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## 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>2019-07-10</td>
<td>First draft of the document.</td>
</tr>
<tr>
<td>0</td>
<td>2</td>
<td>2019-07-18</td>
<td>Second draft of the document. This new version has into account the comments provided by ESMP subgroup members. Example reason codes and their descriptions have been removed from this document.</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td>2019-09-10</td>
<td>Updates in Anomaly document v5.2: Optional connectingLine_RegisteredResource attribute added to the Anomaly_TimeSeries class. mRID of Document, Series and Timeseries (ID_String type) was enlarged from 35 to 60 characters. Approved by MC.</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>2020-09-16</td>
<td>Updates in Anomaly document v5.3: A new optional processType attribute is added to AnomalyReport_MarketDocument class. 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 AnomalyReport_MarketDocument.

The schema of the AnomalyReport_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 AnomalyReport_MarketDocument

2.1 Anomaly report 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>Anomaly_TimeSeries</td>
<td>TC57CIM::IEC62325::MarketManagement::TimeSeries</td>
</tr>
<tr>
<td>AnomalyReport_MarketDocument</td>
<td>TC57CIM::IEC62325::MarketManagement::MarketDocument</td>
</tr>
<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>Original_MarketDocument</td>
<td>TC57CIM::IEC62325::MarketManagement::MarketDocument</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>Series_Period</td>
<td>TC57CIM::IEC62325::MarketManagement::Period</td>
</tr>
<tr>
<td>Time_Period</td>
<td>TC57CIM::IEC62325::MarketManagement::Period</td>
</tr>
</tbody>
</table>
2.2 Anomaly report 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>
<thead>
<tr>
<th>Name</th>
<th>Complete IsBasedOn Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anomaly_TimeSeries</td>
<td>TC57CIM::IEC62325::MarketManagement::TimeSeries</td>
</tr>
<tr>
<td>AnomalyReport_MarketDocument</td>
<td>TC57CIM::IEC62325::MarketManagement::MarketDocument</td>
</tr>
<tr>
<td>Original_MarketDocument</td>
<td>TC57CIM::IEC62325::MarketManagement::MarketDocument</td>
</tr>
<tr>
<td>Point</td>
<td>TC57CIM::IEC62325::MarketManagement::Point</td>
</tr>
<tr>
<td>Reason</td>
<td>TC57CIM::IEC62325::MarketManagement::Reason</td>
</tr>
<tr>
<td>Series_Period</td>
<td>TC57CIM::IEC62325::MarketManagement::Period</td>
</tr>
</tbody>
</table>

2.2.3 Detailed Anomaly report assembly model

2.2.3.1 AnomalyReport_MarketDocument root class

An anomaly report is generated as soon as all the information necessary to balance a time series of a party becomes available.

If there are any anomalies discovered during this phase, an anomaly report is sent to all involved parties.

The anomaly contains only the time series that have been identified as being in error for the party in question.

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

Table 3 shows all attributes of AnomalyReport_MarketDocument.

<table>
<thead>
<tr>
<th>Order</th>
<th>mut.</th>
<th>Attribute name / Attribute type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>[1..1]</td>
<td>mRID</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>createdDateTime</td>
<td>The date and time of the creation of the document.</td>
</tr>
<tr>
<td>2</td>
<td>[1..1]</td>
<td>sender_MarketParticipant.mRID</td>
<td>The identification of a party in the energy market.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PartyID_String</td>
<td>Document owner.</td>
</tr>
<tr>
<td>3</td>
<td>[1..1]</td>
<td>sender_MarketParticipant.marketRole.type</td>
<td>The identification of the role played by a market player.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MarketRoleKind_String</td>
<td>Document owner.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PartyID_String</td>
<td>The role associated with a MarketParticipant.</td>
</tr>
<tr>
<td>4</td>
<td>[1..1]</td>
<td>receiver_MarketParticipant.mRID</td>
<td>The identification of a party in the energy market.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PartyID_String</td>
<td>Document recipient.</td>
</tr>
<tr>
<td>5</td>
<td>[1..1]</td>
<td>receiver_MarketParticipant.marketRole.type</td>
<td>The identification of the role played by a market player.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MarketRoleKind_String</td>
<td>Document recipient.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PartyID_String</td>
<td>The role associated with a MarketParticipant.</td>
</tr>
</tbody>
</table>
Table 4 shows all association ends of AnomalyReport_MarketDocument with other classes.

Table 4 - Association ends of Anomaly report assembly model::AnomalyReport_MarketDocument with other classes

<table>
<thead>
<tr>
<th>Order</th>
<th>mult.</th>
<th>Class name / Role</th>
<th>Description</th>
</tr>
</thead>
</table>

2.2.3.2 Anomaly_TimeSeries

The time series from the original document containing where an error was detected. A set of time-ordered quantities being exchanged in relation to a product.

Table 5 shows all attributes of Anomaly_TimeSeries.

Table 5 - Attributes of Anomaly report assembly model::Anomaly_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 domain 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. The domain associated with a TimeSeries.</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. The domain associated with a TimeSeries.</td>
</tr>
<tr>
<td>Order</td>
<td>mult.</td>
<td>Attribute name / Attribute type</td>
<td>Description</td>
</tr>
<tr>
<td>-------</td>
<td>-------</td>
<td>---------------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>7</td>
<td>[0..1]</td>
<td>marketEvaluationPoint.mRID</td>
<td>A unique identification of the measurement point. The identification of the location where one or more products are metered. The identification of a measurement point associated with a TimeSeries.</td>
</tr>
<tr>
<td>8</td>
<td>[0..1]</td>
<td>in_MarketParticipant.mRID</td>
<td>The identification of a party in the energy market. The identification of the party putting the product into the in area. The identification of a market participant associated with a TimeSeries.</td>
</tr>
<tr>
<td>9</td>
<td>[0..1]</td>
<td>out_MarketParticipant.mRID</td>
<td>The identification of a party in the energy market. The identification of the party taking the product out of the out area. The identification of a market participant associated with a TimeSeries.</td>
</tr>
<tr>
<td>10</td>
<td>[0..1]</td>
<td>marketAgreement.type</td>
<td>The specification of the kind of the agreement, e.g. long term, daily contract. The identification of an agreement for the allocation of capacity to a party.</td>
</tr>
<tr>
<td>11</td>
<td>[0..1]</td>
<td>marketAgreement.mRID</td>
<td>The unique identification of the agreement. The identification of an agreement for the allocation of capacity to a party.</td>
</tr>
<tr>
<td>12</td>
<td>[0..1]</td>
<td>connectingLine_RegisteredResource.mRID</td>
<td>The unique identification of a resource. In the ESMP context, the &quot;model authority&quot; 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 identification of a resource associated with a TimeSeries.</td>
</tr>
<tr>
<td>13</td>
<td>[1..*]</td>
<td>Series_Period.name</td>
<td>The time interval and resolution for a period associated with a TimeSeries. Association Based On: Anomaly report contextual model::Series_Period.Period[1..*] Anomaly report contextual model::Anomaly_TimeSeries[]</td>
</tr>
<tr>
<td>14</td>
<td>[0..1]</td>
<td>curveType</td>
<td>The identification of the coded representation of the type of curve being described.</td>
</tr>
</tbody>
</table>

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

**Table 6 - Association ends of Anomaly report assembly model::Anomaly_TimeSeries with other classes**
In an anomaly report, errors are detailed at the time series level to identify the anomalies that have occurred. Currently the following have been identified: - time series not matching; - crossborder capacity exceeded; - counterpart time series missing; - counterpart time series quantity differences.

Association Based On:
Anomaly report contextual model::Reason.Reason[1..*]

... Anomaly report contextual model::Anomaly_TimeSeries.[]

<table>
<thead>
<tr>
<th>Order</th>
<th>mult.</th>
<th>Class name / Role</th>
<th>Description</th>
</tr>
</thead>
</table>
| 16    | [1..*] | Reason Reason     | In an anomaly report, errors are detailed at the time series level to identify the anomalies that have occurred. Currently the following have been identified: - time series not matching; - crossborder capacity exceeded; - counterpart time series missing; - counterpart time series quantity differences.

### 2.2.3.3 Original_MarketDocument

The document issued by one of the parties where errors have been detected. All the attributes are the ones of this party’s original time series.

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

Table 7 shows all attributes of Original_MarketDocument.

#### Table 7 - Attributes of Anomaly report assembly model::Original_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>marketParticipant.mRID PartyID_String</td>
<td>The identification of a party in the energy market. --- The identification of the party who sent the &quot;Original_MarketDocument&quot;.</td>
</tr>
<tr>
<td>1</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>2</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>
</tbody>
</table>

Table 8 shows all association ends of Original_MarketDocument with other classes.

#### Table 8 - Association ends of Anomaly report assembly model::Original_MarketDocument with other classes

<table>
<thead>
<tr>
<th>Order</th>
<th>mult.</th>
<th>Class name / Role</th>
<th>Description</th>
</tr>
</thead>
</table>

Association Based On:
Anomaly report contextual model::Anomaly_TimeSeries.TimeSeries[1..1]

... Anomaly report contextual model::Original_MarketDocument.[]

### 2.2.3.4 Point

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

Table 9 shows all attributes of Point.
Table 9 - Attributes of Anomaly report assembly model::Point

<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>position Position_Integer</td>
<td>A sequential value representing the relative position within a given time interval.</td>
</tr>
<tr>
<td>1</td>
<td>[1..1]</td>
<td>quantity Decimal</td>
<td>The principal quantity identified for a point.</td>
</tr>
</tbody>
</table>

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

Table 10 - Association ends of Anomaly report 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 Reason</td>
<td>The Reason information associated with a Point providing motivation information. Association Based On: Anomaly report contextual model::Reason.Reason[0..*] Anomaly report contextual model::Point.[]</td>
</tr>
</tbody>
</table>

2.2.3.5 Reason

The motivation of an act.

Table 11 shows all attributes of Reason.

Table 11 - Attributes of Anomaly report 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>

2.2.3.6 Series_Period

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

Table 12 shows all attributes of Series_Period.

Table 12 - Attributes of Anomaly report 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 ESMP_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 13 shows all association ends of Series_Period with other classes.
Table 13 - Association ends of Anomaly report 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: Anomaly report contextual model::Series_Period[].</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-----</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Anomaly report contextual model::Point.Point[1..*]</td>
</tr>
</tbody>
</table>

2.2.4 Datatypes

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

- ESMP_DateTimeInterval compound
- AreaID_String datatype, codelist CodingSchemeTypeList
- BusinessKind_String datatype, codelist BusinessTypeList
- CapacityContractKind_String datatype, codelist ContractTypeList
- 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
- 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 AnomalyReport_MarketDocument XML schema structure

Figure 3 - AnomalyReport_MarketDocument schema structure
2.2.6 AnomalyReport_MarketDocument XML schema

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

```
<xs:import namespace="urn:entsoe.eu:wgedi:codelists" schemaLocation="urn-entsoe-eu-wgedi-codelists.xsd"/>
```

```
sawsdl:modelReference="http://iec.ch/TCS7/2013/CIM-schema-cim16#String">
  <xs:restriction base="xs:string">
    <xs:maxlength value="60"/>
  </xs:restriction>
</xs:simpleType>
```

```
sawsdl:modelReference="http://iec.ch/TCS7/2013/CIM-schema-cim16#String">
  <xs:restriction base="xs:string">
    <xs:pattern value="[1-9][0-9]{0,2}"/>
  </xs:restriction>
</xs:simpleType>
```

```
sawsdl:modelReference="http://iec.ch/TCS7/2013/CIM-schema-cim16#String">
  <xs:restriction base="cim16#String">
    <xs:maxlength value="18"/>
  </xs:restriction>
</xs:simpleType>
```

```
sawsdl:modelReference="http://iec.ch/TCS7/2013/CIM-schema-cim16#String">
  <xs:extension base="cim16#String">
    <xs:attribute name="codingScheme" type="cim16:CodingSchemeTypeList" use="required"/>
  </xs:extension>
</xs:simpleType>
```

```
sawsdl:modelReference="http://iec.ch/TCS7/2013/CIM-schema-cim16#String">
  <xs:complexType>
    <xs:complexContent>
      <xs:extension base="cim16#String">
        <xs:element ref="urn:iec62325.351:tc57wg16:451:esmpversion" name="ESMPVersion"/>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
```

```
  <xs:import namespace="urn:entsoe.eu:wgedi:codelists" schemaLocation="urn-entsoe-eu-wgedi-codelists.xsd"/>
```

```
sawsdl:modelReference="http://iec.ch/TCS7/2013/CIM-schema-cim16#String">
  <xs:restriction base="xs:string">
    <xs:maxlength value="60"/>
  </xs:restriction>
</xs:simpleType>
```

```
sawsdl:modelReference="http://iec.ch/TCS7/2013/CIM-schema-cim16#String">
  <xs:restriction base="xs:string">
    <xs:pattern value="[1-9][0-9]{0,2}"/>
  </xs:restriction>
</xs:simpleType>
```

```
sawsdl:modelReference="http://iec.ch/TCS7/2013/CIM-schema-cim16#String">
  <xs:restriction base="cim16#String">
    <xs:maxlength value="18"/>
  </xs:restriction>
</xs:simpleType>
```

```
sawsdl:modelReference="http://iec.ch/TCS7/2013/CIM-schema-cim16#String">
  <xs:extension base="cim16#String">
    <xs:attribute name="codingScheme" type="cim16:CodingSchemeTypeList" use="required"/>
  </xs:extension>
</xs:simpleType>
```
<xs:restriction base="xs:string">
  <xs:maxLength value="35"/>
</xs:restriction>
</xs:simpleType>
</xs:complexType>
<xs:complexType name="MeasurementPointID_String">
  <xs:simpleContent>
    <xs:extension base="MeasurementPointID_String">
      <xs:attribute name="codingScheme" type="ecl:CodingSchemeTypeList" use="required"/>
    </xs:extension>
  </xs:simpleContent>
</xs:complexType>
<xs:complexType name="PartyID_String">
  <xs:simpleContent>
    <xs:extension base="PartyID_String">
      <xs:attribute name="codingScheme" type="ecl:CodingSchemeTypeList" use="required"/>
    </xs:extension>
  </xs:simpleContent>
</xs:complexType>
<xs:complexType name="CapacityContractKind_String">
  <xs:simpleContent>
    <xs:extension base="CapacityContractKind_String">
      <xs:attribute name="codingScheme" type="ecl:CodingSchemeTypeList" use="required"/>
    </xs:extension>
  </xs:simpleContent>
</xs:complexType>
<xs:complexType name="ResourceID_String">
  <xs:simpleContent>
    <xs:extension base="ResourceID_String">
      <xs:attribute name="codingScheme" type="ecl:CodingSchemeTypeList" use="required"/>
    </xs:extension>
  </xs:simpleContent>
</xs:complexType>
<xs:complexType name="MeasurementUnitKind_String">
  <xs:simpleContent>
    <xs:extension base="MeasurementUnitKind_String">
      <xs:attribute name="codingScheme" type="ecl:CodingSchemeTypeList" use="required"/>
    </xs:extension>
  </xs:simpleContent>
</xs:complexType>
<xs:complexType name="Anomaly_TimeSeries">
  <xs:complexContent>
    <xs:restriction base="cim16#TimeSeries" use="required"/>
    <xs:restriction base="cim16#String"/>
    <xs:restriction base="cim16#String"/>
    <xs:restriction base="cim16#String"/>
    <xs:restriction base="cim16#String"/>
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    <xs:restriction base="cim16#String"/>
    <xs:restriction base="cim16#String"/>
    <xs:restriction base="cim16#String"/>
<xs:element name="mRID" type="ID_String" minOccurs="1"/>
<xs:element name="version" type="ESMPVersion_String" minOccurs="1" maxOccurs="1"/>
<xs:element name="businessType" type="BusinessKind_String" minOccurs="1" maxOccurs="1"/>
<xs:element name="product" type="EnergyProductKind_String" minOccurs="1" maxOccurs="1"/>
<xs:element name="objectAggregation" type="ObjectAggregationKind_String" minOccurs="1" maxOccurs="1"/>
<xs:element name="in_Domain.mRID" type="AreaID_String" minOccurs="0" maxOccurs="1"/>
<xs:element name="out_Domain.mRID" type="AreaID_String" minOccurs="0" maxOccurs="1"/>
<xs:element name="marketEvaluationPoint.mRID" type="MeasurementPointID_String" minOccurs="0" maxOccurs="1"/>
<xs:element name="in_MarketParticipant.mRID" type="PartyID_String" minOccurs="0" maxOccurs="1"/>
<xs:element name="out_MarketParticipant.mRID" type="PartyID_String" minOccurs="0" maxOccurs="1"/>
<xs:element name="marketAgreement.type" type="" minOccurs="0" maxOccurs="1"/>
<xs:element name="marketAgreement.mRID" type="" minOccurs="0" maxOccurs="1"/>
<xs:element name="connectingLine_RegisteredResource.mRID" type="" minOccurs="0" maxOccurs="1"/>
<xs:element name="ResourceID_String" type="" minOccurs="0" maxOccurs="1"/>
<xs:element name="measurement_Unit.name" type="" minOccurs="0" maxOccurs="1"/>
<xs:element name="curveType" type="CurveType_String" minOccurs="0" maxOccurs="1"/>
<xs:element name="Period" type="Series_Period" minOccurs="1" maxOccurs="unbounded"/>
<xs:element name="Reason" type="Reason" minOccurs="1" maxOccurs="unbounded"/>
</xs:complexType>
<xs:simpleType name="ESMP_DateTime">
<sawsdl:modelReference "http://iec.ch/TC57/2013/CIM-schema-cim16#DateTime"/>
</xs:simpleType>
sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
+ Saga: modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"
+ Saga: minOccurs="1" maxOccurs="1"
+ Saga: modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
+ Saga: element name="receiver_MarketParticipant.marketRole.type"
+ Saga: type="MarketRoleKind_String" minOccurs="1" maxOccurs="1"
+ Saga: modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
+ Saga: element name="receiver_MarketParticipant.marketRole.type"
+ Saga: type="MarketRoleKind_String" minOccurs="1" maxOccurs="1"
+ Saga: modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
+ Saga: element name="receiver_MarketParticipant.marketRole.type"
+ Saga: type="MarketRoleKind_String" minOccurs="1" maxOccurs="1"
+ Saga: modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
+ Saga: element name="receiver_MarketParticipant.marketRole.type"
+ Saga: type="AreaID_String" minOccurs="1" maxOccurs="1"
+ Saga: modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
+ Saga: element name="process.processType"
+ Saga: type="ProcessKind_String" minOccurs="0" maxOccurs="1"
+ Saga: modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Process.processType"/>
+ Saga: element name="Anomaly_MarketDocument"
+ Saga: type="Original_MarketDocument" minOccurs="0" maxOccurs="unbounded"
+ Saga: sequence
+ Saga: complexType name="Original_MarketDocument"
+ Saga: sequence
+ Saga: elementType name="marketParticipant.mRID" type="PartyID_String"
+ Saga: minOccurs="1" maxOccurs="1"
+ Saga: modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
+ Saga: element name="mRID" type="ID_String" minOccurs="1"
+ Saga: maxOccurs="1"
+ Saga: modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
+ Saga: element name="revisionNumber" type="ESMPVersion_String"
+ Saga: minOccurs="1" maxOccurs="1"
+ Saga: element name="TimeSeries" type="Anomaly_TimeSeries"
+ Saga: minOccurs="1" maxOccurs="1"
+ Saga: sequence
+ Saga: complexType name="Position_Integer"
+ Saga: modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Integer">
+ Saga: restriction base="xs:integer">
+ Saga: maxInclusive value="999999"/>
+ Saga: minInclusive value="1"/>
+ Saga: restriction>
+ Saga: simpleType name="Point"
+ Saga: modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Point"/>
+ Saga: sequence
+ Saga: elementType name="position" type="Position_Integer"
+ Saga: minOccurs="1" maxOccurs="1"
+ Saga: modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Point.position"/>
<xs:element name="quantity" type="xs:decimal" minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Point.quantity"/>

<xs:element name="Reason" type="Reason" minOccurs="0" maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Point.Reason"/>
</xs:sequence>
</xs:complexType>
</xs:simpleType>

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

<xs:simpleType name="ReasonText_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
  <xs:restriction base="xs:string">
    <xs:maxLength value="512"/>
  </xs:restriction>
</xs:simpleType>

<xs:complexType name="Reason" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Reason">
  <xs:sequence>
    <xs:element name="code" type="ReasonCode_String" minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Reason.code"/>
    <xs:element name="text" type="ReasonText_String" minOccurs="0" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Reason.text"/>
  </xs:sequence>
</xs:complexType>

<xs:complexType name="Series_Period" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period">
  <xs:sequence>
    <xs:element name="timeInterval" type="ESMP_DateTimeInterval" minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period.timeInterval"/>
    <xs:element name="resolution" type="xs:duration" minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period.resolution"/>
    <xs:element name="Point" type="Point" minOccurs="1" maxOccurs="unbounded" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Period.Point"/>
  </xs:sequence>
</xs:complexType>
</xs:schema>