

1
2
3
4

GUIDING PRINCIPLES FOR MEASUREMENT DATA DOCUMENT

5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

VERSION: 0.9

29	TABLE OF CONTENTS	
30	1 INTRODUCTION	6
31	2 SCOPE	7
32	3 REFERENCES	8
33	3.1 NORMATIVE REFERENCES.....	8
34	3.2 OTHER REFERENCES.....	8
35	4 TERMS AND DEFINITIONS	9
36	4.1 TERMS USED IN THIS DOCUMENT.....	9
37	4.2 BASIC PRINCIPLES AND ASSUMPTIONS.....	9
38	5 BUSINESS DOMAIN VIEW: EXCHANGE MEASUREMENT DATA	10
39	5.1 BUSINESS PROCESS USECASE: EXCHANGE MEASUREMENT DATA.....	10
40	5.2 BUSINESS PROCESS: EXCHANGE MEASUREMENT DATA.....	11
41	6 BUSINESS PARTNER VIEW	13
42	6.1 BUSINESS PARTNERS FOR ALIGNMENT OF MEASUREMENT DATA	13
43	7 BUSINESS ENTITY VIEW.....	14
44	7.1 MEASUREMENTDATA_MARKETDOCUMENT CONTEXTUAL MODEL.....	14
45	7.1.1. <i>Overview of the model</i>	14
46	7.1.2. <i>IsBasedOn relationships from the European style market profile</i>	15
47	7.2 MEASUREMENTDATA_MARKETDOCUMENT ASSEMBLY MODEL.....	16
48	7.2.1. <i>Overview of the model</i>	16
49	7.2.2. <i>IsBasedOn relationships from the European style market profile</i>	16
50	7.2.3. <i>Detailed MeasurementData_MarketDocument assembly model</i>	17
51	APPENDIX A MAPPING FROM MYENERGYDATA AND FSKAR	31
52	A.1. MEASUREMENT DATA MARKET DOCUMENT VS FSKAR AND MYENERGYDATA	31
53	A.2. MAPPING TABLE FOR MYENERGYDATA	33
54	A.3. MAPPING TABLE FOR FSKAR METERING DATA MARKET DOCUMENT.....	33
55		
56		

57

TABLE OF FIGURES

58	Figure 1: Business Process UseCase exchange measurement data	10
59	Figure 2: Business Process: Exchange measurement data	11
60	Figure 3: Sequence diagram: Exchange measurement data	12
61	Figure 4 - Business Partners for alignment of measurement data	13
62	Figure 5 - MeasurementData_MarketDocument contextual model.....	14
63	Figure 6 - MeasurementData_MarketDocument assembly model	16
64	Figure 7: Measurement Data Market Document contextual model	32
65	Figure 8: Measurement Data Market Document assembly model	32
66		

Copyright notice:

Copyright © EU DSO Entity and ENTSO-E. All Rights Reserved.

This document and its whole translations may be copied and furnished to others, and derivative works that comment on or otherwise explain it or assist in its implementation may be prepared, copied, published and distributed, in whole or in part, without restriction of any kind, provided that the above copyright notice and this paragraph are included on all such copies and derivative works. However, this document itself may not be modified in any way, except for literal and whole translation into languages other than English and under all circumstances, the copyright notice or references to **EU DSO Entity**, and **ENTSO-E** may not be removed.

This document and the information contained herein is provided on an "as is" basis.

EU DSO Entity® and ENTSO-E DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTY THAT THE USE OF THE INFORMATION HEREIN WILL NOT INFRINGE ANY RIGHTS OR ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Maintenance notice:

THIS DOCUMENT IS MAINTAINED JOINTLY BY ENTSO-E AND EU DSO ENTITY. COMMENTS OR REMARKS ARE TO BE PROVIDED USING THE [MAINTENANCE REQUEST FORM](#) AND SEND IT TO cim@entsoe.eu AND secretariat@eudsoentity.eu.

85

86
87

REVISION HISTORY

Version	Date	Change
0.9	2026-07-06	First published version.

1 INTRODUCTION

The EU Implementing Regulation (EU) 2023/1162 establishes harmonised rules for granting final customers and eligible third parties' access to metering and consumption data. Its overarching objective is to ensure that validated historical consumption data, held by metered data administrators, can be securely and efficiently shared with those entitled to receive it. This regulatory framework supports greater transparency, customer empowerment, and the development of innovative energy services across the European energy market.

In response to these requirements and driven by the ambition of the ENTSO-E and EU DSO Entity Joint Working Group Task Force for data interoperability modelling (JWG/TF3) and other stakeholders, there is a strong desire to introduce a single, unified market document for all types of measurement data exchange. The **Measurement Data Market Document** is aligned to improve and streamline current practices by substituting the use of the existing *FSKAR Metering Data Market Document* and the *MyEnergyData_MarketDocument*. By providing one common, standardised structure for the exchange of metering and consumption information, the new document aims to enhance interoperability, reduce complexity, and ensure compliance with the evolving EU regulatory landscape.

2 SCOPE

The scope of the Measurement Data Market Document encompasses all processes related to the standardised exchange of validated metering and historical consumption data between metered data responsible parties, metered data administrators, final customers, and eligible third parties, in accordance with the requirements set out in Implementing Regulation (EU) 2023/1162, *FSKAR Metering Data Market Document* and the *MyEnergyData_MarketDocument*. This includes the definition of a common data format, message structure, and information model that supports secure, efficient, and interoperable data sharing across the European energy market.

The document covers:

- The transmission of validated historical consumption data from metered data administrators to final customers and parties authorized to access such data.
- The exchange of metering data for a broad range of use cases, including customer information requests, supplier switching, energy service provision, and regulatory reporting where applicable.
- The alignment of data exchange processes with the Common Information Model (CIM) to ensure harmonization and interoperability within and across national markets.
- The replacement of existing metering-related data exchange documents—including the FSKAR Metering Data Market Document and the *MyEnergyData_MarketDocument*—by providing a unified structure capable of supporting all relevant measurement data scenarios.

The Measurement Data Market Document is based on the European style market contextual model (IEC 62325-351), which defines the relevant Aggregate Core Components (ACCs), and are contextualised into Aggregate Business Information Entities (ABIEs) to satisfy the business requirements.

3 REFERENCES

3.1 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

- [1] [IEC 62325-301:2018, Framework for energy market communications - Part 301: Common information model \(CIM\) extensions for markets](#)
- [2] [IEC 62325-351:2016, Framework for energy market communications – Part 351: CIM European market model exchange profile](#);
- [3] [IEC 62325-450:2013, Framework for energy market communications – Part 450: Profile and context modelling rules](#);
- [4] [IEC 62325-451-1:2017, Framework for energy market communications – Part 451-1: Acknowledgement business process and contextual model for CIM European market](#);
- [5] [COMMISSION IMPLEMENTING REGULATION \(EU\) 2023/1162 of 6 June 2023 on interoperability requirements and non-discriminatory and transparent procedures for access to metering and consumption data](#);
- [6] [IEC 62325-451-10 IEC 62325-451-10:2020 Framework for energy market communications - Part 451-10: Profiles for Energy Consumption Data \(“My Energy Data”\)](#)
- [7]
- [8] Accounting and Financial Settlement Of Kf, ACE And Ramping Period (FSKAR), see [ENTSO-E EDI LIBRARY](#)

3.2 Other references

- [9] [The Harmonised Electricity Market Role Model version 2025-01](#);
- [10] UML Profile for UN/CEFACT’s Modelling Methodology (UMM), Base Module, 2.0. ([UN/CEFACT Modelling Methodology \(UMM\)](#)).

4 TERMS AND DEFINITIONS

4.1 Terms used in this document

ABIE	Aggregate Business Information Entity
ACC	Aggregate Core Component
FSKAR	Accounting and Financial Settlement Of Kf (K-factor), ACE (Area Control Error) And Ramping Period
HEMRM	Harmonised Electricity Market Role Model
IR	Implementing Regulation
K-factor	K-factor represents the assumed reaction of an LFC area/block to a frequency deviation. Defined in the SOGL as a value expressed in megawatts per hertz ('MW/Hz'), which is as close as practical to, or greater than the sum of the auto-control of generation, self-regulation of load and of the contribution of frequency containment reserve relative to the maximum steady-state frequency deviation.

4.2 Basic principles and assumptions

The following principles have been used when drafting this document:

- This guiding document is based on the Business Requirements View from the UN/CEFACT Modelling Methodology version 2 (UMM-2), see [10]. The Business Requirements View consist of the three sub views: Business Domain View, Business Partner View and Business Entity View.
- The procedure described in this Guiding document starts with a simplified Business Process UseCase and a related UseCase description. Thereafter an overview activity diagram with a related sequence diagram is shown, the latter showing the information flows that are a part of the procedure.
- To be in line with the HEMRM we use the term Accounting Point in this guiding document instead of similar terms, such as Metering Point and Market Evaluation Point as used in FSKAR and My Energy Data.
- UseCase descriptions are only elaborated for UseCases describing data exchange in the IR (Implementing Regulation) access to metering and consumption data, FSKAR and My Energy Data [5].

5 BUSINESS DOMAIN VIEW: EXCHANGE MEASUREMENT DATA

5.1 Business Process UseCase: Exchange measurement data

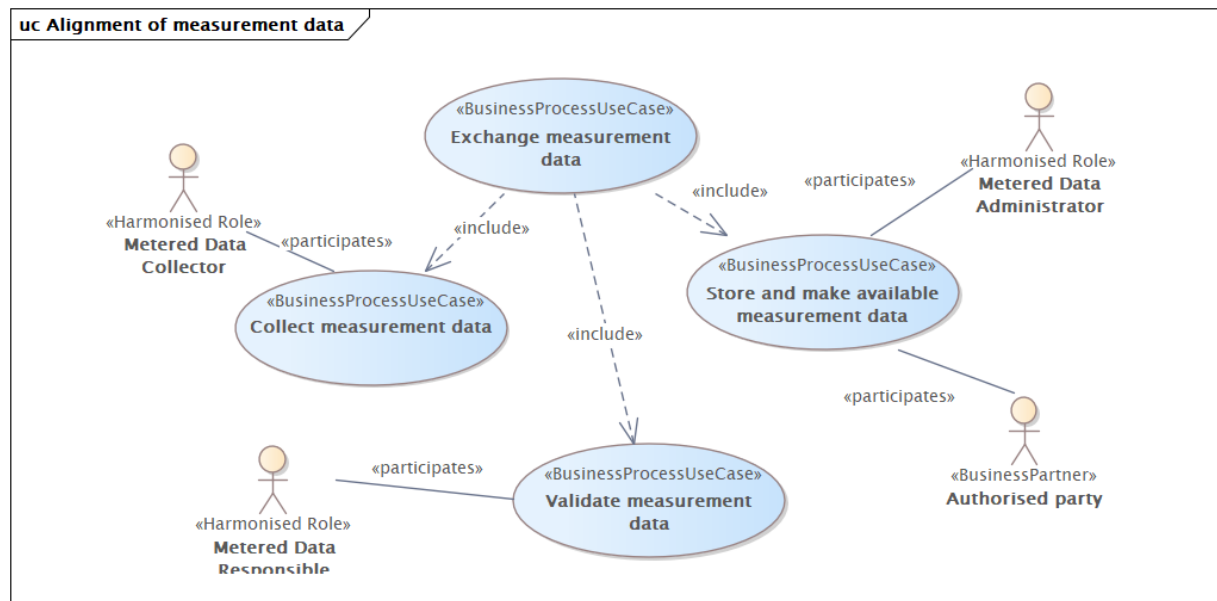


Figure 1: Business Process UseCase exchange measurement data¹

UseCase description: Exchange measurement data	
definition	General UseCase for exchange of measurement data. I.e. measurement data are collected, validated stored and finally made available for authorised users.
beginsWhen	When produced or consumed energy has been measured, calculated, periodically summarised or otherwise needed by an authorised party.
preCondition	The metered data collector, metered data responsible and metered data administrator have access to relevant measurement data. The authorised parties have been registered to receive measurement data.
endsWhen	When the measurement data have been made available for the authorised parties.
postCondition	The authorised parties have received the needed measurement data.
exceptions	Missing measurement data must be re-requested.
actions	See 5.2, Business Process: Exchange measurement data

Table 1: UseCase description: Exchange measurement data

¹ The authorised party is a placeholder for roles that are authorised to receive measurement data, such as the energy supplier, balance responsible party and the system operator.

5.2 Business Process: Exchange measurement data

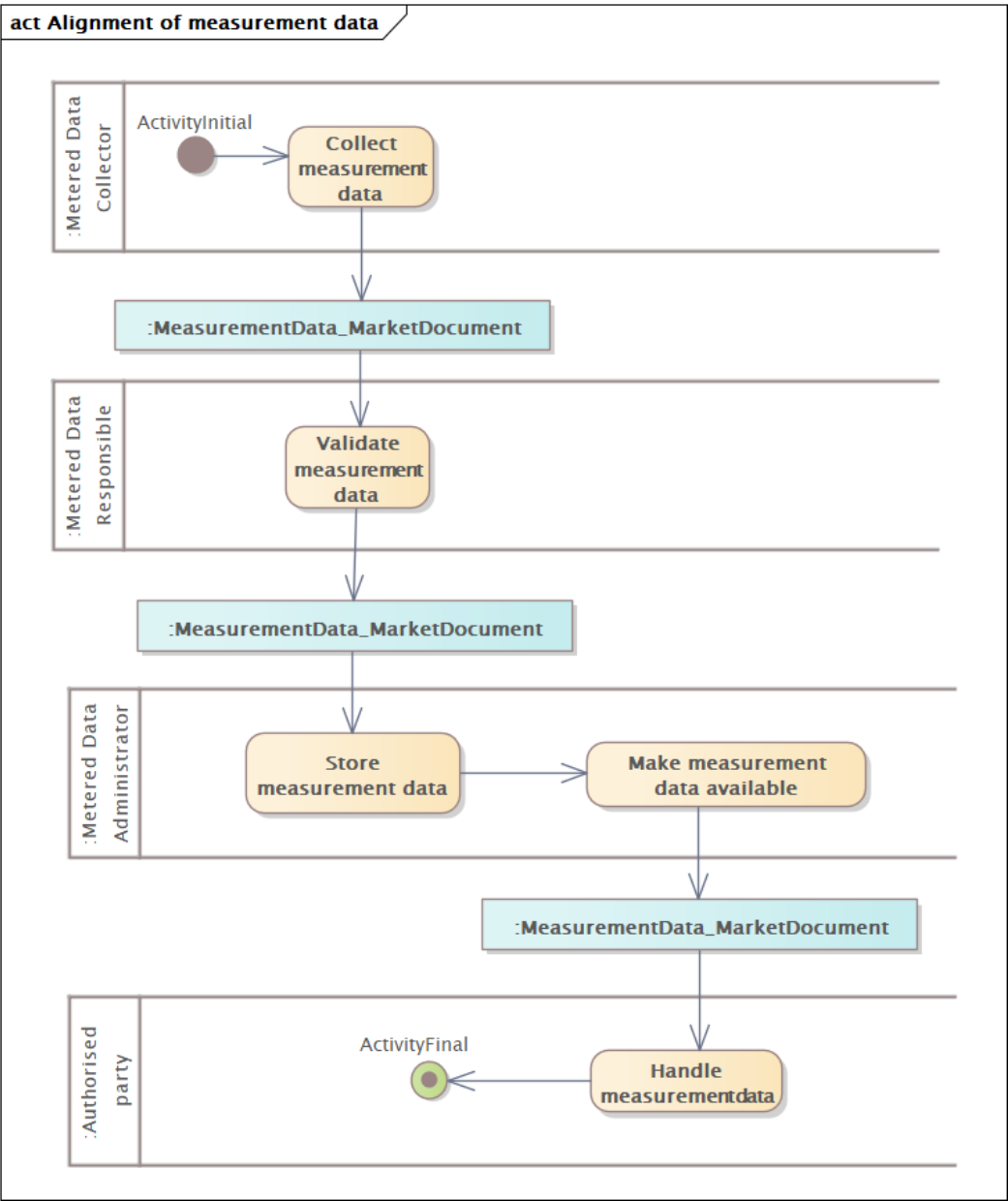


Figure 2: Business Process: Exchange measurement data

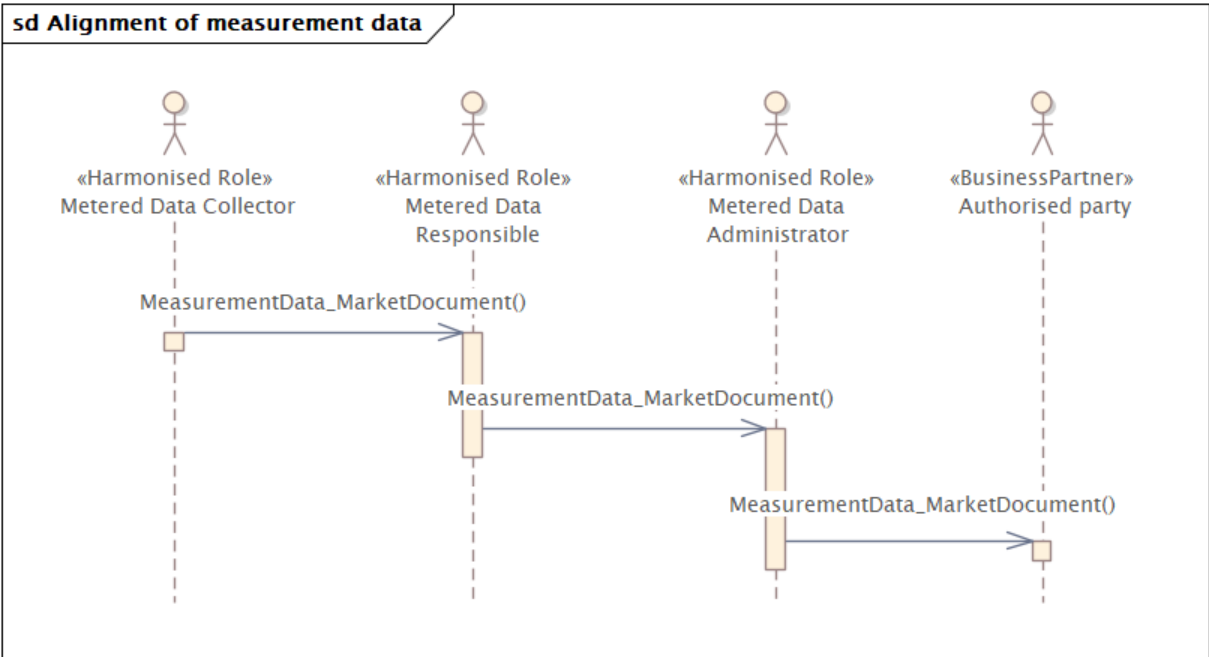


Figure 3: Sequence diagram: Exchange measurement data

6 BUSINESS PARTNER VIEW

6.1 Business Partners for alignment of measurement data

A party responsible for the establishment and validation of measured data based on the collected data received from the Metered Data Collector. The party is responsible for the history of measurement data for a Metering Point.

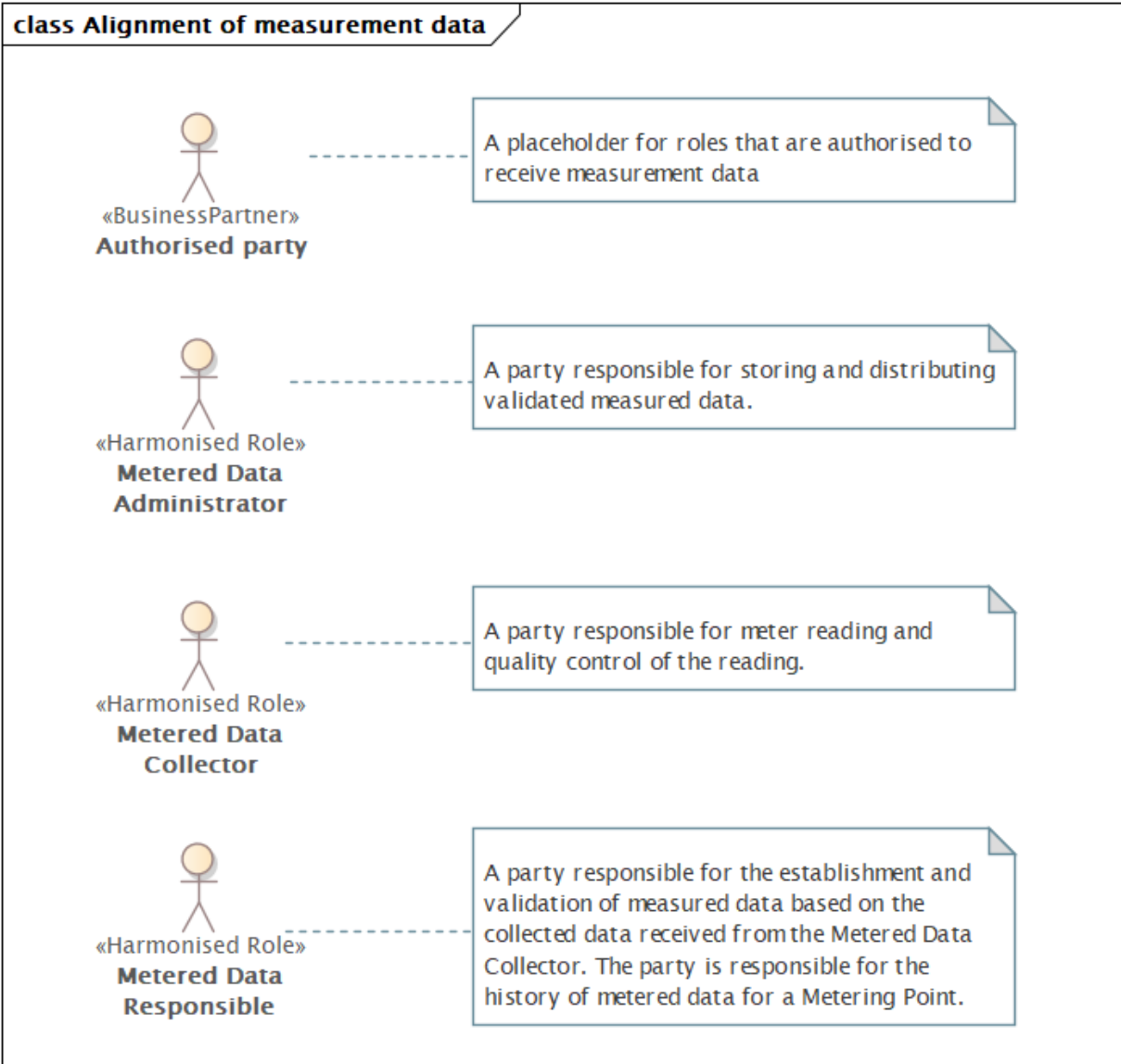


Figure 4 - Business Partners for alignment of measurement data

7 BUSINESS ENTITY VIEW

7.1 MeasurementData_MarketDocument contextual model

7.1.1. Overview of the model

Figure 5 shows the model.

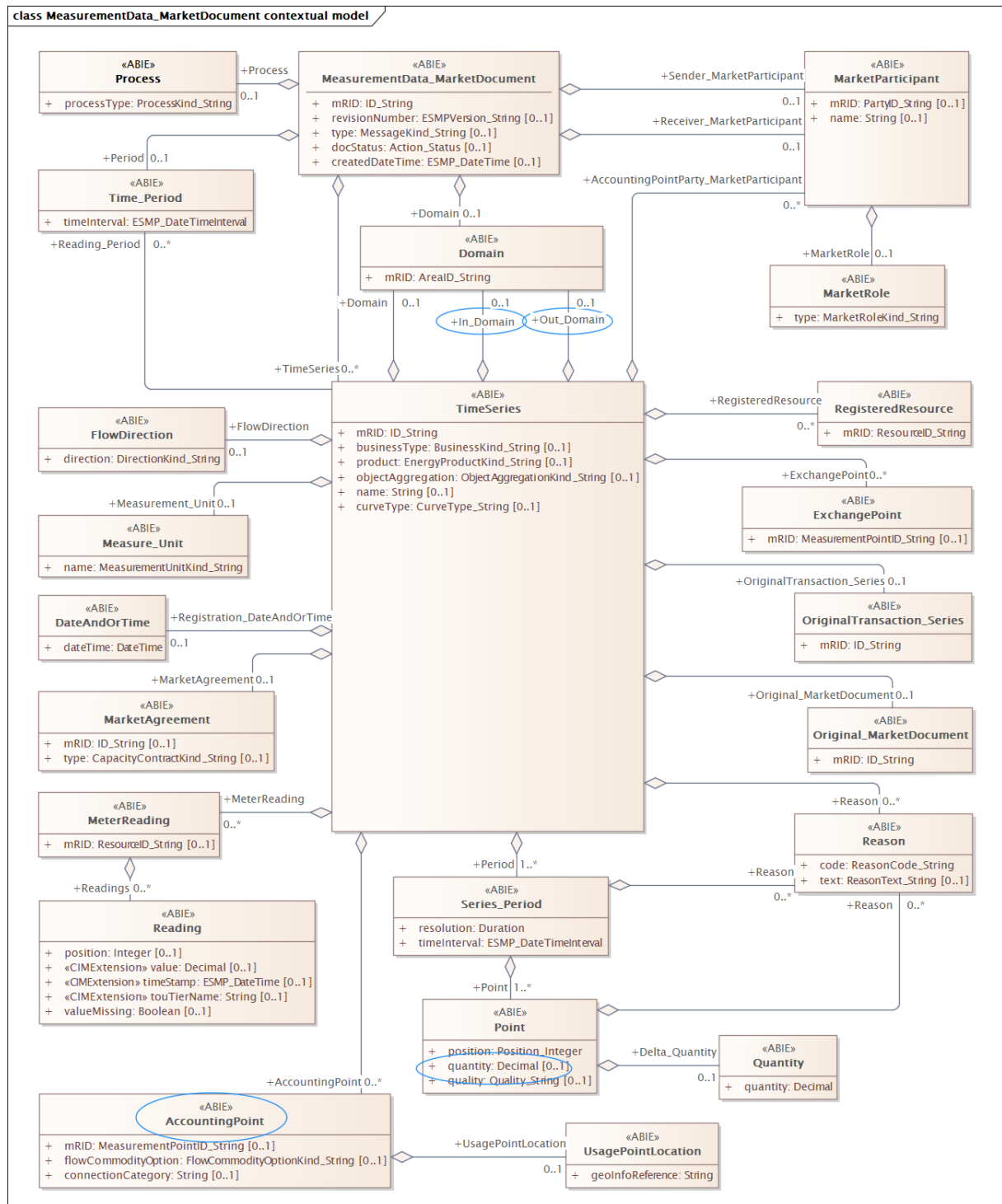


Figure 5 - MeasurementData_MarketDocument contextual model

7.1.2. IsBasedOn relationships from the European style market profile

Table 2 shows the traceability dependency of the classes used in this package towards the upper level.

Name	Complete IsBasedOn Path
AccountingPoint	CIM::Market::MarketManagement::AccountingPoint
DateAndOrTime	CIM::Market::MarketManagement::DateAndOrTime
Domain	CIM::Market::MarketManagement::Domain
ExchangePoint	CIM::Market::MarketManagement::ExchangePoint
FlowDirection	CIM::Market::MarketManagement::FlowDirection
MarketAgreement	CIM::Market::MarketManagement::MarketAgreement
MarketParticipant	CIM::Market::MarketCommon::MarketParticipant
MarketRole	CIM::Market::MarketCommon::MarketRole
Measure_Unit	CIM::Market::MarketManagement::Unit
MeasurementData_MarketDocument	CIM::Market::MarketManagement::MarketDocument
MeterReading	CIM::Enterprise::Metering::MeterReading
Original_MarketDocument	CIM::Market::MarketManagement::MarketDocument
OriginalTransaction_Series	CIM::Market::MarketManagement::Series
Point	CIM::Market::MarketManagement::Point
Process	CIM::Market::MarketManagement::Process
Quantity	CIM::Market::MarketManagement::Quantity
Reading	CIM::Enterprise::Metering::Reading
Reason	CIM::Market::MarketManagement::Reason
RegisteredResource	CIM::Market::MarketCommon::RegisteredResource
Series_Period	CIM::Market::MarketManagement::Period
Time_Period	CIM::Market::MarketManagement::Period
TimeSeries	CIM::Market::MarketManagement::TimeSeries
UsagePointLocation	CIM::Enterprise::Metering::UsagePointLocation

Table 2 - IsBasedOn dependency

Name	Complete IsBasedOn Path
MeasurementData_MarketDocument	CIM::Market::MarketManagement::MarketDocument
MeterReading	CIM::Enterprise::Metering::MeterReading
Point	CIM::Market::MarketManagement::Point
Reading	CIM::Enterprise::Metering::Reading
Reason	CIM::Market::MarketManagement::Reason
RegisteredResource	CIM::Market::MarketCommon::RegisteredResource
Series_Period	CIM::Market::MarketManagement::Period
Time_Period	CIM::Market::MarketManagement::Period
TimeSeries	CIM::Market::MarketManagement::TimeSeries

Table 3 - IsBasedOn dependency

7.2.3. Detailed MeasurementData_MarketDocument assembly model

7.2.3.1. MeasurementData_MarketDocument root class

An electronic document containing the information necessary to satisfy the requirements of a given business process.

Table 4 shows all attributes of MeasurementData_MarketDocument.

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	mRID ID_String	The unique identification of the document being exchanged within a business process flow.
1	[0..1]	revisionNumber ESMPVersion_String	The identification of the version that distinguishes one evolution of a document from another.
2	[0..1]	type MessageKind_String	The coded type of a document. The document type describes the principal characteristic of the document.
3	[0..1]	process.processType ProcessKind_String	The identification of the nature of process that the document addresses. --- The process dealt with in the document.
6	[0..1]	docStatus Action_Status	The identification of the condition or position of the document with regard to its standing.
7	[0..1]	createdDateTime ESMP_DateTime	The date and time of the creation of the document.

Order	mult.	Attribute name / Attribute type	Description
8	[0..1]	domain.mRID AreaID_String	The unique identification of the domain. In the ESMP context, the "model authority" is defined as an authorized issuing office that provides an agreed identification coding scheme for market participant, domain, measurement point, resources (generator, lines, substations, etc.) identification. Master resource identifier issued by a model authority. The mRID is globally unique within an exchange context. Global uniqueness is easily achieved by using a UUID for the mRID. It is strongly recommended to do this. For CIMXML data files in RDF syntax, the mRID is mapped to rdf:ID or rdf:about attributes that identify CIM object elements.

Table 4 - Attributes of MeasurementData_MarketDocument assembly
model::MeasurementData_MarketDocument

Table 5 shows all association ends of MeasurementData_MarketDocument with other classes.

Order	mult.	Class name / Role	Description
4	[1..1]	MarketParticipant Sender_MarketParticipant	The MarketParticipant associated with an electronic document header. Association Based On: MeasurementData_MarketDocument contextual model::MarketParticipant.Sender_MarketParticipant[1..1] ----- MeasurementData_MarketDocument contextual model::MeasurementData_MarketDocument.[]
5	[1..1]	MarketParticipant Receiver_MarketParticipant	The MarketParticipant associated with an electronic document header. Association Based On: MeasurementData_MarketDocument contextual model::MarketParticipant.Receiver_MarketParticipant[1..1] ----- MeasurementData_MarketDocument contextual model::MeasurementData_MarketDocument.[]
9	[0..1]	Time_Period Period	The time interval that is associated with an electronic document and which is valid for the whole document. Association Based On: MeasurementData_MarketDocument contextual model::Time_Period.Period[0..1] ----- MeasurementData_MarketDocument contextual model::MeasurementData_MarketDocument.[]

Order	mult.	Class name / Role	Description
10	[0..*]	TimeSeries TimeSeries	The time series that is associated with an electronic document. Association Based On: MeasurementData_MarketDocument contextual model::TimeSeries.TimeSeries[0..*] ----- MeasurementData_MarketDocument contextual model::MeasurementData_MarketDocument.[]

Table 5 - Association ends of MeasurementData_MarketDocument assembly model::MeasurementData_MarketDocument with other classes

7.2.3.2. AccountingPoint

An administrative point where Energy Supplier change can take place and for which commercial business processes are defined.

Table 6 shows all attributes of AccountingPoint.

Order	mult.	Attribute name / Attribute type	Description
0	[0..1]	mRID MeasurementPointID_String	A unique identification of the measurement point. In the ESMP context, the "model authority" is defined as an authorized issuing office that provides an agreed identification coding scheme for market participant, domain, measurement point, resources (generator, lines, substations, etc.) identification. Master resource identifier issued by a model authority. The mRID is globally unique within an exchange context. Global uniqueness is easily achieved by using a UUID for the mRID. It is strongly recommended to do this. For CIMXML data files in RDF syntax, the mRID is mapped to rdf:ID or rdf:about attributes that identify CIM object elements.
1	[0..1]	flowCommodityOption FlowCommodityOptionKind_String	
2	[0..1]	connectionCategory String	A code used to specify the connection category.
3	[0..1]	usagePointLocation.geolInfoReference String	(if applicable) Reference to geographical information source, often external to the utility. --- Location of this usage point.

Table 6 - Attributes of MeasurementData_MarketDocument assembly model::AccountingPoint

7.2.3.3. ExchangePoint

An administrative point establishing energy exchange between two Domains.

Table 7 shows all attributes of ExchangePoint.

Order	mult.	Attribute name / Attribute type	Description
0	[0..1]	mRID MeasurementPointID_String	A unique identification of the measurement point. In the ESMP context, the "model authority" is defined as an authorized issuing office that provides an agreed identification coding scheme for market participant, domain, measurement point, resources (generator, lines, substations, etc.) identification. Master resource identifier issued by a model authority. The mRID is globally unique within an exchange context. Global uniqueness is easily achieved by using a UUID for the mRID. It is strongly recommended to do this. For CIMXML data files in RDF syntax, the mRID is mapped to rdf:ID or rdf:about attributes that identify CIM object elements.

Table 7 - Attributes of MeasurementData_MarketDocument assembly model::ExchangePoint

7.2.3.4. MarketParticipant

The identification of the party participating in energy market business processes.

Table 8 shows all attributes of MarketParticipant.

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	mRID PartyID_String	The identification of a party in the energy market. In the ESMP context, the "model authority" is defined as an authorized issuing office that provides an agreed identification coding scheme for market participant, domain, measurement point, resources (generator, lines, substations, etc.) identification. Master resource identifier issued by a model authority. The mRID is globally unique within an exchange context. Global uniqueness is easily achieved by using a UUID for the mRID. It is strongly recommended to do this. For CIMXML data files in RDF syntax, the mRID is mapped to rdf:ID or rdf:about attributes that identify CIM object elements.
1	[0..1]	name String	The name is any free human readable and possibly non unique text naming the object.
2	[0..1]	marketRole.type MarketRoleKind_String	The identification of the role played by a market player. --- The role associated with a MarketParticipant.

Table 8 - Attributes of MeasurementData_MarketDocument assembly model::MarketParticipant

7.2.3.5. MeterReading

Set of values obtained from the meter.

Table 9 shows all attributes of MeterReading.

Order	mult.	Attribute name / Attribute type	Description
0	[0..1]	mRID ResourceID_String	The unique identification of the meter reading. In the ESMP context, the "model authority" is defined as a party (originator of the exchange) that provides an identification in the context of a business exchange. Master resource identifier issued by a model authority. The mRID is unique within an exchange context. Global uniqueness is easily achieved by using a UUID, as specified in RFC 4122, for the mRID. The use of UUID is strongly recommended. For CIMXML data files in RDF syntax conforming to IEC 61970-552 Edition 1, the mRID is mapped to rdf:ID or rdf:about attributes that identify CIM object elements.

Table 9 - Attributes of MeasurementData_MarketDocument assembly model::MeterReading

Table 10 shows all association ends of MeterReading with other classes.

Order	mult.	Class name / Role	Description
1	[0..*]	Reading Readings	All reading values contained within this meter reading. Association Based On: MeasurementData_MarketDocument contextual model::Reading.Readings[0..*] ----- MeasurementData_MarketDocument contextual model::MeterReading.[]

Table 10 - Association ends of MeasurementData_MarketDocument assembly model::MeterReading with other classes

7.2.3.6. Point

The identification of the values being addressed within a specific interval of time.

Table 11 shows all attributes of Point.

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	position Position_Integer	A sequential value representing the relative position within a given time interval.
1	[0..1]	quantity Decimal	The principal quantity identified for a point.

Order	mult.	Attribute name / Attribute type	Description
2	[0..1]	quality Quality_String	The quality of the information being provided. This quality may be estimated, not available, as provided, etc.
3	[0..1]	delta_Quantity.quantity Decimal	The quantity value. The association role provides the information about what is expressed.

Table 11 - Attributes of MeasurementData_MarketDocument assembly model::Point

Table 12 shows all association ends of Point with other classes.

Order	mult.	Class name / Role	Description
4	[0..*]	Reason Reason	The Reason information associated with a Point providing motivation information. Association Based On: MeasurementData_MarketDocument contextual model::Reason.Reason[0..*] ----- MeasurementData_MarketDocument contextual model::Point.[]

Table 12 - Association ends of MeasurementData_MarketDocument assembly model::Point with other classes

7.2.3.7. Reading

Specific value measured by a meter or other asset, or calculated by a system. Each Reading is associated with a specific ReadingType.

Table 13 shows all attributes of Reading.

Order	mult.	Attribute name / Attribute type	Description
0	[0..1]	position Integer	A sequential value representing the relative position within a given time interval.
1	[0..1]	value Decimal	Value of this reading.
2	[0..1]	timeStamp ESMP_DateTime	
3	[0..1]	touTierName String	Name used for the time of use tier (also known as "bin", "bucket" or "meter time frame"). For example, "peak", "off-peak", "TOU Category A", etc.
4	[0..1]	valueMissing Boolean	The indication whether or not the quantity of this reading is missing.

Table 13 - Attributes of MeasurementData_MarketDocument assembly model::Reading

7.2.3.8. Reason

The motivation of an act.

Table 14 shows all attributes of Reason.

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	code ReasonCode_String	The motivation of an act in coded form.
1	[0..1]	text ReasonText_String	The textual explanation corresponding to the reason code.

Table 14 - Attributes of MeasurementData_MarketDocument assembly model::Reason

7.2.3.9. RegisteredResource

A resource that is registered through the market participant registration system. Examples include generating unit, load, and non-physical generator or load.

Table 15 shows all attributes of RegisteredResource.

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	mRID ResourceID_String	The unique identification of a resource. In the ESMP context, the "model authority" is defined as an authorized issuing office that provides an agreed identification coding scheme for market participant, domain, measurement point, resources (generator, lines, substations, etc.) identification. Master resource identifier issued by a model authority. The mRID is globally unique within an exchange context. Global uniqueness is easily achieved by using a UUID for the mRID. It is strongly recommended to do this. For CIMXML data files in RDF syntax, the mRID is mapped to rdf:ID or rdf:about attributes that identify CIM object elements.

Table 15 - Attributes of MeasurementData_MarketDocument assembly model::RegisteredResource

7.2.3.10. Series_Period

The identification of the period of time corresponding to a given time interval and resolution.

Table 16 shows all attributes of Series_Period.

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	resolution Duration	The definition of the number of units of time that compose an individual step within a period.

Order	mult.	Attribute name / Attribute type	Description
1	[1..1]	timeInterval ESMP_DateTimeInterval	The start and end time of the period.

Table 16 - Attributes of MeasurementData_MarketDocument assembly model::Series_Period

Table 17 shows all association ends of Series_Period with other classes.

Order	mult.	Class name / Role	Description
2	[1..*]	Point Point	The Point information associated with a given Series_Period.within a TimeSeries. Association Based On: MeasurementData_MarketDocument contextual model::Point.Point[1..*] ----- MeasurementData_MarketDocument contextual model::Series_Period.[]
3	[0..*]	Reason Reason	The reason information associated with a Series_Period providing motivation information. Association Based On: MeasurementData_MarketDocument contextual model::Reason.Reason[0..*] ----- MeasurementData_MarketDocument contextual model::Series_Period.[]

Table 17 - Association ends of MeasurementData_MarketDocument assembly model::Series_Period with other classes

7.2.3.11. Time_Period

The identification of a time interval.

Table 18 shows all attributes of Time_Period.

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	timeInterval ESMP_DateTimeInterval	The start and end date and time for a given interval.

Table 18 - Attributes of MeasurementData_MarketDocument assembly model::Time_Period

7.2.3.12. TimeSeries

A set of time-ordered quantities being exchanged in relation to a product.

In the ESMP profile, the TimeSeries provides not only time-ordered quantities but also time-ordered information.

319 Table 19 shows all attributes of TimeSeries.

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	mRID ID_String	A unique identification of the time series. In the ESMP context, the "model authority" is defined as a party (originator of the exchange) that provides a unique identification in the context of a business exchange such as time series identification, bid identification, ... Master resource identifier issued by a model authority. The mRID is globally unique within an exchange context. Global uniqueness is easily achieved by using a UUID for the mRID. It is strongly recommended to do this. For CIMXML data files in RDF syntax, the mRID is mapped to rdf:ID or rdf:about attributes that identify CIM object elements.
1	[0..1]	original_MarketDocument.mRID ID_String	The unique identification of the document being exchanged within a business process flow. In the ESMP context, the "model authority" is defined as a party (originator of the exchange) that provides an identification in the context of a business exchange such as document identification, ... Master resource identifier issued by a model authority. The mRID is globally unique within an exchange context. Global uniqueness is easily achieved by using a UUID for the mRID. It is strongly recommended to do this. For CIMXML data files in RDF syntax, the mRID is mapped to rdf:ID or rdf:about attributes that identify CIM object elements.
2	[0..1]	originalTransaction_Series.mRID ID_String	A unique identification of the time series. In the ESMP context, the "model authority" is defined as a party (originator of the exchange) that provides a unique identification in the context of a business exchange such as time series identification, bid identification, ... Master resource identifier issued by a model authority. The mRID is globally unique within an exchange context. Global uniqueness is easily achieved by using a UUID for the mRID. It is strongly recommended to do this. For CIMXML data files in RDF syntax, the mRID is mapped to rdf:ID or rdf:about attributes that identify CIM object elements.

Order	mult.	Attribute name / Attribute type	Description
4	[0..1]	businessType BusinessKind_String	The identification of the nature of the time series.
5	[0..1]	domain.mRID AreaID_String	The unique identification of the domain. In the ESMP context, the "model authority" is defined as an authorized issuing office that provides an agreed identification coding scheme for market participant, domain, measurement point, resources (generator, lines, substations, etc.) identification. Master resource identifier issued by a model authority. The mRID is globally unique within an exchange context. Global uniqueness is easily achieved by using a UUID for the mRID. It is strongly recommended to do this. For CIMXML data files in RDF syntax, the mRID is mapped to rdf:ID or rdf:about attributes that identify CIM object elements.
6	[0..1]	in_Domain.mRID AreaID_String	The unique identification of the domain. In the ESMP context, the "model authority" is defined as an authorized issuing office that provides an agreed identification coding scheme for market participant, domain, measurement point, resources (generator, lines, substations, etc.) identification. Master resource identifier issued by a model authority. The mRID is globally unique within an exchange context. Global uniqueness is easily achieved by using a UUID for the mRID. It is strongly recommended to do this. For CIMXML data files in RDF syntax, the mRID is mapped to rdf:ID or rdf:about attributes that identify CIM object elements.

Order	mult.	Attribute name / Attribute type	Description
7	[0..1]	out_Domain.mRID AreaID_String	The unique identification of the domain. In the ESMP context, the "model authority" is defined as an authorized issuing office that provides an agreed identification coding scheme for market participant, domain, measurement point, resources (generator, lines, substations, etc.) identification. Master resource identifier issued by a model authority. The mRID is globally unique within an exchange context. Global uniqueness is easily achieved by using a UUID for the mRID. It is strongly recommended to do this. For CIMXML data files in RDF syntax, the mRID is mapped to rdf:ID or rdf:about attributes that identify CIM object elements.
8	[0..1]	product EnergyProductKind_String	The identification of the nature of an energy product such as power, energy, reactive power, etc.
9	[0..1]	objectAggregation ObjectAggregationKind_String	The identification of the domain that is the common denominator used to aggregate a time series.
10	[0..1]	name String	The name is any free human readable and possibly non unique text naming the object.
11	[0..1]	measurement_Unit.name MeasurementUnitKind_String	The identification of the formal code for a measurement unit (UN/ECE Recommendation 20). --- The unit of measure associated with the quantities in a TimeSeries.
12	[0..1]	flowDirection.direction DirectionKind_String	The coded identification of the direction of energy flow. --- The flow direction associated with a TimeSeries.
13	[0..1]	curveType CurveType_String	The identification of the coded representation of the type of curve being described.

Order	mult.	Attribute name / Attribute type	Description
15	[0..1]	marketAgreement.mRID ID_String	The unique identification of the agreement. In the ESMP context, the "model authority" is defined as an emitting company that provides an agreed identification unique within a business context such as capacity auction identification, market agreement identification, etc. Master resource identifier issued by a model authority. The mRID is globally unique within an exchange context. Global uniqueness is easily achieved by using a UUID for the mRID. It is strongly recommended to do this. For CIMXML data files in RDF syntax, the mRID is mapped to rdf:ID or rdf:about attributes that identify CIM object elements.
16	[0..1]	marketAgreement.type CapacityContractKind_String	The specification of the kind of the agreement, e.g. long term, daily contract.
17	[0..1]	registration_DateAndOrTime.dateTime DateTime	Date and time as per ISO 8601 YYYY-MM-DDThh:mm:ss.sssZ.

Table 19 - Attributes of MeasurementData_MarketDocument assembly model::TimeSeries

Table 20 shows all association ends of TimeSeries with other classes.

Order	mult.	Class name / Role	Description
3	[0..*]	AccountingPoint AccountingPoint	The identification of a measurement point associated with a TimeSeries. Association Based On: MeasurementData_MarketDocument contextual model::AccountingPoint.AccountingPoint[0..*] ----- MeasurementData_MarketDocument contextual model::TimeSeries.[]
14	[0..*]	MarketParticipant AccountingPointParty_MarketParticipant	The identification of a market participant associated with a TimeSeries. Association Based On: MeasurementData_MarketDocument contextual model::MarketParticipant.AccountingPointParty_MarketParticipant[0..*] ----- MeasurementData_MarketDocument contextual model::TimeSeries.[]

Order	mult.	Class name / Role	Description
18	[0..*]	ExchangePoint ExchangePoint	The identification of a measurement point associated with a TimeSeries. Association Based On: MeasurementData_MarketDocument contextual model::ExchangePoint.ExchangePoint[0..*] ----- MeasurementData_MarketDocument contextual model::TimeSeries.[]
19	[0..*]	RegisteredResource RegisteredResource	The identification of a resource associated with a TimeSeries. Association Based On: MeasurementData_MarketDocument contextual model::RegisteredResource.RegisteredResource[0..*] ----- MeasurementData_MarketDocument contextual model::TimeSeries.[]
20	[0..*]	Reason Reason	The reason information associated with a TimeSeries providing motivation information. Association Based On: MeasurementData_MarketDocument contextual model::Reason.Reason[0..*] ----- MeasurementData_MarketDocument contextual model::TimeSeries.[]
21	[0..*]	MeterReading MeterReading	Association Based On: MeasurementData_MarketDocument contextual model::MeterReading.MeterReading[0..*] ----- MeasurementData_MarketDocument contextual model::TimeSeries.[]
22	[1..*]	Series_Period Period	The time interval and resolution for a period associated with a TimeSeries. Association Based On: MeasurementData_MarketDocument contextual model::Series_Period.Period[1..*] ----- MeasurementData_MarketDocument contextual model::TimeSeries.[]

Table 20 - Association ends of MeasurementData_MarketDocument assembly model::TimeSeries with other classes

7.2.3.13. Datatypes

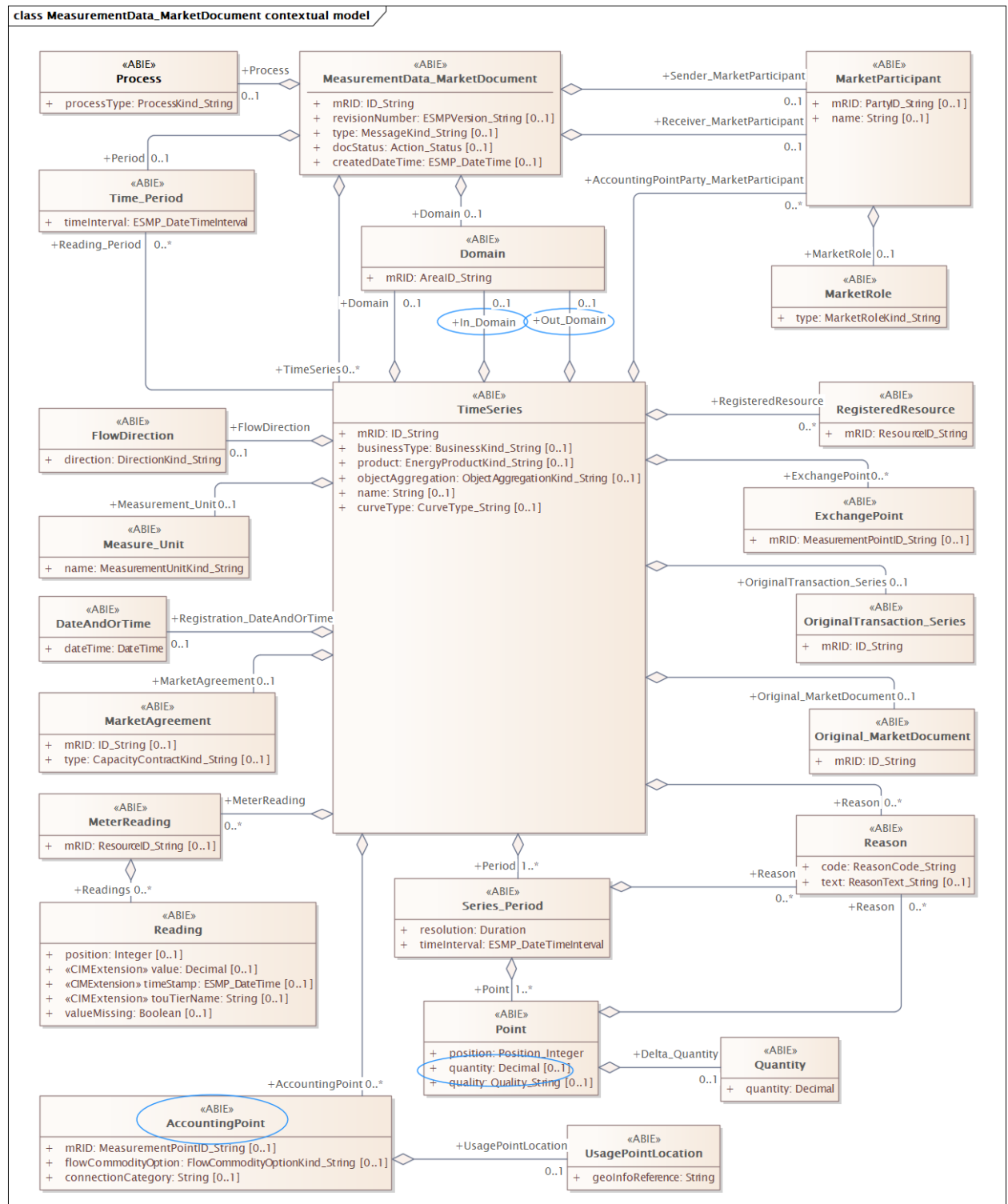
The list of datatypes used for the MeasurementData_MarketDocument assembly model is as follows:

- Action_Status compound
- ESMP_DateTimeInterval compound
- ArealD_String datatype, codelist CodingSchemeTypeList

332 • BusinessKind_String datatype, codelist BusinessTypeList
333 • CapacityContractKind_String datatype, codelist ContractTypeList
334 • CurveType_String datatype, codelist CurveTypeList
335 • DirectionKind_String datatype, codelist DirectionTypeList
336 • EnergyProductKind_String datatype, codelist EnergyProductTypeList
337 • ESMP_DateTime datatype
338 • ESMPVersion_String datatype
339 • FlowCommodityOptionKind_String datatype, codelist FlowCommodityOptionTypeList
340 • ID_String datatype
341 • MarketRoleKind_String datatype, codelist RoleTypeList
342 • MeasurementPointID_String datatype, codelist CodingSchemeTypeList
343 • MeasurementUnitKind_String datatype, codelist UnitOfMeasureTypeList
344 • MessageKind_String datatype, codelist MessageTypeList
345 • ObjectAggregationKind_String datatype, codelist ObjectAggregationTypeList
346 • PartyID_String datatype, codelist CodingSchemeTypeList
347 • Position_Integer datatype
348 • ProcessKind_String datatype, codelist ProcessTypeList
349 • Quality_String datatype, codelist QualityTypeList
350 • ReasonCode_String datatype, codelist ReasonCodeTypeList
351 • ReasonText_String datatype
352 • ResourceID_String datatype, codelist CodingSchemeTypeList
353 • Status_String datatype, codelist StatusTypeList
354 • YMDHM_DateTime datatype
355

Appendix A MAPPING FROM MYENERGYDATA AND FSKAR

A.1. Measurement Data Market Document vs FSKAR and MyEnergyData



A.2. Mapping table for MyEnergyData

Class/Attribute Measurement Data Market Document	Class/Attribute MyEnergyData Market Document	Comment
in_Domain.mRID	principal_Domain.mRID	• Different name in Measurement Data Market Document and MyEnergyData
out_Domain.mRID	associate_Domain.mRID	• Different name in Measurement Data Market Document and MyEnergyData
AccountingPoint	MarketEvaluationPoint	• Different name in Measurement Data Market Document and MyEnergyData
quantity	in_Quantity.quantity	• Must be sent in two separate timeseries in Measurement Data Market Document
	out_Quantity.quantity	
quality	in_Quantity.quality	• Must be sent in two separate timeseries in Measurement Data Market Document
	out_Quantity.quality	

A.3. Mapping table for FSKAR Metering Data Market Document

Class/Attribute Measurement Data Market Document	Class/Attribute FSKAR Metering Data Market Document	Comment
AccountingPoint	MarketEvaluationPoint	• Different name in Measurement Data Market Document and FSKAR