

**Minutes of TC-10 Meeting of
22 March 2017 in Denver, Colorado**

Attendance:

Steve Tilden	Tilden Consulting
Jerry Blair	Keystone International
Tom Linnenbrink	Teqnovations
Sergio Rapuano (by Web)	University of Sannio
Bill Boyer	Sandia (retired)
Nick Paulter	NIST
Donald Larson (by Web)	Entegra Corporation
Dennis Lia (by Web)	Xcerra

Minutes prepared by Jerry Blair, j.blair@ieee.org.

Acknowledgements. We would like to thank the Teqnovations for hosting the meeting and the IEEE I&M Society for providing for the GoToMeeting connection.

Agenda. The agenda is appended to the end of these minutes.

Correspondence and Administration:

- Christy Bahn has replaced Kathryn Bennett as our IEEE Liaison - c.bahn@ieee.org
- TC-10 Policies and Procedures have been approved and are available at the Myproject portal.
- A single Policies and Procedures will be produced for each subcommittee's use in the very near future. (i.e. 1 common P&P)
- Jerry will work with Conference Catalysts after I²MTC 2017 to get our web pages transferred over to the I&M website. After that we will consider having each subcommittee chair maintain their own web pages.

Jitter Report (Sergio Rapuano): The subcommittee meets every two months and has nearly finished the first draft. They will meet in April by teleconference. The PAR expires in 2018.

SCOPT (181) Report (Nick Paulter): No one has requested any changes. The IEEE no longer has a provision for reaffirming a standard, so when the standard expires in 2021, a new one will have to be issued.

Probe Standard (1696) Report (Nick Paulter): The standard was published February of 2014, and there is no known desire for any changes.

ADC Report (Steve Tilden): Eric Zimmerman has resigned as chair, and there is no replacement yet. We will continue to seek a replacement. The standard expires in 2020. The corresponding IEC standard, IEC 60748-4-3, is believed to expire at the same time.

DAC Report (Steve Tilden): There is no activity now.

Waveform Recorder (1057) Report (Bill Boyer): All attendees voted that the draft is ready for ballot.

Potential Future projects and Promotion of Standards:

Promotion

I²MTC 2017 May 22-25 Torino Italy. There is very little on our fields at the conference. Sergio and Jerry will be attending. Nick will attend if he gets approval. <http://iee-ims.org/content/i2mtc-2017-torino-italy>

IMEKO TC-4 is in Romania in September, the same days as the National Measurement Conference (Italy) <http://www.imeko2017.tuiasi.ro/>.

I²MTC 2018 currently planned for Houston, May 14-17. <http://iee-ims.org/content/iee-i2mtc-2018-call-papers>

RF and Wireless Measurements

Sergio is working on communications measurements. There are several papers written by consortia.

Future TC-10 Meetings: With our current level of activity one face-to-face meeting per year should be adequate. Plan for the next meeting at I²MTC in Houston.

TC-10 AGENDA

**1:00 PM – 5:00 PM 21 March, 2017
& 9:00 AM – 5:00 PM 22 March
Mountain Standard Time
Boardroom Executive Suites
1625 17th Street, 3rd Floor
Denver, CO 80202, Denver, CO**

21 March 2017, 1:15 PM

- 1) Thanks to our local conference room host, Teqnovations, LLC (Tom Linnenbrink)
Wifi Instructions: - TBA
- 2) Thanks to I&M Society for free GoToMeeting access – notice will be sent ahead of meeting
- 3) Introduce attendees in room and on-line / Welcome any visitors
- 4) Approve Minutes of last TC-10 meeting – Jerry Blair for Sol Max
- 5) Std-1057 status, edits needing discussion and schedule for ballot & publication, formal vote that the draft standard is ready for ballot – Bill Boyer

End of day 1 – break for dinner

22 March 2017, 09:00 – 17:00:

- 6) Correspondence and Administration
 - a) Christy Bahn has replaced Kathryn Bennett as our IEEE Liaison - c.bahn@ieee.org
 - b) TC-10 Policies and Procedures have been approved and are available at the Myproject portal.
 - c) IEEE SA wants us to also publish a working group P&P – draft mimics the TC-10 P&P has been drafted and will be reviewed in new template just before lunch today.
 - d) Membership update, e-mail lists, etc. – Jerry Blair for Sol Max – attached forms
 - e) Web page (and links from other IEEE site[s]) – Jerry Blair for Sol Max
 - f) Virtual meetings – GoToMeeting available free for all IMS work!
- 7) Jitter Report – Sergio Rapuano via GoToMeeting – draft PAR & summaries.
- 8) SCOPT (181) Report – Nick Paulter, IEC 60469 (Intl Std) was published in 2013.
**“Transitions, pulses and related waveforms - Terms, definitions and algorithms”
IEC 62754 is the uncertainty analysis for the terms in 60469. – need for update
in near future?**

- 9) SCOPS (1696 Probe) Report – Nick Paulter, was published in 2014. Update to follow?
- 10) ADC Subcommittee (1241) Report – Eric Zimmerman has resigned – new PAR – kickoff was last year – possibly will just reaffirm 1241 this round, seeking new chairman. - Tilden
- 11) Update on IEC 60748-4-3 – IEC ADC standard based on 1241. Published 2006 – Tilden
“Semiconductor devices – Integrated circuits – Part 4-3: Interface integrated circuits – Dynamic criteria for analogue-digital converters (ADC) “– Inputs from Allen Belcher
- 12) DAC Subcommittee (1658) Report – Daniel Kimmitt via GoToMeeting. – 1st publication was 2011. Time for PAR?
- 13) Waveform Recorder Committee (1057) Report – Bill Boyer – meeting yesterday afternoon

14) Break for 10-15 minutes

- 15) Potential Future Projects & promotion of standards
 - a) Promotion of Standards
 - i) I2MTC 2017 May 22-25 Torino, Italy - S. Rapuano? – TC-10 attendees? Jerry
 - ii) Test Vision 2020 – July 11-13 in San Francisco @ Moscone Center and Marriott Marquis - a great networking opportunity during Semicon West
 - iii) IMEKO TC-4 / IWADC 2017? – where and when?
 - iv) Press releases? Other ideas?
 - v) Standards Papers at conferences or in magazines? Any takers to write?
 - b) Embedded ADC standard – tabled as only 1 new interest received.
 - c) Time to Digital Converter (TDC) standard – tabled as the interest still not there.
 - d) Arbitrary Waveform Generation? – still tabled, will there ever be a need?
 - e) Convert tutorial(s) to magazine articles – any interest?
 - f) Other ideas?

16) Next Meetings discussions

- a) Since we’ve had little activity, once a year is plenty to try and get face-to-face?
 - b) Perhaps at Cirrus Logic in Austin, TX if 1658 PAR is kicked off? – Dan?
- 17) Other New Business?

- 18) 11:30 – 12:00 – Review TC-10 & working group Policies & Procedures – Steve Tilden
 - 19) Lunch break from 12:00-13:30
 - 20) Open discussions of future direction, participation by those present and other needs related to TC-10, etc.
- 17:00 - Adjourn & select dinner location and time accommodating those departing.**

TC-10 AGENDA

March 18, 2016

8:30 AM – 5:00 PM Pacific Standard Time

Maxim Integrated, San Jose, CA

(160 Rio Robles, San Jose, CA 95134)

- 21) Thanks to our local conference room host, Maxim Integrated, San Jose
Wifi Instructions: - TBA
- 22) Thanks to I&M Society for free GoToMeeting access – notice already sent
- 23) Introduce attendees in room and on-line / Welcome any visitors
- 24) Approve Minutes of last TC-10 meeting – Jerry Blair for Sol Max
- 25) Correspondence and Administration
 - g) Christy Bahn has replaced Kathryn Bennett as our IEEE Liaison - c.bahn@ieee.org
 - h)
 - i) IEEE SA wants us to also publish a working group P&P – draft to mimic the TC-10 P&P has been drafted and will be reviewed just before lunch today. Due date: 10 May 2016!
 - j) Membership update, e-mail lists, etc. – Jerry Blair for Sol Max – attached forms
 - k) Web page (and links from other IEEE site[s]) – Jerry Blair for Sol Max
 - l) Virtual meetings – GoToMeeting available free for all IMS work!
- 26) Jitter Report – Sergio Rapuano via GoToMeeting – draft PAR & summaries.
- 27) SCOPT (181) Report – Nick Paulter, IEC 60469 (Intl Std) was published in 2013.
“Transitions, pulses and related waveforms - Terms, definitions and algorithms”
- 28) SCOPS (1696) Report – Nick Paulter, was published in 2014.
- 29) ADC Subcommittee (1241) Report – Eric Zimmerman – new PAR – kickoff
- 30) Update on IEC 60748-4-3 – IEC ADC standard based on 1241. Published 2006 – Tilden
“Semiconductor devices – Integrated circuits – Part 4-3: Interface integrated circuits – Dynamic criteria for analogue-digital converters (ADC) “
- 31) DAC Subcommittee (1658) Report – Daniel Kimmitt via GoToMeeting.
- 32) Waveform Recorder Committee (1057) Report – Bill Boyer – meeting in afternoon
- 33) Break for 10-15 minutes**
- 34) Potential Future Projects & promotion of standards
 - g) Promotion of Standards

- i) I2MTC 2016 May 23-26 Taipei, Taiwan - S. Rapuano? – TC-10 attendees?
- ii) Test Vision 2020 – July 12-14 in San Francisco, great networking opportunity
- iii) IMEKO TC-4 / IWADC 2017? – where and when?
- iv) Press releases? Other ideas?
- v) Standards Papers at conferences or in magazines? Any takers to write?
- h) Embedded ADC standard – tabled as no new interest received.
- i) Time to Digital Converter (TDC) standard – tabled as the interest wasn't there.
- j) Arbitrary Waveform Generation? – still tabled?
- k) Convert tutorial(s) to magazine articles – any interest?
- l) Other ideas?

35) Next Meetings discussions

- c) Since we've had little activity, once a year / two is plenty to try and get face-to-face?
- d) Tom secured Colorado Springs' Colorado Engineering Institute for meetings who have offered their conference room to us free of charge.

36) Other New Business?

37) 11:30 – 12:00 – Review TC-10 & working group Policies & Procedures – Steve Tilden

38) Lunch break from 12:00-13:30

39) 13:30 – 17:00 - 1057 subcommittee meeting led by Bill Boyer after lunch break

40) 17:00 - Adjourn & select dinner location and time.