

**Before the
Federal Communications Commission
Washington, D.C. 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
)	
Petition of Vonage Holdings Corp. for Limited Waiver of Section 52.15(f)(2)(i) of the Commission’s Rules Regarding Access to Numbering Resources)	

REPORT

Adopted: January 31, 2014

Released: January 31, 2014

Comments Due: March 3, 2014

By the Chief, Wireline Competition Bureau:

I. INTRODUCTION

1. The Bureau issues this Report of a six-month technical trial in which interconnected Voice over Internet Protocol (VoIP) providers were permitted to reserve telephone numbers for their end users directly from the numbering administrators rather than indirectly through a separate telecommunications carrier. The results of this trial reflect that it is technically feasible for interconnected VoIP providers to obtain telephone numbers directly from the numbering administrators. The trial did not identify technical problems regarding number porting, VoIP interconnection, or intercarrier compensation. The trial did indicate that there may be some confusion regarding parties’ rights and obligations with respect to porting and interconnection, but the Bureau believes that these matters could be addressed in pending rulemakings addressing those topics.¹

¹ See *Numbering Policies for Modern Communications et al.*, WC Docket No. 13-97 et al., Notice of Proposed Rulemaking, Order, and Notice of Inquiry, 28 FCC Rcd 5842 (2013) (*Direct Access Order and NPRM*); *AT&T Petition to Launch a Proceeding Concerning the TDM-to-IP Transition*; *Connect America Fund*; *Structure and* (continued....)

II. BACKGROUND

2. On April 18, 2013, the Commission released a Notice of Proposed Rulemaking, Order, and Notice of Inquiry which, *inter alia*, established a six-month technical trial allowing interconnected VoIP providers direct access to telephone numbers.² The Commission explained that it would use this trial to test whether giving interconnected VoIP providers direct access to numbers would raise issues relating to, for example, number exhaust, number porting, VoIP interconnection, or intercarrier compensation, and if so, how those issues might be efficiently addressed.³ The Order required trial participants to file regular reports throughout the six-month trial.⁴ The Commission intended that the information gathered from the technical trial would inform the Commission's broader rulemaking on direct access to numbering by entities that have not been classified as telecommunications carriers or do not hold themselves out as such.

3. The *Direct Access Order* specified that entities eligible to participate in the trial had to submit to the Wireline Competition Bureau (Bureau) and each relevant state commission a detailed numbering proposal.⁵ These proposals were required to (1) include a certification that the trial participant would comply with the terms and conditions of the waiver, (2) identify the rate centers or LATAs in which the participant wished to have numbers directly assigned to it, noting how many numbers in each rate center or LATA it proposed to receive as new numbers and how many it proposed to port in from existing or new customers, and (3) describe the phase-in process to implement the trial.⁶ The Bureau was required to approve proposals 30 days after filing unless the Bureau found that the proposal did not comply with the requirements of the *Direct Access Order*.⁷ A participant could not request or obtain direct access to numbers until its proposal was approved.⁸

4. Participants in the trial were required to comply with specific number utilization and optimization requirements,⁹ as well as industry guidelines and practices, including abiding by the numbering authority delegated to state commissions and filing NRUF reports.¹⁰ State commissions

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Practices of the Video Relay Service Program; Telecommunications Relay Services And Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities; Numbering Policies for Modern Communications, GN Docket Nos. 13-5, 12-353, WC Docket Nos. 10-90, 13-97, CG Docket Nos. 10-51, 03-123, Order, Report and Order and Further Notice of Proposed Rulemaking, Report and Order, Order and Further Notice of Proposed Rulemaking, Proposal for Ongoing Data Initiative, FCC 14-5 (rel. Jan. 31, 2014).

² See *Direct Access Order and NPRM*, 28 FCC Rcd 5842.

³ *Id.* at 5844, para. 2.

⁴ *Id.*

⁵ *Id.* at 5882, para. 101. The Order was released on April 18, 2013. Proposals were due May 20, 2013.

⁶ *Id.*

⁷ *Id.*

⁸ *Id.*

⁹ In addition to complying with the Commission's number utilization and optimization requirements, trial participants were required to maintain at least 65 percent number utilization across its telephone number inventory. See *Direct Access Order and NPRM*, 28 FCC Rcd at 5884, para. 106.

¹⁰ All carriers that have received telephone numbers from the NANPA or Pooling Administrator (PA) are required to file Numbering Resource Utilization/Forecast (NRUF) reports semiannually of their current inventory of numbering resources. See 47 C.F.R. § 52.15(f)(5)–(6). NRUF data supports forecasts of the exhaust date for each NPA as well as the exhaust date for the entire NANP. The NRUF reporting requirement will allow the Commission to better (continued....)

recommended, and the Commission adopted, additional conditions including: (1) providing the relevant state commission with regulatory and numbering contacts when the VoIP provider requests numbers in that state; (2) consolidating and reporting all numbers under its own unique Operating Company Number (OCN)¹¹; (3) providing customers with the ability to access all abbreviated dialing codes (N11 numbers) in use in a state; and (4) maintaining the original rate center designation of all numbers in its inventory.

5. On June 17, 2013, the Bureau released an order addressing the proposals.¹² The Bureau concluded that the proposals submitted by Vonage Holdings Corp. (Vonage), SmartEdgeNet, LLC (SmartEdgeNet), WilTel Communications, LLC (WilTel or Level 3), IntelePeer, Inc. (IntelePeer), and Millicorp met the Commission's requirements to participate in a limited direct access to numbers trial, and approved them.¹³

6. Trial participants were required to file monthly reports beginning 60 days after their initial request for direct access to numbers from a numbering administrator. These reports included: (1) the total number of new numbers placed in service by the participant; (2) the total number of port-in requests (including existing customers as well as new customers), and the percentage of successful ports-in; (3) the number of requests to port out from the participant a number that it holds directly rather than through a CLEC partner, and the percentage of successful ports-out; (4) the total number of routing failures, along with the causes of those failures; and (5) a description of any billing or compensation

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monitor Vonage's number utilization. Most VoIP providers' utilization information is embedded in the NRUF data of the LEC from whom it purchases a Primary Rate Interface (PRI) line. *See Direct Access Order and NPRM*, 28 FCC Rcd at 5883-84, n.259.

¹¹ An OCN is an alphanumeric code that uniquely identifies providers of local telecommunications service. *See, e.g.*, <http://www.atis.org/glossary/definition.aspx?id=8488>. OCNs are used in billing records to identify local telecommunications providers. *See Connect America Fund*, Report and Order and Further Notice of Proposed Rulemaking, 26 FCC Rcd 17663, 17899 n.1251 (2011). Consolidating and reporting all numbers under a VoIP provider's own OCN will make it easier to determine the actual utilization rates within a given state. *See Direct Access Order and NPRM*, 28 FCC Rcd at 5884, n.261.

¹² *Numbering Policies for Modern Communications; IP-Enabled Services; Telephone Number Requirements for IP-Enabled Services Providers; Telephone Number Portability; Developing a Unified Intercarrier Compensation Regime; Connect America Fund; Numbering Resource Optimization; Petition of Vonage Holdings Corp. for Limited Waiver of Section 52.15(f)(2)(i) of the Commission's Rules Regarding Access to Numbering Resources*, WC Docket Nos. 13-97, 04-36, 07-243, 10-90, CC Docket Nos. 95-116, 01-92, Order, 28 FCC Rcd 8889, para. 1 (WCB 2013) (*VoIP Trials Order*).

¹³ *Id.* at 8891, para. 6; *see also* Letter from Brita D. Strandberg, Counsel to Vonage Holdings Corp., to Marlene H. Dortch, Secretary, Federal Communications Commission, WC Docket No. 13-97 *et al.* (filed May 17, 2013) (Vonage Trial Proposal); Letter from Randall B. Lowe, Davis Wright Tremaine LLP, to Marlene H. Dortch, Secretary, Federal Communications Commission, WC Docket No. 13-97 *et al.* (filed May 17, 2013) (submitting Numbering Plan Proposal of SmartEdgeNet, LLC) (SmartEdgeNet Trial Proposal); WilTel Trial Proposal, WC Docket No. 13-97 *et al.* (filed May 20, 2013) (WilTel Trial Proposal); Letter from Kristin Manwarren, Corporate Counsel, IntelePeer, Inc., to Marlene H. Dortch, Secretary, Federal Communications Commission, WC Docket No. 13-97 *et al.* (filed May 20, 2013) (IntelePeer Trial Proposal); Letter from Duane Dyar, Vice President/Operations, Millicorp, to Marlene H. Dortch, Secretary, Federal Communications Commission, WC Docket No. 13-97 *et al.* (filed May 22, 2013) (Millicorp Trial Proposal). Although Millicorp filed its proposal two days after the deadline, the Bureau concluded that Millicorp's participation would increase diversity of the trial participants, and accepted its proposal as timely filed. *See VoIP Trials Order*, 28 FCC Rcd at 8892, para. 7. The Bureau rejected Fractal's proposal because the Commission had limited participation to entities that had petitions for waiver of the Commission's rules regarding access to numbers pending at the time of the *Direct Access Order*, and Fractal did not have a pending petition for waiver on file. *See id.* at 8892, para. 9.

disputes.¹⁴ The Commission also invited parties to submit information regarding the trial, stating that it was particularly interested in the experiences of customers and service providers that are directly affected by the trial participants' receiving direct access to numbers.¹⁵ The Commission asked commenters to address any benefits or concerns with the trial as well as the effectiveness of the conditions.¹⁶

7. Now that the trial is complete, participants may not obtain direct access to additional numbers unless and until the Commission changes any applicable rules. While trial participants are not required to return the numbers they have received during the trial, the Commission reserves the right to order the return of such numbers.¹⁷ Trial participants may continue to assign to end-user customers numbers that the trial participant obtained during the trial. However, they may not port-in a number for a new customer post-trial; rather, they must instead use a CLEC partner when porting in a new number. Trial participants must port-out directly-held numbers upon request.

8. The Order required the Bureau to report to the Commission on the results of the trial within 45 days of completion of the trial.¹⁸ This report satisfies that requirement. We seek comment on this Report from state commissions, industry, the general public, and other stakeholders.

III. DISCUSSION

9. The Bureau's assessment following the trials is that it is technically feasible for interconnected VoIP providers to obtain telephone numbers directly from the numbering administrators, and that such arrangements did not identify technical problems regarding number exhaust, number porting, VoIP interconnection, or intercarrier compensation. While the trials did highlight some issues about interconnection and porting, those issues relate to disputes about what a carrier's obligation is to interconnect with or port to a VoIP provider, and do not appear to implicate any technical concerns. We expect that the Commission can reduce those disputes by providing greater clarity and direction in the pending rulemaking proceedings on direct access to numbers and VoIP interconnection.¹⁹

A. Data from Trial Reports

10. In order to receive numbers from the NANPA, the VoIP providers participating in the trial (and any other new carrier) were required to complete a multi-step process. This process included: (1) getting an operating company number (OCN) registered with NANPA; (2) filing an application with NPAC; (3) applying for a Central Office (CO) code and a Location Routing Number (LRN);²⁰ (4)

¹⁴ *Direct Access Order and NPRM*, 28 FCC Rcd at 5883, para. 103.

¹⁵ *Id.* at 5884, para. 107.

¹⁶ *Id.*

¹⁷ *See Direct Access Order and NPRM*, 28 FCC Rcd at 5883, para. 102 & n.254.

¹⁸ *Id.* at 5878, para. 88. The trial ended on Dec. 17, 2013, 6 months from the date the trial proposals were approved.

¹⁹ *See Direct Access Order and NPRM*, 28 FCC Rcd 5842; *Connect America Fund et al*, WC Docket Nos. 10-90, *et al.*, Report and Order and Further Notice of Proposed Rulemaking, 26 FCC Rcd 17663, 18123-47, paras. 1335-98 (2011) (*USF/ICC Transformation Order*), *pets. for review pending sub nom. In re: FCC 11-161*, No. 11-9900 (10th Cir. Filed Dec. 8, 2011).

²⁰ The LRN is a 10 digit number assigned to each switch from an NPA-NXX code, or Telephone Number, that is unique to that switch. It defines the state and rate center where it was assigned. *See* <http://www.npac.com/number-portability/how-lrn-works>. An LRN is required for any entity that wants to port numbers. An LRN is assigned to each ported telephone number and is used to route calls through the PSTN to the switch serving the ported number. (continued...)

inserting rates and routes into the Business Integrated Routing and Rating Database System (BIRRDs) to make them available to carriers in the Local Exchange Routing Guide (LERG); (5) conducting a testing phase once LRNs were effective.²¹ SmartEdgeNet reports, however, that the process was not overwhelming and is worth the benefit of access to number resources.²²

11. Trial participants requested direct access to numbers in several areas around the country. Vonage requested numbers in three LATAs – Phoenix, AZ; Atlanta, GA; and Boston, MA. Level 3/WilTel requested numbers in Boston, MA; Los Angeles, CA; Rochester, NY; Charlotte, NC; Dallas, TX; and Denver, CO. SmartEdgeNet requested numbers in Dallas, TX; Key West, FL; and Celebration, FL. Millicorp requested numbers in Savannah, GA; Ft. Meyers, FL; and Boca Raton, FL. IntelePeer requested numbers in Los Angeles, CA.²³

12. Vonage, Level 3, and Millicorp are, at present, the only providers that have placed numbers into service for new customers and through porting.²⁴ SmartEdgeNet and IntelePeer have not yet placed new numbers into service, although SmartEdgeNet has had three successful port-in requests.²⁵ Per the *Direct Access Order and NPRM*, SmartEdgeNet and IntelePeer may continue to assign the numbers they received as part of the trial.²⁶

13. Vonage placed numbers into service in the Atlanta and Boston markets. Vonage reports that, as of December 19, 2013, it had placed 1,702 new numbers in service; had 116,948 port-in requests;²⁷ and had 821 port-out requests for directly held numbers.²⁸ One hundred percent of port-ins

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The same ten-digit LRN can be used for every ported number served from the switch to which the LRN's NPA-NXX is assigned.

²¹ See, e.g., Letter from Duane Dyar, Vice President/Operations, Millicorp to Marlene H. Dortch, Secretary, FCC, WC Docket No. 13-97 *et al.*, at 2 (filed Oct. 1, 2013) (Millicorp First Report).

²² See Letter from Randall B. Lowe, Attorney for SmartEdgeNet, LLC, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 13-97 *et al.*, at 3 (dated Dec. 16, 2013) (SmartEdgeNet Dec. 16, 2013 *Ex Parte* Letter). For instance, SmartEdgeNet states that porting through a third party could take several days but, by doing away with the third party, porting has been reduced to a few hours. Access to number resources by interconnected VoIP providers also permits them to control both the numbers assigned to their customers and the process associated with those numbers instead of relying on third parties to whom it must pay a fee. Further, SmartEdgeNet also states that, but for CenturyLink's interconnection requirement, discussed below, direct access allows interconnected VoIP providers to reduce their costs of service and offer technologically advanced services at a reduced price. *Id.*

²³ Letter from Kristin Manwarren, Counsel for IntelePeer, Inc., to Marlene H. Dortch, Secretary, FCC, WC Docket No. 13-97 *et al.* (filed Oct. 25, 2013).

²⁴ Vonage has filed five reports to date, on Aug. 19, 2013, Sept. 19, 2013, Oct. 24, 2013, Nov. 19, 2013, and Dec. 19, 2013. Level 3 has also filed five reports to date, on Sept. 13, 2013, Oct. 15, 2013, Nov. 13, 2013, Dec. 13, 2013, and Dec. 30, 2013. SmartEdgeNet has filed four reports to date, on Sept. 25, 2013, Oct. 25, 2013, Nov. 25, 2013, and Dec. 30, 2013. Millicorp has also filed four reports, dated Oct. 6, 2013, Nov. 6, 2013, Dec. 6, 2013, and Jan. 15, 2014. IntelePeer has filed three reports, on Oct. 25, 2013, Nov. 26, 2013, and Dec. 30, 2013.

²⁵ See Letter from Randall B. Lowe, Attorney for SmartEdgeNet, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 13-97 *et al.* (filed Dec. 30, 2013) (SmartEdgeNet Final Report); Letter from Kristin Manwarren, Counsel for IntelePeer, Inc., to Marlene H. Dortch, Secretary, FCC, WC Docket No. 13-97 *et al.* (filed Dec. 30, 2013) (IntelePeer Final Report).

²⁶ See *Direct Access Order and NPRM*, 28 FCC Rcd at 5883, para. 102 n.254.

²⁷ We note that a single port request can include multiple numbers.

and port-outs were successful. Vonage established a web interface for processing local service requests for porting numbers, allowing providers to request credentials and submit porting requests; this is the same approach adopted by many traditional carriers.²⁹ Vonage states that, during the course of the trial, it completed bulk ports without any problems, moving tens of thousands of numbers overnight without issue.³⁰ Vonage asserts that its success shows that the industry's existing porting regime can easily accommodate direct access for interconnected VoIP providers.³¹

14. Vonage did report that at least one carrier was slow to enable direct porting to Vonage, but ultimately did so.³² We note that VoIP providers have been required to port out numbers, upon request, and have done so for many years.³³ We note also that carriers have been required to port numbers to VoIP providers,³⁴ but that, prior to the technical trial, VoIP providers typically did not have direct access to numbers, and carriers thus did not have experience porting numbers directly to VoIP providers. Instead, carriers ported the numbers to the VoIP provider's carrier partner. The trial provided an opportunity to test porting directly to VoIP providers, and it appears to have occurred seamlessly. Vonage reported no routing failures or billing or compensation disputes, and asserts that no additional regulatory action would be needed to ensure that routing works from a technical perspective.³⁵ Vonage described the trial as "transparent" for customers, who saw no changes to their service.³⁶ Vonage also noted that the need to obtain 10,000 numbers to get an LRN and become a code holder seems to be an unnecessary holdover from legacy systems, and believes that it and other providers can more efficiently use numbers when they can obtain an LRN with a block of 1,000 numbers, obviating the need to return additional numbers from a full code of 10,000 numbers.³⁷

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²⁸ Letter from Brita Strandberg, Counsel to Vonage Holdings Corp., to Marlene H. Dortch, Secretary, FCC, WC Docket No. 13-97 *et al.*, at 5 (filed Dec. 19, 2013) (Vonage Fifth Report).

²⁹ *Id.* at 4–5.

³⁰ *Id.* at 5.

³¹ *Id.*

³² *Id.* at 2–3. Vonage temporarily worked around this carrier's failure to port by having this carrier port to a Vonage carrier partner, and then porting from the carrier partner to Vonage. However, the carrier in question has since enabled direct porting to Vonage. Vonage Fifth Report at 3, n.6. Vonage recommends that the Commission codify its clarification of the existing requirement to port to and from interconnected VoIP providers. *Id.* at 3.

³³ See 47 C.F.R. § 52.34.

³⁴ See *Telephone Number Requirements for IP-Enabled Services Providers; Local Number Portability Porting Interval and Validation Requirements; IP-Enabled Services; E911 Requirements for IP-Enabled Service Providers*, WC Docket Nos. 07-243, 07-244, 04-36, CC Docket Nos. 95-116, 99-200, Report and Order, Declaratory Ruling, Order on Remand, and Notice of Proposed Rulemaking, 22 FCC Rcd 19531, 19550, para. 35, n.119 (2007), *aff'd sub nom. National Telecomms. Cooperative Ass'n v. FCC* (D.C. Cir. Apr. 28, 2009) (Carriers "must port-out NANP telephone numbers upon valid requests from an interconnected VoIP provider (or from its associated numbering partner)."); see also *Direct Access Order and NPRM*, 28 FCC Rcd at 5868–69, paras. 69–72 (describing obligation to port numbers directly to VoIP providers).

³⁵ Vonage Fourth Report at 5.

³⁶ See Letter from Brita D. Strandberg, Counsel to Vonage Holdings Corp. to Marlene H. Dortch, Secretary, FCC, WC Docket No. 13-97 *et al.*, at 2 (filed Jan. 13, 2013) (Vonage Jan. 13, 2014 *Ex Parte* Letter).

³⁷ See *id.*

15. Level 3 has placed numbers into service in the Boston, Los Angeles, Charlotte, Dallas, and Rochester markets. Level 3 reports that as of December 17, 2013, it had placed 2,821 new numbers in service; had 22,669 successfully completed port-in requests; and had 21 successfully completed requests to port out from numbers that Level 3 held directly.³⁸ One hundred percent of port-ins and port-outs were successful. Level 3 reported no routing failures or billing or compensation disputes.

16. Millicorp's trial numbers went live in Savannah, GA, and it has begun placing numbers in production. As of Jan. 15, 2014, it had placed 40 numbers into service.³⁹ Millicorp has also completed "voice testing" in Boca Raton, FL.⁴⁰ Per its proposal, we take this to mean that Millicorp has completed Phase 2 of its trial implementation process, whereby it "test[s] calls from various destinations, including both landline and VoIP providers, as well as ILECs, CLECs, and wireless carriers, to verify and confirm routing, billing and call completion statistics."⁴¹ Millicorp reports no problems, issues, or billing or compensation disputes thus far, outside of the CenturyLink issue, discussed below. Millicorp did observe, however, that it may take several billing cycles of up to 90 days each (including any dispute and audit periods) to determine with confidence that intercarrier compensation procedures operate smoothly and without disruption.⁴²

17. SmartEdgeNet began its voice testing phase, and reports that, as part of that testing, IXC interstate traffic has completed to its network without issue.⁴³ SmartEdgeNet reports that local and toll calls are completing from incumbent lines tested in Key West, FL and Dallas, TX.⁴⁴ One number has been assigned for LRN and one for testing in the Key West and Celebration rate centers.⁴⁵ One has been assigned for LRN and 11 for use in the Dallas rate center.⁴⁶ Because SmartEdgeNet did not have a presence in any rate center, it had to obtain a LRN in these rate centers in order to port numbers.

18. IntelPeer reports that it has begun operational testing with internal telephone numbers to assess call routing, but has not yet started provisioning new customers using IntelPeer OCN designated numbers and has not begun transitioning existing customer telephone numbers to the IntelPeer OCN.⁴⁷

³⁸ Letter from Joseph C. Cavender, Vice President, Federal Regulatory Affairs, Level 3, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 13-97 *et al.* (filed Dec. 30, 2013) (Level 3 Final Report).

³⁹ Letter from Duane Dyar, Vice President/Operation, Millicorp to Marlene H. Dortch, Secretary, FCC, WC Docket No. 13-97 *et al.*, at 2 (filed Jan. 15, 2014) (Millicorp Final Report).

⁴⁰ Letter from Duane Dyar, Vice President/Operation, Millicorp to Marlene H. Dortch, Secretary, FCC, WC Docket No. 13-97 *et al.*, at 1 (filed Dec. 6, 2013) (Millicorp Third Report).

⁴¹ See Millicorp Trial Proposal at 5.

⁴² Letter from Phil Marchesiello, Counsel to Millicorp, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 13-97 *et al.*, at 2 (filed July 15, 2013) (Millicorp July 15, 2013 *Ex Parte* Letter).

⁴³ Letter from Randall B. Lowe, Attorney for SmartEdgeNet, LLC, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 13-97 *et al.* at 2 (filed Nov. 25, 2013) (SmartEdgeNet Third Report).

⁴⁴ *Id.*

⁴⁵ *Id.*

⁴⁶ *Id.* See *supra* note 20 for explanation of LRNs.

⁴⁷ See IntelPeer Final Report at 1.

B. CenturyLink Interconnection Issue

19. Vonage, Level 3, SmartEdgeNet, and Millicorp reported being unable to reach agreement with CenturyLink for traffic exchange. Based on written reports and *ex parte* discussions, we understand that CenturyLink was requiring VoIP trial participants to interconnect via dedicated trunks, and the trial participants objected to this requirement because it added unnecessary costs to the exchange of traffic and disincentivized interconnection in IP format. CenturyLink asserts that an industry standard approach to tracking and measuring traffic is to use separate trunks by provider and, in the case of local traffic, to route traffic only where the LRN and OCN are consistent. CenturyLink contends that it is particularly important to be able to track traffic exchanged during the trial because CenturyLink has seen increased instances of robo-calling and the telecom equivalent of denial of service (TDOS) attacks associated with traffic from VoIP end points.⁴⁸ CenturyLink states that when traffic from multiple providers is co-mingled on the same trunk, it is hard or even impossible to identify the source of any problem.⁴⁹ CenturyLink states that establishing direct relationships, including separate trunks, will improve the VoIP numbering trial and remove the need to establish different arrangements following the trial.⁵⁰ CenturyLink also notes that the VoIP direct access trial is distinct from VoIP interconnection.⁵¹

20. Vonage reports that CenturyLink would only exchange traffic with Vonage if Vonage purchased dedicated TDM trunks in Phoenix and directly entered into a commercial agreement with CenturyLink for the exchange of TDM traffic.⁵² Vonage argues that this arrangement is inconsistent with a move toward all-IP networks. Under CenturyLink's proposed arrangement, CenturyLink would send traffic to Vonage for free, but Vonage would have to pay intercarrier compensation for traffic it sent to CenturyLink, giving CenturyLink incentives to perpetuate legacy TDM technology.⁵³ As a result of this dispute, Vonage states that it did not deploy numbers in the Phoenix market.⁵⁴ Vonage urges the Commission to use this proceeding to encourage carriers to adopt efficient, forward-looking interconnection and routing solutions.⁵⁵

21. Level 3 reports that it was unable to reach agreement with CenturyLink for the exchange of traffic to numbers held directly by its VoIP affiliate, and was therefore unable to interconnect and test call routing in the Denver rate center. Level 3 Enhanced Services, LLC (Level 3 ES), the VoIP provider affiliate participating in the trial, historically has used telephone numbers that are registered in the LERG under the Level 3 LEC OCN. As part of the Commission's numbering trial, Level 3 ES obtained its own OCN, and then obtained new blocks of telephone numbers in its trial rate centers.⁵⁶ Level 3 ES elected to

⁴⁸ Letter from Jeffrey S. Lanning, Vice President, Federal Regulatory Affairs, CenturyLink, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 13-97 *et al.*, at 1 (filed Nov. 15, 2013) (CenturyLink Nov. 15, 2013 *Ex Parte* Letter).

⁴⁹ *Id.*

⁵⁰ *Id.* at 2.

⁵¹ *Id.*

⁵² Letter from Brita Strandberg, Counsel to Vonage Holdings Corp. to Marlene H. Dortch, FCC, WC Docket No. 13-97 *et al.*, at 2–3 (filed Oct. 29, 2013) (Vonage Oct. 29, 2013 *Ex Parte* Letter).

⁵³ *Id.* at 3.

⁵⁴ *Id.*

⁵⁵ Vonage Fifth Report at 4.

⁵⁶ Letter from Joseph C. Cavender, Vice President, Federal Regulatory Affairs, Level 3, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 13-97 *et al.*, at 1 (filed Nov. 5, 2013) (Level 3 Nov. 5, 2013 *Ex Parte* Letter).

use Level 3 LEC to route its trial traffic over existing Level 3 LEC-incumbent interconnection facilities, just as any unaffiliated non-carrier using Level 3 LEC as a CLEC partner would.⁵⁷ However, in order to exchange traffic bound for telephone numbers assigned to the Level 3 ES OCN, CenturyLink required Level 3 to purchase additional interconnection trunks between the Level 3 LEC and CenturyLink that would be dedicated to traffic bound for telephone numbers assigned to the Level 3 ES OCN.⁵⁸

22. Level 3 reports that the parties were unable to reach agreement. As a result, Level 3 ES returned its numbers to support efficient usage of numbers in the Denver rate center.⁵⁹ Level 3 observes that CenturyLink in particular has previously had no objection to routing traffic over common trunks to the Level 3 LEC without regard to whether those trunks carried only traffic associated with one OCN or traffic associated with multiple OCNs.⁶⁰ Specifically, Level 3 states that today, CenturyLink routes traffic in Washington and Minnesota associated with both the Level 3 LEC OCN and the Broadwing OCN over a single set of existing Level 3 LEC-CenturyLink Local Interconnection Service (LIS) trunks.⁶¹ Level 3 asserts that CenturyLink has been routing traffic successfully and without objection in those circumstances since 2010. Level 3 has asked the Commission to investigate whether CenturyLink's conduct is justified and to what extent CenturyLink is enforcing its policies uniformly.⁶²

23. SmartEdgeNet also reports that it has been unable to complete its negotiations with CenturyLink for Celebration, FL.⁶³ SmartEdgeNet disputes the need for CenturyLink to track and measure traffic during the trial.⁶⁴ SmartEdgeNet asserts that one of the primary benefits of interconnected VoIP services is the low cost ability to provide advanced and innovative voice services and that requiring separate trunks defeats one of the benefits of interconnected VoIP services by adding unnecessary costs.⁶⁵ SmartEdgeNet argues that if CenturyLink witnesses an increase in robo-calling and the telecom equivalent of denial of service, it can address those matters with the third party carrier who interconnects

⁵⁷ *Id.*

⁵⁸ Level 3 Nov. 5, 2013 *Ex Parte* Letter at 2. CenturyLink has not demanded that Level 3 ES establish a direct connection with CenturyLink, only that Level 3 LEC have dedicated trunks for certain Level 3 ES traffic.

⁵⁹ Level 3 Final Report at 2.

⁶⁰ *Id.* Level 3 states that in other contexts (*e.g.*, when it acquires a new company), no carrier has refused to route traffic bound for that an acquired company's telephone numbers to and over the existing Level 3 LEC facilities solely because the traffic is associated with a telephone number with a different OCN. Level 3 also notes that traffic is routing successfully in other regions in similar circumstances as a part of the trial without any such dedicated facilities.

⁶¹ *Id.* at 2-3.

⁶² Letter from Joseph C. Cavender, Vice President, Federal Regulatory Affairs, Level 3, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 13-97 *et al.*, at 1 (filed Nov. 12, 2013) (Level 3 Nov. 12, 2013 *Ex Parte* Letter). Specifically, Level 3 asks the Commission to investigate whether CenturyLink demands that AT&T obtain dedicated trunks for traffic destined for telephone numbers associated with the SBCIS OCN.

⁶³ *See* SmartEdgeNet Third Report at 2.

⁶⁴ Letter from Randall B. Lowe, Attorney for SmartEdgeNet, LLC, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 13-97 *et al.*, at 2 (dated Nov. 27, 2013) (SmartEdgeNet Nov. 27, 2013 *Ex Parte* Letter).

⁶⁵ *Id.* SmartEdgeNet asserts that CenturyLink ignores the fact that the cost multiplies ten-fold (around \$1000/month) if traffic volumes require a DS3 entrance facility versus and DS1, and also does not address the other charges associated with its separate trunk requirement, such as the monthly fixed and per mile charges for direct trunked transport. SmartEdgeNet Dec. 16, 2013 *Ex Parte* Letter at 2.

with CenturyLink via a shared or common trunk.⁶⁶ Millicorp also reports that it has been unable to reach agreement with CenturyLink for traffic exchange in its third trial LATA, Ft. Meyers, FL.⁶⁷

C. Other Issues

24. *Limited Scope of Trial.* At the outset of the trial, a number of commenters expressed concern regarding the length of the trial⁶⁸ and the appropriateness of conducting the trial prior to completion of a rulemaking proceeding. For example, CenturyLink commented that six months seemed “a very short period of time to deploy N11 dialing across localities.”⁶⁹ CenturyLink also commented that it is unrealistic and unreasonable to assume that carriers are going to resolve issues surrounding routing and termination of non-TDM traffic and IP interconnection with non-carriers during six month trials.⁷⁰ With the exception of negotiations with CenturyLink, no major issues or problems were reported during the course of the trial. During the limited duration of the trial, participants were able to port-in and port-out numbers and issue new numbers to customers, with no significant billing, routing, or compensation disputes reported.

25. We observe that the trial was limited in scope, scale, and duration. Had the trial lasted longer, included more numbers, or been broader in scope (e.g., open to a greater number or variety of service providers), we might have obtained additional data on matters such as routing, billing, N11 calls, number exhaust, or other issues. In addition, Level 3 reports that it ultimately did not submit a request for telephone numbers in the Concord, NC rate center, as it had initially proposed. Level 3 determined that a minimum of 30 days would be necessary for conducting a thorough trial, and because the LERG effective date for Concord numbers would have been late November, Level 3 concluded that there would not have been sufficient time to conduct an adequate trial.⁷¹

26. *VoIP Interconnection.* Notwithstanding its dispute with CenturyLink regarding interconnection, Vonage noted that it has been able to exchange traffic with AT&T and Verizon through Vonage’s existing agreement with Peerless (a competitive tandem provider). Vonage explained that in Atlanta and Boston, AT&T and Verizon are delivering PSTN-originated traffic to the Vonage OCN over existing trunks with Vonage’s CLEC partner. Vonage understands that AT&T and Verizon modified their agreements with its CLEC partner to account for this arrangement, and filed these modifications with the relevant state commissions.⁷² Vonage also noted that the trial facilitated Vonage’s efforts to

⁶⁶ SmartEdgeNet Nov. 27, 2013 *Ex Parte* Letter at 2; *see also* SmartEdgeNet Dec. 16, 2013 *Ex Parte* Letter at 2.

⁶⁷ *See* Millicorp Third Report at 1; Millicorp Final Report at 1.

⁶⁸ *See, e.g.*, Letter from James Bradford Ramsay, General Counsel, National Association of Regulatory Utility Commissioners (NARUC), to Marlene H. Dortch, Secretary, FCC, WC Docket No. 13-97 *et al.*, at 2 (filed May 8, 2013) (stating that the duration of the test seems too short given the amount of time needed to activate new codes for LRN purposes); IntelPeer Comments at 8–9 (asking the Commission to extend the current trial for an additional six month period because it expects to have reports for only a couple of months, and only for arrangements through a tandem provider). IntelPeer states that to be able to provide any useful data, including information on exchanging traffic via LEC IP connections, IntelPeer anticipates needing several additional months. *Id.*

⁶⁹ CenturyLink Comments at 10–12.

⁷⁰ CenturyLink Comments at 14.

⁷¹ *See* Level 3 Final Report at 2.

⁷² Vonage Oct. 29, 2013 *Ex Parte* Letter at 2; *see also* Vonage Fifth Report at 4 (stating that Vonage’s experience with AT&T and Verizon demonstrates that many carriers are willing to support efficient arrangements today).

negotiate VoIP interconnection agreements with carriers and MSOs.⁷³ During the trial, Vonage concluded a VoIP interconnection agreement with Verizon, which will allow both Verizon and Vonage customers to enjoy the quality of service and cost benefits that come from the exchange of traffic in IP format.⁷⁴ Vonage reports that other providers have entered into or are negotiating VoIP interconnection agreements with Vonage that promise similar benefits.⁷⁵ Millicorp also reports that it is in the final stages of negotiating an interconnection agreement with Verizon.⁷⁶

27. *Facilities Readiness.* Under the Commission's rules, carriers must demonstrate "facilities readiness" before they can obtain initial numbering resources, which helps ensure that carriers are not building inventories before they are prepared to offer service.⁷⁷ VoIP providers participating in the trial were required to comply with this requirement. In the *Direct Access Order*, the Commission sought comment on whether evidence that an interconnection service pursuant to a tariff is appropriate evidence of "facilities readiness" or whether there are there better ways to demonstrate compliance with this requirement, such as entering into traffic exchange agreements with any LEC serving the relevant geographic area.⁷⁸ Vonage recommends that the Commission expressly recognize that interconnected VoIP providers may demonstrate facilities readiness by showing the combination of an agreement between the interconnected VoIP provider and its underlying carrier and an interconnection agreement between that underlying carrier and the relevant incumbent LEC.⁷⁹ Vonage asserts that such arrangements demonstrate facilities readiness where VoIP providers have not entered into direct VoIP interconnection agreements with the relevant incumbent LEC.⁸⁰

IV. CONCLUSION

28. The numbering trial reflects that it is technically feasible for interconnected VoIP providers to obtain telephone numbers directly from the numbering administrators and that such arrangements do not present technical problems regarding number porting, VoIP interconnection, or intercarrier compensation. To the extent that porting and interconnection disputes arose, the Bureau believes that additional clarity and guidance can be given in pending rulemakings addressing those topics.

V. COMMENT FILING PROCEDURES

29. Pursuant to sections 1.415 and 1.419 of the Commission's rules, 47 C.F.R. §§ 1.415, 1.419, interested parties may file comments on this Report on or before the date indicated on the first page

⁷³ Vonage Oct. 29, 2013 *Ex Parte* Letter at 2.

⁷⁴ See Vonage Fifth Report at 2; see also Vonage Jan. 13, 2014 *Ex Parte* Letter at 1 (noting that "once it is exchanging traffic in IP directly with Verizon and other providers, it expects to be able to offer higher quality service to its subscribers, including offering features like high-definition voice" and "also looks forward to reducing some of the costs and inefficiencies that arise when its subscribers' numbers are owned by a CLEC partner and it must seek permission from the number owners to implement even simple services like Caller ID").

⁷⁵ *Id.*

⁷⁶ See Millicorp Final Report at 1.

⁷⁷ See 47 C.F.R. § 52.15(g)(ii).

⁷⁸ See *Direct Access Order*, 28 FCC Rcd at 5858, paras. 29–30.

⁷⁹ Vonage Fifth Report at 4. Vonage reports that this is the evidence that the Numbering Administrator required. *Id.* at 4, n.10.

⁸⁰ *Id.* Vonage reports that both AT&T and Verizon acknowledged that Vonage's arrangement with its CLEC partner satisfied this requirement and permitted porting under their interconnection agreements with that CLEC. *Id.*

of this document. Comments may be filed using the Commission's Electronic Comment Filing System (ECFS). See *Electronic Filing of Documents in Rulemaking Proceedings*, 63 FR 24121 (1998).

- Electronic Filers: Comments may be filed electronically using the Internet by accessing the ECFS: <http://fjallfoss.fcc.gov/ecfs2/>.
- Paper Filers: Parties who choose to file by paper must file an original and one copy of each filing. If more than one docket or rulemaking number appears in the caption of this proceeding, filers must submit two additional copies for each additional docket or rulemaking number.
- Filings can be sent by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail. All filings must be addressed to the Commission's Secretary, Office of the Secretary, Federal Communications Commission.
- All hand-delivered or messenger-delivered paper filings for the Commission's Secretary must be delivered to FCC Headquarters at 445 12th St., SW, Room TW-A325, Washington, DC 20554. The filing hours are 8:00 a.m. to 7:00 p.m. All hand deliveries must be held together with rubber bands or fasteners. Any envelopes and boxes must be disposed of before entering the building.
- Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9300 East Hampton Drive, Capitol Heights, MD 20743.
- U.S. Postal Service first-class, Express, and Priority mail must be addressed to 445 12th Street, SW, Washington DC 20554.

30. People with Disabilities: To request materials in accessible formats for people with disabilities (braille, large print, electronic files, audio format), send an e-mail to fcc504@fcc.gov or call the Consumer & Governmental Affairs Bureau at 202-418-0530 (voice), 202-418-0432 (tty).

FEDERAL COMMUNICATIONS COMMISSION

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