

Meter Reading Process

Model Documentation



The European message format for the gas market

Version 6.1

Document Version: 5
Schema Version: 1

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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 (System Operator)
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 (System Operator)
MeasureType_Composition.chemicalCompoundCode OR MeasureType_Composition.physicalPropertyCode NOTE: Only one MeasureType_Composition attribute per instance.	MeasureType_Composition.chemicalCompoundCode values: ZGL = Lowest announced GCV ZN = Nitrogen ZNV = Net caloric value ZO = Oxygen (O2) ZQD = CO2 content

Meter Reading Document	Measurement data
	<p> ZQE = Hydrogen sulphide content (H₂S) ZQF = Propane content C₃H₈. ZQG = Ethan Content C₂H₆ ZQH = Methane content CH₄ ZQI = i-Butane content i-C₄H₁₀ ZQO = n-Butane content n-C₄H₁₀ ZQJ = Content C₆+ ZQK = i-Pentane content i-C₅H₁₂ ZQP = n-Pentane content n-C₅H₁₂ ZQQ = neo-Pentane content neo-C₅H₁₂ ZQN = Mercaptan (C_nH_{2n+1}SH) ZS = Sulphur (S) ZQR = Hydrogen (H₂) content ZQS= Water dew point at contract conditions DN = Density DN1 = Relative density ZGK = GCV ZQA = Water dew point at line pressure conditions ZQB = Hydrocarbon dew point ZWI = Wobbe index ZQT = Methanol (MeOH) content ZQU = Triethylene glycol (TEG) content ZQV = Monoethylene glycol (MEG) content ZRA = Content of H₂O – Water ZRB = Content of C₂H₅OH – Ethanol ZRC = Content of NH₃ – Ammonia ZRD = Content of NH₄ – Ammonium ZRE = Content of Ar – Argon ZQW = Inerts. Argon, Helium and Nitrogen ZQX = Carbon monoxide </p> <hr/> <p> MeasureType_Composition.physicalPropertyCode values: TC = Temperature </p>

Meter Reading Document	Measurement data
	<p> ZCD = Relative density meter reading. 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>
measureUnit.unitOfMeasureCode	<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 (nm³) 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 </p>

Meter Reading Document	Measurement data
	A06 = Litres (L) A07 = Parts per million (PPM) A13=Tonnes A14=Kg KW4=kWh/kg A09=Parts per million (PPM Mol)
Period.timeInterval	Mandatory
Period.quantity.amount	Mandatory
Period.direction.gasDirectionCode	May be used. Z02 = Input quantity Z03 = Output quantity
Period.status.statusCode	03G = Estimated 04G = Provisional 05G = Definitive 58G = Validated 59G = Replacement value 60G = Average hourly value

3 Metering Process

3.1 Meter Reading Document (METRED)

3.1.1 Meter Reading Business Process

3.1.1.1 Measured Data Sequence

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

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

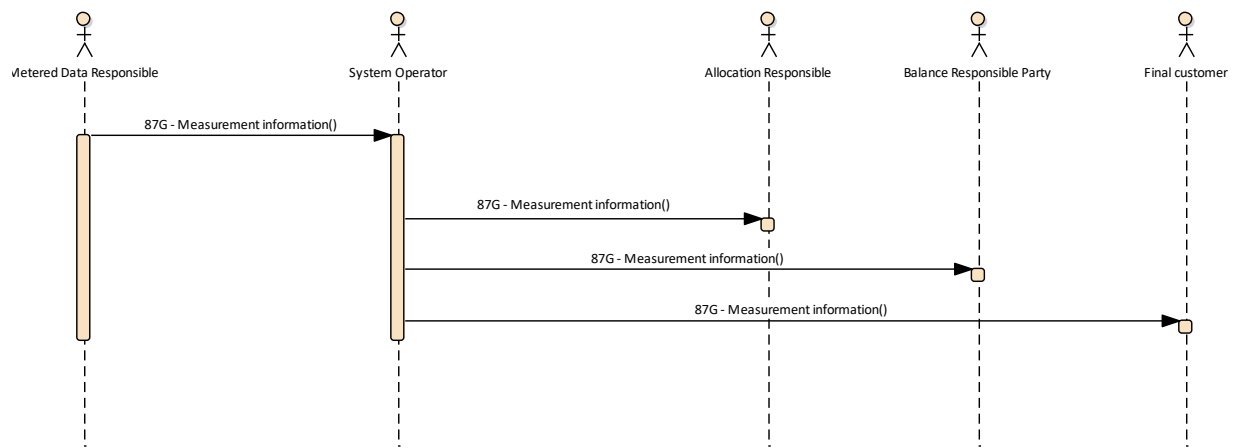


Figure: 1 Measured data sequence

3.1.1.2 Metered Data Workflow

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

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

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

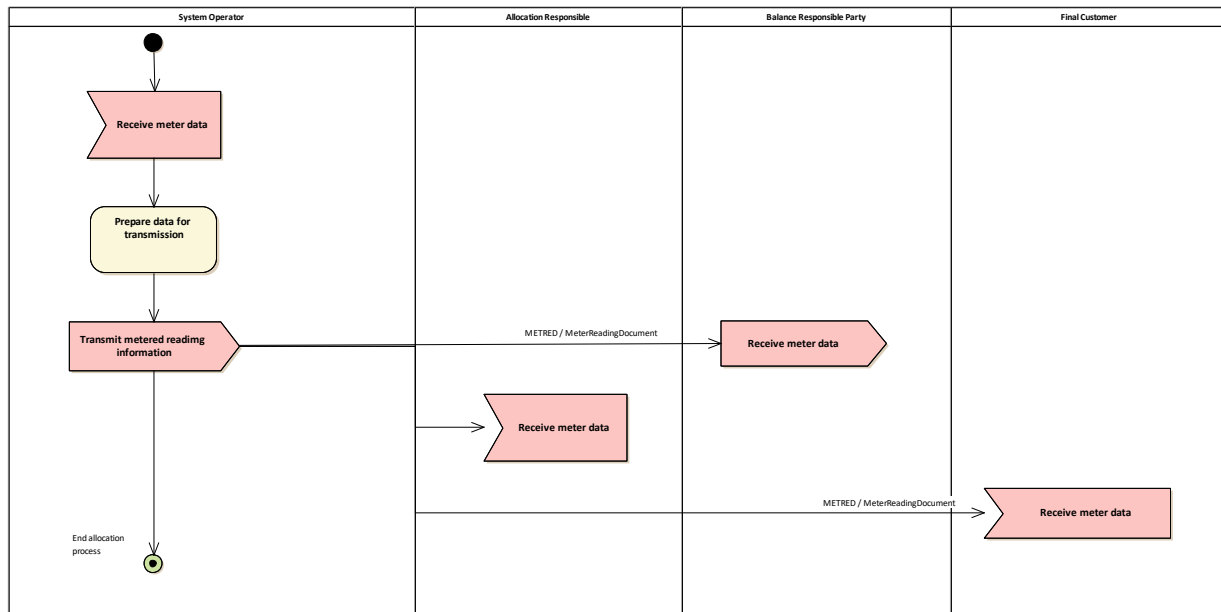


Figure: 2 Metered data workflow

3.1.2 Meter Reading Document Contextual Model

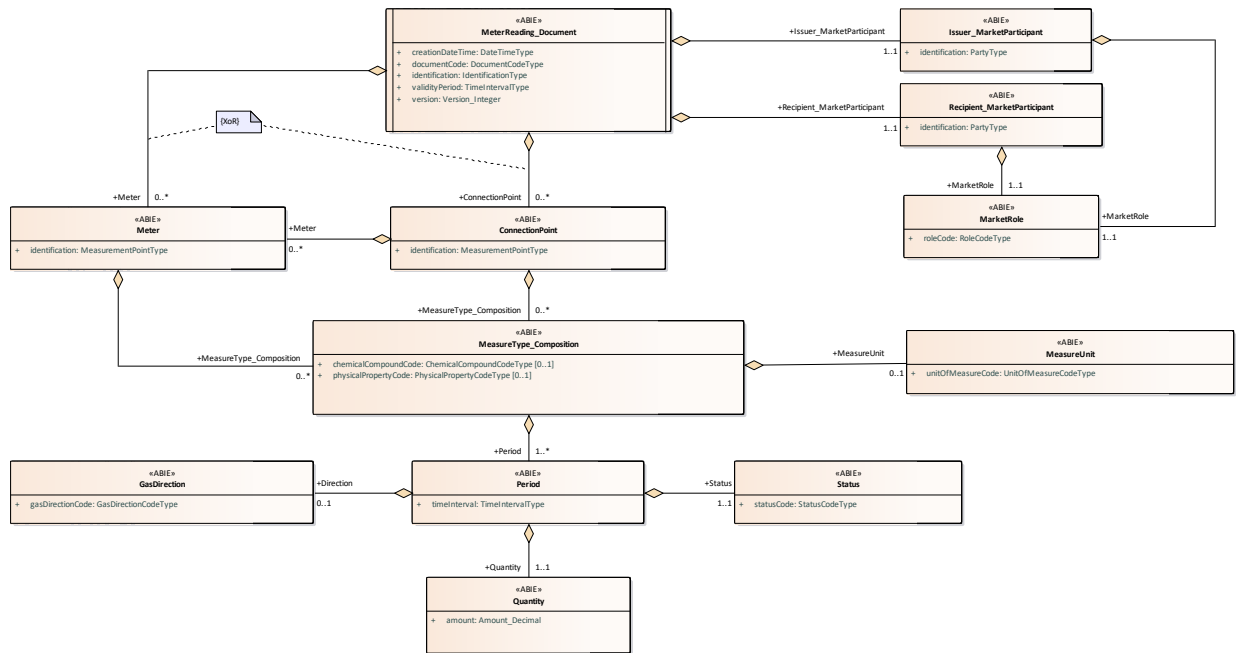


Figure: 3 Meter Reading Document Contextual Model

3.1.3 Meter Reading Document Assembly Model

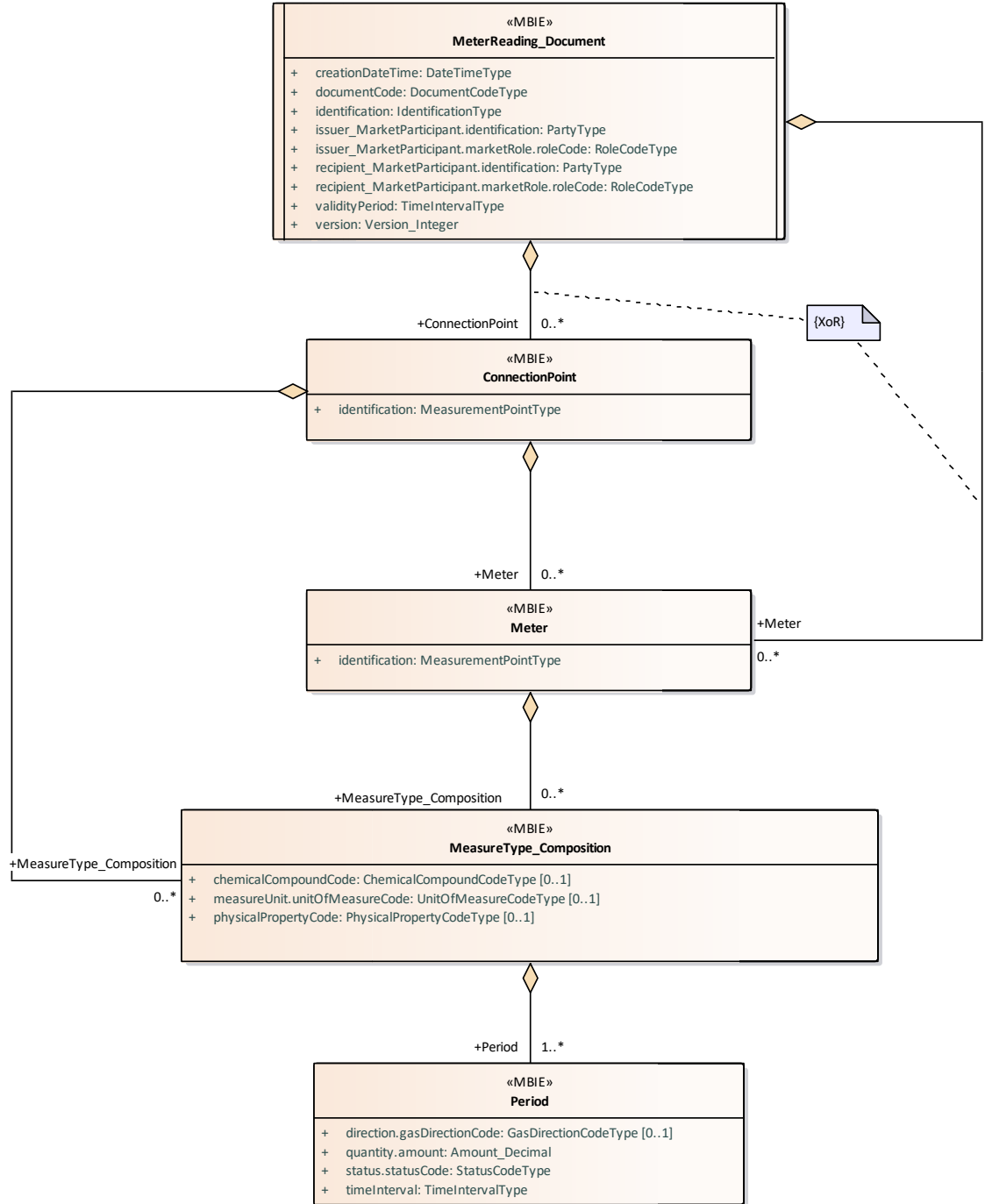


Figure 4 **Meter Reading Document Assembly Model**

3.1.3.1 MeterReading_Document

3.1.3.1.1 Attributes

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.	

3.1.3.2 ConnectionPoint

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

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

3.1.3.2.1 Attributes

Attribute	Description	Multiplicity
identification	The identification of a connection point.	

3.1.3.3 Meter

The identification of a meter.

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

3.1.3.3.1 Attributes

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

3.1.3.4 MeasureType_Composition

A coded identification of the composition of gas.

3.1.3.4.1 Attributes

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]

3.1.3.5 Period

The period that the dependent information is for.

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

3.1.3.5.1 Attributes

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.	

4 Document Change Log

4.1 Version

4.1.1 Attributes

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	
Version 5 2025-01-14	Added ChemicalCompoundCodes ZRA, ZRB, ZRC, ZRD, ZRE, ZQW, ZQX. Added measurementUnit A09. Minor updates in the decision tables	