

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

|   |   |                      |
|---|---|----------------------|
| In the Matter of  | ) |                      |
|   | ) |                      |
| Connect America Fund  | ) | WC Docket No. 10-90  |
|   | ) |                      |
| A National Broadband Plan for Our Future                              | ) | GN Docket No. 09-51  |
|   | ) |                      |
| Establishing Just and Reasonable Rates for<br>Local Exchange Carriers | ) | WC Docket No. 07-135 |
|   | ) |                      |
| High-Cost Universal Service Support                                   | ) | WC Docket No. 05-337 |
|   | ) |                      |
| Developing an Unified Intercarrier<br>Compensation Regime             | ) | CC Docket No. 01-92  |

**REPLY COMMENTS OF HYPERCUBE TELECOM, LLC**

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April 18, 2011

## EXECUTIVE SUMMARY

HyperCube's initial Comments emphasized the following points:

- Intermediate service providers play an important role in ensuring that calls can be completed, regardless of the platforms or network architectures used in call origination and termination, and thus in promoting the transition to an all Internet Protocol ("IP") based infrastructure. Carriers participating in this competitive market sector should be free to employ a variety of marketing approaches, including revenue sharing.
- In order to avoid an adverse impact on the competitive market for intermediate tandem services, any final Part 61 "access stimulation" rules should cover only situations involving stimulation of *end-user* traffic terminating on the stations of local exchange carriers ("LECs") with high interstate access rates. All revenue sharing is not indicative of access stimulation. Such rules should not impose unnecessary and burdensome requirements on competitive local exchange carriers ("CLECs") such as HyperCube whose interstate tariffed rates are already matched to those of the incumbent LEC and therefore already satisfy the Commission's proposed tariff rate ceiling.
- In order to resolve "phantom traffic" disputes, the Commission's Part 64 call signaling rules should also require population of the Jurisdictional Information Parameter ("JIP") in call signaling in accordance with industry recommendations, where technically feasible, within thirty-six (36) months of the Commission's Order, with possible required population of additional fields as industry developments warrant. Intermediate carriers should be encouraged to populate message fields in accordance with industry standards and should be exempt from liability when doing so.

In these Reply Comments, HyperCube re-emphasizes the need to limit the scope of any Part 61 rules to avoid the potential for overly broad rules and any adverse effect on competition as a result. In particular, the Commission should continue to reject calls for trigger mechanisms based on increases in traffic volumes. Such traffic increases very often, for example, reflect successful marketing to wholesale customers, and thus would be unrelated to the end-user traffic stimulation that is the intended focus of the rules.

HyperCube also provides information that further demonstrates that adding a JIP requirement to the call signaling rules would substantially minimize the number of phantom

traffic disputes and would expedite the resolution of those that remain. As recommended by many commenters, addition of the JIP to the required call signaling and billing information is superior to other approaches to improve billing records. Additionally, the use of the Originating Line Information (“OLI”) with standardized coding to reflect traffic types (particularly IP-originated) would virtually eliminate all phantom traffic and related disputes.

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**REPLY COMMENTS OF HYPERCUBE TELECOM, LLC**

HyperCube Telecom, LLC (“HyperCube”) hereby files Reply Comments in response to the *Notice of Proposed Rulemaking and Further Notice of Proposed Rulemaking* issued by the Federal Communications Commission (“Commission” or “FCC”) in the above-captioned proceeding.<sup>1</sup> These Reply Comments are particularly directed to the comments of third parties submitted in response to Section XV of the *USF/ICC Transformation NPRM*, captioned “*Reducing Inefficiencies and Waste by Curbing Arbitrage Opportunities.*”<sup>2</sup> HyperCube previously filed Comments responding to Section XV of the *NPRM* on April 1, 2011 (“Comments”).

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<sup>1</sup> See *Connect America Fund, Notice of Proposed Rulemaking and Further Notice of Proposed Rulemaking*, FCC 11-13 (rel. Feb. 9, 2011) (“*USF/ICC Transformation NPRM*” or “*NPRM*”).

<sup>2</sup> *Id.* at ¶¶ 603-76.

## **I. Introduction**

In its initial Comments, HyperCube explained the important role of intermediate service providers such as HyperCube in ensuring that calls between end-users can be completed, regardless of whether the originating and terminating service providers use an IP based platform, a traditional analog Multi-Frequency (“MF”) or digital Signaling System Seven (“SS7”) Time Division Multiplexing (“TDM”) network, or any combination of these. As shown in HyperCube’s initial Comments, the services of intermediate providers such as HyperCube incorporate efficient network design, apply advanced information systems, allow other service providers to focus on their core end-user services, and promote the transition to a ubiquitous IP-based broadband network infrastructure. HyperCube also pointed out that the market for intermediate services is highly competitive, and that service providers employ a variety of marketing approaches, including revenue-sharing, in order to increase their traffic volumes and thereby avail themselves of the benefits of increased scale and scope. These benefits include an enhanced ability to enter into commercial agreements for traffic termination, thereby moving away from tariff-based access compensation arrangements. HyperCube also emphasized that its own interstate access rates already are matched to those of the Incumbent Local Exchange Carrier (“ILEC”) and therefore satisfy the Commission’s proposed tariff ceiling for CLEC interstate access rates.

As a general matter, HyperCube agrees with TEXALTEL that the end-user traffic stimulation and phantom traffic issues the Commission is addressing in the first phase of this Intercarrier Compensation proceeding may be the by-products and symptoms of a flawed and

outdated ICC system.<sup>3</sup> When the Commission fixes the overall compensation and support system, these issues will likely disappear.

In the interim, however, to resolve these discrete problems immediately, the Commission should only adopt rules that are narrowly tailored to address these limited situations now before it and that do not disrupt competitive market segments. The Commission should also embrace objective, knowledge-based solutions that can eliminate and conclude disputes efficiently and expeditiously.

**II. There is Substantial Consensus that the Proposed Part 61 Rules are Overbroad and Should be Modified to Narrowly Target End-User Traffic Stimulation.**

HyperCube has recommended changes to the Commission's proposed Part 61 rules that would ensure: (1) that the rules cover only the specific situation of stimulation of end-user traffic terminating on stations of LECs with high interstate access charge rates, and (2) that CLECs whose interstate access rates already are benchmarked to the rates of the applicable price-cap ILEC are not unnecessarily burdened by being required to file new, redundant tariffs that would be denied "deemed lawful" status<sup>4</sup> and that may be required to be accompanied by cost support data.

The record of this proceeding finds substantial consensus regarding the need to limit the scope of the Commission's proposed rules addressing end-user traffic stimulation.<sup>5</sup> Several

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<sup>3</sup> See, generally, Comments of TEXALTEL at 5, WC Dkt. 10-90, et al. (filed Apr. 1, 2011); see also NPRM at ¶ 491; Comments of CTIA – The Wireless Association at 3, WC Dkt. 10-90, et al. (filed Apr. 1, 2011).

<sup>4</sup> Several parties have argued that denying tariffs "deemed lawful" status would exceed the Commission's authority. See, e.g., Comments of the Independent Telephone & Telecommunications Alliance at 25, WC Dkt. 10-90, et al. (filed Apr. 1, 2011).

<sup>5</sup> See, e.g., Comments of EarthLink, Inc., at 13, WC Dkt. 10-90, et al. (filed Apr. 1, 2011) ("The source of the problem is the large volume of access minutes terminating to a LEC that is permitted under current rules to set higher access rates that are based, at least in part, on the assumption of low volumes.") (footnote continues on following page)

parties emphasized that the Part 61 rules should be limited in their effect to situations involving substantial stimulation of *end-user* traffic terminating on the stations of LECs with high interstate terminating access charges.<sup>6</sup> Other filers emphasized that the Commission properly declined to prohibit revenue sharing.<sup>7</sup>

With respect to the Commission's proposed tariffing rules, many parties urged the Commission to clarify that it is wholly unnecessary to require new tariff filings of CLECs already meeting the proposed tariff rate ceiling.<sup>8</sup> COMPTTEL, for example, noted that requiring a revised tariff would be unnecessary because the revised tariff would "likely be identical to the one that is already on file."<sup>9</sup> A number of parties also addressed the potential adverse impact on

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("EarthLink Comments").

<sup>6</sup> See, e.g., Comments of PAETEC Holding Corp., MPOWER Communications Corp. and U.S. Telepacific Corp., and RCN Telecom Services, LLC at 29, WC Dkt. 10-90, et al. (filed Apr. 1, 2011) ("Any solution adopted by the Commission should target only the problem scenario and not revenue sharing in general.") ("PAETEC Comments")

<sup>7</sup> See, e.g., Comments of Public Utilities Commission of Ohio at 13-14, WC Dkt. 10-90, et al. (filed Apr. 1, 2011); Comments of National Association of State Utility Consumer Advocates and New Jersey Division of Rate Counsel at 9, WC Dkt. 10-90, et al. (filed Apr. 1, 2011); Comments of Small Company Committee of the Louisiana Telecommunications Association at 16, WC Dkt. 10-90, et al. (filed Apr. 1, 2011); PAETEC Comments at 26-29; Comments of Neutral Tandem at 4-5, WC Dkt. 10-90, et al. (filed Apr. 1, 2011) ("Neutral Tandem Comments").

<sup>8</sup> Indeed, Level 3 noted that such a requirement would violate the Paperwork Reduction Act. See Comments of Level 3 Communications, LLC at 4, WC Dkt. 10-90, et al. (filed Apr. 1, 2011) ("Level 3 Comments"). See also Neutral Tandem Comments at 6 (FCC should clarify that no re-filing is required by CLECs already at benchmark). Moreover, parties that have questioned the tariff benchmark rate in the proposed rules have not provided data support for an alternative benchmark. See Comments of AT&T, Inc. at 17, WC Dkt. 10-90, et al. (filed Apr. 1, 2011) (asserting BOCs "undoubtedly" have higher costs than CLECs) ("AT&T Comments"); Comments of Sprint Nextel Corporation at 16, WC Dkt. 10-90, et al. (filed Apr. 1, 2011) ("BOC rates still provide a hefty profit margin") ("Sprint Comments"). The Commission should be very careful not to adopt rules that foreclose competition by precluding CLECs from leveraging the benefits of their deployment of advanced technologies and network design, the very type of investments the Commission seeks to encourage in promoting the transition to a broadband infrastructure.

<sup>9</sup> See Comments of COMPTTEL at 8, WC Dkt. 10-90, et al. (filed Apr. 1, 2011); see also Neutral Tandem Comments at 6.

competition of denying such tariffs “deemed lawful” status and requiring cost support data, which would impose new and unnecessary costs on CLECs already meeting the Commission’s tariff goals.<sup>10</sup> EarthLink, for example, pointed out that the proposed rules would “eliminate the ability of CLECs who share revenue to file “deemed lawful” tariffs, while price cap ILECs who share revenue would continue to be able to file “deemed lawful” tariffs. Such a result is patently discriminatory against CLECs and is contrary to the precompetitive goals of the Act.”<sup>11</sup>

AT&T’s call for broad rules to address arbitrage in general,<sup>12</sup> and for the Commission to address additional perceived issues such as “mileage pumping”<sup>13</sup> in particular, does not warrant

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<sup>10</sup> See, e.g., *EarthLink Comments* at 17.

<sup>11</sup> *EarthLink Comments* at 17.

<sup>12</sup> See *AT&T Comments* at 3 (“there are a number of other schemes that are also causing consequential public interest harms. AT&T urges the Commission to take immediate action to address all of these issues.”).

<sup>13</sup> AT&T postulates the existence of mileage pumping schemes (selective routing of traffic to increase the mileage-based transport charges). See *AT&T Comments* at 30-34. There is, however, a readily available, neutral technical solution using the JIP that avoids issues of motivation or intent. The vertical and horizontal (“V&H”) coordinates of any given two end offices permit an air mile calculation of the distance between them. That distance could be set as the maximum transport mileage chargeable to a call, regardless of the actual transport routing or technologies involved. The JIP supplies the Local Routing Number (“LRN”) through a database query, which can also provide the V&H coordinates of the originating switch. If transport is limited to the distance between the respective V&H coordinates of the originating and terminating switches, then issues of “mileage pumping” disappear. Under this approach, there would be no need for the Commission to “require the LEC to select the POI closest to its end office with which it can practicably connect,” as AT&T recommended. *AT&T Comments* at 33. Use of the JIP to address any perceived “mileage pumping” would also be preferable to proposals mandating routing in accordance with the Switch Homing Arrangement (“7SHA”) of the Telcordia Local Exchange Routing Guide (“LERG”). See, e.g., *Level 3 Comments* at 9; Comments of Aventure Communications Technology, Inc. at 7-9, WC Dkt. 10-90, et al. (filed Apr. 1, 2011). The LERG dates back to 1984, *Local Number Portability*, ConnectivSolutions.com, <http://www.connectiv-solutions.com/local-number-portability.html> (last visited Apr. 12, 2011), when there were only TDMA networks.

While the LERG is updated monthly, *Telcordia LERG Routing Guide*, Trainfo.com, [http://www.trainfo.com/products\\_services/tra/catalog\\_details.html](http://www.trainfo.com/products_services/tra/catalog_details.html) (last visited Apr. 12, 2011), the LERG’s accuracy depends on the timeliness of the updates provided by carriers within the North American Numbering Plan (“NANP”). SIP providers do not use the LERG. While HyperCube supports the documentation of numbers, ownership, and basic routing in the LERG, it is not essential (and it may be detrimental) to force all providers to use the LERG for routing, as several parties have recommended. The LERG-based routing schemes, particularly the LERG 7 SHA, are supposed to indicate the way traffic

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expansion of the rules beyond their intended focus on the special situation of end-user traffic stimulation.<sup>14</sup> The Commission has staged this Intercarrier Compensation (“ICC”) proceeding to promptly address a few specific issues on an initial and interim basis. In the second stage, the Commission plans more extensive consideration of overall reform of the ICC regime and the Federal Universal Service Fund (“FUSF”). Any expansion of the scope of the first-stage rules to cover additional vaguely-described circumstances or consideration of a different interstate access tariff benchmark rate would be a distraction from and prolong resolution of end-user traffic stimulation issues.

HyperCube’s proposed modifications to the Commission’s Part 61 rules would avoid the potential problems that would occur from overly broad rules as described above. Regardless of the specific language adopted by the Commission, however, any final rules should address only end-user traffic stimulation issues and should not require further tariff filings, or deny tariffs

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should be routed to reach its final destination. While the LERG is updated monthly, Telcordia Routing Administration: Catalog of Products and Services, September 2009, *available at* [http://www.trainfo.com/products\\_services/tra/downloads/tra\\_catalog.pdf](http://www.trainfo.com/products_services/tra/downloads/tra_catalog.pdf) (“*Telcordia Catalog*”), the information in the LERG may lag behind the actual state of the network by as much as half a year as the normal grooms and changes of a network happen. Because of this, there are typically frequent communications between interconnected carriers providing current information not reflected in the LERG on where more optimal routing may be available. Furthermore, a number of carriers build gateway switches into their networks and incentivize interconnectors to drop off traffic at the gateways rather than build facilities out to an end office. SIP exchanges, also known as IP Confederations, have also developed, allowing carriers to pass information to each other or provide an interface to query during call set-up to retrieve routing information from the destination carrier. These types of arrangements are extremely beneficial, as they not only provide more up-to-date documentation on call routing, but also provide immediate updates in the case of failures or other network events that may occur. Thus, carrier agreements, including carrier-to-carrier agreements and agreements involving IP Confederations, often provide for more frequent updating of network and routing information than is available from the LERG.

<sup>14</sup> As previously pointed out, HyperCube’s interstate access tariffs already meet the Commission’s benchmark, and HyperCube’s traffic is rated based on the location of its originating locations. Moreover, contrary to assertions that traffic delivered by alternative tandem providers “arrives without appropriate identifying information,” *see* Comments of CenturyLink at 20-21, WC Dkt. 10-90 *et al.* (filed Apr. 1, 2011) (“*Comments of CenturyLink*”), HyperCube uses its enhanced information systems and commercial agreements to ensure that more, not less, information is included in both signaling and billing messages.

“deemed lawful” status, if a CLEC’s tariffs already satisfy the benchmark. The Commission should therefore reject trigger mechanisms proposed by other parties that would exacerbate this overbreadth problem.<sup>15</sup>

One such proposed trigger is an increase of 100% in the level of traffic submitted for termination over a six-month period.<sup>16</sup> However, this condition could exist in a context unrelated to end-user traffic stimulation. For example, a service provider could elect to switch its wholesale service provider from one supplier to another. That provider might formerly have sent a much smaller volume of traffic to a given carrier. Similarly, the 3:1 traffic termination ratio trigger proposed by Sprint Nextel and others<sup>17</sup> could be easily exceeded by a CLEC when call center<sup>18</sup> or taxi dispatch center traffic is involved. A CLEC with an unaffiliated primary interexchange carrier would also have very imbalanced traffic termination ratios that would exceed minutes-of-use (“MOU”) per line per month triggers such as the 406 MOU trigger

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<sup>15</sup> As PAETEC has shown, the “net payor” test included in the Commission’s proposed rules may be both over- and under-inclusive. *See PAETEC Comments* at 21; *Sprint Comments* at 13 (“Sprint has several concerns about the revenue sharing proposal.”). In HyperCube’s view, what is important is that the FCC’s rules are precise and clear, avoiding generalized terms that could have broad applicability, and specifically identifying the type of traffic the rule is addressing. *See also* Letter from Tiki Gaugler, Federal Regulatory Counsel, XO Communications, LLC, to Marlene H. Dortch, Secretary, FCC, at 6, CC Dkt. 01-92 (filed Nov. 23, 2010) (emphasizing that the problem is the result of high rural access charges, “**NOT** Traffic imbalances or high volumes (which result from legitimate business plans and customers); **NOT** Revenue sharing (which broadly encompasses valid marketing arrangements and customer discounts).”).

<sup>16</sup> *See Comments of the Iowa Utilities Board* at 16, WC Dkt. 10-90, et al. (filed Apr. 1, 2011) (“*IUB Comments*”).

<sup>17</sup> This ratio apparently is copied from the ratio used to calculate whether traffic should be deemed “ISP-bound” for purposes of triggering the reciprocal compensation methodology for such traffic.

<sup>18</sup> *See IUB Comments* at 13; *see also Comments of National Exchange Carrier Association, Inc., et al.* at 32, WC Dkt. 10-90, et al. (filed Apr. 1, 2011) (“for example, if a call center ‘offshores’ to a rural area – a key economic development opportunity (and incentive for broadband deployment) in areas often lacking in substantial new job growth the carrier serving such a call center should not be penalized.”).

recommended by CenturyLink.<sup>19</sup> Any traffic volume tests must be precisely defined in order to limit them to addressing the narrow situation of end-user traffic stimulation. For example, a volume test could be applied only to traffic terminating on specific types of equipment that have a relatively low cost of termination, such as conference bridges.<sup>20</sup> Traffic volume tests, like the revenue-sharing test proposed by the Commission,<sup>21</sup> must be narrowly applied.

Traffic volume tests are also inappropriate because they favor large, vertically integrated carriers, as several parties have noted.<sup>22</sup> Their adoption would thus distort the competitive balance in the marketplace.<sup>23</sup>

### **III. Required Population of the JIP Field Provides an Effective, Neutral, Technology-Based Solution to Most Phantom Traffic Disputes and Expedites Resolution of Remaining Disputes, while the Addition of OLI Coding Would Virtually Eliminate Them.**

In its initial Comments, HyperCube recommended that, in addition to changing the call signaling rules as proposed, the Commission also require that, where technically feasible, originating providers include the JIP in all call signaling.

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<sup>19</sup> See *CenturyLink Comments* at 40.

<sup>20</sup> See Comments of Verizon and Verizon Wireless at 44, WC Dkt. 10-90, et al. (filed Apr. 1, 2011) (recommending a presumption the revenue sharing trigger is met if a “predominant” portion of traffic terminated to equipment such as conference bridges) (“*Verizon Comments*”).

<sup>21</sup> See Comments of HyperCube Telecom, LLC at 9-10, WC Dkt. 10-90, et al. (filed Apr. 1, 2011) (“*HyperCube Comments*”).

<sup>22</sup> See *EarthLink Comments* at 18 (“Moreover, the proposed definition of revenue sharing effectively exempts vertically integrated businesses like AT&T, Verizon and Qwest, who have both LEC and IXC arms.”).

<sup>23</sup> HyperCube notes, however, that it would have no objection to High Volume Access Tariffs, in which rates decline to the level of the BOC rate as traffic volumes increase, as a means of addressing end-user traffic stimulation issues.

HyperCube explained that the JIP identifies the originating service provider by providing the LRN, through a database query. Thus, when the JIP field is populated, the terminating carrier always knows what service provider to bill, substantially reducing the “phantom traffic” problem. Additionally, the JIP provides the location of the originating switch, which may assist in resolving the jurisdictional nature of the traffic, thus minimizing any remaining disputes.

HyperCube noted that there is now a recommended practice<sup>24</sup> for providing the JIP in Session Initiation Protocol (“SIP”) INVITE messages, and that third-party providers, including intermediate carriers, can populate the JIP even when the information is missing from records they receive based on trunking, routing, and other network information and maintenance updates obtained through commercial agreements with trading partners and customers. HyperCube also proposed that intermediate carriers be encouraged to populate the JIP in accordance with industry recommendations by exempting the carriers from liability when they do so.<sup>25</sup> Finally, HyperCube pointed out that additional information that would conclusively resolve jurisdictional issues with respect to the nature of traffic, and thus end all phantom traffic and related disputes, could be provided by requiring population of other parameters, such as the OLI. The OLI exists already in the call signaling, and some carriers such as HyperCube already have extended the OLI pursuant to commercial agreements to provide the ability to identify IP-originated traffic that has been intermingled with other traffic. HyperCube therefore

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<sup>24</sup> RFC 5503, “Private Session Initiation Protocol (SIP) Proxy-to-Proxy Extensions,” March 2009 (“RFC 5303”).

<sup>25</sup> Other commenting parties have urged the Commission to require data population by intermediate carriers at no charge. *See, e.g.*, Comments of the Texas Statewide Telephone Cooperative, Inc. at 11, WC Dkt. 10-90, et al. (filed Apr. 1, 2011) (“*Texas Telephone Comments*”); *EarthLink Comments* at 26. HyperCube already provides this service without charge.

recommended that the Commission also monitor industry developments so that the Commission could quickly further modify its rules if phantom traffic problems persisted.

Many other commenters have also recommended that the Commission require population of the JIP.<sup>26</sup> Moreover, HyperCube's review of the filed comments found no opposition to its use, reflecting the well-established industry practice of populating the JIP. The Coalition for Rational Universal Service and Intercarrier Reform, however, did note that the parameter was frequently not populated in SIP messages,<sup>27</sup> and several parties urged generally that the Commission not change its signaling rules so as to require new or upgraded equipment or operating systems.<sup>28</sup>

However, as HyperCube previously pointed out, now that there is a SIP industry recommendation (RC 5503) for population of the JIP, the field can be populated in INVITE messages if required by Commission rules. This is already in use by HyperCube and several of its trading partners. Industry solutions that evolve out of competitive needs should be encouraged. Also, given the availability of third party JIP population services, no technology changes would be required for implementation of such a rule. Further, because JIP is not a mandatory parameter under industry standards there would be no automatic call blocking in the

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<sup>26</sup> See, e.g., Comments of Frontier Communications Corporation at 13-14, WC Dkt. 10-90, *et al.* (filed Apr. 1, 2011); *EarthLink Comments* at 23; *PAETEC Comments* at 4; *Texas Telephone Comments* at 12.

<sup>27</sup> Comments of the Coalition for Rational Universal Service and Intercarrier Reform at 6, WC Dkt. 10-90, *et al.* (filed Apr. 1, 2011) ("*Coalition Comments*").

<sup>28</sup> See *Verizon Comments* at 48-49 (While the FCC's proposal appropriately requires transmission of the telephone number associated with the calling party only where such transmission is "feasible with network technology deployed at the time a call is originated," it must make clear that this means the proposed rule imposes no obligation on providers to deploy new equipment or upgrade equipment in order to transmit or pass telephone number information.); *AT&T Comments* at 24 ("a carrier should not be required to overhaul its existing systems to comply with these new rules, but should be permitted to continue accepted industry practices for settlement of such calls.").

event it was omitted.<sup>29</sup> Thus, given its utility in resolving phantom traffic disputes, whatever resistance there may be to populating the JIP field must be attributed to the private interests of any opponents.

The record does reveal some imprecision as to the nature and utility of the various parameters that may be populated in signaling and billing messages. The substantial information gain from adding a JIP requirement becomes apparent in light of the limitations of other parameters.

A number of parties have recommended that the Commission require the Automatic Number Identification (“ANI”) code, providing the billing telephone number for a call, to be supplied.<sup>30</sup> The Commission already has initiated a proceeding<sup>31</sup> to implement the “Truth in Caller ID Act,”<sup>32</sup> which will require ANI.<sup>33</sup> Thus, it is sensible to consider these proceedings in tandem. However, using ANI alone will not eliminate phantom traffic disputes. The ANI does not always provide reliable identification of the originating provider. For example, in the case of some call center traffic and information services, an “800” number is entered into the ANI to identify a call-back number. 800 numbers, however, are not tied to LATAs and provide no jurisdictional information themselves. Certain emerging services such as Skype-Out, as well as

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<sup>29</sup> While some have called for call blocking to enforce non-compliance with information requirements of the call signaling rules, *see, e.g.*, Comments of RNK Communications at 8, WC Dkt. 10-90, *et al.* (filed Apr. 1, 2011); Comments of the Toledo Telephone Company, Inc. at 6, WC Dkt. 10-90 *et al.* (filed Apr. 1, 2011), HyperCube prefers encouragement of informal negotiations in such situations, with the Commission’s complaint procedures available in the event of persistent problems.

<sup>30</sup> *See PAETEC Comments* at 13-14; *EarthLink Comments* at 22-23.

<sup>31</sup> *Rules and Regulations Implementing the Truth in Caller ID Act of 2009, Notice of Proposed Rulemaking*, FCC 11-41, WC Dkt. 11-39 (Mar. 3, 2011) (“*Truth in Caller ID NPRM*”).

<sup>32</sup> Truth in Caller ID Act of 2009, Pub. L. No. 111-331, codified at 47 U.S.C. § 227(e).

<sup>33</sup> Caller Identification Service, as used in this proceeding, includes ANI. *See Truth in Caller ID NPRM* at ¶ 18.

traditional services that do not provide a call-back number, will not naturally have an ANI that can be used to determine the call origination jurisdiction. An ANI may also be manipulated by an underlying provider to circumvent a traffic filter. Moreover, some SIP providers are customers of multiple networks. If such a provider originates a call using a carrier other than the one that supplied the ANI code, the ANI will not accurately identify the Public Switched Telephone Network (“PSTN”) origin of the traffic but instead will falsely indicate the “code owner” of the ANI itself. Given these scenarios, ANI alone simply isn’t enough.

Other parties have asked the Commission to require use of Carrier Identification Codes (“CICs”) identifying IXCs in SS7 messages<sup>34</sup> and Operating Company Numbers (“OCNs”) identifying other providers in Exchange Message Interface (“EMI”) billing records.<sup>35</sup> However, CICs appear only in long distance signaling messages, not in local traffic messages.<sup>36</sup> OCNs never appear in some forms of industry standard billing records. Similarly, reliance on Charge Numbers (“CNs”), as recommended by other parties,<sup>37</sup> provides insufficient data, because this

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<sup>34</sup> See Comments of Nebraska Rural Independent Companies at 21-22, WC Dkt. 10-90, et al. (filed Apr. 1, 2011) (“*Nebraska Rural Comments*”) (“The billing records from the tandem provider must include either a CIC or OCN to identify the carrier that should be billed for the traffic.”). See also Comments of TDS Telecommunications Corporation at 9, WC Dkt. 10-90, et al. (filed Apr. 1, 2011) (“providers also should be required to include CIC or OCN codes in signaling information and/or billing records”); *Sprint Comments* at 26 (the FCC should specify that the terminating carrier must receive the OCN, and the IXC’s CIC).

<sup>35</sup> See, e.g., *Nebraska Rural Comments* at 21-22.

<sup>36</sup> See Alliance for Telecommunications Industry Standards (ATIS), *Multiple Exchange Carrier Access Billing Guidelines Issue 9 December 2006*, ATIS 04001004-0009, 2006 (“MECAB”). MECAB provides the requirements for industry standard billing records. See also *Carrier Access Billing System Billing Output Specifications (“CABS BOS”)* and *Small Exchange Carrier Access Billing (“SECAB”) Guidelines* (providing standards for billing outputs). The ATIS Exchange Message Interface documentation specifies formats for data exchange by carriers. MECAB at §§ 6.2 – 6.3. These procedures do not apply to SIP messaging, whose industry protocols are under the auspices of the Internet Engineering Task Force (“IETF”).

<sup>37</sup> See *PAETEC Comments* at 13-14; Comments of TCA at 5-6, WC Dkt. 10-90, et al. (filed Apr. 1, 2011); Comments of Consolidated Communications Holdings at 28-29, WC Dkt. 10-90, et al. (filed Apr. 1, 2011).

parameter is not part of IP messaging. Further, it does not provide complete information about call origination because many Calling Party Numbers (“CPNs”) may be associated with a single CN. At this time, this is an optional parameter and is populated less frequently than the JIP field.

While other parties have requested that the LRN be provided,<sup>38</sup> the LRN is a billing message parameter only. It does not exist in signaling today. However, in populating the JIP, the database query supplies the 6-digit LRN NPA-NXX code of the originating switch, thus both identifying the originating provider and providing some geographic information.<sup>39</sup>

Finally, to the extent that the comments generally reflect strong interest in obtaining the information necessary to avoid and resolve phantom traffic disputes, the Commission could, as HyperCube previously suggested, also require population of the OLI, also called the ANI-II signaling field. The OLI has been successfully used for many years to determine the originating type of device.<sup>40</sup> Payphone charging systems, for example, have operated with this parameter for decades.<sup>41</sup> Because the OLI parameter uses the ANI-II digits, it is already applied in such situations as routing to the nearest poison control center and can be provided by carriers using

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<sup>38</sup> See Comments of Rural LEC Section XV Group at 10-11, WC Dkt. 10-90, *et al.* (filed Apr. 1, 2011); *PAETEC Comments* at 13-14.

<sup>39</sup> Contrary to the recommendation of the Nebraska Rural Independent Companies, the JIP can be populated only with the LRN 6-digit NPA-NXX code. There are only six spaces in the field, and therefore wireless carriers cannot be required to populate the field not only with the LRN of the originating switch but also with a two-digit state code and a two-digit MTA code associated with the originating cell site. As HyperCube previously noted, however, the widely-used “factoring” approach should be sufficient to address situations in which an originating wireless cell site and the first PSTN switch accessed by a call are in different jurisdictions, as the amount of traffic crossing the jurisdictional boundary can be assumed to be equivalent in each direction.

<sup>40</sup> See *HyperCube Comments* at 24-25; ANI II Digits Assignments, NANPA.com, [http://www.nanpa.com/number\\_resource\\_info/ani\\_ii\\_assignments.html](http://www.nanpa.com/number_resource_info/ani_ii_assignments.html) (last visited Apr. 13, 2011).

<sup>41</sup> *In the Matter of Implementation of the Pay Telephone Reclassification and Compensation Provisions of the Telecommunications Act of 1996, Order on Reconsideration*, 11 FCC Rcd. 21233, ¶¶ 13, 103 (1996).

traditional MF and SS7 TDM networks as well as by SIP-based providers. HyperCube and other providers have commercial agreements that provide for population of the OLI.

At this time there are no industry recommendations as to how to populate the OLI in IP-originated traffic as no codes have yet been assigned, although OLI is an available standard field in both billing and signaling. To provide for code assignments, the Commission would only need to request that industry standards bodies provide 2-digit codes unique to each of the types of traffic the Commission needed to identify for jurisdictional and billing accuracy purposes. It would be a simple matter for those already using the OLI pursuant to commercial agreements to modify their databases to reflect the newly-standardized coding system.<sup>42</sup> Phantom traffic disputes related to Enhanced Services Provider (“ESP”) traffic would virtually disappear if carriers were required to include the combination of the JIP (identifying the service provider as well as providing the location of the originating switch) and the OLI (designating the traffic type).<sup>43</sup>

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<sup>42</sup> With this approach, there would be no special concerns about premature number exhaustion, since no additional numbers would be used. *See Level 3 Comment* at 10 (cautioning that requiring non-interconnected VoIP providers to obtain NANP or ITU E.164 numbers in order to provide a CPN could accelerate number exhaustion).

<sup>43</sup> There are, of course, outstanding issues regarding the ICC regime applicable to particular types of traffic. Once the Commission has resolved these issues, however, the combination of the JIP and the OLI would provide all the information necessary to bill accurately.

#### IV. Conclusion

The Commission should adopt clear, narrowly-tailored rules that will provide simple and effective solutions to the problems of end-user traffic stimulation and phantom traffic. Further, an information-focused, technology-based solution to the phantom traffic problem is readily available, and its implementation would be self-effectuating. Adoption of HyperCube's proposed rules, or ones with similar effect, would allow the Commission to focus its resources on designing intercarrier compensation and universal service support systems appropriate for a national network infrastructure evolving into an IP-based broadband network.

Respectfully submitted,



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April 18, 2011