



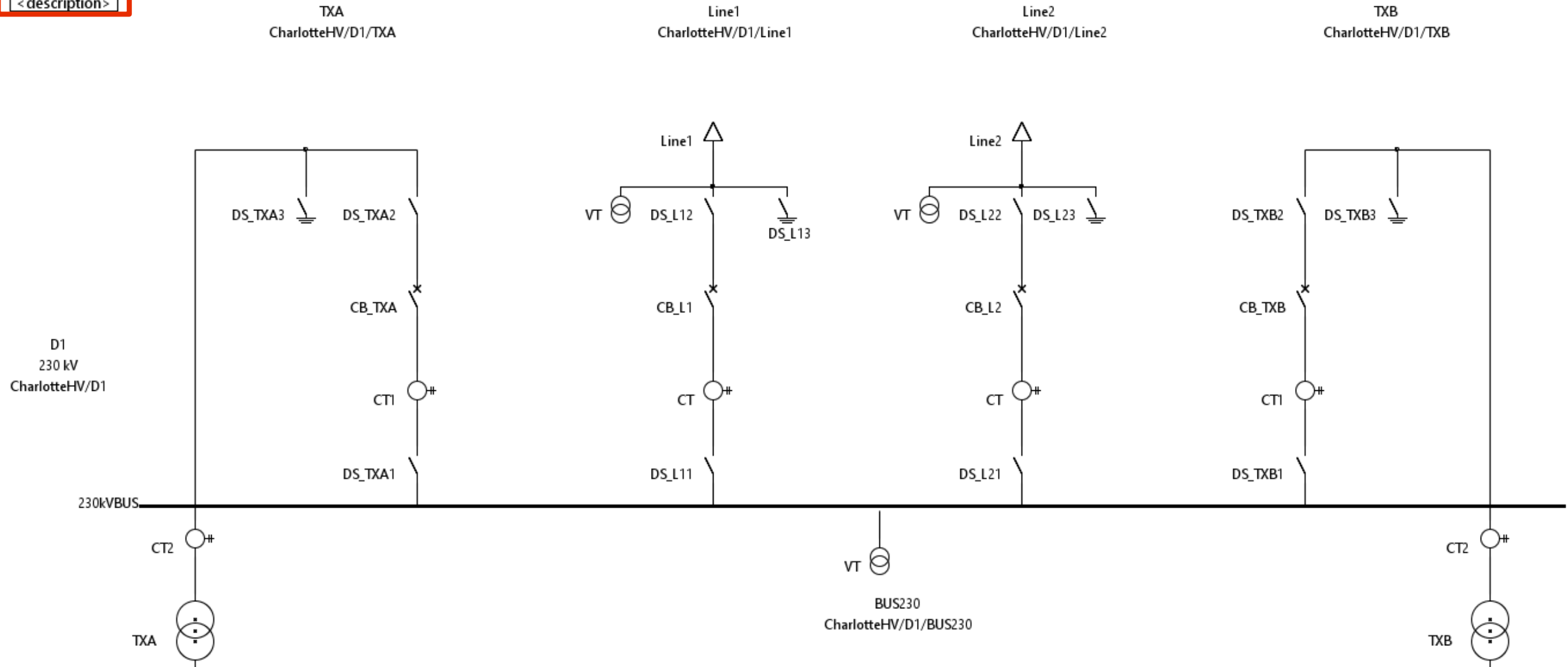
Opening remarks from the chair

Day 1

IEC 61850 Global – London
October 15 – 17, 2019

IOP 2019 – Integrated Application

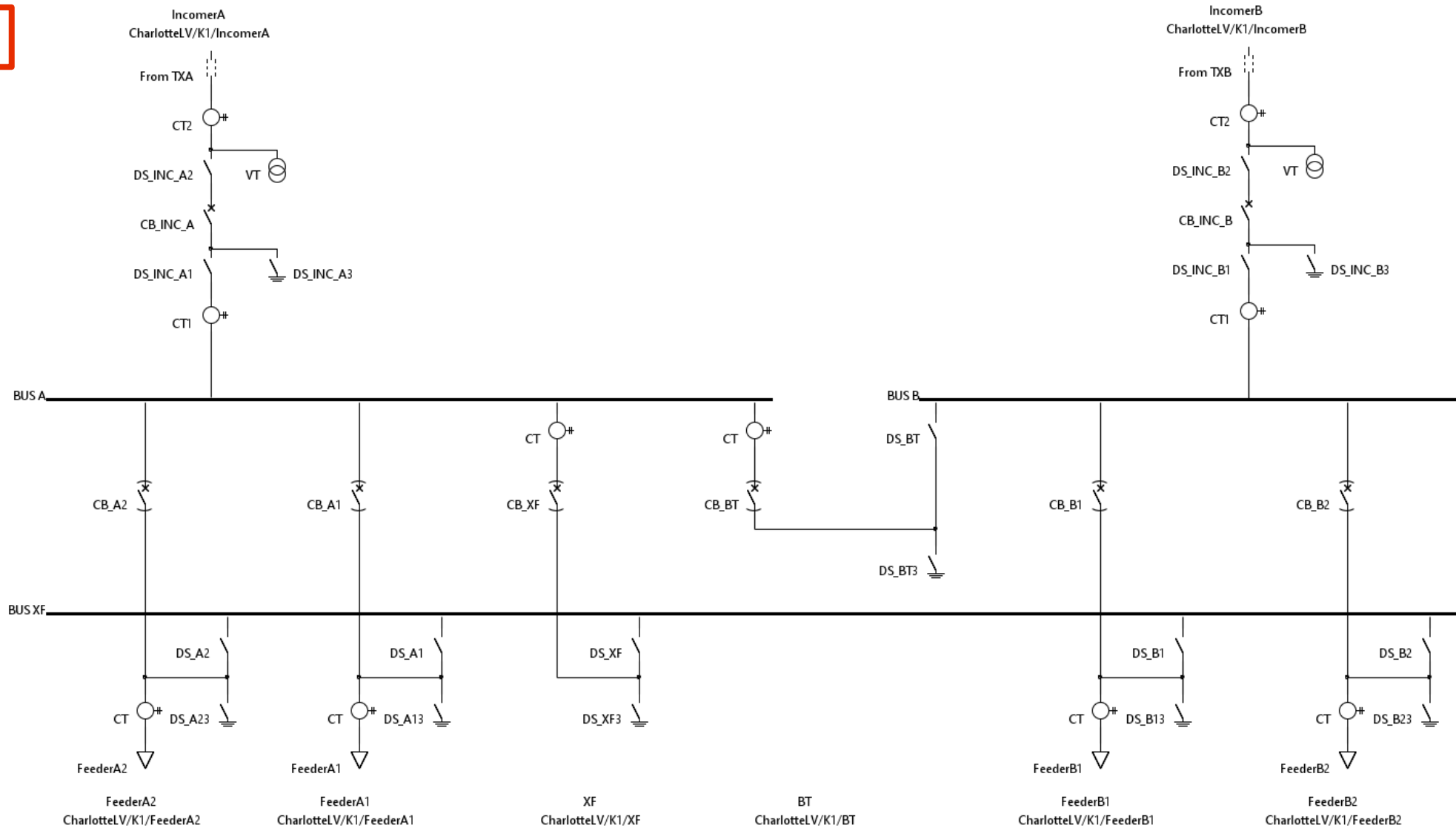
CharlotteHV
<description>



IOP 2019 – Integrated Application

CharlotteLV
<description>

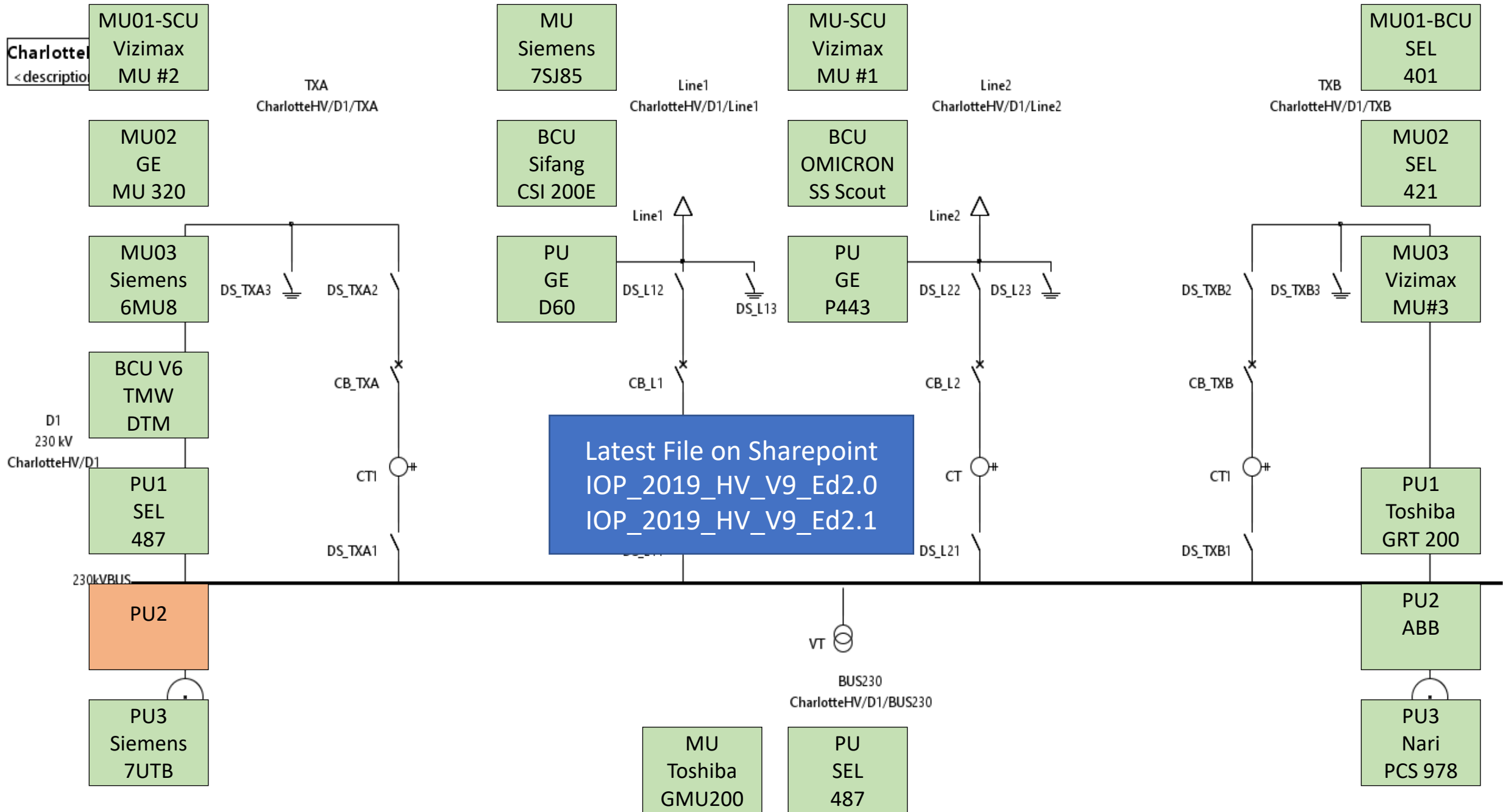
K1
14.4 kV
CharlotteLV/K1



Interaction between functions

Sending Device	Signal	Receiving Device																			
		L1 BCU	L1 PU-M1	L2 MU-SCU	L2 BCU	L2 PU-M2	TXA MU01-SCU	TXA BCU	TXA PU-M1	TXA PU-M3	TXB MU01-BCU	TXB PU-M1	TXB PU-M2	TXB PU-M3	BUS230 PU	IncA PU-BCU	IncB BCU	IncB PU	BT PU-BCU	Substation 2	
<i>Bay L1</i>																					
MU	<u>TCTR.AmpSv</u> <u>TVTR.VolSv</u>	x	x											x							BCU may subscribe for MMXU
BCU	<u>DIS_L11XSWI.Pos</u>													x							
PU-M1	<u>RBRE.OpEx</u>			x		x				x											x
	<u>RREC.OpCls</u>	x																			
	<u>PSCH.Op</u>																				x
	<u>RSYN.Rel</u>	x																			
<i>Bay L2</i>																					
MU-SCU	<u>TCTR.AmpSv</u> <u>TVTR.VolSv</u>				x									x							BCU may subscribe for MMXU
	<u>XCBB.Pos</u>				x	x								x							
BCU	<u>CSWI.OpOpp</u> <u>CSWI.OpCls</u> <u>CSWI.SelOpp</u> <u>CSWI.SelCls</u>			x																	
	<u>DIS_L21XSWI.Pos</u>													x							
	<u>RBRE.OpEx</u>	x					x			x											x
PU-M1	<u>PTRC.Tr</u>			x																	
	<u>RREC.OpCls</u>			x																	
	<u>PSCH.Op</u>																				x
	<u>RSYN.Rel</u>				x																

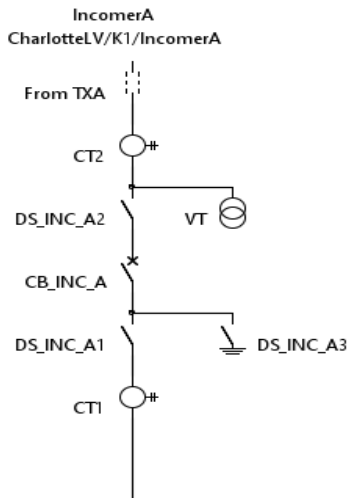
Many GOOSE messages



MUINC
ABB
MU1

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CharlotteLV/K1

PU-BCU
SEL
451-6

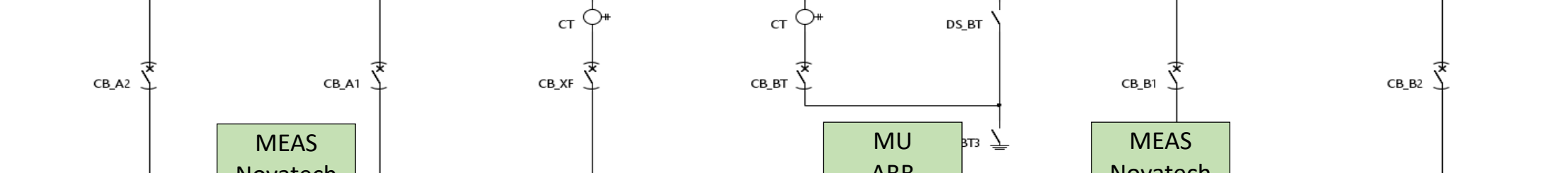
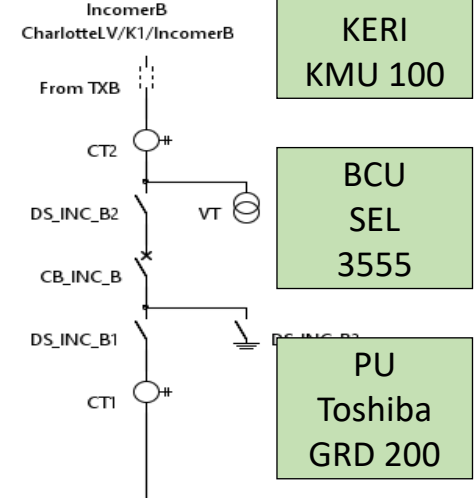


Latest File on Sharepoint
IOP_2019_LV_Ed2_1_V12
IOP_2019_LV_Ed2_0_V12
IOP_2019_LV_Ed1_V12

MUINC
KERI
KMU 100

BCU
SEL
3555

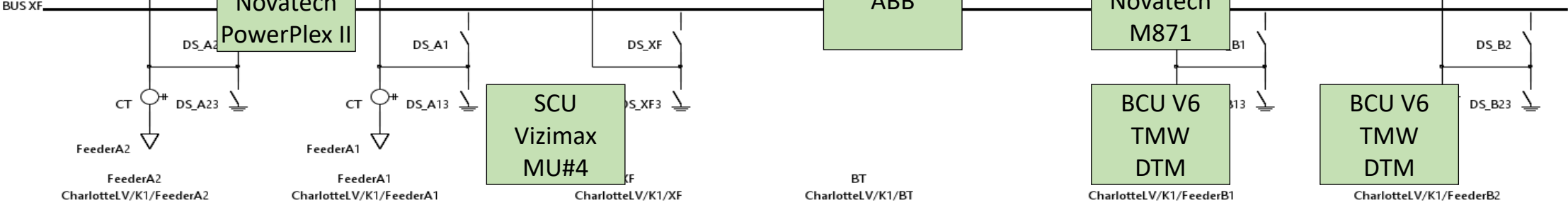
PU
Toshiba
GRD 200



MEAS
Novatech
PowerPlex II

MU
ABB

MEAS
Novatech
M871



FeederA2
CharlotteLV/K1/FeederA2

FeederA1
CharlotteLV/K1/FeederA1

SCU
Vizimax
MU#4

BT
CharlotteLV/K1/BT

BCU V6
TMW
DTM

BCU V6
TMW
DTM

PU-BCU
SISCO
AX-S4

PU-BCU
Not
available

PU-BCU
SEL
751

PU-BCU
RTDS
GTNETx2

PU
Sifang
CSC-211

PU V6
TMW
DTM

Result

- Two weeks before the IOP we started to assign the IEDs to the different bays and roles
- Friday before the IOP, the specification was ready
- On Monday, the first day of the IOP, some first devices could be configured
- By Wednesday, the system design was completed
- Friday we could do a scheme testing including the verification of test mode and simulation



61850 Standardization Update

Examining new opportunities

by Christoph Brunner

IEC 61850 Global – London
October 15 – 17, 2019

The good news...

- ... we got some work done
- Ed 2.1 of the core parts is finally progressing
 - Parts 7-2, 7-3, 7-4 and 9-2 are in the process to be published
 - Part 8-1 just got circulated a FDIS
 - Part 7-1 is about ready to be sent to IEC for circulation
- Some technical reports we worked on for a while are being close to be completed
 - Part 90-11 on logic modeling has been submitted for publication
 - Part 10-3 on functional testing is in preparation for DTR
 - Revisions of 90-4 and 90-12 are as well in DTR or publication stage

But there is still work to do...

- Parts improving the system integration
 - Part 6-2, HMI configuration
 - Part 6-100, function modeling
- Part 90-16 – System Management
- Part 90-18 – Alarm handling
- Part 90-19 – Role based access control
- Part 80-5 – Integration of Modbus devices

- ... and more in WG17 and WG18

Digitalization of standardization – a challenge?

- Standards related to the IT world are different than traditional standards focused on physical equipment
 - Those standards define SW elements that need to be integrated into products
 - The life cycle of such standards is shorter – due to the complexity, short term fixes may be required
- IEC needed to define an update to the traditional standardization approach
- TC57, and in particular IEC 61850 was driving that transition

Code components

- Code components are elements within IEC 61850 that are distributed electronically and are used by SW tools to develop products
 - Schema for Part 6 (SCL)
 - Name Space files for semantic models (e.g. parts 7-2, 7-3, 7-4 or 8-1)
 - Code components may require fixes between publication stages of the standard
- Therefore, it is important, to have a well-defined identification scheme for code components

How to identify the valid code component?

- Version = Edition of IEC publication
 - Identified by a year (not the publication year)
- Revision = Amendment of IEC publication
 - Identified by a Character
 - A is Edition without amendment (can be skipped in identification)
- Release = Update of code component beyond publication
 - Identified by a number
 - Used both for drafts (before publication) and fixes (after publication)
- Example: Schema of IEC 61850-6, Ed 2.1

2007B4

Distribution of code components

- Code components are distributed for free through the IEC website
 - Some code components exist in a “full” version and a “light” version – in that case only the light version is free
- Draft code components are as well circulated with the circulation of the standard drafts (e.g. a CDV or an FDIS)
- Once the standard is published, code components may be updated
 - Updates are driven by the TISSUE process
 - National Committees may comment on an update of a code component

Documents available in this area are supporting documents uploaded by the committee. The IEC is not liable for the content of these documents.

TC 57 Supporting Documents

Table search:



Title, description

Downloads

Created

Publication reference

Handling of Code Components v8.0 2019-08-29

This document sets out the process and rules to be used by IEC groups (TCs, SCs, PCs, WGs, SyCs, ...) and experts in charge of editing IEC documents to ensure a proper handling of copyright licensing of code components included in IEC deliverables. It also defines the technical and process requirements to consider to optionally offer a free access to certain code component(s) through the IEC web site. At the current time this document only applies to IEC TC57

550 kB

2019-09-26

IEC_61850-6.2003.SCL.1.7.full.zip

IEC 61850-6 SCL schema V1.7 (a.k.a. 2003), see the IEC 61850-6:2003 for full legal notices

1121 kB

2017-09-05

IEC 61850-6:2003

IEC_61850-6.2009.SCL.2007B.full.zip

IEC 61850-6 SCL schema V2007B, see the IEC 61850-6:2009 for full legal notices

1725 kB

2017-09-05

IEC 61850-6:2009

IEC_61850-6.2018.SCL.2007B4.full.zip

IEC 61850-6 SCL schema V2007B4, see the IEC 61850-6:2009/AMD1:2018 for full legal notices

1874 kB

2018-06-08

IEC 61850-6:2009+AMD1:2018 CSV

IEC_61850-7-2.NSD.2007A2.light.zip

IEC 61850-7-2 2007A2 NSD light, see the IEC 61850-7-2:2010 for full legal notices

15 kB

2018-07-13

IEC 61850-7-2:2010

IEC_61850-7-3.NSD.2007A2.light.zip

IEC 61850-7-3 2007A2 NSD light, see the IEC 61850-7-3:2010 for full legal notices

22 kB




2018-07-13

IEC 61850-7-3:2010

Distribution of code components with draft



including TCP/IP

57/2150/FDIS
IEC 61850-8-1/AMD1 ED2: Amendment 1 -
Communication networks and systems for power utility
automation - Part 8-1: Specific communication service
mapping (SCSM) - Mappings to MMS (ISO 9506-1 and
ISO 9506-2) and to ISO/IEC 8802-3

 1242 kB	2019-10-11	2019-11-22	Y
 1244 kB			
 31 kB			

57/2151/INF

Microsoft.MicrosoftEdge_8wekyb3d8bbwe > TempState > Downloads > 57_2150e_FDIS (3).zip

Name	Type	Compressed size	Password ...
 IEC_61850-8-1.NSD.2003A2.FDIS.full.zip	Compressed (zipped) Fol...	16 KB	No
 IEC_61850-8-1.NSD.2003A2.FDIS.light.zip	Compressed (zipped) Fol...	14 KB	No

ApplicableServiceNS.AppNS APPNS File
IEC_61850-8-1_2003A2.snsd SNSD File
IECCopyright.xsd XSD File
IECManifest.xml XML Document
IECManifest.xsd XSD File
NSD.xsd XSD File

The TISSUE process - updating the standard

Introduced by UCA International Users Group with the publication of Ed 1 of the standard

■ What is a “TISSUE”

- errors, usually results in modifications
- ambiguities, usually results in clarifications
- ideas, usually results in additions

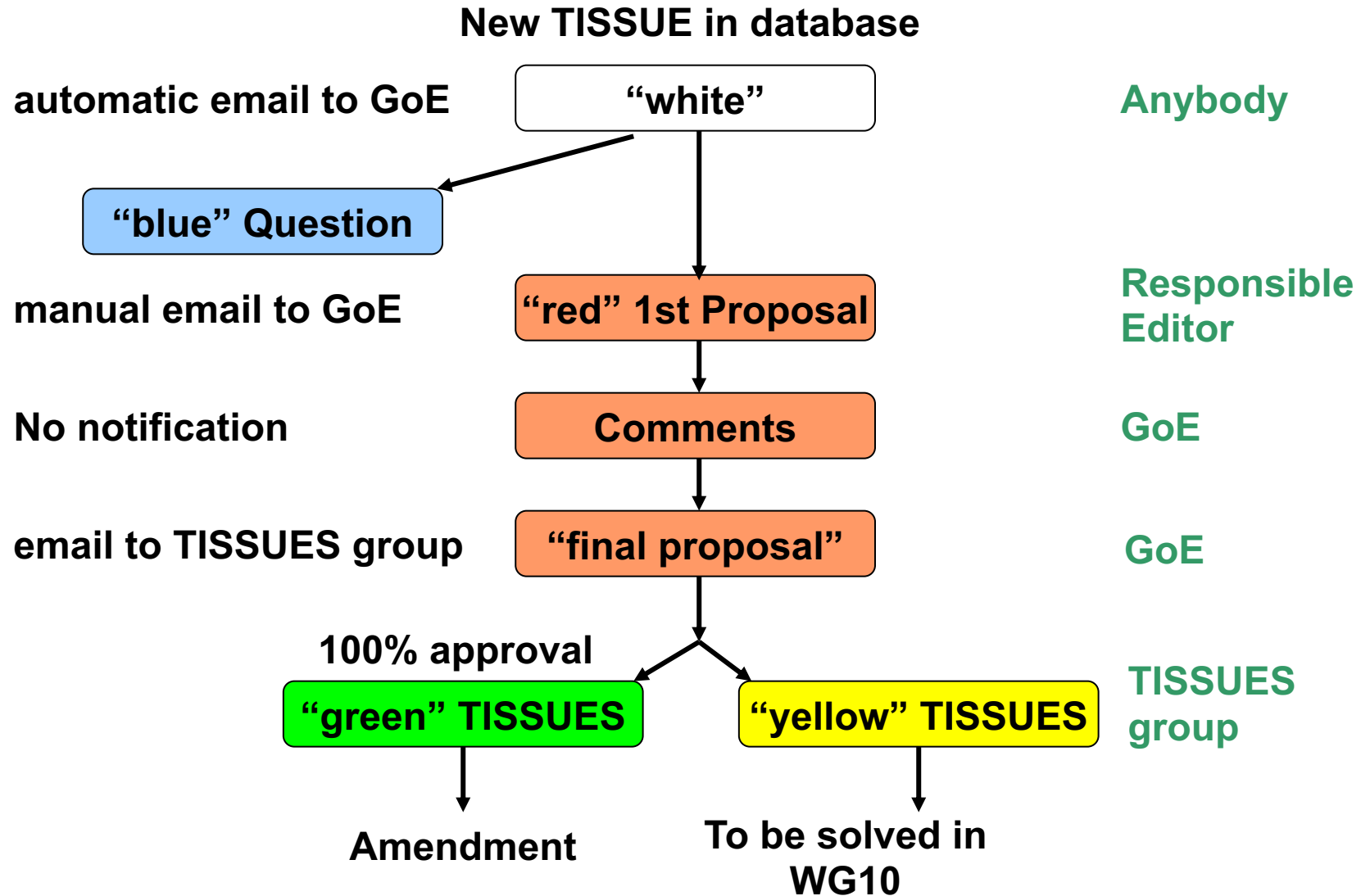
■ For errors and ambiguities, solutions need to be found within short term

- The TISSUE process defines the rules for that

■ TISSUES are handled through a database

- tissue.iec61850.com
- Everybody can enter TISSUES

The original procedure

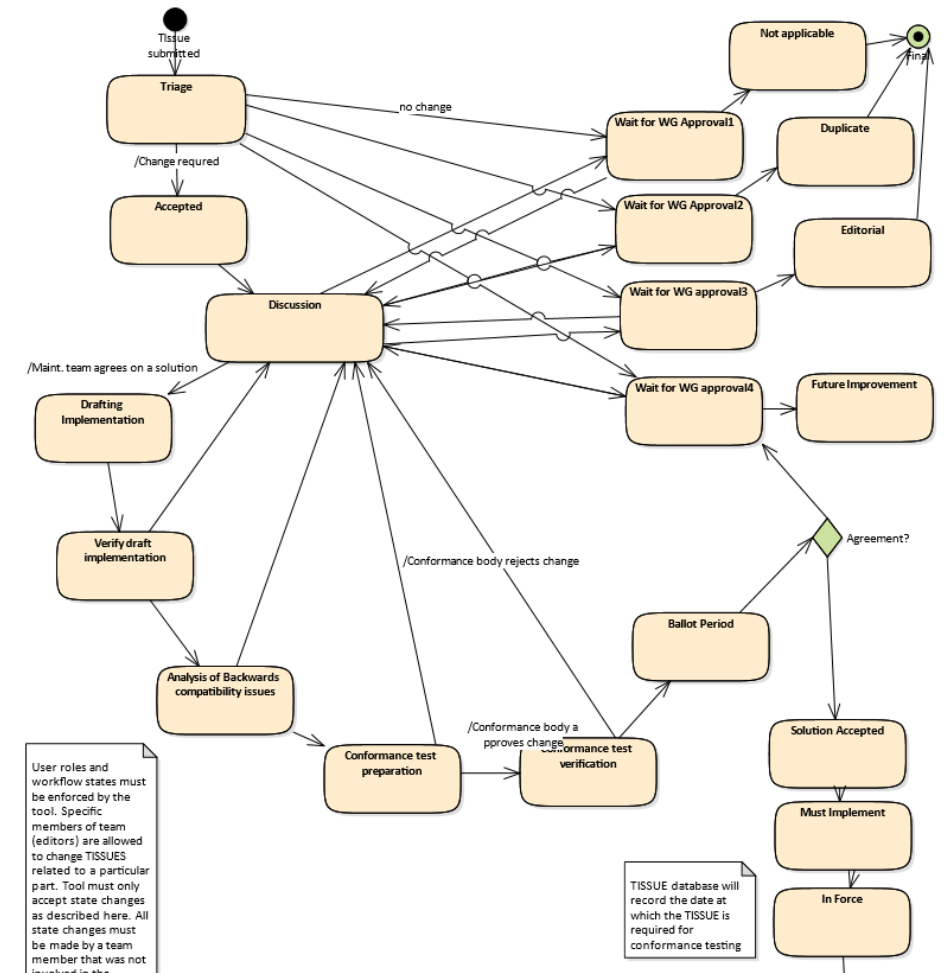


TISSUE process now supported by IEC...

- With the digitalization of the standard, IEC realized the need for a maintenance process supporting short term fixes
- TISSUE process is being updated based on experience over the last 15 years

New TISSUE process – important modifications

- Only TISSUES affecting interoperability are processed
- Declaring a TISSUE as not relevant requires confirmation
- Solution needs to be specified
 - Checked for backwards compatibility issues
- Conformance test needs to be prepared and verified before approval is possible



Name Spaces

- Name space files are machine processable files describing the data models of IEC 61850
 - XML files based on a schema according to TS IEC 61850-7-7
- Basic namespace (part 7-2, 7-3 and 7-4)
- Domain namespace (e.g. part 7-420)
- Product standard namespace (e.g. 61869-9)
- Transitional namespace (e.g. part 90-3)
- Private namespace – vendor or user specific data model extensions

Name space dependencies

■ Depends on

- the considered namespace depends on the other. This applies exclusively to basic namespaces
- *Example: IEC 61850-7-3 depends on IEC 61850-7-4*

■ Includes

- the considered namespace is a superset of the other. This applies exclusively to domain namespaces
- *Example: IEC 61850-7-420 includes IEC 61850-7-4*

■ Extends

- the considered namespace extends the other one, i.e. each extended element should be tagged specifically from this namespace. This applies exclusively to product and transitional namespaces
- *Example: IEC 61869-9 extends IEC 61850-7-4*

Normative information related to a namespace

Attribute	Content
Namespace nameplate	
Namespace Identifier	IEC 61850-7-420
Version	2009
Revision	A
Release	5
Full Namespace Name	IEC 61850-7-420:2009A
Namespace type	domain
Namespace dependencies	
Includes	IEC 61850-7-4:2009A
Namespace deprecation (only if deprecated)	
stereotype	deprecated

Part 1-2 – Guidelines on extending IEC 61850

For any users (primarily standardization bodies) that are using IEC 61850 as a base standard and are extending it as allowed by the IEC 61850 standards

- Management of product-level standards for products that have an interface based on IEC 61850
- Management of domain-level standards based on IEC 61850
- Management of transitional standards based on IEC 61850
- Management of private namespaces based on IEC 61850
- Development of standards offering the mapping of IEC 61850 data model at CDC level
- Development and management of IEC 61850 profiles for domains



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