

INTERNATIONAL ELECTROTECHNICAL COMMISSION

IEC 61850-90-6
Edition 1.0 2018-09

COMMUNICATION NETWORKS AND SYSTEMS FOR POWER UTILITY AUTOMATION –

Part 90-6: Use of IEC 61850 for Distribution Automation Systems

CORRIGENDUM 1

FOREWORD

Insert the following new text after the fifth paragraph of the Foreword:

This IEC standard includes Code Components i.e. components that are intended to be directly processed by a computer.

Such content is any text found between the markers <CODE BEGINS> and <CODE ENDS>, or otherwise is clearly labelled in this standard as a Code Component.

The purchase of this IEC standard carries a copyright license for the purchaser to sell software containing Code Components from this standard to end users either directly or via distributors, subject to IEC software licensing conditions, which can be found at: <http://www.iec.ch/CCv1>

Attribute	Content
Namespace IEC specific information	
Version of the UML model used for generating the document (informative)	WG17build1
Date of the UML model used for generating the document (informative)	2019-04-07
Autogeneration software name and version(informative)	jCleanCim 02v02-NS beta2 built 2

1 Scope

1.2 Namespace information

Replace the existing title and text of Subclause 1.2 with the following new title and text:

1.2 Namespace name and version

This new subclause is mandatory for any IEC 61850 namespace (as defined by IEC 61850-7-1:2011).

Table 60 shows all attributes of (Tr)IEC61850-90-6:2018B namespace.

Table 60 – Attributes of (Tr)IEC61850-90-6:2018B namespace

Attribute	Content
Namespace nameplate	
Namespace Identifier	(Tr)IEC61850-90-6
Version	2018
Revision	B
Full Namespace Name	(Tr)IEC61850-90-6:2018B
Namespace Type	transitional
Namespace dependencies	
extends	IEC 61850-7-4:2007B version :2007 revision :B
Namespace transitional status	
Future handling of namespace content	The name space (Tr)IEC61850-90-6:2018B is considered as "transitional" since the models are expected to be included in further editions IEC 61850-7-4xx. Potential extensions/modifications may happen if/when the models are moved to the International Standard status

1.3 Code components

Replace the existing title and text of Subclause 1.3 with the following new title and text:

1.3 Namespace Code Component distribution

The Code Components are in light and full version:

- The full version is named : *IEC_TR_61850-90-6.NSD.2018B.Full*. It contains definition of the whole data model defined in this standard with the documentation associated and access is restricted to purchaser of this part
- The light version is named : *IEC_TR_61850-90-6.NSD.2018B.Light*. It doesn't contain any documentations but contains the whole data model as per full version, and this light version is freely accessible on the IEC website for download at : <http://www.iec.ch/tc57/supportdocuments>, but the usage remains under the licensing conditions.

The Code Components for IEC 61850 data models are formatted in compliance with the NSD format defined by the standard IEC 61850-7-7. Each Code Component is a ZIP package containing :

- the electronic representation of the Code Component itself (possibly multiple files),
- the grammar files (XSD) enabling to check the consistency of the associated files against the defined version of NSD, but as well against the IEC 61850 flexibility rules in case of private extensions
- a file describing the content of the package (IECManifest.xml).

The IECManifest contains different sections giving information on:

- The copyright notice

- The identification of the code component
- The publication related to the code component
- The list of the electronic files which compose the code component
- An optional list of history files to track changes during the evolution process of the code component

The life cycle of a code component is not restricted to the life cycle of the related publication. The publication life cycle goes through two stages, Version (corresponding to an edition) and Revision (corresponding to an amendment). A third publication stage (Release) allows publication of Code Component in case of urgent fixes of InterOp Tissues, thus without need to publish an amendment. Consequently new release(s) of the Code Component may be released, which supersede(s) the previous release, and will be distributed through the IEC TC57 web site at: <http://www.iec.ch/tc57/supportdocuments>.

The latest version/release of the document will be found by selecting the file named *IEC_TR_61850-90-6.NSD.{VersionStateInfo}.Light* with the filed VersionStateInfo of the highest value.

6 Information models

6.1.5 Mapping of the requirements of VVC use case – Type 5

Replace the existing text of Subclause 6.1.5 with the following new text:

The whole section is changed to the following :

6.1.5.1 Mapping for tap changer control

As presented in Figure 74, no new LN is needed.

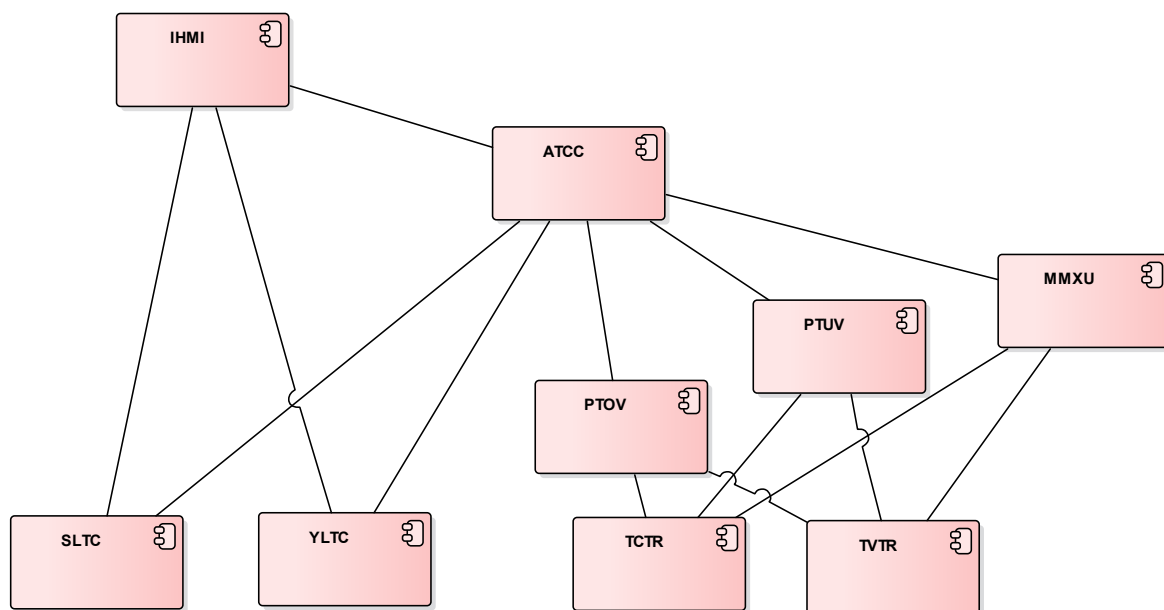


Figure 74 - Possible LN arrangement for the mapping for tap changer control

6.1.5.2 Mapping for capacitor bank control

As presented in Figure 75, no new LN is needed.

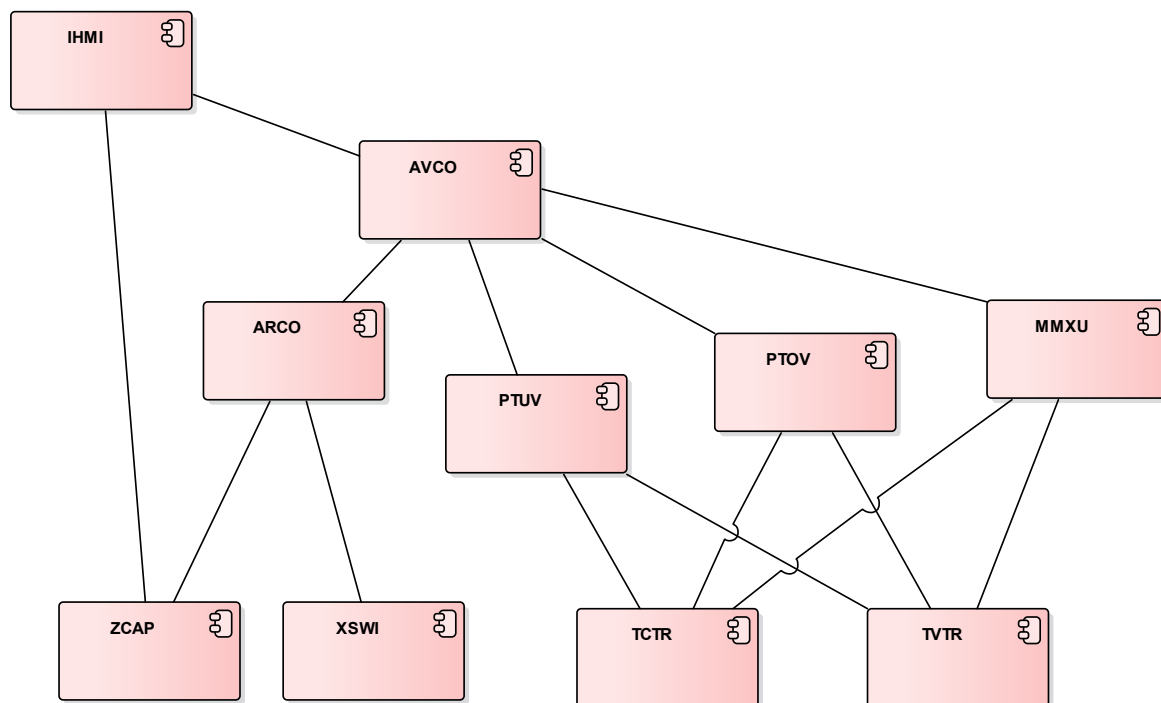


Figure 75- Possible LN arrangement for the mapping for capacitor bank control

7 Logical node classes and data objects modelling

7.2 Logical node classes

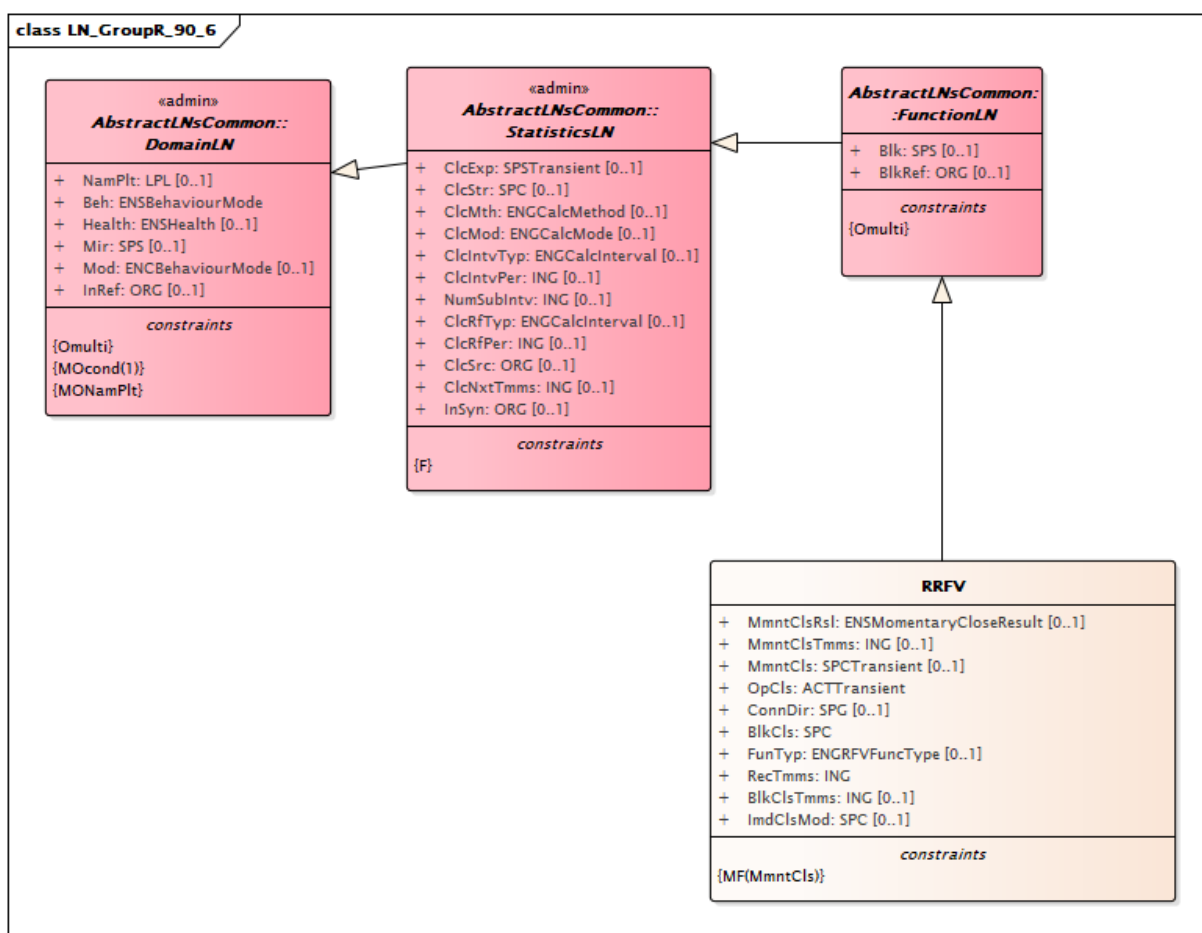
7.2.1 General

Insert, after the first paragraph of Subclause 7.2.1, the following new text:

The constructed classes structure and descriptions are part of the Code Component of this IEC Technical Report and are available as electronic machine readable file in related NSD file.

7.2.8.1 General

Replace existing Figure 90 with the following new figure:



7.2.8.2 LN: Reclosing by feeder voltage detection Name:RRFV

Replace the existing text of Subclause 7.2.8.2 with the following new text:

This LN models a function for reclosing a sectionalizer according to feeder voltage presence/absence.

Table 33 shows all data objects of RRFV.

Table 33 – Data objects of RRFV

RRFV				
Data object name	Common data class	T	Explanation	PresConds/ds
Descriptions				
NamPlt	LPL		inherited from: DomainLN	MONamPlt / MONamPlt
Status information				
MmntClsRsl	ENS (MomentaryCloseResultKind)		The result of momentary close	MF(MmntCls) / F
OpCls	ACT	T	If its 'general' is true, the function decided to close circuit breaker (XCBR) or switch (XSWI). The change of its status value to false is a local issue.	M / F
Blk	SPS		inherited from: FunctionLN	O / F
ClcExp	SPS	T	inherited from: StatisticsLN	O / O
Beh	ENS (BehaviourModeKind)		inherited from: DomainLN	M / M
Health	ENS (HealthKind)		inherited from: DomainLN	O / O
Mir	SPS		inherited from: DomainLN	MOcond(1) / MOcond(1)
Controls				
MmntCls	SPC	T	(controllable) To execute a momentary close. If its stVal = true, a signal is sent from a field controller to close a sectionalizer. The change of its status value to false is local issue according to the end of the signal. So, its stVal does not represent the result of momentary charge, but the MmntClsRsl does.	O / F
BlkCls	SPC		(controllable) if true closing of sectionalizer by this FLISR function is blocked, otherwise unblocked. Its stVal is set to true by RRFV itself according to the logic considering BlkClsTmms, and it can be set to false by remote control to resume the reclosing function of RRFV	M / F
ImdClsMod	SPC		(controllable) If true, the sectionalizer controlled by the RRFV will close soon after the feeder on the substation side is energized, otherwise it will close after the RecTmms delay after the feeder on the substation is energized	O / F
ClcStr	SPC		inherited from: StatisticsLN	O / O
Mod	ENC (BehaviourModeKind)		inherited from: DomainLN	O / O
Settings				
MmntClsTmms	ING		Momentary close duration time in ms	O / F
ConnDir	SPG		Connection direction indicating the side to a primary substation based on the physical sectionalizer installation. true = forward, false = reverse. The "forward" means that a primary substation is on the head side of sectionalizer.	O / F
FunTyp	ENG (RFVFuncTypeKind)		The functional type of Voltage detection based FLISR	O / F
RecTmms	ING		Reclose delay time (ms) i.e. time between detecting voltage presence and closing the sectionalizer	M / F

RRFV				
Data object name	Common data class	T	Explanation	PresConds/ds
BlkClsTmm s	ING		Time for judgement on block closing (ms), i.e. time to wait for voltage absence after the sectionalizer is closed. If no voltage is detected, then BlkCls is set true to prevent subsequent reclosing	O / F
BlkRef	ORG		inherited from: FunctionLN	Omulti / F
ClcMth	ENG (CalcMethodKind)		inherited from: StatisticsLN	O / M
ClcMod	ENG (CalcModeKind)		inherited from: StatisticsLN	O / O
ClcIntvTyp	ENG (CalcIntervalKind)		inherited from: StatisticsLN	O / O
ClcIntvPer	ING		inherited from: StatisticsLN	O / O
NumSubIntv	ING		inherited from: StatisticsLN	O / O
ClcRfTyp	ENG (CalcIntervalKind)		inherited from: StatisticsLN	O / O
ClcRfPer	ING		inherited from: StatisticsLN	O / O
ClcSrc	ORG		inherited from: StatisticsLN	F / M
ClcNxtTmm s	ING		inherited from: StatisticsLN	O / O
InSyn	ORG		inherited from: StatisticsLN	O / O
InRef	ORG		inherited from: DomainLN	Omulti / Omulti

7.3 Data semantics

Table 42 – Attributes defined on classes of LogicalNodes_90_6 package

Replace the existing text of the "OpCls" row in Table 42 with the following new text:

Name	Type	(Used in) Description
OpCls	ACT (T)	<p>(AutomaticSwitchingLN) If its 'general' is true, the switching automation logic or sequence has decided to close the switching equipment. Note that the state must last long enough that the subscriber can detect it.</p> <p>(RRFV) If its 'general' is true, the function decided to close circuit breaker (XCBR) or switch (XSWI). The change of its status value to false is a local issue.</p>

Add, after Annex B, the following new Annex C:

Annex C

NSD file update (informative)

The associate NSD files naturally evolve to reflect the above changes (in compliance with IEC TS 61850-7-7).

In addition, the abstract classes NSD description will evolve from :

```
<LNClass name="AutomatedSequenceLN" titleID="IEC61850_90_6.Abstract90-6LNs::AutomatedSequenceLN.cl.title" base="AutomaticControlLN">
  <DataObject name="SeqRsl" type="ENS" underlyingType="SequenceEndResultKind" descID="IEC61850_90_6.Abstract90-
6LNs::AutomatedSequenceLN.SeqRsl.desc" presCond="O" dsPresCond="F"/>
  <DataObject name="SeqSt" type="ENS" underlyingType="SequenceStatusKind" descID="IEC61850_90_6.Abstract90-6LNs::AutomatedSequenceLN.SeqSt.desc"
presCond="M" dsPresCond="F"/>
  <DataObject name="SeqRs" type="SPC" transient="true" descID="IEC61850_90_6.Abstract90-6LNs::AutomatedSequenceLN.SeqRs.desc" presCond="O"
dsPresCond="F"/>
  <DataObject name="SeqStr" type="SPC" transient="true" descID="IEC61850_90_6.Abstract90-6LNs::AutomatedSequenceLN.SeqStr.desc" presCond="M"
dsPresCond="F"/>
  <DataObject name="RsTmms" type="ING" descID="IEC61850_90_6.Abstract90-6LNs::AutomatedSequenceLN.RsTmms.desc" presCond="O" dsPresCond="F"/>
</LNClass>
<LNClass name="AutomaticSwitchingLN" titleID="IEC61850_90_6.Abstract90-6LNs::AutomaticSwitchingLN.cl.title" base="AutomatedSequenceLN">
  <DataObject name="OpOpn" type="ACT" transient="true" descID="IEC61850_90_6.Abstract90-6LNs::AutomaticSwitchingLN.OpOpn.desc" presCond="O"
dsPresCond="F"/>
  <DataObject name="SelOpn" type="SPS" descID="IEC61850_90_6.Abstract90-6LNs::AutomaticSwitchingLN.SelOpn.desc" presCond="O" dsPresCond="F"/>
  <DataObject name="OpCls" type="ACT" transient="true" descID="IEC61850_90_6.Abstract90-6LNs::AutomaticSwitchingLN.OpCls.desc" presCond="M"
dsPresCond="F"/>
  <DataObject name="SelCls" type="SPS" descID="IEC61850_90_6.Abstract90-6LNs::AutomaticSwitchingLN.SelCls.desc" presCond="O" dsPresCond="F"/>
  <DataObject name="OpnDLTmms" type="ING" descID="IEC61850_90_6.Abstract90-6LNs::AutomaticSwitchingLN.OpnDLTmms.desc" presCond="O"
dsPresCond="F"/>
  <DataObject name="ClsDLTmms" type="ING" descID="IEC61850_90_6.Abstract90-6LNs::AutomaticSwitchingLN.ClsDLTmms.desc" presCond="O"
dsPresCond="F"/>
</LNClass>
To :
<AbstractLNClass name="AutomatedSequenceLN" titleID="IEC61850_90_6.Abstract90-6LNs::AutomatedSequenceLN.cl.title" base="AutomaticControlLN">
  <DataObject name="SeqRsl" type="ENS" underlyingType="SequenceEndResultKind" descID="IEC61850_90_6.Abstract90-
6LNs::AutomatedSequenceLN.SeqRsl.desc" presCond="O" dsPresCond="F"/>
  <DataObject name="SeqSt" type="ENS" underlyingType="SequenceStatusKind" descID="IEC61850_90_6.Abstract90-6LNs::AutomatedSequenceLN.SeqSt.desc"
presCond="M" dsPresCond="F"/>
  <DataObject name="SeqRs" type="SPC" transient="true" descID="IEC61850_90_6.Abstract90-6LNs::AutomatedSequenceLN.SeqRs.desc" presCond="O"
dsPresCond="F"/>
  <DataObject name="SeqStr" type="SPC" transient="true" descID="IEC61850_90_6.Abstract90-6LNs::AutomatedSequenceLN.SeqStr.desc" presCond="M"
dsPresCond="F"/>
  <DataObject name="RsTmms" type="ING" descID="IEC61850_90_6.Abstract90-6LNs::AutomatedSequenceLN.RsTmms.desc" presCond="O" dsPresCond="F"/>
</AbstractLNClass>
<AbstractLNClass name="AutomaticSwitchingLN" titleID="IEC61850_90_6.Abstract90-6LNs::AutomaticSwitchingLN.cl.title" base="AutomatedSequenceLN">
```

```
<DataObject name="OpOpn" type="ACT" transient="true" descID="IEC61850_90_6.Abstract90-6LNs::AutomaticSwitchingLN.OpOpn.desc" presCond="O"
dsPresCond="F"/>
<DataObject name="SelOpn" type="SPS" descID="IEC61850_90_6.Abstract90-6LNs::AutomaticSwitchingLN.SelOpn.desc" presCond="O" dsPresCond="F"/>
<DataObject name="OpCls" type="ACT" transient="true" descID="IEC61850_90_6.Abstract90-6LNs::AutomaticSwitchingLN.OpCls.desc" presCond="O"
dsPresCond="F"/>
<DataObject name="SelCls" type="SPS" descID="IEC61850_90_6.Abstract90-6LNs::AutomaticSwitchingLN.SelCls.desc" presCond="O" dsPresCond="F"/>
<DataObject name="OpnDlTmms" type="ING" descID="IEC61850_90_6.Abstract90-6LNs::AutomaticSwitchingLN.OpnDlTmms.desc" presCond="O" dsPresCond="F"/>
<DataObject name="ClsDlTmms" type="ING" descID="IEC61850_90_6.Abstract90-6LNs::AutomaticSwitchingLN.ClsDlTmms.desc" presCond="O" dsPresCond="F"/>
</AbstractLNClass>
```