

# IEC 61850 CLIENT MICS

## ➤ SUMMARY:

This document is the Model Implementation Conformance Statement of the CimWay built-in client driver for IEC 61850.

The last revision of the technical content accommodates changes in PcVue 15.1.3. Unless otherwise stated, this document is valid for releases made publicly available since.

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## REVISION HISTORY

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2.0	BL	Editorial changes - PcVue 11 release		November 5, 2020	Public
2.1	BL	Editorial changes		August 4, 2021	Public
2.2	BL	Technical - Update to MICS template Ed2 and content update for certification ed2, including new CDC in ed2.1		November 5, 2020	Public
2.3	MMC	Editorial - Applied new corporate template	BL	March 13, 2025	Public

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## 1. Introduction

This document specifies the Model Implementation Conformance Statement (MICS) of the CimWay built-in driver for IEC 61850, further referred to as "the Client". This MICS document specifies the supported Common Data Classes for IEC 61850 Edition 1 and Edition 2 and mapping of the quality.

Together with the PICS, PIXIT and TICS, the MICS forms the basis for conformance testing according to IEC 61850-10.

The following documents are available separately:

- The Protocol Implementation Conformance Statement (PICS),
- The Protocol Implementation eXtra Information for Testing (PIXIT),
- The Model Implementation Conformance Statement (MICS),
- The Tissues Implementation Conformance Statement (TICS).

## 2. Supported common data classes

The « Ed » column indicates Edition 1 and/or Edition 2.

The « Comment » column indicates which Data Attributes are used when mapping a PcVue variable on a DO derived from the respective CDC type.

### 2.1 CDC specifications for status information

CDC	Ed	Description	Supported	Comment
SPS	1,2	Single point status	Yes	Bit variable (stVal q and t)
DPS	1,2	Double point status	Yes	Bit or Register variable (stVal q and t)
INS	1,2	Integer status	Yes	Register variable (stVal q t)
ENS	2	Enumerated status	Yes	Register variable (stVal q t)
ACT	1,2	Protection activation information	Yes	Bit variable (general q t)
ACD	1,2	Directional protection activation information	Yes	Bit variable (general q t) Register variable (dirGeneral q t)
SEC	1,2	Security violation counting	Yes	Register variable (cnt t)
BCR	1	Binary counter reading	No	
BCR	2	Binary counter reading	Yes	Register variable (actVal q t)
HST	2	Histogram	No	
VSS	2	Visible string status	Yes	Text variable (stVal q t)
ORS	2.1	Object reference status	Yes	Text variable (stVal q t)
TCS	2.1	Time value status	Yes	Text variable (stVal q t)

## 2.2 CDC specifications for measurement information

CDC	Ed	Description	Supported	Comment
MV	1,2	Measured value	Yes	Register variable (mag\$f q t) Register variable (mag\$i q t)
CMV	1,2	Complex measured value	Yes	Register variable (cVal\$mag\$f q t) Register variable (cVal\$mag\$i q t) Register variable (cVal\$ang\$f q t) Register variable (cVal\$ang\$i q t)
SAV	1,2	Sampled value	Yes	Register variable (instMag\$f q t) Register variable (instMag\$i q t)
WYE	1,2	Phase to ground/neutral related measured values of a three-phase system	Yes	Supported by mapping CMV sub-data-objects on Register variables
DEL	1,2	Phase to phase related measured values of a three-phase system	Yes	Supported by mapping CMV sub-data-objects on Register variables
SEQ	1,2	Sequence	Yes	Supported by mapping CMV sub-data-objects on Register variables
HMV	1	Harmonic value	No	
HMV	2	Harmonic value	No	
HWYE	1	Harmonic value for WYE	No	
HWYE	2	Harmonic value for WYE	No	
HDEL	1	Harmonic value for DEL	No	
HDEL	2	Harmonic value for DEL	No	

## 2.3 CDC specifications for controls

CDC	Ed	Description	Supported	Comment
SPC	1,2	Controllable single point	Yes	Bit variable (stVal q and t) Commandable Bit variable (ctlVal)
DPC	1,2	Controllable double point	Yes	Bit variable (stVal q and t) Register variable (stVal q and t) Commandable Bit variable (ctlVal)
INC	1,2	Controllable integer status	Yes	Register variable (stVal q and t) Commandable Register variable (ctlVal)
ENC	2	Controllable enumerated status	Yes	Register variable (stVal q and t) Commandable Register variable (ctlVal)
BSC	1,2	Binary controlled step position information	Yes	Register variable (valWTr\$posVal q and t) Bit variable (valWTr\$transInd q and t) Commandable Register variable (ctlVal)
ISC	1,2	Integer controlled step position information	Yes	Register variable (valWTr\$posVal q and t) Bit variable (valWTr\$transInd q and t) Commandable Register variable (ctlVal)
APC	1	Controllable analogue process value	Yes	Register variable (setMag\$f q t) Register variable (setMag\$i q t) Commandable Register variable (ctlVal\$i) Commandable Register variable (ctlVal\$f) Commandable Register variable (ctlVal\$i)

CDC	Ed	Description	Supported	Comment
APC	2	Controllable analogue process value	Yes	Register variable (mxVal\$f q t) Register variable (mxVal\$i q t) Commandable Register variable (ctlVal\$i) Commandable Register variable (ctlVal\$f) Commandable Register variable (ctlVal\$i)
BAC	2	Binary controlled analog process value	Yes	Register variable (mxVal\$f q t) Register variable (mxVal\$i q t) Commandable Register variable (ctlVal\$i) Commandable Register variable (ctlVal\$f) Commandable Register variable (ctlVal)

## 2.4 CDC specifications for status settings

CDC	Ed	Description	Supported	Comment
SPG	1,2	Single point setting	Yes	Bit variable (setVal)
ING	1,2	Integer status setting	Yes	Register variable (setVal)
ENG	2	Enumerated status setting	Yes	Register variable (setVal)
ORG	2	Object reference setting	No	Text variable (setSrcRef q t)
TSG	2	Time setting group	No	While mapping on a DO is useless (and not supported), the useful data attributes can be mapped on Text variables
CUG	2	Currency setting group	No	While mapping on a DO is useless (and not supported), the useful data attributes can be mapped on Text variables
VSG	2	Visible string setting	Yes	Text variable (setVal)

## 2.5 CDC specifications for analogue settings

CDC	Ed	Description	Supported	Comment
ASG	1,2	Analogue setting	Yes	Register variable (setMag\$f) Register variable (setMag\$i)
CURVE	1,2	Setting curve	No	
CSG	2	Curve shape setting	No	

## 2.6 CDC specifications for description information

CDC	Ed	Description	Supported	Comment
DPL	1,2	Device name plate	Yes	Text variable (vendor)
LPL	1,2	Logical node name plate	Yes	Text variable (vendor)
CSD	1,2	Curve shape description	No	
VSD	2.1	Visible string description	Yes	Text variable (val)

## 2.7 CDC specifications for tracking

CDC	Ed	Description	Supported	Comment
CST	2	Common service tracking	No	
BTS	2	Buffered report tracking service	No	
CTS	2	Control tracking service	No	
GTS	2	GOOSE Control block tracking service	No	
LTS	2	Log control block tracking service	No	
MTS	2	MSVCB tracking service	No	
NTS	2	USVCB control block tracking service	No	
OTS	2	Log tracking service	No	
STS	2	SGCB tracking service	No	
UTS	2	Unbuffered report tracking service	No	
Notes: The tracking services are not supported.				

Supported:

- Yes = Client can issue an ACSI service on this CDC and process the data from/to the CDC
- No = Client can't issue an ACSI service on this CDC and doesn't process the data from/to the CDC

## 3. Quality mapping

61850 Quality	CimWay quality
Good	Valid
Questionable	NS
Invalid	NS
Reserved	NS
Overflow	Depends on Validity: NS if Questionable, Invalid or Reserved, Otherwise Valid.
Out of range	
Bad reference	
Oscillatory	
Failure	
Old data	
Inconsistent	
Inaccurate	
Process	
Substituted	
Test	
Operator blocked	

Note: Raw Validity & Detailed quality information can be mapped to variable extended attributes for ad'hoc processing.

## 4. Time quality mapping

61850 Time Quality	CimWay quality
Leap seconds known	PLC – Indicating a valid timestamp
Clock not synchronised	PLC ? – Indicating a questionable or invalid timestamp
Clock failure	PLC ? – Indicating a questionable or invalid timestamp
Accuracy	PLC – Indicating a valid timestamp

Note: Timestamp quality information can be mapped to variable extended attributes for ad'hoc processing.





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