NCSLI 173 Metrology Practices and Working Groups

Condensed Minutes
Disneyland Frontier Tower, Western Room, MPC: 5 pm to 5:30 pm, RP-18: 5:30 pm to 7:30 pm

3/22/2013

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1 Attendees, Introductions

Bill Miller, Lockheed
David Archer, Learning Measure
Howard Castrup, Integrated Sciences Group
Jim Wachter, NASA
Mark Kuster, Pantex Metrology
Randy Long, LAB
Scott Mimbs, NASA
Suzanne Castrup, Integrated Sciences Group
William Hambly III, Make It Louder

Some members did not attend due to travel restrictions.

2 Minutes Review

The chair called for any corrections to the August, 2012 Meeting: None

3 Status Updates Since Last Meeting

The committee heard RP development and other status updates from each working group chair and held discussion as follows.
3.1 173.1 Calibration Interval Analysis (RP-1)

Working Group Chair: Mark Kuster, Pantex Metrology

Mark Kuster briefly summarized the 173.1 WG meeting from Wednesday (see attached minutes).

Further discussion: Mark Kuster requested RP-1 sales statistics from the NCLSI office again but has not yet received them. Linda Stone has prepared the NCSLI RP-1 membership survey--WG members will receive a Web link to test it before release. Suzanne Castrup suggested that the office reiterate the RP-1 release via email to all members, in conjunction with or before the survey; Mark Kuster will contact Linda about it. Randy Long offered to investigate an RP-1 announcement in the LAB Newsletter.

3.2 173.3 SPC for Metrology (RP-XX)

Working Group Chair: Howard Castrup, Integrated Sciences Group

No activity planned pending consideration after the RP-19 release.

3.3 173.4 Measurement Quality Assurance End-to-End (RP-19)

Working Group Chair: Howard Castrup, Integrated Sciences Group

No activity planned until after the RP-18 release.

3.4 173.5 Uncertainty Analysis (RP-12)

Working Group Chair: Suzanne Castrup, Integrated Sciences Group

Suzanne Castrup summarized Tuesday’s WG meeting attended by Del Caldwell, Howard Castrup, Mark Kuster, Suzanne Castrup, and Vernon Alt: After a final WG full-document review and NCSLI Editorial Committee review, the NCSLI Board approved RP-12 February 2013 with minor comments, all now addressed. The NCSLI office has since begun formatting it per the current NCSLI document style guide. The WG has reviewed multiple iterations since but problems remain, some perhaps due to incompatibilities between various Microsoft Word versions. The office returned the document and Howard Castrup currently processes it to correct and streamline the formatting issues. He has completed about half the document and estimates finishing next week. Afterwards, Mark Kuster will run a word-by-word automated document compare against the post-Editorial Committee version to verify that no undiscovered errors remain from the office processing--Suzanne Castrup noticed that reformatting had altered at least some reference entries, perhaps due to automatic spell or grammar checks.

Del Caldwell mentioned and the WG discussed recent movements to remove UUT resolution uncertainty from TUR denominators. All present expressed disagreement with such proposals. The WG also discussed recent concerns about traceability via conformance tests, due to uncertain interpretation of the current VIM uncertainty definition. Doh!

Vernon Alt heard discussion on the RP release process and indicated he would report document preparation observations to the NCSLI Board.

Suzanne Castrup has five uncertainty analysis examples out for review and more in progress and will apply the style guide before submission for further review. Some examples will receive test and measurement world application emphasis.

Howard Castrup reported reviewing the style guide and finding it beneficial with some minor readability issues.

At this point, Mark Kuster closed the MPC meeting.
3.5 173.2 Measurement Decision Risk Analysis (RP-18)

Working Group Chair: Howard Castrup, Integrated Sciences Group

Howard Castrup held a meeting to form an RP-18 working group from those attending. Howard provided a draft hard copy for review and laid out a path forward, which includes two more weeks (after RP-12) reorganizing and editing the document before release to the WG. The document will emphasize universal application in hopes of attracting the test and measurement world.

Scott Mimbs and Jim Wachter suggested including recommendations for applying the (now) eight risk analysis methods supporting Z540.3. Jim Wachter further suggested an overview guiding the user on method selection and what to request from a calibration lab to support the chosen method.

Scott Mimbs reported that NASA has further feedback on Annex 4 and will provide that to Howard. Also, JCGM has released (out of the blue) JCGM 106:2012, a conformance testing risk analysis document primarily centered on the confidence method.

Jim Wachter indicated that many people would like to see a workable guideline for confidence on EOPR regarding the “89 % rule”. In some cases of legacy equipment without established uncertainty analyses, EOPR serves as the sole basis for calibration process validations and some concern arises regarding the amount and quality of data behind the EOPR figure. The WG discussed the matter at length without reaching a firm solution. A binomial evaluation would directly provide the confidence that EOPR exceeds a given level such as 89 %, but likely requires too much data to establish the high confidence desired. Howard Castrup mentioned another method, but it requires knowledge of the measurement process uncertainty to correct for errors between true and observed reliability, thus defeating the purpose of avoiding uncertainty analysis. Mark Kuster mentioned that the RP-1 WG discussed the topic with no definite solution. [Further note: At one RP-1 WG meeting, Steve Dwyer suggested that the Method S1 instrument grouping tests might lead to confidence in EOPR.] Suzanne Castrup, Howard Castrup and William Hambly III also discussed technician data recording issues that impact data quality. Mark Kuster indicated that RP-1 now contains additional data quality guidance.

Scott Mimbs and Jim Wachter brought up the traceability via conformance testing issue. The WG discussed this and the ISO 9001 OOT resolution requirements.

Howard Castrup requested confirmation of those willing to participate. All agreed to review the document, though Scott Mimbs, who will retire next week, may limit participation. Best wishes to Scott.

4 General Discussion

David Archer suggested that free access to NCSLI documents would further their application and recognition.

5 Action Items

- Mark Kuster: Coordinate a further RP-1 release announcement with the NCSLI Office.
- Randy Long: Contact Mark Kuster after determining whether the LAB Newsletter will include an RP-1 release.
- Howard Castrup: Complete the RP-12 formatting overhaul and send Mark Kuster the document.
- Mark Kuster: Compare the reformatted RP-12 against the WG version for accuracy.
- Suzanne Castrup: Coordinate the remaining uncertainty analysis example preparation.
- Scott Mimbs: Provide Howard Castrup the NASA Annex 4 feedback.
- Howard Castrup: Complete the RP-18 updates.
- Howard Castrup: Release RP-18 to the WG for review.