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Technical Issues Implementation Conformance Statement (TICS) for IEC 61850 for the SEL-3505 Automation Controller

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1 INTRODUCTION

The IEC 61850 standards documents are maintained by Working Group 10 (WG10) of the IEC TC 57 technical committee. To address technical issues (Tissues) as they arise, WG10 developed a Tissues process that seeks to address errors, oversights, or problems with the standard or associated documents. Tissues can impact interoperability or conformance test procedures.

According to the UCA International Users Group Quality Assurance Program, IEC 61850 conformance testing requires a Tissues Conformance Statement (TICS) indicating which Tissues a system or product supports.

WG10 has declared implementation of Tissues related to interoperability (IntOp) to be mandatory. WG10 has also stated that Ed2 Tissues should not be implemented. The technical issues committee has categorized Tissues as either (IntOp) or as relating to IEC 61850 Edition 2 (Ed2).

The Tissue process is ongoing, so the categorization of specific Tissues may change. Resolution of new Tissues may also require implementation. Users interested in specific detail of individual Tissues or in the latest available information from the technical issues committee should review the Tissues Database: <http://tissue.iec61850.com>.

This document provides information related to the features the SEL-3505 Automation Controller provides, as documented in the Protocol Implementation Conformance Statement (PICS).

This document applies specifically to the following SEL-3505 model and firmware version.

Model	Firmware Version
SEL-3505 RTAC	SEL-3505-R122-V0-Z001001-D20121121

The SEL-3505 is an IEC 61850 GOOSE publisher and subscriber that is conformance tested by portions of the server conformance test procedures.

This document indicates which Tissues the SEL-3505 implements or supports.

2 MANDATORY TISSUES

This section lists Tissues that were resolved and incorporated into the UCA International Users Group's server conformance test procedures version 2.2. Implementation of IntOp Tissues is mandatory, while Ed2 Tissues should not be implemented.

Part	Tissue	Clause	Description	Category	Implemented or Supported?
8-1	165	14.3.1	Improper Error Response for GetDataSetValues	IntOp	Not applicable
	183	9.3	GetNameList error handling	IntOp	Not applicable
	116	7-2 8.2.1.3 & 7-2 9.2.2.3	GetNameList with empty response?	IntOp	Not applicable

Part	Tissue	Clause	Description	Category	Implemented or Supported?
7-3	28	7.6.2	Definition of APC	IntOp	Yes
	54	6.11	Point def xVal, not cVal	IntOp	Not applicable
	55	7.4.5	Ineut = Ires ?	IntOp	Not applicable
	60		Services missing in tables	Ed2	Not applicable
	63		mag in CDC CMV	IntOp	Yes
	219	7.3.5	operTm in ACT	IntOp	Yes
	270	7.4.5, 7.4.6	WYE and DEL rms values	IntOp	Not applicable

Part	Tissue	Clause	Description	Category	Implemented or Supported?
7-4	None				

Part	Tissue	Clause	Description	Category	Implemented or Supported?
7-2	30	17.5.2.3	control parameter T	IntOp	Not applicable
	31	14.2.3.2.3.2	Typo	IntOp	Not applicable
	32	14.2.2.1, 14.4.2.1	Typo in syntax	IntOp	Not applicable
	35	17.5.2.3	Typo Syntax Control time	IntOp	Not applicable
	36	15.2.2.3, 15.2.2.4	Syntax parameter DSet-Ref missing	IntOp	Not applicable
	37	15.2.3.1	Syntax GOOSE “T” type	IntOp	Yes
	39	15.2.1	Add DstAddr to GoCB	IntOp	Not applicable
	40	15.2.3.1, 15.2.3.3	GOOSE Message “AppID” to “GoID”	IntOp	Yes
	41	15.3.1, 15.3.4.1	GsCB “AppID” to “GsID”	IntOp	Not applicable
	42	16.4	SV time stamp: “EntryTime” to “TimeStamp”	IntOp	Not applicable
	43	17.5.2.3	Control “T” semantic	IntOp	Not applicable
	44	17	AddCause - Object not sel	IntOp	Not applicable
	45	17.5.2.6	Missing AddCauses (neg range)	IntOp	Not applicable
	46	17.3.3	Synchro check cancel	IntOp	Not applicable



	47	19.2	“.” in LD Name?	IntOp	Yes
	49	14.2.2.16	BRCB TimeOfEntry (part of #453)	IntOp	Not applicable
	50	19.2	LNName start with number?	IntOp	Yes
	51	5.5.2	ARRAY [0..num] missing	IntOp	Not applicable
	52	5.2.3.6	Ambiguity GOOSE SqNum	IntOp	Yes
	53	15.3.1, 16.2.1	Add DstAddr to GsCB, SV	IntOp	Not applicable
	151	19.2	Name constraint for control blocks etc.	IntOp	Yes
	166	4.3.3.2.7.3	DataRef attribute in Log	IntOp	Not applicable
	185	14.3.3.2.7.3	Logging - Integrity period	IntOp	Not applicable
	189	16.4	SV Format	IntOp	Not applicable
	190	14.2.2.1	BRCB: EntryId and TimeOfEntry (part of #453)	IntOp	Not applicable
	191	14.2.2.5/ 14.2.2.12	BRCB: Integrity and buffering reports (part of #453)	IntOp	Not applicable
	234	5.5.2	New type CtxInt (Enums are mapped to 8 bit integer)	IntOp	Not applicable
	275	14.2.3.2.3.4	Confusing statement on GI usage (part of #453)	IntOp	Not applicable
	278	14.2.2.15	EntryId not valid for a server (part of #453)	IntOp	Not applicable

Part	Tissue	Clause	Description	Category	Implemented or Supported?
6	1	Annex A.5	Syntax	IntOp	Yes
	5	Annex A	tExtensionAttributeNameEnum is restricted	IntOp	Yes
	8	Annex B	SIUnit enumeration for W	IntOp	Yes
	10	Annex B	Base type for bitstring usage	IntOp	Yes
	17	Schema	DAI/SDI elements syntax	IntOp	Yes
	169	Annex B	Ordering of enum differs from 7-3	IntOp	Yes



3 OPTIONAL INTEROPERABILITY TISSUES

This section lists IntOp Tissues that were added or changed after approval of the UCA International Users Group's server conformance test procedures version 2.2. Consequently, implementation of these IntOp Tissues is considered optional.

Part	Tissue	Clause	Description	Category	Implemented or Supported?
8-1	246	20	Control negative response (SBOs) with LastApplError	IntOp	Yes
	545	23.1	Skip file directories with no files	IntOp	Not applicable
7-4	79	6	AutoRecSt value 4 = "unsuccessful"	Ed2	Yes
7-2	333	5.2.1.3	Enabling of an incomplete GoCB	IntOp	Not applicable
	453	14	Combination of all reporting and logging tissues	IntOp	Yes
6	245	9.3.8	Attribute RptId in SCL is optional	IntOp	Yes
	529	Annex B	Replace sev - Unknown by unknown	IntOp	Not applicable