2023 STI-GA SHAKEN Report

1. **Introduction and Background**

In 2018, the telecommunications industry established the Secure Handling of Asserted information using toKENs (SHAKEN) framework; and it organized the Secure Telephone Identity-Governance Authority (STI-GA), under the auspices of the Alliance for Telecommunications Industry Solutions (ATIS), as the authority to govern and set policy for use of the framework.

Since then, the STI-GA selected iconectiv as the STI-PA, approved 14 STI-Certification Authorities (STI-CAs), and launched and managed the SHAKEN framework, ensuring it was both fully implemented and stable, with the policies necessary to allow the ecosystem to grow and remain secure. The STI-GA has grown the ecosystem from a just handful of initial participants to more than 1,200 today.

This year marked the last FCC STIR/SHAKEN implementation deadline for small facilities-based providers. Growth in the ecosystem continued as almost 500 new providers sought and gained authorization. A major update to the Certificate Policy was adopted as was a new process for the approval of Certification Practice Statements (CPS) that involved compliance testing for STI Certificates. The STI-GA continues to grow the ecosystem and keep it secure while refining its management processes.

SHAKEN Ecosystem Implementation

As of December 31, 2023, the STI-PA authorized a total of 1283 SPs. The full list of authorized SPs is posted on the STI-PA website. The chart below exhibits the continued growth in the ecosystem since December 2019.
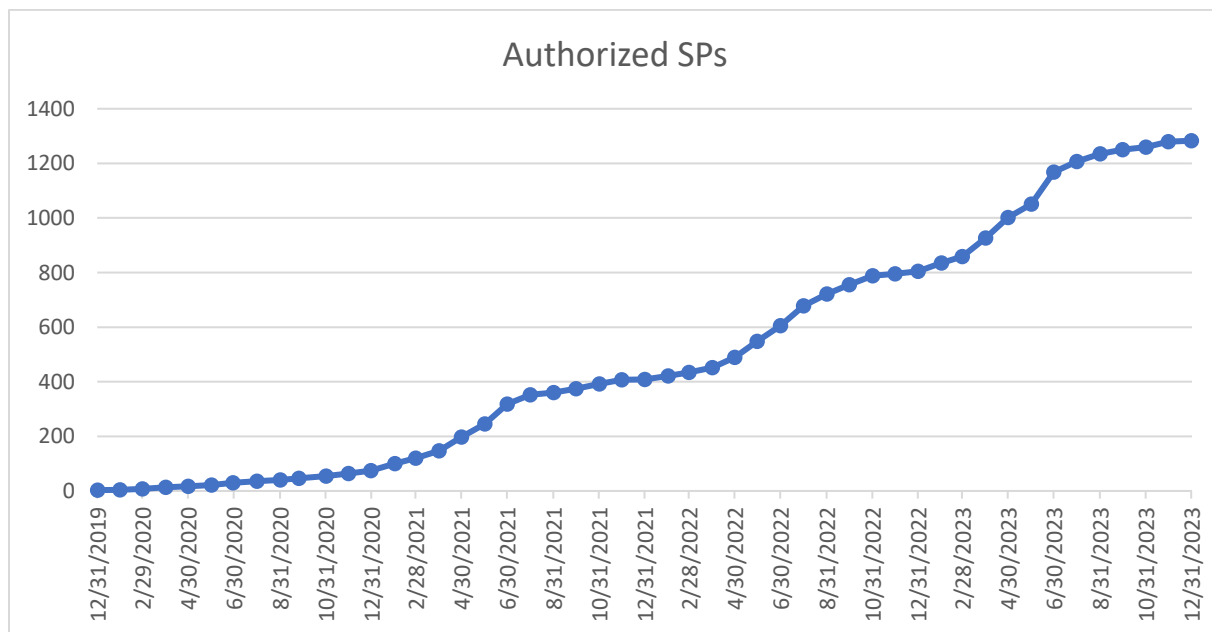
The increased number of SPs allows the STI-GA to distribute the costs of the Framework over more participants. This drives down costs for individual provider participants by reducing the Contribution Factor.

This year, the STI-GA approved the addition of two more STI-CAs to the framework, bringing the total number to fourteen. Twelve of the fourteen STI-CAs are public in that they serve the entire industry. The list of public STI-CAs is posted on the STI-PA website. The STI-GA continues to receive and review applications from prospective STI-CAs indicating the choices for authorized SPs will continue to grow.

2. **STI-GA Policy**

Certificate Policy v1.4

On June 6, 2023, the STI-GA approved a new Certificate Policy (CP), version 1.4 (CP v1.4). This was a major revision tightening up the security for the certificates issued by authorized CAs and ensuring close adherence to the most current ATIS STIR/SHAKEN standards.

Perhaps the most closely industry watched change centered on the use of STI Certificates for signing call attributes other than caller ID. Specifically, the STI-GA reviewed the use of STI Certificates in attesting to three extensions, Rich Call Data (rcd), Diversion (div), and Resource Priority Header (rph).

The rcd extension, defined in ATIS standard 1000094, allows for originating providers to authenticate information in a call header beyond the calling number, such as caller name, call reason, and even the logo of the company calling or a photo of the person calling.

The div is an extension used when a SHAKEN signed call is retargeted to an alternate destination Telephone Number (TN). The div extension, as defined in ATIS standard 1000085, allows an extension to be added to the SHAKEN PASSporT that specifies a destination TN different from the destination TN identified in the SHAKEN PASSporT header.   The div extension may be used for services such as call forwarding, simultaneous ring, and toll-free routing. It allows the Terminating Service Provider to know that the call was legitimately retargeted.

As defined in ATIS Standard 1000078, rph allows for the use of an extension signed with a SHAKEN PASSporT to legitimize a claim that a particular call should receive network priority in an emergency. The rph extension will support National Security/Emergency Preparedness Priority Service calls, which include Wireless Priority Service (WPS), Government Emergency Telecommunication Service (GETS) and Next Generation Network Priority Services (NGN-PS) calls in IP-based networks. The STI-GA determined that it was appropriate for providers to use the STI Certificates assigned under the SHAKEN framework for the signing of these three extensions.

All STI-CAs were required to update their CPSs to align with the new CP v1.4. Each revised CPS had to be reviewed and approved. Further, the STI-GA added an additional component to this approval process. The STI Technical Committee (TC) developed a tool used for testing certificates assigned by STI-CAs and the certificates' compliance with the CP and relevant STIR/SHAKEN standards. CPSs revised by each STI-CA were not approved until the STI-CA also produced a compliant certificate. The TC plans for this compliance testing tool to be available shortly to all STI-CAs.

STI-CA Revocation Policy

The changes made to CP v1.4 to allow the use of STI certificates for signing other extensions caused the STI-GA to consider changes to its Revocation Policy. The current Revocation Policy was revised to make clear that use of the STI Certificate to authenticate *any* false information related to the call can result in SPC token revocation. The policy had previously been limited to the authentication of false caller ID data.

Improper Attestation & Authentication

With the tremendous expansion of the SHAKEN ecosystem (the addition of nearly 500 participating providers), the STI-GA recognized that further guidance in the effective deployment of STIR/SHAKEN was needed. For this reason, the STI-GA worked to better define how service providers should use the SHAKEN certificates to attest and authenticate the calls they originate. In July 2023, the STI-GA approved and posted definitions of both improper attestation and improper authentication that are meant to help providers understand appropriate behavior within STIR/SHAKEN ecosystem.

Improper Attestation may include a carrier signing a call with A-level attestation that clearly did not meet the definition of A-Level attestation in ATIS standard 1000074. Improper Authentication includes the authentication by use of an STI Certificate of *any* information in the call that is determined to be falsified. These definitions are meant to guide STIR/SHAKEN ecosystem participants in the proper use of the STI Certificates they have been given. In creating the definitions, the STI-GA sought to ensure that end users will be able to truly trust that the calls they are receiving are indeed from whom they claim to be from.

3. **International Cooperation**

   Following the completion of an MoU with the Canadian Secure Telephone Governance Authority (CST-GA) to coordinate efforts on the implementation of STIR/SHAKEN, the STI-GA and CST-GA held joint meetings in 2023 and continued work to make each country's trusted CA list and Certificate Revocation List available to the other.

4. **Outreach & Education**

   External Feedback Forum

   In 2023, the STI-GA held its first External Feedback Forum (EFF). The purpose of the EFF was to allow those parties with an interest in the implementation of STIR/SHAKEN, but without direct STI-GA Board representation, to hear directly from the Board and to provide feedback to the Board on issues important to them. In this manner, the STI-GA sought to ensure the broadest participation while staying true to the governance model as it was initially laid out by the industry and approved by the FCC.

   The EFF met for the first time in May 2023. It was attended by a number of enterprise representatives. The STI-GA will hold this forum bi-annually if there is significant interest. The next EFF is planned for early 2024.

   Beyond the EFF, the STI-GA continues to allow any party to provide specific policy suggestion via the STI-GA Policy Change Request Form.

STI-GA Updates

The STI-GA regularly provides updates to the North American Numbering Council (NANC). In 2023, the GA provided updates to the NANC at its February, June, and October meetings.[1] The GA will continue to provide such updates at the request of the FCC and the NANC.

The STI-GA also provided updates through the SIP Forum events. In 2023, the SIP Forum hosted SIPNOC 2023 in September. The STI-GA provided an update on ongoing and future work at the event. An STI-GA Board Director provided an update at the Illinois Broadband Telecommunications Associations meetings in September. The STI-GA Board Chair, and STI-GA Director participated in a robocall-focused panel at the National Association of Regulatory Utility Commissioners winter meetings.

The primary means of STI-GA outreach is via its website. This website is kept current with STI-GA policies, including new policy decisions, through the STI-GA Policy Decisions Binder. Any STI-GA issued media and industry advisories for important announcements are posted and maintained on this site.

To enable users to more easily find the documents posted on the website, the STI-GA approved a redesign of the STI-GA website, which launched in early 2024.

5. **Governance**

Funding and Payments

The STI-GA continued to ensure the SHAKEN framework will be fully funded for the next year via fees paid by participating SPs and Resp Orgs. The continued growth in SP participation over the past four years allows the STI-GA to lower the overall contribution factor applied to STI Participant revenues to determine each participant's STI-PA fee.

While the SHAKEN ecosystem has grown to more than 1200 STI Participants, the STI-GA-approved 2024 budget remains at the same level as its budget for the prior three years. The STI-GA agreed on a Funding Policy for 2024 that either maintained or lowered costs for all participants. The contribution factor used to determine fees for all but the largest and smallest providers fell from .00003574 to .00002722. The maximum payment for the largest providers remained $100,000 while minimum payment applied to the smallest providers was similarly unchanged at $500. The STI-GA will continue to adjust the Funding Policy annually to account for any changes with the overall goal of collecting no more funding than is needed to cover the SHAKEN Framework bills.

Even with the minimization costs per participant, there are STI Participants that, for varying reasons, fail to pay. The STI-GA works closely with the STI-PA to give such SPs every chance to pay their fees before they are stripped of their STI-PA authorization and their ability to participate in the STIR/SHAKEN ecosystem. In 2023, the STI-PA identified approximately 20 STI Participants that were delinquent in paying their fees. After much effort was expended to reach out to and work with these providers to give them every chance to pay, ten of the delinquent providers were removed from the STIR/SHAKEN ecosystem, and their access to the STI-PA's participant portal disabled. Should any STI Participant that has been so removed wish to be reinstated, it must simply reapply via the STI-PA authorization process and pay its STI-PA fees.

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[1] North American Numbering Council | Federal Communications Commission (fcc.gov)

6. **Investigations and Enforcement Actions**

   Review of FCC Actions

   The FCC took action against One Owl Telecom for trafficking in illegal robocalls. While One Owl was not an authorized SP, it was in the process of seeking STI-PA authorization. As such, the STI-GA froze consideration of One Owl's request for an SPC token, a practice it has taken in the past when a company is found by regulators to be suspected of transmitting illegal traffic.

   The FCC has taken action against a number of other SPs. To date, however, those providers have not been previously authorized by the STI-PA.

7. **Conclusion**

   Since the SHAKEN framework launch in late 2018, the ecosystem has grown rapidly and remains poised for continued growth. As more providers participate in the SHAKEN ecosystem, a greater number of calls will be signed. Beyond increasing the number of verified calls, the STI-GA's focus on establishing policies that ensure that STI Participants are aware of what is meant by proper call attestation will enable providers to relay accurate call signature information to end users. Increasing the number of verified calls and the quality of call signatures will benefit consumers as SPs will be better able to assess the caller's right to use the TN that is displayed in the caller ID. Finally, consumers will be more comfortable trusting that the calling party that appears in their caller ID is verified.