

Business Service

Exchange allocation data electricity

This version of the Service Description will take effect after approval,
when
Allocatie 2.0 tranche 4 goes live.

Please note: the Dutch version is leading.

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Code	BSCMF0074 - Exchange allocation data individual allocation point BSCMF0075 - Exchange aggregated allocation data allocation points BSCMF0076 - Exchange Residual volume Correction Factor/Profile fraction	Status	Dutch version approved
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Document management

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Referenced documents

Requirements model

No.	Description	Version	Date	Author
1.	BRS Allocatiegegevens elektriciteit	3.0	13-09-2024	Messaging team MFFBAS
11.	BRS Meetgegevens en reclamaties meetgegevens GV	9.9	08-08-2024	Messaging team MFFBAS

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	3.91	02-09-2024	TenneT
8.	Technical Guide - Measurements & Allocations Documents	1.94	21-05-2024	TenneT

Service descriptions and data model

No.	Description	Version	Date	Author
4.	EDSN Complex Data Type Specificatie	2.4	07-06-2023	EDSN
5.	EDSN Logisch Data Type Specificatie	3.0	07-06-2023	EDSN
6.	ebIX® Code list	1.4A	November 2023	ebIX TC
7.	ISO 8601 voor datum- en tijdsnotatie	1:2019	2019	ISO
9.	Attributenlijst Centraal Aansluitingenregister	13.0	12-06-2023	EDSN
10.	Business Service Uitwisselen herzieningsverzoeken	6.0	08-12-2023	EDSN

This document is a publication of EDSN for MFF BAS. In the interest of completeness and accuracy, we kindly request you to forward any comments, additions and corrections regarding this document to 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. Grid 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. Grid 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. Grid 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 insight into the exchange, a detailed process description has been included as well as an indication of the notifications 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 notifications 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 large consumption 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.² The order of the allocation runs can, for example, be derived from the creation date/time of the RCF/Profile fraction notifications together with the allocation gun identifier in the RCF/Profile fraction notifications. These RCF/Profile fraction notifications are made available to the BRP 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 notifications 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 notification 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 notification 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 notification for the BRP with aggregated allocation data per BRP/SUP combination for Allocation group PRF only contains those profile categories (and determined energy consumption) for which the relevant BRP/SUP combination is active in the relevant grid area;
- A notification for the TSO with aggregated allocation data per BRP for Allocation group PRF only contains those profile categories (and determined energy consumption) for which the relevant BRP is active in the relevant grid area;
- An RCF/Profile fraction notification 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 notification will be sent without profile fractions and with the values 1.00000 for the RCF; The obligation to send these notifications only applies when sending to the BRP, but not when sending to the TSO;
- A notification with allocation data for an individual allocation point or a notification with aggregated allocation data always contains two complete time series (consumption and production). If there is no data for a time series, the value 0.000 is provided for volume in the allocation notification;
- If a party will supply data on behalf of another party (via the MMC-hub), the Carrier ID should be used

² The allocation run identification for a calendar day and grid area is identical for all recipients of the messages from that allocation run.

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 data service

The table below shows the type of allocation point for which the system operator (SO) must send a notification 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 ³
Allocation point with allocation method telemetry (TMT)					
Daily notification "allocation data per individual allocation point (allocation method TMT)"	SO	BRP	Allocation point ELK TMT	A20.201	N101
Daily Notification "aggregated allocation for data allocation points (allocation method TMT)", aggregation by grid area per SUP	SO	BRP	Allocation point ELK TMT	A20.201	N102
Daily notification "allocation data per individual allocation point (allocation method TMT)" ⁴	SO	TSO	Allocation point ELK TMT	A20.211	N101
Daily Notification "aggregated allocation data for allocation points (allocation method TMT), aggregation by grid area per BRP	SO	TSO	Allocation point ELK TMT	A20.211	N102
Allocation point with allocation method smart meter allocation (SMA)					
Daily Notification "aggregated allocation for data allocation points (allocation method SMA)", aggregation by grid area per SUP	SO	BRP	Allocation point ELK SMA	A20.202	N111
Daily Notification "aggregated allocation data for location points (allocation method SMA)", aggregation per grid area per BRP	SO	TSO	Allocation point ELK SMA	A20.212	N111
Allocation Point with Profile Allocation Method (PRF)					
Daily Notification "aggregated allocation for data allocation points (allocation method PRF)", aggregation by grid area per SUP	SO	BRP	Allocation point ELK PRF	A20.203	N121
Daily Notification "aggregated allocation for data allocation points (allocation method PRF)", aggregation by grid area per BRP	SO	TSO	Allocation point ELK PRF	A20.213	N121
Grid loss allocation point with allocation method telemetry (TMT)					
Daily notification "allocation data per individual grid loss allocation point" (allocation method TMT)	SO	BRP	Grid loss allocation point ELK TMT	A20.204	N131
Daily Notification "aggregated allocation data for grid loss allocation points" (allocation method TMT), aggregation by grid area per SUP	SO	BRP	Grid loss allocation point ELK TMT	A20.204	N132
Daily Notification "aggregated allocation data for grid loss allocation points" (allocation method TMT), aggregation by	SO	TSO	Grid loss allocation point ELK TMT	A20.214	N132

³ See paragraph 3.7 Application ProcessTypeID.

⁴ 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 ³
grid area per BRP					
Dimensioned allocation point with allocation method telemetry (TMT)					
Daily notification "allocation data per individual dimensioned allocation point" (allocation method TMT)	SO	BRP	Dimensioned allocation point ELK TMT	A20.205	N141
Daily Notification "aggregated allocation data for dimensioned allocation points" (allocation method TMT), aggregation by grid area per SUP	SO	BRP	Dimensioned allocation point ELK TMT	A20.205	N142
Daily Notification "aggregated allocation data for dimensioned allocation points" (allocation method TMT), aggregation by grid area per BRP	SO	TSO	Dimensioned allocation point ELK TMT	A20.215	N142
Residual Volume Correction Factor (RCF)/Profile fractions electricity					
Daily Notification "Residual Volume Correction Factor and the Profile fractions per grid area used in the allocation calculation" (combined in one notification)	SO	BRP	N/A	A20.206 and A20.207	N151
Daily Notification "Residual Volume Correction Factor and the Profile fractions per grid area used in the allocation calculation" (combined in one notification)	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 system 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	Consumption with production
AZI	Consumption without production
BRP	Balance responsible party, formerly PV (Program responsible party)
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 Net code dimensioned (DIM) profiles.
EDSN	Energy Data Services Netherlands
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, transmission system operator or GDS operator.
NVL	Grid 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 consumption
SJI	Standard annual production
SMA	Smart Meter allocation Identifier for KV allocation points that are allocated with quarter values obtained from the smart meter.
TMT	Telemetry

Abbreviation	Description
	Identifier for GV allocation points that are allocated with quarter values that are supplied by the MRP or calculated by the SO.

2 Roles and responsibilities

2.1 Consumer

This service description describes how the consumers (BRP, TSO, SUP) receive the volumes for settlement.

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

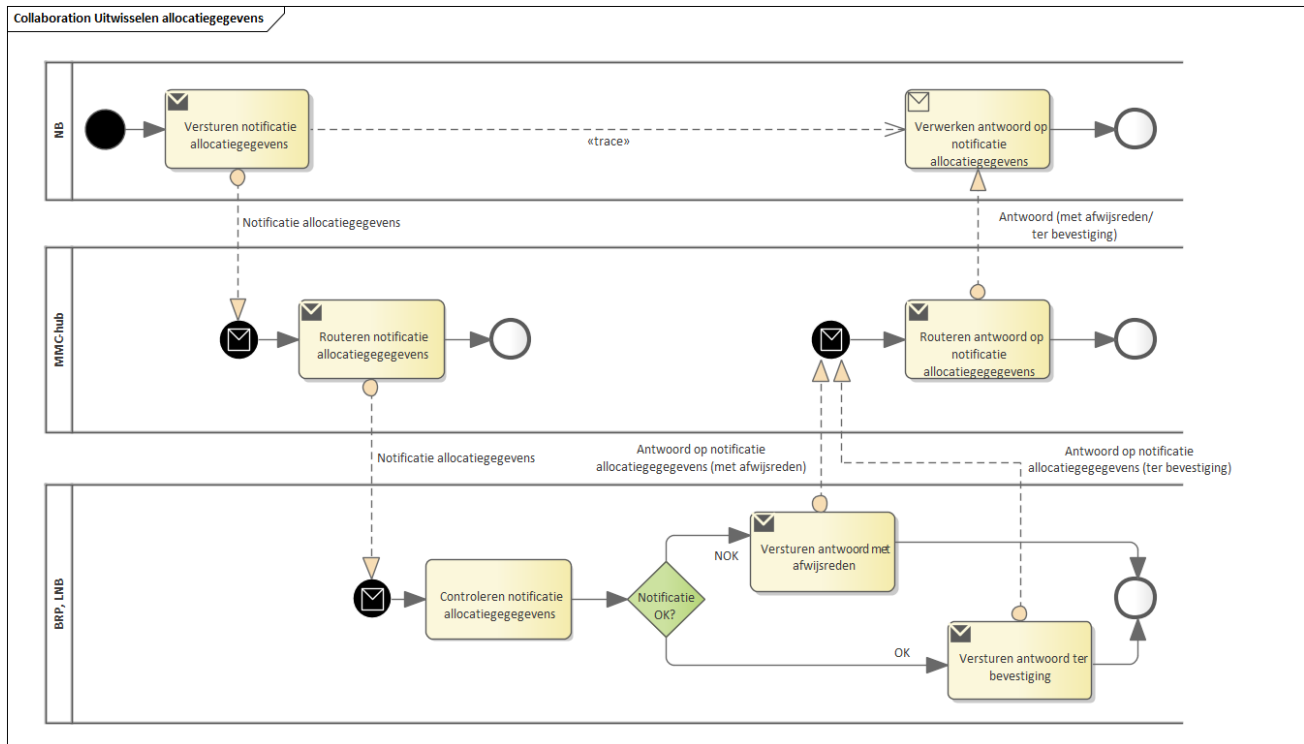


Figure 1 For detailed information about this process, see BRS Allocation data[1]

3.1 Exchange allocation data

The process for exchanging allocation data follows the following scenario:

1. The system operator sends the notification "Notification allocation data"⁵ to the MMC-hub;
2. The MMC-hub processes⁶ the received "Notification allocation data" notification and routes the notification to the recipient⁷;
3. The receiver checks the notification "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 system operator. The notification 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 notification 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 notification to the system operator.

⁵ 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.

⁶ A non-valid notification will be rejected by the MMC-hub, see paragraph 3.2.

⁷ 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 notification "Notification allocation data" and received notification "Confirmation/rejection notification of allocation data":

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

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

3.3 Checks on receiver

The recipient may perform the following checks after receiving the notification "Notification allocation data" and the notification "Confirmation/rejection notification allocation data"⁸:

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

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

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

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

The following checks and error notifications are available to the receiver in response to the notification "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 notification	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 notification 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

⁸ These validations are always carried out by the MMC-hub. It is recommended that recipients also perform these validations themselves.

Control	Error notification	Role	Code
The combination of origin indication, validation status and repair method is a valid combination ⁹ .	The combination of origin indication, validation status and repair method is not a valid combination.	BRP/TSO	683
All volumes in the notification are positive numbers (or zero).	Volume with negative value.	BRP/TSO	686
The EAN code-18 of the grid area or the allocation point together with the system operator is active and administered to the transmission system operator.	The grid 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 notification contains the EAN 13 for the market party with market role BRP.	Missing EAN 13 from BRP.	TSO	759
The daily notification with allocation data was delivered on time. ¹⁰	The daily notification with allocation data was delivered too late.	BRP/TSO	763
The number of time series in the notification matches the allocation group.	The number of time series in the notification 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 notification with this allocation run identifier has been received in the past. ¹¹	BRP/TSO	769
The period to which the notification 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 notification is unique.	A notification with this reference has been received in the past.	BRP/TSO	670

⁹ See BRS Measurement data GV Appendix a for valid combinations of origin indication, validation status and repair methodology[11].

¹⁰ Period in validation can change due to deferral distribution final allocation (market window).

¹¹ This control is intended to reject a message if an allocation run identification from a previous allocation run has been used.

Notification header			
The NotificationID in the SOAP header is unique.	A notification with this NotificationID has been received from this SO.	BRP/TSO	669
The ProcessTypeID in the notification header matches the content of the notification.	ProcessTypeID does not match the content of the notification.	BRP/TSO	681
The ProcessTypeID in the notification header matches the recipient of the notification.	ProcessTypeID does not match the recipient of the notification.	BRP/TSO	747
No notification with a more recent creation date/time stamp has been received.	A notification 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 ¹² 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 ¹³ .	The Correlation ID in the Business Document Header is not the same as the Correlation ID in the SOAP Header.	BRP/TSO	780
Entire notification			
Notification is complete, correct and directed to the correct recipient ¹⁴ .	[free text field] ¹⁵	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 system operator (see service description Exchange Review requests[10]). The notification 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 notification "Notification aggregated allocation data allocation points"

The following checks and error notifications are available to the receiver in response to the notification "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 notification	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 notification 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

¹² See Technical Guide - Measurements & Allocations Documents[8] for further information how to fill the contentType.

¹³ If the response error code 780 is returned, the recipient can ignore the content of the CorrelationID in the BusinessDocumentHeader because this content is not relevant. The CorrelationID in the SOAP header is leading.

¹⁴ Check and error notification if a received notification is not correct or not intended for that recipient and cannot be caught by one of the above checks.

¹⁵ An explanation of error code 999 should be entered in this text field.

Control	Error notification	Role	Code
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
All volumes in the notification are positive numbers (or zero) ¹⁶ .	Volume with negative value.	BRP/TSO	686
The EAN code-18 of the grid area or the allocation point together with the system operator is active and administered to the transmission system operator.	The grid 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 notification 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 notification period.	The BRP-er is not active as BRP-er in the grid area for this allocation group.	BRP	761
The daily notification with allocation data was delivered on time.	The daily notification with allocation data was delivered too late.	BRP/TSO	763
The number of time series in the notification matches the allocation group.	The number of time series in the notification 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 notification with this allocation run identifier has been received in the past. ¹⁷	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 notification 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 notification is unique.	A notification with this reference has been received in the past.	BRP/TSO	670
Notification header			
The NotificationId in the SOAP header is unique.	A previous notification has already been received with the same NotificationID.	BRP/TSO	669
The ProcessTypeID in the notification header matches the content of the notification.	ProcessTypeID does not match the content of the notification.	BRP/TSO	681
The ProcessTypeID in the notification header matches the recipient of the notification.	ProcessTypeID does not match the recipient of the notification.	BRP/TSO	747
No notification with a more recent creation date/time stamp has been received.	A notification 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

¹⁶ All volumes in allocation data notifications 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.

¹⁷ This control is intended to reject a message if an allocation run identification from a previous allocation run has been used.

Control	Error notification	Role	Code
The contentType ¹⁸ 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 ¹⁹ .	The Correlation ID in the Business Document Header is not the same as the Correlation ID in the SOAP Header.	BRP/TSO	780
Entire notification			
Notification is complete, correct and directed to the correct recipient ²⁰ .	[free text field] ²¹	BRP/TSO	999

3.6 Recipient checks for notification "Notification Residual volume Correction Factor and Profile fractions"

The following checks and error notifications are available to the receiver in response to the notification "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 notification	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 notification 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 grid area or the allocation point together with the system operator is active and administered to the transmission system operator.	The grid 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 notification with allocation data was delivered on time.	The daily notification with allocation data was delivered too late.	BRP/TSO	763
The allocation run identifier is unique.	An allocation data notification with this allocation run identifier has been received in the past. ²²	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 notification 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

¹⁸ See Technical Guide - Measurements & Allocations Documents[8] for further information how to fill the contentType.

¹⁹ If the response error code 780 is returned, the recipient can ignore the content of the CorrelationID in the BusinessDocumentHeader because this content is not relevant. The CorrelationID in the SOAP header is leading.

²⁰ Check and error notification if a received notification is not correct or not intended for that recipient and cannot be caught by one of the above checks.

²¹ An explanation of error code 999 should be entered in this text field.

²² This control is intended to reject a message if an allocation run identification from a previous allocation run has been used.

Control	Error notification	Role	Code
The reference in the notification is unique.	A notification with this reference has been received in the past.	BRP/TSO	670
Notification header			
The NotificationId in the SOAP header is unique.	A previous notification has already been received with the same NotificationID.	BRP/TSO	669
The ProcessTypeID in the notification header matches the content of the notification.	ProcessTypeID does not match the content of the notification.	BRP/TSO	681
The ProcessTypeID in the notification header matches the recipient of the notification.	ProcessTypeID does not match the recipient of the notification.	BRP/TSO	747
No notification with a more recent creation date/time stamp has been received.	A notification 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 ²³ 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 ²⁴ .	The Correlation ID in the Business Document Header is not the same as the Correlation ID in the SOAP Header.	BRP/TSO	780
Entire notification			
Notification is complete, correct and directed to the correct recipient ²⁵ .	[free text field] ²⁶	BRP/TSO	999

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

24 If the response error code 780 is returned, the recipient can ignore the content of the CorrelationID in the BusinessDocumentHeader because this content is not relevant. The CorrelationID in the SOAP header is leading.

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

26 An explanation of error code 999 should be entered in this text field.

3.7 Application ProcessTypeID for exchange allocation data

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

Application	Code
Daily notification "allocation data per individual allocation point (allocation method TMT)" to BRP	N101
Daily Notification "aggregated allocation for data allocation points (allocation method TMT)", aggregation by grid area per SUP to BRP	N102
Daily notification "allocation data per individual allocation point (allocation method TMT)" to TSO	N101
Daily Notification "aggregated allocation data for allocation points (allocation method TMT)", aggregation by grid area per BRP to TSO	N102
Daily Notification "aggregated allocation for data allocation points (allocation method SMA)", aggregation by grid area per SUP to BRP	N111
Daily Notification "aggregated allocation data for allocation points (allocation method SMA)", aggregation by grid area per BRP to TSO	N111
Daily Notification "aggregated allocation data for allocation points (allocation method PRF)", aggregation by grid area per SUP to BRP	N121
Daily Notification "aggregated allocation data for allocation points (allocation method PRF)", aggregation by grid area per BRP to TSO	N121
Daily notification "allocation data per individual grid loss allocation point (allocation method TMT)" to BRP	N131
Daily Notification "aggregated allocation data for grid loss allocation points (allocation method TMT)", aggregation by grid area per SUP to BRP	N132
Daily Notification "aggregated allocation data for grid loss allocation points (allocation method TMT)", aggregation by grid area per BRP to TSO	N132
Daily notification "allocation data per individual dimensioned allocation point (allocation method TMT)" to BRP	N141
Daily Notification "aggregated allocation data for dimensioned allocation points (allocation method TMT)", aggregation by grid area per SUP to BRP	N142
Daily Notification "aggregated allocation data for dimensioned allocation points (allocation method TMT)", aggregation by grid area per BRP to TSO	N142
Daily Notification "Residual volume Correction Factor (RCF) and Profile fractions by grid area" to BRP	N151
Daily Notification "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 notification). The following information is exchanged per allocation point:

Entry	Elec	1/n	Note	XML code
Notification identification	V	1	A UUID as a unique identifier of the notification.	
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 ²⁷ .	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 ²⁸ . Permitted values for allocation data to BRP: Allocation point (allocation method TMT) Grid 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 ²⁹ so that the consumer can use the identifier to link the set of allocation data.	
Reference to revisions request	A	1	Reference to the related revisions request. <u>Only required</u> if the notification is sent following a revision request allocation data	
Start date period	V	1	A periodic notification 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 type³⁰		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

²⁷ Market role as defined in ebIX Code list[6].

²⁸ Grid loss allocation point and dimensioned allocation point belong to allocation group NVL and allocation group DIM respectively.

²⁹ The allocation run identification for a calendar day and grid area will be identical for all recipients of notifications from that allocation run.

³⁰ Two complete time series:

1. volume active energy (consumption);
2. volume active energy (production).

Entry	Elec	1/n	Note	XML code
Energy direction	V	1	Allowed values (from ebIX Code list[6]): Consumption Production	E17 E18
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.	
Origin indicator ³¹	V	1	Allowed values: Measured Measured update Calculated Unmeasured 'zero' ³² See BRS Appendix A Status of measurement data and meter readings [11].	MSR UMS CLC NMS
Validation status ³³	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 ³⁴	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 ³⁵ 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 notification.

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

32 "Unmeasured 'zero'" (NMS) is used as Origin indicator status for zeros during production if this is not measured.

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

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

35 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 notification) 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:

Entry	Elec	1/n	Note	XML code
Notification identification	V	1	A UUID as a unique identifier of the notification.	
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.	
	V	1	For aggregated allocation data to TSO: Market role of the BRP ³⁶ .	DDK
	V	1	For aggregated allocation data to BRP: Market role of the SUP ³⁷ .	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 ³⁸ . Allowed values: Allocation points aggregated (allocation method TMT) ³⁹ Allocation points aggregated (allocation method SMA) Allocation points aggregated (allocation method PRF) Grid 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 ⁴⁰ so that the consumer can use the identifier to link the set of allocation data.	
Start date period	V	1	A periodic notification 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	

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

37 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.

39 Excludes allocation data for dimensioned allocation points and grid loss allocation points.

40 The allocation run identification for a calendar day and grid area will be identical for all recipients of notifications from that allocation run.

Energy type ⁴¹		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]): Consumption Production E17 E18
Profile category	A	1	Profile category identifier. <u>Required</u> if it is an aggregated allocation data notification for allocation group PRF. <u>Must be empty</u> if it is an aggregated allocation data notification for allocation group TMT, SMA, NVL or DIM ⁴² . 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 consumption with production or consumption without production. <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 notification for allocation group TMT, SMA, NVL or DIM ⁴² . <u>Must be empty</u> if it is a time series for the profile category E3A, E3B, E3C, E3D or E4A ⁴² . Permitted values for profile category E1A, E1B, E1C, E2A or E2B: Consumption with production Consumption without production AMI AZI
Allocation Result Origin Indication (for SMA) ⁴³	A	1	Indication for the origin indication of the aggregated allocation data. <u>Required</u> if it is an aggregated allocation data notification for allocation group SMA. <u>Must be empty</u> if it is an aggregated allocation data notification for allocation group PRF, TMT, NVL or DIM ⁴² . Allowed values: Measured Calculated MSR CLC

Volume per position		n	
Position	V	1	Position in the series in whole numbers.

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

1. volume active energy (consumption);
2. volume active energy (production).

If Allocation group is PRF, then two time series (consumption and production) per profile category per determined energy consumption.

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

43 Due to the attribute *Origin indication Allocation result*, four time series with aggregated SMA volumes are always exchanged:

1. volume active energy (consumption, measured volumes);
2. volume active energy (production, measured volumes);
3. volume active energy (consumption, calculated volumes);
4. volume active energy (production, calculated volumes).

Volume per position		n	
			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 notification.

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:

Entry	Elec	1/n	Note	XML code
Notification identification	V	1	A UUID as a unique identifier of the notification.	
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 ⁴⁴ 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 type⁴⁵		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) ⁴⁶ . Allowed values (from ebIX Code list[6]): Consumption Production	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	E1A E1B E1C E2A E2B

⁴⁴ The allocation run identification for a calendar day and grid area will be identical for all recipients of notifications from that allocation run.

⁴⁵ 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).

⁴⁶ Must be empty means that the appropriate field is missing from the notification. Empty fields in the XML notification are not allowed based on the UN/CEFACT NDR.

Entry	Elec	1/n	Note	XML code
			Factor (RCF) ⁴⁶ .	E3A E3B E3C E3D E4A
Determined energy consumption	A	1	Indicates whether there is consumption with production or consumption without production. <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) ⁴⁶ . <u>Must be empty</u> for profile fractions if the profile category is E3A, E3B, E3C, E3D or E4A ⁴⁶ . Permitted values for profile category E1A, E1B, E1C, E2A or E2B: Consumption with production Consumption without production	AMI AZI
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) ⁴⁶ . Permitted values for profile category E1A, E1B, E1C, E2A and E2B: Dynamic profile fractions Fallback dynamic profile fractions (reference area) Fallback dynamic profile fractions (national) 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 notification.

4.4 Reply Exchange allocation data

The response consists of an acknowledgement or a rejection:

Entry	Elec	1/n	Note	XML code
Reference response notification	V	1	A UUID as a unique identifier of the notification.	
Notification reference	A ⁴⁷	1	A UUID as unique identifier for the acknowledged or rejected notification ⁴⁸ .	
Date/time response notification	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 notification.

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 provider⁴⁹;
2. Via the notification 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 notification.

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

⁴⁷ If the integrity and/or confidentiality of the XML notification cannot be guaranteed, the recipient must be able to send a rejection to the sender of the corresponding notification without the reference of the received notification. The XML notification is also compromised and the attribute may no longer be reliable or possible to obtain. 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.

⁴⁸ Is the Allocation_Series.mRID of the AllocationSeriesNotification notification, the AggregatedAllocation_Series.mRID of the AggregatedAllocationSeriesNotification notification or the RCF_Series.mRID of the RCFSeriesNotification notification.

⁴⁹ 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 notifications between objects. The notifications in the sequence diagram are explained in more detail in the chapter Information Model. Further details about notification 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 system operator to the MMC-hub. The MMC-hub is responsible for routing, preparing and forwarding the relevant allocation data in the *AllocationSeriesNotification* notification to the recipient.

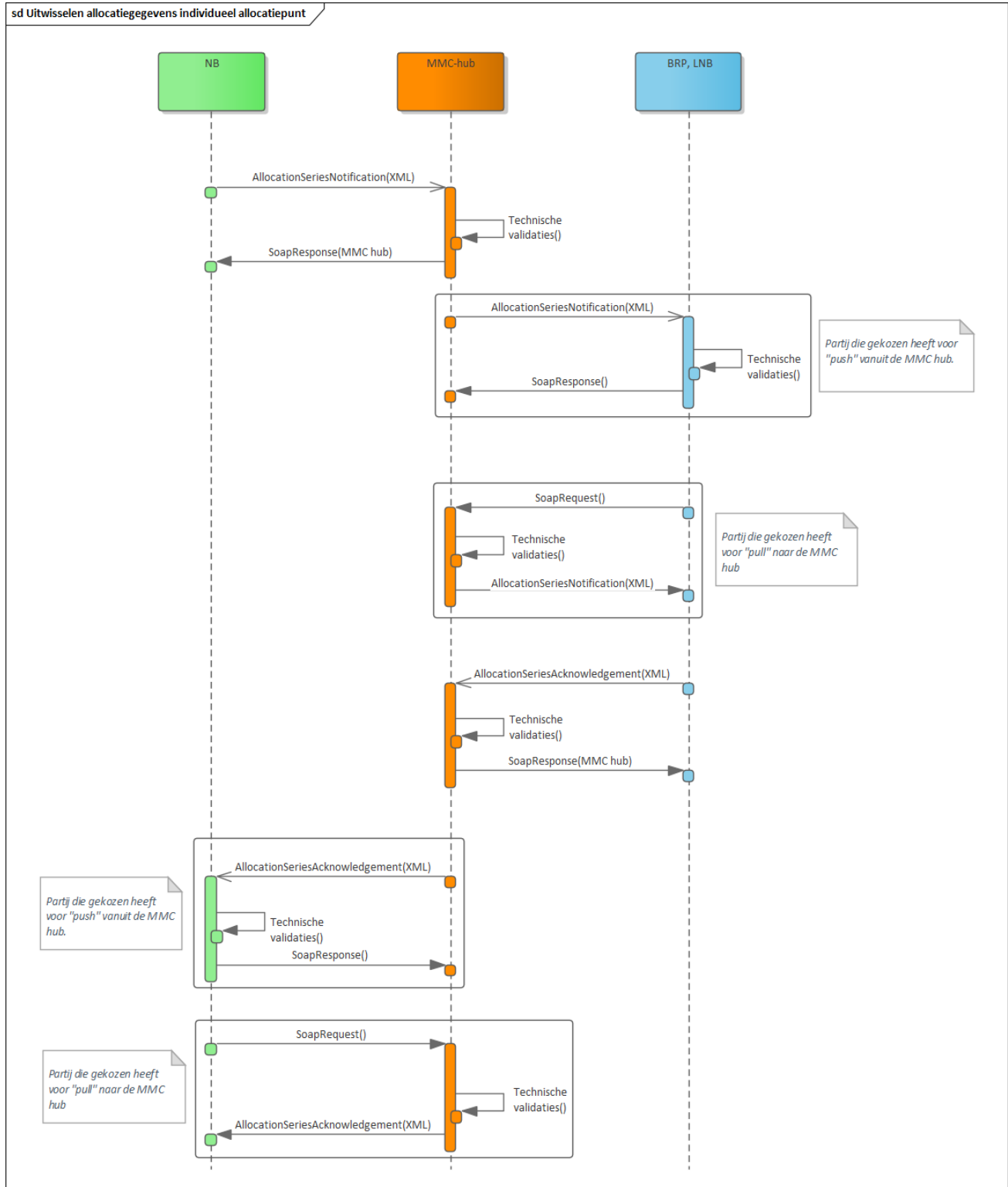


Figure 2 The sequence diagram for Exchange allocation data individual allocation point between SO and BRP, TSO via the MMC-hub

5.3 Exchange aggregated allocation data allocation points

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

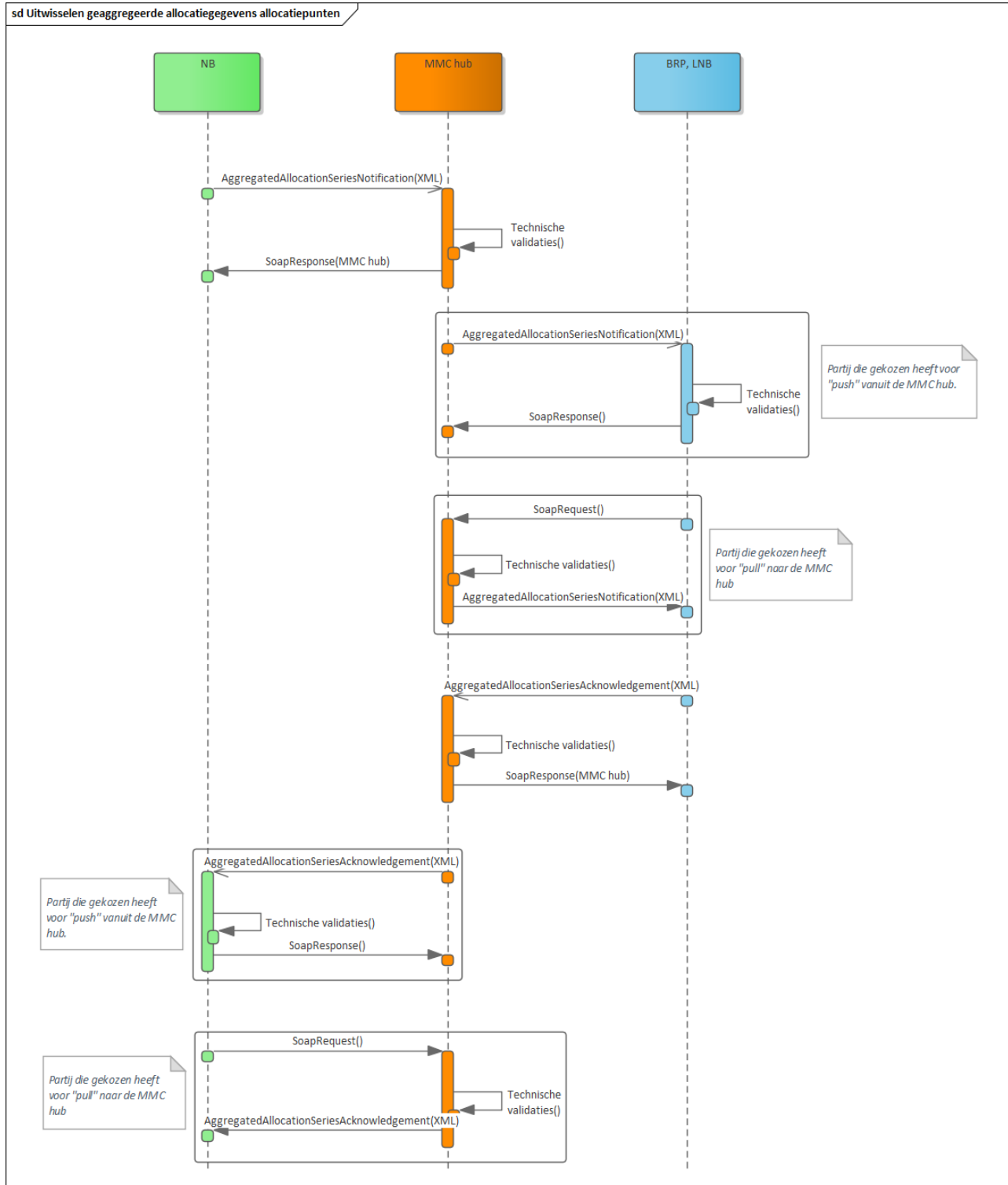


Figure 3 The sequence diagram for Exchange aggregated allocation data allocation points between SO and BRP, TSO via the MMC-hub

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 system operator to the MMC-hub. The MMC-hub is responsible for routing, preparing and forwarding the concerned combined allocation data in the *AllocationFactorSeriesNotification* notification to the recipient.

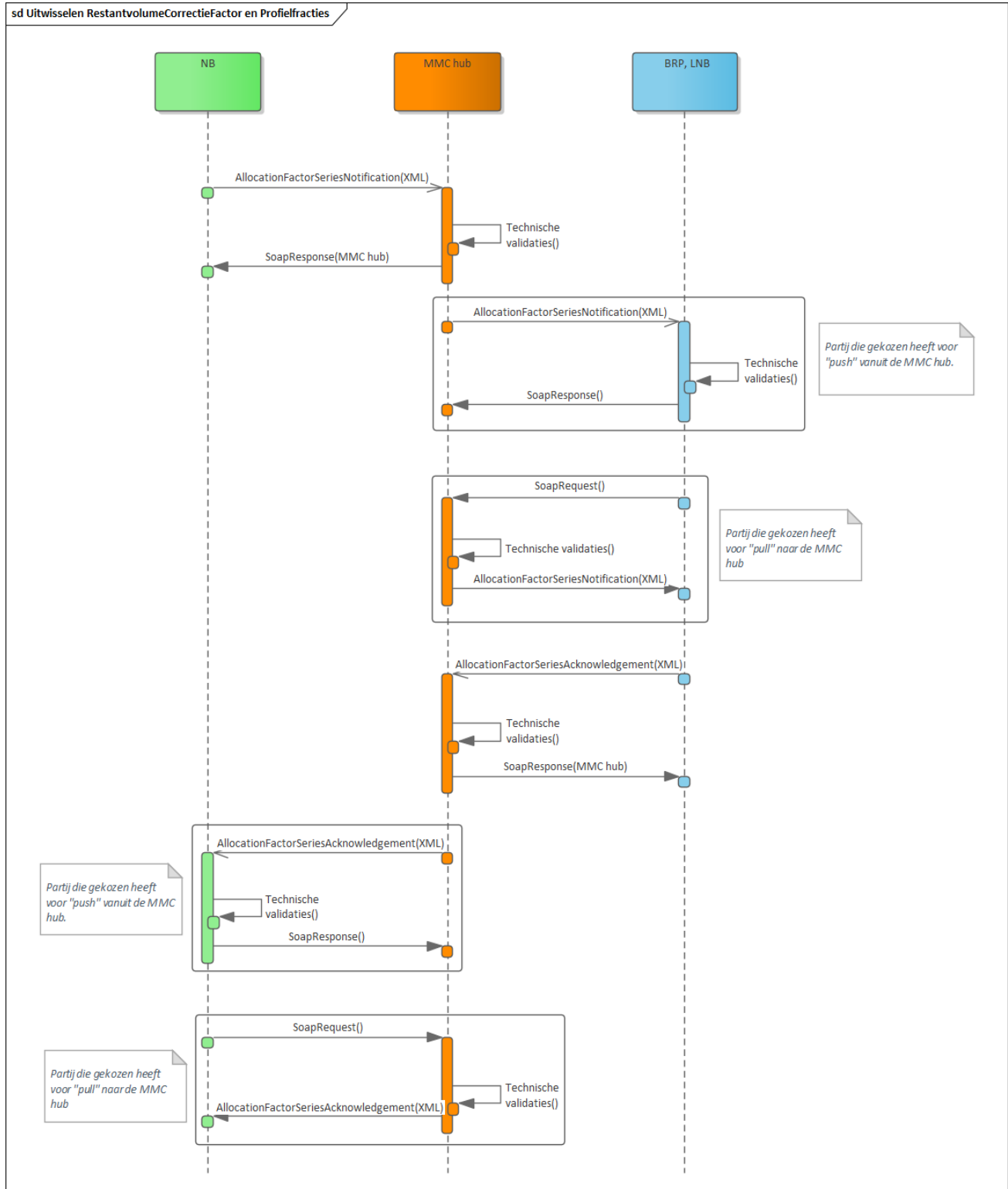


Figure 4 The Sequence diagram for Exchange Residual Volume Correction Factor (RCF) and Profile fractions between SO and BRP, TSO via the MMC-hub

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 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].
Operation	

⁵⁰ To be agreed with TenneT.

User	SO-er
Function	Submit <i>Notification Exchange</i> allocation data individual allocation point
Soap action	See WSDL
Input notification	AllocationSeriesNotification
XSD	AllocationSeriesNotification_1p0
Output notification	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 use ⁵¹	
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].

⁵¹ 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 notification	AggregatedAllocationSeriesNotification
	XSD	AggregatedAllocationSeriesNotification_1p0
	Output notification	AggregatedAllocationSeriesAcknowledgement
	XSD	AggregatedAllocationSeriesAcknowement_1p0

6.3 Properties service 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 notification 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 ⁵²	
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].

⁵² To be agreed with TenneT.

Operation		
User		SO-er
Function		Submit <i>Notification Exchange RCF/Profile fractions</i>
Soap action		See WSDL
	Input notification	AllocationFactorSeriesNotification
	XSD	AllocationFactorSeriesNotification_1p0
	Output notification	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" notifications 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].

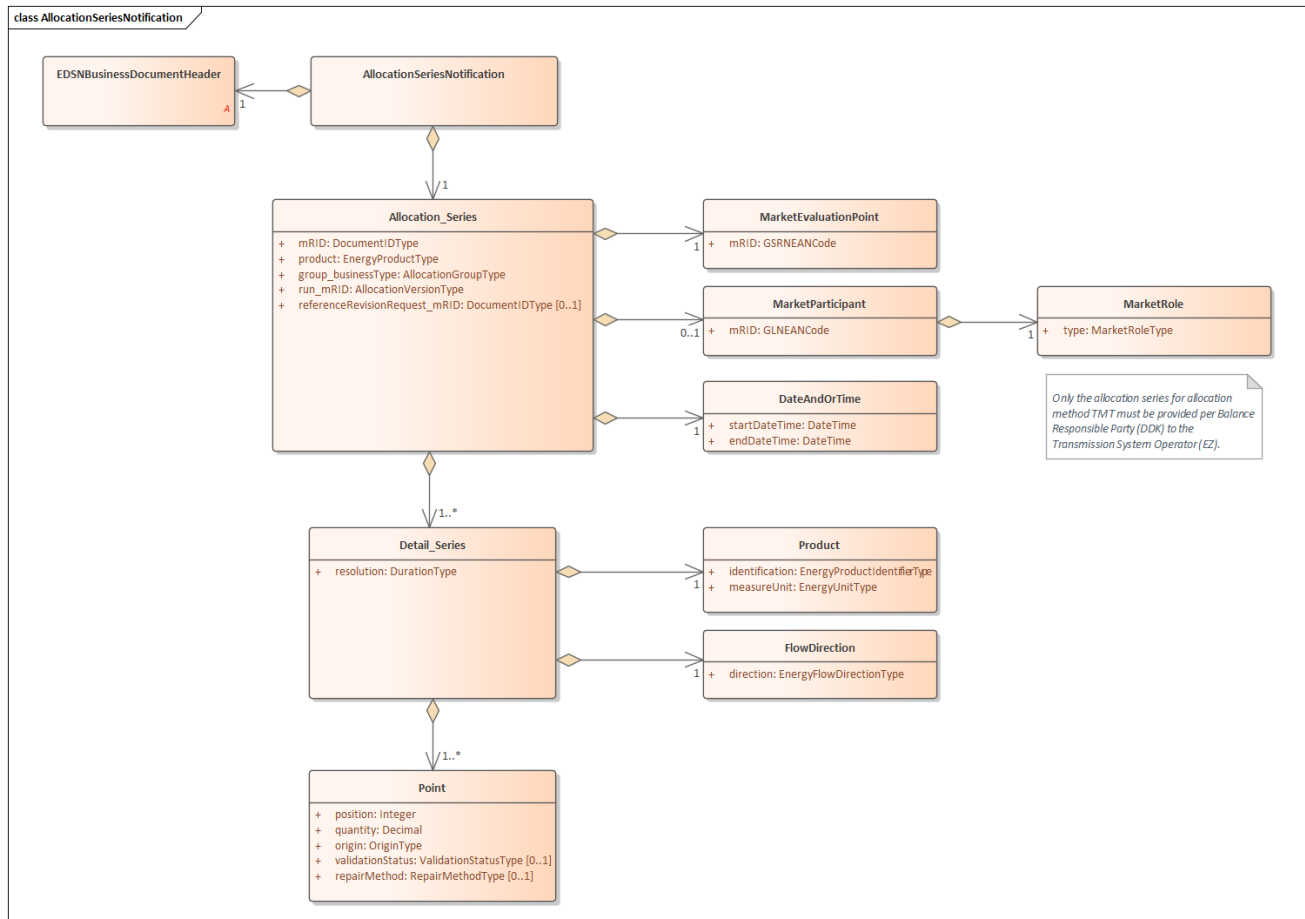
For more information on data types, please refer to NEDU EDSN Design Choices[2].

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.	Notification 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 revisions 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)

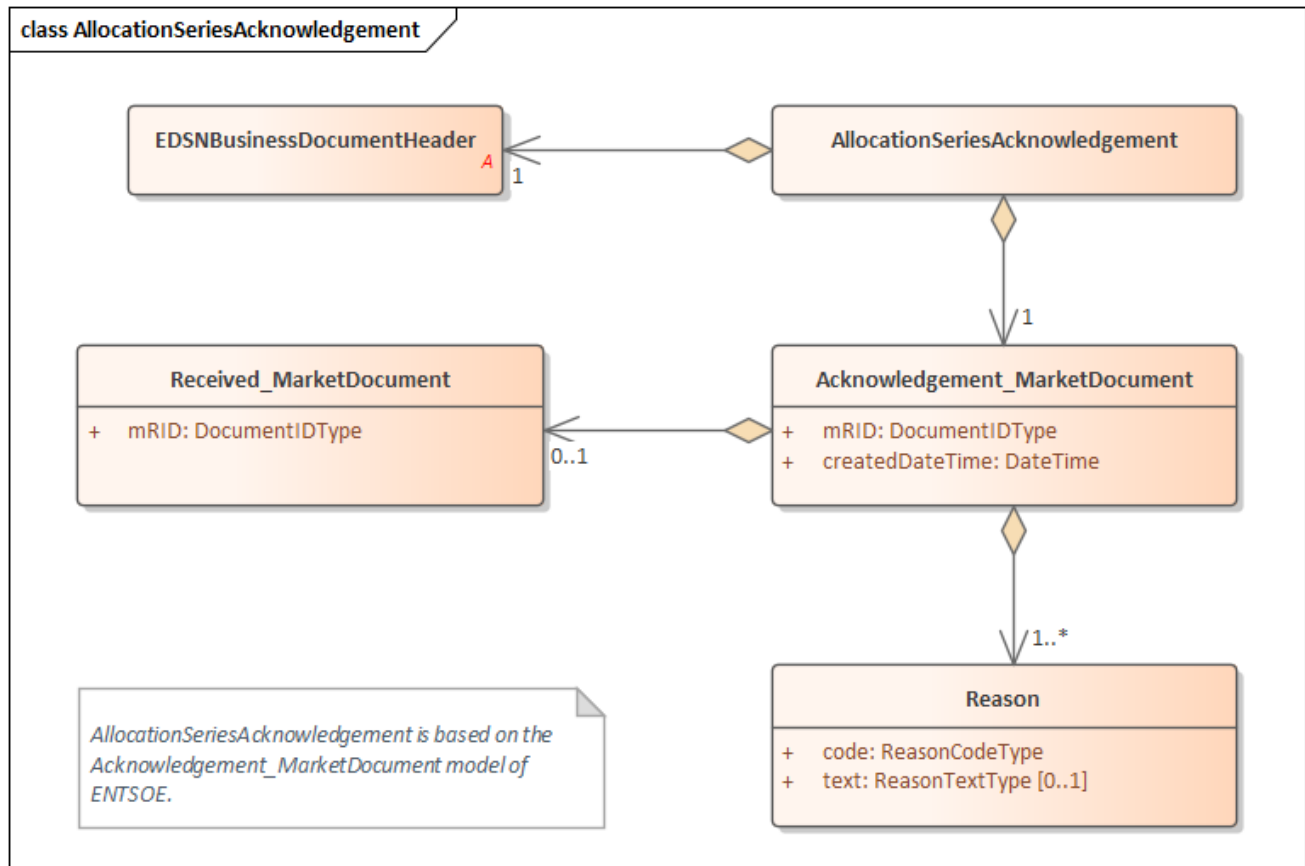
Point

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.	Notification 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 notification

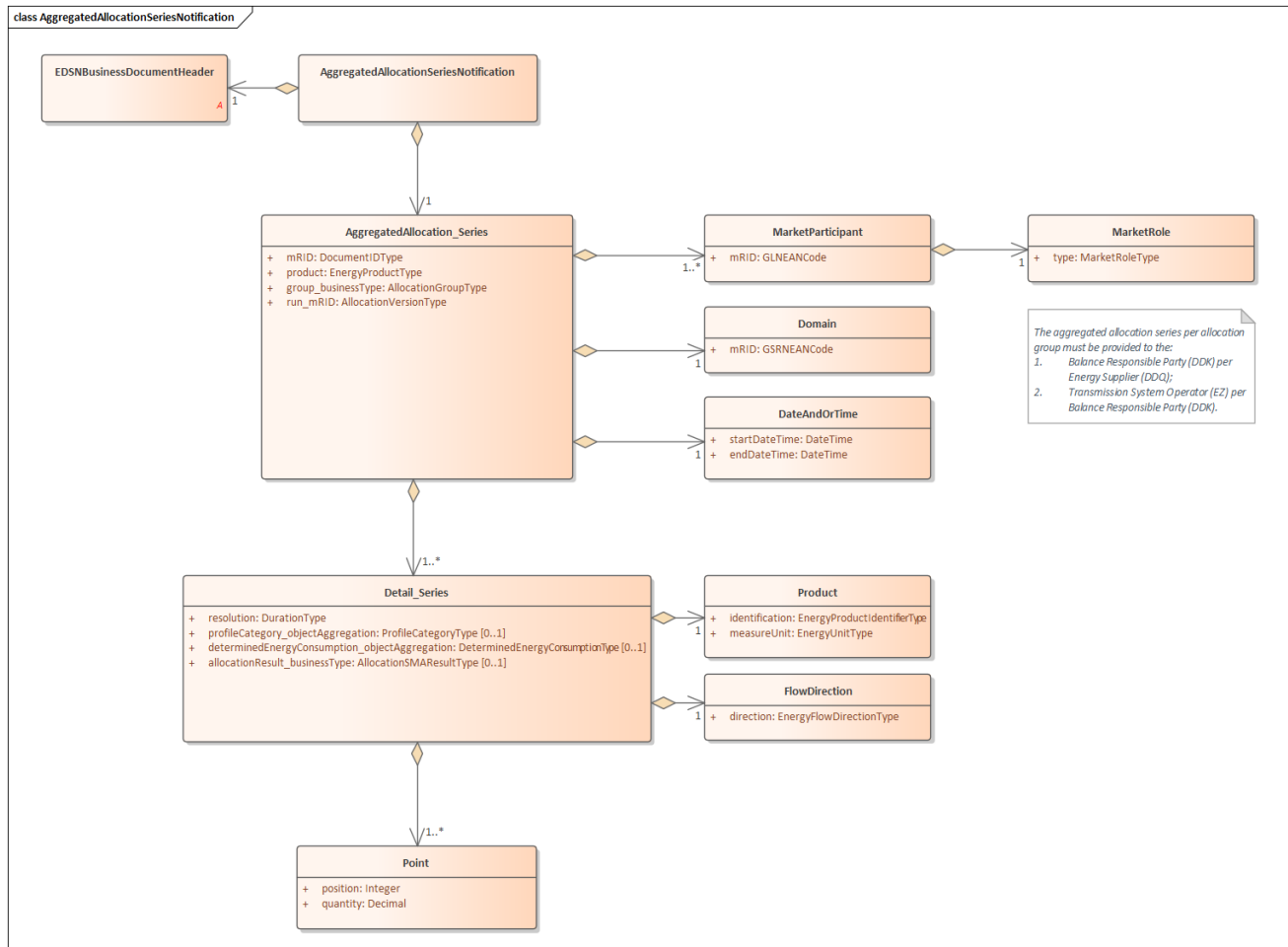
Reason

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 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.	Notification 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 Origin Indication (for SMA)

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)

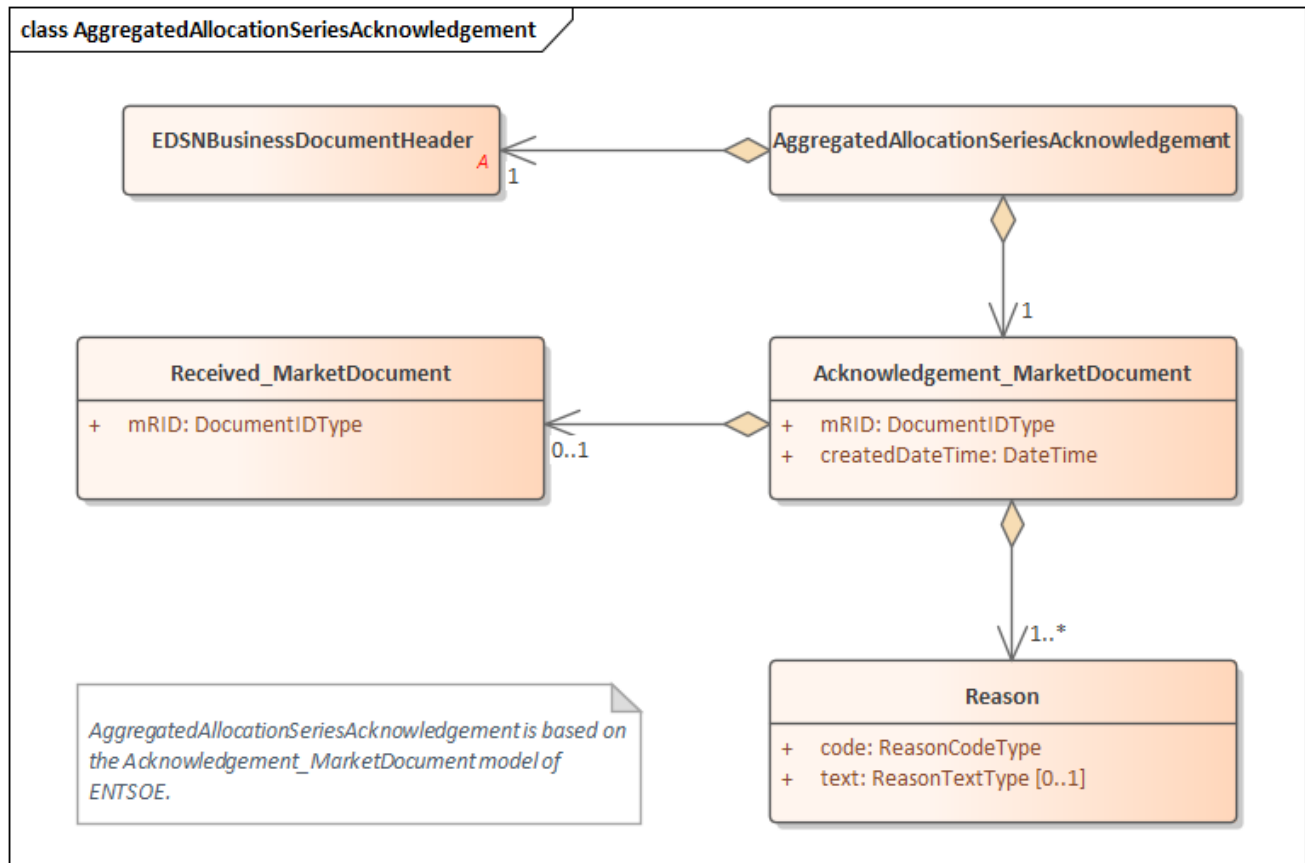
Point

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.	Notification 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 notification

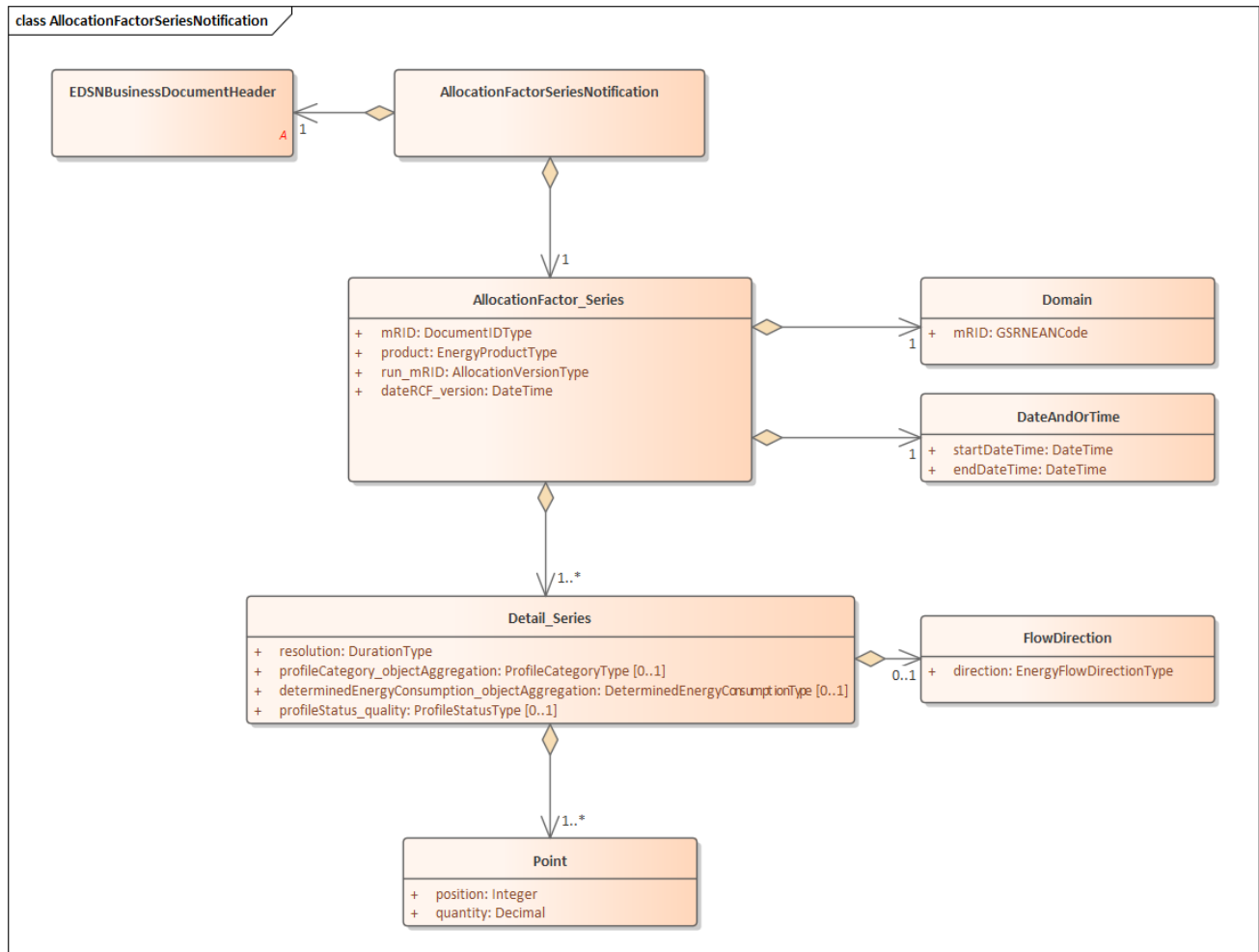
Reason

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 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.	Notification 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

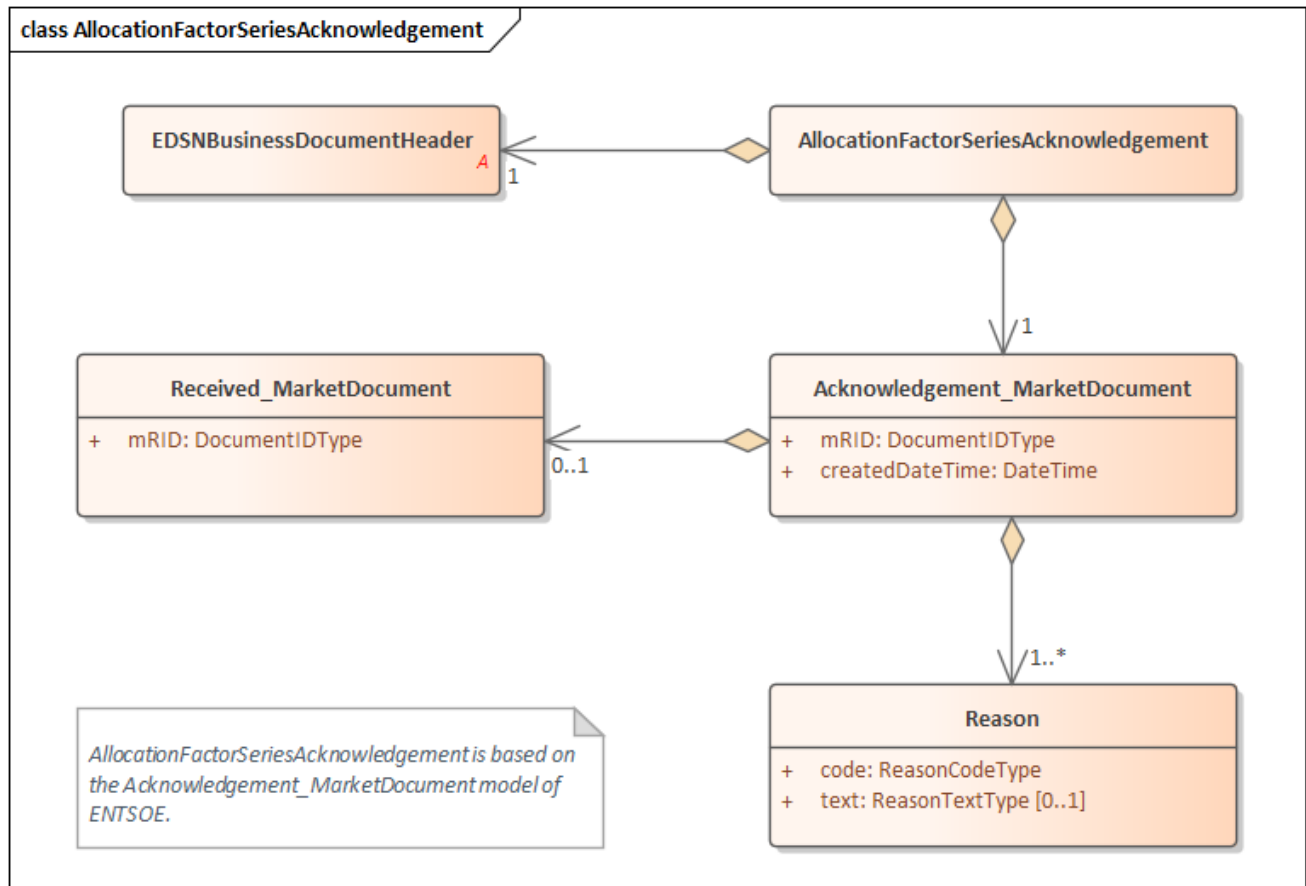
FlowDirection

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.	Notification 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 notification

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 identifier (UUID)