



European Network of
Transmission System Operators
for Electricity

ENTSO-E Settlement Process (ESP) Implementation Guide

2010-10-08

DOCUMENT APPROVED
VERSION 1.2

2	TABLE OF CONTENTS	
3	1	OBJECTIVE6
4	2	IMBALANCE SETTLEMENT PROCESS OVERVIEW.....7
5	2.1	DEFINITION..... 7
6	2.2	SCOPE OF THE SETTLEMENT PROJECT WITHIN THE ROLE MODEL 8
7	2.3	OPERATIONAL SCENARIO 9
8	2.3.1	THE OVERALL CONTEXT 9
9	2.3.2	BREAKDOWN OF THE IMBALANCE SETTLEMENT PHASE 10
10	3	SETTLEMENT SYSTEM INFORMATION REQUIREMENTS12
11	3.1	PROCESS FLOW 12
12	1.1	IMBALANCE SETTLEMENT INFORMATION FLOWS..... 14
13	4	ENERGY ACCOUNT REPORT IMPLEMENTATION18
14	4.1	INFORMATION MODEL 18
15	4.2	RULES GOVERNING THE ENERGY ACCOUNT REPORT IMPLEMENTATION..... 19
16	4.2.1	GENERAL RULES GOVERNING DOCUMENT CONTENT 19
17	4.2.1.1	MAJOR CATEGORISATION OF DOCUMENT INFORMATION MATRIX 19
18	4.3	ENERGY ACCOUNT REPORT CLASS SPECIFICATIONS.....20
19	4.3.1	DOCUMENT IDENTIFICATION.....20
20	4.3.2	DOCUMENT VERSION20
21	4.3.3	DOCUMENT TYPE.....21
22	4.3.4	DOCUMENT STATUS.....21
23	4.3.5	PROCESS TYPE22
24	4.3.6	CLASSIFICATION TYPE.....22
25	4.3.7	SENDER IDENTIFICATION – CODING SCHEME23
26	4.3.8	SENDER ROLE23
27	4.3.9	RECEIVER IDENTIFICATION – CODING SCHEME.....24
28	4.3.10	RECEIVER ROLE24
29	4.3.11	DOCUMENT DATE AND TIME25
30	4.3.12	ACCOUNTING PERIOD.....25
31	4.3.13	DOMAIN - CODINGSCHEME.....26
32	4.4	RULES GOVERNING THE ACCOUNT TIME SERIES CLASS.....27
33	4.4.1	DEPENDENCY MATRIX.....27
34	4.4.2	SENDERS TIME SERIES IDENTIFICATION.....28
35	4.4.3	BUSINESS TYPE.....29
36	4.4.4	PRODUCT.....30
37	4.4.5	OBJECT AGGREGATION30
38	4.4.6	AREA – CODING SCHEME31
39	4.4.7	PARTY – CODING SCHEME31
40	4.4.8	AGREEMENT IDENTIFICATION32
41	4.4.9	MEASUREMENT UNIT.....32
42	4.4.10	CURRENCY.....32
43	4.4.11	ACCOUNTING POINT – CODING SCHEME.....33
44	4.5	RULES GOVERNING THE PERIOD CLASS34
45	4.5.1	TIME INTERVAL34
46	4.5.2	RESOLUTION35
47	4.6	RULES GOVERNING THE ACCOUNT INTERVAL CLASS35
48	4.6.1	DEPENDENCY MATRIX.....36
49	4.6.2	POS.....36
50	4.6.3	IN QTY37
51	4.6.4	OUT QTY.....38
52	4.6.5	SETTLEMENT AMOUNT38

53	5	ACKNOWLEDGEMENT DOCUMENT IMPLEMENTATION	39
54	6	XML DTD AND SCHEMA DEFINITIONS	40
55	6.1	ENERGY ACCOUNT REPORT – DTD DEFINITION.....	40
56	6.2	ENERGY ACCOUNT REPORT – SCHEMA DEFINITION	42
57	6.2.1	ENERGY ACCOUNT REPORT – SCHEMA STRUCTURE.....	42
58	6.2.2	ENERGY ACCOUNT REPORT – SCHEMA DEFINITION.....	43
59	6.3	ENERGY ACCOUNT REPORT DATA INSTANCE.....	46
60	7	COMMUNICATIONS INFORMATION.....	47
61	7.1	TEST INDIKATION (DIFFERENTIATION BETWEEN LIVE AND TEST TRANSMISSIONS).....	47
62	7.1.1	USE OF A DATA INSTANCE THAT USES INDIFFERENTLY THE DTD OR SCHEMA	47
63	8	CONTRIBUTORS.....	48
64			
65		TABLE OF FIGURES	
66		FIGURE 1: SCOPE OF THE SETTLEMENT PROCESS IN ROLE MODEL.....	8
67		FIGURE 2: OVERALL USE CASE.....	9
68		FIGURE 3: INFORMATION EXCHANGE DURING THE IMBALANCE SETTLEMENT PHASE.....	10
69		FIGURE 4: TYPICAL SEQUENCE DIAGRAM OF THE INFORMATION FLOW FROM THE IMBALANCE SETTLEMENT	
70		RESPONSIBLE PERSPECTIVE.....	12
71		FIGURE 5: THE IMBALANCE SETTLEMENT PROCESS	14
72		FIGURE 6: THE IMBALANCE SETTLEMENT PROCESS	15
73		FIGURE 7: EAR INFORMATION MODEL.....	18
74		FIGURE 8: ACKNOWLEDGEMENT PROCESS	39
75		FIGURE 9: XML SCHEMA STRUCTURE	42
76			

77

Copyright notice:

78 Copyright © ENTSO-E. All Rights Reserved.

79 This document and its whole translations may be copied and furnished to others, and
80 derivative works that comment on or otherwise explain it or assist in its implementation may
81 be prepared, copied, published and distributed, in whole or in part, without restriction of any
82 kind, provided that the above copyright notice and this paragraph are included on all such
83 copies and derivative works. However, this document itself may not be modified in any way,
84 except for literal and whole translation into languages other than English and under all
85 circumstances, the copyright notice or references to ENTSO-E may not be removed.

86 This document and the information contained herein is provided on an "as is" basis.

87 **ENTSO-E DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT**
88 **NOT LIMITED TO ANY WARRANTY THAT THE USE OF THE INFORMATION HEREIN**
89 **WILL NOT INFRINGE ANY RIGHTS OR ANY IMPLIED WARRANTIES OF**
90 **MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.**

91

Maintenance notice:

92 **THIS DOCUMENT IS MAINTAINED BY THE ENTSO-E WG EDI. COMMENTS OR**
93 **REMARKS ARE TO BE PROVIDED AT EDI.Library@entsoe.eu**

94

Revision History

Version	Release	Date	Paragraph	Comments
1	0	2004-04-29		Initial release. Approved for publication by ETSO SC 2004-04-15. This version of the guide is being released by TF14 for pilot testing.
1	1	2005-10-04		Introduction of a “domain” attribute in the header class of the Energy Account Report and an “accounting point” attribute in the time series class.
1	2	2010-10-08		Correction of a document error to bring the DtdVersion and DtdRelease tag names into line with the published XML schema Removed Acknowledgement Document paragraph in compliance with all other ENTSO-E Documentation Changed the layout to the ENTSO-E template Suppressed the use of referencing to the central website for schema or dtd
				Approved on 2010-10-20 by Market Committee

95

96 **1 OBJECTIVE**

97 The objective of this implementation guide is to make it possible for software vendors to
98 develop an IT application for market players that can exchange electricity market settlement
99 information, such as finalised schedules, regulation data, aggregated metered information
100 and imbalance reports, to all concerned parties within a given balance area.

101 The implementation guide is one of the building blocks for using UML (Unified Modelling
102 Language) based techniques in defining processes and documents for interchange between
103 actors in the electrical industry in Europe.

104 The initial conception of this guide has been based on an agreed generic imbalance
105 settlement process.

106 The main concern of Imbalance settlement responsible parties is on the secure and reliable
107 operation while facilitating electricity market procedures.

108 It is the intention of the ENTSO-E WG EDI (previously ETSO TF14) to make this
109 implementation guide the second building block based on the ENTSO-E platform. The
110 ENTSO-E WG EDI objective is that the different market participants and associations use
111 this platform in a co-ordinated manner.

112 The guide is targeted basically towards business-to-business application interfaces using the
113 full power of the acknowledgment process. However, it may be equally put into place in a
114 more user-orientated fashion through a web-based service where the key elements of the
115 acknowledgement process are implicit in the service itself.

116 2 IMBALANCE SETTLEMENT PROCESS OVERVIEW

117 The electricity market in Europe is now opening. Some countries have opened the market
118 completely and others have started the process. A central part of any national legal
119 requirements in the electricity market is that each party in the market shall be in balance.
120 This means that the quantity of electricity produced and/or consumed must be equal to the
121 quantity contracted in the market. The procedure to calculate any imbalance between what is
122 contracted to, contracted from and what is really consumed/produced by a balance
123 responsible party and the invoicing of any differences is called “imbalance settlement”.

124 The full balancing process can be broken down into three phases:

- 125 1. *A planning phase*, where balance responsible parties (e.g. trade responsible, production
126 responsible, consumption responsible parties, etc.) calculate in advance the
127 consumption/production of all involved parties for the day ahead. At the conclusion of this
128 phase the system operator informs each balance responsible party of what has been
129 accepted of their schedules and informs the entity responsible for imbalance settlement,
130 called the “imbalance settlement responsible” of all the schedules in question. Such
131 schedules are termed “finalised schedules” in this guide.
- 132 2. *An operation phase*, where the schedule that has been determined during the planning
133 phase (finalised schedule) is executed. The system operator, to ensure system balance
134 at any moment, handles any deviations between production, consumption and
135 unforeseen congestion. Such adjustments are known as “regulation data” within this
136 document.
- 137 3. *A settlement phase*, where following the date of operation, the metered data aggregator
138 sends the data to the imbalance settlement responsible. The imbalance settlement
139 responsible, along with complementary data received from other sources, then carries
140 out the imbalance settlement itself.

141 **The electronic documents defined in this guide cover the final phase of the imbalance**
142 **settlement process, *the settlement phase*.**

143 This document describes the general settlement process that is intended for use within
144 several categories of settlement.

145 It provides a standard enabling a uniform layout for the transmission of aggregate settlement
146 data between the European electricity system operators, producers, suppliers and traders
147 and all imbalance settlement responsible organizations. This shall ensure a common
148 interface between different software solutions.

149 2.1 DEFINITION

150 The documents defined in this implementation guide enable imbalance settlement
151 responsible parties to receive aggregated finalised schedules, regulation data and actual
152 metered information and to send imbalance reports to the responsible parties (consumption,
153 production, capacity, etc.) through the use of an electronic data interchange interface.

155 **2.2 SCOPE OF THE SETTLEMENT PROJECT WITHIN THE ROLE MODEL**

156 The Role model details and definitions can be found in the document “ENTSO-E Harmonised Role Model”. This document is available
157 on the ENTSO-E website.

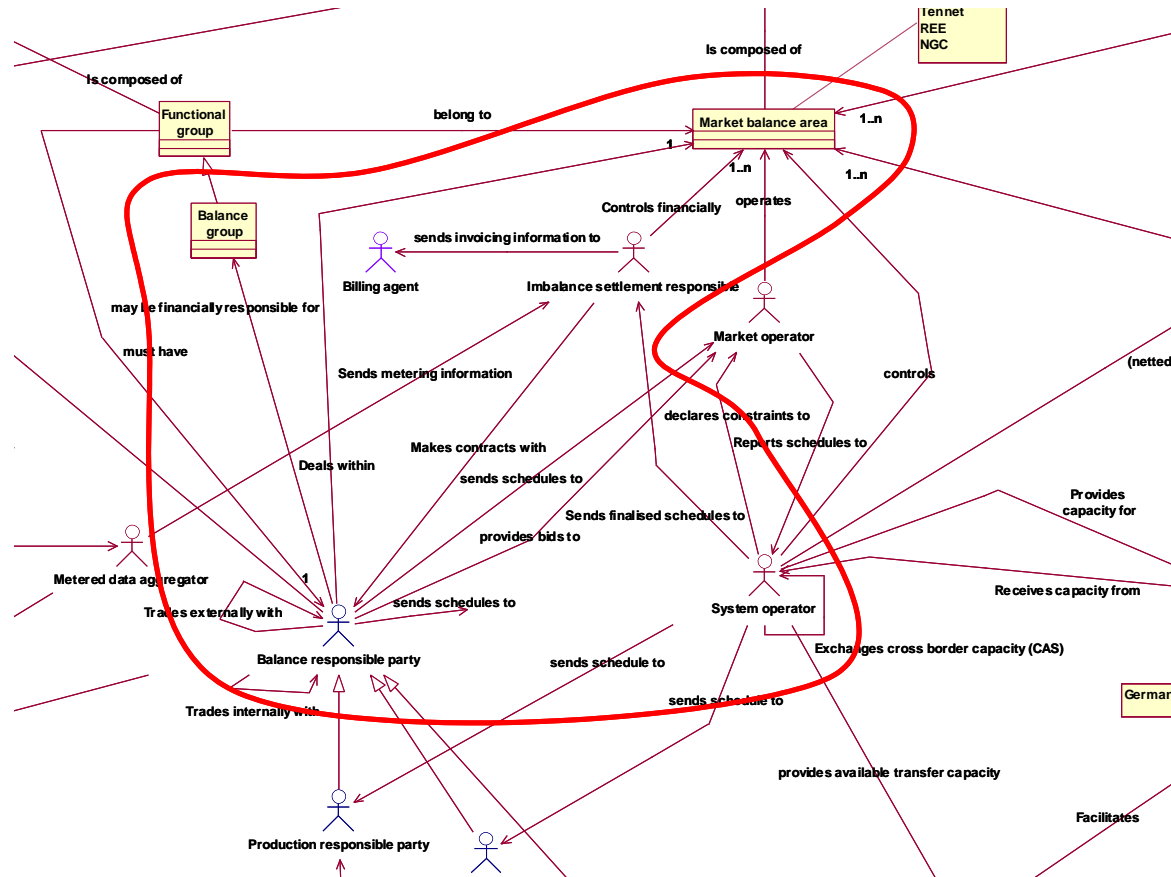


FIGURE 1: SCOPE OF THE SETTLEMENT PROCESS IN ROLE MODEL

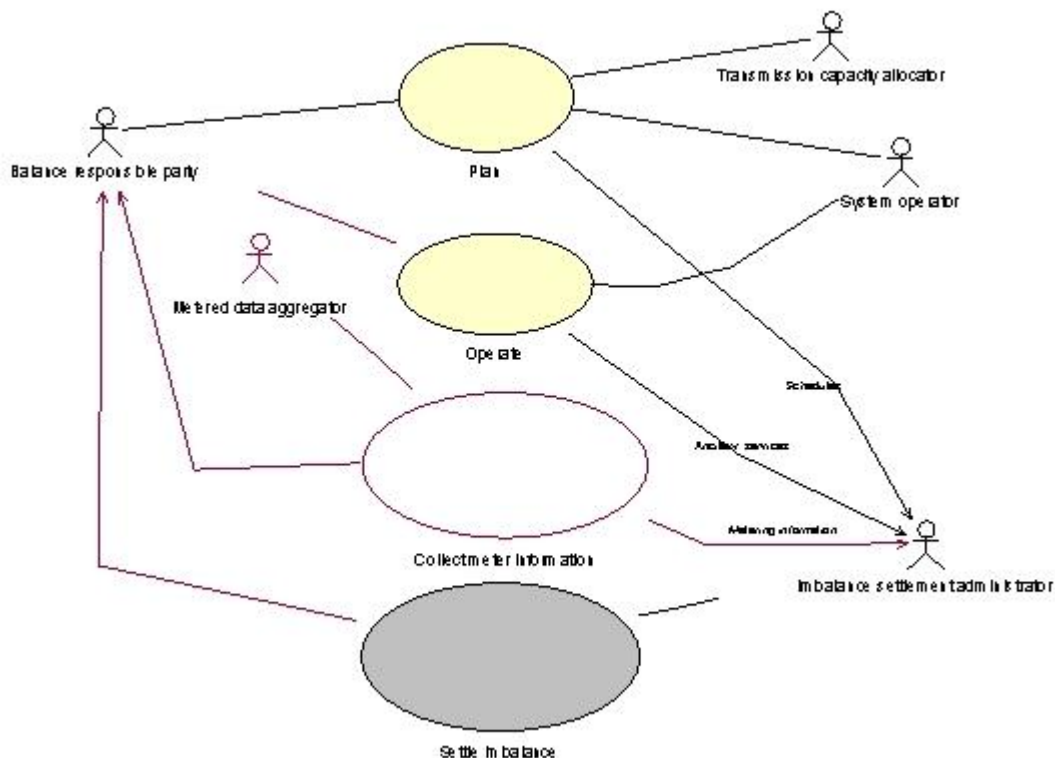
158

159

160 Note: Accounting point to be included once approved in the role model

161 **2.3 OPERATIONAL SCENARIO**

162 **2.3.1 THE OVERALL CONTEXT**



163

164

FIGURE 2: OVERALL USE CASE

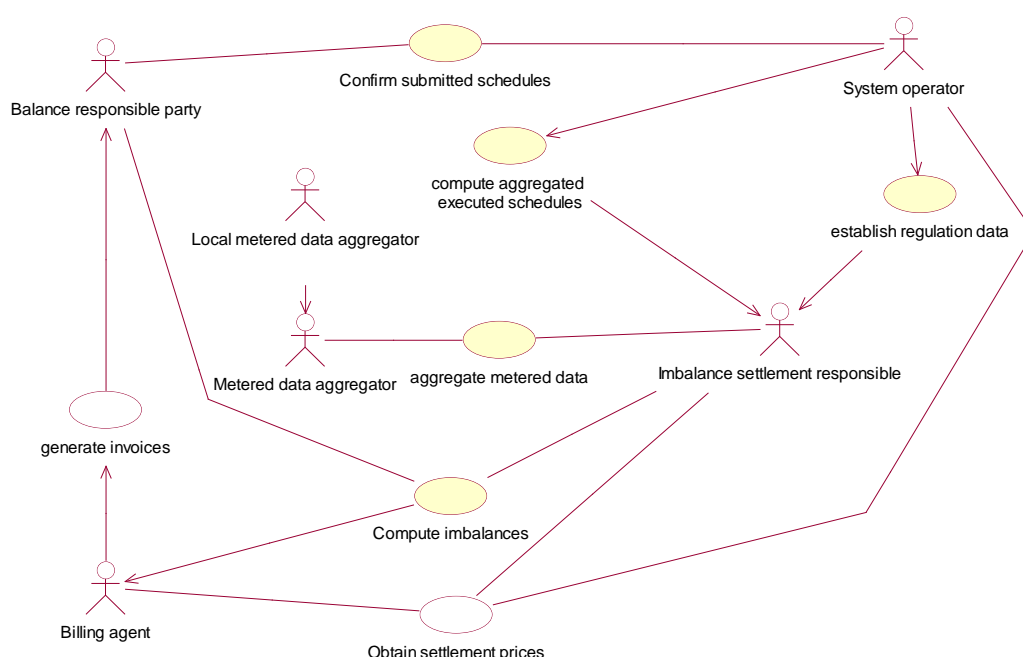
165 Within this perspective there are three principal activities that can be identified (the collection
166 of metering information, although a significant activity, is not within the imbalance settlement
167 scope). These, as shown in Figure 2 are:

- 168 1. *The planning activity.* The principal deliverable of this phase is a set of time series
169 schedules (called finalised schedules) that have gone through their validation process
170 (conformity, matching, plausibility and acceptance).
- 171 2. *The operational activity* that ensures that the different schedules are correctly
172 implemented. This means that the planned production is available to cater for the
173 planned consumption. It also has to ensure that any deviations from the various
174 schedules (production, capacity, consumption, etc.) are catered for. Information from this
175 phase is required in order to correctly determine market imbalances. Such information is
176 termed regulation data.
- 177 3. *The imbalance settlement activity that is the subject matter of this implementation*
178 **guide and will be further detailed below.** This activity takes place once everything has
179 been completed. It may be spread over a defined lapse of time. It is composed of three
180 basic activities. The first activity receives all the schedules that have been agreed and
181 regulation data that has been required for balancing the area. The second activity
182 recuperates the measured values of the delivered products. The final activity reconciles

183 these values, identifies the imbalances and establishes the imbalance settlement
184 amounts (this requiring pricing information that is market dependent).

185 The pricing activity is normally completely independent of the technical and the online
186 processes. It is there to provide the rules to enable the involved parties to manage their
187 financial risks. At the end of the day the same activity is used to determine the price of all
188 deviations from the schedule. This activity has not been identified in Figure 2 since it is
189 essentially an independent activity.

190 2.3.2 BREAKDOWN OF THE IMBALANCE SETTLEMENT PHASE



191
192 **FIGURE 3: INFORMATION EXCHANGE DURING THE IMBALANCE SETTLEMENT PHASE**
193 The imbalance settlement phase, outlined in Figure 3, describes the actors and principal use
194 cases of the imbalance settlement process.

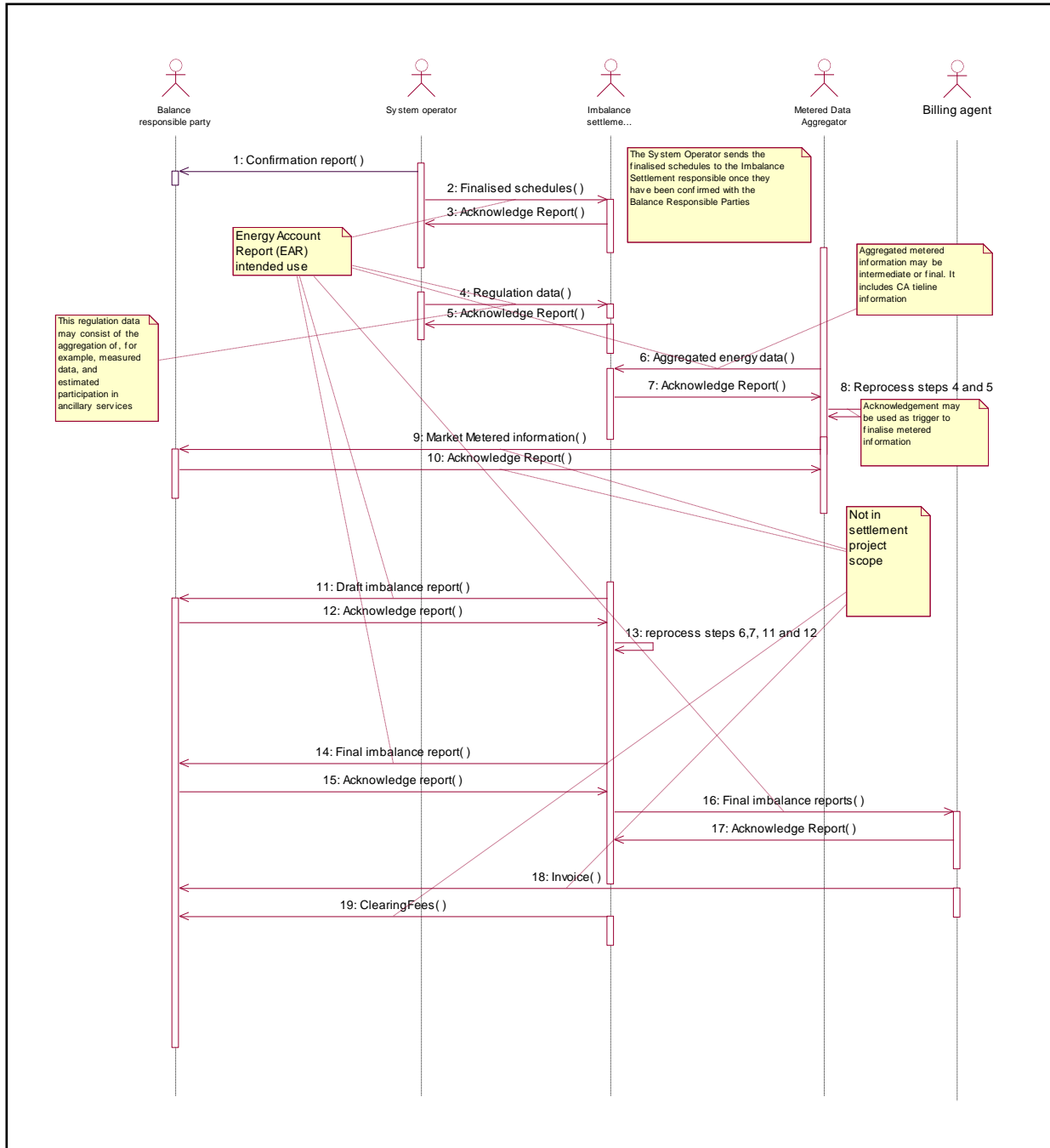
195 The roles that take part in the imbalance settlement process are

- 196 ➤ System Operator, who provides the finalised schedule information and regulation
197 data.
- 198 ➤ Metering data aggregator, who provides the aggregated metered information. The
199 metered data aggregator may have local metered data aggregators that provide
200 initial aggregated input for consolidation and validation before being sent to the
201 imbalance settlement responsible.
- 202 ➤ Imbalance settlement responsible, who establishes the imbalances (quantities
203 and amounts).
- 204 ➤ Billing agent, who invoices the balance responsible party.

- 205 ➤ Balance Responsible Party, who receives the settlement information.
- 206 The basic data that is required for imbalance settlement includes the following:
- 207 ➤ Finalised schedules that originate at the last stage of the ENTSO-E Scheduling
208 process and could be day ahead, intraday or after the fact agreed schedules.
- 209 ➤ Aggregated metered values for each balance responsible party and area (balance
210 group, market balance area, distribution area, etc.). These consist of values for
211 each schedule interval (for example 15 minutes or 60 minutes) for the whole
212 accounting settlement period.
- 213 ➤ Regulation data, such as ancillary services. This is established by the system
214 operator and depends on local market rules and consists of the corrective time
215 series information that has to be used to adjust the actual metered information.
- 216 ➤ Settlement pricing information. This is outside the scope of this implementation
217 guide and is dependent on local market rules.
- 218 The use cases that are within the scope of the imbalance settlement process are:
- 219 ➤ Confirm submitted schedules, a use case that is a part of the ESS process and
220 informs the Balance responsible party of the accepted schedules.
- 221 ➤ Compute aggregated finalised schedule, a use case where the system operator
222 determines the finalised schedules per area and party.
- 223 ➤ Establish regulation data, a use case where the system operator determines the
224 regulation data per area and per party.
- 225 ➤ Aggregate energy data, a use case where the metered data aggregator
226 aggregates the market and tieline meter information per area and per party.
- 227 ➤ Compute imbalances, a use case where the imbalance settlement responsible
228 establishes the imbalances and, depending on local market rules, the settlement
229 amounts. These are established on a per area and per party basis.
- 230 The settlement cycle may be daily, weekly, monthly or yearly and must be tailored to suit
231 local market requirements.

232 3 SETTLEMENT SYSTEM INFORMATION REQUIREMENTS

233 3.1 PROCESS FLOW



234

235 **FIGURE 4: TYPICAL SEQUENCE DIAGRAM OF THE INFORMATION FLOW FROM THE IMBALANCE SETTLEMENT RESPONSIBLE PERSPECTIVE**

236 The sequence diagram in Figure 4 outlines the information that is exchanged between the
237 different actors in the imbalance settlement phase of balance settlement process.

238 The information flows outlined in Figure 4 can be described as follows:

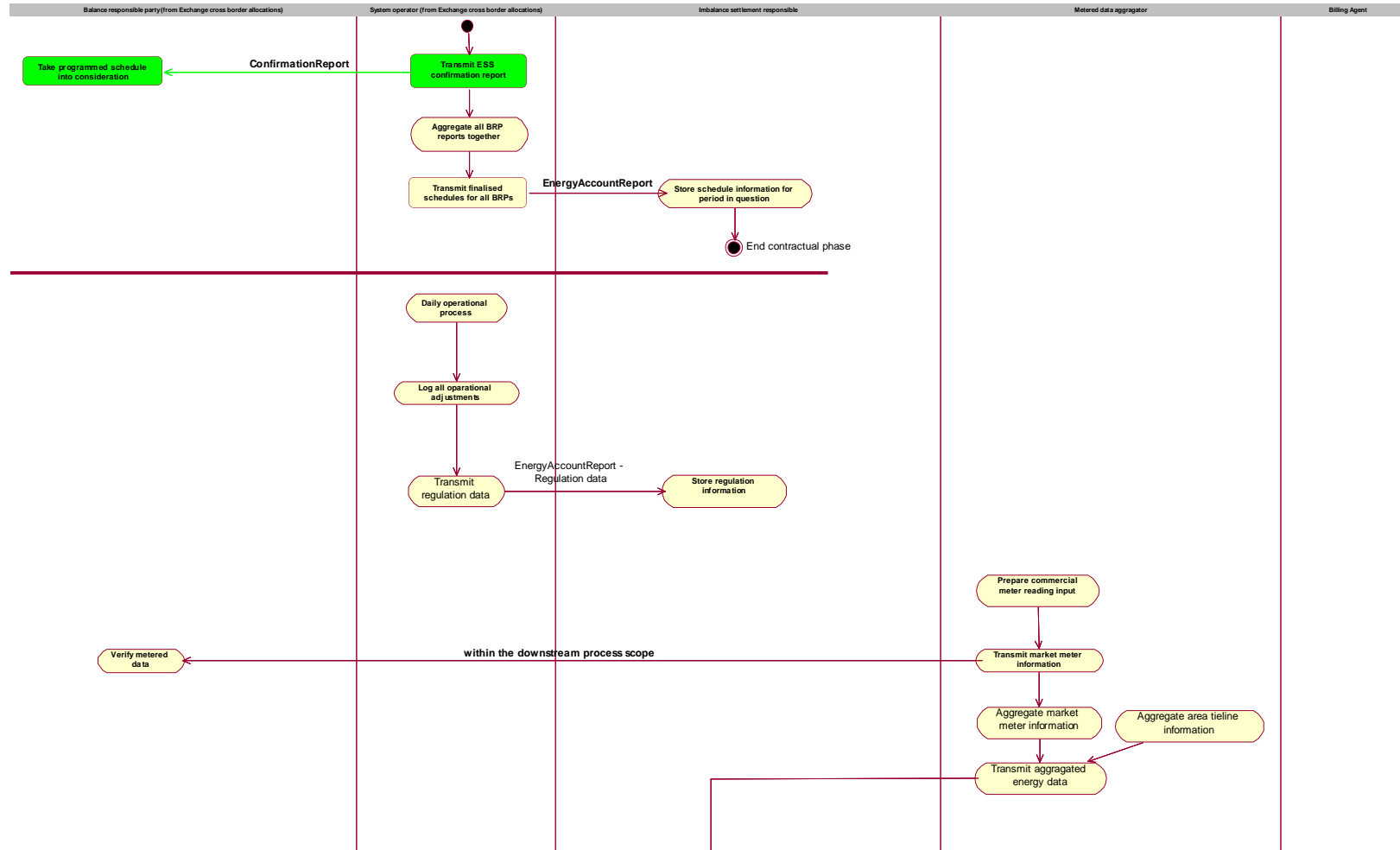
- 239 1. *Confirmation report (1)* is the last step of the ESS process, the agreed schedules may
240 be day ahead, intraday or after the fact schedules.
- 241 2. *Finalised schedules (2)* are the actual aggregated schedules that have been used for
242 operational purposes.
- 243 3. *Regulation data (4)* is sent from the System operator to the imbalance settlement
244 responsible. This regulation data may consist of the aggregation of, for example,
245 measured data, and estimated participation in ancillary services.
- 246 4. *Aggregated energy data (6)* is sent from the meter data aggregator to the imbalance
247 settlement responsible that contains the aggregated meter values of all the market
248 areas, balance units and market relevant tielines.
- 249 5. *Acknowledgement report (3, 5, 7, 12, 15 and 17)* is sent to acknowledge reception of
250 a previously received document and eventually to report error conditions. A particular
251 case can be made of the acknowledgement report to trigger a final aggregated
252 energy document from the metered data aggregator.
- 253 6. *Market metered information (9) and its corresponding acknowledgement (10)* is
254 outside the scope of the settlement process. This particular process can be found
255 within the downstream operational process for metered data collection.
- 256 7. *Draft Imbalance report (11)* contains the values calculated by the imbalance
257 settlement responsible on the basis of aggregated metered data, finalised schedules
258 and regulation data. At this level, the price is assumed to be known by the imbalance
259 settlement responsible thus enabling the settlement amount to be calculated. In TSO
260 to TSO exchanges, such as inadvertent energy exchange, only the mega-watt hour
261 values (the energy values) are of interest.
- 262 8. *Final imbalance report (14 per individual balance responsible party and 16 for all*
263 *balance responsible parties)* is the result of the reprocessing(s) in step 13. This is the
264 final report of the draft described above
- 265 9. *Invoice (18)* is prepared by the billing agent based on the final imbalance report and
266 is not within the scope of the imbalance settlement process.
- 267 10. *Clearing fees (19)* for imbalance settlement management may have to be charged to
268 the balance responsible party depending on local market rules. This is not within the
269 scope of the imbalance settlement process.

270 The imbalance settlement process may be nested within settlement accounting periods (for
271 example, monthly periods may be nested within quarterly, half-yearly or yearly periods).

272 The reconciliation process to handle divergences between invoiced values and finalised
273 results are catered for in the settlement process as a special case of the illustrated process.
274 It is in effect a mix of the reiterations of points 6 through 15. For example, the refining of a
275 standard profile using metered values is carried out under the reconciliation process.

276

278 **1.1 IMBALANCE SETTLEMENT INFORMATION FLOWS**



279

280

FIGURE 5: THE IMBALANCE SETTLEMENT PROCESS

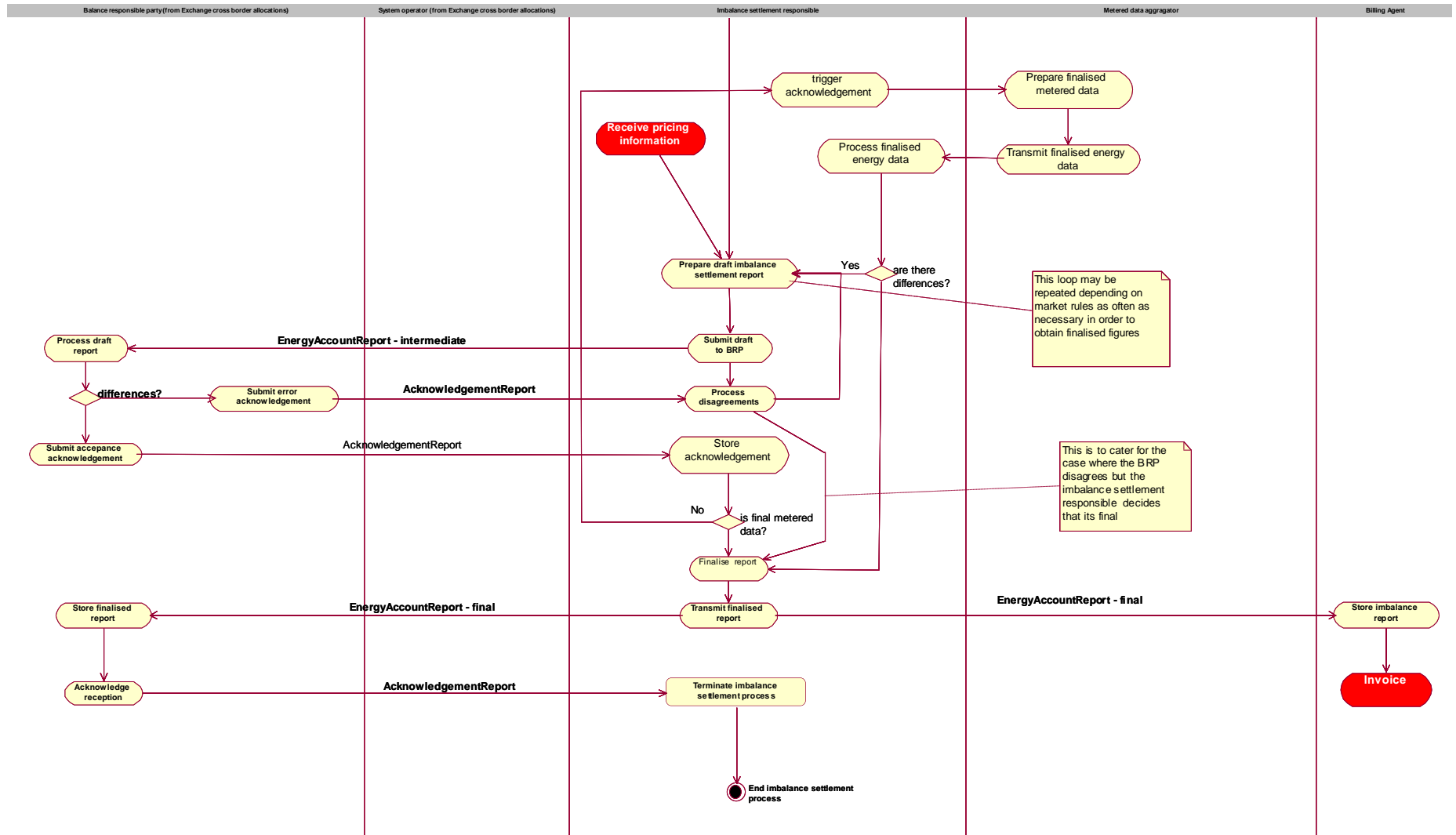


FIGURE 6: THE IMBALANCE SETTLEMENT PROCESS

284 The workflow diagram described in Figure 5 and Figure 6 shows the process flow for
285 imbalance settlement.

286 Initially the system operator compiles and aggregates all the balance responsible
287 schedules by party and area (this is currently the role that has responsibility for
288 scheduling within the ESS. However, a party other than the system operator, for
289 example, imbalance settlement responsible in the case of Austria, may handle such a
290 function. Such parties generally handle the internal schedules leaving the external
291 schedules to the system operator to handle). This information is sent to the imbalance
292 settlement responsible by a “**finalised schedule**” in an EAR structure. The imbalance
293 settlement responsible stores the information for later use in determining the
294 imbalances.

295 After the daily operational process has been executed, the system operator
296 aggregates together all the regulation data that impacts the imbalance process (i.e.
297 ancillary services). Such information is required in order to ensure that the
298 imbalances are correctly determined depending on local market rules. This
299 information is also communicated to the imbalance settlement responsible through
300 “**regulation data report**” in an EAR structure.

301 In a parallel process the metered data aggregator assembles and aggregates the
302 metered information for the market. A similar action is also carried out for the border
303 tielines. The first type of metering information is necessary in order to calculate the
304 imbalance of a party while the second type of metering information will be used to
305 calculate the imbalance of the balance area. This means the deviation between the
306 aggregated programmed cross-border schedules of all parties on the borders of the
307 control areas and the aggregation of all the metered values on the tielines. The
308 resulting information is then sent to the imbalance settlement responsible, generally in
309 an intermediate form. This information is also communicated to the imbalance
310 settlement responsible through an “**aggregated energy data report**” in an EAR
311 structure.

312 The imbalance settlement responsible on reception of the metered data prepares a
313 draft imbalance settlement report for transmission to the balance responsible parties
314 for validation. This information is communicated to the balance responsible parties
315 through an “**imbalance report**” in an EAR structure.

316 The balance responsible parties indicate their agreement or disagreement to the
317 imbalance settlement responsible through the use of an acknowledgement report.

318 In the case of disagreements, the imbalance settlement responsible takes the
319 necessary corrective action and may reissue the report.

320 At a given point in time in the process the imbalance settlement responsible, if he has
321 not yet received a final “**aggregated energy data report**”, may request that the
322 metered data aggregator supply him with the finalised “**aggregated energy data**
323 **report**”. This is generally subject to a cutoff delay.

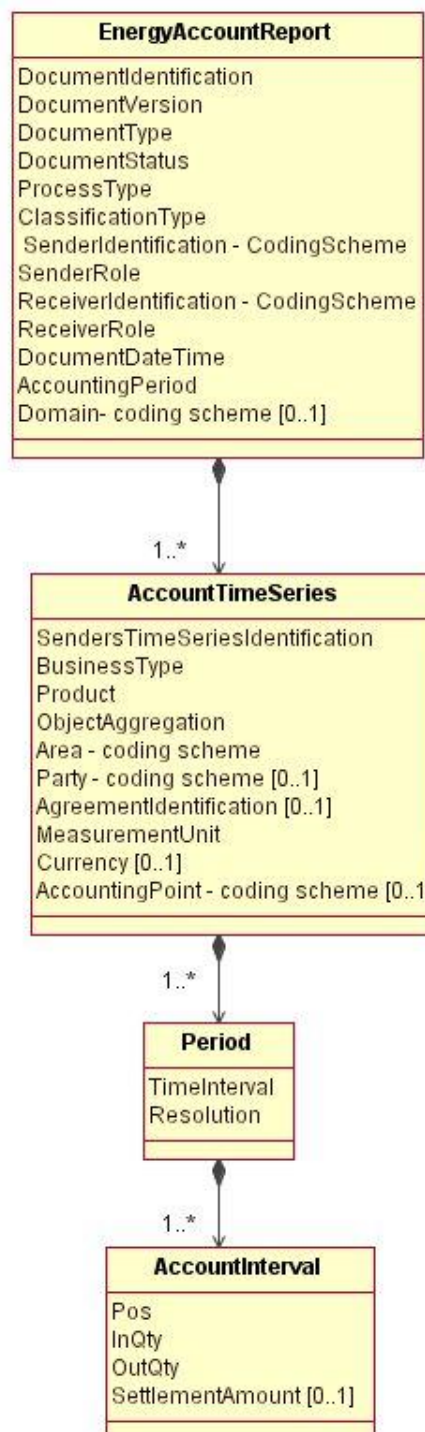
324 On reception of the finalised “**aggregated energy data report**” the imbalance
325 settlement responsible verifies if any differences exist. In such a case, a draft
326 “**imbalance report**” is reissued to the balance responsible party.

327 When the imbalance settlement responsible has received a positive
328 acknowledgement from the balance responsible party concerning the draft imbalance
329 information, he will send a finalised “**imbalance report**” to the balance responsible

330 party. The imbalance settlement responsible sends a consolidated report to the billing
331 agent for invoicing. This information is communicated to the parties in question
332 through an EAR structure.

333 4 ENERGY ACCOUNT REPORT IMPLEMENTATION

334 4.1 INFORMATION MODEL



335

336

FIGURE 7: EAR INFORMATION MODEL

337 **4.2 RULES GOVERNING THE ENERGY ACCOUNT REPORT**
338 **IMPLEMENTATION**

339 **4.2.1 GENERAL RULES GOVERNING DOCUMENT CONTENT**

340 **4.2.1.1 MAJOR CATEGORISATION OF DOCUMENT INFORMATION MATRIX**

Document type	Business type	Process type
A09 - Finalised schedule	A02 - Internal trade A03- External trade explicit capacity A09 - IPP (Independent power producer)	A04 - System operation closure,
A10 - Regulation data report	A10 – Tertiary control A11 - Primary control A12 - Secondary control	A04 - System operation closure
A11 – Aggregated energy data report	A13 - Load profile A14 - Aggregated energy data A15 - Losses A16 - Transits (CBT)	A05 - Metered data aggregation
A12 - Imbalance report	A02 - Internal trade A03- External trade explicit capacity A09 - IPP (Independent power producer) A10 – Tertiary control A11 - Primary control A12 - Secondary control A13 - Load profile A14 - Aggregated energy data A15 - Losses A16 - Transits (CBT) A17 - Settlement deviation A18 - technical constraint deviation A19 – balance energy deviation A20 – imbalance volume A21 - inadvertent deviation A22 - Frequency control A23 - Balance management A24 – Total trade A30 - Internal inter-area trade	A06 - Imbalance settlement

342 4.3 ENERGY ACCOUNT REPORT CLASS SPECIFICATIONS

343 4.3.1 DOCUMENT IDENTIFICATION

ACTION	DESCRIPTION
Definition of element	Unique identification of the document for which the time series data is being supplied.
Description	<p>An Energy account report for a given set of time series and a given accounting period must have a unique identification assigned by the sender of the document for all transmissions to the receiver.</p> <p>All additions, modifications, or suppressions for the time series and accounting period must use the same identification.</p>
Size	The identification of a document may not exceed 35 alphanumeric characters.
Applicability	This information is mandatory.
Dependence requirements	None

344 4.3.2 DOCUMENT VERSION

ACTION	DESCRIPTION
Definition of element	Version of the document being sent. A document may be sent several times, each transmission being identified by a different version number that starts at 1 and increases sequentially.
Description	<p>The document version is used to identify a given version of a time series set for a given accounting period.</p> <p>The first version number for a given document identification shall normally be 1.</p> <p>The document version number must be incremented for each retransmission of a document that contains changes to the previous version.</p> <p>The receiving system should ensure that the version number for a document is superior to the previous version number received.</p>
Size	A version number may not exceed 3 numeric characters.
Applicability	This information is mandatory.
Dependence requirements	None.

345

346 4.3.3 DOCUMENT TYPE

ACTION	DESCRIPTION
Definition of element	The coded type of the document being sent.
Description	The document type identifies the information flow characteristics. Refer to ENTSO-E Code list document for valid codes. <i>Intended codes are:</i> A09 - Finalised schedule A10 - Regulation data report A11 - energy data report A12 - Imbalance report
Size	The document type value must be exactly 3 alphanumeric characters (no blanks).
Applicability	This information is mandatory.
Dependence requirements	None.

347 4.3.4 DOCUMENT STATUS

ACTION	DESCRIPTION
Definition of element	The coded status of the document being sent.
Description	The document status identifies the status of the information sent (e.g. intermediate, final, etc.). Refer to ENTSO-E Code list document for valid codes. <i>Intended codes are:</i> A01 - Intermediate A02 – Final
Size	The document status value must be exactly 3 alphanumeric characters (no blanks).
Applicability	This information is mandatory.
Dependence requirements	None.

348 4.3.5 PROCESS TYPE

ACTION	DESCRIPTION
Definition of element	The nature of the process that the document is directed at.
Description	<p>The process type identifies the process to which the information flow is directed.</p> <p>Refer to ENTSO-E Code list document for valid codes.</p> <p><i>Intended codes are:</i> A04 - System Operation closure A05 - Metered data aggregation A06 - Imbalance settlement</p>
Size	The process type value must be exactly 3 alphanumeric characters (no blanks).
Applicability	This information is mandatory.
Dependence requirements	None.

349 4.3.6 CLASSIFICATION TYPE

ACTION	DESCRIPTION
Definition of element	A type that is used to classify the document by aggregation or classification.
Description	<p>The classification type identifies the aggregation or classification type of the document.</p> <p>Refer to ENTSO-E Code list document for valid classification type codes.</p> <p><i>Intended codes are:</i> A01 - Detail A02 - Summary</p>
Size	The classification type value must be exactly 3 alphanumeric characters (no blanks).
Applicability	This information is mandatory.
Dependence requirements	None.

350 4.3.7 SENDER IDENTIFICATION – CODING SCHEME

ACTION	DESCRIPTION
Definition of element	Identification of the party that is the owner of the document and is responsible for its content.
Description	<p>The sender of the document is identified by a unique coded identification. This code identifies the party that is the “owner” of the information being transmitted in the document and who is responsible for its content.</p> <p>The codification scheme used for the coded identification is indicated by the coding scheme attribute. It is a 3 character alphanumeric code.</p> <p>Refer to ENTSO-E Code list document for valid coding scheme codes.</p>
Size	<p>The maximum length of a sender’s identification is 16 alphanumeric characters.</p> <p>The maximum length of the coding scheme code is 3 alphanumeric characters.</p>
Applicability	Both the identification and the coding scheme are mandatory.
Dependence requirements	None.

351 4.3.8 SENDER ROLE

ACTION	DESCRIPTION
Definition of element	Identification of the role that is played by the sender.
Description	<p>The sender role, which identifies the role of the sender within the document.</p> <p>Refer to ENTSO-E Code list document for valid role codes.</p>
Size	The maximum length of a sender role is 3 alphanumeric characters.
Applicability	This information is mandatory.
Dependence requirements	None.

352 4.3.9 RECEIVER IDENTIFICATION – CODING SCHEME

ACTION	DESCRIPTION
Definition of element	Identification of the party who is receiving the document.
Description	<p>The receiver of the document is identified by a unique coded identification.</p> <p>The codification scheme used for the coded identification is indicated by the coding scheme attribute. It is a 3 character alphanumeric code.</p> <p>Refer to ENTSO-E Code list document for valid coding scheme codes.</p>
Size	<p>The maximum length of a receiver's identification is 16 alphanumeric characters.</p> <p>The maximum length of the coding scheme code is 3 alphanumeric characters.</p>
Applicability	Both the identification and the coding scheme are mandatory.
Dependence requirements	None.

353 4.3.10 RECEIVER ROLE

ACTION	DESCRIPTION
Definition of element	Identification of the role played by the receiver.
Description	<p>The receiver role, which identifies the role of the receiver within the document.</p> <p>Refer to ENTSO-E Code list document for valid role codes.</p>
Size	The maximum length of a receiver role is 3 alphanumeric characters.
Applicability	This information is mandatory.
Dependence requirements	None.

354 4.3.11 DOCUMENT DATE AND TIME

ACTION	DESCRIPTION
Definition of element	Date and time of the creation of the document.
Description	The date and time that the document was prepared for transmission by the application of the sender.
Size	The date and time must be expressed in UTC as YYYY-MM-DDTHH:MM:SSZ.
Applicability	This information is mandatory.
Dependence requirements	None.

355 4.3.12 ACCOUNTING PERIOD

ACTION	DESCRIPTION
Definition of element	The beginning and ending date and time of the period covered by the document.
Description	This information provides the start and end date and time of the accounting period. The receiver will discard any time intervals outside the accounting period.
Size	The start and end date and time must be expressed as YYYY-MM-DDTHH:MMZ/YYYY-MM-DDTHH:MMZ.
Applicability	This information is mandatory.
Dependence requirements	None.

356 4.3.13 DOMAIN - CODINGSCHEME

ACTION	DESCRIPTION
Definition of element	The domain covered within the Energy Account Report.
Description	<p>The identification of the domain that is covered in the Energy Account Report. This will be frequently be the Market Balance Area that is the subject of the report. However, other domains may also be used as defined by local market rules to enable the particular balancing markets to be identified.</p> <p>The codification scheme used for the coded identification is indicated by the coding scheme attribute. It is a 3 character alphanumeric code.</p> <p>Refer to ENTSO-E Code list document for valid coding scheme codes.</p>
Size	<p>The maximum length of this information is 18 alphanumeric characters.</p> <p>The maximum length of the coding scheme code is 3 alphanumeric characters.</p>
Applicability	This information is dependent.
Dependence requirements	Usage is defined by local market rules

357 **4.4 RULES GOVERNING THE ACCOUNT TIME SERIES CLASS**

358 **4.4.1 DEPENDENCY MATRIX**

359 The Account time series has four attributes that are used depending on the following
360 set of conditions:

361

Attribute	Document Type	Process Type	Classification Type	Business Type	Object Aggregation
Party	ALL	ALL	A01 "detail"	ALL	A03 "Party"
Currency	A12 "Imbalance report"	A06 "imbalance settlement"	ALL	A17 "Settlement deviation", A18, "technical constraint deviation" A19 "balance energy deviation" A20 "imbalance volume"	ALL
Agreement Identification	A09 "finalised schedule" A11 "Aggregated energy data" A12 "Imbalance report"	A04 "system operation closure" A05 "metered data aggregation" A06 "imbalance settlement"	A01 "detail"	A02 "internal trade" A03 "external trade" A10 "tertiary control" A16 "transits" A09 "IPP"	ALL
Accounting Point	A11 "Aggregated energy data" A12 "Imbalance report"	A05 "metered data aggregation" A06 "imbalance settlement"	A01 "detail"	All	A03 "Party"

362 4.4.2 SENDERS TIME SERIES IDENTIFICATION

ACTION	DESCRIPTION
Definition of element	Sender's identification of the time series instance. This must be unique for the whole document and guarantee the non-duplication of all the attributes of the account time series class.
Description	A unique identification within the document assigned by the sender.
Size	The maximum size of a time series identification is 35 alphanumeric characters.
Applicability	This information is mandatory.
Dependence requirements	None.

363 4.4.3 BUSINESS TYPE

ACTION	DESCRIPTION
Definition of element	Identifies the trading nature of an energy product.
Description	<p>The nature of the time series for which the product is handled.</p> <p>Refer to ENTSO-E Code list document for valid codes.</p> <p><i>Intended codes are:</i></p> <ul style="list-style-type: none"> A02 - Internal trade A03 - External trade A09 - IPP (Independent power producer) A10 – Tertiary control A11 - Primary control A12 - Secondary control A13 - Load profile A14 - Aggregated energy data A15 - Losses A16 - Transits (CBT) A17 - Settlement deviation A18 – Technical constraint deviation A19 – Balance energy deviation A20 – Imbalance volume A21 - Inadvertent deviation A22 - Frequency control A23 - Balance management A24 - Total trade
Size	The maximum length of this information is 3 alphanumeric characters.
Applicability	This information is mandatory.
Dependence requirements	None.

364 4.4.4 PRODUCT

ACTION	DESCRIPTION
Definition of element	Identification of an energy product such as power, energy, reactive power, transport capacity, etc.
Description	This identifies the product for which the time series is reporting. There is a different time series for each product. Refer to ENTSO-E Code list document for valid codes.
Size	The maximum length of this information is 13 numeric characters.
Applicability	This information is mandatory.
Dependence requirements	None.

365 4.4.5 OBJECT AGGREGATION

ACTION	DESCRIPTION
Definition of element	Identifies how the object is aggregated.
Description	This identified to what extent the object is aggregated. Refer to ENTSO-E Code list document for valid codes. <i>Intended codes are:</i> A01 - Area A03 - Party
Size	The maximum length of this information is 3 alphanumeric characters.
Applicability	This information is mandatory.
Dependence requirements	None.

366 4.4.6 AREA – CODING SCHEME

ACTION	DESCRIPTION
Definition of element	The area of concern for the imbalance settlement responsible that the time series addresses.
Description	<p>The identification of the area (balance group, market balance area, control area, control block, coordination center zone, etc.) that the Imbalance settlement responsible handles.</p> <p>The codification scheme used for the coded identification is indicated by the coding scheme attribute. It is a 3 character alphanumeric code.</p> <p>Refer to ENTSO-E Code list document for valid coding scheme codes.</p>
Size	<p>The maximum length of the area code is 18 alphanumeric characters.</p> <p>The maximum length of the coding scheme code is 3 alphanumeric characters.</p>
Applicability	This information is mandatory.
Dependence requirements	

367 4.4.7 PARTY – CODING SCHEME

ACTION	DESCRIPTION
Definition of element	The party of concern for the time series.
Description	<p>The identification of the party of concern.</p> <p>The codification scheme used for the coded identification is indicated by the coding scheme attribute. It is a 3 character alphanumeric code.</p> <p>Refer to ENTSO-E Code list document for valid coding scheme codes.</p>
Size	<p>The maximum length of this information is 16 alphanumeric characters.</p> <p>The maximum length of the coding scheme code is 3 alphanumeric characters.</p>
Applicability	This information is dependent.
Dependence requirements	Refer to the matrix in 4.4.1 for dependency requirements.

368 4.4.8 AGREEMENT IDENTIFICATION

ACTION	DESCRIPTION
Definition of element	The identification of an agreement.
Description	This provides the identification of the agreement, such as a capacity agreement, that is relative to the time series
Size	The maximum length of this information is 35 alphanumeric characters.
Applicability	This information is dependent.
Dependence requirements	Refer to the matrix in 4.4.1 for dependency requirements.

369 4.4.9 MEASUREMENT UNIT

ACTION	DESCRIPTION
Definition of element	The unit of measure that is applied to the quantities in which the time series is expressed.
Description	The unit of measurement used for the quantities expressed within the time series. Refer to ENTSO-E Code list document for valid codes.
Size	The maximum length of this information is 3 alphanumeric characters.
Applicability	This information is mandatory.
Dependence requirements	None.

370 4.4.10 CURRENCY

ACTION	DESCRIPTION
Definition of element	The currency in which the monetary amount is expressed.
Description	The currency used for the monetary amount expressed within the time series. Refer to ENTSO-E Code list document for valid codes.
Size	The maximum length of this information is 3 alphanumeric characters respecting the standard ISO 4217.
Applicability	This information is dependent.
Dependence requirements	Refer to the matrix in 4.4.1 for dependency requirements.

371 4.4.11 ACCOUNTING POINT – CODING SCHEME

ACTION	DESCRIPTION
Definition of element	A point where the calculation of the energy produced or consumed is carried out. It may be a physical point situated at an extremity of a line; a virtual point that is an agreed position between two connections or an aggregation of physical or virtual points.
Description	<p>The identification of the Accounting Point where the settlement information has been aggregated.</p> <p>The codification scheme used for the coded identification is indicated by the coding scheme attribute. It is a 3 character alphanumeric code.</p> <p>Refer to ENTSO-E Code list document for valid coding scheme codes.</p>
Size	<p>The maximum length of this information is 16 alphanumeric characters.</p> <p>The maximum length of the coding scheme code is 3 alphanumeric characters.</p>
Applicability	This information is dependent.
Dependence requirements	Refer to the matrix in 4.4.1 for dependency requirements.

372 **4.5 RULES GOVERNING THE PERIOD CLASS**

373 There may be several period classes for a time series. The overall time interval
374 covered by the period shall be cover the complete accounting period.

375 The number of periods within a time series as characterized by the resolution must
376 completely cover the period's time interval.

377 If a time series is suppressed then the interval quantities are all zeroed out.

378 A senders minimal resolution must respect market rules.

379 **4.5.1 TIME INTERVAL.**

ACTION	DESCRIPTION
Definition of element	The start and end date and time of the time interval of the period in question.
Description	This information provides the start and end date and time of the period being reported.
Size	The start and end date and time must be expressed in compliance with the following format: YYYY-MM-DDTHH:MMZ/YYYY-MM-DDTHH:MMZ.
Applicability	This information is mandatory.
Dependence requirements	None.

380 **4.5.2 RESOLUTION**

ACTION	DESCRIPTION
Definition of element	The resolution defining the number of periods that the time interval is divided.
Description	This information defines the resolution of a single period. The time interval must contain a whole number of periods as expressed by the resolution.
Size	<p>The resolution is expressed in compliance with ISO 8601 in the following format: PnYnMnDTnHnMnS.</p> <p>Where nY expresses a number of years, nM a number of months, nD a number of days.</p> <p>The letter “T” separates the date expression from the time expression and after it nH identifies a number of hours, nM a number of minutes and nS a number of seconds.</p> <p>For example PT15M expresses a 15 minute resolution.</p>
Applicability	This information is mandatory.
Dependence requirements	None.

381 **4.6 RULES GOVERNING THE ACCOUNT INTERVAL CLASS**

382 The Account interval class contains the relative position within a time interval period,
383 the quantities associated with that position and eventually the total monetary amount
384 of the cost of any eventual imbalance.

385 The position must begin with 1 and increment by 1 for each subsequent position
386 forming a series of contiguous numbers covering the complete range of the period.

387 Any leading zeros in a position shall be suppressed.

388 Negative values are not allowed in time series quantities
389 Leading zeros in a quantity shall be suppressed before transmission.

390 4.6.1 DEPENDENCY MATRIX

Attribute	Document Type	Process Type	Classification Type	Business Type	Object Aggregation
Settlement amount	A12 "Imbalance report"	A06 "imbalance settlement"	ALL	A17 "Settlement deviation", A18, "technical constraint deviation" A19 "balance energy deviation" A20 "imbalance volume"	ALL

391 4.6.2 POS

ACTION	DESCRIPTION
Definition of element	The relative position of a period within an account interval.
Description	This information provides the relative position of a period within an account interval.
Size	The relative position must be expressed as a numeric integer value beginning with 1. All leading zeros must be suppressed. The maximum number of characters is 6.
Applicability	This information is mandatory.
Dependence requirements	None.

392 4.6.3 IN QTY

ACTION	DESCRIPTION
Definition of element	The quantity of the product that enters the area for the position within the account interval in question.
Description	<p>This information defines the quantity of the product that enters the area for the position within the account interval period.</p> <p>A decimal point value may be used to express values that are inferior to the defined unit of measurement.</p> <p>The decimal mark that separates the digits forming the integral part of a number from those forming the fractional part. (ISO 6093) shall always be a period (“.”).</p> <p>All quantities are non-signed values.</p>
Size	<p>The maximum length of this information is 17 numeric characters (decimal mark included).</p> <p>The number of decimal places identifying the fractional part of the quantity depends on local market rules.</p>
Applicability	This information is mandatory.
Dependence requirements	None.

393 4.6.4 OUT QTY

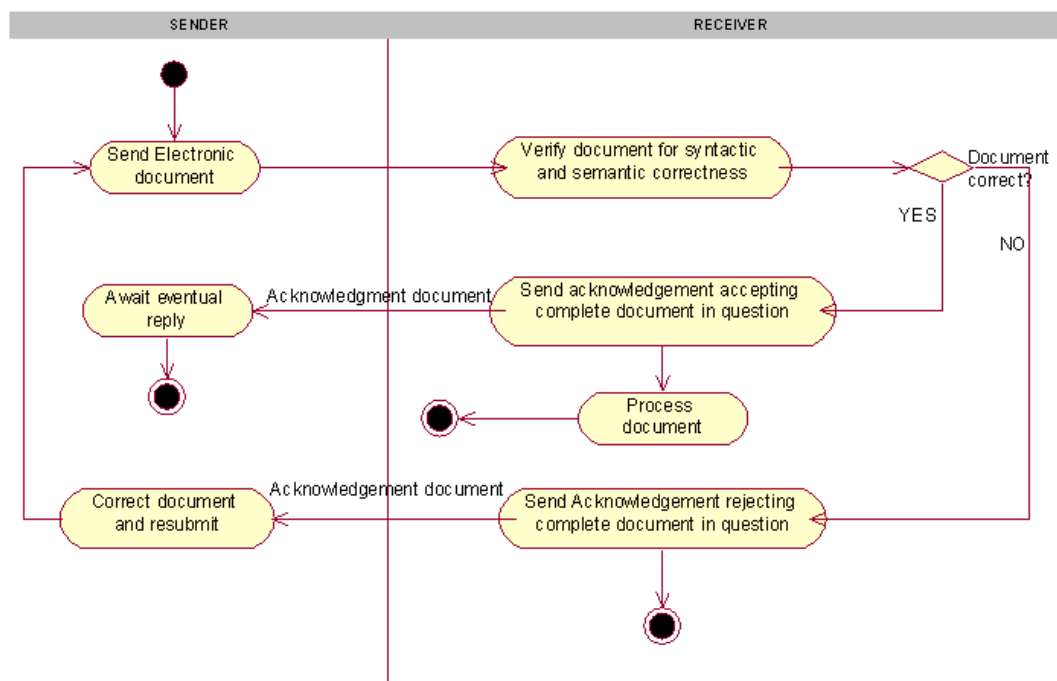
ACTION	DESCRIPTION
Definition of element	The quantity of the product that leaves the area. For the position within the account interval in question.
Description	<p>This information defines the quantity of the product that leaves the area for the position within the account interval period.</p> <p>A decimal point value may be used to express values that are inferior to the defined unit of measurement.</p> <p>The decimal mark that separates the digits forming the integral part of a number from those forming the fractional part. (ISO 6093) shall always be a period (“.”).</p> <p>All quantities are non-signed values.</p>
Size	<p>The maximum length of this information is 17 numeric characters (decimal mark included).</p> <p>The number of decimal places identifying the fractional part of the quantity depends on local market rules.</p>
Applicability	This information is mandatory.
Dependence requirements	None.

394 4.6.5 SETTLEMENT AMOUNT

ACTION	DESCRIPTION
Definition of element	The amount due for the account interval in question.
Description	<p>This information defines the settlement amount taking into consideration the in and out quantities and the pricing scheme based on local market rules.</p> <p>A negative value indicates that the settlement amount is due by the party in question (party to be debited). If the amount is positive it is due by the imbalance settlement responsible (party to be credited).</p> <p>The decimal mark that separates the digits forming the integral part of a number from those forming the fractional part (ISO 6093) shall always be a period (“.”).</p>
Size	The maximum length of this information is 17 numeric characters (decimal mark and sign, if used included).
Applicability	This information is dependent.
Dependence requirements	Refer to the matrix in 4.6.1 for dependency requirements.

395 5 ACKNOWLEDGEMENT DOCUMENT 396 IMPLEMENTATION

397 The Acknowledgement document fits into a general ENTSO-E acknowledgement process as
398 outlined in the figure below.



399

400

FIGURE 8: ACKNOWLEDGEMENT PROCESS

401 The Acknowledgement document shall be used in conjunction with the transmission of all
402 electronic documents defined in the ESS process Information flow diagramme as requiring it
403 for application acknowledgement.

404 When a document is received it will be verified at the application level to ensure that there
405 are no faults in it that could prevent its correct processing.

406 A document that is valid after this verification which necessitates the generation of an
407 application acknowledgement shall require the transmission of an ENTSO-E
408 Acknowledgement document accepting in its entirety the document in question.

409 A document that has an error in it which necessitates the generation of an application
410 acknowledgement shall require the transmission of an ENTSO-E Acknowledgement
411 document that completely or partially rejects the document in question.

412 Note: The Acknowledgement document should be at least from version 4.0. It can be downloaded from the ENTSO-e website
413 (www.entsoe.eu).

414 6 XML DTD AND SCHEMA DEFINITIONS

415 6.1 ENERGY ACCOUNT REPORT – DTD DEFINITION

```
416 <?xml version="1.0" encoding="UTF-8"?>
417 <?xml-stylesheet type="text/xsl" href="ear-xsl.xsl"?>
418 <!-- ENTSO-E Task Force 14 - DTD Version : 1 RELEASE : 1 -->
419 <!ELEMENT EnergyAccountReport (DocumentIdentification, DocumentVersion, DocumentType,
420 DocumentStatus, ProcessType, ClassificationType, SenderIdentification, SenderRole, ReceiverIdentification, ReceiverRole,
421 DocumentDateTime, AccountingPeriod, Domain, AccountTimeSeries+)>
422 <!ATTLIST EnergyAccountReport DtdVersion CDATA #REQUIRED
423 DtdRelease CDATA #REQUIRED>
424
425 <!ELEMENT DocumentIdentification EMPTY>
426 <!ATTLIST DocumentIdentification v CDATA #REQUIRED>
427
428 <!ELEMENT DocumentVersion EMPTY>
429 <!ATTLIST DocumentVersion v CDATA #REQUIRED>
430
431 <!ELEMENT DocumentType EMPTY>
432 <!ATTLIST DocumentType v CDATA #REQUIRED>
433 <!-- See Document type valid codes and meanings in implementation guide -->
434
435 <!ELEMENT DocumentStatus EMPTY>
436 <!ATTLIST DocumentStatus v CDATA #REQUIRED>
437 <!-- See Document status valid codes and meanings in implementation guide -->
438
439 <!ELEMENT ProcessType EMPTY>
440 <!ATTLIST ProcessType v CDATA #REQUIRED>
441 <!-- See role meanings in implementation guide -->
442
443 <!ELEMENT ClassificationType EMPTY>
444 <!ATTLIST ClassificationType v CDATA #REQUIRED>
445 <!-- See meanings in implementation guide -->
446
447 <!ELEMENT SenderIdentification EMPTY>
448 <!ATTLIST SenderIdentification v CDATA #REQUIRED
449 codingScheme CDATA #REQUIRED>
450
451 <!ELEMENT SenderRole EMPTY>
452 <!ATTLIST SenderRole v CDATA #REQUIRED>
453 <!-- See role meanings in implementation guide -->
454
455 <!ELEMENT ReceiverIdentification EMPTY>
456 <!ATTLIST ReceiverIdentification v CDATA #REQUIRED
457 codingScheme CDATA #REQUIRED>
458
459 <!ELEMENT ReceiverRole EMPTY>
460 <!ATTLIST ReceiverRole v CDATA #REQUIRED>
461 <!-- See role meanings in implementation guide -->
462
463 <!ELEMENT DocumentDateTime EMPTY>
464 <!ATTLIST DocumentDateTime v CDATA #REQUIRED>
465
466 <!ELEMENT AccountingPeriod EMPTY>
467 <!ATTLIST AccountingPeriod v CDATA #REQUIRED>
468
469 <!ELEMENT Domain EMPTY>
470 <!ATTLIST Domain v CDATA #REQUIRED>
```


471
472 <!ELEMENT AccountTimeSeries (SendersTimeSeriesIdentification, BusinessType, Product, ObjectAggregation, Area,
473 Party?, AgreementIdentification?, MeasurementUnit, Currency?, AccountingPoint?, Period+)>
474
475 <!ELEMENT SendersTimeSeriesIdentification EMPTY>
476 <!ATTLIST SendersTimeSeriesIdentification v CDATA #REQUIRED>
477
478 <!ELEMENT BusinessType EMPTY>
479 <!ATTLIST BusinessType v CDATA #REQUIRED>
480 <!-- See Business type valid codes and meanings in implementation guide -->
481
482 <!ELEMENT Product EMPTY>
483 <!ATTLIST Product v CDATA #REQUIRED>
484 <!-- See product valid codes and meanings in implementation guide -->
485
486 <!ELEMENT ObjectAggregation EMPTY>
487 <!ATTLIST ObjectAggregation v CDATA #REQUIRED>
488 <!-- See object aggregation valid codes and meanings in implementation guide -->
489
490 <!ELEMENT Area EMPTY>
491 <!ATTLIST Area v CDATA #REQUIRED
492 codingScheme CDATA #REQUIRED>
493
494 <!ELEMENT Party EMPTY>
495 <!ATTLIST Party v CDATA #REQUIRED
496 codingScheme CDATA #REQUIRED>
497
498 <!ELEMENT AgreementIdentification EMPTY>
499 <!ATTLIST AgreementIdentification v CDATA #REQUIRED>
500
501 <!ELEMENT MeasurementUnit EMPTY>
502 <!ATTLIST MeasurementUnit v CDATA #REQUIRED>
503 <!-- See measurement unit meanings in implementation guide -->
504
505 <!ELEMENT Currency EMPTY>
506 <!ATTLIST Currency v CDATA #REQUIRED>
507 <!-- See currency codes in ISO 4712 -->
508
509 <!ELEMENT AccountingPoint EMPTY>
510 <!ATTLIST AccountingPoint v CDATA #REQUIRED
511 codingScheme CDATA #REQUIRED>
512
513 <!ELEMENT Period (TimeInterval, Resolution, AccountInterval+)>
514
515 <!ELEMENT TimeInterval EMPTY>
516 <!ATTLIST TimeInterval v CDATA #REQUIRED>
517
518 <!ELEMENT Resolution EMPTY>
519 <!ATTLIST Resolution v CDATA #REQUIRED>
520
521 <!ELEMENT AccountInterval (Pos, InQty, OutQty, SettlementAmount?)>
522
523 <!ELEMENT Pos EMPTY>
524 <!ATTLIST Pos v CDATA #REQUIRED>
525
526 <!ELEMENT InQty EMPTY>
527 <!ATTLIST InQty v CDATA #REQUIRED>
528
529 <!ELEMENT OutQty EMPTY>
530 <!ATTLIST OutQty v CDATA #REQUIRED>
531
532 <!ELEMENT SettlementAmount EMPTY>

538 6.2.2 ENERGY ACCOUNT REPORT – SCHEMA DEFINITION

```

539 <?xml version="1.0" encoding="UTF-8"?>
540 <!-- edited with XMLSpy v2008 sp1 (http://www.altova.com) by Michael Conroy (TEDIOR SARL) -->
541 <!-- edited with XMLSPY v2004 rel. 3 U (http://www.xmlspy.com) by user user (SEMA) -->
542 <xsd:schema xmlns:ecc="etso-core-cmpts.xsd" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
543 elementFormDefault="qualified" attributeFormDefault="unqualified" ecc:VersionRelease="3.3">
544   <xsd:import namespace="etso-core-cmpts.xsd" schemaLocation="../core/etso-core-cmpts.xsd"/>
545   <!--
546           ENTSO-E Document Automatically generated from a UML class diagram using XMI.
547           Generation tool version 1.7
548   -->
549   <xsd:element name="EnergyAccountReport">
550     <xsd:complexType>
551       <xsd:annotation>
552         <xsd:documentation/>
553       </xsd:annotation>
554       <xsd:sequence>
555         <xsd:element name="DocumentIdentification" type="ecc:IdentificationType">
556           <xsd:annotation>
557             <xsd:documentation/>
558           </xsd:annotation>
559         </xsd:element>
560         <xsd:element name="DocumentVersion" type="ecc:VersionType">
561           <xsd:annotation>
562             <xsd:documentation/>
563           </xsd:annotation>
564         </xsd:element>
565         <xsd:element name="DocumentType" type="ecc:MessageType">
566           <xsd:annotation>
567             <xsd:documentation/>
568           </xsd:annotation>
569         </xsd:element>
570         <xsd:element name="DocumentStatus" type="ecc:StatusType">
571           <xsd:annotation>
572             <xsd:documentation/>
573           </xsd:annotation>
574         </xsd:element>
575         <xsd:element name="ProcessType" type="ecc:ProcessType">
576           <xsd:annotation>
577             <xsd:documentation/>
578           </xsd:annotation>
579         </xsd:element>
580         <xsd:element name="ClassificationType" type="ecc:ClassificationType">
581           <xsd:annotation>
582             <xsd:documentation/>
583           </xsd:annotation>
584         </xsd:element>
585         <xsd:element name="SenderIdentification" type="ecc:PartyType">
586           <xsd:annotation>
587             <xsd:documentation/>
588           </xsd:annotation>
589         </xsd:element>
590         <xsd:element name="SenderRole" type="ecc:RoleType">
591           <xsd:annotation>
592             <xsd:documentation/>
593           </xsd:annotation>
594         </xsd:element>
595         <xsd:element name="ReceiverIdentification" type="ecc:PartyType">
596           <xsd:annotation>
597             <xsd:documentation/>
598           </xsd:annotation>
599         </xsd:element>
600         <xsd:element name="ReceiverRole" type="ecc:RoleType">
601           <xsd:annotation>
602             <xsd:documentation/>
603           </xsd:annotation>
604         </xsd:element>
605         <xsd:element name="DocumentDateTime" type="ecc:MessageDateTimeType">
606           <xsd:annotation>

```

```

607         <xsd:documentation/>
608     </xsd:annotation>
609 </xsd:element>
610 <xsd:element name="AccountingPeriod" type="ecc:TimeIntervalType">
611     <xsd:annotation>
612         <xsd:documentation/>
613     </xsd:annotation>
614 </xsd:element>
615 <xsd:element name="Domain" type="ecc:AreaType" minOccurs="0">
616     <xsd:annotation>
617         <xsd:documentation/>
618     </xsd:annotation>
619 </xsd:element>
620 <xsd:element name="AccountTimeSeries" type="AccountTimeSeries_Type"
621 maxOccurs="unbounded"/>
622 </xsd:sequence>
623 <xsd:attribute name="DtdVersion" type="xsd:string" use="required"/>
624 <xsd:attribute name="DtdRelease" type="xsd:string" use="required"/>
625 </xsd:complexType>
626 </xsd:element>
627 <xsd:complexType name="AccountTimeSeries_Type">
628     <xsd:annotation>
629         <xsd:documentation/>
630     </xsd:annotation>
631 <xsd:sequence>
632     <xsd:element name="SendersTimeSeriesIdentification" type="ecc:IdentificationType">
633         <xsd:annotation>
634             <xsd:documentation/>
635         </xsd:annotation>
636     </xsd:element>
637     <xsd:element name="BusinessType" type="ecc:BusinessType">
638         <xsd:annotation>
639             <xsd:documentation/>
640         </xsd:annotation>
641     </xsd:element>
642     <xsd:element name="Product" type="ecc:EnergyProductType">
643         <xsd:annotation>
644             <xsd:documentation/>
645         </xsd:annotation>
646     </xsd:element>
647     <xsd:element name="ObjectAggregation" type="ecc:ObjectAggregationType">
648         <xsd:annotation>
649             <xsd:documentation/>
650         </xsd:annotation>
651     </xsd:element>
652     <xsd:element name="Area" type="ecc:AreaType">
653         <xsd:annotation>
654             <xsd:documentation/>
655         </xsd:annotation>
656     </xsd:element>
657     <xsd:element name="Party" type="ecc:PartyType" minOccurs="0">
658         <xsd:annotation>
659             <xsd:documentation/>
660         </xsd:annotation>
661     </xsd:element>
662     <xsd:element name="AgreementIdentification" type="ecc:IdentificationType" minOccurs="0">
663         <xsd:annotation>
664             <xsd:documentation/>
665         </xsd:annotation>
666     </xsd:element>
667     <xsd:element name="MeasurementUnit" type="ecc:UnitOfMeasureType">
668         <xsd:annotation>
669             <xsd:documentation/>
670         </xsd:annotation>
671     </xsd:element>
672     <xsd:element name="Currency" type="ecc:CurrencyType" minOccurs="0">
673         <xsd:annotation>
674             <xsd:documentation/>
675         </xsd:annotation>
676     </xsd:element>
677     <xsd:element name="AccountingPoint" type="ecc:AreaType" minOccurs="0">

```

```

678         <xsd:annotation>
679             <xsd:documentation/>
680         </xsd:annotation>
681     </xsd:element>
682     <xsd:element name="Period" type="Period_Type" maxOccurs="unbounded"/>
683 </xsd:sequence>
684 </xsd:complexType>
685 <xsd:complexType name="Period_Type">
686     <xsd:annotation>
687         <xsd:documentation/>
688     </xsd:annotation>
689     <xsd:sequence>
690         <xsd:element name="TimeInterval" type="ecc:TimeIntervalType">
691             <xsd:annotation>
692                 <xsd:documentation/>
693             </xsd:annotation>
694         </xsd:element>
695         <xsd:element name="Resolution" type="ecc:ResolutionType">
696             <xsd:annotation>
697                 <xsd:documentation/>
698             </xsd:annotation>
699         </xsd:element>
700         <xsd:element name="AccountInterval" type="AccountInterval_Type" maxOccurs="unbounded"/>
701     </xsd:sequence>
702 </xsd:complexType>
703 <xsd:complexType name="AccountInterval_Type">
704     <xsd:annotation>
705         <xsd:documentation/>
706     </xsd:annotation>
707     <xsd:sequence>
708         <xsd:element name="Pos" type="ecc:PositionType">
709             <xsd:annotation>
710                 <xsd:documentation/>
711             </xsd:annotation>
712         </xsd:element>
713         <xsd:element name="InQty" type="ecc:QuantityType">
714             <xsd:annotation>
715                 <xsd:documentation/>
716             </xsd:annotation>
717         </xsd:element>
718         <xsd:element name="OutQty" type="ecc:QuantityType">
719             <xsd:annotation>
720                 <xsd:documentation/>
721             </xsd:annotation>
722         </xsd:element>
723         <xsd:element name="SettlementAmount" type="ecc:AmountType" minOccurs="0">
724             <xsd:annotation>
725                 <xsd:documentation/>
726             </xsd:annotation>
727         </xsd:element>
728     </xsd:sequence>
729 </xsd:complexType>
730 </xsd:schema>

```

731 6.3 ENERGY ACCOUNT REPORT DATA INSTANCE

```

732 <EnergyAccountReport DtdVersion="1" DtdRelease="1">
733   <DocumentIdentification v="1234"/>
734   <DocumentVersion v="1"/>
735   <DocumentType v="A09"/>
736   <DocumentStatus v="A02"/>
737   <ProcessType v="A01"/>
738   <ClassificationType v="A01"/>
739   <SenderIdentification v="5790000432752" codingScheme="A10"/>
740   <SenderRole v="A04"/>
741   <ReceiverIdentification v="10X000000000RTEM" codingScheme="A01"/>
742   <ReceiverRole v="A05"/>
743   <DocumentDateTime v="2001-06-02T09:00:00Z"/>
744   <AccountingPeriod v="2001-06-02T22:00Z/2001-06-02T23:00Z"/>
745   <AccountTimeSeries>
746     <SendersTimeSeriesIdentification v="TS0001"/>
747     <BusinessType v="A03"/>
748     <Product v="8716867000016"/>
749     <ObjectAggregation v="A01"/>
750     <Area v="12Y000002347651H" codingScheme="A01"/>
751     <Party v="11X000000340533X" codingScheme="A01"/>
752     <AgreementIdentification v="R567"/>
753     <MeasurementUnit v="MAW"/>
754     <Period>
755       <TimeInterval v="2001-06-02T22:00Z/2001-06-02T23:00Z"/>
756       <Resolution v="PT15M"/>
757     <AccountInterval>
758       <Pos v="1"/>
759       <InQty v="45"/>
760       <OutQty v="45"/>
761     </AccountInterval>
762     <AccountInterval>
763       <Pos v="2"/>
764       <InQty v="40"/>
765       <OutQty v="45"/>
766     </AccountInterval>
767     <AccountInterval>
768       <Pos v="3"/>
769       <InQty v="45"/>
770       <OutQty v="45"/>
771     </AccountInterval>
772     <AccountInterval>
773       <Pos v="4"/>
774       <InQty v="45"/>
775       <OutQty v="45"/>
776     </AccountInterval>
777   </Period>
778 </AccountTimeSeries>
779 </EnergyAccountReport>
780
781
782

```

Note: This example, for the sake of space, is only for the duration of one hour.

783 **7 COMMUNICATIONS INFORMATION**

784 **7.1 TEST INDICATION (DIFFERENTIATION BETWEEN LIVE AND TEST** 785 **TRANSMISSIONS)**

786 Test indication information has not been built into the document since this is normally an
787 envelop function. Envelop information is outside the scope of this document as it is
788 dependent on the communications method employed.

789 The recommended method for testing is to obtain a separate communications address in
790 order to ensure that testing is carried out in a specific test environment.

791 **7.1.1 USE OF A DATA INSTANCE THAT USES INDIFFERENTLY THE DTD OR** 792 **SCHEMA**

793 In some contexts it may be of interest for the TSO to allow a market participant to use
794 indifferently a DTD or an XML schema. In this case the “DOCTYPE” instruction in the DTD
795 compliant instance or the schema instance (xsi) instruction in the schema compliant instance
796 are not used. This results in an XML document that does not identify the DTD or XML
797 Schema to which it is compliant. It is consequently up to the receiving party to use either the
798 DTD or Schema that it feels appropriate to validate the information instance. The initial XML
799 tag provides the information necessary to determine both the XML document name (i.e.
800 EnergyAccountReport, or AcknowledgementMessage) and the version and release used
801 (dtdVersion and dtdRelease) of the DTD or Schema being employed.

802 In the examples provided in paragraph 6 all the instances are shown using this method of
803 transfer.

804 8 CONTRIBUTORS

Name	Country
Erik Hartwell	DK
Herwig Van den Bosch	BE
Joachim Vanzetta	DE
Jon-Egil Nordvik	NO
José Bembibre	ES
Lesław Winiarski	PL
Luigi Franchi	IT
Maurizio Monti	FR
Nisheeth K. Singh	CH
Penny Vatsolaki	GR
Adrian Williman	CH
Berthold Klammer	DE
Mike Conroy	FR
Klaus Schüller	AT
Martin Rohrböck	AT
Martin Apko	CZ
Helge Regber	DE
Matti Vasara	FI
David Bunney	GB
Gyula Sztráda	HU
Tony Fleming	IE
Romas Pangonis	LT
Robert Gengler	LU
Ben G. M. Voorhorst	NL
Jorge Simão	PT
Stefan Izdrea	RO
Oscar Ludwigs	SE
Uros Salobir	SI
Miroslav Pavlovic	SK
Peter Bauhofer	AT
Bozidar Radovic	YU
Frank Reyer	DE
Walter Müller	NL

805