IEC 61850 – MICS

HighPROTEC | PROTECTION TECHNOLOGY MADE SIMPLE

MRM4 |

Model Implementation Conformance Statement (MICS)

UCA International Users Group Testing Sub Committee

Version: 3.7

Original document

English

Original reference manual

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1 Introduction

This model implementation conformance statement is applicable to the MRM4 version 3.7.

This MICS document specifies the modelling extensions compared to IEC 61850 edition 1.

Clause 2 contains the list of implemented logical nodes.

Clause 3 describes the new and extended logical nodes.

Clause 4 describes the existing common data classes.

Clause 5 describes the existing enum types.

2 Logical Nodes

2.1 Logical Nodes List

The following table contains the list of logical nodes implemented in the device:

L: System Logical Nodes
LLN0 (Logical Node device)
LPHD (Physical device)

P: Logical Nodes for protection functions
PIOC (Instantaneous overcurrent)
PMRI (Motor restart inhibition)
PMSS (Motor starting time supervision)
PTOC (Time overcurrent)
PTTR (Thermal overload protection)
PTUC (Undercurrent)

R: Logical Nodes for protection related functions
RBRF (Breaker failure)
RDRE (Disturbance recorder function)

G: Logical Nodes for generic references
GAPC (Generic automatic process control)
GGIO (Generic process I/O)

M: Logical Nodes for metering and measurement
MMXU (Measurement)
MSTA (Metering Statistics)

X: Logical Nodes for switchgear
XCBR (Circuit Breaker)
XSWI (Circuit Switch)

C: Logical Nodes for control
CILO (Interlocking)
CSWI (Switch controller)

I: Logical Nodes for interfacing and archiving
IHMI (Human machine interface)

S: Logical Nodes for sensors and monitoring
SCBR (Circuit breaker monitoring)

2.2 Logical Node Definitions

Abbreviations used in the following table:

- **M**: Data is mandatory in the IEC 61850-7-4.
- **O**: Data is optional in the IEC 61850-7-4 and is used in the device.
- **E**: Data is an extension to the IEC 61850-7-4.

LN Type	LN Class	Description
WW_CILO1	CILO	Interlocking
WW_CSWI1	CSWI	Switch controller
WW_GAPC1	GAPC	Generic automatic process control
WW_GGIO10	GGIO	Generic process I/O
WW_GGIO11	GGIO	Generic process I/O
WW_GGIO14	GGIO	Generic process I/O
WW_GGIO4	GGIO	Generic process I/O
WW_IHMI1	IHMI	Human machine interface
WW_LLN0CON	LLN0	Logical Node device
WW_LLN0MEA	LLN0	Logical Node device
WW_LLN0PRO	LLN0	Logical Node device
WW_LLN0REC	LLN0	Logical Node device
WW_LLN0SYS	LLN0	Logical Node device
WW_LPHDCON	LPHD	Physical device
WW_LPHDMEA	LPHD	Physical device
WW_LPHDPRO	LPHD	Physical device
WW_LPHDREC	LPHD	Physical device
WW_LPHDSYS	LPHD	Physical device
WW_MMXU7	MMXU	Measurement
WW_MSTA1	MSTA	Metering Statistics
WW_PIOC1	PIOC	Instantaneous overcurrent
WW_PMRI1	PMRI	Motor restart inhibition
WW_PMSS1	PMSS	Motor starting time supervision
WW_PTOC1	PTOC	Time overcurrent
WW_PTOC3	PTOC	Time overcurrent
WW_PTOC4	PTOC	Time overcurrent
WW_PTTR2	PTTR	Thermal overload protection
WW_PTTR4	PTTR	Thermal overload protection
WW_PTUC1	PTUC	Undercurrent
WW_RBRF1	RBRF	Breaker failure
WW_RDRE1	RDRE	Disturbance recorder function

LN Type	LN Class	Description
WW_SCBR1	SCBR	Circuit breaker monitoring
WW_XCBR2	XCBR	Circuit Breaker
WW_XSWI1	XSWI	Circuit Switch

2.3 WW_CILO1

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
CILO class				
CILO	WW_CILO1	Interlocking		
Data				
Common Logical Node Information				
Mod	WW_INC1	Mode	M	Status-only
Beh	WW_INS1	Behavior	M	
Health	WW_INS3	Health	M	
NamPlt	WW_LPL1	Name plate	M	
Status Information				
EnaOpn	WW_SPS1	Enable Open	M	
EnaCls	WW_SPS1	Enable Close	M	

2.4 WW_CSWI1

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
CSWI class				
CSWI	WW_CSWI1	Switch Controller		
Data				
Common Logical Node Information				
Mod	WW_INC1	Mode	M	Status-only
Beh	WW_INS1	Behaviour	M	
Health	WW_INS3	Health	M	
NamPlt	WW_LPL1	Name plate	M	
Loc	WW_SPS1	Local operation	O	
Controls				
Pos	WW_DPC2	Switch position	M	

2.5 WW_GAPC1

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
GAPC class				
GAPC	WW_GAPC1	Generic automatic process control		

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
Data				
Common Logical Node Information				
Mod	WW_INC1	Mode	M	Status-only
Beh	WW_INS1	Behaviour	M	
Health	WW_INS3	Health	M	
NamPlt	WW_LPL1	Name plate	M	
Loc	WW_SPS1	Local operation	O	
Status Information				
Str	WW_ACD1	Start	M	
Op	WW_ACT1	Operate	M	

2.6 WW_GGIO4

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
GGIO class				
GGIO	WW_GGIO4	Generic process I/O		
Data				
Common Logical Node Information				
Mod	WW_INC1	Mode	M	Status-only
Beh	WW_INS1	Behaviour	M	
Health	WW_INS3	Health	M	
NamPlt	WW_LPL1	Name plate	M	
Status Information				
Ind1	WW_SPS1	General indication (binary input)	O	
Ind2	WW_SPS1	General indication (binary input)	O	
Ind3	WW_SPS1	General indication (binary input)	O	
Ind4	WW_SPS1	General indication (binary input)	O	
Ind5	WW_SPS1	General indication (binary input)	O	
Ind6	WW_SPS1	General indication (binary input)	O	
Ind7	WW_SPS1	General indication (binary input)	O	
Ind8	WW_SPS1	General indication (binary input)	O	
Ind9	WW_SPS1	General indication (binary input)	O	
Ind10	WW_SPS1	General indication (binary input)	O	
Ind11	WW_SPS1	General indication (binary input)	O	
Ind12	WW_SPS1	General indication (binary input)	O	

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
Ind13	WW_SPS1	General indication (binary input)	O	
Ind14	WW_SPS1	General indication (binary input)	O	
Ind15	WW_SPS1	General indication (binary input)	O	
Ind16	WW_SPS1	General indication (binary input)	O	
Ind17	WW_SPS1	General indication (binary input)	O	
Ind18	WW_SPS1	General indication (binary input)	O	
Ind19	WW_SPS1	General indication (binary input)	O	
Ind20	WW_SPS1	General indication (binary input)	O	
Ind21	WW_SPS1	General indication (binary input)	O	
Ind22	WW_SPS1	General indication (binary input)	O	
Ind23	WW_SPS1	General indication (binary input)	O	
Ind24	WW_SPS1	General indication (binary input)	O	
Ind25	WW_SPS1	General indication (binary input)	O	
Ind26	WW_SPS1	General indication (binary input)	O	
Ind27	WW_SPS1	General indication (binary input)	O	
Ind28	WW_SPS1	General indication (binary input)	O	
Ind29	WW_SPS1	General indication (binary input)	O	
Ind30	WW_SPS1	General indication (binary input)	O	
Ind31	WW_SPS1	General indication (binary input)	O	
Ind32	WW_SPS1	General indication (binary input)	O	

2.7 WW_GGIO10

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
GGIO class				
GGIO	WW_GGI10	Generic process I/O		
Data				
Common Logical Node Information				
Mod	WW_INC1	Mode	M	Status-only
Beh	WW_INS1	Behaviour	M	
Health	WW_INS3	Health	M	
NamPlt	WW_LPL1	Name plate	M	
Status Information				
Ind1	WW_SPS1	General indication (binary input)	O	
Ind2	WW_SPS1	General indication (binary input)	O	

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
Ind3	WW_SPS1	General indication (binary input)	O	
Ind4	WW_SPS1	General indication (binary input)	O	
Ind5	WW_SPS1	General indication (binary input)	O	
Ind6	WW_SPS1	General indication (binary input)	O	
Ind7	WW_SPS1	General indication (binary input)	O	
Ind8	WW_SPS1	General indication (binary input)	O	
Ind9	WW_SPS1	General indication (binary input)	O	
Ind10	WW_SPS1	General indication (binary input)	O	
Ind11	WW_SPS1	General indication (binary input)	O	
Ind12	WW_SPS1	General indication (binary input)	O	
Ind13	WW_SPS1	General indication (binary input)	O	
Ind14	WW_SPS1	General indication (binary input)	O	
Ind15	WW_SPS1	General indication (binary input)	O	
Ind16	WW_SPS1	General indication (binary input)	O	
Ind17	WW_SPS1	General indication (binary input)	O	
Ind18	WW_SPS1	General indication (binary input)	O	
Ind19	WW_SPS1	General indication (binary input)	O	
Ind20	WW_SPS1	General indication (binary input)	O	
Ind21	WW_SPS1	General indication (binary input)	O	
Ind22	WW_SPS1	General indication (binary input)	O	
Ind23	WW_SPS1	General indication (binary input)	O	
Ind24	WW_SPS1	General indication (binary input)	O	
Ind25	WW_SPS1	General indication (binary input)	O	
Ind26	WW_SPS1	General indication (binary input)	O	
Ind27	WW_SPS1	General indication (binary input)	O	
Ind28	WW_SPS1	General indication (binary input)	O	
Ind29	WW_SPS1	General indication (binary input)	O	
Ind30	WW_SPS1	General indication (binary input)	O	
Ind31	WW_SPS1	General indication (binary input)	O	
Ind32	WW_SPS1	General indication (binary input)	O	

2.8 WW_GGIO11

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
GGIO class				

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
GGIO	WW_GGI11	Generic process I/O		
Data				
Common Logical Node Information				
Mod	WW_INC1	Mode	M	Status-only
Beh	WW_INS1	Behaviour	M	
Health	WW_INS3	Health	M	
NamPlt	WW_LPL1	Name plate	M	
Status Information				
Ind1	WW_SPS1	General indication (binary input)	O	
Ind2	WW_SPS1	General indication (binary input)	O	
Ind3	WW_SPS1	General indication (binary input)	O	
Ind4	WW_SPS1	General indication (binary input)	O	
Ind5	WW_SPS1	General indication (binary input)	O	
Ind6	WW_SPS1	General indication (binary input)	O	
Ind7	WW_SPS1	General indication (binary input)	O	
Ind8	WW_SPS1	General indication (binary input)	O	
Ind9	WW_SPS1	General indication (binary input)	O	
Ind10	WW_SPS1	General indication (binary input)	O	
Ind11	WW_SPS1	General indication (binary input)	O	
Ind12	WW_SPS1	General indication (binary input)	O	
Ind13	WW_SPS1	General indication (binary input)	O	
Ind14	WW_SPS1	General indication (binary input)	O	
Ind15	WW_SPS1	General indication (binary input)	O	
Ind16	WW_SPS1	General indication (binary input)	O	
Ind17	WW_SPS1	General indication (binary input)	O	
Ind18	WW_SPS1	General indication (binary input)	O	
Ind19	WW_SPS1	General indication (binary input)	O	
Ind20	WW_SPS1	General indication (binary input)	O	
Ind21	WW_SPS1	General indication (binary input)	O	
Ind22	WW_SPS1	General indication (binary input)	O	
Ind23	WW_SPS1	General indication (binary input)	O	
Ind24	WW_SPS1	General indication (binary input)	O	
Ind25	WW_SPS1	General indication (binary input)	O	
Ind26	WW_SPS1	General indication (binary input)	O	
Ind27	WW_SPS1	General indication (binary input)	O	
Ind28	WW_SPS1	General indication (binary input)	O	

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
Ind29	WW_SPS1	General indication (binary input)	O	
Ind30	WW_SPS1	General indication (binary input)	O	
Ind31	WW_SPS1	General indication (binary input)	O	
Ind32	WW_SPS1	General indication (binary input)	O	

2.9 WW_GGIO14

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
GGIO class				
GGIO	WW_GGI14	Generic process I/O		
Data				
Common Logical Node Information				
Mod	WW_INC1	Mode	M	Status-only
Beh	WW_INS1	Behaviour	M	
Health	WW_INS3	Health	M	
NamPlt	WW_LPL1	Name plate	M	
Status Information				
SPCSO1	WW_SPC2	Single point controllable status output	O	
SPCSO2	WW_SPC2	Single point controllable status output	O	
SPCSO3	WW_SPC2	Single point controllable status output	O	
SPCSO4	WW_SPC2	Single point controllable status output	O	
SPCSO5	WW_SPC2	Single point controllable status output	O	
SPCSO6	WW_SPC2	Single point controllable status output	O	
SPCSO7	WW_SPC2	Single point controllable status output	O	
SPCSO8	WW_SPC2	Single point controllable status output	O	
SPCSO9	WW_SPC2	Single point controllable status output	O	
SPCSO10	WW_SPC2	Single point controllable status output	O	
SPCSO11	WW_SPC2	Single point controllable status output	O	
SPCSO12	WW_SPC2	Single point controllable status output	O	
SPCSO13	WW_SPC2	Single point controllable status output	O	
SPCSO14	WW_SPC2	Single point controllable status output	O	
SPCSO15	WW_SPC2	Single point controllable status output	O	
SPCSO16	WW_SPC2	Single point controllable status output	O	
SPCSO17	WW_SPC2	Single point controllable status output	O	
SPCSO18	WW_SPC2	Single point controllable status output	O	

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
SPCSO19	WW_SPC2	Single point controllable status output	O	
SPCSO20	WW_SPC2	Single point controllable status output	O	
SPCSO21	WW_SPC2	Single point controllable status output	O	
SPCSO22	WW_SPC2	Single point controllable status output	O	
SPCSO23	WW_SPC2	Single point controllable status output	O	
SPCSO24	WW_SPC2	Single point controllable status output	O	
SPCSO25	WW_SPC2	Single point controllable status output	O	
SPCSO26	WW_SPC2	Single point controllable status output	O	
SPCSO27	WW_SPC2	Single point controllable status output	O	
SPCSO28	WW_SPC2	Single point controllable status output	O	
SPCSO29	WW_SPC2	Single point controllable status output	O	
SPCSO30	WW_SPC2	Single point controllable status output	O	
SPCSO31	WW_SPC2	Single point controllable status output	O	
SPCSO32	WW_SPC2	Single point controllable status output	O	

2.10 WW_IHMI1

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
IHMI class				
IHMI	WW_IHMI1	Human machine interface		
Data				
Common Logical Node Information				
Mod	WW_INC1	Mode	M	Status-only
Beh	WW_INS1	Behaviour	M	
Health	WW_INS3	Health	M	
NamPlt	WW_LPL1	Name plate	M	

2.11 WW_LLN0CON

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
LLN0 class				
LLN0	WW_LLN0CON	Logical Node device		
Data				
Common Logical Node Information				

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
Mod	WW_INC1	Mode	M	Status-only
Beh	WW_INS1	Behaviour	M	
Health	WW_INS3	Health	M	
NamPlt	WW_LPL2	Name plate	M	

2.12 WW_LLN0MEA

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
LLN0 class				
LLN0	WW_LLN0MEA	Logical Node device		
Data				
Common Logical Node Information				
Mod	WW_INC1	Mode	M	Status-only
Beh	WW_INS1	Behaviour	M	
Health	WW_INS3	Health	M	
NamPlt	WW_LPL2	Name plate	M	

2.13 WW_LLN0PRO

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
LLN0 class				
LLN0	WW_LLN0PRO	Logical Node device		
Data				
Common Logical Node Information				
Mod	WW_INC1	Mode	M	Status-only
Beh	WW_INS1	Behaviour	M	
Health	WW_INS3	Health	M	
NamPlt	WW_LPL2	Name plate	M	

2.14 WW_LLN0REC

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
LLN0 class				
LLN0	WW_LLN0REC	Logical Node device		
Data				
Common Logical Node Information				
Mod	WW_INC1	Mode	M	Status-only
Beh	WW_INS1	Behaviour	M	
Health	WW_INS3	Health	M	
NamPlt	WW_LPL2	Name plate	M	

2.15 WW_LLN0SYS

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
LLN0 class				
LLN0	WW_LLN0SYS	Logical Node device		
Data				
Common Logical Node Information				
Mod	WW_INC1	Mode	M	Status-only
Beh	WW_INS1	Behaviour	M	
Health	WW_INS3	Health	M	
NamPlt	WW_LPL2	Name plate	M	

2.16 WW_LPHDCON

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
LPHD class				
LPHD	WW_LPHDCON	Physical device information		
Data				
Common Logical Node Information				
PhyNam	WW_DPL1	Physical device name plate	M	
PhyHealth	WW_INS3	Physical Device Health	M	
Proxy	WW_SPS1	Indicates if this LN is a proxy	M	

2.17 WW_LPHDMEA

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
LPHD class				
LPHD	WW_LPHDMEA	Physical device information		
Data				
Common Logical Node Information				
PhyNam	WW_DPL1	Physical device name plate	M	
PhyHealth	WW_INS3	Physical Device Health	M	
Proxy	WW_SPS1	Indicates if this LN is a proxy	M	

2.18 WW_LPHDPRO

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
LPHD class				
LPHD	WW_LPHDPRO	Physical device information		
Data				
Common Logical Node Information				
PhyNam	WW_DPL1	Physical device name plate	M	
PhyHealth	WW_INS3	Physical Device Health	M	
Proxy	WW_SPS1	Indicates if this LN is a proxy	M	

2.19 WW_LPHDREC

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
LPHD class				
LPHD	WW_LPHDREC	Physical device information		
Data				
Common Logical Node Information				
PhyNam	WW_DPL1	Physical device name plate	M	
PhyHealth	WW_INS3	Physical Device Health	M	
Proxy	WW_SPS1	Indicates if this LN is a proxy	M	

2.20 WW_LPHDSYS

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
LPHD class				
LPHD	WW_LPHDSYS	Physical device information		
Data				
Common Logical Node Information				
PhyNam	WW_DPL1	Physical device name plate	M	
PhyHealth	WW_INS3	Physical Device Health	M	
Proxy	WW_SPS1	Indicates if this LN is a proxy	M	

2.21 WW_MMXU7

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
MMXU class				
MMXU	WW_MMXU7	Measurement		
Data				
Common Logical Node Information				
Mod	WW_INC1	Mode	M	Status-only
Beh	WW_INS1	Behaviour	M	
Health	WW_INS3	Health	M	
NamPlt	WW_LPL1	Name plate	M	
Measured values				
A	WW_WYE2	Phase currents (IL1, IL2, IL3)	O	

2.22 WW_MSTA1

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
MSTA class				
MSTA	WW_MSTA1	Metering Statistics		
Data				
Common Logical Node Information				
Mod	WW_INC1	Mode	M	Status-only
Beh	WW_INS1	Behaviour	M	
Health	WW_INS3	Health	M	

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
NamPlt	WW_LPL1	Name plate	M	
Metered values				
AvAPhA	WW_MV1	Average current IL1	E	
AvAPhB	WW_MV1	Average current IL2	E	
AvAPhC	WW_MV1	Average current IL3	E	
MaxAPhA	WW_MV1	Maximum current IL1	E	
MaxAPhB	WW_MV1	Maximum current IL2	E	
MaxAPhC	WW_MV1	Maximum current IL3	E	
MinAPhA	WW_MV1	Minimum current IL1	E	
MinAPhB	WW_MV1	Minimum current IL2	E	
MinAPhC	WW_MV1	Minimum current IL3	E	

2.23 WW_PIOC1

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
PIOC class				
PIOC	WW_PIOC1	Instantaneous overcurrent		
Data				
Common Logical Node Information				
Mod	WW_INC1	Mode	M	Status-only
Beh	WW_INS1	Behaviour	M	
Health	WW_INS3	Health	M	
NamPlt	WW_LPL1	Name plate	M	
Status Information				
Str	WW_ACD1	Start	M	
Op	WW_ACT1	Operate	M	

2.24 WW_PMRI1

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
PMRI class				
PMRI	WW_PMRI1	Motor restart inhibition		
Data				
Common Logical Node Information				

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
Mod	WW_INC1	Mode	M	Status-only
Beh	WW_INS1	Behaviour	M	
Health	WW_INS3	Health	M	
NamPlt	WW_LPL1	Name plate	M	
Status Information				
Op	WW_ACT1	Operate	O	

2.25 WW_PMSS1

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
PMSS class				
PMSS	WW_PMSS1	Motor starting time supervision		
Data				
Common Logical Node Information				
Mod	WW_INC1	Mode	M	Status-only
Beh	WW_INS1	Behaviour	M	
Health	WW_INS3	Health	M	
NamPlt	WW_LPL1	Name plate	M	
Status Information				
Op	WW_ACT1	Operate	O	
MotCyc	WW_INS6	Motor Cycle	E	

2.26 WW_PTOC1

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
PTOC class				
PTOC	WW_PTOC1	Time overcurrent		
Data				
Common Logical Node Information				
Mod	WW_INC1	Mode	M	Status-only
Beh	WW_INS1	Behaviour	M	
Health	WW_INS3	Health	M	
NamPlt	WW_LPL1	Name plate	M	
Status Information				

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
Str	WW_ACD1	Start	M	
Op	WW_ACT1	Operate	M	

2.27 WW_PTOC3

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
PTOC class				
PTOC	WW_PTOC3	Time overcurrent		
Data				
Common Logical Node Information				
Mod	WW_INC1	Mode	M	Status-only
Beh	WW_INS1	Behaviour	M	
Health	WW_INS3	Health	M	
NamPlt	WW_LPL1	Name plate	M	
Status Information				
Str	WW_ACD1	Start	M	
Op	WW_ACT1	Operate	M	

2.28 WW_PTOC4

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
PTOC class				
PTOC	WW_PTOC4	Time overcurrent		
Data				
Common Logical Node Information				
Mod	WW_INC1	Mode	M	Status-only
Beh	WW_INS1	Behaviour	M	
Health	WW_INS3	Health	M	
NamPlt	WW_LPL1	Name plate	M	
Status Information				
Str	WW_ACD1	Start	M	
Op	WW_ACT1	Operate	M	

2.29 WW_PTTR2

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
PTTR class				
PTTR	WW_PTTR2	Thermal overload		
Data				
Common Logical Node Information				
Mod	WW_INC1	Mode	M	Status-only
Beh	WW_INS1	Behaviour	M	
Health	WW_INS3	Health	M	
NamPlt	WW_LPL1	Name plate	M	
Status Information				
Op	WW_ACT1	Operate	M	

2.30 WW_PTTR4

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
PTTR class				
PTTR	WW_PTTR4	Thermal overload		
Data				
Common Logical Node Information				
Mod	WW_INC1	Mode	M	Status-only
Beh	WW_INS1	Behaviour	M	
Health	WW_INS3	Health	M	
NamPlt	WW_LPL1	Name plate	M	
Status Information				
Op	WW_ACT1	Operate	M	

2.31 WW_PTUC1

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
PTUC class				
PTUC	WW_PTUC1	Undercurrent		
Data				
Common Logical Node Information				

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
Mod	WW_INC1	Mode	M	Status-only
Beh	WW_INS1	Behaviour	M	
Health	WW_INS3	Health	M	
NamPlt	WW_LPL1	Name plate	M	
Status Information				
Str	WW_ACD1	Start	M	
Op	WW_ACT1	Operate	M	

2.32 WW_RBRF1

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
RBRF class				
RBRF	WW_RBRF1	Breaker failure		
Data				
Common Logical Node Information				
Mod	WW_INC1	Mode	M	Status-only
Beh	WW_INS1	Behaviour	M	
Health	WW_INS3	Health	M	
NamPlt	WW_LPL1	Name plate	M	
Status Information				
Str	WW_ACD1	Start	M	
OpEx	WW_ACT1	Breaker failure trip	M	

2.33 WW_RDRE1

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
RDRE class				
RDRE	WW_RDRE1	Disturbance recorder function		
Data				
Common Logical Node Information				
Mod	WW_INC1	Mode	M	Status-only
Beh	WW_INS1	Behaviour	M	
Health	WW_INS3	Health	M	
NamPlt	WW_LPL1	Name plate	M	

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
Status Information				
RcdMade	WW_SPS1	Recording made	M	
FltNum	WW_INS2	Fault Number	M	
GriFltNum	WW_INS2	Grid Fault Number	O	
RcdStr	WW_SPS1	Recording started	O	

2.34 WW_SCBR1

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
RBRF class				
SCBR	WW_SCBR1	Circuit breaker monitoring		
Data				
Common Logical Node Information				
Mod	WW_INC1	Mode	M	Status-only
Beh	WW_INS1	Behaviour	M	
Health	WW_INS3	Health	M	
NamPlt	WW_LPL1	Name plate	M	
Status Information				
TrCctAlm	WW_ACD1	Alarm signal	E	

2.35 WW_XCBR2

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
XCBR class				
XCBR	WW_XCBR2	Circuit Breaker		
Data				
Common Logical Node Information				
Mod	WW_INC1	Mode	M	Status-only
Beh	WW_INS1	Behaviour	M	
Health	WW_INS3	Health	M	
NamPlt	WW_LPL1	Name plate	M	
Loc	WW_SPS1	Local operation	M	
OpCnt	WW_INS2	Operation counter	M	
Status Information				

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
CBOpCap	WW_INS5	Circuit breaker operating capability	M	
Controls				
Pos	WW_DPC1	Switch position	M	
BlkOpn	WW_SPC1	Block opening	M	
BlkCls	WW_SPC1	Block closing	M	

2.36 WW_XSWI1

Attribute Name	Attribute Type	Explanation	M/O/E	Remarks
XSWI class				
XSWI	WW_XSWI1	Circuit switch		
Data				
Common Logical Node Information				
Mod	WW_INC1	Mode	M	Status-only
Beh	WW_INS1	Behaviour	M	
Health	WW_INS3	Health	M	
NamPlt	WW_LPL1	Name plate	M	
Loc	WW_SPS1	Local operation	M	
OpCnt	WW_INS2	Operation counter	M	
Status Information				
SwTyp	WW_INS5	Switch type	M	
SwOpCap	WW_INS5	Switch operating capability	M	
Controls				
Pos	WW_DPC1	Switch position	M	
BlkOpn	WW_SPC1	Block opening	M	
BlkCls	WW_SPC1	Block closing	M	

3 Common Data Class

3.1 Common Data Class Definitions

The following table contains the list of Common Data Classes implemented in the device:

CDC Type	CDC Class	Description
WW_ACD1	ACD	Directional Protection activation information
WW_ACT1	ACT	Protection Activation Information
WW_analogValue1	analogValue	Analogue value
WW_Cancel1	Cancel	Cancel operating
WW_CMV2	CMV	Complex measured value
WW_DPC1	DPC	Controllable Double Point
WW_DPC2	DPC	Controllable Double Point
WW_DPL1	DPL	Device name plate
WW_INC1	INC	Controllable Integer Status
WW_INS1	INS	Integer Status
WW_INS2	INS	Integer Status
WW_INS3	INS	Integer Status
WW_INS5	INS	Integer Status
WW_INS6	INS	Integer Status
WW_LPL1	LPL	Logical node name plate
WW_LPL2	LPL	Logical node name plate
WW_MV1	MV	Measured Value
WW_Oper1	Oper	Start/Select operating
WW_origin1	origin	Originator
WW_SPC1	SPC	Controllable Single Point
WW_SPC2	SPC	Controllable Single Point
WW_SPS1	SPS	Single Point Status
WW_units1	units	Unit definition
WW_vector1	vector	Vector definition
WW_WYE2	WYE	Phase to ground related measured values of a three phase system

3.1.1 WW_ACD1

Attribute Name	Attribute Type	FC	TrgOp	Value / Value Range	M/O/E	Remarks
ACD class						
General	BOOLEAN	ST	dchg		M	
dirGeneral	Enum	ST	dchg	ACDdir	M	
q	Quality	ST	qchg		M	
t	Timestamp	ST			M	

3.1.2 WW_ACT1

Attribute Name	Attribute Type	FC	TrgOp	Value / Value Range	M/O/E	Remarks
ACT class						
General	BOOLEAN	ST	dchg		M	
q	Quality	ST	qchg		M	
t	Timestamp	ST			M	

3.1.3 WW_CMV2

Attribute Name	Attribute Type	FC	TrgOp	Value / Value Range	M/O/E	Remarks
CMV class						
cVal	Struct	MX		WW_vector1	M	
q	Quality	ST	qchg		M	
t	Timestamp	ST			M	
instCVal	Struct	MX		WW_vector1	O	
units	Struct	CF		WW_units1	O	
db	INT32U	CF			O	
dbAng	INT32U	CF			E	

3.1.4 WW_DPC1

Attribute Name	Attribute Type	FC	TrgOp	Value / Value Range	M/O/E	Remarks
DPC class						
stVal	Dbpos	ST	dchg	Dbpos	M	

Attribute Name	Attribute Type	FC	TrgOp	Value / Value Range	M/O/E	Remarks
q	Quality	ST	qchg		M	
t	Timestamp	ST			M	
ctlModel	Enum	CF		ctlModel	M	

3.1.5 WW_DPC2

Attribute Name	Attribute Type	FC	TrgOp	Value / Value Range	M/O/E	Remarks
DPC class						
origin	Struct	ST		WW_origin1	O	
ctlNum	INT8U	ST			O	
stVal	Dbpos	ST	dchg	Dbpos	M	
q	Quality	ST	qchg		M	
t	Timestamp	ST			M	
stSeld	BOOLEAN	ST	dchg		O	
ctlModel	Enum	CF		ctlModel	M	
sboTimeout	INT32U	CF			O	
sboClass	Enum	CF		sboClass	O	
cdcNs	VisString255	EX			O	
Oper	Struct	CO		WW_Oper1		
SBOw	Struct	CO		WW_Oper1		
Cancel	Struct	CO		WW_Cancel1		

3.1.6 WW_DPL1

Attribute Name	Attribute Type	FC	TrgOp	Value / Value Range	M/O/E	Remarks
DPL class						
vendor	VisString255	DC			M	

3.1.7 WW_INC1

Attribute Name	Attribute Type	FC	TrgOp	Value / Value Range	M/O/E	Remarks
INC class						

Attribute Name	Attribute Type	FC	TrgOp	Value / Value Range	M/O/E	Remarks
stVal	Enum	ST	dchg	Mode	M	
q	Quality	ST	qchg		M	
t	Timestamp	ST			M	
ctlModel	Enum	CF		ctlModel	M	

3.1.8 WW_INS1

Attribute Name	Attribute Type	FC	TrgOp	Value / Value Range	M/O/E	Remarks
INS class						
stVal	Enum	ST	dchg	Behaviour	M	
q	Quality	ST	qchg		M	
t	Timestamp	ST			M	

3.1.9 WW_INS2

Attribute Name	Attribute Type	FC	TrgOp	Value / Value Range	M/O/E	Remarks
INS class						
stVal	INT32	ST	dchg		M	
q	Quality	ST	qchg		M	
t	Timestamp	ST			M	

3.1.10 WW_INS3

Attribute Name	Attribute Type	FC	TrgOp	Value / Value Range	M/O/E	Remarks
INS class						
stVal	Enum	ST	dchg	AutoRecSt	M	
q	Quality	ST	qchg		M	
t	Timestamp	ST			M	

3.1.11 WW_INS5

Attribute Name	Attribute Type	FC	TrgOp	Value / Value Range	M/O/E	Remarks
INS class						
stVal	Enum	ST	dchg	CBOpCap	M	
q	Quality	ST	qchg		M	
t	Timestamp	ST			M	

3.1.12 WW_INS6

Attribute Name	Attribute Type	FC	TrgOp	Value / Value Range	M/O/E	Remarks
INS class						
stVal	Enum	ST	dchg	MotorCycle	M	
q	Quality	ST	qchg		M	
t	Timestamp	ST			M	

3.1.13 WW_LPL1

Attribute Name	Attribute Type	FC	TrgOp	Value / Value Range	M/O/E	Remarks
LPL class						
vendor	visString255	DC			M	
swRev	visString255	DC			M	
d	visString255	DC			M	

3.1.14 WW_LPL2

Attribute Name	Attribute Type	FC	TrgOp	Value / Value Range	M/O/E	Remarks
LPL class						
vendor	visString255	DC			M	
swRev	visString255	DC			M	
d	visString255	DC			M	
ldNs	visString255	EX				

3.1.15 WW_MV1

Attribute Name	Attribute Type	FC	TrgOp	Value / Value Range	M/O/E	Remarks
MV class						
mag	Struct	MX		WW_analogValue1	M	
q	Quality	ST	qchg		M	
t	Timestamp	ST			M	
units	Struct	CF		WW_units1	O	
db	INT32U	CF			O	
d	visString255	DC			O	
dataNs	visString255	DC			O	

3.1.16 WW_SPC1

Attribute Name	Attribute Type	FC	TrgOp	Value / Value Range	M/O/E	Remarks
SPC class						
stVal	BOOLEAN	ST	dchg		M	
q	Quality	ST	dchg		M	
t	Timestamp	ST			M	
ctlModel	Enum	CF		ctlModel	M	

3.1.17 WW_SPC2

Attribute Name	Attribute Type	FC	TrgOp	Value / Value Range	M/O/E	Remarks
SPC class						
Oper	Struct	CO		WW_Oper1		
stVal	BOOLEAN	ST	dchg		M	
q	Quality	ST	dchg		M	
t	Timestamp	ST			M	
ctlModel	Enum	CF		ctlModel	M	

3.1.18 WW_SPS1

Attribute Name	Attribute Type	FC	TrgOp	Value / Value Range	M/O/E	Remarks
SPS class						
stVal	BOOLEAN	ST	dchg		M	
q	Quality	ST	qchg		M	
t	Timestamp	ST			M	

3.1.19 WW_WYE2

Attribute Name	Attribute Type	FC	TrgOp	Value / Value Range	M/O/E	Remarks
WYE class						
phsAB	WW_CMV2					
phsBC	WW_CMV2					
phsCA	WW_CMV2					
neut	WW_CMV2					

3.2 Common Data Attributes Type Definitions

3.2.1 WW_analogValue1

Attribute Name	Attribute Type	FC	TrgOp	Value / Value Range	M/O/E	Remarks
analogValue class						
f	FLOAT32	MX			M	

3.2.2 WW_Cancel1

Attribute Name	Attribute Type	FC	TrgOp	Value / Value Range	M/O/E	Remarks
Cancel class						
ctlval	BOOLEAN	CO			M	
origin	Struct	ST		WW_origin1	O	
ctlNum	INT8U	ST			O	
T	Timestamp	CO			O	
Test	BOOLEAN	CO			O	

3.2.3 WW_Oper1

Attribute Name	Attribute Type	FC	TrgOp	Value / Value Range	M/O/E	Remarks
Oper class						
ctlval	BOOLEAN	CO			M	
origin	Struct	ST		WW_origin1	O	
ctlNum	INT8U	ST			O	
T	Timestamp	CO			O	
Test	BOOLEAN	CO			O	
Check	Check	CO			O	

3.2.4 WW_origin1

Attribute Name	Attribute Type	FC	TrgOp	Value / Value Range	M/O/E	Remarks
origin class						
orCat	Enum	ST		orCategory	M	

Attribute Name	Attribute Type	FC	TrgOp	Value / Value Range	M/O/E	Remarks
orIdent	Octet64	ST			M	

3.2.5 WW_units1

Attribute Name	Attribute Type	FC	TrgOp	Value / Value Range	M/O/E	Remarks
unit class						
SIUnit	Enum			SIUnit	M	
multiplier	Enum			multiplier	O	

3.2.6 WW_vector1

Attribute Name	Attribute Type	FC	TrgOp	Value / Value Range	M/O/E	Remarks
vector class						
mag	Struct			WW_analogValue1	M	
ang	Struct			WW_analogValue1	O	

3.3 Enumerated type definitions

3.3.1 AutoRecSt

Ordinal	Semantic
1	Ready
2	InProgress
3	Successful

3.3.2 Beh

Ordinal	Semantic
1	on
2	blocked
3	test
4	test/blocked
5	off

3.3.3 CBOpCap

Ordinal	Semantic
1	None
2	Open
3	Close-Open
4	Open-Close-Open
5	Close-Open-Close-Open

3.3.4 ctlModel

Ordinal	Semantic
1	status-only
2	direct-with-normal-security
3	sbo-with-normal-security
4	direct-with-enhanced-security

Ordinal	Semantic
5	sbo-with-enhanced-security

3.3.5 Dbpos

Ordinal	Semantic
1	intermediate
2	off
3	on
4	bad

3.3.6 ACDdir

Ordinal	Semantic
0	unknown
1	forward
2	backward
3	both

3.3.7 Health

Ordinal	Semantic
1	Ok
2	Warning
3	Alarm

3.3.8 Mod

Ordinal	Semantic
1	on
2	blocked
3	test
4	test/block

Ordinal	Semantic
5	off

3.3.9 MotorCycle

Ordinal	Semantic
0	Trip/Off
1	Stop
2	Start
3	Run

3.3.10 multiplier

Ordinal	Semantic
-24	y
-21	z
-18	a
-15	f
-12	p
-9	n
-6	µ
-3	m
-2	c
-1	d
0	
1	da
2	h
3	k
6	M
9	G
12	T
15	P
18	E

Ordinal	Semantic
21	Z
24	Y

3.3.11 orCategory

Ordinal	Semantic
0	not-supported
1	bay-control
2	station-control
3	remote-control
4	automatic-bay
5	automatic-station
6	automatic-remote
7	maintenance
8	process

3.3.12 sboClass

Ordinal	Semantic
0	operate-once
1	operate-many

3.3.13 SIUnit

Ordinal	Semantic
1	none
2	m
3	kg
4	s
5	A
6	K
7	mol
8	cd

Ordinal	Semantic
9	deg
10	rad
11	sr
21	Gy
22	q
23	ºC
24	Sv
25	F
26	C
27	S
28	H
29	V
30	ohm
31	J
32	N
33	Hz
34	lx
35	Lm
36	Wb
37	T
38	W
39	Pa
41	m²
42	m³
43	m/s
44	m/s²
45	m³/s
46	m/m³
47	M
48	kg/m³
49	m²/s
50	W/m K

Ordinal	Semantic
51	J/K
52	ppm
53	1/s
54	rad/s
61	VA
62	Watts
63	VAr
64	phi
65	cos(phi)
66	Vs
67	V^2
68	As
69	A^2
70	A^2t
71	VAh
72	Wh
73	VArh
74	V/Hz

4 Appendix

4.1 Register Maps

Legend: * The Logical Node is dependent on the settings in the “Device planning”. (See “4.2 Device Planning Dependencies”).

LDevice::CTRL

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
CILO1* (WW_CILO1)		
	Mod	
	Beh	
	Health	
	NamPlt	
	EnaOpn	SG[1] . Interl OFF
	EnaCls	SG[1] . Interl ON

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
CSWI1* (WW_CSWI1)		
	Mod	
	Beh	
	Health	
	NamPlt	
	Loc	
	Pos	SG[1] . Pos

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
LLN0 (WW_LLN0CON)		
	Mod	
	Beh	
	Health	
	NamPlt	

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
LPHD1 (WW_LPHDCON)		
	PhyNam	
	PhyHealth	
	Proxy	

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
TCSSCBR1 (WW_SCBR1)		
	Mod	TCS - 74TC . active
	Beh	
	Health	
	NamPlt	
	TrCctAlm	TCS - 74TC . Alarm

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
XCBR1* (WW_XCBR2)		
	Mod	
	Beh	
	Health	
	NamPlt	
	Loc	
	OpCnt	
	Pos	SG[1] . Pos
	BlkOpn	
	BlkCls	
	CBOpCap	

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
XSWI1* (WW_XSWI1)		
	Mod	
	Beh	
	Health	
	NamPlt	
	Loc	
	OpCnt	
	Pos	SG[1] . Pos
	BlkOpn	
	BlkCls	
	SwTyp	
	SwOpCap	

LDevice::DR

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
LLN0 (WW_LLN0REC)		
	Mod	

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
LLN0 (WW_LLN0REC)		
	Beh	
	Health	
	NamPlt	

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
LPHD1 (WW_LPHDREC)		
	PhyNam	
	PhyHealth	
	Proxy	

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
RDRE1 (WW_RDRE1)		
	Mod	
	Beh	
	Health	
	NamPlt	
	RcdMade	Disturb rec . recording
	FltNum	
	GriFltNum	
	RcdStr	Disturb rec . recording

LDevice::EXT

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
COUTGGIO1 (WW_GGIO4)		
	Mod	
	Beh	
	Health	
	NamPlt	
	Ind1	IEC 61850 . COUTGGIO1.Ind1.stVal-I
	Ind2	IEC 61850 . COUTGGIO1.Ind2.stVal-I
	Ind3	IEC 61850 . COUTGGIO1.Ind3.stVal-I
	Ind4	IEC 61850 . COUTGGIO1.Ind4.stVal-I
	Ind5	IEC 61850 . COUTGGIO1.Ind5.stVal-I
	Ind6	IEC 61850 . COUTGGIO1.Ind6.stVal-I
	Ind7	IEC 61850 . COUTGGIO1.Ind7.stVal-I
	Ind8	IEC 61850 . COUTGGIO1.Ind8.stVal-I
	Ind9	IEC 61850 . COUTGGIO1.Ind9.stVal-I

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
COUTGGIO1 (WW_GGIO4)		
	Ind10	IEC 61850 . COUTGGIO1.Ind10.stVal-I
	Ind11	IEC 61850 . COUTGGIO1.Ind11.stVal-I
	Ind12	IEC 61850 . COUTGGIO1.Ind12.stVal-I
	Ind13	IEC 61850 . COUTGGIO1.Ind13.stVal-I
	Ind14	IEC 61850 . COUTGGIO1.Ind14.stVal-I
	Ind15	IEC 61850 . COUTGGIO1.Ind15.stVal-I
	Ind16	IEC 61850 . COUTGGIO1.Ind16.stVal-I
	Ind17	IEC 61850 . COUTGGIO1.Ind17.stVal-I
	Ind18	IEC 61850 . COUTGGIO1.Ind18.stVal-I
	Ind19	IEC 61850 . COUTGGIO1.Ind19.stVal-I
	Ind20	IEC 61850 . COUTGGIO1.Ind20.stVal-I
	Ind21	IEC 61850 . COUTGGIO1.Ind21.stVal-I
	Ind22	IEC 61850 . COUTGGIO1.Ind22.stVal-I
	Ind23	IEC 61850 . COUTGGIO1.Ind23.stVal-I
	Ind24	IEC 61850 . COUTGGIO1.Ind24.stVal-I
	Ind25	IEC 61850 . COUTGGIO1.Ind25.stVal-I
	Ind26	IEC 61850 . COUTGGIO1.Ind26.stVal-I
	Ind27	IEC 61850 . COUTGGIO1.Ind27.stVal-I
	Ind28	IEC 61850 . COUTGGIO1.Ind28.stVal-I
	Ind29	IEC 61850 . COUTGGIO1.Ind29.stVal-I
	Ind30	IEC 61850 . COUTGGIO1.Ind30.stVal-I
	Ind31	IEC 61850 . COUTGGIO1.Ind31.stVal-I
	Ind32	IEC 61850 . COUTGGIO1.Ind32.stVal-I

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
COUTGGIO2 (WW_GGIO4)		
	Mod	
	Beh	
	Health	
	NamPlt	
	Ind1	IEC 61850 . COUTGGIO2.Ind1.stVal-I
	Ind2	IEC 61850 . COUTGGIO2.Ind2.stVal-I
	Ind3	IEC 61850 . COUTGGIO2.Ind3.stVal-I
	Ind4	IEC 61850 . COUTGGIO2.Ind4.stVal-I
	Ind5	IEC 61850 . COUTGGIO2.Ind5.stVal-I
	Ind6	IEC 61850 . COUTGGIO2.Ind6.stVal-I
	Ind7	IEC 61850 . COUTGGIO2.Ind7.stVal-I

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
COUTGGIO2 (WW_GGIO4)		
	Ind8	IEC 61850 . COUTGGIO2.Ind8.stVal-I
	Ind9	IEC 61850 . COUTGGIO2.Ind9.stVal-I
	Ind10	IEC 61850 . COUTGGIO2.Ind10.stVal-I
	Ind11	IEC 61850 . COUTGGIO2.Ind11.stVal-I
	Ind12	IEC 61850 . COUTGGIO2.Ind12.stVal-I
	Ind13	IEC 61850 . COUTGGIO2.Ind13.stVal-I
	Ind14	IEC 61850 . COUTGGIO2.Ind14.stVal-I
	Ind15	IEC 61850 . COUTGGIO2.Ind15.stVal-I
	Ind16	IEC 61850 . COUTGGIO2.Ind16.stVal-I
	Ind17	IEC 61850 . COUTGGIO2.Ind17.stVal-I
	Ind18	IEC 61850 . COUTGGIO2.Ind18.stVal-I
	Ind19	IEC 61850 . COUTGGIO2.Ind19.stVal-I
	Ind20	IEC 61850 . COUTGGIO2.Ind20.stVal-I
	Ind21	IEC 61850 . COUTGGIO2.Ind21.stVal-I
	Ind22	IEC 61850 . COUTGGIO2.Ind22.stVal-I
	Ind23	IEC 61850 . COUTGGIO2.Ind23.stVal-I
	Ind24	IEC 61850 . COUTGGIO2.Ind24.stVal-I
	Ind25	IEC 61850 . COUTGGIO2.Ind25.stVal-I
	Ind26	IEC 61850 . COUTGGIO2.Ind26.stVal-I
	Ind27	IEC 61850 . COUTGGIO2.Ind27.stVal-I
	Ind28	IEC 61850 . COUTGGIO2.Ind28.stVal-I
	Ind29	IEC 61850 . COUTGGIO2.Ind29.stVal-I
	Ind30	IEC 61850 . COUTGGIO2.Ind30.stVal-I
	Ind31	IEC 61850 . COUTGGIO2.Ind31.stVal-I
	Ind32	IEC 61850 . COUTGGIO2.Ind32.stVal-I

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
CTLGGIO1 (WW_GGIO14)		
	Mod	
	Beh	
	Health	
	NamPlt	
	SPCSO1	
	SPCSO2	
	SPCSO3	
	SPCSO4	
	SPCSO5	

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
CTLGGIO1 (WW_GGIO14)		
	SPCSO6	
	SPCSO7	
	SPCSO8	
	SPCSO9	
	SPCSO10	
	SPCSO11	
	SPCSO12	
	SPCSO13	
	SPCSO14	
	SPCSO15	
	SPCSO16	
	SPCSO17	
	SPCSO18	
	SPCSO19	
	SPCSO20	
	SPCSO21	
	SPCSO22	
	SPCSO23	
	SPCSO24	
	SPCSO25	
	SPCSO26	
	SPCSO27	
	SPCSO28	
	SPCSO29	
	SPCSO30	
	SPCSO31	
	SPCSO32	

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
EPGAPC1 (WW_GAPC1)		
	Mod	ExP[1] . active ExP[1] . Blo TripCmd ExP[1] . ExBlo TripCmd
	Beh	
	Health	
	NamPlt	
	Str	ExP[1] . Alarm
	Op	ExP[1] . Trip

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
EPGAPC2 (WW_GAPC1)		
	Mod	ExP[2] . active ExP[2] . Blo TripCmd ExP[2] . ExBlo TripCmd
	Beh	
	Health	
	NamPlt	
	Str	ExP[2] . Alarm
	Op	ExP[2] . Trip

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
EPGAPC3 (WW_GAPC1)		
	Mod	ExP[3] . active ExP[3] . Blo TripCmd ExP[3] . ExBlo TripCmd
	Beh	
	Health	
	NamPlt	
	Str	ExP[3] . Alarm
	Op	ExP[3] . Trip

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
EPGAPC4 (WW_GAPC1)		
	Mod	ExP[4] . active ExP[4] . Blo TripCmd ExP[4] . ExBlo TripCmd
	Beh	
	Health	
	NamPlt	
	Str	ExP[4] . Alarm
	Op	ExP[4] . Trip

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
GOSINGGIO1 (WW_GGIO11)		
	Mod	
	Beh	
	Health	
	NamPlt	
	Ind1	
	Ind2	
	Ind3	
	Ind4	
	Ind5	
	Ind6	

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
GOSINGGIO1 (WW_GGIO11)		
	Ind7	
	Ind8	
	Ind9	
	Ind10	
	Ind11	
	Ind12	
	Ind13	
	Ind14	
	Ind15	
	Ind16	
	Ind17	
	Ind18	
	Ind19	
	Ind20	
	Ind21	
	Ind22	
	Ind23	
	Ind24	
	Ind25	
	Ind26	
	Ind27	
	Ind28	
	Ind29	
	Ind30	
	Ind31	
	Ind32	

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
GOSINGGIO2 (WW_GGIO10)		
	Mod	
	Beh	
	Health	
	NamPlt	
	Ind1	
	Ind2	
	Ind3	
	Ind4	

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
GOSINGGIO2 (WW_GGIO10)		
	Ind5	
	Ind6	
	Ind7	
	Ind8	
	Ind9	
	Ind10	
	Ind11	
	Ind12	
	Ind13	
	Ind14	
	Ind15	
	Ind16	
	Ind17	
	Ind18	
	Ind19	
	Ind20	
	Ind21	
	Ind22	
	Ind23	
	Ind24	
	Ind25	
	Ind26	
	Ind27	
	Ind28	
	Ind29	
	Ind30	
	Ind31	
	Ind32	

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
LLN0 (WW_LLN0SYS)		
	Mod	
	Beh	
	Health	
	NamPlt	

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
LPHD1 (WW_LPHDSYS)		
	PhyNam	
	PhyHealth	
	Proxy	

LDevice::MEAS

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
CMMXU1 (WW_MMXU7)		
	Mod	
	Beh	
	Health	
	NamPlt	
	A	CT . IL1 RMS CT . phi IL1 CT . IL2 RMS CT . phi IL2 CT . IL3 RMS CT . phi IL3 CT . IG meas RMS CT . phi IG meas CT . IG calc RMS CT . phi IG calc

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
CMSTA1 (WW_MSTA1)		
	Mod	
	Beh	
	Health	
	NamPlt	
	AvAPhsA	CT . IL1 avg
	AvAPhsB	CT . IL2 avg
	AvAPhsC	CT . IL3 avg
	MaxAPhsA	CT . IL1 max
	MaxAPhsB	CT . IL2 max
	MaxAPhsC	CT . IL3 max
	MinAPhsA	CT . IL1 min
	MinAPhsB	CT . IL2 min
	MinAPhsC	CT . IL3 min

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
LLN0 (WW_LLN0MEA)		
	Mod	
	Beh	
	Health	
	NamPlt	

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
LPHD1 (WW_LPHDMEA)		
	PhyNam	
	PhyHealth	
	Proxy	

LDevice::PROT

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
GFPTOC1 (WW_PTOC3)		
	Mod	IG[1] - 50N, 51N . active IG[1] - 50N, 51N . Blo TripCmd IG[1] - 50N, 51N . ExBlo TripCmd
	Beh	
	Health	
	NamPlt	
	Str	IG[1] - 50N, 51N . Alarm
	Op	IG[1] - 50N, 51N . Trip

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
GFPTOC2 (WW_PTOC3)		
	Mod	IG[2] - 50N, 51N . active IG[2] - 50N, 51N . Blo TripCmd IG[2] - 50N, 51N . ExBlo TripCmd
	Beh	
	Health	
	NamPlt	
	Str	IG[2] - 50N, 51N . Alarm
	Op	IG[2] - 50N, 51N . Trip

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
GFPTOC3 (WW_PTOC3)		
	Mod	IG[3] - 50N, 51N . active IG[3] - 50N, 51N . Blo TripCmd IG[3] - 50N, 51N . ExBlo TripCmd
	Beh	
	Health	
	NamPlt	
	Str	IG[3] - 50N, 51N . Alarm
	Op	IG[3] - 50N, 51N . Trip

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
GFPTOC4 (WW_PTOC3)		
	Mod	IG[4] - 50N, 51N . active IG[4] - 50N, 51N . Blo TripCmd IG[4] - 50N, 51N . ExBlo TripCmd

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
GFPTOC4 (WW_PTOC3)		
	Beh	
	Health	
	NamPlt	
	Str	IG[4] - 50N, 51N . Alarm
	Op	IG[4] - 50N, 51N . Trip

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
IHMI1 (WW_IHMI1)		
	Mod	
	Beh	
	Health	
	NamPlt	

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
JAMPIOC1 (WW_PIOC1)		
	Mod	Jam[1] - 51LR . active Jam[1] - 51LR . Blo TripCmd Jam[1] - 51LR . ExBlo TripCmd
	Beh	
	Health	
	NamPlt	
	Str	Jam[1] - 51LR . Alarm
	Op	Jam[1] - 51LR . Trip

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
JAMPIOC2 (WW_PIOC1)		
	Mod	Jam[2] - 51LR . active Jam[2] - 51LR . Blo TripCmd Jam[2] - 51LR . ExBlo TripCmd
	Beh	
	Health	
	NamPlt	
	Str	Jam[2] - 51LR . Alarm
	Op	Jam[2] - 51LR . Trip

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
LLN0 (WW_LLN0PRO)		
	Mod	
	Beh	
	Health	

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
LLN0 (WW_LLN0PRO)		
	NamPlt	

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
LPHD1 (WW_LPHDPRO)		
	PhyNam	
	PhyHealth	
	Proxy	

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
PMRI1 (WW_PMRI1)		
	Mod	MStart . active MStart . Blo TripCmd MStart . ExBlo TripCmd
	Beh	
	Health	
	NamPlt	
	Op	MStart . Blo

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
PMSS1 (WW_PMSS1)		
	Mod	MStart . active MStart . Blo TripCmd MStart . ExBlo TripCmd
	Beh	
	Health	
	NamPlt	
	Op	MStart . Trip
	MotCyc	MStart . MotorCyc Enum

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
PTOC1 (WW_PTOC1)		
	Mod	I[1] - 50, 51 . active I[1] - 50, 51 . Blo TripCmd I[1] - 50, 51 . ExBlo TripCmd
	Beh	
	Health	
	NamPlt	
	Str	I[1] - 50, 51 . Alarm
	Op	I[1] - 50, 51 . Trip

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
PTOC2 (WW_PTOC1)		
	Mod	I[2] - 50, 51 . active I[2] - 50, 51 . Blo TripCmd I[2] - 50, 51 . ExBlo TripCmd

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
PTOC2 (WW_PTOC1)		
	Beh	
	Health	
	NamPlt	
	Str	I[2] - 50, 51 . Alarm
	Op	I[2] - 50, 51 . Trip

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
PTOC3 (WW_PTOC1)		
	Mod	I[3] - 50, 51 . active I[3] - 50, 51 . Blo TripCmd I[3] - 50, 51 . ExBlo TripCmd
	Beh	
	Health	
	NamPlt	
	Str	I[3] - 50, 51 . Alarm
	Op	I[3] - 50, 51 . Trip

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
PTOC4 (WW_PTOC1)		
	Mod	I[4] - 50, 51 . active I[4] - 50, 51 . Blo TripCmd I[4] - 50, 51 . ExBlo TripCmd
	Beh	
	Health	
	NamPlt	
	Str	I[4] - 50, 51 . Alarm
	Op	I[4] - 50, 51 . Trip

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
PTOC5 (WW_PTOC1)		
	Mod	I[5] - 50, 51 . active I[5] - 50, 51 . Blo TripCmd I[5] - 50, 51 . ExBlo TripCmd
	Beh	
	Health	
	NamPlt	
	Str	I[5] - 50, 51 . Alarm
	Op	I[5] - 50, 51 . Trip

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
PTOC6 (WW_PTOC1)		
	Mod	I[6] - 50, 51 . active I[6] - 50, 51 . Blo TripCmd I[6] - 50, 51 . ExBlo TripCmd
	Beh	
	Health	
	NamPlt	
	Str	I[6] - 50, 51 . Alarm
	Op	I[6] - 50, 51 . Trip

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
RBRF1 (WW_RBRF1)		
	Mod	CBF - 50BF, 62BF . active CBF - 50BF, 62BF . ExBlo CBF - 50BF, 62BF . ExBlo
	Beh	
	Health	
	NamPlt	
	Str	CBF - 50BF, 62BF . running
	OpEx	CBF - 50BF, 62BF . Alarm

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
RTDPTTR1 (WW_PTTR4)		
	Mod	RTD . active RTD . Blo TripCmd RTD . ExBlo TripCmd
	Beh	
	Health	
	NamPlt	
	Op	RTD . Trip

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
TMPTTR1 (WW_PTTR2)		
	Mod	ThR . active ThR . Blo TripCmd ThR . ExBlo TripCmd
	Beh	
	Health	
	NamPlt	
	Str	ThR . Alarm
	Op	ThR . Trip

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
ULPTOC1 (WW_PTOC4)		
	Mod	I2>[1] - 46 . active I2>[1] - 46 . Blo TripCmd I2>[1] - 46 . ExBlo TripCmd

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
ULPTOC1 (WW_PTOC4)		
	Beh	
	Health	
	NamPlt	
	Str	I2>[1] - 46 . Alarm
	Op	I2>[1] - 46 . Trip

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
ULPTOC2 (WW_PTOC4)		
	Mod	I2>[2] - 46 . active I2>[2] - 46 . Blo TripCmd I2>[2] - 46 . ExBlo TripCmd
	Beh	
	Health	
	NamPlt	
	Str	I2>[2] - 46 . Alarm
	Op	I2>[2] - 46 . Trip

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
ULPTUC1 (WW_PTUC1)		
	Mod	I<[1] - 37 . active I<[1] - 37 . Blo TripCmd I<[1] - 37 . ExBlo TripCmd
	Beh	
	Health	
	NamPlt	
	Str	I<[1] - 37 . Alarm
	Op	I<[1] - 37 . Trip

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
ULPTUC2 (WW_PTUC1)		
	Mod	I<[2] - 37 . active I<[2] - 37 . Blo TripCmd I<[2] - 37 . ExBlo TripCmd
	Beh	
	Health	
	NamPlt	
	Str	I<[2] - 37 . Alarm
	Op	I<[2] - 37 . Trip

Logical Node	Data Object	Module (- ANSI/IEEE Device Number) . Name
ULPTUC3 (WW_PTUC1)		
	Mod	I<[3] - 37 . active I<[3] - 37 . Blo TripCmd I<[3] - 37 . ExBlo TripCmd
	Beh	
	Health	
	NamPlt	
	Str	I<[3] - 37 . Alarm
	Op	I<[3] - 37 . Trip

4.2 Device Planning Dependencies

The availability of Logical Node instances in the generated ICD file depends on the settings in the “Device planning” menu.

The following list gives an overview about those settings for every module that have an effect on the availability of a Logical Node.

Module (- ANSI/IEEE Device Number) . Name	Value
CILO1	
SG[1] . SwitchgearType	Controlled SG
SG[1] . SwitchgearType	Controlled Make Break SG
CSWI1	
SG[1] . SwitchgearType	Controlled SG
SG[1] . SwitchgearType	Controlled Make Break SG
XCBR1	
SG[1] . SwitchgearType	Monitored Make Break SG
SG[1] . SwitchgearType	Controlled Make Break SG
XSWI1	
SG[1] . SwitchgearType	Monitored SG
SG[1] . SwitchgearType	Controlled SG

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