**TC annual Reporting form D_0.3_2013**

**TC ANNUAL REPORTING FORM**

IMS Technical Committee

**MEASUREMENTS AND NETWORKING**

### Reporting period

<table>
<thead>
<tr>
<th>Starting date (dd/mm/yy)</th>
<th>Ending date (dd/mm/yy)</th>
<th>Date of submission (dd/mm/yy)</th>
</tr>
</thead>
<tbody>
<tr>
<td>01/01/21</td>
<td>30/09/21</td>
<td>06/10/21</td>
</tr>
</tbody>
</table>

**Website**

https://ieee-ims.org/technical-committee/tc-37

**Last update (mm/yy)**

| 06/21 |

### TC Chair or co-Chairs

<table>
<thead>
<tr>
<th>First Name</th>
<th>Second Name</th>
<th>Family Name</th>
<th>Affiliation/Address</th>
<th>Membership number</th>
<th>Phone</th>
<th>e-mail address</th>
<th>Date of election</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domenico</td>
<td>Capriglione</td>
<td></td>
<td>University of Cassino and Southern Lazio, Via G. Di Biasio 43, 03043 Cassino (FR), ITALY</td>
<td>80045533</td>
<td>+3907762994361</td>
<td><a href="mailto:capriglione@unicas.it">capriglione@unicas.it</a></td>
<td>01/07/2016</td>
</tr>
</tbody>
</table>

### Secretary (check the right box)

Present [ ] Not Present [X]

<table>
<thead>
<tr>
<th>First Name</th>
<th>Second Name</th>
<th>Family Name</th>
<th>Affiliation/Address</th>
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</tr>
</thead>
<tbody>
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</table>

### TC Membership list(*)

<table>
<thead>
<tr>
<th>First Name</th>
<th>Second Name</th>
<th>Family Name</th>
<th>Affiliation/Address</th>
<th>Membership number</th>
<th>Phone</th>
<th>e-mail address</th>
<th>TC assignments (joining year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domenico</td>
<td>Capriglione</td>
<td></td>
<td>University of Cassino and Southern Lazio, ITALY</td>
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</tr>
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<td>90333781</td>
<td></td>
<td><a href="mailto:angrisan@unina.it">angrisan@unina.it</a></td>
<td>2016</td>
</tr>
</tbody>
</table>

* Please add as many rows as needed
<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
<th>Phone</th>
<th>Email</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Luigi Ferrigno</td>
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<td>Gianfranco Miele</td>
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<td><a href="mailto:g.miele@unicas.it">g.miele@unicas.it</a></td>
<td>2016</td>
</tr>
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<td>2016</td>
</tr>
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<td><a href="mailto:bruno.ando@dieei.unict.it">bruno.ando@dieei.unict.it</a></td>
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</tr>
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<td><a href="mailto:moschitta@unipg.it">moschitta@unipg.it</a></td>
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</tr>
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<td>2016</td>
</tr>
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<td>2016</td>
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<td>2016</td>
</tr>
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<td></td>
<td><a href="mailto:stavallo@unina.it">stavallo@unina.it</a></td>
<td>2016</td>
</tr>
<tr>
<td>Stefania Zinno</td>
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<td><a href="mailto:stefania.zinno@unina.it">stefania.zinno@unina.it</a></td>
<td>2017</td>
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<tr>
<td>Gianni Cerro</td>
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<td>94144628</td>
<td><a href="mailto:g.cerro@unicas.it">g.cerro@unicas.it</a></td>
<td>2017</td>
</tr>
<tr>
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<td>2017</td>
</tr>
<tr>
<td>Federico Tramarin</td>
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<td>2017</td>
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* Please add as many rows as needed
<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
<th>Location</th>
<th>Contact</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Francesco D’Agostino</td>
<td>University of Salerno, ITALY</td>
<td></td>
<td><a href="mailto:fdagostino@unisa.it">fdagostino@unisa.it</a></td>
<td>2017</td>
</tr>
<tr>
<td>Marjo Heikkila</td>
<td>Centria University of Applied Science, (FINLAND)</td>
<td></td>
<td><a href="mailto:marjo.heikkila@centria.fi">marjo.heikkila@centria.fi</a></td>
<td>2018</td>
</tr>
<tr>
<td>Pere Barlet-Ros</td>
<td>Universitat Politècnica de Catalunya, BarcelonaTech (SPAIN)</td>
<td></td>
<td><a href="mailto:pbarlet@ac.upc.edu">pbarlet@ac.upc.edu</a></td>
<td>2018</td>
</tr>
<tr>
<td>Antonio Espirito-Santo</td>
<td>University of Beira Interior (PORTUGAL)</td>
<td></td>
<td><a href="mailto:aes@ubi.pt">aes@ubi.pt</a></td>
<td>2019</td>
</tr>
<tr>
<td>Marco Di Felice</td>
<td>University of Bologna (ITALY)</td>
<td></td>
<td><a href="mailto:marco.difelice3@unibo.it">marco.difelice3@unibo.it</a></td>
<td>2019</td>
</tr>
<tr>
<td>Marco Carratù</td>
<td>University of Salerno (ITALY)</td>
<td></td>
<td><a href="mailto:mcarratu@unisa.it">mcarratu@unisa.it</a></td>
<td>2019</td>
</tr>
<tr>
<td>Francesco Bonavolonta</td>
<td>University of Naples Federico II (ITALY)</td>
<td></td>
<td><a href="mailto:francesco.bonavolonta@unina.it">francesco.bonavolonta@unina.it</a></td>
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<tr>
<td>Giada Giorgi</td>
<td>University of Padova (ITALY)</td>
<td></td>
<td><a href="mailto:giada@dei.unipd.it">giada@dei.unipd.it</a></td>
<td>2020</td>
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<tr>
<td>Irida Shallari</td>
<td>Mid Sweden University (SWEDEN)</td>
<td></td>
<td><a href="mailto:Irida.Shallari@miun.se">Irida.Shallari@miun.se</a></td>
<td>2021</td>
</tr>
</tbody>
</table>

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

TC-37 is constituted by 28 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
### Minutes of the yearly meeting (separate file):

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

<table>
<thead>
<tr>
<th>Name of the Event</th>
<th>Starting date (event) (dd/mm/yy)</th>
<th>Ending date (event) (dd/mm/yy)</th>
<th>Date Participation (dd/mm/yy)</th>
<th>Sponsorship</th>
<th>Type of participation (Yes/No)</th>
<th>Other (specify) 2</th>
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<tbody>
<tr>
<td>SAS 2020</td>
<td>09/03/2020</td>
<td>11/03/2020</td>
<td></td>
<td>Financial and Technical Sponsorship by IMS</td>
<td></td>
<td>Involvement of TC-37 Members in the Steering Committee</td>
</tr>
<tr>
<td>I2MTC 2020</td>
<td>25/05/20</td>
<td>28/05/20</td>
<td></td>
<td>Financial and Technical Sponsorship by IMS</td>
<td>SPS-2: Smart Sensors in the Context of Industry 4.0</td>
<td>Involvement of TC-37 Members as Associate Technical Program Chairs (Networked Embedded Systems and Communication Systems, Sensors and Transducers, Signal Processing for Instrumentation and Measurement, Instrumentation and Measurement in Environmental Protection, Agriculture and Food Production).</td>
</tr>
<tr>
<td>I2MTC 2021</td>
<td></td>
<td></td>
<td></td>
<td>Financial and Technical Sponsorship by IMS</td>
<td>SPS-5: Beyond Smart Sensors Networks: Characterization and Applications of Emerging Wireless Communications for IoT/CPS</td>
<td>Involvement of TC-37 Members as Associate Technical Program Chairs (Measurement for Communications and IoT, Measurement for Industry 4.0, Sensors and Transducers, Signal Processing for</td>
</tr>
</tbody>
</table>

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
### Involvement in standard development

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

<table>
<thead>
<tr>
<th>Program name</th>
<th>Involvement of chapters and sections</th>
<th>Activity in the reporting period, including dates</th>
<th>Notes, attendance</th>
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### Other Activities (tutorials, teaching, career, cooperation, publications, joint activity with chapters or sections) (*)

<table>
<thead>
<tr>
<th>Type of activity</th>
<th>Starting date (dd/mm/yy)</th>
<th>Ending date (dd/mm/yy)</th>
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<th>Notes, attendance</th>
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### Recommended candidates (*)

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

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

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, 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 will continue to support I2MTC with special sessions and currently is involved in organizing the IEEE Symposium on Measurements and Networking (M&N) that will be held in 2022.

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.

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**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 success 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.

As an example, in the year 2018, we invited a researcher of industry (Dr. Michael Fogelle of ETS-Lindgren, Inc) to present the position paper “RF Measurements in a 5G World in the special session “Measurements for Modern Networks and Telecommunication Systems” of I2MTC 2018. The special session was attended by several researchers really interested in the presented topic and we found this experience very interesting for TC-37. We think that this could be a good practice to be followed in the future for more and more encouraging and increasing the links between industry and Academia. That’s it is particularly true in the topic of Measurements & Networking where cross-skills are really needed to properly address issues and challenges that will arise from modern systems.

A similar approach has been adopted for M&N 2019 in which the Technical Program involved main instrumentation manufacturers with oral technical speeches (inside thematic sessions) which were appreciated by attendees.

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**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 2019 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 2019 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. Further special sessions were organized to foster the cross-fertilization:

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* Please add as many rows as needed
Special Session #1: Measurements for networking: Traffic monitoring and Performance analysis;

Special Session #2: Sensor Networks and Sensing Systems for Assistive Technology;

Special Session #4: Intelligent sensors technologies for Structural health monitoring.

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 2019 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.

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.

* Please add as many rows as needed