

# Frequently Asked Questions (FAQ)

## **Q. What does SHAKEN stand for?**

**A.** SHAKEN stands for Signature-based Handling of Asserted information using toKENs. It is a specification designed specifically to mitigate unwanted robocalls by reducing the impact of caller ID spoofing. Unwanted calls are the number one source of recent complaints to the FCC, and caller ID spoofing increases the harm from these unwanted calls.

## **Q. Who developed SHAKEN?**

**A.** It was developed by the ATIS-SIP Forum IP-NNI Task Force. IP-NNI stands for “Internet Protocol - Network to Network Interface.” SIP stands for Session Initiation Protocol. SHAKEN is based on the STIR (Secure Telephone Identity Revisited) protocol developed by the IETF (Internet Engineering Task Force) which is why it is typically referred to as STIR/SHAKEN.

## **Q. How does SHAKEN work?**

**A.** The verification system is designed to correct an unforeseen consequence of technology evolution that began to emerge during the late 1990’s. That’s when the telecommunications industry launched a technology capable of transmitting telephone voice calls via a broadband Internet connection instead of a regular phone line and dramatically reduced the cost of making phone calls. Robocalls use VoIP because it's inexpensive. It also enables some users to enter anything they want as the source of the call. That identification, true or false, automatically is conveyed to the called consumer.

STIR is a call-certifying protocol developed by the Internet Engineering Task Force or “IETF.” The SHAKEN framework complements the STIR protocol by providing guidance for service providers to implement STIR in carrier networks. STIR/SHAKEN allows the originating carrier to generate a digital signature that securely signals the caller's right to use a phone number to the terminating carrier. STIR/SHAKEN will offer a practical mechanism to provide verified information about the calling party as well as the origin of the call — what is known as “attestation.”

When you make a call, your phone carrier will use your identifying number to create a digital signature, or token, that will accompany the call as it is being completed. At the other end, the system verifies that nothing was tampered with and ensures that the call came from someone who has a legitimate right to use that number. Phone calls typically pass through multiple carriers as they travel from caller to recipient. Say, for instance someone who uses AT&T calls someone who uses Verizon, T-Mobile or another carrier. A caller’s phone provider has always known something about the origin of the call and whether the caller ID is authentic. But until now, that provider had no secure way of passing the information along.

SHAKEN provides a reliable way to do that, using encrypted digital signatures for each call that lets the user know that the caller ID information is accurate. The verification from SHAKEN can be displayed directly to the user or fed into a “call-blocking app” that provides a rating system that essentially identifies calls as good, questionable or likely fraudulent. The call-blocking app can take action, on behalf of the user, to stop unwanted calls from getting through. In sum, SHAKEN not only gives service providers the tools needed to sign and verify calling numbers, it also makes it possible for consumers to know, before answering, that the calls they receive are from legitimate parties.

However, SHAKEN is not a silver bullet solution to the problem of unwanted calls.

It won't block any phone calls – including robocalls. The network is designed to get calls through. Consumers eventually are expected to see an as-yet-undetermined signal that will identify calls that have been verified, a feature intended to help guide decisions about whether to pick up. The system also is expected to enhance the accuracy of companies that provide call-blocking apps for consumers. They already try to block robocalls by looking for calling patterns to identify calls from suspicious numbers, but with reliable caller ID information, this will be far more effective.

SHAKEN is designed to be a flexible solution, with industry-led governance that can adapt to address new scams as they arise. An industry-led governance structure will allow SHAKEN to work toward mitigating problem calls without cumbersome regulatory measures.

An important point is that the phone network is essentially facing the same problem that email once faced. Many of us remember a time when our email account was littered with spam, to the point that it was feared users might abandon email altogether. Filters and other anti-spam techniques have brought the email problem under control, even though they have not eliminated email spam. SHAKEN will help us have the same success in mitigating the current problems with the phone network.

**Q. When will SHAKEN be up and running? When will I stop getting these calls?**

**A.** Fraud calls won't vanish overnight. But the phone system has fewer points of entry and fewer paths to monitor than the wide-open spaces of the Internet. Knowing when incoming Caller ID correctly identifies the caller, and that a malicious party can be more easily identified, could finally cut off the scammers.

Seeing the value in the SHAKEN solution, in November 2018, FCC Chairman Ajit Pai said in a statement that he demanded that the phone industry adopt a robust call authentication system to combat illegal

caller ID spoofing and launch that system no later than the end of 2019.

**Q. What is the industry doing to fix the problem?**

**A.** The Secure Telephone Identity Governance Authority (STI-GA), which operates under the auspices of ATIS, is a critical body helping the industry achieve success in mitigating the problem of unwanted robocalling. The STI-GA is defining the rules governing the certificate management infrastructure to ensure effective use and security of SHAKEN certificates. The STI-GA issued a request for proposals for a Secure Telephone Identity Policy Administrator or “STI-PA,” to apply and enforce the STIR and SHAKEN rules. On May 30, 2019, the STI-GA announced the selection of iconectiv as the U.S. STI Policy Administrator (STI-PA), a critical role in advancing industry efforts to mitigate illegal robocalling.

As the STI-PA, iconectiv will apply and enforce the rules as defined by the STI-GA to set the SHAKEN framework into action in the network. The STI-PA will apply and enforce mechanisms designed to ensure that STI certificates are only available to authorized service providers based on rules defined by the STI-GA. As the STI-PA, iconectiv will also ensure that STI Certification Authorities perform all security functions specified to maintain the integrity of the SHAKEN framework. The SHAKEN ecosystem is expected to be operational by the end of 2019.

**Q. What will the user see when SHAKEN is deployed? Will they see a “green checkmark” or “red X”? If they don’t see anything, how will they regain confidence in the phone network?**

**A.** It is currently up to individual service providers to decide how they would like to communicate the information SHAKEN provides to their customers. The IP-NNI Task Force is debating the optimum strategy for what to display to the end user, based on SHAKEN verification. But

independent of what is displayed to the end user, SHAKEN will enhance the effectiveness of call-blocking apps and FTC enforcement actions, both of which will reduce the negative impact of unwanted calls. Over time, these will help consumers to regain confidence in the phone network.

**Q. How much will it cost to solve this problem?**

**A.** Individual service providers bear the costs of operationalizing SHAKEN. ATIS cannot comment further on this, as it is up to the individual service providers.

**Q. Who is making these calls? Where do they originate from?**

**A.** The bulk of the unwanted robocalls calls are from international sources, although these calls often use Voice over Internet Protocol (VoIP). As a result, even when the call agents are in another country, the calls effectively enter the PSTN network within the United States, primarily because this is far cheaper than making an international call. As a result, SHAKEN, even when it is only applied domestically, can begin to have an impact on illegal robocalls.

**Q. How will SHAKEN affect call-blocking apps already in use?**

**A.** Call blocking and analytics apps will remain important in combatting illegal robocalls and empowering consumers to manage the legitimate calls they may or may not want to answer. SHAKEN conveys trusted information to these apps about the authenticity of the callerID and the origin of the call providing the analytics companies with more accurate information on which to base their call-filtering decisions.

**Q. Will SHAKEN work with legacy (TDM/ISUP) networks**

**A.** Generally speaking, no – SHAKEN will not work with legacy TDM/ISUP networks. In specific scenarios, SHAKEN may be able to provide some value for legacy networks that use IP-based interconnection, but this will be limited. To realize the full value of SHAKEN, networks must be SIP-based and use IP-based interconnection.

**Q. Will SHAKEN work for international calls?**

**A.** Not initially. The STI-GA is defining an infrastructure for calls that originate and terminate in the U.S. However, the SHAKEN protocol has been designed in a way that will allow it to be extended to international calls once other countries adopt SHAKEN. The specific details for a federated SHAKEN infrastructure have yet to be defined, but the base protocol is intended to support this.

For now, besides the U.S., Canada is the only other country that has started implementing SHAKEN.

**Q. If SHAKEN won't work for international calls initially, won't that defeat the purpose, since the bulk of problem calls are from international sources?**

**A.** Most problem calls originate from international sources, but these calls typically use VoIP technology and effectively originate as domestic calls, because of the high cost of true international calls. As a result, SHAKEN will have an immediate impact, and as it is extended to apply to international calls, the effectiveness will increase.