



Business Requirements for Measure For Reconciliation

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A. About this document

This document contains ebIX® Business Requirements for the processes regarding the measured data for reconciliation, for electricity only.

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 Modeling Methodology version 2 (UMM-2) ebIX® defines the business requirements before starting the actual modeling. The requirements have been specified by the ebIX® work group “Exchange Metered Data” and 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 expected to be the basis for the specification of web services in a next version of the model document. Since ebIX® supports both Edifact and XML the model will also serve as the basis for the creation of Message Implementation Guides for the mapping to Edifact UNSM’s. The Business Information Model and the syntax specific structures are specified by the ebIX® “Technical Committee” (ETC).

A.1. Comments to the ebIX® model

If you have comments or suggestions to the requirements please contact any member of the project group or directly to Kees Sparreboom, kees.sparreboom@capgemini.com .

A.2. References

A.2.1. Standards

- [1] UML Profile for UN/CEFACT’s Modeling Methodology (UMM), Base Module, 2.0.
(http://www.unece.org/cefact/umm/umm_index.html)
- [2] UML Profile for UN/CEFACT’s Modeling 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.2.2. 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® Business Requirements for Settle Reconciliation (www.ebix.org)

[7] ebIX® code lists (www.ebix.org)

A.3. Participants in the project

These Business Requirements as part of the ebIX® Model for the European Energy Market (see [4]) are made in a project with the members of EMD. For a list of members of EMD see www.ebix.org.

A.4. Main changes since last version

		Old	New	Clarification	Date
Start of updates for Version 2.0.B					
		Aggregated data		All processes regarding aggregated data have been removed.	17-03-2011
End of updates for Version 2.0.B					
1.	Paragraph on references			The list of references has been limited to references directly relevant for a document containing business requirements	2013-07-02
2.	UseCase "Validate Measurements"		The generic UseCase "Validate Measurements" replaces specific validation processes.	The generic process for "Validate Measurements" is specified in the document Introduction to ebIX® Business Requirements and Business Information Models (www.ebix.org)	2013-07-02
3.	Business Partner View and Various UseCase and Activity diagrams		Business Partner Reconciliation Responsible renamed into Reconciliatory	In order to bring name in line with other EMD documents	2013-07-02
4.	Various UseCase diagrams		Various include-relations have been replaced by extensions	In order to do justice to the conditionality of processes.	2013-07-02

5.	Various activity diagrams		Various forks have been replaced by decision nodes	In order to do justice to the conditionality of processes and in line with the updates for UseCases (see above)	2013-07-02
6.	All activity diagrams have been brought in line with the rules stated in the Introduction to ebIX models			One-way processes have final node in receiving swim lane; two-way processes have final node in triggering (sending) swim lane	2013-07-02
7.	All activity diagrams have been brought in line with the rules stated in the Introduction to ebIX models			In case of optional “Failure” for processes, the upper level processes in which these processes are used will also show the option for “Failure”	2013-07-02
8.	All class diagrams		A table with semantic definitions of classes and properties has been added	To bring model documents for ebIX® CuS and ebIX® EMD in line	2013-07-02
9.	All class diagrams, all classes for “...-additions”		The properties Sector and Reason have been deleted	As a consequence of modeling for web services as one of the implementation options	2013-07-02
10.	Class diagram for “Negative Response”		The list of error codes has been reviewed and updated		2013-07-02
11.	Class diagram Validated data for Reconciliation, class Observation			QuantityQuality has been removed it is assumed that the whole purpose of reconciliation is to confront planned data with actual measured data. In case no	2013-07-02

				measurements are available, that MP will not (yet) be part of reconciliation.	
12.	Class diagram Request Validated data for Reconciliation			Proposed volumes have been removed	2013-07-02
End of updates for Version 2.0.C					
13.	References to ebIX® documents			Business Requirements for Settle Reconciliation has been added as a reference [6] in § A.2.2	2013-11-27
14.	§ 1.1.6			Text has been updated to bring this paragraph in line with the improved Business Requirements for Settle Reconciliation	2013-11-27
15.	Class diagrams			A class “Header and context information” has been added	2014-3-3
16.	Class diagram Validated Data for Reconciliation,			The class “Observation” has been replaced by a combination of a class “Observation” and a class “Observation detail”	2014-5-23
End of updates for Version 2.0.D					
17.	All class diagrams			Codes have been updated in line with the newest versions of the code lists	2015-7-13
18.	Introduction			References have been updated	2015-7-13
End of updates for Version 2.0.E					

1. Business Requirements View: Measure for Reconciliation

These Business requirements are based on the assumption, that reconciliation only deals with consumption.¹

1.1. Measure for Reconciliation (Business Process UseCase)

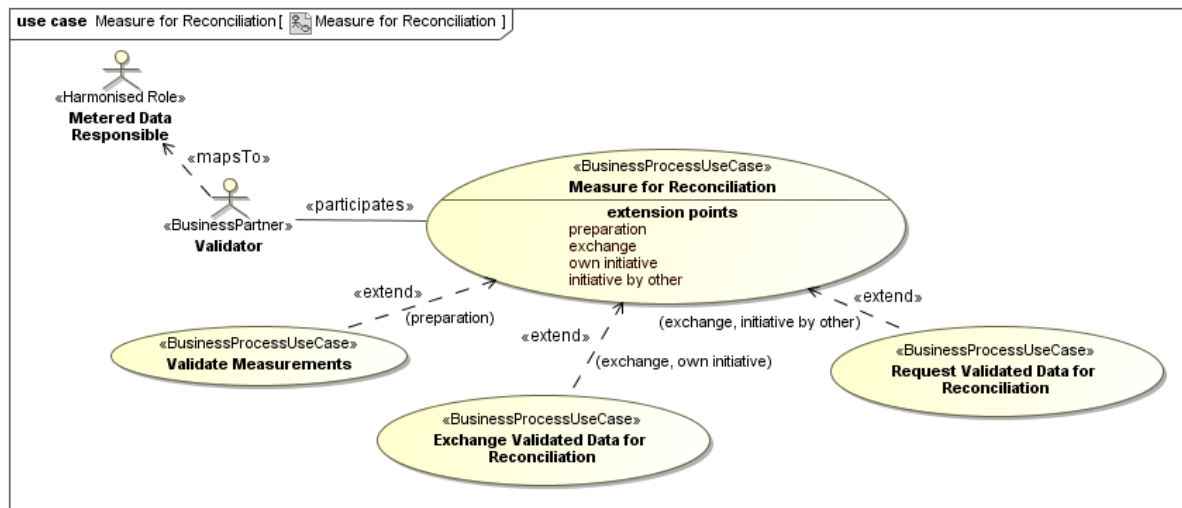


Figure 1 Measure for Reconciliation

1.1.1. Description

UseCase description: Measure for Reconciliation	
definition	Provides validated data for use in the reconciliation process to partners involved in this process.
beginsWhen	The timing of the various processes is guided by a time schedule (nationally defined). As a general rule can be stated, that the processes are executed on a monthly basis.
preCondition	Partners responsible for the execution of the processes should have access to relevant master data.
endsWhen	All processes included in the time schedule have been executed.
postCondition	All validated data are available at the partners so that the reconciliation process can be executed and the results can be verified.
Exceptions	No data available
actions	See 1.1.2

¹ We see the need for reconciliation for production becoming a real business requirement soon. But at the moment no procedures have been developed for this.

1.1.2. Business Process

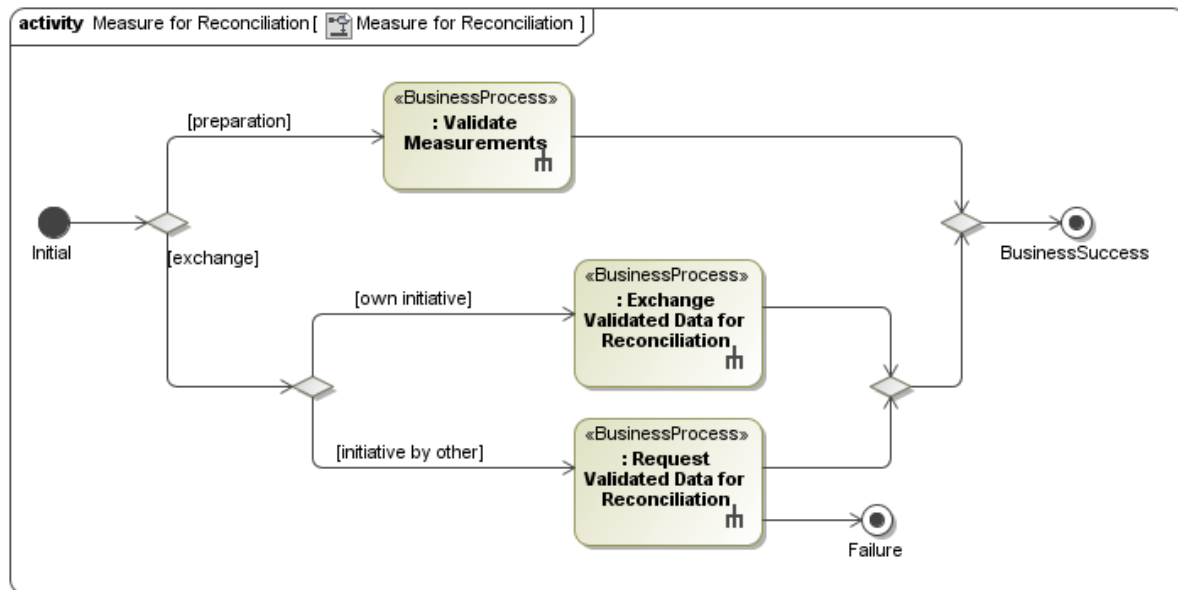


Figure 2 BP Measure for Reconciliation

1.1.3. Validate Measurements (Business Process UseCase)

This process is described in the Introduction to ebIX® Business Requirements and Business Information Models (www.ebix.org), see [4].

1.1.4. Exchange Validated Data for Reconciliation (Business Process UseCase)

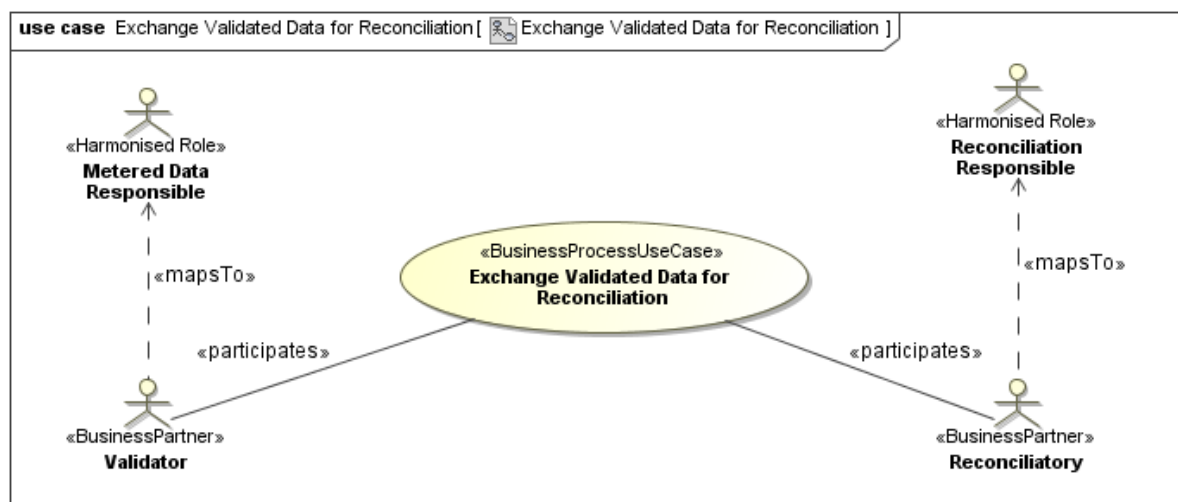


Figure 3 Exchange Validated Data for Reconciliation

1.1.4.1. Description

UseCase description: Exchange Validated Data for Reconciliation	
definition	Validator sends validated data to Reconciliatory
beginsWhen	The Validator <ul style="list-style-type: none"> • decides to, or • when the (national) time schedule prescribes him to.
preCondition	The Validator has available: <ul style="list-style-type: none"> • validated data • master data for the exchange of data
endsWhen	The reception of the validated data has been acknowledged by the Reconciliatory.
postCondition	Validated Data are available for the Reconciliatory.
exceptions	none
actions	See 1.1.4.2

1.1.4.2. Business Process

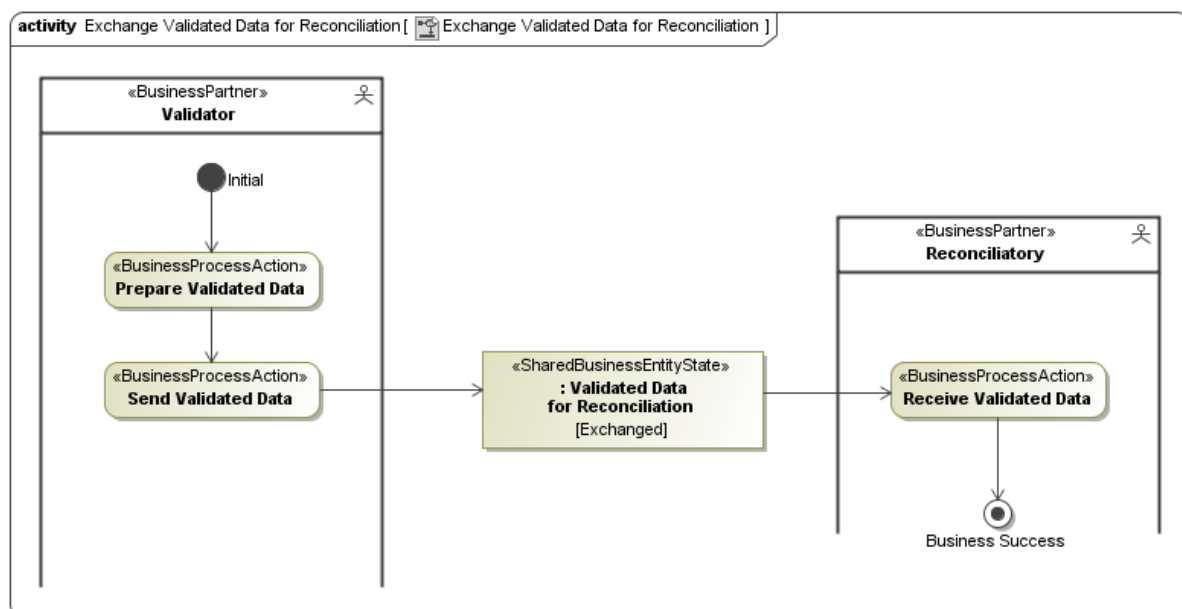


Figure 4 BP Exchange Validated Data for Reconciliation

1.1.5. Request Validated Data for Reconciliation (Business Process UseCase)

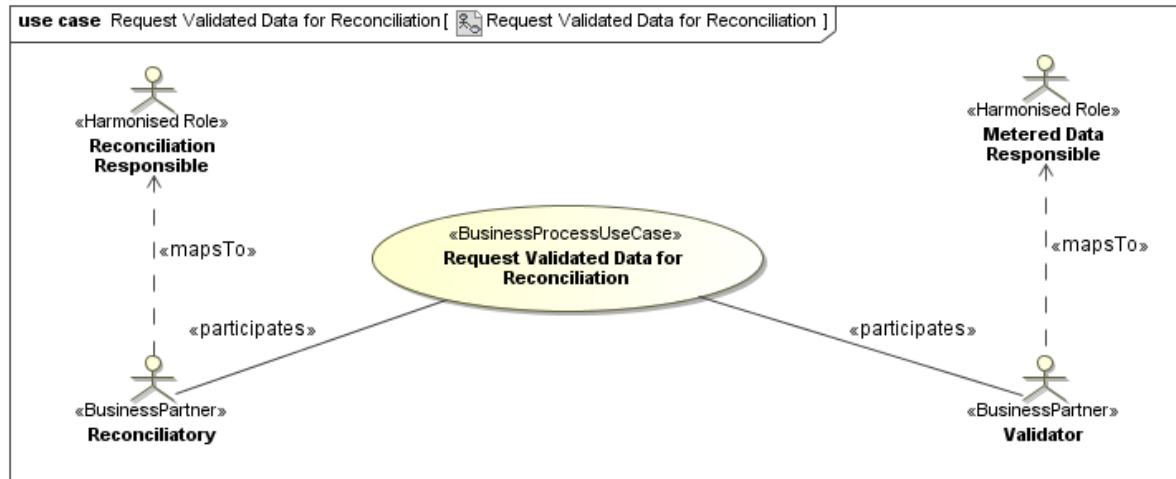


Figure 5 Request Validated Data for Reconciliation

1.1.5.1. Description

UseCase description: Request Validated Data for Reconciliation	
definition	<p>Reconciliatory requests Validated Data from the Validator. The request may contain proposed validated metered data.</p> <p><i>Remark: The role of Reconciliation Accountable is left out of this request process, since the Reconciliatory either coincides with the Balance Supplier (who will receive the metered data as part of the exchange of metered data for billing) or with the Balance Responsible Party. At the moment the latter situation is only relevant in The Netherlands and there is no need for metered data for reconciliation directly from the Metered Data Responsible.</i></p>
beginsWhen	Reconciliatory decides to.
preCondition	Relation between Validator and Reconciliatory.
endsWhen	The reception of the validated data has been acknowledged by the Reconciliatory.
postCondition	Validated Data are available for the Reconciliatory.
exceptions	<p>Sending a request with proposed data can only be done if validated data have already been received before (and are not in line with the receivers expectation).</p> <p>The implementation of a process for requesting and/or proposing validated</p>

	data (and the conditions under which it works) is up to national decision.
actions	<i>See 1.1.5.2</i>

1.1.5.2. Business Process

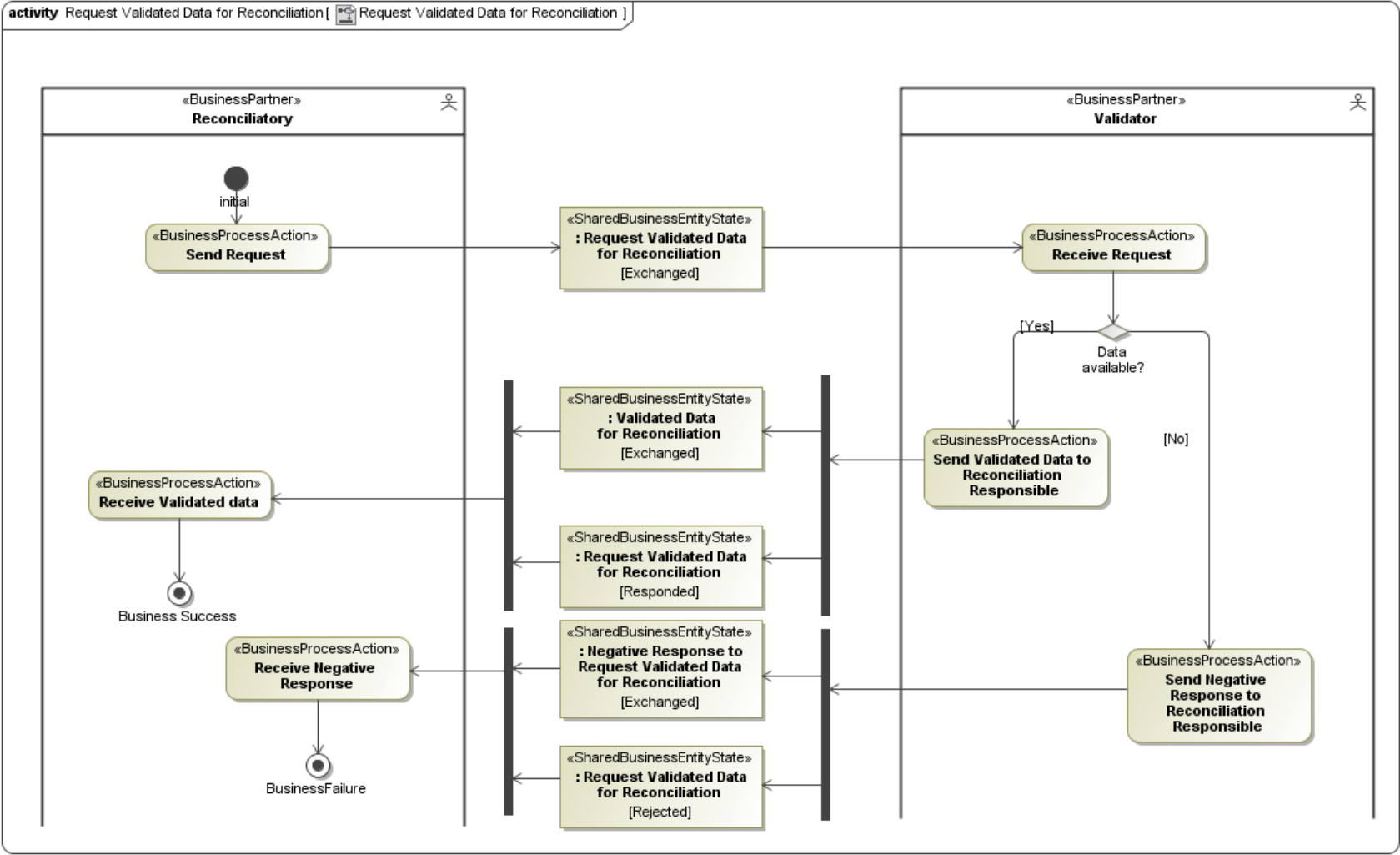


Figure 6 BP Request Validated Data for Reconciliation

1.1.6. Aggregate for Reconciliation

These business requirements see no need for exchange of aggregated measured data for reconciliation.

We see however the need for various forms of aggregated data needed as input for the planning of profiled Metering Points or as input for the imbalance settlement when using analytic profiling.

And we see the need for handing over the residual volumes as a result from imbalance settlement to the start of the reconciliation process when based on synthetic profiles.

And finally we see the need for exchange of aggregated data resulting from the reconciliation process to the next step: billing reconciliation results which is specified in the document ebIX® Business Requirements for Settle Reconciliation (www.ebix.org).

But none of these forms of aggregated data can be regarded as measured data for reconciliation and cannot therefore be part of this document.

1.2. Business Partner View

1.2.1. Business Partners Measure for Reconciliation

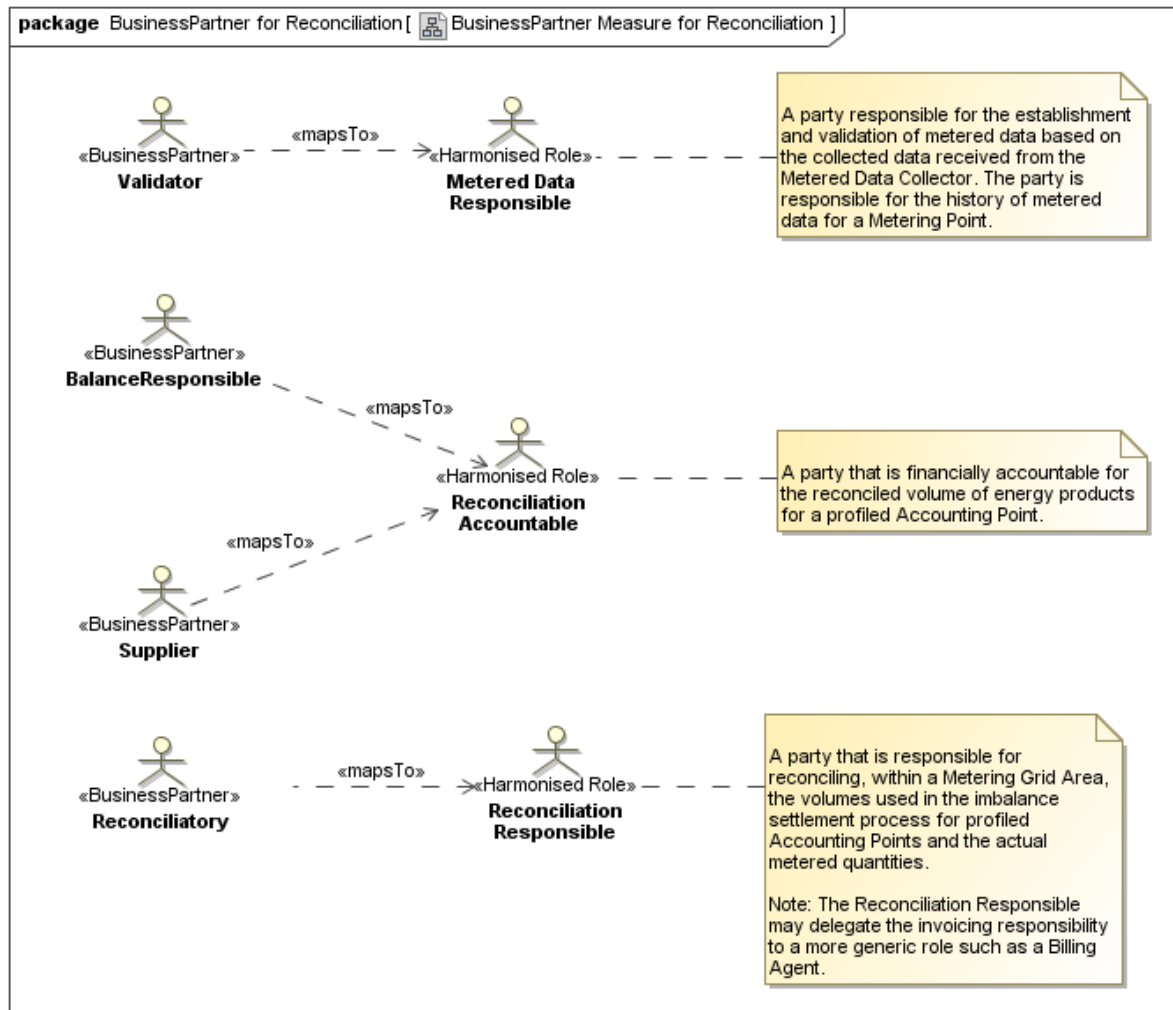


Figure 7 Business Partner Measure for Reconciliation

1.3. Business Entity View

1.3.1. Short introduction

In these business requirements the ebIX® work group EMD has for the first time used the principle of specifying the core data set as business requirements. This core data set is defined as the set of information that is required when using synchronous web services as the exchange mechanism.

The information required for a-synchronous web services is added as an option.

Finally optional information is specified.

For exchange as a stand-alone document header and context information will have to be added. But this is not regarded as a business requirement when defining the core data set, but as a requirement for technical implementation or mapping to syntax.

It is important to note that it is assumed for defining the core data set, that Metering Points are uniquely dedicated to either electricity or to gas. As a consequence the specification of the business sector is not part of core data set anymore.

1.3.2. Validated Data for Reconciliation (Class Diagram)

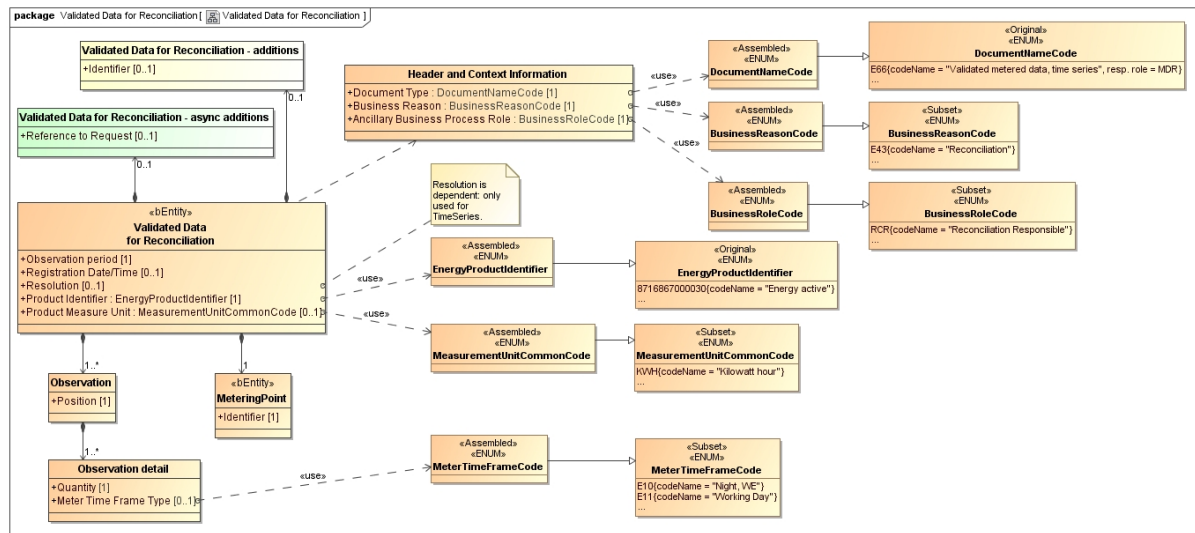


Figure 8 Validated Data for Reconciliation

Element definitions, Validated Data for Reconciliation	
«Business entity» Validated Data for Reconciliation	The information set sent by a Validator responsible for the validation of measured data for a Metering Point in order to enable the reconciliation of imbalance for this Metering Point.
Observation Period	A specific period of time describing the duration of this set of validated data.
Registration Date/Time	The date time of the validation (and storage in the database) of this set of validated data.
Resolution	The resolution of this set of validated data expressed as a duration between the start and end of subsequent observations within this set of validated data. Resolution is dependent: only used when validated data is exchanged as timeseries.
MeteringPoint Type	A code specifying the direction of the active energy flow in this Metering Point, such as consumption, production or combined.
Product Identifier	A code specifying the energy product for the quantity in this time series.
Product Measure Unit	The unit of measure used for the quantity in this time series/set of measured data.
«Business entity» Metering Point	An entity where energy products are measured or computed.
Identifier	The unique identification of the Metering Point to which the validated data are attributed.

Observation	A set of one or more validated quantities of energy and its characteristics for a detail period. The detail set may be a part of a wider (e.g 24 hour) set of such quantities.
Position	The ordinal position of this observation in the wider set of validated quantities of energy.
Observation detail	A validated quantity of energy and its characteristics for a detail period. The validated quantity of energy and its characteristics may be a part of a set.
Quantity	The validated quantity of energy for this detail observation.
Meter Time Frame Type	A code specifying the Meter Time Frame for the validated quantity of energy in question.
Observation	One validated value. This value may be a part of a set of validated data.
Position	The ordinal position of this observation in this set of validated data.
Quantity	The validated quantity of energy for this observation.
Meter Time Frame Type	A code specifying the Meter Time Frame for the quantity in question.
Validated Data for Reconciliation Energy Additions	Additional information, related to Validated Data for Reconciliation, 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 Validator.
Validated Data for Reconciliation Async Additions	Additional information, related to Validated Data for Reconciliation, 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 validated data which uniquely identifies it.
Header and Context Information	The set of information specifying the information to be added to this payload "Validated Data for Reconciliation" 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.

Request Validated Data for Reconciliation Async Additions	Additional information, related to Request Validated Data for Reconciliation, 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.
Header and Context Information	The set of information specifying the information to be added to this payload “Request Validated Data for Reconciliation” 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.

1.3.3.1. Request Validated Data for Reconciliation (State Diagram)

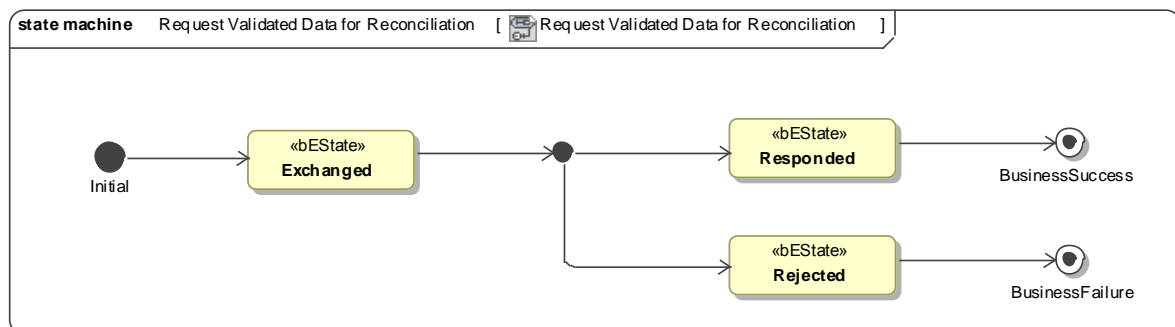


Figure 11 SD Request Validated Data for Reconciliation

1.3.4. Negative Response to Request Validated Data for Reconciliation (Class Diagram)

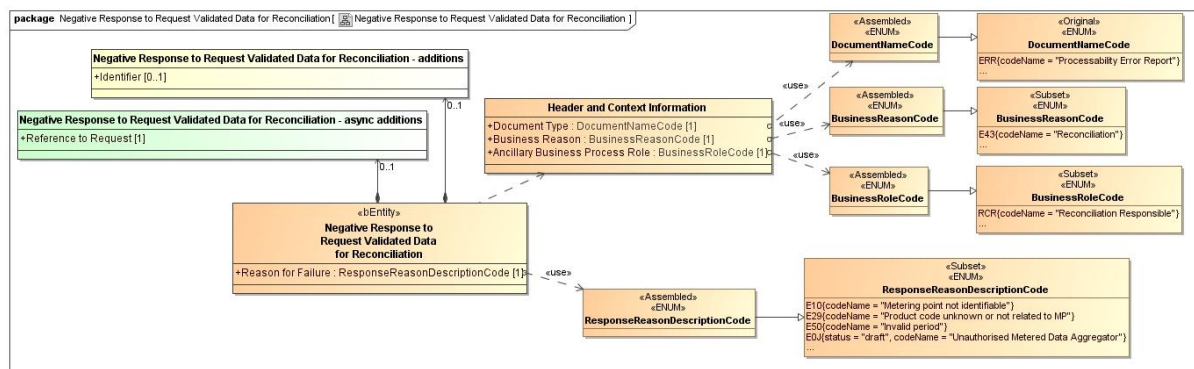


Figure 12 Negative Response to Request Validated Data for Reconciliation

Element definitions, Negative Response to Request Validated Data for Reconciliation	
«Business entity» Negative Response to Request Validated Data for Reconciliation	The information set to be sent by the Validator to the Reconciliatory when negatively responding to a request for validated measured data for reconciliation.
Reason for Failure	A code specifying the reason why the exchange was not successful.
Negative Response to Request Validated Data for Reconciliation Additions	Additional information, related to Negative Response to Request Validated Data for Reconciliation 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 Reconciliatory as the requesting role.
Negative Response to Request Validated Data for Reconciliation Async Additions	Additional information, related to Negative Response to Request Validated Data for Reconciliation, 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 validated data 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 Validated Data for Reconciliation” 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.
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1.3.4.1. Negative Response to Request for Reconciliation (State Diagram)

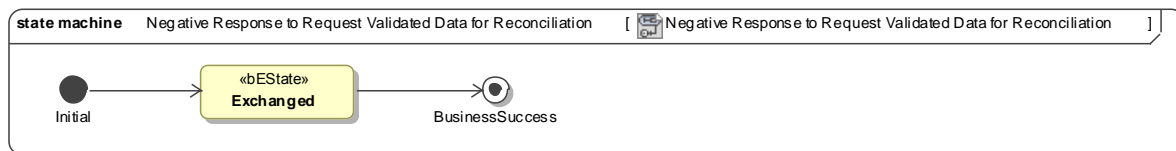


Figure 13 SD Negative Response to Request Validated Data for Reconciliation