WEATHER CONFIGURATION DOCUMENT
UML MODEL AND SCHEMA

2021-06-01
APPROVED DOCUMENT
VERSION 1.0
Table of Contents

1 Objective ......................................................................................................................5
2 WeatherConfiguration_MarketDocument ..................................................................6
2.1 Weather configuration contextual model ..................................................................6
  2.1.1 Overview of the model ......................................................................................6
  2.1.2 IsBasedOn relationships from the European style market profile ......................7
2.2 Weather configuration assembly model ......................................................................8
  2.2.1 Overview of the model ......................................................................................8
  2.2.2 IsBasedOn relationships from the European style market profile ......................8
  2.2.3 Detailed Weather configuration assembly model ..............................................9
    2.2.3.1 WeatherConfiguration_MarketDocument root class ..................................9
    2.2.3.2 EnvironmentalMonitoringStation ...............................................................10
    2.2.3.3 RegisteredResource ......................................................................................10
    2.2.3.4 TimeSeries ..................................................................................................11
  2.2.4 Datatypes ...........................................................................................................12
  2.2.5 WeatherConfiguration_MarketDocument XML schema structure ....................13
  2.2.6 WeatherConfiguration_MarketDocument XML schema ....................................14

List of figures
23 Figure 1 - Weather configuration contextual model ..................................................6
24 Figure 2 - Weather configuration assembly model ....................................................8
25 Figure 3 - WeatherConfiguration_MarketDocument schema structure ....................13

List of tables
27 Table 1 - IsBasedOn dependency ..............................................................................7
28 Table 2 - IsBasedOn dependency ..............................................................................8
29 Table 3 - Attributes of Weather configuration assembly model::WeatherConfiguration_MarketDocument ..............................................................9
31 Table 4 - Association ends of Weather configuration assembly model::WeatherConfiguration_MarketDocument with other classes ..............................................10
33 Table 5 - Attributes of Weather configuration assembly model::EnvironmentalMonitoringStation ..........................................................10
35 Table 6 - Attributes of Weather configuration assembly model::RegisteredResource .............................................................11
36 Table 7 - Attributes of Weather configuration assembly model::TimeSeries ..........11
37 Table 8 - Association ends of Weather configuration assembly model::TimeSeries with other classes .................................................................12
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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>1</td>
<td>0</td>
<td>2021-06-01</td>
<td>First draft of the document. Changes in weather configuration document xsd v1.1: • mRIDs were extended 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 WeatherConfiguration_MARKETDocument.

The schema of the WeatherConfiguration_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 WeatherConfiguration_MarketDocument

2.1 Weather configuration contextual model

2.1.1 Overview of the model

Figure 1 shows the model.

Figure 1 - Weather configuration contextual 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>Associated_Domain</td>
<td>TC57CIM::IEC62325::MarketManagement::Domain</td>
</tr>
<tr>
<td>CoordinateSystem</td>
<td>TC57CIM::IEC61968::Common::CoordinateSystem</td>
</tr>
<tr>
<td>DateAndOrTime</td>
<td>TC57CIM::IEC62325::MarketManagement::DateAndOrTime</td>
</tr>
<tr>
<td>EnvironmentalMonitoringStation</td>
<td>TC57CIM::IEC62325::MarketCommon::EnvironmentalMonitoringStation</td>
</tr>
<tr>
<td>Location</td>
<td>TC57CIM::IEC61968::Common::Location</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>MktPSRTYPE</td>
<td>TC57CIM::IEC62325::MarketManagement::MktPSRTYPE</td>
</tr>
<tr>
<td>PositionPoint</td>
<td>TC57CIM::IEC61968::Common::PositionPoint</td>
</tr>
<tr>
<td>RegisteredResource</td>
<td>TC57CIM::IEC62325::MarketCommon::RegisteredResource</td>
</tr>
<tr>
<td>TimeSeries</td>
<td>TC57CIM::IEC62325::MarketManagement::TimeSeries</td>
</tr>
<tr>
<td>WeatherConfiguration_MarketDocument</td>
<td>TC57CIM::IEC62325::MarketManagement::MarketDocument</td>
</tr>
</tbody>
</table>
2.2 Weather configuration assembly model

2.2.1 Overview of the model

Figure 2 shows the model.

```
Figure 2 - Weather configuration assembly 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>EnvironmentalMonitoringStation</td>
<td>TC57CIM::IEC62325::MarketCommon::EnvironmentalMonitoringStation</td>
</tr>
<tr>
<td>RegisteredResource</td>
<td>TC57CIM::IEC62325::MarketCommon::RegisteredResource</td>
</tr>
<tr>
<td>TimeSeries</td>
<td>TC57CIM::IEC62325::MarketCommon::TimeSeries</td>
</tr>
<tr>
<td>WeatherConfiguration_MarketDocument</td>
<td>TC57CIM::IEC62325::MarketManagement::MarketDocument</td>
</tr>
</tbody>
</table>
```
2.2.3 Detailed Weather configuration assembly model

2.2.3.1 WeatherConfiguration_MarketDocument root class

An electronic document containing the information necessary to satisfy the requirements of weather configuration information.

Table 3 shows all attributes of WeatherConfiguration_MarketDocument.

### Table 3 - Attributes of Weather configuration assembly model::WeatherConfiguration_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>sender_MarketParticipant.mRID PartyID_String</td>
<td>The identification of a party in the energy market. The originator of the document is identified by a unique coded identification. The MarketParticipant that transmits the electronic document.</td>
</tr>
<tr>
<td>4</td>
<td>[1..1]</td>
<td>sender_MarketParticipant.marketRole.type MarketRoleKind_String</td>
<td>The identification of the role played by a market player. The role associated with a MarketParticipant.</td>
</tr>
<tr>
<td>5</td>
<td>[1..1]</td>
<td>receiver_MarketParticipant.mRID PartyID_String</td>
<td>The identification of a party in the energy market. The document recipient.</td>
</tr>
<tr>
<td>6</td>
<td>[1..1]</td>
<td>receiver_MarketParticipant.marketRole.type MarketRoleKind_String</td>
<td>The identification of the role played by a market player. The role associated with a MarketParticipant.</td>
</tr>
<tr>
<td>7</td>
<td>[1..1]</td>
<td>createdDateTime ESMP_DateTime</td>
<td>The date and time of the creation of the document.</td>
</tr>
<tr>
<td>8</td>
<td>[1..1]</td>
<td>docStatus Action_Status</td>
<td>The identification of the condition or position of the document with regard to its standing.</td>
</tr>
</tbody>
</table>

Table 4 shows all association ends of WeatherConfiguration_MarketDocument with other classes.
Table 4 - Association ends of Weather configuration assembly
model::WeatherConfiguration_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 EnvironmentalMonitoringStation

An environmental monitoring station, examples of which could be a weather station or a seismic monitoring station.

Table 5 shows all attributes of EnvironmentalMonitoringStation.

Table 5 - Attributes of Weather configuration assembly
model::EnvironmentalMonitoringStation

<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 ResourceID_String</td>
<td>The unique identification of an environmental monitoring station.</td>
</tr>
<tr>
<td>1</td>
<td>[0..1]</td>
<td>name String</td>
<td>The name is any free human readable and possibly non unique text naming the object.</td>
</tr>
<tr>
<td>2</td>
<td>[0..1]</td>
<td>location.mRID String</td>
<td>The unique identification of a location. --- Location of this monitoring station.</td>
</tr>
<tr>
<td>3</td>
<td>[0..1]</td>
<td>location.name String</td>
<td>The name is any free human readable and possibly non unique text naming the object. --- Location of this monitoring station.</td>
</tr>
<tr>
<td>4</td>
<td>[0..1]</td>
<td>location.positionPoints.xPosition String</td>
<td>X axis position. --- Location of this monitoring station. --- Sequence of position points describing this location, expressed in coordinate system 'Location.CoordinateSystem'.</td>
</tr>
<tr>
<td>5</td>
<td>[0..1]</td>
<td>location.positionPoints.yPosition String</td>
<td>Y axis position. --- Location of this monitoring station. --- Sequence of position points describing this location, expressed in coordinate system 'Location.CoordinateSystem'.</td>
</tr>
<tr>
<td>6</td>
<td>[0..1]</td>
<td>location.positionPoints.zPosition String</td>
<td>(if applicable) Z axis position. --- Location of this monitoring station. --- Sequence of position points describing this location, expressed in coordinate system 'Location.CoordinateSystem'.</td>
</tr>
<tr>
<td>7</td>
<td>[0..1]</td>
<td>location.coordinateSystem.mRID CoordinateSystemKind_String</td>
<td>The identification of a type of coordinate system. --- Location of this monitoring station. --- Coordinate system used to describe position points of this location.</td>
</tr>
</tbody>
</table>

2.2.3.3 RegisteredResource

A resource that is registered through the market participant registration system. Examples include generating unit, load, and non-physical generator or load.
Table 6 shows all attributes of RegisteredResource.

**Table 6 - Attributes of Weather configuration assembly model::RegisteredResource**

<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</td>
<td>ResourceID_String</td>
</tr>
<tr>
<td>1</td>
<td>[0..1]</td>
<td>name</td>
<td>String</td>
</tr>
<tr>
<td>2</td>
<td>[1..1]</td>
<td>pSRType.psrType</td>
<td>PsrType_String</td>
</tr>
<tr>
<td>3</td>
<td>[0..1]</td>
<td>location.mRID</td>
<td>String</td>
</tr>
<tr>
<td>4</td>
<td>[0..1]</td>
<td>location.name</td>
<td>String</td>
</tr>
<tr>
<td>5</td>
<td>[0..1]</td>
<td>location.positionPoints.xPosition</td>
<td>String</td>
</tr>
<tr>
<td>6</td>
<td>[0..1]</td>
<td>location.positionPoints.yPosition</td>
<td>String</td>
</tr>
<tr>
<td>7</td>
<td>[0..1]</td>
<td>location.positionPoints.zPosition</td>
<td>String</td>
</tr>
<tr>
<td>8</td>
<td>[0..1]</td>
<td>location.coordinateSystem.mRID</td>
<td>CoordinateSystemKind_String</td>
</tr>
</tbody>
</table>

2.2.3.4 TimeSeries

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

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

Table 7 shows all attributes of TimeSeries.

**Table 7 - Attributes of Weather configuration 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</td>
<td>ID_String</td>
</tr>
<tr>
<td>1</td>
<td>[0..1]</td>
<td>description</td>
<td>String</td>
</tr>
</tbody>
</table>
### Datatypes

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

- **Action_Status** compound
- **AreaID_String** datatype, codelist CodingSchemeTypeList
- **CoordinateSystemKind_String** datatype, codelist CoordinateSystemTypeList
- **ESMP_DateTime** datatype
- **ESMPVersion_String** datatype
- **ID_String** datatype
- **MarketRoleKind_String** datatype, codelist RoleTypeList
- **MessageKind_String** datatype, codelist MessageTypeList
- **PartyID_String** datatype, codelist CodingSchemeTypeList
- **PsrType_String** datatype, codelist AssetTypeList
- **ResourceID_String** datatype, codelist CodingSchemeTypeList
- **Status_String** datatype, codelist StatusTypeList
2.2.5 WeatherConfiguration_MarketDocument XML schema structure

Figure 3 - WeatherConfiguration_MarketDocument schema structure
The schema to be used to validate XML instances is to be identified by:

```
urn:iec62325.351:tc57wg16:451-n:weatherconfigurationdocument:1:1
```

```xml
<?xml version="1.0" encoding="utf-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
    targetNamespace="urn:iec62325.351:tc57wg16:451-n:weatherconfigurationdocument:1:1"
    schemaLocation="urn-entsoe-eu-wgedi-codelists.xsd"/>
<xs:import namespace="urn:entsoe.eu:wgedi:codelists" schemaLocation="urn-entsoe-eu-wgedi-codelists.xsd"/>
<xs:simpleType name="ResourceID_String-base" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
  <xs:restriction base="xs:string">
    <xs:maxlength value="60"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="ResourceID_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
  <xs:extension base="ResourceID_String-base">
    <xs:attribute name="codingScheme" type="ecl:CodingSchemeTypeList" use="required"/>
  </xs:extension>
</xs:simpleType>
<xs:simpleType name="CoordinateSystemKind_String" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#String">
  <xs:restriction base="ecl:CoordinateSystemTypeList"/>
</xs:simpleType>
<xs:simpleType name="EnvironmentalMonitoringStation" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#EnvironmentalMonitoringStation">
  <xs:sequence>
    <xs:element name="mRID" type="ResourceID_String" minOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
    <xs:element name="name" type="xs:string" minOccurs="0" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.name"/>
    <xs:element name="location.mRID" type="xs:string" minOccurs="0" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
    <xs:element name="location.name" type="xs:string" minOccurs="0" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.name"/>
  </xs:sequence>
</xs:simpleType>
```
<xs:element name="location.positionPoints.xPosition">
  <xs:simpleType name="PsrType_String">
    <xs:restriction base="ecl:AssetTypeList" />
  </xs:simpleType>
  <xs:complexType name="RegisteredResource">
    <xs:sequence>
      <xs:element type="cim16#IdentifiedObject.mRID" maxOccurs="1"/>
      <xs:element name="mRID" type="ResourceID_String" minOccurs="1" maxOccurs="1"/>
      <xs:element name="name" type="xs:string" minOccurs="0" maxOccurs="1"/>
      <xs:element type="cim16#MktPsrType.psrType" minOccurs="1" maxOccurs="1"/>
      <xs:element name="location.mRID" type="xs:string" minOccurs="0" maxOccurs="1"/>
      <xs:element name="location.positionPoints.xPosition"/>
      <xs:element name="location.positionPoints.yPosition"/>
      <xs:element name="location.positionPoints.zPosition"/>
      <xs:element name="location.coordinateSystem.mRID"/>
      <xs:element name="PsrType.psrType" type="PsrType_String" minOccurs="1" maxOccurs="1"/>
      <xs:element name="PsrType.name" type="xs:string" minOccurs="0" maxOccurs="1"/>
      <xs:element name="PsrType.mRID" type="cim16#IdentifiedObject.mRID" maxOccurs="1"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
sawsdl:modelReference=http://iec.ch/TC57/2013/CIM-schema-cim16#ID_String" maxOccurs="1" sawsdl:modelReference=http://iec.ch/TC57/2013/CIM-schema-cim16#String" name=codingScheme" type="ecl:CodingSchemeTypeList" use="required"/>
</xs:complexType>

sawsdl:modelReference=http://iec.ch/TC57/2013/CIM-schema-cim16#TimeSeries" type="xs:complexType"


sawsdl:modelReference=http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>

sawsdl:modelReference=http://iec.ch/TC57/2013/CIM-schema-cim16#DateAndOrTime.date" type="xs:date" minOccurs="0" maxOccurs="1" sawsdl:modelReference=http://iec.ch/TC57/2013/CIM-schema-cim16#DateAndOrTime.date"/>
  
xs:element name="end_DateAndOrTime.date" type="xs:date">
  
xs:element name="start_DateAndOrTime.date" type="xs:date">
  
xs:element name="AreaID_String" type="sawsdl:modelReference["http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"="AreaID_String-0"]"/>


<xs:element name="EnvironmentalMonitoringStation" type="EnvironmentalMonitoringStation" minOccurs="0" maxOccurs="unbounded">


</xs:sequence>
</xs:complexType>

<xs:simpleType name="ESMPVersion_String">
    <xs:restriction base="xs:string">
        <xs:pattern value="[1-9]{1}\{0-9}\{0,2}\"/>
    </xs:restriction>
</xs:simpleType>


<xs:complexType name="PartyID_String-base">
    <xs:simpleContent>
        <xs:extension base="PartyID_String-base">
            <xs:attribute name="codingScheme" type="ecl:CodingSchemeTypelist" use="required"/>
        </xs:extension>
    </xs:simpleContent>
</xs:complexType>


<xs:complexType name="MarketRoleKind_String">
    <xs:complexContent>
        <xs:restriction base="ecl:RoleTypeList">
            <xs:attribute name="codingScheme" type="ecl:CodingSchemeTypelist" use="required"/>
        </xs:restriction>
    </xs:complexContent>
</xs:complexType>


<xs:complexType name="ESMP_DateTime">
    <xs:complexContent>
        <xs:restriction base="xs:dateTime">
            <xs:attribute name="codingScheme" type="ecl:CodingSchemeTypelist" use="required"/>
        </xs:restriction>
    </xs:complexContent>
</xs:complexType>

<xs:complexType>
  <xs:sequence>
    <xs:element name="mRID" type="ID_String" minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
    <xs:element name="revisionNumber" type="ESMPVersion_String" minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Document.revisionNumber"/>
    <xs:element name="type" type="MessageKind_String" minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Document.type"/>
    <xs:element name="sender_MarketParticipant.mRID" type="PartyID_String" minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
    <xs:element name="sender_MarketParticipant.marketRole.type" type="MarketRoleKind_String" minOccurs="1" maxOccurs="1" 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" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#IdentifiedObject.mRID"/>
    <xs:element name="receiver_MarketParticipant.marketRole.type" type="MarketRoleKind_String" minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#MarketRole.type"/>
    <xs:element name="createdDateTime" type="ESMP_DateTime" minOccurs="1" maxOccurs="1" sawsdl:modelReference="http://iec.ch/TC57/2013/CIM-schema-cim16#Document.createdDateTime"/>
  </xs:sequence>
</xs:complexType>