Business Requirements for

Measure Collected Data

Status: Approved by ebIX® Forum
Version: 3.0
Revision: -
Date: April 2020

C O N T E N T

A. About this document

This document is a Business Requirements Specification for the exchange of Collected Data, as part of the overall exchange of measured data in the European energy market. 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 [3].

This document contains ebIX® Business Requirements for the processes regarding collected data, both for electricity and for gas.

As a general introduction ebIX® has published a separate document "Introduction to ebIX® Business Requirements and Business Information Models" [4]. The introduction also includes the generic model elements that are not specific for a particular business process.

In line with UN/CEFACT Modelling Methodology version 2 (UMM-2) ebIX® defines the business requirements before starting the actual modelling. The requirements have originally been specified by the ebIX® work group "Exchange Metered Data" and are now being specified by the ebIX® Business Group (EBG). They are the basis for the Business Information Model, which is published in a separate document.

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).

A.1. Participants in the project

These Business Requirements, as part of the ebIX® Model for the European Energy Market [4], are made in a project with the members of EBG, see www.ebix.org. For comments to the document please contact the secretary@ebix.org.

A.1. References

A.1.1. Standards

[1] UML Profile for UN/CEFACT's Modelling Methodology (UMM), Base Module, 2.0. (http://www.unece.org/cefact/umm/umm_index.html)

[2] UML Profile for UN/CEFACT's Modelling Methodology (UMM), Foundation Module, 2.0. (http://www.unece.org/cefact/umm/umm_index.html)

[3] The Harmonized Role Model (for the Electricity Market) by ebIX®, ENTSO-E, and EFET (www.ebix.org)

A.1.2. ebIX® Documents

[4] Introduction to ebIX® Business Requirements and Business Information Models (www.ebix.org)

[5] Recommended Identification Schemes for the European Energy Market (www.ebix.org)

[6] ebIX® code lists (www.ebix.org)

A.2. Main changes since last version

		Old	New	Clarification	Date
Complete recast of the document					
1.		**Version 2r1-**	**Version 3r0-**	Complete recast of the document	2020-04-02
End of updates for Version 3r0-					

1. Business Requirements View: Collect

1.1. Collect (Business Process UseCase)

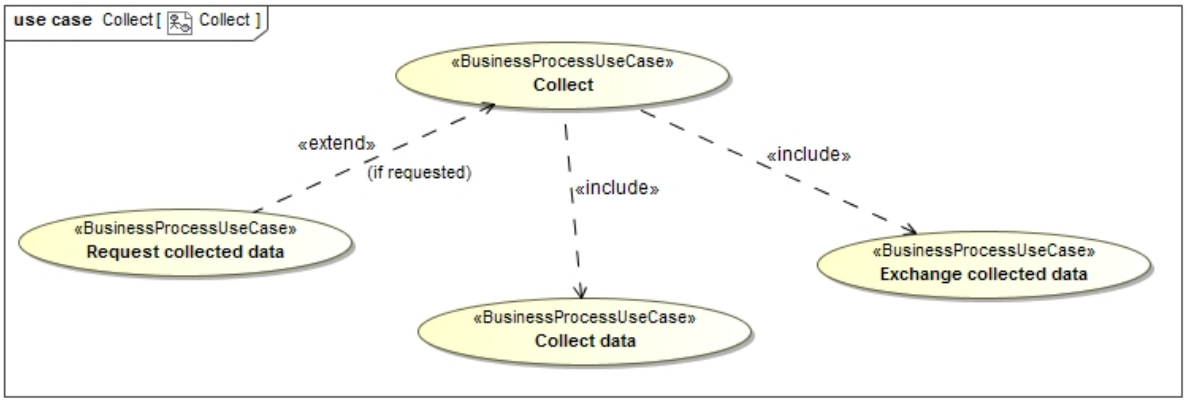

Figure 1. Collect

1.1.1. Description

UseCase description: Collect	
definition	In this process a Metered Data Collector[1] periodically or on request collects and provides collected data to the Metered Data Responsible.
beginsWhen	The Metered Data Collector according to (national) rules is scheduled to or is requested to.
preCondition	The Metered Data Collector knows which register to read and therefore has access to relevant master data.
endsWhen	The distribution of the collected data has been accomplished.
postCondition	Collected data have been received by the Metered Data Responsible
Exceptions	The data cannot be collected within the time limit. The request has been rejected.
actions	*See 1.1.2*

[1] it is assumed that the Metered Data Collector does not keep collected metered data

1.1.2. Business Process

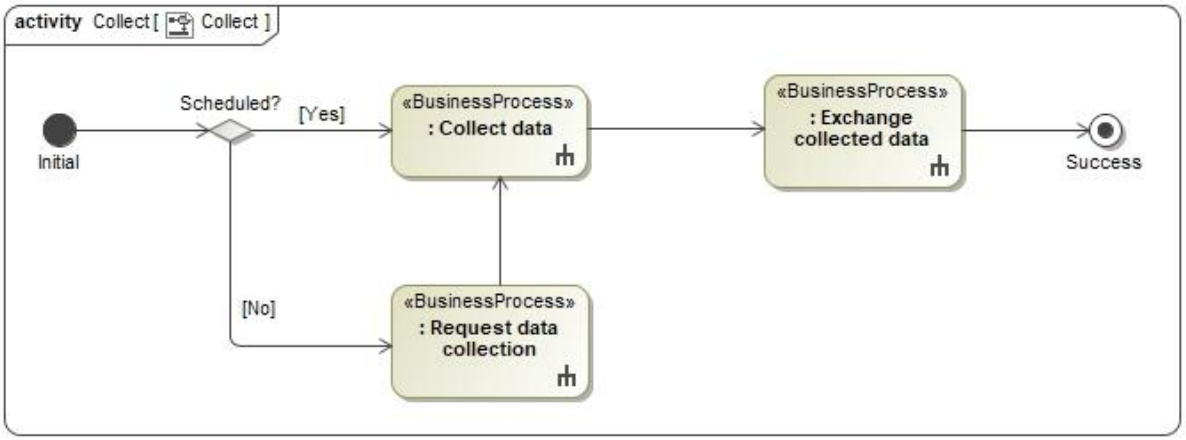

Figure 2. BP Collect

1.1.3. Collect data (Business Process UseCase)

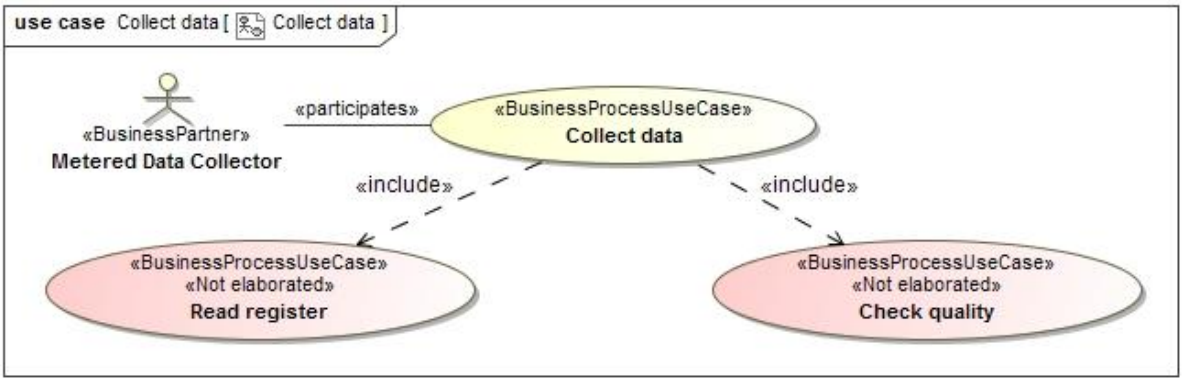

Figure 3. Collect data

1.1.3.1. Description

UseCase description: Collect data	
definition	In this process the Metered Data Collector collects and processes data in order to make these available to the Metered Data Responsible.
beginsWhen	The Metered Data Collector is scheduled to do so or on request of the Metered Data Responsible.
preCondition	The Metered Data Collector has knowledge about the register to read and the relevant quality standards[2].
endsWhen	The data has been checked with positive result.
postCondition	The data is ready for exchange to the Metered Data Responsible.
exceptions	Data collection failed.
actions	*See 1.1.3.3*

[2] This quality standard shall not be confused with validation. It is assumed that the quality standard for the sanity check of the collected data has been defined nationally or between the two parties.

1.1.3.2. Additional information gas meter reading

The technical characteristics of a (mechanical) gas meter may lead to the need for an additional data-logger to facilitate remote reading. The options that have been taken into account when drafting these business requirements are included in the table below.

	Mechanical	Additional data-logger	Electronic (data-logger included in device)	Remarks
A	X			A mechanical meter requires a data-logger for remote reading.
B	X	X		When a data-logger is added to the mechanical meter, a difference between metered values and logged values may arise. Especially in case of low volumes to be measured in combination with high meter capacity.
C			X	In an electronic meter, the data-logger is included in the meter device. A difference between metered values and logged values is highly unlikely.

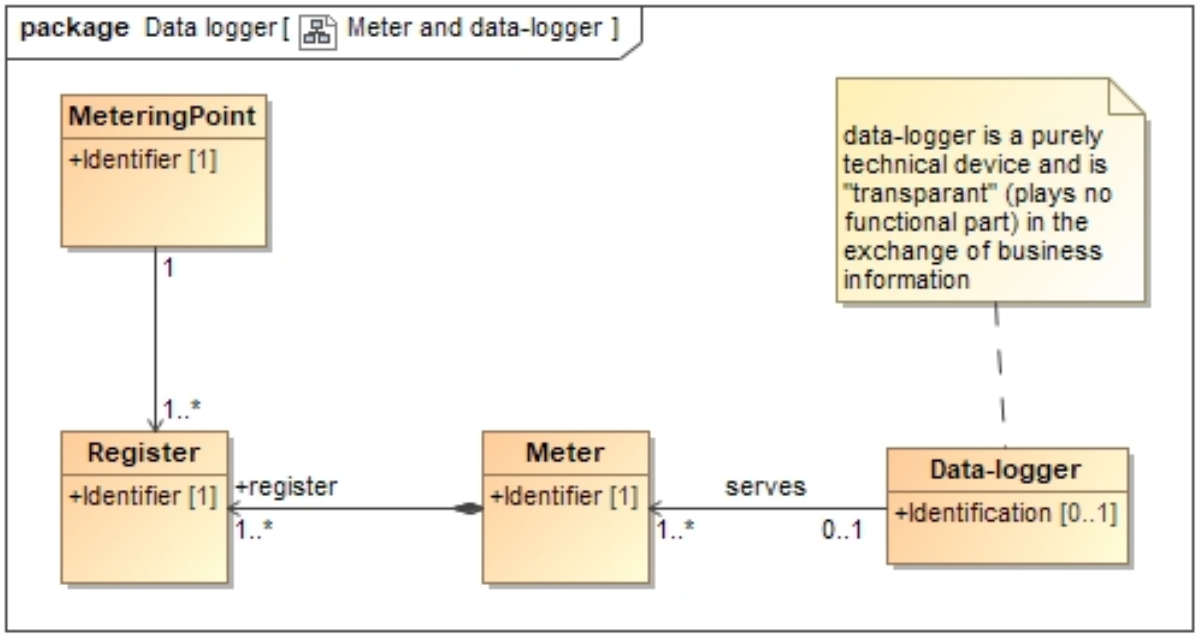

Figure 4. Overview Data-logger

1.1.3.3. Business Process

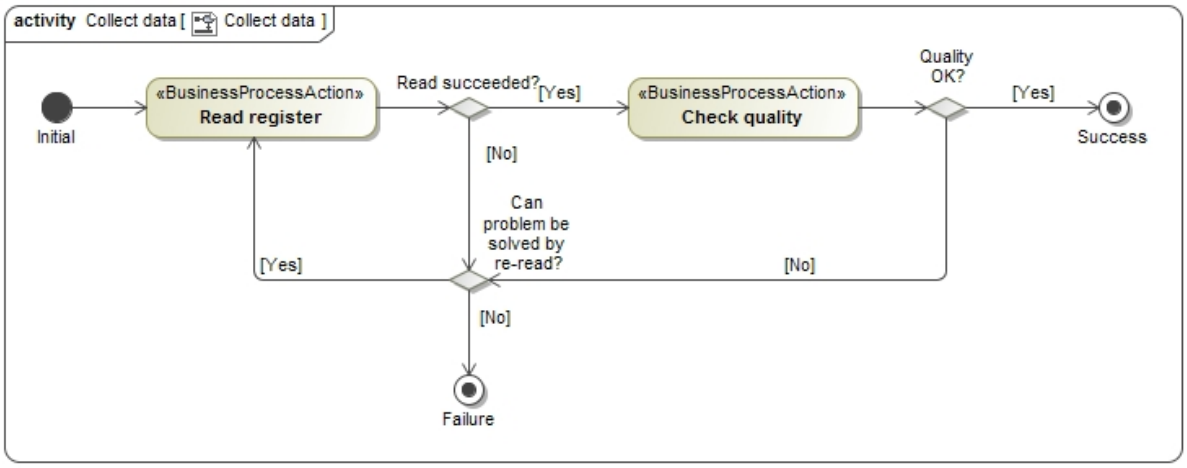

Figure 5. BP Collect data

1.1.3.4. Read Register (Business Process UseCase)

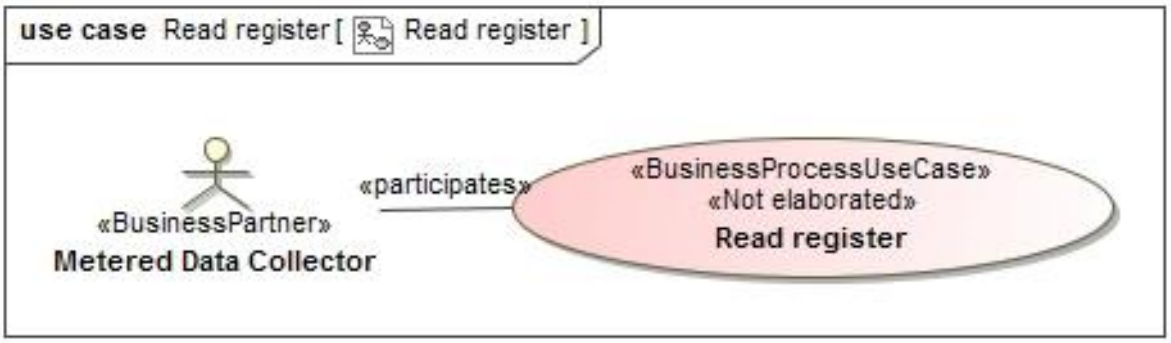

Figure 6. Read register

1.1.3.4.1. Description

UseCase description: Read Register	
definition	In this process the Metered Data Collector reads one or more registers for a Metering Point.
beginsWhen	The Metered Data Collector is scheduled to or requested to.
preCondition	The Metered Data Collector knows which registers to read and has access to relevant master data.
endsWhen	The data have been collected.
postCondition	The collected data are available for quality check.

exceptions	Read didn’t succeed
actions	Not further elaborated

1.1.3.5. Check quality (Business Process UseCase)

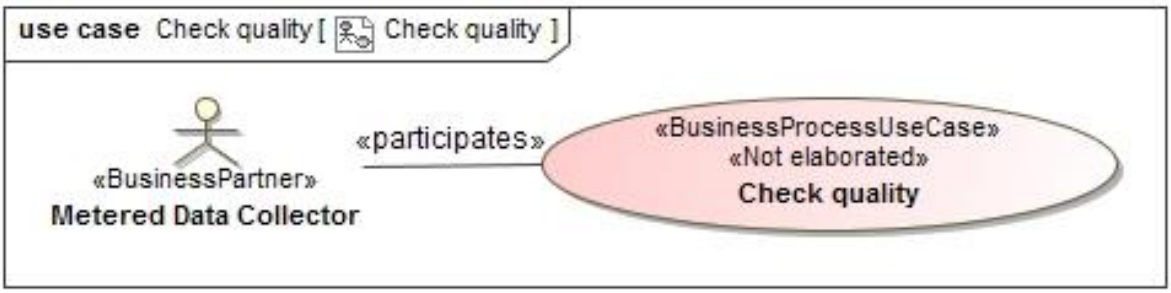

Figure 7. Check quality

1.1.3.5.1. Description

UseCase description: Check quality	
definition	In this process the Metered Data Collector checks the data read whether these are within the limits provided by relevant quality standards.
beginsWhen	Data have been read.
preCondition	Availability of national rules and quality standards.
endsWhen	Data have passed the quality check.
postCondition	Data have been checked positively and are available for exchange.
exceptions	Data beyond limits requiring an extra improvement cycle in the process.
actions	Not further elaborated.

1.1.4. Exchange collected data (Business Process UseCase)

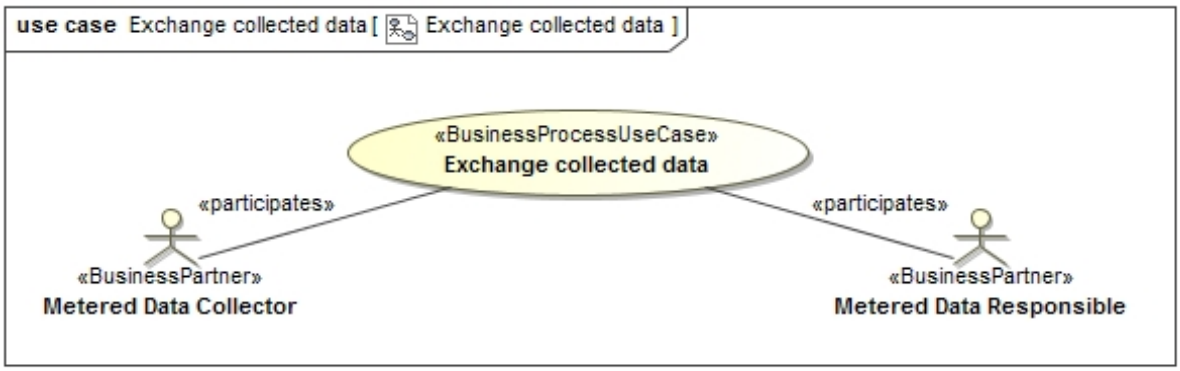

Figure 8. Exchange collected data

1.1.4.1. Description

UseCase description: Exchange collected data	
definition	In this process the Metered Data Collector sends the collected data to the Metered Data Responsible.
beginsWhen	The collected data are available.
preCondition	Correct collected data are available.
endsWhen	The collected data have been received by the Metered Data Responsible.
postCondition	The Metered Data Responsible has the collected data.
exceptions	None.
actions	*See 1.1.4.2*

1.1.4.2. Business Process

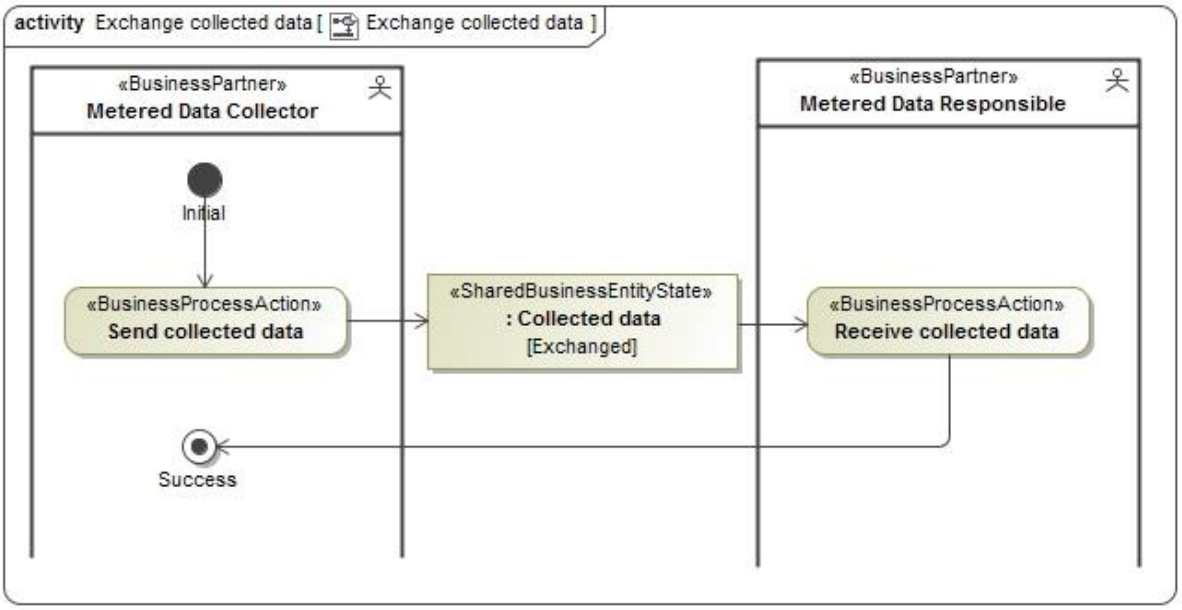

Figure 9.BP Exchange collected data

1.1.5. Request collected data (Business Process UseCase)

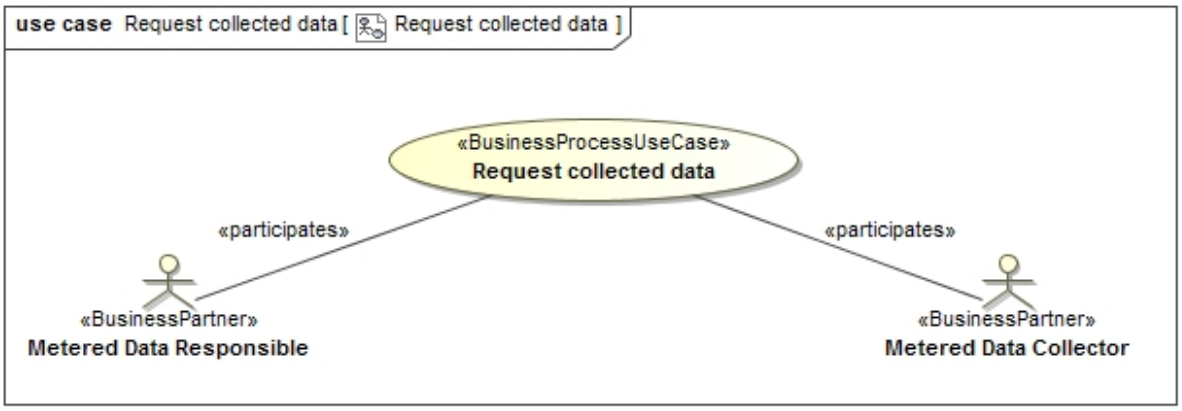

Figure 10. Request collected data

1.1.5.1. Description

UseCase description: Request collected data	
definition	In this process the Metered Data Responsible requests collected data from the Metered Data Collector for a Metering Point.
beginsWhen	Metered Data Responsible decides to.
preCondition	The relation exists between Metered Data Collector and Metered Data Responsible for this Metering Point.
endsWhen	The collected data has been received by the Metered Data Responsible.
postCondition	The Metered Data Responsible can process the requested Collected Data.
exceptions	No Collected Data available at the Collectors.
actions	*See 1.1.5.2*

1.1.5.2. Business Process

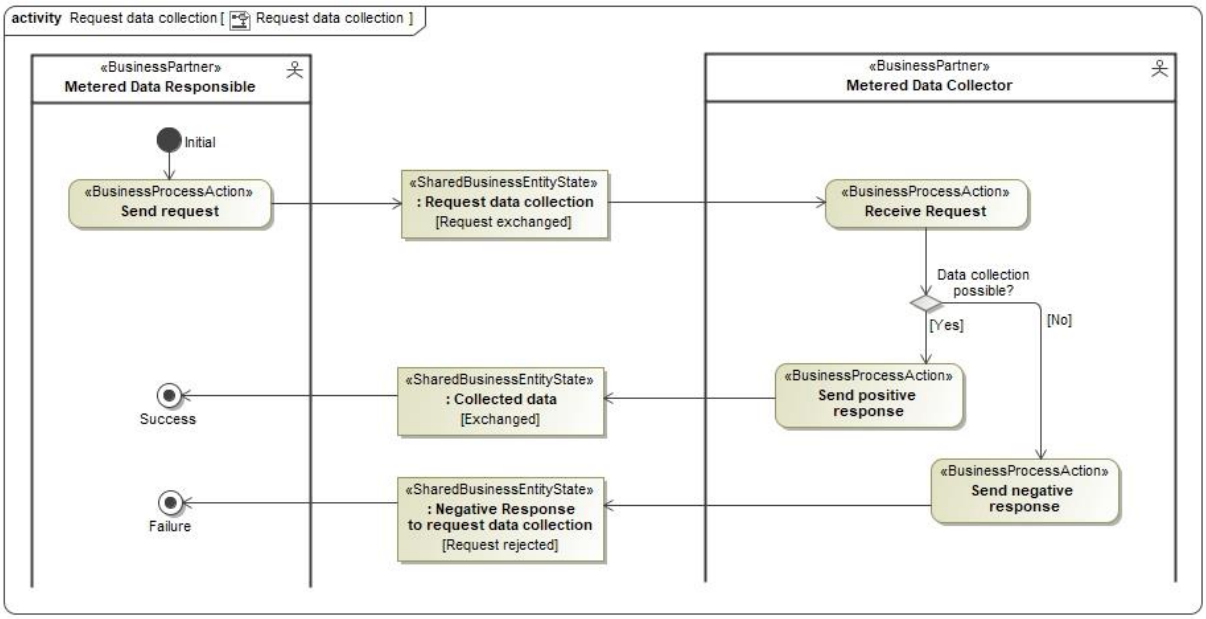

Figure 11. BP Request collected data

1.2. Business Partner View

1.2.1. Business Partners Collect

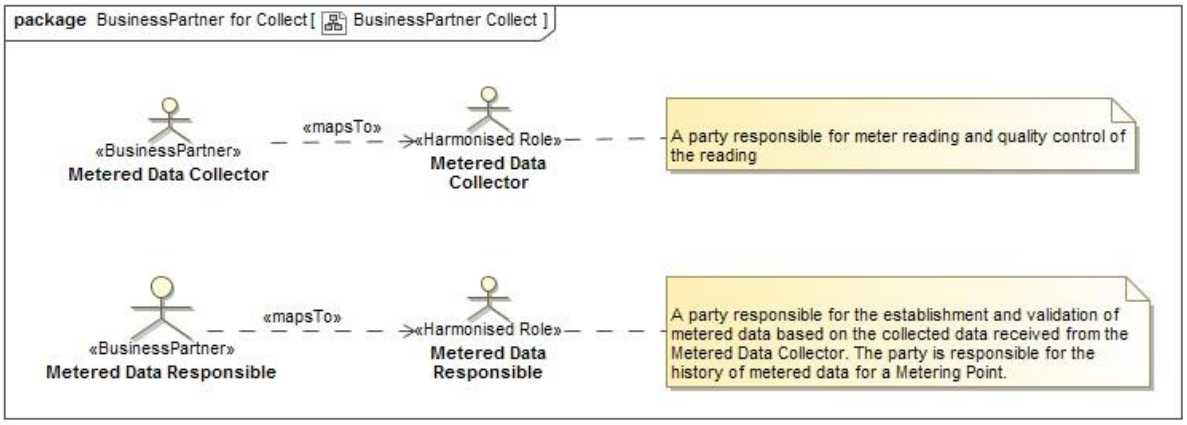

Figure 12.Business Partners Collect

1.3. Business Entity View

In the business entity view the principles as described in the Introduction to ebIX® Business Requirements and Business Information Models (www.ebix.org) [4], are used.

1.3.1. Collected Data (Class Diagram)

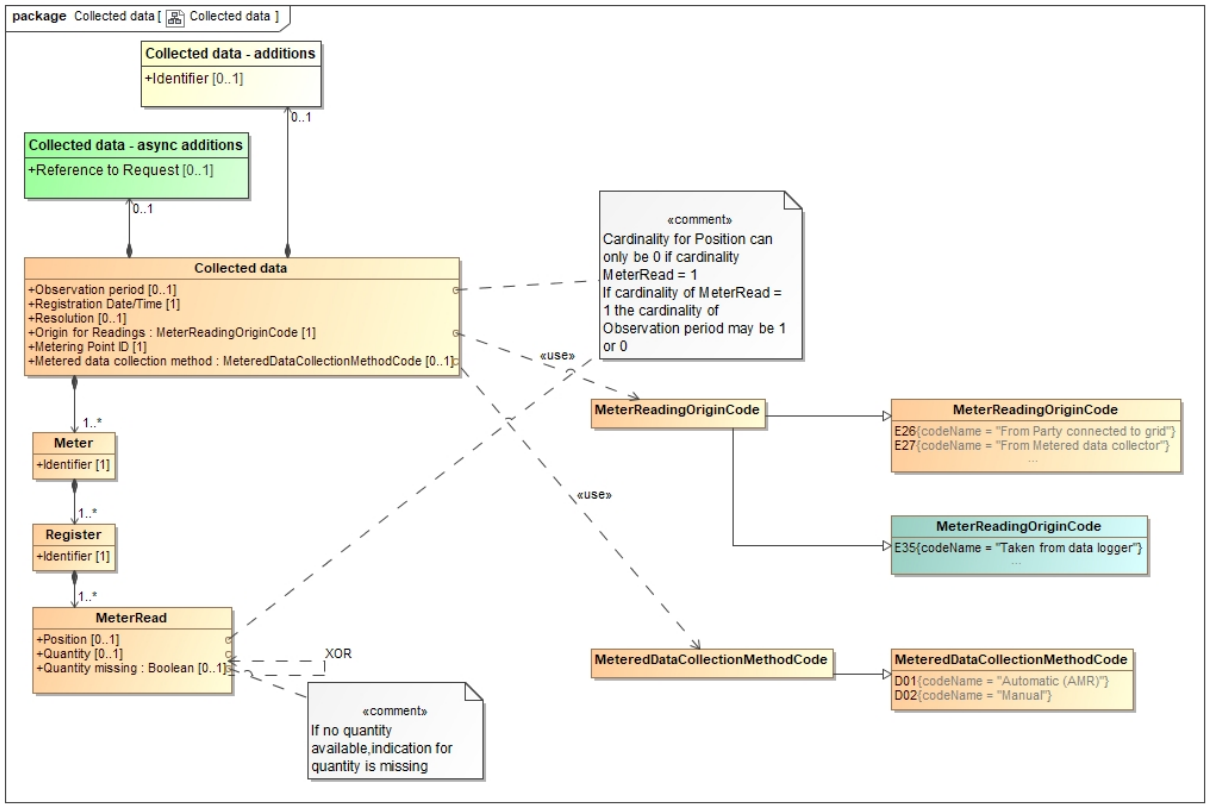

Figure 13. Collected data

Element definitions, Collected Data	
«Business entity» Collected Data	The information set sent by a Collector responsible for the data collection from a meter, to the Validator in charge of the Metering Point to which this Meter belongs.
Observation Period	A specific period of time describing the duration of this set of collected data.
Registration Date/Time	The date time of the registration of this set of collected data.
Resolution	The resolution of this set of collected data expressed as a duration between the start and end of subsequent MeterReads within this set of collected data.
Origin for Readings	A code specifying the origin of this meter reading
«Business entity» Metering Point	An entity where energy products are metered or computed.
Identifier	The unique identification of the Metering Point to which the collected data are attributed.

«Business entity» Meter	A physical device containing one or more registers.
Identifier	The unique identification of the Meter at the Metering Point that contains the register(s) from which this Meter Read has (have) been read.
«Business entity» Register	A physical or logical counter measuring energy products.
Identifier	The unique identification of the Register this Meter Read has been read from.
MeterRead	One meter read (observation) as part of this set of collected data.
Position	The ordinal position of this meter read (observation) in this set of collected data (observation period).
Quantity	The character string as read from the register for this observation. MeterRead, Quantity is dependent: either “Quantity” or “Quantity Missing” is to be used.
Quantity Missing	The indication of whether or not the quantity of this observation is missing. MeterRead, Quantity Missing is dependent: either “Quantity” or “Quantity Missing” is to be used.
Collected Data Additions	Additional information, related to Collected Data the use of which may be agreed on a national level. This is however not used when specifying the payload in the ebIX® model.
Identifier	The unique identification of this set of information as given by the Collector.
Collected Data Async Additions	Additional information, related to Collected Data, needed when using asynchronous communication. This is however not used when specifying the payload in the ebIX® model, but is used when specifying the document in the ebIX® model.
Reference to Request	Information about the request for this set of collected data which uniquely identifies it.
Header and Context Information	The set of information specifying the information to be added to this payload “Collected Data” in order 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 role taking part in this exchange together with the role responsible for the process/this exchange.

1.3.2. Request Collected Data (Class Diagram)

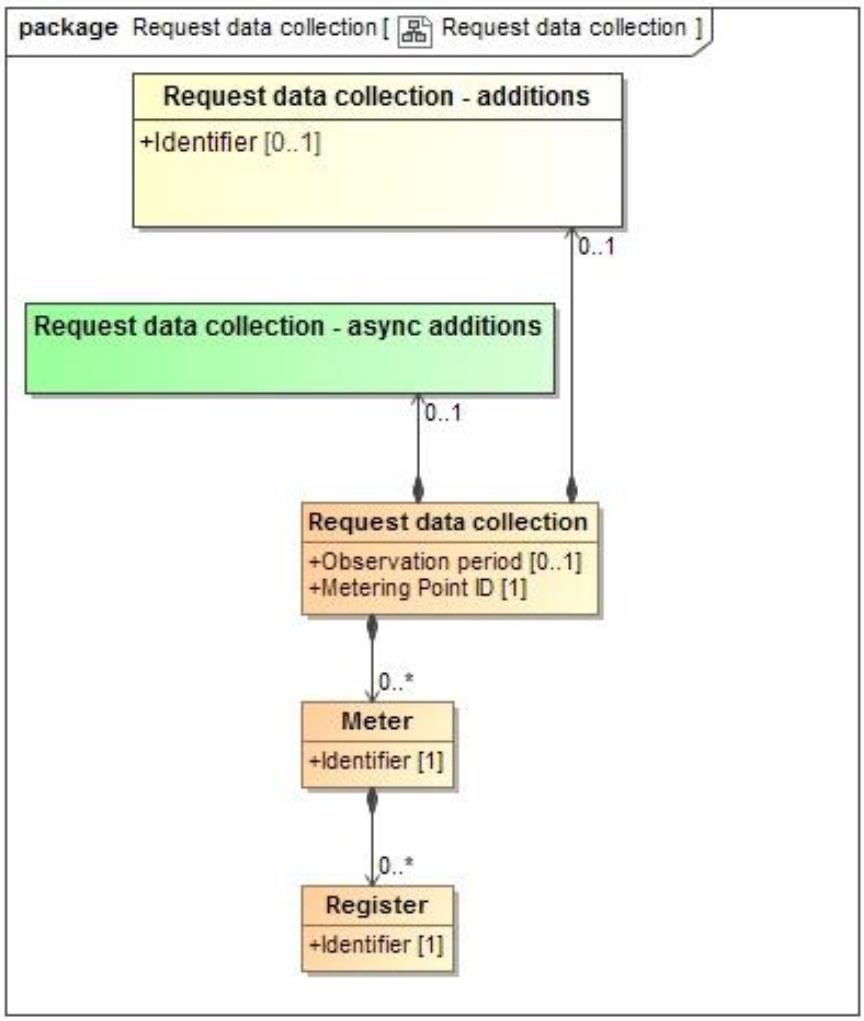

Figure 14. Request data collection

Element definitions, Request Collected Data	
«Business entity» Request Collected Data	The information set sent by a Validator in charge of the Metering Point when requesting a set of collected data from the Collector.
Observation Period	A specific period of time describing the duration of the requested set of collected data.
«Business entity» Metering Point	An entity where energy products are metered or computed.
Identifier	The unique identification of the Metering Point to which the collected data are attributed.

«Business entity» Meter	A physical device containing one or more registers.
Identifier	The unique identification of the Meter that contains the register that has been read.
«Business entity» Register	A physical or logical counter measuring energy products.
Identifier	The unique identification of the Register that has been read.
Request Collected Data Additions	Additional information, related to Request Collected Data the use of which may be agreed on a national level. This is however not used when specifying the payload in the ebIX® model.
Identifier	The unique identification of this request as given by the Validator.
Reason	A code specifying the business process as part of the specification of the context for this request. **Remark**: in contrast to the deletion of "Reason" in almost all other places, the property is regarded to provide valuable information in case of meter changes (e.g. higher priority for the response to the request)
Collected Data Async Additions	Additional information, related to Request Collected Data, needed when using asynchronous communication. This is however not used when specifying the payload in the ebIX® model, but is used when specifying the document in the ebIX® model.
	none
Header and Context Information	The set of information specifying the information to be added to this payload "Request Collected Data" in order 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 role taking part in this exchange together with the role responsible for the process/this exchange.

1.3.3. Negative Response to Request (Class Diagram)

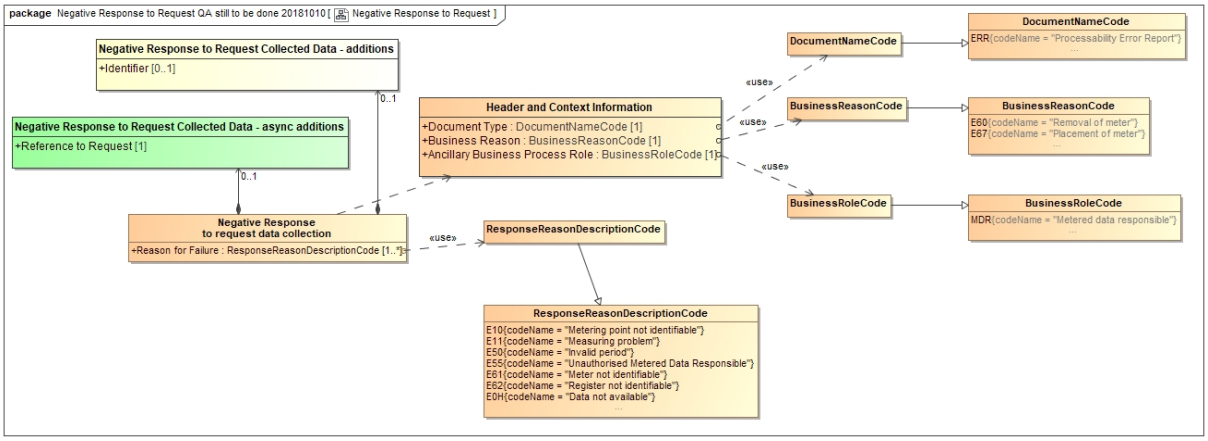

Figure 15.Negative Response to Request

Element definitions, Negative Response to Request Collected Data	
«Business entity» Negative Response to Request Collected Data	The response sent by a Collector to the Validator requesting collected data when not in the position to respond with the requested collected data.
Reason for Failure	A code specifying the reason for this negative response.
Negative Response to Request Collected Data Additions	Additional information, related to Negative Response to Request Collected Data the use of which may be agreed on a national level. This is however not used when specifying the payload in the ebIX® model.
Identifier	The unique identification of this response as given by the Collector.
Negative Response to Request Collected Data Async Additions	Additional information, related to Negative Response to Request Collected Data, needed when using asynchronous communication. This is however not used when specifying the payload in the ebIX® model, but is used when specifying the document in the ebIX® model.
Reference to Request	Information about the request leading to this response, which uniquely identifies it.
Header and Context Information	The set of information specifying the information to be added to this payload “Negative Response to Request” in order 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 role taking part in this exchange together with the role responsible for the process/this exchange.

Appendix A. Header and Context information for the class diagrams

A.1. Header and Context Information attributes definitions

Class/attribute	Sector[3]	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. Collected Data

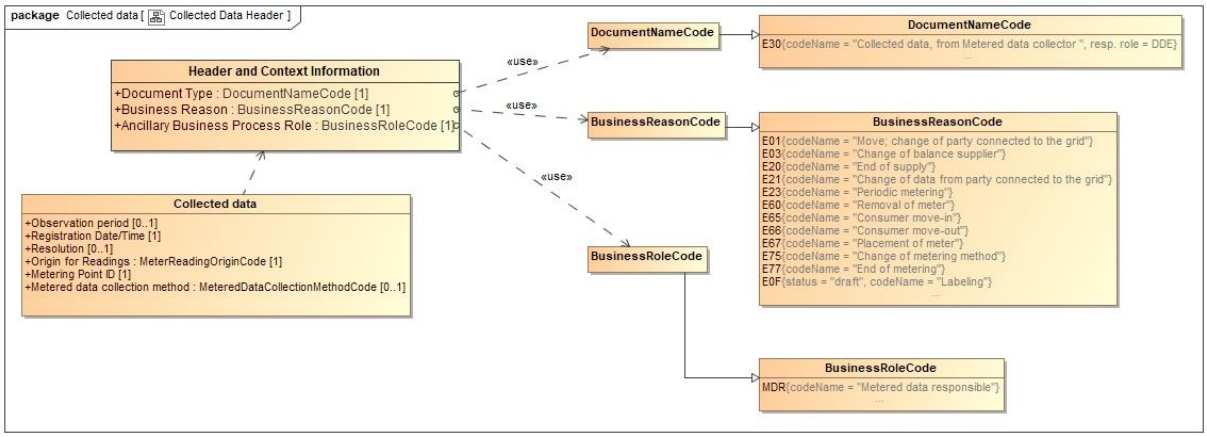

Figure 16 Class diagram: Header and Context Information: Collected Data

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

A.3. Request Collected Data

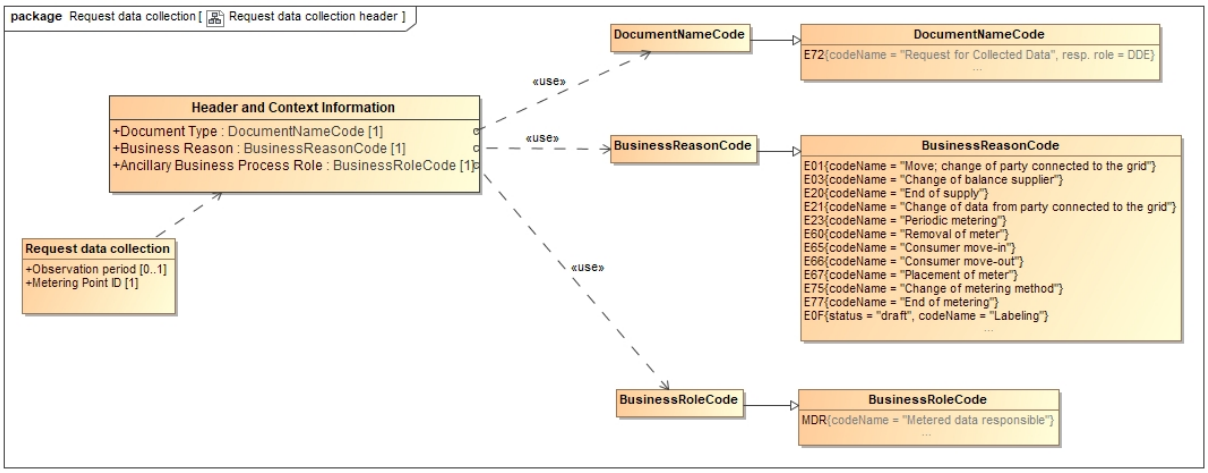

Figure 17 Class diagram: Header and Context Information: Request Collected Data

A.4. Negative Response to request data collection

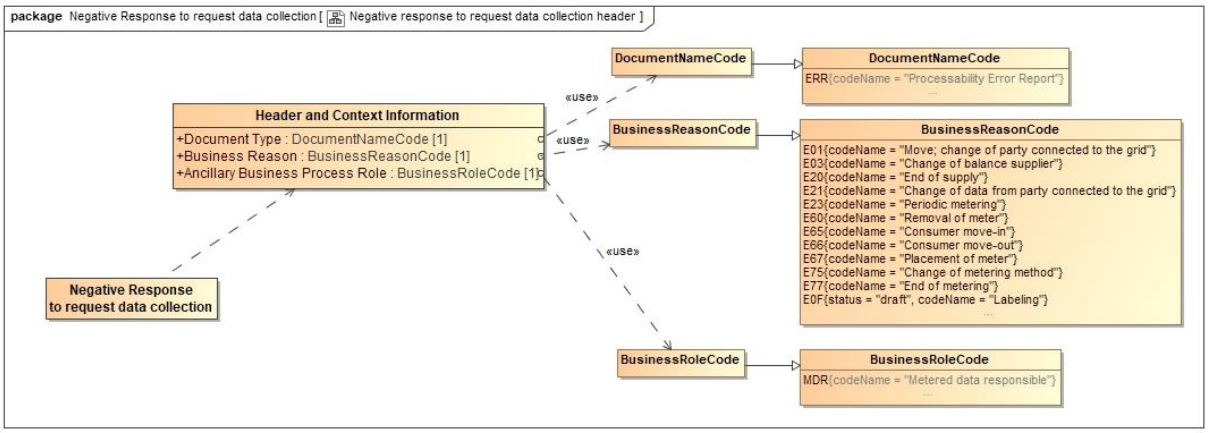

Figure 18 Class diagram: Header and Context Information: Negative Response to request data collection