



ENTSO-E BALANCING PUBLICATION IMPLEMENTATION GUIDE

2015-11-17

APPROVED DOCUMENT
VERSION 1.0

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60 provided at EDI.Library@entsoe.eu

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Revision History

Version	Release	Date	Comments
1	0	2015-11-05	First draft based on the maintenance request to publish prices related to balancing mechanism.

62

63 **1 Objective**

64 A maintenance request was issued in order to publish prices related to balancing mechanism.

65 The existing document (ENTSO-E Balancing transparency process implementation guide)
66 developed to tackle the transparency regulation does not cover such kind of publication.

67 ENTSO-E WG EDI developed thus a new version of the schema enabling the transmission of
68 the required information while being always compatible with the transparency requirements
69 (EMFIP schema).

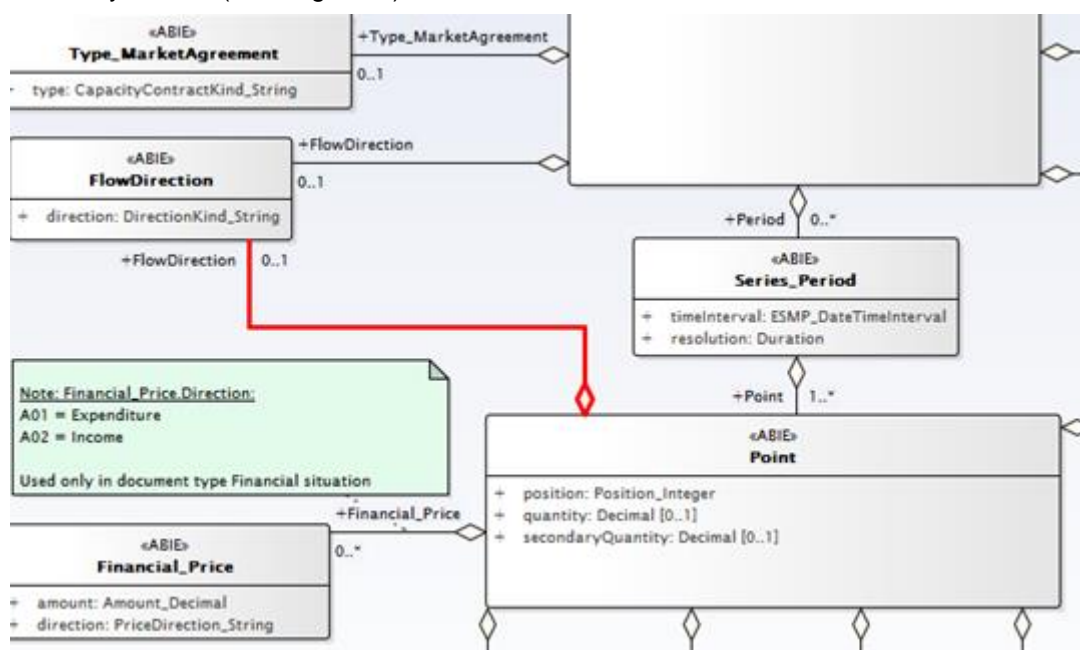
70 This new version is described in this document.

71 **2 Changes made to the EMFIP schema**

72 The main requirement of the maintenance request was to identify whether the reserve is
73 activated “upward” or “downward”, and consequently to publish the related price.

74 In order to enable this publication, the following change has been made on the contextual
75 model:

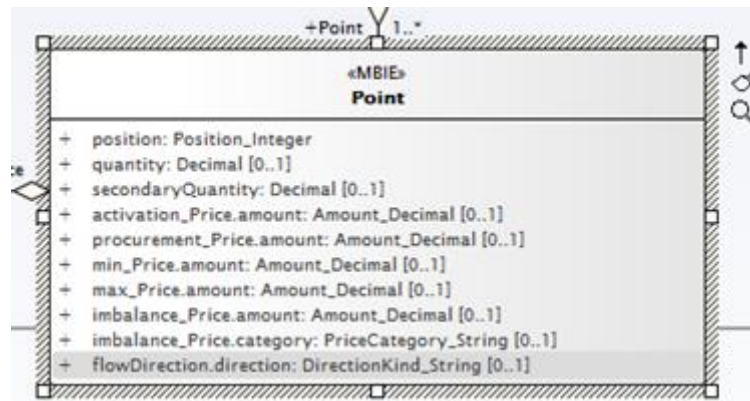
- 76 • Add a new association between the class FlowDirection and the class Point with a
77 cardinality of 0..1 (see Figure 1).



78

79 **Figure 1 – Change to the contextual model**

- 80 • As a consequence, the assembly model is updated and a new attribute
81 flowDirection_direction with the cardinality 0..1 (see Figure 2)



82

83

Figure 2 – Change to the assembly model

84

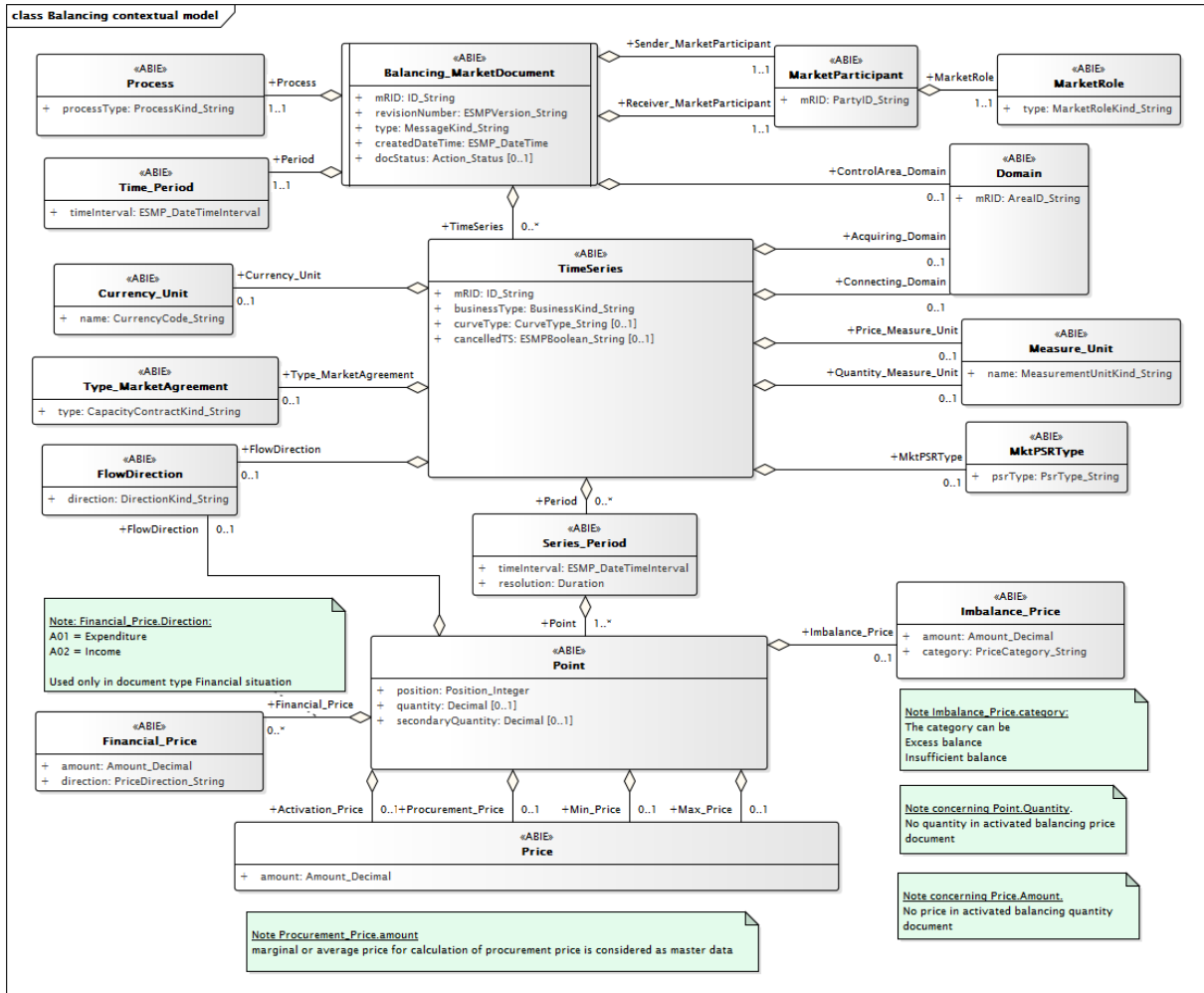
85 All the dependency rules described in the “ENTSO-E Balancing transparency process
86 implementation guide” remain valid.

87 **3 Balancing models**

88 **3.1 Balancing contextual model**

89 **3.1.1 Overview of the model**

90 Figure 3 shows the model.



91

92 **Figure 3 – Balancing contextual model**

93 IsBasedOn relationships from the European style market profile

94 Table 1 shows the traceability dependency of the classes used in this package towards the
95 upper level.

96 **Table 1 – IsBasedOn dependency**

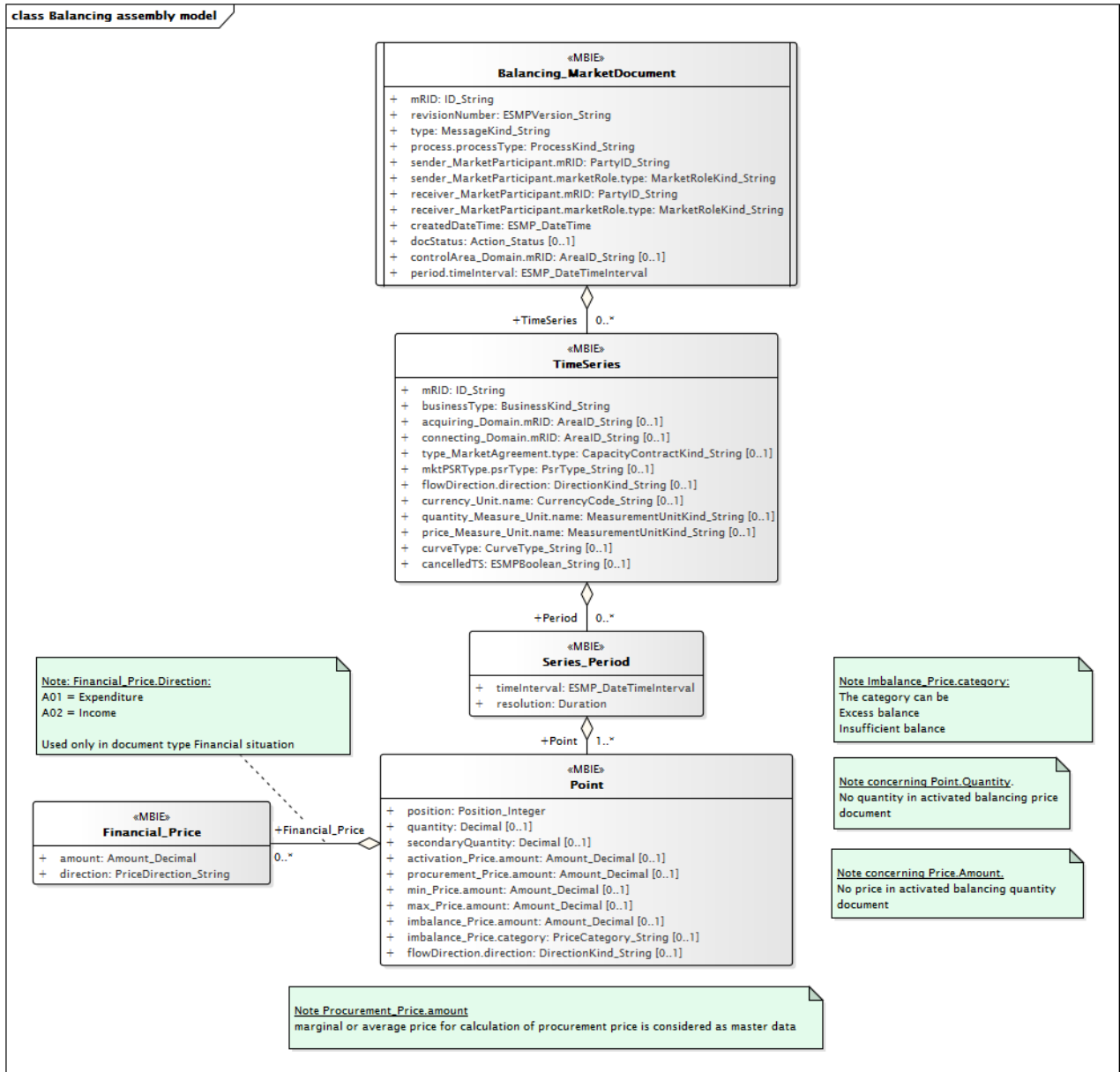
Name	Complete IsBasedOn Path
Balancing_MarketDocument	TC57CIM::IEC62325::MarketManagement::MarketDocument
Currency_Unit	TC57CIM::IEC62325::MarketManagement::Unit
Domain	TC57CIM::IEC62325::MarketManagement::Domain
Financial_Price	TC57CIM::IEC62325::MarketManagement::Price

Name	Complete IsBasedOn Path
FlowDirection	TC57CIM::IEC62325::MarketManagement::FlowDirection
Imbalance_Price	TC57CIM::IEC62325::MarketManagement::Price
MarketParticipant	TC57CIM::IEC62325::MarketCommon::MarketParticipant
MarketRole	TC57CIM::IEC62325::MarketCommon::MarketRole
Measure_Unit	TC57CIM::IEC62325::MarketManagement::Unit
MktPSRType	TC57CIM::IEC62325::MarketManagement::MktPSRType
Point	TC57CIM::IEC62325::MarketManagement::Point
Price	TC57CIM::IEC62325::MarketManagement::Price
Process	TC57CIM::IEC62325::MarketManagement::Process
Series_Period	TC57CIM::IEC62325::MarketManagement::Period
Time_Period	TC57CIM::IEC62325::MarketManagement::Period
TimeSeries	TC57CIM::IEC62325::MarketManagement::TimeSeries
Type_MarketAgreement	TC57CIM::IEC62325::MarketManagement::MarketAgreement

98 **3.2 Balancing assembly model**

99 **3.2.1 Overview of the model**

100 Figure 4 shows the model.



101

102

Figure 4 – Balancing assembly model

103 **3.2.2 IsBasedOn relationships from the European style market profile**

104 Table 2 shows the traceability dependency of the classes used in this package towards the
105 upper level.

106

Table 2 – IsBasedOn dependency

Name	Complete IsBasedOn Path
Balancing_MarketDocument	TC57CIM::IEC62325::MarketManagement::MarketDocument

Name	Complete IsBasedOn Path
Financial_Price	TC57CIM::IEC62325::MarketManagement::Price
Point	TC57CIM::IEC62325::MarketManagement::Point
Series_Period	TC57CIM::IEC62325::MarketManagement::Period
TimeSeries	TC57CIM::IEC62325::MarketManagement::TimeSeries

107

108 3.2.3 Detailed Balancing assembly model

109 3.2.3.1 Balancing_MarketDocument root class

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

112 The Balancing_MarketDocument describes a specific situation in the balancing information
113 exchange.

114 Table 3 shows all attributes of Balancing_MarketDocument.

115 **Table 3 – Attributes of Balancing assembly model::Balancing_MarketDocument**

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	mRID ID_String	The unique identification of the document being exchanged within a business process flow.
1	[1..1]	revisionNumber ESMPVersion_String	The identification of the version that distinguishes one evolution of a document from another.
2	[1..1]	type MessageKind_String	The coded type of a document. The document type describes the principal characteristic of the document.
3	[1..1]	process.processType ProcessKind_String	The identification of the nature of process that the document addresses.
4	[1..1]	sender_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- Document owner.
5	[1..1]	sender_MarketParticipant.marketRole.type MarketRoleKind_String	The identification of the role played by a market player. --- Document owner. --- The role associated with a MarketParticipant.
6	[1..1]	receiver_MarketParticipant.mRID PartyID_String	The identification of a party in the energy market. --- Document recipient
7	[1..1]	receiver_MarketParticipant.marketRole.type MarketRoleKind_String	The identification of the role played by a market player. --- Document recipient --- The role associated with a MarketParticipant.
8	[1..1]	createdDateTime ESMP_DateTime	The date and time of the creation of the document.
9	[0..1]	docStatus Action_Status	The identification of the condition or position of the document with regard to its standing.
10	[0..1]	controlArea_Domain.mRID AreaID_String	The unique identification of the domain. --- The identification of the control area of the issuer.
11	[1..1]	period.timeInterval ESMP_DateTimeInterval	The start and end date and time for a given interval.

116

117 Table 4 shows all association ends of Balancing_MarketDocument with other classes.

118 **Table 4 – Association ends of Balancing assembly model::Balancing_MarketDocument**
119 **with other classes**

Order	mult.	Class name / Role	Description
12	[0..*]	TimeSeries TimeSeries	A time series should exist to describe the specific information associated with balancing reserves, imbalance, financial report or cross-border balancing. Association Based On : Balancing contextual model::Balancing_MarketDocument.[] ----- Balancing contextual model::TimeSeries.TimeSeries[0..*]

120

121 3.2.3.2 Financial_Price

122 The cost corresponding to a specific entity expressed in a currency.

123 Table 5 shows all attributes of Financial_Price.

124 **Table 5 – Attributes of Balancing assembly model::Financial_Price**

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	amount Amount_Decimal	A number of monetary units specified in a unit of currency.
1	[1..1]	direction PriceDirection_String	The direction of a price payment (i.e. an impacted area system operator pays to internal market parties or inverse). This is to be used only in a document describing the financial situation. It enables to distinguish between expenditure and income.

125

126 3.2.3.3 Point

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

128 Table 6 shows all attributes of Point.

129 **Table 6 – Attributes of Balancing assembly model::Point**

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	position Position_Integer	A sequential value representing the relative position within a given time interval.
1	[0..1]	quantity Decimal	The principal quantity or the accepted offer quantity identified for a point.
2	[0..1]	secondaryQuantity Decimal	This information defines the activated quantity or the offered volume for a point.
3	[0..1]	activation_Price.amount Amount_Decimal	A number of monetary units specified in a unit of currency. --- The activation pricing information per quantity and interval.

Order	mult.	Attribute name / Attribute type	Description
4	[0..1]	procurement_Price.amount Amount_Decimal	A number of monetary units specified in a unit of currency. --- The procurement pricing information per quantity and interval.
5	[0..1]	min_Price.amount Amount_Decimal	A number of monetary units specified in a unit of currency. --- The minimum pricing information per quantity and interval.
6	[0..1]	max_Price.amount Amount_Decimal	A number of monetary units specified in a unit of currency. --- The maximum pricing information per quantity and interval.
7	[0..1]	imbalance_Price.amount Amount_Decimal	A number of monetary units specified in a unit of currency. --- The imbalance pricing information per quantity and interval.
8	[0..1]	imbalance_Price.category PriceCategory_String	The category of a price to be used in a price calculation. Note: the price category is mutually agreed between system operators. --- The imbalance pricing information per quantity and interval.
9	[0..1]	flowDirection.direction DirectionKind_String	The coded identification of the direction of energy flow. --- The flow direction provides the indication if the reserve is activated upward or downward.

130

131 Table 7 shows all association ends of Point with other classes.

132 **Table 7 – Association ends of Balancing assembly model::Point with other classes**

Order	mult.	Class name / Role	Description
10	[0..*]	Financial_Price Financial_Price	The price information associated with a given Point. This identifies the financial amount in relation to a specific direction associated with a transmission system operator for procuring, activating and settling balancing information. Association Based On : Balancing contextual model::Point.[] ----- Balancing contextual model::Financial_Price.Financial_Price[0..*]

133

134 3.2.3.4 Series_Period

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

136 Table 8 shows all attributes of Series_Period.

137 **Table 8 – Attributes of Balancing assembly model::Series_Period**

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	timeInterval ESMP_DateTimeInterval	The start and end time of the period.
1	[1..1]	resolution Duration	The definition of the number of units of time that compose an individual step within a period.

138

139 Table 9 shows all association ends of Series_Period with other classes.

140 **Table 9 – Association ends of Balancing assembly model::Series_Period with other**
141 **classes**

Order	mult.	Class name / Role	Description
2	[1..*]	Point Point	The Point information associated with a given Series_Period.within a TimeSeries. Association Based On : Balancing contextual model::Series_Period.[] ----- Balancing contextual model::Point.Point[1..*]

142

143 **3.2.3.5 TimeSeries**

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

145 Table 10 shows all attributes of TimeSeries.

146 **Table 10 – Attributes of Balancing assembly model::TimeSeries**

Order	mult.	Attribute name / Attribute type	Description
0	[1..1]	mRID ID_String	A unique identification of the time series.
1	[1..1]	businessType BusinessKind_String	The identification of the nature of the time series.
2	[0..1]	acquiring_Domain.mRID AreaID_String	The unique identification of the domain. --- The identification of the acquiring area.
3	[0..1]	connecting_Domain.mRID AreaID_String	The unique identification of the domain. --- The identification of the connecting area
4	[0..1]	type_MarketAgreement.type CapacityContractKind_String	The specification of the kind of the contract, e.g. long term, daily contract. --- The identification of the procurement time unit.
5	[0..1]	mktPSRType.psrType PsrType_String	The coded type of a power system resource. --- The identification of the source type of the reserve.
6	[0..1]	flowDirection.direction DirectionKind_String	The coded identification of the direction of energy flow. --- The flow direction associated with a TimeSeries for the balance reserve.
7	[0..1]	currency_Unit.name CurrencyCode_String	The identification of the formal code for a currency (ISO 4217). --- The currency associated with a TimeSeries.
8	[0..1]	quantity_Measure_Unit.name MeasurementUnitKind_String	The identification of the formal code for a measurement unit (UN/ECE Recommendation 20). --- The unit of measure associated with the quantities in a TimeSeries.
9	[0..1]	price_Measure_Unit.name MeasurementUnitKind_String	The identification of the formal code for a measurement unit (UN/ECE Recommendation 20). --- The unit of measure associated with the prices in a TimeSeries.
10	[0..1]	curveType CurveType_String	The identification of the coded representation of the type of curve being described.
11	[0..1]	cancelledTS ESMPBoolean_String	An indicator stating that the TimeSeries, identified by the mRID, is cancelled as well as all the values sent in a previous version of the TimeSeries in a previous document.

147

148 Table 11 shows all association ends of TimeSeries with other classes.

149 **Table 11 – Association ends of Balancing assembly model::TimeSeries with other classes**

Order	mult.	Class name / Role	Description
12	[0..*]	Series_Period Period	The series period class provides the balancing time unit information in respect to the balancing reserve capacity. Association Based On : Balancing contextual model::TimeSeries.[] ----- Balancing contextual model::Series_Period.Period[0..*]

150

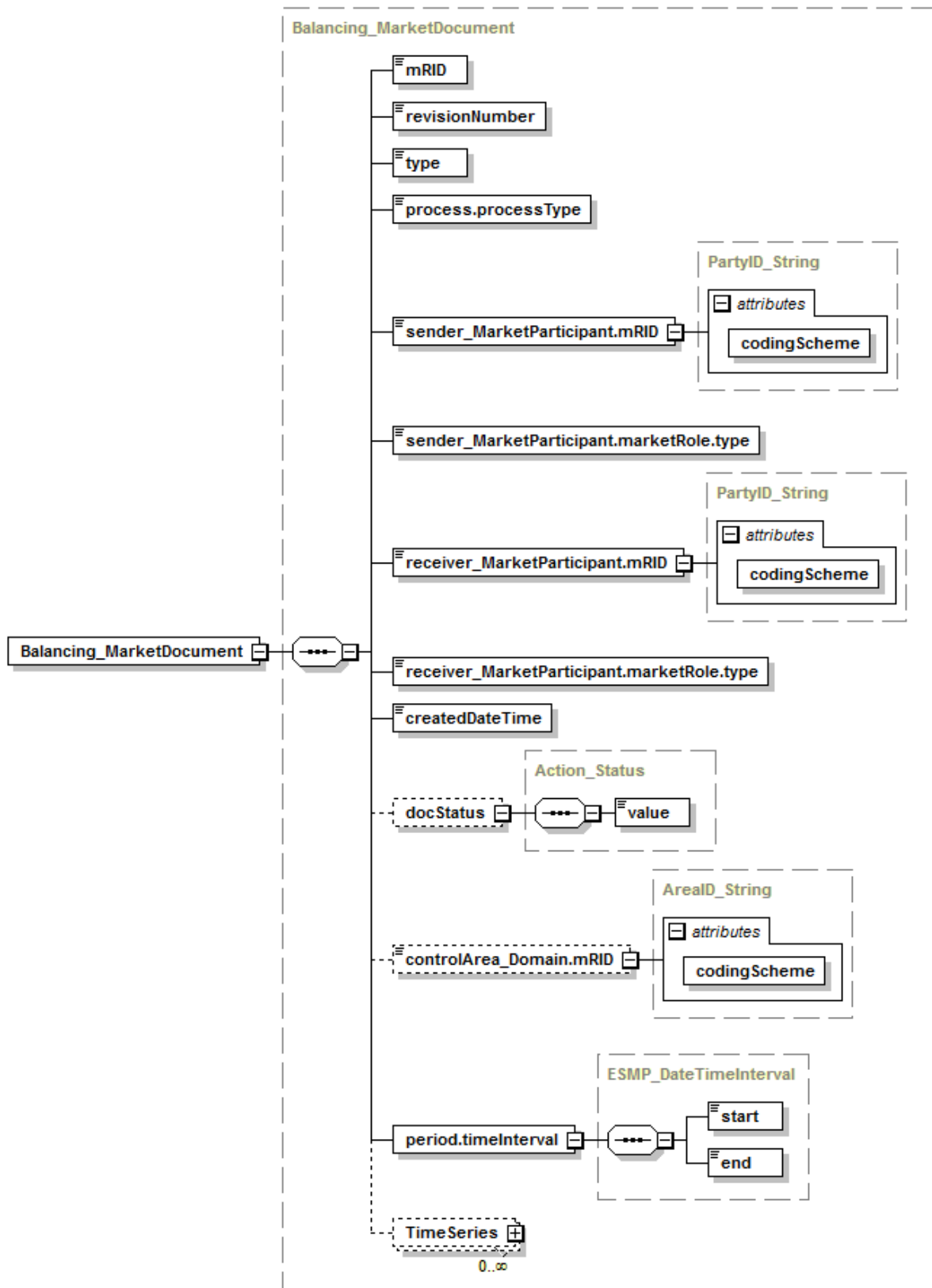
151 3.2.4 Datatypes

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

- 153 • Action_Status compound
- 154 • ESMP_DateTimeInterval compound
- 155 • Amount_Decimal datatype
- 156 • AreaID_String datatype, codelist CodingSchemeTypeList
- 157 • BusinessKind_String datatype, codelist BusinessTypeList
- 158 • CapacityContractKind_String datatype, codelist ContractTypeList
- 159 • CurrencyCode_String datatype, codelist CurrencyTypeList
- 160 • CurveType_String datatype, codelist CurveTypeList
- 161 • DirectionKind_String datatype, codelist DirectionTypeList
- 162 • ESMP_DateTime datatype
- 163 • ESMPBoolean_String datatype, codelist IndicatorTypeList
- 164 • ESMPVersion_String datatype
- 165 • ID_String datatype
- 166 • MarketRoleKind_String datatype, codelist RoleTypeList
- 167 • MeasurementUnitKind_String datatype, codelist UnitOfMeasureTypeList
- 168 • MessageKind_String datatype, codelist MessageTypeList
- 169 • PartyID_String datatype, codelist CodingSchemeTypeList
- 170 • Position_Integer datatype
- 171 • PriceCategory_String datatype, codelist PriceCategoryTypeList
- 172 • PriceDirection_String datatype, codelist PriceDirectionTypeList
- 173 • ProcessKind_String datatype, codelist ProcessTypeList
- 174 • PsrType_String datatype, codelist AssetTypeList
- 175 • Status_String datatype, codelist StatusTypeList
- 176 • YMDHM_DateTime datatype

177 3.2.5 Balancing_MarketDocument XML schema

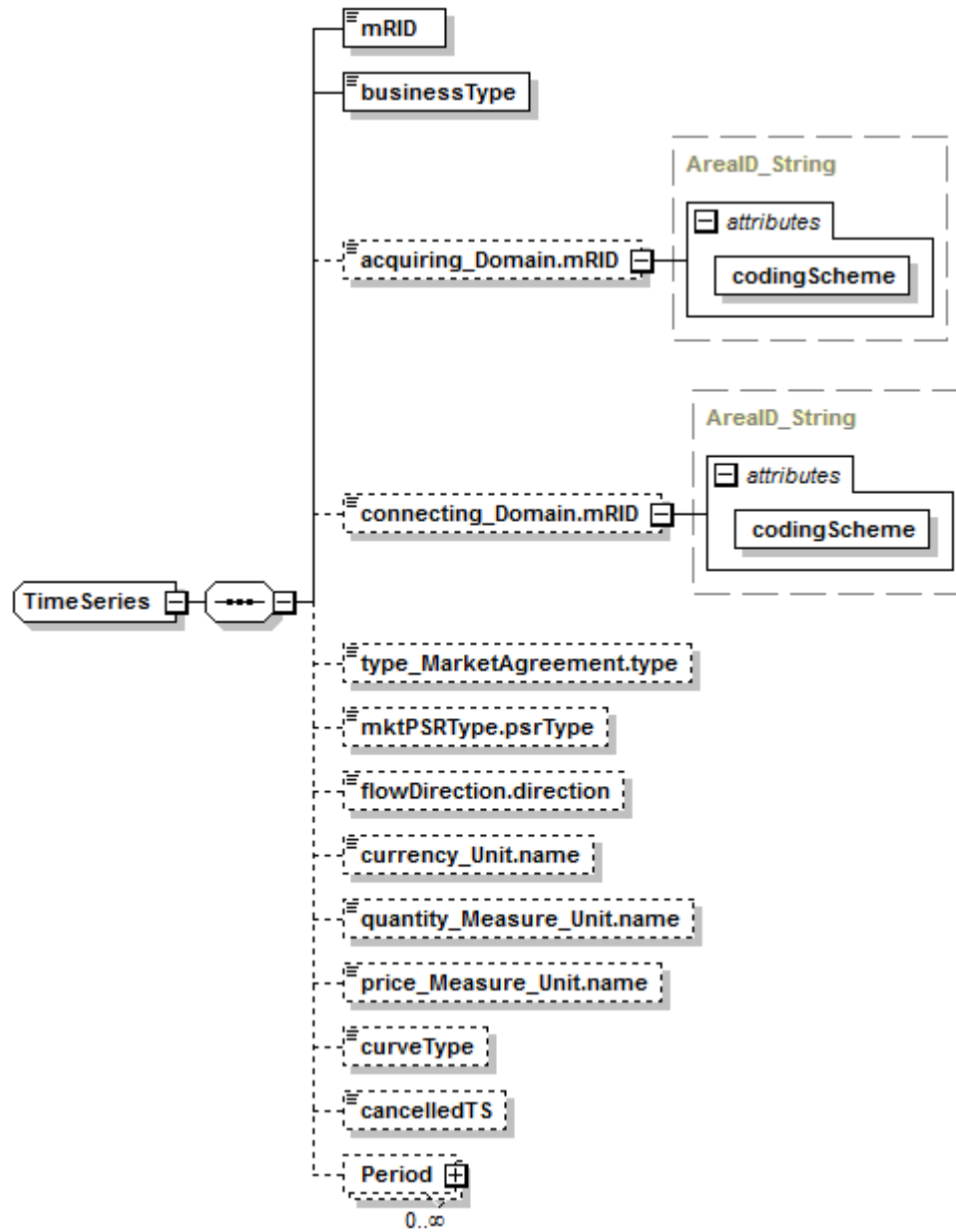
178 Figure 5 to Figure 7 provide the structure of the schema.



179

180

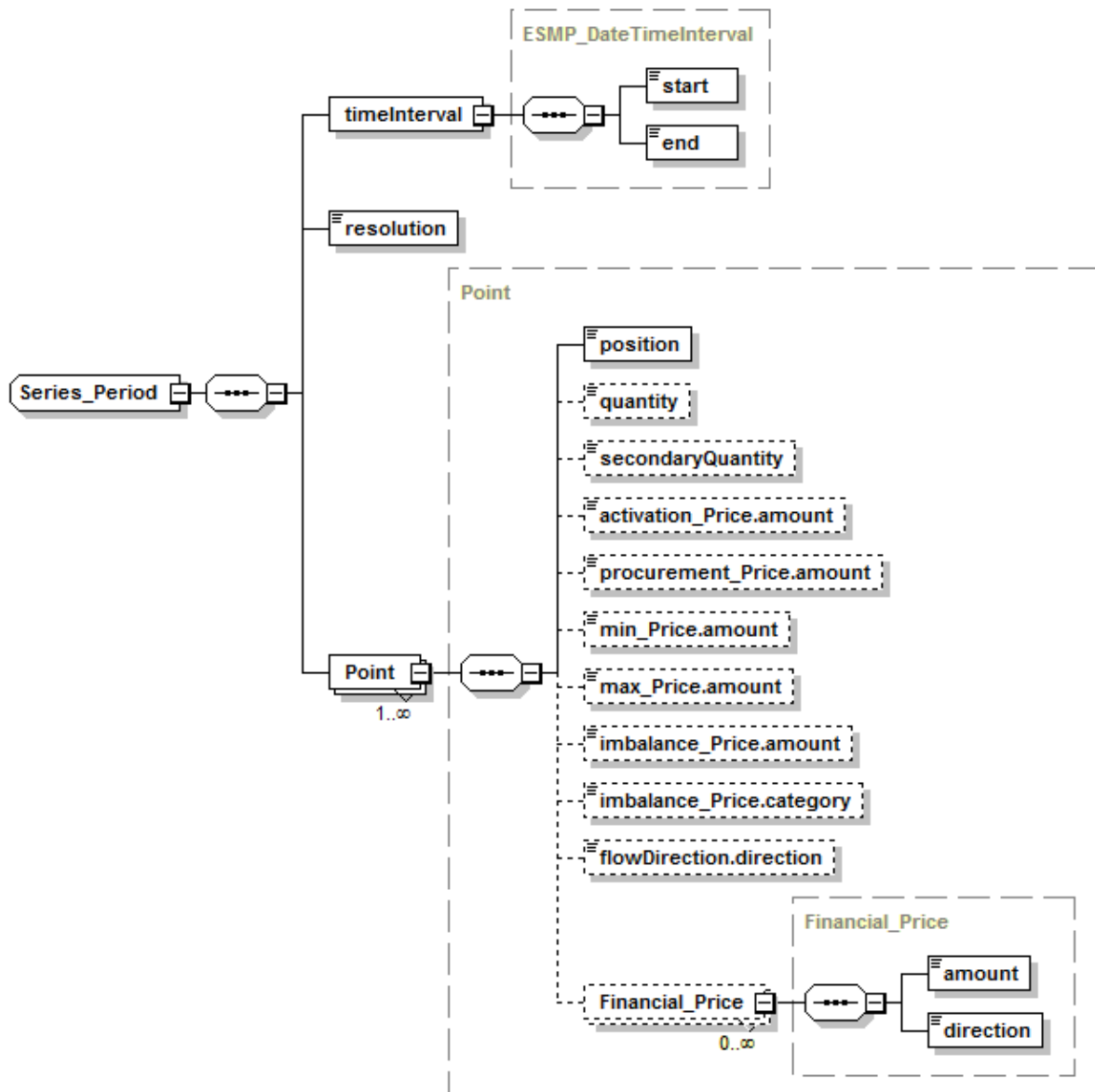
Figure 5 – Balancing_MarketDocument XML schema structure 1/3



181

182

Figure 6 – Balancing_MarketDocument XML schema structure 2/3



183

184

Figure 7 – Balancing_MarketDocument XML schema structure 3/3