BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

In the Matter of	)	
	)	
Implementation of Sections 716 and 717 of the Communications Act of 1934, as Enacted by the Twenty-First Century Communications and Video Accessibility Act of 2010	)	CG Docket No. 10-213
	)	
Amendments to the Commission's Rules Implementing Sections 255 and 251(a)(2) of the Communications Act of 1934, as Enacted by the Telecommunications Act of 1996	)	WT Docket No. 96-98
	)	
Accessible Mobile Phone Options for People Who Are Blind, Deaf-Blind, or Have Low Vision	)	CG Docket No. 10-145

COMMENTS OF GOOGLE INC.

Google Inc. ("Google") files these comments in response to the Further Notice of Proposed Rulemaking[1] seeking comment on implementation of provisions of the Twenty-First Century Communications and Video Accessibility Act of 2010 ("CVAA").[2]

Google supports the Commission's ongoing efforts to implement the CVAA and improve access to Advanced Communications Services ("ACS") by individuals with disabilities. As set forth below, with respect to implementation of additional provisions of the CVAA discussed in the Further NPRM, (1) the Commission should define "interoperability" in the context of

[1] *In the Matter of Implementation of Sections 716 and 717 of the Communications Act of 1934, as Enacted by the Twenty-First Century Communications and Video Accessibility Act of 2010*, CG Dkt. 10-213, Report and Order and Further Notice of Proposed Rulemaking, 26 FCC Rcd. 14557 (rel. Oct. 7, 2011) (herein, "Report & Order" or "Further NPRM").

[2] Twenty-First Century Communications and Video Accessibility Act of 2010, Pub. L. No. 111-260, 124 Stat. 2751 (2010) (as codified in various sections of 47 U.S.C.); Amendment of Twenty-First Century Communications and Video Accessibility Act of 2010, Pub. L. No. 111-265, 124 Stat. 2795 (2010) ("CVAA").

interoperable video conferencing services in a manner that promotes the use of open, publicly available Application Programming Interfaces ("APIs") in developing and utilizing video conferencing technology; (2) adopting a common accessibility API for the purpose of promoting the incorporation of screen readers into mobile phones would harm innovation and is unnecessary due to the rapid cycle of development and innovation driving improvement in accessibility features of mobile phones; and (3) the Commission should adopt a safe harbor for compliance with CVAA obligations for manufacturers that use one or more established APIs and specifications which support applicable provisions in the ISO/IEC 13066-1:2011 standard.

I. ANY DEFINITION OF "INTEROPERABLE" SHOULD PROMOTE OPEN, PUBLICLY AVAILABLE APIS

In adopting rules implementing the ACS provisions of the CVAA, the Commission determined, consistent with the CVAA, that the accessibility requirements of Section 716 apply to "interoperable video conferencing services," which the CVAA defines as any service "that provides real-time video communications, including audio, to enable users to share information of the user's choosing."[3] However, the Commission found the record insufficient to define "interoperable," and sought further comment.[4] In particular, the Commission asks whether it should codify one or more of the following definitions of "interoperable" in the context of video conferencing services and equipment used for such services: (1) able to function inter-platform, inter-network, and inter-provider; (2) having published or otherwise agreed-upon standards that allow for manufacturers or service providers to develop products or services that operate with

[3] 47 U.S.C. § 153(27).

[4] *See* Further NPRM, ¶¶ 301-305.

other equipment or services operating pursuant to the standards; or (3) able to connect users among different video conferencing services, including video relay service ("VRS").[5]

From a consumer perspective, a user of any particular video conferencing service ultimately wants that service and related equipment to be capable of communicating seamlessly with any service used by any other user, without the need to utilize the same provider, platform, or device.[6] However, defining "interoperable" in broad terms, such as "inter-platform, inter-network, and inter-provider," would have the effect of limiting the scope of ACS, including video conferencing services, that service providers and manufacturers must make accessible and usable. This is because interoperability, so defined, likely would not be achievable because of the limitations of video conferencing products and services commercially available at this time.[7] Such a result would be inconsistent with the express purpose of the CVAA "[t]o increase the access of persons with disabilities to modern communications. . . ."[8] Consequently, the Commission should reject any definition of interoperability that includes "inter-platform, inter-network, and inter-provider."

[5] *Id*., ¶¶ 303-304.

[6] For example, individuals with disabilities seeking employment and accommodations in the workplace ideally should enjoy the same features and benefits as most Americans, such as utilizing a single device for their communications needs, and not be restricted to siloed devices or systems.

[7] *See, e.g.,* Comments of Information Technology Industry Council, CG Dkt. 10-213 (Apr. 25, 2011), at 24 ("interoperability between platforms is currently not achievable"); Letter from Julie M. Kearney, Vice President, Regulatory Affairs, CEA, to Marlene H. Dortch, Secretary, FCC, CG Dkt. 10-213 (Sept. 19, 2011), at 4 ("There are few, if any, truly interoperable video conferencing services"); Letter from Mark Uncapher, Director, Regulatory Affairs and Government Affairs, Telecommunications Industry Association, to Marlene H. Dortch, Secretary, FCC, CG Dkt. 10-213 (Sept. 30, 2011), at 2 (there is "really not today any true interoperable video conferencing").

[8] *See* CVAA, Caption, at 1.

The Commission should define "interoperable" in a manner that best reflects Congress' goal of increasing accessibility. Promoting the use of open, publicly available APIs[9] in developing and utilizing video conferencing technology is the least burdensome, most efficient and flexible approach to achieving this goal.

The record in this proceeding demonstrates both the benefits of interoperability[10] and an understanding that development and deployment of open, freely published APIs will benefit consumers, industry, and the Internet.[11] Indeed, the Commission determined that APIs are one of eight fundamental components necessary to ensure that ACS and equipment for ACS are accessible.[12] APIs are essential building blocks that software developers use to create applications consistent with specific environments, ultimately benefiting consumers by

[9] The Further NPRM defines an API as software that an application program uses to request and carry out lower-level services performed by the operating system of a computer or telephone. Further NPRM, n.760 (citing Harry Newton, Newton's Telecom Dictionary, 68 (CMP Books, 20th ed. 2004)). *See also* HTML to Platform Accessibility APIs Implementation Guide, W3C Editor's Draft 10 June 2011, available at http://dvcs.w3.org/hg/html-api-map/raw-file/tip/Overview.html#intro_aapi (last visited Feb. 13, 2012) (describing accessibility APIs as specialized interfaces developed by platform owners "which can be used to communicate accessibility information about user interfaces to assistive technologies").

[10] *See, e.g.*, Comments of National Association of the Deaf, *et al.*, CG Dkt. 10-213 (Nov. 22, 2010), at 4-5 (interoperable video conferencing capability benefits individuals who rely on VRS, and the millions of individuals who are deaf or hard of hearing who benefit from visual communication cues such as speech reading, facial expressions, body language, and gestures); Comments of the Rehabilitation Engineering Research Center on Universal Interface and Information Technology Access at the University of Wisconsin's Trace R&D Center, CG Dkt. 10-213 (Nov. 22, 2010), at 4 ("Interoperable point-to-point video communications is also important to ensure that communications during an emergency is possible with maximum compatibility and probability of a successful connection to both emergency services and with other people that a person may need to contact to ensure their safety or that of their loved one.").

[11] *See, e.g.*, Report & Order, ¶168 ("We do agree . . . that APIs 'can facilitate both accessibility (via third-party solutions) as well as compatibility' and 'reduce the work needed by both mainstream and assistive technology (AT) developers.'") (quoting Comments of Consumer Electronics Association, CG Dkt. 10-213 (Apr. 25, 2011), at 30 and Comments of Rehabilitation Engineering Research Centers on Universal Interface and Information Technology Access and Telecommunications Access, CG Dkt. 10-213 (Apr. 25, 2011), at 29). *See also* Comments of Voice on the Net Coalition, CG Dkt. 10-213 (Apr. 25, 2011), at 8 (accessibility APIs are critical to enable interoperability in devices where accessibility is not achievable).

[12] *See* Report & Order, ¶67.

increasing the availability of inexpensive accessibility technologies. An API is not the bridge between software systems, but rather the specifications that explain what code anyone can use to build such a bridge.

Google urges the Commission to interpret interoperability with reference to the ISO/IEC 13066-1:2011, Information Technology – Interoperability with Assistive Technology standard,[13] which provides a technology-neutral basis for designing interoperability. The ISO/IEC 13066-1:2011 standard states that "[i]nteroperability involves the ability to use assistive technology (AT) to add to or augment existing components of information technology (IT) systems. Interoperability between AT and IT is best facilitated via the use of standardized, public interfaces for all IT components."[14] ISO/IEC 13066-1:2011 "recognizes the central role that . . . accessibility APIs play in aiding this interoperability," and identifies various public APIs that can be used as frameworks to support interoperability.[15]

Acknowledging the role of open, publicly available APIs in achieving accessibility and interoperability is consistent with the market-based approach outlined by Congress[16] and followed to date by the Commission in implementing the CVAA.[17] Promoting interoperability

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[13] *See* ISO/IEC 13066-1:2011, "Information technology – Interoperability with assistive technology (AT) – Part 1: Requirements and recommendations for interoperability," International Organization for Standardization, available at http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=53770 (last visited Feb. 13, 2012).

[14] *Id*. at v.

[15] *Id*.; ISO/IEC 13066-1:2011 at Annex A.

[16] *See* House Report H.R. Doc. No. 111-563 (2010), at 29 ("the Committee intends that the Commission afford manufacturers and service providers as much flexibility as possible, so long as each does everything that is achievable in accordance with the achievability factors). *See also* 47 U.S.C. § 617(e)(1)(D**)** (prohibiting mandatory technical standards except as a safe harbor for compliance if necessary).

[17] *See, e.g.*, Report & Order, ¶150 (confirming that Section 716 grants industry flexibility to ensure compliance with the CVAA's accessibility requirements).

through the use of multiple open APIs, rather than a government-mandated single technical standard, will help enable all parties to meet their obligations under the CVAA. In this regard, use of open, publicly available APIs will ensure that the Commission does not pick winners and losers among platforms, and provide new entrants with an opening to compete by using established APIs.

II. THE COMMISSION SHOULD NOT MANDATE A COMMON ACCESSIBILITY API FOR SCREEN READERS

The Commission seeks comment on a recommendation by Code Factory that manufacturers and mobile operating system developers should develop a common accessibility API in order to foster the incorporation of screen readers[18] into mobile platforms across different mobile phones,[19] and inquires into technical challenges of developing screen reader software applications for various mobile platforms, including Android.[20]

In general, making web browsers on any platform accessible to individuals who are blind or visually impaired has three components: a screen reader or other accessibility framework; the user interface of the browser; and the web content being rendered by the browser. As the Commission observes, "[p]resent technological trends have resulted in relatively short generations of mobile platforms. . . ."[21] Consequently, having multiple screen reader vendors attempt to define platform-level access APIs on fast-moving platforms ultimately will fail. Open

[18] The American Foundation for the Blind defines screen readers as "software programs that allow blind or visually impaired users to read the text that is displayed on the computer screen with a speech synthesizer. A screen reader is the interface between the computer's operating system, its applications, and the user." *See* http://www.afb.org/prodbrowsecatresults.asp?catid=49 (last visited Feb. 13, 2012).

[19] *See* Further NPRM, ¶297 (citing Reply Comments of Code Factory S.L., CG Dkt. 10-213 (Dec. 7, 2010)).

[20] *Id.*, ¶298.

[21] *Id.*, ¶294.

accessibility APIs therefore will assist device manufacturers in developing systems that are well-defined, flexible conduits between web content, the screen reader, and the accessibility framework on a particular platform (mobile or desktop). Moreover, because different platforms may have entirely different development paradigms, it is not practical to attempt to mandate consistency. Merely having a consistent API syntax between two platforms does not mean that the same software will run on both.

Consequently, platform providers, including Google, have pushed aggressively for the inclusion of accessibility framework APIs, and will continue to do so. Google now requires, in order for devices to be compatible with the Android 4.0 operating system, that devices meet certain minimum requirements intended to allow implementation of Android's accessibility framework, which includes an accessibility layer to help users with disabilities navigate their devices more easily. For example, Android 4.0 includes APIs that allow apps to make use of Text-to-Speech ("TTS") services, and devices must meet certain minimum functional requirements related to the Android TTS framework in order to be compatible with the Android 4.0 platform and become eligible to access Android Market and use the Android trademark.[22] Android also promotes consumer choice among browsers.[23] This open approach allows

[22] *See* http://source.android.com/compatibility/4.0/android-4.0-cdd.pdf (last visited Feb. 13, 2012). TTS is an example of an open and publicly available API that Android developers can use within their applications; consequently, other vendors can bring their TTS engines in the form of "new voices" to the Android platform, and help drive interoperability. This can include support for new languages, or improvements to languages that are already supported. The open nature of the TTS API also means that a user of talking applications (for example, blind users running a screen reader) can easily acquire an additional third-party voice and utilize her accessibility tools to immediately discover and leverage the newly acquired voice. As a result, developers, vendors of TTS technologies, and ultimately, the end user all win: Developers can write programs that talk to the user, engine vendors can provide improved voices, and users have the ultimate choice of which voice they use.

[23] For example, Code Factory and IDEAL make accessible web browsers for Android. *See* https://market.android.com/details?id=es.codefactory.android.app.ma.webbrowserenu&hl=en) (last visited Feb. 13, 2012); https://market.android.com/details?id=com.ideal.androidvox2 (last visited Feb. 13,

accessibility developers to push the envelope with respect to what the platform allows, which in turn leads to effective end-user solutions and helps identify the next set of APIs for inclusion in future platform versions. It also ensures that third party application developers and users can enjoy the latest innovations from accessibility providers without having to update their application or platform software.

This cycle of development and innovation will continue to drive improvements in the accessibility features of mobile phone hardware and software, making it unnecessary to mandate a common accessibility API as proposed by Code Factory. Platform providers must be free to define their own APIs in order to innovate and foster developer ecosystems, which in turn will drive innovation in accessibility equipment and service, and ultimately benefit end users. In contrast, a mandatory API for all platforms will slow innovation. Rather than adopting specific technical requirements, the Commission should focus its attention on functional performance criteria.

III. THE COMMISSION SHOULD ADOPT ISO/IEC 13066-1:2011 AS A SAFE HARBOR

The Commission also seeks comment on whether manufacturers may comply with their CVAA obligations "by programmatically exposing the ACS user interface using one or more established APIs and specifications which support the applicable provisions in ISO/IEC 13066-1:2011,"[24] as proposed by the Information Technology Industry Council ("ITI").[25] To the extent that all accessibility APIs are not open and publicly available, Google supports ITI's safe harbor

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2012). *See also* Google's own Chrome beta browser app, http://market.android.com/details?id=com.android.chrome (last visited Feb. 13, 2012).

[24] Further NPRM, ¶312.

[25] *See* Letter from Ken J. Salaets, Director, Global Policy, Information Technology Industry Council, to M. Dortch, Secretary, FCC, CG Dkt. 10-213 (Aug. 9, 2011) ("ITI Aug. 9, 2011 Letter").

proposal, which is consistent with the CVAA.[26] As ITI notes, and as discussed above, ISO/IEC 13066-1:2011 is technology-neutral and promotes interoperability.[27] The standard spells out the requirements for an accessibility API, and related technical reports describe how several distinct APIs meet accessibility requirements.[28] Moreover, because it does not define or require specific technology, commands, APIs, or hardware interfaces, and supports the ongoing development of new APIs,[29] and does not foreclose other safe harbors.

For the above reasons, Google urges the Commission to define interoperability in a manner that promotes the use of open, publicly available APIs, to reject requests for adoption of a common accessibility API, and to adopt a safe harbor for compliance with CVAA obligations for manufacturers that use one or more established APIs and specifications which support applicable provisions in ISO/IEC 13066-1:2011.

Respectfully submitted,

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[26] 47 U.S.C. § 617(e)(1)(D) (prohibiting mandatory technical standards except as a safe harbor for compliance).

[27] *See* ITI Aug. 9, 2011 Letter, at 2.

[28] *See* ISO/IEC 13066-1:2011, Annex A.

[29] *See* ISO/IEC 13066-1:2011 at 1.