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**Meter Reading Process**

**Model Documentation**



The European message format for the gas market

*Version 6.1*

*Document Version: 4*  
*Schema Version: 1*

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# 47 1 Model Detail

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## 2 Document usage decision table

The following decision table provides a summary of the message requirements.

Meter Reading Document	Measurement data
identification	Mandatory
version	Mandatory
DocumentCode	87G
creationDateTime	Mandatory
validityPeriod	Mandatory
issuer_MarketParticipant.identification	Mandatory; codingScheme = 305 (EIC Party X code)
issuer_MarketParticipant.MarketRole.roleCode	ZSO = System Operator ZUE = Metered Data Responsible
recipient_MarketParticipant.identification	Mandatory; codingScheme = 305 (EIC Party X code)
recipient_MarketParticipant.MarketRole.roleCode	ZAA = Allocation Responsible ZSH = Balance Responsible Party ZSO = System Operator UD = Final Customer
ConnectionPoint.identification	May be used; codingScheme = 305 (EIC Measurement Point Z or Y code) or ZSO
Meter.identification	Not used for the relation document header to Connection Point. However it may be used in the relation document header to meter or Connection Point to Meter with codingScheme = 305 (EIC Measurement Point Z or Y code) or ZSO

Meter Reading Document	Measurement data
<p>MeasureType_Composition.chemicalCompoundCode  <b>OR</b>                      MeasureType_Composition.physicalPropertyCode</p> <p><b>NOTE: Only one MeasureType_Composition attribute per instance.</b></p>	<p>MeasureType_Composition.chemicalCompoundCode values:</p> <ul style="list-style-type: none"> <li>ZGL = Lowest announced GCV.</li> <li>ZN = Nitrogen.</li> <li>ZNV = Net calorific value.</li> <li>ZO = Oxygen (O2).</li> <li>ZQD = CO2 content.</li> <li>ZQE = Hydrogen sulphide content (H2S).</li> <li>ZQF = Propane content C3H8.</li> <li>ZQG = Ethane Content C2H6.</li> <li>ZQH = Methane content CH4.</li> <li>ZQI = i-Butane content i-C4H10.</li> <li>ZQO = n-Butane content n-C4H10.</li> <li>ZQJ = Content C6+.</li> <li>ZQK = i-Pentane content i-C5H12.</li> <li>ZQP = n-Pentane content n-C5H12.</li> <li>ZQQ = neo-Pentane content neo-C5H12.</li> <li>ZQN = Mercaptan (CnH2n+1SH).</li> <li>ZS = Sulphur (S).</li> <li>ZQR = Hydrogen (H2) content.</li> <li>ZQS= Water dew point at contract conditions.</li> <li>DN = Density.</li> <li>DN1 = Relative density.</li> <li>ZGK = GCV.</li> <li>ZQA = Water dew point at line pressure conditions</li> <li>ZQB = Hydrocarbon dew point.</li> <li>ZWI = Wobbe index.</li> <li>ZQT = Methanol (MeOH) content.</li> <li>ZQU = Triethylene glycol (TEG) content</li> <li>ZQV = Monoethylene glycol (MEG) content</li> </ul> <hr/> <p>MeasureType_Composition.physicalPropertyCode values:</p> <ul style="list-style-type: none"> <li>TC = Temperature.</li> <li>ZCD = Relative density meter reading.</li> </ul>

Meter Reading Document	Measurement data
	<p>ZLA = Volume at normal conditions (Vn).                      ZLB = Volume at 20°C or 293.15K (V20°C).                      ZPR = Pressure.                      ZWP = Volume at measurement conditions                      ZWO = Compressibility factor Z.                      ZWQ = Quantity (kWh)                      ZCA = Hs flow computer reading.                      ZCB = Carbon dioxide flow computer reading.                      ZCC = Nitrogen flow computer reading.                      ZVC = Position of volume counter at normal conditions                      ZVR = Position of volume counter at measurement conditions                      ZEC = Position of energy counter                      ZED=Gross mass                      ZEE=Net mass</p>
<p>MeasuredType.quantity.measureUnit</p>	<p>BAR = Bar.                      CEL = Celsius.                      GP = Milligram per cubic meter (mg/m3).                      JM = Megajoule per cubic meter (MJ/m3).                      KC1 = Kilocalorie per m3 (kcal/m3).                      KMQ = Kilogram per cubic meter (kg/m3).                      KW1 = Kilowatthour per hour (kWh/h).                      KW2 = Kilowatthour per day (kWh/d).                      KW3 = Kilowatt hour per cubic meter (kWh/m3).                      KWH = Kilowatt hour.                      MOL = Mole %.                      MPA = MegaPascal (MPa).                      MQ5 = Normal cubic meter (nm<sup>3</sup>).                      MQ6 = Normal cubic meter per hour (m3/h).                      MQ7 = Normal cubic meter per day (m3/d).                      MQH = Cubic meters (m3/h).                      MTQ = Cubic meter (m3).                      P1 = Percent.                      A06 = Litres (L).</p>

Meter Reading Document	Measurement data
	A07 = Parts per million (PPM). A13=Tonnes A14=Kg KW4=kWh/kg
Period.timeInterval	Mandatory
period.quantity.amount	Mandatory
Period.gasDirectionCode	May be used. Z02 = Input. Z03 = Output.
Period.status.statusCode	03G = Estimated. 04G = Provisional. 05G = Definitive. 58G = Validated. 59G = Replacement value. 60G = Average hourly value.

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### 63 3 Metering Process

#### 64 3.1 Meter Reading Document (METRED)

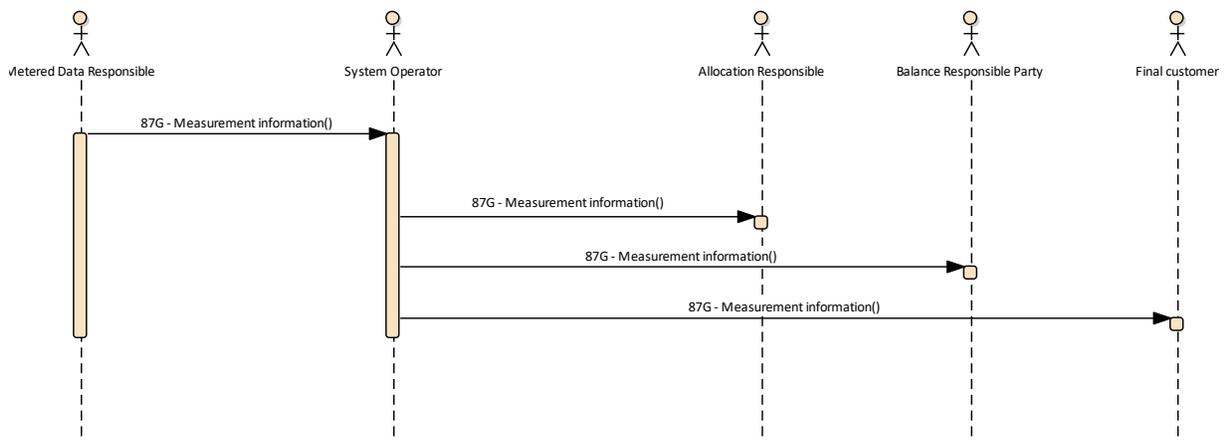
##### 65 3.1.1 Meter Reading Business Process

##### 66 3.1.1.1 Measured Data Sequence

67 The Metered Data Responsible provides the measured data to the System Operator. The System Operator provides  
68 data to the Allocation Responsible.

69 The System Operator may, if requested, provide this information to Balance Responsible Party's, Final customer or  
70 adjacent System Operator.

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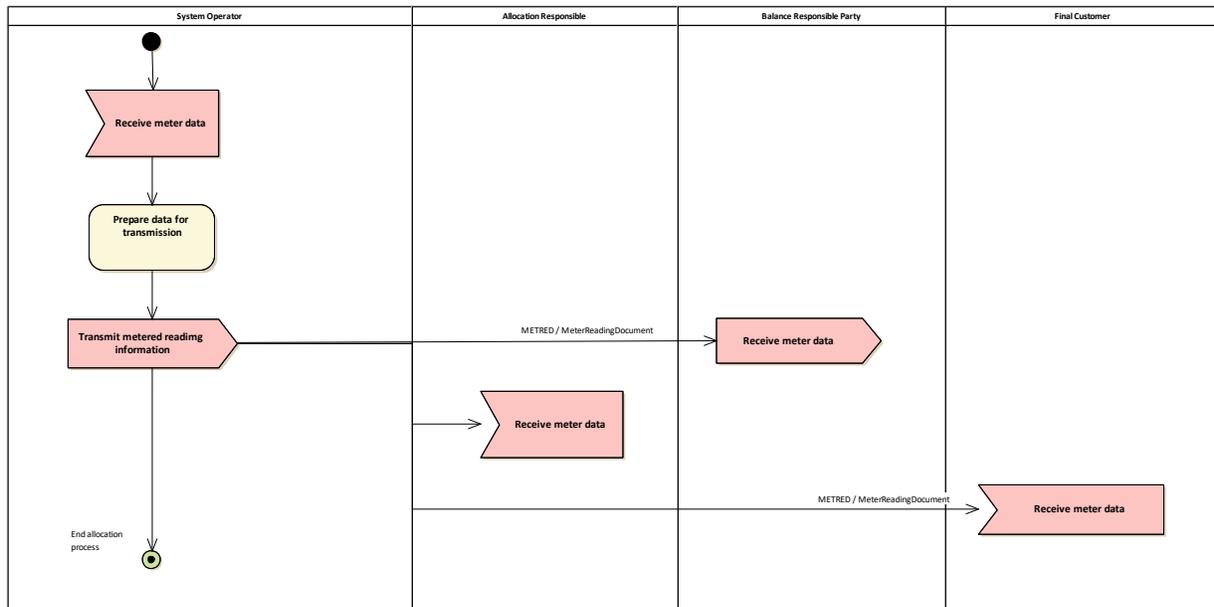
Figure: 1 Measured data sequence

77 **3.1.1.2 Metered Data Workflow**

78 The Metered Data Responsible transmits metered information to the System Operator. This information may be  
 79 provided with meters that can be read in real time.

80 Generally the metered information is obtained directly by the System Operator from the metering equipment in real  
 81 time.

82 The System Operator also provides its counter System Operators with their relevant metered information.  
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 85



86 **Figure: 2 Metered data workflow**

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### 3.1.2 Meter Reading Document Contextual Model

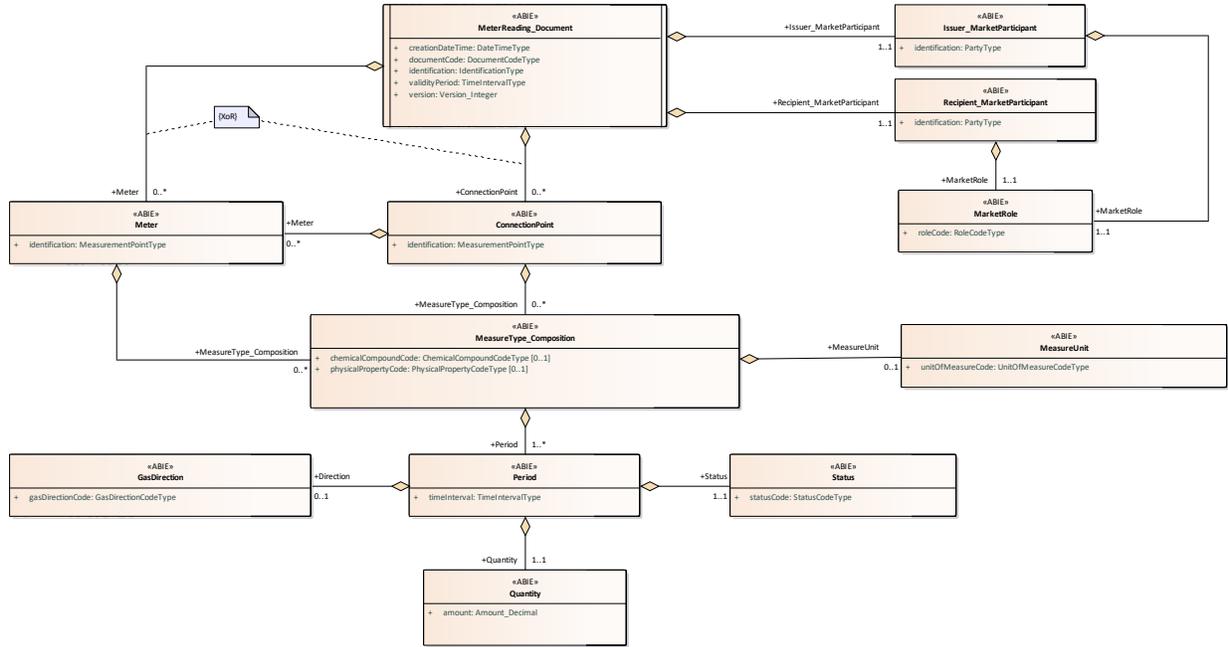


Figure: 3 Meter Reading Document Contextual Model

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### 3.1.3 Meter Reading Document Assembly Model

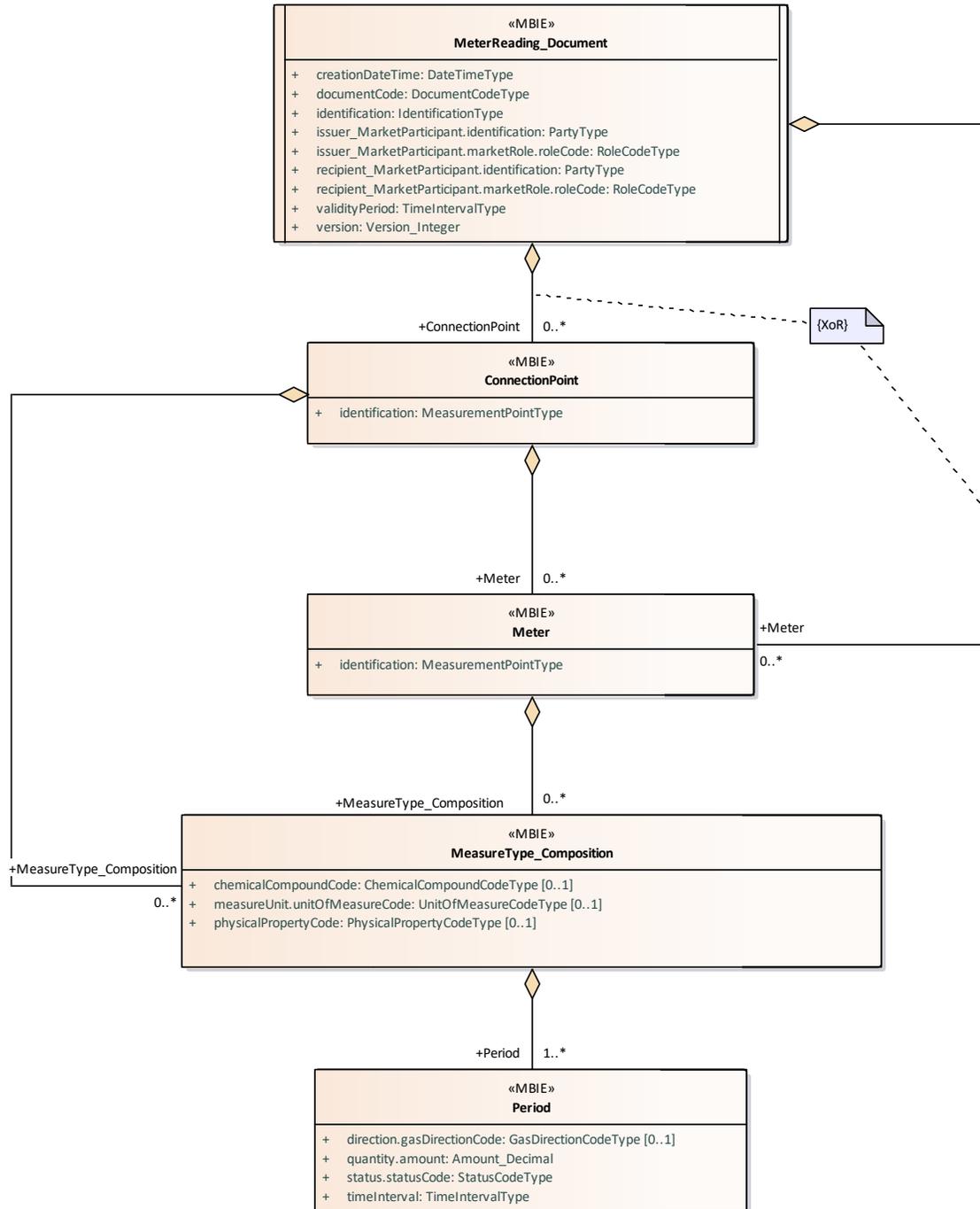


Figure: 4 **Meter Reading Document Assembly Model**

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### 106 3.1.3.1 MeterReading\_Document

#### 107 3.1.3.1.1 Attributes

108

Attribute	Description	Multiplicity
creationDateTime	Date and time of the creation of the current document expressed in UTC.	
documentCode	Coded representation of the type of the electronic document. (Refer to Edig@s DocumentCodeTypeCodeList for the list of valid codes).	
identification	A unique identification of a document that is assigned by the issuer. Identification of the document describing the Meter Reading Document.	
issuer_MarketParticipant.identification	The identification of the party participating in the market. --- The issuer of the Meter Reading Document.	
issuer_MarketParticipant.marketRole.roleCode	A code identifying the role played by a market participant in the market. (Refer to Edig@s RoleCodeTypeCodeList for the list of valid codes). --- The issuer of the Meter Reading Document.	
recipient_MarketParticipant.identification	The identification of the party participating in the market. --- The recipient of the Meter Reading Document.	
recipient_MarketParticipant.marketRole.roleCode	A code identifying the role played by a market participant in the market. (Refer to Edig@s RoleCodeTypeCodeList for the list of valid codes). --- The recipient of the Meter Reading Document.	
validityPeriod	The start and end date and time of the period of validity covered in the document.	
version	Version of the document being sent. The first version number for a given document identification shall normally be 1. The document version number must be incremented for each retransmission of a document that contains changes to the previous version. The receiving system shall only accept a document with a version number which is greater than the previous version number of the same document.	

### 109 3.1.3.2 ConnectionPoint

110 An interconnection point, whether it is physical or virtual, between two or more Member States as well as  
111 interconnection between adjacent entry-exit-systems within the same Member States.

112 The Connection Point class provides all the information concerning the quantities that have been metered on a per  
113 Measure Type class basis.

114

#### 115 3.1.3.2.1 Attributes

116

Attribute	Description	Multiplicity
identification	The identification of a connection point.	

117

118

### 119 3.1.3.3 Meter

120 The identification of a meter.

121 The Meter class provides the identification of a specific meter and beneath it identifies per Measured Type  
122 Composition class the information that has been measured for the validity period defined in the document header.

#### 124 3.1.3.3.1 Attributes

125

Attribute	Description	Multiplicity
identification	The identification of a specific measurement point.	

### 126 3.1.3.4 MeasureType\_Composition

127 A coded identification of the composition of gas.

128

#### 129 3.1.3.4.1 Attributes

130

Attribute	Description	Multiplicity
chemicalCompoundCode	The code identifying the chemical properties of gas. (Refer to Edig@s ChemicalCompoundCodeTypeCodeList for the list of valid codes).	[0..1]
measureUnit.unitOfMeasureCode	The coded representation of a unit of measure using the UN/CEFACT Recommendation 20 common codes. (Refer to Edig@s UnitOfMeasureCodeTypeCodeList for the list of valid codes).	[0..1]
physicalPropertyCode	The code identifying the physical properties of gas. (Refer to Edig@s PhysicalPropertyCodeTypeCodeList for the list of valid codes).	[0..1]

### 131 3.1.3.5 Period

132 The period that the dependent information is for.

133 There must always be one or many Period classes related to a Measured Type Composition class.

134

#### 135 3.1.3.5.1 Attributes

136

Attribute	Description	Multiplicity
direction.gasDirectionCode	A code identifying the direction of a gas flow. (Refer to Edig@s GasDirectionCodeTypeCodeList for the list of valid codes). --- The direction of the energy flow shall always be reported as seen from the perspective of the issuers System Operator's area.	[0..1]
quantity.amount	The amount of a quantity.	
status.statusCode	A code providing the status of an object. (Refer to Edig@s StatusCodeTypeCodeList for the list of valid codes).	
timeInterval	The start and end date and time for the period. The time is expressed in UTC.	

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## 139 4 Document Change Log

### 140 4.1 Version

#### 141 4.1.1 Attributes

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Attribute	Description	Multiplicity
Version 1 2020-06-29	Initial release.	
Version 2 2021-06-01	Release 6.1 Updated schema, and made gasDirection attribute optional.	
Version 3 2022-11-02	Added the PhysicalPropertyCodes ZVC, ZVR, and ZEC	
Version 4 2024-08-05	Added the measurementUnit A13, A14 and KW4 Added PhysicalPropertyCodes ZED and ZEE	

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