SCHEDULE DOCUMENT
UML MODEL AND SCHEMA

2019-07-10
APPROVED DOCUMENT
VERSION 1.1
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This document is maintained by the ENTSO-E CIM EG. Comments or remarks are to be provided at cim@entsoe.eu
### Revision History

<table>
<thead>
<tr>
<th>Version</th>
<th>Release</th>
<th>Date</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2017-01-19</td>
<td>First drafting of the document.</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td>2017-01-30</td>
<td>Version to be submitted to Market Committee following WG EDI meeting in March 2017. Document approved by MC.</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>2019-07-10</td>
<td>Updates in Schedule document v5.2: This version has into account the enlargement of mRID of Document, Series, TimeSeries, Auction and MarketAgreement from 35 to 60 characters. Approved by MC.</td>
</tr>
</tbody>
</table>
1 Objective

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

The schema of the Schedule_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.
2 Schedule MarketDocument

2.1 Schedule contextual model

2.1.1 Overview of the model

Figure 1 shows the model.
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>
<thead>
<tr>
<th>Name</th>
<th>Complete IsBasedOn Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domain</td>
<td>TC57CIM::IEC62325::MarketManagement::Domain</td>
</tr>
<tr>
<td>MarketAgreement</td>
<td>TC57CIM::IEC62325::MarketManagement::MarketAgreement</td>
</tr>
<tr>
<td>MarketEvaluationPoint</td>
<td>TC57CIM::IEC62325::MarketManagement::MarketEvaluationPoint</td>
</tr>
<tr>
<td>MarketParticipant</td>
<td>TC57CIM::IEC62325::MarketCommon::MarketParticipant</td>
</tr>
<tr>
<td>MarketRole</td>
<td>TC57CIM::IEC62325::MarketCommon::MarketRole</td>
</tr>
<tr>
<td>Measure_Unit</td>
<td>TC57CIM::IEC62325::MarketManagement::Unit</td>
</tr>
<tr>
<td>Party_MarketParticipant</td>
<td>TC57CIM::IEC62325::MarketCommon::MarketParticipant</td>
</tr>
<tr>
<td>Point</td>
<td>TC57CIM::IEC62325::MarketManagement::Point</td>
</tr>
<tr>
<td>Process</td>
<td>TC57CIM::IEC62325::MarketManagement::Process</td>
</tr>
<tr>
<td>Reason</td>
<td>TC57CIM::IEC62325::MarketManagement::Reason</td>
</tr>
<tr>
<td>RegisteredResource</td>
<td>TC57CIM::IEC62325::MarketCommon::RegisteredResource</td>
</tr>
<tr>
<td>Schedule_MarketDocument</td>
<td>TC57CIM::IEC62325::MarketManagement::MarketDocument</td>
</tr>
<tr>
<td>Series_Period</td>
<td>TC57CIM::IEC62325::MarketManagement::Period</td>
</tr>
<tr>
<td>Time_Period</td>
<td>TC57CIM::IEC62325::MarketManagement::Period</td>
</tr>
<tr>
<td>TimeSeries</td>
<td>TC57CIM::IEC62325::MarketManagement::TimeSeries</td>
</tr>
</tbody>
</table>
2.2 Schedule assembly model

2.2.1 Overview of the model

Figure 2 shows the model.
2.2.2 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.

Table 2 - IsBasedOn dependency

<table>
<thead>
<tr>
<th>Name</th>
<th>Complete IsBasedOn Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>Point</td>
<td>TC57CIM::IEC62325::MarketManagement::Point</td>
</tr>
<tr>
<td>Reason</td>
<td>TC57CIM::IEC62325::MarketManagement::Reason</td>
</tr>
<tr>
<td>Schedule_MarketDocument</td>
<td>TC57CIM::IEC62325::MarketManagement::MarketDocument</td>
</tr>
<tr>
<td>Series_Period</td>
<td>TC57CIM::IEC62325::MarketManagement::Period</td>
</tr>
<tr>
<td>TimeSeries</td>
<td>TC57CIM::IEC62325::MarketManagement::TimeSeries</td>
</tr>
</tbody>
</table>

2.2.3 Detailed Schedule assembly model

2.2.3.1 Schedule_MarketDocument root class

A schedule document provides the position of a party or a domain related to some market information; it includes a set of time series.

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

Table 3 shows all attributes of Schedule_MarketDocument.

Table 3 - Attributes of Schedule assembly model::Schedule_MarketDocument

<table>
<thead>
<tr>
<th>Order</th>
<th>mult.</th>
<th>Attribute name / Attribute type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>[1..1]</td>
<td>mRID ID_String</td>
<td>The unique identification of the document being exchanged within a business process flow.</td>
</tr>
<tr>
<td>1</td>
<td>[1..1]</td>
<td>revisionNumber ESMPVersion_String</td>
<td>The identification of the version that distinguishes one evolution of a document from another.</td>
</tr>
<tr>
<td>3</td>
<td>[1..1]</td>
<td>process.processType ProcessKind_String</td>
<td>The identification of the nature of process that the document addresses. --- The process dealt with in the document.</td>
</tr>
<tr>
<td>4</td>
<td>[1..1]</td>
<td>process.classificationType ClassificationKind_String</td>
<td>The classification mechanism used to group a set of objects together within a business process. The grouping may be of a detailed or a summary nature. --- The process dealt with in the document.</td>
</tr>
<tr>
<td>5</td>
<td>[1..1]</td>
<td>sender_MarketParticipant.mRID PartyID_String</td>
<td>The identification of a party in the energy market. --- Document owner.</td>
</tr>
<tr>
<td>6</td>
<td>[1..1]</td>
<td>sender_MarketParticipant.marketRole.type MarketRoleKind_String</td>
<td>The identification of the role played by a market player. --- Document owner. --- The role associated with a MarketParticipant.</td>
</tr>
<tr>
<td>7</td>
<td>[1..1]</td>
<td>receiver_MarketParticipant.mRID PartyID_String</td>
<td>The identification of a party in the energy market. --- Document recipient.</td>
</tr>
<tr>
<td>8</td>
<td>[1..1]</td>
<td>receiver_MarketParticipant.marketRole.type MarketRoleKind_String</td>
<td>The identification of the role played by a market player. --- Document recipient. --- The role associated with a MarketParticipant.</td>
</tr>
<tr>
<td>Order/ mult.</td>
<td>Attribute name / Attribute type</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>-------------</td>
<td>--------------------------------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td>9 [1..1]</td>
<td>createdDateTime</td>
<td>The date and time of the creation of the document.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ESMP_DateTime</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 10 [1..1]   | schedule_Time_Period.timeInterval | The start and end date and time for a given interval.  
|             | ESMP_DateTimeInterval          |   --- This information provides the start and end date and  
|             |                                 |   time of the schedule time interval.  
|             |                                 |   All time intervals for the time series in the document shall  
|             |                                 |   be within the total time interval for the schedule.  
|             |                                 |   The receiver will discard any time intervals outside the  
|             |                                 |   schedule period. |
| 11 [1..1]   | domain.mRID                    | The unique identification of the domain.  
|             | AreaID_String                   |   --- The identification of the domain that is covered in the  
|             |                                 |   schedule document. It is in general the market balance  
|             |                                 |   area that is the subject of the schedule plan. |
| 12 [0..1]   | subject_MarketParticipant.mRID  | The identification of a party in the energy market.  
|             | PartyID_String                  |   --- The party that is the subject of the documents time  
|             |                                 |   series. |
| 13 [0..1]   | subject_MarketParticipant.marketRole.type | The identification of the role played by a market player.  
|             | MarketRoleKind_String           |   --- The party that is the subject of the documents time  
|             |                                 |   series.  
|             |                                 |   --- The role associated with a MarketParticipant. |
| 14 [0..1]   | matching_Time_Period.timeInterval | The start and end date and time for a given interval.  
|             | ESMP_DateTimeInterval           |   --- This information provides the start and end date and  
|             |                                 |   time of the period to be matched.  
|             |                                 |   The matching period start date and time shall begin at the  
|             |                                 |   start of the schedule time interval or be within the bounds  
|             |                                 |   of the schedule time interval. The matching period end  
|             |                                 |   date and time shall be the same as that of the schedule  
|             |                                 |   time interval. It is this period that is being presented for  
|             |                                 |   matching.  
|             |                                 |   The period prior to the matching period is generally  
|             |                                 |   considered to be historical data and should correspond to  
|             |                                 |   the information received in previous transmissions. |

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

### Table 4 - Association ends of Schedule assembly model::Schedule_MarketDocument with other classes

<table>
<thead>
<tr>
<th>Order/ mult.</th>
<th>Class name / Role</th>
<th>Description</th>
</tr>
</thead>
</table>
| 15 [0..*]    | TimeSeries        | The time series that is associated with an electronic document.  
|              | TimeSeries        | Association Based On:  
|              |                   | Schedule contextual model::Schedule_MarketDocument.[]  
|              |                   |   -----  
|              |                   | Schedule contextual model::TimeSeries.TimeSeries[0..*] |

2.2.3.2 Point

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

Table 5 shows all attributes of Point.

### Table 5 - Attributes of Schedule assembly model::Point

<table>
<thead>
<tr>
<th>Order/ mult.</th>
<th>Attribute name / Attribute type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 [1..1]</td>
<td>position</td>
<td>A sequential value representing the relative position within a given time interval.</td>
</tr>
</tbody>
</table>
Table 6 - Association ends of Schedule assembly model::Point with other classes

<table>
<thead>
<tr>
<th>Order</th>
<th>mult.</th>
<th>Class name / Role</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>[0..*]</td>
<td>Reason</td>
<td>At the Point level the reason code is used to identify the nature of a curtailment that has been imposed on the specified quantity. The Reason information associated with a Point providing motivation information. Association Based On: Schedule contextual model::Point[]. Schedule contextual model::Reason.Reason[0..*]</td>
</tr>
</tbody>
</table>

2.2.3.3 Reason

The motivation of an act.

Table 7 shows all attributes of Reason.

Table 7 - Attributes of Schedule assembly model::Reason

<table>
<thead>
<tr>
<th>Order</th>
<th>mult.</th>
<th>Attribute name / Attribute type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>[1..1]</td>
<td>code ReasonCode_String</td>
<td>The motivation of an act in coded form.</td>
</tr>
<tr>
<td>1</td>
<td>[0..1]</td>
<td>text ReasonText_String</td>
<td>The textual explanation corresponding to the reason code.</td>
</tr>
</tbody>
</table>

2.2.3.4 Series_Period

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

Table 8 shows all attributes of Series_Period.

Table 8 - Attributes of Schedule assembly model::Series_Period

<table>
<thead>
<tr>
<th>Order</th>
<th>mult.</th>
<th>Attribute name / Attribute type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>[1..1]</td>
<td>timeInterval ESPM_DateTimeInterval</td>
<td>The start and end time of the period.</td>
</tr>
<tr>
<td>1</td>
<td>[1..1]</td>
<td>resolution Duration</td>
<td>The definition of the number of units of time that compose an individual step within a period.</td>
</tr>
</tbody>
</table>
### Table 9 - Association ends of Schedule assembly model::Series_Period with other classes

<table>
<thead>
<tr>
<th>Order</th>
<th>mult.</th>
<th>Class name / Role</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>[1..*]</td>
<td>Point</td>
<td>The Point information associated with a given Series_Period.within a TimeSeries. Association Based On: Schedule contextual model::Series_Period[]. Schedule contextual model::Point.Point[1..*]</td>
</tr>
</tbody>
</table>

### 2.2.3.5 TimeSeries

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

Table 10 shows all attributes of TimeSeries.

### Table 10 - Attributes of Schedule assembly model::TimeSeries

<table>
<thead>
<tr>
<th>Order</th>
<th>mult.</th>
<th>Attribute name / Attribute type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>[1..1]</td>
<td>mRID ID_String</td>
<td>A unique identification of the time series.</td>
</tr>
<tr>
<td>1</td>
<td>[1..1]</td>
<td>version ESMPVersion_String</td>
<td>The identification of the version of the time series.</td>
</tr>
<tr>
<td>2</td>
<td>[1..1]</td>
<td>businessType BusinessKind_String</td>
<td>The identification of the nature of the time series.</td>
</tr>
<tr>
<td>3</td>
<td>[1..1]</td>
<td>product EnergyProductKind_String</td>
<td>The identification of the nature of an energy product such as power, energy, reactive power, etc.</td>
</tr>
<tr>
<td>4</td>
<td>[1..1]</td>
<td>objectAggregation ObjectAggregationKind_String</td>
<td>The identification of the object (party, domain, etc.) that is the common denominator used to aggregate a time series.</td>
</tr>
<tr>
<td>5</td>
<td>[0..1]</td>
<td>in_Domain.mRID AreaID_String</td>
<td>The unique identification of the domain. --- The area where the product is being delivered.</td>
</tr>
<tr>
<td>6</td>
<td>[0..1]</td>
<td>out_Domain.mRID AreaID_String</td>
<td>The unique identification of the domain. --- The area where the product is being extracted.</td>
</tr>
<tr>
<td>7</td>
<td>[0..1]</td>
<td>marketEvaluationPoint.mRID MeasurementPointID_String</td>
<td>A unique identification of the measurement point. --- The identification of the location where one or more products are metered. This may be one physical location or the combination of several points together. The identification of a measurement point associated with a TimeSeries.</td>
</tr>
<tr>
<td>8</td>
<td>[0..1]</td>
<td>in_MarketParticipant.mRID PartyID_String</td>
<td>The identification of a party in the energy market. --- The identification of the party putting the product into the in area.</td>
</tr>
<tr>
<td>9</td>
<td>[0..1]</td>
<td>out_MarketParticipant.mRID PartyID_String</td>
<td>The identification of a party in the energy market. --- The identification of the party taking the product out of the out area.</td>
</tr>
<tr>
<td>10</td>
<td>[0..1]</td>
<td>marketAgreement.type CapacityContractKind_String</td>
<td>The specification of the kind of the agreement, e.g. long term, daily contract. --- The identification of an agreement associated with a time series.</td>
</tr>
<tr>
<td>11</td>
<td>[0..1]</td>
<td>marketAgreement.mRID ID_String</td>
<td>The unique identification of the agreement. --- The identification of an agreement associated with a time series.</td>
</tr>
</tbody>
</table>
Table 11 shows all association ends of TimeSeries with other classes.

### Table 11 - Association ends of Schedule assembly model::TimeSeries with other classes

<table>
<thead>
<tr>
<th>Order</th>
<th>mult.</th>
<th>Class name / Role</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>[1..*]</td>
<td>Series_Period.Period</td>
<td>The time interval and resolution for a period associated with a TimeSeries. Association Based On: Schedule contextual model::TimeSeries[]. Schedule contextual model::Series_Period.Period[1..*]</td>
</tr>
<tr>
<td>16</td>
<td>[0..1]</td>
<td>Reason</td>
<td>At the TimeSeries level the reason code is used to enable processing of the reason text which, depending on market conditions, should be provided in intra day trading. In this context only one reason code has been defined (A48, modification reason). No other codes are permitted. Association Based On: Schedule contextual model::TimeSeries[]. Schedule contextual model::Reason.Reason[0..1]</td>
</tr>
</tbody>
</table>
2.2.4 Datatypes

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

- ESMP_DateTimeInterval compound
- AreaID_String datatype, codelist CodingSchemeTypeList
- BusinessKind_String datatype, codelist BusinessTypeList
- CapacityContractKind_String datatype, codelist ContractTypeList
- ClassificationKind_String datatype, codelist ClassificationTypeList
- CurveType_String datatype, codelist CurveTypeList
- EnergyProductKind_String datatype, codelist EnergyProductTypeList
- ESMP_DateTime datatype
- ESMPVersion_String datatype
- ID_String datatype
- MarketRoleKind_String datatype, codelist RoleTypeList
- MeasurementPointID_String datatype, codelist CodingSchemeTypeList
- MeasurementUnitKind_String datatype, codelist UnitOfMeasureTypeList
- MessageKind_String datatype, codelist MessageTypeList
- ObjectAggregationKind_String datatype, codelist ObjectAggregationTypeList
- PartyID_String datatype, codelist CodingSchemeTypeList
- Position_Integer datatype
- ProcessKind_String datatype, codelist ProcessTypeList
- ReasonCode_String datatype, codelist ReasonCodeTypeList
- ReasonText_String datatype
- ResourceID_String datatype, codelist CodingSchemeTypeList
- YMDHM_DateTime datatype

2.2.5 Schedule_MarketDocument XML schema structure
2.2.6 Schedule_MarketDocument XML schema

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

urn:iec62325.351:tc57wg16:451-2:scheduledocument:5:2

```xml
<?xml version="1.0" encoding="utf-8"?>
<xs:schema xmlns:ecl="urn:entsoe.eu:wgedi:codelists"
xmlns="urn:iec62325.351:tc57wg16:451-2:scheduledocument:5:2"
xmlns:sawsdl="http://www.w3.org/2001/XMLSchema"
xmlns:xs="http://www.w3.org/2000/01/XMLSchema"
targetNamespace="urn:iec62325.351:tc57wg16:451-2:scheduledocument:5:2"
elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:import namespace="urn:entsoe.eu:wgedi:codelists" schemaLocation="urn-entsoe-eu-wgedi-codelists.xsd"/>
  <xs:simpleType name="Position_Integer">
    <xs:restriction base="xs:integer">
      <xs:minInclusive value="999999"/>
      <xs:maxInclusive value="1"/>
    </xs:restriction>
  </xs:simpleType>
  <xs:complexType name="Point">
    <xs:simpleType name="Position_Integer" minOccurs="1" maxOccurs="1">
      <xs:restriction base="xs:integer"/>
    </xs:restriction>
  </xs:complexType>
  <xs:complexType name="Reason">
    <xs:restriction base="ecl:ReasonCodeTypeList" minOccurs="1" maxOccurs="unbounded">
      <xs:element name="Reason" type="Reason" minOccurs="0" maxOccurs=""/>
    </xs:restriction>
  </xs:complexType>
  <xs:complexType name="ReasonText">
    <xs:restriction base="xs:string">
      <xs:maxlength value="512"/>
    </xs:restriction>
  </xs:complexType>
</xs:schema>
```
<xs:simpleType name="ID_String">
  <xs:restriction base="xs:string">
    <xs:maxlength value="16"/>
  </xs:restriction>
</xs:simpleType>

<sawsdl:modelReference http://iec.ch/TC57/2013/CIM-schema-cim16#String">
  <xs:restriction base="ecl:MessageTypeList"/>
</sawsdl:modelReference>

<sawsdl:modelReference http://iec.ch/TC57/2013/CIM-schema-cim16#String">
  <xs:restriction base="ecl:ProcessTypeList"/>
</sawsdl:modelReference>

<sawsdl:modelReference http://iec.ch/TC57/2013/CIM-schema-cim16#String">
  <xs:restriction base="ecl:ClassificationTypeList"/>
</sawsdl:modelReference>

<sawsdl:modelReference http://iec.ch/TC57/2013/CIM-schema-cim16#String">
  <xs:restriction base="ecl:ProcessTypeList"/>
</sawsdl:modelReference>

<sawsdl:modelReference http://iec.ch/TC57/2013/CIM-schema-cim16#String">
  <xs:restriction base="ecl:MessageTypeList"/>
</sawsdl:modelReference>

<sawsdl:modelReference http://iec.ch/TC57/2013/CIM-schema-cim16#String">
  <xs:restriction base="ecl:ProcessTypeList"/>
</sawsdl:modelReference>

<sawsdl:modelReference http://iec.ch/TC57/2013/CIM-schema-cim16#String">
  <xs:restriction base="ecl:MessageTypeList"/>
</sawsdl:modelReference>

<sawsdl:modelReference http://iec.ch/TC57/2013/CIM-schema-cim16#String">
  <xs:restriction base="ecl:ProcessTypeList"/>
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<sawsdl:modelReference http://iec.ch/TC57/2013/CIM-schema-cim16#String">
  <xs:restriction base="ecl:ProcessTypeList"/>
</sawsdl:modelReference>

<sawsdl:modelReference http://iec.ch/TC57/2013/CIM-schema-cim16#String">
  <xs:restriction base="ecl:ProcessTypeList"/>
</sawsdl:modelReference>
<xs:simpleType name="AreaID_String-base">
    <xs:schema targetNamespace="http://iec.ch/TC57/2013/CIM-schema-cim16#" prefix="cim16#">
        <xs:restriction base="xs:string">
            <xs:minOccurs value="1" />
            <xs:maxOccurs value="maxOccurs" />
        </xs:restriction>
    </xs:schema>
</xs:simpleType>

<sawsdl:modelReference href="http://iec.ch/TC57/2013/CIM-schema-cim16#ID_string" />

<xs:simpleType name="AreaID_String">
    <xs:restriction base="cim16#IdentifiedObject.mRID" name="AreaID_String-base">
        <xs:maxLength value="18" />
    </xs:restriction>
</xs:simpleType>


<xs:complexType name="ESMP_DateTimeInterval">
    <xs:sequence>
        <xs:element name="start" type="cim16#YMDHM_DateTime" minOccurs="1" maxOccurs="1" />
        <xs:element name="end" type="cim16#YMDHM_DateTime" minOccurs="1" maxOccurs="1" />
    </xs:sequence>
</xs:complexType>


<xs:complexType name="Schedule_MarketDocument">
    <xs:sequence>
        <xs:element name="mRID" type="cim16#ID_String" minOccurs="1" maxOccurs="1" />
        <xs:element name="revisionNumber" type="cim16#Document.revisionNumber" />
    </xs:sequence>
</xs:complexType>


<xs:complexType name="ProcessKind_String">
    <xs:sequence>
        <xs:element name="process" type="cim16#Process.processType" minOccurs="1" maxOccurs="1" />
    </xs:sequence>
</xs:complexType>


<xs:complexType name="ClassificationKind_String">
    <xs:sequence>
        <xs:element name="process" type="cim16#Process.processType" minOccurs="1" maxOccurs="1" />
    </xs:sequence>
</xs:complexType>


<xs:complexType name="ProcessKind_String">
    <xs:sequence>
        <xs:element name="process" type="cim16#Process.processType" minOccurs="1" maxOccurs="1" />
    </xs:sequence>
</xs:complexType>


<xs:complexType name="ClassificationKind_String">
    <xs:sequence>
        <xs:element name="process" type="cim16#Process.processType" minOccurs="1" maxOccurs="1" />
    </xs:sequence>
</xs:complexType>
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Process.classificationType"/>
<xs:element name="sender_MarketParticipant.mRID" type="PartyID_String" minOccurs="1" maxOccurs="1"/>
</xs:element>
<sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
<xs:element name="sender_MarketParticipant.marketRole" type="MarketRoleKind_String" minOccurs="1" maxOccurs="1"/>
</xs:element>
<sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
<xs:element name="receiver_MarketParticipant.mRID" type="PartyID_String" minOccurs="1" maxOccurs="1"/>
</xs:element>
<sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
<xs:element name="receiver_MarketParticipant.marketRole" type="MarketRoleKind_String" minOccurs="1" maxOccurs="1"/>
</xs:element>
<sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Document.createdDateTime"/>
<xs:element name="schedule_Time_Period.timeInterval" type="ESMP_DateTimeInterval" minOccurs="1" maxOccurs="1"/>
</xs:element>
<sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period.timeInterval"/>
<xs:element name="domain.mRID" type="AreaID_String" minOccurs="1" maxOccurs="1"/>
</xs:element>
<sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID" type="PartyID_String" minOccurs="0" maxOccurs="1"/>
</xs:element>
<sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
<xs:element name="subject_MarketParticipant.mRID" type="PartyID_String" minOccurs="1" maxOccurs="1"/>
</xs:element>
<sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID" type="PartyID_String" minOccurs="1" maxOccurs="1"/>
</xs:element>
<sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
<xs:element name="subject_MarketParticipant.marketRole" type="MarketRoleKind_String" minOccurs="0" maxOccurs="1"/>
</xs:element>
<sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
<xs:element name="matching_Time_Period.timeInterval" type="ESMP_DateTimeInterval" minOccurs="0" maxOccurs="1"/>
</xs:element>
<sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period.timeInterval"/>
<xs:element name="TimeSeries" type="TimeSeries" minOccurs="0" maxOccurs="unbounded"/>
</xs:element>
<xs:simpleType name="EnergyProductKind_String">
  <xs:restriction base="ecl:EnergyProductTypeList"/>
</xs:simpleType>


<xs:complexType name="ObjectAggregationKind_String">
  <xs:restriction base="ecl:ObjectAggregationTypeList"/>
</xs:simpleType>


<xs:simpleType name="MeasurementPointID_String">
  <xs:restriction base="ecl:ContractTypeList">
    <xs:extension base="MeasurementPointID_String" name="codingScheme">
      <xs:attribute name="codingScheme" type="ecl:CodingSchemeTypeList" use="required"/>
    </xs:extension>
  </xs:restriction>
</xs:simpleType>


<xs:simpleType name="CapacityContractKind_String">
  <xs:restriction base="ecl:CapacityContractTypeList"/>
</xs:simpleType>


<xs:simpleType name="ResourceID_String">
  <xs:restriction base="ecl:ResourceID"/>
</xs:simpleType>


<xs:simpleType name="MeasurementUnitKind_String">
  <xs:restriction base="ecl:UnitOfMeasureTypeList"/>
</xs:simpleType>


<xs:simpleType name="CurveType_String">
  <xs:restriction base="ecl:CurveTypeList"/>
</xs:simpleType>


<xs:simpleType name="TimeSeries">
  <xs:restriction base="ecl:TimeSeriesVersion"/>
</xs:simpleType>

<xs:element name="businessType" type="BusinessKind_String" minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#TimeSeries.businessType"/>
<xs:element name="objectAggregation" type="ObjectAggregationKind_String" minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#TimeSeries.objectAggregation"/>
<xs:element name="in_Domain.mRID" type="AreaID_String" minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
<xs:element name="out_Domain.mRID" type="AreaID_String" minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
<xs:element name="marketEvaluationPoint.mRID" type="MarketEvaluationPointKind_String" minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
<xs:element name="in_MarketParticipant.mRID" type="MarketParticipantKind_String" minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
<xs:element name="out_MarketParticipant.mRID" type="MarketParticipantKind_String" minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
<xs:element name="marketAgreement.type" type="MarketAgreementKind_String" minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#TimeSeries.mRID"/>
<xs:element name="ID_String" type="ID" minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
<xs:element name="connectingLine_RegsteredResource.mRID" type="ConnectingLine_RegsteredResource" minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
<xs:element name="measurement_Unit.name" type="MeasurementUnitKind_String" minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Unit.name"/>
<xs:element name="curveType" type="CurveType_String" minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#TimeSeries.curveType"/>
<xs:element name="Reason" type="Reason" minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#TimeSeries.Reason"/>
</xs:sequence>
</xs:complexType>