Nuisance Calls, Caller ID Spoofing and STIR/SHAKEN

FAQs FOR CANADA

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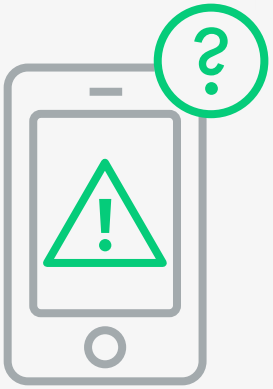
A TransUnion® Company

FAQ 1

Why Are Nuisance Calls, and Caller ID Spoofing, Such a Big Problem In Canada?



Robocalls, typically referred to as "nuisance calls" in Canada, are a global problem. In Canada, nuisance calls are the number one contact method for fraudsters – nearly doubling in the first seven months of 2020. Forty percent of those calls involved Caller ID spoofing.

Market Trends

#1

Contact method for fraudsters

Nuisance calls are the number #1 contact method for fraudsters

- The Centre, in partnership with the Royal Canadian Mounted Police

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2x

As many nuisance calls

Nuisance calls nearly doubled in the first seven months of 2020 from last year

- Canadian Anti-Fraud Centre

40%

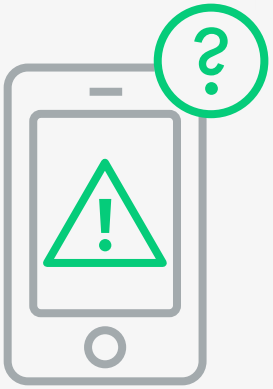
Calls that involve spoofing

Robocalling is the number one contact method used by fraudsters in 2019 in Canada. 40% of unwanted calls involve call spoofing.

- CRTC

FAQ 1 (CONT.)

Why Are Nuisance Calls, and Caller ID Spoofing, Such a Big Problem In Canada?



The Canadian Radio-Television and Telecommunications Commission (CRTC) is the key communications regulator in Canada. Like the Federal Communications Commission in the U.S., they see eradicating nuisance calls and illegitimate Caller ID spoofing as a top priority.

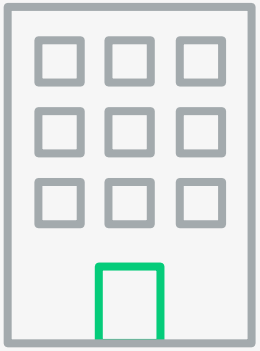
Global adoption has long been the vision of STIR/SHAKEN authors and administrators. How STIR/SHAKEN is implemented with respect to international calls is becoming increasingly important. As seen in recent high-profile legal cases, the primary source of fraudulent voice traffic has been linked to VoIP applications, trunks, and wholesale providers catering to subscribers who are sourcing traffic from international entities set on committing fraud.

Canada is gaining momentum as the second country in the world to implement STIR/SHAKEN call authentication, and they are making rapid progress in short order. However, nuisance calls are a global issue.

Read our International Call Authentication (STIR/SHAKEN) FAQs.

FAQ 2

How Is Canada Addressing the Issue of Nuisance Calls and Caller ID Spoofing?



On 25 January, 2018, the CRTC issued a compliance and enforce telecom decision CRTC 2018-32 requiring Canadian Telecommunications Service Providers (TSPs) to implement STIR/SHAKEN by 9 December 2019.

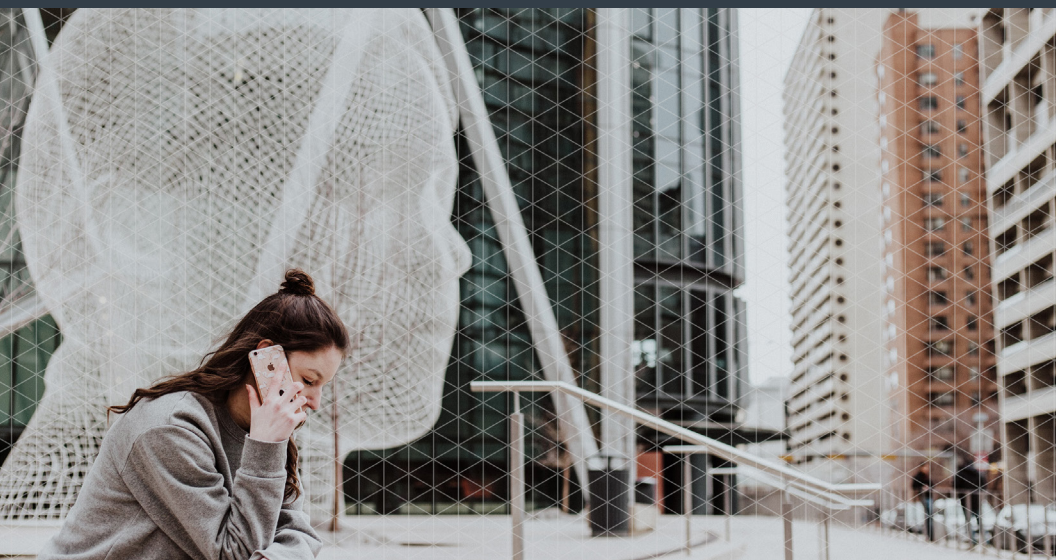
On 9 December 2019, however, the CRTC issued, CRTC 2019-402, pushing the deadline to 30 Sep 2020. They also issued CRTC 2019-403, which established the Canadian Secure Token Governance Authority (CST-GA). The CST-GA was formed to kickstart industry-wide adoption of STIR/SHAKEN policies, protocols, and operating procedures in Canada.

The CST-GA is responsible for directing the Secure Telephone Identity Policy Administrator (STI-PA) and Certification Authorities (STI-CAs) in Canada. All Canadian carriers who wish to implement STIR/SHAKEN must currently be a member of the CST-GA.

On 6 April 2021, the CRTC issued a new decision, CRTC 2021-123, which pushed the STIR/SHAKEN deadline to 30 November 2021.

This decision stated that TSPs must:

- Implement STIR/SHAKEN in their IP-based networks by 30 November 2021 as a condition of continuing to provide voice service. If they do not implement STIR/SHAKEN, they will not be allowed to continue offering voice service.
- Submit Implementation Readiness Assessment Reports, the first by 31 August 2021:
  - May reports are then due 31 May of each year, starting 31 May 2022, covering the first day of September to the last day of February.
  - November reports are then due 30 November, starting 30 November 2022 and covering the first day of March to the last day of August.



Key Dates

2018

CRTC mandates Caller ID authentication via STIR/SHAKEN by December 2019. That was subsequently updated to 30 November 2021.

2019

- CRTC establishes the Canadian Secure Token - Governance Authority (CST-GA). The CST-GA is responsible for directing the Secure Telephone Identity Policy Administrator (STI-PA) and Certification Authorities (STI-CAs) in Canada.
- Canada's CRTC Chairman Ian Scott and the FCC Chairman in the U.S. reported that they had **completed end-to-end international authenticated calls using STIR/SHAKEN** through Comcast Xfinity Voice and Telus wireless phone services.

Key Dates

2020

- In July, the CST-GA and their shareholders selected Neustar to **stand up both the STI-PA and STI-CA by 30 September 2020**, a comprehensive governance solution enabling STIR/SHAKEN protocols across the Canadian telecommunications industry. As the first approved STI-CA, Neustar will issue digital STI Certificates to be used by TSPs to authenticate and verify calls.

- Then in September, the CST-GA and Neustar successfully **launched the Canadian STI-PA and STI-CA** and **website for eligible TSPs** to register and join CST-GA and participate in the Secure Telephone Identity (STI) call authentication ecosystem using STIR/SHAKEN. As an approved STI-CA in both Canada and the U.S., Neustar helps both sets of its Certified Caller customers with a simple integration to effortlessly generate SPC Tokens and STI Certificates against each country's appointed governance solution.

2021

- On 6 April 2021, the CRTC issued a new decision, **CRTC 2021-123**, pushing the STIR/SHAKEN deadline to 30 November 2021.

- Then on 5 August 2021, the CRTC ruled on a Mitel application and determined that the current direct access to numbering resources eligibility requirement is neither necessary nor appropriate for TSPs to participate in the Canadian STIR/SHAKEN ecosystem. They directed CST-GA to create new eligibility requirements within 60 days of the date of this decision (5 August 2021).

Read the blog: Canada Mandates STIR/SHAKEN to Battle Nuisance Call Epidemic.

FAQ 3

What Is STIR/SHAKEN?

STIR/SHAKEN are technology standards that define how to digitally sign phone calls to verify caller identity and prevent spoofing. STIR/SHAKEN utilizes a combination of technical, legal, and behavioral solutions; it is an evolving process that continues to be refined to address the dynamic needs of the marketplace. Expected upcoming improvements include the support of more complex call types, enterprise multi-carrier implementation, and standardizing how attestation is displayed on devices.

STIR Secure Telephony Identity Revisited

SHAKEN Secure Handling of Asserted Information Using Tokens

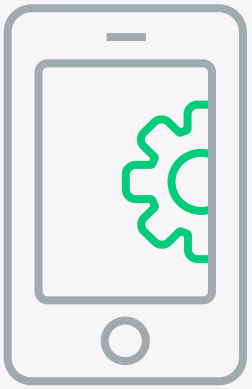
STIR (Secure Telephone Identity Revisited) are global standards created by the IETF that can help any country authenticate calls using SIP-based services. STIR has also been tested extensively in the **ATIS Testbed**, by domestic and international carriers, for numerous years.

SHAKEN, on the other hand, is an ATIS framework designed for carriers that builds on IETF standards.

Visit the STIR/SHAKEN Resource Hub to learn more.

FAQ 4

How Does STIR/SHAKEN Work?



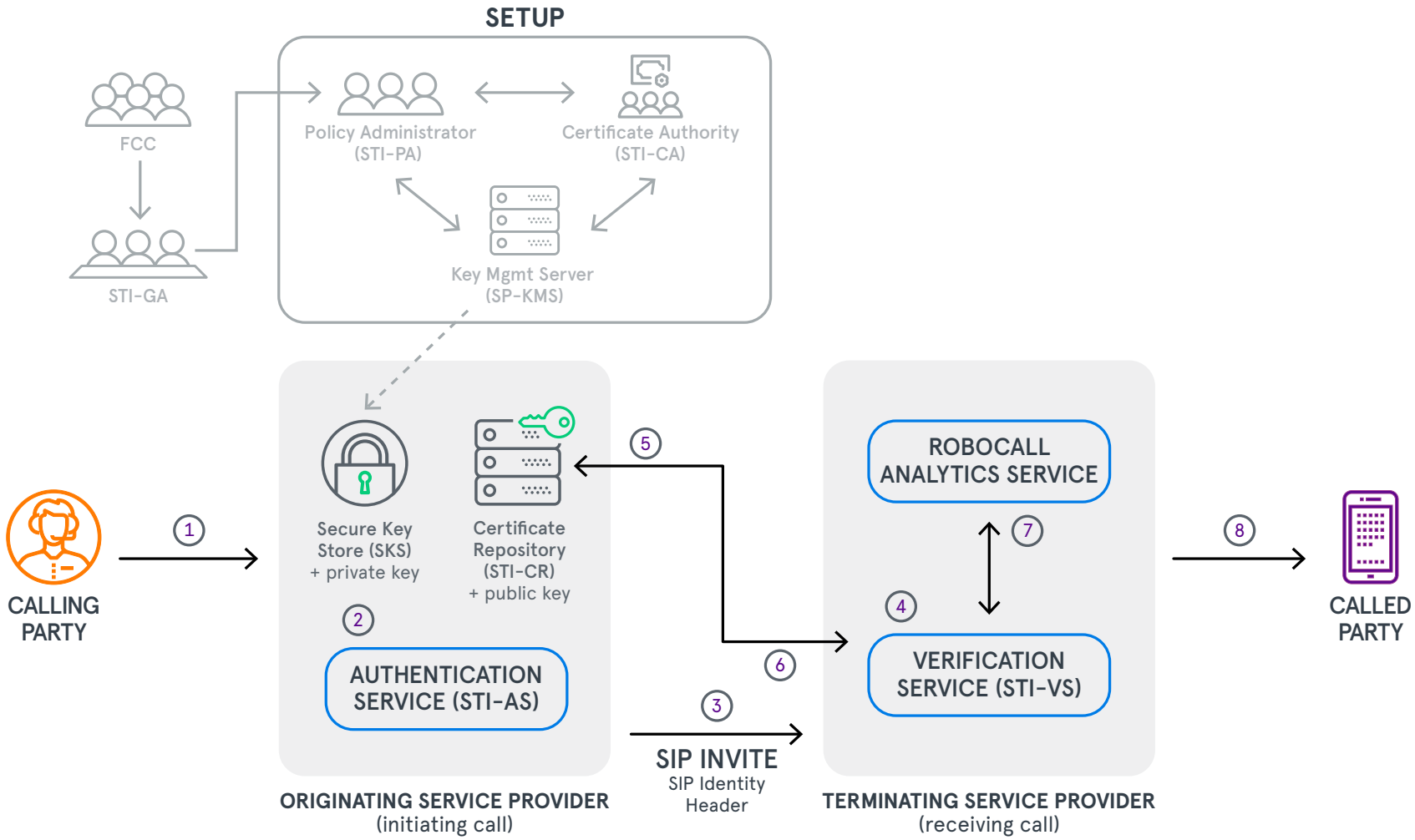
1. **A user wants to originate a call**
   a. Calling party dials phone number of called party they wish to reach
   b. Calling party device sends request to their TSP

2. **This originating TSP invokes the authentication service. This TSP is the service provider that attests to the legitimate use of a phone number that originated from its network. This enables the terminating TSP to "trust" that the call was originated from a valid source and was not spoofed.**
   a. Authentication service validates the relationship with calling party
   b. Assigns attestation level (A, B, C)
   c. Generates SIP Identity header (with PASSporT) using authentication service private key, obtained from Secure Key Store (SKS), to sign (authenticate) call

3. **Originating TSP sends the SIP INVITE to the terminating TSP. This TSP invokes its verification service. The TSP is the service provider that has a relationship with the call recipient. The TSP:**
   a. Initiates a service request to the originating TSP's certificate repository for a public key certificate
   b. Validates STI-CA that issued certificate is from the trusted CA list as approved by PA and that the certificate is not revoked
   c. Verifies the call information and assigns a verification status

4. **The TSP can further examine robocall analytics to determine if the phone number is used for nuisance calls.**

HOW STIR/SHAKEN WORKS



[Download the infographic, How STIR/SHAKEN Works.]

FAQ 5

How Does Attestation Work?

STIR/SHAKEN uses vital information about the originating caller to assign an attestation rating of A, B, or C to each call. These "ratings" set by originating TSPs indicate how certain they are that the outgoing call has a legitimate Caller ID to make the call. The receiving or terminating TSP uses a decryption key to validate the caller's phone number to help identify spoofed calls.

Depending on the call treatment algorithm used by your TSP, customers may be notified with a symbol, verification keyword, or alert indicating that the incoming call has been validated. If the call cannot be verified, the TSP may block the call and/or alert the call recipient to a potential scam call.

A = FULL

The TSP originated the call from a known customer, using a phone number they provided to the customer.

B = PARTIAL

The TSP knows the caller's identity but hasn't verified the right of the caller to the calling phone number.

C = GATEWAY

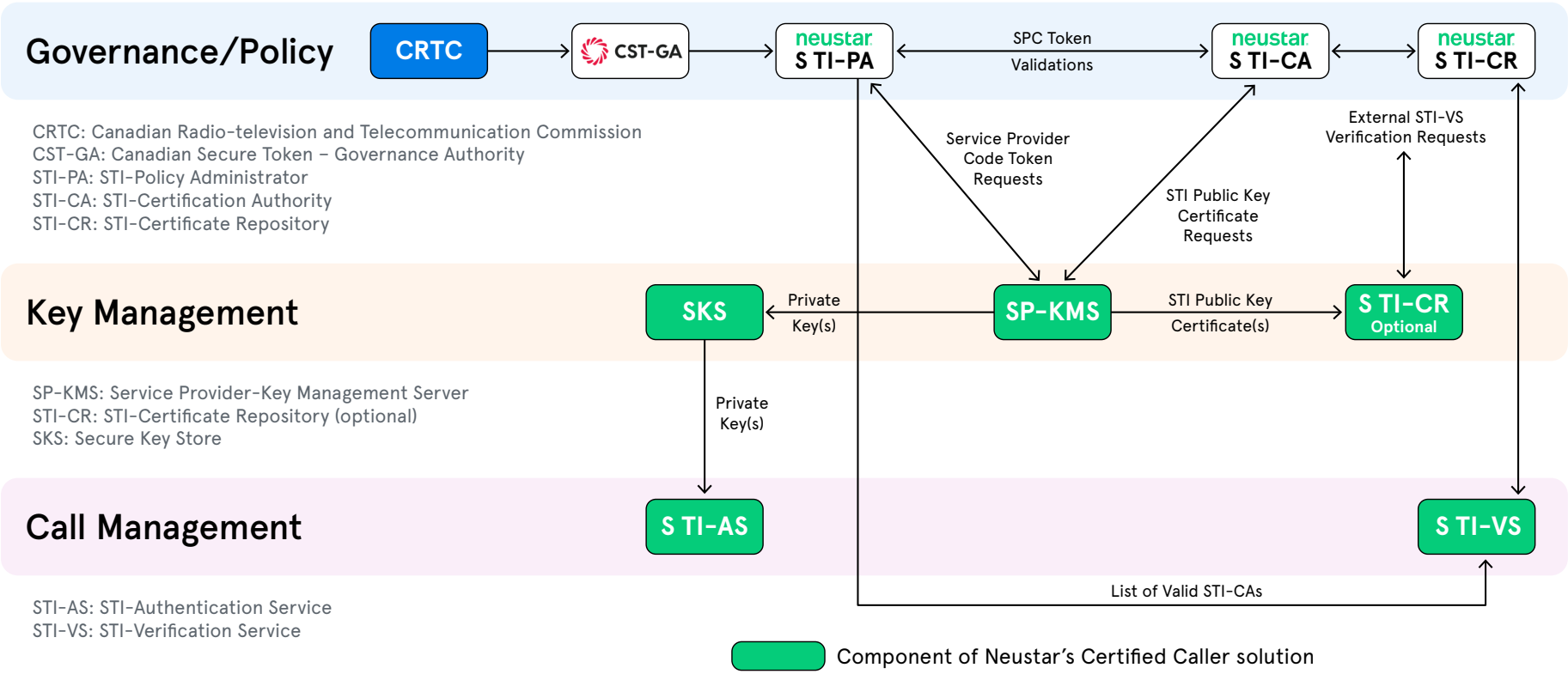
The TSP received a call originated elsewhere and cannot verify the caller or the phone number.

Read the eBook: Overcoming the Attestation Gap.

FAQ 6

What Does the SHAKEN Framework Look Like In Canada?

STIR/SHAKEN works the same way in Canada as it does in the U.S. and conforms to the same set of IETF and ATIS standards. The governance process, however, does differ from the U.S. in that eligibility is done by the CST-GA and not the STI-PA. Here's how governance works in Canada:



FAQ 7

What Do TSPs In Canada Need to Do to Get Started With STIR/SHAKEN?

TSPs in Canada are being directed by the Canadian Radio and Telecommunications Commission (CRTC) to implement STIR/SHAKEN call authentication by 30 November 2021. The Canadian Secure Token Governance Authority, Inc., (CST-GA) was approved and created to oversee this process. A governance and certificate management solution has been operational since 30 September 2020.

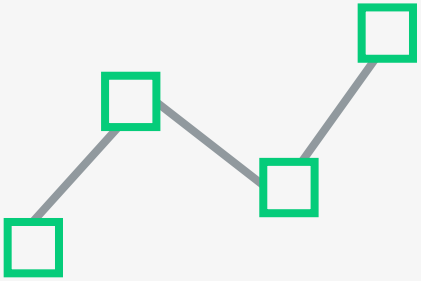
There are currently four key steps to jumpstarting the process for TSPs:

1. Become a member of the CST-GA: Refer to **www.cstga.ca** for further details and most current information
2. Be a registered Local Exchange Carrier (LEC) or Wireless Service Provider (WSP) in good standing with the CRTC
3. Be eligible to acquire Canadian Telephone Numbers directly from the Canadian Numbering Administrator (CNA)
4. Submit Network Access Services and Mobile Subscribers data to CST-GA

Download the TSP Checklist for Implementing STIR/SHAKEN in Canada.

FAQ 8

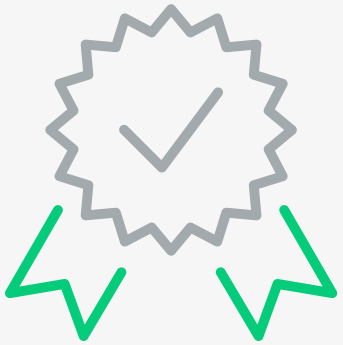
With What Organizations Is Neustar Collaborating to Define International Call Authentication Standards?



At present, Neustar, a TransUnion company, collaborates with the IETF, ATIS, the Network Working Group (NTWG), GSMA, 3GPP, and NICC. We continue to reach out to organizations and regulatory bodies across the globe to help promote call authentication standards that benefit all countries, enterprises and consumers.

FAQ 9

What Is the Role of the Trust Lab and the ATIS Robocalling Testbed?



Neustar's Trust Lab serves as the industry's virtual testbed for TSPs, equipment manufacturers, and software suppliers across the globe to remotely test call authentication solutions like STIR/SHAKEN.

Neustar is also the exclusive provider of the ATIS Robocalling Testbed. Launched in 2017, the industry interoperability test facility helps validate the effectiveness of caller authentication standards and solutions that combat illegitimate call spoofing. The testbed has helped carriers and suppliers meet the June 2021 deadline for STIR/SHAKEN implementation in the U.S. and continues to provide support to carriers on an ongoing basis.

The Trust Lab has recently been enhanced to support emerging and recently published ATIS standards and technical reports including:

- Cross-border and International interoperability
- Delegate Certificates
- Rich Call Data

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- Canada
- China
- Malaysia
- Mozambique
- South Africa
- Singapore

Learn More.

Neustar is a pioneer in call authentication as the co-author of STIR standards and early contributor to the SHAKEN framework, and we play an ongoing leadership role in defining industry standards with ATIS, IETF, and the NTWG. We provide the industry's reference implementation of STIR/SHAKEN as the exclusive operator of the ATIS Robocalling Testbed, where real world STIR/SHAKEN implementations are being tested for interoperability, and Neustar leads the industry in commercial call authentication deployments.

Visit our STIR/SHAKEN Resource Hub to learn about insights, resources, and solutions. And learn how you can implement robocall mitigation solutions today.

Contact us at callerid@team.neustar.

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