



**Transmission, Access and Optical Systems  
(TAOS)  
Technical Committee**

**Status Report for 2019 and 2020  
(Recertification)**

By

Fabrizio Granelli

(TAOS TC Chair, 2019-20)

## TC Recertification Questionnaire - 2020

DATE : November 15, 2020

### DEMOGRAPHICS

1. TECHNICAL COMMITTEE (TC) NAME:  
Transmission, Access and Optical Systems (TAOS) Technical Committee
2. TC CHAIR AND OTHER OFFICERS:  
  
Chair: Fabrizio Granelli  
Vice-Chair: Steve Hranilovic  
Secretary: Walter Cerroni
3. YEARS IN POSITION: 2
4. YEAR OF NEXT ELECTION: 2020 (elections to be held in conjunction with IEEE Globecom 2020)
5. REPORTING AUTHOR: Fabrizio Granelli  
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PHONE: +39 0461 282062
6. NUMBER OF TC MEMBERS:
  - 2016: 1268
  - 2017: 1305
  - 2018: 1358
  - 2019: 1431 {currently: 1478}
7. AVERAGE NUMBER OF ATTENDEES TO TC MEETINGS: 20 {24 (ICC'17), 16 (GC'17), 25 (ICC'18), 18 (GC'18), 17 (ICC'19), 10 (GC'19), 28 (ICC'20)}
8. TC URL: <https://taos.committees.comsoc.org/>
9. HOW OFTEN IS WEBSITE UPDATED? Four times per year, typically
10. TC E-MAIL EXPLODER: [taos@comsoc.org](mailto:taos@comsoc.org)
11. IS THERE AN OFFICIAL MEMBERSHIP LIST? (if not, describe membership criteria):  
  
TAOS membership list corresponds to the list of people registered to the TAOS Mailing List, while the list of active members is periodically updated and published on the website.
12. DO YOU HAVE AN "ACTIVE" MEMBERSHIP TIER AND WHAT ARE THE ELIGIBILITY CRITERIA FOR ACTIVE MEMBERSHIP?

From TAOS P&Ps: A TC active/voting member shall be any individual who has “attended” (physically present, by teleconference, or via electronic means for virtual TC meetings) two or more of the prior five regularly scheduled TC meetings.

13. DO YOU HAVE A POLICY&PROCEDURES DOCUMENT? IF SO, DOES IT COVER THE FOLLOWING ITEMS?

TAOS TC has a P&Ps document. Last version was approved in Dec. 2019.

- Definition of elected and appointed officers, as well as nomination and election procedures; YES, in article 2.2 of TAOS P&Ps
- Membership criteria and eventual tiers; YES, in article 2.1 (Membership), while active/voting members are described in article 2.3 (Election process).
- Planning, announcement and conduction of TC meetings; YES, in article 2.1 (Membership)
- Budget and expenses; YES, in article 2.6 (Budget and expenses)
- Support of COMSOC activities, such as publications, meetings and membership development; YES, in article 2.5 (Support of ComSoc activites)
- Support of COMSOC activities in standardization; YES, in article 2.2 (Elected and appointed officers)
- Information dissemination activities, such as newsletter and web pages, and other areas as appropriate; YES, in articles 2.2 and 2.6

(If these points are not included in you P&P document, it should be reformulated appropriately and approved.)

### DISCIPLINES

14. TC CHARTER (as it appears in your website):

*[extracted by TAOS website and corresponding Section 1 – Charter and Scope of the P&Ps]*  
The IEEE Communication Society’s (ComSoc) Transmission, Access, and Optical Systems (TAOS) Technical Committee plays a leading role in promoting, sponsoring, organizing, and advancing numerous technical activities in areas of interest to TAOS’ community. The following technical areas are of interest to this community:

- Digital and analog transmission systems and equipment
- Technologies, architectures and protocols for optical transmission systems
- Subscriber access systems and equipment (twisted pair, coaxial, optical, wireless, and combinations thereof)
- Medium access control protocols for optical, metallic, and wireless media
- Architectures, performance, and testing of wired and wireless access systems and networks
- SDH/SONET transmission systems

- Network synchronization
- Inductive coordination and electrical protection of wired media

Activities of TAOS in this regards include, but are not limited to, the following:

- ComSoc conferences and symposia (including our flagship ICC and GLOBECOM conference)
- ComSoc Workshops and Tutorials
- ComSoc-sponsored conferences and workshops
- Journal/magazine special issues
- Standards activities
- Promotion of industrial contribution to ComSoc technical activities
- Facilitation of exchange of technical ideas, innovations, and news among our global community (academic and industrial)
- Nominations for IEEE Fellow grade
- Nominations for Distinguished Lecturer program
- Nominations for IEEE/ComSoc Awards
- Collaboration with other TCs and other constituencies and organizations of our global community

15. OTHER TCs WITH PARTIAL OVERLAP IN AREAS OF INTEREST:

No specific overlap with other TCs, however TAOS TC is a horizontal committee focused on transmission, access and optical systems, therefore it is complimentary and synergic with potentially other TCs. With those TCs (ON TC and Green TC), TAOS TC activated liasons in order to coordinate, especially for management of related Symposiums at ICC/GC (ONS and GCC).

### ACTIVITIES

16. CONFERENCES/WORKSHOP/SYMPOSIA/PANELS/TUTORIALS YOUR TC IS ACTIVELY INVOLVED IN (such as having members in TPC, having endorsed COMSOC co-sponsorship, etc.; please specify if the events are/are not cosponsored by COMSOC):

TAOS TC is actively involved in the following symposia in ComSoc flagship conferences (ICC/Globecom), by nominating Co-chairs and TPC members:

- SAC Track on Broadband Access
- Optical Networks and System Symposium
- Green Communications and Networking Symposium

Moreover, TAOS TC is active in the area of SDN and NFV, and Fabrizio Granelli was TPC Co-Chair of IEEE NFV SDN 2018 and 2019.

TAOS TC supported the organization of several workshops co-located with ICC and Globecom: 1<sup>st</sup> to 5<sup>th</sup> Workshop on “Optical Wireless Communications” (Mauro Biagi, Zabih Ghassemlooy, Anna Maria Vegni), “P4 Data Plane Programmability” (Filippo Cugini, Francesco Paolucci)

TAOS TC actively support also flagship ComSoc regional events, such as IEEE LATINCOM, nominating Organizing Committee members and TPC members (e.g. Fabrizio Granelli is General Chair for 2020 IEEE Latincom).

Other sponsorships: IINTEC 2017, SPECTS 2017, HONET-ICT 2017, NETWORKS 2018, Med-Hoc-Net 2018, NOF 2018, ICNC 2019, WD 2019, FOAN 2019. In such event, at least 3 TPC members are provided by the TC in order to guarantee high quality in the reviews and proper involvement of the community.

TAOS TC is also active in terms of tutorials and industrial training activities within ICC and Globecom. For example, in Globecom 2019, TAOS TC supported the following tutorial and training events:

- “Softwarization Concepts (SDN, NFV, ICN) and Practice in 5G Communication Systems and Beyond,” by F. Granelli and F. Fitzek
- “Software Defined Networking and Network Function Virtualization training with mininet and docker,” by F. Granelli and F. Fitzek

By several years, TAOS TC support the organization of the iYES event within ICC and Globecom, an outreach initiative for young members of ComSoc, by providing panelists and motivating speakers.

17. PUBLICATIONS YOUR TC IS ACTIVELY INVOLVED IN (such as having members as Editor in Chief, associate editors, etc.; please specify the kind of involvement and whether the publications are IEEE or not):

IEEE Communications Surveys and Tutorials (F. Granelli is Associate Editor-in-Chief)  
IEEE Communications Magazine (T. El-Bawab is Editor-in-Chief)  
IEEE Transactions of Green Communications and Networks (F. Granelli is Senior Editor, formerly Area Editor)  
MDPI Intelligent Sensors (Athanasios Manikas, Board Member)  
MDPI Special issue on Optical Wireless Communications (Mauro Biagi, Guest Editor)

18. DOES YOUR TC USUALLY ADVANCE CANDIDACIES FOR IEEE/COMSOC AWARDS (such as best paper awards, career awards, international research awards, etc.)?

Yes, typically the Chair of the Technical Committee disseminates the information about IEEE/ComSoc awards through the mailing list and solicits nominations by its members.

19. STANDARDIZATION COMMITTEES AND PROJECTS YOUR TC IS ACTIVELY INVOLVED IN:

Jaafar Elmirghani, IEEE standards for Green Communications - 9 approved - green coms IEEE 1922.1, 1923.1 to 1929.1

20. DOES YOUR TC HAVE A LIAISON TO THE COMSOC STANDARDS BOARD? IF NO, EXPLAIN WHY NOT. IF YES, SHARE THE TC LIAISON’S EXPERIENCE, INCLUDING ISSUES, SUCCESS STORIES, AND SUGGESTIONS TO IMPROVE THE RELATIONSHIP BETWEEN TCs AND STANDARDIZATION ACTIVITIES.

Jaafar Elmirghani is the liaison to ComSoc Standards Board by TAOS TC. His work on behalf of TAOS represents surely a success story, since as mentioned above, it leads to the approval of several standardization efforts (IEEE 1922 to 1929).

21. IDENTIFY THE MEMBERS YOUR TC HAS ADVANCED FOR IEEE COMSOC DISTINGUISHED OR EXPERT LECTURER POSITIONS IN THE LAST 3 YEARS:

Anura Jayasumana (DL 2016-17, 2nd term)  
Abdallah Shami (DL 2016-2017)  
Tarik Taleb (DL 2016-17)  
Athanasios Manikas (DL 2016-17)  
Andrea Tonello (DL 2018-19)  
Tarek El Bawab (DL 2016-18, DL 2018-19, 2 terms)  
RangaRao Venkatesha Prasad (DL 2019-20)  
Nirwan Ansari (DL 2020-21)

22. IDENTIFY THE MEMBERS YOUR TC HAS SUCCESSFULLY ADVANCED FOR CONSIDERATION AS IEEE SENIOR MEMBERS OR FELLOWS IN THE LAST 3 YEARS:

IEEE Fellows elevation: Chadi Assi (2020), Joel Rodrigues (2020), Walid Saad (2019), Harald Haas (2018), Deep Medhi (2018), Wenye Wang (2017).  
IEEE Senior elevation: TAOS TC supports several nominations for Senior Member, between 5 to 10 every year.

23. LIST THE AWARDS YOUR TC IS CURRENTLY ASSIGNING (best paper, career, etc.):

- best symposium paper award, related to ICC/Globecom symposia technically sponsored by TAOS
- best journal or conference paper, related to the scope of TAOS TC
- outstanding service award, for services to the TAOS TC
- young researcher award

24. IDENTIFY THE TCs WITH WHICH YOUR TC IS (OR SHOULD BE) COLLABORATING? (please provide specific instances):

TCs is actively collaborating with the Green Communications and Computing TC for the activities related to the management of the Green Communications and Networking Symposium at ICC/Globecom.

25. LIST THE MAIN ACTIVITIES OF YOUR TC IN THE LAST 3 YEARS (2017 to 2019, with specific information like titles, locations, TC involvement, etc.):

Main activities of TAOS TC in the last 3 years include:

- Major support to IEEE ICC and Globecom by nominating co-chairs for one SAC track and two symposia (Green and Optical)

- Organization of workshops at ICC/Globecom on hot topics within the committee scope (e.g. Optical Wireless Communications Workshop – 5 editions)
- First and revised edition of the Best Readings on Broadband Access (first best readings ever in ComSoc)
- Included invited speakers and best paper presentations within TAOS TC meeting in order to encourage discussion on technical subjects and understand emerging topics within the scope of the committee
- TAOS membership has contributed, and continues to contribute, several ComSoc officers and leaders in numerous areas including, but not limited to:
  - Board of Governors (Stefano Bregni, Tarek El-Bawab, Nelson Fonseca, Stefano Galli)
  - Vice-Presidency, Conferences (Stefano Bregni)
  - Vice-Presidency, Technical and Educational Activities (Nelson Fonseca)
  - Directorship of Conference Operations (Tarek El-Bawab)
  - Directorship of Conference Development (Nelson Fonseca)
  - Directorship of Technical Committees (Stefano Galli)
  - Directorship of Educational Services (Fabrizio Granelli)
  - Standards Board (Jaafar Elmighani)
- TAOS members contributed to educational activities by offering courses to the Educational Services Board

### GENERALITIES

26. HOW FREQUENTLY (AND IN WHAT OCCASIONS) DO YOUR TC MEMBERS MEET?

At least twice per year in the TC meetings co-located with ICC/Globecom + for specific events (TAOS Webinar Series, started in 2020)

27. MENTION WHAT YOU CONSIDER THE MAJOR ACHIEVEMENT OF YOUR TC IN THE LAST 3 YEARS:

The major achievement of TAOS TC in the last 3 years is represented by the capacity of the TC to incubate and push new topics and initiatives within ComSoc and its flagship conferences. Those come from the discussion around access networking technologies that are held during TC meeting as well as offline, and that bring to attention new and emerging areas. One example was the Green Communications and Networking Symposium which was actually founded by TAOS TC (as a SAC Track) BEFORE even the GCCTC was started. Then, TAOS supported the elevation to symposium in 2016, and continued supporting it in the last three years. Another example is Aerial Communications, which was recently approved as an ETI. In such case, discussion about an invited presentation to the TAOS TC meeting about "UAVs and 5G" by Dr. David Lopez-Perez (Nokia Bell-Labs) sparked interested into the topic and lead to the identification of a working group about the topic, that further interacted with other ComSoc colleagues to build the ETI proposal. This will lead to the activation of an Aerial Communications SAC Track in ICC 2021.

28. LIST THE MAIN PROBLEMS YOUR TC HAD IN THE RECENT PAST (relationship with conferences TPC, with COMSOC officers, etc.)

In the recent 2-3 years, TAOS TC had some problems in having its nominations accepted for co-chairs of symposiums at ICC/Globecom. Moreover, GITC decided to discontinue the Broadband Access SAC track, thus highly limiting the possibility from the TAOS TC to support flagship ComSoc events. TAOS TC was always extremely active in this framework, and it is still active. TAOS TC used to support three symposiums:

- SAC Track on Broadband Access
- Green Communications and Networking Symposium
- Optical Networks and Systems Symposium

It should be noted that TAOS was the original founder or co-founder of all the above initiatives, and a relevant part of such communities is present in TAOS membership. Therefore, not accepting nominations by TAOS TC might generate problems in attracting and motivating the community and volunteers to contribute submitting papers and supporting as reviewers/TPC members.

29. WHAT COULD COMSOC DO TO HELP YOUR TC IN ITS OPERATIONS?

ComSoc should avoid changing regulations and P&Ps too much often, as those impact on the day-to-day life of the TC and more important make physical meetings less effective (since most discussion will happen on bureaucratic and management aspects rather than technical topics).

ComSoc should encourage GITC to increase interaction with TCs, especially by disseminating information about meetings (online or in person) in a most effective manner.

30. WHAT ARE YOUR PLANS TO INCREASE YOUR GLOBAL MEMBERSHIP (AND, IN PARTICULAR, YOUR INDUSTRY MEMBERSHIP)?

TAOS TC is starting novel initiatives for increasing its membership and also global participation to the committee-related activities. One of those actions is to increase services to members, by providing selected technical topics coverage in the TC e-newsletter and by activating a series of webinars on TAOS-related topics for the community.

A specific award (the “Best Symposium Paper” award) was recently activated in order to increase the visibility of TAOS as co-sponsor and endorser of the different symposiums, as well as to attract people in the related areas.

Moreover, we activated invited speeches within TAOS TC meeting on specific topics, in order to invite and involve also experts from industry. Due to time limitation, this initiative is being transformed into a stand-alone webinar series (see above).

31. HOW OFTEN DO YOU ROTATE TC CHAIRS (present Bylaws rule is every two years)?

Every two years. Elections for the new secretary will be held in conjunction with IEEE Globecom 2020.

NEW AREAS



32. LIST ANY TECHNICAL AREAS YOU CONSIDER WORTH OF BEING INCUBATED IN THE EMERGING TECHNOLOGY COMMITTEE TO POSSIBLY BECOME A NEW TC:

N/A

ADDITIONAL COMMENTS

33. PLEASE ADD ANY ADDITIONAL INFORMATION PERTINENT TO RECERTIFICATION AND/OR COMMENT ON ANY ASPECT OF THIS SURVEY:

**THANK YOU!**