



CST-GA

Canadian Secure Token
Governance Authority

**Report on Industry Consultation as Directed by CRTC CETD 2021-267
September 29, 2021**

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1. Background

The Signature-based Handling of Asserted Information using toKENs (SHAKEN) framework [ATIS-1000074, ATIS-1000080 and ATIS-1000084] establishes an end-to-end architecture that allows an originating service provider to authenticate and assert a telephone identity and provides for the verification of this telephone identity by the terminating service provider. The integrity and security of this architecture depends on the trust of the entity that authenticates and asserts the telephone identity. In the SHAKEN architecture, trust is established by the originating service provider because it originates the call onto the Public Switched Telephone Network (PSTN). The originating service provider can only fully attest to an identity Telephone Number (TN) when it has verified the association between the calling party and the TN (i.e., verified the calling party has a legitimate right to use the TN for the call). The SHAKEN specifications give the originating service provider wide latitude when verifying the association between the TN and the calling party. Therefore, the integrity and security of the SHAKEN ecosystem requires control of who can obtain a Service Provider Code (SPC) Token and act as the originating service provider.

2. Scope and Objectives

This Report documents the consensus recommendations from the consultation process directed by Canadian Radio-television and Telecommunications Commission (CRTC) Compliance and Enforcement and Telecom Decision (CETD) 2021-267. The recommendations explicitly identify the eligibility criteria for a Telecom Service Provider (TSP), who is not eligible to become a Canadian Secure Token Governance Authority (CST-GA) Shareholder¹, to acquire an SPC Token² and Secure Telephone Identity (STI) Certificates to participate in the STIR/SHAKEN³ framework in Canada, nothing more. All operational and governance matters (e.g., compliance monitoring and revocation) are out of scope for this report and will be addressed at a later date by the CST-GA Shareholders.

3. Assumptions

This Report makes the following assumptions about the scope and objectives of the consultation directed by CRTC CETD 2021-267.

1. The purpose of this consultation is to explicitly develop a consensus position on the eligibility criteria for a TSP to acquire SPC Tokens and STI Certificates and participate in the STIR/SHAKEN framework in Canada. The consultation is open to currently non-eligible TSPs and to currently eligible TSPs (through their membership in the CST-GA). Therefore, this consultation includes all Canadian TSPs.

¹ All Canadian carriers registered and in good standing with the CRTC (including with respect to Network Access Services (NAS) and other Data Collection Survey (DCS) filings) and has access to numbering resources as administered by the Canadian Numbering Administrator (CNA).

² The authorized TSP receives an SPC Token from the STI-PA. This SPC Token is used for TSP validation during the process of acquiring an STI Certificate from the STI Certificate Authority.

³ Secure Telephone Identity Revisited (STIR)

2. Factors, such as defining criteria to revoke a TSP’s eligibility to acquire SPC Tokens and STI Certificates or to monitor ongoing TSP compliance with defined certificate use policies, are out of scope for this consultation. These, and other governance matters will be addressed through ongoing CST-GA governance.
3. The CRTC has recognized that access to certificates can be denied if there is a reason to believe a TSP cannot be trusted to maintain the integrity of the STIR/SHAKEN framework⁴. This consultation will not attempt to identify TSPs that “cannot be trusted” but will instead focus on assessing if a TSP “can be trusted”. To do this, the Report identifies the information about a TSP that is necessary to support a meaningful assessment of the TSP and to reasonably believe that the TSP can in fact be trusted to maintain the integrity of the STIR/SHAKEN framework. This assessment must be based on the individual TSP, and not on the characteristics of a “type of TSP”. The assessment must be applied universally and objectively.
4. The CRTC has recognized that requirements to obtain SPC Tokens and STI Certificates must be (i) necessary to maintain the integrity of the STIR/SHAKEN framework, and (ii) specifically crafted to achieve that objective. Therefore, this Report will identify information that must be provided when applying for the right to acquire an SPC Token and STI Certificate. This information will be selected to understand the TSP identity, its implementation of STIR/SHAKEN, and its ability to determine the legitimate SHAKEN attestation level. This information will provide reasonable confidence that the TSP will maintain the integrity of the STIR/SHAKEN framework and also assist in identifying and resolving problems if/when they do occur.
5. The CRTC recognized that comparison with the United States may be informative, but it is not directly applicable given the different regulatory frameworks in the two countries⁵. Therefore, if U.S. criteria are cited, there will also be an explicit consideration of the ways in which the context is the same, and the ways in which it is different. Consideration may also be given to the impact criteria might have on the ability to successfully implement cross-border STIR/SHAKEN.

4. Principles

The criteria for participation in the Canadian STIR/SHAKEN framework are intended to maximize participation while still ensuring the integrity of the STIR/SHAKEN system. This will depend on a robust system for monitoring and enforcing compliance with all CST-GA certificate use policies. The details of this system for monitoring and enforcing compliance will be developed by the CST-GA and are out of scope for this consultation.

5. Criteria for Access to STI Certificates

This document proposes that the criteria to acquire SPC Tokens and STI Certificates should be based on three components:

⁴ 2021-267 paragraph 52 [CRTC CETD 2021-267 | CRTC](#)

⁵ 2021-267 paragraph 47 [CRTC CETD 2021-267 | CRTC](#)

1. **Identity:** Proving “you are who you say you are” by providing the following information:
 - a. The TSP must have registered⁶ with the CRTC in a category eligible to provide voice services in Canada.
 - b. Number of years of operation as a TSP or providing voice services in Canada.
 - c. Countries of operation for telecommunications services
 - d. Any related dba (doing business as) entities providing voice services
 - e. Operating Company Number (OCN): the registered TSP must have at least one OCN assigned by the National Exchange Carrier Association (NECA).

2. **Reputation:** This component⁷ is intended to provide an opportunity for the applicant to highlight actions it has taken to assure the regulator, the industry, and the general public of its commitment to provide secure attestation of caller identity in telecommunications. The applicant must respond to the questions in Appendix A.

3. **Technical:** providing information to establish compliant implementation processes, and best practices to reliably and accurately determine the appropriate level of attestation for all calls. This includes:
 - a. Applicants must agree to adhere to all STI-GA certificate use policies.
 - b. **Investigation:** Must agree to cooperate in formal requests for investigation to maintain the integrity of the STIR/SHAKEN framework.
 - c. **Attestation:** Must file a compliance statement with the CST-GA detailing how they determine a user has the right to use the calling party number. This must cover all user scenarios, including:
 - i. **Individual user lines** (e.g., landline, mobile or VoIP client) where the calling number is inserted by the network. If the user has the ability to change the number that will be displayed, describe the mechanism used to determine that the user has the right to use the number. Describe how this information will be verified on a regular basis to ensure it is still accurate.
 - ii. **Enterprise lines:** If the user has the ability to insert the calling party number, describe the mechanism to determine the user has the right to assert the number. If the mechanisms used is described in ATIS-1000089 (*ATIS Technical Report on Full Attestation Alternatives for Enterprises and Business Entities with Multi-Homing and Other Arrangements*) provide details of the implementation – for example, if a central telephone number database is used, identify the database and how it is populated and maintained. If a different mechanism other than those described in ATIS-1000089 is used, describe how this works, and why it provides a similar level of confidence.

⁶ <https://crtc.gc.ca/eng/comm/telecom/registr2.htm>

⁷ See Appendix A

6. Out of Scope

Appendix B, included for the information of the CRTC, describes concerns raised by certain participants about the impact of the time reasonably required to operationalize the eligibility criteria recommended by this Report relative to the deadline of November 30, 2021 for implementation of STIR/SHAKEN in CRTC CETD 2021-123.

7. Recommendations

By consensus among the participants in this consultation it is recommended that the CST-GA:

1. Amend its SPC Token access policy to reflect the criteria defined in section 5 of this Report;
2. Develop and implement an application and onboarding process to support the issuance of SPC Tokens based on the criteria in section 5 of this Report; and
3. Provide a copy of this Report to the CRTC for its information.

8. Appendix A Reputation Considerations

The following Yes or No questions are intended to provide additional information that may be useful for assessing the trustworthiness of the applicant organization, and for ongoing compliance monitoring by the CST-GA:

- a. Has the applicant or any related party ever had a CST-GA issued SPC Token suspended or revoked?
- b. Has the applicant or any related party within the last two years, been subject to any CRTC enforcement actions relating to matters that could affect the integrity of the STIR/SHAKEN framework?
- c. Has the applicant or any related party within the past 2 years, received a “Cease and Desist-type” letter from any Canadian government agency (e.g., CRTC) that could affect the integrity of the STIR/SHAKEN framework?
- d. Has the applicant participated or is participating in CISC NTWG meetings regarding STIR/SHAKEN (e.g., Task Identification Forms (TIFs) 37, 38, 40)?
- e. Has the applicant filed a STIR/SHAKEN readiness report per CRTC CETD 2021-123 appendix 1 or 2?⁸
- f. Does the applicant intend to participate with other Canadian Service Providers in the investigation of spoofing, robo-calling, or other nuisance calling incidents?
- g. Does the applicant participate in the Commissioner for Complaints for Telecommunication Services (CCTS)? Is the TSP considered by CCTS to be a non-compliant provider?⁹
- h. Is the applicant or any related party an originating and/or terminating service provider in the US?
- i. Is the applicant or any related party a current or previous holder of an SPC Token in the US?
If yes, has this US SPC Token ever been revoked or suspended?

⁸ [CRTC CETD 2021-123 | CRTC](#)

⁹ as described at <https://www.ccts-cprst.ca/about-ccts/participating-service-providers/non-compliant-providers/>

- j. Has the applicant or any related party received in the last 2 years, a “Cease and Desist-type” letter from any US government agency (e.g., Federal Communications Commission (FCC), Federal Trade Commission (FTC), Department of Justice (DoJ))?
- k. Is the applicant or any related party registered in the US Robocall Mitigation Database (RMD)?
- l. Has the applicant in the last 2 years been removed from the US Robocall Mitigation Database by the FCC?
- m. Does the applicant or any related party participate in US Industry Traceback Group (ITG) traceback requests?

9. Appendix B

Token Availability Timeframe

This Appendix, included for the information of the CRTC, describes concerns raised by certain participants about the impact of the time reasonably required to operationalize the eligibility criteria recommended by this Report relative to the deadline of November 30, 2021 for implementation of STIR/SHAKEN in CRTC CETD 2021-123.

CRTC CETD 2021-267 directs the CST-GA, in collaboration with industry, to define new SPC Token eligibility requirements within 60 days of the decision's August 5, 2021 publication. As such, the CST-GA will publish the final version of this Report with the eligibility requirements on or before October 4, 2021.

The CST-GA will need additional time after October 4, 2021 to operationalize these requirements before it can begin accepting applications from newly eligible TSPs. In addition, these TSPs will need additional time after they are issued SPC Tokens in order to obtain STI Certificates and deploy their STIR/SHAKEN solutions.

CRTC CETD 2021-123 establishes November 30, 2021 as the deadline for TSPs to implement STIR/SHAKEN. The CST-GA is not currently in a position to commit to a date when it will be able to accept SPC Token applications from newly eligible TSPs or the amount of time it will take to process and approve such applications.

CRTC CETD 2021-267 acknowledges that lack of access to SPC Tokens may create challenges for non-eligible TSPs in complying with the Commission's requirement for all TSPs to implement STIR/SHAKEN prior to the deadline, in part because alternative implementation options may not be available. As a result, some TSPs acting in good faith may find it difficult or impossible to complete their implementation by November 30, 2021 due to the SPC Token availability timeframes described above.

10. Appendix C Participants

Company Name	Participant
ATIS	Jim McEachern
Bell Canada	Matthew Peacock
Bell Canada	Thomas Rumball
Bell Canada	Brian Fitzgerald
Bragg Communications/Eastlink	Pierre Guynot de Boismenu
Caztel Communications Inc.	Stephen Abbott
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11. Appendix D Table of Contributions

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21-267-03R04	ATIS	Jim McEachern
21-267-03R05	ATIS	Jim McEachern
21-267-03R06	ATIS	Jim McEachern
21-267-03R07	ATIS	Jim McEachern
21-267-03R08	ATIS	Jim McEachern
21-267-03R09	ATIS	Jim McEachern
21-267-03R10	ATIS	Jim McEachern
21-267-03R11	ATIS	Jim McEachern
21-267-03R12	ATIS	Jim McEachern
21-267-03R13	ATIS	Jim McEachern
21-267-03R14	ATIS	Jim McEachern
21-267-04R0	ATIS	Jim McEachern
21-267-05R0	Freedom/Shaw	Michael Studniberg
21-267-06R0	Microsoft/Twilio/8x8/RingCentral/Telnyx	Gunnar Halley
21-267-06R1	Microsoft/Twilio/8x8/RingCentral/Telnyx	Gunnar Halley
21-267-07R0	ATIS	Jim McEachern
21-267-07R1	ATIS	Jim McEachern
21-267-08R0	Bell Canada	Matt Peacock
21-267-08R1	Bell Canada	Matt Peacock
21-267-08R2	Bell Canada	Matt Peacock
21-267-08R3	Bell Canada	Matt Peacock
21-267-09R0	CST-GA	Marian Hearn
21-267-09R1	CST-GA	Marian Hearn
21-267-10R0	IntelePeer/Microsoft	Scott Stamp/Gunnar Halley
21-267-11R0	CST-GA	Marian Hearn
21-267-11R1	CST-GA	Marian Hearn
21-267-11R2	CST-GA	Marian Hearn
21-267-12R0	Rogers/Bell/Shaw	Gerry Thompson/Thomas Rumball/Graham LeGeyt
21-267-12R1	Rogers/Bell/Shaw	Gerry Thompson/Thomas Rumball/Graham LeGeyt
21-267-13R0	Bell Canada	Brian Fitzgerald

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21-267-15R0	CST-GA	Marian Hearn
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