European Network of
Transmission System Operators
for Electricity

PERMISSION DATA DOCUMENT

UML MODEL AND SCHEMA

2025-05-27
VERSION 1.0

1

Copyright notice:

Maintenance notice:

This document is maintained by the ENTSO-E CIM WG. Comments or remarks are to be provided at cim@entsoe.eu.

NOTE CONCERNING WORDING USED IN THIS DOCUMENT

The force of the following words is modified by the requirement level of the document in which they are used.

- SHALL: This word, or the terms “REQUIRED” or “MUST”, means that the definition is an absolute requirement of the specification.
- SHALL NOT: This phrase, or the phrase “MUST NOT”, means that the definition is an absolute prohibition of the specification.
- SHOULD: This word, or the adjective “RECOMMENDED”, means that there may exist valid reasons in particular circumstances to ignore a particular item, but the full implications must be understood and carefully weighed before choosing a different course.
- SHOULD NOT: This phrase, or the phrase “NOT RECOMMENDED”, means that there may exist valid reasons in particular circumstances when the particular behaviour is acceptable or even useful, but the full implications should be understood and the case carefully weighed before implementing any behaviour described with this label.
- MAY: This word, or the adjective “OPTIONAL”, means that an item is truly optional. One vendor may choose to include the item because a particular marketplace requires it or because the vendor feels that it enhances the product while another vendor may omit the same item. An implementation which does not include a particular option SHALL be prepared to interoperate with another implementation which does include the option, though perhaps with reduced functionality. In the same vein an implementation which does include a particular option SHALL be prepared to interoperate with another implementation which does not include the option (except, of course, for the feature the option provides.).

44

Table of Contents

1 Objective 4
2 PermissionData_MarketDocument 5
2.1 Permission Data contextual model 5
2.1.1 Overview of the model 5
2.1.2 IsBasedOn relationships from the European style market profile 6
2.2 PermissionData assembly model 7
2.2.1 Overview of the 7
2.2.3 IsBasedOn relationships from the European style market profile 8
2.2.4 Detailed PermissionData assembly model 8
2.2.5 Datatypes 14
2.2.2 PermissionData_MarketDocument XML schema structure 15
2.2.3 PermissionData_MarketDocument XML schema 17

List of tables

Table 1 - IsBasedOn dependency 6
Table 2 - IsBasedOn dependency 8
Table 3 - Attributes of PermissionData_MarketDocument assembly model:: PermissionData_MarketDocument 9
Table 4 - Association ends of PermissionData_MarketDocument assembly model::PermissionData_MarketDocument with other classes 10
Table 5 - Attributes of Permission_MarketDocument assembly model::MktActivityRecord 10
Table 6 - Association ends of Permission_MarketDocument assembly model::MktActivityRecord with other classes 10
Table 7 - Attributes of Permission_MarketDocument assembly model::AccountingPoint 11
Table 8 - Association ends of Permission_MarketDocument assembly model::AccountingPoint with other classes 11
Table 9 - Attributes of Permission_MarketDocument assembly model::Permission 11
Table 10 - Association ends of Permission_MarketDocument assembly model::Permission with other classes 13
Table 11 - Attributes of Permission_MarketDocument assembly model::Series 13

Revision History

Version	Release	Date	Comments
1	0	2025-05-27	First drafting of the document.

85

1 Objective

The purpose of this document is to provide the contextual and assembly UML models and the schema of the PermissionData_MarketDocument.

The schema of the PermissionData_MarketDocument could be used in various business processes.

It is not the purpose of this document to describe all the use cases, sequence diagrams, business processes, etc. for which this schema is to be used.

This document shall only be referenced in an implementation guide of a specific business process. The content of the business process implementation guide shall be as follows:

- Description of the business process.
- Use case of the business process.
- Sequence diagrams of the business process.
- List of the schema (XSD) to be used in the business process and versions of the schema.
- For each schema, dependency tables providing the necessary information for the generation of the XML instances, i.e. when the optional attributes are to be used, which codes from which ENTSO-E codelist are to be used.

104

2 PermissionData_MarketDocument

2.1 Permission Data contextual model

2.1.1 Overview of the model

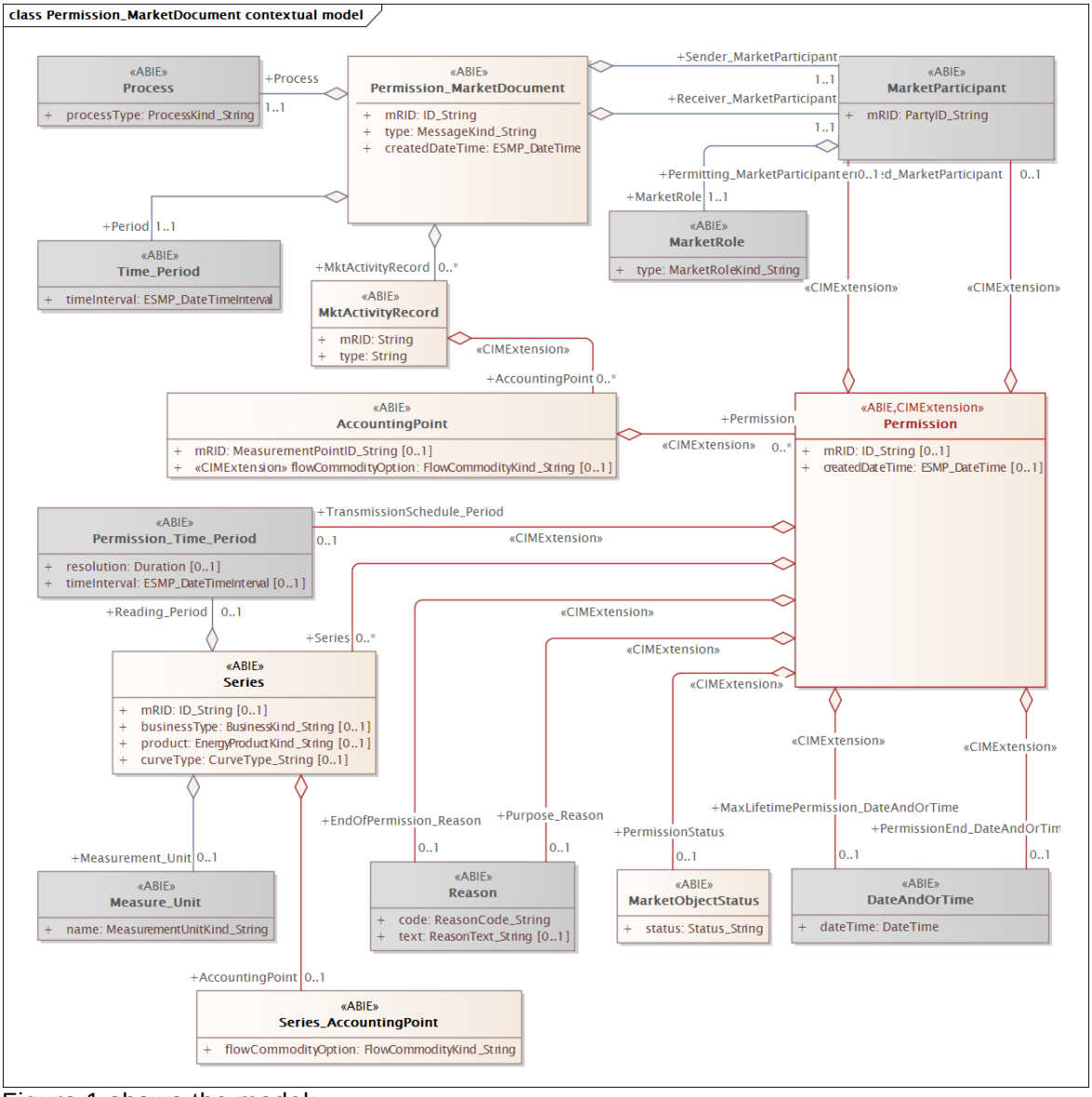


Figure 1 shows the model:

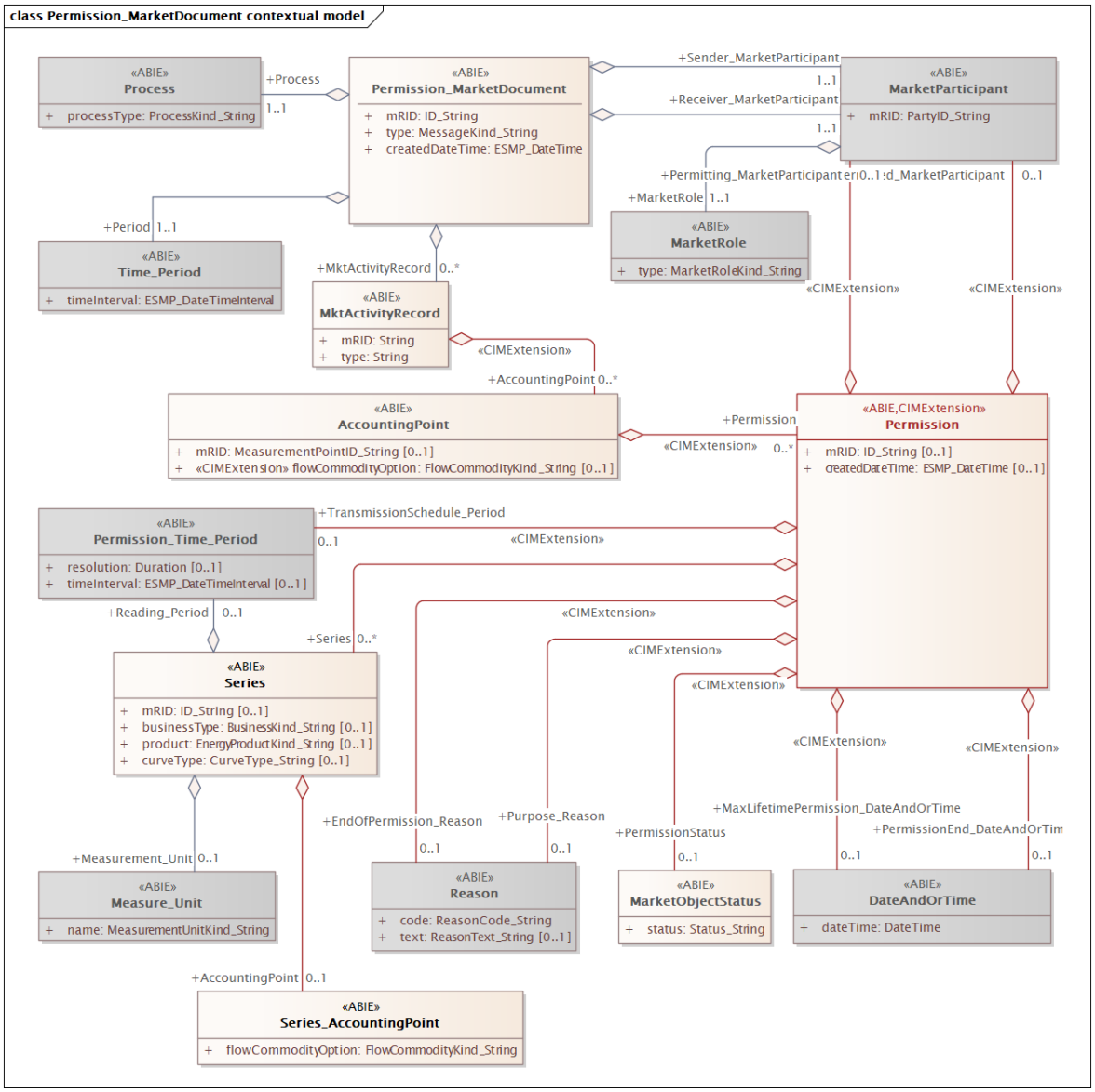


Figure 1 – Permission contextual model

113

2.1.2 IsBasedOn relationships from the European style market profile

Table 1 shows the traceability dependency of the classes used in this package towards the upper level.

Table 1 - IsBasedOn dependency

Name	Complete IsBasedOn Path
AccountingPoint	CIM::Market::MarketManagement::AccountingPoint
AccountingPoint	CIM::Market::MarketManagement::AccountingPoint
Auction	CIM::Market::MarketManagement::Auction
DateAndOrTime	CIM::Market::MarketManagement::DateAndOrTime
MarketObjectStatus	CIM::Market::MarketManagement::MarketObjectStatus
MarketParticipant	CIM::Market::MarketCommon::MarketParticipant
MarketRole	CIM::Market::MarketCommon::MarketRole
Measure_Unit	CIM::Market::MarketManagement::Unit
MktActivityRecord	CIM::Market::MarketCommon::MktActivityRecord
MktActivityRecord	CIM::Market::MarketCommon::MktActivityRecord
Permission	ENTSO-E Market Documents::CIMExtensions::Permission
Permission	ENTSO-E Market Documents::CIMExtensions::Permission
Permission_MarketDocument	CIM::Market::MarketManagement::MarketDocument
Permission_MarketDocument	CIM::Market::MarketManagement::MarketDocument
Permission_Time_Period	CIM::Market::MarketManagement::Period
Process	CIM::Market::MarketManagement::Process
Reason	CIM::Market::MarketManagement::Reason
Series	CIM::Market::MarketManagement::Series
Series	CIM::Market::MarketManagement::Series
Series_AccountingPoint	CIM::Market::MarketManagement::AccountingPoint
Time_Period	CIM::Market::MarketManagement::Period

120

2.2 PermissionData assembly model

2.2.1 Overview of the

Figure 2 shows the model:

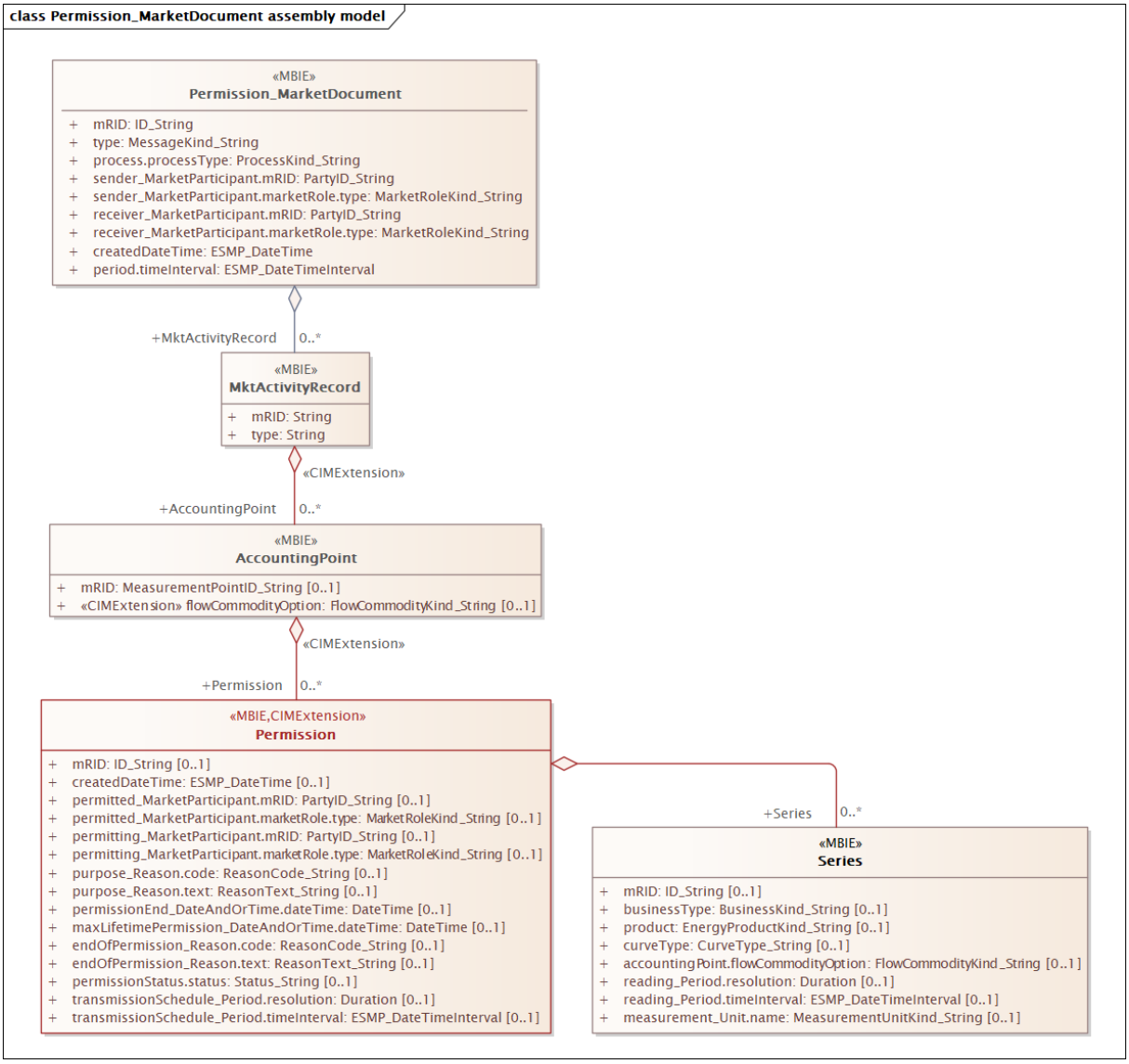


Figure 2 - PermissionData assembly model

2.2.3 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.

Table 2 - IsBasedOn dependency

Name	Complete IsBasedOn Path
AccountingPoint	CIM::Market::MarketManagement::AccountingPoint
AccountingPoint	CIM::Market::MarketManagement::AccountingPoint
Auction	CIM::Market::MarketManagement::Auction
DateAndOrTime	CIM::Market::MarketManagement::DateAndOrTime
MarketObjectStatus	CIM::Market::MarketManagement::MarketObjectStatus
MarketParticipant	CIM::Market::MarketCommon::MarketParticipant
MarketRole	CIM::Market::MarketCommon::MarketRole
Measure_Unit	CIM::Market::MarketManagement::Unit
MktActivityRecord	CIM::Market::MarketCommon::MktActivityRecord
MktActivityRecord	CIM::Market::MarketCommon::MktActivityRecord
Permission	ENTSO-E Market Documents::CIMExtensions::Permission
Permission	ENTSO-E Market Documents::CIMExtensions::Permission
Permission_MarketDocument	CIM::Market::MarketManagement::MarketDocument
Permission_MarketDocument	CIM::Market::MarketManagement::MarketDocument
Permission_Time_Period	CIM::Market::MarketManagement::Period
Process	CIM::Market::MarketManagement::Process
Reason	CIM::Market::MarketManagement::Reason
Series	CIM::Market::MarketManagement::Series
Series	CIM::Market::MarketManagement::Series
Series_AccountingPoint	CIM::Market::MarketManagement::AccountingPoint
Time_Period	CIM::Market::MarketManagement::Period

2.2.4 Detailed PermissionData assembly model

2.2.1.1 PermissionData_MarketDocument root class

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

IsBasedOn: ENTSO-E Market Documents::PermissionData_MarketDocument- AMCD IG::PermissionData_MarketDocument contextual model::PermissionData_MarketDocument

Table 3 shows all attributes of PermissionData_MarketDocument.

Table 3 - Attributes of PermissionData_MarketDocument assembly model:: PermissionData_MarketDocument

mult.	Attribute name / type	Description
[1..1]	createdDateTime ESMP_DateTime	The date and time of the creation of the document.
[1..1]	mRID ID_String	The unique identification of the document being exchanged within a business process flow.
[1..1]	period.timeInterval ESMP_DateTimeInterval	The start and end date and time for a given interval. --- The time interval that is associated with an electronic document and which is valid for the whole document.
[1..1]	process.processType ProcessKind_String	The identification of the nature of process that the document addresses. --- The process dealt with in the document.
[1..1]	receiver_MarketParticipant.marketRole.type MarketRoleKind_String	The identification of the role played by a market player. --- The MarketParticipant associated with an electronic document header. --- The role associated with a MarketParticipant.
[1..1]	receiver_MarketParticipant.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. --- The MarketParticipant associated with an electronic document header.
[1..1]	sender_MarketParticipant.marketRole.type MarketRoleKind_String	The identification of the role played by a market player. --- The MarketParticipant associated with an electronic document header. --- The role associated with a MarketParticipant.
[1..1]	sender_MarketParticipant.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. --- The MarketParticipant associated with an electronic document header.
[1..1]	type MessageKind_String	The coded type of a document. The document type describes the principal characteristic of the document.

Table 4 shows all association ends of PermissionData_MarketDocument with other classes.

Table 4 - Association ends of PermissionData_MarketDocument assembly model::PermissionData_MarketDocument with other classes

mult.	Class name / Role	Description
[0..*]	MktActivityRecord MktActivityRecord	Association Based On: Permission_MarketDocument contextual model::MktActivityRecord.MktActivityRecord[0..*] --- Permission_MarketDocument contextual model::Permission_MarketDocument.[]

2.2.1.2 MktActivityRecord

Subclass of IEC61968: Common:ActivityRecord.

IsBasedOn:ENTSO-EMarketDocuments::Permission _MarketDocument::Permission_MarketDocument contextual model::MktActivityRecord

Table 55 shows all attributes of MktActivityRecord.

Table 5 - Attributes of Permission_MarketDocument assembly model::MktActivityRecord

mult.	Attribute name / type	Description
[1..1]	mRID String	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.
[1..1]	type String	Type of event resulting in this activity record.

Table 6 shows all association ends of MktActivityRecord with other classes.

Table 6 - Association ends of Permission_MarketDocument assembly model::MktActivityRecord with other classes

mult.	Class name / Role	Description
[0..*]	AccountingPoint AccountingPoint	Association Based On: Permission_MarketDocument contextual model::AccountingPoint.AccountingPoint[0..*] --- Permission_MarketDocument contextual model::MktActivityRecord.[]

2.2.1.3 AccountingPoint

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

IsBasedOn: ENTSO-E Market Documents::Permission _MarketDocument::Permission_MarketDocument contextual model::AccountingPoint

Table 77 shows all attributes of AccountingPoint.

Table 7 - Attributes of Permission_MarketDocument assembly model::AccountingPoint

mult.	Attribute name / type	Description
[0..1]	flowCommodityOption FlowCommodityKind_String	The option of flow commodity, such as production, consumption, combined or exchange.
[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 8 shows all association ends of AccountingPoint with other classes.

Table 8 - Association ends of Permission_MarketDocument assembly model::AccountingPoint with other classes

mult.	Class name / Role	Description
[0..*]	Permission Permission	Association Based On: Permission_MarketDocument contextual model::Permission.Permission[0..*] --- Permission_MarketDocument contextual model::AccountingPoint.[]

2.2.1.4 Permission

IsBasedOn:ENTSO-EMarketDocuments::Permission
_MarketDocument::Permission_MarketDocument contextual model::Permission

Table 99 shows all attributes of Permission.

Table 9 - Attributes of Permission_MarketDocument assembly model::Permission

mult.	Attribute name / type	Description
[0..1]	createdDateTime ESMP_DateTime	
[0..1]	endOfPermission_Reason.code ReasonCode_String	The motivation of an act in coded form.

mult.	Attribute name / type	Description
[0..1]	endOfPermission_Reason.text ReasonText_String	The textual explanation corresponding to the reason code.
[0..1]	maxLifetimePermission_DateAndOrTime.dateTime DateTime	Date and time as per ISO 8601 YYYY-MM-DDThh:mm:ss.sssZ.
[0..1]	mRID ID_String	
[0..1]	permissionEnd_DateAndOrTime.dateTime DateTime	Date and time as per ISO 8601 YYYY-MM-DDThh:mm:ss.sssZ.
[0..1]	permissionStatus.status Status_String	The coded condition or position of an object with regard to its standing.
[0..1]	permitted_MarketParticipant.marketRole.type MarketRoleKind_String	The identification of the role played by a market player. --- --- The role associated with a MarketParticipant.
[0..1]	permitted_MarketParticipant.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.
[0..1]	permitting_MarketParticipant.marketRole.type MarketRoleKind_String	The identification of the role played by a market player. --- --- The role associated with a MarketParticipant.
[0..1]	permitting_MarketParticipant.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.
[0..1]	purpose_Reason.code ReasonCode_String	The motivation of an act in coded form.
[0..1]	purpose_Reason.text ReasonText_String	The textual explanation corresponding to the reason code.
[0..1]	transmissionSchedule_Period.resolution Duration	The number of units of time that compose an individual step within a period.
[0..1]	transmissionSchedule_Period.timeInterval ESMP_DateTimeInterval	The start and end date and time for a given interval.

183

184

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

Table 10 - Association ends of Permission_MarketDocument assembly model::Permission with other classes

mult.	Class name / Role	Description
[0..*]	Series Series	Association Based On: -----

2.2.1.5 Series

A set of similar physical or conceptual objects defined for the same period or point of time.

IsBasedOn:ENTSO-EMarketDocuments::Permission _MarketDocument::Permission_MarketDocument contextual model::Series

Table 11 shows all attributes of Series.

Table 11 - Attributes of Permission_MarketDocument assembly model::Series

mult.	Attribute name / type	Description
[0..1]	accountingPoint.flowCommodityOption FlowCommodityKind_String	The option of flow commodity, such as production, consumption, combined or exchange.
[0..1]	businessType BusinessKind_String	The identification of the nature of the time series.
[0..1]	curveType CurveType_String	The identification of the coded representation of the type of curve being described.
[0..1]	measurement_Unit.name MeasurementUnitKind_String	The identification of the formal code for a measurement unit (UN/ECE Recommendation 20).
[0..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.
[0..1]	product EnergyProductKind_String	The identification of the nature of an energy product such as power, energy, reactive power, etc.
[0..1]	reading_Period.resolution Duration	The number of units of time that compose an individual step within a period.
[0..1]	reading_Period.timeInterval ESMP_DateTimeInterval	The start and end date and time for a given interval.

200

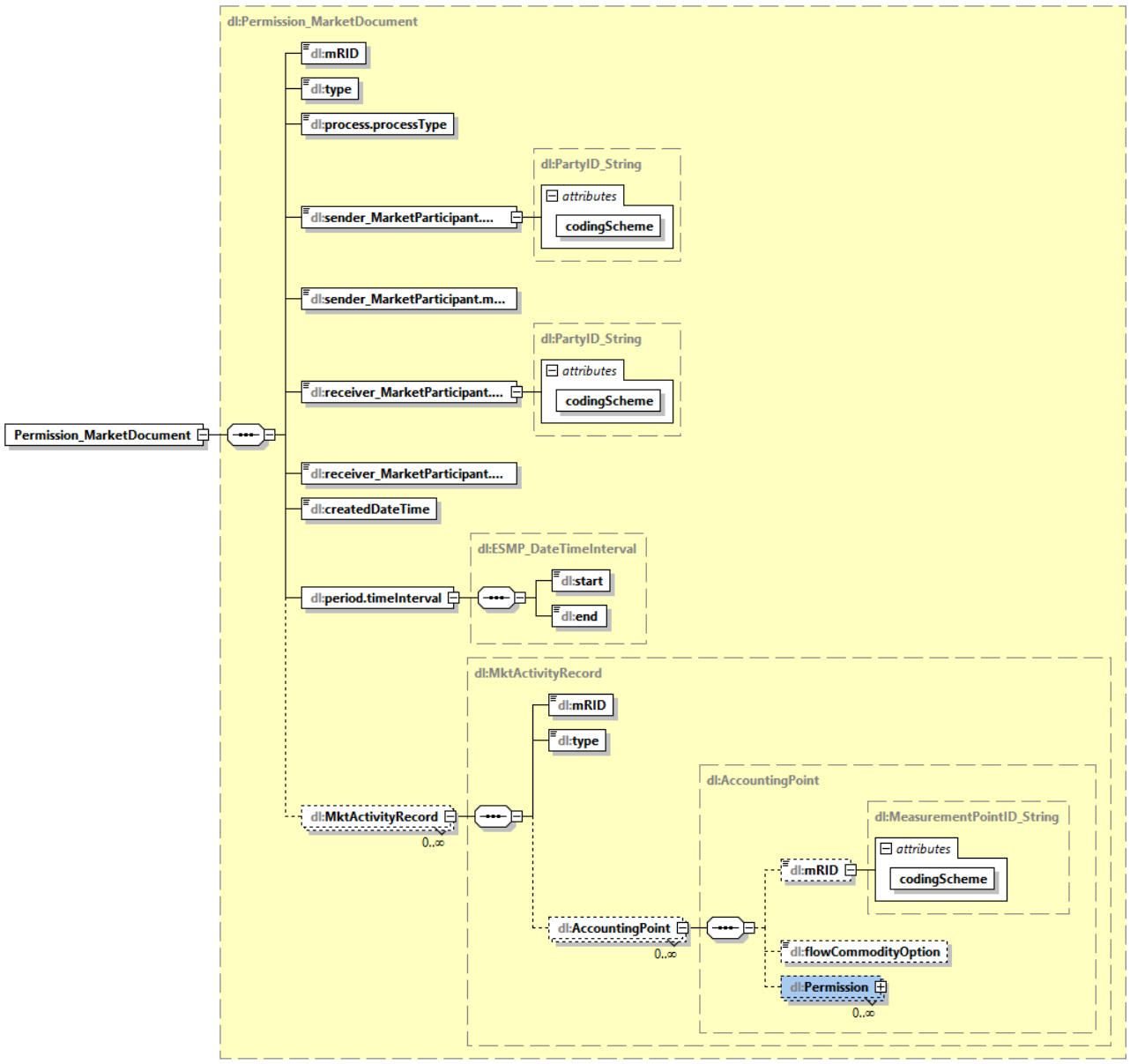
2.2.5 Datatypes

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

- ESMP_DateTimeInterval compound
- CurveType_String datatype
- BusinessKind_String datatype, codelist BusinessTypeList
- EnergyProductKind_String datatype, codelist EnergyProductTypeList
- ESMP_DateTime datatype
- FlowCommodityKind_String datatype
- ID_String datatype
- MarketRoleKind_String datatype, codelist RoleTypeList
- MeasurementPointID_String datatype
- MeasurementUnitKind_String datatype, codelist UnitOfMeasureTypeList
- MessageKind_String datatype, codelist MessageTypeList
- PartyID_String datatype, codelist CodingSchemeTypeList
- ProcessKind_String datatype, codelist ProcessTypeList
- ReasonCode_String datatype
- ReasonText_String datatype
- Status_String datatype
- YMDHM_DateTime datatype

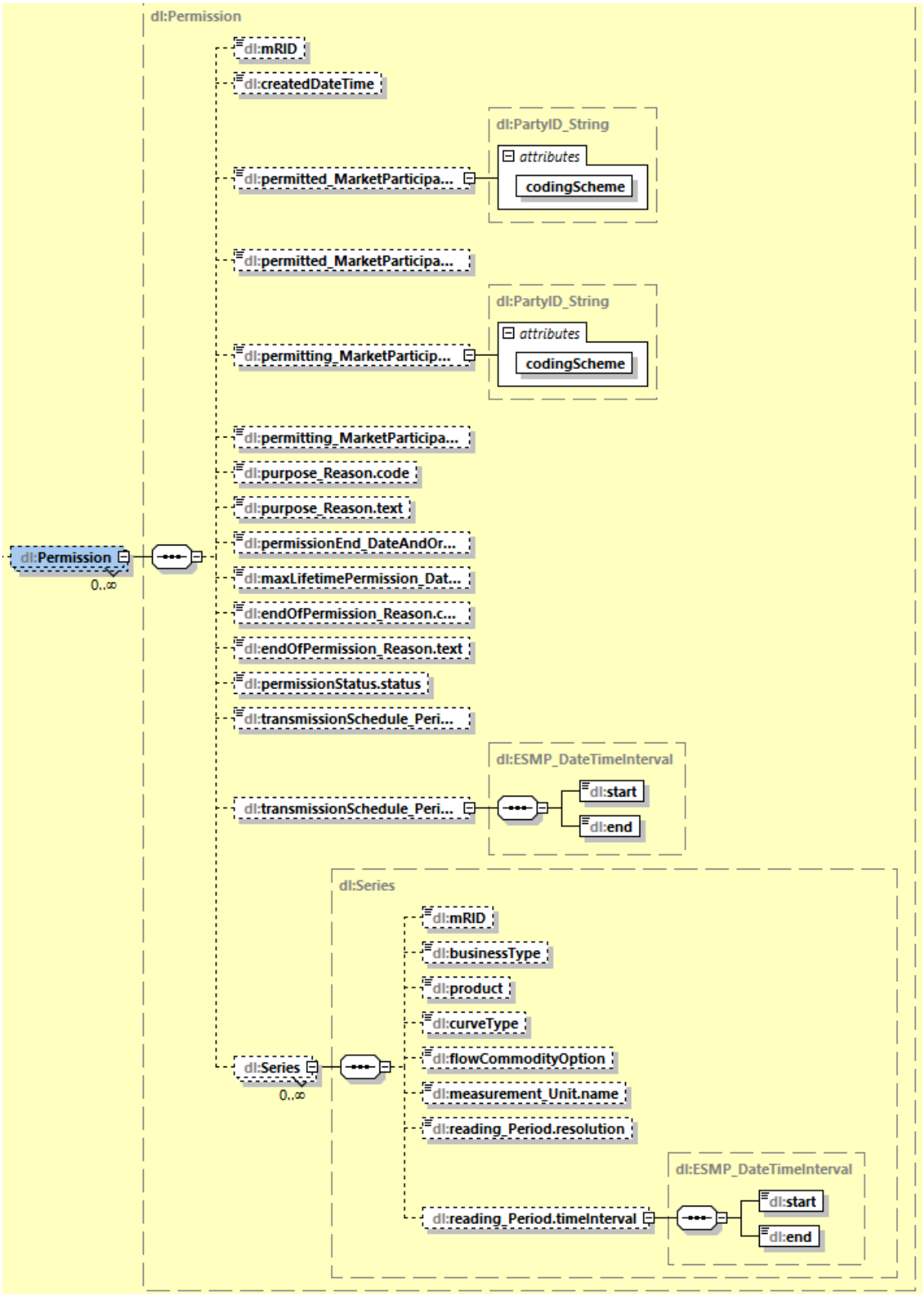
220

221 2.2.2 PermissionData_MarketDocument XML schema structure



222

223



224

225 **Figure 3 – PermissionData assembly model**

2.2.3 PermissionData_MarketDocument XML schema

The schema to be used to validate XML instances is to be identified by:

urn:iec62325.351:tc57wg16:451-n:permissiondocument:1:0

```
<?xml version="1.0" encoding="utf-8"?>
<xs:schema xmlns:ecl="urn:entsoe.eu:wgedi:codelists"
xmlns:sawsdl="http://www.w3.org/ns/sawsdl"
xmlns:dl="urn:iec62325.351:tc57wg16:451-n:permissiondocument:1:0"
xmlns:cimp="http://www.iec.ch/cimprofile" attributeFormDefault="unqualified"
elementFormDefault="qualified" targetNamespace="urn:iec62325.351:tc57wg16:451-
n:permissiondocument:1:0" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:import schemaLocation="urn-entsoe-eu-wgedi-codelists.xsd"
namespace="urn:entsoe.eu:wgedi:codelists" />
  <xs:element name="Permission_MarketDocument" type="dl:Permission_MarketDocument"
/>
  <xs:simpleType name="MeasurementPointID_String-base"
sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-cim15#String">
    <xs:restriction base="xs:string">
      <xs:maxLength value="60" />
    </xs:restriction>
  </xs:simpleType>
  <xs:complexType name="MeasurementPointID_String"
sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-cim15#String">
    <xs:simpleContent>
      <xs:extension base="dl:MeasurementPointID_String-base">
        <xs:attribute name="codingScheme" type="ecl:CodingSchemeTypeList"
use="required" />
      </xs:extension>
    </xs:simpleContent>
  </xs:complexType>
  <xs:simpleType name="FlowCommodityKind_String"
sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-cim15#String">
    <xs:restriction base="ecl:FlowCommodityTypeList" />
  </xs:simpleType>
  <xs:complexType name="AccountingPoint"
sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-cim15#AccountingPoint">
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="1" name="mRID"
type="dl:MeasurementPointID_String"
sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-
cim15#IdentifiedObject.mRID">
      </xs:element>
      <xs:element minOccurs="0" maxOccurs="1" name="flowCommodityOption"
type="dl:FlowCommodityKind_String"
sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-
cim15#Ext_acc_MarketEvaluationPoint.flowCommodityOption">
      </xs:element>
      <xs:element minOccurs="0" maxOccurs="unbounded" name="Permission"
type="dl:Permission" sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-
cim15#AccountingPoint.Permission">
      </xs:element>
    </xs:sequence>
  </xs:complexType>
  <xs:complexType name="MktActivityRecord"
sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-
cim15#MktActivityRecord">
    <xs:sequence>
```

```
284          <xs:element minOccurs="1"
285    maxOccurs="1" name="mRID" type="xs:string"
286    sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-
287    cim15#IdentifiedObject.mRID">
288          </xs:element>
289          <xs:element minOccurs="1" maxOccurs="1" name="type" type="xs:string"
290    sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-
291    cim15#ActivityRecord.type">
292          </xs:element>
293          <xs:element minOccurs="0" maxOccurs="unbounded" name="AccountingPoint"
294    type="dl:AccountingPoint" sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-
295    schema-cim15#MktActivityRecord.AccountingPoint">
296          </xs:element>
297        </xs:sequence>
298      </xs:complexType>
299      <xs:simpleType name="ID_String"
300    sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-cim15#String">
301        <xs:restriction base="xs:string">
302          <xs:maxLength value="60" />
303        </xs:restriction>
304      </xs:simpleType>
305      <xs:simpleType name="ESMP_DateTime"
306    sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-cim15#DateTime">
307        <xs:restriction base="xs:dateTime">
308          <xs:pattern value="((([0-9]{4})[\-](0[13578]|1[02])[\-](0[1-9]|[12][0-
309    9]|3[01])|([0-9]{4})[\-]((0[469])|(11))[\-](0[1-9]|[12][0-9]|30))T(([01][0-9]|2[0-
310    3]):[0-5][0-9]:[0-5][0-
311    9])Z)|(([13579][26][02468][048]|[13579][01345789](0)[48]|[13579][01345789][2468][0
312    48]|[02468][048][02468][048]|[02468][1235679](0)[48]|[02468][1235679][2468][048]|[
313    0-9][0-9][13579][26])[\-](02)[\-](0[1-9]|1[0-9]|2[0-9])T(([01][0-9]|2[0-3]):[0-
314    5][0-9]:[0-5][0-
315    9])Z)|(([13579][26][02468][1235679]|[13579][01345789](0)[01235679]|[13579][0134578
316    9][2468][1235679]|[02468][048][02468][1235679]|[02468][1235679](0)[01235679]|[0246
317    8][1235679][2468][1235679]|[0-9][0-9][13579][01345789])[\-](02)[\-](0[1-9]|1[0-
318    9]|2[0-8])T(([01][0-9]|2[0-3]):[0-5][0-9]:[0-5][0-9])Z)" />
319        </xs:restriction>
320      </xs:simpleType>
321      <xs:simpleType name="PartyID_String-base"
322    sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-cim15#String">
323        <xs:restriction base="xs:string">
324          <xs:maxLength value="16" />
325        </xs:restriction>
326      </xs:simpleType>
327      <xs:complexType name="PartyID_String"
328    sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-cim15#String">
329        <xs:simpleContent>
330          <xs:extension base="dl:PartyID_String-base">
331            <xs:attribute name="codingScheme" type="ecl:CodingSchemeTypeList"
332    use="required" />
333          </xs:extension>
334        </xs:simpleContent>
335      </xs:complexType>
336      <xs:simpleType name="MarketRoleKind_String"
337    sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-cim15#String">
338        <xs:restriction base="ecl:RoleTypeList" />
339      </xs:simpleType>
340      <xs:simpleType name="ReasonCode_String"
341    sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-cim15#String">
342        <xs:restriction base="ecl:ReasonCodeTypeList" />
343      </xs:simpleType>
```

```
344      <xs:simpleType
345   name="ReasonText_String" sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-
346   schema-cim15#String">
347       <xs:restriction base="xs:string">
348         <xs:maxLength value="512" />
349       </xs:restriction>
350     </xs:simpleType>
351     <xs:simpleType name="Status_String"
352   sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-cim15#String">
353       <xs:restriction base="ecl:StatusTypeList" />
354     </xs:simpleType>
355     <xs:simpleType name="YMDHM_DateTime"
356   sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-cim15#DateTime">
357       <xs:restriction base="xs:string">
358         <xs:pattern value="((([0-9]{4})[\-](0[13578]|1[02])[\-](0[1-9]|[12][0-
359   9]|3[01])|([0-9]{4})[\-]((0[469])|(11))[\-](0[1-9]|[12][0-9]|30))T(([01][0-9]|2[0-
360   3]):[0-5][0-
361   9])Z)|(([13579][26][02468][048]|[13579][01345789](0)[48]|[13579][01345789][2468][0
362   48]|[02468][048][02468][048]|[02468][1235679](0)[48]|[02468][1235679][2468][048]|[
363   0-9][0-9][13579][26])[\-](02)[\-](0[1-9]|1[0-9]|2[0-9])T(([01][0-9]|2[0-3]):[0-
364   5][0-
365   9])Z)|(([13579][26][02468][1235679]|[13579][01345789](0)[01235679]|[13579][0134578
366   9][2468][1235679]|[02468][048][02468][1235679]|[02468][1235679](0)[01235679]|[0246
367   8][1235679][2468][1235679]|[0-9][0-9][13579][01345789])[\-](02)[\-](0[1-9]|1[0-
368   9]|2[0-8])T(([01][0-9]|2[0-3]):[0-5][0-9])Z)" />
369       </xs:restriction>
370     </xs:simpleType>
371     <xs:complexType name="ESMP_DateTimeInterval"
372   sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-cim15#DateTimeInterval">
373       <xs:sequence>
374         <xs:element minOccurs="1" maxOccurs="1" name="start"
375   type="dl:YMDHM_DateTime" sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-
376   schema-cim15#DateTimeInterval.start">
377         </xs:element>
378         <xs:element minOccurs="1" maxOccurs="1" name="end" type="dl:YMDHM_DateTime"
379   sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-
380   cim15#DateTimeInterval.end">
381         </xs:element>
382       </xs:sequence>
383     </xs:complexType>
384     <xs:complexType name="Permission"
385   sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-cim15#Permission">
386       <xs:sequence>
387         <xs:element minOccurs="0" maxOccurs="1" name="mRID" type="dl:ID_String"
388   sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-cim15#Permission.mRID">
389         </xs:element>
390         <xs:element minOccurs="0" maxOccurs="1" name="createdDateTime"
391   type="dl:ESMP_DateTime" sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-
392   cim15#Permission.createdDateTime">
393         </xs:element>
394         <xs:element minOccurs="0" maxOccurs="1"
395   name="permitted_MarketParticipant.mRID" type="dl:PartyID_String"
396   sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-
397   cim15#IdentifiedObject.mRID">
398         </xs:element>
399         <xs:element minOccurs="0" maxOccurs="1"
400   name="permitted_MarketParticipant.marketRole.type" type="dl:MarketRoleKind_String"
401   sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-cim15#MarketRole.type">
402         </xs:element>
403         <xs:element minOccurs="0" maxOccurs="1"
404   name="permitting_MarketParticipant.mRID" type="dl:PartyID_String"
```

```
405   sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-
406   cim15#IdentifiedObject.mRID">
407         </xs:element>
408         <xs:element minOccurs="0" maxOccurs="1"
409   name="permitting_MarketParticipant.marketRole.type"
410   type="dl:MarketRoleKind_String"
411   sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-cim15#MarketRole.type">
412         </xs:element>
413         <xs:element minOccurs="0" maxOccurs="1" name="purpose_Reason.code"
414   type="dl:ReasonCode_String" sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-
415   schema-cim15#Reason.code">
416         </xs:element>
417         <xs:element minOccurs="0" maxOccurs="1" name="purpose_Reason.text"
418   type="dl:ReasonText_String" sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-
419   schema-cim15#Reason.text">
420         </xs:element>
421         <xs:element minOccurs="0" maxOccurs="1"
422   name="permissionEnd_DateAndOrTime.dateTime" type="xs:dateTime"
423   sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-
424   cim15#DateAndOrTime.dateTime">
425         </xs:element>
426         <xs:element minOccurs="0" maxOccurs="1"
427   name="maxLifetimePermission_DateAndOrTime.dateTime" type="xs:dateTime"
428   sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-
429   cim15#DateAndOrTime.dateTime">
430         </xs:element>
431         <xs:element minOccurs="0" maxOccurs="1" name="endOfPermission_Reason.code"
432   type="dl:ReasonCode_String" sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-
433   schema-cim15#Reason.code">
434         </xs:element>
435         <xs:element minOccurs="0" maxOccurs="1" name="endOfPermission_Reason.text"
436   type="dl:ReasonText_String" sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-
437   schema-cim15#Reason.text">
438         </xs:element>
439         <xs:element minOccurs="0" maxOccurs="1" name="permissionStatus.status"
440   type="dl:Status_String" sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-
441   cim15#MarketObjectStatus.status">
442         </xs:element>
443         <xs:element minOccurs="0" maxOccurs="1"
444   name="transmissionSchedule_Period.resolution" type="xs:duration"
445   sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-
446   cim15#Ext_acc_Time_Period.resolution">
447         </xs:element>
448         <xs:element minOccurs="0" maxOccurs="1"
449   name="transmissionSchedule_Period.timeInterval" type="dl:ESMP_DateTimeInterval"
450   sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-
451   cim15#Period.timeInterval">
452         </xs:element>
453         <xs:element minOccurs="0" maxOccurs="unbounded" name="Series"
454   type="dl:Series" sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-
455   cim15#Permission.Series">
456         </xs:element>
457       </xs:sequence>
458     </xs:complexType>
459     <xs:simpleType name="MessageKind_String"
460   sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-cim15#String">
461       <xs:restriction base="ecl:MessageTypeList" />
462     </xs:simpleType>
463     <xs:simpleType name="ProcessKind_String"
464   sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-cim15#String">
465       <xs:restriction base="ecl:ProcessTypeList" />
```

```
466      </xs:simpleType>
467    <xs:complexType name="Permission_MarketDocument"
468  sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-cim15#MarketDocument">
469      <xs:sequence>
470        <xs:element minOccurs="1" maxOccurs="1" name="mRID" type="dl:ID_String"
471  sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-
472  cim15#IdentifiedObject.mRID">
473        </xs:element>
474        <xs:element minOccurs="1" maxOccurs="1" name="type"
475  type="dl:MessageKind_String" sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-
476  schema-cim15#Document.type">
477        </xs:element>
478        <xs:element minOccurs="1" maxOccurs="1" name="process.processType"
479  type="dl:ProcessKind_String" sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-
480  schema-cim15#Process.processType">
481        </xs:element>
482        <xs:element minOccurs="1" maxOccurs="1" name="sender_MarketParticipant.mRID"
483  type="dl:PartyID_String" sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-
484  schema-cim15#IdentifiedObject.mRID">
485        </xs:element>
486        <xs:element minOccurs="1" maxOccurs="1"
487  name="sender_MarketParticipant.marketRole.type" type="dl:MarketRoleKind_String"
488  sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-cim15#MarketRole.type">
489        </xs:element>
490        <xs:element minOccurs="1" maxOccurs="1"
491  name="receiver_MarketParticipant.mRID" type="dl:PartyID_String"
492  sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-
493  cim15#IdentifiedObject.mRID">
494        </xs:element>
495        <xs:element minOccurs="1" maxOccurs="1"
496  name="receiver_MarketParticipant.marketRole.type" type="dl:MarketRoleKind_String"
497  sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-cim15#MarketRole.type">
498        </xs:element>
499        <xs:element minOccurs="1" maxOccurs="1" name="createdDateTime"
500  type="dl:ESMP_DateTime" sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-
501  cim15#Document.createdDateTime">
502        </xs:element>
503        <xs:element minOccurs="1" maxOccurs="1" name="period.timeInterval"
504  type="dl:ESMP_DateTimeInterval"
505  sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-
506  cim15#Period.timeInterval">
507        </xs:element>
508        <xs:element minOccurs="0" maxOccurs="unbounded" name="MktActivityRecord"
509  type="dl:MktActivityRecord" sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-
510  schema-cim15#MarketDocument.MktActivityRecord">
511        </xs:element>
512      </xs:sequence>
513    </xs:complexType>
514    <xs:simpleType name="BusinessKind_String"
515  sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-cim15#String">
516      <xs:restriction base="ecl:BusinessTypeList" />
517    </xs:simpleType>
518    <xs:simpleType name="EnergyProductKind_String"
519  sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-cim15#String">
520      <xs:restriction base="ecl:EnergyProductTypeList" />
521    </xs:simpleType>
522    <xs:simpleType name="CurveType_String"
523  sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-cim15#String">
524      <xs:restriction base="ecl:CurveTypeList" />
525    </xs:simpleType>
```

```
526       <xs:simpleType
527   name="MeasurementUnitKind_String"
528   sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-cim15#String">
529       <xs:restriction base="ecl:UnitOfMeasureTypeList" />
530     </xs:simpleType>
531     <xs:complexType name="Series"
532   sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-cim15#Series">
533       <xs:sequence>
534         <xs:element minOccurs="0" maxOccurs="1" name="mRID" type="dl:ID_String"
535   sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-
536   cim15#IdentifiedObject.mRID">
537         </xs:element>
538         <xs:element minOccurs="0" maxOccurs="1" name="businessType"
539   type="dl:BusinessKind_String" sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-
540   schema-cim15#TimeSeries.businessType">
541         </xs:element>
542         <xs:element minOccurs="0" maxOccurs="1" name="product"
543   type="dl:EnergyProductKind_String"
544   sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-
545   cim15#TimeSeries.product">
546         </xs:element>
547         <xs:element minOccurs="0" maxOccurs="1" name="curveType"
548   type="dl:CurveType_String" sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-
549   schema-cim15#TimeSeries.curveType">
550         </xs:element>
551         <xs:element minOccurs="0" maxOccurs="1" name="flowCommodityOption"
552   type="dl:FlowCommodityKind_String"
553   sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-
554   cim15#Ext_acc_TimeSeries.flowCommodityOption">
555         </xs:element>
556         <xs:element minOccurs="0" maxOccurs="1" name="measurement_Unit.name"
557   type="dl:MeasurementUnitKind_String"
558   sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-cim15#Unit.name">
559         </xs:element>
560         <xs:element minOccurs="0" maxOccurs="1" name="reading_Period.resolution"
561   type="xs:duration" sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-
562   cim15#Ext_acc_Time_Period.resolution">
563         </xs:element>
564         <xs:element minOccurs="0" maxOccurs="1" name="reading_Period.timeInterval"
565   type="dl:ESMP_DateTimeInterval"
566   sawsdl:modelReference="http://iec.ch/TC57/2010/CIM-schema-
567   cim15#Period.timeInterval">
568         </xs:element>
569       </xs:sequence>
570     </xs:complexType>
571   </xs:schema>
```