

FINAL
Minutes of the Testing Teleconference
Held on 30 March 2010 (14:00 to 15:03 UTC)

Introduction

This was a teleconference to finalize the GOOSE Performance Test Procedure (presently at Revision 0.3) and to discuss and coordinate other work item issues: Possible Test Procedures for 9-2LE Subscribers, Test Procedure Change List Maintenance (for IEC 61850 Servers), testing of new IED types, and possible other future tasks.

The agenda and invitation to participate was sent out to all the individuals on the UCAlug Testing E-Mail List and posted on 25 March 2009. Draft reference documents had been sent out and/or posted earlier. The Teleconference was held on March 30 starting at 14:00 UTC (10:00 AM US East Coast, 7:00 AM West Coast and 16:00 Europe Time). The Teleconference lasted just over 1 hour and was adjourned at 15:03 UTC. Jack Robinson and Bruce Muschlitz prepared the minutes (this document).

Participants

The following people participated in the Teleconference:

Name	Company
Brunner, Christoph	
Etherden, Nicholas	STRI
Falk, Herb	SISCO
Gerspach, Stephan	ABB
Kimura, Randy	GE
Melenhorst, Edwin	Utinnovation
Muschlitz, Bruce	EnerNex
Ran, Zhang	KETOP
Robinson, Jack	UCAlug
Schimmel, George	TriangleMicroWorks
Schimmel, Richard	KEMA
Skendzic, Veselin	Schweitzer
Steinhauser, Fred	Omicron
Wycinka, Marcin	Areva T&D

REFERENCES

- A. Teleconference 9 February 2010 Minutes, Bruce Muschlitz
- B. Teleconference 30 March Announcement/ Agenda, Posted 25 March 2010, Bruce Muschlitz
- C. GOOSE Performance Testing (Version 0.3). Richard Schimmel, Editor, 9 March 2010
- D. Draft Test Procedures Approved Change List (TPCL) against Server Version 2.2 (version 1.1), Richard Schimmel, Editor, Dated 4 March 2009

Approval of 9 February 2010 Minutes

There were no suggested changes to the minutes of the previous teleconference (Reference A) and they were approved as written.

GOOSE Performance Testing

We spent considerable time discussing concepts related to GOOSE performance testing. Revision 0.3, see Reference C, had been updated according to the edits and agreements discussed 9 February and after exchange of e-mails.

Highlights of our discussion today are given below:

Should we be testing performance of GOOSE with the IED under load from other traffic such as sampled values? Are we testing the IED under stress similar to what a utility might see on a substation LAN? It was noted that utilities need to have some confidence that the IED will perform in a field environment. However, stress testing would best be conducted on the configuration (number of IEDs, VLANs, physical media rates, switch configuration, filters, etc) that a given utility plans on implementing in their substation as part of a field test or factory acceptance test. It would be very difficult for our general procedures to satisfy all the different possible configurations a utility might implement. We agreed that our procedures should focus on a "benchmark" level test with some controlled background loading. If users need additional benchmarks, these can be created later. However, there is a strong industry need for a GOOSE performance benchmark NOW.

There was much discussion of "proper" background load. Some want "absolute worst" case that the device could ever encounter – this is what utilities need before they can commit to using a specific implementation. Some want "typical" loads. We discussed the presence of SMV on the same physical link as GOOSE traffic (therefore the device must somehow deal with all SMV traffic). Some felt that reasonable implementations would remove SMV traffic from the GOOSE link as per 61850-8-1 Annex C (however Nicholas pointed out that this requirement is not a normative part of 61850).

We agreed that background traffic will include non-subscribed GOOSE, buffered reports, but NOT SMV. The PIXIT for the GOOSE performance test would need to clarify the configuration parameters for the DUT.

The test specification will need to have language added to make it clear that this is a benchmark level of test and that GOOSE performance could be worse (or even better) than the test results in specific project applications. **Action Item:** Veselin agreed to draft the benchmark language to be included in the scope section of Reference C.

Server Test Procedure Changes

We discussed the status of the IEC 61850 Test Documents. We are maintaining a list of pending document and IEC 61850 Specification changes. See the Test Procedure Approved Change List (TPCL), Reference D. Should we update the test procedures to incorporate the TPCL? Richard said that for KEMA convenience, they have an internal document, which merges the TPCL and the Server Test Procedures Revision 2.2.

The TPCL (and 61850 Server Tests in general) need inspection to ensure that the MMS negative responses are properly specified. Herb noted that 61850-8-1 Edition 2 will be much more explicit on the negative response codes (Edition 1 simply refers to a common chart).

Action Item: Richard to review 8-1 for alignment with Server Test Procedures (and TPCL).

We agreed that we will continue to use the TPCL and not issue a new revision to the Test Procedures. We can update the Test Procedures after Edition 2 of IEC 61850 is final. New test procedures would impact the current approved testers who are given a one-year window to implement changes to their test systems. As understood by the testers, device test reports reference the TPCL used to conduct a given test and so users will continue to have full disclosure of how their products were tested.

Other Issues/ New Work Items

We agreed that 9-2 LE (Light Edition) Subscriber Test Procedures should soon be developed. Richard, KEMA, has offered to take the lead on this activity.

Jack noted that, as discussed previously in meetings and teleconferences, there is considerable user interest in Implementation Guidelines for IEDs using IEC 61850. The DC on Technical Issues released by the IEC, Editor Christoph Brunner, dated 20 May 2008, is only a list of the TISSUES identified as "IntOP" and does not cover how devices should be implemented to meet a given user function. (This DC has been posted on the Testing Web Site under Shared Documents.) In past e-mails, Bruce has suggested the term "Draft Proposal for Highly Interoperable IEDs Based on IEC 61850 for this guideline which could cover services, parameters, function subsets, etc. to clarify how a device would best make use of the many options and features in the standard. For further discussion.

Next Meetings/ Conclusion

We set a date for our next teleconference: 13 April 2010 at 14:00 UTC for no more than one hour. Bruce will send out a meeting notice one week prior to the teleconference. GotoMeeting will again be used.

We agreed to target teleconferences every two weeks lasting about one hour for the foreseeable future to complete our several open tasks.

We do not yet have a schedule for our next face-to-face Testing Meeting. Zhang suggested that our group consider a proposal from KETOP as host for a meeting to be held in Henan, China. For further discussion.

The teleconference was adjourned at 15:03 UTC.

Teleconference Action Items

1. Veselin to draft "benchmark" language for GOOSE Performance (review draft was sent to Bruce and Richard on 31 March). The language will be incorporated into final Revision 1.0 of the GOOSE Performance Test Procedures.
2. Richard to review IEC 61850 8-1 for negative response codes and suggest additions to the TPCL if needed.
3. Bruce to issue (these) meeting minutes. Jack to provide draft minutes.
4. Bruce to issue GotoMeeting request no later than 6 April for our next teleconference meeting scheduled for 13 April 2010.