



Technical Guide

Measurements & Allocations Documents

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Revision History

Version	Release	Date	Paragraph	Comments
Concept	1	2020-12-23		First draft
1.0	2	2021-03-31		- Added BRP to definitions - Textual adjustments
1.1	3	2021-06-21		Corrections • Endpoints VolumeInstallationSeries • Endpoints MeasurementSeriesRevision
1.2	4	2021-08-06		Added Endpoint for Qualification Environment Updated endpoints due to new XSD & WSDL Removed versioning of XSD and WSDL throughout document and addendum
1.3	5	2021-08-31		Added to this version history the listing of the XSDs that changed in the Market to Market WDLS and MMC HUB WSDLs with revision 1.2(6-8-2021): • AllocationVolumeRevisionResponse_1p1.xsd replaces AllocationVolumeRevisionResponse_1p0.xsd • MeasurementSeriesRevisionResponse_1p1.xsd replaces MeasurementSeriesRevisionResponse_1p0.xsd • MeasurementSeriesAcknowledgement_3p1.xsd replaces MeasurementSeriesAcknowledgement_3p0 • VolumeInstallationSeriesAcknowledgement_1p1.xsd replaces VolumeInstallationSeriesAcknowledgement_1p0.xsd • VolumeSeriesAcknowledgement_1p1.xsd replaces VolumeSeriesAcknowledgement_1p0.xsd • VolumeSeriesNotification_2p0.xsd replaces VolumeSeriesNotification_1p0.xsd Correction on Content type: • ACK_ALLOCATION_VOLUME_REVISION_REQUEST_N91 replaces ACK_ALLOCATION_VOLUME_REVISION_N91 Correction on List request: • List with CorrelationID not mandatory

1.4 6 2021-12-21

Throughout document: *TenneT Web Service Guide* naming changed to *MMC HUB Web Services Guide*

Par. 1.3 changes:

- TenneT TSO also mentioned as an initiator of MeasurementSeries

Par. 2.3.1 changes:

- Qualifying environment removed for all messages
- Additional explanation on TQF and NEDU GAT

Par. 2.3.2 changes:

- Qualifying environment removed for Pull from MMC HUB

Par. 2.4 changes:

- CorrelationId mandatory

Par. 2.5 changes:

- Notifications and RevisionRequests 14 day retention period (was initially not defined)

Par. 2.8 table 1 changes:

- Version numbers of XSD added
- MeasurementSeries message exchange between MRP and TSO (Energy) added
- MeasurementSeries message exchange between MRP and TSO (Gas) added
- VolumeSeries message exchange between MRP and TSO(Gas) removed because of non-existence
- MeasurementSeriesRevisionRequest exchange between TSO(Gas) and MRP because of non-existence
- AllocationVolumeRevisionRequest message exchange between BRP and TSO(Gas) removed because of non-existence

Par. 2.8 table 2 removal of content types:

- MEASUREMENT_SERIES_NOTIFICATION_N13
- ACK_MEASUREMENT_SERIES_NOTIFICATION_N13

Addendum 3 added where to find in MyTenneT:

- TenneT Transport and Signing certificates
- Market party signing certificates

1.5 7 2022-01-31

New reference document "*Business Service – Uitwisselen allocatiegegevens elektriciteit v1.0*" addedPar. 1.3 changes:

- Added to interface overview the AllocationSeries, AllocationFactorSeries and AggregatedAllocationSeries Notifications and their corresponding Acknowledgements

Par 2.2. changes:

- New WSDLs for the AllocationSeries, AllocationFactorSeries and AggregatedAllocationSeries Notifications and their corresponding Acknowledgements

Par. 2.3 changes:

- New endpoints added for AllocationSeries, AllocationFactorSeries and AggregatedAllocationSeries Notifications and their corresponding Acknowledgements
- Remarks added for Tranche1 and Tranche 2
- TenneT production EANS mentioned for Tranche 1 and 2.

Par 2.5 Changes:

- The List on the MMCHUB has been extended with filter on content type(s), order by oldest message first and limit the list result to a maximum number

Par 2.8 table 1 changes:

- Added: AllocationSeries, AllocationFactorSeries and AggregatedAllocationSeries Notifications and their corresponding Acknowledgements
- WSDLs changed from version 2.0 to 2.1 for:
 - VolumeSeries, VolumeInstallationSeries, MeasurementSeries and corresponding Acknowledgements
 - MeasurementSeriesRevision, AllocationVolumeRevision and their corresponding Response
 - Paragraph 2.8 for further detailing of changes in 2.1 version WSDLs

Par 2.8 table 2 changes:

- Removed content types:
VOLUME_SERIES_NOTIFICATION_N61 and ACK_VOLUME_SERIES_NOTIFICATION_N61
Added: Content types for the AllocationSeries, AllocationFactorSeries and AggregatedAllocationSeries Notifications and their corresponding Acknowledgements content types

Par 2.5 changes:

- Added: Polling frequency List request and how to use the Get (see MMC-HUB web services guide)
- Added: Retention period for TQF

1.7 9 2022-06-13

environment can differ from production environment

- Added: Reference to Business Service documents for Availability of Acknowledgements and RevisionResponses in the MMC-HUB

Par 2.3.1 and subparagraphs:

- Use of fictitious EANs for Testing and Qualifying against various market roles for Tranche-1 and Tranche-2
- Connected Systems Tests replaces NEDU GAT Test text
- Tranche-2 EANs for message exchange in production environment
- Changed endpoints for the Notifications of AllocationSeries, AllocationFactorSeries and AggregatedAllocationSeriesNotification

Par 2.8:

- Addendum I: Reference to new WSDLs version 1.1 for AggrgatedAllocationSeriesNotification
- Addendum I: Specification of which messages belong to Tranche-1 and Tranche-2

1.8 10 2022-09-19

Par 2.8:

- mmchub-AllocationFactorSeries-v2.0.wsdl replaces mmchub-AllocationFactorSeries-v1.0 wsdl. In line 149 of WSDL a correction: ttp replaced by http.

1.9 11 2023-10-13

Reference documents added:

- *Uitwisselen volumes voor settlement en reconciliatie elektriciteit*
- *Uitwisselen settlementresultaten elektriciteit*

Par 1.3:

- Interface overview tranche 3 Settlement and Reconciliation messaging added
- Paragraph generic interface description i.s.o. specific

Par 2.2:

- Tranche 3 Settlement and Reconciliation WSDL's list added

Par 2.3.1:

- Supplier role added with fictitious EAN for testing against in th TQF
- TenneT production EAN for Tranche 3

			messaging
			Par 2.3.1.3:
			Tranche 3 Endpoints for Settlement and Reconciliation webservice added
			2.8:
			- Tranche 3 Settlement and Reconciliation WSDL's contents and message flow added - Tranche 3 content types added for Settlement and Reconciliation messaging
1.91	13	2024-01-12	Par 1.3, 2.2, 2.3.1.3: AggregatedVolumeReconciliationSeries messaging and related WSDL's removed
			Par 2.8: Content types removed:
			- AGGREGATED_VOLUME_RECONCILIATION_SERIES_NOTIFICATION_N281 up to and incl, AGGREGATED_VOLUME_RECONCILIATION_SERIES_NOTIFICATION_N283 - ACK_AGGREGATED_VOLUME_RECONCILIATION_SERIES_NOTIFICATION_N281 up to and incl. ACK_AGGREGATED_VOLUME_RECONCILIATION_SERIES_NOTIFICATION_N283
1.92	14	2024-01-15	Par 2.3.1: Reference to usage of <TestRequest> before 28-7-2022 removed.
1.93	15	2024-01-22	Par 2.8: WSDLs for AggregatedvolumeSettlementResultsSeries correction on version number v1.1 iso v.1.0.
1.94	16	2024-05-17	Par 2.8: mmchub-AggregatedVolumeSettlementResultsSeries v1.2 WSDL new. Correction on v1.1 due to incorrect soap action on operation "getAggregatedVolumeSettlementResultSeriesAcknowledgement"

Reference documents:

Via MyTenneT:

1. MMC HUB Web Services Guide

Via Mijn MFFBAS:

2. Business Service - Uitwisselen meetgegevens tijdseries
3. Business Service - Uitwisselen meetgegevens volumes en meterstanden
4. Business Service - Uitwisselen meetgegevens volumes installatie

5. *Business Service - Uitwisselen herzieningsverzoeken*
6. *Business Service - Uitwisselen allocatiegegevens elektriciteit*
7. *Business Service - Uitwisselen volumes voor settlement en reconciliatie elektriciteit*
8. *Business Service - Uitwisselen settlementresultaten elektriciteit*

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1. Introduction

1.1 Definitions

MMC-HUB	Market-Market-Communication HUB, the HUB that TenneT offers market participants to exchange messages with TenneT or with other market participants
MRP	Metering Responsible Party
BRP	Balance Responsible Party
DSO	Distribution System Operator
TSO	Transmission System Operator
TQF	Test and Qualification Facility

See the MMC HUB Web Services *Guide*, for further definitions.

1.2 Purpose

This technical guide is one of the technical guides drafted by TenneT TSO B.V. in addition to the *MMC HUB Web Services Guide*, the implementation guides (various *Business Services* reference documents) and the WSDL's in order to provide specific document and channel related details, required for energy market communications.

Its purpose is to provide additional technical details on how to exchange XML documents that are used to support the Measurements and Allocations process. This between the market participants and TenneT TSO using web services and exchanged via the MMC HUB.

Generic information on the web services channel provided by TenneT can be found in the *MMC HUB Web Services Guide*, specific and detailed information on the Measurement & Allocations process and the content of the documents exchanged can be found in the various reference documents for the *Business Services*. The validations on the data exchanged are also described in the *Business Services* documents. The technical interface specifications are provided in the WSDL documents, of which the names are listed in this document.

1.3 Measurements & Allocations interface overview

The Measurements & Allocations interface allows market participants to submit Measurement and Allocation data to TenneT and market participants via the MMC HUB in XML format through SOAP/HTTPS based web services.

TenneT provides means for:

- the MRP to issue MeasurementSeries, VolumeSeries and VolumeInstallationSeries data and to obtain the Acknowledgements on this data;
- the TSO to issue MeasurementSeries and to obtain the Acknowledgement on this data
- the DSO, BRP and TSO market participants to issue the MeasurementSeriesRevision requests and obtain the Response on this request;
- the BRP to issue the AllocationVolumeRevision requests and to obtain the Response on this request.
- The DSO and TSO to issue the AllocationSeries and to obtain the Acknowledgement on this data
- The DSO to issue the AllocationFactorSeries and to obtain the Acknowledgement on this data
- The DSO and TSO to issue the AggregatedAllocationSeries and to obtain the Acknowledgement on this data
- The DSO,FSO, TSO to issue the SettlementSeries, VolumeSettlementSeries, AggregatedSettlementSeries, AggregatedVolumeSettlementSeries and to obtain the Acknowledgement on this data
- TSO to issue AggregatedSettlementResults and AggregatedVolumeSettlementResults and obtain the Acknowledgement on this data

The generic process for Measurements & Allocations is described below, the detailed process is described in the various Business Services.

A market party or TSO is the initiator of the SOAP communication by invoking a web service to issue a market document. The MMC HUB responds by directly sending a synchronous SOAP-response indicating correct reception (a CorrelationID is then returned) or general SOAP errors, e.g., XSD validation error in case the data is not compliant with the technical specification according to the XSD.

After correct reception the market document is then available for the recipient party via the MMC HUB. The document may either be collected (pulled) from the MMC HUB by the recipient through a web service (provided by TenneT) or pushed via the MMC HUB to a specific web service provided by the recipient but that is specified by TenneT.

Processing of the documents in the background is a timely process. Therefore, the functional Acknowledgment is to be returned a-synchronously from the receiving market participant via the MMC HUB.

The functional acknowledgement response may either be collected (pulled) from the MMC HUB by the

Issuer through a web service provided by TenneT or pushed via the MMC HUB when the issuer provides a web service that is specified by TenneT.

1.4 Issuing the Measurements & Allocations Data

1.4.1 Compose document and submit

To issue a Notification, Acknowledgement, Request or Response the following actions will have to be performed:

- the XML market document needs to be composed according the XSD specification in the corresponding WSDL. The Business Services describe all due information of the document structure and attribute semantics. When the XML document is composed it should be validated against the XSD (provided in the corresponding WSDL) prior to issuing it. Usually this is functionality offered by the middleware;
- after composing the XML the SOAP-request is to be constructed using the corresponding WSDL. All required meta-data in the SOAP-header should be provided, as described in the and this guide. The XML is to be added as pay-load data;
- the pay-load data must be signed (the specifications for signing are mentioned in the *MMC HUB Web Services Guide*) and the signature is to be part of the SOAP-Envelope and then the SOAP web service is to be invoked (usually using designated middleware). The endpoints of the web services are listed further up in this document.

Note: *this document does not elaborate on how the market party technically performs these tasks, as they depend on the specific software and middleware solutions that may differ per party.*

1.4.2 Receive and handle the SOAP response

The MMC HUB responds to the SOAP-request with a SOAP-response (synchronous reply). This response indicates whether the document is received correctly (i.e. the communication was handled correctly and the document syntax did not contain errors). When received correctly the SOAP-response contains the CorrelationId of the message, which can be used for further communication. A SOAP-fault may indicate that the request was not correctly received or it was malformed (see for further details the reference documents: *Business Services* and the *MMC HUB Web Services Guide*). The result of the SOAP fault is that the message cannot not be processed. Causes e.g.:

- If the service request was malformed: find the cause of issue, and correct it. Once corrected: reissue the request.
- If the service is not available there may be different causes. A retry should be done after a time interval (e.g. 1 minute) which may allow the service to become available again. If even after multiple replies (e.g. 10 times) the web service remains unavailable TenneT may be notified of the issue.

Note: *As the web service is idempotent, there is no risk for errors in the backend when the message*

1.4.3 Receive Acknowledgement or Response Document

The Acknowledgement or Response Document (a-synchronous reply) specifies the result of the handling of the issued document. It might be ok, or not if the functional validation failed. In that case the Acknowledgement or Response contains the errors on which the document has been declined. The market party may correct the document and reissue it with a different TechnicalMessageID, and for what to do with the document version number, see the Business Services.

As mentioned above, there are two ways how an Acknowledgement or Response Document may be received: push or pull via the MMC HUB.

2. Technical Information

2.1 Testing

TenneT offers the TQF in order to test the provided web services to exchange data. The TQF endpoints (along with the production endpoints) are mentioned in this chapter.

2.2 WSDLs

The following zip files with the WSDL and xsd's are available for the information exchange between market participants:

1. Market-documents WSDL's
 - a. MeasurementSeries-wsdl
 - b. VolumeSeries-wsdl
 - c. VolumeInstallationSeries-wsdl
 - d. MeasurementSeriesRevision-wsdl
 - e. AllocationVolumeRevision-wsdl
 - f. AllocationSeries-wsdl
 - g. AllocationFactorSeries-wsdl
 - h. AggregatedAllocationSeries-wsdl
 - i. SettlementSeries-wsdl
 - j. VolumeSettlementSeries-wsdl
 - k. AggregatedSettlementSeries-wsdl
 - l. AggregatedVolumeSettlementSeries-wsdl
 - m. AggregatedSettlementResultSeries-wsdl
 - n. AggregatedVolumeSettlementResultSeries-wsdl
2. MMC-HUB WSDL's
 - a. mmchub-MeasurementSeries-wsdl
 - b. mmchub-VolumeSeries-wsdl
 - c. mmchub-VolumeInstallationSeries-wsdl
 - d. mmchub-MeasurementSeriesRevision-wsdl
 - e. mmchub-AllocationVolumeRevision-wsdl
 - f. mmchub-AllocationSeries-wsdl
 - g. mmchub-AllocationFactorSeries-wsdl
 - h. mmchub-AggregatedAllocationSeries-wsdl
 - i. mmchub-SettlementSeries-wsdl
 - j. mmchub -VolumeSettlementSeries-wsdl
 - k. mmchub-AggregatedSettlementSeries-wsdl
 - l. mmchub-AggregatedVolumeSettlementSeries-wsdl
 - m. mmchub-AggregatedSettlementResultSeries-wsdl
 - n. mmchub-AggregatedVolumeSettlementResultSeries-wsdl

See addendum 1 for a graphical overview of the various WSDL's(the version used), its contents and needed implementation per market participant.

The Market-document WSDL's allow market participants to:

1. **send** the Notifications or Requests via the MMC HUB,
2. **receive** the Acknowledgements or Response Documents from the MMC HUB via **push**
3. **send** an isAlive operation to the MMC-HUB for a specific web service.

2.2.2 MMC-HUB WSDL

The MMC-HUB WSDL's allow market participant to

1. **pull** the Notifications, Requests, Acknowledgements or Response Documents **from** the MMC-HUB.
2. **send** an isAlive operation to the MMC-HUB.

In the MMCHUB WSDL's a List and Get operation are available:

1. With the List operation:
 - an overview of all messages which are available for the market participant in the MMC-HUB is shown or

a specific message can be listed based on a specified correlationId (if known, found in the aforementioned synchronous SOAP-response).

2. With the Get operation **one** message can be retrieved from the MMC HUB.

2.3 Endpoints for TQF and Production environment

2.3.1 Sending messages to the MMC-Hub

Market participants on either side of the communication flows (Notification <-> Acknowledgement or RevisionRequest <-> RevisionResponse) send their messages through the MMC-Hub. See *addendum 1* for a detailed overview of each market participant role, the message flow between the market parties and which messages belong to Tranche-1 and Tranche-2.

The following environments are present for the MMC-Hub message exchange:

1. TQF MMC-Hub environment
2. Production MMC-Hub environment

The endpoints and the specifics of both of both environments are described in the next paragraphs.

2.3.1.1 TQF MMC-Hub environment and test EANs to be used

The TQF environment mentioned below is used for:

1. Test and Qualifying and
2. Connected Systems Tests (**parties that are to participate in these Connected Systems tests are involved via the project**)

Ad1 Test and Qualifying

- Testing and Qualifying in the TQF is supported by fictitious receiver identifier EANs

where each fictitious EAN represents a TQF market role to test against.

The sending party must use the correct fictitious receiver EAN as receiver (in the <receiverId> in the SOAP Header and in the <ReceiverID> in the SOAP Body) in order to have the message validated against the desired market role.

The TQF market roles and their corresponding EANs are:

- **BRP role:** 8716867111118
- **DSO:** 8716867111132
- **MRP:** 8716867111149
- **TSO-G:** 8716867111156
- **TSO-E/LNB:** 8716867111163
- **Supplier:** 8716867111170
- use the TQF Signing certificate (to be retrieved via MyTenneT, see addendum 3)
- use the TQF Transport certificate (to be retrieved via MyTenneT, see addendum 3)

Ad 2 Connected Systems Tests (parties that are to participate in these Connected Systems Tests are involved via the project):

- For test messages that are sent to TenneT use:
 - For Tranche-1 Connected System Tests:
 - the EAN 8716867999990 as <receiverId> element in the SOAP Header
 - For Tranche-2 Connected Systems Tests:
 - Dependent on the initiator of the Message Exchange, see for which values par. 2.3.1.2.
 - For Tranche-3 Connected Systems Tests:
 - Dependent on the type of Message exchanged, see for which values par. 2.3.1.2.
 - Use the **TenneT TEST** signing certificate public key (to be retrieved via MyTenneT, see addendum 3)
 - Use the **TQF Transport** certificate (to be retrieved via MyTenneT, see addendum 3)
- For messages sent to other parties use:
 - their EAN-13 as <receiverId> element in the SOAP Header
 - their test signing certificate public key (to be retrieved via MyTenneT (see addendum 3) or from market party)
 - the TQF Transport certificate (to be retrieved via MyTenneT, see addendum 3)

2.3.1.2 Production environment and TenneT EANs to be used

The Production environment mentioned below is the environment where production messages are exchanged.

The TenneT EANs for production differ for messages exchange in Tranche-1 Tranche-2 and Tranche-3 (see par 2.8 Addendums for listing of Tranche-1, Tranche-2 and Tranche-3 messages).

For Tranche-1 the TenneT EAN:

- TenneT uses 8716867999990 in all message exchange.

For Tranche-2 the TenneT EANs:

- When a market party is the initiator of the message exchange and the recipient of the corresponding Acknowledgement, TenneT uses EAN 8716867999983 in the message exchange.
- When TenneT is the initiator of the message exchange and the recipient of the corresponding acknowledgement, TenneT uses EAN 8716867999990 in the message exchange.

For Tranche-3 the TenneT EANs:

- TenneT uses EAN 8716867999990 for issuing the SettlementSeries, VolumeSettlementSeries, AggregatedSettlementSeries and the AggregatedVolumeSettlementSeries.
- TenneT uses EAN 8716867999983 for receiving the AggregatedSettlementSeries, AggregatedVolumeSettlementSeries .
- TenneT uses EAN 8716867999983 for issuing the AggregatedSettlementResultSeries AggregatedVolumeSettlementResultSeries.

2.3.1.3 TQF and Production endpoints

MeasurementSeries

TQF environment:

- <https://sys.tqf.svc.tennet.nl/Measurements Allocations/MeasurementSeriesNotification/v2.0>
- <https://sys.tqf.svc.tennet.nl/Measurements Allocations/MeasurementSeriesAcknowledgement/v2.0>
- <https://sys.tqf.svc.tennet.nl/Measurements Allocations/isAlive/v2.0>

Production environment:

- <https://sys.svc.tennet.nl/Measurements Allocations/MeasurementSeriesNotification/v2.0>
- <https://sys.svc.tennet.nl/Measurements Allocations/MeasurementSeriesAcknowledgement/v2.0>
- <https://sys.svc.tennet.nl/Measurements Allocations/isAlive/v2.0>

VolumeSeries

TQF environment:

- <https://sys.tqf.svc.tennet.nl/Measurements Allocations/VolumeSeriesNotification/v2.0>
- <https://sys.tqf.svc.tennet.nl/Measurements Allocations/VolumeSeriesAcknowledgement/v2.0>
- <https://sys.tqf.svc.tennet.nl/Measurements Allocations/isAlive/v2.0>

Production environment:

- <https://sys.svc.tennet.nl/Measurements Allocations/VolumeSeriesNotification/v2.0>
- <https://sys.svc.tennet.nl/Measurements Allocations/VolumeSeriesAcknowledgement/v2.0>
- <https://sys.svc.tennet.nl/Measurements Allocations/isAlive/v2.0>

VolumeInstallationSeries

TQF environment:

- <https://sys.tqf.svc.tennet.nl/Measurements Allocations/VolumeInstallationSeriesNotification/v2.0>
- <https://sys.tqf.svc.tennet.nl/Measurements Allocations/VolumeInstallationSeriesAcknowledgement/v2.0>
- <https://sys.tqf.svc.tennet.nl/Measurements Allocations/isAlive/v2.0>

Production environment:

- <https://sys.svc.tennet.nl/Measurements Allocations/VolumeInstallationSeriesNotification/v2.0>
- <https://sys.svc.tennet.nl/Measurements Allocations/VolumeInstallationSeriesAcknowledgement/v2.0>
- <https://sys.svc.tennet.nl/Measurements Allocations/isAlive/v2.0>

MeasurementSeriesRevision

TQF environment:

- <https://sys.tgf.svc.tennet.nl/Measurements Allocations/MeasurementSeriesRevisionRequest/v2.0>
- <https://sys.tgf.svc.tennet.nl/Measurements Allocations/MeasurementSeriesRevisionResponse/v2.0>
- <https://sys.tgf.svc.tennet.nl/Measurements Allocations/isAlive/v2.0>

Production environment:

- <https://sys.svc.tennet.nl/Measurements Allocations/MeasurementSeriesRevisionRequest/v2.0>
- <https://sys.svc.tennet.nl/Measurements Allocations/MeasurementSeriesRevisionResponse/v2.0>
- <https://sys.svc.tennet.nl/Measurements Allocations/isAlive/v2.0>

AllocationVolumeRevision

TQF environment:

- <https://sys.tgf.svc.tennet.nl/Measurements Allocations/AllocationVolumeRevisionRequest/v2.0>
- <https://sys.tgf.svc.tennet.nl/Measurements Allocations/AllocationVolumeRevisionResponse/v2.0>
- <https://sys.tgf.svc.tennet.nl/Measurements Allocations/isAlive/v2.0>

Production environment:

- <https://sys.svc.tennet.nl/Measurements Allocations/AllocationVolumeRevisionRequest/v2.0>
- <https://sys.svc.tennet.nl/Measurements Allocations/AllocationVolumeRevisionResponse/v2.0>
- <https://sys.svc.tennet.nl/Measurements Allocations/isAlive/v2.0>

AllocationSeries

TQF environment:

- <https://sys.tgf.svc.tennet.nl/Measurements Allocations/AllocationSeriesNotification/v1.0>
- <https://sys.tgf.svc.tennet.nl/Measurements Allocations/AllocationSeriesAcknowledgement/v1.0>
- <https://sys.tgf.svc.tennet.nl/Measurements Allocations/isAlive/v2.0>

Production environment:

- <https://sys.svc.tennet.nl/Measurements Allocations/AllocationSeriesNotification/v1.0>
- <https://sys.svc.tennet.nl/Measurements Allocations/AllocationSeriesAcknowledgement/v1.0>
- <https://sys.svc.tennet.nl/Measurements Allocations/isAlive/v2.0>

AllocationFactorSeries

TQF environment:

- <https://sys.tgf.svc.tennet.nl/Measurements Allocations/AllocationFactorSeriesNotification/v1.0>
- <https://sys.tgf.svc.tennet.nl/Measurements Allocations/AllocationFactorSeriesAcknowledgement/v1.0>
- <https://sys.tgf.svc.tennet.nl/Measurements Allocations/isAlive/v2.0>

Production environment:

- <https://sys.svc.tennet.nl/Measurements Allocations/AllocationFactorSeriesNotification/v1.0>
- <https://sys.svc.tennet.nl/Measurements Allocations/AllocationFactorSeriesAcknowledgement/v1.0>
- <https://sys.svc.tennet.nl/Measurements Allocations/isAlive/v2.0>

AggregatedAllocationSeries

TQF environment:

- <https://sys.tgf.svc.tennet.nl/Measurements Allocations/AggregatedAllocationSeriesNotification/v1.0>
- <https://sys.tgf.svc.tennet.nl/Measurements Allocations/AggregatedAllocationSeriesAcknowledgement/v1.0>
- <https://sys.tgf.svc.tennet.nl/Measurements Allocations/isAlive/v2.0>

Production environment:

- <https://sys.svc.tennet.nl/Measurements Allocations/AggregatedAllocationSeriesNotification/v1.0>
- <https://sys.svc.tennet.nl/Measurements Allocations/AggregatedAllocationSeriesAcknowledgement/v1.0>
- <https://sys.svc.tennet.nl/Measurements Allocations/isAlive/v2.0>

SettlementSeries

TQF environment:

- <https://sys.tgf.svc.tennet.nl/Measurements Allocations/SettlementSeriesNotification/v1.0>
- <https://sys.tgf.svc.tennet.nl/Measurements Allocations/SettlementSeriesAcknowledgement/v1.0>
- <https://sys.tgf.svc.tennet.nl/Measurements Allocations/isAlive/v2.0>

Production environment:

- <https://sys.svc.tennet.nl/Measurements Allocations/SettlementSeriesNotification/v1.0>
- <https://sys.svc.tennet.nl/Measurements Allocations/SettlementSeriesAcknowledgement/v1.0>

https://sys.svc.tennet.nl/Measurements_Allocations/isAlive/v2.0

VolumeSettlementSeries

TQF environment:

- https://sys.tqf.svc.tennet.nl/Measurements_Allocations/VolumeSettlementSeriesNotification/v1.0
- https://sys.tqf.svc.tennet.nl/Measurements_Allocations/VolumeSettlementSeriesAcknowledgement/v1.0
- https://sys.tqf.svc.tennet.nl/Measurements_Allocations/isAlive/v2.0

Production environment:

- https://sys.svc.tennet.nl/Measurements_Allocations/VolumeSettlementSeriesNotification/v1.0
- https://sys.svc.tennet.nl/Measurements_Allocations/VolumeSettlementSeriesAcknowledgement/v1.0
- https://sys.svc.tennet.nl/Measurements_Allocations/isAlive/v2.0

AggregatedSettlementSeries

TQF environment:

- https://sys.tqf.svc.tennet.nl/Measurements_Allocations/AggregatedSettlementSeriesNotification/v1.0
- https://sys.tqf.svc.tennet.nl/Measurements_Allocations/AggregatedSettlementSeriesAcknowledgement/v1.0
- https://sys.tqf.svc.tennet.nl/Measurements_Allocations/isAlive/v2.0

Production environment:

- https://sys.svc.tennet.nl/Measurements_Allocations/AggregatedSettlementSeriesNotification/v1.0
- https://sys.svc.tennet.nl/Measurements_Allocations/AggregatedSettlementSeriesAcknowledgement/v1.0
- https://sys.svc.tennet.nl/Measurements_Allocations/isAlive/v2.0

AggregatedVolumeSettlementSeries

TQF environment:

- https://sys.tqf.svc.tennet.nl/Measurements_Allocations/AggregatedVolumeSettlementSeriesNotification/v1.0
- https://sys.tqf.svc.tennet.nl/Measurements_Allocations/AggregatedVolumeSettlementSeriesAcknowledgement/v1.0
- https://sys.tqf.svc.tennet.nl/Measurements_Allocations/isAlive/v2.0

Production environment:

- https://sys.svc.tennet.nl/Measurements_Allocations/AggregatedVolumeSettlementSeriesNotification/v1.0
- https://sys.svc.tennet.nl/Measurements_Allocations/AggregatedVolumeSettlementSeriesAcknowledgement/v1.0
- https://sys.svc.tennet.nl/Measurements_Allocations/isAlive/v2.0

AggregatedSettlementResultSeries

TQF environment:

- https://sys.tqf.svc.tennet.nl/Measurements_Allocations/AggregatedSettlementResultSeriesNotification/v1.0
- https://sys.tqf.svc.tennet.nl/Measurements_Allocations/AggregatedSettlementResultSeriesAcknowledgement/v1.0
- https://sys.tqf.svc.tennet.nl/Measurements_Allocations/isAlive/v2.0

Production environment:

- https://sys.svc.tennet.nl/Measurements_Allocations/AggregatedSettlementResultSeriesNotification/v1.0
- https://sys.svc.tennet.nl/Measurements_Allocations/AggregatedSettlementResultSeriesAcknowledgement/v1.0
- https://sys.svc.tennet.nl/Measurements_Allocations/isAlive/v2.0

AggregatedVolumeSettlementResultSeries

TQF environment:

- https://sys.tqf.svc.tennet.nl/Measurements_Allocations/AggregatedVolumeSettlementResultSeriesNotification/v1.0
- https://sys.tqf.svc.tennet.nl/Measurements_Allocations/AggregatedVolumeSettlementResultSeriesAcknowledgement/v1.0
- https://sys.tqf.svc.tennet.nl/Measurements_Allocations/isAlive/v2.0

Production environment:

- https://sys.svc.tennet.nl/Measurements_Allocations/AggregatedVolumeSettlementResultSeriesNotification/v1.0
- https://sys.svc.tennet.nl/Measurements_Allocations/AggregatedVolumeSettlementResultSeriesAcknowledgement/v1.0
- https://sys.svc.tennet.nl/Measurements_Allocations/isAlive/v2.0

Note that the IsAlive endpoint is always version v2.0 for all Measurements&Allocations endpoints.

The isAlive endpoint is to support connectivity testing and to check if the web service is up and running.

2.3.2 Push and Pull messages via MMC HUB

As mentioned previously the message exchange between the market participants and TenneT TSO is executed via the MMC HUB. A market participant can decide to have messages received directly (automatically pushed) via the MMC HUB or to pull messages from the MMC HUB. Note that pulling of messages is always available. Should a market party want the option of push, this must be specified in the questionnaire.

2.3.2.1 Pull messages via MMC HUB

Market participant are able to pull messages (listed in addendum 1) from the MMC HUB using the LIST-, GET and isAlive operations. The MMC-Hub can be reached via the following endpoints:

- **TQF** environment: <https://sys.tqf.svc.tennet.nl/MMCHub/v1.0>
- **Production** environment: <https://sys.svc.tennet.nl/MMCHub/v1.0>

The IsAlive operation of the MMC HUB is to support connectivity testing (for the acceptance and production environment) and to check if the web service is up and running.

2.3.2.2 Push messages via MMC HUB

If a market participant wants to have messages received directly (pushed) via the MMC HUB, the receiving market participant is to implement endpoints (SOAP/HTTPS-service) for their **TQF** and **Production** environment. A proposal for the naming of the endpoints:.

<base>/<domain>/<messagetype>/<version>

<base> is the market participant specific part of the URL, with separate ones for the **TQF** and **Production** environment.

For example:

<base>/Measurements_Allocations/MeasurementSeriesNotification/v1.0

<base>/Measurements_Allocations/isAlive/v1.0

Et cetera.

2.4 SOAP Envelope Header

The messages exchanged between the market participants have a standard SOAP Header. The SOAP Header is used for routing and identification of the type of data in the market document payload.

The Soap envelope header of a message consists of the following fields¹

- **TechnicalMessageID**
- **CorrelationID** has a value to group related (to correlate) messages: the Notification with the Acknowledgement and the RevisionRequest with the RevisionResponse.
 - The value is optional according to the XSD validation. However it is **mandatory** when sending a Notification, Acknowledgement, RevisionRequest, ResponseResponse. The Acknowledgement and the Revision Response are to use the CorrelationId (or if not present the technicalMessageId) of the original message it is responding to
 - In the case of retrieving messages from the MMC HUB via the pull (list and get), it is optional.
- **SenderID**
- **ReceiverID**
- **CarrierID**
- **ContentType**: has a value which describes the type of data in the payload (see addendum 2 for the allowed values).
 - The value is optional according to the XSD validation. However for using the MMC-Hub it is **mandatory** when sending an Notification, Acknowledgement, RevisionRequest or RevisionResponse to the MMC HUB.
 - In the case of retrieving messages from the MMC HUB via the pull(list and get), it is optional.

Example Message Addressing

```
<MessageAddressing xmlns="http://sys.svc.tennet.nl/MMCHub/Header/v1">
  <technicalMessageId>58321bd5-d166-4371-9c2e-cc405b2274a6</technicalMessageId>
  <correlationId>6ab5dede-f376-4434-a383-2d75c561ece6</correlationId>
  <senderId>1234567890321</senderId>
  <receiverId>9876543210321</receiverId>
  <carrierId>1234567890123</carrierId>
  <contentType>ACK_MEASUREMENT_SERIES_NOTIFICATION_N10</contentType>
</MessageAddressing>
```

2.4.1 ContentTypes

The contentType is a value in the Soap envelope header which describes the type of data in the payload. It is used to route the messages received by the MMC-Hub. A full list of the available contentTypes can be found in Addendum 2.

Points of attention concerning the contentTypes of the RevisionResponses

Both the MeasurementSeriesRevisionResponse and the AllocationVolumeRevisionResponse know two contentTypes:

1. ACK_XXX_XXX_REVISION_REQUEST_N**
 - a. This message only confirms the reception of the RevisionRequest. This is not an affirmation or decline of the RevisionRequest.
2. XXX_XXX_REVISION_RESPONSE_N**
 - a. This message contains the decision upon the RevisionRequest.

2.5 MMC HUB

Availability of Notifications, Acknowledgements, RevisionRequests or RevisionResponses from the HUB:

¹ For definitions see the MMC-Hub web service guide.

- The Acknowledgements and RevisionResponses are to be available from the MMC HUB within a *certain number of* minutes. This number is defined in the Business Service reference documents, see [ref: 2,3,4,5,6,7 and 8].

Retention period in the MMC HUB of messages:

- The retention period in the MMC HUB production environment before a message is deleted:
 - Acknowledgement: 2 weeks
 - RevisionResponse: 2 weeks
 - Notification: 2 weeks
 - RevisionRequest 2 weeks
- The retention period is configurable by TenneT per message type. It is generic for all parties.
- The retention period can differ for the TQF environment.
- After deletion from the MMC HUB: The MMC-HUB does not archive messages.

Pull messages from the MMC HUB:

- To be able to retrieve a message with a Get request from the MMC HUB, the market participant must first execute a List request.
This can be done:
 1. With a CorrelationID, if known(e.g. to get the correlating Acknowledgement** on a Document sent to a market participant): the list request will in most cases result in a list with one message (the metadata of one message is returned). If the metadata of more messages is returned, more messages are present under the same CorrelationID. See paragraph 2.4 for when this value is mandatory when exchanging market documents.
 2. Without a CorrelationID: the list request will show the metadata of all documents available for the market recipient. The Measurements & Allocations related documents are those with content type mentioned in addendum 2.
- The list request has options(which can be combined):
 - to filter on content type(s)
 - to sort on oldest messages first(default the most recent message is at the top of the list)
 - to limit the number of results returned with a list request.
- After the list request: a message can then be retrieved with the Get request with a value for the TechnicalMessageID: this value is supplied in the metadata of the message, that was returned with the List request.
- The list request will only show messages that have not been retrieved previously. A message though can be retrieved again(with the same TechnicalMessageID that was used to initially retrieve it) from the MMCHUB as long as the retention period has not passed.
- For the polling frequency of the List Request on the MMCHUB and the way to execute the Get: see *MMC HUB Web Services Guide*.

** The synchronous SOAP reply from the MMC HUB on the original document (of which now the Acknowledgement is to be retrieved), returns (in case correct reception (no general SOAP errors)) a CorrelationID: this is equal to the CorrelationID in the SOAP Header of the original document sent to MMC HUB (that is, if filled in the SOAP Header of the original document otherwise it will be equal to the TechnicalMessageID in the SOAP Header of the original document sent to MMC HUB). It is the value of this CorrelationId that is to be used with the List request. This to correlate the functional response to the original document.

2.6 IP addresses and port

IP addresses for whitelisting purposes and which ports to use, are mentioned in the *MMC HUB Web Services Guide*.

The *MMC HUB Web Services Guide* mentions:

- what types of certificates are necessary for message exchange via the MMC-Hub.
- the requirements on these certificates.
- and the requirements on the Certificate Authority that supply the certificates.

2.8 Addendums

1. WSDL and corresponding messageTypes and message flow

WSDL	xsd/messageType	Version	From	TO
TRANCHE-1 Messages				
MeasurementSeries-wsdl-v2.1*	MeasurementSeriesNotification	2p0	MRP	BRP
mmchub-MeasurementSeries-v2.1**			MRP	DSO
			MRP	TSO (Energy)
			MRP	TSO (Gas)
			TSO (Energy)	DSO
	MeasurementSeriesAcknowledgement	3p1	BRP	MRP
			DSO	MRP
			TSO (Energy)	MRP
			TSO (Gas)	MRP
			DSO	TSO (Energy)
VolumeSeries-wsdl-v2.1*	VolumeSeriesNotification	2p0	MRP	BRP
mmchub-VolumeSeries-wsdl-v2.1**			MRP	DSO
		VolumeSeriesAcknowledgement	1p1	MRP
	BRP			MRP
			DSO	MRP
			TSO (Energy)	MRP
VolumeInstallationSeries-wsdl-v2.1*	VolumeInstallationSeriesNotification	1p0	MRP	DSO
			MRP	TSO (Energy)
mmchub-VolumeInstallationSeries-wsdl-v2.1**	VolumeInstallationSeriesAcknowledgement	1p1	DSO	MRP
			TSO (Energy)	MRP
MeasurementSeriesRevision-wsdl-v2.1*	MeasurementSeriesRevisionRequest	1p0	BRP	MRP
			DSO	MRP
mmchub-MeasurementSeriesRevision-wsdl-v2.1	MeasurementSeriesRevisionResponse	1p1	TSO (Energy)	MRP
			MRP	BRP
			MRP	DSO
			MRP	TSO (Energy)
AllocationVolumeRevision -wsdl-v2.1*	AllocationVolumeRevisionRequest	1p0	BRP	DSO
			BRP	TSO (Energy)
mmchub- AllocationVolumeRevision-wsdl-v2.1**	AllocationVolumeRevisionResponse	1p1	DSO	BRP
			TSO (Energy)	BRP
TRANCHE-2 Messages				
	AllocationSeriesNtfication	1p0	DSO	BRP
			DSO	TSO(Energy)

AllocationSeries-wsdl-v1.0*	AllocationSeriesAcknowledgement	1p0	TSO(Energy) BRP TSO(Energy) BRP	BRP DSO DSO TSO(Energy)
AllocationFactorSeries-wsdl-v1.0*	AllocationFactorSeriesNotification	1p0	DSO DSO	BRP TSO (Energy)
mmchub-AllocationFactorSeries-wsdl-v1.0** mmchub-AllocationFactorSeries-wsdl-v2.0** ****	AllocationFactorSeriesAcknowledgement	1p0	BRP TSO (Energy)	DSO DSO
AggregatedAllocationSeries-wsdl-v1.0*	AggregatedAllocationSeriesNotification	1p0	DSO DSO TSO(Energy)	BRP TSO(Energy) BRP
mmchub-AggregatedAllocationSeries-wsdl-v1.0** AggregatedAllocationSeries-wsdl-v1.1*,*** mmchub-AggregatedAllocationSeries-wsdl-v1.1** ,***	AggregatedAllocationSeriesAcknowledgement	1p0	BRP TSO(Energy) BRP	DSO DSO TSO(Energy)
TRANCHE-3 Messages				
SettlementSeries-wsdl-v1.0 mmchub-SettlementSeries-wsdl-v1.0	SettlementSeriesNotification	1p0	DSO FSO TSO(Energy)	BRP BRP BRP
	SettlementSeriesAcknowledgement	1p0	BRP BRP BRP	DSO FSO TSO(Energy)
VolumeSettlementSeries-wsdl-v1.0 mmchub-VolumeSettlementSeries-wsdl-v1.0	VolumeSettlementSeriesNotification	1p0	DSO DSO FSO FSO TSO(Energy) TSO(Energy)	BRP Supplier BRP Supplier BRP
	VolumeSettlementSeriesAcknowledgement	1p0	BRP Supplier BRP Supplier BRP Supplier	DSO DSO FSO FSO TSO(Energy) TSO(Energy)
AggregatedSettlementSeries-wsdl-v1.0 mmchub-AggregatedSettlementSeries-wsdl-v1.0	AggregatedSettlementSeriesNotification	1p0	DSO DSO FSO FSO TSO(Energy)	BRP TSO(Energy) BRP TSO(Energy) BRP
	AggregatedSettlementSeriesAcknowledgement	1p0	BRP TSO(Energy)	DSO DSO

AggregatedVolumeSettlementSeries-wsdl-v1.0 mmchub- AggregatedVolumeSettlementSeries-wsdl-v1.0	AggregatedVolumeSettlementSeriesNotification	1p0	BRP	FSO
			TSO(Energy)	FSO
			BRP	TSO(Energy)
			DSO	BRP
			DSO	Supplier
			DSO	TSO(Energy)
	AggregatedVolumeSettlementSeriesAcknowledgement	1p0	FSO	BRP
			FSO	TSO(Energy)
			TSO(Energy)	BRP
			BRP	DSO
AggregatedSettlementResultSeries-wsdl-v1.0 mmchub- AggregatedSettlementResultSeries-wsdl-v1.0	AggregatedSettlementResultSeriesNotification	1p0	Supplier	DSO
			TSO(Energy)	DSO
			BRP	FSO
	AggregatedSettlementResultSeriesAcknowledgement	1p0	TSO(Energy)	FSO
			BRP	TSO(Energy)
			TSO(Energy)	BRP
AggregatedVolumeSettlementResultSeries-wsdl-v1.1 mmchub- AggregatedVolumeSettlementResultSeries-wsdl-v1.2	AggregatedVolumeSettlementResultSeriesNotification	1p0	TSO(Energy)	DSO
			TSO(Energy)	FSO
			TSO(Energy)	BRP
	AggregatedVolumeSettlementResultSeriesAcknowledgement	1p0	DSO	TSO(Energy)
			FSO	TSO(Energy)
			BRP	TSO(Energy)

* Changes for wsdl from version 2.0 to 2.1 and also present in the AllocationSeries, AllocationFactorSeries and AggregatedAllocationSeries wsdl:

1. Added to the WDSL: <xsd:import namespace="http://sys.svc.tennet.nl/MMCHub/common/v1" schemaLocation="CommonTypes-v1.0.xsd"/>. This because in one of the Schema definitions the "common" prefix is referred to but was not imported.
2. Security policy <sp:Basic256Sha256/> replaces <sp:Basic256Exn256/> as the <sp:Basic256Exn256/> is an oracle policy.
3. JDeveloper issue with inline schema definitions. Therefore the inlines are moved to a separate XSD.

** Changes for mmchub-wsdl from version 2.0 to 2.1 and also present in the mmchub-AllocationSeries, mmchub-AllocationFactorSeries and mmchub-aggregatedAllocation wsdl:

1. Security policy <sp:Basic256Sha256/> replaces <sp:Basic256Exn256/> as the <sp:Basic256Exn256/> is an oracle policy.
2. List function in the MMCHUB Wsdl has been extended:
 - with a filter option on content type(s) and
 - the list results can be ordered by oldest messages first and can be limited to a maximum number.

*** Change in Line 900 of AggregatedAllocationSeriesNotification_1p0.xsd due to unwanted character ' from other code set then UTF-8:

- ccts:Definition>Code om de allocatiegegevens voor SMA uit te kunnen splitsen in 'gemeten' en 'gerepareerde' volumes (LDT categorie-2).</ccts:Definition> to
- <ccts:Definition>Code om de allocatiegegevens voor SMA uit te kunnen splitsen in gemeten en gerepareerde volumes (LDT categorie-2).</ccts:Definition>

**** Change in Line 149 of mmchub-AllocationFactorSeries.wsdl:

<soap:operation soapAction="http://sys.svc.tennet.nl/MMCHub/getAllocationFactorSeriesNotification"/>
replaced by

<soap:operation soapAction="http://sys.svc.tennet.nl/MMCHub/getAllocationFactorSeriesNotification"/>

2. ContentTypes

MessageType	ContentType
MeasurementSeriesNotification	MEASUREMENT_SERIES_NOTIFICATION_N10
	MEASUREMENT_SERIES_NOTIFICATION_N11
	MEASUREMENT_SERIES_NOTIFICATION_N12
	MEASUREMENT_SERIES_NOTIFICATION_N20
	MEASUREMENT_SERIES_NOTIFICATION_N21
	MEASUREMENT_SERIES_NOTIFICATION_N30
	MEASUREMENT_SERIES_NOTIFICATION_N31
MeasurementSeriesAcknowledgement	ACK_MEASUREMENT_SERIES_NOTIFICATION_N10
	ACK_MEASUREMENT_SERIES_NOTIFICATION_N11
	ACK_MEASUREMENT_SERIES_NOTIFICATION_N12
	ACK_MEASUREMENT_SERIES_NOTIFICATION_N20
	ACK_MEASUREMENT_SERIES_NOTIFICATION_N21
	ACK_MEASUREMENT_SERIES_NOTIFICATION_N30
	ACK_MEASUREMENT_SERIES_NOTIFICATION_N31
VolumeSeriesNotification	VOLUME_SERIES_NOTIFICATION_N40
	VOLUME_SERIES_NOTIFICATION_N41
	VOLUME_SERIES_NOTIFICATION_N50
	VOLUME_SERIES_NOTIFICATION_N60
	VOLUME_SERIES_NOTIFICATION_N70
VolumeSeriesAcknowledgement	ACK_VOLUME_SERIES_NOTIFICATION_N40
	ACK_VOLUME_SERIES_NOTIFICATION_N41
	ACK_VOLUME_SERIES_NOTIFICATION_N50
	ACK_VOLUME_SERIES_NOTIFICATION_N60
	ACK_VOLUME_SERIES_NOTIFICATION_N70
VolumeInstallationSeriesNotification	VOLUME_INSTALLATION_SERIES_NOTIFICATION_N80

VolumelInstallationSeriesAcknowledgement	ACK_VOLUME_INSTALLATION_SERIES_NOTIFICATION_N80
MeasurementSeriesRevisionRequest	MEASUREMENT_SERIES_REVISION_REQUEST_N90
MeasurementSeriesRevisionResponse	ACK_MEASUREMENT_SERIES_REVISION_REQUEST_N90
	MEASUREMENT_SERIES_REVISION_RESPONSE_N90
AllocationVolumeRevisionRequest	ALLOCATION_VOLUME_REVISION_REQUEST_N91
AllocationVolumeRevisionResponse	ACK_ALLOCATION_VOLUME_REVISION_REQUEST_N91
	ALLOCATION_VOLUME_REVISION_RESPONSE_N91
AllocationSeriesNotification	ALLOCATION_SERIES_NOTIFICATION_N101
	ALLOCATION_SERIES_NOTIFICATION_N131
	ALLOCATION_SERIES_NOTIFICATION_N141
AllocationSeriesAcknowledgement	ACK_ALLOCATION_SERIES_NOTIFICATION_N101
	ACK_ALLOCATION_SERIES_NOTIFICATION_N131
	ACK_ALLOCATION_SERIES_NOTIFICATION_N141
AllocationFactorSeriesNotification	ALLOCATION_FACTOR_SERIES_NOTIFICATION_N151
AllocationFactorSeriesAcknowledgement	ACK_ALLOCATION_FACTOR_SERIES_NOTIFICATION_N151
AggregatedAllocationSeriesNotification	AGGREGATED_ALLOCATION_SERIES_NOTIFICATION_N102
	AGGREGATED_ALLOCATION_SERIES_NOTIFICATION_N111
	AGGREGATED_ALLOCATION_SERIES_NOTIFICATION_N121
	AGGREGATED_ALLOCATION_SERIES_NOTIFICATION_N132
	AGGREGATED_ALLOCATION_SERIES_NOTIFICATION_N142
AggregatedAllocationSeriesAcknowledgement	ACK_AGGREGATED_ALLOCATION_SERIES_NOTIFICATION_N102
	ACK_AGGREGATED_ALLOCATION_SERIES_NOTIFICATION_N111
	ACK_AGGREGATED_ALLOCATION_SERIES_NOTIFICATION_N121
	ACK_AGGREGATED_ALLOCATION_SERIES_NOTIFICATION_N132
	ACK_AGGREGATED_ALLOCATION_SERIES_NOTIFICATION_N142
SettlementSeriesNotfication	SETTLEMENT_SERIES_NOTIFICATION_N213
SettlementSeriesAcknowledgement	ACK_SETTLEMENT_SERIES_NOTIFICATION_N213
VolumeSettlementSeriesNotfication	VOLUME_SETTLEMENT_SERIES_NOTIFICATION_N214
VolumeSettlementSeriesAcknowledgement	ACK_VOLUME_SETTLEMENT_SERIES_NOTIFICATION_N214

AggregatedSettlementSeriesNotification	AGGREGATED_SETTLEMENT_SERIES_NOTIFICATION_N211
AggregatedSettlementSeriesAcknowledgement	ACK_AGGREGATED_SETTLEMENT_SERIES_NOTIFICATION_N211
AggregatedVolumeSettlementSeriesNotification	AGGREGATED_VOLUME_SETTLEMENT_SERIES_NOTIFICATION_N212
	AGGREGATED_VOLUME_SETTLEMENT_SERIES_NOTIFICATION_N201
AggregatedVolumeSettlementSeriesAcknowledgement	ACK_AGGREGATED_VOLUME_SETTLEMENT_SERIES_NOTIFICATION_N212
	ACK_AGGREGATED_VOLUME_SETTLEMENT_SERIES_NOTIFICATION_N201
AggregatedSettlementResultSeriesNotification	AGGREGATED_SETTLEMENT_RESULT_SERIES_NOTIFICATION_N241
	AGGREGATED_SETTLEMENT_RESULT_SERIES_NOTIFICATION_N243
	AGGREGATED_SETTLEMENT_RESULT_SERIES_NOTIFICATION_N261
AggregatedSettlementResultSeriesAcknowledgement	ACK_AGGREGATED_SETTLEMENT_RESULT_SERIES_NOTIFICATION_N241
	ACK_AGGREGATED_SETTLEMENT_RESULT_SERIES_NOTIFICATION_N243
	ACK_AGGREGATED_SETTLEMENT_RESULT_SERIES_NOTIFICATION_N261
AggregatedVolumeSettlementResultSeriesNotification	AGGREGATED_VOLUME_SETTLEMENT_RESULT_SERIES_NOTIFICATION_N242
	AGGREGATED_VOLUME_SETTLEMENT_RESULT_SERIES_NOTIFICATION_N251
	AGGREGATED_VOLUME_SETTLEMENT_RESULT_SERIES_NOTIFICATION_N251
	AGGREGATED_VOLUME_SETTLEMENT_RESULT_SERIES_NOTIFICATION_N271
	AGGREGATED_VOLUME_SETTLEMENT_RESULT_SERIES_NOTIFICATION_N231
	AGGREGATED_VOLUME_SETTLEMENT_RESULT_SERIES_NOTIFICATION_N232
	AGGREGATED_VOLUME_SETTLEMENT_RESULT_SERIES_NOTIFICATION_N233
AggregatedVolumeSettlementResultSeriesAcknowledgement	ACK_AGGREGATED_VOLUME_SETTLEMENT_RESULT_SERIES_NOTIFICATION_N242
	ACK_AGGREGATED_VOLUME_SETTLEMENT_RESULT_SERIES_NOTIFICATION_N251
	ACK_AGGREGATED_VOLUME_SETTLEMENT_RESULT_SERIES_NOTIFICATION_N271
	ACK_AGGREGATED_VOLUME_SETTLEMENT_RESULT_SERIES_NOTIFICATION_N231
	ACK_AGGREGATED_VOLUME_SETTLEMENT_RESULT_SERIES_NOTIFICATION_N232
	ACK_AGGREGATED_VOLUME_SETTLEMENT_RESULT_SERIES_NOTIFICATION_N233

3. Certificates in MyTenneT where to find

The tables below show where to find the TenneT certificates(transport and signing) in MyTenneT and the market party signing certificates that is if a market party has indicated to share their signing certificate with other market parties via MyTenneT.

TenneT certificates	Type of certificate	Where to find in MyTenneT
TQF certificates(for web services supported by TQF)	Transport/TLS aka SSL	Choose App: IT- Connectivity Choose Tab: Documents Filter on Document Type: Certificate Choose: the appropriate certificate
	Signing certificate aka s-mime	
Production certificates	Transport/TLS aka SSL	
	Signing certificate aka s-mime	
Test certificates(for web services not yet supported by TQF)	Transport/TLS aka SSL	
	Signing certificate aka s-mime. See paragraph " 2.3.1 Sending messages to the MMC-Hub" when to use this certificate.	

Market party certificate	Type of certificate	Where to find in MyTenneT
Signing certificates of market party(if the party has indicated to share via MyTenneT)	Signing certificate aka s-mime of individual market party	Choose App: IT- Connectivity Choose Tab: MMC-hub certificate Filter on: - Name or Ean of market party - Environment: Test or Production
	Bulk set of test signing certificates of market participants that partake in the NEDU GAT	Choose App: IT- Connectivity Choose Tab: Documents Filter on Document Type: Certificate Download zip file(s): - NeduGAT_SigningCertificates_GridOperators.7z - NeduGAT_SigningCertificates_MRP_BRP_FSO.7z
Signing certificates of market party(if the party has indicated not to share via MyTenneT)	Contact individual market party for the their test and production signing certificate	Not applicable