

**Before the  
Federal Communications Commission  
Washington, DC 20554**

In the Matter of	)	
	)	
Numbering Policies for Modern Communications	)	WC Docket No. 13-97
	)	
IP-Enabled Services	)	WC Docket No. 04-36
	)	
Telephone Number Requirements for IP-Enabled Services Providers	)	WC Docket No. 07-243
	)	
Telephone Number Portability	)	CC Docket No. 95-116
	)	
Developing a Unified Intercarrier Compensation Regime	)	CC Docket No. 01-92
	)	
Connect America Fund	)	WC Docket No. 10-90
	)	
Numbering Resource Optimization	)	CC Docket No. 99-200

**COMMENTS OF SMARTEDGENET**

Randall B. Lowe  
Michael C. Sloan  
Davis Wright Tremaine LLP  
1919 Pennsylvania Avenue, N.W.  
Washington, DC 20006-3401  
Tel: (202) 973-4221  
Fax: (202) 973-4421  
Attorneys for SmartEdgeNet, LLC

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## Summary

These Comments support the Commission's Notice of Proposed Rulemaking and Notice of Inquiry in this matter and address a number of issues. These comments argue that most, if not all, of the issues surrounding access to number resources by interconnected VoIP providers and the transition from a TDM environment to IP are red herrings. Either they are irrelevant to how interconnected VoIP providers do business or are based on a misunderstanding of the facts.

The truth is that the interconnected VoIP train has left the station and all is well and has been for some time. Yet, interconnected VoIP providers are still not able to obtain access to number resources so that they can enjoy the same privileges and cost benefits as do TDM carriers. Allowing such access, however, does not change anything else.

As shown by these Comments, access to number resources by interconnected VoIP providers is in the public interest; the Commission should not continue the anachronism of tying telephone numbers to geography; number exhaust is not an issue and is becoming less so over time; intercarrier compensation is not relevant to how interconnected VoIP providers do business and, in any event, is going away; if anything, less regulation, not more, is required to permit IP services to flourish and grow; direct access to numbers will not affect call routing; and interconnected VoIP providers do and will continue to meet the requirements of E-911 and disability access.

The Commission needs to act expeditiously in this matter so that interconnected VoIP providers can bring the benefit of their services to the public without any further burden or delay.

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**Comments of SmartEdgeNet**

SmartEdgeNet, LLC, dba Edge Communications (“SEN”), hereby submits these comments on the Notice of Proposed Rulemaking and Notice of Inquiry in the above-captioned dockets.<sup>1</sup>

**I. Introduction**

Needless to say, the Commission’s NPRM/NOI is long overdue but soundly applauded. It is much ado about everything yet, at the same time, it is much ado about nothing.

The NPRM/NOI is much ado about everything because the move from TDM to IP is inevitable and growing at a rapid rate. It is much ado about nothing because, as SEN stated in its Reply Comments on its Petition for Limited Waiver in this matter, “[t]he manner by which a

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<sup>1</sup> *In re Numbering Policies for Modern Communications, et al.*, Notice of Proposed Rulemaking, Order and Notice of Inquiry, FCC 13-51, 24 FCC Rcd 5842 (2013) (“NPRM/NOI”).

carrier transmits communications, whether by TDM, IP or two Dixie<sup>®</sup> cups and a string, is irrelevant to whether a carrier should have access to number resources for the benefit of the public it serves.”<sup>2</sup>

The matter at hand is not complicated. The Commission merely needs to eliminate the regulatory barriers to entry by interconnected VoIP providers that were erected prior to the advent of interconnected VoIP services. Once those barriers are removed, the use of number resources and the issues surrounding that use by interconnected VoIP providers is no different than their use by legacy carriers. Indeed, through expensive and inefficient arrangements with telecommunications service providers, interconnected VoIP providers have moved beyond and already addressed the issues raised in the NPRM/NOI. It is now only necessary to allow those providers to perform those services by and on behalf of themselves without any more of a regulatory regime than that which is already in place for legacy carriers. In short, the Commission needs to catch up with the industry by recognizing and encouraging it, not inhibiting it. Indeed, the Commission has a legal obligation to do so as it falls squarely within the Commission’s congressional mandate of universal service.<sup>3</sup>

## **II. About SEN**

SEN is a new company run by telecommunications industry veterans that will place a low cost, remotely managed, IP-enabled local access node on the premises of small to medium sized businesses, which will allow them to realize a 30 to 50 percent reduction in their capital and operating expenses while receiving services, features and functions that match those of large enterprise networks. The node is configured and connected to broadband facilities and any wired

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<sup>2</sup> Reply Comments of SmartEdgeNet LLC, *Administration of the North American Numbering Plan*, CC Dkt. No. 99-200 (May 15, 2012), at 1. Indeed, none of the commenters on SEN’s Petition addressed the issue of why the mode of transmission is relevant.

<sup>3</sup> 47 U.S.C. §§ 151 and 254(b)(2).

or wireless devices on the customer's premise. Thus, SEN is able to provide a 24/7 managed, single bill, all-in-one solution that fulfills the voice, data, application and connectivity requirements of its small and medium sized business customers.

Because SEN's integrated service offerings are properly classified as enhanced services, SEN does not qualify as a telecommunications service provider and, thus, is not currently entitled to interconnection and access to numbers that such providers currently exclusively enjoy.<sup>4</sup> Nonetheless, a key requirement and functionality of the SEN solution is interconnection to the Public Switched Telephone Network ("PSTN"). SEN's customers need to be able to place calls to and receive calls from the PSTN, making SEN a provider of interconnected VoIP services. Because SEN is not a certificated telecommunications carrier, it must obtain PSTN interconnection and telephone numbers from third-party "carrier partners," from whom SEN purchases interconnection services as well as telephone numbers that it assigns to its customers. SEN should be able to obtain numbers directly.

### **III. Granting Interconnected VoIP Providers Access to Number Resources is Sound Public Policy**

The proposed rule changes would "allow[] interconnected Voice over Internet Protocol (VoIP) providers to obtain telephone numbers directly from the North American Numbering Plan Administrator (NANPA) and the Pooling Administrator (PA), subject to certain requirements."<sup>5</sup> As one of four participants in the trial designed to test the efficacy of direct telephone number assignment by interconnected VoIP providers, SEN heartily endorses the change.

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<sup>4</sup> At least 24 states have precluded their utility commissions from regulating VoIP service (including issuing certifications required under the Commission's rules to obtain access to number resources).

<sup>5</sup> NPRM/NOI ¶ 1.

Interconnected VoIP service now accounts for almost 30 percent of the wireline voice telephony market,<sup>6</sup> an astonishing growth from an effectively zero percent market share less than 10 years ago. Interconnected VoIP services have proliferated because VoIP is a more efficient, cost-effective and flexible means of providing voice communications services than the circuit switched technology used to route calls via the PSTN.

As interconnected VoIP has grown, the Commission has recognized that “[c]onsumers increasingly use interconnected VoIP service as a replacement for traditional voice service,”<sup>7</sup> and has imposed, in sequential fashion, a host of social and regulatory obligations on interconnected VoIP service providers that mirror those of traditional telephone service providers. For example, interconnected VoIP providers must permit local number portability (“LNP”), provide E911 emergency calling, contribute to the federal Universal Service Fund, and comply with the Communications Assistance for Law Enforcement Act, as well as the Customer Proprietary Network Information requirements of the Communications Act.<sup>8</sup> Extending numbering authority to interconnected VoIP providers is in keeping with these developments. Interconnected VoIP providers’ rights should be commensurate with their obligations by permitting them the right to obtain telephone numbers directly, as well.

Moreover, authorizing interconnected VoIP service providers to obtain numbers directly “will spur the introduction of innovative new technologies and services, increase efficiency, and facilitate increased choices for American consumers.”<sup>9</sup> At a minimum, freeing interconnected

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<sup>6</sup> See Industry Analysis and Technology Division, Wireline Competition Bureau, Federal Communications Commission, *Local Telephone Competition: Status as of June 30, 2012* (June 2013) at 1 (“2012 Local Telephone Competition Report”).

<sup>7</sup> *In re IP-Enabled Services*, Report and Order, FCC 09-40, 24 FCC Rcd 6039, ¶ 2 (2009).

<sup>8</sup> *Id.* ¶ 5.

<sup>9</sup> NPRM/NOI ¶ 17.

VoIP providers from the need to pay telecommunications carriers to perform an essentially ministerial task will lower costs and prices, and increase interconnected VoIP providers' operational flexibility. Direct numbering authority will also spur the development of new, innovative business arrangements. Because interconnected VoIP providers who do their own numbering will be identified in the Local Exchange Routing Guide ("LERG") and similar industry databases, other providers will be able to determine more easily with whom they are exchanging traffic, which should lead to the development of new and more efficient traffic exchange and call termination arrangements.

Interconnected VoIP providers are fully capable of assigning telephone numbers efficiently and effectively. The concerns that some have raised about telephone number exhaust and call routing will prove unfounded. Interconnected VoIP numbering will be done the same way that number assignments are done by telecommunications carriers today. The same industry databases will be populated with the same information and interconnected VoIP traffic will be routed much like it is today – by and between carrier partners, as well as between interconnected VoIP providers directly, with the latter growing increasingly common. And the Commission, working with its counterparts in the states, will continue overseeing telephone number usage – just as it does today.

In sum, there are no good reasons not to extend telephone number assignment rights to interconnected VoIP providers and every indication that doing so is sound public policy. Allowing interconnected VoIP providers to obtain numbers is in the public interest because, as stated by the Commission in the *SBCIS Waiver Order*,<sup>10</sup> it will help to "expedite the

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<sup>10</sup> *In re Administration of the North American Numbering Plan*, Order, FCC 05-20, 20 FCC Rcd 2957 (2005) ("*SBCIS Waiver Order*").

implementation of IP-enabled services that interconnect to the PSTN”;<sup>11</sup> it will enable interconnected VoIP providers like SEN “to deploy innovative new services and encourage the rapid deployment of new technologies and advanced services that benefit American consumers”;<sup>12</sup> and it will facilitate interconnected VoIP providers’ ability “to efficiently interconnect to the PSTN, and thereby help to achieve the Commission’s goals of fostering innovation and speeding the delivery of advanced services to consumers.”<sup>13</sup>

#### **IV. The Telephone Numbering Policies Adopted in this Proceeding Should Reflect Commission Policies Favoring Converged, All-IP Networks**

When the Commission fashioned the definition of “interconnected VoIP” in 2005, the term “interconnected” referred to the protocol conversion and other steps necessary to route calls between IP and TDM-based networks.<sup>14</sup> But the need for this “interconnection” will recede as the country moves from the PSTN to all-IP networks, as the Commission has recognized. Authorizing interconnected VoIP providers to obtain telephone numbers directly is an important step the Commission can take toward “ensur[ing] that as IP-based services replace circuit-switched services, there is a smooth transition for Americans who use traditional phone service and for the businesses that provide it.”<sup>15</sup>

Preserving 10-digit numbering is a worthwhile policy objective because it is familiar and useful, and will help to maintain the linkage between diverse networks during this transition period. The one convention that links every mobile phone with every interconnected VoIP

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<sup>11</sup> *Id.* ¶ 4.

<sup>12</sup> *Id.*

<sup>13</sup> *Id.* ¶ 6.

<sup>14</sup> See *In re IP-Enabled Services; E911 Requirements for IP-Enabled Service Providers*, First Report and Order and Notice of Proposed Rulemaking, FCC 05-116, 20 FCC Rcd 10245, ¶ 24 (2005).

<sup>15</sup> Federal Communications Commission, *Connecting America: the National Broadband Plan* (2010) (“*National Broadband Plan*”) at 59, available at [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/DOC-296935A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-296935A1.pdf).

phone with every phone on the PSTN is the fact that each has been assigned a unique telephone number. The network effects of this ubiquity have undeniable value. But to fully leverage that value and to maintain the worldwide interconnectedness that telephone numbers currently provide, the Commission must expand the number of entities that have access to telephone numbers to include all providers of voice services. In doing so, the Commission must bear in mind the end goal of converged, all-IP networks, and not adopt rules that assume the continued co-existence of the PSTN and the rules that have been adopted for that network.

**A. Telephone Numbers Should Not Be Based On Geography**

The NPRM/NOI “seek[s] comment on the implications of separating telephone numbers from their addressing and billing function.”<sup>16</sup> As the Commission is well aware, this separation has largely already taken place. In her statement accompanying the NPRM/NOI, Commissioner Rosenworcel observed the following: “in my office here at the Commission, half of those who work with me have phone numbers with area codes that do not reflect where they live. And what is happening in my office is not unusual, it is happening across the country.”<sup>17</sup> The regulatory scheme, however, has not caught up with this reality. The Commission should take the opportunity presented by this proceeding to formally delink telephone numbering from geography.

As originally conceived and implemented, 10-digit numbers had geographic significance. Under the North American Numbering Plan, telephone numbers consist of a three-digit area code (the Numbering Plan Area or NPA), a three-digit central office code (NXX), and a four-digit station number. Through this plan (as well as the 15-digit convention used for international

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<sup>16</sup> NPRM/NOI ¶ 119.

<sup>17</sup> *Id.* at 5920.

calling), a caller anywhere in the world can call anyone else in the world – provided that both callers are connected to the PSTN.

But as the PSTN dwindles in significance, most voice calling is done over mobile phones, where geography is irrelevant, and almost one-third of all landline customers use interconnected VoIP service, for which 10-digit numbers are also irrelevant – except for exchanging traffic with the PSTN. On the Internet, communications are routed between IP addresses, which contain 128 bits for an IPv6 address. Because of the cumbersome length of IP-addresses, shorter, easier-to-remember identifiers have been developed. These are the domain names, email addresses, Twitter handles, and other IP-address shorthands that we are all familiar with.

For interconnected VoIP calls, 10-digit telephone numbers serve basically the same function. When a PSTN-originated call is routed to the customer of an interconnected VoIP service provider, a database look-up is done to map the 10-digit number of the called-party with the much longer IP address that will actually facilitate the routing of the call on the Internet.<sup>18</sup> After the call is handed off to the IP network, the 10-digit number has no further relevance to the routing of the call. All Internet traffic – whether it be interconnected VoIP, video, email, web-based content, or other data – is routed exactly this way.

Indeed, the Commission recognized the lack of a connection between telephone numbers and location in the VoIP context as long ago as 2004, in the *Vonage Declaratory Ruling*. There the Commission noted the following:

[A]lthough Vonage’s service uses North American Numbering Plan (NANP) numbers as the identification mechanism for the user’s IP address, the NANP number is not necessarily tied to the user’s physical location for either assignment or use, in contrast to most wireline circuit-switched calls. Rather, as Vonage explains, the number correlates to the user’s digital signal processor to facilitate

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<sup>18</sup> See, e.g., *In re Vonage Holdings Corp. Petition for Declaratory Ruling*, Memorandum Opinion and Order, FCC 04-267, 19 FCC Rcd 22404, ¶ 9 (2004) (“*Vonage Declaratory Ruling*”).

the exchange of calls between the Internet and the PSTN using a convenient mechanism with which users are familiar to identify the user's IP address. In other words, and again in marked contrast to traditional circuit-switched telephony, a call to a Vonage customer's NANP number can reach that customer anywhere in the world and does not require the user to remain at a single location.<sup>19</sup>

It was this characteristic of Vonage's "over-the-top" service that led the Commission to conclude that VoIP services are inherently interstate in nature.<sup>20</sup>

Even on the PSTN, where telephone numbers once served to manage the routing of calls, that is no longer always the case either. This delinkage began with the advent of LNP.<sup>21</sup> Before LNP, the NPA-NXX of a telephone number identified the switch serving the number, the state and rate center where the number was assigned, as well as the service provider. Today, since numbers have been ported between wireline, wireless and VoIP service providers, the NPA-NXX of a telephone number only identifies the state and rate center where the number was originally assigned; routing is handled by the Location Routing Number, which is found in the metadata (*i.e.*, signaling information) of a call.

Not only is the relationship between telephone numbers and geography no longer meaningful from a technical perspective, SEN believes that the "social" role that telephone numbers once played is also rapidly eroding. Studies show that people do not remember telephone numbers anymore and that most calls are not made using keyboard "dialing."<sup>22</sup> To the contrary, most calls these days are made from cell phones, which are usually initiated by the

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<sup>19</sup> *Id.*

<sup>20</sup> *Id.* ¶¶ 23-32.

<sup>21</sup> See NPRM/NOI ¶ 120.

<sup>22</sup> See, e.g., Nilay Patel, *iMessage, Skype, Google Voice, and the Death of the Phone Number*, The Verge (June 9, 2011), <http://www.theverge.com/2011/06/09/google-voice-skype-imessage-and-the-death-of-the-phone-number/> (arguing that "phone numbers . . . are a relic of an outmoded system"); Nikhyl Singhal, *Phone Numbers Are Dead, They Just Don't Know It Yet*, TechCrunch (Aug. 28, 2010), <http://techcrunch.com/2010/08/28/phone-numbers-dead/> (arguing that phone numbers are becoming increasingly irrelevant to modern communications) (cited at NPRM/NOI ¶ 132 n.304).

caller clicking the called-party's name in a contacts list, not by dialing a ten-digit number. The same is increasingly true in work settings, where VoIP-based phone systems are linked to desktop computers, and calls are initiated through a contacts list or other speed-dial arrangement.

Other than for routing, phone numbers are increasingly irrelevant because people do not call phone numbers, they call people, who are accessed by means other than remembering telephone numbers. Even when phone numbers are still used instead of other identifiers, it is SEN's view that the sentimental attachment that consumers may have once had to their telephone numbers is also rapidly eroding. For example, Manhattanites were famous for their fierce attachment to the 212 area code.<sup>23</sup> Likewise, 213 has historically meant Los Angeles; 312, Chicago; 301, Maryland, etc. But are these traditional numbering regimes meaningful today? One cheeky blogger says no – that the only New Yorkers who today care about having a 212 area code “live in 1990s era sit-coms.”<sup>24</sup> SEN believes that this is the majority view, certainly among those in the public who are still in the workforce and are familiar with technological developments.

For these reasons, SEN supports delinking telephone numbers from geography to the extent technically feasible. This means that all interconnected VoIP providers and most traditional telephone service providers should be able to assign any available telephone number from anywhere in the country to any customer.

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<sup>23</sup> See <http://www.nytimes.com/2003/02/01/opinion/ending-the-212-clique.html>.

<sup>24</sup> See [http://gothamist.com/2013/04/02/212\\_area\\_code\\_may\\_soon\\_be\\_for\\_peopl.php](http://gothamist.com/2013/04/02/212_area_code_may_soon_be_for_peopl.php).

**B. Concerns About Number “Exhaust” Are Overrated and Should Not Guide Commission Policy Making**

The concerns that some have raised about telephone number “exhaust” in certain area codes or rate centers are the concerns of a bygone era that should not guide policy making today. If and when the time comes that all of the 7,920,000 unique available numbers in a given area code are taken,<sup>25</sup> the response should be to open up new area codes, not ration what is an essentially unlimited resource. There is no technical reason why all 990 or so available area code combinations – and the 7.9 billion different telephone number combinations that they would provide – should not be made available for use when needed. As an interim step, the Commission should immediately open several new area codes available for assignment anywhere in the country. The Commission should create a unified, national numbering regime that would apply equally to all service providers using these nationally available numbers, regardless of the type of service being offered or location.<sup>26</sup>

The creation of new national area codes would not prevent the Commission from determining that certain area codes, such as the famous 212, should retain their geographic connection. SEN would support doing so as long as it was done on a grandfathered basis only. For those grandfathered area codes, the relevant state commissions would continue to play their traditional role in overseeing usage, under authority delegated by the Commission. The dual federal-state role proposed here – with the Commission having authority over geographically unrestricted “national” area codes and the states retaining delegated authority over area codes

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<sup>25</sup> Although there are technically 10 billion seven-digit phone number combinations available in each area code, some numbers are not available, such as 911, 411, and numbers starting with 0 or 1. *See, e.g.,* <http://www.area-codes.com/area-code-faq.asp>.

<sup>26</sup> *See* NPRM/NOI ¶ 123.

that retain a state-specific, geographic basis – is a familiar structure in communications regulation.<sup>27</sup>

Thus, SEN supports the Commission’s proposal to retain the states’ role in overseeing number usage in grandfathered area codes, including usage by interconnected VoIP service providers. But a state role in helping to prevent number exhaust should not serve as a vehicle for an expanded state role in regulating VoIP service providers more generally. As explained below, interconnected VoIP services have flourished for nearly a decade now without state regulatory oversight, and there is no reason for the Commission to revisit this very successful *status quo*.

Additional regulation – federal or state – is not required because authorizing interconnected VoIP providers to assign telephone numbers directly will not exacerbate number exhaust. There are at least two separate reasons why this will be the case. First, overall usage by landline providers is declining. Number exhaust concerns first arose in the 1990s when new services that used 10-digit numbers – such as pagers, fax machines and wireless phones – first emerged, and the competitive local exchange carrier (“CLEC”) boom led to the entry of hundreds of new providers that had unrealistic expectations about how many numbers they would be assigning. Since then, telephone number usage by landline providers has declined as technology has evolved.<sup>28</sup> Most consumer calls are made over wireless phones and separate fax lines and pagers are no longer common. As landline access lines have declined, telephone number usage has declined with it.

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<sup>27</sup> See *AT&T v. Iowa Utils. Bd.*, 525 U.S. 366 (1999) (analyzing federal-state role under the Communications Act).

<sup>28</sup> 2012 *Local Telephone Competition Report* at 1.

Second, while SEN hopes that its services will create new demand, it recognizes that many of its prospective customers will be porting their existing service, along with their telephone numbers, from old service providers. Interconnected VoIP is a substitute for traditional telephone service. It has not, and likely will not, create a significant demand for new telephone numbers.

In sum, there is no reason to believe that simply changing the manner in which interconnected VoIP providers obtain telephone numbers will change the total number of telephone numbers in service and, thus, no grounds for believing that providing interconnected VoIP providers direct access to telephone numbers will have any negative effect on number exhaust.

That said, SEN believes that intelligent number assignment policies should be followed. This means that number block assignments in the 100s should be utilized until a provider can demonstrate a need for larger assignments. Likewise, 65 percent of lines should be active-in-service before a new block of numbers is allocated. Rules against hoarding should be enforced and regulators should be able to reclaim numbers when appropriate. Most of these rules are already in place and SEN sees no reason that they should not also apply to interconnected VoIP service providers.

Interconnected VoIP service providers should not, however, be held to more restrictive rules than other service providers. They should not, for example, be required to use “foreign” area codes in jurisdictions where traditional local exchange carriers have access to the “traditional” area codes. The same rules should apply to all providers, regardless of the type of service being offered.

**C. SEN Does Not Favor Using 10-Digit Numbers for Other Services**

The Commission should not adopt policies that encourage the use of 10-digit numbers for new services.<sup>29</sup> As noted above, 10-digit numbers are a vestige of the old PSTN that have little utility in an IP-based environment. While the PSTN has long supported applications other than voice communications (such as fax machines and home alarm systems), the use of 10-digit numbers by application providers has largely been out of necessity, because 10-digit numbering is the only way to route communications on the PSTN. That is, obviously, not the case on IP networks. Application devices can only be reached by IP addresses and SEN expects that identifiers other than 10-digit numbers will be favored.<sup>30</sup> While SEN would not restrict numbering for such purposes, SEN doubts that there will be significant demand for telephone numbers by non-voice applications providers.

**D. Legacy Intercarrier Compensation Arrangements are Irrelevant and Should Not Factor Into the Commission's Decision Making**

Allowing VoIP providers to assign numbers directly has no bearing on whether intercarrier compensation payments are made or not. And, of course, interconnected VoIP providers are not the ones responsible for paying intercarrier compensation since they are not telecommunications service providers.

The concern about intercarrier compensation confuses interconnected VoIP providers with long distance carriers. Interconnected VoIP providers provide, *inter alia*, local PSTN access to their customers and, as a result, seek access to number resources. They do not participate in any intercarrier compensation arrangement. Such responsibility rests with the carrier partner with which the interconnected VoIP provider associates itself.

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<sup>29</sup> See NPRM/NOI ¶ 70.

<sup>30</sup> It should be noted that not every device requires a telephone number. A network and device, such as a thermostat, cannot "talk" with each other. Devices have machine addresses, not telephone numbers.

By way of example, if interexchange traffic originated with an interconnected VoIP provider, the interconnected VoIP provider does not charge the interexchange carrier to which such traffic is handed off for such origination service. Instead, the carrier partner with which the interconnected VoIP provider associates itself would be responsible for originating access fees (if any). Similarly, if the interconnected VoIP provider terminated interexchange traffic, it would not assess terminating access charges on such traffic. Again, the carrier partner of the interconnected VoIP provider would be responsible for terminating access fees (if any). The same would be true for reciprocal compensation traffic: the interconnected VoIP provider would not seek to charge reciprocal compensation; its carrier partner would be responsible for such charges (if any).

This scheme is foursquare with the Commission's move to a bill-and-keep regime; in particular, the Commission's November 2011 Order reforming terminating access charges (including prospectively applying such charges to interconnected VoIP traffic) to bill-and-keep over the next two years,<sup>31</sup> and its March 2012 order making clear that originating access charges for interconnected VoIP traffic are likely to phase down to bill and keep on a similar schedule.<sup>32</sup>

## **V. Regulation of Interconnected VoIP Numbering Should Be Kept to a Minimum**

### **A. "Documentation" Requirements Are Unnecessary**

The Commission asks what, if any, "documentation" interconnected VoIP providers should be required to provide to the number administrator to receive numbers.<sup>33</sup> As the Commission is aware, currently only state-certificated telecommunications carriers that can

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<sup>31</sup> *In re Connect America Fund; A National Broadband Plan for Our Future*, Report and Order and Further Notice of Proposed Rulemaking, FCC 11-161, 26 FCC Rcd 17663 (2011).

<sup>32</sup> *In re Connect America Fund; A National Broadband Plan for Our Future*, Second Order on Reconsideration, FCC 12-47, 27 FCC Rcd 4648 (2012).

<sup>33</sup> NPRM/NOI ¶ 20.

demonstrate “facilities readiness” under Section 52.15(g)(2)(ii) of the Commission’s rules – which often requires producing a Section 252 interconnection agreement with the local ILEC – may obtain number resources.<sup>34</sup> These “documents” – evidence of certification and an interconnection agreement – effectively constitute the minimum eligibility requirements before a carrier can receive number resources under the current regulatory regime.

Allowing interconnected VoIP providers to obtain and issue telephone numbers directly will require revising these requirements. Interconnected VoIP providers are not state-certificated telecommunications carriers and, thus do not have Section 252 interconnection agreements.<sup>35</sup> The question is what, if anything, should replace these requirements.

SEN believes that a documentation requirement is unnecessary, and that interconnected VoIP providers should not be required to prove their eligibility prior to receiving numbering authority. Self-certification, similar to the blanket authority available for all entities that seek to provide domestic telecommunications services,<sup>36</sup> should be sufficient as a practical matter. So long as the current rules with respect to number hoarding, warehousing, and area code administration remain in place, nothing is gained by requiring interconnected VoIP providers (or telecommunications service providers, for that matter) to prove their eligibility to provide the underlying service that telephone numbers make possible.

To the extent the Commission wishes to retain some proof-of-eligibility requirement, SEN believes that the requirement should be as simple and straightforward as possible. The toll-free telephone number-issuing process provides a model. As the Commission is aware, toll-free

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<sup>34</sup> *Id.*

<sup>35</sup> *See supra* note 4.

<sup>36</sup> *In re Implementation of Section 402(b)(2)(A) of the Telecommunications Act of 1996*, Report and Order in CC Docket No. 97-11 and Second Memorandum Opinion and Order in AAD File No. 98-43, FCC 99-104, 14 FCC Rcd 11364 (1999).

(i.e., 8YY) numbers are managed and assigned by “Responsible Organizations” (“RespOrgs”), which may or may not be telecommunications carriers. RespOrgs have access to the SMS/800 database, which contains information regarding the status of all toll-free numbers. RespOrgs are also responsible for creating customer records and downloading records to Service Control Points necessary for call routing and processing.<sup>37</sup> These are historically carrier functions that, in the toll-free environment, have been performed by non-carriers for more than 20 years at a very low cost and great efficiency. Importantly for present purposes, the SMS/800 database administrator does not require a prospective RespOrg to prove its eligibility prior to obtaining RespOrg status. RespOrgs are not required to prove “facilities readiness” by, for example, providing evidence of a relationship with an IXC. That would be a superfluous requirement, since toll-free service cannot be provided without service from an interexchange carrier.

The process by which NANPA issues Carrier Identification Codes (“CICs”) to switchless resellers also demonstrates that requiring “proof of eligibility” is unnecessary before VoIP service providers receive numbering authority. NANPA will issue a CIC code to any switchless reseller that fills out the application form,<sup>38</sup> which consists primarily of the carrier’s attestation that it intends to provide the service.<sup>39</sup> There is likewise no “facilities readiness” requirement.

The same model should apply to interconnected VoIP numbering. A simple attestation to the numbering administrator by the interconnected VoIP provider that it plans to offer and provide service and that it wishes to use numbers under that administrator’s oversight should suffice. Interconnected VoIP providers should not be required to demonstrate that they have

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<sup>37</sup> <http://www.sms800.com/Controls/NAC/Whatissms800.aspx>.

<sup>38</sup> The exception is that evidence of state certification is required for resellers operating in the few states that regulate switchless resale.

<sup>39</sup> See [http://www.nanpa.com/number\\_resource\\_info/New\\_CIC\\_Switchless\\_resellers.pdf](http://www.nanpa.com/number_resource_info/New_CIC_Switchless_resellers.pdf); [http://www.nanpa.com/tools/trainGuides/Other\\_NANP\\_Resources\\_User\\_Guide.pdf](http://www.nanpa.com/tools/trainGuides/Other_NANP_Resources_User_Guide.pdf).

relationships with carriers capable of routing calls to and from the PSTN on the interconnected VoIP provider's behalf prior to receiving number resources for the simple reason that such relationships are necessary for providing interconnected VoIP service. It goes without saying that such arrangements must be in place before interconnected VoIP service can be provided.

If the Commission, nonetheless, believes that some "documentation" that derives from the regulatory process should be required, SEN believes that proof that an interconnected VoIP provider has obtained an FCC Registration Number (FRN) should be sufficient. To obtain an FRN, the interconnected VoIP provider must provide a taxpayer ID number, name, address, and an attestation of intent to provide service.<sup>40</sup> This is basically the same information that is required for a switchless reseller to obtain a CIC code or for an entity to become a RespOrg.

Providing a copy of the FCC Form 477 should not be required because it includes information that is not relevant to the numbering administrator. The Form 477 collects information about interconnected VoIP service in individual states. But when a telephone number is no longer linked to geography, the "location" that an interconnected VoIP provider is providing service (as defined by the location from which a customer is making a call or the location associated with an area code) has no inherent connection to the telephone number issued to the customer. During the transition period during which area codes remain related to geography, the NRUF Reports will provide numbering authorities with all the information they need about number utilization within individual area codes.

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<sup>40</sup> See <http://www.fcc.gov/help/getting-fcc-registration-number-frn-universal-licensing-system-uls>.

The NPRM/NOI's inquiry into whether there are "alternative means for interconnected VoIP providers to demonstrate, absent state certification, that they are providing services in the area for which the numbers are being requested" appears to miss the point.<sup>41</sup> SEN agrees with the Commission's proposal that interconnected VoIP service providers should be able to obtain telephone numbers from any rate center on the same terms as any other provider. But the Commission should make it clear that this right applies to any rate center in the country, regardless of whether the interconnected VoIP provider has customers in the geographic location with which the area code or rate center has been traditionally associated. As telephone numbers are delinked from geography, the Commission should not adopt a regulatory scheme that assumes that numbers will be based on geography.

**B. Interconnected VoIP Numbering Should Not Provide an "Opening" for State Regulation**

SEN is also perplexed by the questions in paragraph 21 of the NPRM/NOI which appears to contemplate using the interconnected VoIP number assignment process as a vehicle for enacting new forms of state and federal regulation – which the NPRM/NOI ambiguously refers to as "certification." No "certification" should be necessary or required for interconnected VoIP providers to obtain numbering authority, for the reasons explained above. To the extent that some documentation is deemed necessary, there is absolutely no basis to impose a regulatory process that requires prior approval from either the states or the Commission. Not only is there no reason for such a requirement, but nothing would more effectively deter interconnected VoIP providers from seeking independent numbering authority than a state or federal "certification" requirement.

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<sup>41</sup> NPRM/NOI ¶ 21.

While SEN believes that state commissions should retain their current role overseeing number usage in rate centers, including number usage by interconnected VoIP service providers, that authority should not lead to an expansion of the state role over other interconnected VoIP service offerings.

**VI. Access to Number Resources by Interconnected VoIP Providers Will Not Affect Call Routing**

The NPRM/NOI solicits comments on the claims that some have made that allowing interconnected VoIP providers direct access to numbers will have an adverse impact on call routing and result in end user confusion.<sup>42</sup> These concerns are misplaced. Numbering authority will not change the mechanics of interconnected VoIP call routing in any material way, but will have many direct and indirect benefits that could very well improve the call routing process.

As the Commission is aware, interconnected VoIP providers purchase PSTN interconnection from “carrier partners” who assume responsibility for the routing and termination of interconnected VoIP traffic to and from the PSTN. Interconnected VoIP providers are likely to enter into arrangements with a number of different providers who undertake responsibility for routing and terminating the call, including SS7 call set-up and paying intercarrier compensation to terminating carriers. Numbering authority will not change this process in any way.

Because interconnected VoIP providers will have an Operating Company Number (“OCN”) issued by NECA, they will have the authority to populate the LERG database with routing information directly, rather than having to rely on carrier partners to perform that function. The LERG will be populated with the same information that it currently contains, identifying the Class 5 switch associated with the interconnected VoIP provider’s number, as

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<sup>42</sup> NPRM/NOI ¶ 41.

well as the identity of the carrier partner that operates that switch. Call routing itself will be unaffected. Also, because the LERG will be populated with the interconnected VoIP provider's OCN, providers accessing the database will see the interconnected VoIP provider's OCN, thereby facilitating the creation of new, direct relationships governing traffic exchange. Thus, direct numbering authority will enhance the development of IP interconnection by increasing the dissemination of information about providers willing and able to enter into such arrangements.

It would be a mistake for the Commission to mandate that interconnected VoIP providers enter into carrier partner relationships, because interconnected VoIP providers will not always need the services of carrier partners.<sup>43</sup> For example, an interconnected VoIP provider may choose to outsource its PSTN connection function to a wholesale vendor that may or may not be a telecommunications carrier. It would be that entity that would require carrier partner relationships to terminate traffic on the PSTN. To the extent that interconnected VoIP providers find it advantageous to enter into a carrier partner relationship directly, they will do so. The Commission should not, however, mandate that interconnected VoIP providers enter into potentially unnecessary and unwanted business relationships solely for the purpose of propping up incumbent local exchange carrier and CLEC business models.

## **VII. Interconnected VoIP Provider E-911 and Disability Access Obligations Will Not Be Affected by VoIP Numbering**

The Commission asks whether direct interconnected VoIP numbering authority, and the formal delinking of telephone numbers from geography, will affect interconnected VoIP providers' provision of E-911 service or compliance with disability access obligations.<sup>44</sup> The answer is clearly "no."

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<sup>43</sup> See NPRM/NOI ¶ 44.

<sup>44</sup> NPRM/NOI ¶¶ 125-127.

As the Commission is aware, the 911 network has already been upgraded to facilitate the handling of nongeographic numbering. Most PSAPs have upgraded to E-911, which allows a carrier to route a call to the most appropriate PSAP and provides the PSAP with the caller's call-back number and location information based on "registered location" information, not on the assumption that a telephone number is linked with a specific address.<sup>45</sup> The Commission has also taken steps to facilitate the transition from legacy 911 and E-911 systems to Next Generation 911 (NG911), which will use IP-based technology to deliver and process 911 traffic, and will support not only traditional voice 911 calls but also the transmission of text, photos, videos and data.<sup>46</sup> Ten-digit numbers will not play any meaningful role in the technical functioning of these new processes. The same is true of the disability access services the Commission oversees.<sup>47</sup>

### **VIII. Conclusion**

The NPRM/NOI asks commenters to address two separate, but related, proposals: (1) allowing interconnected VoIP service providers to obtain and assign telephone numbers directly, and (2) revising the NANPA 10-digit numbering scheme so that telephone numbers are no longer based on geography. These are important issues, to be sure, and SEN favors both proposals.

The manner by which a provider transmits communications, whether by TDM or IP, should be irrelevant to whether the provider should have access to number resources for the benefit of the public it serves. The current regime, which requires interconnected VoIP providers

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<sup>45</sup> See *Legal and Regulatory Framework for Next Generation 911 Services: Report to Congress and Recommendations* (Feb. 22, 2013), § 3.1, available at [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/DOC-319165A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-319165A1.pdf).

<sup>46</sup> *Id.* § 3.1.1.4.

<sup>47</sup> See NPRM/NOI ¶ 127.

to purchase numbers from telecommunications carriers, simply transfers money from the interconnected VoIP provider to the carrier's pocket without adding much, if any, value.

Likewise, the Commission need not ask at this point whether it should adopt policies that delink telephone numbers from geography. That horse left the barn long ago, as the Commission recognized in the 2004 *Vonage Declaratory Ruling*. There, the Commission observed that, “[a]lthough Vonage’s service uses North American Numbering Plan (NANP) numbers as the identification mechanism for the user’s IP address, the NANP number is not necessarily tied to the user’s physical location for either assignment or use.”<sup>48</sup> All interconnected VoIP services have this capability. And as interconnected VoIP services have proliferated and telephone numbers have been ported between traditional telephone companies, interconnected VoIP providers and wireless providers, the fact is that telephone numbers have already become delinked from geography. The policy changes proposed in the NPRM/NOI would simply acknowledge this reality.

But this proceeding touches on issues far greater than whether interconnected VoIP providers should have independent numbering authority and what those numbers should look like. The larger issue, of which numbering is just one part, is whether the Commission is prepared to take steps to preserve the ubiquitous interconnectedness that the world’s voice communications networks – whether they be IP, TDM, CDMA, 3G, 4G, or some other protocol – currently enjoy. We are not speaking here of interconnection at the physical or transport layers, but rather at the application layer. In an IP-based world, in which a 10-digit number is really no different from any other shorthand IP-address indicator (like an email address, domain

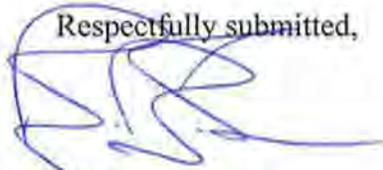
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<sup>48</sup> *Vonage Declaratory Ruling* ¶ 9.

name, Skype number, or Xbox chat identifier), providers will only use 10-digit numbers as long doing so remains convenient and useful.

Preserving 10-digit numbering is a worthwhile policy objective because 10-digit numbers are familiar and will help to maintain the linkage between diverse networks during this transition period. The one convention that links every mobile phone with every interconnected VoIP phone with every phone on the PSTN is the fact that each has been assigned a unique telephone number. The network effect of this ubiquity has undeniable value. But to fully leverage that value and to maintain the worldwide interconnectedness that telephone numbers currently provide, the Commission must expand the number of entities that have access to telephone numbers and the manner in which they can be assigned. Doing so will help to “ensure that as IP-based services replace circuit-switched services, there is a smooth transition for Americans who use traditional phone service and for the businesses that provide it”<sup>49</sup> and to prevent the very real possibility that only users of the same service provider will be able to communicate with one another.

Respectfully submitted,



Randall B. Lowe  
Michael C. Sloan  
Davis Wright Tremaine LLP  
1919 Pennsylvania Avenue, N.W.  
Washington, DC 20006-3401  
Tel: (202) 973-4221  
Fax: (202) 973-4421

Attorneys for SmartEdgeNet, LLC

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<sup>49</sup> *National Broadband Plan* at 59.