

INTERNATIONAL STANDARD

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**Framework for energy market communications –
Part 301: Common information model (CIM) extensions for markets**

**Cadre pour les communications pour le marché de l'énergie –
Partie 301: Extensions du modèle d'information commun (CIM) pour les marchés**



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IEC Central Office
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
Fax: +41 22 919 03 00
info@iec.ch
www.iec.ch

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CONTENTS

FOREWORD.....	22
INTRODUCTION.....	24
1 Scope.....	25
2 Normative references	25
3 Terms, definitions and abbreviations	26
3.1 Terms and definitions.....	26
3.2 Abbreviations.....	27
4 CIM specification	27
4.1 CIM modeling notation	27
4.2 CIM packages.....	28
4.3 CIM classes and relationships.....	30
4.3.1 Classes	30
4.3.2 Generalization	31
4.3.3 Simple association.....	32
4.3.4 Aggregation	33
4.4 CIM model concepts and examples.....	33
4.4.1 'MarketCommon' package.....	33
4.4.2 'MarketManagement' package	34
4.4.3 'MarketOperations' package	38
4.5 Modeling guidelines	44
4.5.1 Modeling for change	44
4.5.2 Process for amendments to the CIM	44
4.5.3 Changes to the CIM UML model	45
4.5.4 Changes to the CIM standards documents.....	45
4.5.5 CIM profiles	45
4.6 Modeling tools	45
5 Detailed model	46
5.1 Overview.....	46
5.2 Context.....	46
6 Top package IEC 62325	47
6.1 General.....	47
6.2 IEC 62325CIMVersion root class.....	48
6.3 Package MarketCommon	48
6.3.1 General	48
6.3.2 MarketParticipant.....	50
6.3.3 MarketRole	50
6.3.4 MarketRoleKind enumeration.....	51
6.3.5 RegisteredResource	55
6.4 Package MarketManagement.....	58
6.4.1 General	58
6.4.2 AceTariffType root class	61
6.4.3 AttributeInstanceComponent root class.....	62
6.4.4 Auction	62
6.4.5 BidTimeSeries	63
6.4.6 DateAndOrTime root class.....	64

6.4.7	Domain	65
6.4.8	FlowDirection root class	65
6.4.9	MarketAgreement	66
6.4.10	MarketDocument	66
6.4.11	MarketEvaluationPoint	67
6.4.12	MarketObjectStatus root class	68
6.4.13	MktPSRType	68
6.4.14	Period root class	69
6.4.15	Point root class	69
6.4.16	Price root class	70
6.4.17	Process	71
6.4.18	Reason root class	71
6.4.19	TimeSeries	72
6.4.20	Unit root class	73
6.5	Package MarketOperations	73
6.5.1	General	73
6.5.2	Package CongestionRevenueRights	76
6.5.3	Package MarketOpCommon	79
6.5.4	Package MarketPlan	92
6.5.5	Package MarketQualitySystem	101
6.5.6	Package MarketSystem	108
6.5.7	Package MktDomain	211
6.5.8	Package ParticipantInterfaces	235
6.5.9	Package ReferenceData	276
	Bibliography	358
	Figure 1 – 'TC 57 CIM' package dependency diagram	29
	Figure 2 – 'IEC 62325' package dependency diagram	30
	Figure 3 – Example of generalization	32
	Figure 4 – Example of simple association	33
	Figure 5 – Example of aggregation	33
	Figure 6 – Common market model	34
	Figure 7 – Market management model overview	35
	Figure 8 – Market management model	36
	Figure 9 – 'MarketManagement' 'TimeSeries' core concept	38
	Figure 10 – Market operator software systems for US style electricity markets	39
	Figure 11 – Regional transmission organization for US style electricity market	40
	Figure 12 – Registered resource reference definition for US style electricity market	41
	Figure 13 – Bid definition for US style electricity market	42
	Figure 14 – Resource bid schedule definitions for US style electricity market	43
	Figure 15 – Market clearing for US style electricity market	44
	Figure 16 – Class diagram IEC 62325::Main	48
	Figure 17 – Class diagram MarketCommon::MarketCommon	49
	Figure 18 – Package diagram MarketManagement::externalDependencies	59
	Figure 19 – Class diagram MarketManagement::Inheritance	60
	Figure 20 – Class diagram MarketManagement::MarketManagementOverview	61

Figure 21 – Class diagram MarketOperations::Main	74
Figure 22 – Package diagram MarketOperations::MarketOperations	75
Figure 23 – Class diagram CongestionRevenueRights::CongestionRevenueRights	76
Figure 24 – Class diagram MarketPlan::MarketPlan	93
Figure 25 – Class diagram MarketQualitySystem::AllocationResults	102
Figure 26 – Class diagram ExternalInputs::ASRequirements	109
Figure 27 – Class diagram ExternalInputs::DefaultBids	110
Figure 28 – Class diagram ExternalInputs::DeratedBranchLimits	111
Figure 29 – Class diagram ExternalInputs::ExistingTransmissionContractRights	112
Figure 30 – Class diagram ExternalInputs::IntermittentResourceSchedules	113
Figure 31 – Class diagram ExternalInputs::LoadForecast	114
Figure 32 – Class diagram ExternalInputs::OutageOrDeratedEquipment	114
Figure 33 – Class diagram ExternalInputs::Telemetry	116
Figure 34 – Class diagram MarketResults::Instructions	161
Figure 35 – Class diagram MarketResults::MarketClearing	162
Figure 36 – Class diagram MarketResults::MarketClearingResults	163
Figure 37 – Class diagram MarketResults::MarketRegionClearing	164
Figure 38 – Class diagram MarketResults::PnodeClearing	165
Figure 39 – Class diagram MarketResults::ResourceAwardsClearing	167
Figure 40 – Class diagram MarketResults::TransactionBidClearing	169
Figure 41 – Class diagram ParticipantInterfaces::ParticipantBids	236
Figure 42 – Class diagram ParticipantInterfaces::ParticipantTrades	237
Figure 43 – Class diagram ParticipantInterfaces::ResourceBids	238
Figure 44 – Class diagram ParticipantInterfaces::ResourceBidSchedules	239
Figure 45 – Class diagram ParticipantInterfaces::TransactionBids	240
Figure 46 – Class diagram ReferenceData::AggregateNode	277
Figure 47 – Class diagram ReferenceData::Contracts	278
Figure 48 – Class diagram ReferenceData::MeteredSubSystem	279
Figure 49 – Class diagram ReferenceData::MultiStateGenerator	280
Figure 50 – Class diagram ReferenceData::PriceNode	281
Figure 51 – Class diagram ReferenceData::RegisteredGenerator	282
Figure 52 – Class diagram ReferenceData::RegisteredInterTie	283
Figure 53 – Class diagram ReferenceData::RegisteredLoad	284
Figure 54 – Class diagram ReferenceData::RegisteredResource	285
Figure 55 – Class diagram ReferenceData::RTO	286
Table 1 – Attribute documentation	46
Table 2 – Association ends documentation	46
Table 3 – Enums documentation	47
Table 4 – Attributes of IEC 62325::IEC 62325CIMVersion	48
Table 5 – Attributes of MarketCommon::MarketParticipant	50
Table 6 – Association ends of MarketCommon::MarketParticipant with other classes	50
Table 7 – Attributes of MarketCommon::MarketRole	50

Table 8 – Association ends of MarketCommon::MarketRole with other classes	51
Table 9 – Literals of MarketCommon::MarketRoleKind	51
Table 10 – Attributes of MarketCommon::RegisteredResource	55
Table 11 – Association ends of MarketCommon::RegisteredResource with other classes	57
Table 12 – Attributes of MarketManagement::AceTariffType	62
Table 13 – Association ends of MarketManagement::AceTariffType with other classes	62
Table 14 – Attributes of MarketManagement::AttributeInstanceComponent	62
Table 15 – Association ends of MarketManagement::AttributeInstanceComponent with other classes	62
Table 16 – Attributes of MarketManagement::Auction	63
Table 17 – Association ends of MarketManagement::Auction with other classes	63
Table 18 – Attributes of MarketManagement::BidTimeSeries	63
Table 19 – Association ends of MarketManagement::BidTimeSeries with other classes	64
Table 20 – Attributes of MarketManagement::DateAndOrTime	64
Table 21 – Association ends of MarketManagement::DateAndOrTime with other classes	65
Table 22 – Attributes of MarketManagement::Domain	65
Table 23 – Association ends of MarketManagement::Domain with other classes	65
Table 24 – Attributes of MarketManagement::FlowDirection	65
Table 25 – Association ends of MarketManagement::FlowDirection with other classes	65
Table 26 – Attributes of MarketManagement::MarketAgreement	66
Table 27 – Association ends of MarketManagement::MarketAgreement with other classes	66
Table 28 – Attributes of MarketManagement::MarketDocument	67
Table 29 – Association ends of MarketManagement::MarketDocument with other classes	67
Table 30 – Attributes of MarketManagement::MarketEvaluationPoint	68
Table 31 – Association ends of MarketManagement::MarketEvaluationPoint with other classes	68
Table 32 – Attributes of MarketManagement::MarketObjectStatus	68
Table 33 – Association ends of MarketManagement::MarketObjectStatus with other classes	68
Table 34 – Attributes of MarketManagement::MktPSRType	69
Table 35 – Association ends of MarketManagement::MktPSRType with other classes	69
Table 36 – Attributes of MarketManagement::Period	69
Table 37 – Association ends of MarketManagement::Period with other classes	69
Table 38 – Attributes of MarketManagement::Point	70
Table 39 – Association ends of MarketManagement::Point with other classes	70
Table 40 – Attributes of MarketManagement::Price	70
Table 41 – Association ends of MarketManagement::Price with other classes	70
Table 42 – Attributes of MarketManagement::Process	71
Table 43 – Association ends of MarketManagement::Process with other classes	71
Table 44 – Attributes of MarketManagement::Reason	71
Table 45 – Association ends of MarketManagement::Reason with other classes	72

Table 46 – Attributes of MarketManagement::TimeSeries	72
Table 47 – Association ends of MarketManagement::TimeSeries with other classes	72
Table 48 – Attributes of MarketManagement::Unit	73
Table 49 – Association ends of MarketManagement::Unit with other classes	73
Table 50 – Attributes of CongestionRevenueRights::CRR	77
Table 51 – Association ends of CongestionRevenueRights::CRR with other classes	78
Table 52 – Attributes of CongestionRevenueRights::CRROrgRole	78
Table 53 – Association ends of CongestionRevenueRights:: CRROrgRole with other classes	78
Table 54 – Attributes of CongestionRevenueRights::CRRSegment	79
Table 55 – Association ends of CongestionRevenueRights:: CRRSegment with other classes	79
Table 56 – Attributes of MarketOpCommon::MarketInvoice	80
Table 57 – Association ends of MarketOpCommon::MarketInvoice with other classes	80
Table 58 – Attributes of MarketOpCommon::MarketInvoiceLineItem	80
Table 59 – Association ends of MarketOpCommon:: MarketInvoiceLineItem with other classes	81
Table 60 – Association ends of MarketOpCommon::MarketLedger with other classes	81
Table 61 – Attributes of MarketOpCommon::MarketLedgerEntry	81
Table 62 – Association ends of MarketOpCommon:: MarketLedgerEntry with other classes	82
Table 63 – Attributes of MarketOpCommon::MktActivityRecord	82
Table 64 – Association ends of MarketOpCommon:: MktActivityRecord with other classes	82
Table 65 – Attributes of MarketOpCommon::MktConnectivityNode	83
Table 66 – Association ends of MarketOpCommon:: MktConnectivityNode with other classes	83
Table 67 – Attributes of MarketOpCommon::MktEnergyConsumer	83
Table 68 – Association ends of MarketOpCommon:: MktEnergyConsumer with other classes	84
Table 69 – Attributes of MarketOpCommon::MktGeneratingUnit	85
Table 70 – Association ends of MarketOpCommon:: MktGeneratingUnit with other classes	86
Table 71 – Attributes of MarketOpCommon::MktLine	87
Table 72 – Association ends of MarketOpCommon::MktLine with other classes	87
Table 73 – Attributes of MarketOpCommon::MktLoadArea	87
Table 74 – Association ends of MarketOpCommon::MktLoadArea with other classes	88
Table 75 – Attributes of MarketOpCommon::MktMeasurement	88
Table 76 – Association ends of MarketOpCommon::MktMeasurement with other classes	88
Table 77 – Attributes of MarketOpCommon::MktOrganisation	89
Table 78 – Association ends of MarketOpCommon::MktOrganisation with other classes	89
Table 79 – Attributes of MarketOpCommon::MktPowerTransformer	89
Table 80 – Association ends of MarketOpCommon:: MktPowerTransformer with other classes	90
Table 81 – Attributes of MarketOpCommon::MktTerminal	91

Table 82 – Association ends of MarketOpCommon::MktTerminal with other classes	91
Table 83 – Attributes of MarketOpCommon::MktUserAttribute	92
Table 84 – Association ends of MarketOpCommon::MktUserAttribute with other classes	92
Table 85 – Attributes of MarketPlan::CRRMarket	93
Table 86 – Association ends of MarketPlan::CRRMarket with other classes	94
Table 87 – Attributes of MarketPlan::EnergyMarket	94
Table 88 – Association ends of MarketPlan::EnergyMarket with other classes	95
Table 89 – Attributes of MarketPlan::Market	95
Table 90 – Association ends of MarketPlan::Market with other classes	96
Table 91 – Attributes of MarketPlan::MarketActualEvent	96
Table 92 – Association ends of MarketPlan::MarketActualEvent with other classes	96
Table 93 – Attributes of MarketPlan::MarketFactors	96
Table 94 – Association ends of MarketPlan::MarketFactors with other classes	97
Table 95 – Attributes of MarketPlan::MarketPlan	97
Table 96 – Association ends of MarketPlan::MarketPlan with other classes	98
Table 97 – Attributes of MarketPlan::MarketProduct	98
Table 98 – Association ends of MarketPlan::MarketProduct with other classes	98
Table 99 – Attributes of MarketPlan::MarketRun	99
Table 100 – Association ends of MarketPlan::MarketRun with other classes	99
Table 101 – Attributes of MarketPlan::PlannedMarket	100
Table 102 – Association ends of MarketPlan::PlannedMarket with other classes	100
Table 103 – Attributes of MarketPlan::PlannedMarketEvent	100
Table 104 – Association ends of MarketPlan::PlannedMarketEvent with other classes	101
Table 105 – Attributes of MarketQualitySystem::AllocationResult	103
Table 106 – Association ends of MarketQualitySystem:: AllocationResult with other classes	103
Table 107 – Attributes of MarketQualitySystem::AllocationResultValues	103
Table 108 – Association ends of MarketQualitySystem:: AllocationResultValues with other classes	104
Table 109 – Attributes of MarketQualitySystem::AuxiliaryCost	104
Table 110 – Association ends of MarketQualitySystem::AuxiliaryCost with other classes	104
Table 111 – Association ends of MarketQualitySystem:: AuxiliaryObject with other classes	104
Table 112 – Attributes of MarketQualitySystem::AuxiliaryValues	105
Table 113 – Association ends of MarketQualitySystem:: AuxiliaryValues with other classes	105
Table 114 – Attributes of MarketQualitySystem::ExpectedEnergy	105
Table 115 – Association ends of MarketQualitySystem:: ExpectedEnergy with other classes	105
Table 116 – Attributes of MarketQualitySystem::ExpectedEnergyValues	106
Table 117 – Association ends of MarketQualitySystem:: ExpectedEnergyValues with other classes	106
Table 118 – Attributes of MarketQualitySystem::FiveMinAuxiliaryData	106
Table 119 – Association ends of MarketQualitySystem:: FiveMinAuxiliaryData with other classes	106

Table 120 – Attributes of MarketQualitySystem::TenMinAuxiliaryData	107
Table 121 – Association ends of MarketQualitySystem:: TenMinAuxiliaryData with other classes	107
Table 122 – Attributes of MarketQualitySystem::TradingHubPrice	107
Table 123 – Association ends of MarketQualitySystem:: TradingHubPrice with other classes	107
Table 124 – Attributes of MarketQualitySystem::TradingHubValues	108
Table 125 – Association ends of MarketQualitySystem:: TradingHubValues with other classes	108
Table 126 – Attributes of ExternalInputs::AnalogMeasurementValueQuality	117
Table 127 – Association ends of ExternalInputs:: AnalogMeasurementValueQuality with other classes	117
Table 128 – Attributes of ExternalInputs::AreaLoadCurve	118
Table 129 – Association ends of ExternalInputs::AreaLoadCurve with other classes	118
Table 130 – Attributes of ExternalInputs::ASRequirements	118
Table 131 – Association ends of ExternalInputs::ASRequirements with other classes	119
Table 132 – Attributes of ExternalInputs::BaseCaseConstraintLimit	119
Table 133 – Association ends of ExternalInputs:: BaseCaseConstraintLimit with other classes	119
Table 134 – Attributes of ExternalInputs::BranchEndFlow	120
Table 135 – Association ends of ExternalInputs::BranchEndFlow with other classes	120
Table 136 – Attributes of ExternalInputs::ConstraintTerm	120
Table 137 – Association ends of ExternalInputs::ConstraintTerm with other classes	121
Table 138 – Attributes of ExternalInputs::ContingencyConstraintLimit	121
Table 139 – Association ends of ExternalInputs:: ContingencyConstraintLimit with other classes	121
Table 140 – Attributes of ExternalInputs::ControlAreaSolutionData	122
Table 141 – Association ends of ExternalInputs:: ControlAreaSolutionData with other classes	122
Table 142 – Attributes of ExternalInputs::DefaultBid	123
Table 143 – Association ends of ExternalInputs::DefaultBid with other classes	123
Table 144 – Attributes of ExternalInputs::DefaultBidCurve	124
Table 145 – Association ends of ExternalInputs::DefaultBidCurve with other classes	124
Table 146 – Attributes of ExternalInputs::DefaultBidCurveData	125
Table 147 – Association ends of ExternalInputs:: DefaultBidCurveData with other classes	125
Table 148 – Attributes of ExternalInputs::DefaultConstraintLimit	125
Table 149 – Association ends of ExternalInputs:: DefaultConstraintLimit with other classes	126
Table 150 – Attributes of ExternalInputs::DiscreteMeasurementValueQuality	126
Table 151 – Association ends of ExternalInputs:: DiscreteMeasurementValueQuality with other classes	126
Table 152 – Attributes of ExternalInputs::DistributionFactorSet	127
Table 153 – Association ends of ExternalInputs:: DistributionFactorSet with other classes	127
Table 154 – Attributes of ExternalInputs::EnergyConsumerData	127

Table 155 – Association ends of ExternalInputs:: EnergyConsumerData with other classes	128
Table 156 – Attributes of ExternalInputs::EnergyPriceIndex	128
Table 157 – Association ends of ExternalInputs::EnergyPriceIndex with other classes	128
Table 158 – Attributes of ExternalInputs::EnergyProfile	128
Table 159 – Association ends of ExternalInputs::EnergyProfile with other classes	129
Table 160 – Attributes of ExternalInputs::EnergyTransaction	129
Table 161 – Association ends of ExternalInputs::EnergyTransaction with other classes	130
Table 162 – Attributes of ExternalInputs::GenDistributionFactor	130
Table 163 – Association ends of ExternalInputs:: GenDistributionFactor with other classes	130
Table 164 – Attributes of ExternalInputs::GeneratingUnitDynamicValues	131
Table 165 – Association ends of ExternalInputs:: GeneratingUnitDynamicValues with other classes	131
Table 166 – Attributes of ExternalInputs::GenericConstraints	131
Table 167 – Association ends of ExternalInputs::GenericConstraints with other classes	132
Table 168 – Attributes of ExternalInputs::InterchangeETCData	132
Table 169 – Association ends of ExternalInputs::InterchangeETCData with other classes	132
Table 170 – Attributes of ExternalInputs::InterchangeSchedule	132
Table 171 – Association ends of ExternalInputs:: InterchangeSchedule with other classes	133
Table 172 – Attributes of ExternalInputs::IntermittentResourceEligibility	133
Table 173 – Association ends of ExternalInputs:: IntermittentResourceEligibility with other classes	134
Table 174 – Attributes of ExternalInputs::LoadDistributionFactor	134
Table 175 – Association ends of ExternalInputs:: LoadDistributionFactor with other classes	135
Table 176 – Attributes of ExternalInputs::LossSensitivity	135
Table 177 – Association ends of ExternalInputs::LossSensitivity with other classes	135
Table 178 – Attributes of ExternalInputs::MktACLineSegment	136
Table 179 – Association ends of ExternalInputs::MktACLineSegment with other classes	136
Table 180 – Attributes of ExternalInputs::MktAnalogLimit	137
Table 181 – Association ends of ExternalInputs::MktAnalogLimit with other classes	137
Table 182 – Attributes of ExternalInputs::MktAnalogLimitSet	138
Table 183 – Association ends of ExternalInputs::MktAnalogLimitSet with other classes	138
Table 184 – Attributes of ExternalInputs::MktAnalogValue	138
Table 185 – Association ends of ExternalInputs::MktAnalogValue with other classes	139
Table 186 – Attributes of ExternalInputs::MktControlArea	139
Table 187 – Association ends of ExternalInputs::MktControlArea with other classes	139
Table 188 – Attributes of ExternalInputs::MktDiscreteValue	140
Table 189 – Association ends of ExternalInputs::MktDiscreteValue with other classes	140
Table 190 – Attributes of ExternalInputs::MktOperationalLimitType	141
Table 191 – Association ends of ExternalInputs:: MktOperationalLimitType with other classes	141
Table 192 – Attributes of ExternalInputs::MktOutageSchedule	141

Table 193 – Association ends of ExternalInputs::MktOutageSchedule with other classes	142
Table 194 – Attributes of ExternalInputs::MktSeriesCompensator	143
Table 195 – Association ends of ExternalInputs:: MktSeriesCompensator with other classes	143
Table 196 – Attributes of ExternalInputs::MktShuntCompensator	144
Table 197 – Association ends of ExternalInputs:: MktShuntCompensator with other classes	144
Table 198 – Attributes of ExternalInputs::MktSwitch.....	145
Table 199 – Association ends of ExternalInputs::MktSwitch with other classes	145
Table 200 – Attributes of ExternalInputs::MktTapChanger.....	146
Table 201 – Association ends of ExternalInputs::MktTapChanger with other classes	146
Table 202 – Association ends of ExternalInputs::MWLimitSchedule with other classes	147
Table 203 – Attributes of ExternalInputs::NodeConstraintTerm	147
Table 204 – Association ends of ExternalInputs::NodeConstraintTerm with other classes	147
Table 205 – Attributes of ExternalInputs::Profile	148
Table 206 – Association ends of ExternalInputs::Profile with other classes	148
Table 207 – Attributes of ExternalInputs::ProfileData.....	148
Table 208 – Association ends of ExternalInputs::ProfileData with other classes	149
Table 209 – Attributes of ExternalInputs::ReservedDemandCurve	149
Table 210 – Association ends of ExternalInputs:: ReserveDemandCurve with other classes	149
Table 211 – Attributes of ExternalInputs::SCADAInformation	150
Table 212 – Attributes of ExternalInputs::SecurityConstraints	150
Table 213 – Association ends of ExternalInputs::SecurityConstraints with other classes	150
Table 214 – Attributes of ExternalInputs::SecurityConstraintSum	151
Table 215 – Association ends of ExternalInputs:: SecurityConstraintSum with other classes	152
Table 216 – Attributes of ExternalInputs::ServicePoint.....	152
Table 217 – Association ends of ExternalInputs::ServicePoint with other classes	152
Table 218 – Attributes of ExternalInputs::ShuntCompensatorDynamicData	153
Table 219 – Association ends of ExternalInputs::ShuntCompensatorDynamicData with other classes	153
Table 220 – Attributes of ExternalInputs::SwitchStatus	153
Table 221 – Association ends of ExternalInputs::SwitchStatus with other classes	153
Table 222 – Attributes of ExternalInputs::SysLoadDistributionFactor.....	154
Table 223 – Association ends of ExternalInputs:: SysLoadDistributionFactor with other classes	154
Table 224 – Attributes of ExternalInputs::TapChangerDynamicData.....	154
Table 225 – Association ends of ExternalInputs:: TapChangerDynamicData with other classes	155
Table 226 – Attributes of ExternalInputs::TerminalConstraintTerm	155
Table 227 – Association ends of ExternalInputs:: TerminalConstraintTerm with other classes	155
Table 228 – Attributes of ExternalInputs::TransferInterface.....	155

Table 229 – Association ends of ExternalInputs::TransferInterface with other classes	156
Table 230 – Attributes of ExternalInputs::TransferInterfaceSolution	156
Table 231 – Association ends of ExternalInputs:: TransferInterfaceSolution with other classes	156
Table 232 – Attributes of ExternalInputs::TransmissionCapacity	156
Table 233 – Association ends of ExternalInputs:: TransmissionCapacity with other classes	157
Table 234 – Attributes of ExternalInputs::TransmissionInterfaceRightEntitlement	157
Table 235 – Association ends of ExternalInputs:: TransmissionInterfaceRightEntitlement with other classes	158
Table 236 – Attributes of ExternalInputs::TransmissionPath.....	158
Table 237 – Association ends of ExternalInputs::TransmissionPath with other classes	158
Table 238 – Association ends of ExternalInputs:: TransmissionReservation with other classes	159
Table 239 – Attributes of ExternalInputs::TREntitlement	159
Table 240 – Association ends of ExternalInputs::TREntitlement with other classes	159
Table 241 – Attributes of ExternalInputs::UnitInitialConditions	160
Table 242 – Association ends of ExternalInputs::UnitInitialConditions with other classes	160
Table 243 – Attributes of MarketResults::AncillaryServiceClearing.....	170
Table 244 – Association ends of MarketResults:: AncillaryServiceClearing with other classes	170
Table 245 – Attributes of MarketResults::BidDeterminant.....	171
Table 246 – Association ends of MarketResults::BidDeterminant with other classes.....	171
Table 247 – Attributes of MarketResults::ChargeProfile	172
Table 248 – Association ends of MarketResults::ChargeProfile with other classes	172
Table 249 – Attributes of MarketResults::ChargeProfileData	173
Table 250 – Association ends of MarketResults::ChargeProfileData with other classes.....	173
Table 251 – Attributes of MarketResults::CommitmentClearing	173
Table 252 – Association ends of MarketResults:: CommitmentClearing with other classes	174
Table 253 – Attributes of MarketResults::Commitments	174
Table 254 – Association ends of MarketResults::Commitments with other classes	174
Table 255 – Attributes of MarketResults::ConstraintClearing.....	175
Table 256 – Association ends of MarketResults::ConstraintClearing with other classes	175
Table 257 – Attributes of MarketResults::ConstraintResults	176
Table 258 – Association ends of MarketResults::ConstraintResults with other classes.....	176
Table 259 – Attributes of MarketResults::DopInstruction	177
Table 260 – Association ends of MarketResults::DopInstruction with other classes.....	177
Table 261 – Attributes of MarketResults::DotInstruction	177
Table 262 – Association ends of MarketResults::DotInstruction with other classes.....	178
Table 263 – Attributes of MarketResults::ExPostLoss	178
Table 264 – Association ends of MarketResults::ExPostLoss with other classes	179
Table 265 – Attributes of MarketResults::ExPostLossResults	179
Table 266 – Association ends of MarketResults::ExPostLossResults with other classes	180

Table 267 – Attributes of MarketResults::ExPostMarketRegion	180
Table 268 – Association ends of MarketResults::ExPostMarketRegion with other classes	180
Table 269 – Attributes of MarketResults::ExPostMarketRegionResults	181
Table 270 – Association ends of MarketResults:: ExPostMarketRegionResults with other classes	181
Table 271 – Attributes of MarketResults::ExPostPricing	181
Table 272 – Association ends of MarketResults::ExPostPricing with other classes	182
Table 273 – Attributes of MarketResults::ExPostPricingResults	182
Table 274 – Association ends of MarketResults:: ExPostPricingResults with other classes	182
Table 275 – Attributes of MarketResults::ExPostResource	183
Table 276 – Association ends of MarketResults::ExPostResource with other classes	183
Table 277 – Attributes of MarketResults::ExPostResourceResults	184
Table 278 – Association ends of MarketResults:: ExPostResourceResults with other classes	184
Table 279 – Attributes of MarketResults::GeneralClearing	184
Table 280 – Association ends of MarketResults::GeneralClearing with other classes	185
Table 281 – Attributes of MarketResults::GeneralClearingResults	185
Table 282 – Association ends of MarketResults:: GeneralClearingResults with other classes	185
Table 283 – Attributes of MarketResults::InstructionClearing	186
Table 284 – Association ends of MarketResults::InstructionClearing with other classes	186
Table 285 – Attributes of MarketResults::InstructionClearingDOP	186
Table 286 – Association ends of MarketResults:: InstructionClearingDOP with other classes	187
Table 287 – Attributes of MarketResults::InstructionClearingDOT	187
Table 288 – Association ends of MarketResults:: InstructionClearingDOT with other classes	188
Table 289 – Attributes of MarketResults::Instructions	188
Table 290 – Association ends of MarketResults::Instructions with other classes	189
Table 291 – Attributes of MarketResults::LoadFollowingOperatorInput	189
Table 292 – Association ends of MarketResults:: LoadFollowingOperatorInput with other classes	189
Table 293 – Attributes of MarketResults::LossClearing	190
Table 294 – Association ends of MarketResults::LossClearing with other classes	190
Table 295 – Attributes of MarketResults::LossClearingResults	190
Table 296 – Association ends of MarketResults::LossClearingResults with other classes	191
Table 297 – Attributes of MarketResults::MarketRegionResults	191
Table 298 – Association ends of MarketResults:: MarketRegionResults with other classes	192
Table 299 – Attributes of MarketResults::MarketResults	192
Table 300 – Association ends of MarketResults::MarketResults with other classes	192
Table 301 – Attributes of MarketResults::MarketStatement	193
Table 302 – Association ends of MarketResults::MarketStatement with other classes	193

Table 303 – Attributes of MarketResults::MarketStatementLineItem	193
Table 304 – Association ends of MarketResults:: MarketStatementLineItem with other classes	194
Table 305 – Attributes of MarketResults::MitigatedBid	195
Table 306 – Association ends of MarketResults::MitigatedBid with other classes	195
Table 307 – Attributes of MarketResults::MitigatedBidClearing	195
Table 308 – Association ends of MarketResults::MitigatedBidClearing with other classes	196
Table 309 – Attributes of MarketResults::MitigatedBidSegment.....	196
Table 310 – Association ends of MarketResults:: MitigatedBidSegment with other classes	196
Table 311 – Attributes of MarketResults::MPMClearing.....	196
Table 312 – Association ends of MarketResults::MPMClearing with other classes	197
Table 313 – Attributes of MarketResults::MPMResourceStatus	197
Table 314 – Association ends of MarketResults::MPMResourceStatus with other classes	198
Table 315 – Attributes of MarketResults::MPMTestResults	198
Table 316 – Association ends of MarketResults::MPMTestResults with other classes	198
Table 317 – Attributes of MarketResults::PassThroughBill	199
Table 318 – Association ends of MarketResults::PassThroughBill with other classes	200
Table 319 – Attributes of MarketResults::PnodeClearing.....	200
Table 320 – Association ends of MarketResults::PnodeClearing with other classes	200
Table 321 – Attributes of MarketResults::PnodeResults	201
Table 322 – Association ends of MarketResults::PnodeResults with other classes	201
Table 323 – Attributes of MarketResults::ResourceAwardClearing	201
Table 324 – Association ends of MarketResults:: ResourceAwardClearing with other classes	202
Table 325 – Attributes of MarketResults::ResourceAwardInstruction.....	202
Table 326 – Association ends of MarketResults::ResourceAwardInstruction with other classes	204
Table 327 – Attributes of MarketResults::ResourceClearing	204
Table 328 – Association ends of MarketResults::ResourceClearing with other classes	205
Table 329 – Attributes of MarketResults::ResourceDispatchResults.....	205
Table 330 – Association ends of MarketResults:: ResourceDispatchResults with other classes	206
Table 331 – Attributes of MarketResults::ResourceLoadFollowingInst.....	206
Table 332 – Association ends of MarketResults:: ResourceLoadFollowingInst with other classes	206
Table 333 – Association ends of MarketResults::RMRDetermination with other classes	207
Table 334 – Attributes of MarketResults::RMROperatorInput	207
Table 335 – Association ends of MarketResults::RMROperatorInput with other classes	207
Table 336 – Attributes of MarketResults::RUCAwardInstruction	208
Table 337 – Association ends of MarketResults:: RUCAwardInstruction with other classes	208
Table 338 – Attributes of MarketResults::SelfScheduleBreakdown	209

Table 339 – Association ends of MarketResults:: SelfScheduleBreakdown with other classes	209
Table 340 – Attributes of MarketResults::Settlement	209
Table 341 – Association ends of MarketResults::Settlement with other classes	210
Table 342 – Attributes of MarketResults::TransactionBidClearing	210
Table 343 – Association ends of MarketResults:: TransactionBidClearing with other classes	210
Table 344 – Attributes of MarketResults::TransactionBidResults	211
Table 345 – Association ends of MarketResults:: TransactionBidResults with other classes	211
Table 346 – Literals of MktDomain::ActionType	212
Table 347 – Literals of MktDomain::AnalogLimitType	212
Table 348 – Literals of MktDomain::AnodeType	212
Table 349 – Literals of MktDomain::ApnodeType	213
Table 350 – Literals of MktDomain::AreaControlMode	214
Table 351 – Literals of MktDomain::AutomaticDispatchMode	214
Table 352 – Literals of MktDomain::AutomaticDisplnstTypeCommitment	214
Table 353 – Literals of MktDomain::BidCalculationBasis	214
Table 354 – Literals of MktDomain::BidMitigationStatus	215
Table 355 – Literals of MktDomain::BidMitigationType	215
Table 356 – Literals of MktDomain::BidType	216
Table 357 – Literals of MktDomain::BidTypeRMR	216
Table 358 – Literals of MktDomain::BranchRatingType	216
Table 359 – Literals of MktDomain::CheckOutType	216
Table 360 – Literals of MktDomain::CommitmentType	217
Table 361 – Literals of MktDomain::ConstraintLimitType	217
Table 362 – Literals of MktDomain::ConstraintRampType	217
Table 363 – Literals of MktDomain::ContractType	218
Table 364 – Literals of MktDomain::CostBasis	218
Table 365 – Literals of MktDomain::CRRCategoryType	218
Table 366 – Literals of MktDomain::CRRHedgeType	219
Table 367 – Literals of MktDomain::CRRRoleType	219
Table 368 – Literals of MktDomain::CRRSegmentType	219
Table 369 – Literals of MktDomain::DispatchResponseType	220
Table 370 – Literals of MktDomain::EnergyPriceIndexType	220
Table 371 – Literals of MktDomain::EnergyProductType	220
Table 372 – Literals of MktDomain::EnergyTransactionType	221
Table 373 – Literals of MktDomain::EquipmentStatusType	221
Table 374 – Literals of MktDomain::ExecutionType	221
Table 375 – Literals of MktDomain::FlagTypeRMR	221
Table 376 – Literals of MktDomain::FlowDirectionType	222
Table 377 – Literals of MktDomain::FuelSource	222
Table 378 – Literals of MktDomain::InterTieDirection	223
Table 379 – Literals of MktDomain::LoadForecastType	223

Table 380 – Literals of MktDomain::MarketProductSelfSchedType	223
Table 381 – Literals of MktDomain::MarketProductType	224
Table 382 – Literals of MktDomain::MarketType	224
Table 383 – Literals of MktDomain::MktAccountKind	225
Table 384 – Literals of MktDomain::MktBillMediaKind	225
Table 385 – Literals of MktDomain::MktInvoiceLineItemKind	225
Table 386 – Literals of MktDomain::MPMTestIdentifierType	226
Table 387 – Literals of MktDomain::MPMTestMethodType	226
Table 388 – Literals of MktDomain::MPMTestOutcome	226
Table 389 – Literals of MktDomain::MQSCHGType	227
Table 390 – Literals of MktDomain::MQSInstructionSource	227
Table 391 – Literals of MktDomain::OnOff	227
Table 392 – Literals of MktDomain::OutageType	227
Table 393 – Literals of MktDomain::ParticipationCategoryMPM	228
Table 394 – Literals of MktDomain::PassIndicatorType	228
Table 395 – Literals of MktDomain::PurposeFlagType	229
Table 396 – Literals of MktDomain::RampCurveType	229
Table 397 – Literals of MktDomain::RampModeType	229
Table 398 – Literals of MktDomain::RampRateCondition	230
Table 399 – Literals of MktDomain::RampRateType	230
Table 400 – Literals of MktDomain::ReserveRequirementType	230
Table 401 – Literals of MktDomain::ResourceAncillaryServiceType	231
Table 402 – Literals of MktDomain::ResourceAssnType	231
Table 403 – Literals of MktDomain::ResourceCapacityType	231
Table 404 – Literals of MktDomain::ResourceLimitIndicator	232
Table 405 – Literals of MktDomain::ResourceRegistrationStatus	232
Table 406 – Literals of MktDomain::ResultsConstraintType	232
Table 407 – Literals of MktDomain::SelfSchedReferenceType	233
Table 408 – Literals of MktDomain::SelfScheduleBreakdownType	233
Table 409 – Literals of MktDomain::SwitchStatusType	233
Table 410 – Literals of MktDomain::TimeOfUse	234
Table 411 – Literals of MktDomain::TradeType	234
Table 412 – Literals of MktDomain::TRType	234
Table 413 – Literals of MktDomain::UnitType	235
Table 414 – Literals of MktDomain::YesNo	235
Table 415 – Attributes of ParticipantInterfaces::ActionRequest	240
Table 416 – Association ends of ParticipantInterfaces::ActionRequest with other classes	241
Table 417 – Attributes of ParticipantInterfaces::AreaLoadBid	241
Table 418 – Association ends of ParticipantInterfaces::AreaLoadBid with other classes	241
Table 419 – Attributes of ParticipantInterfaces::AttributeProperty	242
Table 420 – Association ends of ParticipantInterfaces::AttributeProperty with other classes	242
Table 421 – Attributes of ParticipantInterfaces::Bid	242

Table 422 – Association ends of ParticipantInterfaces::Bid with other classes	243
Table 423 – Attributes of ParticipantInterfaces::BidDistributionFactor	243
Table 424 – Association ends of ParticipantInterfaces:: BidDistributionFactor with other classes	244
Table 425 – Attributes of ParticipantInterfaces::BidError	244
Table 426 – Association ends of ParticipantInterfaces::BidError with other classes	244
Table 427 – Attributes of ParticipantInterfaces::BidHourlyProductSchedule	245
Table 428 – Association ends of ParticipantInterfaces:: BidHourlyProductSchedule with other classes	245
Table 429 – Attributes of ParticipantInterfaces::BidHourlySchedule	245
Table 430 – Association ends of ParticipantInterfaces:: BidHourlySchedule with other classes	246
Table 431 – Attributes of ParticipantInterfaces::BidPriceCurve	246
Table 432 – Association ends of ParticipantInterfaces::BidPriceCurve with other classes	246
Table 433 – Attributes of ParticipantInterfaces::BidPriceSchedule	247
Table 434 – Association ends of ParticipantInterfaces:: BidPriceSchedule with other classes	247
Table 435 – Attributes of ParticipantInterfaces::BidSelfSched	248
Table 436 – Association ends of ParticipantInterfaces::BidSelfSched with other classes	249
Table 437 – Attributes of ParticipantInterfaces::BidSet	249
Table 438 – Association ends of ParticipantInterfaces::BidSet with other classes	249
Table 439 – Attributes of ParticipantInterfaces::ChargeComponent	250
Table 440 – Association ends of ParticipantInterfaces:: ChargeComponent with other classes	250
Table 441 – Attributes of ParticipantInterfaces::ChargeGroup	251
Table 442 – Association ends of ParticipantInterfaces::ChargeGroup with other classes	251
Table 443 – Attributes of ParticipantInterfaces::ChargeType	251
Table 444 – Association ends of ParticipantInterfaces::ChargeType with other classes	252
Table 445 – Attributes of ParticipantInterfaces::DispatchInstReply	252
Table 446 – Association ends of ParticipantInterfaces:: DispatchInstReply with other classes	253
Table 447 – Association ends of ParticipantInterfaces:: EnergyPriceCurve with other classes	253
Table 448 – Attributes of ParticipantInterfaces::GeneratingBid	254
Table 449 – Association ends of ParticipantInterfaces::GeneratingBid with other classes	255
Table 450 – Attributes of ParticipantInterfaces::HourlyPreDispatchSchedule	256
Table 451 – Association ends of ParticipantInterfaces:: HourlyPreDispatchSchedule with other classes	256
Table 452 – Attributes of ParticipantInterfaces::InterTieBid	257
Table 453 – Association ends of ParticipantInterfaces::InterTieBid with other classes	257
Table 454 – Attributes of ParticipantInterfaces::InterTieDispatchResponse	258
Table 455 – Association ends of ParticipantInterfaces:: InterTieDispatchResponse with other classes	258
Table 456 – Attributes of ParticipantInterfaces::LoadBid	259

Table 457 – Association ends of ParticipantInterfaces::LoadBid with other classes	260
Table 458 – Attributes of ParticipantInterfaces::LoadFollowingInst	261
Table 459 – Association ends of ParticipantInterfaces:: LoadFollowingInst with other classes	261
Table 460 – Attributes of ParticipantInterfaces::LoadReductionPriceCurve	261
Table 461 – Association ends of ParticipantInterfaces:: LoadReductionPriceCurve with other classes	262
Table 462 – Attributes of ParticipantInterfaces::MajorChargeGroup	262
Table 463 – Association ends of ParticipantInterfaces:: MajorChargeGroup with other classes	262
Table 464 – Attributes of ParticipantInterfaces::MarketScheduledEvent	263
Table 465 – Association ends of ParticipantInterfaces:: MarketScheduledEvent with other classes	263
Table 466 – Attributes of ParticipantInterfaces::NotificationTimeCurve	263
Table 467 – Association ends of ParticipantInterfaces:: NotificationTimeCurve with other classes	264
Table 468 – Attributes of ParticipantInterfaces::OpenTieSchedule	264
Table 469 – Association ends of ParticipantInterfaces:: OpenTieSchedule with other classes	265
Table 470 – Attributes of ParticipantInterfaces::ProductBid	265
Table 471 – Association ends of ParticipantInterfaces::ProductBid with other classes	265
Table 472 – Attributes of ParticipantInterfaces::PumpingCostSchedule	266
Table 473 – Association ends of ParticipantInterfaces:: PumpingCostSchedule with other classes	266
Table 474 – Attributes of ParticipantInterfaces::PumpingLevelSchedule	266
Table 475 – Association ends of ParticipantInterfaces:: PumpingLevelSchedule with other classes	267
Table 476 – Attributes of ParticipantInterfaces::PumpingShutDownCostSchedule	267
Table 477 – Association ends of ParticipantInterfaces:: PumpingShutDownCostSchedule with other classes	268
Table 478 – Attributes of ParticipantInterfaces::RampRateCurve	268
Table 479 – Association ends of ParticipantInterfaces:: RampRateCurve with other classes	269
Table 480 – Attributes of ParticipantInterfaces::ResourceBid	269
Table 481 – Association ends of ParticipantInterfaces::ResourceBid with other classes	270
Table 482 – Attributes of ParticipantInterfaces::StartUpCostCurve	271
Table 483 – Association ends of ParticipantInterfaces:: StartUpCostCurve with other classes	271
Table 484 – Attributes of ParticipantInterfaces::StartUpTimeCurve	272
Table 485 – Association ends of ParticipantInterfaces:: StartUpTimeCurve with other classes	272
Table 486 – Attributes of ParticipantInterfaces::Trade	272
Table 487 – Association ends of ParticipantInterfaces::Trade with other classes	273
Table 488 – Attributes of ParticipantInterfaces::TradeError	274
Table 489 – Association ends of ParticipantInterfaces::TradeError with other classes	274
Table 490 – Attributes of ParticipantInterfaces::TradeProduct	275
Table 491 – Association ends of ParticipantInterfaces::TradeProduct with other classes	275

Table 492 – Attributes of ParticipantInterfaces::TransactionBid	275
Table 493 – Association ends of ParticipantInterfaces:: TransactionBid with other classes	276
Table 494 – Attributes of ReferenceData::AdjacentCaset	287
Table 495 – Association ends of ReferenceData::AdjacentCaset with other classes	287
Table 496 – Attributes of ReferenceData::AggregatedPnode	287
Table 497 – Association ends of ReferenceData::AggregatedPnode with other classes	288
Table 498 – Attributes of ReferenceData::AggregateNode	288
Table 499 – Association ends of ReferenceData::AggregateNode with other classes	289
Table 500 – Attributes of ReferenceData::BidPriceCap	289
Table 501 – Association ends of ReferenceData::BidPriceCap with other classes	290
Table 502 – Attributes of ReferenceData::CnodeDistributionFactor	290
Table 503 – Association ends of ReferenceData:: CnodeDistributionFactor with other classes	290
Table 504 – Attributes of ReferenceData::CombinedCycleConfiguration	291
Table 505 – Association ends of ReferenceData:: CombinedCycleConfiguration with other classes	293
Table 506 – Attributes of ReferenceData::CombinedCycleConfigurationMember	295
Table 507 – Association ends of ReferenceData:: CombinedCycleConfigurationMember with other classes	295
Table 508 – Attributes of ReferenceData::CombinedCycleLogicalConfiguration	296
Table 509 – Association ends of ReferenceData:: CombinedCycleLogicalConfiguration with other classes	296
Table 510 – Attributes of ReferenceData::CombinedCycleTransitionState	296
Table 511 – Association ends of ReferenceData:: CombinedCycleTransitionState with other classes	297
Table 512 – Attributes of ReferenceData::CongestionArea	297
Table 513 – Association ends of ReferenceData::CongestionArea with other classes	297
Table 514 – Attributes of ReferenceData::ContractDistributionFactor	298
Table 515 – Association ends of ReferenceData:: ContractDistributionFactor with other classes	298
Table 516 – Attributes of ReferenceData::ContractRight	299
Table 517 – Association ends of ReferenceData::ContractRight with other classes	300
Table 518 – Attributes of ReferenceData::ControlAreaDesignation	300
Table 519 – Association ends of ReferenceData:: ControlAreaDesignation with other classes	301
Table 520 – Attributes of ReferenceData::Flowgate	301
Table 521 – Association ends of ReferenceData::Flowgate with other classes	301
Table 522 – Attributes of ReferenceData::FlowgatePartner	302
Table 523 – Association ends of ReferenceData::FlowgatePartner with other classes	302
Table 524 – Attributes of ReferenceData::FlowgateRelief	302
Table 525 – Association ends of ReferenceData::FlowgateRelief with other classes	303
Table 526 – Attributes of ReferenceData::FlowgateValue	303
Table 527 – Association ends of ReferenceData::FlowgateValue with other classes	304
Table 528 – Attributes of ReferenceData::ForbiddenRegion	304
Table 529 – Association ends of ReferenceData::ForbiddenRegion with other classes	304

Table 530 – Attributes of ReferenceData::FormerReference	304
Table 531 – Association ends of ReferenceData::FormerReference with other classes	305
Table 532 – Attributes of ReferenceData::FuelCostCurve	305
Table 533 – Association ends of ReferenceData::FuelCostCurve with other classes	305
Table 534 – Attributes of ReferenceData::FuelRegion	306
Table 535 – Association ends of ReferenceData::FuelRegion with other classes	306
Table 536 – Attributes of ReferenceData::GasPrice	306
Table 537 – Association ends of ReferenceData::GasPrice with other classes	306
Table 538 – Attributes of ReferenceData::HostControlArea	307
Table 539 – Association ends of ReferenceData::HostControlArea with other classes	307
Table 540 – Attributes of ReferenceData::IndividualPnode	308
Table 541 – Association ends of ReferenceData::IndividualPnode with other classes	308
Table 542 – Attributes of ReferenceData::LoadAggregationPoint	309
Table 543 – Association ends of ReferenceData:: LoadAggregationPoint with other classes	309
Table 544 – Attributes of ReferenceData::LoadRatio	309
Table 545 – Association ends of ReferenceData::LoadRatio with other classes	310
Table 546 – Attributes of ReferenceData::LoadReductionTimeCurve	310
Table 547 – Association ends of ReferenceData:: LoadReductionTimeCurve with other classes	310
Table 548 – Attributes of ReferenceData::LocalReliabilityArea	311
Table 549 – Association ends of ReferenceData::LocalReliabilityArea with other classes	311
Table 550 – Attributes of ReferenceData::MarketPerson	311
Table 551 – Association ends of ReferenceData::MarketPerson with other classes	312
Table 552 – Attributes of ReferenceData::MarketQualificationRequirement	312
Table 553 – Association ends of ReferenceData:: MarketQualificationRequirement with other classes	313
Table 554 – Attributes of ReferenceData::MarketRegion	313
Table 555 – Association ends of ReferenceData::MarketRegion with other classes	313
Table 556 – Attributes of ReferenceData::MarketSkill	314
Table 557 – Association ends of ReferenceData::MarketSkill with other classes	314
Table 558 – Attributes of ReferenceData::MaxStartUpCostCurve	315
Table 559 – Association ends of ReferenceData:: MaxStartUpCostCurve with other classes	315
Table 560 – Attributes of ReferenceData::MeteredSubSystem	315
Table 561 – Association ends of ReferenceData::MeteredSubSystem with other classes	316
Table 562 – Attributes of ReferenceData::MktCombinedCyclePlant	316
Table 563 – Association ends of ReferenceData:: MktCombinedCyclePlant with other classes	316
Table 564 – Attributes of ReferenceData::MktConductingEquipment	317
Table 565 – Association ends of ReferenceData:: MktConductingEquipment with other classes	317
Table 566 – Attributes of ReferenceData::MktContingency	317
Table 567 – Association ends of ReferenceData::MktContingency with other classes	318

Table 568 – Attributes of ReferenceData::MktHeatRateCurve	318
Table 569 – Association ends of ReferenceData::MktHeatRateCurve with other classes	319
Table 570 – Attributes of ReferenceData::MktThermalGeneratingUnit	319
Table 571 – Association ends of ReferenceData:: MktThermalGeneratingUnit with other classes	320
Table 572 – Attributes of ReferenceData::MPMTestCategory	321
Table 573 – Association ends of ReferenceData::MPMTestCategory with other classes	322
Table 574 – Attributes of ReferenceData::MPMTestThreshold	322
Table 575 – Association ends of ReferenceData::MPMTestThreshold with other classes	323
Table 576 – Attributes of ReferenceData::MSSAggregation	323
Table 577 – Association ends of ReferenceData::MSSAggregation with other classes	323
Table 578 – Attributes of ReferenceData::MSSZone	324
Table 579 – Association ends of ReferenceData::MSSZone with other classes	324
Table 580 – Attributes of ReferenceData::OilPrice	325
Table 581 – Association ends of ReferenceData::OilPrice with other classes	325
Table 582 – Attributes of ReferenceData::OrgPnodeAllocation	325
Table 583 – Association ends of ReferenceData::OrgPnodeAllocation with other classes	325
Table 584 – Attributes of ReferenceData::OrgResOwnership	326
Table 585 – Association ends of ReferenceData::OrgResOwnership with other classes	326
Table 586 – Attributes of ReferenceData::Pnode	326
Table 587 – Association ends of ReferenceData::Pnode with other classes	327
Table 588 – Attributes of ReferenceData::PnodeDistributionFactor	327
Table 589 – Association ends of ReferenceData:: PnodeDistributionFactor with other classes	328
Table 590 – Attributes of ReferenceData::RegisteredGenerator	328
Table 591 – Association ends of ReferenceData:: RegisteredGenerator with other classes	332
Table 592 – Attributes of ReferenceData::RegisteredInterTie	334
Table 593 – Association ends of ReferenceData::RegisteredInterTie with other classes	335
Table 594 – Attributes of ReferenceData::RegisteredLoad	336
Table 595 – Association ends of ReferenceData::RegisteredLoad with other classes	338
Table 596 – Attributes of ReferenceData::RegulatingLimit	339
Table 597 – Association ends of ReferenceData::RegulatingLimit with other classes	340
Table 598 – Attributes of ReferenceData::ResourceAncillaryServiceQualification	340
Table 599 – Association ends of ReferenceData:: ResourceAncillaryServiceQualification with other classes	340
Table 600 – Attributes of ReferenceData::ResourceCapacity	341
Table 601 – Association ends of ReferenceData::ResourceCapacity with other classes	341
Table 602 – Attributes of ReferenceData::ResourceOperationMaintenanceCost	342
Table 603 – Association ends of ReferenceData:: ResourceOperationMaintenanceCost with other classes	342
Table 604 – Attributes of ReferenceData::ResourceStartupCost	342
Table 605 – Association ends of ReferenceData:: ResourceStartupCost with other classes	343

Table 606 – Association ends of ReferenceData:: ResourceVerifiableCosts with other classes	343
Table 607 – Attributes of ReferenceData::RMRHeatRateCurve	344
Table 608 – Association ends of ReferenceData::RMRHeatRateCurve with other classes	344
Table 609 – Attributes of ReferenceData::RMRStartUpCostCurve	344
Table 610 – Association ends of ReferenceData:: RMRStartUpCostCurve with other classes	345
Table 611 – Attributes of ReferenceData::RMRStartUpEnergyCurve	345
Table 612 – Association ends of ReferenceData:: RMRStartUpEnergyCurve with other classes	346
Table 613 – Attributes of ReferenceData::RMRStartUpFuelCurve	346
Table 614 – Association ends of ReferenceData:: RMRStartUpFuelCurve with other classes	346
Table 615 – Attributes of ReferenceData::RMRStartUpTimeCurve	347
Table 616 – Association ends of ReferenceData:: RMRStartUpTimeCurve with other classes	347
Table 617 – Attributes of ReferenceData::RTO	347
Table 618 – Association ends of ReferenceData::RTO with other classes	348
Table 619 – Attributes of ReferenceData::RUCZone	349
Table 620 – Association ends of ReferenceData::RUCZone with other classes	349
Table 621 – Attributes of ReferenceData::SchedulingCoordinator	349
Table 622 – Association ends of ReferenceData:: SchedulingCoordinator with other classes	350
Table 623 – Attributes of ReferenceData::SchedulingCoordinatorUser	351
Table 624 – Association ends of ReferenceData:: SchedulingCoordinatorUser with other classes	351
Table 625 – Attributes of ReferenceData::SchedulingPoint	351
Table 626 – Association ends of ReferenceData::SchedulingPoint with other classes	351
Table 627 – Attributes of ReferenceData::StartUpEnergyCurve	352
Table 628 – Association ends of ReferenceData::StartUpEnergyCurve with other classes	352
Table 629 – Attributes of ReferenceData::StartUpFuelCurve	353
Table 630 – Association ends of ReferenceData::StartUpFuelCurve with other classes	353
Table 631 – Attributes of ReferenceData::SubControlArea	353
Table 632 – Association ends of ReferenceData::SubControlArea with other classes	354
Table 633 – Attributes of ReferenceData::SubstitutionResourceList	355
Table 634 – Association ends of ReferenceData:: SubstitutionResourceList with other classes	355
Table 635 – Attributes of ReferenceData::TACArea	355
Table 636 – Association ends of ReferenceData::TACArea with other classes	355
Table 637 – Attributes of ReferenceData::TransmissionRightChain	356
Table 638 – Association ends of ReferenceData:: TransmissionRightChain with other classes	356
Table 639 – Attributes of ReferenceData::WheelingCounterParty	356
Table 640 – Association ends of ReferenceData:: WheelingCounterParty with other classes	357

INTERNATIONAL ELECTROTECHNICAL COMMISSION

FRAMEWORK FOR ENERGY MARKET COMMUNICATIONS –

Part 301: Common information model (CIM) extensions for markets

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Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

Throughout this document, references are made to the UML model. References to specific UML packages and classes are made by citing the name of package or class in single quotes, example, 'IEC 61970' or 'IdentifiedObject'.

A list of all parts of the IEC 62325 series, under the general title: *Framework for energy market communications*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

This International Standard is part of the IEC 62325 series for deregulated energy market data exchanges. This standard was originally based upon the work of the European transmission system operators TF 14 EDI (Electronic data interchange) and the EPRI TR 1009455 and TR 1011431 (CIM extensions to support market operations, phase 1 and phase 2).

The principal objective of the IEC 62325 series of standards is to produce standards which facilitate the integration of market application software developed independently by different vendors into a market management system, between market management systems and market participant systems. This is accomplished by defining message exchanges to enable these applications or systems access to public data and exchange information independent of how such information is represented internally.

The common information model (CIM) specifies the basis for the semantics for this message exchange. The profile specifications, which are contained in other parts of the IEC 62325 standards, specify the content of the messages exchanged. Profile specifications in other parts of the IEC 62325 standard support both European style markets based on the European regulations and the Third Party Access and zonal market concepts and US style markets characterized by day ahead unit commitment by a market operator, intraday and real time balancing through central dispatch, and settlement based on locational marginal prices. These markets are used in the US and in other parts of the world and are not exclusively limited to North America.

The CIM is an abstract model that represents all the major objects in an electric utility enterprise typically needed to model the operational aspects of a utility. This model includes public classes and attributes for these objects, as well as the relationships between them.

The objects represented in the CIM are abstract in nature and may be used in a wide variety of applications. The use of the CIM goes far beyond its application in a market management system. This standard should be understood as a tool to enable integration in any domain where a market system model is needed to facilitate interoperability and plug compatibility between applications and systems independent of any particular implementation.

The IEC 62325 standards are part of a series of standards. IEC 61970 standards define the EMS application programming interfaces and the IEC 61968 standards define System interfaces for distribution management. IEC 62325-301 corresponds to the IEC 61970-301 and the IEC 61968-11 standards that describe parts of the common information model relevant to modeling interfaces for EMS, DMS and MMS systems. While there are multiple IEC standards dealing with different parts of the CIM, there is a single, unified information model comprising the CIM behind all these individual standards documents.