Model Implementation Conformance Statement for the IEC 61850 interface in SEL-487V

September 07, 2011

UCA International Users Group
Testing Sub Committee

Template version 0.1
Date: April 24, 2008

Schweitzer Engineering Laboratories, Inc.

INDEX

page

1. Introduction

This model implementation conformance statement is applicable for SEL-487V and SEL-487V-1, with firmware R104:

This MICS document specifies the modelling extensions compared to IEC 61850 edition 1. For the exact details on the standardized model please compare the ICD substation configuration file: “0487V 004.ICD”, version R101.

Clause 2 contains the list of implemented logical nodes.
Clause 3 describes the new and extended logical nodes.

2. **Logical Nodes List**

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

L: System Logical Nodes
LPHD (Physical device information)
LLN0 (Logical node zero)
P: Logical Nodes for protection functions
PDIF (Differential)
PDOP (Directional overpower)
PDUP (Directional underpower)
PIOC (Instantaneous overcurrent)
PTOF (Overfrequency)
PTUF (Underfrequency)
PTOC (Time overcurrent)
PTOV (Overvoltage)
PTRC (Protection trip conditioning)
PTUV (Undervoltage)
G: Logical Nodes for generic references
GGIO (Generic process I/O)
M: Logical Nodes for metering and measurement
MMXU (Measurement)
MSQI (Sequence and imbalance)
MTHR (Thermal measurements)
C: Logical Nodes for control
CSWI (Switch controller)
X: Logical Nodes for switchgear
XCBR (Circuit breaker)
XSWI (Circuit switch)
Z: Logical Nodes for further power system equipment
ZBAT (Battery)

3. Logical Node Extensions

The following table use

- 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.
-

3.1. New Logical Nodes

New logical nodes have the lnNs attribute in the Name plate. The value of lnNs is a reference to the MICS document.

3.1.1 MTHR Thermal Measurements

This LN shall be used to acquire values from RTDs and to calculate thermal capacity. This is mainly used for Thermal Monitoring.

MTHR class				
Attribute Name	**Attribute Type**	**Explanation**	**M/O/E**	**Remarks**
LNName		Shall be inherited from Logical-Node Class (see IEC 61850-7-2).		
Data				
Common Logical Node Information				
		LN shall inherit all Mandatory Data from Common Logical Node Class.	M	
EEHealth	INS	External equipment health (RTD Communications Status)	E	
Measured Values				
MaxWdgTmp	MV	Maximum winding temperature	E	
MaxBrgTmp	MV	Maximum bearing temperature	E	
MaxAmbTmp	MV	Maximum ambient temperature	E	

MaxOthTmp	MV	Maximum other temperature	E	
Tmp	MV	Temperature	E	

3.2. Extended Logical Nodes

The following logical nodes have been extended with extra data. All extra data has been highlighted in the tables and marked as “E” (Extended), these data contains the “dataNs” attribute.

3.2.1 GGIO Generic Process I/O

GGIO class				
Attribute Name	**Attribute Type**	**Explanation**	**M/O/E**	**Remarks**
Measured Values				
Ra	MV	Remote analog	E	
Rao	MV	Remote analog output	E	