

TC ANNUAL REPORTING FORM

IMS Technical Committee

MEASUREMENTS AND NETWORKING

Reporting period

Starting date (dd/mm/yy)	Ending date (dd/mm/yy)	Date of submission (dd/mm/yy)
01/01/24	31/12/24	31/01/25

Website	Last update (mm/yy)
https://ieee-ims.org/technical-committee/tc-37	04/24

TC Chair or co-Chairs

First Name	Second Name	Family Name	Affiliation /Address	Membership number	Phone	e-mail address	Date of election
Domenico		Capriglione	University of Cassino and Southern Lazio, Via G. Di Biasio 43, 03043 Cassino (FR), ITALY	80045533	+3907762994361	capriglione@unicas.it	01/07/2016

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
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TC Membership list^(*)

First Name	Second Name	Family Name	Affiliation /Address	Membership number	Phone	e-mail address	TC assignments (joining year)
Domenico		Capriglione	University of Cassino and Southern Lazio, ITALY	80045533		capriglione@unicas.it	2016
Leopoldo		Angrisan	University of Naples Federico II,	90333781		angrisan@unina.it	2016

^{*} Please add as many rows as needed

ITALY

Luigi	Ferrigno	University of Cassino and Southern Lazio, ITALY	80045497	ferrigno@unicas.it	2016
Gianfranco	Miele	University of Cassino and Southern Lazio, ITALY	80393534	g.miele@unicas.it	2016
Vincenzo	Paciello	University of Cassino and Southern Lazio, ITALY	90441292	v.paciello@unicas.it	2016
Nicola	Pasquino	University of Naples Federico II, ITALY	40356970	npasquin@unina.it	2016
Mauro	D'Arco	University of Naples Federico II, ITALY	92177088	darco@unina.it	2016
Bruno	Andò	University of Catania, ITALY	40256916	bruno.ando@dieei.unict.it	2016
Antonio	Moschitta	University of Perugia, ITALY	04363016	moschitta@unipg.it	2016
Domenico	Luca	Carnì	University della Calabria, ITALY	dlcarni@dimes.unical.it	2016
Francesco	Lamonaca	University of Sannio, ITALY	91116166	flamonaca@unisannio.it	2016
David	Macii	University of Trento, ITALY	80427440	david.macii@unitn.it	2016
Claudio	Narduzzi	University of Padova, ITALY		claudio.narduzzi@unipd.it	2016
Emiliano	Sisinni	University of Brescia, ITALY	41455381	emiliano.sisinni@unibs.it	2016
Stefano	Avallone	University of Naples Federico II, ITALY		stavallo@unina.it	2016
Stefania	Zinno	University of Naples Federico II, ITALY		stefania.zinno@unina.it	2017
Gianni	Cerro	University of Cassino and Southern Lazio, ITALY	94144628	g.cerro@unicas.it	2017
Vincenzo	Marletta	University of Catania, ITALY	93297248	vincenzo.marletta@dieei.unict.it	2017
Federico	Tramarin	National Research Council of Italy (IEIT-CNR)	90267984	federico.tramarin@unipd.it	2017

* Please add as many rows as needed

Francesco	D'Agostiono	University of Salerno, ITALY	41560091	fdagostino@unisa.it	2017
Marjo	Heikkila	Centria University of Applied Science, (FINLAND)		marjo.heikkila@centria.fi	2018
Pere	Barlet-Ros	Universitat Politècnica de Catalunya BarcelonaTech (SPAIN)		pbarlet@ac.upc.edu	2018
Antonio	Espirito-Santo	University of Beira Interior (PORTUGAL)		aes@ubi.pt	2019
Marco	Di Felice	University of Bologna (ITALY)		marco.difelice3@unibo.it	2019
Marco	Carratù	University of Salerno (ITALY)		mcarratu@unisa.it	2019
Francesco	Bonavolontà	University of Naples Federico II (ITALY)		francesco.bonavolonta@unina.it	2019
Giada	Giorgi	University of Padova (ITALY)		giada@dei.unipd.it	2020
Irida	Shallari	Mid Sweden University (SWEDEN)		Irida.Shallari@miun.se	2021
Darko	Suka	University of East Sarajevo (BOSNIA and HERZEGOVINA)		darko.suka@etf.ues.rs.ba	2023

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

TC-37 is constituted by 29 members mainly belonging to IMS. The purpose of the TC-37 is to increase awareness and interest in networking and to encourage I&M Society members to apply their skills and extend their knowledge of networking-related problems in I&M application field. It is in touch with several other bodies operating in the field of modern communication networks, as IP Performance Metrics working group of the Internet Engineering Task Force (IETF), the SIGMETRICS special interest group of ACM (Advanced Computer Machinery), and the AMTA (Antenna Measurement Techniques Association). The TC organizes special sessions at I2MTC, joins in the sponsorship of specific conferences, organize tutorial sessions, as well as it is massively involved in the organization of the biennial IEEE Symposium on Measurements and Networking.

The main fields of expertise include Measurement for networking, Networking for measurements, Measurements for network performance assessment, Measurements in/and for IoT, Measurements for security in networks. Recently, new emerging topics have been included as “Measurements on 5G systems” and “Antenna measurements for modern telecommunication systems”.

TC meetings in the reporting period^(*)

^{*} Please add as many rows as needed

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)
04/07/24	Face2Face	15	Domenico Capriglione Gianfranco Miele Federico Tramarin Gianni Cerro Luigi Ferrigno Emiliano Sisinni Darko Suka Marco Carratù Antonio Espirito Santo Nicola Pasquino Marco Di Felice Giada Giorgi Irida Shallari Alberto Morato Stefania Zinno			

Minutes of the yearly meeting (separate file)¹:

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

Name of the Event	Starting date (event) (dd/mm/yy)	Ending date (event) (dd/mm/yy)	Date Partecipation (dd/mm/yy)	Type of participation (Yes/No)			
				Sponsorship	Session	Tutorial	Other (specify) ²
I2MTC 2024	20/05/2023	23/05/2023		Financial and Technical Sponsorship by IMS			Involvement of TC-37 Members as reviewers and ATPC for the tracks: - Micro- and Nanotechnology for Instrumentation and Measurement; - Instrumentation and Measurement in Medical, Biomedical and Healthcare Systems; - Instrumentation and Measurement for

¹ Yes/No, date of the yearly meeting;

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

* Please add as many rows as needed

M&N 2024	02/07/24	05/07/24	Financial and Technical Sponsorship by IMS	Communications and IoT and Metrology;
				- Data Acquisition Systems;
				Flagship Symposium: Involvement of TC-37 Members as Steering Committee, General co-Chairs, Technical Program Co-Chairs, Special Session Chairs, Special Session Organizers

Involvement in standard development^(*)

Standard	Working Group	Revision	Activity in the reporting period, including dates	Notes, attendance
P2414 Standard for Jitter and Phase Noise (P)				Some members of TC-37 participate to the development of this standard
IEEE P1451-99 Working group, Standard for Harmonization of Internet of Things (IoT) Devices and Systems				Some members of TC-37 participate to the development of this standard
REVISION P1057 (WM&A) IEEE Draft Standard for Digitizing Waveform Recorders				Some members of TC-37 participate to the development of this standard
IEEE P21451-002 Recommended Practice for Low-Power Smart Transducers Applications				Some members of TC-37 participate to the development of this standard
IEEE P1451.5 Standard for a Smart Transducer Interface for Sensors and Actuator Wireless Communication Protocols and Transducer Electronic Data Sheet (TEDS) Formats				Some members of TC-37 participate to the development of this standard

^{*} Please add as many rows as needed

IEEE P1451.0™, Standard for a Smart Transducer Interface for Sensors and Actuators –
Common Functions, Communication Protocols, and Transducer Electronic Data Sheet (TEDS) Formats

Some members of TC-37 participate to the development of this standard

Participation in the development of Society Educational Programs^(*)

Program name	Involvement of chapters and sections	Activity in the reporting period, including dates	Notes, attendance
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Other Activities (tutorials, teaching, career, cooperation, publications, joint activity with chapters or sections) ^(*)

Type of activity	Starting date (dd/mm/yy)	Ending date (dd/mm/yy)	Activity in the reporting period	Notes, attendance
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Recommended candidates^(*)

Type (ADCOM, Fellow, Award –specify-)	First Name	Second Name	Family Name	Affiliation /Address	Motivation
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TC operating Plan: near-term plans for the upcoming year, including scheduled meetings, activities, and so on (max. 1000 char. Including spaces)

^{*} Please add as many rows as needed

TC-37 will continue to promote the integration of researchers belonging to the IMS with ones coming from other areas of communication and information technologies. In particular, enforces will be made for highlighting the important contribution that could give the IMS inside different areas of networking, looking also to emerging fields as IoT, Software Defined Radio, Software Defined Networks, Coexistence and interference problems in wireless networks, 5G, Cyber Security, to cite a few. To this aim, TC-37 will continue to recruit new members for increasing international cooperation and to promote the role of IMS inside these research areas.

TC-37 members are involved as ATPC Chairs in I2MTC 2025 for the tracks Data Acquisition Systems, Advances in Measurement Theory and Metrology, Instrumentation and Measurement in Medical, Biomedical and Healthcare Systems, Micro- and Nanotechnology for Instrumentation and Measurement, Image Processing and Vision Based Measurement. Moreover, a Special Session titled: "TC-37 Measurement Methods and Metrological Characterization for Time-Sensitive Networking (TSN) Systems and Applications".

TC-37 will have a meeting at I2MTC 2025 for updating on main activities and for the organization of the next edition of the IEEE International Symposium on Measurements and Networking (M&N 2026).

As for the standardization activity, the TC-37 will continue to support Working Groups involved in the development of standards sponsored or co-sponsored by IMS.

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)

TC-37 will continue to guard the challenges related to the Measurements in the field of emerging communication technologies as 5G and IoT to cite a few, trying also to involve instrument manufactures and to feed links with the industry.

TC-37 tries to create links with the industry also by involving industry players inside Conferences and events organized or co-organized by the TC-37. As an example, more recent editions of the IEEE International Symposium on Measurements and Networking included specific oral sessions for researchers belonging to industry and instrument manufacturers operating in the field of "Measurements and Networking" with the aim of fostering their links with researchers operating in the field of Academia and belonging to Instrumentation & Measurements Society. In particular, the oral presentations were kept by experts of Teledyne LeCroy, Tektronix, Rhode & Schwarz, DELO Instruments, and ST Microelectronics, and ranged from IoT testing to measurements of WSN and in modern wireless and 5G systems.

Following these trends, the 2022 IEEE International Symposium on Measurements and Networking hosted several presentations coming from industrial partners like Ericsson, Rhode & Schwarz, DELO Instruments, and Teledyne LeCroy. They have been involved up-to-date topics relating to the measurements for modern telecommunication technologies by showing the challenges that will be faced in the next future. The Conference has also hosted keynotes offered by high academic experts in the field of modern and future telecommunication technologies dealing with Measurements for Quantum Information Applications and LoRaWAN, the emerging standard for LPWAN (Low Power Wide Area Networks) in unlicensed bands.

Finally, the 2024 IEEE International Symposium on Measurements and Networking was held in Rome (Italy) on 3-5 July 2024 (<https://mn2024.ieee-ims.org/>) and has viewed an increasing impact of the conference on the international scientific community in the field of IoT, communication systems and networks, cybersecurity framework. The Conference has increased also the interest of industrial partners such as Intel, Rhode & Schwarz, Teledyne LeCroy and Keysight, which have participated in the technical program with on-topic keynotes very appreciated by the audience. The Conference has also hosted keynotes offered by high academic experts in the field of cybersecurity, Time Sensitive Networks, 6G communications, and standardization activities in the IEEE1451 framework.

It is planned that the TC-37 will continue to contribute to the organization of the next editions of such a Symposium.

* 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)

We are trying to create synergies with people that generally attend conferences of Communications Society, Computer Society, and Antenna and propagation Society. In particular, we have invited them to attend the IEEE Symposium M&N 2022 for introducing them to the importance of Instrumentation & Measurement Society in today's applications involving computer networks, telecommunication systems, and antennas. As main evidence of such a willingness, at the 2022 edition of M&N, a special session entitled "Antenna and RCS Measurements" has been hosted. In particular, this special session has been organized by the Italian AMTA (Antenna Measurement Technique Association) Node under the recognition of AMTA, the most prestigious Association on Antenna Measurements worldwide. Moreover, the edition 2022 of the Symposium has been attended also by researchers operating in the field of distributed measurement systems based on optical technologies which is a very hot topic for modern applications.

In this way, people belonging to other societies have attended the Symposium and they have also appreciated the quality of the technical program. We have met important estimations by attendees of M&N 2022 which appreciated the enforce made for gathering people belonging to several areas and for promoting the importance of Instrumentation & Measurement in such cross-fields of research. All these actions are continuously shared with the Instrumentation and Measurements Italian Chapter. Such an approach has been still applied for the organization of the 2024 IEEE Symposium on Measurements & Networking and will be adopted in the organization of the next edition (M&N 2026).

Due to the cross interests on several topics, the TC-37 will increase the cooperation with TC-13 (Wireless and Telecommunication in Measurements) and TC-9 (Sensor Technology).

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

To improve the visibility of the Technical Committees, of course, the website is an important matter. So, I suggest realizing a short manual (to give to TC Chairs) for the management of the website. In particular, in my opinion, the following main items should be provided:

- General guidelines on the most important information that should be given on the website;
 - The procedure and operating steps for including such information on the website.
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