2022 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.

Soon thereafter, the STI-GA issued a request for proposal (RFP) for the STI-Policy Administrator (STI-PA), the role required to enforce the STI-GA policy and authorize entities to participate in the SHAKEN ecosystem.

In 2019, the STI-GA completed the RFP process and selected iconectiv as the STI-PA. Additionally, the STI-GA authorized the first four STI-Certification Authorities (STI-CAs) and met the Federal Communications Commission's (FCC's) December 2019 deadline to launch the SHAKEN framework.

In 2020, the STI-GA continued its work to ensure the SHAKEN framework was both fully implemented and stable, and created the policies necessary to allow the ecosystem to grow and remain secure.

In 2021, the SHAKEN ecosystem experienced tremendous growth. The year began with 74 service providers (SPs) authorized by the STI-PA and ended with more than 400, more than a fivefold increase in STIR/SHAKEN participation within a single year.

In 2022, the growth of the SHAKEN ecosystem continued as the 800th SP was authorized and the STI-GA approved its 12th STI-CA. The STI-GA further worked to secure the SHAKEN framework by tightening up its own Certificate Policy. The GA also entered the arena of enforcement for the first time by revoking the SPC tokens of four previously authorized SPs that failed to pay their STI-PA fees in compliance with the STI Participant agreement and the STI-GA Token Revocation Policy.

2. **SHAKEN Ecosystem Implementation**

As of December 31, 2022, the STI-PA authorized a total of 805 SPs. The full list of authorized SPs is posted on the STI-PA website. The chart below exhibits the continued growth in the ecosystem during the year.

Authorized SPs
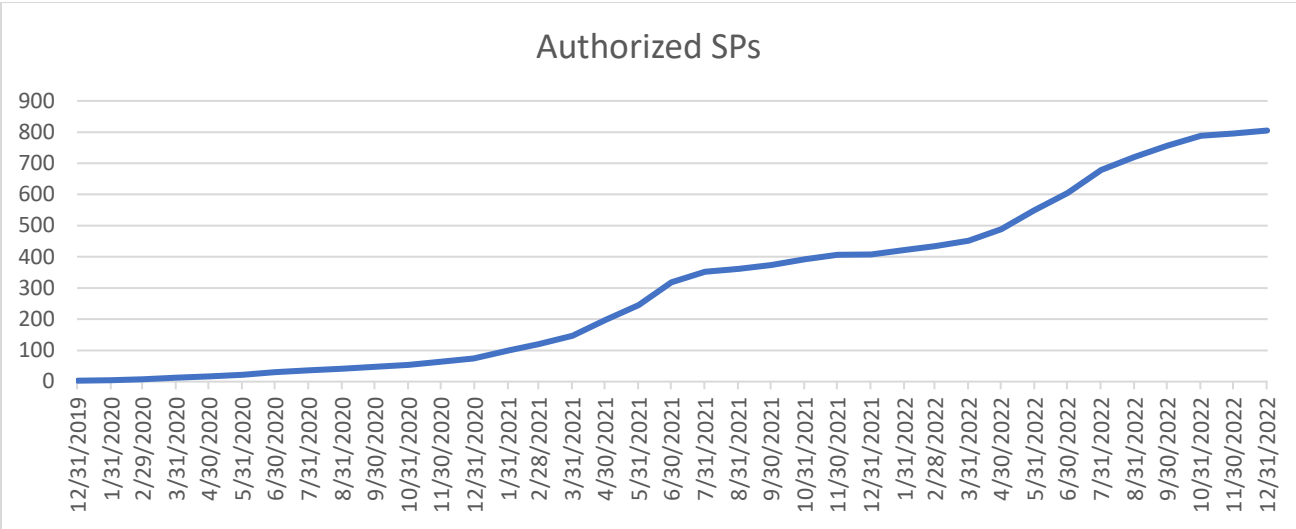
A greater number of SPs has allowed the STI-GA to share the costs of the Framework over more participants, driving down costs for individual provider participants.

The STI-GA Board added two more STI-CAs to the framework, bringing the total number to twelve. Ten of the twelve 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 applications from prospective STI-CAs indicating the number will continue to grow in 2023.

In February 2022, an authorized STI-CA improperly accessed customer data held by the STI-PA. This data included STI Participant account data such as user names, contact information and 499A revenue totals. The data did not include user passwords or credit card information. The STI-GA took steps to confirm that the data was deleted from the STI-CA's systems and that it was not shared with any third party.

The STI-PA identified the breach and took immediate action, including the suspension of the STI-CA's account and the identification and remediation of the system issue that allowed the inappropriate access. To mitigate the impacts of the suspension on SPs, the STI-GA Board approved a manual process which allowed the STI-CA's existing SP customers to continue signing calls with valid certificates while the STI-CA itself did not have access to any STI-PA data.

The STI-GA continued its investigation of the event reinstating the STI-CA following its completion of a number of steps designed to ensure such a breach would not occur again. The STI-GA takes seriously its role as a steward of the data entrusted to the STI-PA by SP participants and created a new Certification Authority Revocation Policy as a direct result of this breach. That policy is discussed below.

3. **Memorandum of Understanding (MoU) with Canada**

The STI-GA, furthering its role to advance industry's battle against illegal robocalling, struck its first agreement with a Governance Authority in another country. In July 2022, the STI-GA announced the completion of an MoU with the Canadian Secure Telephone Governance Authority (CST-GA) to coordinate efforts on the implementation of STIR/SHAKEN. The MoU covers the interconnection of SHAKEN frameworks in both the U.S. and Canada so that providers can more easily sign calls in one country and have the signature accepted in the other. It further allows the two governance authorities to coordinate enforcement to ensure SHAKEN framework participants are operating within boundaries

of the SHAKEN standards and policies. Finally, the MoU paves the way for SPs signing calls in one country to have those calls validated in the other.

The first CST-GA/STI-GA joint Board meeting occurred in September 2022 and coordination between the two governance authorities, including each GA's Technical Committee (TC), is ongoing. The MoU will serve as a model for cooperation as other countries move on implementing STIR/SHAKEN.

4. <u>STI-GA Policy</u>

STI-CA Revocation Policy

The agreement each authorized STI-CA must sign with the STI-PA makes clear that the STI-PA may suspend the STI-CA if it determines that a Certification Authority has violated the terms of its agreement. The STI-GA may similarly determine that an authorized STI-CA should no longer be part of the SHAKEN Framework.

The STI-GA crafted the STI-CA Revocation process. This process lays out the steps to be taken if an STI-CA is found to have violated the terms of their STI-PA agreement. It is largely based on the experience gained by the STI-GA following the February data breach. It covers issue identification and investigation all the way through process review and potential post-reinstatement auditing of the STI-CA.

Certificate Policy

The STI-GA TC has devoted a great deal of time this year in reviewing and approving the Certification Practice Statements (CPSs) based on Certificate Policy (CP) version 1.3 that was updated and issued in 2021. Version 1.3 of the CP added the issuance of intermediate certificates, which can be used for the assignment of delegate certificates. All STI-CAs were required to update their CPSs to align with the new CP. Each revised CPS had to be reviewed and approved.

As the revised CPSs were approved, the TC began work on version 1.4 of the CP. While that work is not yet complete, it is winding down. The new CP version 1.4 should be approved and ready for publication in early 2023.

5. <u>Policy Administrator Systems Development</u>

STI-PA Outage Reporting

On December 12, 2021, the STI-PA implemented a dual region functionality. This change created a second instance of the STI-PA systems that are hosted by Amazon Web Services (AWS). With this change, the STI-PA systems were fully replicated in the AWS East and West regions, with the East Region being the primary. After multiple outages in 2021, the STI-PA did not report a single outage in 2022.

6. <u>Outreach & Education</u>

External Feedback Forum

Approved by the STI-GA Board in December 2022, the External Feedback Forum (EFF) plans to meet twice yearly, beginning in 2023. Its purpose is 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 Board

is seeking 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.

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 2022, the GA provided updates to the NANC at its February, August and October meetings.[1] The GA will continue to provide such updates at the request of the FCC and the NANC.

The STI-GA continued providing updates through the SIP Forum events. In 2022, the SIP Forum hosted SIPNOC 2022 in March and the STIR/SHAKEN Enterprise Summit in October. The STI-GA provided updates on ongoing and future work at both events. Those presentations may be accessed online.[2]

The primary means of STI-GA outreach is via its website. This website is kept current with STI-GA Board 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 the website.

7. **Governance**

Funding and Payments

The Board continued to ensure the SHAKEN framework will be fully funded for the next year via fees paid by participating SPs and Resp Orgs. As noted previously, there has been substantial growth in SP participation over the past three years, which allows the Board to lower the overall contribution factor applied to STI Participant revenues to determine each participant's STI-PA fee.

Even with the management of more than 800 STI Participants, the Board-approved 2023 budget is at the same level as its budget the prior two years. The Board was able to come to agreement on a Funding Policy for 2023 that continued to lower costs for all participants. The largest providers saw the maximum payment fall from $143,925 to $100,000 while the smallest provider payment fell from $825 to $500. The contribution factor applied to provider revenue to determine all other payments also fell from .000053 to .00003574. The Board will continue to adjust the Funding Policy annually to account for any changes. The financial status of the SHAKEN framework entering its fifth year is stable.

Even with the lowering of costs, 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 early 2022, the STI-PA identified 22 delinquent STI Participants owing a total of approximately $180,000. In an effort to ensure these SPs had received proper notice and fully understood the consequence of not paying their STI-PA fees, the STI-GA worked with the STI-PA to reach out to the participants. By October 2022, the list of delinquent payers had been whittled down to four, owing a total of just over $6,000. These four SPs were subsequently 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.

Recoupment

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[1] North American Numbering Council | Federal Communications Commission (fcc.gov)
[2] SIPNOC 2022 Schedule - SIP Forum & STIR/SHAKEN ENTERPRISE SUMMIT Schedule - SIP Forum

The STI-GA pays for the costs of the STI-GA Framework with the collection of STI-PA fees from all participants. The STI-GA sets the level of those fees each year based on known and anticipated costs for the coming year and its most-up to date knowledge of the number of participants. The STI-GA seeks to spread the overall costs among the participants in the most equitable manner possible.

The SHAKEN Framework was launched at the end of 2019 and 2020 was its first full year in operation. While the FCC set its STIR/SHAKEN mandate in June of 2021, many SPs chose to move forward with implementation sooner than required. Seventy-three SPs registered with the STI-PA to participate in STIR/SHAKEN in 2020, year-one of the Framework. To honor the commitment of these SPs, the STI-GA determined that excess funds collected should be credited back to these SPs that chose to participate in year one of the SHAKEN Framework. Each of these SPs received a note along with their 2023 invoice showing a credit for the amount they paid in 2020. In some cases, the credited amount was greater than their 2023 bill, as the STI-GA has been able to lower costs for individual STI Participants as more SPs have joined the ecosystem. In those cases, the credits will be applied both to payment for 2023 and future years.

STI-GA Continuity

In 2022, the two "founding member" STI-GA Board seats held by AT&T and Comcast were eligible for reappointment. The representatives from both companies were reappointed for another three-year term. The continuity of the STI-GA membership exhibits the industry's continued commitment to appropriate STIR/SHAKEN governance, as well as its faith the diversity and decision of the STI-GA Board in the initial years of STIR-SHAKEN implementation.

Similarly, the Board first appointed ATIS as the STI-GA in 2018. In 2022, the Board extended the agreement with ATIS as the STI-GA through the end of 2024.

8. <u>Conclusion</u>

Since the launch of the SHAKEN framework in late 2018, the ecosystem has grown rapidly and remains poised for continued growth. As more SPs and Resp Orgs 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 ensuring that STI Participants are properly signing calls 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 right of a caller to use the TN that is displayed in the caller ID and finally, consumers will be more comfortable trusting that the calling party is who they say they are.