



Description of Ribbon Solutions for Originating Robocall Mitigation



Background

In FCC 20-136 (Second Report and Order; September 29, 2020), the FCC identified specific requirements for any voice service provider who was granted a 2-year extension for the deadline to implement STIR/SHAKEN for Caller ID authentication. These requirements, stated at a high-level are:

- Respond fully and in a timely matter to all traceback requests from the Commission, civil law enforcement, criminal law enforcement, and the industry traceback consortium.
- Take steps to effectively mitigate illegal traffic when it receives actual written notice of such traffic from the Commission through its Enforcement Bureau.
 - Each notified provider must promptly investigate the identified traffic and must then promptly report the results of its investigation to the Enforcement Bureau, including any steps the provider has taken to effectively mitigate the identified traffic or an explanation as to why the provider has reasonably concluded that the identified calls were not illegal and what steps it took to reach that conclusion.
- Take affirmative, effective measures to prevent new and renewing customers from using its network to originate illegal calls, including knowing its customers and exercising due diligence in ensuring that its services are not used to originate illegal traffic.

In addition, with this ruling, the FCC also required all voice service providers, not just those subject to an extension, to file certifications with the Commission regarding their efforts to stem the origination of illegal robocalls on their networks. The filing of certifications will be into an FCC-maintained, publicly accessible, Robocall Mitigation database.

In FCC 20-187 (Fourth Report and Order; December 29, 2020), the FCC reiterated the requirement that all voice service providers must implement affirmative, effective measures to prevent new and renewing customers from using its network to originate illegal calls.

And on April 20, 2021, the FCC's Wireline Competition Bureau issued DS 21-454 (Public Notice Announcing Opening of Robocall Mitigation Database and Filing Instructions and Deadlines), which announced the availability of the FCC's Robocall Mitigation database and the filing instructions. Specifically, voice service providers are required to:

- File their certifications providing detailed information regarding their implementation of the STIR/SHAKEN caller ID authentication framework and/or a robocall mitigation program. Filing must be done by June 30, 2021.
- When filing, the voice service provider needs to certify that their traffic is either fully, partially, or not yet signed with STIR/SHAKEN. If the traffic is not fully signed with STIR/SHAKEN, then the voice service provider is required to certify that some or all of the calls they originate are subject to a robocall mitigation program and submit additional information with specific reasonable steps taken under a program to avoid originating illegal robocalls.

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Ribbon Call Trust™

Ribbon Call Trust™ is a comprehensive solution that encompasses products, product features, and Ribbon hosted, cloud-native “as-a-Service” offers to address FCC requirements and guidelines for STIR/SHAKEN as well as both originating and terminating robocall mitigation.

As an incumbent supplier to many of the voice service providers subject to the FCC mandates, Ribbon has developed features on existing products and introduced new products to enable the implementation of STIR/SHAKEN. And in October 2020, Ribbon introduced Identity Hub, its cloud-native “as-as-Service” platform along with two hosted services: Reputation Scoring for robocall and fraud mitigation and STIR/SHAKEN for caller ID authentication and verification.

A voice service provider can meet the FCC mandates for originating robocall mitigation by subscribing to Ribbon’s Reputation Scoring service. Reputation Scoring provides multi-dimensional reputation scores and guidance for call validation treatment in real-time on a per-call basis to mitigate telephony fraud, nuisance, and robocalls.

The remainder of this document is descriptive information on the Ribbon Call Trust components that provide **originating robocall mitigation** solution.

The target audience for this document are Ribbon’s voice service provider customers who have requested assistance to streamline their obligation to submit a description of their robocall mitigation programs in the FCC’s Robocall Mitigation Database.

Originating Robocall Mitigation – What Ribbon Provides

For each originating call in a voice service provider’s network, Ribbon’s Reputation Scoring service is used to determine the likelihood that the call is illegitimate and should be blocked.

If an originating call is being spoofed using a Telephone Number that appears on a Do-Not-Originate list or otherwise is an unallocated, unused, or invalid number. In these situations, the call will be determined to be fraudulent and Reputation Scoring will indicate the call needs to be blocked.

When subscribing to Ribbon’s Reputation Scoring service, the voice service provider will have access to the Identity Hub Services Dashboard, a secure, visualization and reporting tool that provides insights into the requests made, and the outcomes of, reputation scoring for a voice service provider’s traffic. By using the dashboard data, a voice service provider can easily identify potential originating robocall campaigns which can be investigated further to determine if they are illegitimate and need to be blocked.

The Identity Hub Services dashboard provides summary and historical data for Reputation Scoring service:

- **Score Statistics** – Both summary data and data focused on calls exceeding fraud score thresholds, resulting in a blocking response code.
- **Score Reports** – To highlight fraud scores from the most frequent call originators per day and by source number within a selected timeframe.
- **Call Details** – To show listing data for all calls within a selected timeframe.

Downloadable reports are available for:

- **Top Callers by Date** – Shows scoring data for the top 5 call originators for each day in the configured timeframe.
- **Caller Summary for period** – Provides statistics associated with each call originator over the specified timeframe.
- **Transaction Detail** – Provides details of every transaction in the period

Originating Robocall Mitigation – How Ribbon Delivers

There are several deployment models by which an originating robocall mitigation can be implemented. The information below is provided so a voice service provider can describe their use of Ribbon Reputation Scoring service if requested by the FCC or other appropriate law enforcement agencies.

Note: the descriptions below should be edited to represent which Ribbon products are being used.

Call Controllers (C15 or C20) using SIP to Reputation Scoring service.

1. Ribbon C15 (or C20) call controller in the originating network is provisioned to place a rule at the top of the routing table to send a SIP INVITE to Ribbon's Reputation Scoring service.
2. Reputation Scoring determines the likelihood that a call should be blocked. A call should be blocked because:
 - The originating Telephone Number shows up a Do-Not-Originate list or is an unallocated, unused, or invalid number.
 - Reasonable analytics indicated the call is highly likely to be illegitimate and malicious in intent.
3. When Reputation Scoring determines a call should be blocked it will respond with a SIP 608 Rejected message, or if determined to be necessary, a SIP 607 or 603 message can be returned. In turn, the originating C15 (or C20) call controller will send this call to treatment to be blocked.
4. If Reputation Scoring determines the call is not likely to be illegitimate, it will respond with a SIP 503 Service Unavailable message, or if determined to be necessary, a SIP 480 message can be returned. In turn, the originating C15 (or C20) call controller will route advance to the proper outgoing trunk.
5. If Reputation Scoring encounters a service error condition, it will return a SIP 500 Internal Server Error message, or if determined to be necessary, a SIP 480 or SIP 503 message can be returned. In turn, the originating C15 (or C20) call controller will route advance to the proper outgoing trunk continuing the call normally.


Call Controllers (C15 or C20) + an SBC using SIP to Reputation Scoring service.

1. Ribbon C15 (or C20) call controller in the originating network is provisioned to place a rule at the top of the routing table to send a SIP INVITE to the SBC which will redirect the SIP INVITE to Ribbon's Reputation Scoring service.
2. Reputation Scoring determines the likelihood that a call should be blocked. A call should be blocked in because:
 - The originating Telephone Number shows up a Do-Not-Originate list or is an unallocated, unused, or invalid number.
 - Reasonable analytics indicated the call is highly likely to be illegitimate and malicious in intent.
3. When Reputation Scoring determines a call should be blocked it will respond with a SIP 608 Rejected message, or if determined to be necessary, a SIP 607 or 603 message can be returned. In turn, the SBC which will send the response backward to the originating C15 (or C20) call controller to finally send this call to treatment to be blocked.
4. If Reputation Scoring determines the call is not likely to be illegitimate, it will respond with a 503 Service Unavailable message, or if determined to be necessary, a SIP 480 message can be returned to the SBC. In turn, the SBC will send the response backward to the originating C15 (or C20) call controller which will route advance to the proper outgoing trunk.
5. If Reputation Scoring encounters a service error condition, it will return a SIP 500 Internal Server Error message, or if determined to be necessary, a SIP 480 or SIP 503 message can be returned. In turn, the SBC which will send the response backward to the originating C15 (or C20) call controller which will route advance to the proper outgoing trunk continuing the call normally.

Call Controllers (C15 or C20) + an SBC and Ribbon PSX using REST to Reputation Scoring service.

1. Ribbon C15 (or C20) call controller in the originating network is provisioned to place a rule at the top of the routing table to send a SIP INVITE to the SBC which will redirect the SIP INVITE to Ribbon's PSX. The PSX will in turn send a scoring request to the Reputation Scoring service using a REST API.
2. Reputation Scoring determines the likelihood that a call should be blocked. A call should be blocked in because:
 - The originating Telephone Number shows up a Do-Not-Originate list or is an unallocated, unused, or invalid number.
 - Reasonable analytics indicated the call is highly likely to be illegitimate and malicious in intent.
3. When Reputation Scoring determines a call should be blocked it will respond with a fraud score that is sufficiently high to cause the PSX call validation treatment policies to determine the call should be blocked. When this occurs the PSX will send a SIP 608 Rejected message, or other SIP status code as desired, to the SBC which will send the response backward to the originating C15 (or C20) which will finally send this call to treatment to be blocked.
4. If Reputation Scoring determines the call is not highly likely to be illegitimate it will respond with a fraud score that is sufficiently low to cause the PSX call validation treatment policies to determine the call should be allowed to proceed. When this occurs the PSX will respond with a 503 Service Unavailable message, or other SIP status code as desired, to the SBC which will send the response backward to the originating C15 (or C20) call controller which will route advance to the proper outgoing trunk.
5. If Reputation Scoring encounters a service error condition, it will return either an HTTP 5xx error or a scoring API error. In turn, the PSX will return a SIP 500 Internal Server Error message, or other SIP status code as desired, to the SBC. The SBC will send the response backward to the originating C15 (or C20) call controller which will route advance to the proper outgoing trunk continuing the call normally.

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Contact Us  Contact us to learn more about Ribbon solutions.