



June 23, 2014

Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 Twelfth Street, S.W.  
Washington, DC 20554

Re: WCB SEEKS COMMENT ON VCXC PETITION FOR NOTICE OF INQUIRY ON THE  
MIGRATION TO HD VOICE GN Docket No. 13-5

Dear Ms. Dortch,

The Telecommunications Industry Association (“TIA”)<sup>1</sup> supports the petition of the Voice Communication Exchange Committee (VCXC) requesting the Commission issue a Notice of Inquiry on the migration to high definition (HD) voice as part of the Internet Protocol (IP) transition.

As noted in the Public Notice, the Voice Communication Exchange Committee (VCXC) is requesting the Commission to issue a Notice of Inquiry on the migration to high definition (HD) voice technologies as part of the technology transitions that the Commission is considering. VCXC asks the Commission to “investigate the benefits of a common HD voice implementation to replace standard definition voice services historically associated with the Public Switched Telephone Network.”<sup>2</sup>

As VCXC has stated, the migration to HD voice would accomplish many of the same benefits - and poses many of the same challenges as the migration to HDTV overseen effectively by the Commission. Both reflect the competitive obsolescence of standard definition quality. Indeed, standard definition voice quality associated with the PSTN actually predates the 50-year old National Television System Committee (NTSC) standard the Commission sought to update with HDTV. Using the HDTV transition as a model the Commission could include the migration to HD voice as a part of the IP transition, which would allow the Commission to address the collective technical challenges confronting the industry, while leveraging the extensive public awareness of the transition to HDTV.<sup>3</sup>

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<sup>1</sup> TIA is a Washington, DC-based trade association and American National Standards Institute (ANSI)-accredited standard developer that represent the global information and communications technology (“ICT”) manufacturer, vendor, and supplier community. TIA represents approximately 500 participating companies producing products and services empowering communications in every industry and market, including healthcare, education, security, public safety, transportation, government, the military, the environment, and entertainment. *See* <http://tiaonline.org/>.

<sup>2</sup> *See* VCXC Petition for Notice of Inquiry on the Migration to HD Voice (filed Feb. 25, 2014) at <http://apps.fcc.gov/ecfs/document/view?id=7521089152>

<sup>3</sup> *See* VCXC Petition at 1.

The frequency range that the human voice can produce ranges from 30 to 18,000 Hz. Although the lower frequencies are where most of the speech energy and voice richness is concentrated, much of the intelligibility of human speech occurs in the higher frequencies. When engineers originally designed telephone communications, they determined that a listener did not need to hear all the frequencies that make up the human voice to determine the words being spoken. Because most of the energy necessary for intelligible speech is contained in a band of frequencies between 0 and 4000 Hz, this range was defined as the voice channel.<sup>4</sup>

As the processing power of digital signal processor (DSP) chips increases, the ability for voice devices to perform an advanced voice-compression algorithm becomes easier and cheaper. Therefore, there has been a shift in the voice world to provide voice quality that is better than toll quality. The codec most commonly used to provide improved voice quality for voice over IP is the G.722 wideband codec.<sup>5</sup>

TIA has had standards covering the wideband transmission performance of telephones with digital interfaces suitable for HD voice applications for over ten years.<sup>6</sup> More recently, TIA has developed standards intended to facilitate requirements for analog HD phones to connect to ATAs, MTAs or voice gateways to provide HD voice services via IP.<sup>7</sup> Standards revision activity is also under way for "Telecommunications - IP Telephony Equipment - Voice Gateway Transmission Requirements." This standard covers transmission requirements for voice gateways (VGs) that provide routing functions between telephones, traditional public and private networks, and modern packet-based networks.<sup>8</sup> VGs include packet-based enterprise equipment, residential gateways, ADSL-based Integrated Access Devices (IADs), and cable-based Multimedia Terminal Adapters (MTAs). The main purpose of this revision is to add requirements for supporting wideband (nominally 100 to 7,000 Hz) analog telephones that may be connected to voice gateways for providing High Definition (HD) voice services such as those available using Voice over Internet Protocol (VoIP). The development of these standards is the product of voluntary, open, and consensus-based processes.

An appropriate issue for the FCC's Notice of Inquiry may be to identify those network management practices which may enable HD Voice. TIA has previously cautioned the Commission that restricting Internet network management practices only to providing a "best-

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<sup>4</sup> See Cisco Whitepaper "Wideband Audio and IP Telephony: Experience Higher- Quality Media" available at [http://www.cisco.com/c/en/us/products/collateral/collaboration-endpoints/unified-ip-phone-7965g/prod\\_white\\_paper0900aecd806fa57a.pdf](http://www.cisco.com/c/en/us/products/collateral/collaboration-endpoints/unified-ip-phone-7965g/prod_white_paper0900aecd806fa57a.pdf) (last accessed June 23, 2014)

<sup>5</sup> Ibid

<sup>6</sup> See TIA-920.110-A, TIA-920.120-A, and TIA-920.130-A for wideband digital telephones equipped with handsets, speakerphones, and headsets, respectively

<sup>7</sup> See TIA-470.112, TIA-470.122, and TIA-470.132 for wideband analog telephones equipped with handsets, speakerphones, and headsets, respectively

<sup>8</sup> See "TIA ISSUES CALL FOR INTEREST ON NEW PROJECT FOR TELECOMMUNICATIONS - IP TELEPHONY EQUIPMENT - VOICE GATEWAY TRANSMISSION REQUIREMENTS" <http://www.tiaonline.org/standards/tia-issues-call-interest-new-project-telecommunications-ip-telephony-equipment-voice> (last accessed June 23, 2014)

efforts” service would limit the introduction of managed services that require a ‘better than Best Effort’ delivery paradigm, with service-level guarantees.<sup>9</sup>

TIA looks forward to continue working with the Commission on advancing this promising technology as part of the Internet Protocol (IP) transition.

Respectfully submitted,

**TELECOMMUNICATIONS INDUSTRY  
ASSOCIATION**

By: */s/ Danielle Coffey*\_\_

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Affairs

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<sup>9</sup> See TIA Comments, MANAGED SERVICES DECLARATION, TIA COMMENTS – OPEN INTERNET DOCKET, filed January 14, 2010, Open Internet Broadband Industry Practices, GN 09-191 <http://apps.fcc.gov/ecfs/document/view;jsessionid=LdjTS6rTLnYqZz2vX2Y7DBjD2c0R11B6mmxz621v4nw0xlsQ03Gr!-1864380355!1357496456?id=7020374797>