


Minutes ETC meeting, May 15th and 16th, 2023	 European forum for energy Business Information eXchange
May 30 th , 2023	ETC – ebIX[®] Technical Committee

Date: Wednesday May 15th and 16th, 2023

Time: 09:00 – 16:00 and 09:00 – 15:00

Place: Edisys offices in Oslo,
Munkedamsveien 3B
NO-0161 OSLO

Present: Jan (NL), EDSN
Jan (SE), Svenska kraftnät
Kees, ebIX[®]
Ove, Edisys
Vlatka, Westnetz (during end of ebIX[®] discussion day 2)
Lucy, TenneT (during end of ebIX[®] discussion day 2)
Gerrit, EDSN (during common EBG and ETC meeting day 1)
Boštjan, SODO (during common EBG and ETC meeting day 1)

Appendix A: ebIX[®] rules for how to make MRs to WG16

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

Attachment:

1. Appendixes for ETC minutes (docx)
2. ETC workplan (see ebIX[®] file manager at <https://filemanager.ebix.org/#>)

1 Approval of agenda

The agenda was approved with the following additions:

- Memo: Consequences of closure of ebIX[®], see item 11.1 under AOB
- Can we rename DDQ Balance power supplier to Energy supplier – and maybe more..., see item 11.2 under AOB

Prioritised items:

- Review of MRs where CIM for retail market wg need more information - focus item, see item 6.1.3
- Not yet mapped attributes from the BRS for Alignment of metering configuration characteristics, see item 6.1.6.
- MRs to ENTSO-E CIM EG Retail market workgroup, see item 6.2.1.
- Review of HEMRM update suggestions from EBG, see item 8.1 – joint discussions with EBG Monday May 15, 14:00 – 15:30.
- Memo: Consequences of closure of ebIX[®], see item 11.1 under AOB

2 Approval of minutes from previous meetings

The minutes from previous meeting were approved after some editorial updates found by Kees.

3 Re-review of ebIX® ending plan

The first day from 11:00 to 12:30 Vlatka and Lucy called in to prepare the ebIX® Forum meeting May 30th:

- Vlatka informed that there is no formal decision from the ebIX® Forum to close down ebIX® by the end of 2023.
- The ending plan for ebIX® was reviewed and updated.
- The following agenda was proposed:
 - 1) Approval of agenda
 - 2) Approval of minutes
 - 3) ebIX® accounts and budget
 - 4) Proposal for a close down plan of ebIX®
 - 5) Decide if ebIX® close down by the end of 2023
- Proposal for decision:

“ebIX® forum agrees to initiate all actions for the close down of ebIX® by the end of 2023”.
- Lucy volunteered to come up with a proposal for an ending party for ebIX®.

Actions:

- All are asked to re-review and comment on the plan.
- Ove will send the plan to Gerrit for comments after the meeting and distribute to ebIX® Forum latest one week before ebIX® Forum meeting May 30th.
- Lucy will come up with a proposal for an ending party for ebIX®.

4 Exporting the ebIX® MD model to EA format

Ove has made some tries, however so far without success.

It was suggested to:

- Try asking Sparx (EA) for help.
- Try importing to EA without diagrams.

Actions:

- Ove will continue trying to migrate the ebIX® MD model to EA format, to get an idea of how much work it will be.
- Jan (NL) will ask some colleagues from India if they have any good ideas.
- Ove will ask Sparx if they can help with the task of migrating the ebIX® MD model to EA format.

5 Status for a common ebIX®, EU DSO Entity, ENTSO-E (CIM EG) and ENTSOG Area project

No news.

Jan (SE) and Ove will ask Jon-Egil for a status when they meet him in a Nordic meeting next week.

6 Resolve ebIX®/IEC issues

6.1 Making a European Style Downstream Market Profile (ESDMP)

6.1.1 [Status for governance of reference models: basic IEC CIM and ESDMP \(follow-up item on the agenda\)](#)

Nothing new reported, however it seems that a common up- and down-stream European profile is more likely now than when this item was opened.

Item closed.

6.1.2 [MRs to WG16 CIM modelling team and Information from IEC meetings](#)

MRs to WG16 and their status are found in a separate common ETC Excel sheet that all ETC members may get access to.

Jan (SE) informed that he is maintaining a similar spreadsheet located at the ENTSO-E extranet. The ENTSO-E spreadsheet is however not containing the older MRs. Hence, for the time being we continue maintaining two spreadsheets.

Jan (SE) also noted that he has been updating the Redmine registry with the MRs agreed in ENTSO-E lately.

Minutes from WG16 meetings can be found at: [WG16 / Modelling-Team-Minutes](#).

Jan (SE) has as action from previous meetings asked Alvaro if the aggregations with wrong source/target should be updated, such as the aggregation from TimeSeries to FlowDirection, with the following answer:

For this particular case we can leave apart rules 15 and 17. Let's focus on 83: Associations should be drawn from the dependent (source) class to the target class in Enterprise Architect to facilitate correct dependency processing. The issue is that this rule does not clearly state what is a source and what is a target, and it is open to interpretation.

From my point of view, the Timeseries has FlowDirection, therefore the source should be the timeseries and the target the flow direction. The same should be between the series and the point because Series has points, not the other way around. Source shall be the series and target the point.

Until the working groups do not clearly define (With clear examples) what is a target and a source, I prefer not to touch the model. I fear that if we change the direction of the associations maybe we change the identifier behind the associations and we break the rest of isBasedOn dependencies in the model, so we need to be very careful. If that is the case, the cost benefit for doing the change is not worth it.

So long story, short. Before doing any change, let's the working groups agree on what it is a source and what is a target. After that we can discuss. If not, the source and the target will be open to interpretation.

The action item is closed (but the agenda item will be continued).

6.1.3 [Review of MRs where CIM for retail market wg need more information - focus item](#)

- 1) 2023-002-v5: Add Meter to ESMP and add an association from MarketEvaluationPoint to Meter 20230322

Status:

- We must draft the MRs related to the Register class in BRS for Metering configuration characteristics before resubmitting this MR to CIM for retail market wg.
- Among others, we will make a MR for changing the cardinality of the association from EndDevice to Usage Point from [0..1] to [0..*] in both 61968 and ESMP.

Justification: We know that Registers within a Meter may be connected to different Metering Points, such as in a department building or a department store, where there is one register for each department and a common Meter for the building.

- The resubmission of ebIX®/2023-002 will be postponed until MRs related to Register are finalised.

Action from EBG meeting minutes April 25th and 26th:

- Ove will make a MR for adding EndDeviceFunction to ESMP and associations from Meter to EndDeviceFunction and from EndDeviceFunction to Register and add a reference to this MR in MR ebIX® 2023-002.

From ETC meeting 20230515:

- Ove will as continued action make the above mentioned MR.

2) 2023-004-v3 - Add connectionCategory to Meter in ESMP 20230413

Status:

- Jan (SE) will investigate how the Swedish datahub will handle the “Voltage Level” at “Meter level”.
- To be finalised at our next meeting.

From ETC meeting 20230515:

- Jan (SE) informed that the connectionCategory currently is registered at Metering Point level, but it will probably be needed on a Resource level in the future.

Jan (SE) mentioned that an MR for changing the cardinality of the association from EndDevice to Usage Point from [0..1] to [0..*] in 61968 already is added to Redmine (#5979), hence the first action item below will be changed to do the update in only ESMP.

The last part of the memo “CIM mapping of Metering configuration characteristics”, i.e. suggested MRs related to Register was reviewed and a set of action items were made.

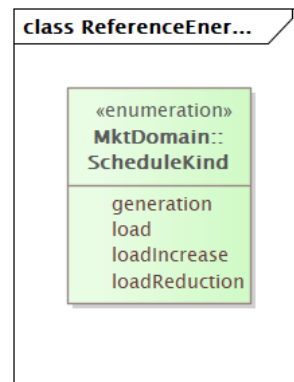
From Jan (SE) April 24th:

<https://redmine.ucaiug.org/issues/6293>

This is about the addition of the attribute energyFlowCategory to the AccountingPoint class. See MR ebIX 2023-001. That would tell if the AccountingPoint is for consumption, production or both.

It was asked if this is similar to or equal with the ScheduleKind enumeration, see under MarketOperations > MktDomain, and figure. That enumeration is used for some different attributes in the “DER” models (Distributed Energy Resources). That, as also was mentioned, could be part of a goal of having the North American and European profiles more similar and using more from each other.

(Note: ScheduleKind is not yet part of CIM used by ESMP, you will find it in e.g. the iec61970cim18v02_iec61968cim14v00_iec62325cim04v14.eap file).



Comment from ETC 20230516:

- The ScheduleKind enumeration seems to cover a different need than what we are looking for.

Another question about this new attribute was about its description: “*The coded identification of the direction of energy flow in an Accounting Point.*”. What would this attribute tell, couldn’t we add some more text to it? To be discussed here in Europe – what would you say? Can we approve the description?

Comments from ETC 20230516:

- Definition of the energyFlowCategory attribute in the MarketEvaluationPoint class “*The coded identification of the direction of energy flow in an Accounting Point.*”.
- Definition of the energyFlowCategory attribute in the Register class “*The coded identification of the direction of energy flow in a Register.*”.

A third question was the name of the attribute: wouldn’t “energyFlowDirection” be a better name? One problem with that would be the existing “FlowDirection” class. But I don’t think the name is so problematic.

Comment from ETC 20230516:

- We think the energyFlowDirection is a better name, however since it is very close to the already used class FlowDirection, we suggest keeping energyFlowCategory.

A final note was that we should look at the association with the class Register. At an AccountingPoint (or: UsagePoint) you would have one or more registers. Couldn’t one of them be “the register with the consumption”, and another be “the register with the production” – or, when just having one register, “a register with netted energy flow”. Looking now into this briefly, I don’t really find this kind of information in CIM.

Comment from ETC 20230516:

- We will make an MR for addition of energyFlowCategory to the Register class.

Actions:

- Ove will make a MR for changing the cardinality of the association from EndDevice to Usage Point from [0..1] to [0..*] in ESMP and make a reference to Redmine #5979.
- Ove will make a MR for adding EndDeviceFunction to ESMP and associations from Meter to EndDeviceFunction and from EndDeviceFunction to Register and add a reference to this MR in MR ebIX® 2023-002.
- Ove will update the code figure in the ebIX® BRS 2023-004-v3 (Add connectionCategory to Meter in ESMP) – thereafter Jan (SE) will resubmit the MR to the CIM for retail market wg.
- Ove will make a MR for adding touTierName to Register in ESMP
- Jan (NL) will verify if ebIX® MR 2021/035 (new Product class), ebIX® MR 2021/036 (measureUnit attribute) and ebIX® MR 2021/044 (Addition of association from Register to Product) still are valid.
- Ove will make a MR for adding energyFlowCategory to Register in IEC/61968 and ESMP
- Ove will make a MR for adding a RegisterMultiplier linked to the Register. Similar as the MeterMultiplier class is linked to the Meter class.
- Ove will make a MR for adding an association from Register to MktPSRType in both IEC/62325 and ESMP.
- Ove will make a MR for adding IEC61968/Metering/Channel and IEC61968/Metering/ReadingType classes to IEC62325-351/ESMPClasses, including the associations between the new Register class and the new Channel Class, and between the new Channel class and the ReadingType class in IEC62325-351/ESMPClasses.

6.1.4 [MRs based on Dutch requirements](#)

The item was postponed.

6.1.5 [Review of non-submitted MRs from the ETC Excel sheet - focus item](#)

Review of MRs after pre-review by EBG:

- 2022/022: Add an association from Series to ChargeType in 62325-301 and 62325-351.
- 2022/023: Add an association from ChargeType to MarketParticipant in 62325-301 and 62325-351.
- 2022/024: Add an association from ChargeGroup to ChargeType in 62325-351.
- 2022/025: Add an association from ChargeType to Period (62325-301) and from ChargeType to Series_Period (62325-351)
- 2022/026: Add the attribute VATobliged (Boolean) to ChargeType in 62325-301 and 62325-351.
- 2022/035: Add the attribute VATlevel (String (may be a percentage or low/high...)) to ChargeType in 62325-301 and 62325-351.

The MRs above was reviewed and updated at the EBG meeting April 25th and 26th. In addition it was agreed making two new MRs:

- MR 2022/020 - Add «ACC» ChargeType with a “standard set of attributes” (see above) to ESMP
 - We suggest keeping the definition of the class ChargeType from the TC57CIM/IEC62325/MarketOperations/ParticipantInterfaces package, however without the examples, i.e.:

Charge Type is the basic level configuration for settlement to process specific charges for invoicing purpose. ~~Examples such as: Day Ahead Spinning Reserve Default Invoice Interest Charge, etc.~~
 - Jan (SE) had done some editorial changes and suggests a major change:
 - Added the suggestion to move the ChargeType class to the MarketCommon package within IEC 62325-301.
- Add MR 2022/021 - Add «ACC» ChargeComponent with the attribute equation and an association to ChargeType.
 - Also here the ChargeComponent class is suggested moved to the MarketCommon package within IEC 62325-301.

The two MRs (2022/020 and 2022/021) were reviewed and updated.

6.1.6 [Not yet mapped attributes from the BRS for Alignment of metering configuration characteristics](#)

- Status for submission of the following MRs to ENTSO-E that have been drafted by Ove:
 - ebIX 2023-006-v1 - Add registersRemotelySwitchable to Meter in 61968 and ESMP.
 - ebIX 2023-007-v1 - Add numberOfRegisters to Meter in 61968 and ESMP.
 - ebIX 2023-008-v1 - Link pressureCompensation to Meter in ESMP.
 - ebIX 2023-009-v1 - Link temperatureCompensation to Meter in ESMP.
 - ebIX 2023-010-v1 - Add altitudeCompensation to EndDeviceInfo and link it to Meter in ESMP.
 - ebIX 2023-011-v1 - Add an association from Meter to UsagePointLocation in ESMP.
- Status for request from Jan (SE)/Kees to Alvaro to change the direction of the association from MarketEvaluationPoint to MktActivityRecord in ESMP, ref. MR 2022/012.
- Status for request from Jan (SE) will ask WG16 if we should change the attributes in PositionPoint to longitude, latitude, altitude, but if not agreed, add explaining text to the description.

EBG discussed at their meeting April 25th and 26th how to use the conversion factor class in BRS for metering configuration characteristics, especially for temperature, pressure and measurement – and for electricity: is this the same as the constant in the register:

- The conversion factor for altitude is a multiplier that depends on the height above sea-level.
- The conversion factor for pressure is a multiplier that depends on pressure at the measure point, e.g. due to measurements at the end of long pipes.
- The conversion factor for temperature is a multiplier that depends on the temperature.
- The conversion factor for measurements for gas is for example used when a smaller pipe is used for the measurement to be able to measure where the flow is lower, e.g. using a conversion factor of 20.
- The conversion factor for measurements for electricity is used similar as for gas, e.g. measuring in a “bypass” with lower current, voltage etc. It is not the same as the constant for a register.

Action:

- Jan (SE) and Ove will ask EBG if we should add a link from Register to MeterMultiplier in the ebIX® BRS for Metering configuration characteristics.

6.2 Status for ENTSO-E CIM EG Retail market workgroup (follow-up item on the agenda)

6.2.1 [MRs to ENTSO-E CIM EG Retail market workgroup](#)

The item was postponed.

6.3 Status for European (ebIX® and CIM EG Retail market workgroup) MRs to CIM

The item was postponed.

6.4 Preparations for coming WG16 meetings

Nothing to prepare.

7 EG1 status

Kees informed that he is trying to get the EG1 working groups, especially related to master data to use the ebIX® BRSs as a sort of supporting source for needed master data - in addition to the existing IAs, which is the primary source.

The item was also handled under item 3.

8 Resolve HG issues - Prioritised item on ETC meeting September 27th

8.1 Review of HEMRM update suggestions from EBG

The “Domain part” of the memo was reviewed, and some phrases were updated, until the Metering Point. The discussion was stopped wondering what the Grid Connection is or should be, see item 8.5 below.

The review will continue at the next EBG meeting June 5th.

8.2 BRP vs Energy Trader

The item was postponed.

8.3 Status for harmonisation of the electricity and gas markets role models

The item was postponed.

8.4 Suggestions for HEMRM extensions

The item was postponed.

8.5 HG MR for the new domain (or CIM object) Grid Connection

EBG (Gerrit) was asked for a better justification for the need for the Grid Connection during the EBG meeting April 25th and 26th:

The “Reason for request” part of the MR was updated with a better justification:

There is a need to link together multiple Accounting Points, e.g. within the same “address”, in a proper way. Today this is done differently in different countries, among others by using sub–Accounting Points linked to a main Accounting Points or by using linked Accounting Points, mother/child Accounting Points etc. However, we believe that the correct way is to link these Accounting Points to the same Grid Connection. Furthermore the administration at the Grid Access Provider becomes very complex with multiple Accounting Points at the “same address”, hence the Grid connection (a point in the physical grid, which may have coordinates) seems the solution for this too.

There is a need to have a link from the energy market to the physical grid (as physical energy is delivered).

Conclusion:

- EBG will be asked to review the updated MR and if ok, submit it to the HG.

Further, a mail was sent to Svein and Chavdar,

During an ebIX® meeting today we discussed how the physical grid is linked to the market. More precise, what term is used for the “element” that links the “physical grid” and the “market” and what class from the CGM part of CIM will be used for this “element”?

Do you have any views on this?

Discussions to be continued at next meeting.

9 ebIX® Business Information Model 2022.A

9.1 Shall we align the definition in the ebIX® Business Information Model and/or ebIX® BRs with CIM definitions for classes and attributes?

The item was postponed.

9.2 Use of XOR in combination with cardinalities

The item was postponed.

9.3 Continue review and update of version 2022.A

The item was postponed.

10 Next meetings¹

- Friday June 16th, 09:00 – 11:00, 2023, GoToMeeting
- Monday June 26th, 10:00 – 12:00, 2023, GoToMeeting
- Thursday September 7th, 11:00 – 16:00, 2023, GoToMeeting
- Tuesday October 3rd (09:00 – 16:00) and Wednesday October 4th (09:00 – 15:00) in Svenska kraftnäts offices in Sundbyberg (Stockholm).

11 AOB

11.1 Memo: Consequences of closure of ebIX®

Ove has started on a memo showing consequences of closure of ebIX®. The memo was reviewed and some smaller updates were done.

The memo was also discussed during the session where Vlatka and Lucy participated Tuesday morning, where it was concluded that it is too early to present the memo for ebIX® Forum at their meeting on May 30th. However, ETC and EBG will continue working on it, with the intention to present it on the ebIX® Forum meeting September 20th.

11.2 Can we rename DDQ Balance power supplier to Energy supplier – and maybe more...

Jan (NL) asked if we could update the ebIX® code list with the new name and definition for DDQ, as found in the UN/CEFACT directory 2020.B and later:

DDQ Energy Supplier

A party supplying energy to a party connected to the grid at an accounting point. In case of a surplus, the energy supplier may also take back energy.

The code list was reviewed and among others the name and definition of Energy supplier was updated.

It was also noted that there are other need updates, such as:

- There are more codes missing in the published code list, such as:
 - Business Role Code Z13: codeName = "Metered Data Administrator"
- There seems also to be several codes missing in Document Name Code, such as E82 – E91

Action:

- Ove will publish the code list.
- Jan (SE) will try finding time do some QA on the code list as homework.

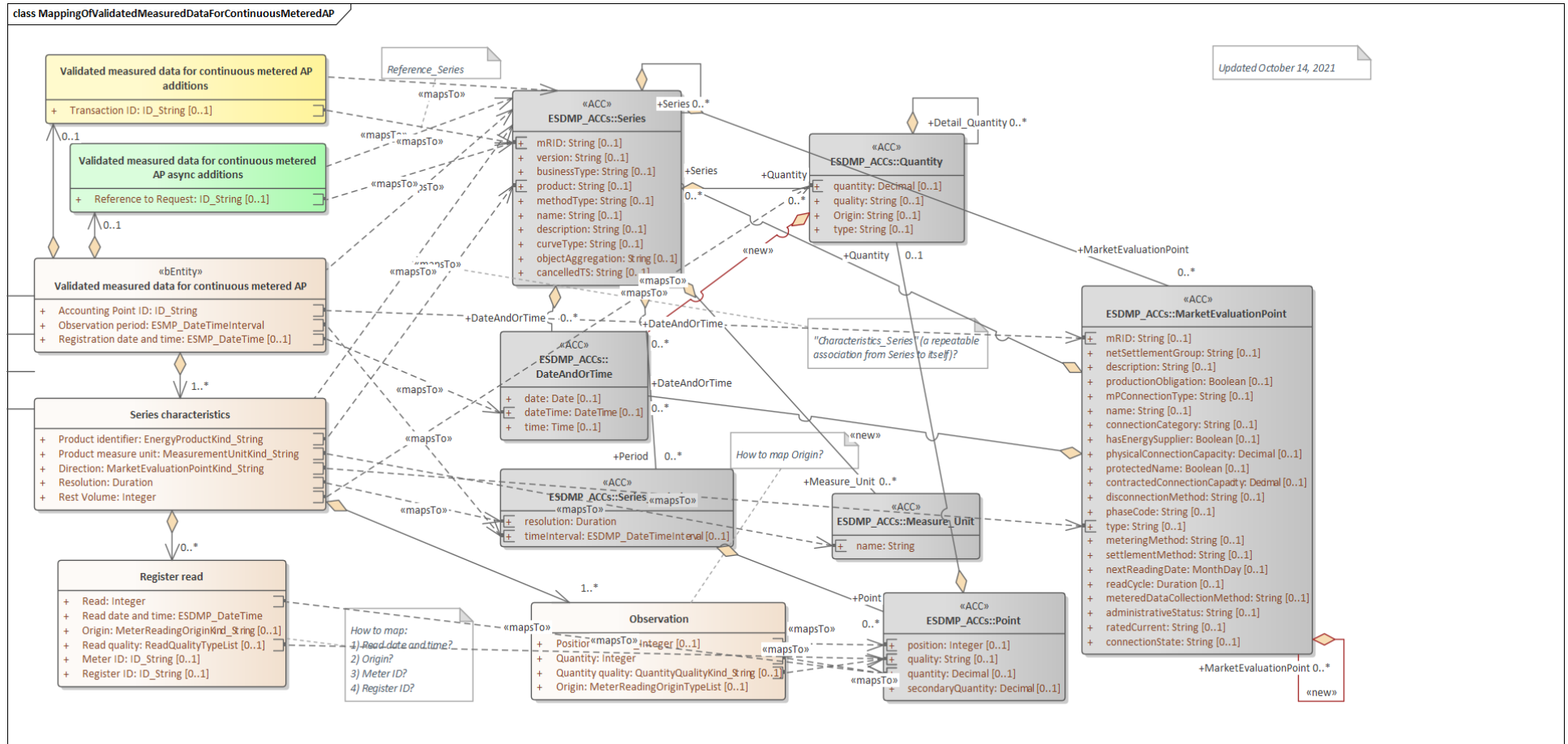
¹ All Face-to-face meeting starts 09:00 the first day and end at 16:00 unless otherwise explicitly stated.

Appendix A ebIX® rules for how to make MRs to WG16

- 1) Artefacts used for MRs to WG16 shall be stored as separate packages in the common cloud EA model.
- 2) Always review existing definitions of attributes, classes etc. that are related to the MR in question and if needed propose updates to these definitions.
- 3) First investigate basic CIM to see if the object we intend to send an MR for already is available there.
If yes, we should make a MR for 62325-351 (ESMP), if not we make a MR for both basic CIM and ESMP.

Appendix B 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
<p>«Business entity»</p> <p>Validated measured data for continuous metered AP</p>	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	<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>
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	<p>A code specifying the direction of the energy flow that was measured with this validated measured data.</p> <p>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.</p>	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>

class MappingOfValidatedMeasuredDataForContinuousMeteredAP

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