

Technical presentation

<Place and date>

ebIX[®] – Short introduction



- ebIX[®]: European Forum for energy business Information eXchange
- European Energy Market: Electricity and Gas
- Focus on downstream part of the market:
 - Parties, such as:
 - Customer, DSO, energy supplier, metering responsible etc.
 - Metering point (accounting point)
 - Master data and measured data
- Start: mid nineties in Nordic countries as Ediel organisation, since 2002 as ebIX[®] for Europe

ebIX[®] work



- 1990's: EDIFACT (MSCONS, DELFOR, PRODAT, ...)
- 2000 2002: Development of UTILMD and UTILTS UNSM's
- 2001: Start modelling using UML
- 2005: first draft Core Components (CCs)
- 2008 : Modelling separation between Business Requirements and Business Information
- 2010 : Transformation Tool UML -> XML schemas
- 2014 : Active cooperation with IEC, linking ebIX[®] model to CIM, updating CIM to fit ebIX[®] model
- 2017 : Joining European Commission Expert Groups



Modelling Methodology



- Business requirement specifications (BRSs) for various processes made by business representatives
 - In the ebIX[®] model: Business Requirement View
- Business information models (BIMs) made by modellers for technical implementers
 - In the ebIX[®] model: Business Choreography View and Business Information View
- Exchange formats, such as XML, derived from the information models

<xsd:sequence>
 <xsd:element ref="rsm:HeaderEnergyDocument" minOccu
 <xsd:element ref="rsm:ProcessEnergyContext" minOccurs
 <xsd:element ref="rsm:PayloadMasterDataMPEvent" minC
 </xsd:sequence>

ebIX[®] modelling – we follow...



- UML-2
- UMM-2
- CCTS 3.0 + UPCC 3.0
- NDR 3.0
- OCL 2.0
- Model Driven Architecture paradigm: model in UML + use of OCL and derive technology dependent elements from UML model
- Supported technologies:
 - XML (schema's based on NDR 3.0)
 - Web services (yet to be developed)

Steps from BRS to exchange formats



- 1. Business requirement specifications (BRSs)
- 2. Data model with its Business Information models (BIM)
- 3. Core Components
- 4. Syntax specific representation

BRSs Data model CCs: ABIEs & MBIEs OCL syntax

syntax specific representation (e.g. XML)

The Harmonised Role Model



A role model for the European Energy Market maintained in a cooperation between ebIX[®], EFET and ENTSO-E

With roles, not companies:

- Imbalance settlement responsible
- Balance responsible party
- Balance supplier
- Metered data responsible
- Grid access provider
- Metering point administrator

With domains like Metering Points and Metering Grid Areas

All data exchange between roles

Business Requirements



- Business work groups makes BRSs
- "Modelled" in UML
- UMM-2 is used as basis for our methodology and meta-model
- Payload for information exchange that can be used by synchronous web services
- Optional additional information for asynchronous and "optional" additions
- Mapped to IEC CIM, see IEC TR 62325-103

Some examples



- Time series (measured data)
- Metering Point Event (master data)
- Code lists

Energy_TimeSeries (1)



package ABIE [📓 Energy_TimeSeries]



Energy_TimeSeries (2)



«ABIE»		
Energy_TimeSeries		
BBIE»+Identification : ebix:org::BDT::Transaction_IdentifierType [01]		
«BBIE»+Function : ebix:org::BDT::DocumentFunction_CodeType [01]		
BBIE»+Registration_DateTime: ebix:org::BDT::DateTimeType [01]		
BBIEs+MeterReadingOrigin_Type : ebix:org::BDT::MeterReadingOrigin_CodeType [01]		
«BBIE»+LatestUpdate_Date: ebix:org::BDT::DateTimeType [01]		
«BBIE»+Currency: ebix:org::BDT::CurrencyIdentification_CodeType [01]		
+Request_Reference : ebix:org::ABIE::Reference_Identity [01]		
+Observation_Period : ebix:org::ABIE::TimeSeries_Period [01]		
+BalanceResponsible_Involved : ebix:org::ABIE::Energy_Party [01]		
+TransportCapacityResponsible_Involved : ebix:org::ABIE::Energy_Party [01]		
+BalanceSupplier_Involved : ebix:org::ABIE::Energy_Party [01]		
+Product_Included : ebix:org::ABIE::Product_Characteristic [01]		
+MP_Detail: ebix:org::ABIE::Measurement_MeteringPoint_Characteristic [01]		
+MeteringPoint_Used : ebix:org::ABIE::Domain_Location [01]		
+MeteringGridArea_Used : ebix:org::ABIE::Domain_Location [01]		
+InArea_Used : ebix:org::ABIE::Domain_Location [01]		
+OutArea_Used : ebix:org::ABIE::Domain_Location [01]		
+BalanceGroup_Used : ebix:org::ABIE::Domain_Location [01]		
+Metering_Installation : ebix:org::ABIE::Meter_Facility [0*]		
+Generation_Installation : ebix:org::ABIE::Generator_Facility [0*]		
+Observation_Interval : ebix:org::ABIE::Observation_Period [0*]		

Energy_TimeSeries (3) focus on time series



«ABIE» Energy_TimeSeries	
BBIEs+Identification : ebix:org::BDT::Transaction_IdentifierType [01] BBIEs+Function : ebix:org::BDT::DocumentFunction_CodeType [01] BBIEs+Registration_DateTime : ebix:org::BDT::DateTimeType [01] BBIEs+MeterReadingOcinin_Type : ebix:org::BDT::MeterReadingOcinin_CodeType [01]	«ASBIE»
BBIEs+LatestUpdate_Date : ebix:org::BDT::DateTimeType [01] BBIEs+LatestUpdate_Date : ebix:org::BDT::DateTimeType [01] BBIEs+Currency : ebix:org::BDT::CurrencyIdentification_CodeType [01] Request_Reference : ebix:org::ABIE::Reference_Identity [01]	
Observation_Period : ebic:org::ABIE::TimeSeries_Period [01] BalanceResponsible_Involved : ebic:org::ABIE::Energy_Party [01] TransportCapacityResponsible_Involved : ebic:org::ABIE::Energy_Party [01]	+Observation_Interval_0* «ABIE»
+BalanceSupplier_Involved : ebic:org::ABIE::Energy_Party [01] +Product_Included : ebic:org::ABIE::Product_Characteristic [01] +MP_Detail : ebic:org::ABIE::Measurement_MeteringPoint_Characteristic [01] +MeteringPoint_Used : ebic:org::ABIE::Domain_Location [01] +MeteringPoint_Used : ebic:org::ABIE::Domain_Location [01]	
InArea_Used : ebix.org::ABIE::Domain_Location [01] OutArea_Used : ebix.org::ABIE::Domain_Location [01] BalanceGroup_Used : ebix:org::ABIE::Domain_Location [01] Metering_Installation : ebix:org::ABIE::Meter_Eacility [0, *]	«ASBIE»
+Generation_Installation : ebix:org::ABIE::Generator_Facility [0*] +Observation_Interval : ebix:org::ABIE::Observation_Period [0*]	+Observation_Detail_1*
	«ABIE» Energy_Observation
	BBIE»+Energy_Quantity : ebix:org::BDT::Integer_QuantityType [01] BBIE»+Generated_Quantity : ebix:org::BDT::Integer_QuantityType [01] BBIE»+Quantity_Missing : ebix:org::BDT::IndicatorType [01]
	<pre>«BBIE»+Energy_Price : ebix:org::BDT::AmountType [01] «BBIE»+Price_Missing : ebix:org::BDT::IndicatorType [01] «BBIE»+Quantity_Quality : ebix:org::BDT::Quantity_Quality_CodeType [01]</pre>

MP_Event (1)





MP_Event (2)



«ABIE»
MP_Event
BBIE»+Identification: ebix:org::BDT::Transaction_IdentifierType [01] BBIE»+StartOfOccurrence: ebix:org::BDT::DateTimeType [01] CriginalBusinessDocument: ebix:org::ABIE::Reference_Identity [01] HoriginalBusinessDocument: ebix:org::ABIE::Reference_Identity [01] HeteringPoint_Used: ebix:org::ABIE::Domain_Location [01] HeteringPointCapacityResponsible_Involved: ebix:org::ABIE::Energy_Party [01] HeteredDataResponsible_Involved: ebix:org::ABIE::Energy_Party [01]
+Consumer_Involved : ebix:org::ABIE::Energy_Party [01]

Collected Data built from CC









ebIX[®] business processes modelled and published



- Introduction to ebIX[®] models
- Change of Supplier
- End of Supply
- Change of Balance Responsible Party
- Customer Move
- Alignment of MP Characteristics
- Change of Metered Data Responsible
- End of Metered Data Responsible
- Change of Transport Capacity Responsible
- Upfront Request for Metering Point Characteristics

ebIX[®] business process (cont'd)



- Alignment of Metering Configuration Characteristics
- Alignment of characteristics for a Customer linked to a Metering Point
- Request change of MP characteristics
- Alignment of Area characteristics
- Bulk change of BRP
- Rearrange MPs between grids

ebIX[®] business process (cont'd)

- Measure Calorific Value
- Measure Collected Data
- Measure Determine Meter Read
- Measure for Imbalance Settlement
- Measure for Labeling
- Measure for Reconciliation
- Measure for Billing

Settle Reconciliation



Contact and information



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For more more information, please go to our website

