



# Balance Management System

**Balance Planning**

**Implementation guide for BRP**

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## 1. Introduction

Balance Management System is a system operated by AST that includes several modules for system operations and management and data exchange with electricity market participants and other relevant parties.

The Balance Planning module is the integral part of the Balance Management System and it includes the functionalities and services that are necessary for ensuring balance planning.

The goal of this document is to provide detailed insight on data exchange rules and requirements for Balance Responsible Parties to be able to perform necessary adjustments in their local systems and to implement the message exchange with the BVS according to System use Agreement and Balancing agreement.

## 2. Scope

This document gives a detailed description of:

- Balance planning process;
- Data exchange with AST balance management system;
- Data validation;
- XML examples and library of xsd schemas (technical details about authentication, endpoints, security certificates and API methods is out of scope and will be provided separately on request).

## 3. Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

Document code/version	Document name / description	Author/ Date
4:1	The ENTSO-E scheduling system implementation guide	ENTSO-E 2012-11-21
5.2	Schedule document UML model and schema	ENTSO-E 2019-07-10
8.1	Acknowledgement document UML model and schema	ENTSO-E 2020-06-30
5.2	Confirmation document UML model and schema	ENTSO-E 2021-01-27
5.2	Anomaly report document UML model and schema	ENTSO-E 2020-09-16

### 3.1. Applicable EDI documents

Message	EDI document	Version

Schedule document	Schedule document	urn:iec62325.351:tc57wg16:451-2:scheduledocument:5:2
Confirmation document	Confirmation document	urn:iec62325.351:tc57wg16:451-2:confirmationdocument:5:2
Anomaly report	Anomaly report document	urn:iec62325.351:tc57wg16:451-2:anomalydocument:5:3
ACK	Acknowledgement document	urn:iec62325.351:tc57wg16:451-1:acknowledgementdocument:8:1

### 3.2. Applicable protocols for file based data exchange

For file-based data exchange the following protocols will be supported. Detailed information regarding of technical details is out of the scope of this document. For more information regarding to data exchange please contact with [bvs.atbalsts@ast.lv](mailto:bvs.atbalsts@ast.lv).

- Webservice (*SOAP*)
- SFTP
- E-mail (SMTP/IMAP) incoming emails only as a backup communication channel, if other data exchange channels are unavailable
- BVS external portal – *only for data exchange from BRP to BVS (incoming)*.

*For incoming and outgoing data exchange different combination of communication channels can be configured. To agree on possible combination for communication please provide a request to [bvs.atbalsts@ast.lv](mailto:bvs.atbalsts@ast.lv)*

## 4. Terms and definitions

The Terms used in this Implementation guide that are not explained are used in the sense that they are used in the System use Agreement and Balancing agreement.

Acronyms

Acronym	Name
ACK	Acknowledgment document
AST	AS "Augstsprieguma tīkls", Latvian TSO
BVS	Balance Management System (Balansa Vadības Sistēma)
BRP	Balance Responsible Party
GUI	Graphical User Interface
TSO	Transmission System Operator
EET	Eastern European Time
EIC	Energy Identification Code
UTC	Coordinated Universal Time
MTU	Market Time Unit
GOT	Gate Open Time
GCT	Gate Closure Time
D-1	Day-ahead

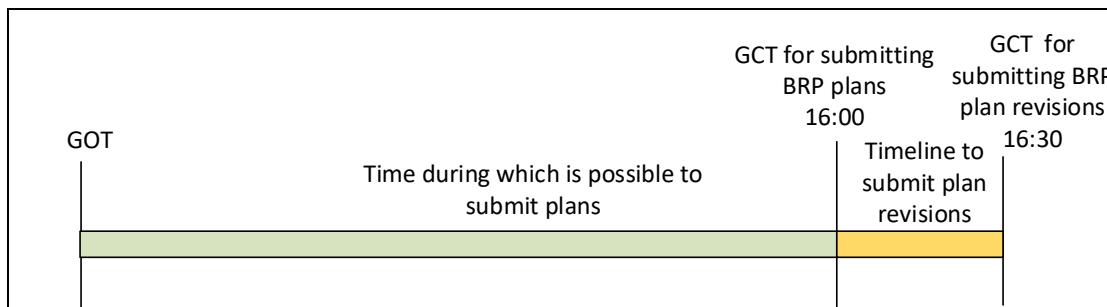
ID	Intra-day
ENTSO-E	European Network of Transmission System Operators for Electricity
SFTP	Secure File Transfer Protocol
SMTP	Simple Mail Transfer Protocol
SOAP	Simple Object Access Protocol
TS	Time series
XML	Extensible Markup Language

## 5. General day-ahead and intraday planning business process

Process diagram depicts the general overview of data exchange between BRP and AST.

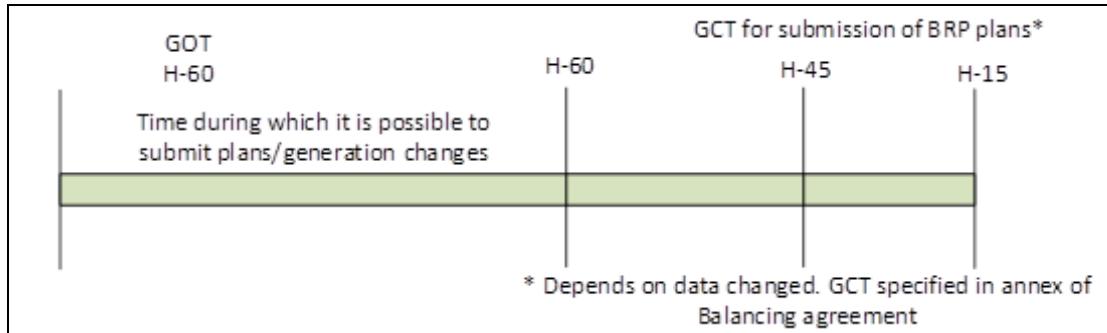
### 5.1. General day-ahead planning process

Process diagram depict the general overview of day-ahead balance planning process. During the time period of D-1 14:00 until GCT (16:00) the BRP shall submit balance plans to TSO. There is time for submitting BRP plan revisions, from 16:00 till 16:30.



### 5.2. General intra-day planning process

Process diagram depict the general overview of intra-day balance planning process. During the time period of ID H-60 until H-45(H-15), BRP shall submit balance plans/generation changes to TSO.



#### 5.2.1. General rules

For each file-based electronic data interchange defined in this document, an acknowledgement document, as defined in IEC 62325-451-1, should be generated either accepting the whole received document or rejecting it completely.

In all documents the single applicable coding scheme shall be *A01 = E/C* coding scheme.

For Schedule Market Documents, data providers may submit higher versions containing updated plans only as detailed in chapter 5.1. (and 6.). For all other documents, higher versions must contain the same number of time series and cover the same time interval.

The BVS will as far as technically feasible validate that submitted data complies with the business rules and permitted combinations of attributes as articulated by this implementation guide. Any data submission that fails such validation will be rejected by the system. BSP shall not submit a higher version of a document before it has received acknowledgement of previous version. This rule must be implemented locally. Data submission that violates business rules of BVS may result in, for example, uncorrectly processed balance plans or rejected plans.

The timing restrictions provided in business rules are according to EET, the data included in XML documents should be represented in UTC time.

In case of unavailability of Web Service the BRP can use GUI for manual data upload or edit plans directly in GUI. Section 5.2.2. describes more detailed data submission rules depending on chosen data exchange channel.

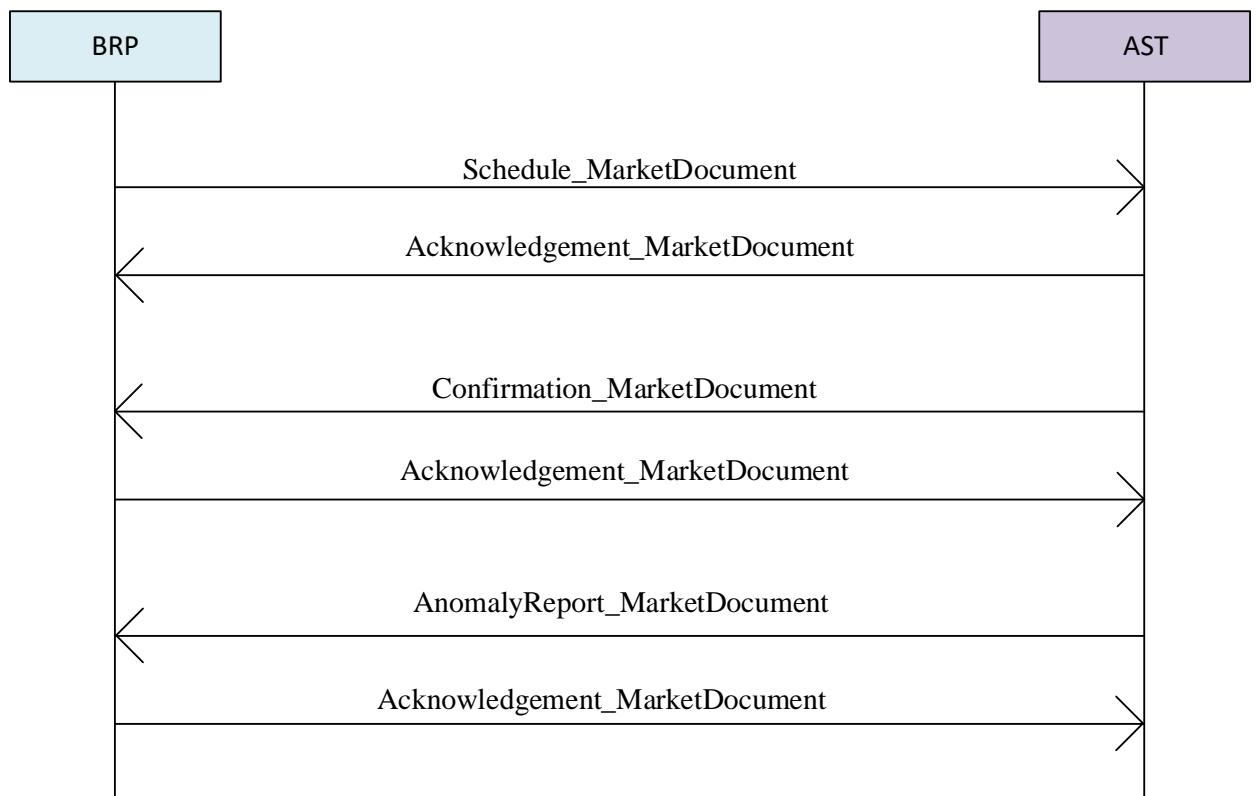
### 5.2.2. Data exchange rules depending on data exchange channel

Data exchange channel	Schedule document	ACK	Confirmation report	Anomaly report
Webservice (SOAP)	Submit pre-prepared planned XML schedule document to AST *	Two-way exchange of ACKmessages (XML)*	Once schedule document contents are matched successfully, AST will send out confirmation report (XML)*	In case of any data mismatches, AST will send out anomaly report (XML)*
SFTP	Submit pre-prepared planned XML or XLSX schedule document to AST*	Two-way exchange of ACK messages (XML)*	Once schedule document contents are matched successfully, AST will send	In case of any data mismatches, AST will send out anomaly report (XML)*

			out confirmation report (XML)*	
E-mail (XML)	Submit pre-prepared planned xml schedule document to AST ( <u>only if BVS is unavailable</u> )	It is possible to configure that AST could send ACK via Email (XML)*	It is possible to configure that AST could send confirmation report via Email (XML)*	It is possible to configure that AST could send anomaly report via Email (XML)*
E-mail (XLSX)	Submit pre-prepared planned XLSX schedule document to AST ( <u>only if BVS is unavailable</u> )			
Customer portal (data upload)	Upload XML/XLSX schedule document.	If schedule document was uploaded then it is possible to receive ACK via WS, SFTP, EMAIL or only as a notification in GUI	If schedule document was uploaded then it is possible to receive confirmation report via WS, SFTP, EMAIL or only as a notification in GUI	If schedule document was uploaded then it is possible to receive anomaly report via WS, SFTP, EMAIL or only as a notification in GUI
Customer portal (data correction or manual input, using option to copy previous plans)	Create schedule document manually/edit existing plans in GUI	If Schedule document was created manually in GUI then there is no possibility to exchange with acknowledgement messages. Acknowledgement message will be substituted by notification in GUI or sent via Email (without xml in attachment).	If Schedule document was created manually in GUI then Confirmation report will be substituted by notification in GUI or sent via Email	If Schedule document was created manually in GUI then anomaly report will be substituted by notification in GUI or sent via Email (without xml in attachment).

			(without xml in attachment).	
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\* different combinations of communication channels can be set up, for more information please contact with AST.



## 6. Schedule\_MarketDocument

### 6.1. Document and times series version numbers

The initial transmission of a schedule document should generally have a version number of "1". For each successful transmission of the document the version number is increased.

Each retransmission of the schedule document shall include all the time series associated with the document in question. Each time series has a version number that corresponds to the version number of the document in which the series has been added or changed. The following solution will be applied- all the time series version numbers should be strictly the same as the document version.

Example where all TS have the same version in the document and coincides with the document version:

1. An initial document transmission with three time series:

Document identification	Document version	TS identification	TS version
12345	1	TS01	1
		TS02	1
		TS03	1

2. A second transmission of the same document with modification only in TS02:

Document identification	Document version	TS identification	TS version
12345	2	TS01	2
		TS02	2
		TS03	2

3. A third transmission of the same document with added TS04:

Document identification	Document version	TS identification	TS version
12345	3	TS01	3
		TS02	3
		TS03	3
		TS04	3

## 6.2. Intraday trading

An intra-day document respects exactly the same rules as that of a day ahead document.

Intra-day scheduling can only take place within the scope of the MTU already scheduled but not executed.

The table below outlines the characteristics that apply to day-ahead and intra-day trading:

Process Type	Name	Number of unique doc.	Information (Values)	Schedule Time Interval	Matching period
A01	Day ahead	1	Current position	Whole day	Whole day
A18	Intraday total	1 per gate	Current position Current position is given by last confirmed document: CP = A01, and at a later point in time replaced by A18 <b>A18</b>	Whole day	Remaining hours

Example of Intraday schedule using Process Type A18:

Process type:	A01	A18	A18	...	A18
Document Identification:	ID0	ID1	ID2	...	IDn
Initial Document Version	1	1	1	...	1
Schedule Time Interval	whole day	whole day	whole day	...	whole day
Matching Period	whole day	rest of day	rest of day	...	rest of day
Value interpretation:	Total	Total	Total	...	Total
Current position:	Val0	Val1	Val2	...	Valn

### 6.3. Dependency matrix

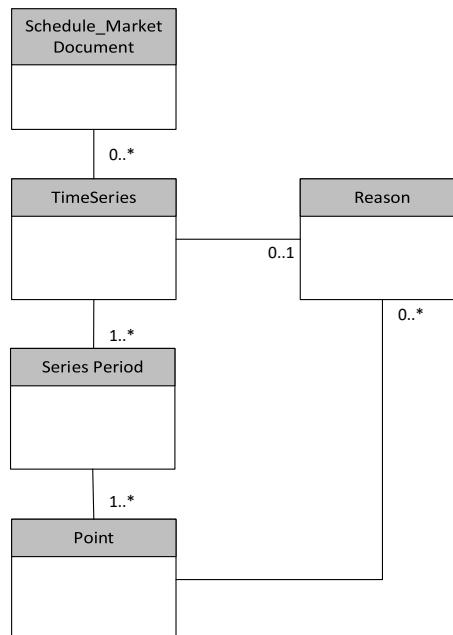
The matrix below shows the mandatory requirement for dependent key attributes in the schedule document:

Object aggregation	Business type	Name	Area (domain)		Party (market participant)		Capac. agreem.id (market agreem.)	Capac. contract type
			IN	OUT	IN	OUT		
A03 (Party)	A01	Production	M		M			
	A02	Internal trade	M	M	M	M		
	A03	External trade explicit capacity	M	M	M	M	M	M
	A04	Consumption		M		M		
	A06	External trade non explicit capacity	M	M	M	M		
	A07	Net Production / Consumption	M	M	M	M		
	A08	Net internal trade	M	M	M	M		
	A30	Internal inter area trade	M	M	M	M		
	A93	Wind generation	M		M			
A01 (Area)	A01	Production	M					
	A02	Internal trade	M	M				
	A03	External trade explicit capacity	M	M			M	M
	A04	Consumption		M				
	A06	External trade non explicit capacity	M	M				
	A07	Net Production / Consumption	M	M				
	A08	Net internal trade	M	M				
	A30	Internal inter area trade	M	M				
	A93	Wind generation	M					
	A94	Sun generation	M					
	Z22	Other generation	M					

## 6.4. Schedule\_MarketDocument structure

Document	Schedule_MarketDocument
Document format	.XML
Namespace	urn:iec62325.351:tc57wg16:451-2:scheduledocument:5:2
Communication channel	web-service

Schedule\_MarketDocument structure diagramm



## 6.5. Schedule\_MarketDocument element description

Header	Mandatory	Value	Description
mRID	yes	1-35 chars	The unique identification of the document.
revisionNumber	yes	1-3 chars	The identification of the version.
type	yes	A01- Balance resp. sched. A04- System Op. area sched. A09- Finalised schedule	The coded type of a document.
process.processType	yes	A01- Day Ahead A02- Intraday incremental A17- Schedule Day A18- Intraday total A19- Intraday accumulated	The identification of the nature of process that the document addresses.

process.classificationType	yes	A01- detail type- normal day ahead sched. A02- summary type- generally only used for exchanges between TSOs	The classification mechanism used to group a set of objects together within a business process.
sender_MarketParticipant.mRID	yes	1-16 chars	The identification of a party in the energy market.
sender_MarketParticipant.marketRole.type	yes	1-3 chars	The identification of the role played by a market player.
receiver_MarketParticipant.mRID	yes	1-16 chars	The identification of a party in the energy market.
receiver_MarketParticipant.marketRole.type	yes	1-3 chars	The identification of the role played by a market player.
createdDateTime	yes	YYYY-MM-DDTHH:MM:SSZ	Date and time of creation of the document.
schedule_Time_Period.timeInterval	yes	YYYY-MM-DDTHH:MMZ/YYYY-MM-DDTHH:MMZ	The start and end date and time for a given interval.
domain.mRID	yes	1-16 chars	The unique identification of the domain.
subject_MarketParticipant.mRID	no	1-16 chars	The identification of a party in the energy market.
subject_MarketParticipant.marketRole.type	no	1-3 chars	The identification of the role played by a market player.
matching_Time_Period.timeInterval	no	YYYY-MM-DDTHH:MMZ/YYYY-MM-DDTHH:MMZ	The start and end date and time for a given interval.
TimeSeries	yes		A set of time-ordered quantities being exchanged in relation to a product.
mRID	yes	1-35 chars	The unique identification of the time series.
version	yes	1-3 chars	The identification of the version of the time series.
businessType	yes	A01- Production A02- Internal trade ... (check 1. appendix)	The identification of the nature of the time series
product	yes	8716867000016- Active power	The identification of the nature of an energy product.
objectAggregation	yes	From Classifiers A01- Area A02- Metering point A03- Party	The identification of the domain that is the common denominator used to aggregate a time series.
in_Domain.mRID	(check 2. Appendix)		The unique identification of the domain.
out_Domain.mRID	(check 2. Appendix)		The unique identification of the domain.

marketEvaluationPoint.mRID	no		A unique identification of the measurement point.
in_MarketParticipant.mRID	(check 2. Appendix)	1-16 chars	The identification of a party in the energy market.
out_MarketParticipant.mRID	(check 2. Appendix)	1-16 chars	The identification of a party in the energy market.
marketAgreement.type	no	A01 Daily A02 Weekly ...	The specific. of the kind of the agreement, e.g. long term, daily contract.
marketAgreement.mRID	no	1-35 chars	The unique identification of the agreement.
connectingLine_Register edResource.mRID	no	new tag in 5:2 version	The unique identification of a resource.
measure_Unit.name	yes	1-3 chars	The identification of the formal code for a measurement unit.
curveType	no		The identification of the coded representation of the type of curve being described.
Series_Period	yes		The time interval and resolution for a period associated with a TimeSeries.
timeInterval	yes	YYYY-MM- DDTHH:MMZ/YYYY-MM- DDTHH:MMZ	The start and end time of the period.
resolution	yes	example: PT15M / PT60M	The definition of the number of units of time that compose an individual step within a period.
Point	yes		The identification of the values being addressed within a specific interval of time.
position	yes	The position must begin with 1 and increment by 1 for each subsequent position.	A sequential value representing the relative position within a given time interval.
quantity	yes	Max length - 17 numeric characters (decimal mark and sign, if used, included).	The principal quantity identified for a point.
Reason	no		At the TimeSeries level the reason code is used to enable processing of the reason text which, depending on market conditions, should be provided in intra day trading.
code	yes		The motivation of an act in coded form.
text	no		The textual explanation corresponding to the reason code.

## 7. Balance plan submission with xlsx

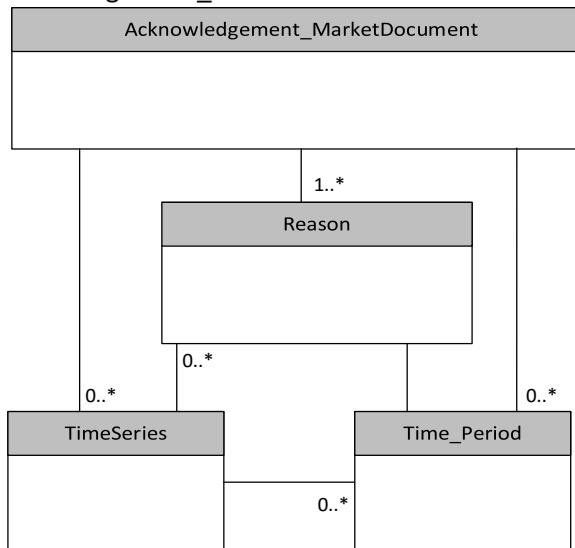
## Balance plan submission form:

## 8. Acknowledgement\_MarketDocument structure

Acknowledgement is an electronic document that is used to acknowledge the reception of a document and to provide information concerning its basic validity.

Document	Acknowledgement_MarketDocument
Document format	.XML
Namespace	urn:iec62325.351:tc57wg16:451-1:acknowledgementdocument:8:1
Communication channel	web-service

Acknowledgement\_MarketDocument structure diagramm



### 8.1. Acknowledgement\_MarketDocument element description

Acknowledgement_MarketDocument	Mandatory	Description
mRID	yes	The unique identification of the document.
createdDateTime	yes	Date and time of creation of the acknowledgement YYYY-MM-DDTHH:MM:00Z
sender_MarketParticipant.mRID	yes	EIC code of the document sender (Receiver of the original document)
sender_MarketParticipant.marketRole.type	yes	ReceiverRole of the original document
receiver_MarketParticipant.mRID	yes	EIC code of the document receiver (Sender of the original document)
receiver_MarketParticipant.marketRole.type	no	SenderRole of the original document
received_MarketDocument.mRID	no	Unique identification of the document being acknowledged
received_MarketDocument.revisionNumber	no	Version of the document being acknowledged
received_MarketDocument.type	no	Type of the document being acknowledged

received_MarketDocument.processType	no	Not used
received_MarketDocument.title	no	Not used
received_MarketDocument.createDateTime	no	Date and time of reception of the electronic document YYYY-MM-DDTHH:MM:00Z
TimeSeries (Rejected_TimeSeries)	no	Not used
mRID		
version		
Reason	yes	
code		code providing the acknowledgement status A01 - Fully Accepted A02 - Fully Rejected A03 Message contains errors at the time series level
text		string containing the textual description of a rejection
Time_Period (InError_Period)	no	Not used
timeInterval		

## 9. Confirmation\_MarketDocument

A confirmation report is generated once a cut-off time has been reached for the schedule time interval in question. At that point in time the total schedule is balanced, and all outstanding discrepancies are noted.

### Confirmed time series

The confirmation report provides all the time series that have been provided in the schedule document for the schedule time interval in question. It contains all the time series that are confirmed by the sender to the receiver.

### Imposed time series

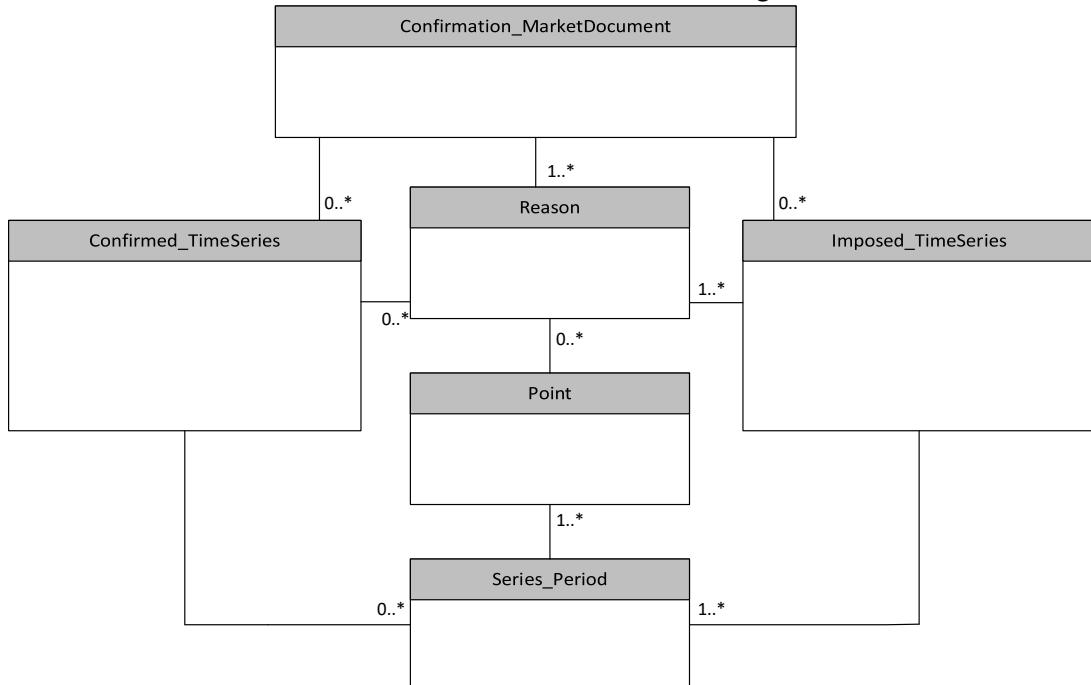
The confirmation report may include one or several time series that the system operator has imposed on the market participant in compliance with market rules. For example, if market rules indicated that in case of mismatch one of the time series of a party would automatically be taken and imposed on the other party. Such a condition could occur if a market participant had a document that was rejected due to syntax errors and the document was never retransmit prior to cut-off.

An imposed time series cannot be provided if an equivalent time series has already been accepted. If the quantity values of an already accepted time series were changed, these are not imposed time series but confirmed time series for instance with reason code A63 (modified time series).

### 9.1. Confirmation\_MarketDocument structure

Document	Confirmation_MarketDocument
Document format	.XML
Namespace	urn:iec62325.351:tc57wg16:451-2:confirmationdocument:5:2
Communication channel	web-service

### Confirmation\_MarketDocument structure diagramm



### 9.2. Confirmation\_MarketDocument element description

Confirmation_MarketDocument	Mandatory	Value	Description
mRID	yes	1-35 chars	The unique identification of the document being exchanged within a business process flow.
type	yes	A08- Final confirmation report	The coded type of a document. The document type describes the principal characteristic of the document.
createdDateTime	yes	YYYY-MM-DDTHH:MM:SSZ	Date and time of creation of the document.
sender_MarketParticipant.mRID	yes	1-16 chars	Identification of the party who is sending the confirmation report.
sender_MarketParticipant.marketRole.type	yes	1-3 chars	The identification of the role played by a sender.
receiver_MarketParticipant.mRID	yes	1-16 chars	The identification of a party in the energy market.
receiver_MarketParticipant.marketRole.type	yes	1-3 chars	The identification of the role played by a market player.

schedule_Period.timeInterval	yes	YYYY-MM-DDTHH:MMZ/YYYY-MM-DDTHH:MMZ	The start and end date and time for a given interval.
confirmed_MarketDocument.mRID	no	1-16 chars	The unique identification of the document being exchanged within a business process flow.
confirmed_MarketDocument.revisionNumber	no	1-3 chars	The identification of the version that distinguishes one evolution of a document from another.
related_MarketDocument.mRID	no	new tag in 5:2 version	The unique identification of the document being exchanged within a business process flow.
related_MarketDocument.revisionNumber	no	new tag in 5:2 version	The identification of the version that distinguishes one evolution of a document from another.
domain.mRID	yes	1-16 chars	The unique identification of the domain.
subject_MarketParticipant.mRID	no	1-16 chars	The identification of a party in the energy market.
subject_MarketParticipant.marketRole.type	no	1-3 chars	The identification of the role played by a market player.
process.processType	no	1-3 chars	The identification of the nature of process that the document addresses.
Reason	yes		
code	yes		The motivation of an act in coded form.
text	no		The textual explanation corresponding to the reason code.
Confirmed_TimeSeries	no		The time series that is associated with an electronic document.
mRID	yes	From original document	The unique identification of the time series.
version	yes	From original document	The identification of the version of the time series.
businessType	yes	From original document	The identification of the nature of the time series
product	yes	From original document	The identification of the nature of an energy product such as power, energy, reactive power, etc.
objectAggregation	yes	From original document	The identification of the domain that is the common denominator used to aggregate a time series.
in_Domain.mRID	no	From original document	The unique identification of the domain.
out_Domain.mRID	no	From original document	The unique identification of the domain.
marketEvaluationPoint.mRID	no	From original document	A unique identification of the measurement point.
in_MarketParticipant.mRID	no	From original document	The identification of a party in the energy market.
out_MarketParticipant.mRID	no	From original document	The identification of a party in the energy market.
marketAgreement.type	no	From original document	The specification of the kind of the agreement, e.g. long term, daily contract.
marketAgreement.mRID	no	From original document	The unique identification of the agreement.

connectingLine_RegisteredResource.mRID	no	new tag in 5:2 version	The unique identification of a resource associated with a TimeSeries.
measure_Unit.name	yes	From original document	The identification of the formal code for a measurement unit.
curveType	no	From original document	The identification of the coded representation of the type of curve being described.
Series_Period	no (for confirmed time series) yes (for imposed time series)		The time interval and resolution for a period associated with a TimeSeries.
timeInterval	yes	the same as for scheduled_market_doc	The start and end time of the period
resolution	yes	the same as for scheduled_market_doc	The definition of the number of units of time that compose an individual step within a period.
Point			The identification of the values being addressed within a specific interval of time.
position	yes	the same as for scheduled_market_doc	A sequential value representing the relative position within a given time interval.
Imposed_TimeSeries	no		The time series that is associated with an electronic document.
mRID	yes	the same as for scheduled_market_doc	The unique identification of the time series.
version	yes	the same as for scheduled_market_doc	The identification of the version of the time series.
businessType	yes	the same as for scheduled_market_doc	The identification of the nature of the time series
product	yes	the same as for scheduled_market_doc	The identification of the nature of an energy product such as power, energy, reactive power, etc.
objectAggregation	yes	the same as for scheduled_market_doc	The identification of the domain that is the common denominator used to aggregate a time series.
in_Domain.mRID	no	the same as for scheduled_market_doc	The unique identification of the domain.
out_Domain.mRID	no	the same as for scheduled_market_doc	The unique identification of the domain.
marketEvaluation Point.mRID	no	the same as for scheduled_market_doc	A unique identification of the measurement point.
in_MarketParticipant.mRID	no	the same as for scheduled_market_doc	The identification of a party in the energy market.
out_MarketParticipant.mRID	no	the same as for scheduled_market_doc	The identification of a party in the energy market.
marketAgreement.type	no	the same as for scheduled_market_doc	The specification of the kind of the agreement, e.g. long term, daily contract.
marketAgreement.mRID	no	the same as for scheduled_market_doc	The unique identification of the agreement.
connectingLine_RegisteredResource.mRID	no	the same as for scheduled_market_doc	The unique identification of a resource associated with a TimeSeries.

measure_Unit.name	yes	the same as for scheduled_market_doc	The identification of the formal code for a measurement unit.
curveType	no	the same as for scheduled_market_doc	The identification of the coded representation of the type of curve being described.

### 9.3. BRP answer to Confirmation\_MarketDocument

After confirmation report for BRP is created and sent, BRP should answer with ACK (depending on used channel, described in section 5.2.1., detailed document structure described in section 8.), A01 code is expected in case of successful document validation.

## 10. AnomalyReport\_MarketDocument

An anomaly report is generated as soon as all the information necessary to balance a time series of a party becomes available.

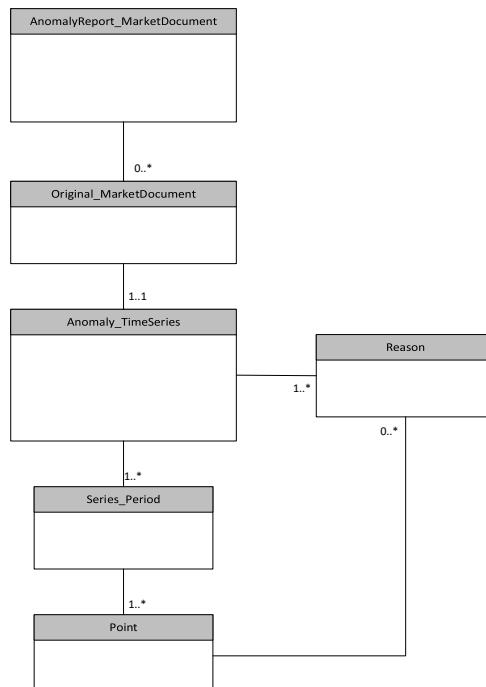
If there are any anomalies discovered during this phase, an anomaly report is sent to all involved parties.

The anomaly contains only the time series that have been identified as being in error for the party in question.

### 10.1. AnomalyReport\_MarketDocument structure

Document	AnomalyReport_MarketDocument
Document format	.XML
Namespace	urn:iec62325.351:tc57wg16:451-2:anomalydocument:5:3
Communication channel	web-service

AnomalyReport\_MarketDocument structure diagramm



## 10.2. AnomalyReport\_MarketDocument element description

AnomalyReport_MarketDocument	Mandatory	Value	Description
mRID	yes	1-35 chars	The unique identification of the document being exchanged within a business process flow.
createdDateTime	yes	YYYY-MM-DDTHH:MM:SSZ	Date and time of creation of the document.
sender_MarketParticipant.mRID	yes	From Parties 1-16 chars	The identification of a party in the energy market.
sender_MarketParticipant.marketRole.type	yes	From Classifiers 1-3 chars	The identification of the role played by a market player.
receiver_MarketParticipant.mRID	yes	From Parties 1-16 chars	The identification of a party in the energy market.
receiver_MarketParticipant.marketRole.type	yes	From Classifiers 1-3 chars	The identification of the role played by a market player.
schedule_Time_Period.timeInterval	yes	YYYY-MM-DDTHH:MMZ/YYYY-MM-DDTHH:MMZ	The start and end date and time for a given interval.
domain.mRID	yes		The unique identification of the domain.
process.processType	no	From Classifiers	The identification of the nature of process that the document addresses.
Original_MarketDocument	no	"Original_Market Document" separated from "TimeSeries class"	The set of information from the Original_MarketDocument sent by the party related to the TimeSeries stated as in error.
marketParticipant.mRID		From original document 1-16 chars	The identification of a party in the energy market.
mRID		From original document 1-35 chars	The unique identification of the document being exchanged within a business process flow.
revisionNumber		From original document 1-3 chars	The identification of the version that distinguishes one evolution of a document from another.
Anomaly_TimeSeries			The time series from the original document containing where an error was detected.
mRID	yes	From original document	A unique identification of the time series.
version	yes	From original document	The identification of the version of the time series.
businessType	yes	From original document	The identification of the nature of the time series.
product	yes	From original document	The identification of the nature of an energy product such as power, energy, reactive power, etc.

objectAggregation	yes	From original document	The identification of the domain that is the common denominator used to aggregate a time series.
in_Domain.mRID	no	From original document	The unique identification of the domain.
out_Domain.mRID	no	From original document	The unique identification of the domain.
marketEvaluationPoint.mRID	no	From original document	A unique identification of the measurement point.
in_MarketParticipant.mRID	no	From original document	The identification of a party in the energy market..
out_MarketParticipant.mRID	no	From original document	The identification of a party in the energy market.
marketAgreement.type	no	From original document	The specification of the kind of the agreement, e.g. long term, daily contract.
marketAgreement.mRID	no	From original document	The unique identification of the agreement.
connectingLine_RegistredResource.mRID	no	From original document	The unique identification of a resource.
measurement_Unit.name	yes	From original document	The identification of the formal code for a measurement unit (UN/ECE Recommendation 20).
curveType	no	From original document	The identification of the coded representation of the type of curve being described.
Series_Period	yes		The time interval and resolution for a period associated with a TimeSeries
timeInterval	yes	From original document	The start and end time of the period.
resolution	yes	From original document	The definition of the number of units of time that compose an individual step within a period.
Point	yes		The identification of the values being addressed within a specific interval of time.
position	yes	From original document	A sequential value representing the relative position within a given time interval.
quantity	yes	From original document	The principal quantity identified for a point
Reason	yes- at time series level no- at point level		In an anomaly report, errors are detailed at the time series level to identify the anomalies that have occurred.
code	yes	2. Appendix	The motivation of an act in coded form.
text	no	From Classifiers max 512 chars	The textual explanation corresponding to the reason code.

## 11. BRP answer to AnomalyReport\_MarketDocument

After anomaly report for BRP is created and sent, BRP should answer with ACK (depending on used channel, described in section 5.[21.12.](#), detailed document structure described in section 8.), A01 code is expected in case of successful document validation.

## 12. BRP balance plan validation and matching

### 12.1. BRP balance plan validation

The balance planning process involves data exchange between BRP and TSO to transfer production, consumption forecasts and market results from BRPs.

BRP Day-Ahead and Intraday Balance Plans are used to transfer mentioned forecasts and market results from BRP to TSO.

Any incoming document is identified as BRP Day-Ahead/Intraday Balance Plan document by the following Schedule document attributes/tags:

- Message Type = A01 (Balance responsible schedule)
- Process Type = A01 (day-ahead) or A18 (intraday)
- Sender Role = A08 (BRP)

As a result of validation, the corresponding acknowledgment document is prepared.

There are common reason codes for acknowledgment document. The specific reason code for each check is defined below in the table with validation checks:

Validation	Description	Error ID
VLD.001. Day-ahead/Intraday submission deadline	<p>The BRP balance plan for certain period specified in Schedule interval can't be sent after particular LV balance plan is confirmed.</p> <p>The following document's attributes are checked:</p> <ul style="list-style-type: none"> <li>• Schedule interval (Schedule_MarketDocument level, schedule_Time_Period.timeInterval tag).</li> </ul>	A57 - Deadline limit exceeded/ Gate not open.
VLD.002. Sender	<p>The document Sender should be party with Party Role Type = BRP.</p> <p>The following document's attributes are checked:</p> <ul style="list-style-type: none"> <li>• Schedule interval (Schedule_MarketDocument level, sender_MarketParticipant.mRID tag).</li> </ul>	A78 – Sender identification and/or role invalid
VLD.003. Document identification or version	<p>System checks whether the document (Document Identification) with the same or higher version (DocumentVersion) already exists in the system, if so, then the error should be registered.</p> <p>Messages with negative status (for example “Kļūdains” (Error)) is not taken into account.</p> <p>The following document's attributes are checked:</p> <ul style="list-style-type: none"> <li>• mRID (Schedule_MarketDocument level, mRID tag);</li> <li>• Message version (Schedule_MarketDocument level, revisionNumber tag).</li> </ul>	A51- Message identification or version conflict
VLD.004. Is constant	<p>The attribute (tag) Classification type of the document must contain certain value:</p> <ul style="list-style-type: none"> <li>• Classification type = A01;</li> </ul> <p>The following document's attributes are checked:</p> <ul style="list-style-type: none"> <li>• Classification type (Schedule_MarketDocument level, process.classificationType tag).</li> </ul>	B30 – Unverified (Missing or not validated data.)

Validation	Description	Error ID
VLD.005. Unique TS ID	<p>The identification of the time series can't have duplicates in the document.</p> <p>The following document's attributes are checked:</p> <ul style="list-style-type: none"> <li>• mRID (Time Series level, mRID tag).</li> </ul>	A55 - Time series identification conflict Error contains:
VLD.006. Unique TS data	<p>There is only one time series in certain D-1 plan for each unique combination of the business type, in area, out area, in party, out party.</p> <p>The following document's attributes are checked:</p> <ul style="list-style-type: none"> <li>• Business Type (Time Series level, BusinessType tag);</li> <li>• In Area (Time Series level, in_Domain.mRID tag);</li> <li>• Out Area (Time Series level, out_Domain.mRID tag)</li> <li>• In Party (Time Series level, in_MarketParticipant.mRID tag);</li> <li>• Out Party (Time Series level, out_MarketParticipant.mRID tag).</li> </ul>	A55 - Time series identification conflict
VLD.007. Is constant (Product)	<p>The following document's attributes are checked:</p> <ul style="list-style-type: none"> <li>• Product (Time Series level, Product tag).</li> </ul>	B30 – Unverified (Missing or not validated data.)
VLD.008. Is constant (Resolution)	<p>The following document's attributes are checked:</p> <ul style="list-style-type: none"> <li>• Resolution (Series_Period level, Resolution tag).</li> </ul>	A41 - Resolution inconsistency
VLD.009. Classifier (Measure Type)	<p>The following filled attributes (tags) of the document must contain values defined in the certain Classifier:</p> <ul style="list-style-type: none"> <li>• Measure Type (Series_Period level, measure_Unit.name tag) must correspond to values from sub-classifier Measure</li> </ul>	B30 – Unverified (Missing or not validated data.)
VLD.010. Classifier (Business Type)	<p>The following filled attributes (tags) of the document must contain values defined in the certain Classifier:</p> <ul style="list-style-type: none"> <li>• Business Type (Time Series level, BusinessType tag)</li> </ul>	A62 - Invalid business type
VLD.011. Classifier (Party)	<p>The following filled attributes (tags) of the document must contain values defined in the certain Classifier:</p> <ul style="list-style-type: none"> <li>• In Party (Time Series level, in_MarketParticipant.mRID tag);</li> <li>• Out Party (Time Series level, out_MarketParticipant.mRID tag)</li> </ul>	A22 - In party/Out party invalid
VLD.012. Classifier (InArea)	<p>The following filled attributes (tags) of the document must contain values defined in the certain Classifier:</p> <ul style="list-style-type: none"> <li>• Area (Time Series level, InArea tag)</li> </ul>	A82 - In/Out area inconsistent with domain
VLD.013. Classifier (OutArea)	<p>The following filled attributes (tags) of the document must contain values defined in the certain Classifier:</p> <ul style="list-style-type: none"> <li>• Area (Time Series level, OutArea tag)</li> </ul>	A82 - In/Out area inconsistent with domain
VLD.014. In/Out Area/Party combination according to object aggregation	<p>System will check:</p> <ul style="list-style-type: none"> <li>• If valid object aggregation is used for particular business type</li> <li>• If valid In/Out - Area/Party attribute combination is used for particular object aggregation.</li> </ul>	A69 - In/Out Party/Domain combination is not valid according to object aggregation

Validation	Description	Error ID
VLD.018. Day-ahead/Intraday time periods matching	<p>The document period (Schedule interval) must match with all other time periods mentioned in the document (i.e. TimeSeries Period level Period time intervals).</p> <p>The following document's attributes are checked:</p> <ul style="list-style-type: none"> <li>• Schedule interval (Schedule_MarketDocument level, schedule_Time_Period.timeInterval tag);</li> <li>• Period (Series_Period level, TimeInterval tag).</li> </ul>	A04 - Schedule time interval incorrect
VLD.019. Number of Position	<p>The number of Position rows must correspond to a time for each Time Series Period in the document.</p> <p>The following document's attributes are checked:</p> <ul style="list-style-type: none"> <li>• Period (Series_Period level, TimeInterval tag);</li> <li>• Position (Time Series level, Position tag).</li> </ul>	A49 - Position inconsistency
VLD.020. Quantity non-negative	<p>Negative values are not allowed in time series quantities (Quantity).</p> <p>The following document's attributes are checked:</p> <ul style="list-style-type: none"> <li>• Quantity (Series_Period Point level, Quantity tag).</li> </ul>	A46 - Quantities must not be signed values
VLD.021. Zero balance	<p>For each position across all time series in the document the following rule is in force:</p> <p>Quantity of "Generation" time series - quantity of "Consumption" time series + quantity of Purchase - quantity of Sail should be 0 (zero).</p>	A54 - Global position not in balance
VLD.022. Receiver	<p>The document Receiver EIC code must correspond to AST - "Augstsrieguma tīkls" EIC code</p> <p>The following document's attributes are checked:</p> <ul style="list-style-type: none"> <li>• Receiver (Schedule_MarketDocument level, receiver_MarketParticipant.mRID tag).</li> <li>• Receiver Role (Schedule_MarketDocument level, receiver_MarketParticipant.marketRole.type tag).</li> </ul>	A53 - Receiving party incorrect
VLD.023. Schedule time period length	<p>Schedule Time Interval should be a whole day at CET/CEST time zone. I.e. it should start from D 00:00 and end to D+1 00:00.</p> <p>The following document's attributes are checked:</p> <ul style="list-style-type: none"> <li>• Schedule interval (Schedule_MarketDocument level, schedule_Time_Period.timeInterval tag).</li> </ul>	A04 - Time interval incorrect
VLD.024. Quantity format	<p>Quantity should be with 1 decimal place</p> <p>The following document's attributes are checked:</p> <ul style="list-style-type: none"> <li>• Quantity (Point level, Quantity tag).</li> </ul>	A42 - Quantity inconsistency
VLD.026. Trading for one MTU is only in one direction	<p>For each internal/external trading (business type A02) is checked quantity for MTU interval in both directions by the following rules:</p> <ul style="list-style-type: none"> <li>- If the trade quantity for the MTU interval (determined by position) &gt; 0, then in the opposite direction it should be zero.</li> </ul> <p>the opposite direction means the TS with the same Business Type, In/Out Area and in the fields In Party/Out party the same values as in the opposite fields Out party/In Party.</p>	A29 - Counterpart time series quantity differences

## 12.2. BRP balance plan matching

### 12.2.1. Missing Time series between BRP and NEMO plan

Matching by NEMO data is performed based on NEMO data. If NEMO TS data contains NEMO EIC code as *InParty* and BRPs EIC code as *OutParty*, then in BRP data TS with the same *InParty* and *OutParty* values are searched. The same principle is used when values *InParty* and *OutParty* are vice versa.

If there is a BRP with a missing TS (partly or without plan), the anomaly report is sent to that BRP (notification text includes business type, in area/out area and in party/out party of missing data).

### 12.2.2. Mismatch in data between BRP and NEMO plan

Matching by NEMO data is performed based on NEMO data. If NEMO TS data contains NEMO EIC code as *InParty* and BRPs EIC code as *OutParty*, then in BRP data TS with the same *InParty* and *OutParty* values are searched. The same principle is used when values *InParty*, *OutParty* are vice versa.

The Anomaly Report is created when there are differences in the result of NEMO, BRPs data matching validation.

Anomaly Report is generated based on processed BRP Party Plan Time Series data for which differences or missing data were found as a result of NEMO-BRP matching validation.

### 12.2.3. Missing Time series between BRP and BRP plan

If the BRP has a missing TS (partly or without plan), the anomaly report will be sent back (notification text will include missing *business type*, *in area/out area* and in *party/out party* ).

Anomaly Report is generated based on processed BRP Party Plan Time Series data for which differences or missing data were found as a result of BRP-BRP data matching validation. During the NEMO, BRP matching validation the Time Series with discrepancy are selected for the Anomaly Report.

## 12.2.4. Mismatch in data between BRP and BRP plan

Mutual BRPs data matching is performed based on selected BRP data. If processed BRP TS data contains own EIC code as *InParty* and another BRPs EIC code as *OutParty*, then in another BRP TS's the data with the same *InParty* and *OutParty* values are searched. The same principle is used when values for *InParty* and *OutParty* are vice versa.

The Anomaly Report is created when there are differences in the result of BRP-BRP data matching validation.

Anomaly Report is generated based on processed data in BRP Party Plan Time Series data where differences or missing data will be found as a result of BRP-BRP data matching validation.

## 13. Schedule\_MarketDocument XML example

```

<Schedule_MarketDocument xmlns='urn:iec62325.351:tc57wg16:451-2:scheduledocument:5:2'>
    <mRID>D-1_BRP_20_10</mRID>
    <revisionNumber>1</revisionNumber>
    <type>A01</type>
    <process.processType>A01</process.processType>
    <process.classificationType>A01</process.classificationType>
    <sender_MarketParticipant.mRID
codingScheme='A01'>BRP_EIC</sender_MarketParticipant.mRID>
    <sender_MarketParticipant.marketRole.type>A08</sender_MarketParticipant.marketRole.type>
        <receiver_MarketParticipant.mRID
codingScheme='A01'>10X1001A1001B54W</receiver_MarketParticipant.mRID>
    <receiver_MarketParticipant.marketRole.type>A04</receiver_MarketParticipant.marketRole.type>
        <createdDateTime>2022-02-14T14:10:20Z</createdDateTime>
        <schedule_Time_Period.timeInterval>
            <start>2022-10-20T22:00Z</start>
            <end>2022-10-21T22:00Z</end>
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codingScheme='A01'>10X1001A1001B54W</in_MarketParticipant.mRID>
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    <out_Domain.mRID codingScheme='A01'>10YLV-1001A00074</out_Domain.mRID>
    <in_MarketParticipant.mRID codingScheme='A01' />
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  <out_MarketParticipant.mRID
codingScheme='A01'>11XNORDPOOLSPOT2</out_MarketParticipant.mRID>
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codingScheme='A01'>BRP_EIC</in_MarketParticipant.mRID>
    <out_MarketParticipant.mRID
codingScheme='A01'>BRP_EIC</out_MarketParticipant.mRID>
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    <in_MarketParticipant.mRID
codingScheme='A01'>BRP_EIC</in_MarketParticipant.mRID>
    <out_MarketParticipant.mRID
codingScheme='A01'>BRP_EIC</out_MarketParticipant.mRID>
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```

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```

## 14. Positive Acknowledgement\_MarketDocument example

```

<Acknowledgement_MarketDocument xmlns='urn:iec62325.351:tc57wg16:451-
1:acknowledgementdocument:8:1'>
  <mRID>ACK-7718</mRID>
  <createdDateTime>2022-10-21T10:10:27Z</createdDateTime>
  <sender_MarketParticipant.mRID
codingScheme='A01'>10X1001A1001B54W</sender_MarketParticipant.mRID>
  <sender_MarketParticipant.marketRole.type>A04</sender_MarketParticipant.mark
etRole.type>
  <receiver_MarketParticipant.mRID
codingScheme='A01'>BRP_EIC</receiver_MarketParticipant.mRID>
  <receiver_MarketParticipant.marketRole.type>A08</receiver_MarketParticipant.
marketRole.type>
  <received_MarketDocument.mRID>D-1_Piemers</received_MarketDocument.mRID>
  <received_MarketDocument.revisionNumber>2</received_MarketDocument.revisionN
umber>
  <received_MarketDocument.type>A01</received_MarketDocument.type>
  <received_MarketDocument.process.processType>A01</received_MarketDocument.pr
ocess.processType>
  <received_MarketDocument.createdDateTime>2022-10-
21T11:00:00Z</received_MarketDocument.createdDateTime>
  <Reason>
    <code>A01</code>
    <text>Message fully accepted</text>
  </Reason>
</Acknowledgement_MarketDocument>

```

## 15. Negative Acknowledgement\_MarketDocument example

```

<Acknowledgement_MarketDocument xmlns='urn:iec62325.351:tc57wg16:451-
1:acknowledgementdocument:8:1'>
  <mRID>ACK-7630</mRID>
  <createdDateTime>2022-10-20T11:28:00Z</createdDateTime>
  <sender_MarketParticipant.mRID
codingScheme='A01'>10X1001A1001B54W</sender_MarketParticipant.mRID>
  <sender_MarketParticipant.marketRole.type>A04</sender_MarketParticipant.mark
etRole.type>
  <receiver_MarketParticipant.mRID
codingScheme='A01'>BRP_EIC</receiver_MarketParticipant.mRID>
  <receiver_MarketParticipant.marketRole.type>A08</receiver_MarketParticipant.
marketRole.type>
  <received_MarketDocument.mRID>D-1_14_10</received_MarketDocument.mRID>

```

```

<received_MarketDocument.revisionNumber>3</received_MarketDocument.revisionNumber>
    <received_MarketDocument.type>A01</received_MarketDocument.type>
<received_MarketDocument.process.processType>A01</received_MarketDocument.pr
ocess.processType>
    <received_MarketDocument.dateTime>2021-08-
03T11:27:19Z</received_MarketDocument.dateTime>
    <Reason>
        <code>A02</code>
        <text>Message fully rejected</text>
    </Reason>
    <Reason>
        <code>A51</code>
        <text>A51 - Message identification or version conflict</text>
    </Reason>
    <Reason>
        <code>A57</code>
        <text>A57 - Deadline limit exceeded/Gate not open</text>
    </Reason>
</Acknowledgement_MarketDocument>

```

## 16. Confirmation\_MarketDocument example

```

<Confirmation_MarketDocument xmlns='urn:iec62325.351:tc57wg16:451-
2:confirmationdocument:5:2'>
    <mRID>D-1-A08-20221018-7504</mRID>
    <type>A08</type>
    <createdDateTime>2022-10-18T03:43:41Z</createdDateTime>
    <sender_MarketParticipant.mRID>
codingScheme='A01'>10X1001A1001B54W</sender_MarketParticipant.mRID>
    <sender_MarketParticipant.marketRole.type>A04</sender_MarketParticipant.m
arketRole.type>
    <receiver_MarketParticipant.mRID>
codingScheme='A01'>BRP_EIC</receiver_MarketParticipant.mRID>
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nt.marketRole.type>
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        <start>2022-10-17T22:00Z</start>
        <end>2022-10-18T22:00Z</end>
    </schedule_Period.timeInterval>
    <confirmed_MarketDocument.mRID>D-
1_BRP_17_10</confirmed_MarketDocument.mRID>
    <confirmed_MarketDocument.revisionNumber>1</confirmed_MarketDocument.revi
sionNumber>
        <domain.mRID codingScheme='A01'>10YLV-1001A00074</domain.mRID>
        <process.processType>A01</process.processType>
        <Reason>
            <code>A06</code>
            <text>Schedule accepted</text>
        </Reason>
        <Confirmed_TimeSeries>
            <mRID>1</mRID>
            <version>1</version>
            <businessType>A01</businessType>
            <product>8716867000016</product>
            <objectAggregation>A03</objectAggregation>
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codingScheme='A01'>10X1001A1001B54W</in_MarketParticipant.mRID>
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codingScheme='A01'>BRP_EIC</out_MarketParticipant.mRID>

```

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## 17. AnomalyReport\_MarketDocument example

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codingScheme='A01'>BRP_EIC</receiver_MarketParticipant.mRID>

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```

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</AnomalyReport_MarketDocument>
```

## 1. Appendix

### BusinessType code list

Kods	Nosaukums	Apraksts
A01	Production	The nature of the business being described is production details.
A02	Internal trade	
A04	Consumption	The nature of the business being described is consumption details.
A49	Inflow	The volume of water that flows into a reservoir in a given interval.
A93	Wind generation	The business being described concerns wind generation.
A94	Solar generation	The business being described concerns solar generation.
C29	The rest of production	
Z30	Up level	
Z31	Up max	
Z32	Up min	

## 2. Appendix

### ReasonCodeType code list

Kods	Nosaukums	Apraksts
A01	Message fully accepted	The message has been fully accepted for application processing.
A02	Message fully rejected	No part of the message has been accepted for application processing, e.g. Global position incomplete.
A03	Message contains errors at the time series level	Part of the message contents, i.e. certain time series, has been accepted for application processing. It is necessary to look at the time series level to determine the time series that have been rejected. The time series is excluded from the global position.