

Minutes EBG meeting	 European forum for energy Business Information eXchange
September 6 th , 2022	EBG (ebIX® Business Group)

Date: Monday, September 5th, 2022

Time: 14:00 –15:30

Place: GoToMeeting

Present: Bartosz, PSE
Bostjan, SODO
Jan, Svenska kraftnät
Ove, Edisys

Appendix B: Status for BRS review

Appendix C: EBG project and survey list

Appendix D: Mapping from ebIX® class diagrams for Validated measured data for continuous metered AP to CIM

Attachments: None

1 Approval of agenda

The agenda was approved with the following additions:

- Question from Israel, 11.1 under AOB.
- ebIX® Forum agenda, 11.2 under AOB.

2 Approval of minutes from previous meetings

The minutes from previous meetings were approved.

3 Status for “Alignment of master data for areas project” (follow up item)

Currently we have the following confirmed participants in the common European energy market “Alignment of master data for areas” project:

Name	Company	Representing
Bartosz Kwiatkowski	PSE	ebIX®
Douglas Hill	ENTSOG	ENTSOG (observer)
Gerrit Fokkema (Convenor)	EDSN	ebIX®
Jon Egil Nordvik	Statnett	ENTSO-E/CIM EG
Kees Sparreboom	TenneT	ebIX® or ENTSO-E
Ove Nesvik (Secretary)	EdiSys	ebIX®
?	?	EU DSO Entity

We are still awaiting a response from the EU DSO Entity regarding their participation.

4 Status for datahub survey (follow up item)

Sylvia and Joachim sent in May 2022 a request for update of the original “datahub survey” drafted summer 2019. The request is based on a question from the German regulator who wants to know the overall status for other European datahubs.

Sylvia provided an updated survey, containing the latest answers by end of previous week.

Action:

- Ove will send the survey to EBG for commenting until next EBG meeting before publishing.

5 Continue review of items with red background in the “Comment column” in Appendix B (Status for BRS review)

A) Discuss if we shall update the BRS for Alignment of Accounting Point characteristics according to Appendix B, row 2:

- a. Review of MR NMEG 2021/3 – Addition of a **Reporting resolution** and **Reporting Interval** to the AP Administrative Characteristics class.

We discussed with Jan present:

- We think the current attribute Meter Reading Periodicity (Proposed renamed to “Meter Reading Resolution” using the ISO 8601 format) is the same as the Reporting Interval – we need to discuss the naming.
- The Reporting Resolution is probably a new attribute.
- It is proposed adding a new class “Measurement reporting information” where we add Meter Reading Periodicity (Reporting Resolution), Metering Method, Scheduled Meter Reading Date and Reporting Interval.

Conclusion:

- We remove “Meter Reading Periodicity”
- We add “**Reporting Interval**” - how often the meter reading is made available from the Metered Data Administrator.
- We add “**Reporting Resolution**” - the length of each observation that is reported to the market.
- We add “**Register resolution**” - the length of each observation that is registered in the Register in the Meter.
- We add a new class “**Measurement information**” where we add Meter Reading resolution, Reporting resolution, Metering Method and Scheduled Meter Reading Date.

Action:

- Ove will update the BRS for Alignment of AP characteristics – for review at next meeting
- b. Sub Accounting Points have been introduced in the BRS for Prepare and aggregate Resources, hence EBG should introduce references to parent and child APs, or another way of handling Sub Accounting Points, in the BRS for Alignment of AP characteristics BRS (parent and child APs are for instance used in Denmark)? Sub Accounting Points.

Conclusion:

- We need a link between APs.
- We will make a survey for how different countries are handling sub-APs today.
- To be continued at our next EBG meeting.

B) Discuss if the “Exchange.... UseCases” in “BRS for Billing” and “BRS for Measure for determine and exchange validated meter read” should be renamed to “Notify...” and eventually moved under a “Distribute... UseCase”?

Status:

- The “Exchange.... UseCases” were updated to “Notify.... UseCases” after our meeting last week. It was not added any “Distribute.... UseCases”.
- See also A.2 Measure BRSs, row 1.
- Item closed.

At the previous meeting Jan and Ove informed that NMEG has withdrawn the MR for addition of a “Supply start date” to the AP Administrative Characteristics class in Alignment of AP characteristics BRS, hence Ove has removed the issue (MR) from Appendix A and Appendix B.

Ove had as action from before summer updated the BRS for Measure for Collected Data, however with a few questions. Due to lack of time the review of these questions was postponed until next meeting. See also “A.2 Measure BRSs, row 2”.

Ove had also as action to update the BRS for Customer Move with addition of the Flexibility Register Administrator, however this was already done in February this year, hence no longer valid. See also A.1 Structure BRSs, row 14.

6 Update of BRSs to HEMRM 2022-01

The status of the updates is found in “Appendix A Status for update of BRSs to HEMRM 2022-01 and other updates”.

Due to lack of time, the item was postponed.

7 Review of CIM definitions for classes and attributes based on mapping from ebIX® class diagrams for Validated measured data for continuous metered AP to CIM

See Appendix D.

Due to lack of time, the item was postponed.

8 Review of BRS for Settle for Reconciliation

Due to lack of time, the item was postponed.

9 Review of ebIX domain model (low priority item)

Due to lack of time, the item was postponed.

10 Meeting schedule

GoToMeetings:

- Every Monday from August 29th until December 19th, 2022, except for holidays.

Physical meeting:

- Tuesday and Wednesday December 6th and 7th, 2022, in Hamburg.

At the next meeting we will give priority to a review of HEMRM definitions.

11 AOB

11.1 Question from Israel

From Netzah Calamaro:

Dear panel chairman:

(Dear secretary)

1. I am lecturer at Tel-Aviv university. Reading the document [Smart meter reading methods:](#)
" The question, raised by Poland, is: what type of method is used in each country for calculating the net registered energy flow per registering interval in a smart meter?
2. I ask whether this implies **that per every period of load profile arithmetic method implies there may be only Active import or Active export but not both simultaneously,**
3. I have inspected 20 meter model types and that was the result over 20/20 model types.
4. I have recently encountered a meter type that "interval" means much less than a load profile period.
My question is: is that according to section 2) correct or according to section 3?.

Netzah Calamaro

Action:

- Ove will answer that we need a better understanding of the question.

Item closed until we receive an answer from Netzah.

11.2 ebIX® Forum agenda

A proposal for an agenda for next ebIX® Forum was reviewed; a few clarifications were added and some of the items shortened. Ove will ask Vlatka if we can shorten the agenda to finish by lunch (12:30).

Action:

- Jan/Ove will ask the working group comparing HGRM and HEMRM to review the extension of the Energy Supplier in BRS for Customer move, ref action item from previous ebIX® Forum meeting:

EBG/RtR will verify extensions to the definitions of roles with the group harmonising the electricity and gas markets role models before adding the extension to the role definitions in a BRS to include gas.

Appendix A Status for update of BRSs to HEMRM 2022-01 and other updates

A.1 Structure BRSs

#	BRS	Status	Comments
1.	BRS for administration of consent	Updated the definition of the role Consumer. Updated Appendix A.	a) Shall we add Flexibility Register Administrator to the UC "Check consent"? If yes, we should probably send it to ebIX Forum for approval. b) There were mismatch between some of the class diagrams and the related element definitions, which has been corrected.
2.	BRS for Alignment of AP characteristics	Roles are updated to be in line with HEMRM 2022-01. Updated Appendix A.	The BRS needs a review. Thereafter we should probably send it to ebIX Forum for approval.
3.	BRS for Alignment of Area characteristics	Updated the definition of the role Market Operator. Updated Appendix A.	Shall we publish it directly?
4.	BRS for Alignment of characteristics of a Customer at an AP	No changes to roles needed. Updated Appendix A.	Shall we publish it directly?
5.	BRS for Alignment of metering configuration characteristics	No changes to needed. Updated Appendix A.	Shall we publish it directly?
6.	BRS for bulk change of BRP	No changes to roles needed	
7.	BRS for Bulk change of Shipper	Updated Balance Supplier to Energy Supplier, incl. update of the definition.	Shall we publish it directly?
8.	BRS for Change of BRP	Updated roles, such as Balance Supplier to Energy Supplier, incl. update of the definitions.	Shall we publish it directly?
9.	BRS for Change of Metered Data Responsible	Updated definitions of Metered Data Responsible and Metering Point Administrator incl. update of the definition.	Shall we publish it directly?
10.	BRS for Change of Shipper	Updated roles, such as Balance Supplier to Energy Supplier, incl. update of the definitions.	Shall we publish it directly?

#	BRS	Status	Comments
11.	BRS for Change of supplier	Updated role definitions incl. update of Energy Supplier to fit gas.	The definition of the Energy Supplier in the Business Partner View is updated to fit gas. Shall we present it to the group harmonising HGRM and HEMRM ¹ ?
12.	BRS for Combined grid and supply billing	No changes to roles needed, however there are from earlier some corrections of spelling and grammatical errors.	Shall we review it and publish it directly?
13.	BRS for Consented request for Accounting Point characteristics	No changes to roles or other updates needed.	
14.	BRS for Customer move	No changes to roles needed. Updated attribute sequence in class diagrams.	Shall we publish it directly?
15.	BRS for End of Metered Data Responsible	Updated definitions of Metered Data Responsible and Metering Point Administrator incl. update of the definition. Updated attribute sequence in class diagrams.	Shall we publish it directly?
16.	BRS for End of supply	Updated definitions of BRP, Balance Supplier (to Energy Supplier) and Metering Point Administrator incl. update of the definition. Updated attribute sequence in class diagrams.	Shall we publish it directly?
17.	BRS for Manage APs	No changes to roles or other updates needed. Updated attribute sequence in class diagrams.	Shall we publish it directly?
18.	BRS for Rearrange MPs between grids	Updated definitions of BRP, Balance Supplier (to Energy Supplier) and Metering Point Administrator incl. update of the definition.	Shall we publish it directly?

¹ Action item 2022a-02 from ebIX® Forum: EBG/RtR will verify extensions to the definitions of roles with the group harmonising the electricity and gas markets role models before adding the extension to the role definitions in a BRS to include gas.

A.2 Measure BRs

#	BRS	Status	Comments
1.	BRS for Measure for Billing	No changes to roles needed to roles.	<p>However, the sequence of attributes in “Series characteristics” in “Validated measured data for billing” has been updated (Moved Resolution to the Product, unit cluster) and the layout in Appendix A have been updated.</p> <p>Exchange UCs has been renamed to Notify.</p> <p>Updated Appendix A.</p> <p>Shall we publish it directly?</p>
2.	BRS for Measure for Collected Data	Update of roles to be in line with the ebIX®, EFET and ENTSO-E Harmonised Electricity Market Role Model version 2022-01.	<p>Updated Appendix A.</p> <p>Shall we publish it directly?</p>
3.	BRS for Measure for Determine and exchange validated meter read	No changes to roles needed to roles.	<p>Exchange UCs and documents has been renamed to Notify.</p> <p>Shall we publish it directly?</p>
4.	BRS for Measure for Imbalance Settlement	No changes to roles needed to roles.	
5.	BRS for Measure for Reconciliation	No changes to roles needed to roles.	
6.	BRS for Measure for renewable energy certificates		<p>Moved Resolution to the Product, unit cluster in all class diagrams.</p> <p>Updated Appendix A.</p>
7.	BRS for Validate and exchange notify measured data	No changes to roles needed to roles.	<p>Moved Resolution to the Product, unit cluster in all class diagrams.</p> <p>Exchange UCs and documents has been renamed to Notify.</p>

A.3 Distributed Flexibility BRSs

#	BRS	Status	Comments
1.	BRS for Flexibility register administration	No changes to roles or other updates needed.	See comments in the memo: "usage of attributes in confirm and reject documents in ebIX BRSs"
2.	BRS for Prepare and aggregate Resources for flexibility services	No changes to roles or other updates needed.	

A.4 Settlement and reconciliation BRSs

#	BRS	Status	Comments
1.	BRS for Settle for Reconciliation	TBD	TBD

Appendix B Status for BRS review

Structure BRSs			
#	BRS	Status	Comment
1.	Administer Customer Consent	Published at www.ebix.org	Finished
2.	Alignment of Accounting Point characteristics	Published at www.ebix.org	<p>Finished</p> <p>To remember: Review of MR NMEG 2021/3 – Addition of a Reporting resolution and Reporting Interval to the AP Administrative Characteristics class.</p> <p>To remember (20210913): Sub Accounting Points have been introduced in the BRS for Prepare and aggregate Resources, hence EBG should introduce references to parent and child APs, or another way of handling Sub Accounting Points, in the BRS for Alignment of AP characteristics BRS (parent and child APs are for instance used in Denmark)? Sub Accounting Points.</p>
3.	Alignment of Area Characteristics	Published at www.ebix.org	
4.	Alignment of characteristics for a Customer linked to an AP	Published at www.ebix.org	Finished
5.	Alignment of Metering Configuration Characteristics	Published at www.ebix.org	Finished
6.	Bulk change of BRP	Published at www.ebix.org	Finished
7.	Bulk change of Shipper	Published at www.ebix.org	Finished
8.	Change of BRP	Published at www.ebix.org	Finished
9.	Change of Metered Data Responsible	Published at www.ebix.org	Finished
10.	Change of Shipper	Published at www.ebix.org	Finished
11.	Change of supplier	Published at www.ebix.org	Finished
12.	Combined grid and supply billing	Published at www.ebix.org	Finished
13.	Consented (earlier Upfront) request for Metering Point Characteristics	Published at www.ebix.org	Finished
14.	Customer move	Published at www.ebix.org	Finished.

Structure BRs			
#	BRS	Status	Comment
15.	End of Metered Data Responsible	Published at www.ebix.org	Finished
16.	End of supply	Published at www.ebix.org	Finished
17.	Manage Accounting Points	Published at www.ebix.org	Finished
18.	Rearrange MPs between grids	Published at www.ebix.org	Finished

Measure BRs			
#	BRS	Status	Comment
1.	BRS for Measure Calorific Value	Finished	<ul style="list-style-type: none"> The content of the BRS is moved to a separate UseCase in BRS for Measure for Billing
2.	BRS for Measure for Billing	Finished	20211209: <ul style="list-style-type: none"> Published at www.ebix.org
3.	BRS Validated measured data	Finished	20220221: <ul style="list-style-type: none"> Published at www.ebix.org
4.	BRS for Measure for Collected Data	Finished	20200402: <ul style="list-style-type: none"> Published at www.ebix.org. 20200608: <ul style="list-style-type: none"> “Collected Data” should be renamed to “Collected <i>Measured</i> Data” 20220104: <ul style="list-style-type: none"> The BRS need a layout update, incl. renaming of the term “negative response” to “Rejection”.
5.	BRS for Measure for determine and exchange validated meter read	Finished	20220310: <ul style="list-style-type: none"> Published at www.ebix.org.
6.	BRS for Measure for Imbalance Settlement	<ul style="list-style-type: none"> Finished 	20220905: <ul style="list-style-type: none"> Published at www.ebix.org.
7.	BRS for measure for renewable energy certificates	Finished	20220905: <ul style="list-style-type: none"> Published at www.ebix.org.
8.	BRS for Measure for Reconciliation	Finished	20220609: <ul style="list-style-type: none"> Sent on circulation for comments to ebIX® Forum until August 9th.

Measure BRSs			
#	BRS	Status	Comment
9.	BRS for Settle for Reconciliation	To be reviewed	<p>20210125:</p> <ul style="list-style-type: none"> Investigate the need for addition of MDR and MGA in the “root class”, ref Dutch requirements. <p>20220609:</p> <ul style="list-style-type: none"> All EBG participants are asked to send the BRS to national reconciliation experts, asking if they can understand the BRS and if the content still is valid. Answer before July 4th.

Appendix C EBG project and survey list

C.1 Potential projects

#	Project description	Priority	Start
A)	Review what attributes to send in a confirmation (e.g. all from the request, only approve/disapprove or some core attributes, such as AP)	High	After finalising RtR
B)	Review and propose update to the HEMRM, based on new procedures from ETC and EBG, ref minutes from ebIX® Forum meeting March 24 th , 2020, including: <ul style="list-style-type: none"> Update definition of Accounting Point in the HRM based on the flex project. Make a preproposal for update of the definition of the «Harmonised Role» Resource Provider. Among others we think it is the BRP that sends schedules and not the Resource Provider and we think the term “manages” could be clarified. 	High	After finalising RtR
C)	Efficient data alignment, including the possibility to request historical and/or future master data. See “very general” data act from EU: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13045-Data-Act-amended-rules-on-the-legal-protection-of-databases_en	Not prioritised	EBG must do a survey for the need of such a project
D)	Discuss differentiation of data sets per Entitled Role when aligning master data (e.g. when referencing notification of AP master data in a BRS) based on GDPR	High	After A) and B)
E)	Making a BRS for alignment of Exchange Point characteristics	High	Hopefully a part of the common energy market area project
F)	Making an introduction to the ebIX® BRSs, including an overview of the BRSs and a short description.	In finalising RtR	TBD
G)	Review of MR NMEG 2021/3 – Addition of a Reporting resolution and Reporting Interval to the AP Administrative Characteristics class. in Alignment of AP characteristics BRS	Medium	After finalising RtR
H)	It is assumed that the EC will decide to use IEC basic CIM as the reference Information Model, hence we should bring our definitions in line with IEC CIM. This can be done by changing our definitions, or by submitting maintenance requests to IEC TC57/wg16 (eventually to be forwarded by wg16 to wg14).	Medium	After A), B) and G)
I)	Update of Gas Role Model with addition of Aggregated Reception Station, Calorific Value Area and Temperature Area for gas.	Low	When the Gas Role Model starts adding domains.
J)	Investigate if services, such as flex-services should be added to BRS for Measure for billing. If so, we need to add a Resource ID to the class diagram(s) and extend the Basic assumption chapter.	This is a to-remember item	When the flex project is finalised

#	Project description	Priority	Start
K)	Verify extensions to the definitions of roles with the group harmonising the electricity and gas markets role models before adding the extension to the role definitions in a BRS to include gas.	Continuous	When updating role definitions in BRSs

C.2 Approved (and running) projects

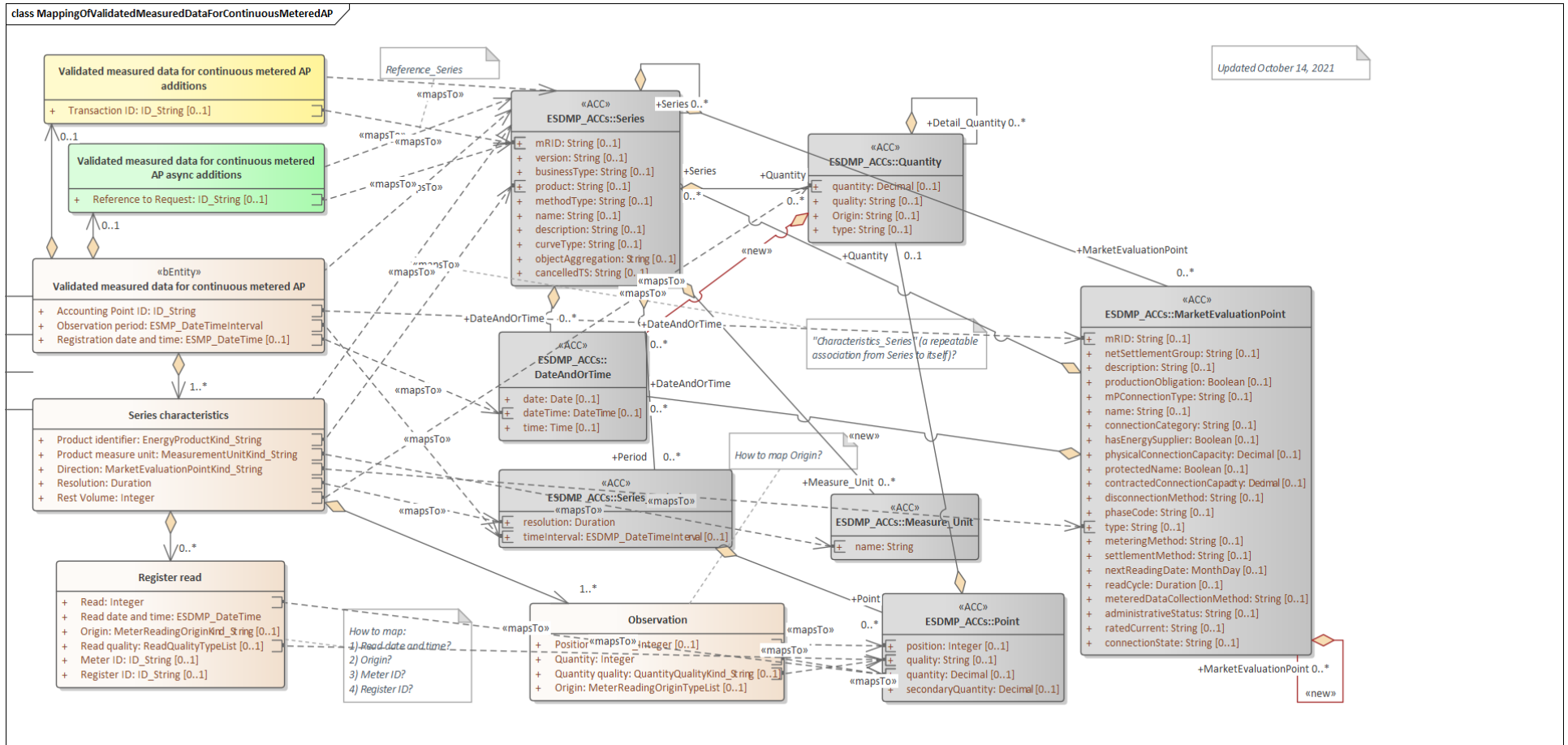
#	Project	Members	Status	Start	End
A)	RtR, Role-to-Role (hub)	All EBG	Start October 2018	Q4 2018	Q4 2021
B)	Common energy market area project	EBG: Bartosz, Boštjan (?), Gerrit, Jan (?), Kees and Ove. “External”: Douglas (ENTSOG), Jon-Egil (ENTSO-E/CIM EG) and? from EU DSO Entity	Hopefully start October 2022	October 2022?	?

C.3 Surveys

#	Survey	Status
A)	Datahub	20220609: Third version sent to ebIX® members for update

Appendix D Mapping from ebIX® class diagrams for Validated measured data for continuous metered AP to CIM

The mapping will be reviewed by ETC, while EBG will look into the definitions of classes and attributes to see if we need to update the ebIX® definitions or if we should send maintenance requests to IEC for update of the CIM definitions.



BRS attribute	BRS definition	CIM attribute	CIM definition
«Business entity» Validated measured data for continuous metered AP	The information set sent by a Metered Data Responsible to the Metered Data Administrator when exchanging validated measured data for continuous metered AP	Series	A set of similar physical or conceptual objects defined for the same period or point of time.
Accounting Point ID	The unique identification of the Accounting Point to which the validated measured data are attributed.	MarketEvaluationPoint / mRID	Master resource identifier issued by a model authority. The mRID is unique within an exchange context. Global uniqueness is easily achieved by using a UUID, as specified in RFC 4122, for the mRID. The use of UUID is strongly recommended. For CIMXML data files in RDF syntax conforming to IEC 61970-552, the mRID is mapped to rdf:ID or rdf:about attributes that identify CIM object elements.
Observation period	The specific period of time the validated measured data have been measured, calculated or estimated for.	Series_Period / timeInterval	The start and end date and time for a given interval.
Registration date and time	The date and time of the validation (and storage in the database) of this set of validated measured data.	DateAndOrTime / dateTime	Date and time as per ISO 8601 YYYY-MM-DDThh:mm:ss.sssZ.
Series characteristics	The characteristics of this set of validated measured data, i.e., the product and flow direction.	Series	A set of similar physical or conceptual objects defined for the same period or point of time.
Product identifier	A code specifying the energy product for the quantities in this set of validated measured data.	Series / product	The type of the product such as Power, energy, reactive power, transport capacity that is the subject of the time series.
Product measure unit	The unit of measure used for the quantities in this set of validated measured data.	Measure_Unit / name	The coded representation of the unit.
Direction	A code specifying the direction of the energy flow that was measured with this validated measured data. A flow from the Accounting Point into the Metering Grid Area is defined as production and a flow from the Metering Grid Area into the Accounting Point is defined as consumption.	MarketEvaluationPoint / type	Specifies if the Market Evaluation Point is an Exchange Point or an Accounting Point.

BRS attribute	BRS definition	CIM attribute	CIM definition
Resolution	<p>The resolution is the time between two observations, leading to the number of observations in this timeseries (calculated from the Observation Period divided by the Resolution).</p> <p>The Observation Period must contain a whole number of observations as derived from the resolution.</p> <p>The resolution is expressed in compliance with ISO 8601 in the following format:</p> <p style="text-align: center;">PnYnMnDTnHnMnS.</p> <p>For example PT15M for 15 minutes resolution.</p>	Series / resolution	The number of units of time that compose an individual step within a period.
Rest Volume	The Rest Volume is used for a volume that cannot be related to the 'normal' measured time series observations, i.e., the difference, for the Observation Period, between the start- and end meter read and the aggregated volume from the exchanged time series.	Quantity / quantity	<p>The quantity value.</p> <p>The association role provides the information about what is expressed.</p>
Register read	A read from the register of the Meter linked to the Accounting Point and characteristics of the read. This read is at the basis of the validated measured data in the Observation.	N/A	
Read ²	The value as read from or calculated for the register, for this Read date and time in the Observation period.	Point / quantity	Principal quantity identified for a point.
Read date and time	The timestamp of the moment in time when the value was registered in the Register of the Meter or the value was calculated for.	N/A	
Origin	A code specifying the role of the party that has retrieved or calculated the read.	N/A	
Read quality	The quality of this read, such as estimated, remotely read or physically read.	Point / quality	The quality of the information being provided. This quality may be estimated, not available, as provided, etc.
Meter ID	The unique identification of the Meter linked to the Accounting Point, which contains the register that has been read.	N/A	

² If the Register read is missing, the Meter Reading Origin Code shall be “E28 From Metered Data Responsible” and the Quantity Quality Code shall be “56 Estimated”.

BRS attribute	BRS definition	CIM attribute	CIM definition
Register ID	The unique identification of the Register within the Meter, where this data has been read from or is estimated for.	N/A	
Observation	One validated measured value within a timeseries.	N/A	
Position	The ordinal position of this Observation in this Observation Period for this set of validated measured data.	Point / position	A sequential value representing the relative position within a given time interval.
Quantity	The validated quantity of energy for this Observation.	Point / quantity	Principal quantity identified for a point.
Quantity quality	The quality of this quantity (volume), such as validated (default value, hence not sent), estimated, or temporary.	Point / quality	The quality of the information being provided. This quality may be estimated, not available, as provided, etc.
Origin	A code specifying the role of the party delivering the Quantity.	N/A	
Validated measured data for continuous metered AP additions	Additional information, related to validated measured data, the use of which may be agreed on a national level.	Series	A set of similar physical or conceptual objects defined for the same period or point of time.
Transaction ID	The unique identification of this set of information as given by the Metered Data Responsible.	Series / mRID	<p>Master resource identifier issued by a model authority. The mRID is unique within an exchange context. Global uniqueness is easily achieved by using a UUID, as specified in RFC 4122, for the mRID. The use of UUID is strongly recommended.</p> <p>For CIMXML data files in RDF syntax conforming to IEC 61970-552, the mRID is mapped to rdf:ID or rdf:about attributes that identify CIM object elements.</p>
Validated measured data for continuous metered AP async additions	Additional information related to validated measured data needed when using asynchronous communication.	Series	A set of similar physical or conceptual objects defined for the same period or point of time.
Reference to request	Information about the request for this set of validated measured data for continuous metered AP which uniquely identifies it.	Series / mRID	<p>Master resource identifier issued by a model authority. The mRID is unique within an exchange context. Global uniqueness is easily achieved by using a UUID, as specified in RFC 4122, for the mRID. The use of UUID is strongly recommended.</p> <p>For CIMXML data files in RDF syntax conforming to IEC 61970-552, the mRID is mapped to rdf:ID or rdf:about attributes that identify CIM object elements.</p>

Target \ Source	1 DateAndOrTime	2 MarketEvaluationPoint	3 Measure_Unit	4 Point	5 Quantity	6 Series	7 Series_Period
1 Observation				Quant... → quantity Maps To Position → position Maps To Quantity → quantity			
2 Register read				Read → quantity Maps To Read ... → quantity			
3 Series characteristics		Direct... → type Maps To	Produ... → name Maps To		Rest V... → quantity Maps To	Produ... → product Maps To Resol... → resolu... Maps To	
4 Validated measured dat...	Regist... → dateTi... Maps To	Accou... → mRID Maps To				Maps To Obser... → timel... Maps To	
5 Validated measured dat...						Trans... → mRID Maps To Maps To	
6 Validated measured dat...						Maps To Refer... → mRID Maps To	