

File No. 04-16/2028-C&B/TEC/NWG9  
Government of India  
Department of Telecommunications  
Telecommunications Engineering Centre  
Khurshid Lal Bhawan, Janpath, New Delhi-110001  
(Convergence and Broadcasting Division)

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Dated: 25.11.2024

Circular

**Subject: Inviting nominations for National Working Group (NWG)-21 corresponding to ITU-T Study Group-21 “Technologies for multimedia, content delivery and cable television” for the study period 2025-2028- reg.**

Telecommunication Engineering Centre (TEC) is the nodal authority of Department of Telecommunications (DoT), Government of India, for constituting various National Working Groups (NWGs) corresponding to respective International Telecommunication Union (ITU) Study Groups (SGs). The Study Groups of ITU’s Telecommunication Standardization Sector (ITU-T) assemble domain experts from around the world to develop international standards known as ITU-T Recommendations which act as defining elements in the global infrastructure of information and communication technologies (ICTs).

2. ITU SG-9 and ITU SG-16 have been consolidated into ITU SG-21 as Technologies for multimedia, content delivery and cable television for the study group 2025-28.
3. TEC has re-constituted National Working Group (NWG) -9 as National Working Group (NWG) - 21 corresponding to ITU-T SG-21 titled “**Technologies for multimedia, content delivery and cable television**” for the **study period 2025-2028**, under the chairship of Dy. Director General (Convergence and Broadcasting), TEC. NWG-21 has the responsibility of submitting the contributions in ITU-T SG- 21 as Indian Contribution.
4. The list of ITU-T SG-21 questions under study is as follows:
  - i. QA/9: Transmission and delivery control of television and sound programme signal for contribution, primary distribution and secondary distribution
  - ii. QB/9: Methods and practices for conditional access and content protection
  - iii. QC/9: AI-enabled enhanced functions over integrated broadband network
  - iv. QD/9: Guidelines for developing countries to implement and deploy digital cable television networks
  - v. QE/9: Software frameworks and architectures for advanced content distribution services over integrated broadband cable networks
  - vi. QF/9: Functional requirements for terminal devices of the integrated broadband cable network
  - vii. QG/9: Transmission control and interfaces (MAC layer) for IP and/or packet-based data over integrated broadband cable networks
  - viii. QH/9: The Internet protocol (IP) enabled multimedia applications and services for cable television networks enabled by converged platforms
  - ix. QI/9: Requirements, methods, and interfaces of the advanced service platforms to enhance the delivery of audiovisual content, and other multimedia interactive services over integrated broadband cable networks

- x. QB/16: Artificial intelligence-enabled multimedia applications
- xi. QC/16: Visual, audio and signal coding
- xii. QD/16: Immersive live experience systems and services
- xiii. QE/16: Multimedia systems, terminals, gateways and data conferencing
- xiv. QF/16: Intelligent visual systems and services
- xv. QG/16: Multimedia streaming-related systems and services including content delivery, application platforms and end systems
- xvi. QH/16: Multimedia framework, applications and services
- xvii. QI/16: Multimedia aspects of distributed ledger technologies and related services
- xviii. QJ/16: Digital culture-related systems and service
- xix. QK/16: Human factors for intelligent user interfaces and services
- xx. QM/16: Vehicular multimedia communications, Systems, network and application
- xxi. QN/16: Multimedia framework for digital health application
- xxii. Q.Acc/21: Multimedia system, service and application accessibility for digital inclusion
- xxiii. AHG-MV: SG16 Ad hoc Group on metaverse standardization work in ITU –T SG 16

More details about ITU-T SG-21 are available at:

<https://www.itu.int/en/ITU-T/studygroups/2025-2028/21/Pages/default.aspx>

5. As the development of contribution to standardization process of ITU-T Study Groups is a consultative process, nominations of subject matter/ domain experts are invited for the membership in the NWG-21 for the study period 2025- 2028. Participation in this activity will aid in inclusion of Indian Standards in International Standardization bodies and to compete in the global marketplace, unhindered by technical barriers.

6. Stakeholders, Academia, Industry Associations, Startups or Organizations with related working domain may kindly send their nominations for the membership in NWG-21, to [dircb2.tec-dot@gov.in](mailto:dircb2.tec-dot@gov.in) with a copy to [mukesh.kmr2029@gov.in](mailto:mukesh.kmr2029@gov.in) latest by 10.12.2024 in the following format:

| Name | Organization | Designation | Email Id | Contact No. | Working Domain |
|------|--------------|-------------|----------|-------------|----------------|
|      |              |             |          |             |                |



(Laxmi)

Director (C&B)

Email: [dircb2.tec-dot@gov.in](mailto:dircb2.tec-dot@gov.in)

To,

1. All stakeholders through DoT/TEC website.
2. ADET(IT), DoT HQ- for uploading on DoT website.
3. AD(IT), TEC- for uploading on TEC website.

Copy to:

1. Sr. DDG, TEC- for kind info please.
2. Chair, ITU-T SG-21- for kind info please.