SHAKEN
STIRRED ✓

The need for Evolution and Enhancement of the SHAKEN framework

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I suppose it is temping, if the only tool you have is a hammer, to treat everything as if it were a nail.

-Abraham Maslow

Robocall Ecosystem Hammers
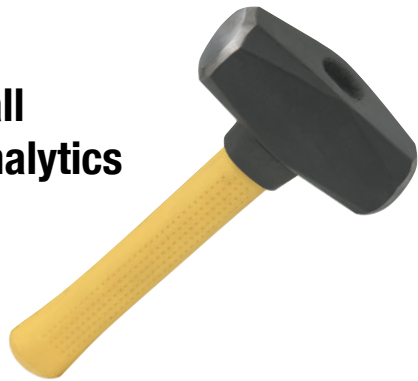
SHAKEN Attestation

Call Analytics

SHAKEN Attestation

A powerful tool for originating service providers to be the responsible parties for determining the legitimate usage of telephone numbers originating onto the telephone network

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Call Analytics

A powerful tool for looking at call patterns, most effective for large generators of brute-force illegitimate robocalling

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To a great extent, these tools have and will be effective for the primary telephone usage and primary fraudulent call scenarios we see.

However, as with life, things are more complicated.

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Telephone Number relationship is Direct

Wireless and Wireline Services

Telephone Number relationships/usage is much more complex:

VoIP/CPaaS providers

Outbound Call Centers

Enterprises

Automated reminder/notification services

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Most of these business models generally involve complex indirectly managed pools of telephone numbers and multiple originating service providers (e.g. multi-homing)

Because they had no choice, many legitimate business that use the telephone network to reach customers have adopted the same spammy techniques that illegitimate spammers use.

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Current Hammers

SHAKEN Attestation

Call Analytics

Good for identifying and differentiating between consumer telephone numbers and call patterns and unwanted calls

Becomes challenging to provide accurate attestation and analytics when legitimate calls look indistinguishable from unwanted calls

Based on legitimate business needs or bad guys adapting to hide in plain sight

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Key Issue:

The hammer is the one tool we would like to use to combat the robocall issue

Kill the spam   Block calls   Eliminate the Scourge

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Key Issue:

But what happens when instead of hearing, "Why did I get that call"

We hear, "Why didn't I get that call"

The Telephone Network is a resource we want people to use and more importantly trust

SHAKEN/STIR is inherently a tool and framework that is built to carry a representation of trust in identity

For the **use cases**

the originating provider is not always in the best position to provide

direct knowledge of the true origination of the call

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For these cases, there is many layers

TN providers, cloud comms providers, resellers, …

Many layers between the true origination of the call, the telephone number used for the call, and the originating provider

For many of these cases, the responsible party for a call has a lot of incentive to make sure the trust associated with the call is assigned at its source

When a service provider is assigned a telephone number from the NANP, SHAKEN expects that assignment and usage is governed by responsible entities.

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**However, with many middle men and lots of room for monkey business like impersonation, we need to extend SHAKEN with an
end-to-end
secure framework
based on cryptographic proof**

(sound familiar?)

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But because the TN Authoritative Provider is not always a part of the call, and the Originating Provider has a hard time vouching for more complex call scenarios, there needs to be a method of "delegating" the authority and responsibility for authenticating a particular set of Telephone Numbers a customer has paid to use.

The good guys have huge incentive to protect and abide by this responsibility, protect the credentials, use those credentials responsibly.

Even if that doesn't happen,

The bad guys, when using legit credentials, with traceback will get caught.

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Certificate

Delegation

the golden swiss army knife?

How about…

A new hammer

A hammer that rather than focusing on smashing and bashing…

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…is used with many
hammers that work in
concert to create an eco-
system of trust and
harmony

88 hammers

It's time to start envisioning a world where trust in the telephone network is a feature (beyond enforcement)

Certificate Delegation = Distributing the responsibility and participation in making the telephone network trusted

with incentives like:

people pick up calls because they know who is calling

a novel concept

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Over the next few days

Let's have conversations beyond

the negatives… spam identification, blocking, traceback

and start to incorporate the positives of what the SHAKEN/ STIR frameworks potential is:

End-to-end call authentication

Rich Call Data, more to come…

Start the move away from the need for legitimate callers to act like spammers to get through the noise

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A piano with only two hammers doesn't make harmonious music