



**Technical Committee on
Transmission, Access, and Optical Systems (TAOS)**
Annual Activity Report

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1 General Trends

1.1 New Theme and Activities

As of TAOS' Globecom 2010 meeting, Broadband Access (Copper, Optical, and Wireless; Telecom, Cable, and Utilities) was identified as *Theme* for TAOS technical activities. Also, a new focus on Green Communications has been realized at the same time (based on earlier proposal made to Globecom 2010). The adoption of these two strategic technical areas is due to emerging interest in both of them among TAOS' and the global ComSoc communities. Also, both areas are of particular interest to the Telecom industry, which provides for an opportunity to engage more industrial membership into ComSoc conferences and activities.

As part of these trends, TAOS has proposed two Tracks in the ICC/Globecom Symposia on Selected Areas in Communications (SAC). The Access Networks and Systems (ANS) Track and the Track on Green Communication Systems and Networks (GCSN) are now two successful establishments within the SAC Symposium, with rising paper submission figures. These two tracks also enjoy industrial participation that is well above the average of ICC and Globecom symposia.

The introduction of the ANS and GCSN new Tracks into ICC and Globecom makes TAOS the largest and most versatile TC in terms of contribution to these two conferences. At this point in time, our TC nominates four co-chairs (two for SAC, one for the Optical Networks and Systems ONS Symposium, and one for the Wireless Communication Symposium WCS) and also provides TPC members to all.

We are also launching, throughout 2012, a new *Best Readings Project* in the area of Broadband Access. Frank Effenberger is the Chair/Lead of this project.

1.2 Membership and Leadership Enrichment

Throughout 2011, TAOS has exercised special effort in attracting new blood and new volunteers/activists, from all over the world, to participate and enrich our membership and our scope of technical activities. TAOS' meetings are now seeing steady rise in attendance with diversity in technical and geographic backgrounds (males/females).

Over the course of 2011, TAOS prepared and nominated several new Co-Chairs for upcoming ICC and Globecom conferences; and introduced so many new TPC members into the conferences we sponsor. Nearly 50% of our nominations for ICC/Globecom Chairpersonship have been new faces to TAOS and/or ComSoc, including industrial members. New nominations are made out of a pool of tested reviewers and TPC members in past conferences. The remaining 50% of our nominations have utilized our rich base of experienced professional and ex-/current officers.

2 Technical Activities

2.1 Conferences (Sponsorship and Support)

TAOS contributed to major IEEE ComSoc (and ComSoc-Sponsored) conferences, in terms of organization, setting up technical program, program committee formation, papers' evaluation, acceptance, etc. Examples of the 2011 conferences to which we contributed include:

2.1.1 ICC and GLOBCOM

- ICC 2011 (Kyoto, Japan, June 2011): T. El-Bawab served as SAC Access Networks and Systems (ANS) Track Chair and S. Bregni served as Optical Networks and Systems (ONS) Symposium Co-chair.
- GC 2011 (Houston, Texas, USA, December 2011): X. Fernando served as SAC Access Systems and Networks (ASN) Chair, J. Elmighani served as SAC Green Communication Systems and Networks (GCSN) Track Chair, and Jong-Dug Shin served as Optical System and Networks (ASN) Co-Chair.
- ICC 2012 (Ottawa, Canada, June 2012): J. Elmighani is serving as SAC Access Systems and Networks (ASN) Track Chair, V. Vokkarane serving as Optical Networks and Systems (ONS) Symposium Co-chair, and J. Gibson is serving as Wireless Communication Systems (WCS) Symposium Co-Chair.
- GC 2012 (Anaheim, California, USA, December 2012): S. Bregni is serving as Conference Technical Program Vice-Chair. R. Subrahmanyam is serving as SAC Access Systems and Networks (ASN) Track Chair, M. Devetsikiotis is serving as SAC Green Communication System and Networks (GCSN) Chair and T. El-Bawab is serving as Optical Networks and Systems (ONS) Symposium Co-Chair.
- ICC 2013 (Budapest, Hungary, Summer 2013): Michael Peeters will serve as SAC Access Networks and Systems (ANS) Track Chair, A. Manikas will serve as SAC Green Communication Systems and Networks (GCSN) Track Chair, Franco Callegati will serve as Optical Networks and Systems (ONS) Symposium Co-Chair.
- GC 2013 (Atlanta, GA, USA, December 2013): Filippo Cugini will serve as as SAC Access Networks and Systems (ANS) Track Chair, Stefano Bregni will serve as SAC Green Communication Systems and Networks (GCSN) Track Chair, and S. J. Ben Yoo will serve as Optical Networks and Systems (ONS) Symposium Co-Chair.

Detailed statistics concerning completed symposia/tracks are documented in our 2011 minutes of meetings and slides, which are published in TAOS' website.

2.1.2 Other ComSoc-Sponsored Conferences

- HONET 2010 (TPC contributions, T. El-Bawab served as Conference TPC co-chair)
- Packet Video 2010 (PV 2010), Ravi Subrahmanyam was nominated to experiment this workshop for future sponsorship considerations
- 2011 NIST-ATIS-Telcordia Synchronization workshop (TPC contributions)
- ITU 2011, Collaboration between ITU and ComSoc resumed via scientific symposium within this ITU flagship event. TAOS assumed a leading role thereto and provided three TPC members with industrial background (T. El-Bawab, R. Subrahmanyam, and F. Effenberger)
- ONDM 2011 (TPC contributions)
- HONET 2011 (TPC contributions)
- FITCE 2012 (TPC contributions)

Other details are documented in our 2011 minutes of meetings and slides, which are published in TAOS' website.

2.2 Journal/Magazine Special Issues

- IEEE Communications Magazine, Special Issue on Synchronization in Next Generation Networks, Guest Editors Ravi Subrahmanyam & Stefano Bregni (February 2011). Collection of papers providing a snapshot of the state of the art in synchronization as it applies to frequency and phase transfer in next generation networks, including standards activity. 14 papers submitted, out of which 5 accepted:
 - o ITU standardization update
 - o IEEE Audio-Video Bridging standard update (802.1as)
 - o Overview of packet timing vs. traditional synchronization performance metrics
 - o Measurements for NGN packet-based synchronization
 - o Using IEEE1588 and Boundary Clocks for Clock Synchronization in Telecom Networks
 - o Synchronous Ethernet and extension to carry phase
- IEEE Communications Magazine, three more papers are proposed as follow-up to the February 2011 special issue:
 - o Time/frequency distribution over PONs, Synchronous Ethernet and IP. :
 - o Synchronous Ethernet to Transport Frequency and Phase/Time
 - o Time Synchronization over Passive Optical Networks
 - o Impact of network equipment on Packet Delay Variation in the context of packet-based timing transmission

2.3 Standards

- Areas of 2011 technical activities
 - o P1904.1 Service Interoperability of Ethernet PONs
 - o P1905.1 Standard for a Convergent Digital Home Network for Heterogeneous Technologies
- TAOS played active role in the 2011 modifications of standardization organization within ComSoc. Motions were put before BoG by Stefano Galli in ICC 2011 for more TC involvement in standardization activities.
 - o TAOS Chair T. El-Bawab participated in the Standards Reconciliation Meeting in New York on August 31, 2011.
 - o Motions received favourable vote in September 2011 OpCom Meeting, and were mostly approved in Globecom 2011.

2.4 Contributions to ComSoc Committees and Leadership Positions

TAOS continues to provide ComSoc with senior/leadership support in numerous technical and administrative areas. The following are 2011 examples:

- ComSoc Board of Governor: Stefano Bregni (Member at Large)
- Education Board: Stefano Bregni (Director), Tarek El-Bawab & Michael Devetsikiotis (Task-Force/Work-Group Chairs)
- IEEE Communications Magazine: Steve Gorshe (Editor-in-Chief)
- IEEE Transactions on Communications: A. Bononi (Editor)
- IEEE Communications Surveys and Tutorials: Maode Ma (Senior Editor); Stefano Bregni, Michael Devetsikiotis, Fabrizio Granelli, and Ahmed Kamal (Editors)
- GLOBECOM/ICC Technical Content (GITC) Committee: Michael Devetsikiotis and Stefano Bregni (Members)
- Ad Hoc Committee on Smart Grid Communications: S. Bregni
- Ad Hoc Committee on Cloud Communications and Networking: M. Devetsikiotis
- IEEE Global Communications Newsletter: S. Bregni (Editor)

2.5 TAOS Members Elevated to IEEE Fellows, or Served as Distinguished Lecturers

- Elevated to IEEE Fellow
 - o Michael Devetsikiotis
 - o Ahmed Kamal
 - o George Rouskas
- ComSoc Distinguished Lecturer Program: M. Devetsikiotis

3 Organizational and Administrative Activities & Updates

3.1 Officers

In 2010, Michael Devetsikiotis was elected as Secretary for TAOS. He has started his term of service on January 1, 2011. Frank Effenberger continues to serve as TAOS Standards Liaison

3.2 Website

The TAOS website (www.comsoc.org/~taos/), which is hosted on the ComSoc server, is under update, restructuring, and renovation. A link to this site is also available via ComSoc Technical Committees (TCs) page (www.comsoc.org/about/committees/Technical).

3.3 Mailing List

The TAOS mailing list is open for public subscriptions. The list is moderated though to control spam and limit postings to subjects which are within interests of TAOS community. We have had few (10-20) new addresses added throughout 2011. Fewer (1-3) addresses have unsubscribed over the same time period. Policy updates (further enforcement of ComSoc guidelines and privacy considerations) have been made and will be published on our web site soon.

Further improvements, and maintenance, of the list is anticipated throughout 2012. In particular, it has been observed that several addresses are old, including some with expired domains. Since bouncing e-mails never reach moderators, this issue has been hidden for quite sometime. We shall work in this matter with ComSoc IT staff throughout 2012.