IEEE NGNI-TC NEWSLETTER

1 NGNI-TC News

1.1 The NGNI TC has been established

The IEEE Next-Generation Networking and Internet Technical Committee (NGNI TC) has been officially established, which is a consolidation of three previous TCs, The Internet Technical Committee (ITC), the Network Operations & Management Technical Committee (CNOM), and the Tactile Internet Technical Committee. The NGNI TC aims to unite researchers and practitioners to advance cutting-edge research in next-generation networking and Internet technologies, and to foster collaboration between academia and industry. Below is a summary of the basic information related to the NGNI-TC.

NGNI-TC Name and Mission

Full Name	Next-Generation Networking and Internet Technical Committee (NGNI-TC)
Mission	Provide enhanced services to the next-generation network community, consolidate ComSoc's networking expertise, and promote the advancement and innovation of new networking technologies.

NGNI-TC Operation Committee (Term 2026–2027)

Chair	Ruidong Li, Kanazawa University, Japan
Vice Chair	Sahar Hoteit, Université Paris Saclay, France
Secretary	Pengwenlong Gu, CNAM, France
Conference Coordinator	Yulei Wu, University of Bristol, U.K.
Journal Coordinator	Danda B. Rawat, Howard University, USA
Member Development Coordinator	Constandinos X. Mavromoustakis, University of Nicosia, Cyprus
TWG Coordinator	Chuan Foh, University of Surrey, U.K.
Meeting Coordinator	Yinfeng Cao, Hong Kong Polytechnic University, Hong Kong
Mailing List Coordinator	Haihan Nan, Virginia Tech, USA

TC Nomination & Election Sub-committee

Chair	Chonggang Wang, Interdigital, USA

TC Award Sub-committee

Chair	Wei Zhang, University of New South Wales, Sydney, Australia

TC Standardization Programs Development Coordinator

Coordinator	Ranga Rao Venkatesha Prasad, Delft University of Technology, Netherlands
Co-Coordinators	Periklis Chatzimisios (International Hellenic University, Greece; University of New Mexico, USA); Anindya Saha (Tejas Networks, India); Pranav Jha (Indian Institute of Technology Bombay, India)

TC Industry Communities Coordinator

Coordinator	JaeSeung Song, Sejong University, South Korea
Advisor	Giang T. Nguyen, TU Dresden, Germany
Co-Coordinators	Xiang Sun (Autonomous Solutions, Inc., USA); Muhammad Hamza Ihtisham (Jazz, Pakistan); Quang-Trung Luu (Université Paris-Saclay, France)

TC Educational Services Coordinator

Coordinator	Yuan Wu, Macau University, China
Advisors	Wanqing Tu (Durham University, U.K.); Periklis Chatzimisios (International Hellenic University, Greece; University of New Mexico, USA)
Co-Coordinators	Zhiqing Tang (Beijiang Normal University, Zhuhai Campus, China); Jie Gao (Carleton University, Canada)

TC WICE/YP/Student Services Coordinator

Coordinator	Kapal Dev, Munster Technological University, Ireland
Advisor	Eirini Eleni Tsiropoulou, Arizona State University, USA
Co-Coordinator	Huijun Tang, Durham University, U.K.

TC Local Chapters Coordinator

Coordinator	Wenjia Li, New York Institute of Technology, USA
Advisor	Yacine Ghamri-Doudane, University of La Rochelle, France
Co-Coordinator	Zhengxin Yu, Lancaster University, UK

IEEE NGNI-TC NEWSLETTER

TC Newsletter Editor-in-Chief

Editor-in-Chief	Zhiyi Tian, Southeast University, China
Advisors	Hanna Bogucka (Poznan University of Technology, Poland); Zhijin Qin (Tsinghua University, China); Tony Q.S. Quek (Singapore University of Technology and Design, Singapore); Wei Wang (San Diego State University, USA)
Associate Editors	Cheng Huang (Sichuan University, China); Keshav Sood (Deakin University, Australia); Prof. Jiale Zhang (Yangzhou University, China)

Advisory Sub-committee

Chair	Ruidong Li, Kanazawa University, Japan
Members	Stefano Giordano (University of Pisa, Italy); Falko Dressler (TU Berlin, Germany); Shui Yu (University of Technology Sydney, Australia); Jon Crowcroft (University of Cambridge, U.K.); Xiaoming Fu (University of Goettingen, Germany); Deep Mendi (NSF, USA); Stefano Secci (Cnam, France); Paolo Bellavista (University of Bologna, Italy); Shiwen Mao (Auburn University, USA); Frank Fitzek (Dresden University of Technology, Germany)

1.1.1 NGNI-TC Plan (Term 2026–2027)

1. Engaging the communities of the three original TCs, and maintaining all the previous member groups and activities.
2. Pushing forward the activities in the technical scope of NGNI TC, especially in emerging areas such as network virtualization and programmability, integration of computation/AI and networking, 6G network, metaverse networking, quantum networking, Open RAN, etc.
3. Actively cooperating with IEEE ComSoc and contributing to the community via conferences, journals, award selection, standardizations, industries, educations, WICE/YP/Student Services, Local Chapters, and newsletters.
4. Expanding the visibility of NGNI and involving more members in the NGNI TC.
5. Collaborating with IEEE TWG (Technical Working Group) chairs to promote their TWGs.
6. Nominations for IEEE conference positions and various voluntary roles in ComSoc.
7. Accomplishing fundamental operational tasks as a new TC, including establishing and updating a homepage, amending the TC P&Ps, etc.

1.1.2 Mailing List Usage Policy and Subscription

The NGNI-TC mailing list (`ngni@comsoc.org`) is available to all NGNI-TC members.

Usage Policy. Material appropriate for the mailing list includes:

- Announcements of conferences, workshops and call for papers;
- Technical discussions related to the NGNI-TC charter;
- Issues relating to the role of the NGNI-TC and the committee to ComSoc.

Announcements of a commercial or political nature are not appropriate.

Subscribing/Unsubscribing/Sending methods to NGNI-TC mailing list

- **Subscribing:** send an email to `listserv@comsoc.org` and type "subscribe ngni First-Name FamilyName" (with no signature or any other text) in the body.
- **Unsubscribing:** send an email to `listserv@comsoc.org` and type "signoff ngni" (with no signature or any other text) in the body.
- **Sending mail:** please subscribe first, then address your email message to `ngni@comsoc.org`.

1.1.3 Conference Endorsement Policy

To request endorsement approval from NGNI-TC, please provide the following information to vice chair Sahar Hoteit (`sahar.hoteit@centralesupelec.fr`) and Ruidong Li (`liruidong@ieee.org`):

1. Three representatives of NGNI-TC who are involved in the event with roles as TPC members and/or OC members.
2. The conference statistics in past editions.
3. The previous endorsement record (if any).

Note: Tactile Internet TC, CNOM, and Internet TC have been merged into NGNI TC; members in the previous three TCs automatically become members of NGNI TC.

1.2 Working Plan of NGNI Educational Services

The Next-Generation Networking and Internet Technical Committee (NGNI-TC) is proud to announce its comprehensive educational roadmap for the 2026–2027 term. Spearheaded by a global team of academic leaders, the initiative aims to bridge the gap between emerging research and community knowledge through high-quality, forward-looking content.

1.2.1 The Leadership Team

The Educational Service Team is composed of distinguished experts dedicated to fostering global technical excellence:

- **Coordinator:** Yuan Wu (Macau University, China).
- **Advisors:** Wanqing Tu (Durham University, U.K.) and Periklis Chatzimisios (International Hellenic University, Greece; University of New Mexico, USA).
- **Co-Coordinators:** Zhiqing Tang (Beijiang Normal University, China) and Jie Gao (Carleton University, Canada).

1.2.2 Core Initiatives: Webinars and Seasonal Schools

The 2026 calendar features two flagship pillars designed to deliver timely technical insights:

1. **NGNI Webinar Series:** A bi-monthly flagship program (approx. 6 sessions in 2026) featuring 60–75 minute deep-dives. These sessions will explore $5G/6G$ networking, AI-native architectures, Edge Intelligence, Digital Twins, and Network Security.
2. **Summer/Seasonal Schools:** Intensive 1–3 day events focusing on in-depth training and hands-on components. These ad-hoc sessions will be co-located with major conferences or hosted by leading labs to provide immersive learning.

Beyond these pillars, the TC will provide mentoring for students and young professionals, alongside Distinguished Lecturer-style sessions at major ComSoc events.

1.2.3 Other Activities and Events

The NGNI-TC will also proactively organize educational activities in conjunction with NGNI/-ComSoc events throughout the year, as suitable opportunities arise. These activities may include tutorials or short courses, educationally focused panels, Distinguished Lecturer–style sessions, and mentoring activities for students and young professionals.

1.2.4 Call for Webinar Proposals

All NGNI TC members are invited to propose webinar topics and speakers. Proposals should include:

- **Requirements:** A proposed webinar title, speaker name(s) and affiliation(s) with a short bio, a brief abstract (around 150–250 words), suggested month(s) and time zone preferences, and any co-organization plans (e.g., joint with another TC/chapter/industry partner), if applicable.
- **Submission:** Email to `yuanwu@um.edu.mo` with the subject line *"NGNI Webinar Proposal"*.

1.3 Working Plan of NGNI-TC Newsletter

The NGNI-TC Newsletter serves as the official communication gateway of the IEEE NGNI Technical Committee. For the 2026–2027 term, the newsletter is committed to evolving into a premier monthly platform for disseminating timely and authoritative information on next-generation networking.

1.3.1 Editorial Organization

A global team of experts oversees the editorial integrity and strategic direction of the newsletter:

Editor-in-Chief	Zhiyi Tian, Southeast University, China
Advisors	Hanna Bogucka (Poznan Univ. of Tech., Poland); Zhijin Qin (Tsinghua Univ., China); Tony Q.S. Quek (SUTD, Singapore); Wei Wang (SDSU, USA)
Associate Editors	Cheng Huang (Sichuan Univ., China); Jiale Zhang (Yangzhou Univ., China); Keshav Sood (Deakin Univ., Australia)

1.3.2 Core Objectives & Structure

The newsletter is designed to provide a concise, well-structured overview of the field's rapid evolution. Our monthly issues will feature:

- NGNI-TC News
- Recent Technology Advancements
- Conference and Publication Information
- Technical Activities
- Announcements from NGNI-TC

1.3.3 Submission Principles

All contributions are expected to maintain professional IEEE standards. Submissions should be:

- Technically accurate
- Concise and informative
- Written in professional IEEE style English

1.3.4 Open Call for Submissions

Researchers and practitioners are invited to report on recent progress related to NGNI technologies.

- **Formats:** Files in **Word** or **LaTeX** are both acceptable.
- **Deadline:** Submissions are open on a rolling basis; share your articles when ready.
- **Submission:** Please email your content to the editorial team:
  - `zhiyi.tian@ieee.org` (EiC)
  - `codesec@scu.edu.cn`; `jialezhang@yzu.edu.cn`; `keshav.sood@deakin.edu.au`

2 Conference and Publication

2.1 Conference Call for Papers

2.1.1 IEEE High-Performance Switching and Routing 2026

Montreal, Canada
IEEE HPSR 2026 focuses on high-performance switching, routing, and programmable data planes, directly aligning with NGNI's mission to evolve future internet architectures. By addressing scalability, low-latency protocols, and AI-driven traffic engineering, the conference provides the technical foundations for next-generation networking. Key areas include Zero-Touch Networking, NFV, Applied AI for routing, and network security, all of which are essential for the resilient internet services promoted by NGNI.

Important Dates

- Paper Submission Deadline: **30 January 2026**
- Notification of Acceptance: **28 February 2026**
- Camera-Ready Papers Due: **30 March 2026**

For more information please visit: `https://hpsr2026.ieee-hpsr.org/authors/call-papers`

2.1.2 IEEE International Mediterranean Conference on Communications and Networking

Cagliari, Italy, 6–9 July 2026
IEEE MeditCom 2026 is an IEEE Communications Society portfolio conference providing an international forum for recent advances in communications and networking. By focusing on key challenges in next-generation communication systems and Internet architectures, it aligns closely with the scope of NGNI. Topics of interest include 5G/6G wireless systems, Big Data and ML for

communications, Edge Intelligence, Terahertz communications, and advanced techniques across the physical, link, and network layers.

Important Dates

- Paper Submission Deadline: **26 February 2026**
- Notification of Acceptance: **24 April 2026**
- Camera-Ready Papers Due: **15 May 2026**

For more information please visit: `https://meditcom2026.ieee-meditcom.org/call-papers`

2.1.3 The 35th International Conference on Computer Communications and Networks

Honolulu, Hawaii, USA, 27–30 July 2026
ICCCN 2026 is a premier international conference that brings together researchers, practitioners, and industry experts to present and discuss recent advances in computer communications and networking. The conference focuses on innovative research addressing key challenges in next-generation networking and Internet technologies, making it highly relevant to the scope of NGNI. Topics of interest include network architecture and protocols, wireless and mobile networking, edge and cloud computing, Internet of Things and cyber-physical systems, AI/ML for networking, and network security.

Important Dates

- Paper Submission Due: **13 February 2026**
- Acceptance Notification: **24 April 2026**
- Conference Dates: **27–30 July 2026**

For more information please visit: `http://www.icccn.org/icccn26/call-for-papers/index.html`

2.2 Special issue call for papers

2.2.1 Journal: IEEE Journal on Selected Areas in Communications (JSAC)

Special Issue title: Digital Twins for Wireless Networks: Enabling Application-Aware and Closed-Loop Optimization Scope: This Special Issue focuses on the integration of digital twin technologies into future wireless networks as active components for application-aware control and closed-loop optimization. It solicits original contributions on scalable digital twin architectures, intelligent orchestration mechanisms, learning-driven adaptation, and cross-layer optimization frameworks, with particular relevance to next-generation and 6G wireless systems.
Submission deadline: May 1, 2026
Link: `https://www.comsoc.org/publications/journals/ieee-jsac/cfp/digital-twins-wireless-networks-enabling-application-aware-and`

2.2.2 Journal: IEEE Journal on Selected Areas in Communications (JSAC)

Special Issue title: Advanced Waveforms Embracing Channel Dynamics for Future Wireless Systems
Scope: This Special Issue addresses advanced waveform design for wireless systems operating under highly dynamic and non-stationary channel conditions anticipated in future networks. Topics of interest include delay–Doppler domain waveforms, chirp-based modulation schemes, enhanced OFDM variants, AI-assisted waveform design, and robust transceiver solutions supporting reliable communication and integrated sensing in next-generation wireless systems.
Submission deadline: March 15, 2026
Link: `https://www.comsoc.org/publications/journals/ieee-jsac/cfp/advanced-waveforms-embracing-channel-dynamics-future-wireless`

2.2.3 Journal: Elsevier Computer Communications

Special Issue title: Intelligence and Service Orchestration in Next-Generation Mobile Networks Scope: This Special Issue aims to collect innovations proposed by the research community in the field of Intelligence and Service Orchestration in next-gen mobile networks. These topics and challenges have recently been investigated by researchers, telco stakeholders, government agencies, and international organizations (e.g. NextGenerationEU, CAMARA).
Submission deadline: February 28, 2026
Link: `https://www.sciencedirect.com/special-issue/327227/intelligence-and-service-orchestration-in-next-generation-mobile-networks`

2.3 Highlight Papers

2.3.1 CRAEN: Hybrid Generative Semantic and Bit Communications in Satellite Networks

Authors: Chong Huang, Gaojie Chen, Jing Zhu, Qu Luo, Pei Xiao, Wei Huang, and Rahim Tafazolli
Venue: IEEE Global Communications Conference (GLOBECOM), 2025.

Key Contributions: This paper presents CRAEN, a hybrid communication framework that integrates generative semantic communication with conventional bit-level transmission for satellite networks. Unlike prior works that treat semantic and bit communications as isolated paradigms, CRAEN enables adaptive switching and joint operation between the two modes based on channel conditions, service requirements, and task-level objectives. The authors design a system architecture that leverages generative models to extract and reconstruct task-relevant semantics, thereby reducing transmission overhead while preserving end-task performance. Analytical modeling and simulation results demonstrate that CRAEN achieves substantial gains in spectral efficiency and robustness under challenging satellite channel conditions.

Relevance to NGNI: CRAEN is highly relevant to NGNI as it exemplifies how AI-driven semantic understanding can be tightly integrated into network control. By enabling task-aware adaptation, the framework aligns with the NGNI vision of networks that dynamically optimize resource usage based on service intent rather than raw data delivery.

2.3.2 Masked Modulation for Long-Range Half-Duplex ISAC

Authors: Yifeng Xiong, Shuangyang Li, Marco Lops, Fan Liu, Weijie Yuan, and Jianhua Zhang
Venue: IEEE Global Communications Conference (GLOBECOM), 2025.

Key Contributions: This paper investigates a novel masked modulation scheme for long-range half-duplex integrated sensing and communication (ISAC) systems. The authors address a fundamental challenge in ISAC: the efficient coexistence of sensing and communication functionalities under hardware constraints. By embedding sensing information into communication signals through structured modulation masks, the proposed approach enables simultaneous operation without requiring full-duplex capabilities. Numerical results show that the scheme achieves a favorable trade-off between sensing accuracy and communication performance, especially in long-range scenarios where conventional designs suffer from severe interference.

Relevance to NGNI: The proposed masked modulation framework contributes to NGNI by enabling intelligent physical-layer co-design for multifunctional networks. ISAC is a cornerstone of next-generation intelligent networks, where environmental awareness directly informs network decision-making. This work supports NGNI objectives such as context-aware adaptation and perception-driven control.

3 Announcements from NGNI-TC

3.1 Seeking Expert Volunteers in the Area of Data Center Network

According to the requests from ComSoc, we are seeking experts in the area of data center networks, who are also willing to contribute to the volunteer services for ComSoc.

If you are interested, please provide the following information to me (`liruidong@ieee.org`).

Note: If there are more than two applicants, the most suitable candidates will be recommended to ComSoc.

Applicant information

1. Name
2. Affiliation
3. Subarea of interest

Targeted subareas

SubArea 1: Data centers consume a massive amount of electricity; therefore, "Green Data Centers" and methods to reduce the carbon footprint of large-scale server farms.

Key topics: Energy-efficient cooling, power-aware scheduling of workloads, and renewable energy integration for data center infrastructure.

SubArea 2: Day-to-day health and performance of large networks (*data center focus*): automated management and monitoring of data center networks.

Key topics: Performance monitoring, fault detection, and AI-driven operations (AIOps) for cloud infrastructure.

SubArea 3: Inter-data center and intra-data center optical interconnects.

Key topics: Optical switching, high-capacity fiber links (400G/800G+), and the physical layer of data center fabrics.

3.2 Invitation to Contribute to Potential TC Events

NGNI-TC, as the sole technical committee in the area of Next-Generation Networking and Internet in IEEE ComSoc, holds the mission of providing enhanced services to the next-generation network community, consolidating ComSoc's networking expertise, and promoting the advancement and innovation of new networking technologies.

To realize such a mission, we would like to identify the Topic Groups of the TC as follows and strengthen our efforts on those topic groups in the future. NGNI-TC's operations have entered a relatively stable period as a new TC. For the next step, we will consider potentially establishing new event(s) for the NGNI-TC.

If you are interested in contributing to the TC event, such as serving as a TPC member or OC member, or have any other suggestions, please fill out the volunteer form below. (Finally it is up to the committee of the event to decide whether your expectation will be met.)

`https://docs.google.com/forms/d/e/1FAIpQLSeebBr9NeTeCnQNTEeKtGWOhWdp2qPUCDJfKPMbu2K-vtzgXw/viewform?usp=dialog`

3.3 Call for Articles to NGNI-TC Newsletter

The NGNI-TC Newsletter welcomes submissions reporting recent research progress related to Next-Generation Networking and Internet technologies.

If you want to submit the report or article to NGNI-TC Newsletter, please send the content (Files in Word or LaTeX format are both acceptable.) to the team (`zhiyi.tian@ieee.org`; `codesec@scu.edu.cn`; `jialezhang@yzu.edu.cn`; `keshav.sood@deakin.edu.au`). It is always open for submission when the articles are ready.

3.4 Call for Webinar Proposals

We invite NGNI TC members to propose webinar topics and speakers (including self-nominations). When submitting a proposal, please include a proposed webinar title, speaker name(s) and affiliation(s) with a short bio, a brief abstract (around 150–250 words), suggested month(s) and time zone preferences, and any co-organization plans (e.g., joint with another TC/chapter/industry partner), if applicable. After that, the education services team/committee will review proposals considering topic relevance, novelty, audience interest and speaker profile. Accepted proposals will be scheduled based on speaker availability and the 2026 calendar.

Please submit your proposal to `yuanwu@um.edu.mo`, with the email title of "NGNI Webinar Proposal". Thank you all.

Editorial Team

(Email: jialezhang@yzu.edu.cn); Keshav Sood (Email: keshav.sood@deakin.edu.au)
TC Newsletter Editors: Changkun Wang; Bosen Rao