



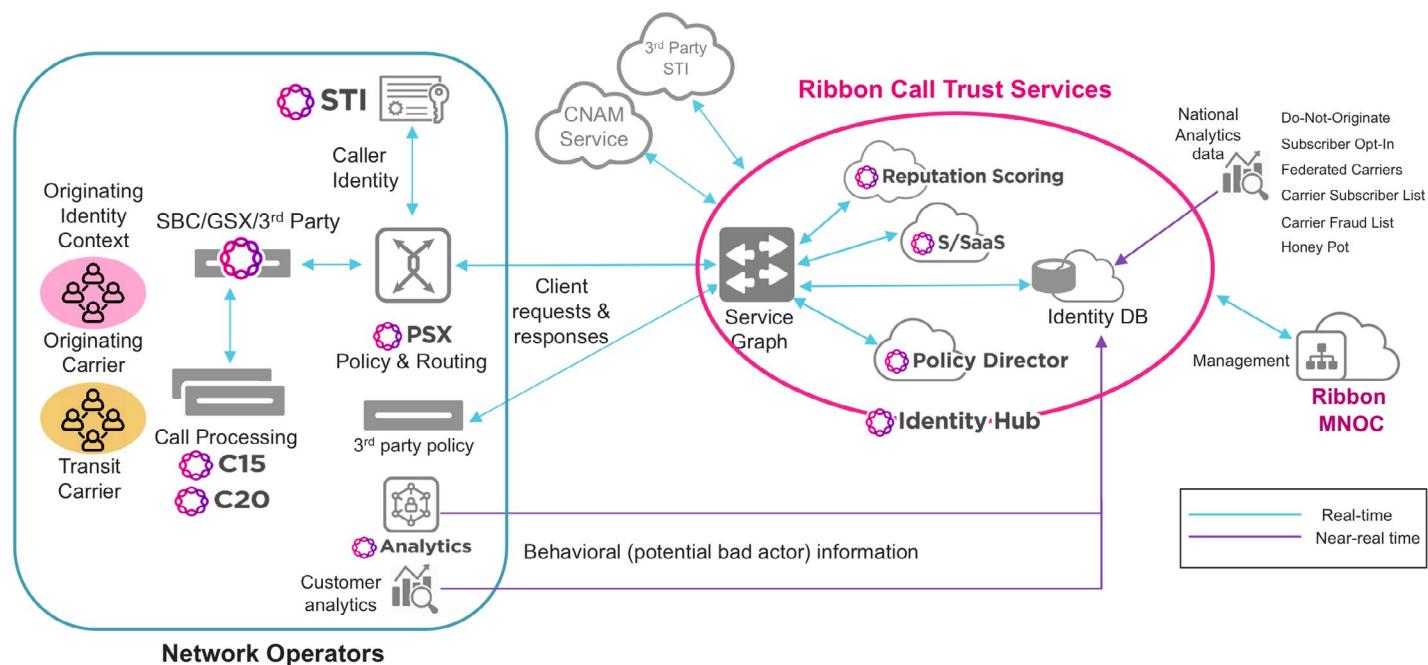
# Ribbon Identity Hub

Innovation to Restore Trust in the Phone Call



It seems everyone has a trust problem with phone calls because of the proliferation of robocalls, and fraud, which means most people choose to ignore calls they receive if they do not recognize the incoming number. This situation is not good for the service provider, the called end customer, or the originator whose business has legitimate reasons and value to their end customer. What is needed is an identity assurance solution to restore trust in the phone call.

Our answer is Ribbon Call Trust®, a complete identity assurance solution that integrates Ribbon and 3rd party data to determine caller identity, intent, and reputation. Figure 1 below, shows the overall Ribbon Call Trust solution and where Ribbon Identity Hub fits.



**Figure 1 – Ribbon Identity Hub fit within Ribbon Call Trust Architecture**

Ribbon Identity Hub is a cloud-native SaaS platform that enables Ribbon's Call Trust services to mitigate and prevent robocalling and fraud calls. By leveraging Identity Hub, Ribbon offers managed services for real-time reputation scoring and STIR/SHAKEN authentication, signing, verification, and certificate management. By implementing Ribbon Call Trust, a service provider can optimize the likelihood that a call that should be answered, is in fact answered.

Allowing good calls to proceed or blocking clearly fraudulent calls is easy, however there will be many calls that fall into an "is this a good call or a bad call" category. For those calls, a service provider needs to be able to make call routing decisions based on a much wider set of options for call validation treatment (CVT). Some examples of CVT options are: normal routing to the called party with enhanced information about the originator; routing a call to voice mail or a voice captcha, or routing to an announcement telling the originator the call cannot be completed. Ribbon's Policy and Routing server (PSX) shown in Figure 1 above, in conjunction with the information received from Call Trust Reputation Scoring service, provides advanced CVT capabilities.

Identity Hub supports both configured and dynamic machine learning (ML) models for identity assertion and reputation scoring, based on multi-source data integration. With insights into service provider network topology and fraud or robocall traffic patterns collected by Ribbon Analytics, Identity Hub's inference engine can dynamically adapt to new network conditions and traffic patterns to improve the accuracy of call classification.

Ribbon Identity Hub has been designed to leverage cloud-native, webscale technologies to deliver a highly scalable, highly reliable, extremely flexible solution that is fully adaptable to any service provider's traffic patterns.

Delivering real-time identity assurance services means a service provider can be highly responsive to the dynamic nature of fraud and robocalling as bad actors continuously adapt to stay one (or two) steps ahead of the service provider community.

A key attribute of Ribbon Identity Hub adaptability is its design as an open ecosystem, with open APIs and open data integration. Identity Hub incorporates a service graph function that can be easily configured to define how it ingests and processes real-time and non-real time data from other services or databases. A service broker function provides a flexible way to integrate current and future services based on customer specific sequencing and call flows. Examples of Ribbon innovations include:

- Real-time integration of 3rd party transactional policy information, such as real-time attestation of caller identity from Ribbon STI or Calling Name (CNAME) databases.
- Ability to collect or accept near real time 3rd party policy data that can be crowdsourced, carrier-based, or subscriber provided.
- Accept near-real time data on potential robocall and fraud, from Ribbon Analytics or any 3rd party customer analytics solution, based on analysis of network traffic patterns and Call Detail Records for every call
- Acceptance of requests from Ribbon or 3rd party solutions for reputation scoring, call signing or verification.
- Provision of reputation scores, STIR/SHAKEN attestation or verification responses, and call validation treatment options to Ribbon and 3rd party network elements.

Ribbon Call Trust services are invoked in real-time, meaning they are in the call path for each call. Because of this, Ribbon Identity Hub is designed to deliver real-time processing with very low latency in a highly robust and reliable architecture.

In summary, Ribbon Identity Hub is where "all the smart stuff happens" so service providers can mitigate or eliminate spam, robocalls and fraud. Or to put it another way, by subscribing to Ribbon's Call Trust services, a service provider will be better positioned to ensure the right person answers the right call at the right time.

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