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Reply-to-comments of Somos, Inc.
Review of the Numbering Plan and associated instruments
Australia Communications and Media Authority

Somos is an independent, not-for-profit company that administers and manages all country code +1 numbers in North America on behalf of the Unites States (US) government. Somos supplies these reply-to-comments as a numbering administrator to shed light on some areas where Somos has relevant experience that may be useful to the Australian Communications and Media Authority (ACMA).

Somos Numbering Administration Services

Somos' number administration responsibilities fall into three neutral administrator service roles that Somos provides on behalf of the US Federal Communications Commission (FCC). The North American Numbering Plan Administrator (NANPA) which provisions and assigns 10-digit numbers in 10,000 or 1,000 geographic blocks. The NANPA also monitors number resource utilization, manages forecast report processing, and opens up new area codes, when necessary, based on forecasted utilization.

The Reassigned Numbers Database (RND) is a new administrator service Somos provides with the objective of minimizing unwanted or nuisance calls to consumers. The database contains all disconnected telephone numbers in the US, and providers are required to update the RND monthly. Legal robocallers/marketers check the RND prior to calling a number for which they have prior approval to call to ensure the number is with the party who initially approved the contact. If the number has changed subscribers, the caller no longer has the right to call that number. Today, there are over 450 million numbers in the RND and over 215 million unwanted calls or texts have potentially been prevented.

Somos is also the Toll-Free Numbering Administrator (TFNA) and manages Toll-Free numbers (TFNs), also known as 800 numbers (Freephone in Australia), and serves as a one-stop shop administrator service. TFNs are non-geographic numbers, assigned in real-time and at the individual number level. As the TFNA, Somos also manages TFN portability, routing, and fraud mitigation services.

As a numbering administrator, Somos believes in good governance. That means protecting the integrity of the numbering system and the numbers themselves. Somos offers these reply-to-comments in the context of our experience as a numbering administrator.

Use of Do Not Originate List

Somos strongly encourages the use of a Do Not Originate (DNO) list, mentioned in the comments by Optus and netnumber. Somos has experience in providing a comprehensive DNO list, which has proven effective in blocking illegal robocalls with spoofed caller ID information and has been easily implemented in providers' existing systems. It is one tactic that is fairly easy and inexpensive to implement but is a highly effective tool in the anti-robocall and scam toolbox.

Somos' approach to compiling its DNO list is to include numbers that should always be blocked because they will never originate legitimate traffic (invalid, unassigned and unallocated numbers), as well as numbers in service that will never make an outbound call using that calling line identification (CLI).

In the US about 22% of all ten-digit dialing combinations are invalid. This includes numbers that begin with a zero or a one, which are invalid because US area codes (also called Number Planning Areas, or NPA) and US exchanges begin with 2-9 only. For example, numbers such as 022-222-2222 and 202-022-2222 are invalid. In the US, dialing zero first is for operator services, and dialing one first is for outbound long-distance calling.

About 32% of all US numbers are either unassigned or unavailable for assignment. Unassigned means the numbers are still in the NANPA pool of available area codes.[1] The area codes that are unavailable for assignment are also included in the Somos DNO list. No CLI can begin with "X11" either in the area code or the exchange, as X11 is reserved for three-digit dialing of services such as emergency (911) and directory assistance (411). The same goes for 988, the new three-digit suicide prevention hotline deployed in the US starting in 2022. These number combinations should never be in the CLI of a legitimate call and are therefore on the Somos DNO list.

About 16% of all numbers are in assigned area codes, but the number ranges have yet to be allocated. In the US, numbers are allocated from NANPA to carriers on either a 10,000 central office[2] (CO) code level or a 1,000 block level. Where an area code is active, there are just under 800 available CO Codes for assignment. Any 10,000 CO code that is not yet assigned to a carrier should never generate outbound calls, so those numbers are on the Somos DNO list. In the US, some of those nearly 800 CO codes are broken down into 10, 1,000 blocks of numbers, so that carriers can have number sets without taking excessive allocations which will not be required. Unassigned 1,000 number blocks are also in the Somos DNO list.

Additionally, Toll-Free (Freephone) numbers are allocated by the individual telephone number. As the Toll-Free Numbering Administrator (TFNA), Somos knows, at any given time, which numbers have been reserved by a Toll-Free service provider (called Responsible

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[1] Information on all US area codes is available here: https://nationalnanpa.com/area_codes/.

[2] In the US, a central office is a facility that houses equipment to which subscriber home and business lines are connected on a local loop. This office has telephone switches to switch calls locally or to a long-distance carrier office. This term is also known as end office or public exchange. In general, the first three digits of a US telephone number refer to the area code, and the next three digits refer to the central office where that number was initially provisioned.

Organizations or 'Resp Orgs') and which are available to be reserved.[3] Any available Toll-Free number that has not been reserved by a Resp Org is on the Somos DNO list.

Since Somos updates its DNO list in real time, any time a Toll-Free number is reserved it moves off the DNO list. Similarly, any number that has been returned to the Spare Pool is added to the Somos DNO list.

Those three categories of numbers – invalid, unassigned, and unallocated – make up about 70% of all possible CLIs. Of the other 30%, the Somos DNO list contains more than 4 million numbers, Toll-Free and otherwise, identified by enterprises and service providers as never placing outbound calls. These include inbound call centers, conference call services, and numbers assigned to IoT data only devices. This number is growing rapidly as more number-users learn of the ability to put their number on a DNO list.

IoT is the fastest growing numbering segment. According to the 2022 CTIA Annual Survey, IoT was 42 percent of all wireless connections, with that number increasing year-to-year.[4] Having a specific allocation for IoT that cannot make calls and cannot be ported would increase the efficacy of a Do Not Originate list.

The FCC has twice mandated the use of a DNO list – first for international gateway providers,[5] and second for messaging providers.[6] The FCC has a proposed rule to make use of a DNO list mandatory for all carriers in the call path.[7]

The Somos DNO list has proven highly effective in blocking illegitimate calls. Carriers have reported to Somos that they have been able to block many calls using the Somos DNO list. For example, preliminary results from a single day sample indicate that numbers on the Somos DNO list constituted 17% of one gateway provider's traffic displaying a number as caller ID. This equals about a million call attempts. A leading wireless carrier also reported a 90% reduction in reported robocalls after implementing the Somos DNO list, and a tier 1 carrier reported that 3% of all calls per day on their network were on the Somos DNO list. This means that millions of illegally spoofed robocalls a day are blocked by use of the Somos DNO list,

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[3] The numbers that are available to be reserved are referred to as the "Spare Pool."

[4] https://www.ctia.org/news/2022-annual-survey-highlights.

[5] *Advanced Methods to Target and Eliminate Unlawful Robocalls, Call Authentication Trust Anchor,* CG Docket No. 17-59, WC Docket No. 17-97, Sixth Report and Order in Docket 17-59, Order on Reconsideration, Fifth Order in Docket 17-97, and Fifth Further Notice of Proposed Rulemaking, *Advanced Methods to Target and Eliminate Unlawful Robocalls* CG Docket No. 17-59; *Call Authentication Trust Anchor*, WC Docket No. 17-97 (May 19, 2022) ¶¶ 87-91 (United States Federal Communication Commission).

[6] *Targeting and Eliminating Unlawful Text Messages, Rules and Regulations Implementing the Telephone Consumer Protection Act of 1991*, Report and Order and Further Notice of Proposed Rulemaking, CG Docket Nos. 21-402, 02-278 (March 16, 2023) ¶¶ 16-26 (United States Federal Communication Commission).

[7] *Advanced Methods to Target and Eliminate Unlawful Robocalls, Call Authentication Trust Anchor,* CG Docket No. 17-59, WC Docket No. 17-97, Seventh Report and Order in CG Docket No. 17-59 and WC Docket No. 17-97, Eighth Further Notice of Proposed Rulemaking in CG Docket No. 17-59, and Third Notice of Inquiry in CG Docket No. 17-59, FCC 23-37 (May 19, 2023) ¶¶ 76-79 (United States Federal Communication Commission).

either as mandated by the FCC or voluntarily, because it is an easily implementable way to block a large percentage of illegal robocalls. It is simply good hygiene to use a comprehensive DNO list.

Traceback

Traceback is another effective tool to fight robocalls. Somos, as the Toll-Free Numbering Administrator, oversees the Toll-Free Traffic Pumping Traceback Group (TPTG). The TPTG was set up in the US by the Toll-Free industry in order to investigate situations where Toll-Free (Freephone) numbers were receiving artificially inflated traffic, resulting in fraudulent payments.

The TPTG includes Resp Orgs and carriers, working with law enforcement and agency representatives - all of whom are interested in finding the source of illegitimate calls and eliminating them. The members of the group must be willing to participate in the traceback process, be responsive to fellow members and be reactive to law enforcement and agency requests for information. Note that this traceback is separate from the Industry Traceback Group, run by USTelecom, that does traceback for non-Toll-Free robocalls in the US.

Toll-Free, like Freephone in Australia, is a "called party pays" service in the US. Unscrupulous telecom providers share revenue with a robo-dialer, sending thousands of minutes per day to Toll-Free numbers for the sole purpose of gaining revenue from the end-user. In 2015, this was identified as the top issue for the Toll-Free industry.

The traceback process is managed via a portal where members of the group can raise and submit reports, send reports to the next member company that needs to input data, see responses and update reports as shared folders. The process from reporting to completion by all parties involved in the call's routing is usually completed within 24 to 48 hours. Once a provider is identified in the call path, they find where they received the call from (upstream provider) until the source is found. Although tracebacks don't always go back to the source, by knowing where a carrier is getting bad traffic from, they can take measures to minimize that illegal traffic by working with the upstream carrier. Or, if necessary, they can opt to no longer take calls from that upstream carrier until they put mitigation efforts in place.

The FCC has emphasized that those providing telephone numbers to end users must know their customer, and those transporting traffic must know their upstream provider. Know your customer is another important tool to stop illegal robocalls. Using tracebacks and asking your customer about their traffic is one of the most effective ways the Toll-Free industry has found to drive traffic pumpers off networks.

Since the TPTG process started, and along with enforcement actions[8] and FCC rules that took some of the profit out of traffic pumping,[9] US traffic pumping is down 90% from its high.

Central Numbering Registry

Somos agrees with much of what netnumber provided in the initial comment round regarding the advantages of a Central Numbering Registry. In the US, the Toll-Free Numbering Registry (TFNRegistry™), run by Somos, is a single, centralized, unified registry that provides the first, critical link in the chain of custody to find the ultimate subscriber to the TFN. The TFNRegistry is a unified registry where Resp Orgs can search and reserve individual TFNs, and then provide the necessary routing for those TFNs to be utilized in the network. It is also where TFNs can be ported from one Resp Org to another.

By having a single, unified, golden database, Somos knows which Resp Org has which TFNs at any point in time because both assignment and porting are done through the TFNRegistry. Somos knows how many and which numbers are in service, in the process of being in service, in the process of being disconnected, and those available to be reserved. The chain of custody always starts with the Resp Org. The Resp Org will know who they have assigned the number to, whether an end user, or a wholesaler/reseller. If a number is assigned to the wholesaler/reseller, it is still the primary responsibility of the Resp Org to make sure that number is used only for legal purposes.

The TFNRegistry also contains the routing information for every TFN, which Somos updates at least every 15 minutes. When a call is placed to a TFN, the originating carrier dips one of the routing companies to determine where and how that call should be routed.

That is how Somos can help shut down TFNs used by scammers impersonating a business or government entity through the Somos Fraud Reporting System (FRS). FRS is a portal where government and business entities can report cases of impersonation fraud, using a TFN as a callback number. Once reported through the portal, the portal dips the TFNRegistry to find the Resp Org and notifies the Resp Org of the report. The Resp Org investigates and if they find there is an impersonation scam being perpetrated on one of those numbers, the Resp Org will go into the TFNRegistry and remove the routing. At that point, the phone number is out of service and the fraudsters can no longer use that number. Anyone who was going to call that number because of an ad, website, email, text, or call impersonating the company or government agency will be spared from potentially becoming a fraud victim.

When law enforcement is investigating these scams, they come to Somos to find the Resp Org for the number at the time of the incident. Law enforcement then follows the chain of

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[8] *In the matter of Thomas Dorcher, ChariTel Inc., OnTel, Inc, and ScammerBlaster, Inc.,* Notice of Apparent Liability for Forfeiture, File No. EB-TCD-21-00032187, NAL/Acct. No.: 202232170007, (July 14, 2022) (United States Federal Communication Commission).

[9] *In the matter of 877 Access Charge Reform,* Report and Order, WC Docket No. 18-156 (October 7, 2020) (United States Federal Communication Commission).

custody to the Resp Org and sends them a subpoena for their customer on that number, and so on until the ultimate end user is found.

Audits

While Somos does not have an actual audit in the US, Somos does keep track of the various businesses in which TFNs are used. While most carriers in the US are also Resp Orgs, the inverse is not true, as most Resp Orgs are not carriers. There are Resp Orgs who provide numbers to end users, those who provide numbers to wholesale provider or reseller, those who provide numbers for ad tracking, and those who provide high-end vanity telephone numbers. By keeping track of these various categories of Resp Orgs, Somos can spot trends and see how the numbers are being used. This is part of the information Somos uses to predict usage for the upcoming year, which is necessary to calculate projected revenues, a required part of the Somos annual tariff filed with the FCC. It also helps Somos predict when numbers in the current Toll-Free area codes will run out, necessitating the opening of a new Toll-Free area code.

On the non-Toll-Free side, NANPA conducts a Number Resource Utilization Forecast twice a year, where all carriers are required to provide their forecasts for upcoming number use. This confidential information is then used to determine if any area code is running out of numbers, necessitating a new area overlay or split area code to be deployed in the near future, as well as when the entire numbering system will exhaust numbers in their current form.

Somos believes understanding how your numbers are being used is all part of being a good administrator. While an industry-wide audit is a somewhat daunting task the first time, it is a good way for the ACMA to understand the numbering resources that each carrier has under its control, and how those numbers are being used. Subsequent annual audits or forecasts will be much easier once the first one is completed.

Conclusion

Somos intends this reply-to-comments to be a helpful guide of how certain numbering administration is handled in the US. Some of that may be applicable, and other information may not be. Somos is happy to provide any further information as needed as the ACMA continues to develop and revise its numbering plan.

For further information, please contact:

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