



TC ANNUAL REPORTING FORM

IMS Technical Committee

TC-18

Reporting period

Starting date (dd/mm/yy)

Ending date (dd/mm/yy)

Date of submission (dd/mm/yy)

2025/01/01

2025/12/31

2026/02/01

Website

Last update (mm/yy)

TC Chair or co-Chairs

| First Name | Second Name | Family Name | Affiliation /Address | Membership number | Phone | e-mail address | Date of election |
|------------|-------------|-------------|---|-------------------|-----------------|---------------------|------------------|
| Chi-Hung | | HWANG | National Institutions of Applied Research | 90634408 | +886-0988623523 | chhwang@niar.org.tw | -- |

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^(*)

| First Name | Second Name | Family Name | Affiliation /Address | Membership number | Phone | e-mail address | TC assignments (joining year) |
|------------|-------------|--------------|---|-------------------|-------|--|-------------------------------|
| Subhas | | Mukhopadhyay | Macquarie University | | | subhas.mukhopadhyay@mq.edu.au | |
| Chi-Hung | | Hwang | Taiwan Instrument Research Institute, NARLabs | | | chhwang@narlabs.org.tw | |

* Please add as many rows as needed

| | | | |
|----------|----------------|---|--|
| Henry | Leung | University of Calgary | leungh@ucalgary.ca |
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| Yuhao | Wang | Nanchang University, China | wangyuhao@ncu.edu.cn |
| Alex | Mason | Norwegian Meat and Poultry Research Center | alex.mason@animalia.no |
| Hartmut | Ewald | Universität Rostock | hartmut.ewald@uni-rostock.de |
| Michael | Gard | Ditch Witch | mgard@ditchwitch.com |
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| Bruno | Ando | University of Catania | bruno.ando@dieei.unict.it |
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| Tai-Shan | Liao | Taiwan Instrument Research Institute, NARLabs | tsliao@narlabs.org.tw |
| Mang | Ou-yang | National Chiao Tung University | oym.mail@gmail.com |
| Lijuan | Wang | University of Kent | L.Wang@kent.ac.uk |
| Der-Chen | Huang | National Chung Hsing University | huangdc@nchu.edu.tw |

* Please add as many rows as needed

| | | | | |
|------------|-----------------------|--|--|-------|
| Yung-Bin | LIN | National Center for Research on Earthquake Engineering, NARLabs | yblin@narlabs.org.tw | |
| Kegen | Yu | China University of Mining and Technology | kegen.yu@cumt.edu.cn ; kegen.yu@ieee.org | |
| Chanchana | Thanachayanont | National Metal and Materials Technology Center | chanchm@mtec.or.th | 2024~ |
| Chung-Ping | Young | National Cheng Kung University | cpyoung@mail.ncku.edu.tw | 2024~ |
| Livio | D'Alvia | Measures for industrial sustainability and safety at Sapienza University of Rome | livio.dalvia@uniroma1.it | 2025 |
| Abdalla | Abdurahman | Libyan Academy for Postgraduate Studies | 11159@academy.edu.ly | 2025 |

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

TC-18 is a technical committee that provides a platform for all colleagues who are working on the development of sensors, devices, instruments, and systems for environmental monitoring, for example, the Envi-IoTs' development and applications and the development of the associated algorithm for analyzing the collected field data, and the potential application of the collected data for the environmental change investigation, disaster monitoring/ forecasting, the disease-vectors survey, pandemic propagation modeling and predicting. TC-18 encourages colleagues whose research activities are in the following fields but are not limited to joining.

– The development of Novel Sensors or Devices for the field data collection.

* Please add as many rows as needed

- System integration and validation for Environmental Monitoring.
- (Volunteer-based) Distributing System for Envi-IoTs applications.
- Applications of robots and unmanned systems for field data collecting.
- Field data collecting and the following on data fusion, management, and mining.
- Applying artificial intelligence technologies for data analysis, classifications, modeling, and prediction.
- Impacts on environmental change due to Global warming

TC-18 also welcomes the PIs of ongoing projects to share their experiences, and colleagues propose international cooperation programs for Global environmental monitoring through the TC-18 platform.

TC meetings in the reporting period^(*)

| 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) |

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 Participation (dd/mm/yy) | Type of participation (Yes/No) | | | |
|--------------------|-------------------------------------|-----------------------------------|----------------------------------|--------------------------------|---------|----------|------------------------------|
| | | | | Sponsorship | Session | Tutorial | Other (specify) ² |
| IEEE I2MTC 2023 | | | | Yes | | | |
| IEEE I2MTC 2024 | | | | Yes | | | TC-Poster Session |
| IEEE I2MTC 2025 | | | | Yes | | | |

Due to some mistaken, TC-18 is missing to submit proposal for special session of IEEE I2MTC 2026; the event will be reorganize for IEEE IMS 2027.

Involvement in standard development^(*)

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



| Standard | Working Group | Revision | Activity in the reporting period, including dates | Notes, attendance |
|----------|---------------|----------|---|-------------------|
|----------|---------------|----------|---|-------------------|

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

| 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) ^(*)

| Type of activity | Starting date (dd/mm/yy) | Ending date (dd/mm/yy) | Activity in the reporting period | Notes, attendance |
|---|--------------------------|------------------------|----------------------------------|-------------------------|
| Talk at National Chung Hsing University | 14/03/2025 | 14/03/2025 | Y | More than 200 attendees |
| Talk at National Taiwan Normal University | 18/09/2025 | 18/09/2025 | Y | More than 150 attendees |
| Talk at National Taiwan Normal University | 12/12/2025 | 12/12/2025 | Y | More than 200 attendees |

Recommended candidates^(*)

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

* 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)

- (1) If available, we will participate in the poster session for TCs at IEEE I2MTC 2026 to meet potential members.**
- (2) Encouraging colleagues/TC members to share their programs, especially those for evaluating the environmental impacts of Global climate change.
- (3) Encouraging colleagues/TC members to initiate Global cooperation programs to evaluate the environmental impacts of Global climate change.
- (4) Hosting a possible TCs meeting at the IEEE I2MTC 2026 conference site for sharing the ongoing projects to initiate international networks for cooperation.
- (5) Continuously organizing a special session for the future IEEE I2MTCs.
- (6) TC-18 will cooperate with colleagues who are involved in petite hyperspectral image technology for a special session in I&M Magazine.**

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)

- (1) Extending the cooperation with TCs to propose a special session at the IEEE I2MTC conference.
- (2) Extending cooperation with TCs to propose a special session at the SAS conference.
- (3) Improving the role of TC-18 to an important platform for sharing important findings or ongoing programs on evaluating the environmental impacts due to Global climate change.
- (4) Making TC-18 become a platform to support peers in initializing Global cooperation programs for evaluating the environmental impacts due to Global climate change.

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

1. TC-18 has been working with TC-42 to host the special session for the IEEE I2MTC event for a couple of years because optical fiber sensors are widely used for environmental monitoring.
2. Environmental measurement would utilize various kinds of sensors and need a robust network to handle the data collected from various sensors, developing methodologies for data fusion and mining; therefore, TC-18 will extend cooperation among TCs for organizing special sessions at different financially sponsored conferences.
- 3. TC-18 will cooperate with colleagues to initiate a new TC, which is related to hyperspectral imaging technology. The petition will be submitted in the first quarter of 2026.**

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

* Please add as many rows as needed