



2020 Year-End STI-GA Report

Introduction

2020 was focused on ensuring the SHAKEN framework was both fully implemented and stable. This required continued development of the technical framework, the Secure Telephone Identity Policy Administrator (STI-PA) systems and approval of STI Certification Authorities (STI-CAs) that are required to assign certificates to authorized service providers (SPs).

The technical framework included final acceptance of the STI-PA systems following the implementation and testing of the first change order as well as ensuring a smoother registration process for SPs. Another key action included approval of STI-CAs.

The policy framework included review and revision of the Service Provider Code (SPC) token Access Policy, the Funding Policy, the Certificate Policy (CP), creation of the Revocation and Reinstatement Processes, and a formal Policy Change Request process.

On both the policy and technical framework fronts, the SHAKEN framework is now ready for broader industry use. As the ecosystem continues to grow, the industry's ability to use STIR/SHAKEN to help mitigate illegal caller ID spoofing will increase.

The Technical Framework

The SHAKEN technical framework includes the STI-GA, the STI-PA and the STI-CAs. The STI-GA manages the selection and implementation of the STI-PA and its systems and the approval of STI-CAs. The STI-GA was established in 2018 and the STI-PA selected in 2019. While the initial STI-PA systems launch occurred in December 2019, the STI-GA final acceptance of the STI-PA systems did not occur until February 2020.

From a technical standpoint, the STI-PA - iconectiv - implemented the first required changes identified by the STI Technical Committee (TC) prior to the December 2019 rollout. With these changes successfully tested and implemented, the STI-GA declared final acceptance of the STI-PA systems in February 2020.

Following system acceptance, the STI-PA refined the registration process and prepared for the expected increase in 2021 SP registrations.

Throughout 2020, as experience was gained, the registration process became smoother and more efficient.

As the iconectiv team gained experience addressing SP-specific registration issues, testing and SP registration became more efficient, resulting in faster authorizations.

The informal introduction of approved vendors greatly assisted SPs seeking to work with a vendor. By mid-year, a number of vendors requested permission to test their systems' interface with the STI-PA. At least two vendors that had been involved prior to roll-out as initial STI-CAs had already proved their systems' ability to interface with the STI-PA. An approved vendor must build and test an application capable of communicating with the STI-PA via the STI-PA API. Any SP working in conjunction with an approved vendor does not need to go through the staging process, since the staging process is designed to prove a SP's ability to communicate across the STI-PA API. Consequently, the number of authorized SPs increased.

SP Registration

The STI-PA began 2020 with three authorized SPs. By the close of 2020 there were 74 authorized SPs. This includes small, medium and large providers as well as wireless, wireline and interconnected VoIP providers.

STI-CA Approval

2020 began with four STI-CAs operating under a temporary agreement to act in accordance with a recently passed CP. Two of those STI-CAs were formed to issue certificates for the purposes of their own SP. A third initially served a limited audience of its current customer base. The fourth was open to assign certificates to all SPs. The SHAKEN framework ended the year with a total of eight approved STI-CAs. Of those eight STI-CAs, six are open to serving the broader industry and all eight are operating under fully approved Certification Practice Statements (CPS) based on the most current version of the CP, version 1.1.

Securing eight fully approved STI-CAs required the Policy Management Authority (PMA) to review, provide comment on and eventually approve the submitted and redrafted CPS. Most of this work was ultimately consolidated as the STI-GA Board adopted major updates in CP version 1.1, as discussed above.

The SHAKEN ecosystem experienced significant expansion throughout its first year of operations and is well-positioned for further expansion in 2021.

The Policy Framework

Throughout the year, the STI-GA Board considered the policies necessary to protect the security and integrity of the SHAKEN ecosystem. Many policies were either instituted or amended by the Board in 2020. These policies set the rules for how STI-CAs assign and manage the STI certificates assigned to SPs, which SPs have access to those certificates, how those certificates might be revoked from SPs should they be incorrectly used, and how a SP could be reinstated to the SHAKEN ecosystem post-revocation. The STI-GA Board sought to further broaden input on its policies by creating a Policy Change Request process. This is a process whereby any entity can suggest changes to current STI-GA Board policy. The

framework was fully funded in 2020 and the Board made key determinations on funding the framework for 2021.

Service Provider Code token Access Policy

The STI-GA Board revised the SPC token Access Policy late in 2020. The initial 2018 SPC token Access Policy adopted has three requirements for entities seeking authorization by the STI-PA:

- 1) Have a current form 499A on file with the FCC
- 2) Have been assigned an Operating Company Number (OCN)
- 3) Have direct access to telephone numbers from the North American Number Plan Administrator (NANPA) and National Pooling Administrator (NPA)¹

In its deliberations, the STI-GA Board considered a policy that would be as inclusive as possible while protecting the security and integrity of the SHAKEN ecosystem. Those deliberations resulted in adoption of a revised SPC token Access Policy in November. The revised policy replaced direct access to telephone numbers with certification required in the FCC's September 30 Report & Order.² The order requires "all voice service providers to certify that their traffic is either "signed with STIR/SHAKEN or . . . subject to a robocall mitigation program."³ SP registration in that database will replace the telephone number access requirement as the third authorization prong no earlier than June 30, 2021.

Revocation and Reinstatement Processes

The STI-GA Board also created policies to revoke SP access to SPC tokens in the event that SPs were misusing their STI certificates, as well as reinstating them after resolving the misuse. Misuse of an SPC token or failure to comply with important framework policies and other safeguards could jeopardize the integrity of the STIR/SHAKEN ecosystem. For this reason, the SP Agreement, the agreement signed by all STI-PA authorized SPs, requires compliance with these policies and safeguards:

"Service Provider shall only use SPC tokens for the intended purposes as set forth in the Participant Agreement and the ATIS SHAKEN Specifications and in compliance with all requirements of such specifications. Service Provider agrees not to sign any telephone calls that do not meet the levels of attestation in the relevant ATIS SHAKEN Specifications."

The SP agreement also establishes that the STI-PA "may suspend or terminate SP's access to SPC tokens and/or revoke existing tokens immediately upon indication that SP is in breach of this Agreement."

The Revocation process details the procedure whereby the Board determines a SP's right to retain its SPC token and, thus, its SHAKEN call signing privileges. Under the Revocation Process, the STI-GA Board will determine if revocation of the SP's access to SPC tokens is warranted. The process allows the affected SP to provide any relevant written information for the STI-GA Board's consideration. Any revocation decision by the STI-GA Board will be relayed to both the affected SP and the STI-PA. This notification will include a description of the action taken (revocation) and the reasons for the action.

¹ While the access limitation is reasonable, signing a given call should not be limited to only the pool of numbers available to the provider via direct access. In other words, per ATIS-100074, 5.2.3, under correct conditions a qualified service provider (SP) must be allowed to sign leased numbers as well as other numbers belonging to an OCN not assigned to that qualified SP insofar as the SP can properly verify the customer's authorized use of that number.

² [FCC-20-136A1.pdf](#)

³ *ibid*, paragraph 82.

Any SP that has had its SPC token revoked by the STI-GA Board may appeal that decision under the procedures laid out in the Revocation Process. Alternatively, the SP may also seek to address any deficiencies identified by the STI-GA Board and seek reinstatement under the Reinstatement Process.⁴

Certificate Policy

The Board also made major revisions to the CP used by the STI-CAs to manage how they assign certificates to authorized SPs. The initial CP was adopted by the STI-GA Board in 2019, but a major revision (CP version 1.1) was adopted by the STI-GA Board in April. CP version 1.1 included some important technical updates as well as a new section 9 dealing with STI-CA business practices. The CP will continue to evolve as necessary based on changes in the overall ecosystem, and in particular for the legitimate and proper usage and management of STI-certificates.

Policy Change Request Process

In order to ensure the broadest possible input on its policies, the Board created a formal process whereby any entity could provide feedback on already adopted STI-GA Board policies, the Policy Change Request (PCR). Multiple entities submitted PCRs that the Board took into consideration in its policy deliberations.

Funding Policy

The SHAKEN framework could not have been stood up without funding. 2020 funding was provided from a number of sources. Funding sources included fees paid by registering SPs to the STI-PA as well as STI-GA Board member payments used to fund the first six months of the STI-GA. The majority of funds, however, were provided through a backstop agreement with four major providers (AT&T, Comcast, T-Mobile and Verizon). The Board further determined that for 2021 and beyond, all funding needed would come from fees paid to the STI-PA by authorized SPs.

A given SP's STI-PA fee is determined by multiplying its FCC form 499A telecom revenues by a contribution factor.⁵ In 2020, the contribution factor was set at .0000385. That factor was the same for all SPs, but no SP paid more than the ceiling amount or less than the floor amount. In 2020, the ceiling (cap) was set at \$240,000 and the floor (minimum) at \$825.

Because of the elimination of direct STI-GA Board member and Backstop provider payments the contribution factor for 2021 increased to .0001821.

At the close of 2020, with greater stability in both the systems and the policies underlying those systems, and some assurance in the funding going forward, the SHAKEN ecosystem is positioned and ready for growth in 2021.

Conclusion

2020 demonstrated a continuation of the industry's ongoing efforts to help mitigate illegal robocalling and caller ID spoofing. The STI-GA, its Board and Technical Committee, the STI-PA, the STI-CAs and the authorized SPs all contributed to the first-year growth of the ecosystem. By cementing the technical and

⁴ The STI-GA Board discussed the Revocation Process with the FCC and the FCC subsequently released a Further Notice of Proposed Rulemaking on their role in the process. See [Revocation Process FCC FNPRM](#).

⁵ 499-A Revenue lines 423 or 514 (column A), whichever is greater.

policy frameworks, the STI-GA ensured the SHAKEN framework was ready for the anticipated 2021 expansion. The STI-GA will remain active in carrying out its role to protect the security and integrity of the SHAKEN ecosystem while allowing the broadest participation possible.