



# IEC 61850 Client TICS

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Revision :	2.2/15.1.3
Content :	This document contains Tissues 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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# Authorization

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Written by	JSB		April 19 <sup>th</sup> , 2013
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# Revision history

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Revision	Author	Action	Editing	Date	Distribution
2.0	BL	Editorial changes - PcVue 11 release		November, 8 <sup>th</sup> 2013	Public
2.1	BL	Editorial changes		Nov 5 <sup>th</sup> , 2020	Public
2.2	BL	Update to TICS template Ed2 and content update for certification ed2		August, 4 <sup>th</sup> 2021	Public

# Content

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# 1 Introduction

This document specifies the Tissues Implementation Conformance Statement (TICS) of the CimWay built-in driver for IEC 61850, further referred to as "the Client".

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

According to the UCA IUG QAP the TICS document is required to perform conformance testing and is referenced on the certificate.

The TISSUE database is available at [www.tissues.iec61850.com](http://www.tissues.iec61850.com)

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 Mandatory Edition 2 Tissues

Column "Supported by client":

- "Y": Means that the client supports servers that have implemented the respective tissue.
- "ni": No impact on testing
- "na": Not applicable if the client does not support the corresponding ACSI service(s)

Part 6 Tissue	Description	Supported by client
658	Tracking related features	na
663	FCDA element cannot be a "functionally constrained logical node"	Y
668	Autotransformer modeling	ni
719	ConfDataSet - maxAttributes definition is confusing	na
721	Log element name	na
768	bType VisString65 is missing	ni
779	object references	ni
788	SICS S56 from optional to mandatory	na
789	ConfLdName as services applies to both server and client (supportsLdname)	Y
804	valKind and IED versus System configuration (valimport)	na
806	Max length of log name inconsistent between -6 and -7-2	ni
807	Need a way to indicate if "Owner" present in RCB	na
822	Extension of IED capabilities	na
823	ValKind for structured data attributes	na
824	Short addresses on structured data attributes	na
825	Floating point value	na
845	SGCB ResvTms	na
853	SBO and ProtNs	na
855	Recursive SubFunction	na
856	VoltageLevel frequency and phases	ni
857	Function/SubFunction for ConductingEquipment	na
886	Missing 8-1 P-types	na
901	tServices as AP or as IED element	na

Part 6 Tissue	Description	Supported by client
936	SupSubscription parameter usage is difficult	na
1175	IPv6 address lowercase only	na

Part 7-1 Tissue	Description	Supported by client
828	Data model namespace revision IEC 61850-7-4:2007[A]	na
1151	simulated GOOSE disappears after 1st appearance when LPHD.Sim = TRUE	na
1196	Extensions to standardized LN classes made by third parties	na

Part 7-2 Tissue	Description	Supported by client
778	AddCause values – add value not-supported	Y
780	What are unsupported trigger option at a control block?	na
783	TimOper Resp- ; add Authorization check	na
786	AddCause values 26 and 27 are switched	Y
820	Mandatory ACSI services (use for PICS template)	Y
858	typo in enumeration ServiceType	ni
861	dchg of ConfRev attribute	na
876	GenLogicalNodeClass and SGCB, GoCB, MsvCB, UsvCB	ni
1038	Loss of Info Detection After Resynch	Y
1062	Entrytime not used in CDC	ni
1071	Length of DO name	ni
1091	The sentence "The initial value of EditSG shall be 0", has to be stated in part 7.2 not in 8.1	na
1127	Missing owner attribute in BTS and UTS	na
1163	Old report in URCB	ni
1202	GI not optional	ni

Part 7-3 Tissue	Description	Supported by client
697	persistent command / PulseConfig	na
698	Wrong case is BAC.dB attribute	Y
722	Units for 'h' and 'min' not in UnitKind enumeration.	ni
919	Presence Condition for sVC	ni
925	Presence of i or f attribute - Problem with writing	Y
926	Presence Conditions within RangeConfig	Y

Part 7-4 Tissue	Description	Supported by client
671	mistake in definition of Mod & Beh	ni
674	CDC of ZRRCLocSta is wrong	ni
675	SIML LN	ni
676	Same data object name used with different CDC	ni
677	MotStr is used with different CDC in PMMS and SOPM LN classes	ni
679	Remove CycTrMod Enum	ni
680	SI unit for MHYD.Cndct	ni
681	Enum PIDAlg	ni
682	ANCR.ParColMod	ni

Part 7-4 Tissue	Description	Supported by client
683	Enum QVVR.IntrDetMth	ni
685	Enum ParTraMod	ni
686	New annex H - enums types in XML	Y
694	Data object CmdBlk	ni
696	LSVS.St (Status of subscription)	ni
712	interpretation of quality operatorBlocked	ni
713	DO Naming of time constants in FFIL	ni
724	ANCR.Auto	ni
725	Loc in LN A-group	ni
734	LLN0.OpTmh vs. LPHD.OpTmh	ni
735	ISAF.Alm and ISAF.AlmReset	ni
736	PFSign	ni
742	GAPC.Str, GAPC.Op and GAPC.StrVal	ni
743	CCGR.PmpCtl and CCGR.FanCtl	ni
744	LN STMP, EEHealth and EENAME	ni
772	LPHD.PwrUp/PwrDn shall be transient	ni
773	Loc, LockKey and LocSta YPSH and YLTC	ni
774	ITCI.LockKey	ni
775	KVLV.ClsLim and OpnLim	ni
776	LPHD.OutOv/InOv and LCCH.OutOv/InOv	ni
800	Misspelling in CSYN	ni
802	CCGR and Harmonized control authority	ni
808	Presence condition of ZMOT.DExt and new DOs	ni
831	Setting of ConfRevNum in LGOS	na
838	Testing in Beh=Blocked	ni
844	MFLK.PhPiMax, MFLK.PhPiLoFil, MFLK.PhPiRoot DEL->WYE	ni
849	Presence conditions re-assessing in case of derived statistical calculation	ni
877	QVUB -settings should be optional	ni
909	Remove ANCR.ColOpR and ColOpL	ni
912	Clarification of PwrRtg/VARtg	ni
920	Resetable Counter is NOT resetable	ni
932	Rename AVCO.SptVol to AVCO.VolSpt	ni
939	Change CDC for ANCR.FixCol	ni
991	LGOS: GoCBRef (as well as LSVS.SvCBRef) should be mandatory	ni
1007	PTRC as fault indicator - Update of description required	ni
1044	TapChg in AVCO	ni
1077	Rename DOnames within LTIM	ni

Note: Tissues 675, 735, 772, 775, 776, 878 are not relevant for conformance testing.

Part 8-1 Tissue	Description	Supported by client
784	Tracking of control (CTS)	na
817	Fixed-length GOOSE float encoding	ni
834	File dir name length 64	Y
951	Encoding of Owner attribute	na
1040	More associate error codes	Y
1178	Select Response+ is non-null value	Y

### 3 Mandatory Edition 1 InterOp Tissues

During the October 2006 meeting IEC TC57 Working Group 10 decided that:

- green Tissues with the category "IntOp" are mandatory for IEC 61850 edition 1
- Tissues with the category "Ed.2" Tissues should not be implemented.

The table below gives an overview of the implemented InterOp Tissues.

Part	Tissue Nr	Description	Implemented Y/N/na
8-1	116	GetNameList with empty response?	Y
8-1	165	Improper Error Response for GetDataSetValues	Y
8-1	183	GetNameList error handling	Y
7-4		None	na
7-3	28	Definition of APC	na
7-3	54	Point def xVal, not cVal	na
7-3	55	Ineut = Ires ?	na
7-3	60	Services missing in tables	na
7-3	63	mag in CDC CMV	na
7-3	219	operTm in ACT	na
7-3	270	WYE and DEL rms values	na
7-2	30	control parameter T	na
7-2	31	Typo	na
7-2	32	Typo in syntax	na
7-2	35	Typo Syntax Control time	na
7-2	36	Syntax parameter DSet-Ref missing	na
7-2	37	Syntax GOOSE "T" type	na
7-2	39	Add DstAddr to GoCB	na
7-2	40	GOOSE Message "AppID" to "GoID"	na
7-2	41	GsCB "AppID" to "GsID"	na
7-2	42	SV timestamp: "EntryTime" to "TimeStamp"	na
7-2	43	Control "T" semantic	na
7-2	44	AddCause - Object not sel	na
7-2	45	Missing AddCauses (neg range)	na
7-2	46	Synchro check cancel	na
7-2	47	"," in LD Name?	na
7-2	49	BRCB TimeOfEntry (part of #453)	na
7-2	50	LNNName start with number?	na
7-2	51	ARRAY [0..num] missing	na
7-2	52	Ambiguity GOOSE SqNum	na
7-2	53	Add DstAddr to GsCB, SV	na
7-2	151	Name constraint for control blocks etc.	na
7-2	166	DataRef attribute in Log	na
7-2	185	Logging - Integrity periode	na
7-2	189	SV Format	na
7-2	190	BRCB: EntryId and TimeOfEntry (part of #453)	na
7-2	191	BRCB: Integrity and buffering reports (part of #453)	na
7-2	234	New type CtxInt (Enums are mapped to 8 bit integer)	na
7-2	275	Confusing statement on GI usage (part of #453)	na
7-2	278	EntryId not valid for a server (part of #453)	na
6	1	Syntax	na

Part	Tissue Nr	Description	Implemented Y/N/na
6	5	tExtensionAttributeNameEnum is restricted	na
6	8	SIUnit enumeration for W	na
6	10	Base type for bitstring usage	na
6	17	DAI/SDI elements syntax	na
6	169	Ordering of enum differs from 7-3	na

Note: Tissue 49, 190, 191, 275 and 278 are part of the optional tissue #453, all other technical tissues in the table are mandatory if applicable.

Note: Editorial tissues are marked as "na".

Note: Final proposal on tissue 45 is not defined yet

## 4 Optional Edition 1 InterOp Tissues

After the approval of the server conformance test procedures version 2.2 the following InterOp tissues were added or changed. It is optional to implement these tissues.

Part	Tissue Nr	Description	Implemented Y/N/na
8-1	246	Control negative response (SBOs) with LastApplError	na
8-1	545	Skip file directories with no files	na
7-2	333	Enabling of an incomplete GoCB	na
7-2	453	Combination of all reporting and logging tissues	na
6	245	Attribute RptId in SCL is optional	na
6	529	Replace sev - Unknown by unknown	na

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