



## TC ANNUAL REPORTING FORM

### IMS Technical Committee

#### TC10, Waveform Generation, Measurement, and Analysis

#### Reporting period

Starting date (dd/mm/yy)

01/01/24

Ending date (dd/mm/yy)

31/12/24

Date of submission (dd/mm/yy)

11/01/24

#### Website

<https://ieee-ims.org/technical-committee/tc-10>

Last update (mm/yy)

2024

#### TC Chair or co-Chairs

First Name	Second Name	Family Name	Affiliation /Address	Membership number	Phone	e-mail address	Date of election
Nicholas	G	Paulter, Jr	NIST 100 Bureau Dr. Gaithersburg, MD 20899 USA	41340692	240-483-5947 (c)	nicholas.paulter@nist.gov	2018

#### Secretary (check the right box)

Present ☐

Not Present ☒

First Name	Second Name	Family Name	Affiliation /Address	Membership number	Phone	e-mail address	Date of election
------------	-------------	-------------	----------------------	-------------------	-------	----------------	------------------

#### TC Membership list<sup>(\*)</sup>

First Name	Second Name	Family Name	Affiliation /Address	Membership number	Phone	e-mail address	TC assignments (joining year)
------------	-------------	-------------	----------------------	-------------------	-------	----------------	-------------------------------

(AVAILABLE FROM IEEE, also attached)

\* Please add as many rows as needed

---

**TC mission – field of expertise (max. 1000 char. Including spaces)**

---

Develop, promote and support standards for specifying and measuring waveforms, and for specifying and testing instrumentation used for waveform measurement or generation;

Promote effective practices of waveform measurement, generation, and analysis through workshops, review papers, etc.;

Maintain liaison with other groups, societies, and standards organizations working in the same area.

---

**TC meetings in the reporting period<sup>(\*)</sup>**

Date (dd/mm/yy)	Online / Face2Face	Attendance (number)	TC Members	Information sent within 4 months to (Yes/No)		
				Chair of TSAC	IM Magazine	Other (specify)
16 Jan 2024	on-line	09	see official meeting minutes, attached			
16 Apr 2024	on-line	14	see official meeting minutes, attached			
16 Jul 2024	on-line	14	see official meeting minutes, attached			
15 Oct 2024	on-line	15	see unofficial meeting minutes, attached			

---

**Minutes of the yearly meeting (separate file)<sup>1</sup>**

meetings are held quarterly, three approved meeting minutes are attached, unapproved 4th quarter meeting minutes are attached

---

**Participation in Society sponsored Events (Conferences, Symposia, Workshops)  
(\*)**

<sup>1</sup> Yes/No, date of the yearly meeting;

\* Please add as many rows as needed

Name of the Event	Starting date (event) (dd/mm/yy)	Ending date (event) (dd/mm/yy)	Date Participation (dd/mm/yy)	Type of participation (Yes/No)			
				Sponsorship	Session	Tutorial	Other (specify) <sup>2</sup>
I2MTC-2024	20 May 2024	23 May 2024		TC10 Special session: "Waveform acquisition and analysis"			

## Involvement in standard development<sup>(\*)</sup>

Standard	Working Group	Revision	Activity in the reporting period, including dates	Notes, attendance
Std 181	Pulse Tech	2011	Several web-based meetings conducted. Revision in progress.	
Std 1057	Waveform recorder	2017	No activity	
Std 1241	ADC	2023	Recently published (2023). No activity.	
Std 1681	DAC	2023	Recently published (2023). No activity.	
Std 2414	Jitter	2020	No activity.	
Std 1696	Probe standards	2013	Several web-based meetings conducted. Revision in progress.	

## Participation in the development of Society Educational Programs<sup>(\*)</sup>

Program name	Involvement of chapters and sections	Activity in the reporting period, including dates	Notes, attendance
--------------	--------------------------------------	---	-------------------

## Other Activities (tutorials, teaching, career, cooperation, publications, joint activity with chapters or sections) <sup>(\*)</sup>

Type of activity	Starting date (dd/mm/yy)	Ending date (dd/mm/yy)	Activity in the reporting period	Notes, attendance
Article updating TC10 activities was published in Oct 2024. (L. De Vito, J. Jendzurski, S. Rapuano, W. B. Boyer, J. Blair and N. G. Paulter, "The IEEE Technical Committee 10: The Waveform Generation, Measurement, and Analysis Committee, Update 2023," in IEEE Instrumentation & Measurement Magazine, vol. 27, no. 7, pp. 26-30, September 2024, doi: <a href="https://doi.org/10.1109/MIM.2024.10700738">https://doi.org/10.1109/MIM.2024.10700738</a> .)				
Article on the early history of the TC10 was published in Oct 2024. (W. Boyer, "Early History of the IEEE Technical Committee 10 from 1981 to 2007," vol. 27, no. 7, pp. 19-25, October 2024, doi: <a href="https://doi.org/10.1109/MIM.2024.10700735">10.1109/MIM.2024.10700735</a> .)				

<sup>2</sup> For example, Involvement in reviewing papers (and indicate approximate number of paper reviews for the listed event)

\* Please add as many rows as needed

---

**Recommended candidates<sup>(\*)</sup>**

Type (ADCOM, Fellow, Award –specify-)	First Name	Second Name	Family Name	Affiliation /Address	Motivation
---------------------------------------	------------	-------------	-------------	----------------------	------------

---

---

**TC operating Plan: near-term plans for the upcoming year, including scheduled meetings, activities, and so on (max. 1000 char. Including spaces)**

---

- Maintain valid membership list
- Hold periodic on-line TC10 WebEx meetings
- Maintain IEEE TC10 and IEEE SA web sites
- Convene TC10-related I2MTC-2024 Special Sessions:
  - "TC10 Special Session on the Measurement, Modeling, and Prediction of Jitter in Space-grade Optical Transceivers"
  - "Rydberg Arrays for Enhanced Direction Finding - Sponsored by TC10"

---

**TC operating plan: long term vision from 2-5 years out, based on IMS Strategic Plan, including areas of strength , areas for improvement, how is the subject area going to change, planned actions for lifting achievement succession plans etc. (max. 1000 char. Including spaces)**

---

- Maintain current TC-10 membership and broaden industry involvement
  - Increase TC10 visibility, in collaboration with IEEE IMS and IEEE SA
  - Increase interest in participation as an officer
    - Luca De Vito accepted WG1694 chair position
    - Charles Cerny accepted WG1241 chair position
    - Identify chair for 181 Working Group
    - Identify TC10 chair
- 

<sup>\*</sup> Please add as many rows as needed



---

TC convergence, synergy, cooperation with other TC, from I&M or other societies (max. 1000 char. Including spaces)

---

---

Comments/Suggestions (max. 1000 char. Including spaces)

---

IEEE Waveform Generation Measurement and Analysis Technical Committee (TC10)

Approved Meeting Minutes

16 January 2024 / 11:00 AM –13:00 PM (UTC-5)

1. Call to Order
2. Introductions and Roll Call
  - a. Nick Paulter, TC10 chair, presided and took minutes
3. Approval of the Agenda
  - a. Motion for agenda of this meeting (16 January 2024) approval was provided by Sergio Rapuano and seconded by Gearóid ó hEidhin. No dissent to this motion.
  - b. The approved agenda is available on iMeetCentral (<https://ieee-sa.imeetcentral.com/tc10-general/folder/WzIwLDE0NDI3NzE4XQ/WzIsODUzMTQzMjBd/>).
4. Approval of minutes from 17 October 2023 meeting
  - a. Motion for minutes approval was provided by Ioan Tudosa and seconded by Paolo Carbone. No dissent to this motion.
  - b. The approved minutes are available on iMeetCentral (<https://ieee-sa.imeetcentral.com/tc10-general/folder/WzIwLDEzMjA3MTQwXQ/WzIsODUzMTQzMjZd/>).
5. TC10 administrative
  - a. Next meeting will be 16 April 2024 starting at 1100 UTC-5 (1600 UTC+0).
  - b. Chair positions
    - i. Charles Cerny (USAF Research Laboratory, USA) has been approved by the TC10 officers as the Std 1241 Working Group chair.
    - ii. Chair for Std 181 Working Group is being sought from TC10 membership.
  - c. Reminder to reviewers of manuscript submitted to TC10 Special Session, “Waveform acquisition and analysis,” for the I2MTC-2024.
  - d. Reminder for TC10 officers to contribute to annual TC10 document describing updates to TC10 activities.
6. Discussion topics
  - a. IEEE TC10 history – Bill Boyer
    - i. The document has been uploaded to TC10 iMeetCentral for general review (<https://ieee-sa.imeetcentral.com/tc10-general/folder/WzIwLDEzMjA3MTMyXQ/WzIsODUzMTQzMjFb/>). Contact Bill to provide input at [db1505@comcast.net](mailto:db1505@comcast.net).

## 7. Working Groups Updates

- a. Revision of IEE Std 181, IEEE Standard for Transitions, Pulses, and Related Waveforms
  - i. Lead: Nick Paulter
  - ii. The kick-off meeting is scheduled for 18 January 2024 at 1100 (UTC-5).
- b. Revision of IEEE Std 1241, IEEE Standard for Terminology and Test Methods for Analog-to-Digital Converters
  - i. Lead: Nick Paulter
  - ii. Status: Published. IEEE SA provided a link to download a complimentary copy for working group members.
  - iii. Charles Cerny is the new 1241 Working Group chair. All communication regarding the Std 1241 and the Working Group should be directed to Charles at [dr.c.c@ieee.org](mailto:dr.c.c@ieee.org).
- c. Revision of IEEE Std 1658, IEEE Standard for Terminology and Test Methods of Digital-to-Analog Converter Devices
  - i. Lead: Luca DeVito
  - ii. Status: Published. IEEE SA provided a link to download a complimentary copy for working group members.
- d. Revision of IEEE Std 1696, IEEE Standard for Terminology and Test Methods for Circuit Probes
  - i. Lead: John Jendzurski
  - ii. Status:
    1. The first five clauses have been reviewed. There are two more clauses to review.
    2. Current par expires December 2025.

## 8. Adjourn

- a. Motion to adjourn was made by Nick. Gearóid seconded the motion. No dissent for this motion was given.
- b. Meeting adjourned around 1230 (UTC-5).

## 9. 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 agenda and draft minutes of today's meeting
  - ii. Nick Paulter – upload approved minutes of 17 Oct 2023 meeting
  - iii. Identify volunteer to provide presentation at upcoming (16 April 2024) meeting
  - iv. Nick Paulter – identify chair candidates for the 181 Working Group.

Attendee list with affiliation:

Attendee name	Affiliation
Fritz Caspers	CERN, Switzerland
Paolo Carbone	University of Perugia, Italy
Grazia Iadarola	Polytechnic University of Marche, Italy
Patrycja Jarosz	IEEE, USA
Alessandro Mingotti	University of Bologna, Italy
Gearóid ó hEidhin	GE Renewables, UK
Nicholas Paulter	National Institute of Standards and Technology, USA
Sergio Rapuano	University of Sannio, Italy
Ioan Tudosa	University of Sannio, Italy
Han Woong Yoo	Automation and Control Institute, Austria



IEEE Waveform Generation Measurement and Analysis Technical Committee (TC10)

Approved Meeting Minutes

16 April 2024 / 11:00 AM –13:00 PM (UTC-5)

1. Call to Order
2. Introductions and Roll Call
  - a. Nick Paulter, TC10 chair, presided and took minutes
  - b. Introductions were not deemed necessary as all attendees were familiar with or knew of each other.
3. Approval of the Agenda
  - a. Motion for approval of the agenda of this meeting (16 April 2024) was provided by Sergio and seconded by Grazia. No dissent to this motion.
  - b. The approved agenda is available on iMeetCentral (<https://ieee-sa.imeetcentral.com/tc10-general/folder/WzIwLDE0NDI3NzE4XQ/WzIsODUzMTQzMjBd/>).
4. Approval of minutes from 16 January 2024 meeting
  - a. Motion for approval of the minutes of the 16 Jan 2024 meeting was provided by Ioan and seconded by Gearóid. No dissent to this motion.
  - b. The approved minutes are available on iMeetCentral (<https://ieee-sa.imeetcentral.com/tc10-general/folder/WzIwLDEzMjA3MTQwXQ/WzIsODUzMTQzMjZd/>).
5. TC10 administrative
  - a. No comments or problems reported using IEEE SA e-tools (iMeetCentral, ListServ).
  - b. Next meeting will be 16 July 2024 starting at 1100 UTC-5 (1600 UTC+0).
  - c. Chair positions
    - i. Chair for Std 181 Working Group is being sought from TC10 membership.
6. Discussion topics
  - a. IEEE TC10 history – Bill Boyer
    - i. Several modifications have been made. Plan is to submit to IEEE I&M Magazine.
  - b. I2MTC Special Session, “Waveform acquisition and analysis”
    - i. Five papers accepted for presentation.
    - ii. Several TC10 members will be present, try to assemble for dinners and/or lunches.
  - c. I&M Magazine
    - i. TC10 has been providing annual updates on its activities and status of its documentary standards for the last few years.
    - ii. Authors have been TC10 officers.
    - iii. The 2023 update was submitted to the Magazine in early April 2024 by Nick.
  - d. I2MTC poster
    - i. Each technical committee (TC) is allowed one poster up to the maximum number of posters.
    - ii. TC10 submitted a poster that was developed by the TC10 officers.
  - e. DVM & ADC – Allan
    - i. In the True8Digit (<https://true8digit.eu/>) project, Allan has noted discrepancies in the definition (and maybe method of measurement) of integral nonlinearity for digital volt meters and analog-to-digital converters. Once this project is complete, it may warrant a

new documentary standard to address these discrepancies that could logically be within the purview of the IEEE TC10.

7. Working Groups Updates
  - a. Revision of IEE Std 181, IEEE Standard for Transitions, Pulses, and Related Waveforms
    - i. Lead: Nick Paulter
    - ii. The kick-off meeting and one other meeting has occurred.
    - iii. Each clause has been assigned up to three reviewers. Upon completion of reviews, Nick will compile and provide to WG 181 members for final review.
  - b. Revision of IEEE Std 1696, IEEE Standard for Terminology and Test Methods for Circuit Probes
    - i. Lead: John Jendzurski
    - ii. Status:
      1. Review being completed by clause.
      2. New members have joined.
      3. Will schedule a July meeting.
8. Guest presentation:  
Fritz Caspers, CERN, "History and development of bench measurement techniques for impedance evaluation"
9. Adjourn
  - a. Meeting adjourned around 1220 (UTC-5).
10. Tasks
  - a. Outstanding tasks (not completed from previous lists)
    - i. none
  - b. New
    - i. Nick - upload agenda and draft minutes of today's meeting
    - ii. Nick- upload approved minutes of 16 Jan 2024 meeting
    - iii. Nick - Identify volunteer to provide presentation at upcoming (16 July 2024) meeting
    - iv. Nick- identify chair candidates for the 181 Working Group.

Attendee list with affiliation:

Attendee name		Affiliation
Last	First	
Belcher	Allan	Signal Conversion Ltd, UK
Boyer	Bill	Sandia (retired), USA
Carbone	Paolo	University of Perugia, Italy
Caspers	Fritz	CERN, Switzerland
Ciocan	Razvan (Secretary)	Draper Laboratories, USA
De Vito	Luca	University of Sannio, Italy
Gendai	Yuji	THine Electronics, Inc., Japan
Iadarola	Grazia	Polytechnic University of Marche, Italy
Jarosz	Patrycja	IEEE, USA
Jendzurski	John	National Institute of Standards and Technology, USA
Kyriazis	Gregory	INMETRO, Brazil
ó hEidhin	Gearóid	GE Renewables, UK
Paulter	Nicholas (Chair)	National Institute of Standards and Technology, USA
Rapuano	Sergio	University of Sannio, Italy
Renczes	Balázs	Budapest University of Technology and Economics, Hungary

IEEE Waveform Generation Measurement and Analysis Technical Committee (TC10)  
Approved Meeting Minutes  
16 July 2024 / 11:00 AM –13:00 PM (UTC-5)

1. Call to Order
2. Introductions and Roll Call
  - a. Nick Paulter, TC10 chair, presided and took minutes.
  - b. Introductions were given.
  - c. Quorum achieved: 11/14 members attending.
3. Approval of the Agenda
  - a. Motion for approval of the agenda of this meeting (16 July 2024) was provided by Sergio and seconded by Pasquale. No dissent to this motion.
  - b. The approved agenda is available on iMeetCentral (<https://ieee-sa.imeetcentral.com/tc10-general/folder/WzIwLDE0NDI3NzE4XQ/WzIsODU4OTM4NjFd/>).
4. Approval of minutes from 16 April 2024 meeting
  - a. Motion for approval of the minutes of the 16 April 2024 meeting was provided by Ioan and seconded by Allan. No dissent to this motion.
  - b. The approved minutes are available on iMeetCentral (<https://ieee-sa.imeetcentral.com/tc10-general/folder/WzIwLDEzMjA3MTQwXQ/WzIsODU4OTM4NjRd/>).
5. TC10 administrative
  - a. No comments or problems reported using IEEE SA e-tools (iMeetCentral, ListServ).
  - b. Next meeting will be 15 October 2024 starting at 1100 UTC-4 (1500 UTC+0).
  - c. Chair positions
    - i. Chair for Std 181 Working Group is being sought from TC10 membership.
6. Discussion topics
  - a. IEEE TC10 history – Bill Boyer
    - i. Several modifications have been made. Submitted to and accepted for publication by IEEE I&M Magazine.
  - b. I2MTC
    - i. I2MTC-2024 TC10 Special Session, “Waveform acquisition and analysis”
      1. Well attended. Deemed a successful TC10-sponsored special session.
    - ii. Recurrent TC10 special sessions at I2MTC
      1. Nick asked if the 2024 special session was sufficiently successful to warrant proposing a special session for the I2MTC-2025.
      2. Sergio suggested that the TC10 should propose a special session at each I2MTC.
  - c. I&M Magazine
    - i. TC10 has been providing annual updates on its activities and status of its documentary standards for the last few years.
      1. The 2023 update was submitted to the Magazine in early April 2024 by Nick and approved for publication.
    - ii. Sergio described a “standards” track for the Magazine, which intends to publish four articles per year on IEEE standards. The purpose is to expose Magazine readership to IMS documentary standards.
      1. Sergio is asking for volunteers for these papers.

2. Luca volunteered to provide a paper.
- d. Other outreach
  - i. IEEE 2024 International Workshop on Technologies for Defense and Security (<https://techdefense.org/>)
    1. Nick and Pasquale are organizing a special session on directed energy weapons.
    2. TC10 members are encouraged to attend.
  - ii. IMEKO TC6
    1. Ioan will provide details at 15 October meeting.
7. New standards proposal
  - a. Ioan Tudosa presented a proposal for a new TC10 documentary standard that would address the terminology and test and evaluation methods for clocks and oscillators. It was generally agreed that such a standard would be useful and is within the purview of the TC10.
  - b. Ioan will:
    - i. Identify working group of interested parties and potential contributors.
    - ii. Draft a scope with the working group.
    - iii. Develop the Project Authorization Request.
8. Working Groups Updates
  - a. Revision of IEE Std 181, IEEE Standard for Transitions, Pulses, and Related Waveforms
    - i. Lead: Nick Paulter
    - ii. The revision is progressing. Currently in the process of completing the terminology-related clauses.
  - b. Revision of IEEE Std 1696, IEEE Standard for Terminology and Test Methods for Circuit Probes
    - i. Lead: John Jendzurski
    - ii. Status:
      1. Review of entire document is complete. All suggest changes are editorial.
      2. John is planning to address resolution of comments. Plans to have the document ready for ballot by the end of CY2024.
      3. Patrycja presented an e-balloting option.
9. Guest presentation:  
John Jendzurski, National Institute of Standards and Technology, "Design and Measurement of a Dynamic Through-Barrier Radar Calibration Target"
10. Adjourn
  - a. Meeting adjourned around 1235 (UTC-4).
11. Tasks
  - a. Outstanding tasks (not completed from previous lists)
    - i. Nick– identify chair candidates for the 181 Working Group.
  - b. New
    - i. Nick - upload agenda and draft minutes of today's meeting.
    - ii. Nick– upload approved minutes of 16 Apr 2024 meeting.
    - iii. Nick - Identify volunteer to provide presentation at upcoming (15 October 2024) meeting.

Attendee list with affiliation:

Attendee name		Affiliation
Last	First	
Belcher	Allan	Signal Conversion Ltd, UK
Boyer	Bill	Sandia (retired), USA
Ciocan	Razvan (Secretary)	Draper Laboratories, USA
Daponte	Pasquale	University of Sannio, Italy
De Vito	Luca	University of Sannio, Italy
Gendai	Yuji	THine Electronics, Inc., Japan
Jarosz	Patrycja	IEEE, USA
Jendzurski	John	National Institute of Standards and Technology, USA
Kyriazis	Gregory	INMETRO, Brazil
Ó hEidhin	Gearóid	GE Renewables, UK
Paulter	Nicholas (Chair)	National Institute of Standards and Technology, USA
Rapuano	Sergio	University of Sannio, Italy
Tudosa	Ioan	University of Sannio, Italy

IEEE Waveform Generation Measurement and Analysis Technical Committee (TC10)

**unApproved** Meeting Minutes

15 October 2024 / 11:00 AM –13:00 PM (UTC-5)

1. Call to Order
2. Introductions and Roll Call
  - a. Nick Paulter, TC10 chair, presided and took minutes.
  - b. Introductions were given.
  - c. Quorum achieved: 12/15 members attending.
3. Approval of the Agenda
  - a. Motion for approval of the agenda of this meeting (15 October 2024) was provided by Gearóid and seconded by Sergio. No dissent to this motion.
  - b. The approved agenda is available on iMeetCentral (<https://ieee-sa.imeetcentral.com/tc10-general/folder/WzIwLDE0NDI3NzE4XQ/WzIsODYzNjkxMzZd/>).
4. Approval of minutes from 16 July 2024 meeting
  - a. Motion for approval of the minutes of the 16 July 2024 meeting was provided by Sergio and seconded by Yuji. No dissent to this motion.
  - b. The approved minutes are available on iMeetCentral (<https://ieee-sa.imeetcentral.com/tc10-general/folder/WzIwLDEzMjA3MTQwXQ/WzIsODYzNjkxMzZd/>).
5. TC10 administrative
  - a. No comments or problems reported using IEEE SA e-tools (iMeetCentral, ListServ).
  - b. Next meeting will be 21 January 2025 starting at 1100 UTC-5 (1600 UTC+0).
  - c. Chair positions
    - i. Chair for Std 181 Working Group is being sought from TC10 membership.
6. Discussion topics
  - a. I2MTC
    - i. I2MTC-2025 TC10 Special Session proposed
      1. Charles Cerny – Rydberg arrays for atomic clocks
      2. Razvan Ciocan – jitter in space-grade optical transceivers
  - b. I&M Magazine – no discussion
  - c. Other outreach
    - i. IEEE 2024 International Workshop on Technologies for Defense and Security (<https://techdefense.org/>)
      1. Nick and Pasquale are organizing a special session on directed energy weapons.
        - a. Nick will need to adjust participation.
7. New standards proposal
  - a. Ioan Tudosa presented a proposal for a new TC10 documentary standard that would address the terminology and test and evaluation methods for clocks and oscillators. It was generally agreed that such a standard would be useful and is within the purview of the TC10.
  - b. Ioan will: (no progress as of 15 Oct 2024)
    - i. Identify working group of interested parties and potential contributors.
    - ii. Draft a scope with the working group.
    - iii. Develop the Project Authorization Request.

8. Working Groups Updates
  - a. Revision of IEE Std 181, IEEE Standard for Transitions, Pulses, and Related Waveforms
    - i. Lead: Nick Paulter
    - ii. The revision is progressing. Currently reviewing Clause 5, which is the second longest clause in the standard and includes parameter calculation algorithms.
  - b. Revision of IEEE Std 1696, IEEE Standard for Terminology and Test Methods for Circuit Probes
    - i. Lead: John Jendzurski
    - ii. Status:
      1. Motion and second to submit for ballot was received.
      2. MEC has provided comments. John will correct the draft accordingly.
      3. John will send a request to WG181 for approval to submit for ballot.
9. Guest presentation:  
Grazia Iadarola, Polytechnic University of Marche, Italy, “Physiological monitoring by wearable sensors: outcomes from Compressed Sensing”
10. Adjourn
  - a. Meeting adjourned around 1240 (UTC-4).
11. Tasks
  - a. Outstanding tasks (not completed from previous lists)
    - i. Nick– identify chair candidates for the 181 Working Group.
  - b. New
    - i. Nick - upload agenda and draft minutes of today’s meeting.
    - ii. Nick– upload approved minutes of 16 Jul 2024 meeting.
    - iii. Nick - Identify volunteer to provide presentation at upcoming (21 January 2025) meeting.



Attendee list with affiliation:

Attendee name		Affiliation
Last	First	
Belcher	Allan	Signal Conversion Ltd, UK
Boyer	Bill	Sandia (retired), USA
Calvin	John	Keysight Technologies, USA
Ciocan	Razvan (Secretary)	Draper Laboratories, USA
Daponte	Pasquale	University of Sannio, Italy
De Vito	Luca	University of Sannio, Italy
Gendai	Yuji	THine Electronics, Inc., Japan
Iadarola	Grazia	Polytechnic University of Marche, Italy
Jarosz	Patrycja	IEEE, USA
Jendzurski	John	National Institute of Standards and Technology, USA
Miličević	Kruno	University of Osijek, Croatia and Random Red, Croatia
ó hEidhin	Gearóid (Vice chair)	GE Renewables, UK
Paulter	Nicholas (Chair)	National Institute of Standards and Technology, USA
Rapuano	Sergio	University of Sannio, Italy
Tudosa	Ioan	University of Sannio, Italy
Yoo	Han Woong	Automation and Control Institute, Austria

TC10 Member List 2024		
Alessandro Mingotti	Gregory Kyriazis	Paolo Carbone
Allan Belcher	Gearoid O H Eidhin	Paolo Crovetti
Pasquale Daponte	Ioan Tudosa	Pier Andrea Traverso
William Boyer	Jerome Blair	Sergio Rapuano
Luca De Vito	John Jendzurski	Razvan Ciocan
Donald Larson	John Calvin	Balázs Renczes
Charles Cerny	Kruno Milicevic	Han Woong Yoo
Fritz Caspers	Martin Hudlicka	Yuji Gendai
Grazia Iadarola	N Paulter	