

SCTE • ISBE

IMAGINE THE POSSIBILITIES...

2020
Call for Papers

SCTE • ISBE
CABLE-TEC EXPO[®]
DENVER, CO » OCTOBER 13-16

The logo for Cable-Tec Expo 2020 features the year '2020' in a stylized font, with each digit enclosed in a colored circle (green, orange, blue, green) that overlaps with the others.The logo for the 2020 Fall Technical Forum consists of a stylized blue diamond shape with a white circle inside, and a white arrow-like shape pointing to the right.

**2020 Fall
Technical Forum**
SCTE • ISBE • NCTA • CABLELABS

CALL FOR PAPERS

Abstracts Must Be Submitted to
SCTE•ISBE by Friday, April 24, 2020.

The Society of Cable Telecommunications Engineers (SCTE), along with its global brand, the International Society of Broadband Experts (ISBE), CableLabs® and NCTA is seeking proposals for papers and presentations for technical sessions that will be conducted during SCTE•ISBE Cable-Tec Expo® 2020, which will take place Tuesday through Friday, October 13th through 16th, in Denver, CO.

The SCTE•ISBE Cable-Tec Expo 2020 Program Committee, co-chaired by Ed Marchetti of Comcast and Tom Monaghan of Charter, will review all technical abstracts.

THE CABLE-TEC EXPO 2020 PROGRAM COMMITTEE IS TARGETING SUBMISSIONS IN THE FOLLOWING 13 KEY AREAS:

- Wireline Access Network
- Wireless Access Network
- Converging Access Networks
- Powering 10G
- Internet of Things
- Operational Transformation
- Network Operations 2.0
- Workplace of the Future/Workforce Operations/Learning & Development
- Cloud & Virtualization
- Security & Privacy
- Artificial Intelligence, Machine Learning & Data Analytics
- Business Services
- Video Services

Submitted papers will be either technical papers, that describe new and emerging technologies, or operational practices, that provide field guidance. Abstracts addressing a nearer term solution (within the next three years) will be given priority.

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WIRELINE ACCESS NETWORK

- 10G Big picture
- 10G Low Latency
- 10G DAA @ RPHY Update
- 10G FDX Optimization and Progress
- 10G and Beyond: Converged FDX & ESD
- Overview of DOCSIS® 4.0
- DOCSIS® Profile Management Application: deployment results
- Real world OFDMA and/or high split
- vCMTS update
- Hybrid fiber shelf
- Spectrum expansion strategies: ESD, upstream splits, FDX, new amplifier and tap technologies
- Operationalizing remote-PHY and FMA
- Coherent optics in the access network
- Passive optical networking
- Maximizing OFDM performance in HFC networks
- Flexible MAC architecture
- Wavelength flexibility in access networks
- DAA: R-PHY and FMA
- Generic Access Platform



WIRELESS ACCESS NETWORK

- Optimization of in-home Wi-Fi
- Wi-Fi 6: features, benefits, deployment plans and timing
- Wi-Fi quality, reliability, latency: approaches to improve the in-home experience
- Wi-Fi troubleshooting strategy
- Mid-band spectrum opportunities and challenges: C-band, CBRS, BRS-EBS
- Current spectrum technology and policy issues
- mmWave opportunities and challenges
- Backhaul/fronthaul opportunities/challenges
- Impact of 5G on Broadband
- 5G challenges and opportunities: optical node overlays with 5G radios, etc
- WLAN and LTE coexistence
- Wireless network engineering and operations
- HetNets: seamless and ubiquitous interoperability between various multi-coverage protocols
- Where can wireless compete with wired access to the home
- Leveraging unlicensed spectrum for private LTE network deployments



CONVERGING ACCESS NETWORKS

- Wired/Wireline convergence requirements
- Fixed Mobile Convergence: best strategies and technologies for operators converging their networks
- Converged 10G network: fiber, coax, wireless
- 10G & 5G strategies and deployments
- Distribution of 10G in the home
- Interference analysis between wireline and wireless networks
- Edge compute architectures and addressable services



POWERING 10G

- Power reliability and availability
- Power sustainability
- Power monitoring and management
- Practical powering for next-gen access networks



INTERNET OF THINGS

- IoT security and network requirements
- Aging in Place/Telehealth
- Telemedicine
- Smart City services and deployments
- Implications of creating a robust “gaming” network
 - i. Home, network, back office
 - ii. Lag, throughput, endpoints
 - iii. Economics, SLAs
- If the cable industry builds the IoT infrastructure, will IoT services and customers come?



OPERATIONAL TRANSFORMATION

- How digital transformations can support new business models and operations models
- Product self-healing
- Automated notifications
- Proactive customer outreach
- Software revolution of field meters
- Taking care of the plant with PNM
- PMA deployment results
- PNM Prioritization and 2020 Update
- Measuring and optimizing end-to-end reliability
- Human factors on network reliability
- Augmented operations: leveraging analytics and automation to make operations more efficient and effective
- How automation benefits the customer experience
- Disaster recovery
- Grounding and bonding
- Operational best practices for a programmable access network
- Inventory of HFC plant, RF/optical
- Addressing unrelenting growth in backbone and core systems
 - i. Aging systems
 - ii. Fiber shortages
 - iii. Technology comparisons



NETWORK OPERATIONS 2.0

- Evolution of network monitoring techniques: Component level vs. service level monitoring
- Data driven network operations: correlation, modeling, trending and anomalies. Explore what role Business Intelligence play in Network Operations
- The role of Continual Service Improvement (CSI) in Network Operations: Real world examples of successful use of the 7 step CSI models to reduce network impacts and the role of data analytics
- The role of Automation in NOC/Network Operations
- Efficient Work flows through standardization and automation (both HFC and Network work flows): Dissect the role of the NOC through to Fix agents and explore examples of automations for each step



WORKPLACE OF THE FUTURE/WORKFORCE OPERATIONS/LEARNING & DEVELOPMENT

- Leveraging AR/VR in the workforce for operational efficiency
- Skills and talents required for the future of cable, and how to transform our workforce to meet these demands in an increasingly competitive environment
 - i. Training required to re-skill the existing workforce and attract new entrants into the workforce



CLOUD & VIRTUALIZATION

- Evolution of the hybrid cloud strategy in the cable industry for streamlined application deployment and resiliency
- Services agnostic networks: enabling software-controlled network access that enables services ubiquitously (i.e. unbinding services from access technologies)
- Virtualization: when and why does it make sense
- Delivering virtualized services at scale and peak performance
- Fundamentals of building a cloud
- Orchestration of smart nodes/amps and CIN
- Virtualization of packet cores
 - i. Tunnels, prioritization, QoS
 - ii. EVPN, MPLS, VxLAN
- Leveraging distributed VNFs and Edge compute in cable
 - i. Application in SD-WAN for business services
 - ii. Application in Flexible MAC for residential services
 - iii. Application for mobile in 5G



SECURITY & PRIVACY

- Cyber Security & Privacy
- Growing risks and vulnerabilities are increasing network service providers responsibility and obligations for residential and commercial customers — how to respond and create confidence among our consumers
- Managing connectivity, device and data management, data integrity, and security in IoT networks
- End-to-end security
- 3rd party security; security as a service (SaaS)
- Extending cable industry security tools to business customers
- Security of open source software
- Securing the customer's premise
- Security threat trends
- Encrypted DNS:
 - i. DNS over TLS (DOT)
 - ii. DNS over HTTPS (DOH)
- Use of Resource Public Key Infrastructure (RPKI)
- GDPR, CCPA, and other privacy issues and trends
- Blockchain security frameworks for content distribution



ARTIFICIAL INTELLIGENCE, MACHINE LEARNING & DATA ANALYTICS

- How will AI/ML/DA enable the future of cable (from network management to customer experience and operations)
- AI/VR/AR, immersive environment at home and in cable ops
- Big Data and cable: PMA, PNM, streaming telemetry, smart amps and nodes
- Deep learning to classify MER patterns
- Evolved communications services and personal assistants
- Using AI/ML to pivot from being component to service focused:
 - i. Driving operational excellence with AI/ML
 - ii. The journey from “white paper” to realizing value from operationally focused AI/ML
 - iii. Mistakes, Learnings, and Successes from AI/ML journey to realize operational excellence
 - iv. The journey of Operational Excellence using AI/ML
 - v. From “concept” to driving operational excellence with AI/ML



BUSINESS SERVICES

- Service Convergence: Residential / Mobile / Business
- Leveraging and optimizing the network for both residential and business service requirements
- What opportunities does network slicing provide for the future of cable networks?
- Impact of Wi-Fi 6 and 5G on the business environment
- The opportunity for SMB Mobility
- The emerging SD-WAN market
- Managed business service offerings



VIDEO SERVICES

- Advances in interactive and immersive video
Evolution of user generated content
- Impact of ATSC 3.0, retransmission considerations, business opportunities and challenges
 - i. current broadcast and CE deployment plans and timing
 - ii. Carriage of native 3.0 over cable systems
- What is required to convert headends to IP video; implications for ad insertion, regional blackouts and PEG channels
- Virtualized video headends
- High Dynamic Range
- Optimizing OTT video service performance

WHAT DO YOU PROPOSE?

While abstracts on the above topics will be given priority, other topics addressing cable industry technical, engineering, and business issues will also be considered.

Submitted papers will be either technical papers, that describe new and emerging technologies, or operational practices, that provide field guidance. Abstracts addressing a nearer term solution (within the next three years) will be given priority.

ENTER EACH SUBMISSION SEPARATELY TO:

Enter each **SCTE•ISBE Cable-Tec Expo® 2020** Abstract Submission [here](#) by **Friday, April 24, 2020**, the call for papers deadline. Each abstract submission will be limited to 2,000 characters.

INCLUDE:

- Technical Paper or Operational Practice's Title
- Brief Description of Proposed Session Content
- Name of Author/Presenter
- Company
- Mailing Address
- Telephone Number
- E-mail Address

Previously published papers and practices and product-specific presentations will not be accepted.

The Program Committee will announce selected papers and presentations by **May 22, 2020**. Selected participants will be required to complete and submit an electronic version of their white paper and associated PowerPoint presentation by **August 7, 2020**, for inclusion in the SCTE•ISBE Cable-Tec Expo 2020 Proceedings.

For general questions regarding the Expo technical workshops or the abstract submission process, please e-mail expo_info@scte.org.

