



Business information model

for

Measure,

Determine

Meter Read

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C O N T E N T

A. About this document 3

A.1. References 3

A.1.1. International open standards used:..... 3

A.1.2. ebIX® Document references 3

A.2. Main changes since last version..... 4

1. Introduction 6

1.1. Place in the overall model for the European Energy Market 6

1.2. About the ebIX® Model 6

1.3. Objectives..... 6

1.4. Scope..... 6

1.5. Actors, parties and roles 7

1.6. Annexes for mapping to technology of choice 7

2. Business Choreography View: Measure, Determine Meter Read 8

2.1. UseCase Notification Need for Meter Read (Business Realization)..... 8

2.1.1. UseCase Notification Need for Meter Read (Business Collaboration)..... 8

2.1.1.1. Description 8

2.1.1.2. Notification Need for Meter Read 9

2.1.1.3. UseCase Notification Need for Meter Read (Business Transaction)..... 9

2.1.1.3.1. Description 9

2.1.1.3.2. Notification Need for Meter Read 10

3. Modeled Business Information: Notification Need for Meter Read (Business Information View) 11

3.1. Notification Need for Meter Read (Business Information)..... 12

3.1.1. Mapping NotificationNeedForMeterRead 13

3.1.2. OCL constraints for NotificationNeedForMeterRead <<MA>> 14

A. About this document

This document contains the Business Information Model for Measure, Determine Meter Read. This model is based on the ebIX® Business Requirements for Measure, Determine Meter Read [9] version 2r0E.

The model is drafted using the ebIX® Rules for the use of UN/CEFACT Modeling Methodology version 2.0 (UMM-2). UMM-2 uses UML as the Modeling Language.

This part of the ebIX® Model for the European Energy Market is made by ebIX® ETC and is based on business requirements as specified by ebIX® EMD.

If you have comments or suggestions to the model please contact any member of the project group (see ebIX® website).

A.1. References

A.1.1. International open standards used:

- [1] UML Profile for UN/CEFACT's Modeling Methodology (UMM), Base Module, (http://www.unece.org/cefact/umm/umm_index.html)
- [2] UML Profile for UN/CEFACT's Modeling Methodology (UMM), Foundation Module, (http://www.unece.org/cefact/umm/umm_index.html)
- [3] UN/Cefact Core Components Technical Specification Version 3.0, 29 September 2009 (<http://www.unece.org/tradewelcome/un-centre-for-trade-facilitation-and-e-business-uncifact/outputs/technical-specifications.html>)
- [4] UN/CEFACT UML Profile for Core Components Technical Specification 3.0 (<http://www.unece.org/tradewelcome/un-centre-for-trade-facilitation-and-e-business-uncifact/outputs/technical-specifications.html>)
- [5] UN/CEFACT XML Naming and Design Rules Technical Specification Version 3.0, (http://www.unece.org/cefact/xml/xml_index.html)
- [6] UN/CEFACT Core Components Data Type Catalogue Version 3.0, 29 September 2009 (http://www.unece.org/cefact/codesfortrade/unccl/ccl_index.html)
- [7] Object Constraint Language, OMG Available Specification Version 2.0 formal, 1 May 2006 (www.omg.org/spec/OCL/2.0/)

A.1.2. ebIX® Document references

- [8] Introduction to ebIX® Business Requirements and Information Models (www.ebix.org)
- [9] ebIX® Business Requirements for Measure, Determine Meter Read (www.ebix.org)
- [10] The Harmonized Role Model (for the Electricity Market) by ebIX®, ENTSO-E and EFET (www.ebix.org)

[11] ebIX® Rules for the use of OCL statements (www.ebix.org)

A.2. Main changes since last version

		Old	New	Clarification	Date
Version 2014.A					
	ebIX® Document references		ebIX® Rules for the use of OCL statements	This document has been added to the list of references	September 2013
	Business partners and authorized roles			Authorized roles have been added	September 2013
	Class diagram, payload			Cardinality changed into 1..* and as a consequence in the constraint for the structure of the payload a statement has been added to set the cardinality for the payload to 1 (in the document version it is 1..*)	September 2013
	OCL statements			OCL statements have been updated and brought in line with updated Business Requirements and updated ABIE's	September 2013
	Class diagram			The root class (<<MA>>) now inherits from a standard <<MA>>-cluster as opposed to composing each <<MA>> individually from ABIE's.	August 2014
	Class diagram			Table containing	August 2014

				mapping information (BRS to BIM) has been added.	
	Class diagram			Table containing constraints replaces text representing constraints	August 2014
	OCL constraint			Product code for gas has been added	June 2015
End of Version 2014.A					

1. Introduction

1.1. Place in the overall model for the European Energy Market

This document contains the Business Information Model for the exchange of data for determining a Meter Read for processes in the European Energy Market that need an independently established status by means of a meter read for the moment of change. This model is part of the overall ebIX[®] business domain for Measure.

1.2. About the ebIX[®] Model

The documents for the domain Measure describe a model for the exchange of metered data in the European Energy Market. The model will, when the modeling project will have been completed, be a part of a common ebIX[®] model for the European Energy Market. The model is important for having a common and agreed understanding on how the exchange of business information in the European Energy Market works.

In line with UMM-2 the ebIX[®] model contains 3 main parts:

1. Business Requirements View
2. Business Choreography View
3. Business Information View

The Business Requirements for Measure, Determine Meter Read are specified in a separate document [9].

This document contains the Business Choreography View and the Business Information View for Measure, Determine Meter Read.

1.3. Objectives

This ebIX[®] Business Information Model shall specify the exchange of data for determining a Meter Read as business information in line with the ebIX[®] business requirements for “Measure, Determine Meter Read” and in line with the UN/Cefact Modeling Methodology version 2.0 [1] and [2].

From the information specification in the Business Information View syntax dependent exchange formats are derived for publication as recommendation by ebIX[®].

From the process specifications in the Business Choreography View web service definitions are derived for publication as recommendation by ebIX[®].

1.4. Scope

This model belongs to the Measure domain of the overall ebIX[®] model and focuses on the exchange of data for determining a Meter Read.

1.5. Actors, parties and roles

In the modeled processes (UseCases and Activity Diagrams) specified in the next paragraphs the actors are either presented as <<BusinessPartner>>, <<AuthorizedRole>> or as <<Harmonized Role>>.

A business partner is an organization type, an organizational unit type or a person type that participates in a business process [2].

An authorized role is a concept which is more generic than a business partner and allows the reuse of collaborations by mapping an authorized role to a business partner within a given scenario [2].

A harmonized role represents a specific responsibility in the European Energy Market related to the exchange of information [10].

In this document the following business partners (<<BusinessPartner>>) are taken from the business requirements:

- Validator
- Initiating Role

In the model the business partner is to be mapped to a <<Harmonized Role>> from the Role Model. In this document the following harmonized roles (<<HarmonizedRole>>) are used:

- Metered Data Responsible
- Metering Point Administrator

In the model the <<Harmonized Role>> from the Role Model is mapped to an <<AuthorizedRole>>. In this document the following authorized roles (<<AuthorizedRole>>) are used:

- Validator
- Initiating Role

1.6. Annexes for mapping to technology of choice

Information on the available mappings to technology of choice is to be found in the document “ebIX[®] Introduction to Business Requirements and Information Models” [8].

2. Business Choreography View: Measure, Determine Meter Read

2.1. UseCase Notification Need for Meter Read (Business Realization)

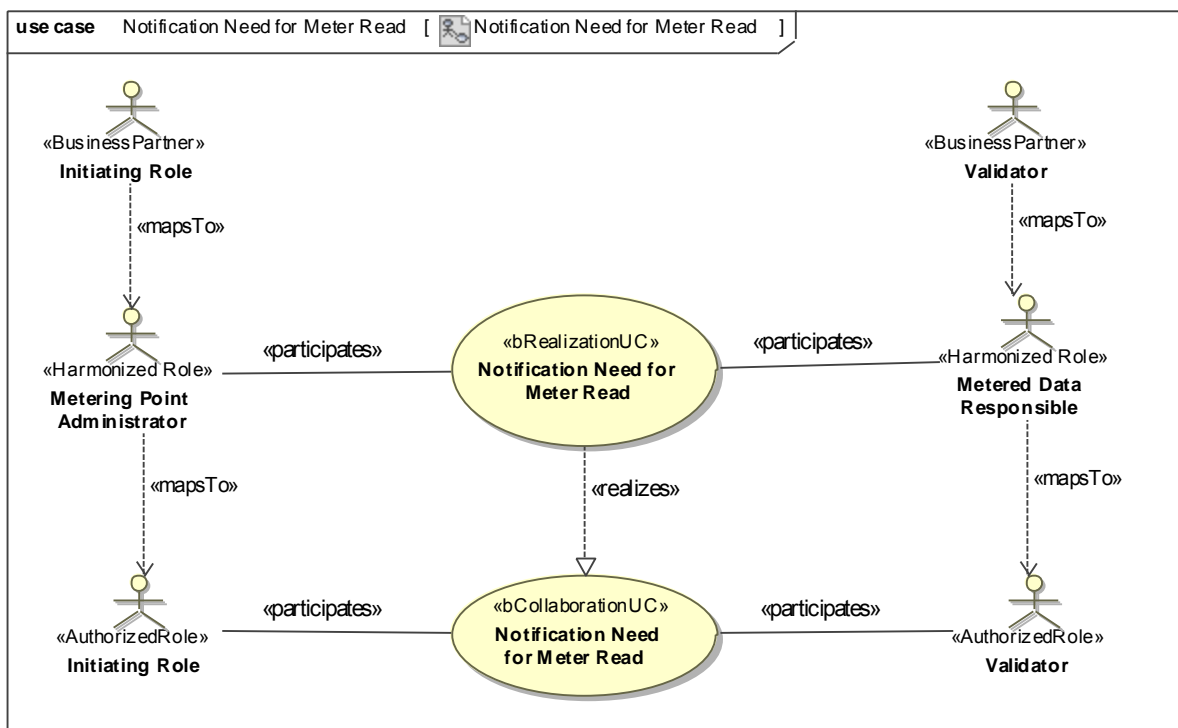


Figure 1 Realization: Notification Need for Meter Read

2.1.1. UseCase Notification Need for Meter Read (Business Collaboration)

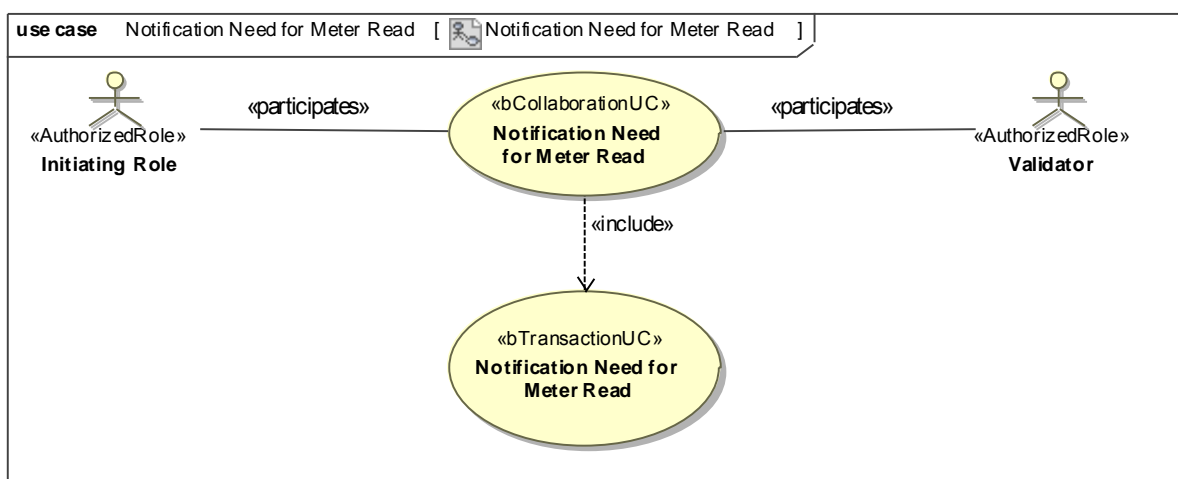


Figure 2 Collaboration: Notification Need for Meter Read

2.1.1.1. Description

No detailed description for the Collaboration. For detailed description see Business Transaction (2.1.1.2).

2.1.1.2. Notification Need for Meter Read

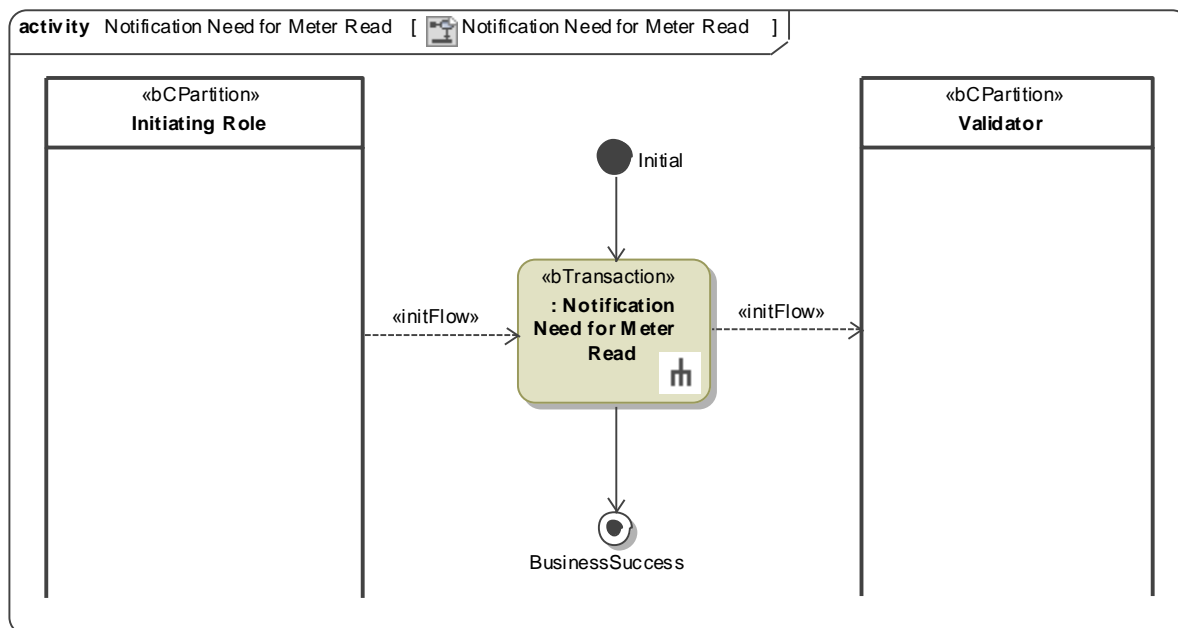


Figure 3 Collaboration: Notification Need for Meter Read

2.1.1.3. UseCase Notification Need for Meter Read (Business Transaction)

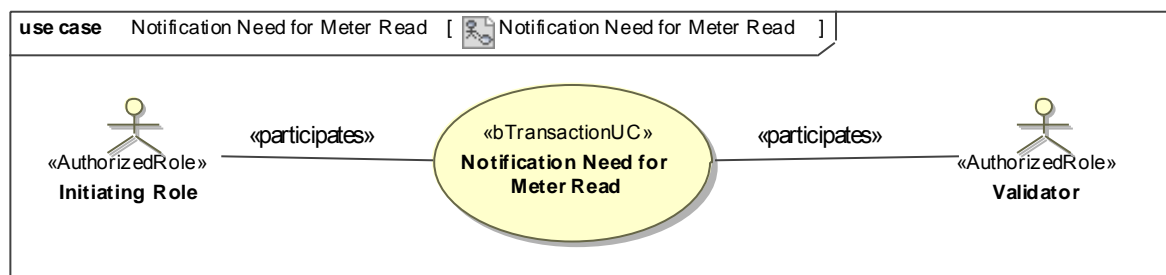


Figure 4 Transaction: Notification Need for Meter Read

2.1.1.3.1. Description

UseCase description: Notification Need for Meter Read	
definition	An initiating role notifies the need for an independently established status by means of a meter read for the moment of change to the validator.
beginsWhen	The initiating role decides to.
preCondition	The initiating role processes a change request that needs an independently established status by means of a meter read for the moment of change.
endsWhen	The notification has been received by the validator
postCondition	The validator can start the process for the establishment of a meter read.

exceptions	none
actions	See 2.1.1.3.2

2.1.1.3.2. Notification Need for Meter Read

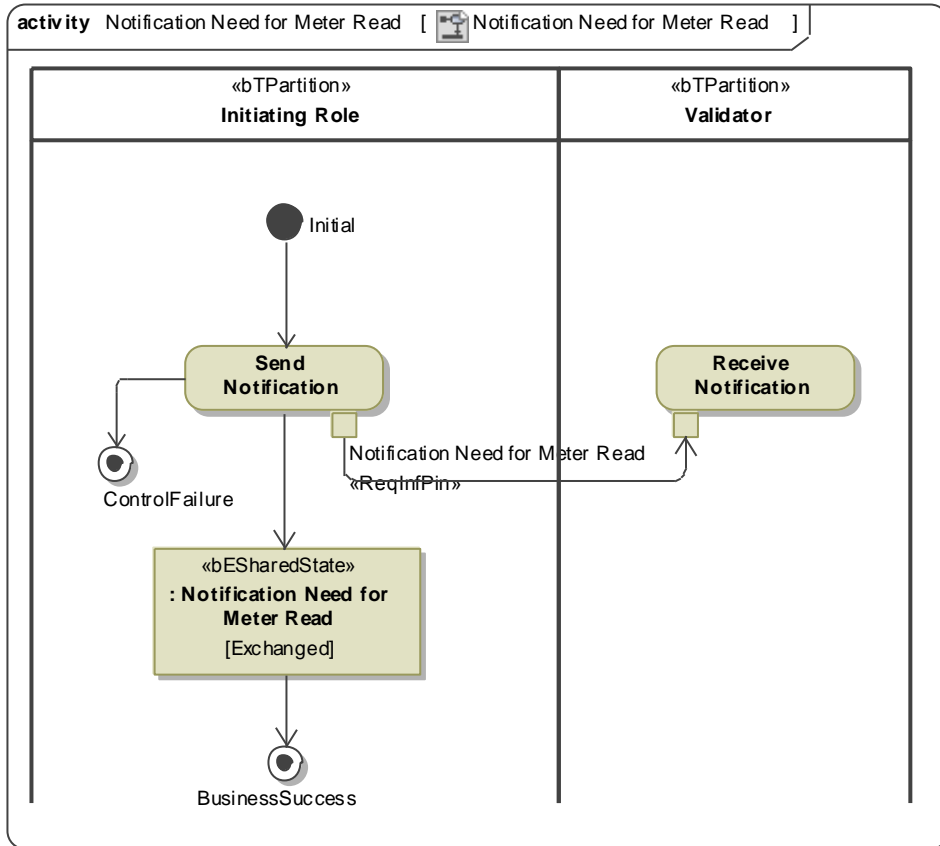


Figure 5 Transaction: Notification Need for Meter Read

3. Modeled Business Information: Notification Need for Meter Read (Business Information View)

See next page

3.1. Notification Need for Meter Read (Business Information)

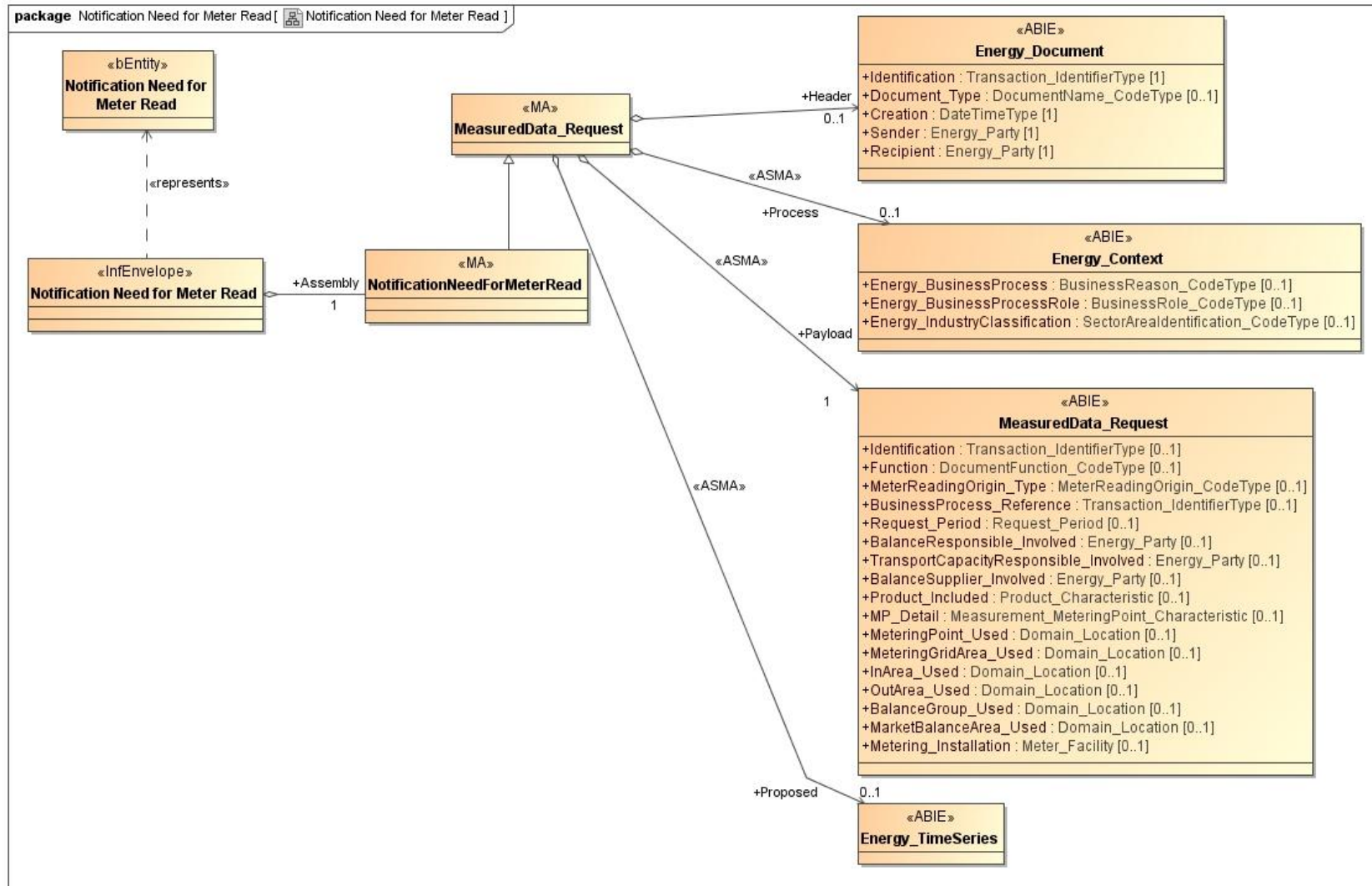






Figure 6 Notification Need for Meter Read



3.1.1. Mapping NotificationNeedForMeterRead



	+Identification : ebix:org::BDT::Domain_IdentifierType [1] [ebix:org::ABIE:;...]	+Energy_BusinessProcess : ebix:org::BDT::BusinessReason_CodeType [0..1]...	+Energy_BusinessProcessRole : ebix:org::BDT::BusinessRole_CodeType [0.....]	+Document_Type : ebix:org::BDT::DocumentName_CodeType [0..1] [ebix:or...	+BusinessProcess_Reference : ebix:org::BDT::Transaction_IdentifierType [0.....]	+Identification : ebix:org::BDT::Transaction_IdentifierType [0..1] [ebix:org:;...]	+MeteringPoint_Used : ebix:org::ABIE::Domain_Location [0..1] [ebix:org::AB...	+MP_Detail : ebix:org::ABIE::Measurement_MeteringPoint_Characteristic [0.....]	+Product_Included : ebix:org::ABIE::Product_Characteristic [0..1] [ebix:org:;...]	+Request_Period : ebix:org::ABIE::Request_Period [0..1] [ebix:org::ABIE::M...	+MeteringPoint_Type : ebix:org::BDT::MeteringPointType_CodeType [0..1] [...]	+Identification : ebix:org::BDT::EnergyProduct_IdentifierType [1] [ebix:org:;...]
Entity for Determine Meter Read	1	1	1	1	1	1	1	1	1	1	1	1
Notification Need for Meter Read	1	1	1	1	1							
Notification Need for Meter Read - additions					1	1						
+Identifier [0..1]												
+Reference to Business Process [0..1]												
Header and Context Information	1	1	1									
+Ancillary Business Process Role : ebix:org::Codes::ebIX Assembled::BusinessRoleCode [1]												
+Business Reason : ebix:org::Codes::ebIX Assembled::BusinessReasonCode [1]												
+Document Type : ebix:org::Codes::ebIX Assembled::DocumentNameCode [1]												
Notification Need for Meter Read							1	1	1	1	1	1
European Energy Market::Measure::Requirements::Business Entities for Measure::Entity from Role Model::MeteringPoint::MeteringPoint [1]												
+Direction : ebix:org::Codes::ebIX Assembled::MeteringPointTypeCode [0..1]												
+Product Identifier : ebix:org::Codes::ebIX Assembled::EnergyProductIdentifier [1]												
+Requested reading date [1]												
MeteringPoint	1											
MeteringPoint	1											
+Identifier [1]												

3.1.2. OCL constraints for NotificationNeedForMeterRead <<MA>>

#	Specification	Constrained Element	Applied Stereotype
1	<pre>-- Structure MeasuredData_Request -- Notification Need for Meter Read self.Payload.Function->size()=0 inv: self.Payload.MeterReadingOrigin_Type->size()=0 inv: self.Payload.Request_Period->size()=1 inv: self.Payload.Request_Period.Resolution_Duration->size()=0 inv: self.Payload.Request_Period.Start->size()=1 inv: self.Payload.Request_Period.End->size()=1 inv: self.Payload.Request_Period.Continuous->size()=0 inv: self.Payload.BalanceResponsible_Involved->size()=0 --inv: self.Payload.BalanceResponsible_Involved.Role->size()=1 --inv: self.Payload.BalanceResponsible_Involved.Name->size()=1 inv: self.Payload.TransportCapacityResponsible_Involved->size()=0 --inv: self.Payload.TransportCapacityResponsible_Involved.Role->size()=1 --inv: self.Payload.TransportCapacityResponsible_Involved.Name->size()=1 inv: self.Payload.BalanceSupplier_Involved->size()=0 --inv: self.Payload.BalanceSupplier_Involved.Role->size()=1 --inv: self.Payload.BalanceSupplier_Involved.Name->size()=1 inv: self.Payload.Product_Included->size()=1 inv: self.Payload.Product_Included.Unit_Type->size()=0 inv: self.Payload.MP_Detail->size()<=1 inv: self.Payload.MP_Detail.MeteringPoint_Type->size()=1 inv: self.Payload.MP_Detail.MeteringMethod_Type->size()=0 inv: self.Payload.MP_Detail.SettlementMethod_Type->size()=0 inv: self.Payload.MP_Detail.VoltageLevel_Type->size()=0 inv: self.Payload.MP_Detail.StandardLoadProfile_Type->size()=0 inv: self.Payload.MP_Detail.ScheduledMeterReading_Date->size()=0 inv: self.Payload.MP_Detail.MeterReadingFrequency_Duration->size()=0 inv: self.Payload.MeteringPoint_Used->size()=1 inv: self.Payload.MeteringGridArea_Used->size()=0 inv: self.Payload.InArea_Used->size()=0 inv: self.Payload.OutArea_Used->size()=0 inv: self.Payload.BalanceGroup_Used->size()=0 inv: self.Payload.MarketBalanceArea_Used->size()=0 inv: self.Payload.Metering_Installation->isEmpty() --inv: self.Payload.Metering_Installation->forAll (Meter_Identification->size()=1) --inv: self.Payload.Metering_Installation->forAll (Register_Identification->notEmpty())</pre>	 NotificationNeedForMeterRead	<pre>«» invariant [Constraint] «» abie [Constraint] «» document [Constraint] «» payload [Constraint]</pre>

#	Specification	Constrained Element	Applied Stereotype
2	<p>-- BDT MeasuredData_Request -- Notification Need for Meter Read</p> <p>self.Payload.Request_Period.Start.timeZoneCode->size()=0 inv: self.Payload.Request_Period.End.timeZoneCode->size()=0</p> <p>inv: self.Payload.Product_Included.Identification.content=EnergyProductIdentifier::8716867000030 or self.Payload.Product_Included.Identification.content=EnergyProductIdentifier::5410000100016 inv: self.Payload.Product_Included.Identification.schemeAgencyIdentifier=CodeListResponsibleAgencyCode::9</p> <p>inv: self.Payload.MP_Detail.MeteringPoint_Type.content=MeteringPointTypeCode::E17 or self.Payload.MP_Detail.MeteringPoint_Type.content=MeteringPointTypeCode::E18 inv: self.Payload.MP_Detail.MeteringPoint_Type.listIdentifier->size()=0 inv: self.Payload.MP_Detail.MeteringPoint_Type.listAgencyIdentifier->size()=1 inv: self.Payload.MP_Detail.MeteringPoint_Type.listAgencyIdentifier=CodeListResponsibleAgencyCode::260</p> <p>inv: self.Payload.MeteringPoint_Used.Identification.schemeIdentifier->size()=0 inv: self.Payload.MeteringPoint_Used.Identification.schemeAgencyIdentifier=CodeListResponsibleAgencyCode::9</p>	 NotificationNeedForMeterRead	<p>«» invariant [Constraint] «» bdt [Constraint] «» document [Constraint] «» payload [Constraint]</p>
3	<p>-- Structure Energy_Document -- Notification Need for Meter Read</p> <p>self.Header.Document_Type->size()=1 inv: self.Header.Sender.Identification->size()=1 inv: self.Header.Sender.Role->size()=0 inv: self.Header.Sender.Name->size()=0 inv: self.Header.Recipient.Identification->size()=1 inv: self.Header.Recipient.Role->size()=0 inv: self.Header.Recipient.Name->size()=0</p>	 NotificationNeedForMeterRead	<p>«» abie [Constraint] «» document [Constraint] «» invariant [Constraint]</p>
4	<p>-- BDT Energy_Document -- Notification Need for Meter Read</p> <p>self.Header.Document_Type.content=DocumentNameCode::E44 inv: self.Header.Document_Type.listIdentifier->size()=0 inv: self.Header.Document_Type.listAgencyIdentifier=CodeListResponsibleAgencyCode::260</p> <p>inv: self.Header.Creation.timeZoneCode->size()=0</p>	 NotificationNeedForMeterRead	<p>«» bdt [Constraint] «» document [Constraint] «» invariant [Constraint]</p>

#	Specification	Constrained Element	Applied Stereotype
	<p>inv: self.Header.Sender.Identification.schemeIdentifier->size()=0 inv: self.Header.Sender.Identification.schemeAgencyIdentifier=CodeListResponsibleAgencyCode::9 or self.Header.Sender.Identification.schemeAgencyIdentifier=CodeListResponsibleAgencyCode::305</p> <p>inv: self.Header.Recipient.Identification.schemeIdentifier->size()=0 inv: self.Header.Recipient.Identification.schemeAgencyIdentifier=CodeListResponsibleAgencyCode::9 or self.Header.Sender.Identification.schemeAgencyIdentifier=CodeListResponsibleAgencyCode::305</p>		
5	<p>-- Structure Energy_Context -- Notification Need for Meter Read</p> <p>self.Process.Energy_BusinessProcess->size()=1 inv: self.Process.Energy_BusinessProcessRole->size()=1 inv: self.Process.Energy_IndustryClassification->size()=1</p>	 NotificationNeedForMeterRead	<p>«>> invariant [Constraint] «>> document [Constraint] «>> abie [Constraint]</p>
6	<p>-- BDT Energy_Context -- Notification Need for Meter Read</p> <p>self.Process.Energy_BusinessProcess.content=BusinessReasonCode::E01 or self.Process.Energy_BusinessProcess.content=BusinessReasonCode::E03 or self.Process.Energy_BusinessProcess.content=BusinessReasonCode::E06 or self.Process.Energy_BusinessProcess.content=BusinessReasonCode::E20 or self.Process.Energy_BusinessProcess.content=BusinessReasonCode::E35 or self.Process.Energy_BusinessProcess.content=BusinessReasonCode::E65 or self.Process.Energy_BusinessProcess.content=BusinessReasonCode::E66 or self.Process.Energy_BusinessProcess.content=BusinessReasonCode::E77 or self.Process.Energy_BusinessProcess.content=BusinessReasonCode::E93 inv: self.Process.Energy_BusinessProcess.listIdentifier->size()=0 inv: self.Process.Energy_BusinessProcess.listAgencyIdentifier=CodeListResponsibleAgencyCode::260</p> <p>inv: self.Process.Energy_BusinessProcessRole.content=BusinessRoleCode::MDR inv: self.Process.Energy_BusinessProcessRole.listIdentifier->size()=0 inv: self.Process.Energy_BusinessProcessRole.listAgencyIdentifier=CodeListResponsibleAgencyCode::260</p> <p>inv: self.Process.Energy_IndustryClassification.content=SectorAreaIdentificationCode::23 or self.Process.Energy_IndustryClassification.content=SectorAreaIdentificationCode::27 inv: self.Process.Energy_IndustryClassification.listAgencyIdentifier=CodeListResponsibleAgencyCode::260</p>	 NotificationNeedForMeterRead	<p>«>> bdt [Constraint] «>> invariant [Constraint] «>> document [Constraint]</p>

#	Specification	Constrained Element	Applied Stereotype
7	-- Structure Document -- Notification Need for Meter Read self.Header->size()=1 inv: self.Process->size()=1 inv: self.Proposed->size()=0	 NotificationNeedForMeterRead	«» invariant [Constraint] «» document [Constraint]
8	-- Structure Payload -- Notification Need for Meter Read self.Header->size()=0 inv: self.Process->size()=0 inv: self.Payload->size()=1 inv: self.Proposed->size()=0	 NotificationNeedForMeterRead	«» invariant [Constraint] «» payload [Constraint]