



OVERVIEW 2025



Advancing ICT Industry Transformation



CONTENTS

3	A LETTER FROM THE PRESIDENT AND CEO
4	ATIS BOARD OF DIRECTORS
5	ATIS BOARD MEMBER COMPANIES
7	ATIS' VALUE-DRIVEN MISSION
11	OPEN RAN INNOVATION
14	6G AND BEYOND: THE WORK OF ATIS' NEXT G ALLIANCE
20	6G LIBRARY
21	STRATEGIC INITIATIVES
23	3GPP AND ATIS EVENTS
26	POLICY AND REGULATORY
29	STANDARDS AND SOLUTIONS
29	ATIS COMMITTEES AND FORUMS



From the President and CEO



As the competition for technology-driven advantage accelerates and economic and security challenges intensify at home and abroad, ATIS' mission has never been more critical.

Our work transforms the information and communications technology (ICT) industry. The *2025 ATIS Overview* brings you up to speed on our initiatives and how they position our members for market success.

You will learn how our solutions are the basis for innovation in the ICT industry; how they are a critical catalyst bridging the work of policymakers and the standards community; and how they start with the success of our members' business models in mind.

Our solutions most recently include those being developed by our Next G Alliance (NGA), which is establishing North American 6G leadership by focusing on the future 6G ecosystem and how it will fuel growth for the ICT industry as well as vertical industries. ATIS' work also encompasses our:

- > Minimum Viable Profile Initiative to foster the development and integration of open radio access network (O-RAN) technologies within service provider networks
- > Generative AI in telecom project
- > Committee work on wireless emergency alerts and network reliability
- > Continued efforts to fight unwanted robocalling

By reading the *2025 ATIS Overview*, we hope that you learn how ATIS brings the ICT industry together to solve real-world problems and shape its future. You will see how ATIS helps our industry thrive.

Stay informed on the solutions that are advancing ICT industry transformation at www.atis.org.

Sincerely,

A handwritten signature in black ink that reads "Susan M. Miller". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Susan M. Miller
ATIS President & CEO



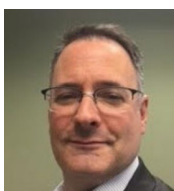
Board of Directors Officers



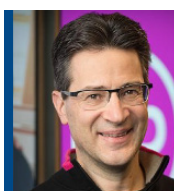
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AT&T



First Vice Chair
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VP, Technology Strategy &
Architecture
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Second Vice Chair
Nicolas Fetchko
VP for Technology and Trade Policy
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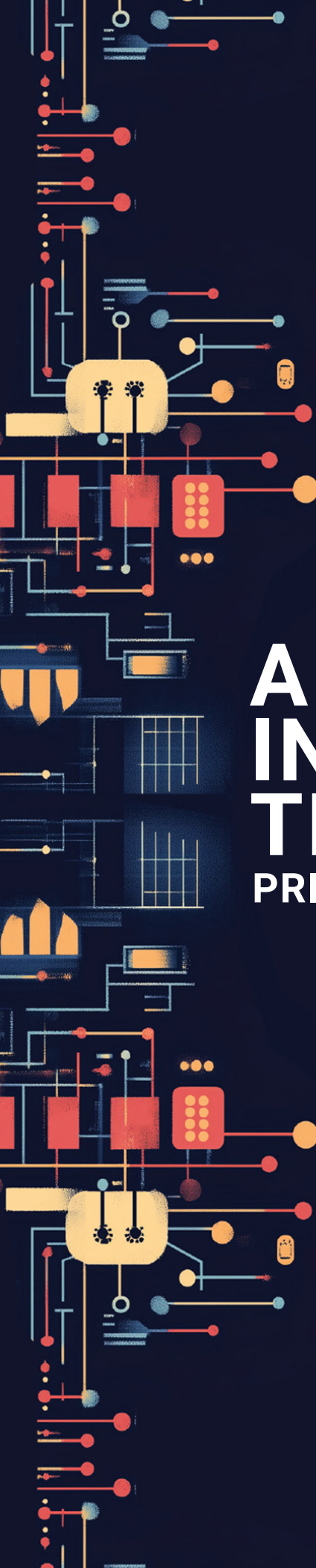
Secretary
Karri Kuoppamaki
Senior VP, Technology
Development & Strategy
T-Mobile



ATIS President and CEO
Susan M. Miller

ATIS Board Member Companies





ADVANCING INDUSTRY TRANSFORMATION

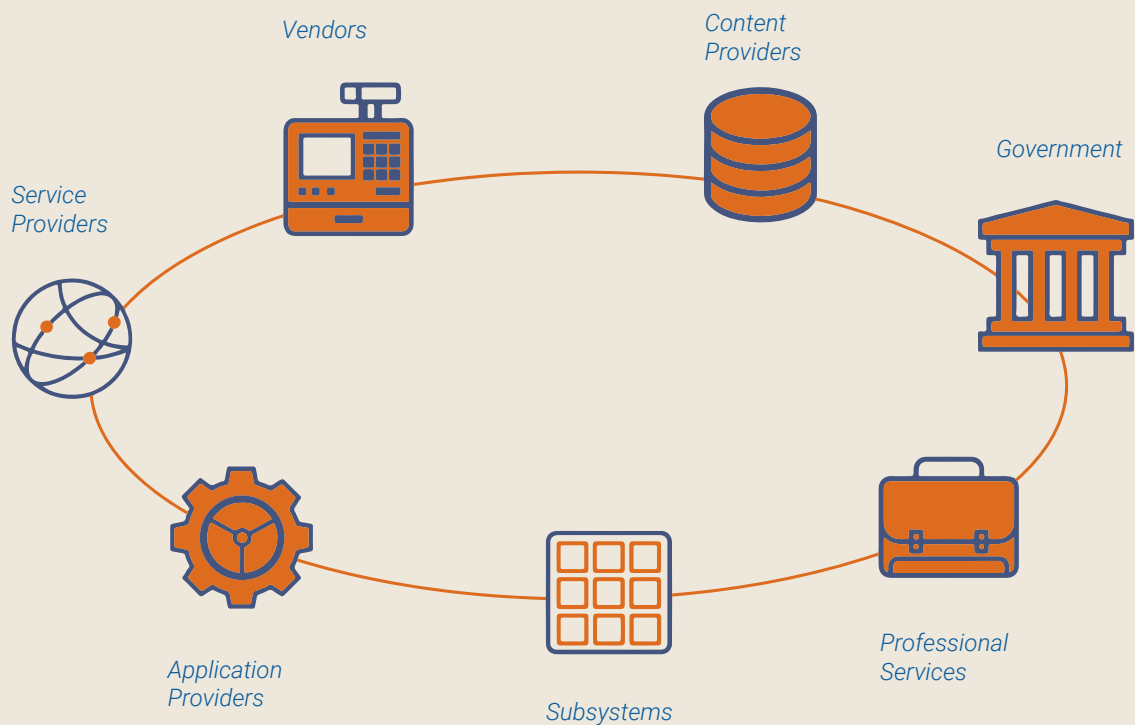
PRIORITIES/TECHNOLOGY FOCUS AREAS

National Accreditation and Global Leadership

ATIS is accredited by the American National Standards Institute (ANSI). ATIS is the North American Organizational Partner for the 3rd Generation Partnership Project (3GPP), a member of the International Telecommunication Union (ITU) Radiocommunication Sector, as well as a member of the Inter-American Telecommunication Commission (CITEL).

ATIS' Value-Driven Mission

ATIS' strategic initiatives and solutions/standards work progresses new business opportunities, solves common industry challenges, and creates a platform for collaboration with other industries.



Identifying and defining where and how to align and collaborate; sharing resources, effort and cost to develop large-scale, interoperable solutions for a “common industry good” is both critical and beneficial to the industry. ATIS is the catalyst.

A Diverse and Robust Portfolio of Deliverables

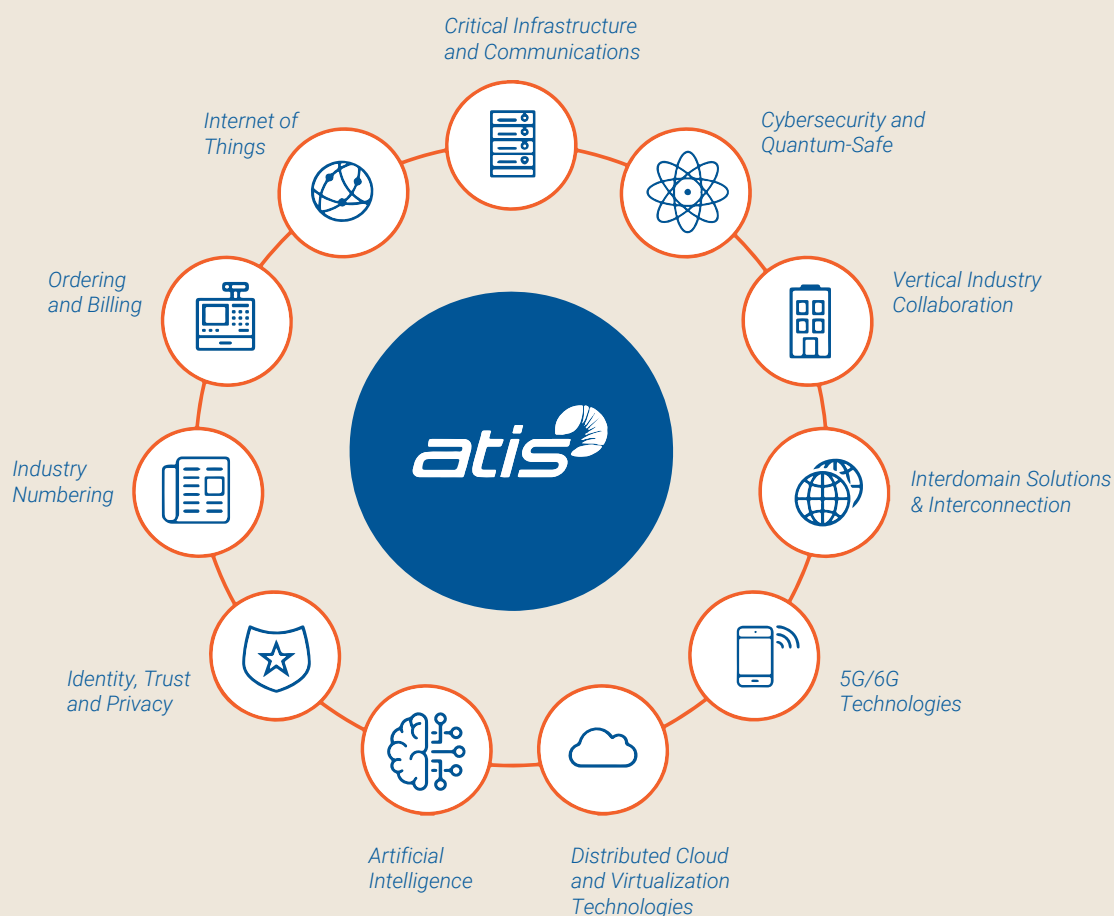
ATIS brings the ICT industry together to deliver technology innovation for the future and address critical priorities.

Here's how we create value:

- > ATIS' strategic initiatives and solutions/standards work progresses new business opportunities, solves common industry challenges, and creates a platform for collaboration with other industries.
- > Members innovate and compete using ATIS' foundational work. Collaborative efforts across industries can lead to greater scale and customer adoption.
- > Identifying and defining where and how to align and collaborate are top priorities. Sharing resources, effort and costs to develop large-scale, interoperable solutions for a "common industry good" is both critical and beneficial to the industry.

Technology Focus Areas

Our priorities change with member demands and the market. Current technology focus areas are shown below:



ATIS Overview

ATIS' robust portfolio includes strategic initiatives, technology and standards development, global partnerships, and regulatory/policy advocacy.

Strategic Initiatives

Innovation Agenda

TOPS Council

Next G Alliance

Special Initiatives (e.g., STI-GA)

Board-driven initiatives promoting technology assessments, adoption and foundational agreements

Technology/ Standards Development

ATIS Standards Development Committees

Specialized Committee activities covering emergency services, sustainability, wireless services, synchronization, interconnection, network reliability, and other areas

Global Partnerships

3GPP

ITU-R

Other Global Initiatives

Global specifications and standards alignment activities focused on large-scale interoperability and inter-working

Technology Policy

ATIS Initiatives and Committees

Advance industry's priorities at the intersection of technology policy and through active executive branch, regulatory, and legislative engagement

ATIS Board Strategic Initiatives

- > Next G Alliance – 6G and Beyond
- > Distributed Ledger Technology
- > Cybersecurity
- > Quantum-Safe Communication and Information
- > Uncrewed Aerial Vehicles
- > User-Controlled Privacy Using Self-Sovereign Identity

Technology and Operations Council

- > Content Classification for Traffic Optimization
- > Enhanced Zero Trust and 5G
- > Categorization and 5G KPIs
- > Artificial Intelligence

Special Initiatives

- > 5G Supply Chain
- > ATIS/SIP Forum IP-NNI Joint Task Force
- > Non-Terrestrial Networks
- > Secure Telephone Identity Governance Authority

Committees and Forums

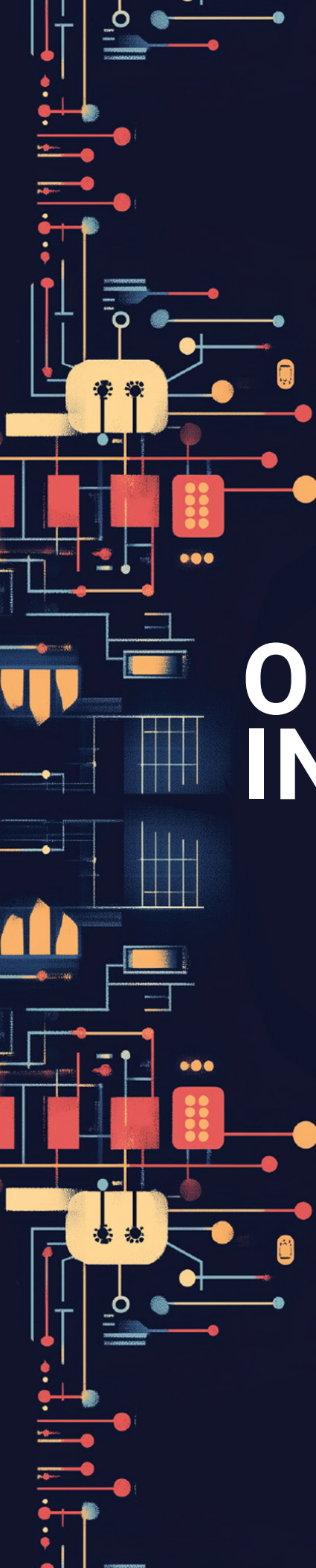
- > Automatic Identification & Data Capture Committee
- > Emergency Services Interconnection Forum
- > Industry Numbering Committee
- > International Mobile Subscriber Identity (IMSI) Oversight Council
- > Network Reliability Steering Committee
- > Next Generation Interconnection Interoperability Forum
- > Ordering and Billing Forum
- > Packet Technologies and Systems Committee
- > SMS/800 Number Administration Committee
- > Sustainability in Telecom: Energy and Protection Committee
- > Synchronization Committee
- > Telecom Management and Operations Committee
- > Wireless Technologies and Systems Committee

International Partnerships

- > 3GPP

Next G Alliance

- > Next G Applications WG
- > Next G Green G WG
- > Next G National 6G Roadmap WG
- > Next G Societal and Economic Needs WG
- > Next G Spectrum WG
- > Next G Technology WG



OPEN RAN INNOVATION



ATIS' Minimum Viable Profile Simplifies and Accelerates Open RAN Adoption in North America

The North American Open RAN Minimum Viable Profile (MVP) is a major ATIS industry innovation establishing a minimum set of technical requirements common across all North American operators to foster the development and integration of Open RAN technologies within their networks.

Mobile network operators (MNOs) are adopting Open RAN to advance innovation and deployment flexibility in their networks. Existing standards and specifications provide the technical basis for Open RAN deployment but contain considerable optionality in areas including Open RAN architecture, functional capabilities, and performance. Navigating the range of optionality has been challenging within the trusted equipment supply chain. The MVP will assist in the development and integration of baseline Open RAN solutions.

Through ATIS, North American MNOs have come together with system vendors to reach consensus on the capabilities and performance they expect from an Open RAN system. The Open RAN MVP is a major step toward accelerating deployment of multi-vendor Open RAN solutions in North America. It will enable Open RAN stakeholders, including new entrants, to offer their innovations in the North American Open RAN equipment marketplace. It will both inform and drive rapid development of carrier grade equipment for the U.S. — and potentially global — Open RAN markets. It will also expand and strengthen the trusted wireless equipment supply chain.

An expansion of the first release of the Open RAN MVP was delivered in early 2025. It further evolves the initial MVP, published in September, and more fully addresses multi-vendor deployment and interoperability issues.

Visit mvp.atis.org.





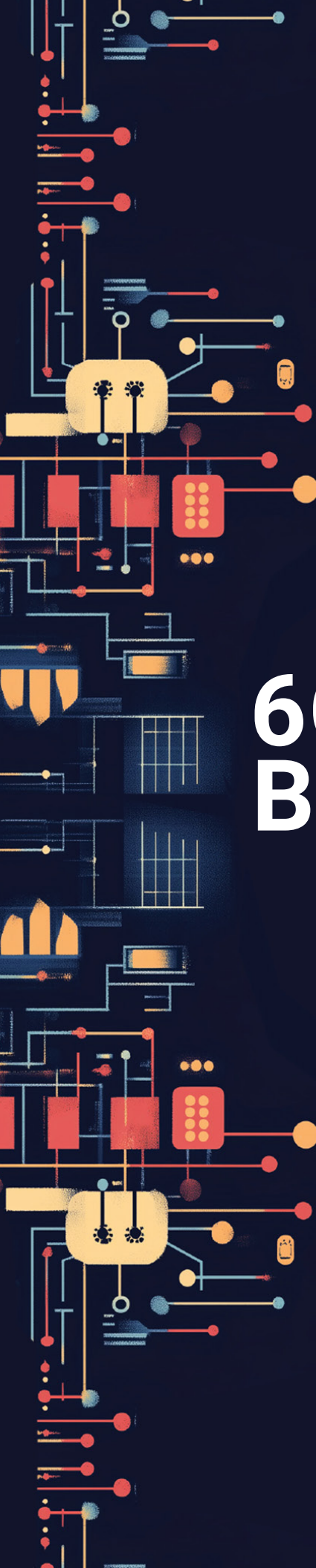
ATIS Launches the Open RAN Committee

ATIS has announced the formation of the [ATIS Open RAN Committee \(ORC\)](#). This new committee is examining topics associated with the use and deployment of Open RANs in North America. ORC's main focus is the evaluation of O-RAN Alliance specifications for possible transposition into ATIS standards pursuant to the recent Memorandum of Understanding (MoU) between ATIS and the O-RAN Alliance.



ATIS and O-RAN ALLIANCE Agree on Transposition of O-RAN Specifications to ATIS Standards

In another major step toward advancing the adoption of Open Radio RAN in North America, [ATIS](#) and the [O-RAN ALLIANCE](#) announced the [joint signing](#) of an MoU that enables the transposition of O-RAN ALLIANCE specifications to ATIS standards. The MoU establishes a joint process to identify O-RAN specifications for adoption by ATIS. This gives O-RAN ALLIANCE specifications the benefit of recognition by ATIS, an accredited standards body with broad membership from the North American industry. It furthers both organizations' mutual objectives to advance the industry toward more intelligent, open, virtualized, and global standards-compliant mobile networks.



6G AND BEYOND

Building a foundation for North American leadership in 6G and beyond takes place in ATIS' Next G Alliance. Unparalleled in its breadth, depth, and scope of activities, the NGA is setting a new benchmark in terms of preparing the North American ICT industry for the future as well as a broad range of vertical markets.





A Comprehensive Strategic Approach

Beyond building a robust technical foundation for 6G, [ATIS' NGA](https://www.atis.org) is focused on the entire future 6G ecosystem and how it will fuel innovation and a growth economy. In addition to conducting foundational R&D, this work embraces the development and integration of advanced network technologies and innovative devices. It involves listening to the perspectives of key vertical industries to align 6G with their future needs and help them see its potential for their customers. And it involves speeding to market all of the groundbreaking 6G products and transformative services developed through this process.

The NGA has developed critical 6G use cases, assessed societal needs, and explored spectrum issues and key research drivers. As an outgrowth of this integrated approach, new processes are being envisioned that will redefine how 6G technologies are developed, deployed, and managed. Insights are being forged on security requirements. The NGA also plays an active role in guiding regulatory and standardization efforts to ensure implementation of comprehensive security measures in the evolving 6G landscape.

This is the big picture. What does it mean in terms of tangible accomplishments? Since its inception in 2020, the NGA has:

- > Published more than 30 foundational publications mapping the North American 6G vision
- > Established a Vertical Markets group to gain insight from the key users of 6G innovations
- > Grown to 80 members
- > Hosted public webinars to educate a broad range of industry stakeholders on the NGA's North American 6G vision
- > Engaged in major collaborative efforts with four other regional 6G organizations and provided input to three major U.S. governmental policy initiatives
- > Co-hosted major annual 6G events: Informa/ NGA 6G Summit and the Fall 6G Symposium

Although this work has been instrumental in driving the 6G conversation, the landscape has changed since work began in 2020. That is why the NGA will be changing gears in 2025 to position its initiatives for success in the next stage of 6G development. The goal is to maximize its impact in North America – and ultimately, globally. The work involves market and business case development and restructuring of its working groups. The NGA will also be revisiting its public-private partnership efforts and looking at new opportunities to collaborate with the U.S. and Canadian governments on areas of mutual interest.

The NGA believes that 6G can bring the industry business success if it is built with an innovative mindset. To that end, fueling the NGA's 2025 efforts are:

- > A focus on solution delivery.
- > Enabling innovators of all sizes the ability to build and grow with 6G.
- > Standardizing where there is a clear need so that new products can be brought to market as soon as practicable. The NGA believes that standardization should not be a barrier to innovation, but rather a catalyst for innovation.

It will indeed "take a village" to make this future a reality. The NGA's efforts holistically consider the market's needs to position the 6G network as an innovation catalyst. The 6G-powered innovation that operators deliver will ensure that all ICT ecosystem members and all marketplace sectors will benefit and profit.

North American Voice for 6G



Here are highlights of the work that is building North American 6G leadership:



Collaboration Among All Critical Sectors

The ICT Industry

The NGA's membership represents a diverse ecosystem of operators, vendors, hyperscalers, research groups, universities, and government representatives to bolster the region's interests globally. Learn about the [NGA's membership](#).

R&D and Academia

The NGA's work is aligning North America's R&D organizations, academia, government, and industry around common goals for the region's 6G leadership.

The NGA Research Council unites North America's top academics to pinpoint critical 6G R&D priorities. With active participation from private sector research organizations and government agencies, the Council's work is in alignment with the industry's vision. Furthermore, a public-private partnership has been proposed to the U.S. National Science Foundation.

The Policy Arena

In the public policy arena, the NGA has and will continue to work to actively shape presidential administration initiatives on critical and emerging technologies. ATIS participated in an invitation-only workshop sponsored by the Biden-Harris Administration, "6G: Open & Resilient by Design," that brought together members of Congress, senior White House officials, and the heads of the NSF, NTIA, and the FCC for presentations and discussions around U.S. 6G leadership.

ATIS also played a leading role in developing the Biden-Harris [National Standards Strategy for Critical and Emerging Technology](#). It served on the Subcommittee on International Standards, which was established within NIST's Visiting Committee on Advanced Technology to inform implementation of the Standards Strategy. Execution of the Strategy to support private-sector-led standards engagement will be important as the industry begins the standardization process for 6G.

Global Collaboration

MoUs on 6G Collaboration with Key Regions Globally.

Productive international partnerships are being forged to secure global cooperation in the 6G future. In 2023, the NGA signed an [MoU](#) with India's Bharat 6G Alliance, marking one more in a series of MoUs already established. The NGA has entered into collaboration agreements with [Korea's 6G Forum](#), [Japan's Beyond 5G Promotion Consortium](#), and [Europe's 6G Smart Networks and Services Industry Association \(6G-IA\)](#). Each of these is a critical link to advancing both organizations' objectives in the development of the global 6G mobile wireless ecosystem. Work to fulfill these agreements' objectives accelerates in 2025.

ATIS and EU Smart Networks and Services Joint Undertaking publish Beyond 5G & 6G Roadmap.

ATIS and the 6G-IA, the private member of the EU Smart Networks and Services Joint Undertaking (SNS JU), have published the [EU-US Beyond 5G/6G Roadmap](#), a major first step in affirming the two regions' commitment to collaborating in the development of 6G networks.

The document contains a set of key strategic observations and recommendations for 6G networks and services, capturing the views and priorities from the NGA and the SNS JU. It offers a candidate roadmap for future opportunities through EU and U.S. funding. It also aims to provide directions for collaboration opportunities that will go beyond the scope of funding, assisting the academic and business stakeholders between the two sides of the Atlantic to identify mutually beneficial opportunities.

NGA/Korean 6G Forum Joint Workshop

In addition to the NGA's technical and policy-related initiatives, forging global cooperation to advance North American priorities is a focus. To advance industry goals in this area, the NGA recently worked with delegates from Korea's 6G Forum to have a two-day meeting at ATIS' Washington, DC headquarters in 2024.

Together, the two groups addressed topics critical to 6G's future, including the migration from 5G to 6G, 6G technology, verticals and applications, spectrum, sustainability, and more. This work builds on the principles set forth in an MoU signed by both parties to further their mutual goals of advancing cooperation in next-generation mobile communications. Both ATIS and Korea's 6G Forum ended the meetings looking forward to continued collaboration.

Launch of the Verticals Market Group

Understanding how 6G can foster vertical markets innovation.

NGA created a Verticals Market Group to collaborate with other industry segments to better understand their technology and market challenges and how the mobile telecom industry can address them and build value. The group held a workshop series in Q1 2025 with a select number of industry vertical stakeholders to understand these issues and identify common themes between industries. The goal is to ensure that 6G is capable of addressing both current needs and future issues as they arise. Stay tuned for updates as this group evolves at nextgalliance.org

This is a representative sampling of recent NGA reports mapping the 6G future. All NGA resources are available in the 6G Library.

NGA White Papers



The “Greening” of 6G Data Centers

Advancing the NGA’s objective of minimizing the environmental impact of future generations of wireless technology.

As network infrastructure continues to transition from 4G to 5G, data center energy consumption has increased and is now the second largest energy consumer in mobile networks. With growing demands from AI, cloud computing, and network virtualization, 6G will increase the urgency for sustainability metrics across the ICT sector. These factors create an impetus to make sustainable data center operations a critical ICT industry priority. [Evolution of Sustainability Indicators for Data Centers and Next Generation Core Networks](#) provides an overview of key data center sustainability strategies critical for achieving net-zero emissions across the entire ICT value chain.

To expand on the concepts presented in Evolution of Sustainability Indicators for Data Centers and Next Generation Core Networks, the NGA [Green G Working Group](#) held a [webinar](#). Access the [proceedings](#).



Next-Generation Distributed Sensing and Communications

Presenting the transformative role of 6G technology in enhancing integrated sensing and communication systems.

Next-generation systems will enable distributed sensors and communication networks to implement a tightly integrated exchange of data so complete systems of sensors can work together. These will provide the network with critical analytics to upgrade configurations and improve performance. Working independently and in tandem, these systems will enable new user capabilities.

In this “self-optimizing” environment, security, safety and autonomous applications can thrive. AI/ML models can be trained to support this evolution. The NGA’s [Distributed Sensing and Communications](#) report highlights the transformative role of 6G technology in enhancing integrated sensing and communication systems. Innovations covered are poised to establish ubiquitous connectivity facilitated by emerging network services. The goal is to enable massive, creative, and value-driven sensor and data collection opportunities for the industry.



Understanding the 6G Opportunities Inherent in JCAS/ICAS

Critical findings for advancing exciting new 6G use cases.

Joint communication and sensing (JCAS)/integrated communication and sensing (ICAS) is one of the key new features for 6G where existing telecommunication infrastructure is also used for RF sensing without requiring an active transmission from targets to be sensed. JCAS/ISAC introduces new use cases and unleashes broad possibilities for automated vehicles, health care, entertainment, smart industry, and smart cities, as well as novel uses of spectrum and more.

The NGA’s [Channel Measurements and Modeling for Joint/Integrated Communication and Sensing, as well as 7-24 GHz Communication](#) is a study of 6G JCAS/ICAS channel models. Midbands, mmWave, and sub-THz spectrum bands are also covered in the report. The measurements and modeling provided are intended to provide a better empirical basis for 3GPP development of both sensing and communication propagation channels as part of their ongoing studies in Rel-19 because this will be the foundation for 6G.



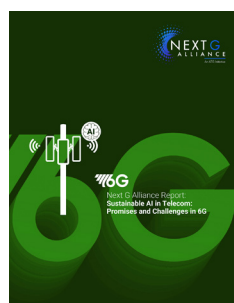
Mapping the Future of 6G Management and Orchestration

Enabling intelligent and autonomous M&O in the 6G world.

6G systems are expected to address a wider range of use

cases and markets than previous generations. Management and Orchestration (M&O) must expand and diversify to ensure that the system operates efficiently and reliably, while at the same time meeting the performance and regulatory requirements of a varied and dynamic environment.

The [Next G Alliance Report: Management and Orchestration](#) provides an in-depth analysis of the key aspects and challenges to enable the intelligent and autonomous M&O necessary to achieve a cognitive, energy-efficient, secure, robust, and resilient converged communication-computing 6G system. New 6G capabilities will create growing system-wide complexity and increasing levels of interactions and interdependence. This report makes a major contribution toward understanding these through a service framework that embraces AI/ML technologies, data management, cloud system M&O, system digitalization, and knowledge management.



Sustainable AI in Telecom: The Promises and Challenges

Another contribution by the NGA Green G Working Group to position North America as the global leader in environmental sustainability for 6G and beyond.

Artificial intelligence (AI) is transforming the ICT landscape, offering powerful tools to optimize resource allocation, enhance network performance, and increase the automation and resilience of ICT networks. However, its energy demands — particularly during model training and deployment — pose significant environmental challenges. [Sustainable AI in Telecom: Promises and Challenges in 6G](#), examines how to mitigate the environmental impact of AI across the information and communication technology (ICT) industry value chain.



Understanding the Spectrum Needs of a 6G World

Spectrum as vital to establishing North American 6G leadership.

Proactively understanding 6G spectrum needs and planning for

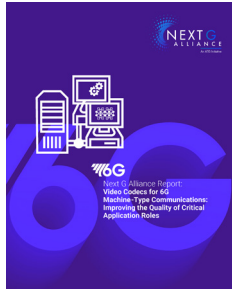
them is essential to U.S. leadership in critical and emerging technologies. The NGA's [Spectrum Needs for 6G](#) assesses 6G spectrum needs based on scenario-specific key performance indicators (KPIs) and application-specific technical performance requirements. The methodology used for estimating spectrum needs is based on the data rate requirements of 6G applications, with an emphasis on North American context and needs.



Spectrum Access Work Advances North American Opportunities in the 6G Future

Exploring evolving spectrum management and access types.

How spectrum is accessed for next-generation communications is critical to ensuring that North America has adequate spectrum resources. The NGA's [Spectrum Access Mechanisms](#) evaluates the range of spectrum management and access mechanisms, including sharing regimes, to maximize North American opportunities for the 6G future. Presented in the context of promoting the most effective use of spectrum, these opportunities cover licensed, unlicensed, and shared use by considering deployment and operational aspects of incumbent systems in the same band or in adjacent bands.



Video Codecs for 6G Machine-Type Communications

Providing the groundwork for improving the quality of critical applications in a 6G world.

By leveraging AI and improved data compression techniques,

the integration of 6G and advanced video codecs promises to revolutionize machine-type communications, driving innovation across multiple sectors. An NGA report provides the critical groundwork for achieving this, presenting an overview of machine-to-machine video communication, related use cases, technical requirements, and more.

[Video Codecs for 6G Machine-Type Communications: Improving the Quality of Critical Application Roles](#) focuses on applications such as intelligent surveillance, connected vehicles, industrial automation, and intelligent agriculture. It explores the need for efficient video transmission and AI-native environments to support the machine-type communications of the next-gen future.



Wireless Radio Technology in the 6G World

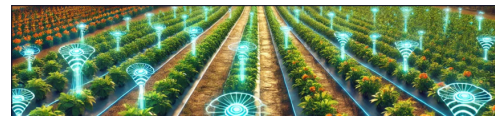
Shedding light on critical issues shaping fundamental 6G basic radio technologies – key building blocks enabling 6G-powered innovation.

To deliver insight into the future of 6G basic radio technologies, the NGA developed the [6G Radio Technology Part I: Basic Radio Technologies](#) and [Part II](#) reports. The evolutionary and revolutionary changes in basic radio technologies detailed within are the most fundamental aspects of next-generation cellular systems that will have a direct impact on KPIs. Insights delivered will play a critical role in North American 6G technology leadership.



The Next G Alliance Research Council

The Research Council brings together leading industry and academic experts from the NGA to collaborate on the development of a comprehensive North American 6G research strategy. This council leverages key NGA findings and lays the groundwork for cooperative efforts that may be undertaken by government, industry, and academia in North America. Research Council members also advance research goals established by the NGA, working with the U.S. and Canadian governments as well as private-sector 6G research communities.



How LPWAs and Short-Range Sensors are Transforming Rural North America

October 11, 2024 • By Amir Gommori, Gagandeep Bhatti and Tamera Hill • Category: Societal and Economic Needs • No comments

Low-Power Wide-Area Networks (LPWAs) and short-range sensors are not just technologies; they are tools that offer people power and control over their own lives and are revolutionizing aspects of life in rural North America. Through enabling long-range communication and dense data collection with minimal energy use, LPWAs are making a profound impact in sectors including agriculture, healthcare, and public safety...

[READ MORE >](#)

6G Insight in Action: The NGA Blog

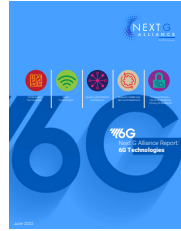
To further showcase how the NGA's work shapes the 6G future, ATIS launched the NGA blog series. Recent topics include:

- > [How LPWAs and Short-Range Sensors are Transforming Rural North America](#)
- > [Shaping a Greener Future: The Role of Environmental Sustainability in 6G Technology](#)
- > [From Everyday Living to Societal Goals: The Promise of 6G Applications](#)

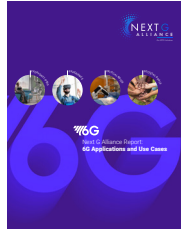
Access all blogs at <https://nextgalliance.org/blog>

6G Library

Access all Next G Alliance publications in the 6G Library.



Next G Alliance Report:
6G Technologies



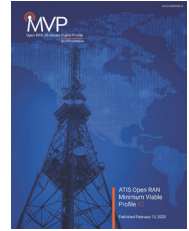
Next G Alliance Report:
6G Applications
and Use Cases



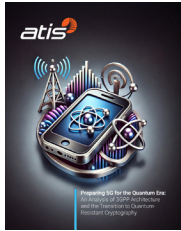
Next G Alliance Report:
Roadmap to 6G



ATIS Report:
AI Implementation in
Telecommunications
Network



ATIS Report:
ATIS Open RAN Viable
Profile



ATIS Report:
Preparing 5G for the
Quantum Era



Next G Alliance Report:
AI-Native Wireless
Networks



Next G Alliance
Report: Sustainable
6G Connectivity – A
Powerful Means of Doing
Good



Next G Alliance Report:
6G Distributed Cloud and
Communications System



Next G Alliance Report:
Trust, Security, and
Resilience for 6G
Systems



Next G Alliance Report:
Digital World Experiences



Next G Alliance Report:
Cost-Efficient Solutions



Next G Alliance Report:
6G Radio Technology
Part I: Basic Radio
Technologies



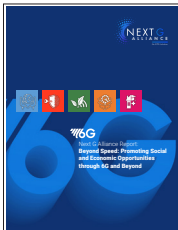
Next G Alliance Report:
6G Radio Technology
Part II: Basic Radio
Technologies



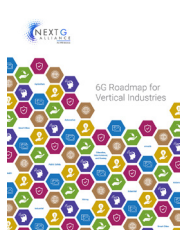
Next G Alliance Report:
6G Technologies for Wide-
Area Cloud Evolution



6G Market Management
and Orchestration



Next G Alliance
Report: Beyond Speed:
Promoting Social and
Economic Opportunities
through 6G and Beyond



Next G Alliance Report:
6G Roadmap for Vertical
Industries



ATIS Report:
Enhanced Zero Trust
and 5G



Next G Alliance Report:
Channel Measurements
and Modeling for Joint/
Integrated Communication
and Sensing, as well as
7-24 GHz Communication



Next G Alliance Report:
6G Sustainability KPI
North American
6G Roadmap Priorities



Next G Alliance Report:
Distributed Sensing
and Communications



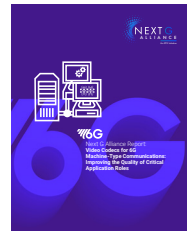
Next G Alliance Report:
Network-Enabled
Robotic and
Autonomous Systems



Next G Alliance Report:
Multi-Sensory Extended
Reality (XR) in 6G



Next G Alliance Report:
Shaping Tomorrow:
The Evolution of
Personalized Digital
Experiences Through 6G
Technologies



Next G Alliance Report:
Video Codes for 6G
Machine-Type
Communications:
Improving the Quality of
Critical Application Roles



Next G Alliance Report:
Spectrum Working Group:
Spectrum Access
Mechanisms



Next G Alliance Report:
Spectrum Needs for 6G



Next G Alliance Report:
6G Spectrum
Considerations



Next G Alliance Report:
Terminology for
Frequency Ranges



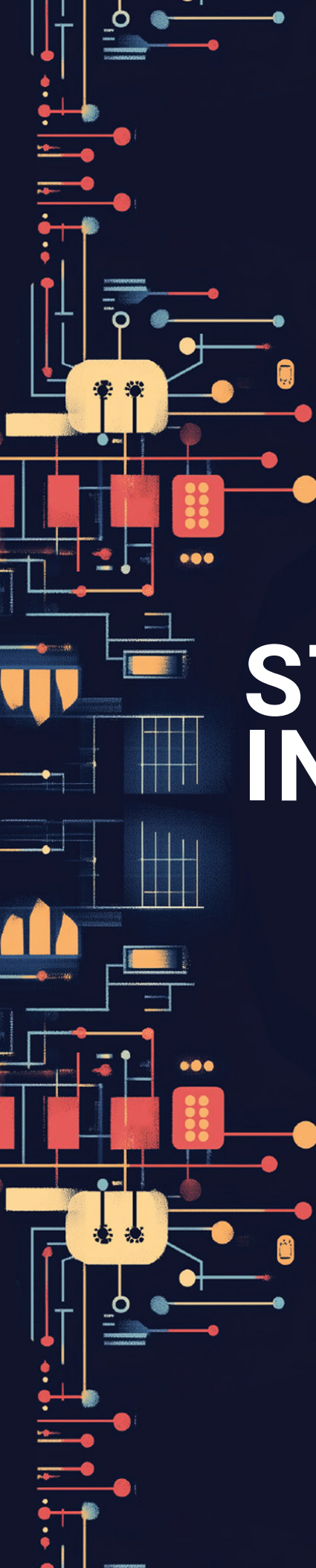
Next G Alliance Report:
Evolution of Sustainability
Indicators for Data
Centers and Next
Generation Core Networks



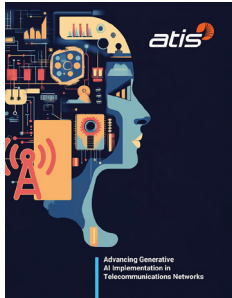
Next G Alliance Report:
Evolution of Sustainability
Indicators for Next-
Generation Radio Network
Technologies



Next G Alliance Report:
6G Sustainability KPI
Assessment Introduction
and Gap Analysis



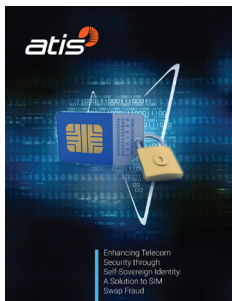
STRATEGIC INITIATIVES



Generative AI in Telecom

Collaboration exploring the transformative power of generative AI in the ICT industry.

Generative artificial intelligence (AI) is bringing about a new era of innovation and efficiency in various sectors, with significant implications for the ICT industry. ATIS led a comprehensive study to explore how Generative AI can revolutionize telecom operations. The product of this work, [Advancing Generative AI Implementation in Telecommunications Networks](#), covers how generative AI will transform the telecommunications industry by enhancing the efficiency, personalization, and security of network operations across domains such as RANs, core networks, devices, and network management. It makes a major industry contribution by surveying key use cases of generative AI, including RAN optimization, digital twins, network slicing, and AI-enhanced troubleshooting.



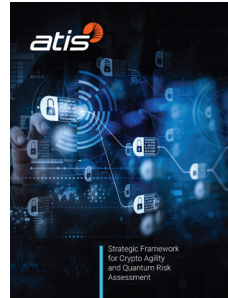
Innovation to Combat SIM Swap Fraud

An industry-first analysis to lead advancements in telecom security.

SIM swap fraud poses significant risks to individuals, businesses, and telecommunication providers alike. Through these practices, malicious actors take control of consumers' cell phones and gain unauthorized access to their mobile phone numbers. The result is identity theft which leads to compromised accounts, financial losses and personal privacy breaches. It is a pressing concern in today's digital landscape, prompting an FCC Report and Order implementing new rules to protect consumers from SIM swap and port-out fraud.

To address this problem, ATIS has developed [Enhancing Telecom Security through Self-Sovereign Identity: A Solution to SIM Swap Fraud](#), a report addressing the escalating threat of SIM swap fraud and introducing a cutting-edge ATIS solution to combat it by leveraging Self-Sovereign Identity (SSI) technology.

With this new solutions-focused white paper, ATIS aims to empower both individuals and telecommunication providers with tools they need to safeguard against fraudulent activities. By harnessing the power of SSI, carriers can implement robust authentication mechanisms, safeguarding both customer identities and the integrity of mobile communications overall.

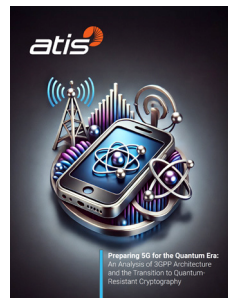


Introducing Crypto Agility KPI Metrics for the Quantum Era

Revolutionizing cybersecurity preparedness.

The power of quantum computing could eventually compromise current encryption algorithms widely used by network operators. The solutions presented in [ATIS' Strategic Framework for Crypto Agility and Quantum Risk Assessment](#) will help ensure communications and data in the ICT industry remain secure. This report introduces essential crypto agility metrics that ICT organizations can use to proactively measure, assess, and enhance their preparedness for the shift to quantum-safe cryptography.

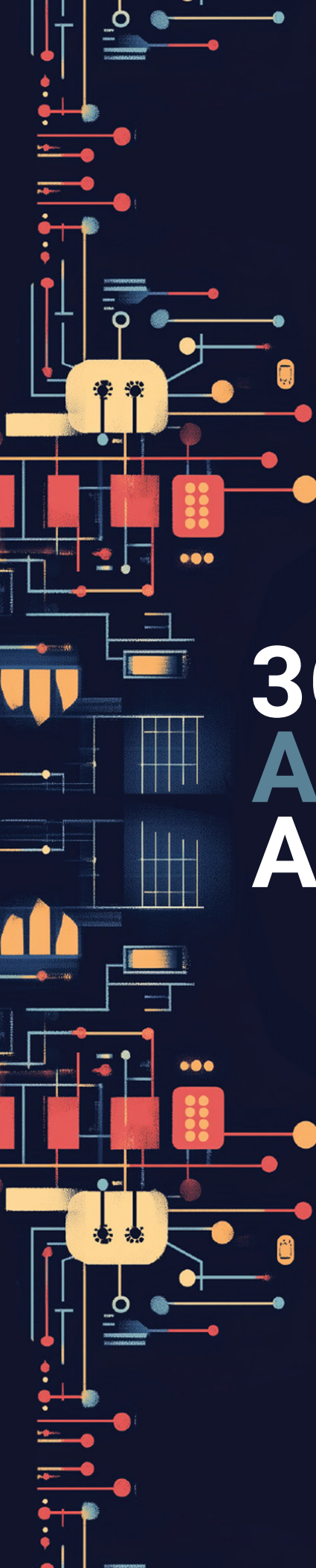
Crypto agility refers to an organization's capacity to promptly and efficiently adapt its cryptographic strategies in response to emerging threats. As new cryptographic technologies emerge and potential vulnerabilities are discovered, organizations must be agile in transitioning to more secure cryptographic algorithms. The standardized crypto agility metrics and KPIs presented in this ATIS report offer organizations a structured and measurable approach to responding to the challenges of quantum computing.



Advancing 5G Into the Quantum Era

Analysis of 3GPP architecture and the transition to quantum-resistant cryptography.

Maintaining 5G's security foundations depends on its safe transition to the world of quantum computing. This transition has potentially profound implications, threatening to compromise encrypted communications, expose private data, and undermine current telecom networks' security foundations. ATIS is delivering essential insights to help the industry prepare now to defend against both the conventional and quantum computing threats of the future. [Preparing 5G for the Quantum Era: An Analysis of 3GPP Architecture and the Transition to Quantum-Resistant Cryptography](#) makes a major industry contribution toward ensuring that 5G networks remain resilient and safeguarded against the threats posed by quantum computing. Specifically, it provides insight into the integration of quantum-resistant cryptography within 3GPP 5G network standards. This report is expected for completion in early 2025.



3GPP AND ATIS EVENTS



ATIS Hosts November 3GPP Working Group Meetings in Orlando

ATIS hosted the 3GPP Working Group (WG) Meetings in Orlando, Florida, November 18-22, 2024. Working Groups in Service and System Aspects (SA), Core Network and Terminals (CT), and RAN met to address some of the most crucial areas in the ongoing development and standardization of mobile communication technologies. ATIS is proud to be the North American 3GPP Organizational Partner and to again host this important 3GPP event in North America.



Upcoming 3GPP Meetings

Save the Date for the 2025 3GPP Working Group Meetings in Calgary, Baltimore and Dallas.



ATIS EVENTS



**PROTECTION
ENGINEERS
GROUP**

Electrical Protection of Communications Networks

SAVE THE DATE

PEG Conference
March 18 – 20, 2025
Truist Park | Atlanta, GA

Presented by  Hosted by  **Southwire**

Learn the Best
Methods to
Protect Critical
Communications
Infrastructure



peg.atis.org



wsts.atis.org

North America's Premier Timing & Sync Event
May 12-15, 2025 | Savannah, GA

WORKSHOP

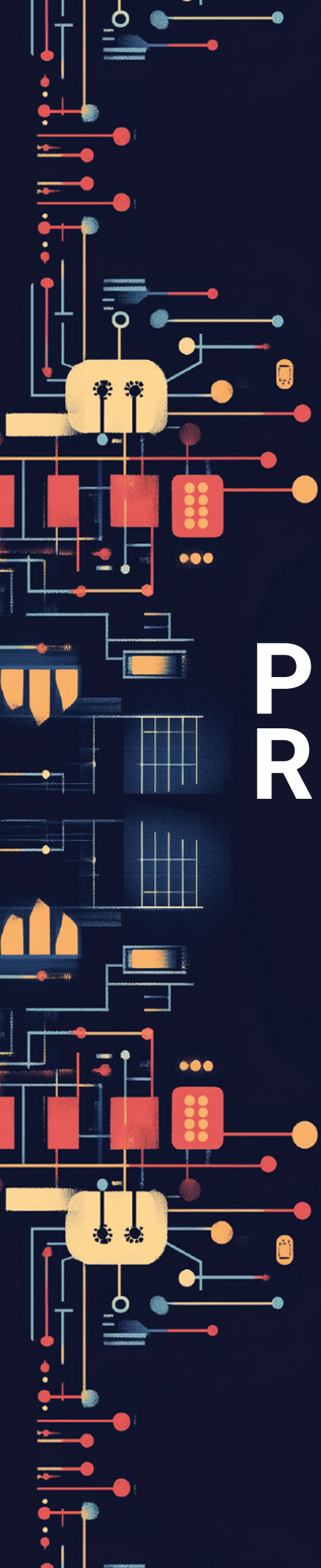
ON

SYNCHRONIZATION

AND

TIMING SYSTEMS

Time and Sync: Catalysts for Modern Innovation



POLICY AND REGULATORY

In the public policy arena, ATIS serves as a leading voice for the North American ICT industry on critical and emerging technology issues before the White House, Congress, and federal agencies.

ATIS Regulatory and Policy Engagement

Advancing member and industry priorities through targeted regulatory and policy engagement.



ATIS works on multiple fronts to advance industry goals in the policy arena, advancing policies that promote North American leadership in advanced communications technologies and global ICT standards development.

In early 2024, the NGA and the 6G-IA, the private member of the EU Smart Networks

and Services Joint Undertaking (SNS JU), published the [EU-US Beyond 5G/6G Roadmap](#), a major first step in affirming the two regions' commitment to collaborating in the development of 6G networks. The document contains a set of key strategic observations and recommendations for 6G networks and services, capturing the views and priorities from the NGA and the SNS JU. It offers a candidate roadmap for future opportunities through EU and U.S. funding. It also aims to provide directions for collaboration opportunities that will go beyond the scope of funding, assisting the academic and business stakeholders on both sides of the Atlantic to identify mutually beneficial opportunities.

In July 2024, the White House released the [National Spectrum Strategy Implementation Plan](#) and requested public input. After reviewing and comparing with ATIS' previously filed comments, ATIS worked with the broader standards community to provide feedback to NIST through ANSI.

Among its many new priorities, Congress continues to focus on the need for U.S. leadership in the development of global standards in key technologies standards. ATIS issued a statement of support for the [Promoting United States Leadership in Standards Act of 2024](#), introduced by Senators Warner and Blackburn. This legislation echoes ATIS' dedication to enhancing American leadership in international standards by addressing barriers to hosting such meetings in the U.S.

Spectrum policy is a key element for success in 6G and the NGA filed comments responding to government requests for public input in this area. The NGA's comments submitted to the NTIA regarding the [National Spectrum Strategy Implementation Plan](#) emphasized the critical role of collaborative efforts in spectrum access and management. The NGA's response to the Request for Information on the National Spectrum Research and Development Plan underscored its commitment to advocating for coordinated investment and international collaboration in advancing 6G development.

Also related to 6G leadership, the NTIA issued a request for comments (RFC) inviting insights and perspectives from various stakeholders about how government policies can best support the development and deployment of next-generation technology. It asked a wide range of questions about how to enable 6G success, advance R&D, and address 6G safety, security and environmental concerns. ATIS' policy team, together with NGA working group leaders, developed and filed a robust RFC response that identified critical priorities and recommendations that should be considered by this and future administrations. NTIA is expected to release a report in early 2025 that reflects the input received.

One priority area identified in our comments is the need for follow-through on funding commitments for R&D and standards work. Frequently, spending on important projects is promised in legislation, such as the CHIPS and Science Act, which promised a significant increase in funding for the National Science Foundation's Technology Innovation Program (NSF TIP). However, the actual funding appropriated by Congress has been significantly below the authorized levels. Driven by similar concerns about NIST funding shortfalls, ATIS joined over 20 other standards development organizations in signing a letter to Congressional appropriations committee leaders in support of full funding for NIST in the fiscal year 2025 budget.

Although most international participants in the 2024 Orlando, Florida, 3GPP meetings were able to obtain the visas needed to attend the event in a timely manner, delegates from certain countries experienced delays in embassy approvals. ATIS worked closely with leadership from the U.S. Department of State and NTIA to assist in expediting some of the visa applications. This allowed a number of participants to have their visas approved in time for the meetings. We will continue to work with government officials to find ways to further improve processes to ensure that visa approval delays do not hamper international participation in U.S.-hosted standards meetings.

Finally, the 2024 presidential election resulted in changes in federal government leadership. ATIS is working to build and strengthen relationships with the incoming administration, as well as with the new Congressional leaders and in agencies such as NTIA and the FCC, to continue advancing priority policy issues for all ATIS members.



Robocalling Mitigation

Expanding and refining the use of SHAKEN.

Since the STIR/SHAKEN launch in 2019, the STI-GA has focused on growing the ecosystem, specifically in the number of entities assigning certificates and the number of providers using those certificates to sign calls. Now, there are 15 Secure Telephone Identity Certification Authorities (STI-CAs), which assign certificates to providers. More than 1,400 providers are authorized to obtain and use those certificates to sign their calls. The ecosystem has expanded to meet the FCC's regulatory requirements. Together, the STI-GA and the Secure Telephone Identity Policy Authority (STI-PA) have ensured the policies and systems that make STIR/SHAKEN possible have successfully expanded to meet industry demand.

However, growth does not come without growing pains. In 2024, the STI-GA investigated complaints filed against service providers found to be, for example, giving A-Level attestation to calls that were from illegally spoofed telephone numbers. If the allegations prove true and if a provider does not make changes, the STI-GA will remove these providers from the ecosystem. The STI-GA's goal is to ensure that all participating providers are signing calls correctly. Although the STI-GA removed providers from the ecosystem in 2024, it has more commonly worked with them to improve their processes so that they can continue to attest to calls and do so in a trustworthy manner.

To support this work, the STI-GA in 2024 further defined some of its existing policies to ensure that STI-CAs and the providers they serve are better aware of what is required of ecosystem participants, as well as what consequences they face if they fail to meet those requirements.

In looking into service provider call signing practices, the STI-GA has worked with both state attorneys general and the FCC. This work has resulted in providers having to change their processes. Some have also been put on probation for a period of time to ensure there was no backsliding.

As more providers participate in STIR/SHAKEN and more calls than ever are signed, stability in the STIR/SHAKEN framework is important to its long-term success. That stability includes continuity in the entities serving roles within the STIR/SHAKEN framework. The STI-GA renewed the contract of iconectiv as the STI-PA through at least the end of 2029. The STI-GA also reiterated its trust in the guidance provided by ATIS by approving a new three-year agreement for ATIS to continue in its role of administration and management of the STI-GA's duties.

In late 2024, the FCC adopted an order that is expected to bring more providers to the STI-PA for authorization. Although it is not clear how many providers that will add, the STI-GA and STI-PA are well equipped to handle the increase. With five years of success since the launch of STIR/SHAKEN, the STI-GA is in good a good position to continue expanding the quantity of providers attesting to calls, as well as the quality of the attestations those providers are attaching to calls. Protecting customers from illegal robocalls will remain the focus of the STI-GA, ATIS, and the overall telecommunications industry.



STANDARDS AND SOLUTIONS

ATIS Solutions and Standards transform industry challenges into results. Here are a few examples from our committees:

ESIF: The Emergency Services Interconnection Forum

ESIF is where the industry comes together in a voluntary open forum to identify and resolve technical and operational issues to facilitate interconnection of emergency services networks with other networks (e.g., wireline, cable, satellite, internet, etc.). Among its many roles, the Committee develops Next Generation 9-1-1 (NG9-1-1) and location accuracy requirements and solutions. ESIF members come from industry, government, standards, and public safety organizations.

- > [The Emergency Services Interconnection Forum \(ESIF\)](#) Next Generation Emergency Services Subcommittee (NGESM) has developed the [9-1-1 Authority Readiness Guidelines for NG9-1-1 Connectivity](#), which includes the 9-1-1 Authority Readiness Checklist for Valid Requests. This checklist identifies the 9-1-1 Authority, primary contacts, and characteristics related to the 9-1-1 Authority that may be used for supporting NG9-1-1 interconnection for 9-1-1 calls.
- > ESIF has consolidated the Emergency Services & Methodologies (ESIF ESM) and Next Generation Emergency Services (ESIF NGES) Subcommittees into the [Next Generation Emergency Services & Messaging \(NGESM\) Committee](#). The ESIF NGESM mission statement is:

The ESIF Next Generation Emergency Services & Messaging (NGESM) Committee develops standards and other documentation related to emergency services (i.e., E9-1-1 and Next Generation 9-1-1). This scope includes architectures, functions, and interfaces for communications networks. It also includes a set of minimum, practical requirements to ensure consistent, valid, verifiable, and reproducible location data in a variety of access environments based on sound engineering and statistical practice. NGESM also coordinates emergency services needs and issues with and among Standards Development Organizations (SDOs) and industry forums/committees, within and outside ATIS. The Committee has an emphasis on standards development as it relates to North American communication networks, taking into consideration alignment with standards developed by other ATIS committees (e.g., PTSC, WTSC) and other organizations such as ITU, 3GPP, ETSI and NENA.

- > The ESIF IMS911 Committee rescoped its mission statement based on a new work item to draft standards regarding Rich Communications Services (RCS) for NG9-1-1 texting. The new ESIF IMS911 mission statement:

The ESIF IMS911 is a joint effort led by the Next Generation Emergency Services & Messaging (NGESM) subcommittee and coordinated with the Packet Technologies and Systems Committee (PTSC) and the Wireless Technologies and Systems Committee Systems and Network Subcommittee (WTSC SN) to develop standards relating to the application of common IMS (Stage 1, 2, and 3) and Rich Communication Services (RCS) for the processing, transport, and/or delivery of Emergency Service calls with the NG9-1-1 network to the appropriate PSAP.

INC: Industry Numbering Committee

INC is the industry's open forum for addressing and developing solutions for numbering issues. On October 28, 2024, the [combined NANP Administration System \(NAS\)](#) was implemented. It combines the previous Pooling Administration System (PAS), the Routing Number Administration System (RNAS), and NANP Administration System (NAS). INC has worked for the past three years to revise and update its guidelines in preparation for implementation of the combined NAS (CNAS).

IP-NNI Task Force

With ATIS' SHAKEN standards mitigating unwanted voice traffic, unwanted texts are a growing consumer concern. The [IP-NNI Task Force](#) is advancing the study of this topic. It is also discussing establishing a task force for the SMS unwanted message work. The Task Force recently reviewed the draft of proposed [ATIS Standard, SMS Unwanted Message Mitigation Landscape \(ATIS-1000101\)](#) and approved it for publication, including the following language from the recommendations section:

The ATIS/SIP Forum IP-NNI Task Force (TF) proposes the creation of an ATIS/SIP Forum joint task force under or in parallel with the IP-NNI TF to evaluate and, if necessary, develop new standards for verified identity transmission and validation in text messaging (i.e., authentication). The TF should first focus on educating participants in available mitigation tools, resources, and techniques prior to any consideration of new standards, as well as provide a venue for ongoing discussion. Participation should include

experts in establishing trust frameworks or policies, vetting identity credentials, the secure transmission of identity information, and mitigating fraudulent traffic.

Several other baselines were progressed for SHAKEN delegate certificates and SHAKEN Calling Name and Rich Call Data (RCD) handling procedures.

NRSC: Network Reliability Steering Committee

[NRSC](#) is home to a key set of industry advisors on the health and reliability of the nation's communications networks and is actively involved in public policy input on leading issues in this area. Most recently, the committee has public policy filings in areas including:

- > [Petition for Clarification and/or Reconsideration](#) of the FCC Second Report and Order on NORS and DIRS reporting obligations (filed May 10, 2024)
- > [Comments](#) in response to the FCC Second FNPRM related to NORS and DIRS reporting obligations (Filed May 13, 2024)
- > [Letter](#) to Public Safety and Homeland Security Bureau regarding NRSC support for CSRIC Best Practices (sent May 23, 2024)
- > [Reply to Opposition](#) in response to the Opposition of APCO International submitted by the Association of Public-Safety Communications Officials, International (APCO) in response to ATIS' Petition for Clarification and/or Reconsideration. (filed July 3, 2024)

OBF: The Ordering and Billing Forum

- > [The Ordering and Billing Forum \(OBF\)](#) released the [Access Service Ordering Guidelines \(ASOG\) Version 69](#), a major industry operations support resource. ASOG Version 69 includes an expansion of the REMARKS field on the Clarification/Notification Request (C/NR) to 450 alphanumeric characters. (Learn more at [ATIS: OBF Issue 3664](#), [ASOG: Expansion of CNR Remarks Field](#).)
- > OBF also released the [Access Service Ordering Guidelines \(ASOG\) Version 70](#), a major industry operations support resource. ASOG Version 70 includes an expansion of the REMARKS field on the Clarification/Notification Request

(C/NR) to 450 alphanumeric characters. (Learn more at [ATIS: OBF Issue 3667](#), [ASOG – Expand the Error Message field \(Practice 10\) an additional 60 characters](#).)

- > OBF has released [ATIS Supplement B to Unified Ordering Model \(UOM\) Volume II – Analysis Wireless Intercarrier Communications Interface Specification \(WICIS\) for Local Number Portability Version 5.0.0](#). This supplement to WICIS 5.0.0. provides changes to the usage of the SSN TAX ID field and the NLSP and OLSP valid values. (Learn more at [ATIS: OBF Issue 3665](#), [Removal of SSN/TaxID field and ATIS: OBF Issue 3666](#), [Modify the NLSP and OLSP Valid values](#).)

STEP: Sustainability in Telecom: Energy and Protection Committee

Among its many activities to safeguard our ICT infrastructure, [STEP](#) is addressing electromagnetic pulse (EMP) events. Critical infrastructure such as telecom networks have long been subject to risks associated with physical threats and natural disasters.

Natural events can impact critical infrastructure as did a strong geomagnetic storm, that reached Earth in May 2024. This event was caused by several coronal mass ejections from the sun. Geomagnetic storms like this one can affect infrastructure in near-Earth orbit and on Earth's surface. The result is potential disruption of communications, the electric power grid, navigation, radio, and satellite operations. Although the sun is one source of these events, the risk of an adversarial nation state initiating a kinetic or cyber-attack can also result in impacts to infrastructure. ATIS published best practices for EMP event mitigation. However, there have been recent advances that warrant a refresh, especially with rising threat risks.

To address this problem, ATIS' STEP Committee is most recently engaged in work on [Issue 0213](#), [Review and Update ATIS Electromagnetic Pulse \(EMP\) Event Mitigation Best Practices](#). In response to the need to update EMP Best Practices based on global threats and technological advancements in the shielding of communications building structures, STEP is developing a set of best practices. The work will look at EMP events of natural occurrence, such as sunspots, as well as man-made events.

SYNC: The Synchronization Committee

Telecom infrastructure is increasingly exposed to both physical and cyber risks from malicious actors. These stem from a growing integration of information and communications technologies with critical infrastructure and adversaries focused on exploiting potential cyber-vulnerabilities, as well as the development of kinetic systems designed to purposely disrupt critical infrastructure. Among their many hazards, these threats and events can impact the Global Positioning System (GPS). The dangers are far-reaching. GPS is fundamental to the global economy, essential for telecommunications, 911 services, the power grid, and financial exchanges, as well as for consumers. Telecom services are increasingly vulnerable as satellite signals now can be attacked both on Earth and in space. Once considered a remote possibility, these threats are growing, as is evident from recent occurrences in Eastern Europe, for example.

The U.S. DoD-operated GPS has even been the subject of both intentional and purposeful interference and denial of service around the world. Occurrences of jamming and spoofing are reported almost daily. Telecommunication networks use the signals from GPS satellites almost exclusively to generate time and frequency information for cellular mobile and wireline infrastructure. GPS outages can disrupt the operational aspects of mobile networks in as few as 30 minutes. Outages of more than 72 hours could be catastrophic.

GPS reliability is critical: The U.S. has no “Plan B.” The Department of Transportation leads civilian projects on timing and navigation but a backup solution to GPS has not yet been agreed upon. Separate from civilian use, the military is developing GPS backup options for its own use, including for weapons such as precision-guided missiles. China and Russia already have their own backup solutions in development.

ATIS' [Synchronization Committee \(SYNC\)](#) is addressing this critical issue through an initiative to develop resilient timing plans for critical infrastructure operators. The goal is to help operators reduce or eliminate the reliance on GPS as a primary source of time and frequency reference for telecommunications networks. SYNC is expected to produce reference architectures and best practices to provide sufficient protection of the network by using extended holdover clocks, multi-constellation and multi-band global navigation satellite systems (GNSS; e.g., Galileo), as well as GPS interference-detection techniques.

Through its work in this area, ATIS' SYNC Committee aims to provide inputs to the federal government including recommendations for how the government can

assist telecommunications network operators by providing a resilient, robust, and reliable alternative to GPS for time and frequency distribution. To participate in developing Resilient Timing Plans for Critical Infrastructure Operators, contact Rich Moran at rmoran@atis.org.

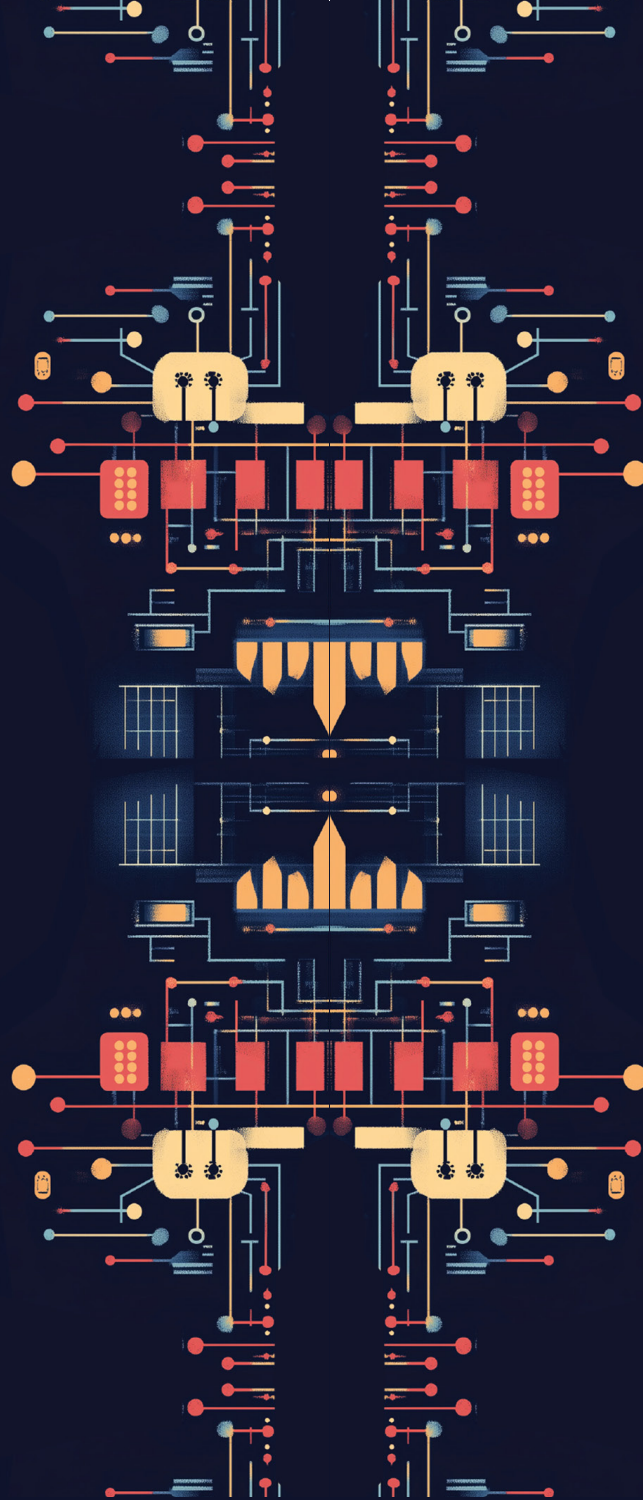
WTSC: Wireless Technologies and Systems Committee

The National Cybersecurity and Infrastructure Security Agency (CISA) Emergency Communications Division (ECD) has embarked on an effort to create a consistent definition of the services and is using Next Generation Networks Priority Services (NGN-PS) whenever possible. A major subgroup of the [Wireless Technologies and Systems Committee \(WTSC\)](#) is changing its name to better reflect the terms used by the U.S. Congress, which authorizes the service. The new name for the WTSC subgroup covering issues related to this change is Emergency Services & NGN-PS Coexistence on 3GPP RANs (NGN-PS).

WTSC NGN-PS is made up of members of [WTSC RAN](#), [ESIF NGES](#), and the [Packet Technologies and Systems Committee \(PTSC\)](#). The group will develop joint studies on Emergency Services and Next Generation Network Priority Services (NGN-PS) coexistence on 3GPP defined Radio Access Networks (RANs). These studies will focus on how emergency services could potentially starve NGN-PS communications during network degradation conditions (e.g., congestion and overload conditions during disaster events) and provide guidance to help mitigate the problem.

ATIS Committees and Forums

ACTA		Administrative Council for Terminal Attachments
AIDC		Automatic Identification & Data Capture Committee
ESIF		Emergency Services Interconnection Forum
INC		Industry Numbering Committee
IOC		International Mobile Subscriber Identity Oversight Council
NGIIF		Next Generation Interconnection Interoperability Forum
NRSC		Network Reliability Steering Committee
OBF		Ordering and Billing Forum
ORC		Open RAN Committee
PTSC		Packet Technologies and Systems Committee
SNAC		SMS/800 Number Administration Committee
STEP		Sustainability in Telecom: Energy and Protection Committee
SYNC		Synchronization Committee
TMOC		Telecom Management and Operations Committee
WTSC		Wireless Technologies and Systems Committee



ATIS and its members work together to address the industry's business and technology imperatives, ensuring value is delivered to the larger ecosystem.

This collaborative model is value-driven, finely tuned to changing business needs and aligned with the market's need to introduce new technologies at the pace of innovation.

www.atis.org

To learn more about ATIS' initiatives, contact [Rich Moran](#), ATIS Director of Membership

