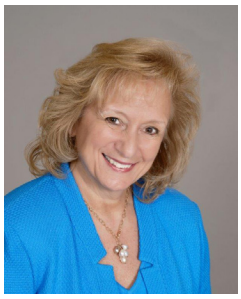
SPRING 2020

INNOVATION UPDATE

Contents

Message from the President and CEO



ATIS solutions are critical to building, sustaining and transforming the communications networks that are the intrinsic fabric of daily life. As our industry meets the challenges of COVID-19, the critical nature of our work is amplified. ATIS' current virtual work model is allowing our initiatives to continue seamlessly. Our results position our industry to thrive in a new world. In *Innovation Updates* you learn about our recent work to:

LAUNCH THE PATH TO 6G

- Delivering a Call to Action to position the U.S. as the global 6G leader for the next decade and beyond.

ADVANCE 5G

- Extending development of 5G best practices and guidelines to create supply chain standards that can be operationalized in the public and private sectors.

MITIGATE ILLEGAL ROBOCALLING

- Working through the Secure Telephone Identity Governance Authority to implement STIR/SHAKEN within U.S. borders and beyond.
- Launching a Non-IP Call Authentication Task Force to evaluate how our robocalling mitigation success can be applied to TDM traffic.

During these unprecedented times. ATIS will continue advancing our industry's priorities. Keep up to date on our successes at www.atis.org.

Sincerely,

Susan M. Miller
President and CEO

"The [6G collaboration] push by ATIS is not minor. The association's board is composed of top executives from AT&T, Verizon, Ciena and Comcast, and it's the group that has previously addressed topics including secure supply chain, robocalls and hearing aid compatibility for cellphones. Meaning, ATIS is often the place where major US telecom companies go to get things done."

— From the May 21 *Light Reading* article "US prepares for a 6G fight"

Strategic Initiatives

Advancing ICT Industry Transformation

Many of the strategic initiatives covered here evolve from our Innovation Agenda. Driven by ATIS' board of directors made up of C-level executives from the top ICT companies, the Agenda helps our industry look ahead and align to address industry challenges on the long-term horizon. The work is geared toward envisioning what it takes to turn challenges into new business opportunities, create solutions that catalyze innovation, fast-track industry transformation and create platforms for collaboration with vertical industries. The strategic work also comes out of our Technology and Operations (TOPS) Council. TOPS initiatives look at a near-term time frame of 12-to-18-months.

Launching the Path to 6G

Advancing North American leadership in wireless communications technology. Given the complex global environment, government and industry collaboration will be key to establishing a cohesive 6G national strategy. ATIS sees an opportunity to bring government, industry and academia together to firmly establish North American leadership in 6G development, standardization and commercialization over the next decade. To advance this goal, we created a Call to Action - Promoting U.S. Leadership on The Path to 6G. In April, it was sent to U.S. regulatory, policy and legislative leaders to advocate:

- Achieving a more cohesive strategy for U.S. leadership in the early stage of 6G thought and research - across industry, government, and academia
- Recognizing the benefits of strong global leadership, including R&D, standardization, manufacturing, and commercialization
- Aligning on a set of core principles that will help to direct government actions and incentivize U.S. investment
- Proposing a set of technology development focus areas that embody U.S. leadership and innovation.

In May, ATIS released the Call to Action publicly to resounding media response. It was covered in outlets including *Light Reading*, *Mobile World Live*, *Digital Trends*, and many others – garnering a readership of 31 million, with 257 social media shares. Learn about the Call to Action by contacting Susan Miller, ATIS President and CEO or Mike Nawrocki, VP of Technology and Solutions.

Advancing 5G

A LOOK AHEAD AT THE 5G FUTURE – AND BEYOND

A vision of the 5G technology landscape and North American needs in terms of 3GPP specifications. In March, the Technology and Operations Council completed a detailed landscape of existing forward-looking work occurring in 3GPP and related fora. *5G Specifications in 3GPP: North American Needs for the 5G Future* examined new 3GPP Release 17 and beyond use cases to lay out a vision of the mobility landscape (post Release 16). In addition, the report created a consensus view of North American needs in 3GPP. This report will serve as an advisory to industry and offers the opportunity to provide leadership and impact 3GPP's work in the near-term future.

By determining now what is needed to improve network performance and management capabilities, operators will be afforded the opportunity to proactively develop new business models, expand into new verticals and increase revenue streams capitalizing on 5G innovation. North America will play a leading role in the initial and near-term deployments of 5G. This forward-looking report is not only critical to companies in the region, but also to advancing ATIS leadership on 5G evolution at the global level. Access *5G Specifications in 5G Specifications in 3GPP: North American Needs for the 5G Future* in the ATIS White Paper Center.

The path to 6G. Since April, the 5G North American Needs Focus Group has built on its initial work by investigating the landscape of future network enablers and the path to 6G. The group will look more closely at potential Release 18 and beyond studies to identify potential gaps or North American needs not being addressed. Specifically, it will:

- Manage the existing set of identified North American needs
- Support a more detailed analysis and alignment with specific 3GPP activities, through communication of North American needs to ATIS' Wireless Technologies and Systems Commitee
- Coordinate with other related emerging activities across ATIS

Learn more.

5G INTEGRATION IN NON-TERRESTRIAL NETWORKS

Standards and solutions to enable a future where global communications and connectivity are seamless and ubiquitous. ATIS' non-terrestrial networks

(NTN) 5G Integration Working Group (WG) is advancing the 5G standards that make NTNs, including satellite segments, a recognized part of 5G connectivity infrastructure. Chaired by Intelsat, the WG is driving creation of normative standards for satellite NTNs in 5G. It brings together satellite ecosystem players and terrestrial ecosystem players to develop and coordinate technical positions and create aligned contributions to advance support of NTNs in 3GPP. The goal is to target smooth integration and complementarity with existing terrestrial networks, especially in regions that are not easily accessible by conventional deployments.

Priorities and use cases are being driven by satellite operators' needs while working with the terrestrial providers to ensure that mobile network operators and others can seamlessly and cost-effectively integrate with satellite systems. Technical recommendations for integration will consider satellite systems' unique characteristics. The Working Group will generate aligned technical proposals between the satellite community and major terrestrial 3GPP ecosystem contributors. The ultimate goal is to ensure an end-to-end standard in the Release 17 timeframe (Architecture freeze: Q4 2020). Learn more.

The work item aims to specify the enhancements identified for new radio NTN, especially LEO and GEO with implicit compatibility to support HAPS (high-altitude platform station) and ATG (air-to-ground). Contributions will be prepared in RAN1, RAN2, RAN3 & RAN4.

Additionally, a study item for NB-IoT/eMTC addressing satellite constellation orbit LEO and GEO, Transparent payload & GNSS capability in the UE. Contributions will be prepared in RAN1, RAN2.

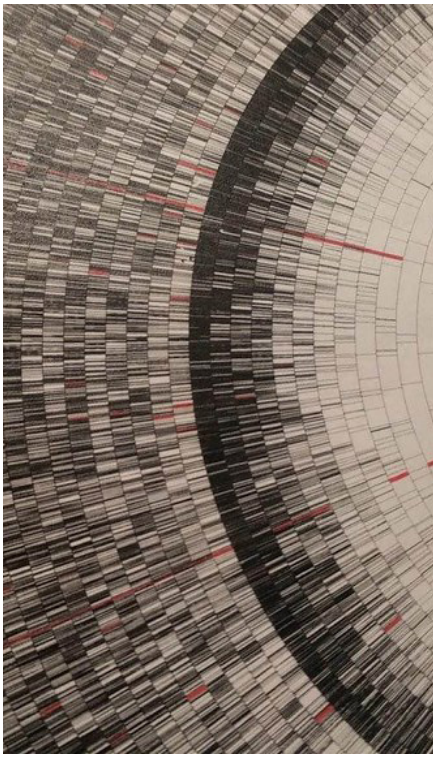
5G VERTICALS' ENABLEMENT PLATFORMS ASSESSMENT INTEGRATION

Developing a view of the enabling frameworks and platforms that will create value and new business opportunities for service providers in a range of vertical industries. Launched in December 2019, the 5G Verticals' Enablement Platforms (5GVP) Focus Group is examining the newly created vertical business opportunities driven by emerging 5G and IoT technology solutions across key vertical industries. TOPS Council members have identified and prioritized the vertical sectors and enterprise markets that will benefit from common enablement platforms and cross-industry collaboration. Verticals being examined include Industrial and Manufacturing, Connected Vehicles, Smart Cities, Public Safety, Remote Health Care and Media & Entertainment.

Outreach is beginning to gain insight into the needs and requirements that will drive opportunities. Recommendations that prioritize the collaborative platform opportunities identified across vertical markets will be made this summer. The goal is to create an initial framework of 5G enablement platform capabilities that will intersect with vertical market needs and ultimately drive 5G adoption. Learn more.

5G SUPPLY CHAIN

Collaboration to support better network security. ATIS developed many of the key industry standards that are setting the 5G network into action. ATIS' 5G Supply Chain Working Group (5GSC WG) was launched to operationalize supply chain (SC) requirements into a process that provides assurance and can lead to certifying 5G infrastructure and devices to a common set of standards. ATIS works closely with the Department of Defense, other government agencies, and industry partners in this initiative. DoD sees 5G as more than higher performance over a faster wireless network. The 5G era introduces new technologies, players and risks at a rate far outpacing current Supply Chain Risk Management (SCRM) policies and practices. Its many contributions in this area uniquely position ATIS to lead this initiative to apply SCRM principles in development of supply chain standards for trusted 5G networks and services.



In its work, the 5GSC WG will work to establish "assured" commercial 5G networks; develop or identify standards to be applied to 5G systems; and evaluate audit/certification options for ICT solution providers, infrastructure, and endpoint device original equipment manufacturers. The group is assessing use cases and developing requirements in order to enhance end-to-end ICT supply chain visibility, coordination of existing supply chain management best practices, industry alignment with federal guidelines, improved threat monitoring tools, and a method to influence national/international standards development. This initiative continues to expand its membership with additional Canadian operators and government agencies joining this work, providing a broader North American perspective. Learn more.

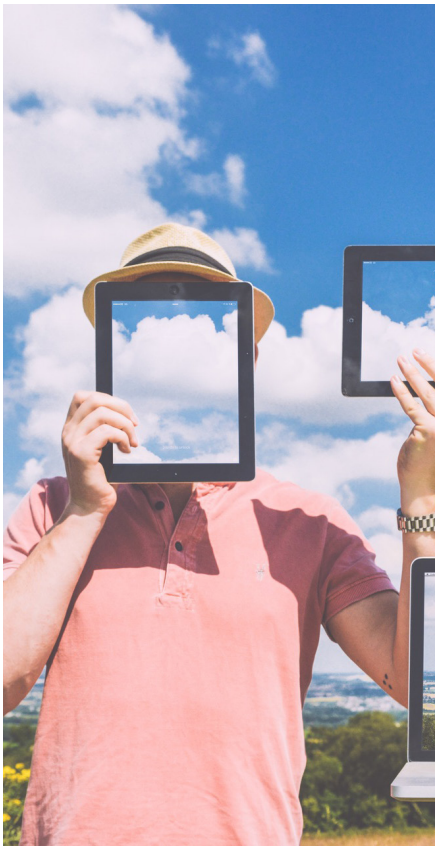
Blockchain/Distributed Ledger Technology

Applying DLT to address the challenges of unwanted robocalls. ATIS' Distributed Ledger Technology (DLT) project is engaged in learning what it takes to apply DLT to addressing the real-world challenges of today's communications industry. From a number of potential use cases examined, one has been selected for more in-depth analysis and proof of concept (PoC). The Enterprise Identity use case addresses the challenges/gaps presented by the current

STIR/SHAKEN service to effectively validate enterprise calls in multi-homing scenarios and help consumers differentiate between trusted enterprise calls versus spoofed and illegal robocalls.

Through the innovative use of DLT, the ATIS Enterprise Identity Network provides an authoritative source of know-your-customer (KYC) vetted and trusted Enterprise Identities. Once a vetted enterprise has a digital identity on the distributed ledger, it can request the allocation of a TN from a TN provider indicating the purpose and intended use of the number. This way, all stakeholders connected to the ATIS Enterprise Identity Network instantly know who has the authoritative right to place calls using a TN and for what purpose. This solution elevates what a "trusted" TN means for all stakeholders and helps consumers differentiate between trusted enterprise calls versus spoofed and illegal robocalls.

This brief video shows how DLT brings value to stakeholders of the Enterprise Identity Network.



Advancing STIR/SHAKEN with DLT. DLT and its cryptographic principles provide a KYC-verified enterprise identity for all communications service providers to use to attest originating TNs to overcome many complex call scenarios. The ATIS Enterprise Identity Network authentication process could enhance the capability for STIR/SHAKEN attestation for enterprise calls. This incorporates ATIS' Enterprise Identity Network as part of the many solutions ATIS is developing to mitigate illegal robocalling.

For more details on the ATIS Enterprise Identity Network, read the ATIS white paper *Enterprise Identity on Distributed Ledger for Authenticated Caller Use Cases*. Learn more.

Cybersecurity

DevSecOps: Making security an integral part of the DevOps Process. The ATIS Cybersecurity Ad Hoc is investigating Collaborative DevSecOps in a service provider network. DevSecOps is the philosophy of integrating security practices within the DevOps process. DevOps (development and operations) is a software development methodology which enables continuous integration and continuous delivery of software features though collaborative, agile relationships between development and operations. It is often a key element in the migration to cloud native network services.

Most industry work on DevSecOps has assumed an enterprise environment that may not fully take into account the unique requirements and aspects of a service provider network.

Specifically, the service provider environment:

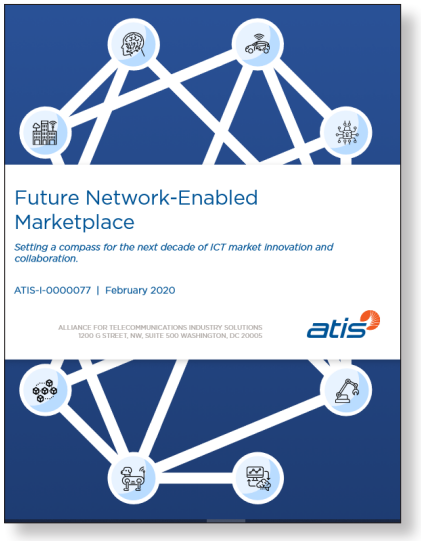
- Often has more stringent requirements on security, resiliency, availability, scalability and performance given a larger and more diverse customer base that may be covered by stringent SLA requirements
- Implements network functions (often as micro-services) with unique characteristics and functionality that require ongoing development (Dev) from multiple vendors
- Challenges the traditional integration models between Dev and Ops (development and operations) characteristic of traditional DevOps models due to the need to engage many different vendors in a collaborative environment.

These aspects create new challenges in ensuring secure deployments. The first step in this new work item has been to landscape the broad topic area to better articulate the problem statement and determine a way forward.

DNS Privacy, Security and Services

Delivering insights on technical impacts of DNS privacy on network service scenarios. In April, ATIS published *Technical Impacts of DNS Privacy and Security on Network Service Scenarios*, which makes a major contribution toward helping service providers address the challenges as well as the opportunities in DNS encryption. The report stems from our members' request that ATIS examine the impacts and best practices related to the rapid introduction of DNS security protocols, particularly in web browsers, from a network systems perspective.

With this report, ATIS delivers some of the first-ever industry recommendations to cooperatively improve DNS security and provide the groundwork for future collaboration to address evolving security threats. The report is designed to help ATIS service provider and enterprise members boost DNS security and address legal imperatives — all while excelling at their core business objectives.



Future Network-Enabled Marketplace

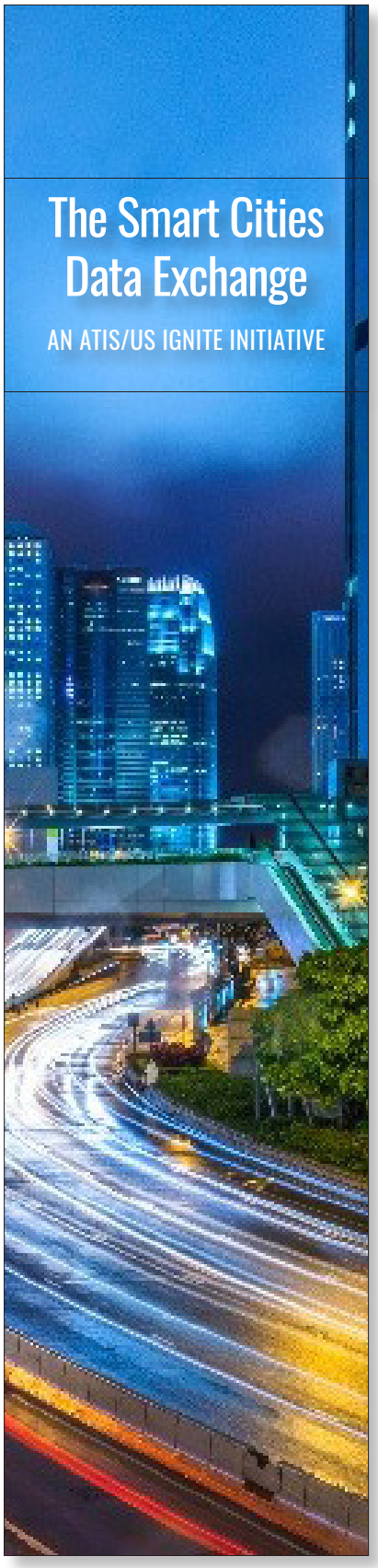
A roadmap for advancing ICT industry transformation in light of new network capabilities, services and applications. In February, ATIS announced publication of *The Future Network-Enabled Marketplace: Setting a compass for the next decade of ICT market innovation and collaboration*. The report outlines major trends that will revolutionize networks, services and applications in the next 5 to 10 years and presents key findings on how to advance the industry to its future state.

Comprehensive in nature, *The Future Network-Enabled Marketplace* offers an assessment of the emerging societal, technology and business trends that are shaping the future marketplace, and also overviews the pathways to this future — namely cloudification, privacy and trust, personalized customer experience, adjoining industry relationships and new business models. From these, a marketplace vision is presented as well as a collaborative roadmap for the future.

Access *The Future Network-Enabled Marketplace* in ATIS' White Paper Center.

Robocalling and Communication ID Spoofing–An Expanded View

A comprehensive view of what's needed to advance illegal robocalling mitigation. The critical work to mitigate unwanted robocalling takes place across many ATIS groups. The TOPS Council Robocalling and Communication ID (RCID) Spoofing Focus Group is delivering a comprehensive view of the robocalling mitigation work taking place in the industry to see what else is needed. Launched in January, the Focus Group is developing a holistic landscape view of all robocalling and spamming efforts, including their regulatory implications, and will frame out requirements for future work in a conventional standards-development flow. This framing will encompass consumer education and coordination opportunities with other organizations. In addition, the output under development identifies work that can be undertaken across ATIS and the industry to supplement current activities to further enhance current robocalling mitigation. Learn more.

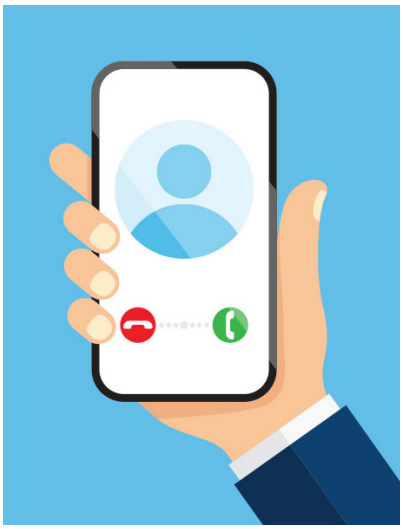


Smart Cities

Delivering opportunities for municipalities, citizens and businesses through smart city data sharing. In the near future, Smart Cities' success will be defined as much by their digital infrastructure as their physical structures. Only by unlocking the data available to them will communities be able to use it to improve citizens' lives and harness its monetization potential. Data catalogs play a pivotal role in achieving these goals. Forthcoming in summer 2020, the ATIS Smart Cities Data Catalog Specification is a major contribution toward advancing the interoperability of smart city data catalog solutions.

Data catalogs effectively allow data users to discover and search datasets and data sources, without the need to know the cumbersome and exact data connection string, syntax or path. Data catalogs can leverage open APIs to create a simplified mechanism to identify data that is relevant to a data consumer's application or need. The technical and business requirements contained in the new Catalog Specifications are intended to create a data catalog blueprint that can be used to exchange data between cities and city data partners.

While individual cities will certainly benefit from data sharing across their own internal departmental divisions and Smart City applications, it is the data sharing among cities and other trusted entities that advances them to the next level of value creation. To get there, data exchanges and marketplaces must be set into action. The new ATIS report assesses data-sharing alternatives for Smart Cities and proposes a blueprint for a common framework, a common architecture and an evolutionary path from data collection to data monetization. The end goal is to make it easier for those who use Smart Cities data to deliver benefits in the areas of economic development, transportation, environmental goals, public safety, tourism and more. The Specification was created through a partnership between leading industry solution providers and several major data-centric cities. It is another of the products of the ATIS and US Ignite collaboration. Learn more.



Regulatory Initiatives

Illegal Robocalling Mitigation

Solutions to mitigate the FCC's leading cause of consumer complaints – developed with an eye toward international collaboration. As the Secure Telephone Identity Governance Authority (STI-GA), the body charged with implementing an industry-wide solution to mitigate unwanted robocalling, it was ATIS' role to establish and manage the STIR/SHAKEN ecosystem. In 2019, our challenge was to get the Policy Administrator for STIR/SHAKEN ecosystem up and running in accordance with the FCC's aggressive timetable. With that accomplished, ATIS moved onto the next phase at the start of 2020, ensuring processes were in place to allow for widespread Service Provider (SP) adoption.

More than 50 service providers have begun the process of registration and almost two dozen have been declared "authorized providers" of STIR/SHAKEN. Industry implementation is well underway. In April, the FCC set a deadline of June 30, 2021 by which IP-based networks must have STIR/SHAKEN implemented. Steady growth in the list of authorized providers is expected to continue throughout 2020 as that date nears.

As the host of the ATIS/SIP Forum IP-NNI Task Force (IP-NNI), we are continuing to develop the standards that make adoption of STIR/SHAKEN possible, not just in the U.S., but internationally. Service provider implementation of STIR/SHAKEN in Canada has been mandated by this September. The IP-NNI Task Force has completed a technical report on cross-border call authentication which defines how calls authenticated in one country can be accepted and used to inform consumers in another. Cross-border call authentication is not simply theoretical. The STI-GA has already begun coordination with the Canadian Secure Token Governance Authority with cross-border call authentication as the end goal.

ATIS' work within U.S. borders and beyond to implement STIR/SHAKEN will eventually allow consumers to regain trust in their telephones and again answer calls with the confidence of knowing who is on the other end. Learn more at the STI-GA homepage.

New Task Force Examines Hearing Aid Compatibility in Wireless Handsets

Bringing a wide range of organizations and companies together to advance hearing aid compatibility for wireless handsets. ATIS is convening a Hearing Aid Compatibility Task Force (HAC TF) bringing together key stakeholders to make recommendations to the FCC on its proposed requirement that 100% of covered wireless handsets be hearing aid compatible. This effort was initiated via an agreement presented to the FCC by the Competitive Carriers Association, CTIA, the Hearing Loss Association of America, the National Association of the Deaf, Telecommunications for the Deaf and Hard of Hearing, and the Telecommunications Industry Association — collectively known as the Consensus Proposal Participants (CPPs). With a long-standing track record serving as a key focal point for ICT industry collaboration and hearing aid compatibility issues, ATIS is well-positioned to advance the objectives of the industry and consumers regarding mobile phone hearing aid compatibility.

The HAC TF established a new working group to survey currently available and emerging technologies that enable those with hearing loss to connect their devices. Additional working groups will be established in the future to examine and survey other critical areas, culminating in the delivery of the TF's final report and recommendations to the FCC by the December 31, 2022 deadline. The final report will include its operations and accomplishments to date, information collected on the HAC issues being evaluated, and a summary of the achievability of requiring 100% of covered wireless handsets to be hearing aid compatible.

During its inaugural meeting, leadership was elected to serve for the duration of the TF:

- HAC TF Chair, James Craig (Apple), Accessibility Standards Engineer
- HAC TF Co-Vice Chair, Shellie Blakeney (T-Mobile USA), Director – Federal Regulatory Affairs
- HAC TF Co-Vice Chair, Lise Hamlin (HLAA), Director of Public Policy

On behalf of the CPPs, ATIS is currently seeking additional stakeholders including wireless OEMs, wireless service providers, representatives of consumers with hearing loss, hearing aid manufacturers/representative associations, research and academic institutions and other stakeholders to join this effort. Learn more and access the membership application at hac.atis.org.

Standards and Solutions

ATIS committees develop the standards that deliver and enhance key communications services. Their work brings a collaborative approach to creating solutions to leading industry challenges. This section presents key highlights of our latest committee work. Learn more about the mission of all of our Committees.

Advancing Illegal Robocalling Mitigation

NEW NON-IP CALL AUTHENTICATION TASK FORCE LAUNCHED

ATIS takes a leadership role to evaluate if industry success in mitigating illegal robocalling in IP networks can be applied to TDM traffic. On May 13, ATIS announced the launch of a new task force to investigate non-IP call authentication. ATIS members that operate non-IP (i.e., TDM) networks as well as others that may have an interest in TDM call authentication are encouraged to participate.

ATIS has been at the forefront of efforts to develop call authentication standards and has been actively working with the SIP Forum through the joint ATIS/SIP Forum IP Network-to-Network Interface (IP-NNI) Task Force to develop the SHAKEN series of specifications. This work has appropriately focused on IP-to-IP call authentication. However, the passage of the TRACED Act and adoption by the Federal Communications Commission (FCC) of its March 2020 Report & Order and rulemaking highlighted a need to further examine TDM call authentication.

To address this need, the new Non-IP Call Authentication Task Force launched within the ATIS Packet Technologies and Systems Committee (PTSC) is focusing solely on non-IP call authentication issues. It will allow participants to

- Discuss and address TDM call authentication issues
- Gain a fuller understanding of the SHAKEN architecture and governance models that would facilitate consideration of complementary approaches for non-IP networks
- Investigate the viability of non-SHAKEN, non-IP call authentication frameworks and how these would interact with SHAKEN
- Be informed of IP-NNI Task Force developments, including out-of-band (OOB) SHAKEN and other work relevant to non-IP call authentication, and,

as appropriate, discuss and develop consensus-based positions on relevant work underway in the IP-NNI Task Force

- Develop best practices for non-IP networks to address issues such as the deployment of relevant SHAKEN specifications (for example, OOB SHAKEN if approved by the IP-NNI Task Force) or interworking of non-IP networks with SHAKEN

Benefits of joining the Non-IP Call Authentication Task Force include access to the latest industry information on call authentication as well as the opportunity to demonstrate to the FCC that your organization is making reasonable efforts to advance its TDM call authentication capabilities. The Task Force is open to all ATIS members at no additional charge. Non-ATIS members can participate for a nominal fee. Learn more here. To join, contact ATIS Membership Director Rich Moran.

A FRAMEWORK FOR SHAKEN ATTESTATION AND ORIGINATION IDENTIFIER CALL AUTHENTICATION

Providing a framework for SHAKEN attestation and granularity of the Origination Identifier. The Signature-Based Handling of Asserted information using toKENs (SHAKEN) protocol, which specifies a practical mechanism for authenticating calls, is a major industry tool in the fight against illegal robocalling. It was developed in the joint ATIS/SIP Forum IP Network-to-Network Interface (IP-NNI) Task Force. The population of attestation indicator and origination identifier in the SIP Identity header relies on several decisions made by the originating service provider (SP). These are based on the type of interface at the ingress to its network, knowledge of the customer or SP entity it has received the call from, and knowledge or agreements as to the calling party telephone numbers (calling TNs) used on the interface. These determinations are made both through administrative and security management procedures as well as security services applied at call processing time. The resulting values are provided to the SHAKEN Secure Telephone Identity Authentication Service (STI-AS) function to be passed with the protected call data.

A new report documents the characteristics of the security services applied at the User-to-Network Interface or Network-to-Network Interface of an originating SP, and some guidelines for the population of SHAKEN attestation indicator and origination identifier based on these services. *A Framework for SHAKEN Attestation and Origination Identifier* (ATIS-1000088) was developed by the joint ATIS/SIP Forum IP-NNI Task Force under ATIS' PTSC and the SIP Forum Technical Working Group.

Network Reliability

ATIS' Network Reliability Steering Committee (NRSC) is home to a set of industry advisors on the health of the nation's communications networks. It provides timely consensus-based technical and operational expert guidance and best practices to many segments of the public communications industry. It holds quarterly public meetings with the FCC and provides information to help minimize the number of agency rule-makings and mandates. Among its recent accomplishments:

A STANDARD OPERATING PROCEDURE FOR PSAP OUTAGE CONTACT INFORMATION

Strengthening situational awareness during 9-1-1 outages. In January, ATIS announced publication of the *Standard Operating Procedure (SOP) for Operating Public Safety Answering Point (PSAP) Outage Contact Information* (ATIS-0100068). This document provides information on how Public Safety Answering Point (PSAP) contact information is to be collected and documented. This new process addresses the challenges associated with identifying PSAP and 9-1-1 authority recipients of outage notifications and the mechanisms for collecting and standardizing contact information. The SOP is another of the many industry resources ATIS has delivered to advance communications during times of emergency.

An industry challenge in the delivery of outage notifications is knowing who to notify, by telephone and electronic means, in the event of a potentially impacting 9-1-1 outage. Today, requirements to notify PSAPs make it necessary to obtain accurate outage contact information for each PSAP. The *Standard Operating Procedure (SOP) for Operating Public Safety Answering Point (PSAP) Outage Contact Information* presents an industry consensus on improvements in collecting PSAP information.

ATIS is currently addressing how to educate PSAPs on the new SOP. Webinars and presentations to the PSAP community are now being considered. The goal is that all PSAPs receive the same training on how to provide valuable contact information.

ATIS RESOURCES HELPS TELECOMMUNICATIONS SERVICE PROVIDERS EXCEL IN THEIR EMERGENCY PREPAREDNESS EFFORTS – INCLUDING EFFORTS TO TAKE DURING PANDEMICS

Resources advancing disaster mitigation. In March, the Network Reliability Steering Committee (NRSC) promoted a list of proactive steps that telecommunications service providers can take to prepare for and respond to a wide array of emergency situations. Updated in 2019, the *Network Reliability Steering Committee Emergency Preparedness and Response Checklist* (ATIS-0100019) was created by service providers responding to actual emergency situations.

Comprehensive in nature, the resource addresses the areas of Pre-Event, Restoration, and Non-Event Specific activities that service providers should complete throughout the year to be prepared to handle emergency events in the physical environment. Featuring an easy-to-use layout, the Checklist cross-references Best Practices in many of the key areas addressed. This resource is of critical relevance with the beginning of the 2020 hurricane season on June 1. Access the *Network Reliability Steering Committee Emergency Preparedness and Response Checklist*.

Pandemic preparedness. NRSC also offers a checklist of voluntary industry Best Practices and relevant links as a reference in preparation for a pandemic event, the *NRSC Pandemic Checklist, Version 2* (ATIS-0100018). This resource supports the industry in its efforts to minimize the impact of a pandemic on the workforce and ensure network stability. Although the Pandemic Checklist was published earlier, the actions it contains are directly relevant to COVID-19 and were promoted through ATIS media and social channels in February.

Checklist activities are designed to help safeguard communications infrastructure addressing human and environmental factors as well as power, software, payload, hardware, networks and policy considerations. In addition to highly relevant voluntary Best Practices, it also provides general information on monitoring pandemics and their attributes. Access the *NRSC Pandemic Checklist, Version 2.*

Ordering and Billing

Re-scheduling a major industry software update as service providers face challenging conditions. In April, ATIS announced that, based on the consensus of its Ordering and Billing Forum (OBF) Access Service Ordering (ASO) Committee, the delayed implementation of the Access Service Ordering

Guidelines Version 60 (ASOG V60) has been rescheduled for September 19, 2020. The delay is to ensure IT systems remain stable to continue to electronically process high-priority orders related to the activities brought about by COVID-19. On September 19, ASOG V60 will be implemented concurrently with ASOG V61, which was scheduled for March 2020 publication.

OBF ASO will closely monitor ongoing risk assessment with these releases until their implementation. The ASOG is a valued industry resource to facilitate service orders between ICT service providers. Learn more.

Priority and Emergency Services

EMERGENCY LOCATION

Advancing location accuracy test methodologies. ATIS has developed many of the solutions and standards that establish the requisite test methodologies to enable consistent and measurable methods for the testing of existing and future location accuracy technologies. An ATIS standard, *Unified X/Y and Z Indoor Test Methodology* (ATIS-0500040), provides guidelines for assessing the performance of wireless location technologies in various types of indoor conditions and environments.

Drawing from existing ATIS standards, this document defines an integrated test methodology for simultaneously measuring horizontal (X/Y-axis) and vertical (Z-axis) position accuracy performance. It also extends the testing methodology to account for additional emerging vertical height determination technologies, including Wi-Fi-based techniques, so that testing of such approaches in the production environment is technology agnostic.

Before this standard, the X/Y and Z coordinates were assessed separately. This ATIS innovation will help the industry more efficiently assess how effective wireless technologies are in locating individuals in an emergency situation.

Height Reporting & Propagation Recommendations. Today, for emergency location purposes, height can be reported in either an orthometric or an ellipsoidal context. Current standards allow for several ellipsoid definitions, and numerous reporting formats are standardized with varying underlying assumptions and approaches for capturing uncertainty bounds. These varying approaches to reporting Z-axis results have the potential to cause confusion and additional error, particularly as Z-axis results propagate between components in a broader positioning system. Additionally, the varying approaches can cause confusion when testing Z-axis solutions, potentially

impairing test results. Recommendations are needed for a common approach to reporting Z-axis height.

ATIS' Emergency Services Interconnection Forum (ESIF) is developing minimum recommendations for reporting Z-axis height results and best practices for propagating these results that prevent errors from accumulating. The work may define that an ellipsoidal representation of height is preferred and identify the specific acceptable geodetic system(s). It also is intended to recommend minimum requirements for converting between ellipsoidal and orthometric representations of height. A survey of the existing standards where Z-axis reporting formats are defined will be conducted, identifying common features and potential gaps. If needed, ESIF will recommend changes to existing standards.

Specialized Distributed Power Systems

Advancing 5G through new power standards. The Sustainability in Telecom: Energy and Protection (STEP) Committee has begun development of a new power standard to facilitate and expedite the deployment of 5G, small cells, and other distributed networks. The new standard addresses the need for a standard for remotely powering distributed devices that consume more than the 100-Watt constraint identified by other industry standards.

Small cells are key enablers of 5G and 4G/LTE networks. Deploying thousands of new devices requires innovations in power technology as well as engineering and installation practices. Since current standards do not address the high power consumption requirements of these devices, a new standard for distributed power was deemed necessary. The new standard will tentatively be called Specialized Distributed Communications Power Systems and is expected to take at least a year to develop. Learn more.

Spectrum

Addressing creation of a microwave-only standard. ATIS' previously published document *North American Spectrum Bands* (ATIS-0700040) provides a summary of the commercial and commercial/unlicensed wireless bands currently used in the U.S. and Canada. WTSC is currently working on updates of this standard to include spectrum bands across all of North America. In correlation with this standard, the industry identified a need to develop a separate microwave-only standard that is a companion to the ongoing development of the updates to ATIS-0700040. This standard will summarize the microwave spectrum (900

MHz to 300 GHz) which is used for fixed, point-to-point operation (systems employing a fixed transmitter transmitting to a fixed remote location).

The forthcoming *North American Microwave Spectrum Bands* document is intended to be a quick reference for Operator and Vendor Radio planning and technology considerations for the microwave spectrum. To be most effective, it will be a living document and updated periodically as major changes occur from both the regulatory and technological considerations (such as when higher frequency bands and larger bandwidths are made available by various regulators).

Webinars and Events

ATIS Webinars

CALL AUTHENTICATION FOR NON-IP NETWORKS — TRACED ACT COMPLIANCE AN ATIS WEBINAR

An ATIS webinar Call Authentication for Non-IP Networks — TRACED Act Compliance is taking place Wednesday, June 17, 2020 at 2:00-3:00 p.m. ET. Register here. Note that the webinar will be recorded for on-demand playback after the event. Visit the ATIS webinars page.

ATIS WORKSHOP ON SYNCHRONIZATION AND TIMING SYSTEMS GOES VIRTUAL

North America's premier timing and sync event, originally scheduled for a Bellevue, Washington F2F in May, transitioned into a virtual format this year. The ATIS Virtual Workshop on Synchronization and Timing Systems was offered in a three-session webinar series May 6, 13 and 20, 2020. The event's speakers, many of whom are world-renowned experts, covered how technologies in critical sectors — including telecom, electric power, finance and others — increasingly require that more precise and resilient time be made available for their innovative new applications and services. Webinars are available on-demand at www.wstsconference.com.

ATIS Events


PEG
PROTECTION
ENGINEERS
GROUP
Electrical Protection of Communications Networks
February 23-25, 2021
Raleigh, North Carolina
www.pegconference.com


ANNUAL MEETING
of the COMMITTEES
MAY 10-13, 2021 • SAN ANTONIO, TX


WORKSHOP
ON
SYNCHRONIZATION
AND
TIMING SYSTEMS
MARCH 15-19, 2021 • DENVER, COLORADO
atis

Industry Events

Internet of Things World

IWCE
Connecting Critical Communications

ISE EXPO
ICT SOLUTIONS & EDUCATION

BIG 5G EVENT