-in-the-key '	

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'
 ATT+3+5+:::AN35'
 SCD+1+TIME_FORMAT++++:position-in-the-ARR-structure'
 ATT+3+5+:::AN3'
 SCD+3+OBS_VALUE++++:position-in-the-ARR-structure'
 ATT+3+5+:::AN15'
 SCD+3+OBS_STATUS++++:position-in-the-ARR-structure'
 ATT+3+5+:::AN1'
 ATT+3+35+2:USS'
 ATT+3+32+5:ALV'

ARR
 structure
 then, *time format* follows

then, the observation follows

the observation status follows and:

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

(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)
 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)
 ATT+3+35+usage-status-code:USS'
 ATT+3+32+attachment-level-code:ALV'
 IDE+1+ $code-list-id$ '

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

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

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

[] for uncoded attributes]

SCD+Z09+concept-identifier'
 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'
 ATT+3+5+:::AN.. $max-field-length$ '
 ATT+3+35+usage-status-code:USS'
 ATT+3+32+attachment-level-code:ALV'

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

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

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



UNT+...
UNZ+...

tables)

701 VLI+CL_UNIT+++Unit '
 702 CDV+BEF '
 703 FTX+ACM+++Belgian franc '
 704 CDV+DEM '
 705 FTX+ACM+++Deutsche Mark '
 706 ...
 707 CDV+USD '
 708 FTX+ACM+++US dollar '
 709
 710 VLI+CL_UNIT_MULT+++Unit multiplier '
 711 CDV+6 '
 712 FTX+ACM+++Millions '
 713 CDV+9 '
 714 FTX+ACM+++Billions ' etc.

Disseminating statistical concept definitions

715 STC+FREQ '
 716 FTX+ACM+++Frequency '
 717 STC+REF_AREA '
 718 FTX+ACM+++Reference country or area '
 719 STC+BOP_ITEM '
 720 FTX+ACM+++IMF breakdown; balance of payments items (standard component) '
 721 STC+DATA_TYPE '
 722 FTX+ACM+++Type of data '
 723 STC+TITLE '
 724 FTX+ACM+++Title '
 725 STC+UNIT '
 726 FTX+ACM+++Unit '
 727 STC+UNIT_MULT '
 728 FTX+ACM+++Unit multiplier '
 729 STC+TIME_PERIOD '
 730 FTX+ACM+++Time period or time range '
 731 STC+TIME_FORMAT '
 732 FTX+ACM+++Time format '
 733 STC+OBS_VALUE '
 734 FTX+ACM+++Observation value '
 735 STC+OBS_STATUS '
 736 FTX+ACM+++Observation status '
 737 STC+OBS_CONF '
 738 FTX+ACM+++Observation confidentiality '

Disseminating a key family's definition

740
 741 ASI+BAL_OF_PAYM_TEST '
 742 FTX+ACM+++Bal. of payments k.f. for testing '
 743
 744 SCD+13+FREQ++++:1 '
 745 ATT+3+5+:::AN1 '
 746 IDE+1+CL_FREQ '
 747 SCD+4+REF_AREA++++:2 '
 748 ATT+3+5+:::AN2 '
 749 IDE+1+CL_AREA '
 750 SCD+4+BOP_ITEM++++:3 '
 751 ATT+3+5+:::AN3 '
 752 IDE+1+CL_BOP_ITEM '
 753 SCD+4+DATA_TYPE++++:4 '
 754 ATT+3+5+:::AN1 '
 755 IDE+1+CL_BOP_DATA_TYPE '

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

756		Other component elements in the ARR structure structure	
757	SCD+1+ TIME_PERIOD ++++: <u>5</u> ' ATT+3+5+:::AN. <u>35</u> '		<i>Fifth component element is time and it is a descr. up to 35 char. long;</i>
758			
759	SCD+1+ TIME_FORMAT ++++: <u>6</u> ' ATT+3+5+:::AN <u>3</u> '		<i>Sixth component element is the time format and it is a number 3 char. long;</i>
760			
761			
762	SCD+3+ OBS_VALUE ++++: <u>7</u> ' ATT+3+5+:::N <u>15</u> '		<i>Seventh component element is the observation and it is a 15 char. long numeric field; -- observation attributes --</i>
763			
764	SCD+3+ OBS_STATUS ++++: <u>8</u> ' ATT+3+5+:::AN <u>1</u> ' ATT+3+35+ <u>2</u> :USS ' ATT+3+32+ <u>5</u> :ALV ' IDE+1+CL_OBS_STATUS '		<i>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.</i>
765			
766			
767			
768			
769	SCD+3+ OBS_CONF ++++: <u>9</u> ' ATT+3+5+:::AN <u>1</u> ' ATT+3+35+ <u>1</u> :USS ' ATT+3+32+ <u>5</u> :ALV ' IDE+1+CL_OBS_CONF '		<i>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.</i>
770			
771			
772			
773			
774		Disseminating same key family's definition of attributes	
775	SCD+Z09+ TITLE ' ATT+3+5+:::AN. <u>70</u> ' ATT+3+35+ <u>2</u> :USS ' ATT+3+32+ <u>9</u> :ALV '		<i>"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)</i>
776			
777			
778			
779	SCD+Z09+ UNIT ' ATT+3+5+:::AN. <u>12</u> ' ATT+3+35+ <u>2</u> :USS ' ATT+3+32+ <u>9</u> :ALV ' IDE+1+CL_UNIT '		<i>"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</i>
780			
781			
782			
783			
784	SCD+Z09+ UNIT_MULT ' ATT+3+5+:::AN. <u>2</u> ' ATT+3+35+ <u>2</u> :USS ' ATT+3+32+ <u>9</u> :ALV ' IDE+1+CL_UNIT_MULT '		<i>"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</i>
785			
786			
787			
788			
789	UNT+135+MREF000001 '		
790	UNZ+1+IREF000001 '		
791	The example given above shows how a centre (e.g. the ECB, coded as 4F0) disseminates structural data to a central bank (e.g. to the National Bank of Belgium, coded as BE2). The dissemination of the concept definition (<i>segments starting with STC</i>) and of the code lists (<i>groups starting with VLI</i>) provide the receiver with some basic metadata; then, the dimensions are given (<i>first group of segments starting with ASI</i>) and the receiver can form the key structure of the example key family (<i>BAL_OF_PAYM_TEST</i>):		
792			
793			
794			
795			
796			
797			
798		FREQ:REF_AREA:BOP_ITEM:DATA_TYPE	
799	<i>dimension value length in characters:</i>	1 2 3	1

800 This is the structure of the key of the time series of the key family. E.g. a specific time series
801 could be the monthly series (FREQ=M) referring to the *goods* (BOP_ITEM=100) *balance*
802 (type:net=4) of Belgium (REF_AREA=BE); its key would be:

803

804 M:BE:100:4

805 Additional information is provided by the attributes TITLE (uncoded), UNIT (coded) and
806 UNIT_MULT (coded) of the key family which for this series might take the values:

807

808 TITLE=*Merchandise trade balance*, UNIT=BEF, UNIT_MULT=9



809 **9 SEGMENT BY SEGMENT REFERENCE GUIDE**

810 **9.1 Organisation of the Guide**

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

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

814 **Scope**

815 This defines the scope of the facility.

816 **GESMES segments used**

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

818 **Features and guidelines for usage**

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

820 **For each segment**

- 821 • data element sequence

822 This shows the sequence of data elements in the segment.

- 823 • data element usage rules

824 This is a table which defines:

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

826 *mandatory:* the data element must be present;

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

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

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

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

838

839 Content and general usage rules of the segment

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

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

843 **Code lists**

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

848

849



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856 **9.2 Interchange Administration Section**857 **9.2.1 Scope**

858 The administration data at the level of the interchange comprises the identification of the syntax
859 version and character set used, the sender and receiver identification and the date and time of
860 the preparation of the interchange.

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

862

863 **9.2.2 GESMES Segments Used**

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

867

868 **9.2.3 Features and Guidelines for Use**

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

870

871 **9.2.4 Interchange Administration: Segment Structure**

872 *UNAservice-characters*

873 *UNB+syntax-identifier:syntax-version+sender-identification+ receiver-identification+date-of-*
874 *preparation:time-of-preparation +interchange-reference++application-reference'*

875 **Segment Type:** **UNA**

876 **Segment Type Name:** *Syntax Character Specification*

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

878 **Status:** *Mandatory*

879 Data Element Sequence

880 UNAsyntax-characters

881 Data Element Rules

local name	usage rules	format	code values
syntax-characters	mandatory	an6 (including the segment terminator)	In SDMX-EDI these characters have to be: :+.?'

882 Content and General Usage Rules

883 UNA contains the specification of the data element separator and segment terminator characters
 884 used. The character repertoire for SDMX-EDI is UNOC (see relevant discussion in the
 885 description of the next segment). In order to use the recommended service character set with the
 886 UNOC character repertoire it is necessary to specify the service characters in the UNA segment
 887 as detailed below. In SDMX-EDI the UNA segment has a fixed syntax and it is written always as:
 888 **UNA:+.?'**

889 (=UNA followed by colon, plus sign, dot, question mark, space and single quote; the single quote
 890 is the character corresponding to the ANSI/ASCII character 39). The UNA statement, as it is
 891 given above, means:

892 the *component separator* used is : (colon), the *data element separator* is + (plus sign), the
 893 *decimal sign* is . (dot), the *release indicator* is ? (question mark), space is reserved for possible
 894 future use and ' (single quote; ASCII/ANSI 39) is used as the *segment terminator*.

895 The reading and writing applications should have these characters parameterised (at least the
 896 service characters: colon, plus sign, release indicator). For the proper use of the release
 897 character see the appendix on the EDIFACT syntax and the special chapter on the text contained
 898 in uncoded attributes (the release character is not needed before the point, as the point is not
 899 an EDIFACT service character).

900 **Example:**

901 *It has to be written always as:* UNA:+.?'

902 **ATTN!**

- 903 (1) There is a space between ? and '.
- 904 (2) In SDMX-EDI only the point (.) is used for the decimal notation.
- 905 (3) The last character (') is part of the segment (and segment terminator by "coincidence").

906 **Segment Type:** **UNB**
 907 **Segment Type Name:** *Interchange header*
 908 **Max. Number of Occurrences:** *1*
 909 **Status:** *Mandatory*

910 Data Element Sequence

911 UNB+*syntax-identifier:syntax-version+sender-identification+ receiver-identification+date-of-*
 912 *preparation:time-of-preparation +interchange-reference++application-reference+++test-*
 913 *indicator'*

914 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	
--	-----------------------	--

915 Content and General Usage Rules

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

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

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

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

937 Dependencies

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

941 **Example 1 - exchange of live data:**

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

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

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

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

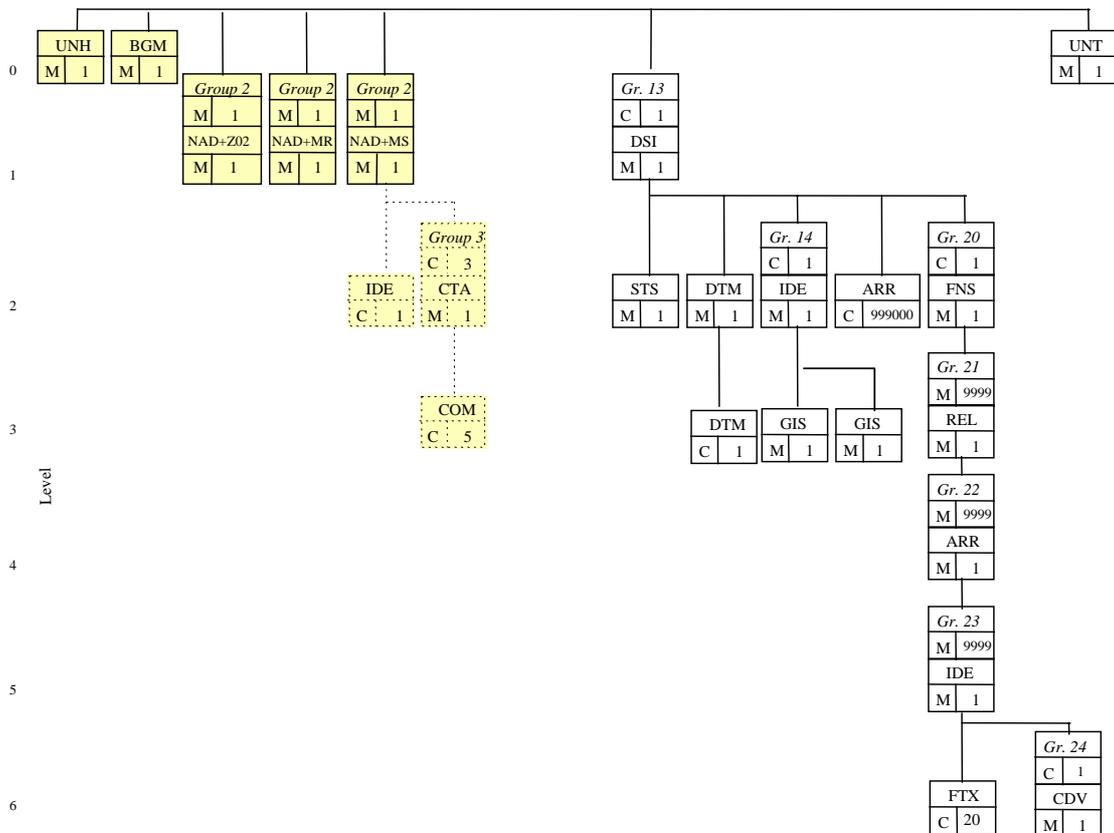
950 As before, but, due to presence of the test indicator (++++1), the contents of the interchange
951 should not be used to update or to modify databases at the receiving end as this interchange
952 serves only testing purposes.

953

 954 **9.3 Message Administration Section**

 955 **9.3.1 Scope**

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

 958 **9.3.2 GESMES Segments Used**


959

 960 **9.3.3 Features and Guidelines for Use**

 961 UNH identifies the message type and version.

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

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

969 information about the sender (if used by the sender, then the sending institution chooses its one,
970 two or three most relevant contact people).

971 The Message Administration Group is necessary in all types of messages (the three NAD
972 segments are mandatory).

973 An interchange can contain more than one messages; therefore, every message within the
974 interchange should carry a Message Administration Group.

975

976 **9.3.4 Message Administration Section: Segment Structure**

977 **UNH+message-reference-number+message-type:message-type-version:message-type-**
978 **release:controlling-agency'**

979 **BGM+message-name'**

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

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

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

983 | IDE+10+message-id' (message identification provided by the sender)

984 | CTA+contact-function+contact-id:contact-name' (contact information)

985 | COM+communication-number:communication-channel' (com. number and type of
986 channel)

987

988

989 **Segment Type:** **UNH**

990 **Segment Type Name:** *Message Header*

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

992 **Status:** *Mandatory*

993

994 Data Element Sequence

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

996 release:controlling-agency'

997 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

998

999 Content and General Usage Rules

1000 This segment starts the message and contains data which identify the message type and a
 1001 unique reference which can be used to validate the integrity of the message. In SDMX-EDI the
 1002 only non-fixed element is the *message reference number*. The message reference number
 1003 (format: MREFnnnnnn) is a serial (incremental by one) integer number produced by the sender
 1004 for each message in the current interchange (an interchange can include more than one
 1005 message). The part of the pure number (nnnnnn) is six characters long, starting with
 1006 MREF000001, MREF000002, ...etc.; no more than 999,999 messages can be included in one
 1007 interchange. The first message reference number should be 000001.

1008 Dependencies

1009 The same message reference number has to appear also at the end of the message, in the UNT
 1010 segment.

1011 **Example:**

1012 UNH+MREF000001+GESMES:2:1:E6'

1013 **Segment Type:** **BGM**

1014 **Segment Type Name:** *Beginning of Message*

1015 **Max. Number of Occurrences:** *1*

1016 **Status:** *Mandatory*

1017

1018 Data Element Sequence

1019 BGM+message-name'

1020 Data Element usage Rules

local name	usage rules	format	SDMX-EDI code values
message-name	<u>mandatory</u> 73 - 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) 74 - 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. DSL - data set list the message contains only a list of data set identifiers and the key family definitions that describe their structure.	an..3	73 - statistical definitions 74 - statistical data DSL - data set list

1021

1022 Content and General Usage Rules

1023 This segment identifies the function of the message.

1024 Dependencies

1025 If the *message-name* has been set to 74, then the data set administration section has to be
 1026 present and no structural sections (e.g. code lists, key family definition) should be included in the
 1027 message. The reading applications should expect numeric data and/or attributes in this
 1028 message. On the other hand, if the *message-name* has been set to 73, the data set
 1029 administration section should not be present and the reading application should conclude that
 1030 the message contains structural definitions (lists of concepts or code lists or key family
 1031 definitions).



1032

1033

1034 **Example 1:**

1035 BGM+74'

1036 This message contains or it refers to data (observations) and/or attributes.

1037 **Example 2:**

1038 BGM+73'

1039 This message contains only code lists and/or statistical concept definitions and/or key family
1040 definitions.

1041



1042 **Segment Group:** **Group 2 (NAD)**
1043 **Max. Number of Occurrences:** 3
1044 **Status:** *Mandatory*

1045 Content and General Usage Rules

1046 The NAD group is used to provide:
1047 (1) the identity of the organisation maintaining the code lists and the key family definitions,
1048 (2) the identity of the receiving organisation and
1049 (3) the identity of the sending organisation (and, possibly, more information provided by
1050 the sender).

1051 Each piece of information is provided by a simple NAD segment (NAD+Z02+..., NAD+MR+...
1052 and NAD+MS+... respectively). The third one (NAD+MS+...) might be followed by an IDE
1053 segment and/or up to three occurrences of Group 3 (CTA-COM) which give further information
1054 related to the sender.

1055 **Segment Type:** NAD First occurrence - ref. to code lists administration agency

1056 **Segment Type Name:** Name and Address

1057 **Max. Number of Occurrences:** 1

1058 **Status:** Mandatory

1059 Data Element Sequence

1060 NAD+party-type+organisation-id'

1061 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	Z02 (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: BIS ECB EUROSTAT IMF OECD

1062 Content and General Rules

1063 This is used to provide the identity of the organisation maintaining the code lists and key family
1064 definition used in the message. The sending institution chooses appropriately this parameter in
1065 accordance with the guidelines of the centre whose statistical concepts, code lists and structures
1066 are used in the message. For a more extensive discussion on the practical role and the use of
1067 the "maintenance agency" concept, the reader is advised to refer to the paragraph on [central](#)
1068 [institutions](#).

1069 **Example 1 :**

1070 NAD+Z02+EUROSTAT'

1071 This is how the segment should be written if the message uses/refers to structural definitions
1072 administrated by Eurostat.

1073 **Example 2 :**

1074 NAD+Z02+BIS'

1075 **Example 3:**

1076 NAD+Z02+ECB'



1077

1078 **Segment Type:** **NAD Second occurrence - reference to the message receiver**1079 **Segment Type Name:** *Name and Address*1080 **Max. Number of Occurrences:** *1*1081 **Status:** *Mandatory*1082 Data Element Sequence

1083 NAD+party-type+organisation-id'

1084 Data Element Usage Rules

local name	usage rules	format	SDMX-EDI code values
Party-type	<u>mandatory</u> <i>party-type is MR</i>	an..3	MR - 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.

1085

1086 Content and General Rules

1087 This is used to provide the identity of the receiving organisation.

1088 **Example:**

1089 NAD+MR+4F0'

1090 Here, the message is supposed to be sent to the European Central Bank (here coded as 4F0).

1091

1092

1093 **Segment Type:** **NAD** Third occurrence; reference to the message sender

1094 **Segment Type Name:** *Name and Address*

1095 **Max. Number of Occurrences:** 1

1096 **Status:** *Mandatory (trigger)*

1097 Data Element Sequence

1098 NAD+party-type+organisation-id'

1099 Data Element Usage Rules

local name	usage rules	format	SDMX-EDI code values
party-type	<u>mandatory</u> <i>party-type</i> 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.

1100

1101 Content and General Rules

1102 This is used to provide the identity of the sending organisation.

1103 **Example:**

1104 NAD+MS+BE2'

1105 The message is sent by the National Bank of Belgium (here coded as BE2).

1106

 1107 **Segment Type:**
IDE

 1108 **Segment Type Name:** *Message identity*

 1109 **Max. Number of Occurrences:** *1*

 1110 **Status:** *Conditional*

 1111 Data Element Sequence

 1112 IDE+*object-type+message-identity'*

 1113 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>

1114

 1115 Content and General Rules

 1116 This message identity is provided by the sender. It is free text and in general it can be up to 35
 1117 characters long (e.g. "Daily update", "Monthly tape").

1118

 1119 **Example 1:**

1120 IDE+10+Quarterly BoP reporting'

1121 The sender has identified this message as "Regular quarterly BoP reporting".

1122



1123

1124 **Segment Group:** **Group 3 (CTA-COM)**1125 **Max. Number of Occurrences:** 31126 **Status:** *Conditional*1127 *Content and General Usage Rules*

1128 Each occurrence of this group is used to provide details about a contact that is relevant to the
1129 sending organisation identified in the preceding NAD+MS segment. These details include the
1130 name of the contact and, optionally, contact numbers such as telephone, fax, e-mail.

1131 This Group is conditional. Certain data exchange circuits might find it useful and could agree to
1132 regularly use it in the exchanged messages.

1133 As Group 3 can be repeated three times, if the sender made use of it, he could choose the
1134 (maximum) three most relevant people whose details could be useful to the receiver.

1135

 1136 **Segment Type:** **CTA**

 1137 **Segment Type Name:** *Contact information*

 1138 **Max. Number of Occurrences:** 1

 1139 **Status:** *Mandatory (trigger)*

 1140 Data Element Sequence

1141 CTA+contact-function+contact-id:contact-name'

 1142 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

1143

 1144 Content and General Rules

1145 It identifies a contact name at the sending institution.

 1146 **Example 1:**

1147 CTA+CC+:Mr John Smith'

 1148 Mr. John Smith is the person responsible for the compilation and production of the data at the
 1149 sending institution.

 1150 **Example 2:**

1151 CTA+CP+IS/BoP:Mr John Smith'

 1152 Mr. John Smith is the person responsible for data computer processing at the IS/BoP unit in the
 1153 sending institution.

1154

1155 **Segment Type:** **COM**

1156 **Segment Type Name:** *Communication number and type of channel*

1157 **Max. Number of Occurrences:** 5

1158 **Status:** *Conditional*

1159 Data Element Sequence

1160 COM+communication-number:communication-channel'

1161 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

1162 Content and General Rules

1163 It provides a contact number for the person indicated in the preceding CTA segment and it
1164 identifies the type of this number (communication channel).

1165 **Example 1:**

1166 COM+0049 69 13440:TE'

1167

1168 **Example 2:**

1169 Combining with previous segments:

1170 NAD+MS+4F0'

1171 IDE+10+ECB-monthly disseminated aggr. data'

1172 CTA+CC+Money and Banking:Mr John Smith'

1173 COM+0049 69 13440:TE'

1174 COM+0049 69 13446000:FX'

1175 COM+jsmith@test.com:EM'

1176 CTA+CP+IS/M&B:Mr Klaus Roberts'

1177 COM+0049 69 1344888:TE'

1178 This example shows the use of the whole (conditional) group following NAD+MS. The ECB
1179 (=4F0) provides info about the message contents (IDE segment) and people to contact
1180 (CTA/COM segments).

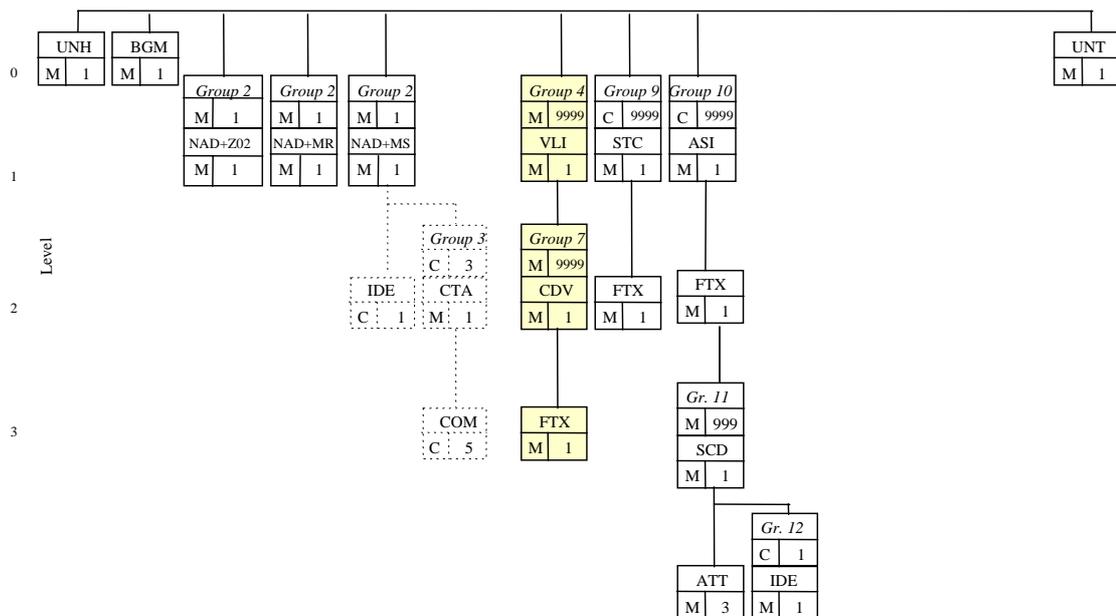
1181 **9.4 Code List Section**

 1182 **9.4.1 Scope**

1183 The dissemination of the code lists from the centre enables the receiving institutions to build
 1184 tables with the possible values for all coded statistical concepts (dimensions used in key families
 1185 and coded attributes). References to the code lists can be used by any of the data sets sent in
 1186 other SDMX-EDI messages.

 1187 **9.4.2 GESMES Segments Used**

1188 In SDMX-EDI data and attributes (DSI Group) cannot be mixed in the same message with the
 1189 groups of segments carrying the structural definitions (i.e. code lists-VLI, statistical concepts-
 1190 STC, key family definitions-ASI). Therefore, the following branching diagram presents a typical
 1191 SDMX-EDI structural message carrying code lists, statistical concept definitions and key family
 1192 definitions. The shaded boxes are the ones used for the exchange of code lists which is
 1193 discussed in this section; that it is why Group 4 has been flagged here as mandatory.



1194

 1195 **9.4.3 Features and Guidelines for Use**

1196 The list is sent in Group 4. The list itself must be given a unique identifier and this is sent in the
 1197 VLI segment. The individual code values are sent in the CDV segment (one code in each
 1198 occurrence of a CDV segment) and their textual description is given in the FTX segment (one
 1199 textual description for each occurrence of a CDV segment).

1200

1201

1202

1203

1204

1205



1206

1207 **9.4.4 Code List Section: Segment Structure**

1208 VLI+*code-list-id*+++*code-list-name*'

1209 CDV+*code-value*'

1210 FTX+ACM+++*textual-description*'

1211



1212 **Segment Group:** **Group 4 (VLI-Group 7)**

1213 **Max. Number of Occurrences:** 9999

1214 **Status:** *Conditional*

1215 *Content and General Usage Rules*

1216 A group of segments containing a code list. It can be stored by the receiver on a metadata
1217 database (see also about alternative ways of organising structural definitions in Section 3.4.1.).

1218

1219

1220 **Segment Type:** **VLI**

1221 **Segment Type Name:** *Value List Identification*

1222 **Max. Number of Occurrences:** 1

1223 **Status:** *Mandatory (trigger)*

1224

1225 Data Element Sequence

1226 VLI+code-list-id+++code-list-name'

1227 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	an..18	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	an..70	Short description (name) of a code list provided by a centre institution, e.g.: Units code list

1228

1229 Content and General Usage Rules

1230 The segment is used to provide a unique identifier and a name for a code list.

1231

1232 **Example 1:**

1233 VLI+CL_ADJUSTMENT+++Adjustment code list'

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

1235

1236 **Example 2 :**

1237 VLI+CL_ORGANISATION+++Organisation code list'

1238 A code list called CL_ORGANISATION will be given via the segments which follow (CDV, FTX).



1239 **Segment Group:** **Group 7 (CDV-FTX)**

1240 **Max. Number of Occurrences:** 9999

1241 **Status:** *Mandatory*

1242 *Content and General Usage Rules*

1243 A group of segments containing the code values in a code list and their descriptions.

1244 The CDV segment occurs once for each code and the FTX segment once for each CDV.

1245 **Segment Type:** **CDV**

1246 **Segment Type Name:** *Code Value*

1247 **Max. Number of Occurrences:** *1*

1248 **Status:** *Mandatory (trigger)*

1249

1250 Data Element Sequence

1251 *CDV+code-value'*

1252 Data Element Usage Rules

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

1253

1254 Content and General Rules

1255 This is used to provide a code value.

1256 **Example:**

1257 *CDV+DK2'*

1258 This is a code value from the [CL_ORGANISATION](#) code list (mentioned in a [previous example](#)
1259 when demonstrating VLI).

1260 **Segment Type:** **FTX**

1261 **Segment Type Name:** *Free Text (code value textual description)*

1262 **Max. Number of Occurrences:** 1

1263 **Status:** *Mandatory*

1264

1265 Data Element Sequence

1266 FTX+text-subject+++code-value-description'

1267 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	ACM (=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 where each "text" can be up to 70 characters long.

1268

1269 Content and General Rules

1270 This is used to provide the description of a code value.

1271 Each occurrence of this segment is used to provide the description of a code value. It can be up
 1272 to (total) 350 characters long. However, if the description is longer than 70 characters (upper
 1273 limit for a single component element), then the *text* should be split in (the maximum) 5
 1274 component element-texts (each one of them not being longer than 70 characters and separated
 1275 among them with a *component separator*). The reading applications should read the
 1276 components of the received text and consider that they form a string which is the result of the
 1277 added sub-strings. The writing applications should break the text into pieces of 70 characters or
 1278 shorter; it does not matter whether a word is broken between two component elements or not
 1279 (see also the [Appendix](#) on the EDIFACT syntax).

1280 Briefly, the code value description can be given as *free-text:free-text:free-text:free-text:free-text'*
 1281 where *free-text* can be up to 70 characters long and can repeat up to five times. See also
 1282 section 6.9.9.

1283 **Example:**

1284 FTX+ACM+++Danmarks Nationalbank'

1285 This is the description explaining the code value shown in the previous example demonstrating
 1286 CDV.

1287 **9.5 Statistical Concept Definition Section**

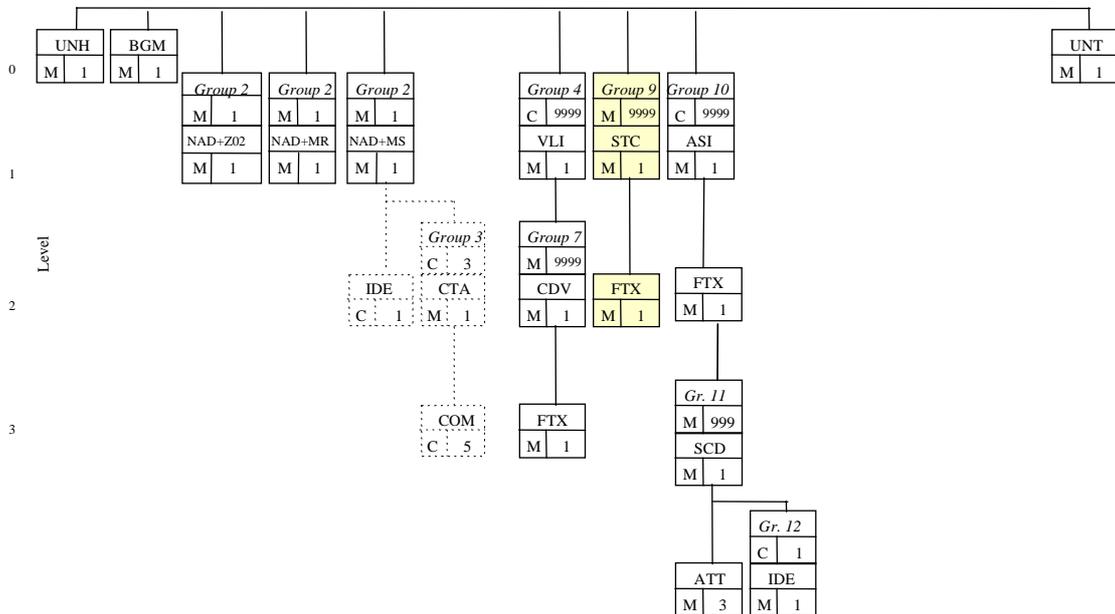
 1288 **9.5.1 Scope**

1289 This provides a list of the statistical concepts used by the partners together with their names.

 1290 **9.5.2 GESMES Segments Used**

 1291 In the following SDMX-EDI branching diagram the shaded boxes are used in the definition of the
 1292 concepts. Group 9 is shown here as mandatory, as without it is not possible to disseminate
 1293 statistical concept definitions.

1294


 1295 **9.5.3 Features and Guidelines for Use**

 1296 A pair of segments is used; the first segment (STC) provides the identifier of the statistical
 1297 concept and the second one (FTX) its name.

 1298 **9.5.4 Statistical Concept Definition Section: Segment Structure**

1299 STC+concept-identifier'

1300 FTX+ACM+++concept name'



repeats

1301



1302

1303 **Segment Group:** **Group 9 (STC-FTX)**

1304 **Max. Number of Occurrences:** 9999

1305 **Status:** *Conditional*

1306 *Content and General Usage Rules*

1307 A pair of segments describing a statistical concept.

1308 **Segment Type:** **STC**

1309 **Segment Type Name:** *Statistical concept*

1310 **Max. Number of Occurrences:** 1

1311 **Status:** *Mandatory (trigger)*

1312

1313 Data Element Sequence

1314 STC+concept-identifier'

1315 Data Element Usage Rules

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

1316

1317 Content and General Usage Rules

1318 The segment identifies the statistical concept.

1319

1320 **Example:**

1321 STC+[SOURCE_AGENCY](#)'

1322 The *name* of a concept, whose identifier is SOURCE_AGENCY, will be given in the FTX
1323 segment which follows.

1324

1325 **Segment Type:** **FTX**

1326 **Segment Type Name:** *Free Text (name of the concept)*

1327 **Max. Number of Occurrences:** *1*

1328 **Status:** *Mandatory*

1329

1330 Data Element Sequence

1331 *FTX+text-subject+++code-label'*

1332 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	ACM (=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.

1333

1334 Content and General Rules

1335 This is used to provide the name of the concept stated in the previous segment (STC).

1336 **Example:**

1337 *FTX+ACM+++[Source agency](#)'*

1338 This is the name of the concept shown in the previous example (see description for [STC](#)).

1339

1340

1341

 1342 **9.6 Key Family Definition Section**

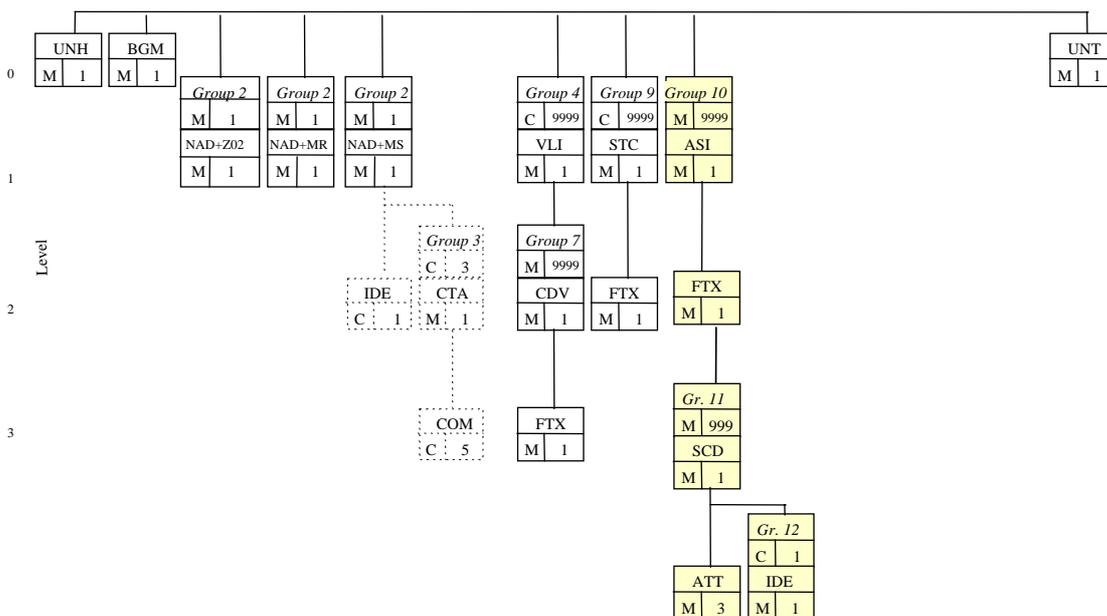
 1343 **9.6.1 Scope**

1344 This section allows the organisation receiving the corresponding structural message to interpret
 1345 key family definitions (which dimensions and at which positions) and the corresponding lists of
 1346 relevant attributes. It is obvious that the key family definition could not contain structure
 1347 components (i.e. a statistical concept) which have not been already described in the
 1348 “exchanged” concepts (e.g. via Group 8): each concept id used in a key family definition should
 1349 also become *known* to the partner institutions.

 1350 **9.6.2 GESMES Segments Used**

1351 When the parties exchange key family definitions, they have to use Group 10 (the shaded boxes
 1352 show the segments involved); that is why this group is shown here as mandatory:

1353


 1354 **9.6.3 Features and Guidelines for Use**

1355 A key family definition is reflected in one occurrence of the [ASI](#) segment. A [FTX](#)
 1356 segment provides the name of the key family. Each structure component is identified as an occurrence of
 1357 the [SCD](#) segment, in terms of the statistical concept identifier (and the position of the dimension
 1358 in the key structure if the concept is a dimension). In general, a complete key family definition
 1359 comprises:

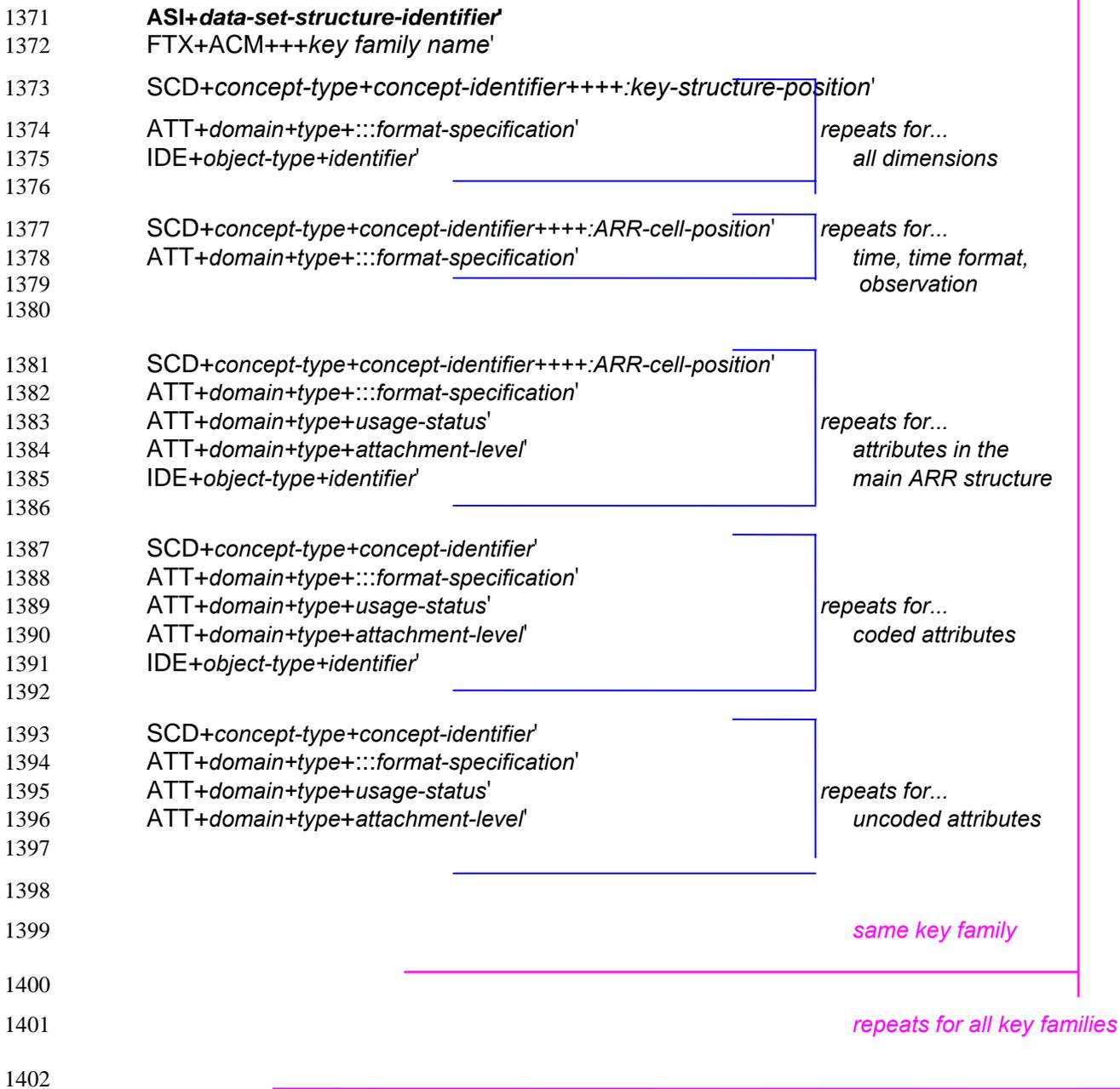
1360 the identification of all dimensions of this key family and also of all the other relevant observation
 1361 component elements (**this structural information is needed for the interpretation of the ARR
 1362 segment following Group 14 - not shown here - which holds the data to be exchanged**).

1363 the identification of all the attributes (mandatory and non-mandatory) which are in use within this
 1364 key family (SCD segment), the definition of their status and their attachment level;
 1365 the description of the format of the values of the statistical concepts (ATT segment) and

1366 the identification of the corresponding code list (IDE) if the statistical concept is coded.
 1367

1368 **9.6.4 Key Family Definition Section: Segment Structure**

1369
 1370





1403 **Segment Group:** **Group 10 (ASI-Group 11)**

1404 **Max. Number of Occurrences:** 9999

1405 **Status:** *Conditional*

1406 *Content and General Usage Rules*

1407 Each occurrence of this group is used to provide the definition of a key family (its dimensions
1408 and attributes). The key family may be new or it may already exist on the receiver's database, in
1409 which case the definition in this group should replace the definition in the existing metadata
1410 database.



1411 **Segment Type:** **ASI**

1412 **Segment Type Name:** *Array Structure Identification*

1413 **Max. Number of Occurrences:** *1*

1414 **Status:** *Mandatory (trigger)*

1415 *Content and General Usage Rules*

1416 This is used to identify the data set structure (i.e. array structure).

1417 *Data Element Sequence*

1418 *ASI+data-set-structure-identifier'*

1419 *Data Element Usage Rules*

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

1420

1421 *Content and General Rules*

1422 This is used to provide the structure of the data set: in SDMX-EDI the identification of the data
 1423 set structure is provided by a "key family identifier".

1424 **Example:**

1425 *ASI+[ESCB_BAL_OF_PAYM01'](#)*

1426 **Segment Type:** **FTX**

1427 **Segment Type Name:** *Free Text (name of a key family)*

1428 **Max. Number of Occurrences:** 1

1429 **Status:** *Mandatory*

1430

1431 Data Element Sequence

1432 FTX+text-subject+++code-label'

1433 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	ACM (=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.

1434

1435 Content and General Rules

1436 This is used to provide the name of the key family stated in the previously given segment (ASI).

1437 **Example:**

1438 FTX+ACM+++[ECB kf for BoP data'](#)

1439 This is the name of the key family shown in the previous example (see description for [ASI](#)).

1440



1441 **Segment Group:** **Group 11 (SCD-ATT-Group 12)**

1442 **Max. Number of Occurrences:** 999

1443 **Status:** *Conditional*

1444 Content and General Usage Rules

1445 This segment group identifies the statistical concepts of the key family and defines them as
1446 either dimensions or attributes. Dimensions must be coded, while attributes may be or not.
1447 In addition, it provides information required for the interpretation of the ARR segment following
1448 group 14:

- 1449 • time dimensions: "time period" ("To which periods do the data in the ARR segment relate?")
1450 and "time format" ("Do the data in the ARR segment relate to a single period or to a range
1451 and what is the frequency?")
- 1452 • array cells: observation value, the observation level attribute observation status (mandatory)
1453 and the observation level attributes observation confidentiality and observation pre-break
1454 (both conditional).

1455 These categories of definitions are elaborated below:

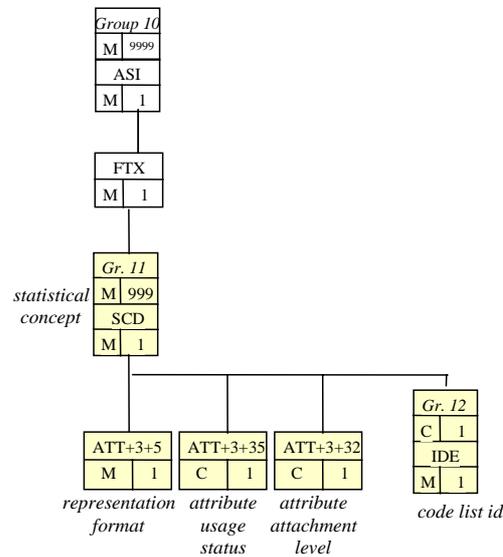
1456 Dimension: For each dimension of the key family, (1) its position in the key structure, (2) its
1457 representation (length of the code values and whether they are numeric or alphanumeric) and
1458 (3) the name of the relevant code list are provided.

1460 Time period, time format, observation value and "array" attributes: These are defined by their
1461 representation and their position in the array structure. Moreover, for the three observation level
1462 attributes ("array attributes": observation status, observation confidentiality, observation pre-
1463 break value), also the attachment level, their usage status and (but not for the "observation pre-
1464 break") the relevant code lists are provided.

1465 Attribute definitions: All attributes for the key family are defined with the information on

- 1466 • whether they are coded or uncoded
- 1467 • their usage status (mandatory or conditional)
- 1468 • their attachment level (data set, sibling series, time series or observation)
- 1469 • representation: field length (exact or maximum length) and the information whether they
1470 are numeric or alphanumeric
- 1471 • relevant code list (for coded attributes) .

1472 As the ATT segment is used for three different purposes (that it is why in the branching diagram
1473 it is shown that it can be repeated up to three times), for reasons of clarity in the following pages
1474 it is presented separately, for each one of its three usages. The diagram below provides a
1475 "zoom" view on the group:



1476

1477

1478 Segment Structure

- 1479 SCD+concept type+concept identifier++++:position in key (or array structure)'
- 1480 ATT+domain+type+:::format specification' (for the representation)
- 1481 ATT+domain+type+code:code list qualifier' (for the usage status of attributes only)
- 1482 ATT+domain+type+code:code list qualifier' (for the attachment level of attributes only)
- 1483 IDE+object type+identifier' (code list for dimensions, coded attributes)

1484

1485 Note

1486 The examples for the various segments to be used in the key family definition section are
 1487 derived from the example key family defined in the next paragraph. The examples are built up in
 1488 such a way that the reader can with each added segment retain the overall view of the whole
 1489 group. The complete section with required segments is then presented following the
 1490 presentation of the IDE segment (group 12).
 1491
 1492

1493

1494 **Segment Type:** **SCD**

1495 **Segment Type Name:** *Structure Component Definition*

1496 **Max. Number of Occurrences:** *1*

1497 **Status:** *Mandatory (trigger)*

1498 Data Element Sequence

1499 *SCD+concept-type+concept-identifier++++:position-in-key-structure'*

1500 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	an..18	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.

1501

1502 Content and General Rules

1503 It is used to identify the statistical concepts used in the key family, their type (dimension or
 1504 attribute) and in the case of dimensions to define their position in the key structure. In addition,
 1505 apart from the dimensions, it defines the array cell position in the ARR segments of the
 1506 supplementary elements, i.e. time dimension, time format, observation, observation status (and
 1507 confidentiality and observation pre-break, if used in the key family).

1508

 1509 **Example:**

1510 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
<i>DIMENSIONS:</i>				
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>	6
Observation	OBS_VALUE	an..15	<i>time</i>	7
Observation status	OBS_STATUS	an1	<i>dimension</i>	8
Obs. confidentiality	OBS_CONF	an1	<i>observation</i>	9
Pre-break value	OBS_PRE_BREAK	an..15	<i>array cell</i>	10
<i>ATTRIBUTES:</i>				
Title	TITLE	an..70	attribute	-
Unit	UNIT	an..12	attribute	-
Unit multiplier	UNIT_MULT	an..2	attribute	-

1511

1512 (In this key family it has been assumed that the observation confidentiality and observation pre-
1513 break have been included in the array structure of the key family; this might not be the case for
1514 other key families)

1515

1516 The structure definition segments for this key family would be:

 1517 **SCD+13+FREQ++++:1'**... (corresponding ATT and IDE segments should follow) ...

 1518 **SCD+4+REF_AREA++++:2'**

1519 ... (corresponding ATT and IDE segments should follow) ...

1520

 1521 **SCD+4+BOP_ITEM++++:3'**

1522 ... (corresponding ATT and IDE segments should follow) ...

 1523 **SCD+4+DATA_TYPE++++:4'**

1524 ... (corresponding ATT and IDE segments should follow) ...

1525

1526 Other component elements (time dimension and array cells) present in the ARR segments for
1527 this particular key family:

 1528 **SCD+1+TIME_PERIOD++++:5'**

1529 (corresponding ATT segment should follow)

 1530 **SCD+1+TIME_FORMAT++++:6'**

1531 ...(*corresponding ATT segment should follow*)...

1532 SCD+3+OBS_VALUE++++:7'

1533 ...(*corresponding ATT segment should follow*)...

1534 SCD+3+OBS_STATUS++++:8'

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

1536 SCD+3+OBS_CONF++++:9'

1537 ...(*corresponding ATT and IDE segments should follow*)...

1538 SCD+3+OBS_PRE_BREAK++++:10'

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

1540 Attributes used in this key family (**note that only *concept-type* and *concept-identifier* are**

1541 **used here**):

1542 SCD+Z09+TITLE'

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

1544 SCD+Z09+UNIT'

1545 ... (*corresponding ATT and IDE segments should follow*)...

1546 SCD+Z09+UNIT_MULT'

1547 ...(*corresponding ATT and IDE segments should follow*)...

1548

 1549 **Segment Type:** **ATT** **First occurrence - ref. to representation format**

 1550 **Segment Type Name:** *Attribute*

 1551 **Max. Number of Occurrences:** *1*

 1552 **Status:** *Mandatory*

 1553 Data Element Sequence

 1554 *ATT+domain+type+:::format-specification'*

 1555 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	5 - 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.

1556

 1557 Content and General Rules

 1558 It is used to inform about the format of the values taken by all the statistical concepts used in the
 1559 key family.

 1560 **Example:**

1561 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>time</i>	6
Observation	OBS_VALUE	an..15	<i>dimension</i>	7
Observation status	OBS_STATUS	an1	<i>observation</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	-

1562

1563

1564

1565

1566

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

1567

1568 **Segment Type:** **ATT** **Second occurrence - ref. to usage status**

1569 **Segment Type Name:** *Attribute*

1570 **Max. Number of Occurrences:** *1*

1571 **Status:** *Conditional*

1572 Data Element Sequence

1573 *ATT+domain+type+code:code-list-qualifier'*

1574 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	35 - 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

1575

1576 Content and General Rules

1577 It has to be used for all attributes (and only for the attributes). This applies to the attributes which
1578 are exchanged in the main ARR structure (attached next to the observation) and to the attributes
1579 which are exchanged using the FNS group. (So, it does not apply to the definition of the
1580 observation value, which, implicitly is mandatory)

1581 **Example:**

1582 Taking again the previous example, the structure definition segments (SCD and the
1583 representation and usage status definition in ATT) relating to the attributes only would now look
1584 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

1585

1586

1587

1588 **Segment Type:** **ATT** **Third occurrence - ref. to the attachment level**

1589 **Segment Type Name:** *Attribute*

1590 **Max. Number of Occurrences:** *1*

1591 **Status:** *Conditional*

1592 Data Element Sequence

1593 *ATT+domain+type+code:code-list-qualifier'*

1594 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

1595

1596 Content and General Rules

1597 It has to be used for all attributes (and only for the attributes). This applies to the attributes which
 1598 are exchanged in the main ARR structure (attached next to the observation) and to the attributes
 1599 which are exchanged using the FNS group. (So, it does not apply to the definition of the
 1600 observation value, which, implicitly relates to the observation level)

1601 **Example:**

1602 Using again the previous example, we assume that in this key family:

- 1603 • the “observation status”, the “observation confidentiality” and the “observation pre-break” are
 1604 defined at the observation level;
- 1605 • the “title” is defined at the sibling group level and
- 1606 • the “unit” and “unit multiplier” at the time series level.

1607 The structure definition segments (SCD and the representation, usage status and attachment
 1608 level definition in ATT) relating to the attributes only would now look as follows (dimensions and
 1609 the time dimensions do not carry an attachment level).

1610

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



- 1611
- 1612 **Segment Group:** **Group 12 (IDE)**
- 1613 **Max. Number of Occurrences:** *1*
- 1614 **Status:** *Conditional*
- 1615 *Content and General Usage Rules*
- 1616 This group is used to identify the code list used by a coded statistical concept.

1617 **Segment Type:** **IDE**

1618 **Segment Type Name:** *Identity*

1619 **Max. Number of Occurrences:** 1

1620 **Status:** *Mandatory*

1621

1622 Data Element Sequence

1623 IDE+*object-type+identifier*'

1624 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	an..18	Provided by centre institution.

1625

1626 Content and General Rules

1627 This contains the identifier of the code list of the statistical concept specified in the preceding
1628 SCD segment if this concept is coded.

1629 **Example 1:**

1630 IDE+1+[CL_FREQ](#)'

1631 Note that this IDE should be preceded by a relevant SCD segment (and one or three ATT
1632 segments depending on whether the concept is a dimension or an attribute). For example, to
1633 introduce the previous segment, the following segments could precede:

1634 SCD+13+[FREQ](#)++++:1'

1635 ATT+3+5+:::[AN1](#)'

1636 Obviously, the IDE segment will not be used if the related statistical concept is uncoded.

1637

1638 **Example 2:**

1639 Referring to the example presented in the previous pages, the complete structure definition
1640 section (SCD and the representation, usage status and attachment level definition in ATT and
1641 conditional IDE segment) for dimensions, the time dimension, array cells and attributes would
1642 now look as follows:

1643

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'

1644

1645

1646 **9.7 Data Set Administration Section**

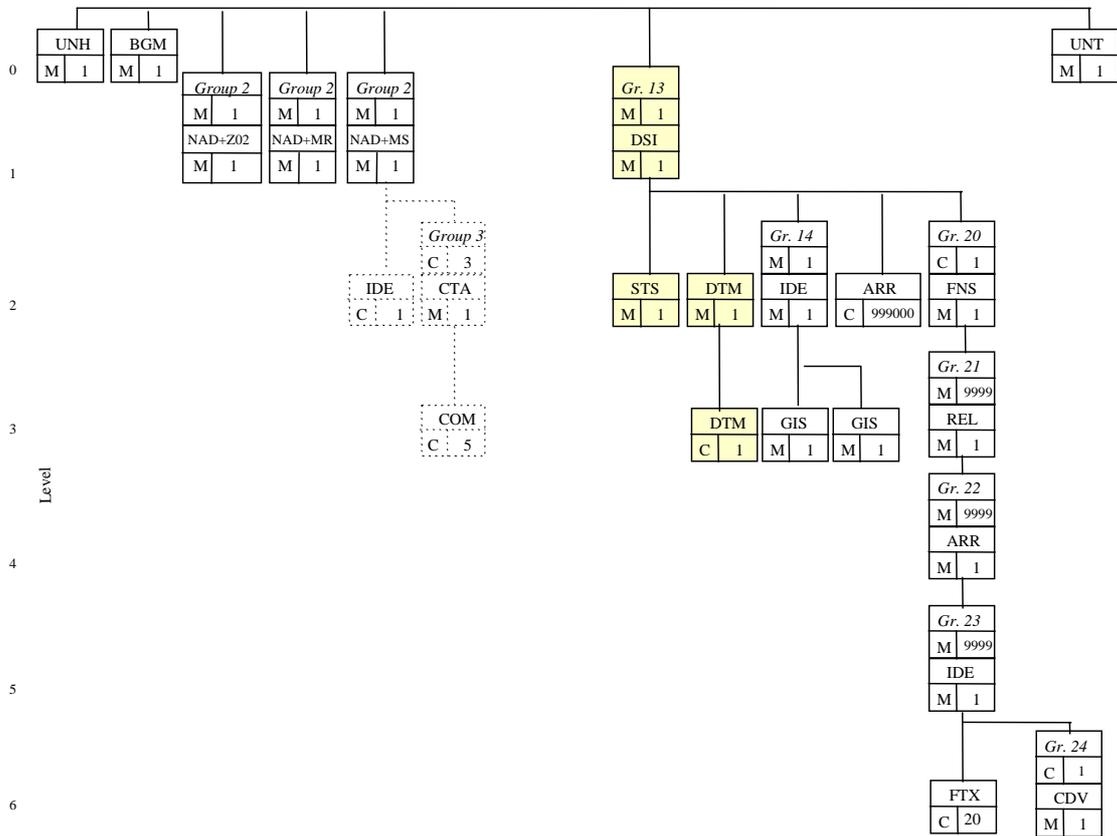
1647 **9.7.1 Scope**

1648 The Data set administration Section includes the identification of the data set, the action which
 1649 has to be performed (update/replace or delete) and the included data and attribute values
 1650 extraction date and time.

1651

1652 **9.7.2 GESMES Segments Used**

1653 In this branching diagram the relevant boxes appear shaded and Group 13 is shown as
 1654 mandatory.



1655

1656

1657

1658 **9.7.3 Guidelines For Use of Segments**

1659 The data set identifier is indicated in the DSI segment. It is always present in messages carrying
 1660 data and/or attributes (or containing instructions for deletions of data and/or attributes). This
 1661 Group is not used in "structural messages" (containing e.g. key family definitions or code lists).
 1662 Thus, if Group 13 is used by the sender, then the message should contain also data (or
 1663 references to delete data) and/or attributes (or references for deleting attributes).

1664

1665 In the context of SDMX-EDI, it has been agreed that:

1666 an update or delete message can contain data or references to **only one key family** and to **one**
1667 **data set**. Therefore, **the DSI segment can appear only once in a message**;

- 1668 •
- if a message contains Group 13, it should not contain any structural data**
- (Groups 4 to
-
- 1669 12 should not be present).

1670

1671 **9.7.4 Data Set Administration Section: Segment Structure**

1672 [If group 13 is used:]

1673 [DSI](#)+*data-set-identifier*' (data set identification: *mandatory*)1674 [STS](#)+*status-type+status-code*' (status of the message: *mandatory*)1675 [DTM](#)+*date-time-type:date-time:date-time-format*'(1st DTM - data set extraction time stamp:
1676 *mandatory*)1677 [DTM](#)+*date-time-type:date-time:date-time-format*'(2nd DTM - reporting period: *conditional*)

1678



1679 **Segment Group:** **Group 13 (DSI-STS-DTM)**

1680 **Max. Number of Occurrences:** 1

1681 **Status:** *Conditional*

1682

1683 Content and General Usage Rules

1684 In SDMX-EDI only one occurrence of this group is allowed in a message; Group 13 comprises
1685 the segments:

- 1686 • [DSI](#) (dataset identification)
- 1687 • [STS](#) (status)
- 1688 • [DTM](#) (first occurrence: date time of data set extraction)
- 1689 • [DTM](#) (second occurrence: reporting period; conditional segment)

1690

1691 When this group is used in a message, this message should also contain:

- 1692 • Sufficient information (i.e. group 14) for the ARR structure identification

1693 and

- 1694 • observations and/or attributes

1695 or

1696 in case of a “delete message”,

- 1697 • references to observations and/or attributes

1698

1699



1700 **Segment Type:** **DSI**

1701 **Segment Type Name:** *Data Set Identification*

1702 **Max. Number of Occurrences:** *1*

1703 **Status:** *Mandatory (trigger)*

1704 Data Element Sequence

1705 DSI+data-set-identifier'

1706 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.

1707

1708 Content and General Usage Rules

1709 The DSI identifier describes the specific statistical context which the included data and/or
 1710 attribute values belong to. Guidelines concerning the use of the data set are provided by the
 1711 centre administrating the data exchange (see also Box 1 on next page).

1712 Implementation Remark

1713 It is recommended to partner institutions to build their database systems and filters with "data
 1714 set" intelligence, basing their design (when for example data files are received) on the DSI
 1715 identifier of the received message. The same applies for the extraction systems: it is better to
 1716 base the development of the "export" routines on the concept of *a data set (in general, a subset
 1717 of series belonging to the same key family) which needs to be extracted* and not on the
 1718 extraction of all series which belong to the same key family. One or more data sets (identification
 1719 of the data set is provided by the DSI segment) can follow the structural definitions for the same
 1720 key family (information provided by the key family identifier on the [IDE](#) segment). See also
 1721 discussion in Box 1.

1722

1723 **Example 1:**

1724 DSI+ECB_BOP1'

1725 The reported data belong to the ECB_BOP1 data set.

1726 **Example 2:**

1727 DSI+BIS_MACRO'

1728 The reported data in the message belong to the BIS_MACRO data set.

1729

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.

1752 **Segment Type:** **STS**

1753 **Segment Type Name:** *Status Report*

1754 **Max. Number of Occurrences:** *1*

1755 **Status:** *Mandatory*

1756 Data Element Sequence

1757 *STS+status-type+status-code'*

1758 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	3 - data contents
status-code	this specifies the status identified by <i>status-type</i>	an..3	7 - update or replace 6 - delete

1759

1760 Content and General Usage Rules

1761 This segment specifies the action expected to be performed on the contents of the message. As
 1762 in SDMX-EDI only one DSI (one reference to a data set) is allowed per message, **a message**
 1763 **can be used to instruct the receiver either to perform deletions or to update a receiving**
 1764 **database (these two actions cannot be mixed in the same message):** the action declared by
 1765 this status code affects the whole message:

1766 if the segment has been written as **STS+3+7'** then the (update) message should contain either
 1767 data (in the ARR segment following Group 14) or attributes (in Groups 20-24) or both;

1768 if the segment has been written as **STS+3+6'** then the (delete) message should contain either
 1769 references to delete data (in the ARR segment following Group 14) or references to delete
 1770 attributes (in Groups 20 to 23) or both.

1771 **Examples:**

- 1772 • STS+3+7'

1773 The contents of the message should be used to update the databases of the receiver and/or to
 1774 replace previously existing values (assuming that the test indicator of the interchange was not
 1775 used).

- 1776 • STS+3+6'

1777 The references in the ARR segments of the message are pointers for deletions which should be
 1778 performed in the databases of the receiver (of course the receiving end could implement
 1779 adequate security and control mechanisms, if desirable, in order to check or to prevent fully
 1780 automated deletions).

1781

 1782 **Segment Type:** **DTM (1st occurrence: data set extraction time stamp)**

 1783 **Segment Type Name:** *Date/Time/Period*

 1784 **Max. Number of Occurrences:** *1*

 1785 **Status:** *Mandatory*

 1786 Data Element Sequence

1787 DTM+date-time-type:date-time:date-time-format'

 1788 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)

1789

1790

 1791 Content and General Rules

1792 In general, DTM is used to present dates/time and periods. Its first occurrence in SDMX-EDI is
 1793 used to present the data set "preparation date/time" (=242). The date format used is always the
 1794 same (CCYYMMDDhhmm which is coded as 203 in EDIFACT). The sending institutions should
 1795 provide in this segment the date/time at which the data set reported in the message was
 1796 extracted from the internal data base system (local date and time of the sender).

1797 If the previously given STS segment indicated that the message will be used for deletions, then
 1798 this date/time should be the date/time of the preparation of the message.

1799

1800

 1801 **Example:**

1802 DTM+242:199702241345:203'

1803 The reported data set was extracted from the database of the sender at 13:45 (local time) on the
 1804 24th February 1997.

1805 **Segment Type:** **DTM (2nd occurrence: reporting period)**

1806 **Segment Type Name:** *Date/Time/Period*

1807 **Max. Number of Occurrences:** *1*

1808 **Status:** *Conditional*

1809 Data Element Sequence

1810 DTM+date-time-type:date-time:date-time-format

1811 Data Element Usage Rules

local name	usage rules	format	SDMX-EDI code values
date-time-type	<u>mandatory</u>	an..3	Z02 - 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

1812

1813 Content and General Rules

1814 The second occurrence of DTM is conditional and is used to declare which is the reporting
 1815 period (if relevant and/or requested by a centre institution). Obviously, if this segment is used,
 1816 the period or period range given in this segment should be consistent with the contents (data)
 1817 written in the message.

1818

1819

1820 **Example 1:**1821 *The following segment says that the message contains data for 1992 (single period):*

1822 DTM+Z02:1992:602'

1823

1824 **Example 2:**1825 *The following segment says that the message contains data from 1992 to 1993 (period range):*

1826 DTM+Z02:19921993:702'

1827

1828 **Example 3:**1829 *The following segment says that the message contains data from 1995q1 to 1995q4 (period*
1830 *range):*

1831 DTM+Z02:1995119954:708'

1832 .

1833

1834

 1835 **9.8 Array Structure and Data Section**

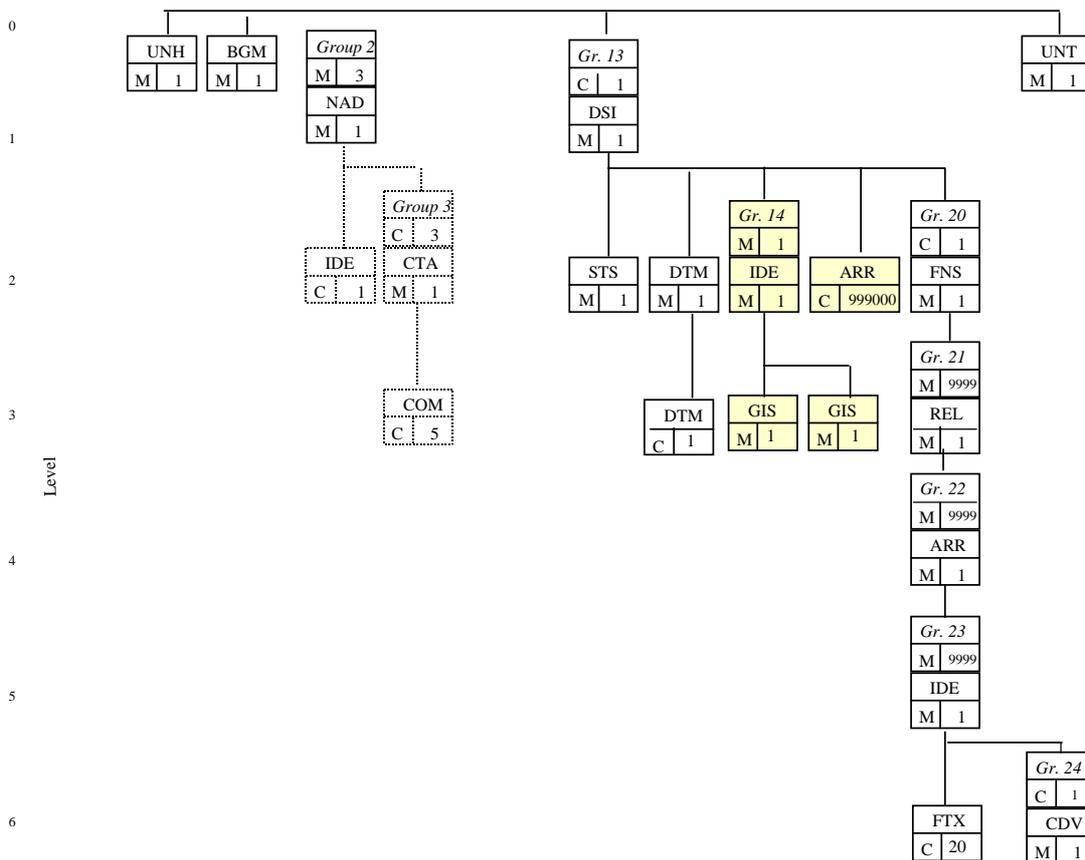
 1836 **9.8.1 Scope**

1837 The array data comprises the identification of the data set structure (IDE), the indication of the
 1838 method used to place data values in the ARR segment (first occurrence of GIS), an indication
 1839 about the character used for the missing values (second occurrence of GIS) and the data values
 1840 (or references for deletions) in the ARR segment.

1841

 1842 **9.8.2 GESMES Segment Usage**

1843 In this branching diagram the shaded boxes (Group 14 and ARR) are the ones related to the
 1844 *array structure* and the contained *data* (or references). Group 14 and the following ARR segment
 1845 are shown here as mandatory to indicate that the *Array structure and data Section* is present.



1846

1847

1848

1849 **9.8.3 Features and Guidelines for Use**

1850 The IDE segment provides the data set structure defining the expected sequence of data values
1851 in the ARR segment. In SDMX-EDI it is indicated by the key family identifier. The GIS segment
1852 (first occurrence) indicates which one of the four alternative ways of placing data in the ARR
1853 segment has been used (in SDMX-EDI it is always the same: AR3). The second occurrence of
1854 GIS is used to indicate the missing value character used. In SDMX-EDI the ARR segment
1855 contains the key, the numeric values and their corresponding status flags.

1856

1857 **9.8.4 Array Structure and Data Section: Segment Structure**

1858

1859 array structure1860 IDE+object-type+identity-number'1861 GIS+processing-indicator:list-qualifier:code-maintenance-agency:processing-value'

1862 (GIS has to be present twice)

1863

1864 array data1865 ARR++array-cell-data:array-cell-data:array-cell-data:array-cell-data:array-cell-
1866 data:etc.'

1867 (the sequence just above is the generic expression; for further information, see p. 105 and the
1868 pages which follow)

1869



1870

1871 **Segment Group:****Group 14 (IDE-GIS-GIS)**1872 **Max. Number of Occurrences:****1**1873 **Status:****Mandatory**

1874

1875 Content and General Usage Rules

1876 Group 14 comprises the segments:

- 1877 • [IDE](#) - array structure identification
- 1878 • [GIS](#) - message processing indicator
- 1879 • [GIS](#) - missing value indicator

1880

1881 This group has to be present in all messages containing or referring to data and/or attributes
1882 (including the case of a pure attribute update or delete message; the ARR segment which
1883 follows Group 14 would not be present in this case).

1884

1885

 1886 **Segment Type:** **IDE**

 1887 **Segment Type Name:** *Identity*

 1888 **Max. Number of Occurrences:** *1*

 1889 **Status:** *Mandatory (trigger)*

1890

 1891 Data Element Sequence

 1892 *IDE+object-type+identity-number'*

 1893 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

1894

 1895 Content and General Rules

 1896 This segment is used to indicate the structure of the data set (e.g. how many dimensions, which
 1897 ones and in which order). This information is provided by the key family identifier.

1898 .

1899

 1900 **Example 1:**

 1901 *IDE+5+ECB_BOP1'*

1902

 1903 **Example 2:**

 1904 *IDE+5+BIS_MACRO'*

1905 **Segment Type:** **GIS (first occurrence)**

1906 **Segment Type Name:** *General Indicator*

1907 **Max. Number of Occurrences:** *1*

1908 **Status:** *Mandatory*

1909

1910 Data Element Sequence

1911 *GIS+processing-indicator'*

1912

1913 Data Element Usage Rules

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

1914

1915 Content and General Usage Rules

1916 This segment (first occurrence) is used to define how the data elements are used in the ARR
 1917 segment. In SDMX-EDI it is always AR3.

1918 **Example:**

1919 *GIS+AR3'*

1920 In SDMX-EDI the segment has to be written in this fixed format.

1921

1922

 1923 **Segment Type:** **GIS (second occurrence)**

 1924 **Segment Type Name:** *General Indicator*

 1925 **Max. Number of Occurrences:** 1

 1926 **Status:** *Mandatory*

1927

 1928 Data Element Sequence

1929 GIS+processing-indicator::: processing-value'

1930

 1931 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

1932

 1933 Content and General Usage Rules

1934 This segment (second occurrence) is used in SDMX-EDI to define which is the character used for
 1935 the missing values in the ARR segment. The reading applications should read this character,
 1936 parametrise it and, based on this, they should recognise the missing values in the ARR segment.

1937

 1938 **Example:**

1939 GIS+1:::'

1940 In SDMX-EDI this segment is written in this fixed format.

1941



1942 **Segment Type:** **ARR**

1943 **Segment Type Name:** *Array Information*

1944 **Max. Number of Occurrences:** *999000*

1945 **Status:** *Conditional*

1946 Data Element Sequence in SDMX-EDI

1947 *"Single observation" technique:*

1948 *ARR++series-key:period:time-format:observation:observation-status:obs.-confidentiality:obs-pre-break'*

1949

1950 *ARR++series-key:period:time-format:observation:observation-status:obs.-confidentiality: obs-pre-break'*

1951 *(repeats)*

1952

1953 *"Time range" technique:*

1954 *ARR++series-key:period-range:time-format:observation:observation-status:obs.-confidentiality:obs-pre-*

1955 *break+*

1956 *observation:observation-status:obs.-confidentiality:obs-pre-break +*

1957 *etc.*

1958 *observation:observation-status:obs.-confidentiality:obs-pre-break'*

1959

1960 *ARR++series-key:period-range:time-format:observation:observation-status:obs.-confidentiality:obs-pre-*

1961 *break+*

1962 *observation:observation-status:obs.-confidentiality:obs-pre-break+*

1963 *etc.*

1964 *observation:observation-status:obs.-confidentiality:obs-pre-break'*

1965 *(repeats)*

1966 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 Table 8. period and period range format codes
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. CL_OBS_STATUS with format an1)
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. CL_OBS_CONF with format an1)
Pre-break-observation conditional	Conditional [not used in "delete messages"]	an..15	a numeric observation or a missing value indicator

1967

1968

1969

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

1970

 1971 **Content and General Usage Rules When Reporting Data (for deletions see p.136)**

1972

- **Time series key**

1973

1974

1975

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

1976

Q:BE:100:4.

1977

1978

1979

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

1980

- **Periods, period ranges, time format and time format code list**

1981

1982

1983

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

1984

Example: *single monthly period:* **199505:610** (= May 1995)

1985 *period range (quarterly):* **1994119962:708** (= 1994 Q1 to 1996 Q2)

1986 The table below indicates the formats for period specifications and the time format codes.

1987

1988

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

1989

1990

1991

1992

Data elements: observation and observation level attributes

1993

1994

1995

1996

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

1997 (observation level) attribute "**Observation confidentiality**" and "**Pre-break observation**". Within
1998 the data element the components are separated by the component separator ":" (colon).

1999 **Example:** Data element with 2 components:

2000 1234.5:A (only [observation status](#))

2001 Data element with 3 components:

2002 1234.5:A:C (observation status + [confidentiality](#))

2003 Data element with 4 components:

2004
2005 1234.5:B::1230.5 (observation status, confidentiality not given, [pre-break](#) observation)

2006

2007 Data element with 4 components:

2008 1234.5:B:C:1230.5 (observation status, confidentiality and pre-break observation)

2009

2010 The *time format indication* and the *first data element with an observation* have to be separated
2011 with a component separator ":". The *individual data elements* that follow are then separated by
2012 the data element separator "+" (plus sign), which follows each data element. Due to the GESMES
2013 truncation rules the data element separator, following the last data element in the segment, is
2014 omitted and replaced by the segment terminator sign (' , single quote). The maximum number of
2015 data elements in an ARR segment is 9999, i.e. the overall maximum number of data element
2016 separators ("+") is 10,000 including the 2 immediately following the ARR statement. A time
2017 series with more than 9999 observations has to be split over more than 1 ARR segment. It is
2018 recommended that applications use the maximum number of data elements as a parameter.

2019 **Example:** ...+1234.5:A+234.6:B+3456.7:A' (3 data elements followed by segment
2020 terminator)

2021

2022 **Remarks, rules, special cases and recommendations concerning the handling of**
2023 **observation elements**

2024 In SDMX-EDI this **maximum length** of the component element holding the observation is 15
2025 positions. As a consequence the maximum number of significant figures for an observation is:

2026

⇒ 15 for a positive integer

2027

⇒ 14 for a positive decimal or a negative integer

2028

⇒ 13 for a negative decimal

2029

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

2030

2031 **Scientific notation** may be used for both the observation and the observation pre-break, if
2032 agreed by the parties involved. To express a number in scientific notation¹: omit any plus signs,
2033 as "+" is a reserved character in GESMES and may be misinterpreted; use "E" before the
2034 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.

2035

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

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

2036 Again, in SDMX-EDI, the total length of the field should not exceed 15 characters.

2037 **Pre-break observations** do not have an observation status.

2038

2039 A **missing value** is indicated using a dash ("-") (e.g. ...+-:H+...). The explanation of the absence
2040 of a value is provided by the observation status which follows. (Applications should be parame-
2041 terised for this "missing observation" character, taking its value from the second occurrence of
2042 the GIS segment.)

2043 If there are **unchanged or non-reported values** within a reported time range, the
2044 corresponding separators have still to be written; therefore a sequence “++” means that the
2045 observation which would be expected between the two plus signs is considered either as not
2046 reported or as unchanged vis-à-vis the last reported value (see also [examples below](#) when
2047 discussing the time range technique).

2048 **Observations have always to be reported together with an observation status value.** If an
2049 observation changes and the status is not changed, both components have to be reported.
2050 Likewise, if the observation status changes and the observation remains unchanged, both
2051 components would have to be re-reported; the same would apply also if the observation
2052 confidentiality status changed (relevant for the key families in which this attribute might be used):
2053 all three elements have to be re-reported. **Similarly, if the observation confidentiality status
2054 or the pre-break observation changed, all component elements would have to be re-
2055 reported.** By not reporting, for a certain observation, neither an observation confidentiality
2056 attribute nor an observation pre-break value, the receiver should assume that for this period
2057 values (for the confidentiality status and pre-break) never existed or they cease to exist from
2058 now on.

2059 **Example 1:**

2060 On 10 March 1999 the segment ARR++M:YY:ZZ:199902:610:-7.9:[E:C](#)' was reported.

2061 On 15 March 1999 the segment ARR++M:YY:ZZ:199902:610:-7.9:[A:F](#)' was reported.

2062 The second time the sender resent the observation, because the status (from [E](#)estimate to
2063 [normal](#)) and the observation confidentiality (from "[C](#)Confidential" to "[F](#)Free") were modified.

2064

2065 **Example 2:**

2066 On 10 March 1999 the segment ARR++M:YY:ZZ:199902:610:-7.9:[E:C](#)' was reported.

2067 On 15 March 1999 the segment ARR++M:YY:ZZ:199902:610:-7.9:[A](#)' was reported.

2068 The second time the sender sent the segment without the observation confidentiality value; in
2069 this case the receiver would need to decide how to interpret the fact that the confidentiality
2070 attribute was not reported: he could either delete the previously existing value (C) or leave it
2071 unchanged (i.e. continue to mark the observation as confidential).

2072

2073 **Example 3:**

2074 On 10 April 1999 the segment ARR++M:FG:T1:199902:610:[10:B](#):F:12' was reported.

2075 On 15 April 1999 the segment ARR++M:FG:T1:199902:610:[10:A](#):F' was reported.

2076 Here it is assumed that in the first transmission (10-Apr-1999) the sending institution reported a
2077 break in series together with a pre-break value. In the second transmission it is now assumed



2078 that the sending institution revised all back data, built a series without breaks and re-reported the
2079 same observation without the "break" flag and without the pre-break observation.

2080 **Time range and single observation technique**

2081 With the *time range technique* the period and time format specification in the ARR segment are
2082 set to define a range of periods, which is then followed by a number of data elements, which has
2083 to exactly match the number periods in the defined time range.

2084 Also, as it had been discussed earlier (see paragraph describing the data elements of the ARR
2085 segment):

- 2086 • no more than 9,999 observations can be reported in the same ARR segment;
- 2087 • **the first and the last observation of the range should be explicitly written in the**
2088 **segment:** in this way, the number of observations reported in an ARR segment should
2089 always be equal to the number of periods indicated by the time range (otherwise, the
2090 EDIFACT truncation rules would allow deviation from this principle).

2091 **Example 1. - time range technique**

2092 ARR++M:YY:ZZ:199301199304:710:39.9:A+21.5:A+23.4:A+43.0:E'

2093 This segment contains four observations (with their corresponding status) for the series
2094 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
2095 and the observation 43.0 (E) is for Apr.93.

2097 ⇒ With the *single observation technique* the period and time format specification are set to
2098 define a single time period, which is then followed by a single component data element for the
2099 observation and its attribute(s).

2100

2101 **Example 2. - single period technique**

2102 ARR++M:YY:ZZ:199301:610:39.9:A'

2103 ARR++M:YY:ZZ:199302:610:21.5:A'

2104 ARR++M:YY:ZZ:199303:610:23.4:A'

2105 ARR++M:YY:ZZ:199304:610:43.0:E'

2106 These four segments contain one observation each and they are equivalent to the single
2107 segment shown in the previous example.

2108
2109 The two techniques can be mixed in the same message (but, of course, not within the same
2110 ARR segment):

2111

2112 **Example 3:**

2113 the following set of segments is valid (and equivalent to the ones shown in examples 1 & 2):

2114 ARR++M:YY:ZZ:199301:610:39.9:A'

2115 ARR++M:YY:ZZ:199302199304:710:21.5:A+23.4:A+43.0:E'

2116 and the following one (example 4) is also valid and an equivalent form of the previous set of
2117 segments:

2118 **Example 4:**

2119 ARR++M:YY:ZZ:199301199302:710:39.9:A+21.5:A'

2120 ARR++M:YY:ZZ:199303:610:23.4:A'

2121 ARR++M:YY:ZZ:199304:610:43.0:E'

2122

2123 The examples below (5, 6 and 7) show the use of the two techniques when “reporting”
2124 **unchanged or non-reported observations** and their flags (it was discussed theoretically on a
2125 [previous page](#)); of course, it makes sense to refer to reporting of *unchanged* observations only
2126 when using the *time range technique*.

2127 **Example 5:**

2128 It is assumed that an institution has to report for the series M:YY:ZZ only data for Nov.92, Jan.93
2129 and Apr.93 since only these data were revised or updated (the observation for April 1993 is an
2130 estimate and it should be treated as confidential); for Dec92, Feb93 and Mar93 the data which
2131 had been reported in the past remain still valid:

2132 *Series:* M:YY:ZZ

2133 Nov92 Dec93 Jan93 Feb93 Mar93 Apr93

2134 **-7.9** (A) unchanged **37.8**(A) unchanged unchanged **43** (E, C)

2135 When using the time range technique all separators (including the ones referring to the
2136 unchanged observations) should be explicitly written; then, the sequence above is reported as:

2137 ARR++M:YY:ZZ:199211199304:710:-7.9:A++37.8:A+++43:E:C'

2138

2139 **Example 6:**

2140 The following three segments, written using the single observation technique, are equivalent to
2141 the one presented just above (example 4):

2142 ARR++M:YY:ZZ:199211:610:-7.9:A'

2143 ARR++M:YY:ZZ:199301:610:37.8:A'

2144 ARR++M:YY:ZZ:199304:610:43:E:C'

2145

2146 **Example 7:**

2147 In the following segments, another way is shown to report the same data by mixing the two
2148 techniques:

2149 ARR++M:YY:ZZ:199211199301:710:-7.9:A++37.8:A'

2150 ARR++M:YY:ZZ:199304:610:43:E:C'

2151

2152

2153 **Practical application of the two techniques:**

2154 In general, because of the elimination of redundant information, the *time range technique* is the
2155 most preferred method for exchanging complete time series or databases: e.g. in the first
2156 reporting of a new series to a centre institution or when a central institution disseminates a full
2157 data base to other institutions.

2158 The *single observation technique* is simple and efficient for reporting a single observation per
2159 series, for example in the updates and revisions context. It can be useful also in the case of
2160 series with sparse irregular observations; e.g. for some series with only some observations per
2161 year, it is sensible to report only these observations (e.g. using daily frequency with the single
2162 observation technique). Usually, this is a matter which will be administrated by the centre (e.g. if
2163 the observations are not too sparse, it might be preferable to keep a continuous track of the
2164 exchanged series using missing values in conjunction with the “cannot-exist” obs. status).

2165 *In general*, both the *time range* and the *single observation* technique are equally valid.

2166

2167 **The use of the Pre-break value attribute: examples**

2168 The following examples correspond to [Example 1](#) and [2](#) previously shown. The difference is that
2169 here they also include a pre-break value.

2170 **Example 1 - time range technique:**

2171 ARR++M:YY:ZZ:199301199304:710:39.9:A+21.5:B::20.1+23.4:A+43.0:E'

2172 The observation for Feb.93, which is a break, includes also **a pre-break-observation 20.1**.

2173 **Example 2 - single period technique:**

2174 ARR++M:YY:ZZ:199301:610:39.9:A'

2175 ARR++M:YY:ZZ:199302:610:21.5:B::20.1'

2176 ARR++M:YY:ZZ:199303:610:23.4:A'

2177 ARR++M:YY:ZZ:199304:610:43.0:E'

2178 The same as before, using the single period technique.

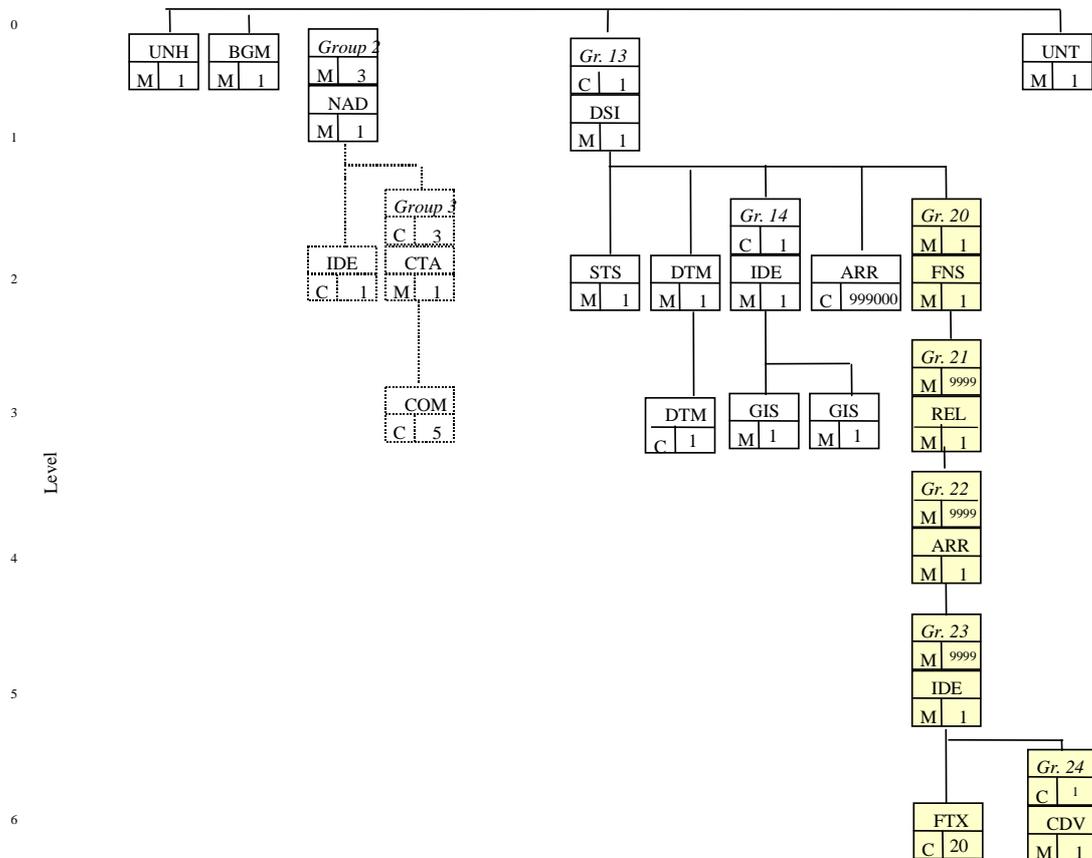
2179 **9.9 Attribute Section**

 2180 **9.9.1 Scope**

2181 An attribute is an object relating to (i) to an observation or (ii) to a time series or (iii) to a group of
 2182 sibling series or to (iv) a data set. It provides information about the corresponding data (at that
 2183 level), such as the measurement unit or the confidentiality status. An attribute can be coded
 2184 (taking values from a code list) or uncoded (free text). The purpose of the segments included in
 2185 the Attributes Section is to allow the exchange of attributes at the levels foreseen by the data
 2186 model.

 2187 **9.9.2 GESMES Segment Usage**

2188 The Attributes Section comprises all groups from Group 20 to 24 (they are shown shaded in the
 2189 diagram below). These groups have to be used in order to exchange attributes (that it is why
 2190 Group 20 is shown here as mandatory). Regardless of whether the message carries
 2191 observations as well (in which case the ARR segment which follows Group 14 would be also
 2192 used), Groups 13 and 14 need also to be used as they provide information about the relevant
 2193 data set and key family.
 2194



2195

2196 Guidelines for Usage

2197 Group 20 is used always in the Data and Attribute message (or in an “attribute only” update
2198 message). It is used also when specific attributes need to be deleted.

2199 The attributes are all included in a set introduced by the [FNS](#) segment.

2200 The [REL](#) segment is used to define the scope of the attribute in terms of the object type to which
2201 the attributes relate.

2202 The [ARR](#) segment defines the statistical objects to which the attributes relate.

2203 The [IDE](#) segment identifies the statistical concept.

2204 If the statistical concept is coded, then the [CDV](#) segment provides its value;

2205 If it is uncoded, then the [FTX](#) segment contains the textual value.

2206

2207

2208 **9.9.3 Attribute Section: Segment Structure**

2209

2210 *FNS+set-identifier:identity-number-type'*

2211 *REL+relationship-type+array-scope'*

2212 *ARR+last-dimension-position+array-cell-data:array-cell-data:array-cell-data:etc.'*

2213 *IDE+object-type+identifier'*

2214 *CDV+code-value' or*

2215 *FTX+text-subject+++text'*

2216

2217

2218

2219



2220 **Segment Group:** **Group 20 (FNS-Group 21)**

2221 **Max. Number of Occurrences:** *1*

2222 **Status:** *Conditional*

2223 *Content and General Usage Rules*

2224 This group contains a set of attributes relevant to the specified data set and following the
2225 specified key family definition in use throughout this message.

2226 The **examples** used for the segments relating to the FNS group on attributes are built up in such
2227 a way that with each added segment the reader retains the overall view of the whole group. The
2228 completed examples are then presented following the description of the CDV segment (Group
2229 24).

2230 **Segment Type:** **FNS**

2231 **Segment Type Name:** *Footnote Set*

2232 **Max. Number of Occurrences:** *1*

2233 **Status:** *Mandatory (trigger)*

2234

2235 Data Element Sequence

2236 FNS+*set-identifier:identity-number-type*'

2237 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.: Attributes
identity-number-type	<u>mandatory</u> the object is "attribute" (=10)	an..3	10 - Attributes

2238

2239 Content and General Usage Rules

2240 This segment is used to identify the attribute set. In principle, the reading applications will use
 2241 the FNS segment to confirm that an attribute section starts, but they can ignore the *set-identifier*
 2242 given in the segment (it is enough to acknowledge the existence of the FNS segment).

2243

2244 **Example:**

2245 FNS+[Attributes:10](#)'

2246 In the examples which follow in the next few subsections, the FNS segment is not shown again,
 2247 as it has a constant format.



2248 **Segment Group:** **Group 21 (REL-Group 22)**

2249 **Max. Number of Occurrences:** 9999

2250 **Status:** *Conditional*

2251 *Content and General Usage Rules*

2252 This group contains a specification of the scope of the attribute(s) (REL), followed by the
2253 attributes (group 22).

2254 **Segment Type:** REL

2255 **Segment Type Name:** Relationship

2256 **Max. Number of Occurrences:** 1

2257 **Status:** Mandatory (trigger)

2258 Data Element Sequence

2259 REL+relationship-type+array-scope'

2260 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

2261 Content and General Usage Rules

2262 This is used to provide the scope of the footnote(s) or attribute(s).

2263 Dependencies

2264 The *array-scope* given here should be consistent with the contents of the Group 22-ARR
2265 segment which follow (until a new REL is found). If *array-scope*=4, then in the ARR segments
2266 (which follow the REL segment) the references should be to specific dimension values
2267 identifying either a time series or a sibling group (in the latter case the frequency would be
2268 wildcarded). If *array-scope*=5, then the references for the attributes will indicate attachments at
2269 the observation level (all dimensions plus time reference plus time-format). If *array-scope*=1,
2270 then the ARR segments which follow should not contain dimension values, but all dimensions
2271 should be wild-carded (attributes attached at the data set level).

2272 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

2273 Example 2 - attributes for sibling series:

REL+Z01+4'

Array scope is "combination of dimension values"

...

ARR segment to follow

2274

2275 **Example 3 - attributes for a time series:**

REL+Z01+4'

Array scope is "combination of dimension values"

...

ARR segments to follow

2276

2277 **Example 4 - attribute for an individual observation:**

REL+Z01+5'

Array scope is "observation"

...

ARR segments to follow

2278

2279

2280 **Segment Group:** **Group 22 (ARR-Group 23)**

2281 **Max. Number of Occurrences:** 9999

2282 **Status:** *Conditional*

2283

2284 *Content and General Usage Rules*

2285 This group contains an ARR segment which defines the statistical objects to which the attributes
2286 which follow refer.

2287 Then, the name (identifier) of the attribute follows (in an IDE segment) and its value follows
2288 which can be:
2289 either text (FTX segment)
2290 or a value from a code list (group 24, CDV)
2291

2292 The examples that are presented in this subsection include also relevant segments (e.g. REL)
2293 which should precede the appearance of the segments of the group.
2294

2295



2296

2297 **Segment Type:** **ARR**

2298 **Segment Type Name:** *Array Information*

2299 **Max. Number of Occurrences:** *1*

2300 **Status:** *Mandatory (trigger)*

2301

2302 Data Element Sequence

2303 *ARR+last-dimension-position+array-cell-data:array-cell-data:array-cell-data:etc.'*

2304 Data Element Usage Rules

local name	usage rules	format	SDMX-EDI code values
Last-dimension-position	<p><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.</p>	an..12	This value can be: (a) the number of dimensions in the key family (for attributes at sibling group or time series level) (b) the number of dimensions in the key family increased by two (for the OBS_COM attribute) (c) 0 - for attributes attached at the data set level (as identified by the DSI segment).
Array-cell-data	<p><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 format</i></p>	an..35	see examples; (not used for attributes attached at the data set level)

2305

2306

2307

2308 Content and General Usage Rules

2309 The segment is used to specify the values in the data set for which the attribute(s) are relevant.

2310 For attributes at the observation level, the *last-dimension-position* is the number of dimensions
 2311 plus two: the reason is that the conceptual dimension time (which is needed in order to address
 2312 the observation level) is represented in GESMES by two physical dimensions: period and time
 2313 format (see also examples).

2314 For attributes at the data set level, the *last-dimension-position* must be set equal to 0: this is the
 2315 method to wildcard all dimension values.

2316 This ARR segment plays an important role also in deletions of attributes (see p. 136).

2317

2318 **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 segments to follow

2319

2320 **Example 2 - attributes for sibling series:**

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

2321

2322 **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 segments to follow

2323

2324 **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 segments to follow

2325 These attribute segments refer to the observation for [June 1996](#) of the series [M:XX:ZZ:CC](#).



2326 It is obvious that in this case we have to write ARR+6, because apart from the key family
2327 dimensions (=4) the reading applications should expect *two more dimension references* which
2328 are needed to refer to a specific period (the “199606” -date component- and the “610” -format
2329 component-). **This is an important point to be taken into account when designing both the**
2330 ***writing and reading* applications.**

2331

2332 **Segment Group:****Group 23 (IDE-FTX-Group 24)**2333 **Max. Number of Occurrences:** 99992334 **Status:** *Conditional*

2335

2336 *Content and General Usage Rules*

2337 Each occurrence of this group is used to identify an attribute which relates to the object specified
2338 in the preceding ARR segment. The attribute present in the IDE segment can be assigned as
2339 value:

2340 either a text (FTX segment) for an uncoded attribute

2341 or a value from a code list (group 24, CDV) for a coded attribute

2342

 2343 **Segment Type:**
IDE

 2344 **Segment Type Name:** *Identity*

 2345 **Max. Number of Occurrences:** 1

 2346 **Status:** *Mandatory (Trigger)*

2347

 2348 Data Element Sequence

2349 IDE+object-type+identifier'

 2350 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 - coded attribute Z11 - uncoded attribute
identifier	<u>mandatory</u> the identity of the object	an..35	attribute identifier

2351

 2352 Content and General Rules

 2353 Each occurrence of this segment is used to identify an attribute related to the object specified in
 2354 the preceding ARR segment.

 2355 The *identifier* in this segment points

 2356 either to the *text* in the FTX segment

 2357 or to the *code-value* in Group 24 (CDV)

2358 which follow.

2359

2360

 2361 **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

- 2362 **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 |
| ... | CDV segment to follow |
| IDE+Z11+TITLE' | Uncoded attribute TITLE |
| ... | FTX segment to follow |
- 2363
- 2364 **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 |
| ... | CDV segment to follow |
| IDE+Z11+COLL_DETAIL' | Uncoded attribute COLL_DETAIL |
| ... | FTX segment to follow |
- 2365
- 2366 **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 segment to follow |

2367

2368

2369 **Segment Type:** **FTX**

2370 **Segment Type Name:** *Free Text*

2371 **Max. Number of Occurrences:** *20*

2372 **Status:** *Conditional*

2373 Data Element Sequence

2374 FTX+text-subject+++text:text:text:text:text'

2375 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)

2376 Content and General Usage Rules

2377 Each occurrence of this segment is used to provide the text value of an uncoded attribute. The
 2378 overall allowed length of the text depends on the specification of the respective attribute in the
 2379 key family definition. If the foreseen length is longer than 70 characters (upper limit for original
 2380 text inside a single component element, not counting [release characters](#)), then the *text* should
 2381 be split in (the maximum) 5 component element-texts (each one of them not being longer than
 2382 70 characters and separated among them with a *component separator*). The reading
 2383 applications should read the components of the received text and consider that they form a
 2384 string which is the result of the added sub-strings. The writing applications should break the
 2385 original text into pieces of 70 characters or shorter (it does not matter whether a word is broken
 2386 between two component elements or not), keeping spaces as significant characters and adding
 2387 release characters as required afterwards.

2388 Multiple FTX segments can be sent (up to 20, one below the other) and the reading applications
 2389 should consider them as an ordered sequence of sections of the same text. As before, the use
 2390 of a new FTX does not imply that this should be interpreted as *line feed*.

2391 The free text in FTX should respect the EDIFACT rules for the treatment of the characters used in
 2392 the syntax (see also separate chapter on using [text in uncoded attributes](#)).

2393



2394 **Example 1 - coded attribute for a data set:**

2395

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

2396

2397

2398 **Example 2 - attributes for sibling series:**

2399

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
FTX+ACM+++MONETARY AGGREGATE	Attribute text value
M1'	

2400

2401

2402 **Example 3 - attributes for a time series:**

2403

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
FTX+ACM+++COLLECTED ON 2 LAST	Attribute text value
WORKING DAYS OF THE MONTH'	

2404

2405

2406 **Example 4 - attribute for an individual observation:**

2407

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
METHOD'	Attribute text value

2408



2409

2410

2411 **Segment Group:** **Group 24 (CDV)**

2412 **Max. Number of Occurrences:** *1*

2413 **Status:** *Conditional*

2414

2415 *Content and General Usage Rules*

2416 This group provides the value of a coded attribute.

2417 **Segment Type:** **CDV**

2418 **Segment Type Name:** *Code value*

2419 **Max. Number of Occurrences:** *1*

2420 **Status:** *Mandatory*

2421

2422 Data Element Sequence

2423 *CDV+code-value'*

2424 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

2425

2426 Content and General Rules

2427 Each occurrence of this segment is used to assign a value to the attribute specified in the
2428 preceding IDE segment.

2429

2430 **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+USD'	code value for US dollar

2431 **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
CDV+A'	code value: A (=assumed to mean availability="free")
IDE+Z11+TITLE'	Uncoded attribute TITLE
FTX+ACM+++MONETARY AGGREGATE	attribute text value
M1'	

2432

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
CDV+A'	coded value for collection is A = "average of period"
IDE+Z11+COLL_DETAIL'	Uncoded attribute COLL_DETAIL
FTX+ACM+++simple arithmetic mean of daily values'	attribute text value

2433

2434

Example 4 - attribute for an individual observation:

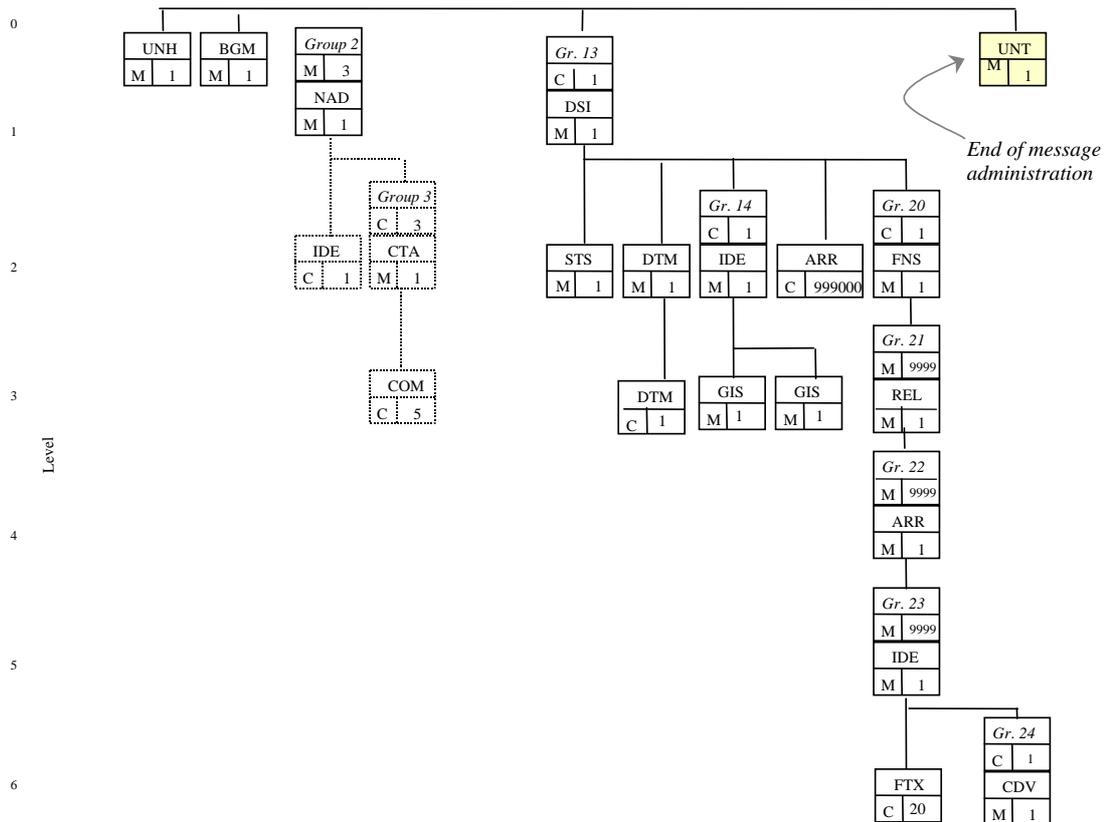
REL+Z01+5'	Array scope is "observation"
ARR+6+M:XX:ZZ:CC:199606:610'	attached to obs. of June 1996 for series M:XX:ZZ:CC
IDE+Z11+OBS_COM'	uncoded attribute OBS_COM
FTX+ACM+++NEW	ACCOUNTING attribute text value
METHOD'	

2435

2436 **9.10 End of Message Administration Section**

 2437 The UNT segment ends the message and contains control count data that can be used to check
 2438 the integrity of the data received.

2439





2440

2441 **Segment Type:** **UNT**

2442 **Segment Type Name:** *Message Trailer*

2443 **Max. Number of Occurrences:** *1*

2444 **Status:** *Mandatory*

2445

2446 Data Element Sequence

2447 UNT+*number-of-segments+message-reference-number*'

2448 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: MREFnnnnnn

2449

2450 Content and General Usage Rules

2451 This segment ends the message and contains control data that can be used to validate message
2452 integrity.

2453

2454

2455 **Example:**

2456 UNT+59+MREF000001'

2457 This message contains 59 segments and the UNH which started the message has a message-
2458 reference-number of MREF000001

2459



2460 **9.11 End of Interchange Administration Section**

2461 The UNZ segment ends the interchange (UNZ) and contains control count data that can be used
2462 to check the integrity of the messages received.



2463 **Segment Type:** **UNZ**

2464 **Segment Type Name:** *Interchange Trailer*

2465 **Max. Number of Occurrences:** *1*

2466 **Status:** *Mandatory*

2467

2468 Data Element Sequence

2469 UNZ+number-of-messages+interchange-reference'

2470 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: IREFnnnnnn

2471

2472

2473 Content and General Usage Rules

2474 This segment ends the interchange and it is put immediately following the last UNT of the last
 2475 message of the interchange. It contains a count of the number of messages in the interchange
 2476 and a reference number that can be used to validate the integrity of the interchange.

2477

2478

2479 **Example:**

2480 UNZ+3+IREF000006'

2481 There are three messages in the interchange and the value of the interchange-reference in the
 2482 UNB that relates to this UNZ is IREF000006

2483

2484 **10 DELETE MESSAGES**

2485 A SDMX-EDI message turns into a message containing *delete directives* when its STS segment
2486 has been written as:

2487 `STS+3+6'`

2488 Once this segment has been found, the message is considered as a **delete message**. All its
2489 ARR segments should then contain exclusively references to values of objects which should be
2490 deleted; all references for deletion should refer exclusively to statistical objects belonging or
2491 related to the data set indicated by the DSI segment of this message.

2492

2493 **10.1 Rules and Techniques for Deletions**

2494 References for deletions can appear in two different parts of a “delete” message and they are
2495 discussed separately below:

2496 **10.1.1 Deletions of observations, time series, sibling groups and data sets**

2497 These deletions are activated via references appearing in the main set of ARR segments
2498 (FOLLOWING GROUP 14) of the message

2499 **Rule:** *numeric observations cannot be present in the ARR segments of the message.*

2500 **Deletion of specific observations and the corresponding observation flags (observation
2501 status, observation confidentiality, observation pre-break);**

2502 *recommendation:* *deletions which could create conceptually unjustified “holes” within a time
2503 series composed of continuous observations should be avoided;*

2504 e.g. if `M:XXX:YYY` and `M:XXX:ZZZ` are the keys of two series, then the segments

2505 `ARR++M:XXX:YYY:199201:610'` and

2506 `ARR++M:XXX:ZZZ:199203:610'`

2507 imply the deletion of the `Jan92`-observation (and the corresponding obs. flags) for the series
2508 `M:XXX:YYY` and the deletion of the `Mar93`-observation (and the corresponding obs. flags) for the
2509 series `M:XXX:ZZZ`

2510 **Deletion of ranges of observations and the corresponding observation flags (observation
2511 status, observation confidentiality, observation pre-break);**

2512 *recommendation:* *deletions which could create conceptually unjustified “holes” within a time
2513 series composed of continuous observations should be avoided;*

2514 e.g. if `M:XXX:YYY` is the key of the series, then the segment
2515 `ARR++M:XXX:YYY:199201199205:710'`

2516 implies the deletion of the observations of the series (and its attributes) from `Jan.1992` to
2517 `May.1992`.

2518 **Deletion of a specific time series;**

2519 **Rule:** *dates/periods/time ranges cannot be present in segment;*

2520 e.g. if **M:BE:XXX:YYY** is the key of a series, then the segment

2521 **ARR++M:BE:XXX:YYY'**

2522 implies the deletion of this series and all its attribute values at all levels not higher than the time
2523 series level (incl. the coded and uncoded attribute values)

2524 **Deletion of a group of sibling series;**

2525 *Rule: dates/periods/time ranges cannot be present in segment;*

2526 e.g. if **:BE:XXX:YYY** is the key of the sibling group (second position: frequency wildcarded: for
2527 any frequency), then the segment

2528 **ARR++:BE:XXX:YYY'**

2529 implies the deletion of all series of the group (e.g. **Q:BE:XXX:YYY** and **M:BE:XXX:YYY**) and all
2530 their attribute values at all levels not higher than the sibling group level (incl. the coded and
2531 uncoded attribute values).

2532 **Deletion of a whole data set;**

2533 *Rule: dates/periods/time ranges cannot be present in segment;*

2534 In this case, the ARR segment should be written in the following way: **ARR+0'**

2535 This segment should imply the deletion of all series and all attribute values of the data set
2536 indicated by the DSI segment of the message.

2537 **10.1.2 Deletions of attributes**

2538 These deletions are activated via references appearing in the set of Group 21-ARR segments:

2539 *Rule: both the ARR and IDE segments should be present in a delete message, but CDV or FTX segments
2540 (which follow in a normal update message) cannot be present in this case.*

2541 **Deletions of specific observation comments (Obs_Com) at the observation level**

2542 e.g. the segments

2543 **ARR+7+M:ABB:A:DE:S1:199606:610'**

2544 **IDE+Z11+OBS_COM'**

2545 imply the deletion of the observation comment value for **Jun.96** for the series **M:ABB:A:DE:S1**.

2546 **Deletions of specific attributes at a series level;**

2547 e.g. the segments

2548 **ARR+5+M:ABB:A:DE:S1'**

2549 **IDE+Z11+COVERAGE'**

2550 imply the deletion of the value of the attribute **COVERAGE** for the series **M:ABB:A:DE:S1**.

2551 **Deletions of specific attributes at a sibling group level;**

2552 e.g. if in this key family the attribute **COVERAGE** has been defined at the sibling group level and
2553 frequency is the first dimension of the key family, then the segments

2554 **ARR+5+:ABB:A:DE:S1'**

2555 **IDE+Z11+COVERAGE'**

2556 imply the deletion of the value of the attribute **COVERAGE** for the sibling group **:ABB:A:DE:S1**.

2557 **Deletion of specific attributes at a data set level;**
2558 e.g. if in this key family the attribute [OTHER_METH_EXPL](#) has been defined at the data set
2559 level, then the segments
2560 `ARR+0'`
2561 `IDE+Z11+OTHER_METH_EXPL'`
2562 imply the deletion of the text for the attribute [OTHER_METH_EXPL](#) .
2563 **Remark:** it is assumed that, before writing the ARR/IDE pairs, appropriate settings have been
2564 used for the REL segment: [REL+Z01+4'](#) for deleting time series' and sibling groups' attributes,
2565 [REL+Z01+5'](#) for deleting observation comments and [REL+Z01+1'](#) for data set attributes'
2566 deletions.

2567

2568 **10.2 Comments on Deletions**2569 **Deletions** affect:

- 2570 • objects identified by the ARR segment which comes immediately after Group 14 (for deletion
2571 of observations, series, sibling groups and data sets);
- 2572 • specific attribute values identified via references in the ARR segment of Group 22 (in
2573 conjunction with a corresponding attribute identifier).

2574 **Deletion of observations** or ranges of observation should not create “holes” in a series
2575 containing continuous observations or if these holes could not be conceptually justified. Usually,
2576 an observation deletion is expected at the start or the end of a series. For example, should a
2577 need arise to temporarily “delete” an observation in the middle of a series with continuous
2578 observations (for example if the value is wrong and the correct one is not known yet), an
2579 “update” instruction should be used instead: a “missing value” should be sent with an
2580 appropriate missing value explanation flag (a value of the corresponding OBS_STATUS attribute
2581 indicating the reasoning for the reported missing value).

2582 **The deletion of a whole data set** can be initiated only by the centre which informs the receiving
2583 ends in advance, using other administrative means, providing a timetable and describing the
2584 concrete actions which should take place. The deletion of a data set implies the deletion of all
2585 series included in the data set and of their corresponding attribute values at all levels
2586 (observation, time series, sibling, data set). The key family, from which the data set took its
2587 structure, is not affected by the deletion of the data set.

2588 **The deletion of structural definitions (e.g. key families) using automated means is not**
2589 **foreseen.** If such a need arises, administrative guidance will be provided by the centre
2590 administrating the corresponding data exchange (if the institution administrating the data
2591 exchange is different from the institution devising the structural definitions used, a prior
2592 consultation between the two central institutions might be needed).



2593 **11 MESSAGE ACKNOWLEDGEMENTS**

2594 SDMX-EDI does not currently support message acknowledgements.

2595 Message acknowledgement services provided by a centre may differ between centres.

2596 **12 TEXT IN UNCODED ATTRIBUTES: RULES AND CONSIDERATIONS**

2597 **12.1 Character Set**

2598 In a SDMX-EDI message the upper case Latin character set, the service characters (: ' ? +), the
2599 dash (used in negative numbers and to denote missing values) and the dot (decimal point in
2600 numbers) are used; **text given as a value to an uncoded attribute can also use any**
2601 **character of the [standard character set](#) (e.g. lower case characters) and characters of the**
2602 **[extended set](#) (160-255), e.g. é, ñ, ê, ö, ç.** However, the use of the extended character set needs
2603 to be evaluated before being put in production, as it could create interoperability problems
2604 between partners' applications.

2605 When a need arises to use another character set beyond Latin (e.g. Greek, Cyrillic, Japanese),
2606 then Latin characters should be used chosen according to the closest sound of the characters.

2607

2608 **12.2 Special Characters**

2609 ***Special non-alphanumeric characters in uncoded attributes should be used with caution:***

2610 beyond the ANSI/ASCII code number 126, only the ANSI-accented-characters are allowed
2611 especially, control characters (coded in [positions 128 - 159](#)) must not be used inside a SDMX-
2612 EDI message, as they cause problems in applications.

2613 The release character (“?” in SDMX-EDI) must precede any appearance of the SDMX-EDI
2614 service characters (+':?), but it should not precede decimal points; see also Appendix on the
2615 [EDIFACT](#) syntax. The [release character](#) should not be included in the character count for FTX
2616 component elements.

2617

2618 **12.3 Uncoded Attribute Values: Maximum Length of Text**

2619 The length of the text that can be used in an uncoded attribute value is specified in the key
2620 family definition. This issue is discussed extensively on page 64 and 127 (providing also a
2621 number of examples): a FTX segment can contain up to 350 characters (broken down to five
2622 component elements of maximum 70 characters of original text each¹). The general
2623 recommendation for uncoded attributes is not to use more than one FTX segment per uncoded
2624 attribute, therefore, the resulting string not to exceed 350 characters of original text in total.

2625

¹ 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.

2626 **13 EXAMPLE MESSAGES**

 2627 **13.1 Data Update Message**

 2628 Let us assume that the following data have to be sent by the National Bank of Belgium to the
 2629 ECB:

 2630 **Key family: PRICES_TEST_DATA** - Monthly data for five time series
 2631

	M:BE:PROD:	M:BE:CONS:	M:BE:WHOL:	M:BE:WHOL:	M:BE:WHOL:
Sep.95	GN:NS	GN:NS	GN:NS	RM:NS	RM:SA
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

 2632 **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	<i>etc.</i>	
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

2633

2634

 2635 As it is shown on the table above the last two daily observations have been flagged as
 2636 confidential.
 2637



2638 For the series [M:BE:IR:MM:THRM](#) the observation 4.10:A for February 1994 was revised and
2639 needs to be reported as well.

2640

2641 For the monthly series [M:BE:IR:MM:THRM](#) the following observations have also to be sent:

<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>
4.24 A	4.22 A	3.98 A	3.84 A	3.53 A	3.32 A	3.31 A

2644

2645 The following sequence of segments is a full interchange containing two messages (one for
2646 each key family) and performs the required reporting:



2647
2648 **BE2=National Bank of Belgium, 4F0=ECB**
2649 *see CL_ORGANISATION code list*
2650 **interchange header**
2651
2652 **first message header**
2653
2654 **data set identifier**
2655
2656 **key family identifier**
2657
2658
2659
2660
2661 **series key**
2662 **time range technique**
2663
2664
2665
2666
2667
2668
2669
2670
2671
2672
2673
2674
2675
2676
2677
2678 **first message trailer**
2679
2680
2681 **second message header**
2682
2683
2684
2685
2686
2687
2688
2689
2690 **missing values**
2691

```
UNA:+.?'
UNB+UNOC:3+BE2+4F0+970613:0800+IREF000001++SDMX-EDI+++1'

UNH+MREF000001+GESMES:2:1:E6'
BGM+74'
NAD+Z02+ECB'
NAD+MR+4F0'
NAD+MS+BE2'
DSI+PRICES_TEST_DATA'
STS+3+7'
DTM+242:199705281419:203'
IDE+5+PRICES_TEST_DATA'
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:A'
ARR++Q:BE:PROD:GN:NS:1995419961:708:98.67:A+99.67:A'
ARR++M:BE:CONS:GN:NS:199509199603:710:112.20:A+112.30:A+112.40:A+112.50:A+112.70:A+113.10:A+113.80:A'
ARR++Q:BE:CONS:GN:NS:1995419961:708:112.40:A+113.20:A'
ARR++M:BE:WHOL:GN:NS:199509199603:710:111.80:A+112.10:A+111.90:A+112.10:A+112.40:A+112.30:A+112.00:A'
ARR++Q:BE:WHOL:GN:NS:1995419961:708:112.03:A+112.23:A'
ARR++M:BE:WHOL:RM:NS:199509199603:710:110.20:A+110.10:A+110.00:A+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:A'
ARR++M:BE:WHOL:RM:SA:199509199603:710:102.90:A+103.00:A+104.60:A+106.30:A+109.00:A+111.10:A+109.80:A'
ARR++Q:BE:WHOL:RM:SA:1995419961:708:104.63:A+109.97:A'
UNT+22+MREF000001'

UNH+MREF000002+GESMES:2:1:E6'
BGM+74'
NAD+Z02+ECB'
NAD+MR+4F0'
NAD+MS+BE2'
DSI+INT_RATES_TEST'
STS+3+7'
DTM+242:199705311400:203'
IDE+5+INT_RATES_KF'
GIS+AR3'
GIS+1:::-'
```



```

2692  ARR++D:BE:IR:MM:THRM:1995090119960329:711:4.31:A+-:H+-:H+4.30:A+4.32:A+4.25:A+4.
2693  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
2694  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
2695  :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:
2696  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
2697  +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+
2698  -: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+-
2699  :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.
2700  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
2701  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
2702  +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+
2703  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
2704  .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.
2705  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
2706  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+-
2707  :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
2708  +:-:H+-:H+3.31:A+3.31:A+3.31:E+3.32:F+C+3.33:F:C'
2709  ARR++M:BE:IR:MM:THRM:199402:610:4.10:A'
2710  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+
2711  3.31:A'
2712  UNT+15+MREF000002'
2713
2714  UNZ+2+IREF000001'

```

obs-confid (2nd -optional- attr.)

second message trailer

interchange trailer

2718 In a completely realistic scenario, the *line feed* characters are not needed after the end of each
2719 segment and the whole interchange could be transmitted in only *one line*. This is shown below,
2720 in the following interchange:

```

2721  UNA:+.? 'UNB+UNOC:3+BE2+4F0+970613:0800+IREF000002++SDMX-
2722  EDI+++1'UNH+MREF000001+GESMES:2:1:E6'BGM+74'NAD+Z02+ECB'NAD+MR+4F0'NAD+MS+BE2'DSI+PRIC
2723  ES_TEST_DATA'STS+3+7'DTM+242:199705281419:203'IDE+5+PRICES_TEST_DATA'GIS+AR3'GIS+1:::-'
2724  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+
2725  99.80:A'ARR++Q:BE:PROD:GN:NS:1995419961:708:98.67:A+99.67:A'ARR++M:BE:CONS:GN:NS:199509
2726  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
2727  S:GN:NS:1995419961:708:112.40:A+113.20:A'ARR++M:BE:WHOL:GN:NS:199509199603:710:111.80:A
2728  +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:
2729  708:112.03:A+112.23:A'ARR++M:BE:WHOL:RM:NS:199509199603:710:110.20:A+110.10:A+110.00:A+
2730  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
2731  :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
2732  11.10:A+109.80:A'ARR++Q:BE:WHOL:RM:SA:1995419961:708:104.63:A+109.97:A'UNT+22+MREF00000
2733  1'UNH+MREF000002+GESMES:2:1:E6'BGM+74'NAD+Z02+ECB'NAD+MR+4F0'NAD+MS+BE2'DSI+DAILY_INT_R

```



2734 ATES_TEST'STS+3+7'DTM+242:199705311400:203'IDE+5+DAILY_INT_RATES_TEST'GIS+AR3'GIS+1:::-
2735 '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
2736 .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.
2737 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
2738 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
2739 :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+-
2740 :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+-
2741 :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+-:
2742 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
2743 +3.79:A+3.81:A+3.79:A+3.80:A+3.79:A+-:H+-:H+-:H+-:H+3.76:A+3.74:A+3.73:A+-:H+-:H+-:H+3.
2744 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
2745 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
2746 :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:
2747 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
2748 +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+
2749 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
2750 .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
2751 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+
2752 IREF000002'

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2765 **13.2 Data and Attribute Update Message**

2766 UNA:+.? ' *interchange administration section*
 2767 UNB+UNOC:3+BE2+4F0+970926:1948+IREF000001++SDMX-EDI+++1'
 2768 UNH+MREF000001+GESMES:2:1:E6'
 2769 BGM+74'
 2770 NAD+Z02+EMI'
 2771 NAD+MR+4F0'
 2772 NAD+MS+BE2'
 2773 IDE+10+Test message (26-Sep-97)'
 2774 DSI+EMI_TEST_BOP'
 2775 STS+3+7'
 2776 DTM+242:199709261948:203'
 2777 IDE+5+EMI_TEST_BOP'
 2778 GIS+AR3'
 2779 GIS+1:::-'
 2780 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'
 2781 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'
 2782 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'
 2783 FNS+Attributes:10'
 2784 REL+Z01+4'
 2785 ARR+6+:BE:N:1:379:3'
 2786 IDE+Z11+TITLE'
 2787 FTX+ACM+++Test virtual title'
 2788 IDE+Z10+UNIT'
 2789 CDV+BEF'
 2790 IDE+Z10+UNIT_MULT'
 2791 CDV+6'
 2792 ARR+6+M:BE:S:2:379:3'
 2793 IDE+Z10+COLLECTION'
 2794 CDV+2'
 2795 ARR+6+M:BE:N:2:379:2'
 2796 IDE+Z10+COLLECTION'
 2797 CDV+C'
 2798 REL+Z01+5'
 2799 ARR+8+M:BE:N:4:379:3:199705:610'
 2800 IDE+Z11+OBS_COM'
 2801 FTX+ACM+++Test virtual observation comment'
 2802 UNT+35+MREF000001' *← end of message administration*
 2803 UNZ+1+IREF000001' *← end of interchange administration*

message administration section
data set administration section
array structure and data section
attribute section

2804

2805 The message above contains data and attributes:

- 2806 • some numeric values (array structure and data section) are given for the series
2807 M:BE:N:2:269:1, M:BE:S:3:982:2 and M:BE:N:4:379:3.
- 2808 • the text “Test virtual title” is assigned as TITLE to the sibling group “:BE:N:1:379:3” (here
2809 “frequency” is assumed to be the first dimension and it is wild-carded); for the same sibling
2810 group, the value “BEF” is assigned to the attribute UNIT and the value “6” to the attribute
2811 UNIT_MULT (unit multiplier).
- 2812 • the value “C” is assigned to the attribute COLLECTION for the series M:BE:S:2:379:3 and the
2813 same attribute value also for the series M:BE:N:2:379:2.
- 2814 • the text “Test virtual observation comment” is assigned as OBS_COM (observation comment)
2815 for the May 1995 observation for the series M:BE:N:4:379:3.

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2817

13.3 Key Family Definition Message

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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 table¹:

2819

2820

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)						
<i>Observation</i>	<i>M</i>	OBS_STATUS	Observation status	CL_OBS_STATUS	Observation status codelist	AN1
<i>Observation</i>	<i>C</i>	OBS_CONF	Observation confidentiality	CL_OBS_CONF	Observation confidentiality codelist	AN1
II. Attributes (handled in the FNS group)						
<i>Sibling</i>	<i>M</i>	TITLE	Title	<uncoded>	<uncoded>	AN..70
<i>Sibling</i>	<i>M</i>	UNIT	Unit	CL_UNIT	Unit codelist	AN..12
<i>Sibling</i>	<i>M</i>	UNIT_MULTIPLIER	Unit multiplier	CL_UNIT_MULT	Unit multiplier codelist	AN..2
<i>Sibling</i>	<i>M</i>	DECIMALS	Decimals	CL_DECIMALS	Decimals codelist	AN1
<i>Time series</i>	<i>M</i>	COLLECTION	Collection indicator	CL_COLLECTION	Collection indicator codelist	AN1
<i>Time series</i>	<i>M</i>	AVAILABILITY	Availability	CL_AVAILABILITY	Organisation availability code list	AN1
<i>Sibling</i>	<i>M</i>	COMPILATION	Compilation explanations	<uncoded>	<uncoded>	AN..70
<i>Observation</i>	<i>C</i>	OBS_COM	Observation comment	<uncoded>	<uncoded>	AN..70
<i>Time series</i>	<i>C</i>	BREAKS	Explanation for breaks	<uncoded>	<uncoded>	AN..70
<i>Sibling</i>	<i>C</i>	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)						
<i>Advanced use (ASI group)</i>		USAGE_STATUS	Usage status	USS	Usage status code list	AN1
<i>Advanced use (ASI group)</i>		ATTACHMENT_LEVEL	Attachment level	ALV	Attachment level code list	AN1

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2823

Each message referring to a key family, like the one presented in the previous example, has to comply with the corresponding key family definition.

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2827

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:

2828

¹ 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.



```

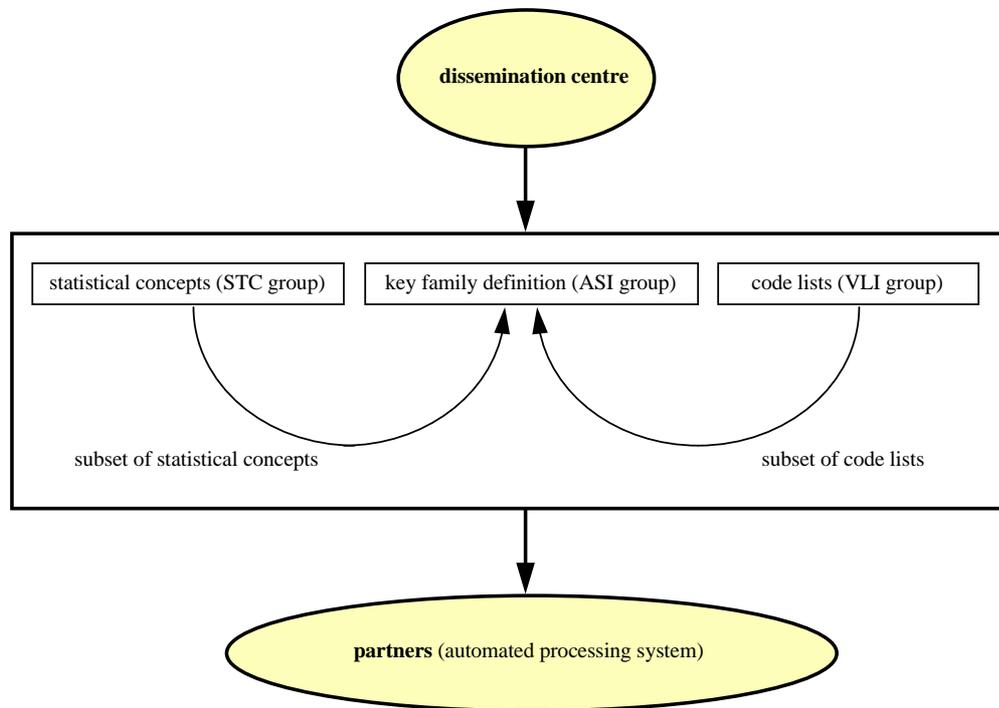
2829
2830 UNA:+.? '
2831 UNB+UNOC:3+4F0+ZZZ+970525:1539+IREF000003++SDMX-EDI '
2832 UNH+MREF000001+GESMES:2:1:E6 '
2833 BGM+73 '
2834 NAD+Z02+EMI '
2835 NAD+MR+ZZZ '
2836 NAD+MS+4F0 '
2837 IDE+10+Ad hoc message - example key family'
2838 ASI+EMI_TEST_BOP'
2839 FTX+ACM+++Test kf for BoP Statistics'
2840 SCD+13+FREQ++++:1'ATT+3+5+:::AN1'IDE+1+CL_FREQ'
2841 SCD+4+REF_AREA++++:2'ATT+3+5+:::AN2'IDE+1+CL_AREA_EE'
2842 SCD+4+ADJUSTMENT++++:3'ATT+3+5+:::AN1'IDE+1+CL_ADJUSTMENT'
2843 SCD+4+DATA_TYPE++++:4'ATT+3+5+:::AN1'IDE+1+CL_DATA_TYPE'
2844 SCD+4+BOP_ITEM++++:5'ATT+3+5+:::AN3'IDE+1+CL_BOP_ITEM'
2845 SCD+4+BASIS++++:6'ATT+3+5+:::AN1'IDE+1+CL_BASIS'
2846 SCD+1+TIME_PERIOD++++:7'ATT+3+5+:::AN..35'
2847 SCD+1+TIME_FORMAT++++:8'ATT+3+5+:::AN3'
2848 SCD+3+OBS_VALUE++++:9'ATT+3+5+:::AN..15'
2849 SCD+3+OBS_STATUS++++:10'ATT+3+5+:::AN1'ATT+3+35+2:USS'ATT+3+32+5:ALV'IDE+1+CL_OBS_STATU
2850 S'
2851 SCD+3+OBS_CONF++++:11'ATT+3+5+:::AN1'ATT+3+35+1:USS'ATT+3+32+5:ALV'IDE+1+CL_OBS_CONF'
2852 SCD+Z09+TITLE'ATT+3+5+:::AN..70'ATT+3+35+2:USS'ATT+3+32+9:ALV'
2853 SCD+Z09+UNIT'ATT+3+5+:::AN..12'ATT+3+35+2:USS'ATT+3+32+9:ALV'IDE+1+CL_UNIT'
2854 SCD+Z09+UNIT_MULTIPLIER'ATT+3+5+:::AN..2'ATT+3+35+2:USS'ATT+3+32+9:ALV'IDE+1+CL_UNIT_MU
2855 LT'
2856 SCD+Z09+DECIMALS'ATT+3+5+:::AN1'ATT+3+35+2:USS'ATT+3+32+9:ALV'IDE+1+CL_DECIMALS'
2857 SCD+Z09+COLLECTION'ATT+3+5+:::AN1'ATT+3+35+2:USS'ATT+3+32+4:ALV'IDE+1+CL_COLLECTION'
2858 SCD+Z09+AVAILABILITY'ATT+3+5+:::AN1'ATT+3+35+2:USS'ATT+3+32+4:ALV'IDE+1+CL_AVAILABILITY
2859 '
2860 SCD+Z09+COMPILATION'ATT+3+5+:::AN..70'ATT+3+35+2:USS'ATT+3+32+9:ALV'
2861 SCD+Z09+BREAKS'ATT+3+5+:::AN..70'ATT+3+35+1:USS'ATT+3+32+4:ALV'
2862 SCD+Z09+AGG_EQUN'ATT+3+5+:::AN..70'ATT+3+35+1:USS'ATT+3+32+9:ALV'
2863 SCD+Z09+OBS_COM'ATT+3+5+:::AN..70'ATT+3+35+1:USS'ATT+3+32+5:ALV'
2864 UNT+88+MREF000001'
2865 UNZ+1+IREF000003'
2866

```

These three elements should be also defined

2867
2868 The partners could build fully automated systems by reading the key family definitions directly
2869 from SDMX-EDI messages, like the one above.

2870 In fact, all three SDMX-EDI structural sections (each one could be in a different message),
2871 shown in the graph below, are needed in order to allow the centre to disseminate the complete
2872 key family definition in SDMX-EDI and the receiving institutions to make a paperless
2873 interpretation of the received time series data.



2874

2875 The receiver's system could be automated by "reading" the list of statistical concepts and the
 2876 relevant code lists and linking them in the context of a key family definition message. The next
 2877 two examples complete the whole example by providing the list of statistical concepts and the
 2878 code lists.

2879

2880 13.4 List of Concepts Dissemination Message

2881 The example message shown below contains the concepts which were used in building the
 2882 previous key family.

```

2883 UNA:+.? '
2884 UNB+UNOC:3+4F0+ZZZ+970525:1539+IREF000001++SDMX-EDI '
2885 UNH+MREF000001+GESMES:2:1:E6 '
2886 BGM+73 '
2887 NAD+Z02+EMI '
2888 NAD+MR+ZZZ '
2889 NAD+MS+4F0 '
2890 IDE+10+Statistical concepts-example list'
2891 STC+REF_AREA'FTX+ACM+++Reference area'
2892 STC+FREQ'FTX+ACM+++Frequency'
2893 STC+ADJUSTMENT'FTX+ACM+++Adjustment indicator'
2894 STC+DATA_TYPE'FTX+ACM+++BoP type/position'
2895 STC+BOP_ITEM'FTX+ACM+++BoP item'
2896 STC+BASIS'FTX+ACM+++Data basis'
2897 STC+TIME_PERIOD'FTX+ACM+++Time period or range'
2898 STC+TIME_FORMAT'FTX+ACM+++Time format code'
2899 STC+OBS_VALUE'FTX+ACM+++Observation value'
2900 STC+TITLE'FTX+ACM+++Title'
2901 STC+UNIT'FTX+ACM+++Unit'
2902 STC+UNIT_MULTIPLIER'FTX+ACM+++Unit multiplier'
  
```

2903 STC+**DECIMALS**'FTX+ACM+++Decimals'
 2904 STC+**AVAILABILITY**'FTX+ACM+++Availability'
 2905 STC+**COLLECTION**'FTX+ACM+++Collection indicator'
 2906 STC+**AVAILABILITY**'FTX+ACM+++Availability'
 2907 STC+**COMPILATION**'FTX+ACM+++Compilation explanations'
 2908 STC+**BREAKS**'FTX+ACM+++Explanation for breaks'
 2909 STC+**AGG_EQUN**'FTX+ACM+++Aggregation equation used'
 2910 STC+**OBS_COM**'FTX+ACM+++Observation comment'
 2911 STC+**ORGANISATION**'FTX+ACM+++Organisation'
 2912 UNT+49+MREF000001'
 2913 UNZ+1+IREF000001'
 2914
 2915
 2916

13.5 Code List Dissemination Message

2917 The example message shown below contains the code lists. These lists should be used for
 2918 giving values to the coded statistical concepts of a key family (according to its definition). The
 2919 message below is for demonstration purposes only: the code lists shown are much shorter than
 2920 their actual length (e.g. countries and other codes missing).

2921 UNA:+.? '
 2922 UNB+UNOC:3+4F0+ZZZ+970525:1539+IREF000002++SDMX-EDI '
 2923 UNH+MREF000001+GESMES:2:1:E6 '
 2924 BGM+73 '
 2925 NAD+Z02+**EMI** '
 2926 NAD+MR+ZZZ '
 2927 NAD+MS+4F0 '
 2928 IDE+10+Message with example code lists '
 2929 VLI+**CL_FREQ**+++Frequency code list '
 2930 CDV+**M**'FTX+ACM+++monthly '
 2931 CDV+**Q**'FTX+ACM+++quarterly '
 2932 VLI+**CL_AREA_EE**+++Area code list (EUROSTAT/ECB) '
 2933 CDV+**4D**'FTX+ACM+++European Commission '
 2934 CDV+**4F**'FTX+ACM+++European Monetary Institute '
 2935 CDV+**5B**'FTX+ACM+++Bank for International Settlements '
 2936 CDV+**BE**'FTX+ACM+++Belgium '
 2937 CDV+**DK**'FTX+ACM+++Denmark '
 2938 CDV+**FR**'FTX+ACM+++France '
 2939 CDV+**GB**'FTX+ACM+++United Kingdom '
 2940 CDV+**GR**'FTX+ACM+++Greece '
 2941 CDV+**LU**'FTX+ACM+++Luxembourg '
 2942 CDV+**NO**'FTX+ACM+++Norway '
 2943 CDV+**US**'FTX+ACM+++United States of America '
 2944 VLI+**CL_ADJUSTMENT**+++Adjustment indicator code list '
 2945 CDV+**N**'FTX+ACM+++neither seasonally or working day adjusted '
 2946 CDV+**S**'FTX+ACM+++seasonally adjusted, not working day adjusted '
 2947 CDV+**W**'FTX+ACM+++working day adjusted, not seasonally adjusted '
 2948 CDV+**Y**'FTX+ACM+++working day and seasonally adjusted '
 2949 VLI+**CL_DATA_TYPE**+++BoP type/position code list '
 2950 CDV+**1**'FTX+ACM+++Stocks at the beginning of the period '
 2951 CDV+**2**'FTX+ACM+++Credit flows '
 2952 CDV+**3**'FTX+ACM+++Debit flows '
 2953 CDV+**4**'FTX+ACM+++Net flows '
 2954 CDV+**5**'FTX+ACM+++Price valuation adjustment '
 2955 CDV+**6**'FTX+ACM+++Exchange rate adjustments '
 2956 CDV+**7**'FTX+ACM+++Reclassification, other adjustments and other revaluations '
 2957 CDV+**8**'FTX+ACM+++Stocks at the end of the period / Gross stocks '
 2958 VLI+**CL_BOP_ITEM**+++BoP item code list '
 2959 CDV+**269**'FTX+ACM+++Merchanting and other trade-related services '
 2960 CDV+**379**'FTX+ACM+++Current transfers '
 2961 CDV+**971**'FTX+ACM+++Freight transport by air and sea '
 2962 CDV+**981**'FTX+ACM+++Other services '
 2963 CDV+**982**'FTX+ACM+++Services not allocated '
 2964 CDV+**991**'FTX+ACM+++Goods and services '



2965 VLI+CL_BASIS+++Data basis code list'
2966 CDV+1'FTX+ACM+++Transaction'
2967 CDV+2'FTX+ACM+++Cash'
2968 CDV+3'FTX+ACM+++Accruals'
2969 CDV+Z'FTX+ACM+++Other'
2970 VLI+CL_OBS_STATUS+++Observation status code list'
2971 CDV+A'FTX+ACM+++normal value'
2972 CDV+E'FTX+ACM+++estimated value'
2973 CDV+F'FTX+ACM+++forecast value'
2974 CDV+H'FTX+ACM+++missing, holiday or weekend'
2975 VLI+CL_OBS_CONF+++Observation confidentiality code list'
2976 CDV+F'FTX+ACM+++Free'
2977 CDV+C'FTX+ACM+++Confidential (and non-publishable)'
2978 VLI+CL_UNIT+++Unit code list'
2979 CDV+BEF'FTX+ACM+++Belgian Franc'
2980 CDV+DEM'FTX+ACM+++German Deutsche Mark'
2981 CDV+ITL'FTX+ACM+++Italian Lira'
2982 VLI+CL_UNIT_MULT+++Unit multiplier code list'
2983 CDV+6'FTX+ACM+++millions'
2984 CDV+9'FTX+ACM+++billions'
2985 VLI+CL_COLLECTION+++Collection indicator code list'
2986 CDV+C'FTX+ACM+++end of period'
2987 CDV+M'FTX+ACM+++average of observations through period'
2988 VLI+CL_ORGANISATION+++Organisation code list'
2989 CDV+BE2'FTX+ACM+++Banque Nationale de Belgique (Belgium)'
2990 CDV+DK2'FTX+ACM+++Danmarks Nationalbank (Denmark)'
2991 CDV+DE2'FTX+ACM+++Deutsche Bundesbank (Germany)'
2992 CDV+4F0'FTX+ACM+++European Central Bank (ECB)'
2993 CDV+5B0'FTX+ACM+++Bank for International Settlements (BIS)'
2994 CDV+4D0'FTX+ACM+++European Commission (Eurostat)'
2995 CDV+ZZZ'FTX+ACM+++Unspecified'
2996 VLI+USS+++Usage status code list'
2997 CDV+1'FTX+ACM+++Conditional'
2998 CDV+2'FTX+ACM+++Mandatory'
2999 VLI+ALV+++Attachment level code list'
3000 CDV+1'FTX+ACM+++Key family'
3001 CDV+4'FTX+ACM+++Time series'
3002 CDV+5'FTX+ACM+++Observation'
3003 CDV+9'FTX+ACM+++Sibling group'
3004 UNT+143+MREF000001'
3005 UNZ+1+IREF000002'

3006 **14 APPENDIX: THE UN/EDIFACT SYNTAX**

3007 **14.1 Introduction**

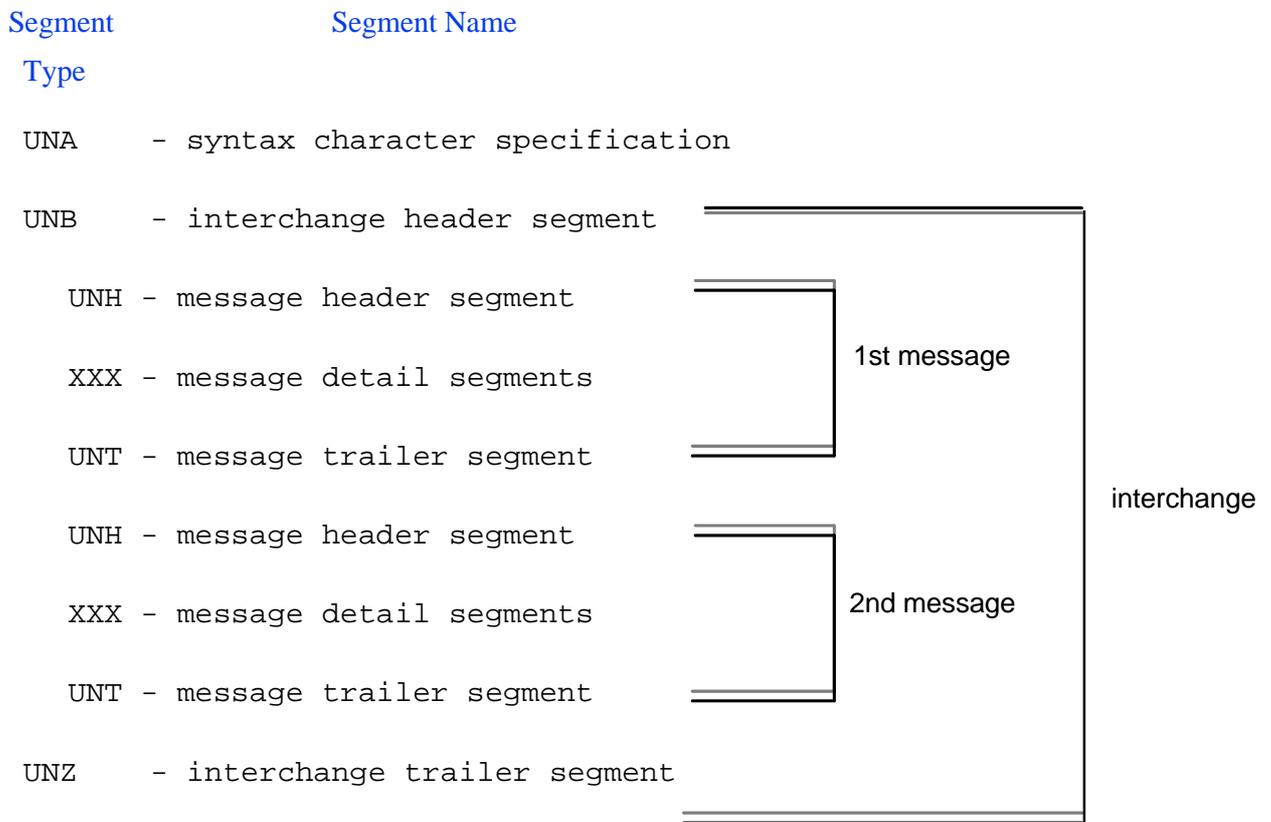
3008 The specification of the EDIFACT syntax is contained in the ISO document ISO 9735 Reference
 3009 number ISO 9735: 1988 (E). The latest version of this document is dated 1990-11-01.

3010 This explanation given below is a simplified version of some of the sections of ISO 9735. The
 3011 purpose of this explanation is to highlight the parts of ISO 9735 which are relevant to the use of
 3012 GESMES explained in this guide. In general, if an organisation wishes to process a GESMES
 3013 message directly from an application (rather than use a commercial EDIFACT translator), then
 3014 particular attention should be given to the EDIFACT truncation rules (though, the “fixed” rules of
 3015 SDMX-EDI incorporate and imply in fact these truncation rules).

3016 Organisations are advised to read ISO 9735 if a fuller understanding of the EDIFACT syntax is
 3017 required.

3018 **14.2 EDIFACT Interchange and Message Structure**

3019 The structure of an EDIFACT interchange is shown below.



3020

3021 An EDIFACT interchange comprises a sequence of segments. Each segment has a unique 3
3022 character identifier. Segment identifiers which begin with UN are called "service segments" and
3023 are defined as a part of the EDIFACT Syntax (ISO 9735). Other segments are called User Data
3024 Segments and are defined in the Segments Directory of the UN Trade Data Interchange
3025 Directory (UNTDID).

3026 **14.3 Purpose of the interchange and message envelope segments**

3027 UNA - Service String Advice

3028 In general, in GESMES, this segment is conditional and is only used if the sender wishes to define
3029 the service characters used in the interchange. Its use is advised unless a restricted character
3030 set is required (e.g. upper case only). **In SDMX-EDI this segment is mandatory** and the
3031 specified set is '+.?'

3032

3033 UNB - Interchange Header

3034 This contains information which identifies the interchange, the sender, receiver, date and time of
3035 preparation and other optional data. An interchange can contain many messages.

3036 UNH - Message Header

3037 This contains information which identifies the type and version number of the message that
3038 follows.

3039 User Defined Segments

3040 This contains one or more segments that have been designed to support the business function
3041 required of the message (e.g. DTM, NAD, DSI etc.).

3042 UNT - Message Trailer

3043 This indicates the end of the message identified in the UNH and contains data which supports
3044 the checking of the integrity of the data in the message.

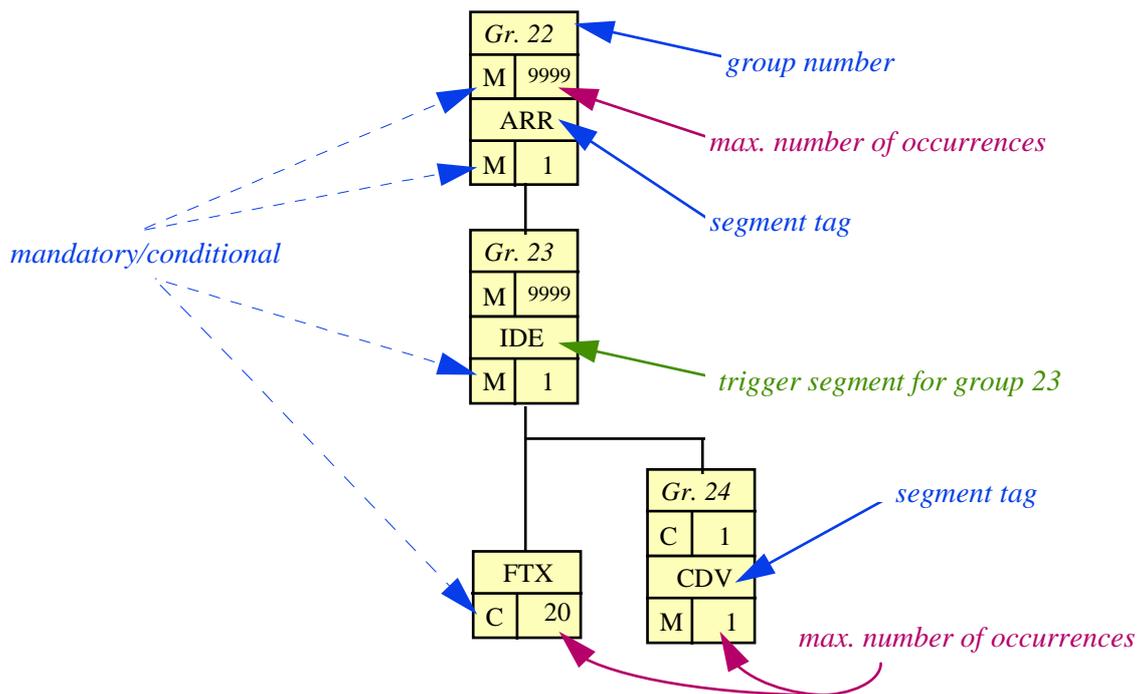
3045 UNZ - Interchange Trailer

3046 This indicates the end of the interchange identified in the UNB, and contains data which
3047 supports the checking of the integrity of the interchange.

3048

3049

 3050 **14.4 Interpreting a Branching Diagram**

 3051 An EDIFACT message can be represented in a diagrammatic form called a branching diagram. An
 3052 extract from the branching diagram of SDMX-EDI is shown below.


3053

 3054 Group 22 is the collection of segments which is used to assign values to an attribute(s) which is
 3055 (are) attached at a level or object defined in the ARR segment (group 22); the attribute(s) is (are)
 3056 identified in the IDE segment and its (their) value(s) is (are) given in the FTX (if the attribute is
 3057 uncoded) or in the CDV segment (if it is coded). Group 22 can appear up to 9,999 times.

3058

 3059 **14.4.1 Interpretation of the Diagram**

 3060 The diagram is interpreted hierarchically. The group number is not sent in the message, the
 3061 existence of the group in a particular transmission is indicated by the existence of the first segment
 3062 in the group - this is called the "trigger" segment. The trigger segment is always mandatory if the
 3063 group is used and can only occur once for each occurrence of the group. The trigger segment for
 3064 group 22 is the ARR segment. It is followed by between 1 and 9999 occurrences of group 23.
 3065 Group 23 comprises between 1 to 20 occurrences of the FTX segment or 1 occurrence of the
 3066 Group 24 (here it is not a "genuine" group as it comprises only one segment; in SDMX-EDI it is
 3067 shown as a *group* for reasons of presentation consistency with generic GESMES, in which Group 24
 3068 includes more segments). An example sequence of segments is shown below.

3069

3070

3071 **Example:**

3072 The following ordered sequence of segments could be present in a message:

3073 **ARR, IDE, FTX, IDE, CDV, IDE, FTX, FTX, FTX, FTX, ARR, IDE, CDV.**

3074 This message contains 2 occurrences of Group 21; the first one contains three occurrences of Group
 3075 22 and the second one contains just one occurrence of Group 22. The sequence of these groups and
 3076 segments (when reading/writing this message) is more clearly illustrated below:

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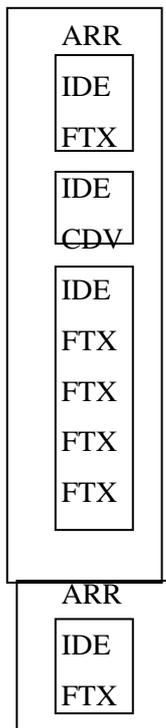
3088

3089

3090

3091

3092



3093

3094 **14.5 EDIFACT Service Characters**

3095 (For a discussion concerning the use of control characters see Box 2, last section of this
 3096 Appendix)

3097 **The service character set:**

3098 The following service characters are used in EDIFACT:

- 3099 • Segment Terminator
- 3100 • Data Element Separator
- 3101 • Component Separator
- 3102 • Release Indicator

3103

3104 The characters that are used as separators are specified in the transmission (using the UNA
3105 segment, first segment of the transmission). If they are not specified then the default characters
3106 are used as specified in the EDIFACT syntax. These defaults are dependent upon the character
3107 repertoire used. The defaults for the Level A character repertoire are:

3108 + the data element separator
3109 : the component separator
3110 ' the segment terminator
3111 ? the release indicator

3112 These service characters are specified in the UNA segment of SDMX-EDI.

3113 **Segment and data element separators:**

3114 A segment is terminated by the segment terminator.

3115 Each data element is terminated by a data element separator, except the last data element in
3116 the segment, which is terminated by a segment terminator. The segment tag is separated from
3117 the first data element in the segment by a data element separator.

3118 A component data element is terminated by a component separator, except for the last
3119 component in a composite which is terminated by a data element separator. If the component
3120 data element is the last data element in the segment then it is terminated by a segment
3121 terminator.

3122 **Release indicator:**

3123 The release indicator is used when it is necessary to transmit one of the separator, release or
3124 terminator characters as data. It is sent immediately before the character to be released and is
3125 valid for the following character only.

3126 e.g. consider the following text:

3127 *Is today's temperature more than +10 degrees?*

3128 This would be sent in an EDIFACT message as follows:

3129 *Is today?'s temperature more than ?+10 degrees??*

3130

3131 **14.6 EDIFACT Truncation Rules**

3132 The EDIFACT syntax uses truncation rules to eliminate redundant data. Software creating
3133 EDIFACT messages must observe these rules. In order to explain them, the following segment is
3134 used:

3135 TAG+DE1+CE1:CE2:CE3:CE4+DE3+DE4'

3136 TAG *the segment tag (e.g. NAD)*

3137 DE *a data element*

3138 CE *a component element*

3139 + *the data element separator*

3140 : *the component separator*

3141 ' *the segment terminator*

3142 The truncation rules are:

3143 i) Leading zeros are eliminated from numeric data/component elements and trailing spaces
 3144 are eliminated from alphabetic or alphanumeric data/component elements if the
 3145 data/component element is defined as variable length.

3146

3147 ii) If no data exists for a data/component element then the relevant separator follows
 3148 immediately after the separator for the previous data/component element.

3149

3150 iii) A composite element is terminated after the last component element for which there are
 3151 data for the composite.

3152 TAG+DE1+CE1:CE2:CE3:CE4++DE4'

3153 | data element (DE3) is omitted
 3154 (i.e. there are no data for DE3)

3155 TAG+DE1+CE1::CE3:CE4+DE3+DE4'

3156 | a component element (CE2) is omitted
 3157 (i.e. there are no data for CE2)
 3158

3159 iv) If all the component elements of a composite are omitted then this is indicated by the data
 3160 element separator.
 3161

3162 TAG+DE1+CE1:CE2+DE3+DE4'

3163 | the last two component elements (CE3, CE4) are omitted
 3164 (i.e. there are no data for CE3 and CE4)

3165 TAG+DE1++DE3+DE4'

3166 | the composite element is omitted
 3167 (i.e. there are no data for CE1, CE2, CE3, CE4)
 3168

3169 v) The segment is terminated immediately after the last data element for which there are data.

3170

3171 TAG+DE1+CE1:CE2+DE3'

3172 | the segment is terminated before the last data element
 3173 (i.e. there are no data for DE4)

3174 TAG+DE1+CE1:CE2'

3175 | the segment is terminated after the second component element of the composite
 3176 (i.e. there are no data for CE3, CE4, DE3 and DE4)

3177

3178

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.

3179

 3180 **15 APPENDIX: CODE LISTS FOR OBSERVATION STATUS AND OBS. CONFIDENTIALITY**

3181 As a reference, the following two tables present the code lists for the observation status and the
 3182 observation confidentiality attributes. It is strongly recommended in all implementations of
 3183 SDMX-EDI to use these two code lists unchanged in order to guarantee interoperability when
 3184 interpreting the body of the main ARR segments.

 3185 **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

3186 When more than one "condition" occurs for the same observation, then the next table should be
 3187 used: it indicates the level of importance of each specific "event" (e.g. the information that an
 3188 observation is a "break" is more important than it is an "estimate" and the flag B -rather than E-
 3189 should be used).

3190

Observation status hierarchy	Relevant in conjunction with...	
	numeric values	missing values
B / break	Yes	Yes
M / undefined, data cannot exist		Yes
L / data not collected		Yes
H / holiday or weekend		Yes
S / strike	Yes	Yes
F / forecast value	Yes	
E / estimated value	Yes	
P / provisional value	Yes	
A / normal value	Yes	

3191

3192

3193

3194 **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

3195

 3196 **16 APPENDIX: FREQUENTLY ASKED QUESTIONS ABOUT SDMX-EDI**

 3197 **Which are the most important "quantitative" restrictions applying to a message?**

3198 More than one messages (UNH/UNT) can be present in the same file/interchange (UNB/UNZ).

 3199 If a message contains [statistical data and/or attributes](#), only one [DSI](#) Group (group no. 13) can
 3200 be written inside this message. If a message contains [statistical definitions](#), then a DSI cannot
 3201 be present and one or more repetitions of Groups [VLI](#) (no.4), [STC](#) (no.9) and [ASI](#) (no.10) can
 3202 appear in the same message. See also below the paragraph on [message types](#).

 3203 A message can be either a "deletion" (parameter "[6](#)" in STS, see page 95) message or an
 3204 "update" (parameter "[7](#)" in STS) message (not both).

 3205 A message can be (only one of the following three types):
 3206 a "structural" message (parameter in BGM segment equal to "[73](#)") containing code lists ([VLI](#)),
 3207 concepts ([STC](#)) and/or key family definitions ([ASI](#));

 3208 a normal message containing data/attributes or instructions for deletions (parameter in BGM
 3209 segment equal to "[74](#)", see page 48);

 3210 a data set list message (parameter in BGM segment equal to "[DSL](#)").

3211 Maximum length of fields (SDMX-EDI limits):

- 3212 • **Code lists.** Identifiers: [an..18](#), code list names: [an..70](#), code values: [an..18](#), code value
3213 descriptions: [an..350](#)
- 3214 • **Statistical concepts.** Identifiers: [an..18](#), concept names: [an..70](#).
- 3215 • **Key families** and data sets. Identifiers: [an..18](#), key family and data set names: [an..70](#).

 3216 In practice, an effort is made by centre institutions to keep the length of [series keys](#) no longer
 3217 than 35 characters.

 3218 Up to [999,000](#) ARR segments (following Group 14) can be written in the same message.

 3219 In each ARR segment [only one time series key](#) can be present.

 3220 Up to [9,999](#) data elements can be written in the same ARR, i.e. a time series with more than
 3221 9,999 observations needs to be split over 2 or more ARR segments

 3222 Up to [15 positions](#) (n..15) can be used inside a data element for writing a numeric value
 3223 (including the place needed for the minus sign for negative values and/or the decimal point; the
 3224 plus sign for positive numbers must never be used).

3225 The only attributes which can be present in the main [ARR](#) segment are the [observation status](#)
3226 (mandatory coded attribute), the [observation confidentiality](#) (conditional coded attribute) and the
3227 [pre-break value](#) (conditional numeric field).

3228

3229 **Can an "update" and a "delete" message be present in the same interchange?**

3230 Yes.

3231

3232 **Is there a way to distinguish between "reporting new data" and "reporting corrections in**
3233 **previously reported data"?**

3234 SDMX-EDI is not equipped with a specific mechanism for this and it is left to the receiving
3235 application how to process the information contained in a SDMX-EDI interchange. Receiving
3236 applications could check - before "writing" on the reception databases - whether each received
3237 observation/attribute/time series/sibling group is a new one or a replacement of a previously
3238 existing observation/attribute/time series/sibling group. Nevertheless, if in a specific data
3239 exchange circuit this was required, the distinction could be served by the second (conditional)
3240 DTM segment which carries the "reporting period" information: for example, this segment could
3241 be used only in a message carrying new data (a reporting period could be anyway more relevant
3242 in this case).

3243

3244 **Can spaces be used at the end of strings in the FTX segment?**

3245 No, as this could cause interpretation problems: according to the EDIFACT rules, [insignificant](#)
3246 [trailing spaces are eliminated from alphabetic or alphanumeric component elements](#).

3247 For example, the segment

3248 FTX+ACM+++Test kf for BoP Statistics '

3249 is wrong, since it has redundant spaces at the end of the string.

3250

3251 **The terms "mandatory" and "conditional" are confusing.**

3252 Indeed, without referring to a specific context, it is not possible to explain the meaning of the
3253 adjectives mandatory and conditional: their meaning depends on the context in which they are
3254 used. The table below provides an overview of their specific meaning in each case.

3255

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"> - Observation Status - Observation Confidentiality - Pre-break value 	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"> - it is relevant to provide such a value(s) - 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 - the values of the observation confidentiality and/or pre-break observation need to be updated 	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).	

3256

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 3261 **17 APPENDIX: MAP OF ISO 8859-1 (UNOC) CHARACTER SET (LATIN 1 OR “WESTERN”)**

3262

3263 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	{	|	}	~	

3264

3265 Extended character set (decimal character codes 160-255):

	ı	ϕ	£	κ	¥	ı	§	¨	ø	≡	«	¬	-	®	™
°	±	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

3266

 3267 Code positions 128 - 159 are reserved for control purposes only (they should not be used in
 3268 messages).

3269

3270

3271

3272

3273 **18 APPENDIX. EDIFACT CODE LISTS USED IN SDMX-EDI**

 3274 The table below contains the relevant EDIFACT code values used in SDMX-EDI segments.
 3275 Please note that the provided code lists are not complete as they list only those values used in
 3276 SDMX-EDI. The entries are sorted alphabetically by segment.

ATT segment	9017 - Attribute Qualifier (domain) 3 array structure component
ATT segment	Attribute Qualifier (type) 5 presentation 35 usage status 32 object link type (attachment level)
ATT segment	Attachment level code 1 data set 4 time series 5 observation 9 sibling group
ATT segment	Code list qualifier ALV attachment level USS usage status
ATT segment	Attribute status 1 conditional 2 mandatory
BGM segment	Message function 73 statistical definitions 74 statistical data DSL list of data sets
COM segment	3155 - Communication channel qualifier EM electronic mail TE telephone FX telefax XF X.400
CTA segment	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
DTM segment	2005 - Date/time/period qualifier 242 preparation date Z02 reporting period



DTM segment	2379 - date/time/period format qualifier 101 YYMMDD 102 CCYYMMDD 201 YYMMDDHHMM 203 CCYYMMDDHHMM 602 CCYY 604 CCYYS 608 CCYYQ 610 CCYMM 616 CCYYWW 702 CCYY-CCYY 704 CCYYS-CCYYS 708 CCYYQ-CCYYQ 710 CCYMM-CCYMM 711 CCYYMMDD-CCYYMMDD 716 CCYYWW-CCYYWW
FTX segment	4451 - Text Subject Qualifier ACM statistical description
IDE segment	Identification Qualifier 1 value list 4 code value 5 data set structure 10 message context Z10 coded attribute Z11 uncoded attribute
NAD segment	Party type MS Message sender MR Message receiver Z02 Maintenance agency for codes
REL segment	9141 - Relationship Qualifier Z01 the relationship is with a statistical array
SCD segment	7497 - Component function qualifier 1 array time dimension 3 array cell 4 array dimension (other than time dimension) 13 dimension is "frequency" Z09 attribute
STS segment	9011 - Status event, coded 6 delete 7 add and replace
VLI segment	3 Coded list



3278

3279