

Business Service

Exchange allocation data electricity

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Document management

Version	Version date	Changes	Author
0.1	03-06-2021	Initial version Compiled based on BRS Allocation data and message definition AllocationSeries and AggregatedAllocationSeries	EDSN
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0.6	05-07-2021	Review WG C1 and simulation processed Recipient checks added	EDSN
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0.8	28 October 2021	Review sector and WG C1 processed Term “adjusted” replaced by “determined”	EDSN
0.81	09-11-2021	Review business integration team processed	EDSN
0.82	11 November 2021	WG C1 feedback processed	EDSN
0.83	15 November 2021	Control 779 added	EDSN
0.9	18 November 2021	Check 758 tightened and 759 removed Version for the NEDU approval process	EDSN
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1.1	17-05-2022	Modified version using the following RFC's: • RFC Allocation 2.0-1 Use Correlation ID: Added control 780 to properly use the Correlation ID for the Allocation 2.0 messages exchanged through the MMC HUB; • RFC Allocation 2.0-Tranche-2.1 Message RCF/Profile fractions: Change in the starting points for sending the RCF/Profile fraction message; • RFC Allocation 2.0-Tranche-2.2 Optimization Controls Allocation Messages.	EDSN
1.3	25-05-2022	Version after check processing RFC's	EDSN
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Distribution history

Version	Distribution date	Receivers
0.1	03-06-2021	Working group C1
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Version	Distribution date	Receivers
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1.3	25-05-2022	BS A2.0 AD, WG C1, SI MFF BAS, SSG
2.0	14-06-2022	BS A2.0 AD, WG C1, SI MFF BAS, SSG

Referenced documents

Requirements model

No.	Description	Version	Date	Author
1.	BRS Allocatiegegevens	1.0	16-12-2021	NEDU WG C1
11.	BRS Meetgegevens en reclamaties meetgegevens GV	8.0	20-05-2022	NEDU

Design frameworks and guidelines

No.	Description	Version	Date	Author
2.	NEDU EDSN Ontwerpkeuzes	3.9	15-04-2021	NEDU/EDSN
3.	TenneT Web Services guide	N.v.t.	April 2020	TenneT
8.	Technical Guide - Measurements & Allocations Documents	1.0	31-03-2021	TenneT

Service descriptions and data model

No.	Description	Version	Date	Author
4.	EDSN Complex Data Type Specificatie	2.2	27-05-2020	EDSN
5.	EDSN Logisch Data Type Specificatie	2.7	27-05-2020	EDSN
6.	ebIX® Code list	1.0A	June 2019	ebIX TC
7.	ISO 8601 voor datum- en tijdsnotatie	1:2019	2019	ISO
9.	Attributenlijst Centraal Aansluitingenregister	10.4	02-06-2021	EDSN
10.	Servicebeschrijving Uitwisselen herzieningsverzoeken	2.0	18-02-2021	EDSN

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1 Introduction

1.1 Service description

The service description describes arrangements for the SO's exchange of time series¹ for allocation data electricity per individual allocation point of:

- a. Allocation points with allocation method telemetry (TMT) to BRP;
- b. Net loss allocation points with allocation method telemetry (TMT) to BRP;
- c. Dimensioned allocation points with allocation method telemetry (TMT) to BRP;
- d. Allocation points with allocation method telemetry (TMT) to TSO.

This service description also describes the arrangements for the SO's exchange of time series for aggregated allocation data electricity of:

- a. Allocation points with allocation method telemetry (TMT) to BRP;
- b. Allocation points with allocation method smart meter allocation (SMA) to BRP;
- c. Allocation Points with allocation method profile (PRF) to BRP;
- d. Net loss allocation points with allocation method telemetry (TMT) to BRP;
- e. Dimensioned allocation points with allocation method telemetry (TMT) to BRP;
- f. Allocation points with allocation method telemetry (TMT) to TSO;
- g. Allocation points with allocation method smart meter allocation (SMA) to TSO;
- h. Allocation Points with allocation method profile (PRF) to TSO;
- i. Net loss allocation points with allocation method telemetry (TMT) to TSO;
- j. Dimensioned allocation points with allocation method telemetry (TMT) to TSO.

The time series for aggregated allocation data of dimensioned allocation points (e. and j.) and grid loss allocation points (d. and i.) are exchanged separately and are thus not included in the aggregated allocation data for allocation points with allocation method telemetry (a. and f.).

And the arrangements concerning the SO's exchange of time series for the:

- a. Residual volume Correction Factor (RCF) and Profile fractions electricity that have been used for the concerned allocation run, per grid area to BRP;
- b. Residual volume Correction Factor (RCF) and Profile fractions electricity that have been used for the concerned allocation run, per grid area to TSO.

To give the reader a good idea of the exchange, a detailed process description is included as well as an indication of the messages to be used. For a functional description of the process that supports this exchange, please refer to the Business Requirement Specification Measuring Allocation Data [1].

1.2 Reading guide

This document describes the following aspects, including:

- Process *Exchange allocation data*;
- The exchange of this allocation data via TenneT's MMC Hub;
- The syntactic validations by the MMC Hub, the confirmation/rejection by the MMC Hub
- The checks on allocation data by consumers (BRP and TSO);
- The confirmation/rejection of the allocation data by the consumers (BRP and TSO);
- XML message definitions.

For the functionality of the MMC Hub, please refer to the TenneT Web Services guide[3].

¹ These are interval values with a time interval of e.g. 15 minutes.

1.3 Starting points

The following principles were used when designing the *Exchange allocation data* service:

- Date/time notation in XML messages according to NEDU EDSN *Design Choices*[2]
- The start and end date are in UTC and in accordance with the notation: YYYY-MM-DDThh:mm:ssZ;
 - Example start and end date calendar day electricity (9 February 2020, winter time): 2020-02-08T23:00:00Z / 2020-02-09T23:00:00Z;
 - Example start and end date calendar day electricity (29 March 2020, change winter time to summer time): 2020-03-28T23:00:00Z / 2020-03-29T22:00:00Z;
 - Example start and end date calendar day electricity (09 June 2020, summer time): 2020-06-08T22:00:00Z / 2020-06-09T22:00:00Z;
 - Example start and end date calendar day electricity (25 October 2020, change summer time to winter time): 2020-10-24T22:00:00Z / 2020-10-25T23:00:00Z;
- Where this service description refers to "distribution system operator" "system operator" "DSO" or "SO", this can also be read as "GDS owner" insofar as it concerns electricity wholesale connections
- An allocation run identifier is assigned to a set of allocation data for a given calendar day and for a particular grid area associated with the same allocation run so that the consumer can use this identifier to match the set of allocation data. The order of the allocation runs can be derived from the creation date/time of the RCF/Profile fraction messages together with the allocation run identifier in the RCF/Profile fraction messages. These RCF/Profile fraction messages are made available to the BRP and TSO and are thus the only messages that offer insight to all BRP's and TSO (applicable to at least all BRP's that have one or more allocation points as part of the appropriate allocation run or a previous allocation run for the same calendar day);
- A set of allocation data consists of:
 1. Allocation data for individual allocation points;
 2. Aggregated allocation data;
 3. Residual volume Correction Factor and Profile fractions electricity used for the concerned allocation run;
- The Residual Volume Correction Factor can contain negative values;
- All volumes in allocation data messages are positive numbers (or zero) except volumes in the allocation data for Allocation group PRF. Negative numbers in the set of allocation data are only allowed for this Allocation group;
- A message with aggregated allocation data per BRP/SUP combination is only offered to the BRP if the relevant BRP/SUP combination is active at one or more allocation points in the relevant grid area;
- A message with aggregated allocation data per BRP is only offered to the TSO if the relevant BRP is active at one or more allocation points in the relevant grid area;
- A message for the BRP with aggregated allocation data per BRP/SUP combination for Allocation group PRF only contains those profile categories (and confirmed acquisition type) for which the relevant BRP/SUP combination is active in the relevant grid area;
- A message for the TSO with aggregated allocation data per BRP for Allocation group PRF only contains those profile categories (and confirmed acquisition type) for which the relevant BRP is active in the relevant grid area;
- An RCF/Profile fraction message for a grid area always contains all time series for all profile fractions if one or more profiled allocation points are active in the relevant grid area;
- If no allocatable profiled allocation points are active in the relevant grid area, the RCF/Profile fraction message will be sent with the values 1.00000 for the RCF;
- A message with allocation data for an individual allocation point or a message with aggregated allocation data always contains two complete time series (acquisition and feed-in). If there is no data for a time series, the value 0.000 is provided for volume in the allocation message;
- If a party will supply data on behalf of another party (via the MMC Hub), the Carrier ID should be used for this in the SOAP header. For use Carrier ID see *TenneT Web Services guide*[3];
- Profile category from go live Allocatie 2.0 tranche 2: A classification for connections based on objectively determined characteristics such as connection value, switching times, contracted transport capacity, determined energy consumption and operating time.

1.4 Use of the Exchange allocation information service

The table below shows the type of allocation point for which the grid operator (SO) must send a message with allocation data to the balance responsible party (BRP) or transmission system operator (TSO). The table also contains a reference to the relevant use cases from the BRS[1].

Exchange	Provider of allocation data	Consumer of allocation data	Type of connection	BRS Use case	Code ²
Allocation point with allocation method telemetry (TMT)					
Daily message "allocation data per individual allocation point (allocation method TMT)"	BRP/SO	BRP	Allocation point ELK TMT	A20.201	N101
Daily Message "aggregated allocation for data allocation points (allocation method TMT)", aggregation by grid area per SUP	BRP/SO	BRP	Allocation point ELK TMT	A20.201	N102
Daily message "allocation data per individual allocation point (allocation method TMT)" ³	BRP/SO	TSO	Allocation point ELK TMT	A20.211	N101
Daily Message "aggregated allocation data for allocation points (allocation method TMT), aggregation by grid area per BRP	BRP/SO	TSO	Allocation point ELK TMT	A20.211	N102
Allocation point with allocation method smart meter allocation (SMA)					
Daily Message "aggregated allocation for data allocation points (allocation method SMA)", aggregation by grid area per SUP	BRP/SO	BRP	Allocation point ELK SMA	A20.202	N111
Daily Message "aggregated allocation data for location points (allocation method SMA)", aggregation per grid area per BRP	BRP/SO	TSO	Allocation point ELK SMA	A20.212	N111
Allocation Point with Profile Allocation Method (PRF)					
Daily Message "aggregated allocation for data allocation points (allocation method PRF)", aggregation by grid area per SUP	BRP/SO	BRP	Allocation point ELK PRF	A20.203	N121
Daily Message "aggregated allocation for data allocation points (allocation method PRF)", aggregation by grid area per BRP	BRP/SO	TSO	Allocation point ELK PRF	A20.213	N121
Net loss allocation point with allocation method telemetry (TMT)					
Daily message "allocation data per individual net loss allocation point" (allocation method TMT)	BRP/SO	BRP	Net loss allocation point ELK TMT	A20.204	N131
Daily Message "aggregated allocation data for net loss allocation points" (allocation method TMT), aggregation by grid area per SUP	BRP/SO	BRP	Net loss allocation point ELK TMT	A20.204	N132
Daily Message "aggregated allocation data for net loss allocation points" (allocation method TMT), aggregation by grid area per BRP	BRP/SO	TSO	Net loss allocation point ELK TMT	A20.214	N132
Dimensioned allocation point with allocation method telemetry (TMT)					
Daily message "allocation data per individual dimensioned allocation point" (allocation method TMT)	BRP/SO	BRP	Dimensioned allocation point ELK TMT	A20.205	N141
Daily Message "aggregated allocation data for dimensioned allocation points" (allocation method TMT), aggregation by grid area per SUP	BRP/SO	BRP	Dimensioned allocation point ELK TMT	A20.205	N142
Daily Message "aggregated allocation data for dimensioned allocation points"	BRP/SO	TSO	Dimensioned allocation point	A20.215	N142

² See paragraph 3.7 Application ProcessTypeID.

³ Involves allocation data supplied to the TSO based on laws and regulations.

Exchange	Provider of allocation data	Consumer of allocation data	Type of connection	BRS Use case	Code ²
"(allocation method TMT), aggregation by grid area per BRP			ELK TMT		
Residual Volume Correction Factor (RCF)/Profile fractions electricity					
Daily Message "Residual Volume Correction Factor and the Profile fractions per grid area used in the allocation calculation" (combined in one message)	BRP/SO	BRP	N/A	A20.206 and A20.207	N151
Daily Message "Residual Volume Correction Factor and the Profile fractions per grid area used in the allocation calculation" (combined in one message)	BRP/SO	TSO	N/A	A20.216 and A20.217	N151

1.5 List of abbreviations

Abbreviation	Description
Allocation point	Virtual point at the transfer point of a connection, where the energy exchange between an installation and the grid is administratively allocated to a market party as if measurement had taken place at the transfer point of the connection (Electricity 1.1 Glossary).
AMI	Off-take with feed-in
ASIA	Off-take without feed-in
BRP	Balance responsible Party (formerly PV)
BRS	Business Requirements Specification
cSMA	Collective Smart Meter Allocation
DIM	Unmeasured connections for which profiles are drawn up in accordance with Appendix 16 of the Grid code dimensioned (DIM) profiles.
EDSN	Energie Data Services Nederland B.V.
GDS	Closed distribution system
GV	Large consumption
KV	Small consumption
TSO	Transmission system operator
SUP	Supplier
MMC Hub	Market-Market-Communication Hub
SO	System operator All references to SO can also be read as distribution system operator (DSO), transmission system operator (TSO) or GDS operator.
NVL	Net loss
PRF	Profile Identifier for KV or GV allocation points that are not allocated via measured quarter values, but via profile fractions and an SJI/SJA.
RCF	Residual volume correction factor (factor that makes sure that the residual volume is divided).
DSO	Distribution system operator
SJA	Standard annual acquisition
SHI	Standard annual feed-in
SMA	Smart meter allocation Identifier for KV allocation points that are allocated with quarter values obtained from the smart meter.
TMT	Telemetry Identifier for GV allocation points that are allocated with quarter values that are supplied by the metering responsible party (MRP) or calculated by the SO.

2 Roles and responsibilities

2.1 Consumer

This service description describes how the consumers (BRP, TSO) receive the allocation data.

2.2 Provider

This service description describes how the provider (SO) offers the allocation data.

2.3 RACI

The RACI below shows the roles and responsibilities for service description *Exchange allocation data electricity*:

R (Responsible, NL: Verantwoordelijk)	EDSN Business Integration
A (Accountable, NL: Eindverantwoordelijk)	To be determined!
C (Consulted, NL: Raadplegen)	NEDU-ICWE, ebIX Technical Committee, TenneT
I (Informed, NL: Informeren)	NEDU General Meeting of Members, EDSN

3 BPMN Exchange allocation data

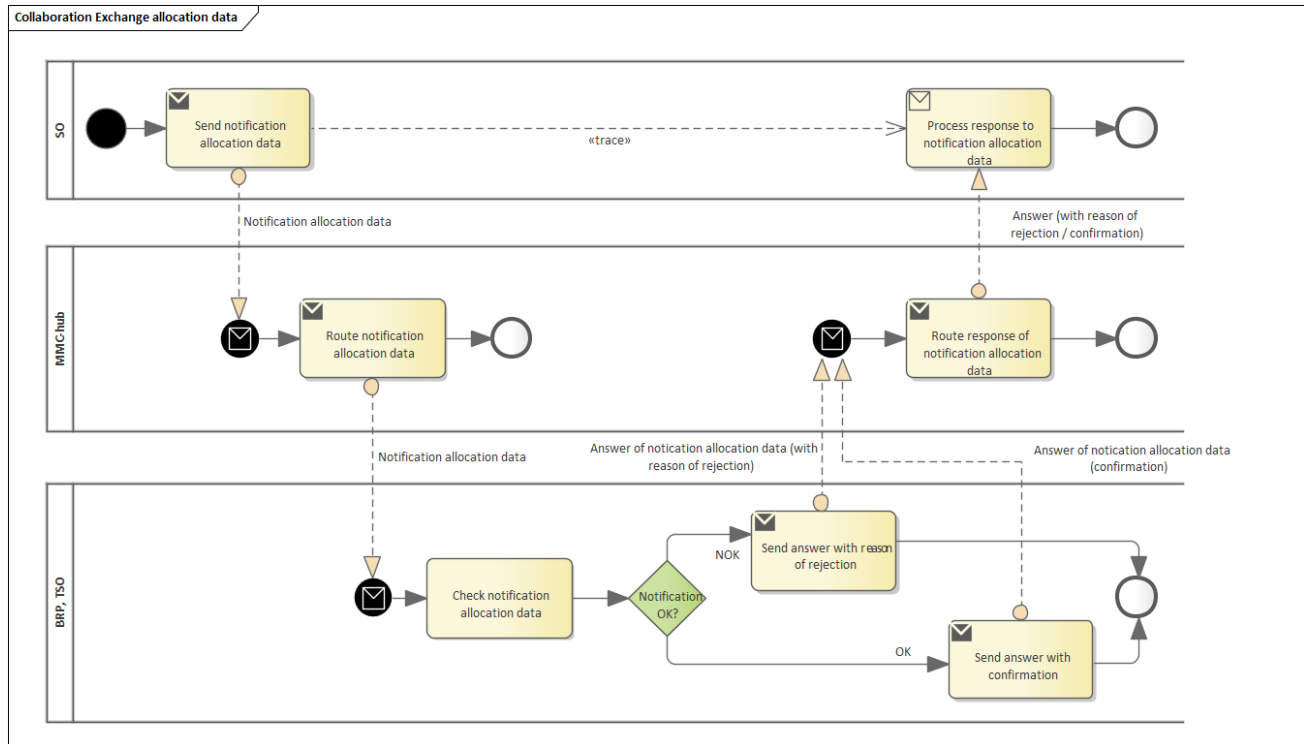


Figure 1 For detailed information about this process, see BRS Allocation data[1]

3.1 Exchange allocation data

The process for exchanging allocation data follows the following scenario:

1. The grid operator sends the message "Notification allocation data"⁴ to the MMC Hub;
2. The MMC Hub processes⁵ the received "Notification allocation data" message and routes the message to the recipient⁶;
3. The receiver checks the message "Notification allocation data"
4. The receiver sends the response "Confirmation/rejection notification allocation data" to the MMC Hub:
 - a confirmation reply, or
 - an answer with one or more rejections:
 - If the BRP has received allocation data from an individual allocation point with allocation method telemetry (TMT, NVL or DIM) and does not expect it, the BRP should submit a revision request to the concerned grid operator. The message with allocation data from an individual allocation point with allocation method telemetry cannot then be rejected by the BRP. If a new allocation gun is required, all BRP's and TSO will receive a new set of allocation data (with a new unique allocation run identifier);
 - A BRP or TSO can only issue a rejection if an allocation data message is semantically incorrect (after carrying out the checks in sections 3.4, 3.5 or 3.6). The BRP or TSO is requested to then directly contact the relevant SO so that they can jointly look at the matter and take any corrective action;
5. The MMC Hub processes the response and routes the message to the grid operator.

4 A notification with allocation data for an individual allocation point, a notification with aggregated allocation data for allocation points in an allocation group, or a notification for Residual volume Correction Factor and Profile fractions.

5 A non-valid message will be rejected by the MMC Hub, see paragraph 3.2.

6 Is the consumer (BRP, TSO) of the allocation data.

3.2 Validations MMC Hub

The MMC Hub performs the following validations in response to the received message "Notification allocation data" and received message "Confirmation/rejection notification of allocation data":

Validation	Error message
XSD Validation: The message shall comply to the XSD rules	TEN-500001: [Error detail]
Unreadable message: The message shall be a valid XML layout	TEN-500001: [Error detail]
Others: All other faults	TEN-999999: Unhandled exception

If a message is rejected by the MMC Hub, the MMC Hub sends the error code and text to the submitter of the message concerned. For the functionality of the MMC Hub, please refer to the TenneT Web Services guide[3].

3.3 Checks on receiver

The recipient may perform the following checks after receiving the message "Notification allocation data" and the message "Confirmation/rejection notification allocation data"⁷:

Validation	Error message in the SOAP response
The received XML message complies with the W3C XML 'well-formedness' specification.	TEN-500001: [Error detail]
The received XML message complies with the XML schema definition (XSD) of the receiver.	TEN-500001: [Error detail]

Following the received message "Notification allocation data" the receiver performs the following checks:

Validation	Error message in the Acknowledgement
The integrity and/or confidentiality of the XML message is guaranteed (signing check).	Error code: 999 Error message: TEN-500021 – Incorrect message signing
The technicalMessageld in the SOAP header is unique.	Error code: 999 Error message: TEN-500023 – Unique identifier not unique or already processed

3.4 Recipient checks for message "Notification allocation data individual allocation point"

The following checks and error messages are available to the receiver in response to the message "Notification allocation data individual allocation point" and shall be carried out insofar as they are mandatory or relevant for the processing by the receiver:

Control	Error message	Role	Code
Time series allocation data			
The EAN code-18 of the connection is a valid EAN code.	EAN code-18 is not valid.	BRP/TSO	650
In the case of a daily electricity report, the period is exactly one calendar day.	The period to which the message refers is not correct.	BRP/TSO	663
All products match the product type.	One or more products do not fit the product type.	BRP/TSO	667
All energy units match the products.	One or more energy units do not fit the product(s).	BRP/TSO	668
The number of positions of all time series matches the period and the resolution.	The number of positions is incorrect.	BRP/TSO	671
The first position in a time series is "1".	First position does not start with '1'.	BRP/TSO	676
The positions within a time series increase with an increment of '1'.	The increment of a time series is not '1'.	BRP/TSO	782
The volume has a correct number of decimal places.	Volume has an incorrect number of decimal places.	BRP/TSO	776
The combination of origin indication, validation status and repair method is a valid combination ⁸ .	The combination of origin indication, validation status and repair method is not a valid combination.	BRP/TSO	683

⁷ These validations are always carried out by the MMC Hub. It is recommended that recipients also perform these validations themselves.

⁸ See BRS Metering data GV Appendix a for valid combinations of origin indication, validation status and repair methodology[11].

All volumes in the message are positive numbers (or zero).	Volume with negative value.	BRP/TSO	686
The EAN code-18 of the network area or the allocation point together with the system operator is active and administered to the transmission system operator.	The network area or the allocation point, in combination with the system operator, is not included in the administration of the transmission system operator.	TSO	777
The message contains the EAN 13 for the market party with market role BRP.	Missing EAN 13 from BRP.	TSO	759
The daily message with allocation data was delivered on time. ⁹	The daily message with allocation data was delivered too late.	BRP/TSO	763
The number of time series in the message matches the allocation group.	The number of time series in the message does not match the allocation group.	BRP/TSO	764
The BRP is known and certified according the BRP certification register.	The BRP is not known and certified according the BRP certification register.	TSO	765
The allocation run identifier is unique.	An allocation data message with this allocation run identifier has been received in the past.	BRP/TSO	769
The period to which the message relates lies at least 1 day in the past.	The data relates (partly) to the future.	BRP/TSO	772
The resolution is in line with the agreements for this data.	The resolution is not in line with this data.	BRP/TSO	773
The reference in the message is unique.	A message with this reference has been received in the past.	BRP/TSO	670

⁹ P period in validation can change due to deferral distribution final allocation (market window).

Message header			
The MessageID in the SOAP header is unique.	A message with this MessageID has been received in the past.	BRP/TSO	669
The ProcessTypeID in the message header matches the content of the message.	ProcessTypeID does not match the content of the message.	BRP/TSO	681
The ProcessTypeID in the message header matches the recipient of the message.	ProcessTypeID does not match the recipient of the message.	BRP/TSO	747
No message with a more recent creation date/time stamp has been received.	A message has already been received with a more recent creation date/time stamp.	BRP/TSO	704
The senderID in de SOAP Header equals the SenderID in the Business Document Header.	senderID in de SOAP Header does not equal SenderID in de Business Document Header.	BRP/TSO	701
The receiverID in de SOAP Header equals the ReceiverID in the Business Document Header.	receiverID in de SOAP Header does not equal the ReceiverID in the Business Document Header.	BRP/TSO	745
The contentType ¹⁰ in the SOAP Header is in keeping with the ProcessTypeID in the Business Document Header.	contentType in the SOAP is not consistent with ProcessTypeID in the Business Document Header.	BRP/TSO	754
The Correlation ID in the Business Document Header, if filled in, is the same as the Correlation ID in the SOAP Header.	The Correlation ID in the Business Document Header is not the same as the Correlation ID in the SOAP Header.	BRP/TSO	780
Entire message			
Message is complete, correct and directed to the correct recipient ¹¹ .	[free text field] ¹²	BRP/TSO	999

If the BRP has received allocation data from an individual allocation point and does not expect it or expects allocation data from an individual allocation point but has not received it, then the BRP must submit a revision request to the appropriate grid operator (see service description Exchange Review requests[10]). The message with allocation information for an individual allocation point can then not be rejected by the BRP. If a new allocation gun is required, all BRP's and TSO will receive a new set of allocation data (with a new unique allocation run identifier).

3.5 Recipient checks for message "Notification aggregated allocation data allocation points"

The following checks and error messages are available to the receiver in response to the message "Notification allocation data aggregated allocation data allocation points" and shall be carried out insofar as they are mandatory or relevant for the processing by the receiver:

Control	Error message	Role	Code
Time series aggregated allocation data			
The EAN code-18 of the grid area is a valid EAN code.	EAN code-18 is not valid.	BRP/TSO	651
In the case of a daily electricity report, the period is exactly one calendar day.	The period to which the message refers is not correct.	BRP/TSO	663
All products match the product type.	One or more products do not fit the product type.	BRP/TSO	667
All energy units match the products.	One or more energy units do not fit the product(s).	BRP/TSO	668
The number of positions of all time series matches the period and the resolution.	The number of positions is incorrect.	BRP/TSO	671
The first position in a time series is "1".	First position does not start with '1'.	BRP/TSO	676
The positions within a time series increase with an increment of '1'.	The increment of a time series is not '1'.	BRP/TSO	782
The volume has a correct number of decimal places.	Volume has an incorrect number of decimal places.	BRP/TSO	776

¹⁰ See Technical Guide - Measurements & Allocations Documents[8] for further information how to fill the contentType.

¹¹ Check and error message if a received message is not correct or not intended for that recipient and cannot be caught by one of the above checks.

¹² An explanation for error code 999 must be provided in this text field.

All volumes in the message are positive numbers (or zero) ¹³ .	Volume with negative value.	BRP/TSO	686
The EAN code-18 of the network area or the allocation point together with the system operator is active and administered to the transmission system operator.	The network area or the allocation point, in combination with the system operator, is not included in the administration of the transmission system operator.	TSO	777
The message contains the EAN 13 for a market party and the expected market role exactly once.	Missing or incorrect EAN 13.	BRP/TSO	758
The BRP was registered in the appropriate grid area for at least one allocation point within this allocation group during the whole message period.	The BRP-er is not active as BRP-er in the grid area for this allocation group.	BRP	761
The daily message with allocation data was delivered on time.	The daily message with allocation data was delivered too late.	BRP/TSO	763
The number of time series in the message matches the allocation group.	The number of time series in the message does not match the allocation group.	BRP/TSO	764
The BRP is known and certified according the BRP certification register.	The BRP is not known and certified according the BRP certification register.	TSO	765
The allocation run identifier is unique.	An allocation data message with this allocation run identifier has been received in the past.	BRP/TSO	769
The determined energy consumption is compatible with the profile category.	The determined energy consumption is not compatible with the profile category.	BRP/TSO	771
The period to which the message relates lies at least 1 day in the past.	The data relates (partly) to the future.	BRP/TSO	772
The resolution is in line with the agreements for this data.	The resolution is not in line with this data.	BRP/TSO	773
The reference in the message is unique.	A message with this reference has been received in the past.	BRP/TSO	670
Message header			
The MessageID in the SOAP header is unique.	A previous message has already been received with the same MessageID.	BRP/TSO	669
The ProcessTypeID in the message header matches the content of the message.	ProcessTypeID does not match the content of the message.	BRP/TSO	681
The ProcessTypeID in the message header matches the recipient of the message.	ProcessTypeID does not match the recipient of the message.	BRP/TSO	747
No message with a more recent creation date/time stamp has been received.	A message has already been received with a more recent creation date/time stamp.	BRP/TSO	704
The senderID in de SOAP Header equals the SenderID in the Business Document Header.	senderID in de SOAP Header does not equal SenderID in de Business Document Header.	BRP/TSO	701
The receiverID in de SOAP Header equals the ReceiverID in the Business Document Header.	receiverID in de SOAP Header does not equal the ReceiverID in the Business Document Header.	BRP/TSO	745
The contentType ¹⁴ in the SOAP Header is in keeping with the ProcessTypeID in the Business Document Header.	contentType in the SOAP is not consistent with ProcessTypeID in the Business Document Header.	BRP/TSO	754
The Correlation ID in the Business Document Header, if filled in, is the same as the Correlation ID in the SOAP Header.	The Correlation ID in the Business Document Header is not the same as the Correlation ID in the SOAP Header.	BRP/TSO	780
Entire message			

¹³ All volumes in allocation data messages are positive numbers (or zero) except volumes in the allocation data for Allocation group PRF. This check therefore does not apply to the set of allocation data for Allocation group PRF. See section 1.3 Starting points.

¹⁴ See Technical Guide - Measurements & Allocations Documents[8] for further information how to fill the contentType.

Message is complete, correct and directed to the correct recipient ¹⁵ .	[free text field] ¹⁶	BRP/TSO	999
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3.6 Recipient checks for message “Notification Residual volume Correction Factor and Profile fractions”

The following checks and error messages are available to the receiver in response to the message "Notification Residual volume Correction Factor and Profile fractions" and shall be carried out insofar as they are mandatory or relevant for the processing by the receiver:

Control	Error message	Role	Code
Time Series			
The EAN code-18 of the grid area is a valid EAN code.	EAN code-18 is not valid.	BRP/TSO	651
In the case of a daily electricity report, the period is exactly one calendar day.	The period to which the message refers is not correct.	BRP/TSO	663
The number of positions of all time series matches the period and the resolution.	The number of positions is incorrect.	BRP/TSO	671
The first position in a time series is "1".	First position does not start with '1'.	BRP/TSO	676
The positions within a time series increase with an increment of '1'.	The increment of a time series is not '1'.	BRP/TSO	782
The factor has the correct number of decimal places.	Factor has an incorrect number of decimal places.	BRP/TSO	774
The EAN code-18 of the network area or the allocation point together with the system operator is active and administered to the transmission system operator.	The network area or the allocation point, in combination with the system operator, is not included in the administration of the transmission system operator.	TSO	777
The daily message with allocation data was delivered on time.	The daily message with allocation data was delivered too late.	BRP/TSO	763
The allocation run identifier is unique.	An allocation data message with this allocation run identifier has been received in the past.	BRP/TSO	769
The determined energy consumption is compatible with the profile category.	The determined energy consumption is not compatible with the profile category.	BRP/TSO	771
The period to which the message relates lies at least 1 day in the past.	The data relates (partly) to the future.	BRP/TSO	772
The resolution is in line with the agreements for this data.	The resolution is not in line with this data.	BRP/TSO	773
The number of time series with profile fractions matches the profile category.	The number of time series with profile fractions does not match the profile category.	BRP/TSO	779
The profile fractions status matches the profile category.	The profile fractions status does not match the profile category.	BRP/TSO	781
The reference in the message is unique.	A message with this reference has been received in the past.	BRP/TSO	670
Message header			
The MessageID in the SOAP header is unique.	A previous message has already been received with the same MessageID.	BRP/TSO	669
The ProcessTypeID in the message header matches the content of the message.	ProcessTypeID does not match the content of the message.	BRP/TSO	681
The ProcessTypeID in the message header matches the recipient of the message.	ProcessTypeID does not match the recipient of the message.	BRP/TSO	747
No message with a more recent creation date/time stamp has been received.	A message has already been received with a more recent creation date/time stamp.	BRP/TSO	704
The senderID in de SOAP Header equals the SenderID in the Business Document Header.	senderID in de SOAP Header does not equal SenderID in de Business Document Header.	BRP/TSO	701

15 Check and error message if a received message is not correct or not intended for that recipient and cannot be caught by one of the above checks.

16 An explanation for error code 999 must be provided in this text field.

The receiverID in de SOAP Header equals the ReceiverID in the Business Document Header.	receiverID in de SOAP Header does not equal the ReceiverID in the Business Document Header.	BRP/TSO	745
The contentType ¹⁷ in the SOAP Header is in keeping with the ProcessTypeID in the Business Document Header.	contentType in the SOAP is not consistent with ProcessTypeID in the Business Document Header.	BRP/TSO	754
The Correlation ID in the Business Document Header, if filled in, is the same as the Correlation ID in the SOAP Header.	The Correlation ID in the Business Document Header is not the same as the Correlation ID in the SOAP Header.	BRP/TSO	780
Entire message			
Message is complete, correct and directed to the correct recipient ¹⁸ .	[free text field] ¹⁹	BRP/TSO	999

¹⁷ See Technical Guide - Measurements & Allocations Documents[8] for further information how to fill the contentType.

¹⁸ Check and error message if a received message is not correct or not intended for that recipient and cannot be caught by one of the above checks.

¹⁹ An explanation for error code 999 must be provided in this text field.

3.7 Application ProcessTypeID for exchange allocation data

As described in *the BRS Allocation data*[1], the message specifications for allocation data are used for various applications. The application in question must be mentioned in the message's EDSNBusinessDocumentHeader (functional header), under ProcessTypeID. Further explanation about the use of the EDSNBusinessDocumentHeader has been included in the NEDU EDSN Design Choices[2].

Application	Code
Daily message "allocation data per individual allocation point (allocation method TMT)" to BRP	N101
Daily Message "aggregated allocation for data allocation points (allocation method TMT)", aggregation by grid area per SUP to BRP	N102
Daily message "allocation data per individual allocation point (allocation method TMT)" to TSO	N101
Daily Message "aggregated allocation data for allocation points (allocation method TMT)", aggregation by grid area per BRP to TSO	N102
Daily Message "aggregated allocation for data allocation points (allocation method SMA)", aggregation by grid area per SUP to BRP	N111
Daily Message "aggregated allocation data for allocation points (allocation method SMA)", aggregation by grid area per BRP to TSO	N111
Daily Message "aggregated allocation data for allocation points (allocation method PRF)", aggregation by grid area per SUP to BRP	N121
Daily Message "aggregated allocation data for allocation points (allocation method PRF)", aggregation by grid area per BRP to TSO	N121
Daily message "allocation data per individual net loss allocation point (allocation method TMT)" to BRP	N131
Daily Message "aggregated allocation data for net loss allocation points (allocation method TMT)", aggregation by grid area per SUP to BRP	N132
Daily Message "aggregated allocation data for net loss allocation points (allocation method TMT)", aggregation by grid area per BRP to TSO	N132
Daily message "allocation data per individual dimensioned allocation point (allocation method TMT)" to BRP	N141
Daily Message "aggregated allocation data for dimensioned allocation points (allocation method TMT)", aggregation by grid area per SUP to BRP	N142
Daily Message "aggregated allocation data for dimensioned allocation points (allocation method TMT)", aggregation by grid area per BRP to TSO	N142
Daily Message "Residual volume Correction Factor (RCF) and Profile fractions by grid area" to BRP	N151
Daily Message "Residual volume Correction Factor (RCF) and Profile fractions by grid area" to TSO	N151

4 Functional parameters

4.1 Notification Exchange allocation data individual allocation point

Exchange allocation data individual allocation point is an exchange per TMT, NVL or DIM allocation point (one allocation point in one message). The following information is exchanged per allocation point:

Given	Elec	1/n	Note	XML code
Message Reference	V	1	A UUID as a unique identifier of the message.	
EAN code connection	V	1	EAN 18 electricity allocation point.	
EAN code and market role BRP	A	1	EAN 13 from BRP. <u>Only required</u> for the following allocation data: Allocation data individual allocation point with allocation method TMT to TSO.	
	A	1	Market role of the BRP ²⁰ .	DDK
Product type	V	1	Allowed values (from ebIX Code list[6] and including a leading zero): Electricity	023
Allocation group	V	1	An identifier for the group to which the concerned allocation data belongs ²¹ . Permitted values for allocation data to BRP: Allocation point (allocation method TMT) Net loss allocation point (allocation method TMT) Dimensioned allocation point (allocation method TMT) Permitted values for allocation data to TSO: Allocation point (allocation method TMT)	TMT NVL DIM TMT
Allocation run identifier	V	1	Unique identifier (UUID) for the allocation run. The set of allocation data (individual allocation points, aggregated allocation location data, RCF used, and Profile fractions used) over a given calendar day and for a given grid area have the same unique allocation run identifier so that the consumer can use the identifier to link the set of allocation data.	
Reference to review request	A	1	Reference to the related review request. <u>Only required</u> if the message is sent following a revision request allocation data	
Start date period	V	1	A periodic message is sent for each consecutive period that a party is active on a connection. Start date time is in UTC and in accordance with ISO 8601 notation[7]: YYYY-MM-DDThh:mm:ssZ	
End date period	V	1	End date time is in UTC and in accordance with ISO 8601 notation[7]: YYYY-MM-DDThh:mm:ssZ	
Energy type²²		n		
Imbalance settlement period (electricity)	V	1	Resolution is in accordance with ISO 8601 notation[7] for <i>Duration</i> . Permissible values electricity: 15 minutes	PT15M
Product ID	V	1	Permitted values (from ebIX Code list[6]) for electricity: Active energy	8716867000030
Energy unit	V	1	Permissible active energy value: kWh	KWH
Energy direction	V	1	Allowed values (from ebIX Code list[6]): Decrease Feed	E17 E18
Volume per position		n		

²⁰ Market role as defined in ebIX Code list[6].

²¹ Net loss allocation point and dimensioned allocation point belong to allocation group NVL and allocation group DIM respectively.

²² Two complete time series:

1. volume active energy (acquisition);
2. volume active energy (feed-in).

Given	Elec	1/n	Note	XML code
Position	V	1	Position in the series in whole numbers. The first position in series is '1' and then increased by 1 per position.	
Volume	V	1	Volume as a decimal number, always to 3 decimal places.	
Origin indicator ²³	V	1	Allowed values: Measured Measured update Calculated Unmeasured 'zero' ²⁴ See BRS Appendix A Status of measurement data and meter readings [11].	MSR UMS CLC NMS
Validation status ²⁵	A	1	Allowed values: Valid Not Valid Manually approved See BRS Appendix A Status of measurement data and meter readings [11].	QLD NVL MNL
Repair method ²⁶	A	1	Allowed values: Meter check Correction factor error Correction build-in error Interpolation at meter change Zero data for loss of power Correction based on meter readings Extra information Objection BRP Objection SO Estimated Calculated by SO ²⁷ See BRS Appendix A Status of measurement data and meter readings [11].	VMT CFF CIN IMC NCD CMR ENF RBR RGR GMR CBD

Mandatory fields (V) are always filled; optional fields (O) or dependent fields (A) if required for the context of the related allocation data message.

23 Origin indicator is "calculated" (CLC) for allocation data from Allocation group NVL and DIM.

24 "Unmeasured 'zero'" (NMS) is used as Origin indicator status for zeros during feed-in if this is not measured.

25 The Validation status is not entered for allocation data from Allocation group NVL and DIM.

26 The repair method for allocation data from Allocation group NVL and DIM is "calculated by SO" (CBD).

27 If repair method is "Calculated by SO" (CBD), then Origin indicator is "Calculated" (CLC) and Validation status is not entered.

4.2 Notification Exchange aggregated allocation data allocation points

Exchange aggregated allocation data allocation points is an exchange of aggregated allocation data from a TMT, SMA, PRF, NVL or DIM allocation group (one aggregate in one message) per grid area per BRP and per SUP (for the BRP) and per grid area per BRP (for the TSO). The following information is exchanged per aggregate:

Given	Elec	1/n	Note	XML code
Message Reference	V	1	A UUID as a unique identifier of the message.	
EAN code and market role	V	1	For aggregated allocation data to TSO: EAN 13 from BRP.	
	V	1	For aggregated allocation data to BRP: EAN 13 from SUP.	
EAN code grid area	V	1	For aggregated allocation data to TSO: Market role of the BRP ²⁸ .	DDK
	V	1	For aggregated allocation data to BRP: Market role of the SUP ²⁹ .	DDQ
EAN code grid area	V	1	The identifying EAN18 code of the grid area.	
Product type	V	1	Allowed values (from ebIX Code list[6] and including a leading zero): Electricity	023
Allocation group	V	1	An identifier for the group to which the concerned allocation data belongs ³⁰ . Allowed values: Allocation points aggregated (allocation method TMT) ³¹ Allocation points aggregated (allocation method SMA) Allocation points aggregated (allocation method PRF) Net loss allocation points aggregated (allocation method TMT) Dimensioned allocation points aggregated (allocation method TMT)	TMT SMA PRF NVL DIM
Allocation run identifier	V	1	Unique identifier (UUID) for the allocation run. The set of allocation data (individual allocation points, aggregated allocation location data, RCF used, and Profile fractions used) over a given calendar day and for a given grid area have the same unique allocation run identifier so that the consumer can use the identifier to link the set of allocation data.	
Start date period	V	1	A periodic message is sent for each consecutive period that a party is active on a connection. Start date time is in UTC and in accordance with ISO 8601 notation[7]: YYYY-MM-DDThh:mm:ssZ	
End date period	V	1	End date time is in UTC and in accordance with ISO 8601 notation[7]: YYYY-MM-DDThh:mm:ssZ	
Energy type³²		n		
Imbalance settlement period (electricity)	V	1	Resolution is in accordance with ISO 8601 notation[7] for <i>Duration</i> . Permissible values electricity: 15 minutes	PT15M
Product ID	V	1	Permitted values (from ebIX Code list[6]) for electricity: Active energy	8716867000030
Energy unit	V	1	Permissible active energy value:	

²⁸ Market role as defined in ebIX Code list[6].

²⁹ Market role as defined in ebIX Code list[6].

The time series for aggregated allocation data of dimensioned allocation points and grid loss allocation points are exchanged separately and are thus not included in the aggregated allocation data for allocation points with allocation method telemetry.

³¹ Excludes allocation data for dimensioned allocation points and net loss allocation points.

³² Two complete time series if Allocation group is TMT, SMA, NVL or DIM:

1. volume active energy (acquisition);
2. volume active energy (feed-in).

If Allocation group is PRF, then two time series (acquisition and feed-in) per profile category per Defined acquisition type.

Given	Elec	1/n	Note	XML code
			kWh	KWH
Energy direction	V	1	Allowed values (from eblX Code list[6]): Decrease Feed	E17 E18
Profile category	A	1	Profile category identifier. <u>Required</u> if it is an aggregated allocation data message for allocation group PRF. <u>Must be empty</u> if it is an aggregated allocation data message for allocation group TMT, SMA, NVL or DIM ³³ . See Appendix F of the Attribute List[9] for the allowed values for allocation group PRF.	E1A E1B E1C E2A E2B E3A E3B E3C E3D E4A
Determined energy consumption	A	1	Indicates whether there is acquisition with feed-in or off-take without feed-in. <u>Required</u> if it is a time series for the profile category E1A, E1B, E1C, E2A or E2B. <u>Must be empty</u> if it is an aggregated allocation data message for allocation group TMT, SMA, NVL or DIM ³⁴ . <u>Must be empty</u> if it is a time series for the profile category E3A, E3B, E3C, E3D or E4A ³⁵ . Permitted values for profile category E1A, E1B, E1C, E2A or E2B: Off-take with feed-in Off-take without feed-in	AMI ASIA
Allocation result (for cSMA) ³⁶	A	1	Identifier that allows the allocation results SMA to be divided into “measured” and “calculated” volumes when implementing cSMA ³⁷ . <u>Must be empty</u> to implement CSMA ³⁸ .	
Volume per position		n		
Position	V	1	Position in the series in whole numbers. The first position in series is ‘1’ and then increased by 1 per position.	
Volume	V	1	Volume as a decimal number, always to 3 decimal places.	

Mandatory fields (V) are always filled; optional fields (O) or dependent fields (A) if required for the context of the related allocation data message.

33 Must be empty means that the appropriate field is missing from the message. Empty fields in the XML message are not allowed based on the UN/CEFACT NDR.

34 Must be empty means that the appropriate field is missing from the message. Empty fields in the XML message are not allowed based on the UN/CEFACT NDR.

35 Must be empty means that the appropriate field is missing from the message. Empty fields in the XML message are not allowed based on the UN/CEFACT NDR.

36 A requirement from IC276. Attribute Allocation result allows four time series with aggregated cSMA volumes to be exchanged:

1. volume active energy (acquisition, measured volumes);
2. volume active energy (feed-in, measured volumes);
3. volume active energy (acquisition, calculated volumes);
4. volume active energy (acquisition, calculated volumes).

37 The “calculated” volumes are the result of the SMA fraction calculated using the measured volumes.

38 Must be empty means that the appropriate field is missing from the message. Empty fields in the XML message are not allowed based on the UN/CEFACT NDR.

4.3 Notification Exchange Residual volume Correction Factor and Profile fractions

Exchange Residual Volume Correction Factor and Profile fractions involves exchanging the following combined allocation data per grid area:

1. Residual Volume Correction Factor (RCF): factors for distributing the residual volume;
2. Profile fractions: The profile fractions electricity (dynamic profile, dynamic fallback (regional or national) profile or standard profile);

used for the concerned allocation run. The following information is exchanged for each grid area:

Given	Elec	1/n	Note	XML code
Message Reference	V	1	A UUID as a unique identifier of the message.	
EAN code grid area	V	1	The identifying EAN18 code of the grid area.	
Product type	V	1	Allowed values (from ebIX Code list[6] and including a leading zero): Electricity	023
Allocation run identifier	V	1	Unique identifier (UUID) for the allocation run. The set of allocation data (individual allocation points, aggregated allocation location data, RCF used, and Profile fractions used) over a given calendar day and for a given grid area have the same unique allocation run identifier so that the consumer can use the identifier to link the set of allocation data.	
Date Version RCF	V	1	Date/time calculation RCF. Date time is in UTC and in accordance with ISO 8601 notation[7]: YYYY-MM-DDThh:mm:ssZ	
Start date period	V	1	Start date time is in UTC and in accordance with ISO 8601 notation[7]: YYYY-MM-DDThh:mm:ssZ	
End date period	V	1	End date time is in UTC and in accordance with ISO 8601 notation[7]: YYYY-MM-DDThh:mm:ssZ	
Energy type³⁹		n		
Imbalance settlement period (electricity)	V	1	Resolution is in accordance with ISO 8601 notation[7] for <i>Duration</i> . Permissible values electricity: 15 minutes	PT15M
Energy direction	A	1	<u>Required</u> for Profile fractions. <u>Must be empty</u> for the Residual Volume Correction Factor (RCF) ⁴⁰ . Allowed values (from ebIX Code list[6]): Decrease Feed	E17 E18
Profile category	A	1	Profile category identifier. <u>Required</u> for Profile fractions. See Appendix F of the Attribute List[9] for the permitted values. <u>Must be empty</u> for the Residual Volume Correction Factor (RCF) ⁴¹ .	E1A E1B E1C E2A E2B E3A E3B

39 Number of complete time series for Residual Volume Correction Factor (RCF) is 1.

Number of complete time series for Profile fractions is 30:

- E1A: 4 time series (per energy direction per determined energy consumption);
- E1B: 4 time series (per energy direction per determined energy consumption);
- E1C: 4 time series (per energy direction per determined energy consumption);
- E2A: 4 time series (per energy direction per determined energy consumption);
- E2B: 4 time series (per energy direction per determined energy consumption);
- E3A: 2 time series (per energy direction);
- E3B: 2 time series (per energy direction);
- E3C: 2 time series (per energy direction);
- E3D: 2 time series (per energy direction);
- E4A: 2 time series (per energy direction).

40 Must be empty means that the appropriate field is missing from the message. Empty fields in the XML message are not allowed based on the UN/CEFACT NDR.

41 Must be empty means that the appropriate field is missing from the message. Empty fields in the XML message are not allowed based on the UN/CEFACT NDR.

Given	Elec	1/n	Note	XML code
				E3C E3D E4A
Determined energy consumption	A	1	Indicates whether there is acquisition with feed-in or off-take without feed-in. <u>Required</u> for Profile fractions if the profile category is E1A, E1B, E1C, E2A or E2B. <u>Must be empty</u> for the Residual Volume Correction Factor (RCF)⁴². <u>Mandatory empty</u> for profile fractions if profile category E3A, E3B, E3C, E3D or E4A is involved⁴³. Permitted values for profile category E1A, E1B, E1C, E2A or E2B: Off-take with feed-in Off-take without feed-in	AMI ASIA
Status profile fractions	A	1	Indication of whether it is a profile series that has been calculated based on the method and calculation rules defined for determining the dynamic profile fraction or whether one has fallen back on the standard profile or standard profile fractions. <u>Required</u> for Profile fractions. <u>Must be empty</u> for the Residual Volume Correction Factor (RCF)⁴⁴. Permitted values for profile category E1A, E1B, E1C, E2A and E2B: Dynamic profile fractions Fallback dynamic profile fractions (reference area) Fallback dynamic profile fractions (rural) Default profile fractions Permitted values for profile category E3A, E3B, E3C, E3D and E4A: Default profile fractions	DYN FBR FBL STD STD
Residual Volume Correction Factor (RCF) or Profile fractions by position		n		
Position	V	1	Position in the series in whole numbers. The first position in series is '1' and then increased by 1 per position.	
Residual Volume Correction Factor (RCF) or Profile Fraction	V	1	<u>Residual Volume Correction Factor (RCF):</u> Factor for dividing the residual volume as a decimal number, always to 5 decimal places. <u>Profile fraction:</u> Decimal number, always to 8 decimal places.	

Mandatory fields (V) are always filled; optional fields (O) or dependent fields (a) if required for the context of the relevant RCF/Profile fraction message.

42 Must be empty means that the appropriate field is missing from the message. Empty fields in the XML message are not allowed based on the UN/CEFACT NDR.

43 Must be empty means that the appropriate field is missing from the message. Empty fields in the XML message are not allowed based on the UN/CEFACT NDR.

44 Must be empty means that the appropriate field is missing from the message. Empty fields in the XML message are not allowed based on the UN/CEFACT NDR.

4.4 Reply Exchange allocation data

The response consists of an acknowledgement or a rejection:

Given	Elec	1/n	Note	XML code
Reference response message	V	1	A UUID as a unique identifier of the message.	
Message Notification Reference	A ⁴⁵	1	A UUID as unique identifier for the acknowledged or rejected notification message ⁴⁶ .	
Date/time response message	V	1	Date time is in UTC and in accordance with ISO 8601 notation[7]: YYYY-MM-DDThh:mm:ssZ	
Confirmation/rejection code	V	n	If confirmed (not rejected!), code "000" must be shared in the response. If rejected, at least one code for rejection must be shared in the response (see paragraph 3.3 - 3.6).	000 Code for rejection: see paragraph 3.3 - 3.6
Explanation of the rejection	A	n	Optional explanation of the rejection. <u>Only mandatory</u> for error code 999.	

Mandatory fields (V) are always filled; optional fields (O) or dependent fields (A) if required for the context of the related allocation data message.

4.4.1 Explanation about correlating the response to the notification

Correlation on the following levels:

1. CorrelationID in de EDSNBUSINESSDOCUMENTHEADER shows the technical correlation between Notification and Acknowledgement if entered into the Notification by the provider⁴⁷;
2. Via the message attribute (UUID), the mandatory process correlation between Notification and Acknowledgement is established. This attribute should also be used in a revision request as a reference to the allocation data message.

Additionally, a correlation may apply on the level of the SOAP header, see the document MMC Technical Guide – Measurements & Allocations Documents [8].

⁴⁵ If the integrity and/or confidentiality of the XML message cannot be guaranteed, the recipient must be able to send a rejection to the sender of the corresponding message without the reference of the received message. Due to compromised integrity or confidentiality there is no proper way to retrieve this information. The receiver is requested to contact the relevant sender directly afterwards and so that they can examine the issue together and take any corrective action.

⁴⁶ Is the Allocation_Series.mRID of the AllocationSeriesNotification message, the AggregatedAllocation_Series.mRID of the AggregatedAllocationSeriesNotification message or the RCF_Series.mRID of the RCFSeriesNotification message.

⁴⁷ CorrelationID can be entered by the provider of the allocation data. If filled, the receiving party (consumer) must specify this CorrelationID in the response to the provider. See Design Choices[2] for an explanation of the use of CorrelationID.

5 Sequence Diagram

5.1 Note

The sequence diagram shows the parties and services as an object with a so-called "lifeline". The interaction between these objects is shown by arrows as one or more messages between objects. The messages in the sequence diagram are explained in more detail in the chapter Information Model. Further details about message standards and application methods are described in NEDU EDSN Design Choices[2].

5.2 Exchange allocation data individual allocation point

The sequence diagram below concerns the supply of Allocation data individual allocation point by the grid operator to the MMC Hub. The MMC Hub is responsible for routing, preparing and forwarding the relevant allocation data in the *AllocationSeriesNotification* message to the recipient.

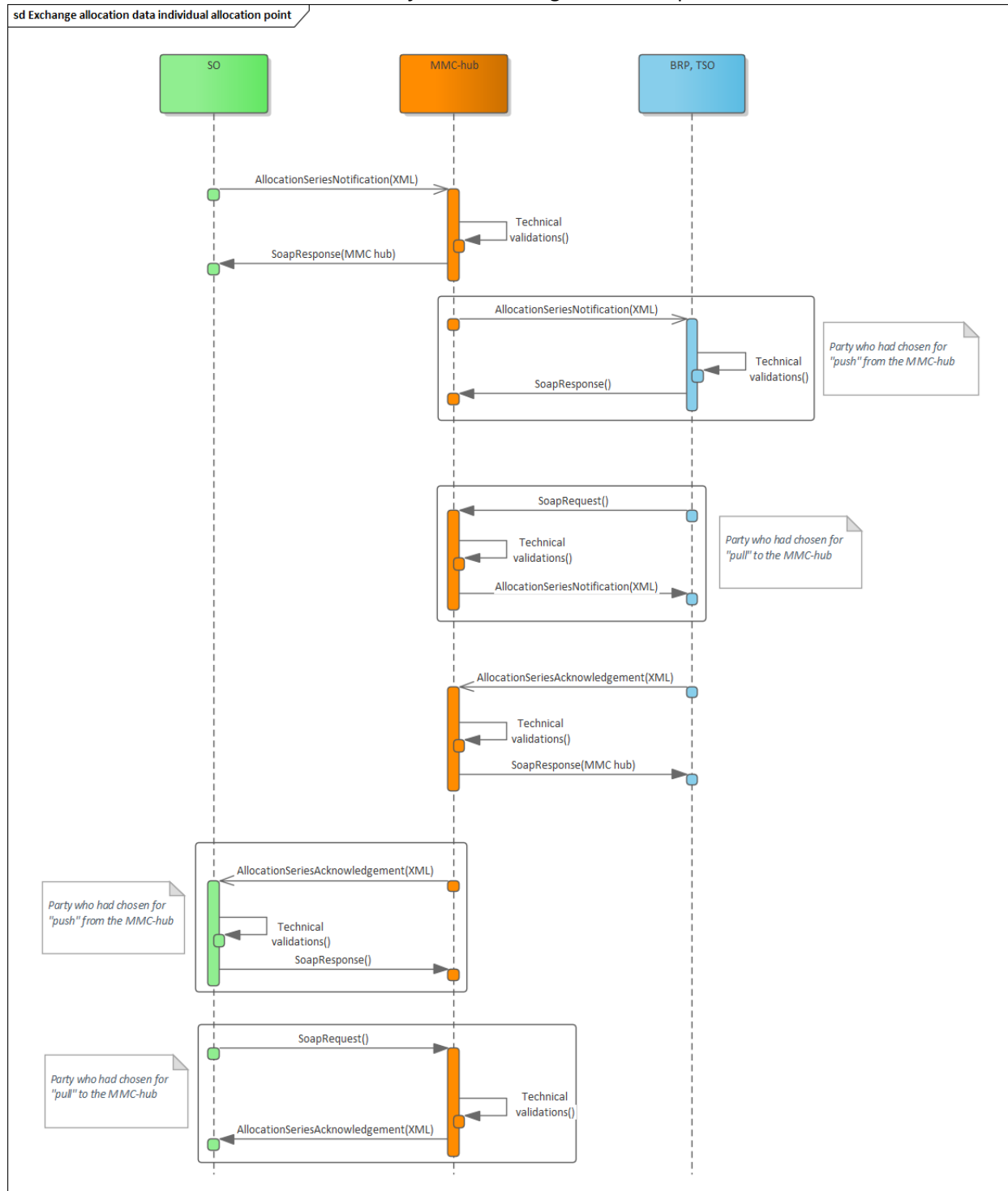


Figure 2 The sequence diagram for Exchange allocation data individual allocation point between SO and BRP, TSO via the MMC Hub

5.3 Exchange aggregated allocation data allocation points

The sequence diagram below relates to the supply of Aggregated allocation data allocation point by the grid operator to the MMC Hub. The MMC Hub is responsible for routing, preparing and forwarding the relevant allocation data in the *AggregatedAllocationSeriesNotification* message to the recipient.

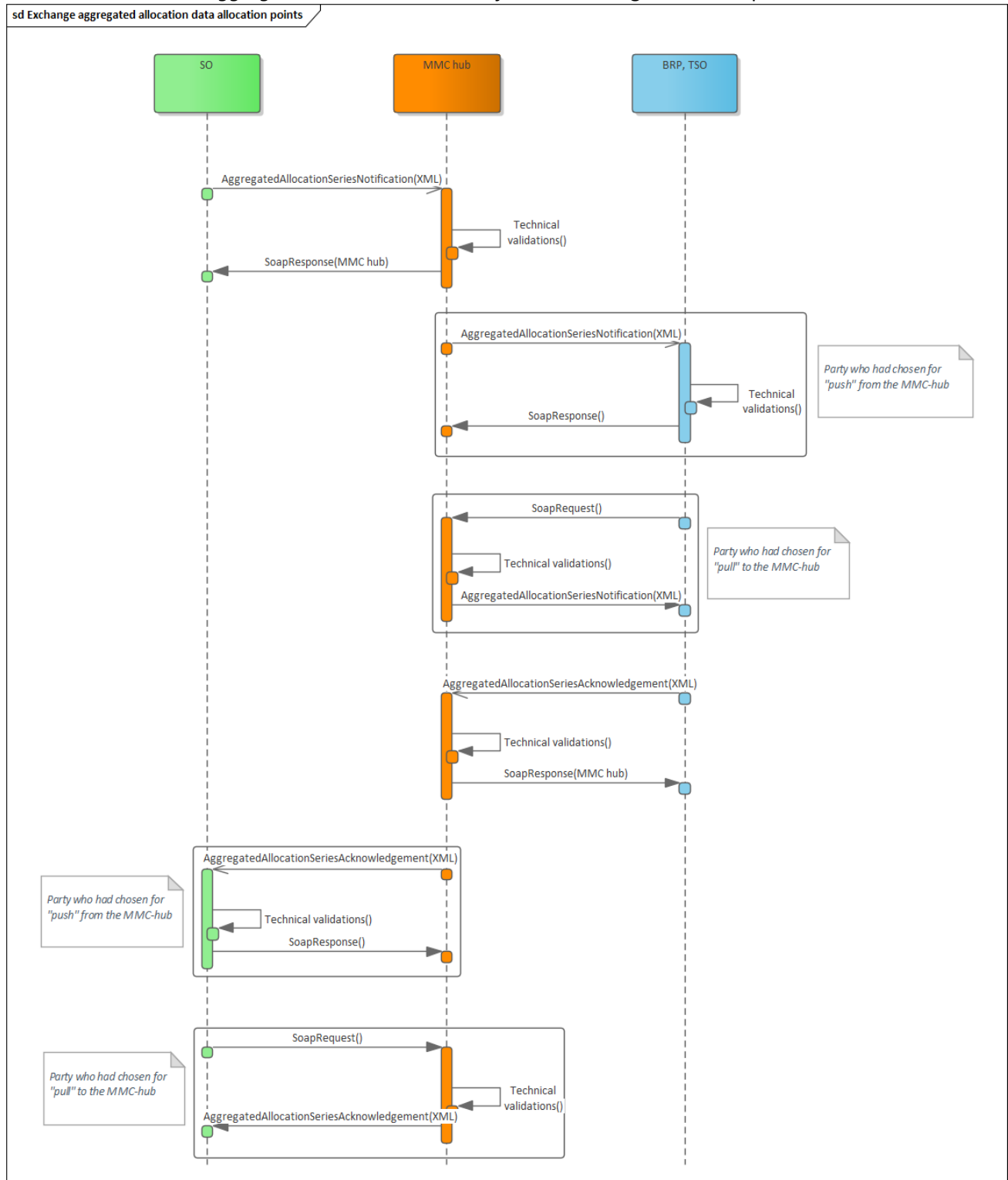


Figure 3 The sequence diagram for Exchange aggregated allocation data allocation points between SO and BRP, TSO via the MMC Hub

5.4 Exchange Residual volume Correction Factor (RCF) and Profile fractions

The sequence diagram below relates to the supply of *RCF/Profile fractions* by the grid operator to the MMC Hub. The MMC Hub is responsible for routing, preparing and forwarding the concerned combined allocation data in the *AllocationFactorSeriesNotification* message to the recipient.

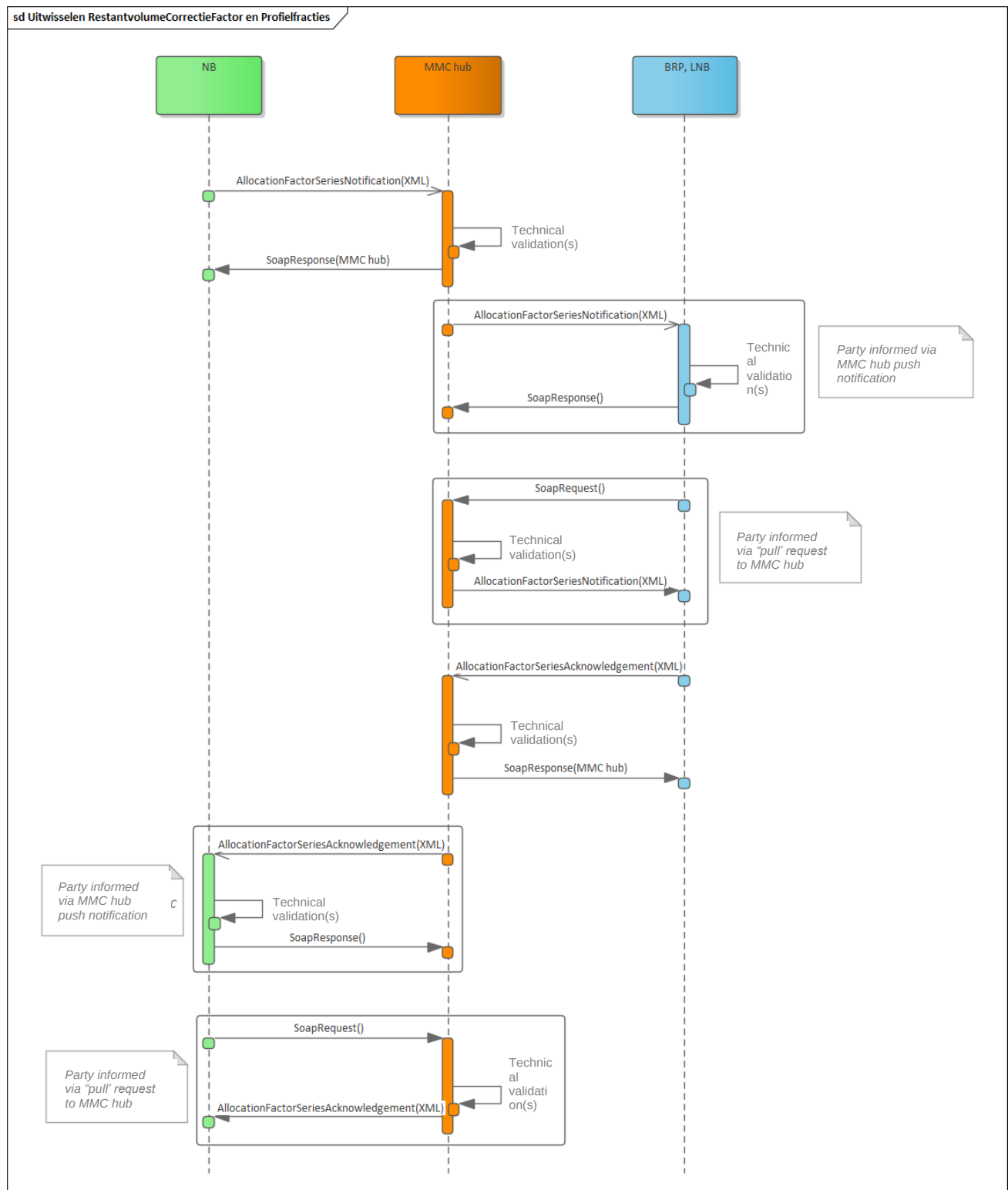


Figure 4 The Sequence diagram for Exchange Residual Volume Correction Factor (RCF) and Profile fractions between SO and BRP, TSO via the MMC Hub

6 Properties of Exchange allocation data service

6.1 Properties of Exchange allocation data individual allocation point

Exchange allocation data individual allocation point (AllocationSeries)	
Service	AllocationSeries – Exchange location data individual allocation point
Service ID	BSCMF0074
Description	The exchange of allocation data for individual allocation point between SO (provider) and BRP, TSO (consumer)
Service transaction pattern	Notification/Acknowledgement
Precondition(s)	<i>Notification Exchange allocation data individual allocation point</i> is submitted by a party that is authorized and authenticated to do so.
Trigger	SO provides <i>Notification Exchange allocation data individual allocation point</i> to MMC Hub.
Post condition(s)	• <i>Notification Exchange allocation data individual allocation point</i> rejected; - or • <i>Notification Exchange allocation data individual allocation point</i> carried out.
Service use ⁴⁸	
Pattern of use	N/a.
Average load	N/a.
Peak load	N/a.
Period peak load	N/a.
Period of inactivity	N/a.
Max. consumer response time	100% of the incoming Notifications must be answered by the consumer by means of an Acknowledgement within 15 minutes.
Max. response time Soap response MMC Hub	See MMC Technical Guide - Measurements & Allocations Documents[8].
Time-out	See MMC Technical Guide - Measurements & Allocations Documents[8].
Retry	The sender (provider of the allocation data) only performs a 'retry' if he did not receive a positive HTTP response from de MMC Hub. If the recipient (consumer of the allocation data) after the max. response time still did not receive a response, we advise to contact the recipient to find out the reason behind. If necessary after that the administrator of the MMC Hub can be contacted. After coordination, a resend of the Notification can be chosen as a follow-up action.
Web service	
WSDL	See MMC Technical Guide - Measurements & Allocations Documents[8].
Version	See MMC Technical Guide - Measurements & Allocations Documents[8].
Date	See MMC Technical Guide - Measurements & Allocations Documents[8].
Soap address	See MMC Technical Guide - Measurements & Allocations Documents[8].

⁴⁸ To be agreed with TenneT.

Operation	
User	SO-er
Function	Submit <i>Notification Exchange allocation data individual allocation point</i>
Soap action	See WSDL
Input message	AllocationSeriesNotification
XSD	AllocationSeriesNotification_1p0
Output message	AllocationSeriesAcknowledgement
XSD	AllocationSeriesAcknowledgement_1p0

6.2 Properties Exchange *aggregated allocation data allocation points service*

Exchange aggregated allocation data allocation points (AggregatedAllocationSeries)	
Service	AggregatedAllocationSeries – Exchange aggregated allocation data allocation points
Service ID	BSCMF0075
Description	The exchange of aggregated allocation data points between SO (provider) and BRP, TSO (consumer)
Service transaction pattern	Notification/Acknowledgement
Precondition(s)	<i>Notification Exchange aggregated allocation data points allocation</i> is submitted by a party that is authorized and authenticated to do so.
Trigger	SO supplies <i>Notification Exchange aggregated allocation data allocation points</i> to MMC Hub.
Post condition(s)	• <i>Notification Exchange aggregated allocation data allocation points</i> rejected; - or • <i>Notification Exchange aggregated allocation data allocation points</i> carried out.
Service use⁴⁹	
Pattern of use	N/a.
Average load	N/a.
Peak load	N/a.
Period peak load	N/a.
Period of inactivity	N/a.
Max. consumer response time	100% of the incoming Notifications must be answered by the consumer by means of an Acknowledgement within 15 minutes.
Max. response time Soap response MMC Hub	See MMC Technical Guide - Measurements & Allocations Documents[8].
Time-out	See MMC Technical Guide - Measurements & Allocations Documents[8].
Retry	The sender (provider of the allocation data) only performs a 'retry' if he did not receive a positive HTTP response from de MMC Hub. If the recipient (consumer of the allocation data) after the max. response time still did not receive a response, we advise to contact the recipient to find out the reason behind. If necessary after that the administrator of the MMC Hub can be contacted. After coordination, a resend of the Notification can be chosen as a follow-up action.
Web service	
WSDL	See MMC Technical Guide - Measurements & Allocations Documents[8].
Version	See MMC Technical Guide - Measurements & Allocations Documents[8].
Date	See MMC Technical Guide - Measurements & Allocations Documents[8].
Soap address	See MMC Technical Guide - Measurements & Allocations Documents[8].

⁴⁹ To be agreed with TenneT.

Operation	
User	SO-er
Function	Submit <i>Notification Exchange aggregated allocation data location points</i>
Soap action	See WSDL
Input message	AggregatedAllocationSeriesNotification
XSD	AggregatedAllocationSeriesNotification_1p0
Output message	AggregatedAllocationSeriesAcknowledgement
XSD	AggregatedAllocationSeriesAcknowledement_1p0

6.3 Properties serve Exchange *Residual Volume Correction Factor (RCF) and Profile fractions*

Exchange residual volume correction factor and profile fractions (AllocationFactorSeries)	
Service	AllocationFactorSeries – Exchange remaining volume correction factor and profile fractions combined in message AllocationFactorSeriesNotification
Service ID	BSCMF0076
Description	The exchange of RCF/Profile fractions between SO (provider) and BRP, TSO (consumer)
Service transaction pattern	Notification/Acknowledgement
Precondition(s)	<i>Notification Exchange RCF/Profile fractions</i> is submitted by a party that is authorized and authenticated to do so.
Trigger	SO supplies <i>Notification Exchange RCF/Profile fractions</i> to MMC Hub.
Post condition(s)	• <i>Notification Exchange RCF/Profile fractions</i> rejected; - or • <i>Notification exchange RCF/Profile fractions</i> carried out.
Service use ⁵⁰	
Pattern of use	N/a.
Average load	N/a.
Peak load	N/a.
Period peak load	N/a.
Period of inactivity	N/a.
Max. consumer response time	100% of the incoming Notifications must be answered by the consumer by means of an Acknowledgement within 15 minutes.
Max. response time Soap response MMC Hub	See MMC Technical Guide - Measurements & Allocations Documents[8].
Time-out	See MMC Technical Guide - Measurements & Allocations Documents[8].
Retry	The sender (provider of the allocation data) only performs a 'retry' if he did not receive a positive HTTP response from de MMC Hub. If the recipient (consumer of the allocation data) after the max. response time still did not receive a response, we advise to contact the recipient to find out the reason behind. If necessary after that the administrator of the MMC Hub can be contacted. After coordination, a resend of the Notification can be chosen as a follow-up action.
Web service	
WSDL	See MMC Technical Guide - Measurements & Allocations Documents[8].
Version	See MMC Technical Guide - Measurements & Allocations Documents[8].
Date	See MMC Technical Guide - Measurements & Allocations Documents[8].
Soap address	See MMC Technical Guide - Measurements & Allocations Documents[8].

⁵⁰ To be agreed with TenneT.

Operation	
User	SO-er
Function	Submit <i>Notification Exchange RCF/Profile fractions</i>
Soap action	See WSDL
Input message	AllocationFactorSeriesNotification
XSD	AllocationFactorSeriesNotification_1p0
Output message	AllocationFactorSeriesAcknowledgement
XSD	AllocationFactorSeriesAcknowledgement_1p0

7 Information model

7.1 Note

The information model is shown as a class diagram. Each class diagram is followed by a table with the description of the elements, except for the class diagrams of "empty" messages exchanged for acknowledgement.

Multiplicities are indicated with the elements. Notation 0..1 means that the element optionally occurs once, 1..1 means that the element occurs once (mandatory). Notation 0...* means that the element may optionally occur more than once. Notation 1..* means that the element may occur one or more times (mandatory).

Data types determine which type of value an element can contain. The data types are subdivided into:

- **Composite data types** (CDT): a composition of several (fixed) elements, which are reused more often (e.g. address)[4].
- **Logical data types** (LDT): a defined set of properties of the element such as minimum length, maximum length, pattern[5].

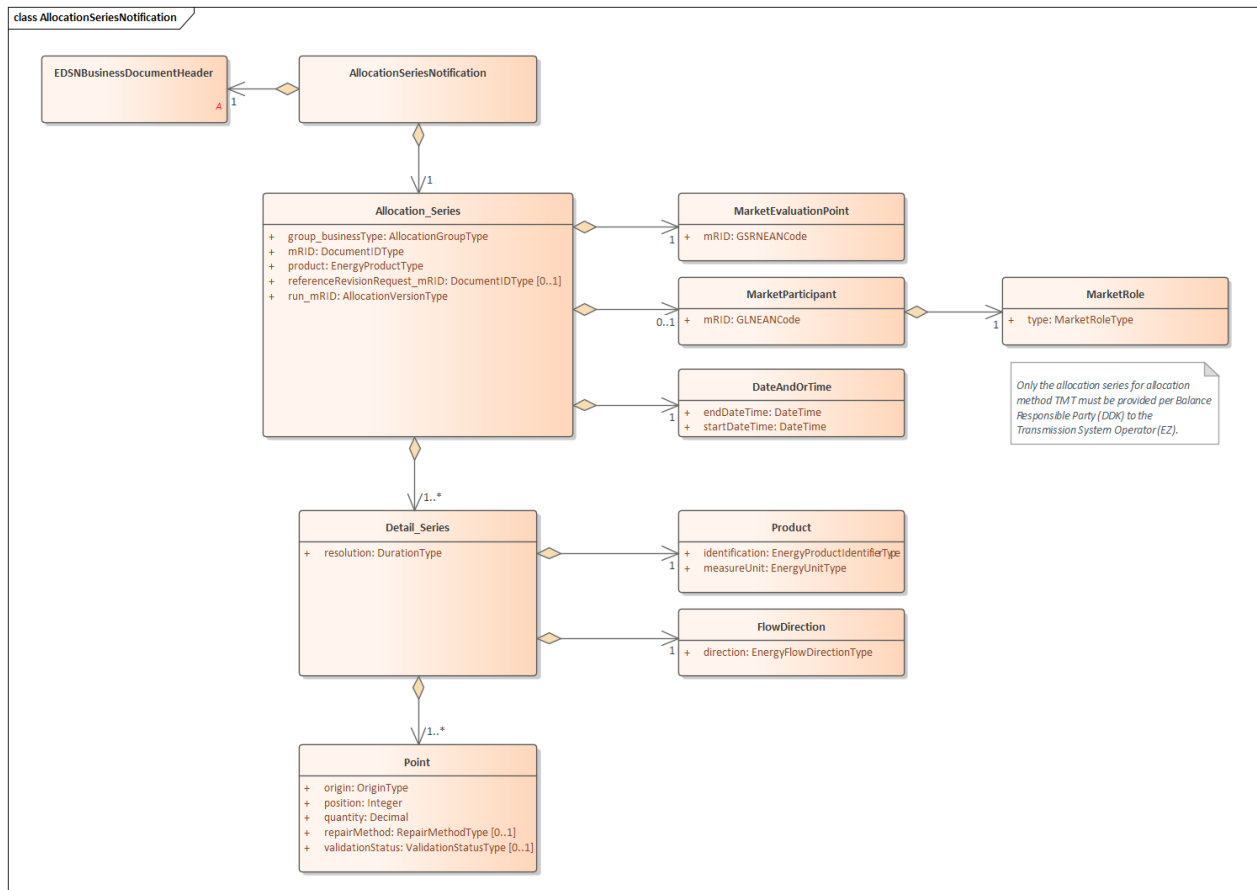
For more information on data types, please refer to NEDU EDSN Design Choices[2].

Detailed information on the values of the data types is available as a PDF document on mijnEDSN:

- EDSN Complex Data Type Specification (CDT).
- EDSN Logical Data Type Specification (LDT).

These documents also describe the values of the data types used in other information models.

7.2 Notification Exchange allocation data individual allocation point (AllocationSeriesNotification)



Allocation_Series

XML element	Data type	Multiplicity	Description	Functional parameter
mRID	DocumentIDType	1..1	A unique identification of the time series.	Message Identifier (UUID)
product	EnergyProductType	1..1	The identification of the energy product (electricity, gas etc.).	Product type
group_businessType	AllocationGroupType	1..1	The identification of the nature of the time series.	Allocation group
run_mRID	AllocationVersionType	1..1	The identification of the version of the time series.	Allocation run identifier
referenceRevisionRequest_mRID	DocumentIDType	0..1	Reference to an earlier received revision request.	Reference to review request

DateAndOrTime

XML element	Data type	Multiplicity	Description	Functional parameter
startDateTime	DateTime	1..1	Start date/time of the period as per ISO 8601 YYYY-MM-DDThh:mm:ssZ.	Start date period
endDateTime	DateTime	1..1	End date/time of the period as per ISO 8601 YYYY-MM-DDThh:mm:ssZ.	End date period

Detail_Series

XML element	Data type	Multiplicity	Description	Functional parameter
resolution	DurationType	1..1	The definition of the number of units of time that compose an individual step within a period.	Imbalance settlement period (electricity)

FlowDirection

XML element	Data type	Multiplicity	Description	Functional parameter
direction	EnergyFlowDirectionType	1..1	The identification of the direction.	Energy direction

MarketEvaluationPoint

XML element	Data type	Multiplicity	Description	Functional parameter
mRID	GSRNEANCode	1..1	The identification of the evaluation point.	EAN code connection

MarketParticipant

XML element	Data type	Multiplicity	Description	Functional parameter
mRID	GLNEANCode	1..1	The identification of a party in the energy market.	EAN code market party

MarketRole

XML element	Data type	Multiplicity	Description	Functional parameter
type	MarketRoleType	1..1	The identification of the role played by a market player.	Market role (DDK = Balance Responsible Party)

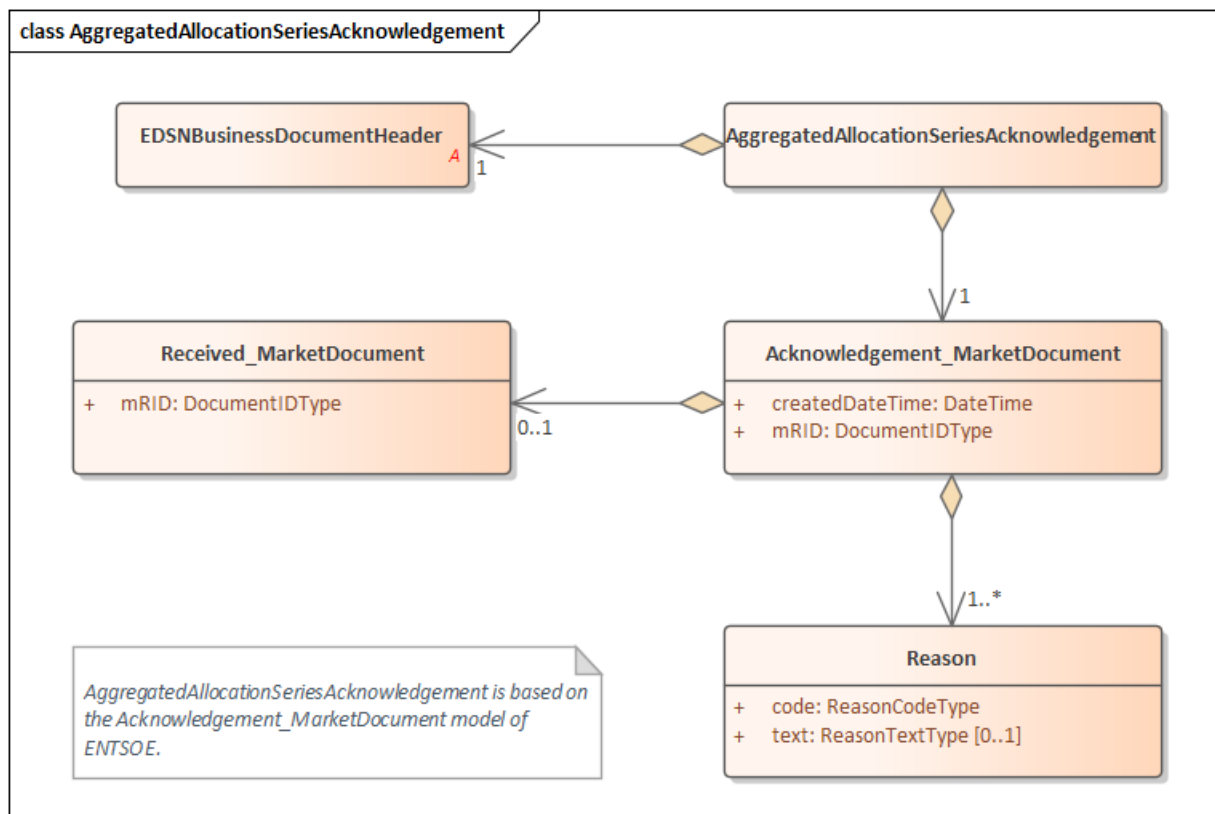
Point

XML element	Data type	Multiplicity	Description	Functional parameter
position	Integer	1..1	A sequential value representing the relative position within a given time interval.	Position
quantity	Decimal	1..1	The principal quantity or the accepted offer quantity identified for a point.	Volume
origin	OriginType	1..1	The identification of the origin.	Origin indicator
validationStatus	ValidationStatusType	0..1	The identification of the validation status.	Validation status
repairMethod	RepairMethodType	0..1	The identification of the repair method.	Repair method

Product

XML element	Data type	Multiplicity	Description	Functional parameter
identification	EnergyProductIdentifierType	1..1	The unique identification of the product.	Product ID
measureUnit	EnergyUnitType	1..1	The identification of the measure unit.	Energy unit

7.3 Confirmation/rejection notification allocation data individual allocation point (AllocationSeriesAcknowledgement)



Acknowledgement_MarketDocument

XML element	Data type	Multiplicity	Description	Functional parameter
mRID	DocumentIDType	1..1	The unique identification of the document being exchanged within a business process flow.	Message Identifier (UUID)
createdDateTime	DateTime	1..1	The date and time of the creation of the document as per ISO 8601 YYYY-MM-DDThh:mm:ssZ.	Date/time message

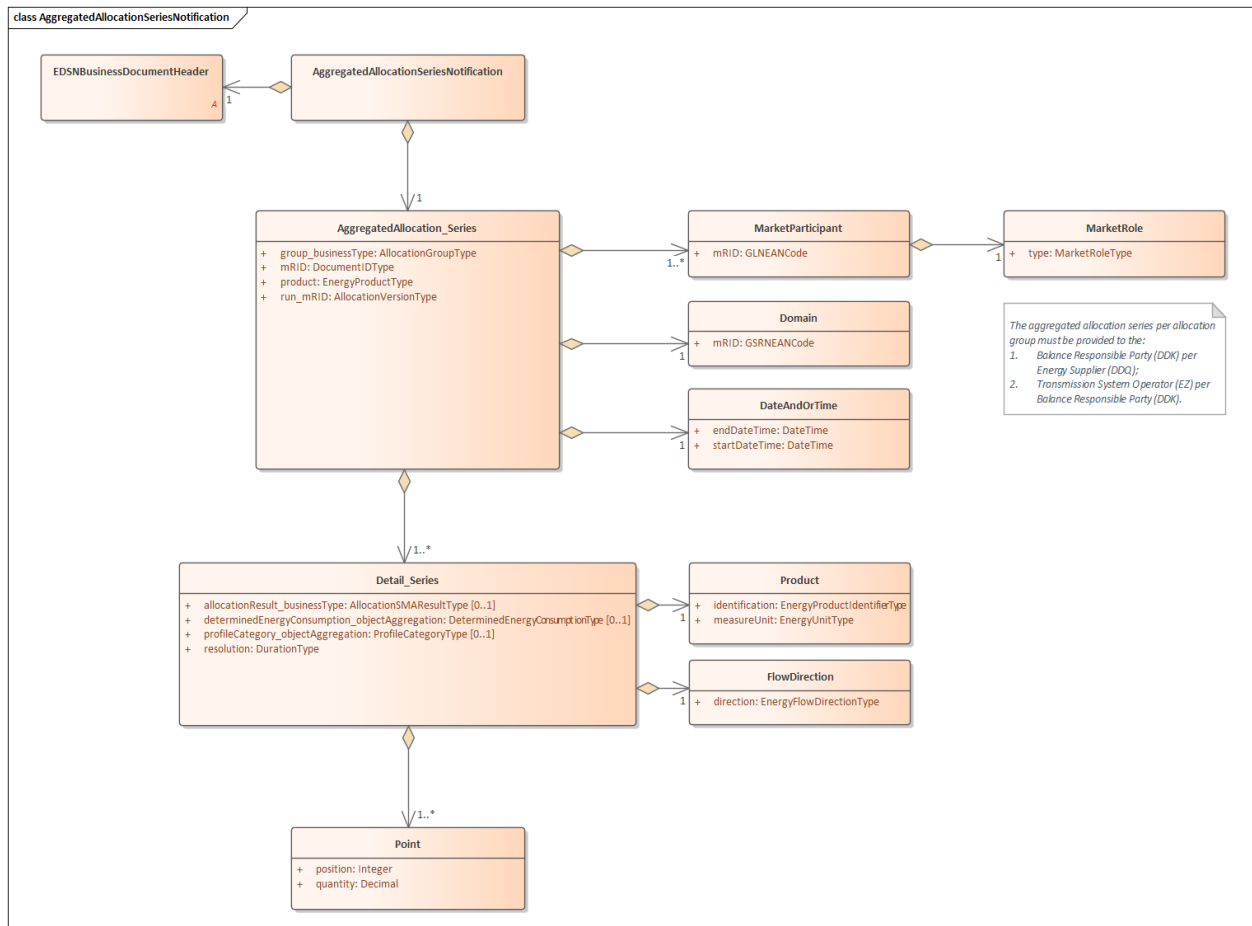
Reason

XML element	Data type	Multiplicity	Description	Functional parameter
code	ReasonCodeType	1..1	The motivation of an act in coded form.	Confirmation/rejection code
text	ReasonTextType	0..1	The textual explanation corresponding to the reason code.	Explanation of confirmation/rejection

Received_MarketDocument

XML element	Data type	Multiplicity	Description	Functional parameter
mRID	DocumentIDType	1..1	The unique identification of the document being exchanged within a business process flow.	Notification message identifier (UUID)

7.4 Notification Exchange aggregated allocation data (AggregatedAllocationSeriesNotification)



AggregatedAllocation_Series

XML element	Data type	Multiplicity	Description	Functional parameter
mRID	DocumentIDType	1..1	A unique identification of the time series.	Message Identifier (UUID)
product	EnergyProductType	1..1	The identification of the energy product (electricity, gas etc.).	Product type
group_businessType	AllocationGroupType	1..1	The identification of the nature of the time series.	Allocation group
run_mRID	AllocationVersionType	1..1	The identification of the version of the time series.	Allocation run identifier

DateAndOrTime

XML element	Data type	Multiplicity	Description	Functional parameter
startDateTime	DateTime	1..1	Start date/time of the period as per ISO 8601 YYYY-MM-DDThh:mm:ssZ.	Start date period
endDateTime	DateTime	1..1	End date/time of the period as per ISO 8601 YYYY-MM-DDThh:mm:ssZ.	End date period

Detail_Series

XML element	Data type	Multiplicity	Description	Functional parameter
resolution	DurationType	1..1	The definition of the number of units of time that compose an individual step within a period.	Imbalance settlement period (electricity)
profileCategory_objectAggregation	ProfileCategoryType	0..1	Identification of the profile category that is the common denominator used to aggregate a time series.	Profile category
determinedEnergyConsumption_objectAggregation	DeterminedEnergyConsumptionType	0..1	The identification of the determined energy consumption that is the common denominator used to aggregate a time series.	Determined energy consumption
allocationResult_businessType	AllocationSMAResultType	0..1	The identification of the nature of the time series.	Allocation result (for cSMA)

Domain

XML element	Data type	Multiplicity	Description	Functional parameter
mRID	GSRNEANCode	1..1	The unique identification of the domain.	EAN code grid area

FlowDirection

XML element	Data type	Multiplicity	Description	Functional parameter
direction	EnergyFlowDirectionType	1..1	The identification of the direction.	Energy direction

MarketParticipant

XML element	Data type	Multiplicity	Description	Functional parameter
mRID	GLNEANCode	1..1	The identification of a party in the energy market.	EAN code market party

MarketRole

XML element	Data type	Multiplicity	Description	Functional parameter
type	MarketRoleType	1..1	The identification of the role played by a market player.	Market role (DDK = Balance Responsible Party, DDQ = Energy Supplier)

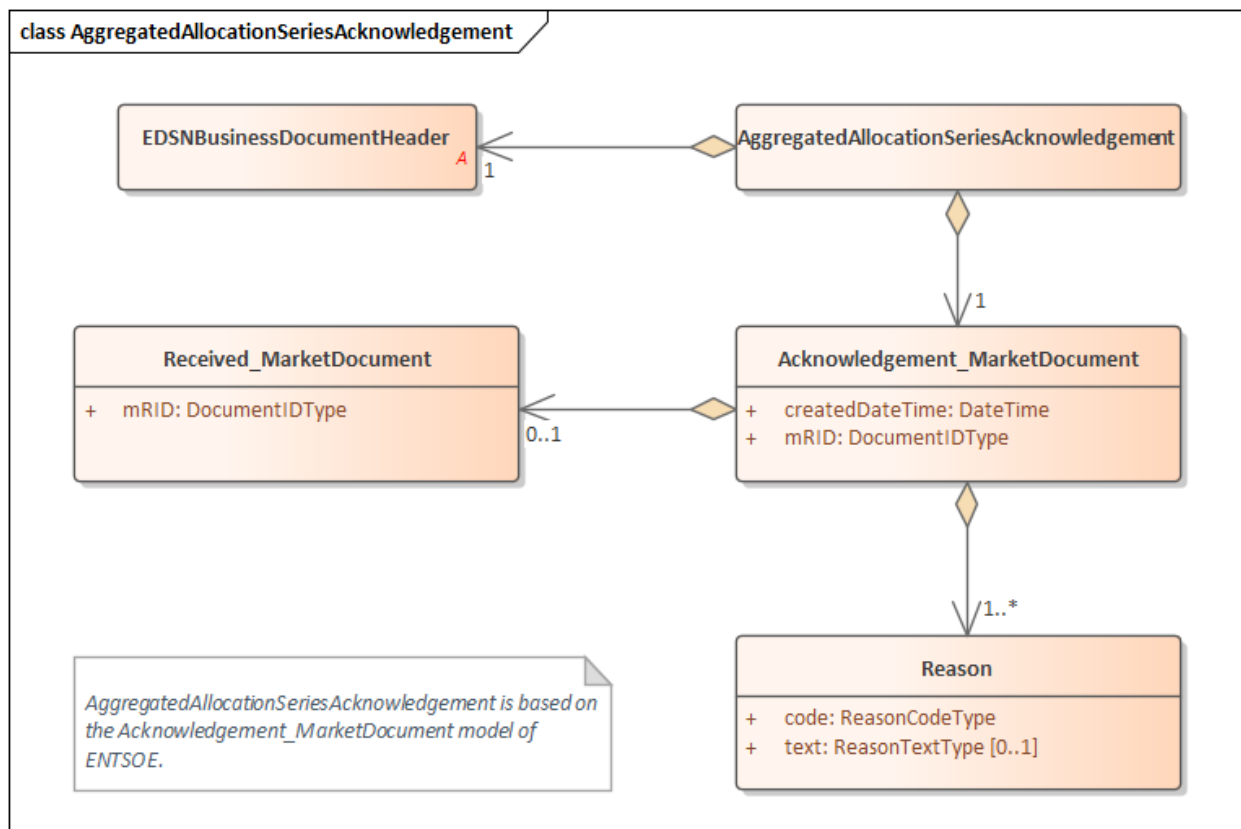
Point

XML element	Data type	Multiplicity	Description	Functional parameter
position	Integer	1..1	A sequential value representing the relative position within a given time interval.	Position
quantity	Decimal	1..1	The principal quantity or the accepted offer quantity identified for a point.	Volume

Product

XML element	Data type	Multiplicity	Description	Functional parameter
identification	EnergyProductIdentifierType	1..1	The unique identification of the product.	Product ID
measureUnit	EnergyUnitType	1..1	The identification of the measure unit.	Energy unit

7.5 Acknowledgement/rejection notification aggregated allocation data (AggregatedAllocationSeriesAcknowledgement)



Acknowledgement_MarketDocument

XML element	Data type	Multiplicity	Description	Functional parameter
mRID	DocumentIDType	1..1	The unique identification of the document being exchanged within a business process flow.	Message Identifier (UUID)
createdDateTime	DateTime	1..1	The date and time of the creation of the document as per ISO 8601 YYYY-MM-DDThh:mm:ssZ.	Date/time message

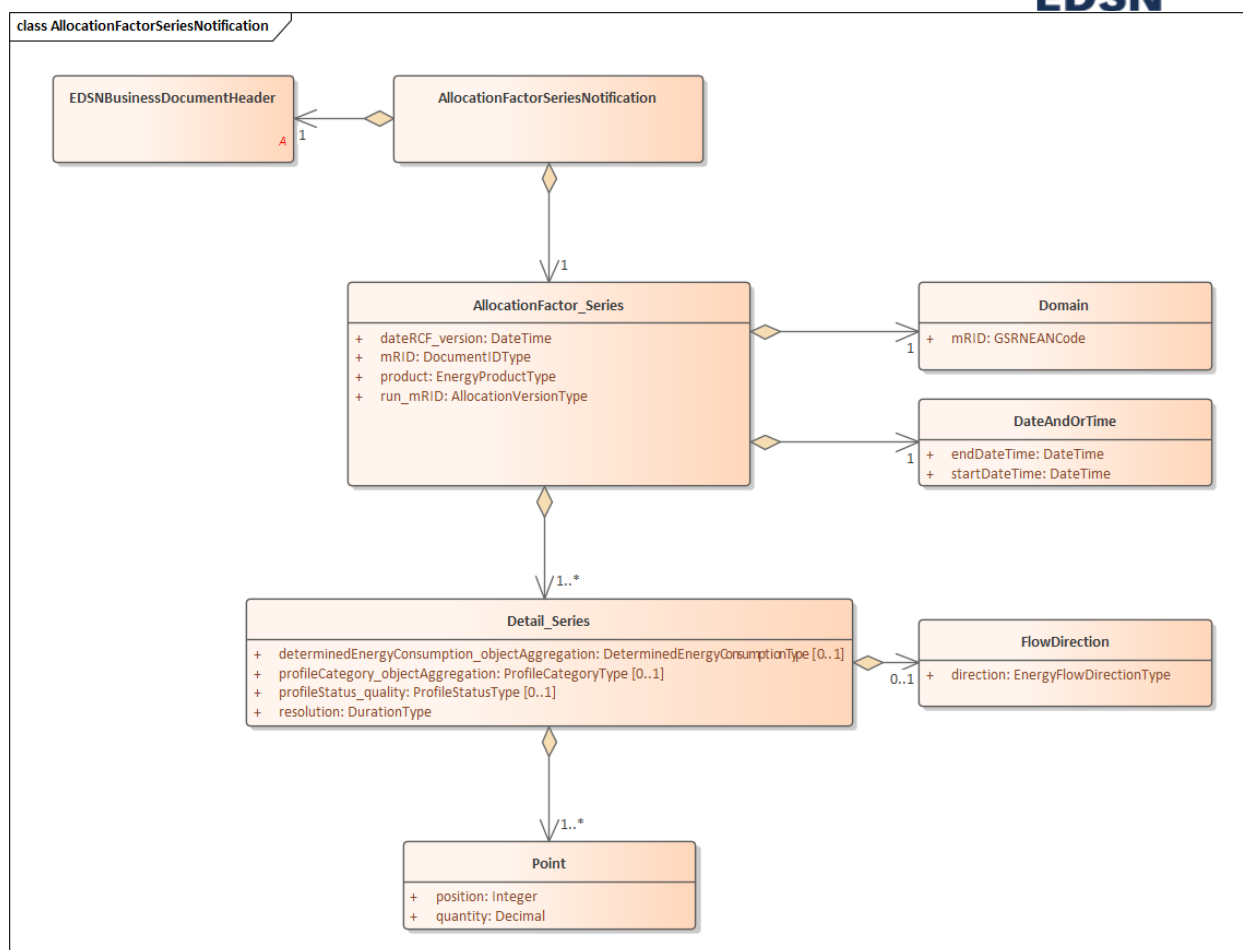
Reason

XML element	Data type	Multiplicity	Description	Functional parameter
code	ReasonCodeType	1..1	The motivation of an act in coded form.	Confirmation/rejection code
text	ReasonTextType	0..1	The textual explanation corresponding to the reason code.	Explanation of confirmation/rejection

Received_MarketDocument

XML element	Data type	Multiplicity	Description	Functional parameter
mRID	DocumentIDType	1..1	The unique identification of the document being exchanged within a business process flow.	Notification message identifier (UUID)

7.6 Notification Exchange RCF/Profile fractions (AllocationFactorSeriesNotification)



AllocationFactor_Series

XML element	Data type	Multiplicity	Description	Functional parameter
mRID	DocumentIDType	1..1	A unique identification of the time series.	Message Identifier (UUID)
product	EnergyProductType	1..1	The identification of the energy product (electricity, gas etc.).	Product type
run_mRID	AllocationVersionType	1..1	The identification of the version of the time series.	Allocation run identifier
dateRCF_version	DateTime	1..1	The date version of the time series as per ISO 8601 YYYY-MM-DDThh:mm:ssZ.	Date Version RCF

DateAndOrTime

XML element	Data type	Multiplicity	Description	Functional parameter
startDateTime	DateTime	1..1	Start date/time of the period as per ISO 8601 YYYY-MM-DDThh:mm:ssZ.	Start date period
endDateTime	DateTime	1..1	End date/time of the period as per ISO 8601 YYYY-MM-DDThh:mm:ssZ.	End date period

Detail_Series

XML element	Data type	Multiplicity	Description	Functional parameter
resolution	DurationType	1..1	The definition of the number of units of time that compose an individual step within a period.	Imbalance settlement period (electricity)
profileCategory_objectAggregation	ProfileCategoryType	0..1	The identification of the profile category that is the common denominator used to aggregate a time series.	Profile category
determinedEnergyConsumption_objectAggregation	DeterminedEnergyConsumptionType	0..1	The identification of the determined energy consumption that is the common denominator used to aggregate a time series.	Determined energy consumption
profileStatus_quality	ProfileStatusType	0..1	The quality of the information being provided. This quality may be estimated, not available, as provided, etc.	Status profile fractions

Domain

XML element	Data type	Multiplicity	Description	Functional parameter
mRID	GSRNEANCode	1..1	The unique identification of the domain.	EAN code grid area

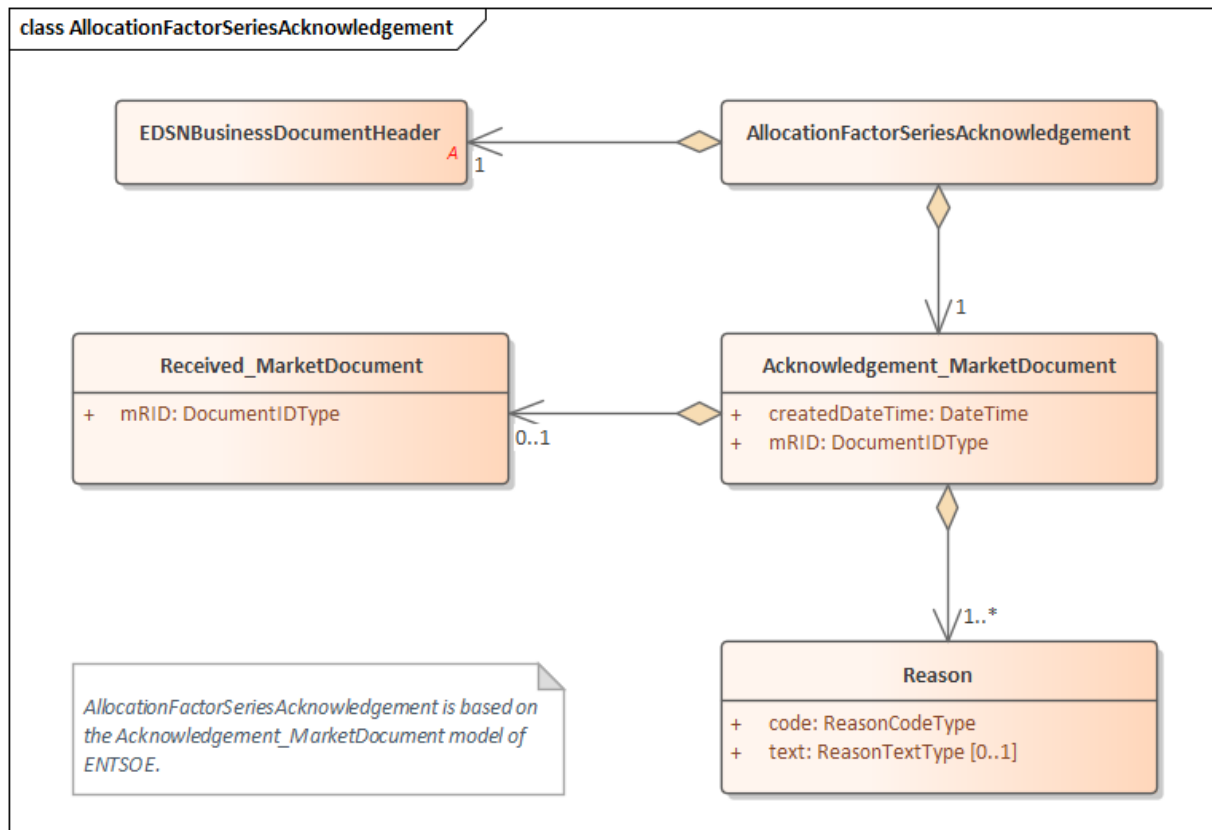
FlowDirection

XML element	Data type	Multiplicity	Description	Functional parameter
direction	EnergyFlowDirectionType	1..1	The identification of the direction.	Energy direction

Point

XML element	Data type	Multiplicity	Description	Functional parameter
position	Integer	1..1	A sequential value representing the relative position within a given time interval.	Position
quantity	Decimal	1..1	The quantity of the factor identified for a point.	Residual Volume Correction Factor (RCF) or Profile Fraction

7.7 Confirmation/rejection notification RCF/Profile fractions (AllocationFactorSeriesAcknowledgement)



Acknowledgement_MarketDocument

XML element	Data type	Multiplicity	Description	Functional parameter
mRID	DocumentIDType	1..1	The unique identification of the document being exchanged within a business process flow.	Message Identifier (UUID)
createdDateTime	DateTime	1..1	The date and time of the creation of the document as per ISO 8601 YYYY-MM-DDThh:mm:ssZ.	Date/time message

Reason

XML element	Data type	Multiplicity	Description	Functional parameter
code	ReasonCodeType	1..1	The motivation of an act in coded form.	Confirmation/rejection code
text	ReasonTextType	0..1	The textual explanation corresponding to the reason code.	Explanation of confirmation/rejection

Received_MarketDocument

XML element	Data type	Multiplicity	Description	Functional parameter
mRID	DocumentIDType	1..1	The unique identification of the document being exchanged within a business process flow.	Notification message identifier (UUID)