

IEEE Waveform Generation Measurement and Analysis Technical Committee (TC10)
Meeting Minutes
18 January 2022 / 11:00 AM –11:50 PM (EDT)

1. Call to Order
2. Introductions and Roll Call
 - a. Nick Paulter, TC10 chair, presided
 - b. Jerry Blair, TC10 Secretary, took minutes
3. Roberts Rules of Order Overview
4. Approval of the Agenda
 - a. Motion for agenda approval was provided and seconded. Agenda was approved unanimously.
 - b. The approved agenda is available on iMeetCentral (<https://ieee-sa.imeetcentral.com/login>).
5. Approval minutes from 21 June 2021 meeting
 - a. Motion for minutes approval was provided and seconded. Minutes were approved unanimously.
 - b. The approved minutes are available on iMeetCentral (<https://ieee-sa.imeetcentral.com/login>).
6. TC10 Policies and Procedures (P&P) Review
 - a. TC10 Standards Committee P&P - has been uploaded to the TC10 iMeetCentral site (<https://ieee-sa.imeetcentral.com/tc10-general/folder/WzIwLDEzOTIzMDEzXQ/WzIsNzk0MjA5NTRd/>).
 - b. Common Individual based WG P&P
 - i. The TC10 working group P&P has been approved and is available at the 1241 Working Group iMeetCentral site (<https://ieee-sa.imeetcentral.com/p1241/folder/WzIwLDE0NDM5MDA4XQ>).
7. Working Groups Updates
 - a. Revision of IEE Std 181, IEEE Standard for Transitions, Pulses, and Related Waveforms
 - i. Lead: Nick Paulter
 - ii. PAR expires 2025. We will wait until the 1241 is balloted and approved before starting on the 181.
 - b. Revision of IEEE Std 1241, IEEE Standard for Terminology and Test Methods for Analog-to-Digital Converters
 - i. Lead: Nick Paulter
 - ii. Making good progress: 1.5 clauses and 4 or 5 annexes to go. Text is expected to be finished by the next TC-10 meeting.
 - c. Revision of IEEE Std 1658, IEEE Standard for Terminology and Test Methods of Digital-to-Analog Converter Devices
 - i. Lead: Luca DeVito
 - ii. Not moving as fast as we would like. PAR ends at end of this year, may need an extension. Nick asked how many people are contributing, Luca said more than 10, and that people are contributing during the meeting but not much between meetings. Will consider increasing meeting frequency. Gregory said that the committee has increased

frequency of meetings. Alan Belcher pointed out that keeping track of how changes in one part of the doc affects other parts is the most difficult part.

- d. Revision of IEEE Std 1696, IEEE Standard for Terminology and Test Methods for Circuit Probes
 - i. Lead: John Jendzurski
 - ii. Kickoff meeting is scheduled for February.
 - e. IEEE Std 1057-2017, IEEE Standard for Digitizing Waveform Recorders
 - i. Lead: Bill Boyer
 - ii. Standard doesn't expire until 2028, so there is no need to start a revision process before 2026.
8. Future Meetings
- a. Frequency: meet once every three months. This will be a one-hour web-based meeting unless a majority of TC10 members request a face-to-face meeting. The content of these meetings will include general information, working group updates, related activities in other Standards Development Organizations, and guest technical presentation.
9. Discussion topics
- a. TC10 technical presentations: Nick asked if anyone would like to give a technical presentation for next meeting. David H will give a presentation. He will send Nick an abstract for distribution to the TC10 members.
 - b. Relationship between TC10 and other standards development organizations: Gregory asked about the relationship between TC10 and European committees. Nick pointed out that efforts in past to make common IEEE and IEC standards did not work out. Individual chairs have tried to harmonize the standards.
 - c. Out of date standards: Charles Cerny said that at a recent meeting it was pointed out that the relevant radar standards were out of date. He asked how to go about making the change. Nick recommended contacting the TC that authored the standard and informing them of the issue.
 - d. Other possible TC10 standards: Some discussion of WG standard. Gregory brought up Josephson based ADCs and DACs. Allan Belcher mentioned work on quantum ADCs. He pointed that IEEE standards are now in the IEC format so they could be more easily converted. He mentioned a test method he developed that was documented in an IEEE publication. He may give a presentation in the future.
10. Adjourn
- a. Motion to adjourn was made and seconded.
 - b. Meeting adjourned at 1154 (UTC-5).
11. Tasks
- a. Outstanding tasks (not completed from previous lists)
 - i. WG chairs - review web pages (<https://sagroups.ieee.org/im-wma-tc10/>) for content
 - b. New
 - i. Nick Paulter - upload draft minutes provide by Jerry Blair of 18 Jan 2022 meeting
 - ii. David Humphreys - provide presentation information (title, abstract, author brief) to Nick for distribution to TC10 members.
 - iii. Allan Belcher - send Nick information/presentation on quantum ADCs/DACs for distribution to TC10 members

Attendee list with affiliation:

Attendee name	Affiliation
Allan Belcher	Signal Conversion, Ltd, UK
Jerome Blair	Keystone International, Inc, USA
Fritz Capsers	CERN, Switzerland
Charles Cerny	USAF Research Laboratory, USA
Razvan Ciocan	Draper, USA
Paolo Crovetto	Polytechnic University of Turin, Italy
Pasquale Daponte	University of Sannio, Italy
Luca De Vito	University of Sannio, Italy
Yuji Gendai	THine Electronics, Japan
John Jendzurski	National Institute of Standards and Technology, USA
Gregory Kyriaszis	National Institute of Metrology Standardization and Industrial Quality, Brazil
Alessandro Mingotti	University of Bologna, Italy
N Paulter	National Institute of Standards and Technology, USA
Sergio Rapuano	University of Sannio, Italy
Han Woong Yoo	Automation and Control Institute, Austria
Balázs Renczes	Budapest University, Hungary
Paolo Carbone	University of Perugia, Italy
Bill Boyer	Sandia Natl. Lab., retired, USA
Brian Lee	National Instruments, USA
David Humphreys	NPL, UK
Michael Cracraft	Rose-Hulman Institute of Technology, USA