

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Advanced Methods to Target and Eliminate Unlawful Robocalls)	CG Docket No. 17-59
)	
Call Authentication Trust Anchor)	WC Docket No. 17-97

**Comments of the
Alliance for Telecommunications Industry Solutions**

The Alliance for Telecommunications Industry Solutions (ATIS) hereby submits these comments in response to the April 23, 2021, *Fifth Further Notice of Proposed Rulemaking in CG Docket No. 17-59*, and *Fourth Further Notice of Proposed Rulemaking in WSC Docket No. 17-97 (FNPRM)*. In the *FNPRM*, the Federal Communications Commission (Commission) proposes to require gateway providers to apply STIR/SHAKEN caller ID authentication to, and perform robocall mitigation on, foreign-originated calls with U.S. numbers. ATIS supports the Commission’s efforts to address illegal robocalling and is actively responding to this challenge. ATIS is pleased to have this opportunity to provide an overview of its work related to call authentication and robocalling, as well as to provide information pertaining to the application of SHAKEN to foreign-originated calls.

I. Background

ATIS is a global standards development and technical planning organization that develops and promotes worldwide technical and operations standards and other deliverables for information and communications technologies. ATIS’ diverse membership of over 175

companies includes key stakeholders from the Information and Communications Technologies and Service (ICTS) industry – wireless, wireline, cable and VoIP service providers, equipment manufacturers, broadband providers, applications and content developers, software developers, consumer electronics companies, public safety agencies, and internet service providers. Nearly 600 industry subject matter experts work collaboratively in ATIS’ committees which focus on a broad range of issues, including industry numbering, wireline and wireless interconnection, emergency services, ordering and billing, and network synchronization. Another 600 subject matter experts participate in ATIS ‘innovation initiatives, which focusing on issues such as network-enabled artificial intelligence to quantum technology to user-controlled privacy using self-sovereign identity to unmanned aerial vehicles, to 5G and 6G

ATIS is also one of the founding members and sole North American Organizational Partner, to the Third Generation Partnership Project (3GPP) that develops next generation wireless, including Long Term Evolution (LTE), specifications.¹ In addition, ATIS is a partner in oneM2M, a global forum for the development of technical machine-to-machine specifications. for communications.

ATIS standards provide a vital foundation for the U.S. ICTS industry and innovation economy by diffusing state-of-the-art technical ICTS solutions and promoting rapid commercialization of new products and services based on those solutions. This has allowed the U.S. to assume and maintain a leading role in the development of new global solutions critical to U.S. competitiveness.

¹ 3GPP is a global collaborative effort among: ATIS; Association of Radio Industries and Businesses; the China Communications Standards Association; European Telecommunications Standards Institute; Telecommunications Standards Development Society, India; Telecommunications Technology Association; and Telecommunication Technology Committee. ATIS members contribute to the development of 3GPP specifications, which are transposed into ATIS standards for use by the industry in the U.S. and globally.

II. Comments

A. ATIS' Robocalling and Call Authentication Work

ATIS has been a global leader in the development of call authentication standards, including the development of SHAKEN, which defines how the authentication and verification of caller ID information carried over Internet Protocol (IP) networks may be accomplished. The SHAKEN standards, developed in collaboration with the SIP Forum, continue to evolve to address new and emerging issues:

- *ATIS Standard on Signature-based Handling of Asserted information using toKENs* (ATIS 1000074. V002) provides a framework and guidance on how to utilize Secure Telephone Identity (STI) technologies toward the validation of legitimate calls and the mitigation of illegitimate spoofing of telephone identities on IP-based service provider voice networks.
- *ATIS Standard on Signature-based Handling of Asserted information using toKENs (SHAKEN): Governance Model and Certificate Management* (ATIS-1000080.v004) which expands the SHAKEN framework by introducing a governance model and defining certificate management procedures for STI technologies.
- *ATIS Technical Report on a Framework for Display of Verified Caller ID* (ATIS-1000081) provides a framework for signaling verified Caller ID information from the network to a User Equipment (UE) and displaying the information on the UE in a uniform manner, independent of technology.
- *ATIS Technical Report on SHAKEN APIs for a Centralized Signing and Signature Validation Server* (ATIS-1000082) defines a Representational State Transfer (REST)ful interface that can be used in the SHAKEN framework to sign and verify telephony identity
- *Signature-Based Handling of Asserted Information Using Tokens (SHAKEN): SHAKEN Support of "div" PASSporT* (ATIS-1000085.v002) describes how the PASSporT "div" extension can be utilized within the SHAKEN framework to provide end-to-end SHAKEN authentication for calls that are retargeted by features such as call-forwarding.
- *Mechanism for Initial Cross-Border Signature-based Handling of Asserted information using toKENs (SHAKEN)* (ATIS-1000087) provides a framework and guidance on how to use STI technologies on IP-based service provider voice networks in scenarios where a call originates in one country and terminates in a different country.
- *ATIS Technical Report on a Framework for SHAKEN Attestation and Origination Identifier* (ATIS-1000088) provides a framework for SHAKEN attestation and granularity of the Origination Identifier.

- *ATIS Technical Report on Full Attestation Alternatives for Enterprises and Business Entities with Multi-Homing and Other Arrangements (ATIS 1000089.v002)* describes use cases where a SHAKEN originating service provider may not have complete, locally available information to establish a verified association between a calling telephone number and its direct customer as the basis for assigning a “full attestation” value to particular calls.
- *Signature-based Handling of Asserted information using toKENs (SHAKEN): Delegate Certificates (ATIS-100092)* extends the SHAKEN certificate management framework to enable a telephone number (TN) service provider (TNSP) to create telephone number or range of telephone numbers of specific certificates for entities that do not have access to STI certificates.
- *ATIS Standard on Toll-Free Numbers in the SHAKEN Framework (ATIS-1000093)* addresses the application of the currently defined STIR/SHAKEN framework to calls where the calling party number is a toll-free number.
- *Signature-based Handling of Asserted information using toKENs (SHAKEN): Calling Name and Rich Call Data Handling Procedures (ATIS-1000094)* expands the SHAKEN framework, introducing mechanisms for authentication, verification, transport of calling name and other enhanced caller identity information (e.g., images, logos), and call reason and describing how they are handled in various call origination and termination scenarios.

While SHAKEN is focused on IP-to-IP calls, ATIS is also examining the issue of call authentication for non-IP calls. In May 2020, ATIS launched the Non-IP Call Authentication (NIPCA) Task Force. This Task Force of ATIS’ Packet Technologies and Systems Committee (PTSC) was created to evaluate call authentication for TDM-based Originating Service Providers (OSP) and Terminating Service Providers (TSP). The Task Force investigated the feasibility of TDM call authentication frameworks, including how these would interact with SHAKEN. To date, the NIPCA Task Force has developed deliverables pertaining to:

- *Extending STIR/SHAKEN over TDM (ATIS-1000095)* extends the SHAKEN framework to convey verified attestation levels over TDM interconnects, originations, and terminations.
- *Out-of-Band PASSporT Transmission Involving TDM Networks (ATIS-1000096)* extends the currently defined SHAKEN framework to enable the transmission of Personal ASSertion Tokens (PASSporTs) for calls that use TDM signaling and/or TDM switches during origination, termination, and/or transit.

- *Technical Report on Alternatives for Call Authentication for Non-IP Traffic* (ATIS-1000097) identifies non-IP call authentication scenarios and provides a framework to evaluate potential approaches that could provide call authentication even when the call is not SIP end-to-end. This document also assesses the ability of the two proposed non-IP call authentication approaches to provide call authentication for all identified scenarios.

The ATIS NIPCA Task Force is currently also defining an extension to *Extending*

STIR/SHAKEN over TDM (ATIS-1000095) that may allow full SHAKEN attestation to be carried over TDM networks in some use cases. This does not provide a general mechanism for SHAKEN over TDM networks, but it can extend the scope of call authentication over non-IP networks.

ATIS has also issued White Papers and Technical Reports on important issues related to robocalling, including:

- *Robocalling and Communication ID Spoofing: Better Understanding Illicit and Unwanted Calls and How to Counter Them* (ATIS-I-0000081). Published in February 2021, this report summarizes the many types of illicit calling and the measures being deployed to counter them. It explains why the industry must deploy many separate components in combination to maximize mitigation with minimal blocking of wanted calls. The report concludes with recommendations for future industry action.
- *Number Allocation Authentication for Originating Service Provider SHAKEN Enterprise Identity Distributed Ledger Network: Providing Enterprise and Telephone Attestation* (ATIS-I-0000084). This August 2021 Technical Report extends the capabilities of SHAKEN to provide the ecosystem with new options for mitigating illegal robocalls and features a distributed ledger infrastructure called the enterprise identity network. The report enables an enterprise to establish enterprise identity credentials by applying distributed ledger technology and its cryptographic principles to allow enterprises to place calls signed with its enterprise identity credentials, enabling any originating service provider (OSP) receiving the call to authenticate the enterprise identity of the calling enterprise.
- *Enterprise Identity on Distributed Ledger for Authenticated Caller Use Cases* (ATIS-1-0000076). This paper, published December 2019, provides a description for using distributed ledger technology to provide enterprise identity verification to authenticate originating party caller information in IP communication networks. It describes the challenges associated with the attestation of a telephone number (TN) due to enterprise multi-homing with originating service providers that are not the allocation provider of the TN, within IP communication networks.
- *Developing Calling Party Spoofing Mitigation Techniques: ATIS' Role*. Published in March 2017, this report highlights the practical mitigation techniques the industry is

developing to provide the consumer with useful tools to reduce unwanted robocalls, and concludes that a layered approach, similar to that used in cybersecurity efforts, provides the flexibility to respond to these evolving threats.

- *Calling Party Spoofing Mechanisms and Mitigation Techniques* (ATIS-I-0000051). This April 2016 paper outlines practical mitigation techniques being developed and emphasizes Caller ID spoofing is not a static problem that can be solved with a single solution. Rather, a flexible, layered approach is needed to respond to these evolving threats.

ATIS' contributions to this issue are not limited to the development of standards. ATIS also plays a key role in the call authentication ecosystem. The ATIS Robocalling Testbed, hosted by the Neustar Trust Lab, allows the industry to validate the effectiveness of SHAKEN as an implementation framework for service providers to better combat robocalls and call spoofing on IP-based networks. In addition, the Secure Telephone Identity Governance Authority (STI-GA), operates under the auspices of ATIS.

B. Application of SHAKEN to Foreign-Originated Robocalls

With ATIS' significant experience with call authentication issues and as the developer of the SHAKEN standards, ATIS is pleased to provide input regarding the application of SHAKEN to foreign-originated robocalls. ATIS' input should not be considered a recommendation for Commission action.

ATIS notes that, to address foreign-originated illegal robocalls, the Commission seeks input on a number of proposals including, for example, whether it should require gateway providers to confirm that a foreign call originator is authorized to use a particular U.S. number that purports to originate the call and whether it should apply additional "know your customer" requirements to gateway providers.² The Commission also notes that the gateway providers, in many cases, do not have a direct relationship with the originator, making it significantly more

² FNPRM at ¶80.

difficult to obtain “know your customer” information.³

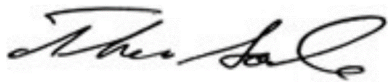
While the Commission’s proposed approach attempts to address foreign originated illegal robocalls by imposing new responsibilities on gateway providers, ATIS notes that the SHAKEN standards consider cross-border traffic and recognize that countries other than the U.S. can be part of the call authentication ecosystem and trust framework, potentially allowing international calls to be signed by the originating carrier. For example, the *Mechanism for Initial Cross-Border Signature-based Handling of Asserted information using toKENs (SHAKEN)* (ATIS-1000087) specifies how the trust framework could be extended to include other countries, which would allow call authentication to be performed by foreign-originating service providers. This standard explains that initial deployment of cross-border SHAKEN is likely to be based on direct bilateral agreements but that other mechanisms could also be introduced.

³ FNPRM at ¶85.

III. CONCLUSION

ATIS supports the Commission's effort to address illegal robocalls and appreciates the opportunity to provide its input to the *FNPRM*. As one of the leading developers of ICTS standards related to robocalling and call authentication, ATIS is pleased to provide an update on its robust work programs on these matters, including the continued development of SHAKEN standards. ATIS notes that the SHAKEN standards consider cross-border traffic and recognize that countries other than the U.S. can be part of the call authentication ecosystem and trust framework, potentially allowing international calls to be signed by the originating carrier.

Respectfully submitted,



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