

2017-05-09_4th_TimeSync_Subgroup_Meeting

Participants:

Name	Company
Roman Graf	ABB
Gustavo Silvano	GE
Higor Rachadel	GE
Juan Carlos Billalabeitia	GE
Bernhard Baumgartner	OMICRON Lab
Amin Abdul	Siemens
Roy Lei Zhang	Siemens
Jean-Sebastien	Vizimax

Housekeeping:

- All E-mail communication is handles via the TimeSync Subgroup Google group.
To send an E-mail to all group members use: iop-timesync-sg@googlegroups.com
- To enlist for the subgroup either:
use this link: <https://groups.google.com/forum/?hl=en#!forum/iop-timesync-sg> and click **Apply for membership** or send an E-mail to bernhard.baumgartner@omicron-lab.com
- All data is stored on the **IOP Sharepoint** server in this directory (and subdirectories) [TimeSync Subgroup](#)
- Meeting reports: can be found here [Meeting reports](#)

Mission:

- Allow IEC/IEEE 61850-9-3 and IEEE C37.238-2017 focused testing.
- Offer test bed for people that detect problems in the integrated tests and want to dig into the issue.

Discussed Topics:

- **2017 Test cases:**
2015 Test cases for IEC/IEEE 61850-9-3 were reviewed and unnecessary tests deleted
 - A new draft is generated after each subgroup meeting. If you want to add comments or modify the draft check out the current file and apply your changes. (Make sure that track changes is switched on).

Current Draft:

http://iec61850.ucaiug.org/2017IOP-NOrleans/IOP%20Documents/TimeSync_Subgroup/2017_Test_Cases/IOP%20PTP%20Test%20Cases%20for%20IEC_IEEE_61850-9-3_Draft_2.docx

- Default settings only - test with changing domain
 - default domain 0 only
 - recommended domain 93 only - start with 93
 - mixed domains by adding or changing equipment to domain 0
- Insert end2end device
- **Separation between integrated test cases and subgroup test cases needed to minimize overlap.**
 - **Subgroup should focus on 9-3 related tasks and**
 - **Interoperability with IEEE C37.238-2017 (current status - Draft 21.2 (latest one is 21.3) only editorial changes left).**

- **Equipment list:**

Every participant in the time sync subgroup should enter his equipment into the equipment list that can be found on the server:

http://iec61850.ucaiug.org/2017IOP-NOrleans/IOP%20Documents/TimeSync_Subgroup/1588_Equipment_list.xlsx

- PICS for all 9-3 equipment that will be brought to the IOP should be submitted in addition to entering them into the Equipment list.

- **Time Reference**

- GPS Security (Spoofing and Jamming) should be evaluated.
- GLONASS should be tested as well if possible. --> Jean Sebastian might be able to borrow a simulator
- In-Room transmission of GPS Signal from Simulator would be better than distributing an L-Band Signal via cables (problems for some devices) --> Bernhard to check --> **GPS transmission not possible. GPS repeating requires a license.**
- Might be interested to have a re-broadcast of live GPS signal for the integrated testing.



Talk to Herb about experimental license



Check equipment from OMICRON if available or not - available - we need to know the distances

- **BMCA**

- **Idea:** Two Masters fed with different GPS Signals - how will this affect the BMCA configure long cable length to simulate static offset at one GM

- **Transparent Clock Manufacturers:**

- We need to get the following companies on board:
Siemens / Rugged Com - have one-step TC (will bring one-step TC)



- Check availability of one-Step clock from Siemens

Cisco

Belden - still in discussion

Arbiter

GE Switches

Moxa



- **Slight change of 61850 how to react on leap seconds:**

A device not synchronized during the time of leap second insertion it must declare: "Leap second not known" in the 61850 time stamp.

Edition 2.1 - quality bit in the 61850 time stamp.

Jean - Sebastian & Roman - > please provide proposal for test case. Does this cause

interoperability issues?

(To be done in integrated demo?) >>> will be covered by integrated testing.

- **HSR & PRP Testing**

- should be done - add to questionnaire - put column into equipment list.

Questions:

- ? Does someone have a GLONASS Simulator for testing?
- ? Has someone a **one-step** transparent clock available? - Siemens / Ruggedcom
- ? Does someone have a second GPS Simulator? (possibly NIST)
- ? Who can help to contact the switch manufacturers?

Questions from NIST:

- ? Does 61859-90-4 does it reference to 2011 MIB - E-mail Roman from ABB to clarify
- ? Are IRIG -B Timing sources scope of the test?
Answer: IRIG-B Testing is not in the focus of the IOP.

Questions to NIST:

- ? There is a test specification draft for 1588 by the IEEE committee - would be good input for testing . Can you make this document available.
https://www.iol.unh.edu/sites/default/files/testsuites/1588/1588-Default-Test-Plan_v0.0.2.pdf

Schneider electric

To dos:

- EVERYBODY: Please enter the equipment you plan to bring into the Spreadsheet available on the Sharepoint**
- EVERYBODY: Review current 9-3 Test Case Draft and provide comments.**
- EVERYBODY: Review the test cases mentioned at the end of the meeting report to see if any test cases for the TimeSync Subgroup can be derived.**
- Jean Sebastian: Check if GPS/GLONASS simulator is available - check if you can borrow one or get specialists to come.
- Bernhard: add 100-FX and 1000-FX column to equipment list
- Bernhard: Publish presentation on Sharepoint (link)
- Bernhard: Prepare proposal for PICS Template
- Bernhard: Add MIB column to equipment list

1. IED Failure / Power down Testing

Power Down Sync Signal

Power Down OC

Power Down infrastructure

Powering up grandmasters with and without synchronization signal.

Clause 7.1

9. Isolated Testing IED restart [AG1]

Can we assume that IED is a clock slave and not a master, boundary or transparent clock.?

What are the timing system implications of power loss to a slave clock? Is this test in NIST scope?

Testing IED restart / power up of a GOOSE subscriber[AG1]

Restart of all components (GM, TC, BC and OC) should be tested
How is impact on the other devices. Monitoring: Commercial test device like (Calnex)

Discuss timing implications

20. Network Failure

This certainly impacts timing. What do we do for this test?

- What are the network failure modes in this case?
 - HSR & PRP - single point failure
 - Amin to provide short E-mail to Bernhard
 - Gustavo will also provide input RSTP & PRP

Next meeting:

Wednesday May 24th

15:30 CEST - invitation will follow