



**58651.2-  
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<p>4.2. 2. - « ( .)», 21 31</p>	<p>ConductingEquipment  Switch ( 6—7 2020 .)</p>	<p>Conductor  ProtectedSwitch</p>

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United power system and isolated power systems. Information model of power industry. Basic profile of information model

— 2020—01—01

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	( .)	( .)
— -	IdentifiedObject	—
	PowerSystemResource	IdentifiedObject
	ACDCTerminal	IdentifiedObject
	ConnectivityNodeContainer	PowerSystemResource
	Equipmentcontainer	ConnectivityNodeContainer
	Equipment	PowerSystemResource
	PrimeMover	PowerSystemResource
	SteamSupply	PowerSystemResource
	FossilSteamSupply	SteamSupply
	ConductingEquipment	Equipment
	AuxiliaryEquipment	Equipment
	Sensor	AuxiliaryEquipment
	GeneratingUnit	Equipment
	RegulatingCondEq	ConductingEquipment
	Conductor	ConductingEquipment
	Connector	ConductingEquipment
	Switch	ConductingEquipment
	Protected Switch	Switch
	RotatingMachine	RegulatingCondEq
	TransformerEnd	IdentifiedObject
-	TapChanger	PowerSystem Resource
	PhaseTapChanger	TapChanger
-	PhaseTapChangerNonLinear	PhaseTapChanger
	ShuntCompensator	RegulatingCondEq

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	( . )	( . )
	Name	—
	NameType	—
	BaseVoltage	IdentifiedObject
	GeographicalRegion	IdentifiedObject
-	SubGeographicalRegion	IdentifiedObject
	PSRType	IdentifiedObject
1)	Terminal	ACDCTerminal
	ConnectivityNode	IdentifiedObject
	Organisation	IdentifiedObject
-	OrganisationRole	IdentifiedObject
	Plant	Equipmentcontainer
	Line	Equipmentcontainer
	HydroPowerPlant	PowerSystem Resource
	Substation	Equipmentcontainer
	VoltageLevel	Equipmentcontainer
2)	Bay	Equipmentcontainer
	WaveTrap	AuxiliaryEquipment
	CurrentTransformer	Sensor
	PotentialTransformer	Sensor
	SurgeArrester	AuxiliaryEquipment
( )	ACLLineSegment	ConductingEquipment
	BusbarSection	Connector
	SynchronousMachine	RotatingMachine
	AsynchronousMachine	RotatingMachine
	Breaker	Protected Switch
	LoadBreakSwitch	ProtectedSwitch
	Disconnecter	Switch
	GroundDisconnecter	Switch
	Jumper	Switch
	Fuse	Switch
	Recloser	Switch
	PowerTransformer	ConductingEquipment
	PowerTransformerEnd	TransformerEnd
	Seriescompensator	ConductingEquipment

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	( . )	( . )
3)	NonlinearShuntCompensator	ShuntCompensator
4)	LinearShuntCompensator	ShuntCompensator
5)	StaticVarCompensator	RegulatingCondEq
	RatioTapChanger	TapChanger
-	PhaseTapChangerLinear	PhaseTapChanger
6)	PhaseTapChangerTabular	PhaseTapChanger
7)	PhaseTapChangerSymmetrical	PhaseTapChangerNonLinear
8)	PhaseTapChangerAsymmetrical	PhaseTapChangerNonLinear
	ThermalGeneratingUnit	GeneratingUnit
	HydroGeneratingUnit	GeneratingUnit
	NuclearGeneratingUnit	GeneratingUnit
	WindGeneratingUnit	GeneratingUnit
	SteamTurbine	PrimeMover
	HydroTurbine	PrimeMover
	CombustionTurbine	PrimeMover
-	BWRSteamSupply	SteamSupply
( . )	PWRSteamSupply	SteamSupply
	Supercritical	FossilSteamSupply
	Subcritical	FossilSteamSupply
	DrumBoiler	FossilSteamSupply
-	HeatRecoveryBoiler	FossilSteamSupply
1)		
2)		
3)		
4)		
5)		
6)		(
7)		-
8)		(

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	( .)	( .)	
1)	name	IdentifiedObject	
	[aliasName]	IdentifiedObject	
	[description]	IdentifiedObject	
-	mRID	IdentifiedObject	UUID <sup>2)</sup>
,	isDC	BaseVoltage	
,	nominalVoltage	BaseVoltage	
-	sequenceNumber	ACDCTerminal	
1) 2)	16- (128- )		

5.2

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			( .)	-
	IdentifiedObject	Name	Names	0..*
,	Name	IdentifiedObject	IdentifiedObject	1..1
	NameType	Name	Names	0..*
	Name	NameType	NameType	1..1
	PowerSystem Resource	PSRType	PSRType	0..1
	PSRType	PowerSystem Resource	PowerSystem Resources	0..*
	Terminal	ConnectivityNode	ConnectivityNode	0..1
	ConnectivityNode	Terminal	Terminals	0..*
-	Conducting Equipment	Terminal	Terminals	0..*
,	Terminal	Conducting Equipment	Conducting Equipment	1..1

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			( .)	-
,	TransformerEnd	Terminal	Terminal	1
( )	Terminal	TransformerEnd	TransformerEnd	0..*
-	AuxiliaryEquipment	Terminal	Terminal	1..1
, -	Terminal	AuxiliaryEquipment	AuxiliaryEquipment	0..*
( )	Line	SubGeographical Region	Region	0..*
, -	SubGeographical Region	Line	Lines	0..*
( )	Equipment	Equipmentcontainer	Equipmentcontainer	0..1
,	Equipmentcontainer	Equipment	Equipments	0..*
1)	Equipment	Equipmentcontainer	Additional Equipmentcontainer	0..*
, 1)	Equipmentcontainer	Equipment	AdditionalGrouped Equipment	0..*
( )	Substation	SubGeographical Region	Region	0..1
, -	SubGeographical Region	Substation	Substations	0..*
( )	VoltageLevel	Substation	Substation	1..1
, -	Substation	VoltageLevel	VoltageLevels	0..*
, -	Bay	VoltageLevel	VoltageLevel	1..1
	VoltageLevel	Bay	Bays	0..*
( )	RotatingMachine	GeneratingUnit	GeneratingUnit	0..1

6

			( . )	-	
,	-	GeneratingUnit	RotatingMachine	RotatingMachine	0..1
	-	Conducting-Equipment	BaseVoltage	BaseVoltage	0..1
	-	VoltageLevel	BaseVoltage	BaseVoltage	0..1
	-	TransformerEnd	BaseVoltage	BaseVoltage	0..1
	,	BaseVoltage	Conducting-Equipment	Conducting-Equipment	0..*
	-	BaseVoltage	VoltageLevel	VoltageLevel	0..*
	,	BaseVoltage	TransformerEnd	TransformerEnds	0..*
		SteamTurbine	SteamSupply	SteamSupplies	0..*
	,	SteamSupply	SteamTurbine	SteamTurbines	0..*
	-	CombustionTurbine	HeatRecoveryBoiler	HeatRecoveryBoiler	0..1
	-	HeatRecoveryBoiler	CombustionTurbine	Combustion-Turbines	0..*
		Synchronous-Machine	PrimeMover	PrimeMovers	0..*
	,	PrimeMover	Synchronous-Machine	Synchronous-Machines	0..*
	,	Organisation	OrganisationRole	Roles	0..*
	,	OrganisationRole	Organisation	Organisation	0..1
	2)	OrganisationRole	IdentifiedObject	Objects	0..*
	2)	IdentifiedObject	OrganisationRole	OrganisationRoles	0..*
1)		[1].			
2)					
:	,	(	)	,	

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**6**

6.1

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.1 —

	( )	( )
	Measurement	IdentifiedObject
	Measurementvalue	IdentifiedObject

.2 —

	( )	( )
	Analog	Measurement
	Discrete	Measurement
	AnalogValue	Measurementvalue
	DiscreteValue	Measurementvalue

. —

	( )	( )	
	unitSymbol	Measurement	UnitSymbol <sup>1)</sup>
	phases	Measurement	PhaseCode <sup>2)</sup>
	unitMultiplier	Measurement	UnitMultiplier <sup>3)</sup>
	measurementType	Measurement	
,	positiveFlowIn	Analog	
	maxValue	Analog	-
-	minValue	Analog	-
, -	normalValue	Analog	-
	value	AnalogValue	-
	timeStamp	Measurementvalue	DateTime <sup>4)</sup>
	maxValue	Discrete	
-	minValue	Discrete	
, , -	normalValue	Discrete	

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	( .)	( .)	
	value	DiscreteValue	
1) UnitSymbol —	( . [1]).		
2) PhaseCode —	( . [1]): , , , , N, , , .		
3) UnitMultiplier — — 10 <sup>6</sup> , G — 10 <sup>9</sup> , — 10 <sup>12</sup> , — 1.	( . [1]): micro — 10 <sup>-6</sup> , m — 10 <sup>-3</sup> , — 10 <sup>-2</sup> , d — 10 <sup>-1</sup> , k — 10 <sup>3</sup> ,		
4) DateTime —	Zulu ( . [2]).		

.4 —

			( .)	- -
, -	Measurement	ACDCTerminal	Terminal	0..1
, -	ACDCTerminal	Measurement	Measurements	0..*
,	Measurement	PowerSystem-Resource	PowerSystem-Resource	0..1
,	PowerSystem-Resource	Measurement	Measurements	0..*
	Analog	AnalogValue	AnalogValues	0..*
	AnalogValue	Analog	Analog	1..1
	Discrete	DiscreteValue	DiscreteValues	0..*
	DiscreteValue	Discrete	Discrete	1..1

( )

.1 —

	( )	( )
	Asset	IdentifiedObject
,	- Assetcontainer	Asset
,	- EndDevice	Assetcontainer
	Document	IdentifiedObject
	Agreement	Document

.2 —

	( )	( )
,	- Meter	EndDevice
	UsagePoint	IdentifiedObject
	Location	IdentifiedObject
	UsagePointLocation	Location
—	Customer	OrganisationRole
	CustomerAgreement	Agreement
( ) —	EnergyConsumer	ConductingEquipment
	- EnergySource	ConductingEquipment
	ElectronicAddress	—

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	( )	( )	
1	email1	ElectronicAddress	
2	email2	ElectronicAddress	
	lan	ElectronicAddress	
MAC (Media Access Control)	mac	ElectronicAddress	
	password	ElectronicAddress	
	radio	ElectronicAddress	

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	( .)	( .)	
	userID	ElectronicAddress	
	web	ElectronicAddress	
	mainAddress	Location	StreetAd dress <sup>1)</sup>
	secondaryAddress	Location	StreetAd dress
	phone1	Location	TelephoneNumber <sup>1)</sup>
	phone2	Location	TelephoneNumber
	electronicAddress	Location	ElectronicAddress <sup>1)</sup>
	phaseCode	UsagePoint	PhaseCode
	servicePriority	UsagePoint	
	nominalServiceVoltage	UsagePoint	Voltage <sup>2)</sup>
-	outageRegion	UsagePoint	
	created DateTi me	Document	DateTi me
-	lastModifiedDateTi me	Document	DateTi me
	electronicAddress	Document	ElectronicAddress
GMT <sup>3)</sup>	timeZoneOffset	EndDevice	-
,	customerCount	EnergyConsumer	
« », -	normallyInService	Equipment	
<p>1) «value» « (unit) (multiplier)».</p> <p>2) «value» « (unit) (multiplier)».</p> <p>3) GMT —</p>			

.4 —

			( .)	-
	UsagePoint	EndDevice	EndDevices	0..*
,	EndDevice	UsagePoint	UsagePoint	0..1
,	EndDevice	Customer	Customer	0..1
	Customer	EndDevice	EndDevices	0..*
	UsagePoint	UsagePoint-Location	UsagePoint-Location	0..1



.4

			( . )	-
,	-	UsagePoint-Location	UsagePoint	UsagePoints 0..*
	-	Customer	Customer-Agreement	Customer-Agreements 0..*
,	-	Customer-Agreement	Customer	Customer 1..1
	-	PowerSystem-Resource	Location	Location 0..1
		Location	PowerSystem-Resource	PowerSystem-Resources 0..*
,		Location	CoordinateSystem	CoordinateSystem 0..1
	-	CoordinateSystem	Location	Locations 0..*
,		Location	PositionPoint	PositionPoints 0..*
	-	PositionPoint	Location	Location 1..1
,		UsagePoint	Equipment	Equipments 0..*
,		Equipment	UsagePoint	UsagePoints 0..*
,	-	UsagePoint	Customer-Agreement	Customer-Agreement 0..1
,	-	Customer-Agreement	UsagePoint	UsagePoints 0..*
		UsagePoint	UsagePoint-Location	UsagePoint-Location 0..1
,	-	UsagePoint-Location	UsagePoint	UsagePoints 0..*
,	-	Asset	PowerSystem-Resource	PowerSystem-Resources 0..*
,	-	PowerSystem-Resource	Asset	Assets 0..*

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.1 — ( )

	( .)	( .)
	DCConductingEquipment	Equipment
	DCBaseTerminal	ACDCTerminal
	DCEquipmentContainer	Equipmentcontainer

.2 — ( )

	( .)	( .)
( )	DCLineSegment	DCConductingEquipment
	DCTerminal	DCBaseTerminal
	ACDCConverterDCTerminal	DCBaseTerminal

. — ( )

	( .)	( .)	
( )	capacitance	DCLineSegment	Capacitance <sup>1^</sup>
( )	inductance	DCLineSegment	Inductance <sup>1)</sup>
( )	resistance	DCLineSegment	Resistance <sup>1)</sup>
( ) , -	length	DCLineSegment	Length <sup>1)</sup>
<sup>1)</sup> «value» « (unit) (multiplier) ». -			

.4 —

			( .)	-
-	DCConducting-Equipment	DCTerminal	DCTerminals	0..*
	DCTerminal	DCConducting-Equipment	DCConducting-Equipment	0..1

- [1] 61970-301:2016 (EMS-API).  
301. (CIM) [Energy management system  
application program interface (EMS-API) — Part 301: Common information model (CIM  
base]
- [2] 8601 ( ) . (Date and time — Represen-  
tations for information interchange)

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02.12.2019.

60°84<sup>1</sup>/<sub>8</sub>.

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« [1] [2]».

4. 4.1. 1 :

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	( .)	( .)
	ACDCTerminal	IdentifiedObject
	AuxiliaryEquipment	Equipment
	ConductingEquipment	Equipment
	Conductor	ConductingEquipment
	ConnectivityNodeContainer	PowerSystem Resource
	Connector	ConductingEquipment
	Equipment	PowerSystem Resource
	Equipmentcontainer	ConnectivityNodeContainer
	FossilSteamSupply	SteamSupply
	GeneratingUnit	Equipment
— -	IdentifiedObject	—
	PhaseTapChanger	TapChanger
-	PhaseTapChangerNonLinear	PhaseTapChanger
	PowerSystemResource	IdentifiedObject
	PrimeMover	PowerSystem Resource
	Protected Switch	Switch
	RegulatingCondEq	ConductingEquipment
	RotatingMachine	RegulatingCondEq
	Sensor	AuxiliaryEquipment
	ShuntCompensator	RegulatingCondEq
	SteamSupply	PowerSystemResource
	Switch	ConductingEquipment
-	TapChanger	PowerSystemResource
	TransformerEnd	IdentifiedObject

4.2. 2 :

« 2 —

	( .)	( .)
	ACLineSegment	Conductor
	Asset	IdentifiedObject
,	Assetcontainer	Asset
	AsynchronousMachine	RotatingMachine
	BaseVoltage	IdentifiedObject
1)	Bay	Equipmentcontainer
	Breaker	ProtectedSwitch
	BusbarSection	Connector
-	BWRSteamSupply	SteamSupply
	CombustionTurbine	PrimeMover
	ConnectivityNode	IdentifiedObject
	CurrentTransformer	Sensor
	Disconnecter	Switch
	Document	IdentifiedObject
	DrumBoiler	FossilSteamSupply
	Fuse	Switch
	GeographicalRegion	IdentifiedObject
	GroundDisconnecter	Switch
-	HeatRecoveryBoiler	FossilSteamSupply
	HydroGeneratingUnit	GeneratingUnit
	HydroTurbine	PrimeMover
	Jumper	Switch
	Line	Equipmentcontainer
2) -	LinearShuntCompensator	ShuntCompensator
	LoadBreakSwitch	ProtectedSwitch
	Name	—
	NameType	—
3)	NonlinearShuntCompensator	ShuntCompensator
	NuclearGeneratingUnit	GeneratingUnit
	Organisation	IdentifiedObject
	OrganisationRole	IdentifiedObject

	( )	( )
4)	PhaseTapChangerAsymmetrical	PhaseTapChangerNonLinear
-	PhaseTapChangerLinear	PhaseTapChanger
5)	PhaseTapChangerSymmetrical	PhaseTapChangerNonLinear
6)	PhaseTapChangerTabular	PhaseTapChanger
	Plant	Equipmentcontainer
	PotentialTransformer	Sensor
	PowerT ransformer	ConductingEquipment
	PowerT ransformerEnd	TransformerEnd
	PSRType	IdentifiedObject
( )	PWRSteamSupply	SteamSupply
	RatioTapChanger	TapChanger
	Recloser	ProtectedSwitch
	rf:BusArrangement	AuxiliaryEquipment
	Seriescompensator	ConductingEquipment
7)	StaticVarCompensator	RegulatingCondEq
	SteamTurbine	PrimeMover
	Subcritical	FossilSteamSupply
	SubGeographicalRegion	IdentifiedObject
	Substation	Equipmentcontainer
	Supercritical	FossilSteamSupply
	SurgeArrester	AuxiliaryEquipment
	SynchronousMachine	RotatingMachine
8)	Terminal	ACDCTerminal
	ThermalGeneratingUnit	GeneratingUnit
	VoltageLevel	Equipmentcontainer
	WaveTrap	AuxiliaryEquipment
	WindGeneratingUnit	GeneratingUnit

1)

2)

3)

4)

5)

2

6)

7)

8)

5. 5.1. 3 :

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	( . )	( . ) -	
	sequenceNumber	ACDCTerminal	
,	rf:isDC	BaseVoltage	
,	nominalVoltage	BaseVoltage	
« » ,	normallyInService	Equipment	
-	aliasName	IdentifiedObject	
	description	IdentifiedObject	
	mRID	IdentifiedObject	LIUID <sup>1)</sup>
<sup>2)</sup>	name	IdentifiedObject	
	name	Name	
	name	NameType	
<sup>1)</sup>	16- (128- ) , / 9834-8.		
<sup>2)</sup>	,		

5.2. 4 :

« 4 —

			( . )	-
,	-	Asset	PowerSystemResource	PowerSystem Resources 0..*
,		Asset	Assetcontainer	Assetcontainer 0..1
,	-	Assetcontainer	Asset	Assets 0..*
	-	AsynchronousMachine	PrimeMover	rf:PrimeMover 0..1
	-	AuxiliaryEquipment	Terminal	Terminal 1..1

4



			( .)	- -
, - -	BaseVoltage	ConductingEquip- ment	ConductingEquip- ment	0..*
, - -	BaseVoltage	TransformerEnd	TransformerEnds	0..*
, - -	BaseVoltage	VoltageLevel	VoltageLevel	0..*
, -	Bay	VoltageLevel	VoltageLevel	1..1
-	CombustionTur- bine	HeatRecoveryBoi- ler	HeatRecoveryBoi- ler	0..1
	ConductingEquip- ment	BaseVoltage	BaseVoltage	0..1
-	ConductingEquip- ment	Terminal	Terminals	0..*
	ConnectivityNode	ConnectivityNo- deContainer	ConnectivityNo- deContainer	1..1
	ConnectivityNode	Terminal	Terminals	0..*
, )	ConnectivityNo- deContainer	ConnectivityNo- de	ConnectivityNo- des	0..*
( ) ,	Equipment	Equipmentcon- tainer	Equipmentcon- tainer	0..1
1) -	Equipment	Equipmentcon- tainer	AdditionalEquip- mentContainer	0..*
, )	Equipmentcon- tainer	Equipment	Equipments	0..*
, - - 1)	Equipmentcon- tainer	Equipment	AdditionalGrouped- Equipment	0..*
, -	GeneratingUnit	RotatingMachine	RotatingMachine	0..1
	GeographicalRe- gion	SubGeographical- Region	Regions	0..*
-	HeatRecoveryBoi- ler	CombustionTur- bine	CombustionTur- bines	0..*
	IdentifiedObject	Name	Names	0..*
2) -	IdentifiedObject	OrganisationRole	rf:OrganisationRo- les	0..*
, )	Line	SubGeographical- Region	Region	0..*
, )	Name	IdentifiedObject	IdentifiedObject	1..1

			( .)	-
	Name	NameType	NameType	1..1
	NameType	Name	Names	0..*
,	Organisation	Organisation	rf:ChildOrganisations	0..*
,	Organisation	Organisation	rf:ParentOrganisation	0..1
,	Organisation	OrganisationRole	Roles	0..*
2)	OrganisationRole	IdentifiedObject	rf:Objects	0..*
,	OrganisationRole	Organisation	Organisation	0..1
,	PhaseTapChanger	TransformerEnd	TransformerEnd	0..1
,	Plant	SubGeographicalRegion	rf: Region	0..1
	Plant	Substation	rf:Substations	0..*
,	PowerSystemResource	Asset	Assets	0..*
	PowerSystemResource	PSRType	PSRType	0..1
	PowerTransformer	PowerTransformerEnd	PowerTransformerEnd	0..*
,	PowerTransformerEnd	PowerTransformer	PowerTransformer	0..1
,	PrimeMover	AsynchronousMachine	rf:AsynchronousMachine	0..1
,	PrimeMover	SynchronousMachine	SynchronousMachines	0..*
	PSRType	PowerSystemResource	PowerSystemResources	0..*
,	RatioTapChanger	TransformerEnd	TransformerEnd	1..1
( )	RotatingMachine	GeneratingUnit	GeneratingUnit	0..1
,	SteamSupply	SteamTurbine	SteamTurbines	0..*
,	SteamTurbine	SteamSupply	SteamSupplies	0..*
,	SubGeographicalRegion	GeographicalRegion	Region	0..1

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			( .)	- -
,	SubGeographi- calRegion	Line	Lines	0..*
, -	SubGeographi- calRegion	Plant	rf: Plants	0..*
,	SubGeographi- calRegion	Substation	Substations	0..*
,	Substation	Plant	rf:Plant	0..1
( ) ,	Substation	SubGeographi- calRegion	Region	0..1
,	Substation	VoltageLevel	VoltageLevels	0..*
-	SynchronousMa- chine	PrimeMover	PrimeMovers	0..*
, -	Terminal	AuxiliaryEquip- ment	AuxiliaryEquip- ment	0..*
,	Terminal	ConductingEquip- ment	ConductingEquip- ment	1..1
	Terminal	ConnectivityNode	ConnectivityNode	0..1
( ) ,	Terminal	TransformerEnd	TransformerEnd	0..*
-	TransformerEnd	BaseVoltage	BaseVoltage	0..1
-	TransformerEnd	PhaseTapChanger	PhaseTapChanger	0..1
-	TransformerEnd	RatioTapChanger	RatioTapChanger	0..1
, -	TransformerEnd	Terminal	Terminal	0..1
-	VoltageLevel	BaseVoltage	BaseVoltage	0..1
	VoltageLevel	Bay	Bays	0..*
( ) ,	VoltageLevel	Substation	Substation	1..1

1>

( ).

7

4

2)

6. 6.3. : «( )». ( ):

« .1 —

	( .)	( .)
	Measurement	IdentifiedObject
	Measurementvalue	IOPoint
	IOPoint	IdentifiedObject

.2 —

	( .)	( .)
	Analog	Measurement
	AnalogValue	Measurementvalue
	Discrete	Measurement
	DiscreteValue	Measurementvalue

. —

	( .)	( .)	
	maxValue	Analog	
	minValue	Analog	
, , -	normalValue	Analog	
,	positiveFlowIn	Analog	
	value	AnalogValue	
	maxValue	Discrete	
	minValue	Discrete	
, , -	normalValue	Discrete	
	value	DiscreteValue	
	measurementType	Measurement	
	phases	Measurement	PhaseCode <sup>1^</sup>
	unitMultiplier	Measurement	UnitMultiplier <sup>2)</sup>

	( .)	( .)	
	unitSymbol	Measurement	UnitSymbol <sup>3)</sup>
	timeStamp	Measurementvalue	DateTime <sup>4)</sup>
<p>1) PhaseCode — ( . [1]): , , , , N, , , .</p> <p>2) UnitMultiplier — ( . [1]): micro — 10<sup>6</sup>, m — 10<sup>3</sup>, — 10<sup>2</sup>, d — 10<sup>1</sup>, k — 10<sup>3</sup>, M — 10<sup>6</sup>, G — 10<sup>9</sup>, — 10<sup>12</sup>, — 1.</p> <p>3) UnitSymbol — ( . [1]).</p> <p>4) DateTime — Zulu ( . [3]).</p>			

.4 —

			( .)	-
	ACDCTerminal	Measurement	Measurements	0..*
	Analog	AnalogValue	AnalogValues	0..*
	AnalogValue	Analog	Analog	1..1
	Discrete	DiscreteValue	DiscreteValues	0..*
	DiscreteValue	Discrete	Discrete	1..1
	Measurement	ACDCTerminal	Terminal	0..1
	Measurement	PowerSystem-Resource	PowerSystem-Resource	0..1
	PowerSystem-Resource	Measurement	Measurements	0..*

( ):

« .1 —

	( .)	( .)
	Agreement	Document
	EndDevice	Assetcontainer

.2 —

	( .)	( .)
—	Customer	OrganisationRole
	CustomerAgreement	Agreement
	ElectronicAddress	—

.2

	( .)	( .)
( )—	EnergyConsumer	ConductingEquip- ment
	EnergySource	ConductingEquip- ment
	Location	IdentifiedObject
,	Meter	EndDevice
	UsagePoint	IdentifiedObject
	UsagePointLocation	Location

	( .)	( .)	
	created DateTi	Document	
	electronicAddress	Document	ElectronicAddress
	lastModified Date- Time	Document	
1	email1	ElectronicAddress	
2	email2	ElectronicAddress	
	lan	ElectronicAddress	
MAC (Media Access Control)	mac	ElectronicAddress	
	password	ElectronicAddress	
	radio	ElectronicAddress	
	userID	ElectronicAddress	
	web	ElectronicAddress	
GMT <sup>1)</sup>	timeZoneOffset	EndDevice	
,	customerCount	EnergyConsumer	
	electronicAddress	Location	ElectronicAddress <sup>2)</sup>
	mainAddress	Location	StreetAddress <sup>2)</sup>
	phone1	Location	TelephoneNumber <sup>2)</sup>
	phone2	Location	TelephoneNumber <sup>2)</sup>
	secondaryAddress	Location	StreetAddress <sup>2)</sup>
,	nominalService- Voltage	UsagePoint	
,	outageRegion	UsagePoint	
	phaseCode	UsagePoint	PhaseCode

	( .)	( .)	
	servicePriority	UsagePoint	
<sup>1)</sup> GMT — <sup>2)</sup>			

.4 —

			( .)	-
	Asset	Location	Location	0..1
-	CoordinateSystem	Location	Locations	0..*
-	Customer	CustomerAgreement	CustomerAgreements	0..*
	Customer	EndDevice	EndDevices	0..*
-	CustomerAgreement	Customer	Customer	1..1
-	CustomerAgreement	UsagePoint	UsagePoints	0..*
-	EndDevice	Customer	Customer	0..1
-	EndDevice	UsagePoint	UsagePoint	0..1
-	Equipment	UsagePoint	UsagePoints	0..*
-	Location	Asset	Assets	0..*
-	Location	CoordinateSystem	CoordinateSystem	0..1
-	Location	PositionPoint	PositionPoints	0..*
-	Location	PowerSystemResource	PowerSystemResources	0..*
-	PositionPoint	Location	Location	1..1
	PowerSystemResource	Location	Location	0..1
-	UsagePoint	CustomerAgreement	CustomerAgreement	0..1
	UsagePoint	EndDevice	EndDevices	0..*
	UsagePoint	Equipment	Equipments	0..*
	UsagePoint	UsagePointLocation	UsagePointLocation	0..1

.4

			( .)	-
	UsagePointLocation	UsagePoint	UsagePoints	0..*

: «( )».  
 .1. : «( )».  
 .2. :

	( .)	( .)
-	ACDCConverterDCTerminal	DCBaseTerminal
	DCLine	DCEquipmentContainer
	DCLineSegment	DCConductingEquipment
	DCTerminal	DCBaseTerminal

	( .)	( .)	
,	capacitance	DCLineSegment	
,	inductance	DCLineSegment	
,	length	DCLineSegment	
,	resistance	DCLineSegment	

.4. :  
 « ».  
 « » :  
 «[1] 61970-301:2020 (EMS-API). 301. (CIM) [Energy management system application program interface (EMS-API) — Part 301: Common information model (CIM) base]»  
 [2] 61968-11:2013 11. (CIM) [Application integration at electric utilities — System interfaces for distribution management — Part 11: Common information model (CIM) extensions for distribution]»  
 [3] 8601 ( ) [Date and time — Representation for information interchange (all parts)]».

( 5 2023 г.)