

Minutes of Meeting, Joint Task Force 3 – Part 10 --- Testing

Thursday, March 29, 2001

Thomas Rudolph convened the meeting in the absence of Marco Janssen. Following members and guests were in attendance:

William Ackerman
Klaus-Peter Brand
David Dolezilek
Herb Falk
Steve Kunsman
Martin Pfanner (Guest)
Thomas Rudolph
Karlheinz Schwarz
Fred Steinhauser (Guest)

1. Marco had sent out a memo regarding existing work assignments and requests for persons to develop some new sections. A December 2000 copy of the draft document was sent to Thomas for use at this meeting. Marco reported a minimal response to his memo (only Ackerman updated his section by the due date of February 16).
2. Much of section 5 will be left open for work by Thomas and Klaus-Peter based on some CIGRE material. Herb has prepared some conformance testing criteria and offered to share it with the group.
3. Standard PICS (Protocol Information Conformance Statement) should be defined in Parts 7-2,3,4; and referenced in Part 10. PICS are always annexes to part 7, and part 10 can't have separate PICS. Vendors should be required to state which PICS are supported and therefore to be tested.
4. There was an extended discussion on test procedures and certification issues. All 'shall' requirements of 61850 need to be tested. There is a need for test certification, but this can be a self-certification by a vendor; or a certification by an independent third party. An independent tester can help resolve conflicts, but care must be taken that the independent tester doesn't create non-compliance problems.
5. The objective of testing should be to verify vendor claims. However, Part 10 should not attempt to create or dictate pass/fail criteria.
6. The objective right now is to do the best we can. How to improve the overall standard as testing evolves is outside our current scope. This could be a future task for a user group.

A coffee break was then taken.

7. The group divided into three sub-groups after the coffee break to work on specific sections:

Section 6, Excluding Section 6.2.6

Ackerman
Kunsmann
Pfanner

Section 6.2.6

Dolezilek
Falk
Steinhauser
Tengdin

Section 5.3.2

Brand
Rudolf
Schwartz

8. The Task Force reconvened at 1545. Sub-groups reported as follows:

8.1. Group 3, Part 5.3.2

Finalized basic brainstorming points--- a clear understanding is needed of what is wanted:

- What system tests could be used for.
- Device interoperability testing – test for operation when receiving bad data, time stamp too old, quality bits indicate bad data, bus loading, etc.
- There appears to be a need for a standard “test device” that can be used for simulated system tests.
- Dynamic behavior of services at system startup, could involve both device under test as well as balance of system
- Test of overall time of a function in a chain
- Test of goose detection and response
- Difficult to test 4 ms requirements for certain functions

8.2. Group 1, Part 6 excluding 6.2.6

Finalized a framework and architecture in various areas, discussed missing parts of the section. Ackerman and Kunsmann will fill up the framework with appropriate text and submit it to the group by the end of April.

8.3 Group 2, Part 6.2.6

Established a working definition of time stamp accuracy, and when the device is in synchronism with the time source. Basically, the idea is to cause an event with a 'precise' time stamp, and then compare the device time stamp to determine the error. All possible error sources within the device will be imbedded in this measurement.

Testing should be to accuracy class, but this should be renamed to error class. Part 5 needs to be fixed to use the correct nomenclature. Part 5 talks about clock accuracy, but it's really time stamp accuracy. Various event classes may have different error classes.

Each event class should be tested to see if actual error is within specified error bounds. Testing should include dynamic changes. Statistical grading should be used rather than pass/fail grading. Statistically significant testing will therefore be needed.

Group did not have opportunity to discuss testing of goose or sampled values. Testing of sampled values is difficult because it is not event-driven.

Clock accuracy is a basic factor in all the testing being contemplated.

Tengdin agreed to prepare notes on the group's discussions, and submit them to Rudolph by the end of April.

9. Future leadership of group is indeterminate at this time. The understanding is that Marco intends to continue his participation and group leader status. However, in the event Marco is unable to continue, Karlheinz Schwarz volunteered to take the lead.

10. The meeting was adjourned at 1645.

Submitted by Bill Ackerman
April 6, 2001