



Business Requirements for Validate and exchange measured data

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A. About this document

This document is a Business Requirements Specification (BRS) for the process of validate and exchange measured data, both for electricity and for gas. In this BRS we use business terms for the actors, and we map them to the terms used in the Harmonised Role Model from ENTSO-E, ebIX® and EFET [2]. A party acts in the capacity of a certain role.

As a general introduction ebIX® has published a separate document “Introduction to ebIX® Business Requirements and Business Information Models” [3]. The introduction also includes the generic model elements that are not specific for a business process.

In line with UN/CEFACT Modelling Methodology version 2 (UMM-2) ebIX® defines the business requirements as the first step in modelling energy market processes. This document specifies an UMM Business Requirements View, which consist of the three sub views: Business Domain View, Business Partner View and Business Entity View".

The Business Information Model is in turn the basis for the creation of XML schema's and is the basis for the specification of web services. The Business Information Model and the syntax specific structures are specified by the “ebIX® Technical Committee” (ETC).

Since the ebIX® model is open for national customisation, some attributes are added as optional for usage for regional/national customisation. If used, these attributes must be specified nationally.

A.1. Comments to the ebIX® model

If you have comments or suggestions to the requirements, please contact ebIX® secretary at secretary@ebix.org.

A.2. References

A.2.1. Standards

- [1] UML Profile for UN/CEFACT's Modelling Methodology (UMM), Base Module, 2.0.
([UN/CEFACT Modelling Methodology \(UMM\)](#))
- [2] The Harmonized Role Model (for the Electricity Market) by ebIX®, ENTSO-E, and EFET
(https://www.ebix.org/artikel/role_model)

A.2.2. ebIX® Documents

- [3] Introduction to ebIX® Business Requirements and Business Information Models
(<https://www.ebix.org/artikel/documents>)

- [4] Recommended Identification Schemes for the European Energy Market
(<https://www.ebix.org/artikel/documents>)
- [5] ebIX® code lists (<https://www.ebi.x.org/artikel/documents>)
- [6] ebIX® BRSs for Structuring of the European Energy Market, including change of supplier and alignment of Accounting Point characteristics (<https://www.ebi.x.org/artikel/documents>)
- [7] ebIX® Business Requirements for Measure Collected data
(<https://www.ebi.x.org/artikel/documents>)
- [8] ebIX® Business Requirements for Measure for Billing
(<https://www.ebi.x.org/artikel/documents>)

A.3. Main changes since last version

Old	New	Clarification	Date
Version 1.0			
NA	1.0.A	This is a new BRS, hence changes have not been tracked.	20220221

1 Business Domain View: Validate and exchange measured data

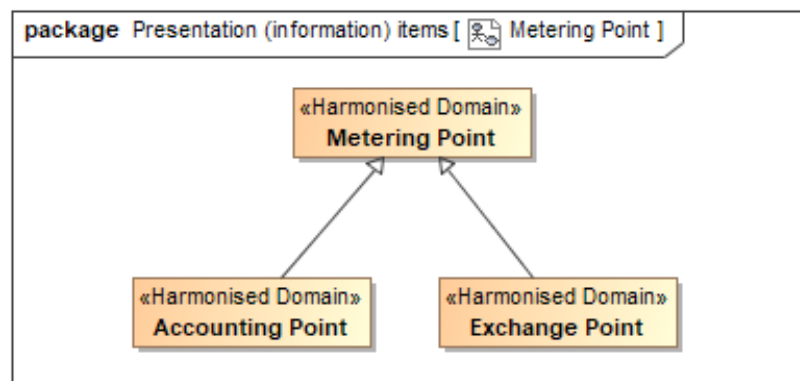
1.1 Overview

This overview presents in broad lines the process of validating measured data and the exchange of these from the Metered Data Responsible (responsible for validating the measured data) to the Metered Data Administrator.

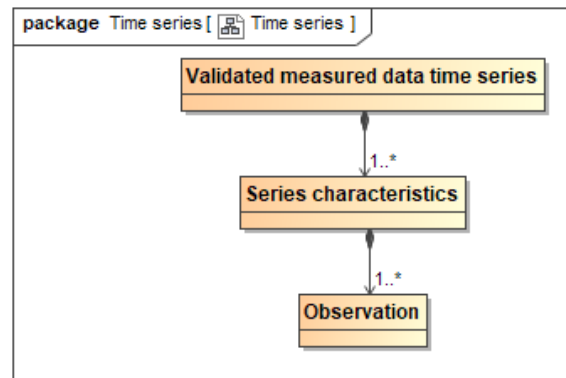
It all starts at the Metered Data Responsible, normally receiving collected data from the Metered Data Collector. These collected data are validated according to national rules. If no collected data is received within a time frame based on national rules, the Metered Data Responsible will calculate, or estimate based on national rules the validated measured data. After validation or calculation, the validated measured data are sent to the Metered Data Administrator, responsible for distribution of the validated measured data to all entitled parties, such as the Energy Supplier, Grid Company, Balance Responsible Party and Consented Parties.

1.2 Basic assumptions

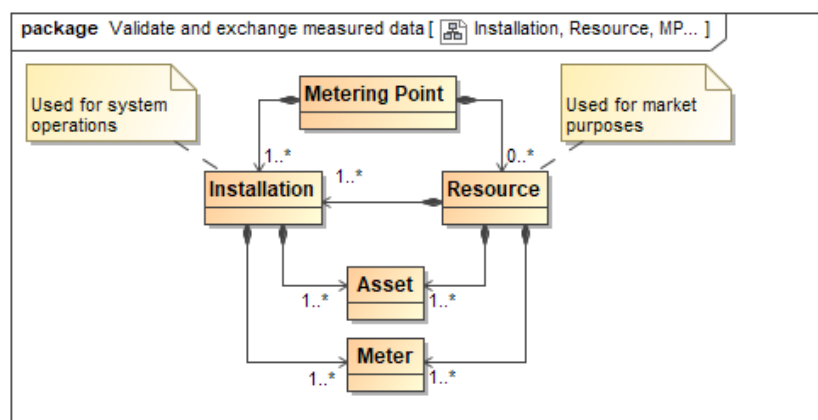
- Exchange of single meter reads, such as opening reads after change of supplier, etc., are documented in BRS for Determine Meter Read.
- Accounting Point and Exchange Point are specialisations of a Metering Point. In this BRS, Accounting Point and Exchange Point are used when applicable. Metering Point is used if the “point” can be either an Accounting Point or an Exchange Point.



- The characteristics of a Metering Point (Accounting Point or Exchange Point) are exchanged as master data; hence these are not part of the measured data documents.
- The Series characteristics class is introduced as normalisation from observations having characteristics in common, in between the Time series class and the Observation class:



- In this BRS it is assumed the following relations between Metering Point, Resource(s) and Installation(s):



A Metering Point consists of one or more Installations, which contains one or more Assets that consume or produce energy. At the connection of an Installation to the grid, the energy flow is measured with one or more Meter(s).

An Installation is a galvanic isolated set-up connecting one or more Assets at a Metering Point to the grid.

A Resource consists of a set of (one or more) Assets of one or more Installations at a metering Point for offering a certain energy capacity (service) to the market. A Resource can be metered separately or using the meter(s) of the installation.

Since this BRS concerns market processes, the Installation is not used in the rest of the BRS.

- It is assumed that Resources are continuous metered.

- The conventions for how to use Flow Direction are:
 - The direction is seen from the grid (Metering Grid Area¹ (MGA)) point of view. A flow from the Accounting Point, Exchange Point or Resource into the grid is defined as *production* and a flow from the grid into the Accounting Point, Exchange Point or Resource is defined as *consumption*.
- An Accounting Point relates to only one grid (MGA) and this relation is defined in master data.
- An Exchange Point is linked to multiple grids (MGAs), hence the “reporting grid (MGA)” (the point of view) must be defined in the information exchange.
- Peak values can be sent in the Quantity attribute in the Observation class. That it is a peak can be seen from the Measure Unit, i.e., MAW (MW) is used for peaks in electricity markets and Q39/Q40 (normalised cubic meter per day or per hour) is used for peaks in the gas market.

The period, the peak is valid for, must be given in the Observation period in the root class. If a time series is sent in the same message, also the time series period must be covered by the Observation period.

- As you will notice from chapter 3, the class diagrams provide the structure of the data to be exchanged. However, the actual exchange of data needs national rules for specifying the exchange in combination with the structure. For example, when to use optional classes must be specified nationally.

¹ A Metering Grid Area is a physical area where consumption, production and exchange of energy can be measured. It is delimited by the placement of meters for continuous measurement for input to, and withdrawal from the area. A Metering Grid Area consists of a set of Accounting Points in that physical area.

Additional information:

It can be used to establish volumes that cannot be measured such as network losses.

1.3 Validate and exchange measured data (Business Process UseCase)

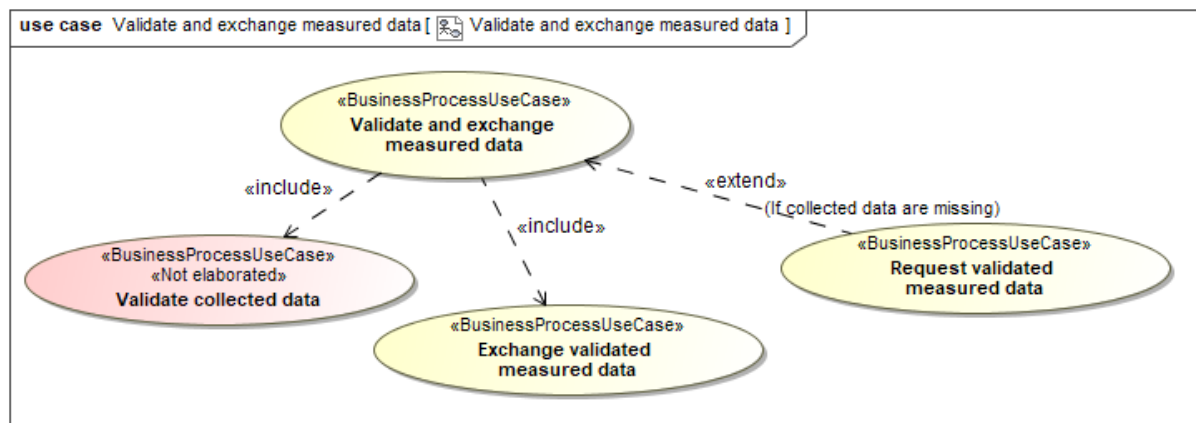


Figure 1 UseCase: Validate and exchange measured data

1.3.1 Description

UseCase description: Validate and exchange measured data	
definition	<p>This is the process where a Metered Data Responsible validates collected data and forwards this validated measured data to the Metered Data Administrator.</p> <p>And on the other hand, the Metered Data Administrator may request for validated measured data.</p>
beginsWhen	When the Metered Data Responsible has received collected data from the Metered Data Collector, when scheduled to validate measured data or when the Metered Data Administrator sends a request for validated measured data to the Metered Data Responsible.
preCondition	The Metered Data Responsible has received collected data from the Metered Data Collector or is scheduled to validate data.
endsWhen	The Metered Data Responsible has sent the validated measured data to the Metered Data Administrator.
postCondition	The Metered Data Administrator has an updated set of validated measured data.
Exceptions	None.
actions	Not applicable at this level.

1.3.2 Validate collected data (Business Process UseCase)

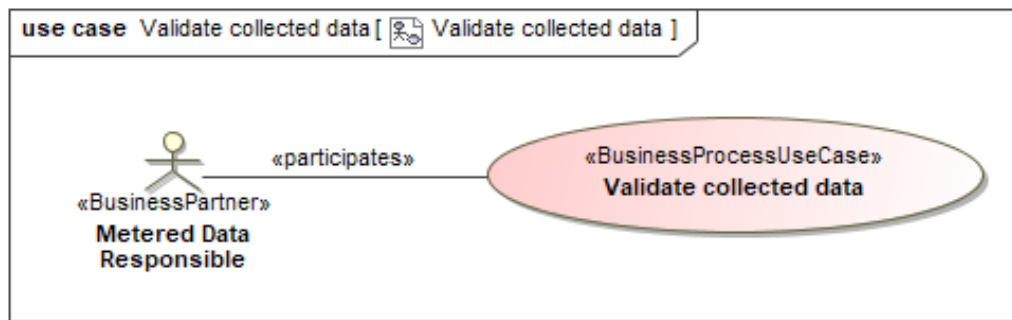


Figure 2 UseCase: Validate collected data

1.3.2.1 Description

UseCase description: Validate collected data	
definition	<p>This is a Metered Data Responsible internal process for producing validated measured data from received collected data or by estimation or calculation using historical measured data and/or Accounting Point characteristics, based on national rules.</p> <p>If the Metered Data Responsible is missing collected data from the Metered Data Collector the Metered Data Responsible may send a request for these collected data to the Metered Data Collector (described in ebIX® Business Requirements for Measure Collected data (https://www.ebi.x.org/artikel/documents) [7], or the Metered Data Responsible may calculate or estimate replacing values.</p>
beginsWhen	When the Metered Data Responsible has received collected data from the Metered Data Collector, when scheduled to validate measured data or when the Metered Data Administrator sends a request for validated measured data to the Metered Data Responsible.
preCondition	<p>The Metered Data Responsible has access to relevant master data and the validated measured data history.</p> <p>There are (national) rules for validation defined.</p>
endsWhen	The validated measured data have been produced.
postCondition	The validated measured data are available for exchange.
exceptions	None.
actions	This is an internal process within the Metered Data Responsible, hence not further elaborated.

1.3.3 Exchange validated measured data (Business Process UseCase)

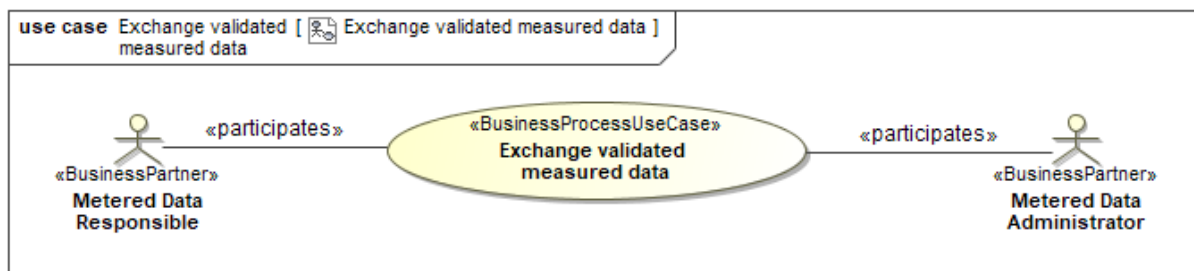


Figure 3 UseCase: Exchange validated measured data

1.3.3.1 Description

UseCase description: Exchange validated measured data	
definition	This is the process where the Metered Data Responsible sends validated measured data for a Metering Point (a profiled or continuous metered Accounting Point or an Exchange Point), or a Resource to the Metered Data Administrator.
beginsWhen	When the Metered Data Responsible has produced the validated measured data or the sending is scheduled to according to national rules.
preCondition	The Metered Data Responsible has successfully validated the measured data for the Metering Point or Resource.
endsWhen	The Metered Data Responsible has sent the validated measured data to the Metered Data Administrator.
postCondition	The Metered Data Administrator has the validated measured data for this Metering Point or Resource.
exceptions	None.
actions	See 1.3.3.1.1.

1.3.3.1.1 Business Process

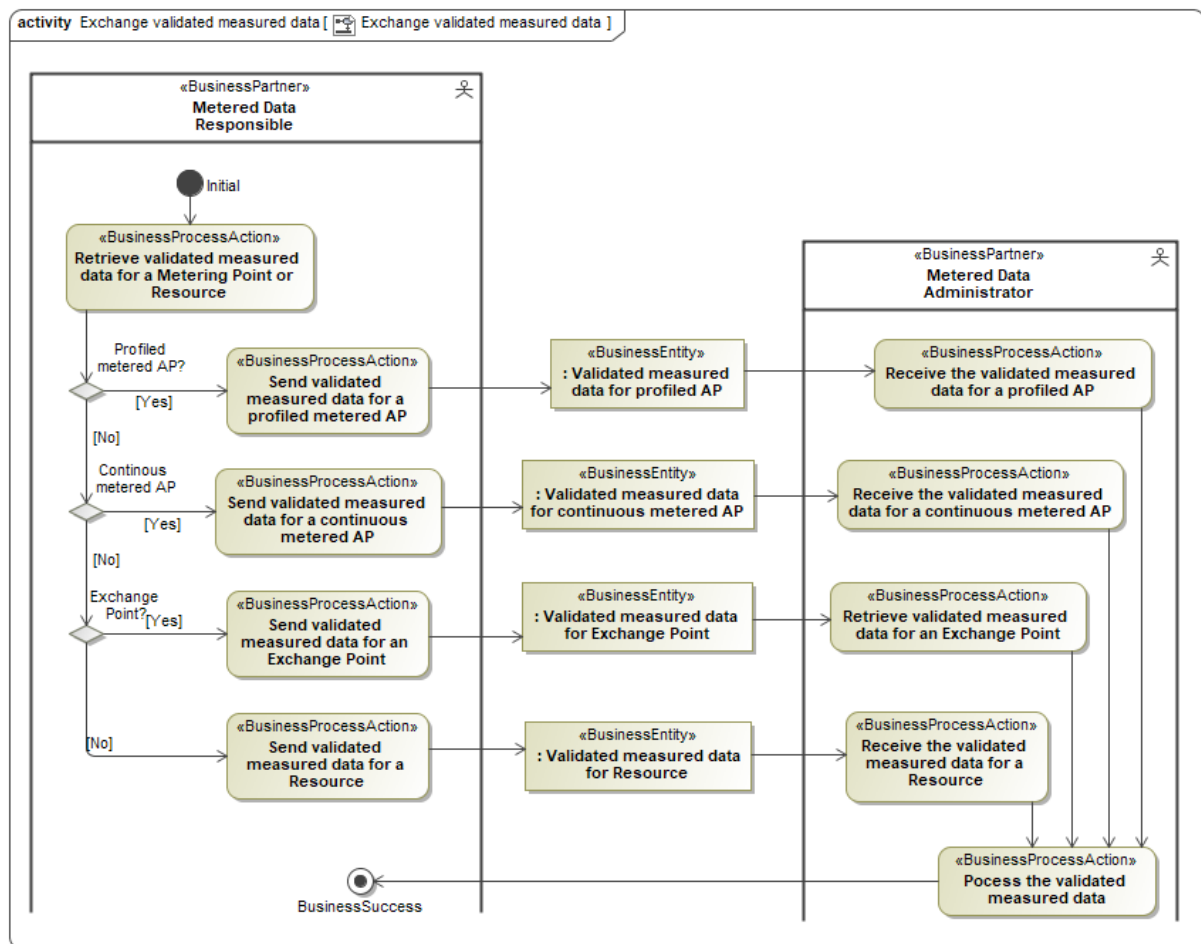


Figure 4 Business process: Exchange validated measured data

1.3.4 Request validated measured data (Business Process UseCase)

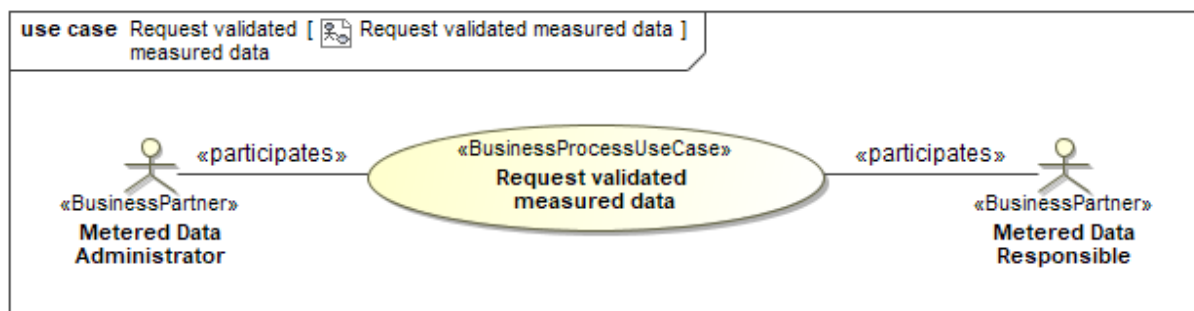


Figure 5 UseCase: Request validated measured data

1.3.4.1 Description

UseCase description: Request validated measured data	
definition	This is the process where the Metered Data Administrator requests validated measured data for a Metering Point, or a Resource at a Metering Point, with specified characteristics (including a period) from the Metered Data Responsible.
beginsWhen	When the Metered Data Administrator has a need to request validated measured data at the Metered Data Responsible.
preCondition	The Metered Data Administrator is missing validated measured data for a Metering Point or Resource for a certain period.
endsWhen	The Metered Data Administrator has received the requested validated measured data.
postCondition	The Metered Data Administrator has the needed validated measured data in its administration.
exceptions	The request for validated measured data is rejected by the Metered Data Responsible.
actions	See 1.3.4.2

1.3.4.2 Business Process

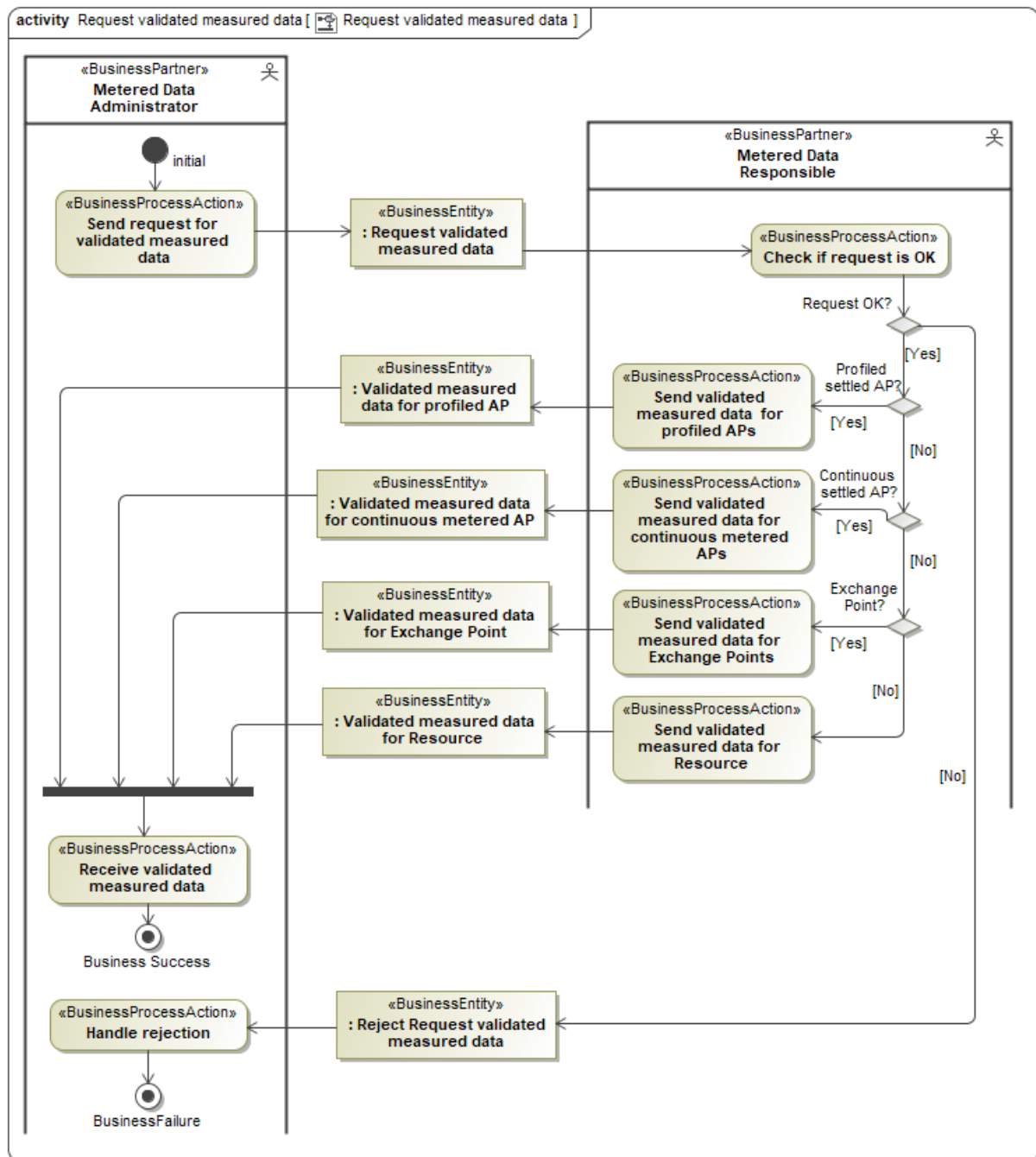


Figure 6 Business process: Request validated measured data

2 Business Partner View

2.1 Business Partners for Validate and exchange measured data

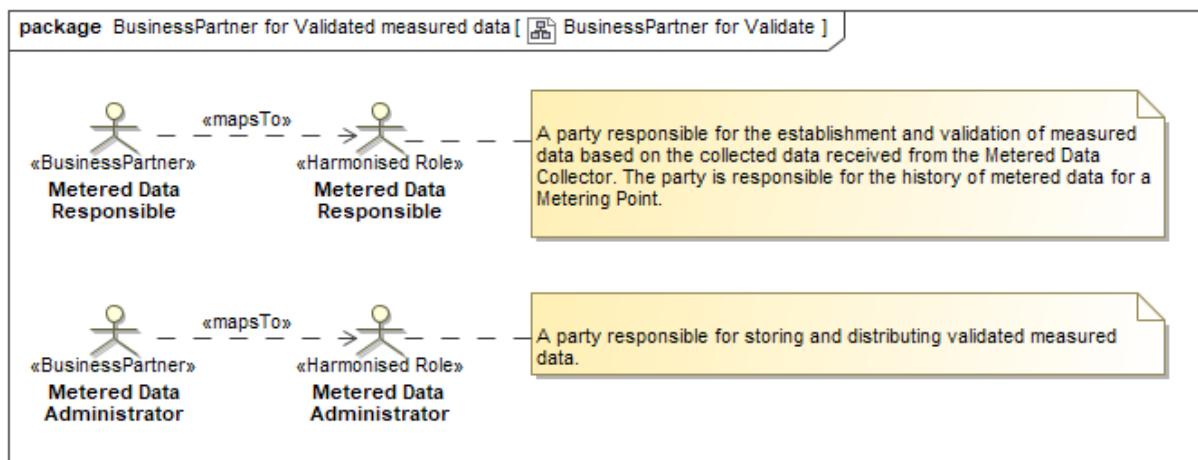


Figure 7 Business Partners for Validate and exchange measured data

3 Business Entity View

A general introduction to the Business Entity View can be found in the Introduction to ebIX® Business Requirements and Business Information Models (<https://www.ebix.org/artikel/documents>) [3].

3.1 Validated measured data for profiled AP (Class Diagram)

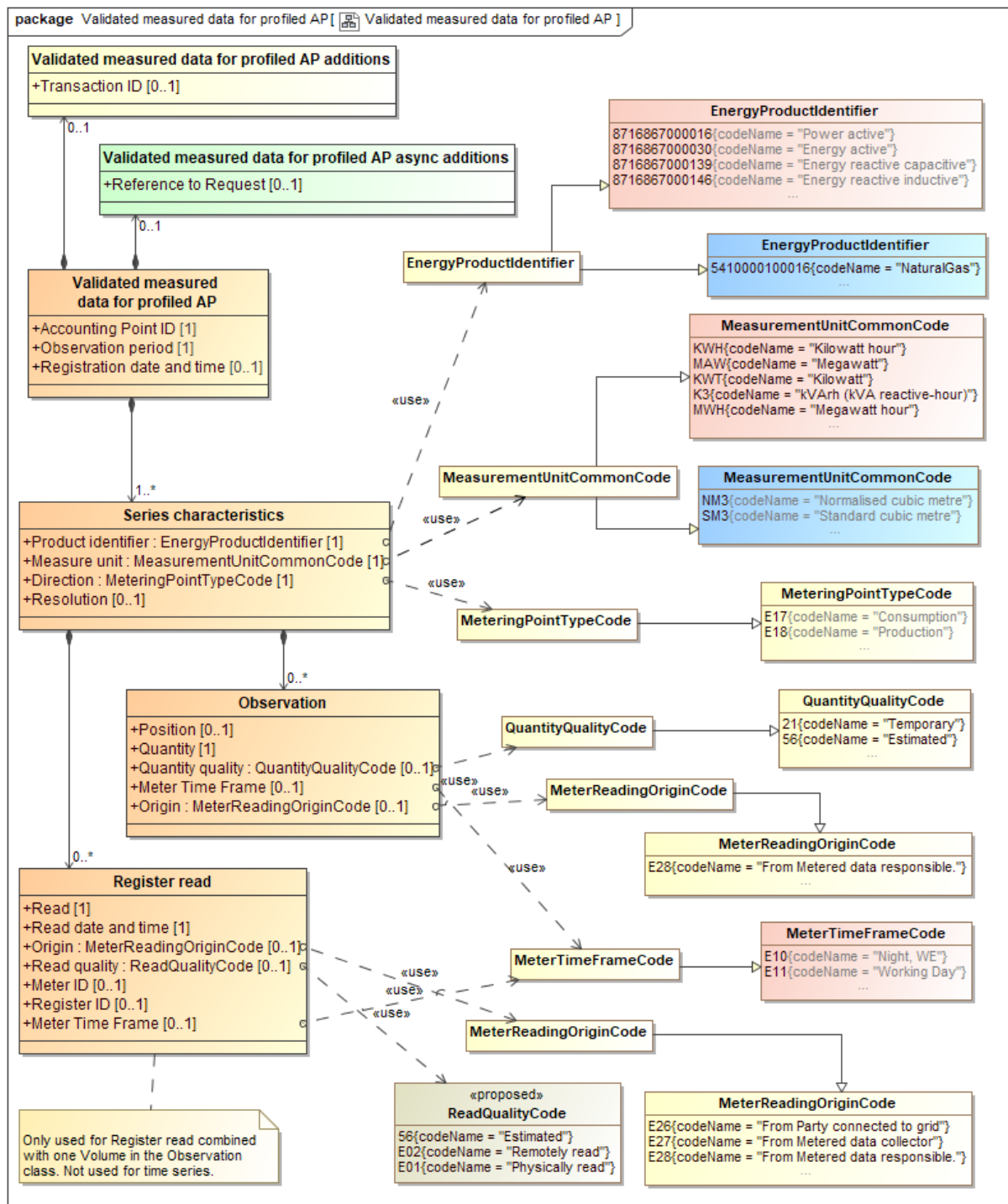


Figure 8 Class diagram: Validated measured data for profiled AP²

² Resolution and Position can be omitted if sending only one volume in the Observation class.

3.1.1 Element definitions: Validated measured data for profiled AP

Attribute	Sect or ³	Definition
«Business entity» Validated measured data for profiled AP		The information set sent by a Metered Data Responsible to the Metered Data Administrator when exchanging validated measured data for profiled AP.
Accounting Point ID		The unique identification of the Accounting Point to which these validated measured data are attributed.
Observation period		The specific period of time the validated measured data have been measured, calculated or estimated for.
Registration date and time		The date and time of the validation (and storage in the database) of this set of validated measured data.
Series characteristics		The characteristics of this set of validated measured data, i.e., the product and flow direction.
Product identifier		A code specifying the energy product for the quantities in this set of validated measured data.
Measure unit		The unit of measure used for the quantities in this set of validated measured data.
Direction		A code specifying the direction of the flow of the energy that is measured in the Observation period. 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.
Resolution		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). The Observation Period must contain a whole number of observations as derived from the resolution. The resolution is expressed in compliance with ISO 8601 in the following format: PnYnMnDTnHnMnS. For example PT15M for 15 minutes resolution.
Register read		A read from the register of a meter linked to the Metering Point. Further, a register also defines characteristics of the product that is being measured (like in the OBIS code) and characteristics of the read. This read is at the basis of the validated measured data in the Observation.

³ It is assumed that Accounting Points are uniquely dedicated to either electricity or to gas.

Attribute	Sect or ³	Definition
Read ⁴		The value as read from or calculated for the register, for this Read date and time in the Observation period.
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.
Origin		A code specifying the role of the party that has retrieved or calculated the read.
Read quality		The quality of this read, such as estimated/calculated, remotely read, or physically read.
Meter ID		The unique identification of the Meter, linked to the Accounting Point, which contains the register that has been read.
Register ID		The unique identification of the Register within the Meter, where this data has been read from or is estimated for.
Meter time frame	Elec.	A code specifying the Meter Time Frame for the read.
Observation		One validated measured value within a timeseries.
Position		The ordinal position of this Observation in this Observation Period for this set of validated measured data.
Quantity		The validated quantity of energy for this Observation.
Quantity quality		The quality of this quantity (volume), such as validated (default value, hence not sent), estimated, or temporary.
Meter time frame	Elec	A code specifying the Meter Time Frame for the quantity.
Origin		A code specifying the role of the party delivering the Quantity.
Validated measured data for profiled AP additions		Additional information, related to validated measured data, the use of which may be agreed on a national level.
Transaction ID		The unique identification of this set of information as given by the Metered Data Responsible.
Validated measured data for profiled AP async additions		Additional information related to validated measured data, needed when using asynchronous communication.
Reference to request		Information about the request for this set of validated measured data, which uniquely identifies it.

⁴ 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”.

3.2 Validated measured data for continuous metered AP (Class Diagram)

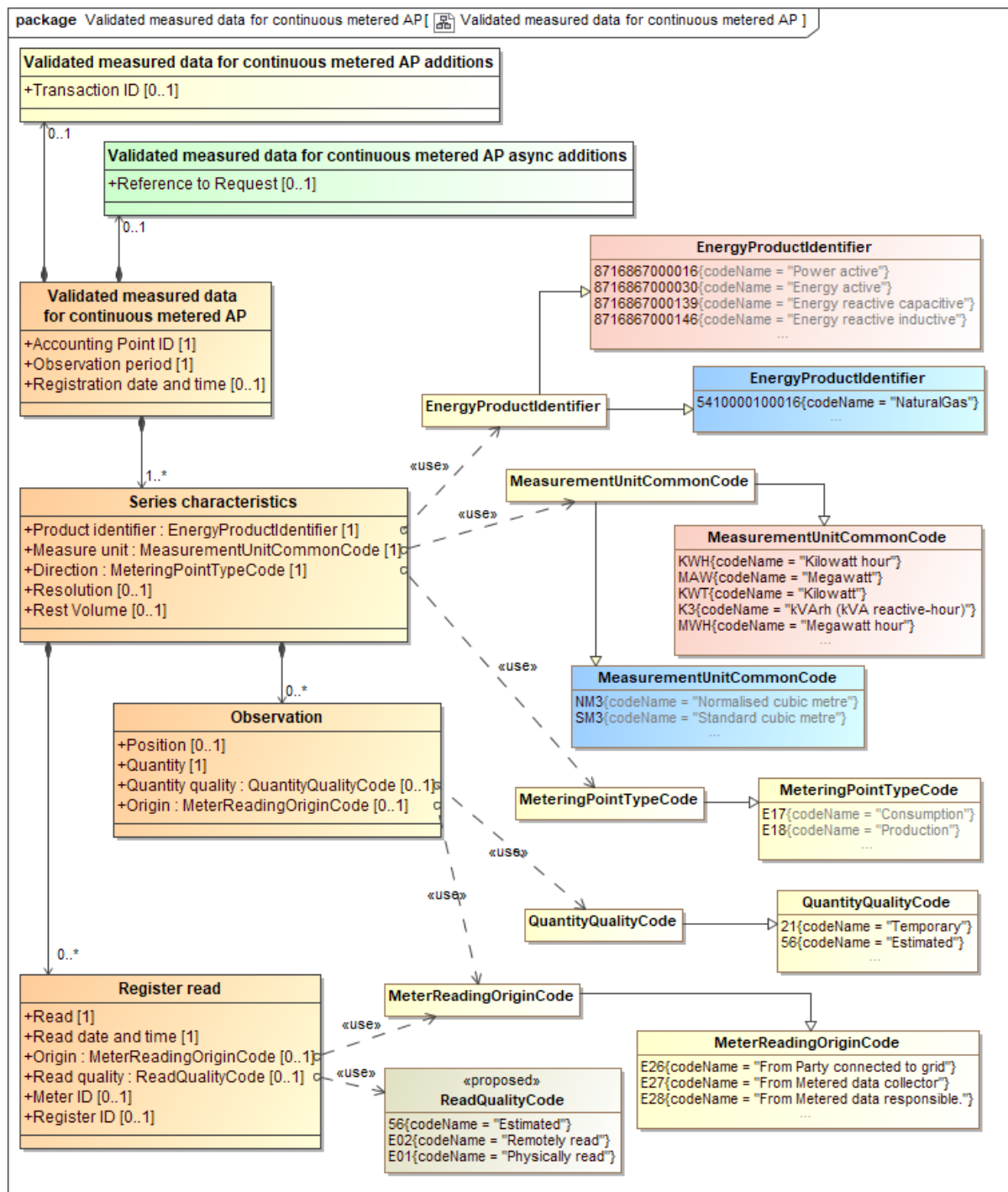


Figure 9 Class diagram: Validated measured data for continuous metered AP⁵

⁵ Resolution and Position can be omitted if sending only one volume in the Observation class.

3.2.1 Element definitions: Validated measured data for continuous metered AP

Attribute	Sector ⁶	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
Accounting Point ID		The unique identification of the Accounting Point to which the validated measured data are attributed.
Observation period		The specific period of time the validated measured data have been measured, calculated or estimated for.
Registration date and time		The date and time of the validation (and storage in the database) of this set of validated measured data.
Series characteristics		The characteristics of this set of validated measured data, i.e., the product and flow direction.
Product identifier		A code specifying the energy product for the quantities in this set of validated measured data.
Measure unit		The unit of measure used for the quantities in this set of validated measured data.
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.
Resolution		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). The Observation Period must contain a whole number of observations as derived from the resolution. The resolution is expressed in compliance with ISO 8601 in the following format: PnYnMnDTnHnMnS. For example PT15M for 15 minutes resolution.
Rest Volume	Gas	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.

⁶ It is assumed that Accounting Points are uniquely dedicated to either electricity or to gas.

Attribute	Sector ⁶	Definition
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.
Read ⁷		The value as read from or calculated for the register, for this Read date and time in the Observation period.
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.
Origin		A code specifying the role of the party that has retrieved or calculated the read.
Read quality		The quality of this read, such as estimated, remotely read or physically read.
Meter ID		The unique identification of the Meter linked to the Accounting Point, which contains the register that has been read.
Register ID		The unique identification of the Register within the Meter, where this data has been read from or is estimated for.
Observation		One validated measured value within a timeseries.
Position		The ordinal position of this Observation in this Observation Period for this set of validated measured data.
Quantity		The validated quantity of energy for this Observation.
Quantity quality		The quality of this quantity (volume), such as validated (default value, hence not sent), estimated, or temporary.
Origin		A code specifying the role of the party delivering the Quantity.
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.
Transaction ID		The unique identification of this set of information as given by the Metered Data Responsible.
Validated measured data for continuous metered AP async additions		Additional information related to validated measured data needed when using asynchronous communication.
Reference to request		Information about the request for this set of validated measured data for continuous metered AP which uniquely identifies it.

⁷ 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”.

Comments to the diagram:

- There are two ways to exchange measured data from an Exchange Point. Use either the combination of Metering Grid Area and Direction, or the combination of In Area and Out Area.
 - Report the measured quantities for each linked Metering Grid Area individual, giving the Metering Grid Area ID in the top class and the Direction of the energy flow for that Metering Grid Area in the Direction attribute in the Series characteristics class.
 - Report, when only two Metering Grid Areas are linked to the Exchange Point, the energy flow to both connected Metering Grid Areas in one message by using the In Area and Out Area to indicate the direction between the two Metering Grid Areas. Note that with changing direction of energy flow, there will be two Series Characteristics classes with changing In- and Out Areas.

3.3.1 Element definitions: Validated measured data for Exchange Points

Attribute	Sector ⁹	Definition
«Business entity» Validated measured data for Exchange Point		The information set sent by a Metered Data Responsible to the Metered Data Administrator when exchanging validated measured data for an Exchange Point.
Exchange Point ID		The unique identification of the Exchange Point to which the validated measured data are attributed.
Observation period		The specific period of time the validated measured data have been measured, calculated or estimated for.
Registration date and time		The date and time of the validation (and storage in the database) of this set of validated measured data.
Metering Grid Area ID ¹⁰		The unique identification of the Metering Grid Area, linked to the Exchange Point, where these measurements are validated for.
Aggregated Reception Station ID	Gas	The unique identification of the Aggregated Reception Station, linked to the Exchange Point, where these measurements are validated for.
Series characteristics		The characteristics of this set of validated measured data, i.e., the product and flow direction.
Product identifier		A code specifying the energy product for the reads and/or the quantities in this set of validated measured data.
Measure unit		The unit of measure used for the quantities in this set of validated measured data.

⁹ It is assumed that Accounting Points are uniquely dedicated to either electricity or to gas.

¹⁰ The Exchange Point is connected to two Metering Grid Areas, hence the Metered Data Responsible sends two time series, one to each Metering Grid Area. The two timeseries will have different Directions.

Attribute	Sector ⁹	Definition
Direction		<p>A code specifying the direction of the flow of the energy measured in this Observation period.</p> <p>A flow from the Exchange Point into the Metering Grid Area is defined as production and a flow from the Metering Grid Area into the Exchange Point is defined as consumption.</p>
In Area		The Metering Grid Area into where the energy flow is from the Exchange Point
Out Area		The Metering Grid Area from where the energy flow is into the Exchange Point.
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>
Rest Volume	Gas	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.
Register read		A read from the register and characteristics of the read. This read is at the basis of the validated measured data in the Observation.
Read ¹¹		The value as read from or calculated for the register, for this Read date and time in the Observation period.
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.
Origin		A code specifying the role of the party delivering the Read.
Read quality		The quality of this read, such as estimated, remotely read or physically read.
Meter ID		The unique identification of the Meter, linked to the Exchange Point, which contains this register that has been read.

¹¹ 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”.

Attribute	Sector ⁹	Definition
Register ID		The unique identification of the Register within the Meter, where this data has been read from or is estimated for.
Observation		One validated measured value within a timeseries.
Position		The ordinal position of this Observation in this Observation Period for this set of validated measured data.
Quantity		The validated quantity of energy for this Observation.
Quantity quality		The quality of this quantity (volume), such as validated (default value, hence not sent), estimated or temporary.
Origin		A code specifying the role of the party delivering the quantity.
Validated measured data for Exchange Point additions		Additional information, related to validated measured data, the use of which may be agreed on a national level.
Transaction ID		The unique identification of this set of information as given by the Metered Data Responsible.
Validated measured data for Exchange Point async additions		Additional information, related to validated measured data, needed when using asynchronous communication.
Reference to request		Information about the request for this set of validated measured data, which uniquely identifies it.

3.4 Validated measured data for Resource (Class Diagram)

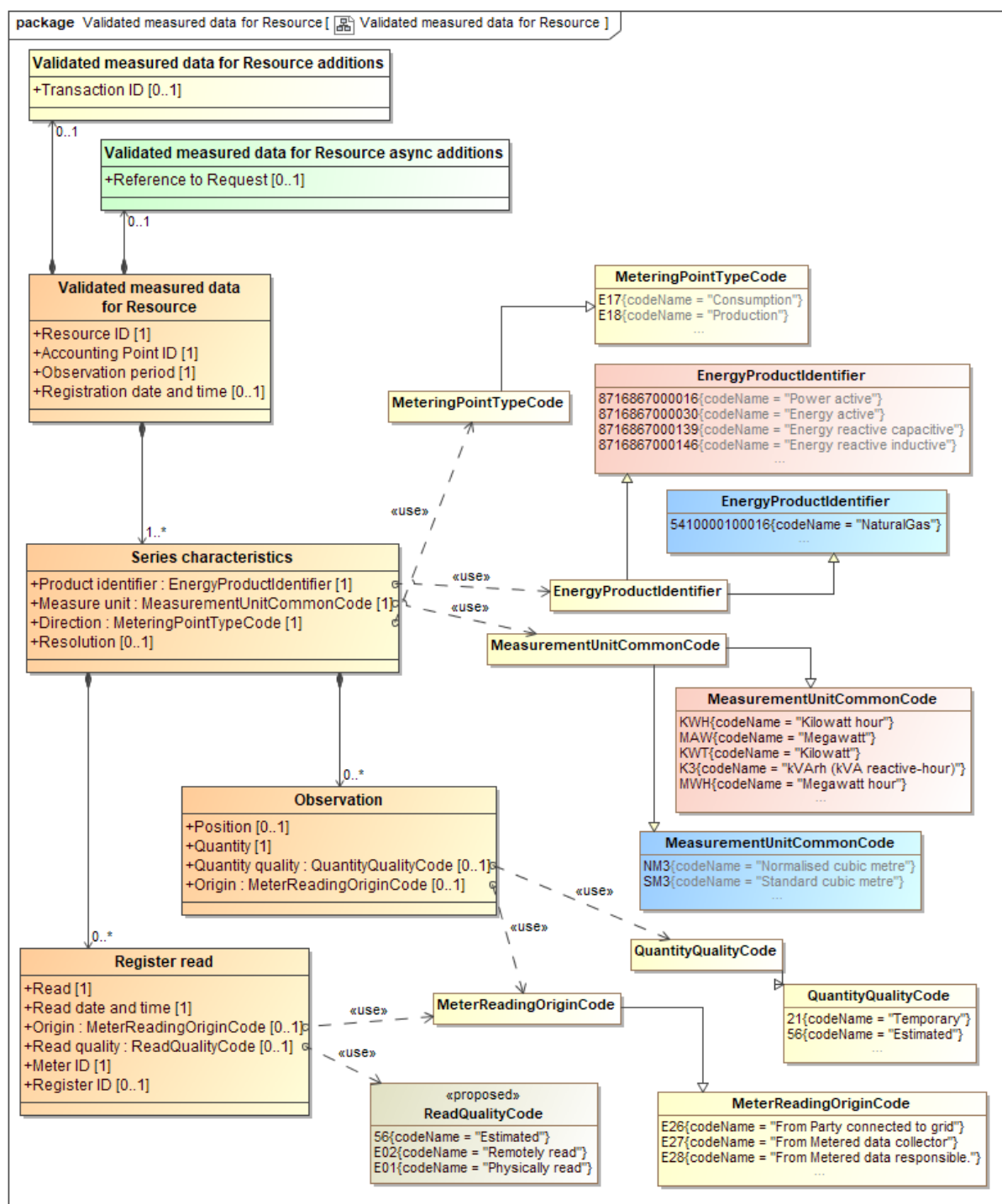


Figure 11 Class diagram: Validated measured data for Resource¹²

¹² Resolution and Position can be omitted if sending only one volume in the Observation class.

3.4.1 Element definitions: Validated measured data for Resource

Attribute	Sector ¹³	Definition
«Business entity» Validated measured data for Resource		The information set sent by a Metered Data Responsible to the Metered Data Administrator when exchanging validated measured data for a Resource.
Resource ID		The unique identification of the Resource, linked to the Accounting Point, to which the validated measured data are attributed.
Accounting Point ID		The unique identification of the Accounting Point the Resource belongs to.
Observation period		The specific period of time the validated measured data have been measured, calculated or estimated for.
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>
Registration date and time		The date and time of the validation (and storage in the database) of this set of validated measured data.
Series characteristics		The characteristics of this set of validated measured data, i.e. the product and flow direction.
Product identifier		A code specifying the energy product for the quantities in this set of validated measured data.
Measure unit		The unit of measure used for the quantities in this set of validated measured data.
Direction		<p>A code specifying the direction of the flow of the energy measured in the Observation period.</p> <p>A flow from the Resource into the Metering Grid Area is defined as production and a flow from the Metering Grid Area to the Resource is defined as consumption.</p>

¹³ It is assumed that Accounting Points are uniquely dedicated to either electricity or to gas.

Attribute	Sector ¹³	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>
Register read		A read from the register and the characteristics of this read within the Observation Period.
Read ¹⁴		The value as read from or calculated for the register, for this Read date and time in the Observation period.
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.
Origin		A code specifying the role of the party that has retrieved or calculated the read.
Read quality		The quality of this read, such as estimated, remotely read or physically read.
Meter ID		The unique identification of the Meter that contains the Register where this Read has been read from or is estimated for.
Register ID		The unique identification of the Register within the Meter, where this data has been read from or is estimated for.
Observation		One validated measured value within a timeseries.
Position		The ordinal position of this Observation in this Observation Period for this set of validated measured data.
Quantity		The validated quantity of energy for this Observation Position.
Quantity quality		The quality of this quantity (volume), such as validated (default value, hence not added), estimated or temporary.
Origin		A code specifying the role of the party delivering the quantity.
Validated measured data for Resource additions		Additional information, related to validated measured data, the use of which may be agreed on a national level.
Transaction ID		The unique identification of this set of information as given by the Metered Data Responsible.

¹⁴ 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”.

Attribute	Sector ¹³	Definition
Validated measured data for Resource async additions		Additional information, related to validated measured data, needed when using asynchronous communication.
Reference to request		Information about the request for this set of validated measured data, which uniquely identifies it.

3.5 Request validated measured data (Class Diagram)

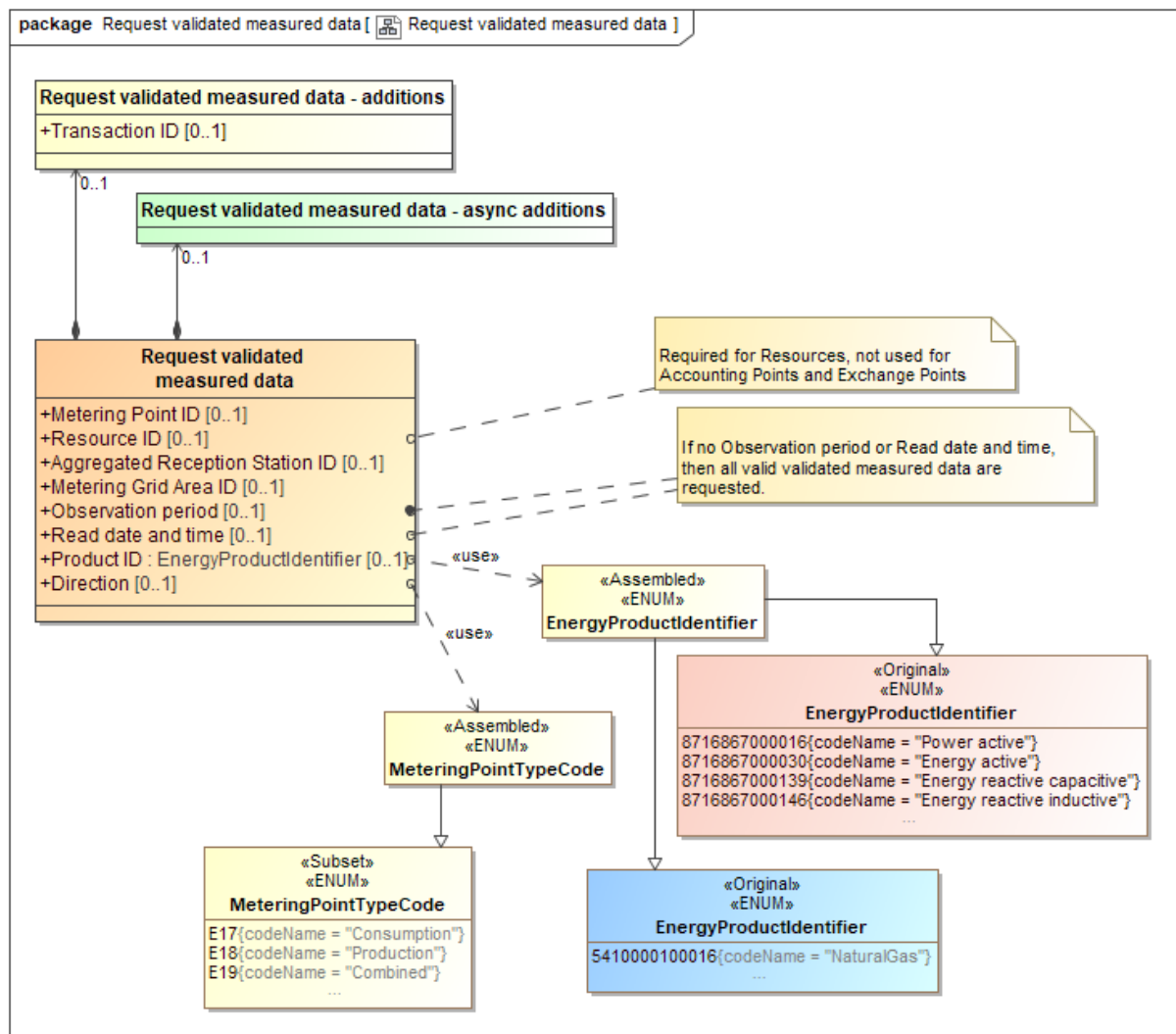


Figure 12 Class diagram: Request validated measured data

3.5.1 Element definitions: Request validated measured data

Attribute	Sector ¹⁵	Definition
«Business entity» Request validated measured data		The information set to be sent from the Metered Data Administrator to the Metered Data Responsible when requesting validated measured data at a Metering Point or a Resource.
Metering Point ID		The unique identification of the Metering Point (Accounting Point or Exchange Point) for which validated measured data are requested.

¹⁵ It is assumed that Accounting Points are uniquely dedicated to either electricity or to gas.

Attribute	Sector ¹⁵	Definition
Resource ID		The identification of the Resource at the Accounting Point, for which validated measure data are requested.
Aggregated Reception Station ID	Gas	The unique identification of the Aggregated Reception Station linked to the Exchange Point, where the energy in these requested measurements shall be exchanged with.
Metering Grid Area ID		The unique identification of the Metering Grid Area linked to the Exchange Point, where the energy in these requested measurements shall be exchanged with.
Observation period		A specific period of time describing the period of measurement for the requested set of validated measured data.
Read date and time		The requested timestamp of the moment in time when the value was registered in the Register of the Meter or the value was calculated for.
Product ID		A code specifying the energy product for the requested validated measured data.
Direction		<p>A code specifying the requested direction of the flow of the measured energy.</p> <p>A flow from the Metering Point (Accounting Point or Exchange Point) or Resource into the Metering Grid Area is defined as production and a flow from the Metering Grid Area to the Metering Point, Exchange Point or Resource is defined as consumption.</p>
Request validated measured data Additions		Additional information related to the Request validated measured data, which may be agreed on a national level.
Transaction ID		The unique identification of this set of information as given by the sender of the document.
Request validated measured data Async Additions		Additional information, related to Request validated measured data, needed when using asynchronous communication.

3.6 Reject Request validated measured data (Class Diagram)

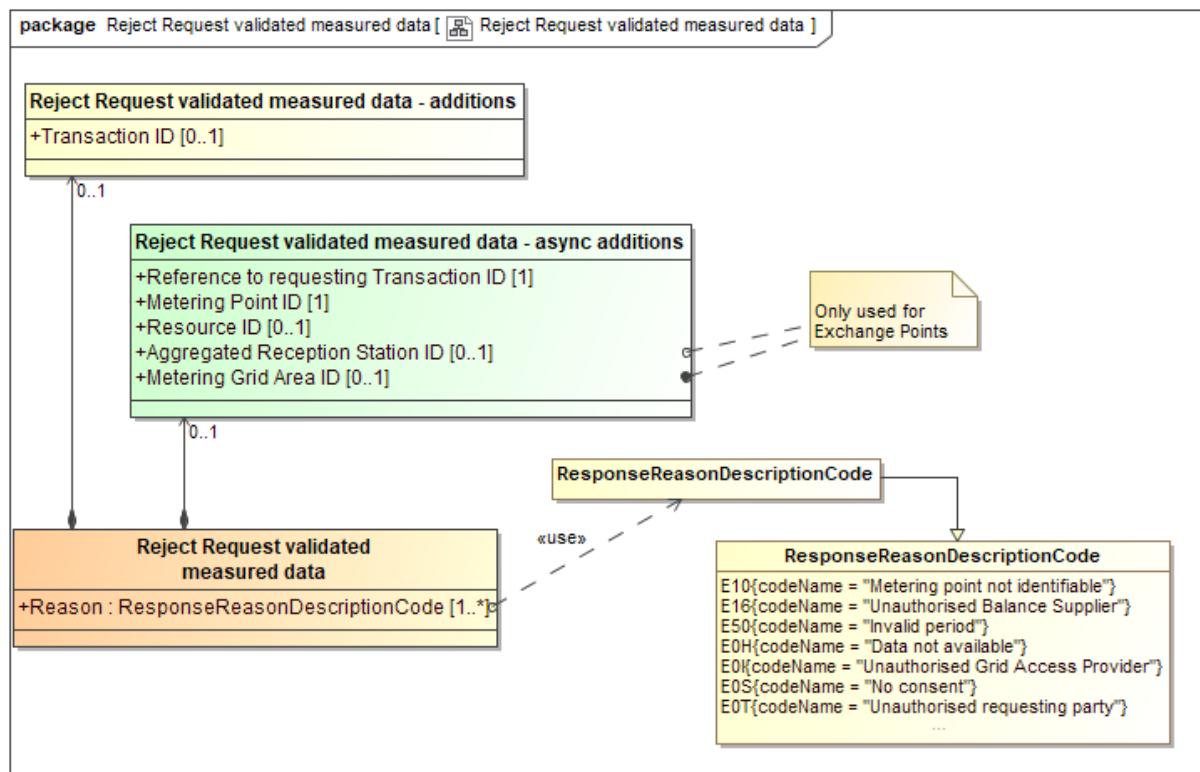


Figure 13 Class diagram: Reject Request validated measured data

3.6.1 Element definitions: Reject Request validated measured data

Attribute	Sector ¹⁶	Definition
«Business entity» Reject Request validated measured data		The information set to be sent from the Metered Data Responsible to the Metered Data Administrator when rejecting a request for validated measured data.
Reason		A code specifying (one of) the reason(s) for the rejection of the Request for validated measured data.
Reject Request validated measured data Additions		Additional information related to the rejection of the request for validated measured data, which may be agreed on a national level.
Transaction ID		The unique identification of this rejection.
Reject Request validated measured data Async Additions		Additional information, related to the rejection of the request for validated measured data, needed when using asynchronous communication.

¹⁶ It is assumed that Accounting Points are uniquely dedicated to either electricity or to gas.

Attribute	Sector ¹⁶	Definition
Reference to requesting Transaction ID		The unique identification as given by the Metered Data Responsible of the requesting Transaction ID that is rejected.
Metering Point ID		The unique identification of the Metering Point (Accounting Point or Exchange Point) for which the requested validated measured data are rejected.
Resource ID		The identification of the Resource at the Accounting Point for which the requested validated measure data are rejected.
Aggregated Reception Station ID	Gas	The unique identification of the Aggregated Reception Station where the Exchange Point is linked to and the requested measurements are rejected for.
Metering Grid Area		The unique identification of the Metering Grid Area where the Exchange Point is linked to, and the requested measurements are rejected for.

Appendix A. Header and Context information for the class diagrams

A.1. Header and Context Information attributes definitions

Class/attribute	Sector ¹⁷	Description
Header and Context Information		The set of information specifying the information to be added to this payload to enable the exchange as a document.
Document Type		A code representing the document type used for the exchange of this set of information.
Business Reason		A code representing the business reason for the exchange of this set of information.
Ancillary Business Process Role		A code representing the market role taking part in this exchange together with the Responsible Role, responsible for the process/this exchange.

A.2. Validated measured data for profiled AP

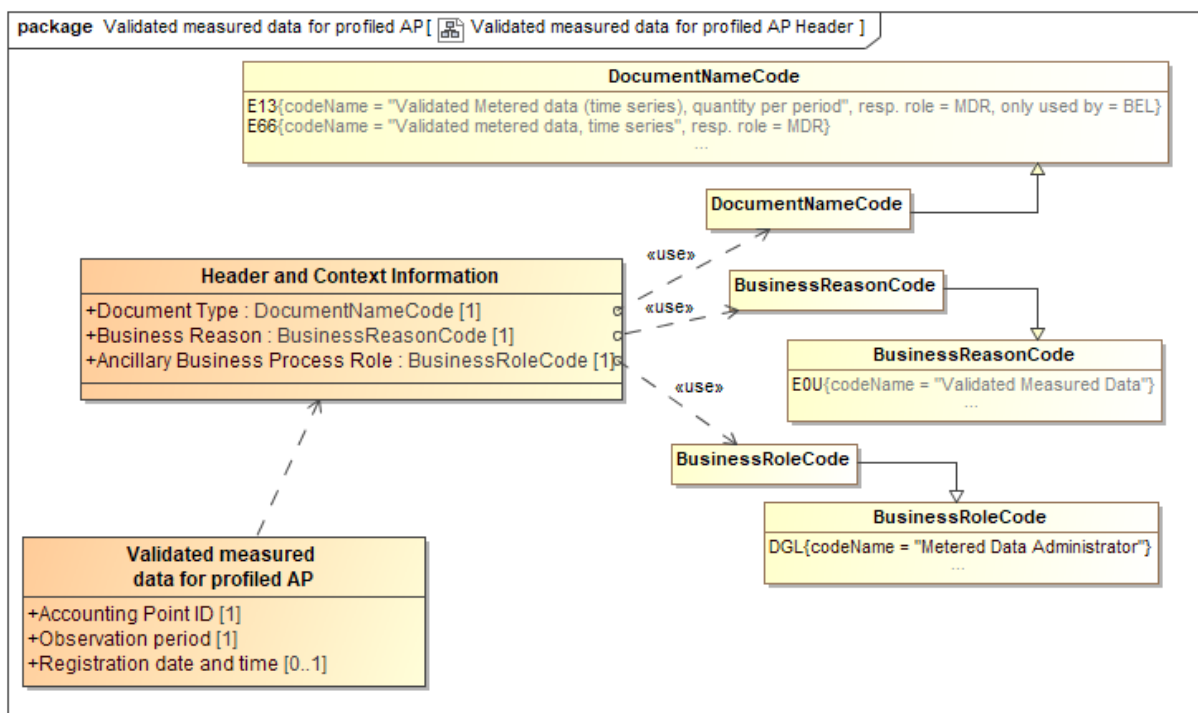


Figure 14 Class diagram: Header and Context information: Validated measured data for profiled AP

¹⁷ It is assumed that Accounting Points are uniquely dedicated to either electricity or to gas.

A.3. Validated measured data for continuous metered AP

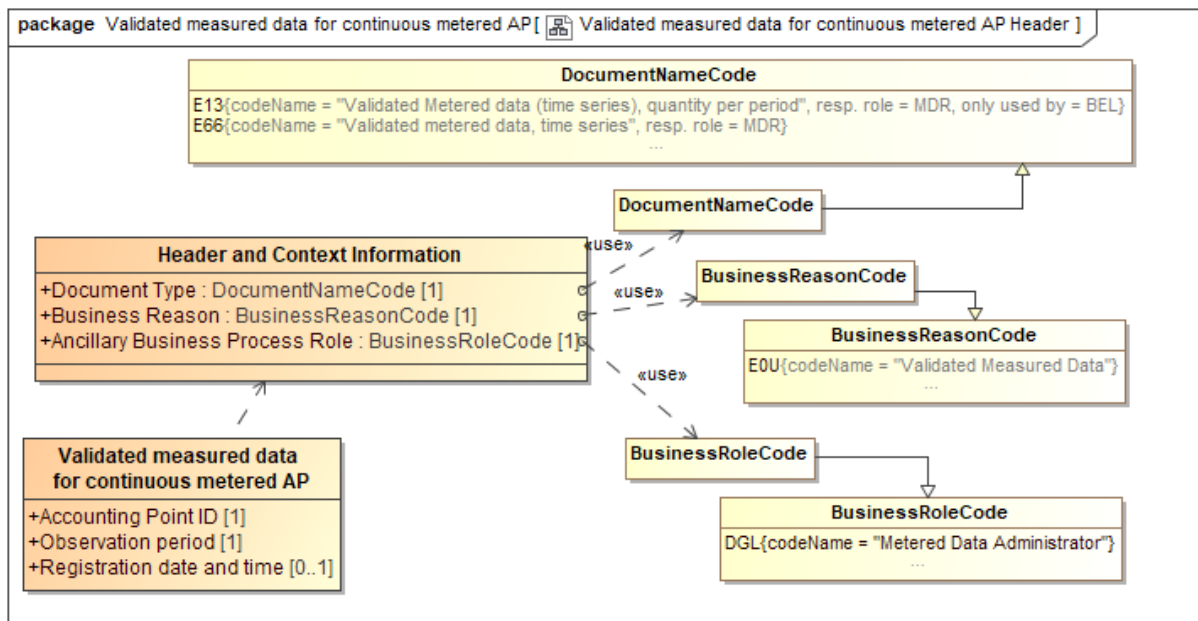


Figure 15 Class diagram: Header and Context information: Validated measured data for continuous metered AP

A.4. Validated measured data for Exchange Points

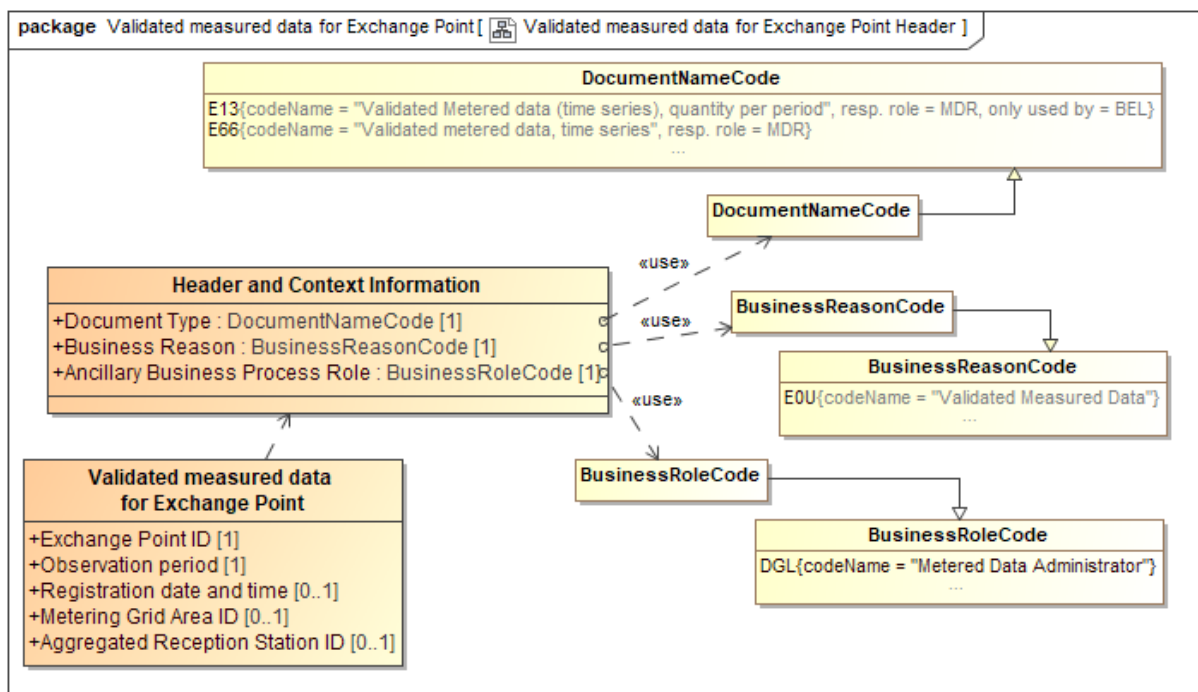


Figure 16 Class diagram: Header and Context information: Validated measured data for Exchange Points

A.5. Validated measured data for Resource

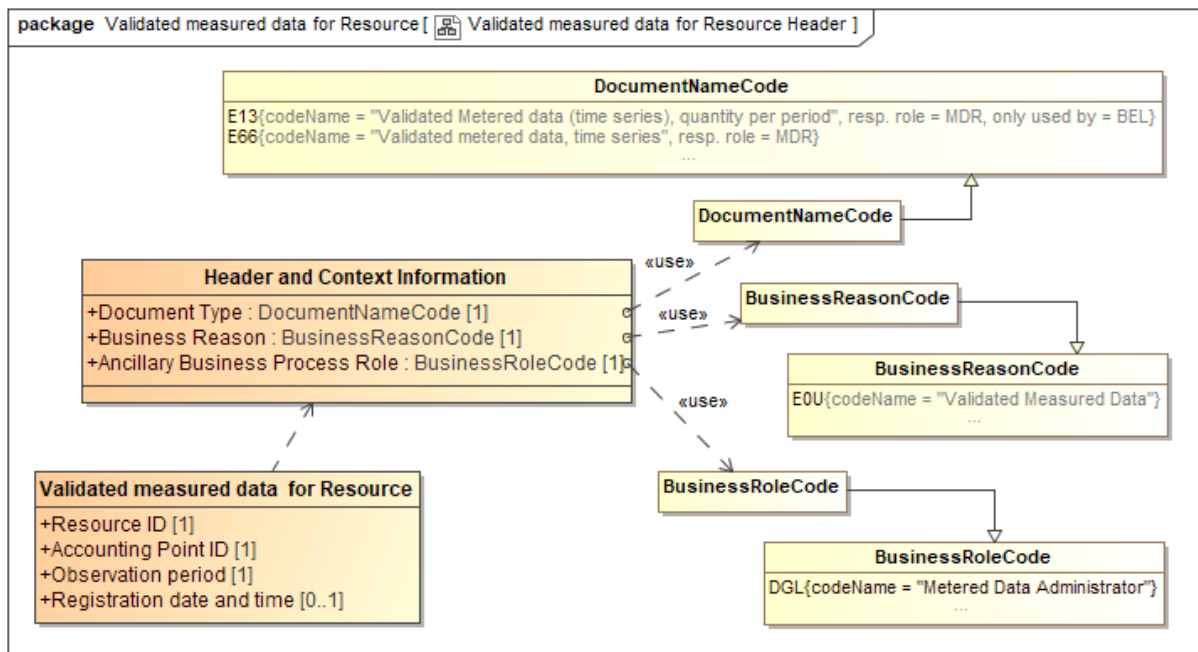


Figure 17 Class diagram: Header and Context information: Validated measured data for Resource

A.6. Request validated measured data

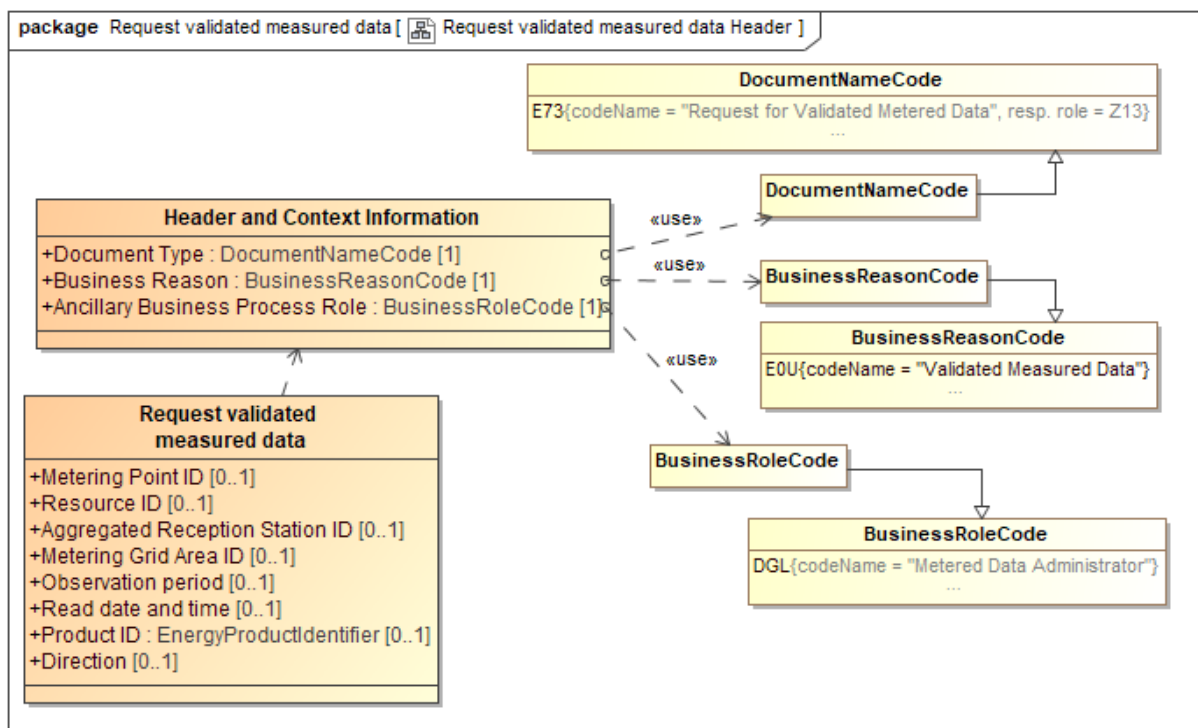


Figure 18 Class diagram: Header and Context information: Request validated measured data

A.7. Reject Request validated measured data

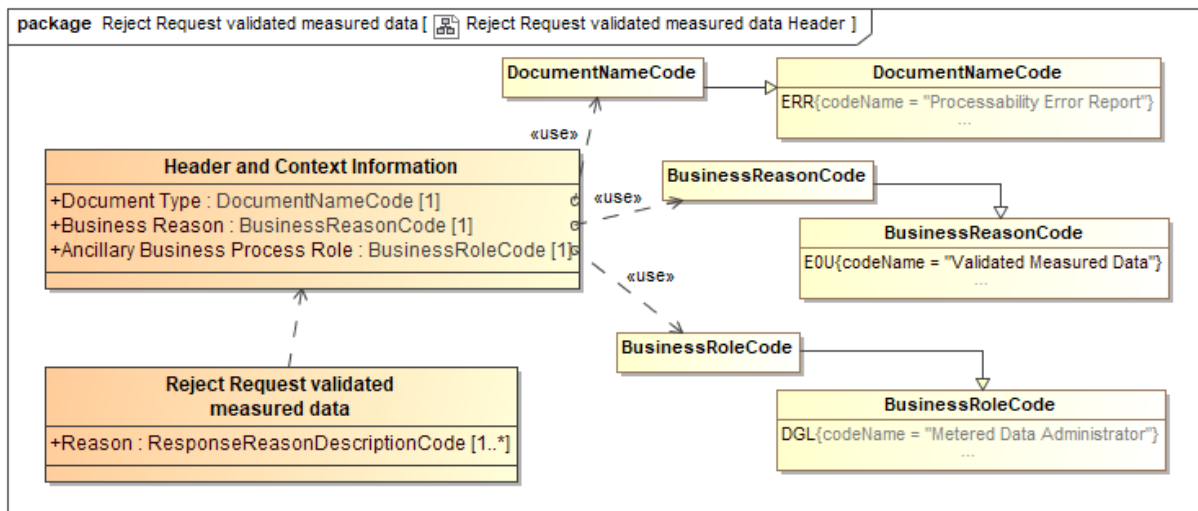


Figure 19 Class diagram: Header and Context information: Reject Request validated measured data