Telcordia Technologies, Inc., doing business as iconectiv (“Telcordia” or “iconectiv”), is pleased to submit these brief comments in response to the Federal Communications Commission’s (“FCC” or “Commission”) request for comment in the above-referenced Public Notice. As the Public Notice reflects, the legacy U.S. public switched telephone network (“PSTN”) is in the process of transitioning to all IP-based networks. This transition will, among other things, permit all Americans to realize the full benefits of IP-enabled broadband services. Indeed, the Commission recently authorized a six-month trial to examine providing interconnected VoIP providers’ direct access to telephone numbers. In the Public Notice, the Commission now seeks comment on several additional proposed trials relating to the ongoing

1. Since February 14, 2013, Telcordia, a wholly owned subsidiary of Ericsson, has been doing business as iconectiv.


transitions from copper to fiber, from wireline to wireless, and from time-division multiplexing ("TDM") to IP. These include a VoIP interconnection trial, a geographic all-IP trial, and additional trials for numbering and related databases. The Commission proposes to move forward with real-world trials to obtain data and “gather a factual record to help determine what policies are appropriate to promote investment and innovation while protecting consumers, promoting competition, and ensuring that emerging all-Internet Protocol (IP) networks remain resilient.”

iconectiv supports the Commission’s goal. To that end, iconectiv proposes to make available its expertise and database technologies to support the proposed VoIP interconnection and geographic all-IP trials, and other recommended trials that the industry, States, or Commission may identify. iconectiv has extensive experience in developing and implementing technology and applications for key aspects of IP-based communications, including numbering, routing, and location management. Through collaboration, iconectiv believes industry and the Commission can leverage this experience and these existing products and technologies to provide useful trial data efficiently and quickly. Specifically, iconectiv proposes to work with industry and the Commission, through workshops or other means, to identify modifications to the LERG Routing Guide, COMMON LANGUAGE, and the Country Code 1 (CC1) ENUM Shared Registry System (SRS) as may be necessary to support the trials. Through this collaborative process, iconectiv can offer the benefit of its experience and technical expertise to facilitate the transition to the all-IP networks of the future.

4 Technology Transitions Policy Task Force PN, 28 FCC Red. at 6346.
DISCUSSION

I. Location Management Resources

iconectiv, working with the industry, has already done significant work over the past several years preparing for the transition to an all-IP environment. As the Commission contemplates potential trials regarding IP networks, it makes sense to leverage this work and experience. For example, code sets within the COMMON LANGUAGE\(^5\) have been expanded for identifying next generation network elements including Call Agents, Trunk Gateways, and other related elements, a crucial step in routing IP communications. In addition, iconectiv has established location coding as well as service-specific coding to support the various elements used within the IP-based networks, such as Ethernet switches, softswitches, and routers.

Companies then create records within those code sets as needed. As un-needed code sets go away over time, new ones can be added. Many major service providers use these code sets today for naming TDM class 4/5 switches, Call Agents, Gateways, and PSAP and 911 components; these sets constitute an integral part of FCC reporting requirements, such as network change reporting.\(^6\) For these reasons, including COMMON LANGUAGE data in each of the proposed trials would benefit the Commission as well as the communications industry.

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\(^6\) COMMON LANGUAGE has been instrumental in providing a common information infrastructure and readily available information registries across communications industry for wireline, wireless, cable, and utility operators. It is embedded in current regulatory reporting including Notice of Network Changes, Collocation Order, Tariffs, Study Area Boundaries, and the USF Program Administration. Tariffs contain COMMON LANGUAGE USOCs and NC/NCI information to describe the services offered and mapping them to rates. It is also embedded in the recent Connect America Fund requirements. See Connect America Fund et al., Report and Order and Notice of Proposed Rulemaking, FCC 11-161, 26 FCC Rcd. 17,663 (2011).
II. Routing and Numbering Resources

The Commission requested comment on the desirability of creating a trial database that provides access to number-related info, e.g., points of termination or caller-ID information. Existing databases, however, including the Business Integrated Routing and Rating Database System (“BIRRDS”) that underlies the LERG Routing Guide, the LERG Routing Guide itself, and – in particular – Country Code 1 ENUM, already provide access to such information. Taking advantage of these existing databases during a trial of the IP transition not only makes sense but offers a quick and effective way to begin identifying enhancements or other changes that might be necessary to evolve to an all-IP environment.

The existing BIRRDS database and the LERG currently provide data, including operating company numbers, NPA NXX block assignments, and substantial other data elements, in support of PSTN call routing. The LERG has served as a comprehensive, equitable, and standardized means of routing data exchange among service providers for many years. As the need to support IP next-generation network elements has evolved, iconectiv, in consultation with the industry, has added or modified fields in BIRRDS and the LERG to allow numbering resources to be associated with softswitches, as well as related routing arrangements for IP interconnection. Iconectiv began including these additional fields and modifications in BIRRDS and the LERG over ten years ago, and further expanded data to support numbering assignments and call routing for SBC Internet Services, Inc. (“SBCIS”) starting in 2005, when the FCC granted SBCIS a waiver authorizing it to directly access numbering resources. More recently, iconectiv has continued to participate actively in industry fora and to work with individual providers in identifying and assessing various scenarios related to data-exchange needs involving IP. As IP

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data needs become defined on a unified industry basis, the LERG, which already contains both TDM and some IP-related data, will offer carriers an efficient means of exchanging data during the transition to an all-IP world. By utilizing BIRRDS and the LERG in this manner, the trial could be beneficial to consumers by helping identify appropriate data and data relationships needed in an all-IP network to support the integrity of the network and quality of service.

iconectiv also offers the Country Code 1 ENUM database, which supports associating IP-routing information with telephone numbers, a capability that industry has identified as key to the IP transition. ENUM is an international standard that unifies traditional telephony and next-generation IP networks, and provides a critical framework for mapping and processing diverse network addresses. It transforms the telephone number into a universal identifier that can be used across many different devices and applications (such as voice, fax, wireless, email, text messaging, location-based services, and the Internet). To do so, it associates a telephone number with Uniform Resource Identifiers (“URIs”) that identify gateways for customer services and devices. There are both public ENUM and service-provider, or private, ENUM. Service provider ENUM is intended to support IP peering – enabling the IP-IP exchange of traffic

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8 See, e.g., Technology Transitions Policy Task Force PN, 28 FCC Rcd. at 6355 n. 40 (citing Hank Hultquist, FCC Begins Transition to All-IP Interconnection, AT&T Public Policy Blog (Apr. 29, 2013), available at http://attpublicpolicy.com/fcc/fcc-begins-transition-to-all-ip-interconnection (stating that “numbering databases may seem like the driest of telecom issues, but they are the key to enabling this transition [to all-IP interconnection]” and that “in order to move to IP interconnection, there must be a database that associates IP routing information with telephone numbers”)) (last accessed May 7, 2013)); see also http://transition.fcc.gov/bureaus/oet/tac/tacdocs/meeting121012/TAC12-10-12FinalPresentation.pdf.

between service providers, including but not limited to voice, MMS, and SMS messages. While public ENUM is still nascent, service-provider ENUM is a competitive, multivendor market.

iconectiv worked closely with industry in developing the Country Code 1 ENUM Shared Registration System (“CC1 SRS”) in order to meet industry specifications. CC1 SRS offers service provider ENUM supporting IP-IP traffic exchange and provisions data as needed from the current PSTN databases (LERG and NPAC) to enable interworking and long-term IP routing. The CC1 SRS gives service providers a choice of operating modes: (1) direct provisioning of ENUM Uniform Resource Identifier (“URI”) information, or (2) establishing rules for real-time derivation of ENUM URI information based on telephone number (“TN”), 7-digit Thousands Block, and 6-digit NXX updates from the LERG and NPAC. This flexibility enables IP interconnection for services providers on both IP and traditional PSTN networks. By including the CC1 ENUM SRS database in the trial, the FCC can quickly and efficiently collect valuable data on domain name routing, leveraging processes and procedures that service providers have already developed and implemented.

Use of the CC1 ENUM SRS database can also provide enormous flexibility for the trials since it is based on simple open-interface methods for collecting and uploading data. Testing this data during the trial could help the Commission and industry identify or define additional IP network elements that should be included in the database for future use in the IP transition and beyond.

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III. Evolution of Business Processes

Service providers have spent years developing and implementing multiple business practices, procedures, and system processes for call routing that rely on existing industry data sources such as the LERG Routing Guide, LIDB Access Routing Guide, and COMMON LANGUAGE. Significant work remains for a successful IP transition. Business processes supporting translations, ASRs (Access Service Requests), and other business systems and practices, many locally developed, will need to be identified and revised for an all-IP environment. To avoid a delay in the trials while carriers try to create wholesale changes to their existing business processes, iconectiv believes that modifications to the existing iconectiv databases in wide use today could help create efficiencies during the transition to the all-IP networks. Additionally, major carriers, which have built many business practices, procedures, and processes around BIRRDS, the LERG Routing Guide, and COMMON LANGUAGE, will be able to better, and more effectively, assess, integrate, and develop processes and practices for their IP networks through use of these existing data sources. Doing so would permit carriers to maintain reliable business process flows during the course of the trial, a key component of service reliability. Leveraging existing products and business processes also will aid resource-constrained carriers; they will be able to reduce the amount of time spent on development work because they will be able to simply modify existing processes and interfaces rather than trying to create and implement completely new ones.

Moreover, these existing industry data sources also provide necessary inputs required for some Commission reporting requirements. Thus, incorporating these data sources, which the industry must continue to rely on for its reporting obligations, into the proposed trials offers a quick and efficient way to leverage this accumulated industry expertise and to rapidly generate
useful data for and from the trials. A structure for the proposed trials that includes a collaborative process involving the industry, the Commission, and data providers like iconectiv, to identify and modify these existing data sources and industry processes to reflect pertinent IP data will support the IP transition in the following key ways:

- Integration of new data with existing data and processes such as those in the LERG, as applicable, provides a ‘common source’ (PSTN and IP) for transition needs.
- PSTN/IP integrated development permits clearer, comparative, and contextual understanding of issues affecting the IP transition when compared to isolated development.
- An integrated approach permits time to identify and separate pertinent data from non-pertinent data since defining needs/processes can occur more effectively when using existing processes as a base.

**CONCLUSION**

iconectiv fully supports the efforts of the Commission and industry to conduct trials to identify and help answer questions regarding technical concerns and explore technology transition issues, and to do so in a manner that ensures the resiliency of the all-IP networks. iconectiv believes that including the LERG, COMMON LANGUAGE, and ENUM CC1 SRS as described above in the proposed trials will help enable the transition to an all Internet Protocol
network, and looks forward to assisting the Commission and industry in these efforts.

Respectfully submitted,

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