Balance Management System

Balancing Bid Management

Implementation Guide

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Contents

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 Bid Management module is the integral part of the Balance Management System and it includes the functionalities and services that are necessary for balancing service provision.

The goal of this document is to provide detailed insight on data exchange rules and requirements for Balance Service Providers to be able to perform necessary adjustments in their local systems and to implement the message exchange with the BMS regarding the balancing service provision.

2. Scope

This document describes the data exchange rules and form between BSPs local system and the Bid Management module of the Balance Management System that is relevant for balancing service provision. The library of *.xsd schemas is provided as addition to this implementation guide.

Other technical details necessary for implementation that are not included in this document should be requested separately by contacting the representative indicated on the AST website.

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.

IEC 62325-451-7, Framework for energy market communications – Part 451-7: Reserve resource business process and contextual model for CIM European market

IEC 62325-451-1, Framework for energy market communications – Part 451-1: Acknowledgement business process and contextual model for CIM European market

Common Platform for manually activated restoration reserves IMPLEMENTATION GUIDE

ENTSO-E Common information model (CIM) European style market profile user guide VERSION 3.0

ENTSO-E Acknowledgement document – UML model and schema VERSION 1.1

ENTSO-E Reserve Bid document – UML model and schema VERSION 1.4

ENTSO-E Activation document – UML model and schema VERSION 1.2

Baltic balancing market rules

Rules for Providing the Balancing Service under the System Ancillary Service Agreement.

3.1. Applicable EDI documents

Message	EDI document	Version
Balancing Bid	Reserve Bid Market Document	urn:iec62325.351:tc57wg16:451-7:reservebiddocument:7:3
Balancing Bid update	Reserve Bid Market Document	urn:iec62325.351:tc57wg16:451-7:reservebiddocument:7:3
Activation Order	Activation Document	urn:iec62325.351:tc57wg16:451-7:activationdocument:6:3
Activation Order Response	Activation Document	urn:iec62325.351:tc57wg16:451-7:activationdocument:6:3
ACK	Acknowledgement document	urn:iec62325.351:tc57wg16:451-1:acknowledgementdocument:8:1

The actual XSD schemas are available on ENTSO-E website, following the link: https://www.entsoe.eu/publications/electronic-data-interchange-edi-library/

3.2. Available channels for file based data exchange

For file-based data exchange the following channels will be supported:

- WebService (SOAP);
- SFTP;
- E-mail (SMTP/IMAP) - *backup communication channel if other communication channels are unavailable, if not set differently in Rules for balancing service provision;*
- BMS external portal – *only for data exchange from BSP to BMS (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*

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 Rules for Providing the Balancing Service under the System Ancillary Service Agreement.
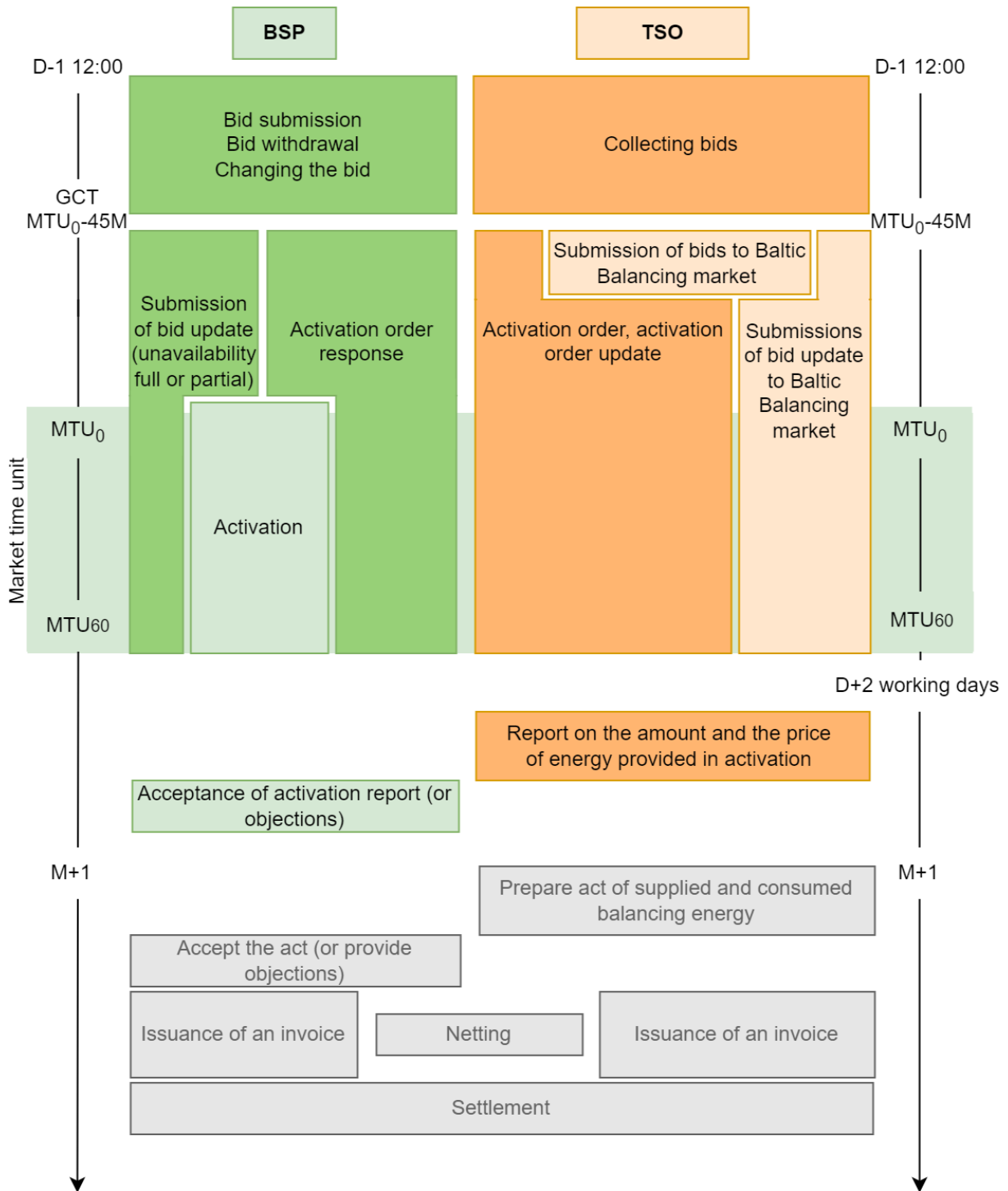
Acronyms

Acronym	Name
ACK	Acknowledgement
AO	Activation order
AOR	Activation order response
BMS	Balance Management System
BSP	Balance Service Provider
CIM	Common Information Model

CMOL	Common Merit Order List
EDI	Electronic Data Interchange
EET	East European Time
GCT	Gate Closure Time
GOT	Gate Open Time
GUI	General User Interface
MAW	Megawatts
MOL	Merit Order List
MTU	Market Time Unit
TSO	Transmission System Operator
XML	Extensible Markup Language

5. mFRR business process for standard products

5.1. General overview

BSP

TSO

D-1 12:00 — D-1 12:00

Bid submission
Bid withdrawal
Changing the bid

Collecting bids

GCT
MTU_0-45M — MTU_0-45M

Submission of bid update (unavailability full or partial)

Activation order response

Submission of bids to Baltic Balancing market

Activation order, activation order update

Submissions of bid update to Baltic Balancing market

Market time unit

MTU_0 — MTU_0

Activation

$MTU60$ — $MTU60$

D+2 working days

Report on the amount and the price of energy provided in activation

Acceptance of activation report (or objections)

M+1 — M+1

Prepare act of supplied and consumed balancing energy

Accept the act (or provide objections)

Issuance of an invoice

Netting

Issuance of an invoice

Settlement

Legend:
- BSP actions in scope of this implementation guide
- TSO actions in scope of this implementation guide
- BSP actions out of scope of this implementation guide
- TSO actions out of scope of this implementation guide
- Other activities for business context

Process diagram depicts the general overview of subprocesses regarding balancing service provision with a focus on data exchange between parties.

During the time period of D-1 12:00 until GCT the BSP shall submit balancing bids to TSO. Until the GCT they can be modified, withdrawn or new bids can be added. After the GCT the TSO provides the bids to Baltic Balancing market and only in case of technical issues (e.g., unexpected technical issues with reserve unit, disconnection from the grid, temperature limits exceeded, others) the BSP is allowed to update the bid it has provided.

Based on the market results and system needs the activation order is issued and sent to the BSP, after which the BSP activates the reserve in time period specified in the said activation order. Additionally, the BSP is obliged to provide activation order response to notify the TSO about the amount of the capacity activated.

In not more than 2 working days after the activation the TSO provides to BSP the report about the amount of energy delivered in the activation and the price of it. The BSP accepts the report, or in case of not agreeing on the received report - provides the grounds of changes that need to be done in the said report.

Based on these reports agreed on during the settlement period, the act on balancing energy supplied during settlement period will be provided and the settlement will take place. The act provision and settlement processes are indicated only as context and are not a subject of this implementation guide.

5.1. Sequence diagram
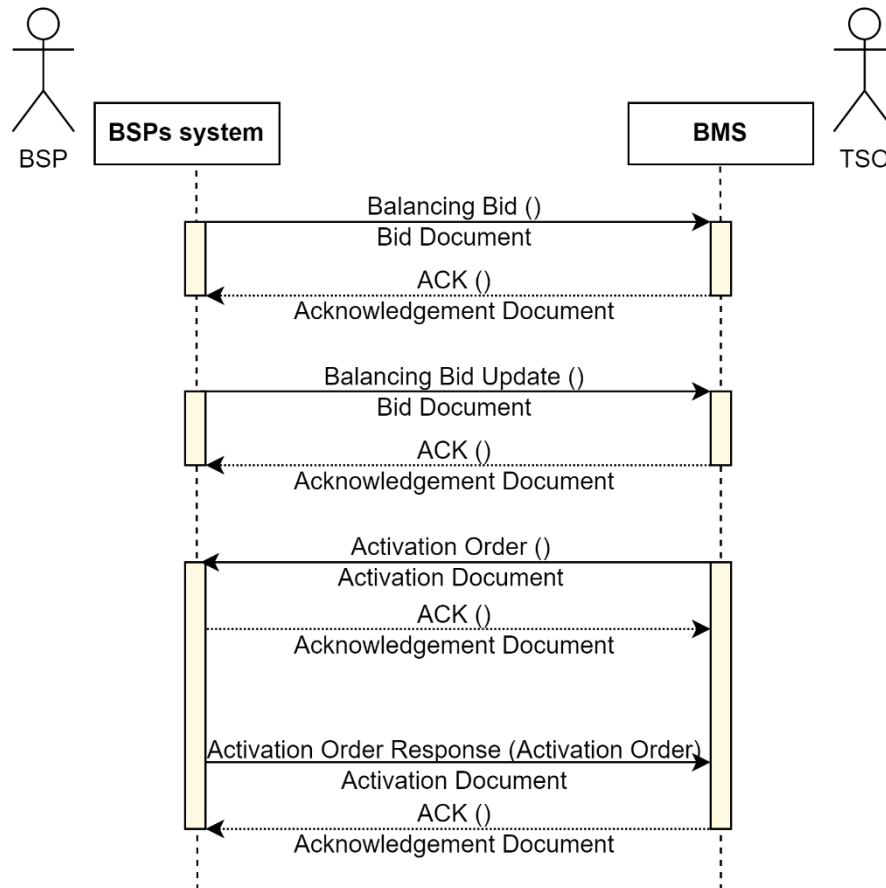
5.2. Business rules

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 = EIC coding scheme.

For Reserve Bid Market Documents, data providers may submit higher versions containing updated bids only as detailed in chapter 5.2.2 (and 6.1). For all other documents, higher versions must contain the same number of time series and cover the same time interval.

The BMS 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. A data submission that violates this rule may result in data not processed properly by the BMS; bids may be ignored, for example.

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 BSP can use GUI for manual upload of XML documents.

5.2.2.   Bid submission

Balancing bid data exchange schema
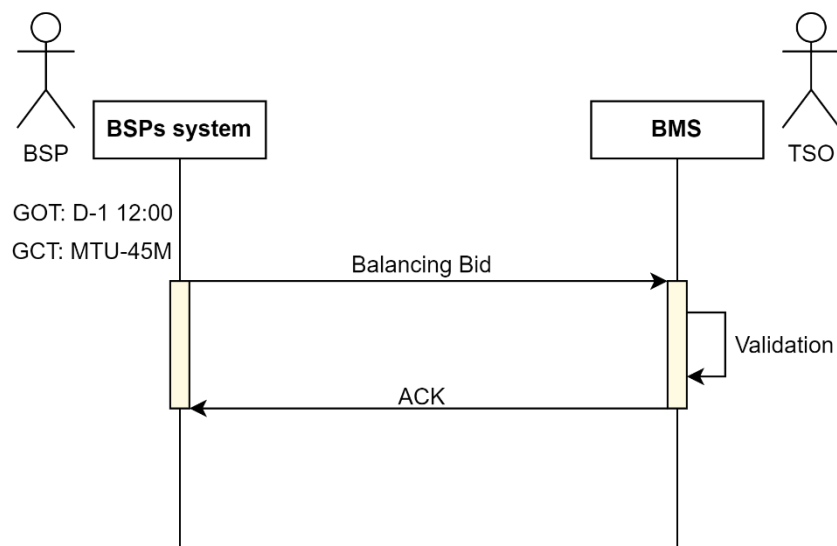
Dependencies governing Balancing Bid document

All information about the bid is included in the bid document that is provided by BSP to TSO. Submission of bids for next EET day can be done no earlier than D-1 12:00 EET. The maximum period of time series is 24h. The bids can be provided not later than 45 minutes before the corresponding MTU.

BSP is responsible to provide unique bid time series identification and document identification. The times series identification of already submitted bid is used to refer to the bid in next documents (possibly with different document identification) to make changes in the bid or withdraw it.

The BMS will perform validation of the bid, checking the maximum allowed capacity of the Reserve unit that is included in the bid information and several other limitations that should be followed and are in line with the Rules for balancing service provision.

The document time period is used to provide information about the period under consideration. When providing consecutive versions of the bid, if the time period of bid included in the document is shorter than document time period, the bid time period that is not included in bid time series period but is

covered by document time period is going to be deleted, it only applies if in previous versions this period was covered by the time series. For more detailed explanation please see chapter 6.1.

Only bids to be updated or newly added bids should be included in document. The bids that are not included but were sent in previous document/-s remain unchanged.

To completely withdraw the bid the appropriate bid document should be sent including the whole time series period and bid status should be set to withdrawn.

Document structure diagram
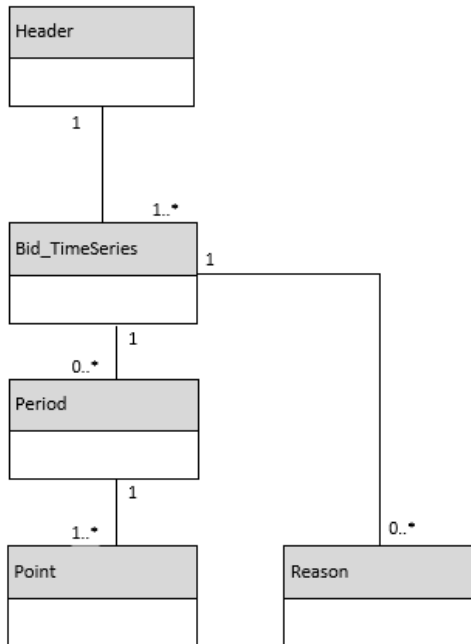
Document element description

Tag	Value	Mandatory[1]	Description	Conditions
Header				
mRID	(1..35 chars)	YES	Unique identification of the Bid Document	
revisionNumber	(1….3 chars)	YES	Document version	Initial transmission shall equal "1". Every next version should be higher than previous.

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[1] Mandatory parameter is defined based on xsd schema. Otherwise if tag conditions does not include the case where in is not used, it is mandatory to include such tag in document being submitted.

| type	A37	YES	Type of the document	A37 - Reserve Bid document
process.processType	A47	NO	The process type identifies the process to which the information flow is directed.	A47 - Manual frequency restoration reserves(mFRR)
Sender_MarketParticipant.mRID	(1…16 chars)	YES	Identification of the party who is sending the document	EIC of party who is sending the document
Sender_MarketParticipant.MarketRoleType	A27	YES	Identification of the role that is played by the sender.	A27 – resource provider
Receiver_MarketParticipant.mRID	10X1001A1001B54W	YES	Identification of the party who is receiving the document	TSO EIC code. 10X1001A1001B54W – AST
Receiver_MarketParticipant.MarketRoleType	A04	YES	Identification of the receiver role	A04 – System operator
CreatedDateTime	UTC DateTime	YES	Date and time of document creation	The date and time must be expressed in UTC as YYYY-MM-DDTHH:MM:SSZ.
reserveBid_Period.timeInterval				
start	UTC DateTime	YES	The beginning date and time of the period covered by the document.	The start and end date and time must be expressed in UTC time zone and as YYYY-MM-DDTHH:MMZ.
end	UTC DateTime	YES	Ending date and time of the period covered by the document.	The start and end date and time must be expressed in UTC time zone and as YYYY-MM-DDTHH:MMZ.

domain.mRID	10YLV-1001A00074	YES	EIC of area covered by sender	EIC code of Latvia: 10YLV-1001A00074
subject_MarketParticipant.mRID	10X1001A1001B54W	NO	The identification of a party in the energy market	EIC of party who is providing the bid
subject_MarketParticipant.MarketRoleType	A04	NO	The identification of the role played by a market player	A27 – resource provider
Bid_TimeSeries				
mRID	(1..35 chars)	YES	Unique identification of the bid assigned by BSP	
auction.mRID	BalticCoBA	NO	A unique identification assigned by the Reserve Allocator of the set of specifications that clearly defines the auction to which the tender is addressed. For general reference purposes only.	Constant value: Baltic CoBA
businessType	B74	YES	The nature of the time series for which the product is handled.	B74 - Offer
acquiring_Domain.mRID	10YLV-1001A00074	YES	The EIC identification of the scheduling area where the energy is going	Equal to connecting_Domain.mRID EIC code of Latvia: 10YLV-1001A00074
connecting_Domain.mRID	10YLV-1001A00074	YES	The area where the energy is coming from	EIC code of Latvia: 10YLV-1001A00074
provider_MarketParticipant.mRID	(1…16 chars)	NO	A unique identification of the Resource Provider responsible for reserve bid	EIC of the BSP

quantity_Measure_Unit.name	MAW	YES	The unit of measurement used for the quantities expressed within the time series.	Always expressed in megawatts – MAW
currency_Unit.name	EUR	NO	The currency in which the monetary amount is expressed.	Constant value: EUR
Divisible	A01 A02	YES	The indication of whether or not the activated quantity can be lower than offered.	A01 - Yes (divisible) A02 - No (not divisible)
LinkedBidIdentification	(1…35 chars)	NO	The identification used to associate bids that are to be linked together. If the bid is not linked then the attribute is not used.	Example: Bid B is linked with bid A. Bid B can be activated only after bid A is activated. Bid B need to have bid A ID.
status	A06 A13	NO	The status of the bid.	The following Status codes permitted: A06 - Available A13 - Withdrawn
registeredResource.mRID	(1…18 chars)	NO	Identification of the resource that will be used to supply the energy	EIC code of Reserve Unit. For example specific power generating module or demand unit or group qualified by TSO.
flowDirection.direction	A01 A02	YES	This identifies the direction of the energy flow.	A01 - UP; A02 - DOWN.
marketAgreement.type	A01 Z59	NO	The type of the market agreement	If mFRR, then A01 - Daily If ER mFRR, then: Z59 - Volume ER mFRR (100 MW)
marketAgreement.mRID	(1…18 chars)	NO	Market agreement identification	If mFRR free bid, then not used;

				If ER mFRR then procurement or auction agreement ID for capacity.
standard_MarketProduct .marketProductType	A07	NO	Used when the bid refers to a standard product	A07 - Standard mFRR product eligible for scheduled and direct activation
Period				
TimeInterval				
start	UTC DateTime	YES	The beginning date and time of the period.	The start and end date and time must be expressed in UTC time zone and as YYYY-MM-DDTHH:MMZ.
end	UTC DateTime	YES	Ending date and time of the period.	The start and end date and time must be expressed in UTC time zone and as YYYY-MM-DDTHH:MMZ.
Resolution	PT60M	YES	The resolution defining the number of periods that the time interval is divided.	Time resolution for bid is equal to MTU in compliance with following format: PnYnMnDTnHnMnS.
Point				
position	(1…6 chars)	YES	Position within the time interval	
quantity.quantity	(1…17 numeric chars) Min = 1MW, resolution 1MW	YES	Quantity offered	That is expressed in the Measurement Unit Quantity
minimum_Quantity.quantity	1	NO	Minimum bid quantity to be activated	If divisible = yes, then fixed value = 1 MW, if divisible = no, then not used.
Energy_Price.amount	(1…17 numeric chars)	NO	The price of the energy	Not more than two decimal positions can be included.

5.2.3. Update of bid after GCT

Bid update data exchange schema
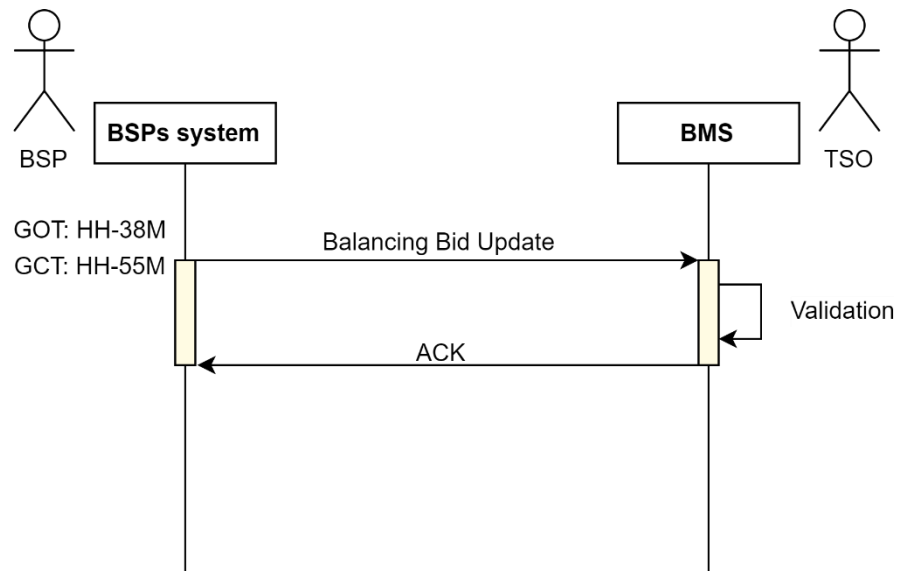
Dependencies governing Balancing Bid Update document

The same document as for balancing bid document is used for Balancing Bid Update submission. Balancing bid can be update in case of unexpected technical limitations in any moment after H-38 min but not later than 5 minutes before activation order creation or the end of market time unit.

The balancing bid update should contain only the corresponding market time unit data that is being updated, the appropriate bid time series identification should be used. Only the quantity and status updates are allowed, all other fields of the document should match the last bid version before the GCT.

The start of time period for which the update is done should be in future and end of time period should be the end of corresponding MTU. In case the bid times series will contain the time period partly or fully in the past the bid update will be rejected.

The quantity specified in bid document should correspond to remaining available quantity. The updated bid document should contain the remaining quantity (that can't be higher than original quantity) and the bid status - available. If the whole amount is unavailable the quantity should be set to 0 MW. It should be noted that each bid update document should have a unique mRID. Sending next version is allowed only in case previous one was not successfully validated and document was rejected.

Document structure diagram – see chapter 5.2.2.

Document element description

The value of **grey** coloured tags should be the same as in the original Bid document provided by BSP.

Tag	Value	Mandatory[2]	Description	Conditions
Header				
mRID	(1..35 chars)	YES	Unique identification of the Bid Document	
revisionNumber	(1….3 chars)	YES	Document version	Initial transmission shall equal "1". Every next version should be higher than previous.
type	Z42	YES	Type of the document	Z42 - Reserve Bid Update document
process.processType	A47	NO	The process type identifies the process to which the information flow is directed.	A47 - Manual frequency restoration reserves(mFRR)
Sender_MarketParticipant. mRID	(1…16 chars)	YES	Identification of the party who is sending the document	EIC of party who is sending the document
Sender_MarketParticipant. MarketRoleType	A27	YES	Identification of the role that is played by the sender.	A27 – resource provider
Receiver_MarketParticipant. mRID	10X1001A 1001B54W	YES	Identification of the party who is receiving the document	TSO EIC code. 10X1001A1001B54W – AST
Receiver_MarketParticipant. MarketRoleType	A04	YES	Identification of the receiver role	A04 – System operator

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| CreatedDateTime	UTC DateTime	YES	Date and time of document creation	The date and time must be expressed in UTC as YYYY-MM-DDTHH:MM:SSZ.
reserveBid_Period.timeInterval				
start	UTC DateTime	YES	The beginning date and time of the period covered by the document.	The start and end date and time must be expressed in UTC time zone and as YYYY-MM-DDTHH:MMZ.
end	UTC DateTime	YES	Ending date and time of the period covered by the document.	The start and end date and time must be expressed in UTC time zone and as YYYY-MM-DDTHH:MMZ.
domain.mRID	10YLV-1001A00074	YES	EIC of area covered by sender	EIC code of Latvia: 10YLV-1001A00074
subject_MarketParticipant.mRID	10X1001A1001B54W	NO	The identification of a party in the energy market	EIC of party who is providing the bid
subject_MarketParticipant.MarketRoleType	A04	NO	The identification of the role played by a market player	A27 – resource provider
Bid_TimeSeries				
mRID	(1..35 chars)	YES	Unique identification of the bid assigned by BSP	
auction.mRID	BalticCoBA	NO	A unique identification assigned by the Reserve Allocator of the set of specifications that clearly defines the auction to which the tender is addressed.	Constant value: Baltic CoBA

			For general reference purposes only.	
businessType	B74	YES	The nature of the time series for which the product is handled.	B74 - Offer
acquiring_Domain.mRID	10YLV-1001A00074	YES	The EIC identification of the scheduling area where the energy is going	Equal to connecting_Domain.mRID EIC code of Latvia: 10YLV-1001A00074
connecting_Domain.mRID	10YLV-1001A00074	YES	The area where the energy is coming from	EIC code of Latvia: 10YLV-1001A00074
provider_MarketParticipant.mRID	(1...16 chars)	NO	A unique identification of the Resource Provider responsible for reserve bid	EIC of the BSP
quantity_Measure_Unit.name	MAW	YES	The unit of measurement used for the quantities expressed within the time series.	Always expressed in megawatts – MAW
currency_Unit.name	EUR	NO	The currency in which the monetary amount is expressed.	Constant value: EUR
Divisible	A01 A02	YES	The indication of whether or not the activated quantity can be lower than offered.	A01 - Yes (divisible) A02 - No (not divisible)
LinkedBidIdentification	(1...35 chars)	NO	The identification used to associate bids that are to be linked together. If the bid is	Example: Bid B is linked with bid A.

			not linked then the attribute is not used.	Bid B can be activated only after bid A is activated. Bid B need to have bid A ID.
status	A06	NO	The status of the bid.	The following Status codes permitted: A06 - Available
registeredResource.mRID	(1…18 chars)	NO	Identification of the resource that will be used to supply the energy	EIC code of Reserve Unit. For example specific power generating module or demand unit or group qualified by TSO.
flowDirection.direction	A01 A02	YES	This identifies the direction of the energy flow.	A01 - UP; A02 - DOWN.
marketAgreement.type	A01 Z59	NO	The type of the market agreement	If mFRR, then A01 - Daily If ER mFRR, then: Z59 - Volume ER mFRR (100 MW)
marketAgreement.mRID	(1…18 chars)	NO	Market agreement identification	If mFRR free bid, then not used; If ER mFRR then procurement or auction agreement ID for capacity.
standard_MarketProduct .marketProductType	A07	NO	Used when the bid refers to a standard product	A07 - Standard mFRR product eligible for scheduled and direct activation
Period				
TimeInterval				
start	UTC DateTime	YES	The beginning date and time of the period.	The start and end date and time must be expressed in UTC time zone and as YYYY-MM-DDTHH:MMZ.

end	UTC DateTime	YES	Ending date and time of the period.	The start and end date and time must be expressed in UTC time zone and as YYYY-MM-DDTHH:MMZ.
Resolution	PT60M	YES	The resolution defining the number of periods that the time interval is divided.	Time resolution according to the TimeInterval but not more than PT60M in compliance with following format: PnYnMnDTnHnMnS
Point				
position	(1…6 chars)	YES	Position within the time interval	Not more than 1 position allowed.
quantity.quantity	(1…17 numeric chars) Min = 0 MW, resolution 1MW	YES	Quantity offered	That is expressed in the Measurement Unit Quantity
minimum_Quantity.quantity	1	NO	Minimum bid quantity to be activated	If divisible = yes, then fixed value = 1 MW, if divisible = no, then not used.
Energy_Price.amount	(1…17 numeric chars)	NO	The price of the energy	Not more than two decimal positions can be included.
Reason				
Code	(1…3 chars)	YES	Refer to the ENTSO-E reason codelist for appropriate codes	In case of bid update: B16 - A tender that has been requested is no longer available in the MOL.
Text	(1…150 chars)	NO	Description of the reason	Reason of the unavailability should be provided in the reason text part.

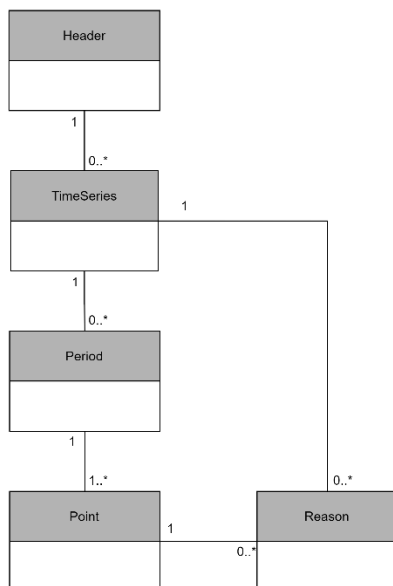## 5.2.4. Activation order and response to Activation order

Bid activation data exchange schema
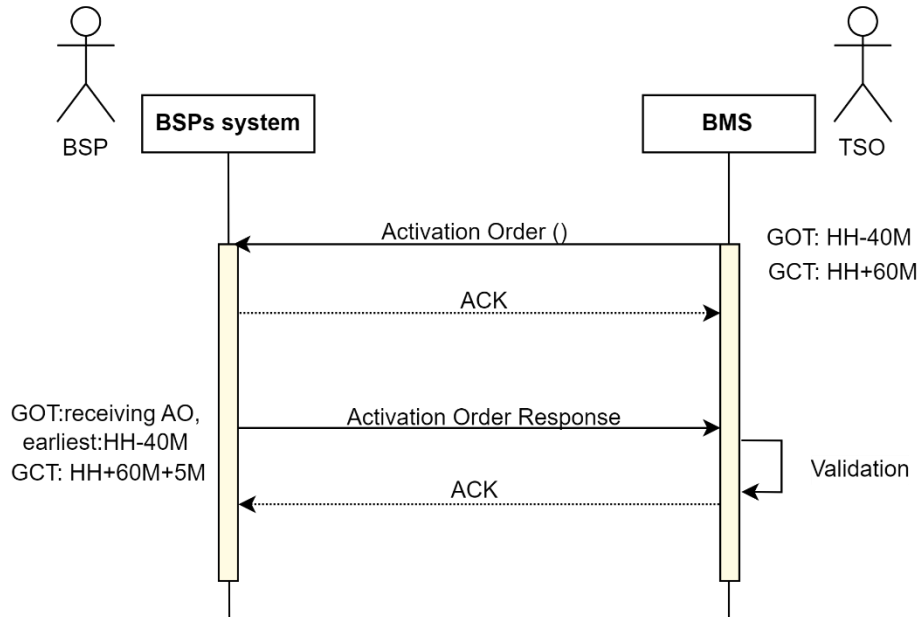
Dependencies governing Activation order document

Activation order document is provided by TSO to BSP. Activation order can be provided not earlier than GCT of the Bid submission and not later than the end of MTU. Activation order covers not more than one MTU, it can be updated until end of the MTU. The activation according to the time period and quantity specified in activation order should be performed by BSP.

AO Document structure diagram

Document element description

Tag	Value	Mandatory[3]	Description	Conditions
Header				
mRID	(1…35 chars)	YES	Unique identification of the document for which the time series data is being supplied.	All additions, modifications, or suppressions for the time series and activation period must use the same identification.
revisionNumber	(1…3 chars)	YES	Document version	Starts at 1 and increases sequentially.
type	A40	YES	Type of the document	A40 - Activation order
process.processType	A30	NO	The process type identifies the process to which the information flow is directed.	A30 –Tertiary reserve process
sender_MarketParticipant.mRID	10X1001A1001B54W	YES	Identification of the party that is the owner of the document	TSO EIC code. 10X1001A1001B54W – AST
sender_MarketParticipant.marketRole.type	A04	YES	Identification of the role that is played by the sender.	A04 – System operator
receiver_MarketParticipant.mRID	(1…16 chars)	YES	Identification of the party who is receiving the document	EIC of party who is sending the document
receiver_MarketParticipant.marketRole.type	A27	YES	Identification of the receiver role	A27 – resource provider

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[3] Mandatory parameter is defined based on xml schema. Otherwise if tag conditions does not include the case where in is not used, it is mandatory to include such tag in document being provided.

createdDateTime	UTC DateTime	YES	The date and time that the document was prepared for transmission by the application of the sender.	The date and time must be expressed in UTC as YYYY-MM-DDTHH:MM:SSZ.
activation_Time_Period.ti meInterval				
start	UTC DateTime interval	YES	This information provides the start date and time of the activation period	The start date and time must be expressed in UTC time zone and as YYYY-MM-DDTHH:MMZ
end	UTC DateTime interval	YES	This information provides the end date and time of the activation period	The end date and time must be expressed in UTC time zone and as YYYY-MM-DDTHH:MMZ
domain.mRID	10Y1001A10 01A94A	YES	EIC of area	Synchronous area of Baltic states-10Y1001A1001A94A
TimeSeries				
mRID	(1..35 chars)	YES	Unique identification of the bid being activated	mRID of Bid_TimeSeries of the Reserve Bid Document being activated.
resourceProvider_Mar ketParticipant.mRID	(1…16 chars)	YES	A unique identification of the Resource Provider responsible for reserve activation	BSP EIC code
businessType	Z54	YES	The nature of the time series for which the product is handled.	Z54 – Volume for mFRR standard product Z59 - Volume ER mFRR specific product NERC (100 MW);

acquiring_Domain.mRID	(1…16 chars)	YES	The area where the reserve is contracted for use (destined)	EIC code. For normal activation: 10Y1001A1001A94A - Synchronous area of Baltic states For special activation: 10YLV-1001A00074 - Latvia 10Y1001A1001A39I - Estonia 10YLT-1001A0008Q – Lithuania 10YFI-1--------U – Finland 10YSE-1--------K – Sweden 10YPL-AREA-----S –Poland 10Y1001A1001A49F - Russian area 10Y1001A1001A51S – Belarus area
connecting_Domain.mRID	10YLV-1001A00074	YES	The area where the energy is coming from	EIC code. 10YLV-1001A00074 – Latvia
measurement_Unit.name	MAW	YES	The unit of measurement used for the quantities expressed within the time series.	Always expressed in megawatts -MAW
flowDirection.direction	A01 A02	YES	This identifies the direction of the energy flow.	A01 = UP A02 = DOWN
marketObjectStatus.status	A08	YES	The status of the specific activation request.	A08 = In process – the quantities in the time series are requested for activation.
registeredResource.mRID	(1…18 chars)	NO	Identification of the resource that is used to supply energy capabilities to the System Operator.	EIC code or Reserve Unit

	Period				
	timeInterval				
	start	UTC DateTime interval	Y E S	This information provides the start date and time of the activation period	The start date and time must be expressed in UTC time zone and as YYYY-MM-DDTHH:MMZ
	end	UTC DateTime interval	Y E S	This information provides the end date and time of the activation period	The end date and time must be expressed in UTC time zone and as YYYY-MM-DDTHH:MMZ
	resolution	PTnM	Y E S	The resolution defining the number of periods that the time interval is divided.	According to form: PnYnMnDTnHnMnS. Where nM expresses the number of minutes.
	Point				
	position	(1…6 chars)	Y E S	This information provides the relative position of a period within an activation interval	The relative position must be expressed as a numeric integer value beginning with 1. All leading zeros must be suppressed.
	quantity	(1…17 numeric chars)	Y E S	This information defines the quantity that is to be activated for the interval in question and that is expressed in the Measurement Unit Quantity.	
Reason					
code	Time series	(1…3 chars)	Y E S	Reason codes for activation	A37 - Balancing
					Z01 – Countertrade
					Z02 – Countertrade
					Z03 – Countertrade
					Z04 – Countertrade
					Z05 – Countertrade
					A46 - System services

Dependencies governing Activation order response document

Activation order response document should be provided by BSP after receiving each Activation order or its update. In activation order response document the activation order data is used for reference. The quantity actually activated should be provided.

AOR Document structure diagram – see the diagram provided for activation order.

Document element description
The value of grey coloured tags should be the same as in the Activation order provided by TSO.

Tag	Value	Mandatory	Description	Conditions
Header				
mRID	(1…35 chars)	YES	Unique identification of the document for which the time series data is being supplied.	All additions, modifications, or suppressions for the time series and activation period must use the same identification.
revisionNumber	(1…3 chars)	YES	Document version	Starts at 1 and increases sequentially.
type	A41	YES	Type of the document	A41 - Activation order response
process.processType	A30	NO	The process type identifies the process to which the information flow is directed.	A30 –Tertiary reserve process
sender_MarketParticipant. mRID	(1…16 chars)	YES	Identification of the party who is receiving the document	EIC of party who is sending the document

---

[4] Mandatory parameter is defined based on xml schema. Otherwise if tag conditions does not include the case where in is not used, it is mandatory to include such tag in document being provided.

sender_MarketParticipant. marketRole.type	A27	YES	Identification of the receiver role	A27 – resource provider
receiver_MarketParticipant.mRID	10X1001A1001B54W	YES	Identification of the party that is the owner of the document	TSO EIC code. 10X1001A1001B54W –AST
receiver_MarketParticipant.marketRole.type	A04	YES	Identification of the role that is played by the sender.	A04 – System operator
creationDateTime	UTC DateTime	YES	The date and time that the document was prepared for transmission by the application of the sender.	The date and time must be expressed in UTC as YYYY-MM-DDTHH:MM:SSZ.
activation_Time_Period.timeInterval				
start	UTC DateTime interval	YES	This information provides the start date and time of the activation period	The start date and time must be expressed in UTC time zone and as YYYY-MM-DDTHH:MMZ
end	UTC DateTime interval	YES	This information provides the end date and time of the activation period	The end date and time must be expressed in UTC time zone and as YYYY-MM-DDTHH:MMZ
domain.mRID	10Y1001A1001A94A	YES	EIC of area	Synchronous area of Baltic states- 10Y1001A1001A94A
order_MarketDocument.mRID	(1..35 chars)	NO	The identification of the Activation Order that is being acknowledged by Activation response	Is mandatory for A41 = Activation Response. DocumentIdentification of Activation document from TSO

order_MarketDocument.revisionNumber	(1…3 chars)	NO	The version of the Activation Order that is being acknowledged by Activation response	Is mandatory for A41 = Activation Response. DocumentVersion of Activation document from TSO
TimeSeries				
mRID	(1..35 chars)	YES	Unique identification of the bid being activated	mRID of Bid_TimeSeries of the Reserve Bid Document being activated.
resourceProvider_MarketParticipant.mRID	(1…16 chars)	YES	A unique identification of the Resource Provider responsible for reserve activation	BSP EIC code
businessType	Z54	YES	The nature of the time series for which the product is handled.	Z54 – Volume for mFRR standard product Z59 - Volume ER mFRR specific product NERC (100 MW);
acquiring_Domain.mRID	(1…16 chars)	YES	The area where the reserve is contracted for use (destined)	EIC code. For normal activation: 10Y1001A1001A94A - Synchronous area of Baltic states For special activation: 10YLV-1001A00074 -Latvia 10Y1001A1001A39I - Estonia 10YLT-1001A0008Q – Lithuania 10YFI-1--------U – Finland 10YSE-1--------K – Sweden 10YPL-AREA-----S –Poland 10Y1001A1001A49F - Russian area 10Y1001A1001A51S – Belarus area

connecting_Domain.mRID	10YLV-1001A00074	YES	The area where the energy is coming from	EIC code. 10YLV-1001A00074 –Latvia
measurement_Unit.name	MAW	YES	The unit of measurement used for the quantities expressed within the time series.	Always expressed in megawatts -MAW
flowDirection.direction	A01 A02	YES	This identifies the direction of the energy flow.	A01 = UP A02 = DOWN
marketObjectStatus.status	A07 A09	YES	The status of the specific activation request.	Activation Response: A07 = Activated – the quantities in the time series have been activated (accepted) A09 = Cancelled – the activation proposal quantities in the time series are rejected.
registeredResource.mRID	(1…18 chars)	NO	Identification of the resource that is used to supply energy capabilities to the System Operator.	EIC code or Reserve Unit
Period				
timeInterval				
start	UTC DateTime interval	YES	This information provides the start date and time of the activation period	The start date and time must be expressed in UTC time zone and as YYYY-MM-DDTHH:MMZ
end	UTC DateTime interval	YES	This information provides the end date and time of the activation period	The end date and time must be expressed in UTC time zone and as YYYY-MM-DDTHH:MMZ

	Resolution	PTnM	YES	The resolution defining the number of periods that the time interval is divided.	According to form: PnYnMnDTnHnMnS. Where nM expresses the number of minutes.
	Point				
	position	(1…6 chars)	YES	This information provides the relative position of a period within an activation interval	The relative position must be expressed as a numeric integer value beginning with 1. All leading zeros must be suppressed.
	quantity	(1…17 numeric chars)	YES	This information defines the quantity that is actually activated for the interval in question and that is expressed in the Measurement Unit Quantity.	Quantity activated, 1 MW precision.
Reason					
code	Time series	(1…3 chars)	YES	Reason codes for activation	A37 - Balancing Z01 – Countertrade Z02 – Countertrade Z03 – Countertrade Z04 – Countertrade Z05 – Countertrade A46 - System services

5.2.5. Acknowledgement

Dependencies governing Acknowledgement document

Acknowledgement is provided by any party after receiving document, indicating the acceptance or rejection using the standard codes from Reason Code Type of ENTSO-E code list and other specific codes provided in this chapter.

The document can be only fully accepted or rejected, meaning that partly successfully validated documents (for example – with error in one of many time series) will be rejected.

Acknowledgement Document structure diagram
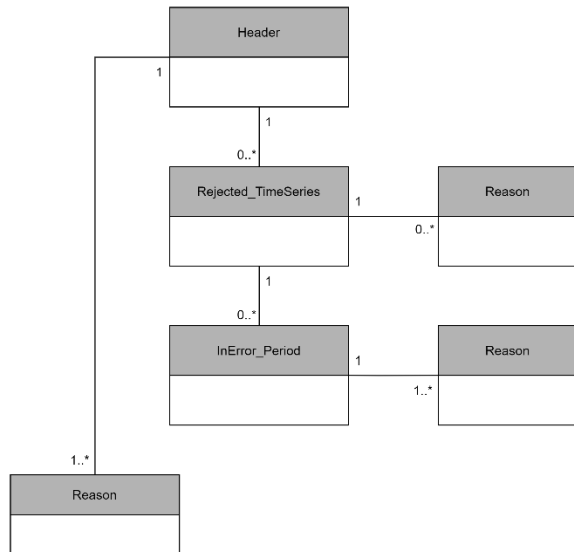
Document element description

Tag	Value	Mandatory[5]	Description	Conditions
Header				
mRID	(1..35 chars)	YES	An acknowledgement document is sent in reply to the receipt of a document.	This identification is assigned by the party who is acknowledging the application reception of a document
createdDateTime	UTC DateTime	YES	Date and time of transmission of the acknowledgement.	The date and time that the document was prepared for transmission by the sender. The date and time must be expressed in UTC as YYYY-MM-DDTHH:MM:SSZ
sender_MarketParticipant. mRID	(1…16 chars)	YES	Identification of the party that is the owner of the document	The identification of the party that is the originator of the acknowledgement. This value should be the same as that

---

[5] Mandatory parameter is defined based on xml schema. Otherwise if tag conditions does not include the case where in is not used, it is mandatory to include such tag in document being provided.

				found in the receiver identification of the document being acknowledged. 10X1001A1001B54W –AST EIC of the BSP
sender_MarketParticipant. marketRole.type	A04 A27	Y E S	Identification of the role that is played by the sender.	A04 – TSO A27 – BSP Identification of the role that is played by the sender
receiver_MarketParticipant .mRID	(1…16 chars)	Y E S	Identification of the party who is receiving the document	This value should be the same as that found in the sender identification of the document being acknowledged 10X1001A1001B54W –AST EIC of the BSP
receiver_MarketParticipant .marketRole.type	A04 A27	N O	Identification of the receiver role	A04 – TSO A27 – BSP Identification of the role that is played by the receiver
received_MarketDocument .mRID	(1…35 chars)	N O	Unique identification of the document that has been received.	This information identifies the document that has been received by the receiving party. The identification is extracted from the received document
received_MarketDocument .revisionNumber	(1…3 chars)	N O	The version of the document that has been received.	The document version must be provided for all documents being acknowledged that have a document version attribute
received_MarketDocument .type	(1…3 chars)	N O	The document type is used to identify the type of document being acknowledged.	The document type is mandatory in contexts where there is potential ambiguity about the document being acknowledged
received_MarketDocument .process.processType	(1…3 chars)	N O	The identification of the nature of process that the document addresses.	The information is extracted from the received document.

received_MarketDocument .createdDateTime	(1…3 chars)	NO	The date and time of the creation of the document.	The information is extracted from the received document.
Rejected_TimeSeries		NO		In case the time series level error.
mRID	(1..35 chars)	YES	The time series in the received document that has been rejected during the initial validation process.	Time series included in the received document.
Reason		YES		
Code	(1…3 chars)	YES	A code providing the acknowledgement status at Time Series Level.	Reason codes are described in the table below.
Text	(1…150 chars)	NO	Textual description of a rejection.	Reason Title from table below should be used as ReasonText.
InError_Period		NO		In case of the time period level error.
start	UTC DateTime	YES	The start date and time of the time period in error. This information is used to identify the time interval that has been identified as being in error.	The start and end date and time must be expressed in UTC time zone and as YYYY-MM-DDTHH:MMZ.
end	UTC DateTime	YES	The end date and time of the time period in error. This information is used to identify the time interval that has been identified as being in error.	The start and end date and time must be expressed in UTC time zone and as YYYY-MM-DDTHH:MMZ.
Reason		YES		

Code	(1…3 chars)	YES	A code providing the acknowledgement status at Time Period Level.	Reason codes are described in the table below.
Text	(1…150 chars)	NO	Textual description of a rejection.	Reason Title from table below should be used as ReasonText.
Reason		YES		
Code	(1…3 chars)	YES	A code providing the acknowledgement status of received document.	Reason codes are described in the table below. In case of a received document without error, only one Reason element is necessary to acknowledge it. At least one reason element must appear associated with the header part of the document.
Text	(1…150 chars)	NO	Textual description of a rejection.	Reason Title from table below should be used as ReasonText.

[List of reason codes will be added in following versions of Implementation Guide]

5.2.6. Activation report

[TBD]

6. Examples

6.1. Biding example

This section provides detailed example about bid submission and the options of editing the bid or withdrawing it from tender.

The BSPs can provide several bids in one document, that would be realized as several Bid time series in one Bid document covering period of all Bid time series or as separate bids in separate documents.

To edit the submitted bids the higher version of the same document can be used, but in case the time period does not match the original document or there is a need for example to update only one of Bid Time Series, add new Bid Time series, then new document can be used.

The initial state of the example:

- BSP submits Bid document containing three separate bids – represented as 3 Bid Time series.
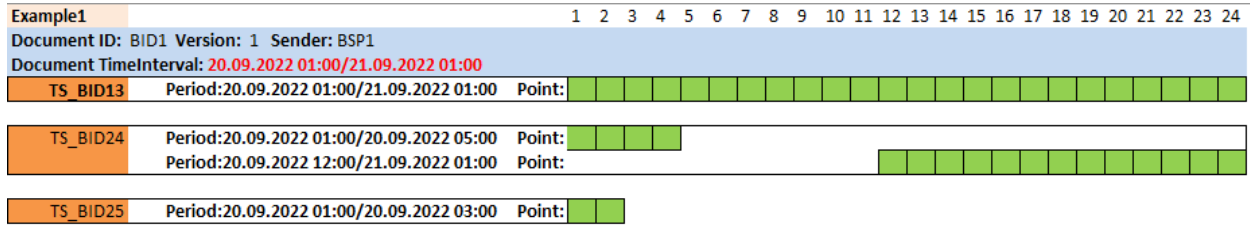
- In the BMS the local bid list is created, containing all currently actual bids:
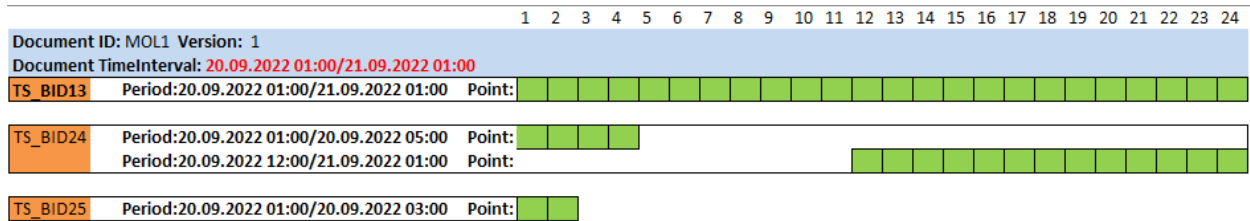
- The BSP submits new document, providing only one of the time series mentioned before and a new one:
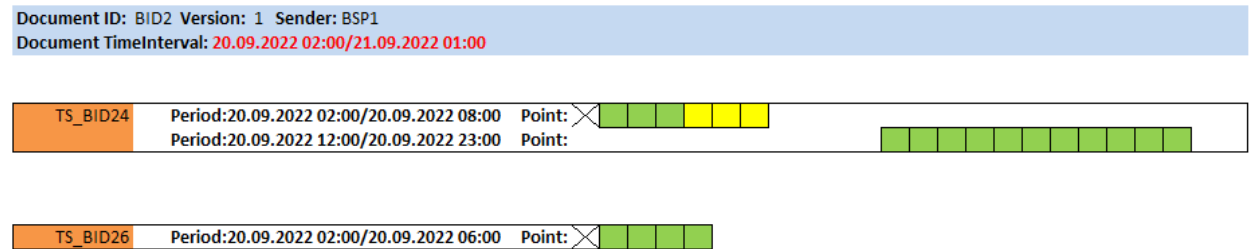
In TS_BID24 additional 3 positions are provided, but the positions for last two hours are included in document period but not in the time series periods, meaning that these time series positions should be removed.

TS_BID26 previously was not included in document, meaning that this is a new bid added to the existing ones.

The changes to the bid time series should be done considering the GCT. If the GCT for the first (or more) position in the original time series has already passed, then the Time Series should not include this period at all. Otherwise the whole document will be rejected by BMS.

- In the result the local bid list is updated. Creating the following list:

Where TS_BID13 and TS_BID25 have remained unchanged, TS_BID26 have been added and in TS_BID24 the newly added positions are added, but last two -removed.

- The BSP deletes one of the bids completely by submitting the Bid time series, containing the original data, but applying the status – A13 – withdrawn.

- In the result the local bid list in system is changed accordingly:

6.2. Bid link example

Bids can be linked 'to another bid creating parent-child bids, meaning – that the child bid that is being referred to the parent bid can not be activated before the parent bid has been activated.

It is useful for technical restriction and/or star-up cost modelling. If the linking is applied the child bid will be activated only in case the parent bid has been activated in full capacity, until that the child bid is considered unavailable.

In the example represented in picture above (1) shows all the bids submitted, BID_A and BID_B is linked to bid BID_C. While the BID_C is not fully activated (2), the BID_A and BID_B is skipped even though these are least expensive bids. After the BID_C is activated fully (3), the BID_A can be activated (4) and after that BID_B if needed.

The bid that is linked could also be more expensive or with the same price. The direction of bids needs to be the same for all linked bids.

There could also be linked bids to the bid that is already linked, using the example it would be that BID_B is linked to BID_C, and BID_A is linked to BID_B. Then the activation sequence would be BID_C, BID_B and BID_A.
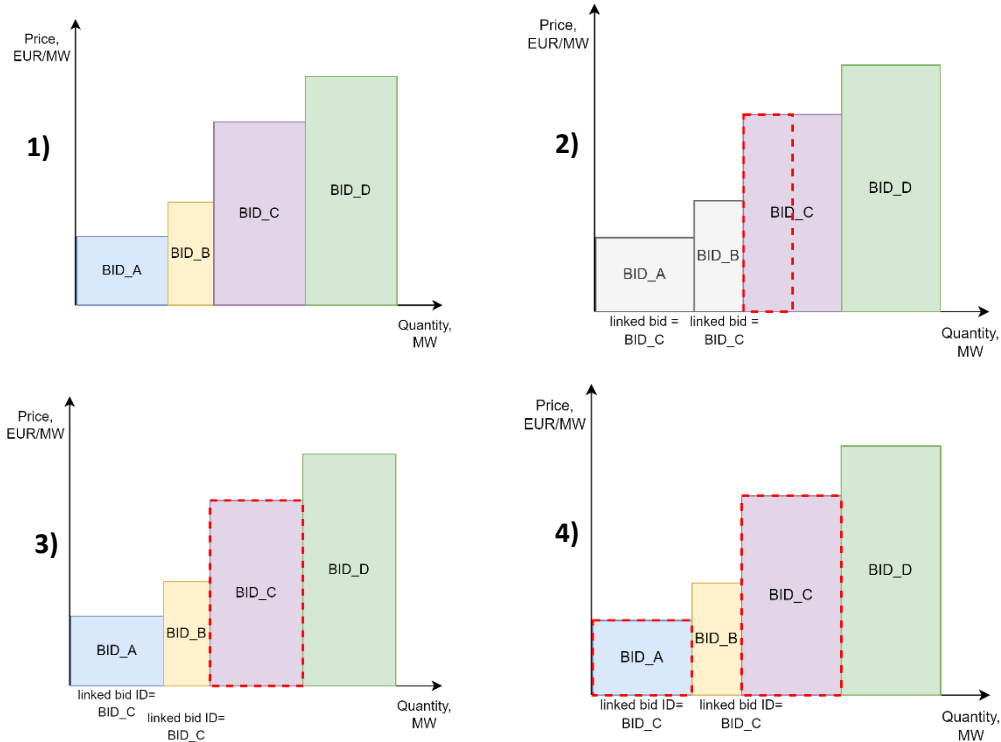
6.3. Activation example

In Activation document provided by TSO to BSP the bid activation period is indicated. The activation order can be updated according to the time periods specified in market rules.

In case the activation order is updated the higher version of the said order is sent to BSP with changed time series period. The BSP is obliged to provide activation order response for every activation order received.

In case the activation order is sent prior to the MTU and based on system operation processes this activation is not necessary anymore or was provided by mistake it is possible to cancel the activation prior the activation period. In this case the activation order with higher version number will be sent, but the time series period start and end time will be the same value. No activation should be done in this case.

6.4. Bid document example

```xml
<?xml version='1.0' encoding='UTF-8' standalone='yes'?>
<ReserveBid_MarketDocument xmlns='urn:iec62325.351:tc57wg16:451-7:reservebiddocument:7:3'>
   <mRID>BID-doc-ID</mRID>
   <revisionNumber>1</revisionNumber>
   <type>A37</type>
   <process.processType>A47</process.processType>
   <sender_MarketParticipant.mRID codingScheme='A01'>BSP-EIC</sender_MarketParticipant.mRID>
   <sender_MarketParticipant.marketRole.type>A27</sender_MarketParticipant.marketRole.type>
   <receiver_MarketParticipant.mRID
     codingScheme='A01'>10X1001A1001B54W</receiver_MarketParticipant.mRID>
   <receiver_MarketParticipant.marketRole.type>A04</receiver_MarketParticipant.marketRole.type>
   <createdDateTime>2022-08-30T10:44:00Z</createdDateTime>
   <reserveBid_Period.timeInterval>
      <start>2022-12-06T10:00Z</start>
      <end>2022-12-06T12:00Z</end>
   </reserveBid_Period.timeInterval>
   <domain.mRID codingScheme='A01'>10YLV-1001A00074</domain.mRID>
   <subject_MarketParticipant.mRID codingScheme='A01'>BSP-EIC</subject_MarketParticipant.mRID>
   <subject_MarketParticipant.marketRole.type>A27</subject_MarketParticipant.marketRole.type>
   <Bid_TimeSeries>
      <mRID>TS_BID_ID</mRID>
      <auction.mRID>BalticCoBA</auction.mRID>
      <businessType>B74</businessType>
      <acquiring_Domain.mRID codingScheme='A01'>10YLV-1001A00074</acquiring_Domain.mRID>
      <connecting_Domain.mRID codingScheme='A01'>10YLV-
        1001A00074</connecting_Domain.mRID>
```

```xml
<provider_MarketParticipant.mRID codingScheme='A01'>BSP-EIC</provider_MarketParticipant.mRID>
<quantity_Measurement_Unit.name>MAW</quantity_Measurement_Unit.name>
<currency_Unit.name>EUR</currency_Unit.name>
<divisible>A01</divisible>
<status>
    <value>A06</value>
</status>
<registeredResource.mRID codingScheme='A01'>ReserveUnit-EIC</registeredResource.mRID>
<flowDirection.direction>A02</flowDirection.direction>
<energyPrice_Measurement_Unit.name>MWH</energyPrice_Measurement_Unit.name>
<marketAgreement.type>A01</marketAgreement.type>
<standard_MarketProduct.marketProductType>A07</standard_MarketProduct.marketProductType>
<Period>
 <timeInterval>
   <start>2022-12-06T10:00Z</start>
   <end>2022-12-06T12:00Z</end>
 </timeInterval>
 <resolution>PT60M</resolution>
 <Point>
  <position>1</position>
  <quantity.quantity>10.0</quantity.quantity>
  <minimum_Quantity.quantity>1.0</minimum_Quantity.quantity>
  <energy_Price.amount>0.00</energy_Price.amount>
 </Point>
 <Point>
  <position>2</position>
  <quantity.quantity>10.00</quantity.quantity>
  <minimum_Quantity.quantity>1.0</minimum_Quantity.quantity>
  <energy_Price.amount>00.00</energy_Price.amount>
 </Point>
 </Period>
 </Bid_TimeSeries>
</ReserveBid_MarketDocument>
```

6.5. Activation order and activation order response document example

Activation order:

```xml
<Activation_MarketDocument xmlns="urn:iec62325.351:tc57wg16:451-7:activationdocument:6:3">
 <mRID>AST_AO_20221220_11431</mRID>
```

```xml
    <revisionNumber>1</revisionNumber>
    <type>A40</type>
    <process.processType>A30</process.processType>
    <sender_MarketParticipant.mRID
      codingScheme="A01">10X1001A1001B54W</sender_MarketParticipant.mRID>
    <sender_MarketParticipant.marketRole.type>A04</sender_MarketParticipant.marketRole.type>
    <receiver_MarketParticipant.mRID codingScheme="A01">BSP-
      EIC</receiver_MarketParticipant.mRID>
   <receiver_MarketParticipant.marketRole.type>A27</receiver_MarketParticipant.marketRole.type>
    <createdDateTime>2022-12-20T12:44:04Z</createdDateTime>
    <activation_Time_Period.timeInterval>
     <start>2022-12-20T13:00Z</start>
     <end>2022-12-20T14:00Z</end>
    </activation_Time_Period.timeInterval>
    <domain.mRID codingScheme="A01">10Y1001A1001A94A</domain.mRID>
    <TimeSeries>
     <mRID>TS2</mRID>
     <resourceProvider_MarketParticipant.mRID codingScheme="A01">BSP-
      EIC</resourceProvider_MarketParticipant.mRID>
     <businessType>Z54</businessType>
     <acquiring_Domain.mRID codingScheme="A01">10YLV-1001A00074</acquiring_Domain.mRID>
     <connecting_Domain.mRID codingScheme="A01">10YLV-
      1001A00074</connecting_Domain.mRID>
     <measurement_Unit.name>MAW</measurement_Unit.name>
     <flowDirection.direction>A01</flowDirection.direction>
     <marketObjectStatus.status>A08</marketObjectStatus.status>
     <registeredResource.mRID codingScheme="A01">ReserveUnit-EIC</registeredResource.mRID>
     <Period>
      <timeInterval>
       <start>2022-12-20T13:00Z</start>
       <end>2022-12-20T14:00Z</end>
      </timeInterval>
      <resolution>PT60M</resolution>
      <Point>
       <position>1</position>
       <quantity>10</quantity>
      </Point>
     </Period>
     <Reason>
      <code>A37</code>
     </Reason>
    </TimeSeries>
   </Activation_MarketDocument>
```

Activation Order Response:

```xml
<Activation_MarketDocument xmlns="urn:iec62325.351:tc57wg16:451-7:activationdocument:6:3">
 <mRID>AOR-Document-ID</mRID>
 <revisionNumber>1</revisionNumber>
 <type>A41</type>
 <process.processType>A30</process.processType>
 <sender_MarketParticipant.mRID codingScheme="A01">BSP-EIC</sender_MarketParticipant.mRID>
 <sender_MarketParticipant.marketRole.type>A27</sender_MarketParticipant.marketRole.type>
 <receiver_MarketParticipant.mRID codingScheme="A01">10X1001A1001B54W
   </receiver_MarketParticipant.mRID>
<receiver_MarketParticipant.marketRole.type>A04</receiver_MarketParticipant.marketRole.type>
 <createdDateTime>2022-12-20T12:44:34Z</createdDateTime>
 <activation_Time_Period.timeInterval>
  <start>2022-12-20T13:00Z</start>
  <end>2022-12-20T14:00Z</end>
 </activation_Time_Period.timeInterval>
 <domain.mRID codingScheme="A01">10Y1001A1001A94A</domain.mRID>
 <order_MarketDocument.mRID> AST_AO_20221220_11431</ order_MarketDocument.mRID>
 <order_MarketDocument.revisionNumber>1</ order_MarketDocument.revisionNumber>
 <TimeSeries>
  <mRID>TS2</mRID>
  <resourceProvider_MarketParticipant.mRID codingScheme="A01">BSP-
   EIC</resourceProvider_MarketParticipant.mRID>
  <businessType>Z54</businessType>
  <acquiring_Domain.mRID codingScheme="A01">10YLV-1001A00074</acquiring_Domain.mRID>
  <connecting_Domain.mRID codingScheme="A01">10YLV-
   1001A00074</connecting_Domain.mRID>
  <measurement_Unit.name>MAW</measurement_Unit.name>
  <flowDirection.direction>A01</flowDirection.direction>
  <marketObjectStatus.status>A08</marketObjectStatus.status>
  <registeredResource.mRID codingScheme="A01">ReserveUnit-EIC</registeredResource.mRID>
  <Period>
   <timeInterval>
    <start>2022-12-20T13:00Z</start>
    <end>2022-12-20T14:00Z</end>
   </timeInterval>
   <resolution>PT60M</resolution>
   <Point>
    <position>1</position>
    <quantity>10</quantity>
   </Point>
```

```
   </Period>
  <Reason>
   <code>A37</code>
  </Reason>
 </TimeSeries>
</Activation_MarketDocument>
```

6.6.Acknowledgement document example

```
<Acknowledgement_MarketDocument xmlns='urn:iec62325.351:tc57wg16:451-
    1:acknowledgementdocument:8:1'>
 <mRID>ACKdocument-ID</mRID>
 <createdDateTime>2022-11-02T10:28:00Z</createdDateTime>
 <sender_MarketParticipant.mRID codingScheme='A01'>BSP-EIC</sender_MarketParticipant.mRID>
 <sender_MarketParticipant.marketRole.type>A27</sender_MarketParticipant.marketRole.type>
 <receiver_MarketParticipant.mRID
    codingScheme='A01'>10X1001A1001B54W</receiver_MarketParticipant.mRID>
 <receiver_MarketParticipant.marketRole.type>A04</receiver_MarketParticipant.marketRole.type
>
 <received_MarketDocument.mRID>AST_AO_20221102_8497</received_MarketDocument.mRID>
 <received_MarketDocument.revisionNumber>1</received_MarketDocument.revisionNumber>
 <received_MarketDocument.type>A40</received_MarketDocument.type>
 <received_MarketDocument.process.processType>A30</received_MarketDocument.process.proce
    ssType>
 <received_MarketDocument.createdDateTime>2022-11-
    02T10:27:14Z</received_MarketDocument.createdDateTime>
 <Reason>
   <code>A01</code>
   <text>Message fully accepted</text>
 </Reason>
</Acknowledgement_MarketDocument>
```