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Electronic and Overnight Delivery

October 10, 2018

Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: 800 Response Information Services LLC
Petition for Emergency Declaratory Relief, or, in the Alternative, Petition for
Further Rulemaking
CC Docket No. 96-115

Dear Ms. Dortch:

On behalf of 800 Response Information Services LLC, enclosed please find an original and four (4) copies of the company's Petition for Emergency Declaratory Relief, or, in the Alternative, Petition for Further Rulemaking. Courtesy copies have been sent electronically to the individuals below.

Should any questions arise concerning this matter, please feel free to contact the undersigned counsel directly.

Sincerely,

A handwritten signature in black ink, appearing to read "Eric Fishman", is written over a horizontal line.

Eric Fishman

Enclosure

cc: Kris Monteith, Chief Wireline Competition Bureau (kris.monteith@fcc.gov)
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**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Implementation of the)	CC Docket No. 96-115
Telecommunications Act of 1996)	
Telecommunications Carriers' Use of)	
Customer Proprietary Network Information and)	
Other Customer Information)	

**Petition for Emergency Declaratory Relief, or
In the Alternative,
Petition for Further Rulemaking**

800 Response Information Services LLC

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October 10, 2018

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EXECUTIVE SUMMARY

800 Response Information Services LLC (“800 Response”), a telecommunications service provider engaged in the provisioning of toll-free service, petitions the Commission to issue a ruling that the provisions of Section 222 of the Communications Act of 1934 (the “Act”), governing customer proprietary network information (“CPNI”), 47 U.S.C. § 222, and Section 251 of the Act, 47 U.S.C. § 251, governing interconnection, do not permit carriers to block interconnection to their location platform for toll-free calls initiated on their networks, or to otherwise impose upon connecting carriers and providers of toll-free telephone service an obligation to obtain the consent of customers to use their location for purposes of routing their calls to a toll-free number.

800 Response requests this relief on an expedited basis, to take effect no later than October 19, 2018, on which date one major carrier, AT&T, has notified connecting carriers and toll-free service providers that it will no longer provide even “coarse” location information for toll-free calls initiated by its own customers unless such calls are “safety related,” (a term which it does not define) while continuing to provide location information in support of a full suite of location-based services to non-telecommunications users. Expedited action is also warranted where, as here, another major carrier, Verizon, has announced plans to initiate in the near future a cumbersome double consent requirement forcing customers to provide consent via SMS after already having imposed an opt-in consent for call termination via an interactive voice response (“IVR”). For the

reasons set forth below, such requirements contravene the provisions of the Act, and are detrimental to the public interest.

Alternatively, in the event the Commission cannot rule on the instant petition for declaratory ruling by October 19, 800 Response respectfully urges the Commission to initiate a further rulemaking proceeding to define and clarify the obligations of carriers to support the accurate and proper termination of calls to toll-free numbers, and to require such carriers, from October 19 through the conclusion of the further rulemaking proceeding, to continue, or, where a carrier has already limited access, to resume providing access to toll-free service providers via current serving arrangements with location-based service providers to such carriers' respective location platforms to ensure continuity of service, and to refrain from imposing upon connecting carriers and providers of toll-free telephone service an obligation to obtain the consent of customers to use their location when routing calls to a toll-free number.

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Customer Proprietary Network Information and)	
Other Customer Information)	

**Petition for Emergency Declaratory Relief, or
In the Alternative,
Petition for Rulemaking**

800 Response Information Services LLC ("800 Response"), by its attorney and pursuant to Section 1.2 of the Commission's rules, 47 C.F.R. § 1.2, petitions the Commission to issue a ruling that the provisions of Section 222 of the Communications Act of 1934 (the "Act"), governing customer proprietary network information ("CPNI"), 47 U.S.C. § 222, and Section 251 of the Act, 47 U.S.C. § 251, do not permit carriers to block interconnection to their location platform for toll-free calls initiated on their networks, or to otherwise impose upon connecting carriers and providers of toll-free telephone service an obligation to obtain the consent of customers to use their location for purposes of routing their calls to a toll-free number. 800 Response requests this relief on an expedited basis, to take effect no later than October 19, 2018, on which date one major carrier, AT&T, has notified connecting carriers and toll-free service providers that it will no longer provide even "coarse" location information for toll-free calls initiated by its own customers unless such calls are "safety related" (a term which it does not define), while continuing to provide location information in support of a full suite of location-

based services to non-telecommunications users. Expedited action is also warranted where, as here, another major carrier, Verizon, has announced plans to initiate in the near future a cumbersome double consent requirement forcing customers to provide consent via SMS after already having imposed an opt-in consent for call termination via an interactive voice response unit (“IVR”). For the reasons set forth below, such requirements contravene the provisions of the Act, and are detrimental to the public interest.

Alternatively, in the event the Commission cannot rule on the instant petition for declaratory ruling by October 19, 800 Response respectfully urges the Commission to initiate a rulemaking proceeding to define and clarify the obligations of carriers to support the accurate and proper termination of calls to toll-free numbers, and to require such carriers, from October 19 through the conclusion of the rulemaking proceeding, to continue, or, where a carrier has already limited access, to resume providing access to toll-free service providers via current serving arrangements with location-based service providers to such carriers’ respective location platforms to ensure continuity of service, and to refrain from imposing upon connecting carriers and providers of toll-free telephone service an obligation to obtain the consent of customers to use their location when routing calls to a toll-free number.

Background. 800 Response is a telecommunications carrier engaged in the provisioning of toll-free telephone service. Like many other interexchange toll-free service providers, 800 Response enables calls to customers with multiple locations to have their calls properly routed based on the location of the dialing party. 800

Response also provides shared use toll-free service, a service model that permits multiple customers in different geographic and industry markets to share the benefits of easy-to-remember vanity 800 numbers through the routing of calls based upon the geographic location of the calling party.

800 Response is registered with the FCC as an interstate interexchange telecommunications service provider, and holds certificates of public convenience and necessity in the 32 states in which such filings are required to operate as a provider of intrastate telecommunications service.

As a regulated common carrier, 800 Response is subject to an extensive body of federal and state requirements, including laws and regulations relating to the protection of confidential information, whether relating to its customers or to parties who are placing calls to its customers. Its responsibilities in this regard are primarily governed by Section 222 of the Act and Part 64 of the Commission's rules, *supra*. 800 Response has complied fully with these requirements since its inception in 2005, and has never received any complaints, nor been the target of any regulatory enforcement actions, alleging violation of the CPNI rules.

In its provisioning of toll-free telephone service, toll-free service providers require access to, and utilize, information on dialing parties' locations in order to correctly route toll-free calls to their customers (the intended destination of the dialing parties). Before the wireless era, toll-free service providers utilized a dialing party's area code or NXX exchange to approximate that location. The explosion and dominance of wireless technology in general and smart phones in particular,

however, has made this approach less viable, since the NPA NXX of a wireless caller is not well correlated to the caller's location.¹

To address this problem, 800 Response and other toll-free service providers have engaged the services of third party location-based service ("LBS") providers that have arrangements with carriers who account for over 90% of wireless traffic. Toll-free service providers obtain the telephone number of the dialing party from the carrier on whose network the dialing party's call originated and, after obtaining the calling party's consent via an "opt-out" IVR interaction, utilizing an application program interface ("API") provided by the LBS provider, uses the Internet to forward the dialing party's telephone number to the LBS provider. The LBS provider then obtains the approximate physical location of the dialing party ("coarse location", typically the coordinates of the serving cell tower) from the originating carrier and returns that information to 800 Response. Utilizing that location information, toll-free service providers then determine the proper termination point for the call and complete the call accordingly.

In recent months, major carriers on whose networks toll-free calls originate have imposed upon toll-free service providers unreasonable burdens that contravene both Sections 222 and 251 of the Act. In January of this year, for example, Verizon required 800 Response and other toll-free service providers to

¹ Measured in miles, the disparity between geographic coordinates of the dialing party's "coarse location" and those of the wire center coordinates of their NPA-NXX can be very large. An analysis of 10,000 recent calls showed that this error would exceed 100 miles for 18% of calls, and would exceed 500 miles for 10% of calls. For businesses and government agencies that rely on geographic routing of toll-free numbers, this means that large numbers of calls will either be routed to the wrong termination point, or not routed at all, causing unhappy consumers, reduced service levels, lost profits, confusion, and frustration.

obtain from dialing parties (*i.e.*, customers of Verizon) explicit prior consent via an “opt-in” IVR interaction, purportedly pursuant to the Commission’s CPNI rules, to access the callers’ locations. Verizon has also recently announced that it will soon impose a double consent requirement, forcing toll-free service providers utilizing an LBS provider to obtain consent from the dialing parties on every call via SMS. Sprint has indicated that it may soon follow suit.

In May of this year, Sprint entirely blocked telecommunication carriers from interconnecting to its location platform.

More recently, AT&T has announced that effective October 19, it will block LBS provider interconnection to their location platform for all toll-free calls initiated on its network that are not “safety related.”

Impact on the Public. Each of these actions by major carriers impedes the ability of toll-free service providers to route calls to the correct termination points as specified by their customers, who are the ones paying for the calls and publicizing the numbers to the dialing public.

When a consumer dials a telephone number, they have a clear expectation that their call will be answered by the party they are trying to reach, be it an auto dealer, a flower shop, or a bank. When instead confronted with an IVR prompt asking for their consent to be located in order to route their call, many will abandon the call, mistakenly thinking they have dialed the wrong number (this is especially true for senior citizens or non-native English speakers). Moreover, under the contemplated double SMS-text “opt-in” initiatives of Sprint and Verizon, even after consenting via IVR interaction, the carriers will not supply the requisite “coarse

party's call. On the contrary, Section 222(d) of the Act expressly carves out an exception to the general rule requiring the confidentiality of CPNI by stating that "nothing in this section prohibits a telecommunications carrier from using, disclosing, or permitting access to customer proprietary network information obtained from its customers...(1) to initiate, *render*, bill and collect for telecommunications services..." (emphasis added). To the extent an initiating carrier provides information relating to the location of dialing parties (who are its subscribers) to 800 Response, and 800 accesses and utilizes this information, they do so for these limited and permitted purposes.

A corollary of this statutory mandate is that an originating carrier may not impose on a connecting carrier a CPNI approval requirement which does not exist and which, if enforced, would impede the provisioning of telecommunications service, contravening the originating carrier's interconnection duties under Section 251 of the Act.

In sum, the provisions of Section 251 of the Act prohibit a telecommunications carrier from refusing to interconnect with, or from imposing unlawful burdens for interconnection on, other telecommunications carriers. Moreover, the CPNI provisions of Section 222 of the Act and of the FCC's rules do not require or allow an originating carrier to demand that connecting carriers obtain from dialing parties who are customers of the originating carrier consent to access and utilize their location information where, as here, the connecting carrier (800 Response) utilizes such information for the sole purpose of routing calls to the toll-free number. To the extent 800 Response utilizes such data solely for the purpose of

routing calls, its use thereof is permissible under the Act and the Rules, does not constitute a use for marketing purposes, and does not trigger any notice or consent requirements under the Act or the FCC's rules.

In this regard, connecting carriers do not present the same public policy concerns as do LBS providers or even wireless carriers. Like other connecting carriers, 800 Response relies upon LBS providers to ensure the accurate routing of toll-free calls. Unlike LBS providers, however, it does not track individual wireless users' movements, including over time, or monetize that information. Unlike wireless carriers it also does not have access to all movements of the individuals dialing its customers' numbers over time. Rather, like all other connecting carriers who require information for routing purposes, it obtains coarse information about a user's location at one specific point in time, and discards that information immediately after the call is terminated. As a result, connecting carriers, who are subject to the same privacy standards as wireless carriers, present only a minimal privacy risk, especially when compared to wireless carriers themselves. As The Alliance for Telecommunications Industry Solutions ("ATIS") has noted,

"Interconnecting carriers operate under the same CPNI rules as the cellular carriers, and there is no reason why toll-free carriers should be viewed as less trustworthy in maintaining the privacy of that information. Originating location information is required for toll-free carriers to provide service to the caller and to the party they are calling – and is not used to sell additional products or services. The amount of data disclosed to the toll-free carrier

provides no significant danger to a caller's privacy, and in any event the carrier is subject to CPNI restrictions.”³

800 Response respectfully submits that the restrictions imposed by major wireless carriers as set forth below are unlawful under Sections 222 and 251 of the Act, unwarranted, since 800 Response and other toll-free telephone service providers are already subject to the provisions of Title II of the Act, and contravene the public interest by impeding the termination of toll-free calls initiated by countless users nationwide. The newest burdens, recently announced by AT&T and scheduled to go into effect on October 19, and contemplated by Verizon and Sprint, are especially pernicious since compliance with an undefined “safety related” requirement is entirely arbitrary on its face, and an SMS-based double-consent requirement is patently unworkable, respectively.

The restrictions imposed by major wireless carriers are also unlawfully discriminatory under Section 202 of the Act in that they impermissibly target providers of toll-free and shared use services, whose businesses rely upon LBS providers to ensure accurate and reliable call termination. Carriers who typically do not serve multiple locations from a single caller, or need to store location information after a call is terminated, enjoy a discriminatory preference as a result of the mandates major wireless carriers have imposed.

³ See April 16, 2015 letter from Thomas Goode, ATIS General Counsel, to Ann Stevens, Deputy Division Chief, Competition Policy Division, Wireline Competition Bureau, p. 4, attached hereto. See also North American Numbering Council “Geographic Routing of Toll Free Services” White Paper transmitted to Matthew DelNero, Chief, Wireline Competition Bureau on July 13, 2015, attached hereto.

WHEREFORE, 800 Response respectfully petitions the Commission to issue a declaratory ruling, effective no later than October 19, that the provisions of Sections 222 and 251 of the Act impose on carriers who originate toll-free calls for their customers an obligation to share the dialing party's location with connecting carriers and providers of multi-location or shared use toll-free telephone services, and do not permit such originating carriers to impose an obligation on connecting carriers to obtain the consent of dialing parties to use their location when routing calls to a toll-free number in such cases.

Alternatively, in the event the Commission cannot rule on the instant petition for declaratory ruling by October 19, 800 Response respectfully urges the Commission to initiate a rulemaking proceeding to define and clarify the interconnection obligations of wireless carriers, including the provision of location information, when customers of those carriers initiate calls to toll-free numbers which utilize multi-location or shared use service arrangements. 800 Response further requests that the Commission require such carriers, from October 19 through the termination of the rulemaking proceeding, to refrain from imposing upon connecting carriers and providers of toll-free telephone service an obligation to obtain the consent of dialing parties to use their location for the limited purpose of routing calls to a toll-free number.

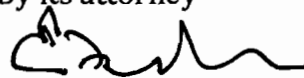
800 Response respectfully submits that the emergency relief sought herein under both the declaratory ruling and rulemaking scenarios is warranted where, as here, the new mandates announced by carriers would result in serious disruption and deterioration of service for thousands of toll-free service customers and

millions of dialers. The damage to toll-free service providers and other connecting carriers affected by these mandates would be irreparable as the carriers' tariffs typically absolve them from liability for indirect damages.

Respectfully submitted,

800 Response Information Services LLC

By its attorney

A handwritten signature in black ink, appearing to read 'Eric Fishman', written over a horizontal line.

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October 10, 2018



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April 16, 2015

Via Email
Ann Stevens (Ann.Stevens@fcc.gov)
Deputy Division Chief
Competition Policy Division
Wireline Competition Bureau
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: CC Docket No. 95-155
Toll-Free Numbering Resources

Dear Ms. Stevens:

The Alliance for Telecommunications Industry Solutions (ATIS) SMS/800 Number Administration Committee (SNAC) is writing to provide additional information regarding some of the topics discussed in SNAC's November 14, 2013, letter regarding toll-free numbering resources. Below is additional information regarding: (1) the need to accommodate geographic routing during the PSTN transition; (2) the need to clarify the application of the CPNI rules to toll-free services; and (3) industry efforts to standardize processes surrounding the use of Letters of Agency (LOA).

The Need to Accommodate Geographic Routing. The November 2013 ATIS SNAC letter notes that ***there is, and will continue to be, a need for location-based routing during the PSTN transition.***¹ As ATIS explained in its August 19, 2013, comments in response to Commission's examination of its long-term approach to numbering resources,² one of the key roles of geographic numbering relates to the routing of toll-free calls. Routing features allow subscribers to provide efficient and effective services to their customers, streamline business operations, and provide quick and effective response in the case of emergencies, including natural disasters.

Many toll-free service providers rely upon the calling party number as an indicator of the geographic location of the caller in order to provide least-cost network and multi-carrier routing, time-of-day routing, and other special routing features, by

¹ ATIS SNAC Letter at p. 2 (emphasis added).

² Reply Comments of the Alliance for Telecommunications Industry Solutions, filed August 19, 2013, in response to *Notice of Proposed Rulemaking, Order and Notice of Inquiry*, FCC 13-51 (released April 18, 2013).

virtue of having complete and accurate knowledge of the geographic origination. Toll-free subscribers can also route their calls to one of many stores or service locations based upon the location and time zone of the caller. Moreover, shared-use toll-free businesses route calls to licensees who have subscribed to receive all calls originated from specific, defined territories.

Routing of calls based on the caller's location is important to many uses of toll-free service. For example, a business may wish to have calls routed to its premises closest to the caller or to a call center designated to handle calls from a particular area. Alternatively, a toll-free subscriber may not wish to accept calls from outside of the area where it does business. Toll-free subscribers may also want to select a toll-free service provider to carry their calls based on originating location so as to minimize their costs.

Current procedures for routing toll-free calls rely on the caller's telephone number to determine originating location. The originating service provider's switch queries a toll-free Service Control Point (SCP) for routing instructions, including the toll-free number and the caller's telephone number (TN) in the query. The SCP returns the Carrier Identification Code (CIC) of the selected toll-free service provider and optionally translates the toll-free number based on logic downloaded from SMS/800. Both CIC and number translation may depend on the location indicated by the caller's telephone number. The prevalence of wireless roaming, *de facto* non-geographic assignment practices for new telephone numbers, and nomadic VoIP has rendered this approach significantly less effective and the toll-free industry has expressed its concern about the pace at which the effectiveness of the current TN-based routing methodology continues to erode.

For wireless calls, the originating service provider may have more accurate information about the caller's location, including, for example, the cell site from which the call originated. This information, however, is not in a form that can be used by the existing toll-free SCP query. To make use of this information, changes would be required in switch software, toll-free SCP logic, and SMS/800. Given that many of the switching platforms and some SCPs have been manufacturer-discontinued and carriers are planning to replace them as they transition to IP, such significant changes may not be cost-justified. The situation is further complicated because some wireless carriers do not perform their own toll-free queries but hand off toll-free calls to an access tandem or an aggregator for such processing. In this case, changes to the SS7 protocol and corresponding switch software would also be required.

Location information based on cell site or even GPS is sometimes used by the toll-free service provider or toll-free subscriber. This information is used after the initial routing to a selected toll-free service provider and not is provided in the signaling stream that sets up the toll-free call (for the reasons discussed above) but through independent commercial arrangements.

It has sometimes been suggested that the Jurisdiction Information Parameter (JIP) be used in place of the caller's telephone number to provide location information. While JIP

can identify the originating switch, there are several issues with its use for location based toll-free routing. First, the JIP is 6 digits in length rather than 10 digits; thus, changes in switch software would be required to use JIP rather in place of the caller's telephone number. Second, JIP is not populated by all switch platforms. Third, JIP may not always provide better location information. While JIP may provide better information in certain circumstances, such as in the case of wireless roaming to another state, it may not when a switch that services multiple rate centers, LATAs, or states may have only a single JIP.

While identifying the correct originating location and providing that information to toll-free carriers is difficult in the current PSTN/TDM network, a long-term solution must be integrated into the planning for the IP/SIP transition. Certain resellers and non-telecommunication companies currently face onerous business challenges due to this issue. In some cases, these companies may be forced out of business between now and the time new location technologies are implemented. Ongoing industry efforts seek to alert the Commission to the severity of this issue and to press for workable methods to accurately identify the toll-free callers' location to assist these companies during the planning and implementation of the PSTN to IP transition.

Even after the transition from TDM networks to next generation networks, there will remain a need for location-based routing for toll-free calls. The accurate routing of the calls will still require that the caller's approximate location be identified. In the developing IP/SIP environment, as opposed to the existing TDM/SS7 PSTN, it will be possible to develop effective location-based routing of toll-free calls. The industry will need to pursue this opportunity.

The NANC's Future of Numbering Working Group prepared and approved a white paper "Geographic Routing of Toll-Free Services" to address the roadblocks to toll-free location-based routing caused by ongoing and anticipated changes to the numbering plan, geographic number portability, consolidation of rate centers, etc. The white paper provides suggestions for supporting toll-free routing by originating location without encumbrances, unnecessary call delay, or privacy (CPNI) concerns. This white paper was recently circulated to NANC members and presented to the NANC at its December 2014 meeting. More information is available on the NANC website <http://nanc-chair.org/docs/documents17-2014.html>.

CPNI Rules and Toll-Free Services. In its November 2013 ATIS SNAC letter, ATIS noted that there is need for further clarity surrounding the application of the Commission's customer proprietary network information (CPNI) rules to toll-free numbers.³ ATIS SNAC explained that there is uncertainty among some carriers as to whether the provision of location information, which is necessary for the accurate billing of toll-free numbers, can be provided under the Commission's CPNI rules. Clarification from the Commission will help resolve this uncertainty.

³ ATIS SNAC Letter at p. 2.

We note that Part 64, Subpart P, of the Commission's rules states, "The terminating carrier must act in accordance with the privacy indicator unless the call is made to a called party that subscribes to an ANI or charge number based service and the call is paid for by the called party." ⁴ This section deals with "transmit[ing] for all PSTN Traffic the telephone number received from or assigned to or otherwise associated with the calling party to the next provider in the path from the originating provider to the terminating provider." While this does not explicitly address the disclosure of originating location information from sources other than what can be inferred by the telephone number itself, it does explicitly exempt from privacy restrictions those calls to numbers for which the calling party is charged for the call, including toll-free numbers.

The ANI (even when blocked by the calling party) is used specifically to provide location information for the purpose of screen pops, identifying the customer, and to: (a) rate calls (rates were originally based on distance); (b) route calls to the proper carrier/destination in accordance with the directions of the Service Subscriber to the toll-free number; and (c) allow for proper taxation (i.e., to determine whether calls were intra or interLATA, and which the state, city, etc. the call originated from/terminated to). The ANI is provided for the purpose of identifying the location of the caller to the serving wire center. Because originating carriers are already required by statute to provide the calling party's TN for reverse-toll service, and because it is incumbent upon originating carriers to pass to downstream carriers the information necessary to properly route calls, originating carriers similarly should provide the caller's (approximate) location information now that TNs no longer effectively fill that role.

While the cellular carrier has access to location information on all of their customer's calls, a toll-free provider has access to only a small percentage of the customer's toll-free calls; receiving only one data point about a caller's location that is retained for a very short period of time. Interconnecting carriers operate under the same CPNI rules as the cellular carriers, and there is no reason why toll-free carriers should be viewed as less trustworthy in maintaining the privacy of that information. Originating location information is required for toll-free carriers to provide service to the caller and to the party they are calling – and is not used to sell additional products or services. The amount of data disclosed to the toll-free carrier provides no significant danger to a caller's privacy, and in any event the carrier is subject to CPNI restrictions.

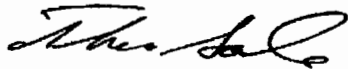
Letter of Agency. In its November 2013 letter, ATIS SNAC suggested that the Commission consider mandating the use of industry developed standardized LOA forms and/or mandating that the database administrator implement the procedures outlined on the new standardized form(s).⁵ ATIS SNAC notes that the SMS/800 is developing an online RespOrg change system that may address this topic. Successful implementation of this system may eliminate the need for the Commission to mandate use of standardized LOA forms.

⁴ Title 47: Telecommunication PART 64—MISCELLANEOUS RULES RELATING TO COMMON CARRIERS Subpart P—Calling Party Telephone Number; Privacy; Section 64.1601.

⁵ Id. at p. 3.

ATIS SNAC would be happy to provide additional information about these issues or to set up time to discuss these matters. If there are any questions, please do not hesitate to contact the undersigned.

Sincerely,

A handwritten signature in black ink, appearing to read "Thomas Goode", with a stylized flourish at the end.

Thomas Goode
ATIS General Counsel



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**Betty Ann Kane
Chairman**

July 13, 2015

**Mathew DelNero
Chief
Wireline Competition Bureau
Federal Communications Commission
445 Twelfth Street, SW
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RE: "Geographic Routing of Toll Free Services" White Paper

Dear Mr. DelNero:

This is to advise the Federal Communications Commission ("FCC") that the North American Numbering Council ("NANC"), at its June 4, 2015 meeting, unanimously concurred with the recommendation of the Future of Numbering Working Group ("FoN") to transmit the "Geographic Routing of Toll Free Services" White Paper ("White Paper") to the FCC.

The FoN Working Group prepared this White Paper to call attention to certain problems with respect to geographic routing of toll free services, resulting from new technologies and evolving numbering policies, including transition to an all Internet Protocol ("IP") network.

The NANC has not voted the content of the White Paper. The document incorporates claims related to Section 222, legal arguments related to Customer Proprietary Network Information ("CPNI"), and other analyses that the NANC has not considered in depth nor taken any position thereon. It reflects the output of efforts of the FoN Working Group, and the NANC, having reviewed the White Paper, has reached agreement that its transmittal to the FCC may be informative.

Please feel free to contact me or the FoN Working Group Tri-Chairs: Carolee Hall, Idaho Public Utilities Commission (Carolee.Hall@puc.idaho.gov); Dawn Lawrence, XO

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Communications (dawnrl13@yahoo.com); or Suzanne Addington, Sprint
(Suzanne.M.Addington@sprint.com), if you or members of your staff have any
questions regarding the White Paper.

Sincerely,



Betty Ann Kane
Chairman
North American Numbering Council

Attachments (1)

cc: Kris Monteith, FCC
Ann Stevens, FCC
Marilyn Jones, FCC
NANC Members

Geographic Routing of Toll Free Services

Introduction

Routing calls based on the caller's location is an important aspect of many toll free services, whether a call originates from a wireline, wireless, or VOIP caller. For example, a toll free subscribing business may wish to have calls to its toll free number routed to its premises or service location closest to the caller or to a call center designated to handle calls from a particular area. Toll free routing may be determined based on originating location so as to minimize their costs. Other examples include:

1. Shared Use toll free businesses route calls to licensees who have subscribed to receive all calls originated from specific defined territories.
2. Calls originating from certain area codes, or even from large sections of the country can be blocked (using the SMS/800 Database), thus limiting unwanted misdials and calls from consumers residing outside the subscriber's service area. While this protects the toll free subscriber from needing to respond to unwanted calls, it also avoids the confusion and frustration that consumers experience upon reaching a "wrong number".
3. Emergency service organizations (e.g. poison control centers and suicide hotlines) often make use of toll free numbers that are dialed by individuals who need critical, often immediate assistance. These calls are often routed according to the emergency provider located closest to the caller, who can respond quickest to the situation at hand.
4. Originating caller information for a toll free call may be needed by network managers in protecting their networks during mass calling events or emergencies. During these events the network managers may want to re-re-route calls or drop calls in order to prevent the network from becoming overloaded and risk possible shutdown.

This white paper provides an overview of toll free location-based routing, identifies specific roadblocks to accurately routing those calls in the current environment, and offers up suggestions for overcoming those limitations within the context of current rules and regulations.

Geographic Routing of Toll Free Services

The prevalence of wireless roaming and nomadic VoIP has rendered this approach less effective, as the calling party's telephone number may not be an accurate reflection of his or her geographic location. The toll free industry has expressed concern³ about the diminishing effectiveness of this current number-based routing methodology.

In the wireless case, the originating service provider may have more accurate information about the caller's location, for example the cell site from which the call originated. This information is not, however, in a form that can be used by the existing toll free SCP query; to make use of this information would require changes in switch software, toll free SCP logic, and to the SMS/800 database. Given that many of the switching platforms and some SCPs are manufacture discontinued and carriers are planning to replace them as they transition to IP, such changes would be a major undertaking. The situation is further complicated, since some wireless carriers do not perform their own toll free queries but hand toll free calls off to an access tandem or an aggregator for such processing. In this case the changes to the SS7 protocol and corresponding switch software would also be required.

Location information based on cell site or even GPS is sometimes used by the toll free service provider. This information is used after the initial routing to a selected toll free service provider and is not provided in the signaling stream that sets up the toll free call (for the reasons discussed above) but through independent commercial arrangements.

Privacy Considerations

In the developing IP/SIP environment, as opposed to the existing TDM/SS7 PSTN, it will be possible to develop effective location based routing of toll free calls -- but this is a work in progress. To facilitate that work it is necessary for the industry to understand how rules regarding privacy may

³ SNAC Issue 2614 "Standardize Wireless Toll Free Call Processing" was opened in May 2003; SNAC Issues 3119 "Industry Standardization of Toll Free Aggregated Traffic" and 3120 "TF Industry VOIP Originating ANI Requirement" were opened in December 2006; and SNAC Issue 3423 "Incorrect Originating Information" was opened in May, 2013. Also see ATL Communications Notice of Ex Parte, CC 95-155, filed June 15, 2014.

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Technical Characteristics of Location-Based Toll Free Routing

Historically, the caller's Telephone Number ("TN") has been used to approximate the caller's geographic location, using the NPA/NXX of the TN assigned to the caller to determine the rate center and local service provider central office serving the customer, as provided in the Local Exchange Routing Guide ("LERG") industry database. As TNs have traditionally been assigned to customers that are physically located within the boundaries of the specified rate center, service providers have treated the NPA/NXX of a caller's assigned TN, for calling number, as a geographic location identifier.¹

Thus as the originating service provider makes routing decisions for toll free calls based on the callers' location, the provider generally uses the NPA/NXX of the calling number to determine the caller's location. Toll free calls can be routed based on the options available in the SMS/800 "Area of Service" (AOS) functionality. SMS/800 AOS parameters allow for Toll Free calls to be routed based on the originating caller's:

- a. Country/US Territory
- b. State
- c. Area Code
- d. LATA
- e. Rate Center/NPA-NXX/NXX
- f. Telephone Number

The originating service provider's switch queries a toll free Service Control Point (SCP) for routing instructions, including the toll free number and the caller's telephone number in the query. The SCP returns the Carrier Identification Code (CIC) of the selected toll free service provider and optionally translates² the toll free number into a geographic number based on logic downloaded from SMS/800. Both CIC and number translation may depend on the location indicated by the caller's telephone number.

¹ Calling number is used loosely here to refer to ANI, SS7 Charge Number, and SS7 Calling Party Number parameters.

² The SCP may contain the logic to translate the number into a geographic number that has been downloaded from SMS/800 or it may contain just very minimal routing information and the call would simply be forwarded to the proper carrier by the SCP. For these numbers, the translation logic would be contained within the carrier's own network and may still require translation in order to properly route the call.

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actions, the Section 222 protections are sound, well understood by industry and consumers, and judicially approved⁵.

In its Declaratory Ruling released June 27, 2013, Implementation of the Telecommunications Act of 1996: Telecommunications Carriers' Use of Customer Proprietary Network Information and Other Customer Information, the Commission:

1. Par. 8: did not adopt any new rules
2. Par. 33: "We also reiterate that section 222(c) (1) [of 47 USC] allows a telecommunications carrier to use, disclose, or permit access to this CPNI 'in its provision of (A) the telecommunication service from which such information is derived, or (B) services necessary to, or used in, the provision of such telecommunications service.'"

Note that Section 222 (b) of Title 47 states: "A telecommunications carrier that receives or obtains proprietary information from another carrier for the purpose of providing any telecommunications service shall use such information only for such purpose, and shall not use such information for its own marketing efforts."

The combination of these two provisions (in the statute) indicates that Congress contemplated the transfer of CPNI in the provision of telecommunications services, and specifically permitted it. Moreover, Section 222(b) clearly imposes upon carriers an obligation to use such information only "for such purpose."

Section 222(a) clearly states that "Every telecommunications carrier has the duty to protect the confidentiality of proprietary information of, and relating to, other telecommunications carriers, equipment manufacturers, and customers, including telecommunications carriers reselling telecommunications services provided by a telecommunications carrier." The toll-free carrier's operations and business practices are designed to ensure compliance with these regulations, and they are obligated to file annual compliance reports with the FCC.

Purpose for Which Access to Protected Information is sought:

⁵ See Location-Based Services: An Overview of Opportunities and Other Considerations, FCC Wireless Telecommunications Bureau, May 2012, p. 5.
http://transition.fcc.gov/Daily_Releases/Daily_Business/2012/db0530/DOC-314283A1.pdf.

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affect the use of accurate location information, particularly for wireless callers.

Current rules clearly authorize use of calling number for toll free routing and permit delivery of billing number to the toll free subscriber. Given the issues that have arisen around use of customer location information, in particular as may be provided by smart-phones, some carriers have expressed concerns about using network or CPE derived location information for routing calls from mobile callers without obtaining their consent⁴. Understanding the Commission's perspective on this issue would help the industry move forward in closing the gap with respect to location-based routing for toll free.

Common Carrier Status:

As an FCC- and state-registered common carrier, the toll free service provider is bound by an extensive body of federal and state requirements, including laws and regulations relating to the protection of customers' privacy. Responsibilities in this regard are primarily governed by Section 222 of the Communications Act of 1934, as amended, 47 U.S.C. § 222 and Part 64, Subpart of the FCC's rules (47 C.F.R. §§ 64.2001 *et seq.*) pertaining to Customer Proprietary Network Information ("CPNI"). As defined by the Act, CPNI is information "that relates to the quantity, technical configuration, type, destination, *location*, and amount of use of a telecommunications service subscribed to by any customer of a telecommunications carrier, and that is made available to the carrier by the customer solely by virtue of the carrier-customer relationship; and information contained in the bills pertaining to telephone exchange service or telephone toll service received by a customer of a carrier." (Emphasis added).

Through rulemakings and enforcement actions, the FCC has resolved difficult issues related to its CPNI rules, including establishing minimum notice standards, determining when opt-in and opt-out choices for consumers are appropriate, adopting data sharing rules and reasonable data security measures, and requiring notification to law enforcement and consumers in the event of data breaches. As a result of the Commission's

⁴ See letter dated November 13, 2013 from ATIS to Ann Stevens, Deputy Chief, Competition Policy Division, Wireline Competition Bureau, FCC.

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Other approaches to coding location could be developed, such as dividing the country into a grid and assigning a number to identify each square. The assigned number could be used to route the call appropriately.

Toll Free Subscribers using location based routing are implicitly conveyed information about a calling location. Today that information may be just about the rate center to which the caller's number is assigned, rather than a roaming wireless or nomadic VoIP customer's actual current location.

While “fuzzy” location data should be available to indicate the location to which the call is to be routed, that is different from transmitting “actual current location.” In determining the degree to which notice and consent requirements are warranted, consideration should be given to the granularity of location information passed through to the Toll Free Subscriber.

Opt-In /Opt-Out Considerations/Impacts to Toll Free Customers

The management of privacy concerns inevitably involves trade-offs. For example, if user consent is required before an LBS (Location Based Service) provider can use location information from the user's cell phone, the carrier sharing the location information needs to determine (based on CPNI rules)⁶ whether it should be done on an opt-in or opt-out basis and how frequently that consent needs to be renewed (e.g. weekly, monthly, annually, or never). The extent and frequency of an LBS provider's access to protected information, and the perceived sensitivity of the protected information, typically shape the restrictions pursuant to which the provider is required to operate.

In the case where a caller is actually a *customer* of the LBS provider, participating in an ongoing commercial relationship via a location-enabled data or voice application, the wireless carriers' notice and consent rules provide a useful and necessary mechanism for protecting privacy.

It is important to recognize, however, that every additional layer of protection has a significant negative impact on toll free subscribers and on their customers who call them on their toll free numbers. Requiring a toll free provider to engage every caller in an “opt-out” or “opt-in” interaction

⁶ See 47 CFR 64 Subpart U

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Toll-free carriers require access to originating location information for the limited purpose of assuring proper routing of toll-free calls to the dialing party's intended destination. The routing of telephone calls requires the interconnection of thousands of switches and networks operated by the multitude of carriers who participate in the ubiquitous, national, public switched telephone network. FCC and state regulations assign responsibility to these carriers for timely and accurate routing and termination of calls made via their networks. In order to carry out this mandate, carriers exchange the information necessary (primarily the originating caller's telephone number) for timely and accurate call routing and billing, including information which is not available to the general public.

Granularity of location information

For the most part, toll free calls that are routed based on the originating callers' location currently utilize the caller's telephone number, which corresponds with a "fuzzy" location (usually within miles of the caller's location). However with cellular devices the originating caller's telephone number no longer can be relied upon to provide fuzzy location, and so other methods of determining the caller's geographic location may be warranted. There are a number of ways in which location can be specified that can provide that same level of granularity, or even greater location specificity, as required by the Toll Free Subscriber. These include:

1. V and H Coordinates;
2. Cell tower location;
3. Lat/long measurement (which can be truncated to create "fuzzy location"); or
4. "Fuzzy location" Zip Code.

Call set-up in IP can be designed so as to purposely *decrease* location accuracy inherent in the data stream. Cell ID provides a medium level of accuracy (in approx. 8 seconds – clearly too long for acceptable call set up), while assigned cell tower is virtually immediate and provides basically area code/exchange accuracy.

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Increasing customer and device mobility should not compromise seamless and accurate toll free geographic routing, and mechanisms to provide accurate location based routing of toll free calls should be developed with as minimal impacts on performance and added caller interaction as are consistent with the determination of caller privacy interests.

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would involve significant additional processing time. That time comes at a cost to customers and their callers.

As a rule, callers want their calls to complete quickly, and do not want to deal with time-consuming, interactive voice response systems, which are frequently viewed as annoyances; this is especially true when callers do not expect to encounter an automated interaction. In addition, the longer a caller is on a call, the greater the likelihood that the call will be disconnected. Thus, the imposition of opt-in or opt-out requirements would be detrimental to both toll free customers and the callers attempting to reach them, while having at best a miniscule impact on the protection of the callers' privacy.

Conclusion

Because a toll free number may have different terminating points across the country, identification of the calling parties' locations is often indispensable to the provision of the service.

Today, the on-going erosion in the geographic underpinnings of the North American Numbering Plan is gaining increased visibility and attention in the telecommunications industry. Taken together, the de facto nomadic nature of mobile telephone service, the proliferation of mobile devices, and their impact on determining an originating caller's location have compromised the toll free carriers' ability to route and bill mobile and nomadic VOIP originated calls on the basis of the TN.

Where both the extent and frequency of access to protected information are limited and where the carrier is subject to the FCC's strict CPNI regulations, as well as other obligations placed upon common carriers, there is no need or reason to impose an additional layer of protection. A toll-free carrier that is registered with the Federal Communications Commission as an interstate telecommunications service provider operates as a common carrier, subject to the laws and regulations imposed by federal and state governments. When a toll free telecommunications provider requires geographic originating location for the limited purpose of correctly routing toll free calls to its customers, and the location information passed on to Toll Free Subscribers is of a general "fuzzy" nature, that information should be provided free of the notice and consent obligations.