UNLEASH THE POWER OF LIMITLESS CONNECTIVITY
OCTOBER 11-14
ATLANTA, GA

2021 CALL FOR PAPERS
CLOSES APRIL 9, 2021
Abstracts Must Be Submitted to SCTE•ISBE by Friday, April 9, 2021.

The Society of Cable Telecommunications Engineers (SCTE), along with its global brand, the International Society of Broadband Experts (ISBE) is seeking proposals for papers and presentations for technical sessions that will be conducted during SCTE•ISBE Cable-Tec Expo® 2021, which will take place Monday, October 11–Thursday, October 14, in Atlanta, Georgia.

The SCTE•ISBE Cable-Tec Expo 2021 Program Committee, chaired by Kevin Hart, Chief Product and Technology Officer at Cox Communications, will review all technical abstracts.

The Program Committee is Targeting Papers in the Following 10 Key Areas:

- Wireline Access Network
- Wireless Access Network
- Converged Networks and Mobility
- Energy Management and Sustainability on the Road to 10G
- Internet of Things, Home Networking, Smart Cities, and Emerging Services
- Operational Transformation
- Workplace of the Future/Workforce Operations/Learning & Development
- Cloud & Virtualization
- Security & Privacy
- Video Services

The Fall Technical Forum committee believes that innovation is powered by diverse perspectives and experience. We encourage and support representation and inclusivity of all people. Our Call for Papers reflects our goal to include submissions from across our industry’s diverse expanse of professionals, and we commit to considering all entries equally.
Abstract Topics

**WIRELINE ACCESS NETWORK**

- The Path to DOCSIS® 4.0 and Multi-gig Services: Migration strategies to maximize the network’s future potential – How to leverage High Split, Midsplit, and DAA and what each element/approach offers for tactical and strategic planning.
- ESD (Extended Spectrum DOCSIS®) and FDX (Full Duplex)
- DOCSIS® 3.1 High Split
- Preparing the network for DOCSIS® 4.0 technology which includes DCA and OFDMA.
- An update on FDX DOCSIS® 4.0 technology, including an amplifier.
- 1.8 GHz actives and passives
- Gigabit Symmetrical and Beyond – All about High Split, D4.0, FDX, ESD, etc.
- How to Measure Utilization in a DOCSIS® 3.1 and 4.0 World: Mixed modulation and DAA architectures offer new challenges and opportunities to standardize how we measure contention and utilization of our service groups. Papers should address best practices and caveats to look out for.
- Improving DOCSIS® Performance – new innovations continue to emerge which allow us to optimize our plant and resolve issues before they become customer impacting.
- Latency Reduction – with the recent gaming boom and ongoing COVID-driven collaboration, latency continues to be a critical component of the customer experience. The latest on latency reduction methods and improvements.
- FTTH Evolution – many operators are building FTTH in greenfield, but standards are not well defined. With new emerging FTTH technologies (XGS-PON, 10G EPON, and others) cable operators have new options for service delivery and performance. But how do you support self-install? Is Wi-Fi 6E a key part of the solution? What standards for build and install are emerging domestically and internationally?
- Latency needs – is this the speed metric of the future?
- Migrating to advanced access networks – full duplex, extended spectrum, FTTH, Coherent optics, etc. – Mixing technology and optimizing markets.
- The latest Proactive Network Maintenance, Profile Management Application, Low Latency DOCSIS®, and Upstream Efficiency
- Virtualization of the CMTS, including the platform as well as the actual CMTS
- Next Steps in HFC Architectures: N+0, FDD, ESD, practical use of D4.0
- Physical and practical limits of data transmission over coaxial cables. What maximum data rates can we expect over the last mile if cable type and length is given?
Abstract Topics

WIRELESS ACCESS NETWORK

- Optimization of in-home Wi-Fi
- Wi-Fi Quality, Reliability, Latency: Approaches to improve the in-home experience
- Wi-Fi 6, 6E, 7. Use cases, user experience, adjustment to change.
- Impact of Wi-Fi 6 and 5G on the business services environment
- Fixed Wireless Access using CBRS or C-Band
- Disruptive wireless technologies – comparisons to fiber & HFC performance
- Improving the In-Home Experience – how are operators dealing with self-install, self-serve, Wi-Fi performance issues, convergence of wireless/wireline in the home.

CONVERGED NETWORKS AND MOBILITY

- Network and hosting infrastructure to support 5G wireless opportunities
- MVNO options, pros & cons, considerations
- Should cable operators utilize LTE, 5G or both?
  i. Same 5G as everyone else, or do cable operators deploy and operate differently?
  ii. What is the role of CableLabs® and SCTE•ISBE in this deployment?
- Wireless & spectrum
  i. Deployment opportunities/challenges/strategies for serving rural populations
  ii. Deployment opportunities/challenges/strategies in the 3.1-3.55, 3.7 and 6 GHz bands
  iii. Update/outlook on spectrum availability, issues and concerns for 2021 and beyond
  iv. Update on 3GPP activities
  v. Advanced antenna systems technology
- C-Band Implications: opportunity and risk
- Now that the CBRS auctions and soon C Band auctions are complete, how will we see MSO’s participate in 4G/5G. For example MVNO only, building networks for off load, full blown MNO competitors?
- One 10G Network, Building and Supporting a Converged Network: HFC, PON, 5G, and others
- The Evolution of the Core Network: The latest on backbone and regional architecture, routing, and optics
- What is the Rural Digital Opportunity Fund (RDOF)? Getting rural communities connected
- Fixed Mobile Convergence: Best strategies and technologies for operators converging their networks
- Killer Apps: What will drive the need for higher capacity in networks?
- Mobility Services: Offering services to customers wherever they are
- The opportunity for SMB Mobility
- The evolution of the “edge” – converged access, greater compute and memory, greater reliability
- Leveraging and optimizing the network for both residential and business service requirements
Abstract Topics

- Using GAP in the overall edge-compute, vRAN architecture
- What opportunities does network slicing provide for the future of cable networks?
- Universal Aggregation for Service Convergence:
  - Residential, mobility, business services
- Methodology of Network Slicing:
  - Flex Ethernet – Segment Routing
  - Automation of path compute engines
- Low latency technologies for wireless backhaul applications
- Network as a Service (NaaS) – what does it mean to the cable industry?
- Convergence: Why and when? What is the business case?
- What is the role of CableLabs® and SCTE-ISBE in this converged architecture?
- Emerging Enterprise Commercial Solutions: SDN, security, localized datacenters, etc.
- SD-WAN: A good opportunity to expand footprint
- Winning in Enterprise Business Services:
  - 100–400G resilient services
  - Management of clear channel services
- Strategies and techniques for ensuring network reliability for enterprise customers
- Strategies for serving customers in rural environments – Fixed wireless, Remote PHY, FTTH, Combinations, etc. – balancing and stratifying options.
- Interference analysis between wireline and wireless networks
- Edge compute architectures and addressable services

ENERGY MANAGEMENT AND SUSTAINABILITY
ON THE ROAD TO 10G

- Smart grids and microgrids
- Access Network Efficiency
- Power reliability and availability
- Power sustainability
- Power monitoring and management
- Practical powering for next-gen access networks
- New powering business opportunities for cable operators (e.g. EV fleets)
- Impacts of cooling technologies on power demands
Abstract Topics

INTERNET OF THINGS, HOME NETWORKING, SMART CITIES, AND EMERGING SERVICES

- 10G use cases and pragmatic roadmap to enabled service offerings
- Update on “connected community” services and infrastructure (for example community Wi-Fi, operator sponsored shared workspaces, phase 1 Smart City applications)
- IoT security and network requirements
- Emerging IoT services in telehealth, remote learning, connected home, etc.
- The future of home networking and customer experience
- Fitness, health, and wellness enhanced by connectivity
- What services will operators deploy, and when? Update on the operator’s IoT field trials/proofs of concept
- Evolution of managed home Wi-Fi, SmartHome needs
- Equity in technology (accessible and unbiased implementation)

OPERATIONAL TRANSFORMATION

- Self-installation innovations
- How digital transformations can support new business models and operations models
- Advancing construction and drop technology to keep up with extreme demand while lowering the largest cost factor.
- Operational automation (both AI and non-AI)
- New normal – COVID is not the last pandemic nor will it be “over” in 2021 – impact of significant increase in work from home as a permanent change and its impact on operations, especially in the field.
- COVID/post COVID impacts to the network, how to use this experience to drive home/small business HSD over the 80% take rate and become the clear winner in this category
- Operational Risk and Transformation – leveraging people, technology, data, processes, and controls to address operational risks and drive performance
- The operational impacts of supporting cloud-based services
- Integrating technological advances into CARE, IT, sales, other supporting groups
- Measuring and optimizing end-to-end reliability
- Human factors on network reliability
- Business continuity and disaster recovery
- Data driven network operations – correlation, modeling, trending, and anomalies – explore what role Business Intelligence plays in Network Operations
- The role of automation in the NOC & Network Operations
- How will artificial intelligence, machine learning, and data analysis enable the future of cable (from network management to customer experience and operations)
Abstract Topics

- Big Data and Cable: PMA, PNM, streaming telemetry, smart amps, and nodes
- Using AI/ML to Pivot From Being Component to Service Focused:
  i. The journey from “white paper” to realizing value from operationally-focused AI/ML
  ii. Mistakes, learnings, and successes from AI/ML journey to realize operational excellence
- APIs/Model Driven Telemetry (MDT) for OSS:
  i. Should this be something CableLabs® standardizes?
  ii. What APIs are needed?
  iii. Restful APIs versus MDT. Pros and cons. Do we pick one or both?
  iv. What is the role for Model Driven Telemetry MDT in the Cable market? Note that MDT is being used for RPHY and RMACPHY
  v. What is the role of CableLabs® and SCTE•ISBE in this specification?

WORKPLACE OF THE FUTURE/WORKFORCE OPERATIONS/
LEARNING & DEVELOPMENT

- Emerging tools and network requirements to support permanent shift to WFH for many in the workforce
- What percentage of work and personal business & education will shift to remote/video moving forward? Best practices to excel in this long-term environment.
- 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
- Cable’s role in life-long learning

CLOUD & VIRTUALIZATION

- How do we move almost everything to the cloud?
- Compelling Reasons for Migrating to the Cloud:
  i. What is the role of CableLabs® and SCTE•ISBE in this migration?
- Software defined networking for cable
- 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)
Abstract Topics

SECURITY & PRIVACY

- Making networks more secure – quantum key distribution
- Securing the distributed access network
- Security in the modern work environment
- 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
- Nation State Attack Evolution
- Evolving privacy regulations
- Managing cybersecurity as an enterprise risk issue
- Supply Chain Security:
  - i. Zero trust security models
- The overwhelming world of security solutions, and yet never enough
- 3rd party security; security as a service (SaaS)
- Impacting economics of ecosystems using distributed ledgers
- The security of open source software
- Privacy concerns of broadband services
- Trusted boot on evolving architectures
- New identity management solutions
- Multi-ecosystem trust solutions – how does cable trust and enable IoT solutions?
- Quantum technologies for cable
- Evolution of cryptography and how that may impact cable
- New approaches to scalable and secure software updates of cable infrastructure
- Lessons learned from the Solarwinds hack
- CableHaunt – another case where innocent features caused a real problem
- Security of the core – advances in security BGP and DNS
- Model driven architecture and telemetry – are there new security concerns?
- Mobile and cable convergence – is there a common approach to identity management?
- Transparent Security
- Privacy: KPIs, compliance, and market differentiation
- Supply chains and global politicization of security
- Software Bill of Materials (SBoM) and embedded security threats in deployed devices
- Traffic management, DNS over HTTPS, route hijacks, route advertising and trust
- Dynamic Security in Customer Owned Devices: technical, regulatory, and legal challenges to trust management
Abstract Topics

VIDEO SERVICES

- AR/VR as a substitute for lack of mobility, and for live simulation
- AI/VR/AR, Immersive Environment at Home and in Cable Operations:
  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 video
- Advances in advertising
- Optimizing OTT video service performance
While abstracts on the included 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 SCTE•ISBE Expo 2021 Abstract Submissions at expo.scte.org/callforpapers by April 9, 2021. 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 product-specific presentations will not be accepted.

The Program Committee will announce selected papers and presentations by May 7, 2021. Selected participants will be required to complete and submit an electronic version of their white paper and associated PowerPoint presentation by August 6, 2021, for inclusion in the SCTE•ISBE Cable-Tec Expo 2021 Proceedings.

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