National Federation of the Blind

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September 13, 2010

Marlene H. Dortch, Secretary
Federal Communications Commission
Office of the Secretary
445 12th Street SW
Washington, DC 20554

Re: Docket Number FCC-2010-0232-0001

Dear Secretary Dortch:

These are the comments of the National Federation of the Blind (NFB) in response to the notice posted in the *Federal Register* on August 5, 2010, (75 FR 150, p. 47304–47305) requesting input from all stakeholders in order to determine the appropriate next steps to achieve telecommunications access for the blind and deaf-blind. As the largest and oldest nationwide organization of blind people, the National Federation of the Blind is a critical stakeholder in this effort. Access to wireless communication is extremely limited for the blind, but we believe the NFB, FCC, and manufacturers can work together to ensure that the blind and deaf-blind have access to fully accessible, affordable wireless phones.

In order to be as clear and explicit as possible, we will provide feedback to the Commission's request in a question-and-answer format.

1. What wireless phone features and functions in the current marketplace are not accessible for people who are blind, have vision loss, or are deaf-blind?

   The current marketplace has an extremely limited selection of accessible wireless phones for blind people. Virtually all features and functions of available mobile phones are inaccessible to blind people at the time of purchase. There are two exceptions. Among moderately priced handsets, the EnV line of phones from LG Electronics has basic accessibility. This means that the only features blind people can use are dialing a number and answering a call. Functions such as reading the caller ID, entering and retrieving phone book entries, sending and reading received text messages and e-mails, personalizing the phone's settings or sound profiles, and utilizing advanced features such as Web browsing are unavailable to blind or deaf-blind users. The only fully accessible phone is the Apple iPhone. The iPhone is fully accessible at time of purchase. The Apple Computer Corporation has utilized VoiceOver, a text-to-speech application that is built into the phone, to make all features and functions fully accessible to blind users without the purchase of third-party software. If a blind person does not purchase the iPhone but desires full access to his or her wireless phone, he or she must purchase third-party screen-access software. This software is not only

expensive (with a typical price range of $295–$395) but is also only compatible with high-end handsets. Advanced smartphones that can run this third-party access software generally cost at least $200, but more commonly cost around $400. Some smartphones cost as much as $600. Even if the software proves to be compatible with the user's smartphone, there is no guarantee that all features and functions will be accessible. It is common for most phones to still fall short of full accessibility even when utilizing third-party access software. In summary, blind people have only three options when attempting to find an accessible wireless phone: (a) buy a moderately priced EnV phone from LG Electronics with basic, limited access to features and functions; (b) buy a high-end smartphone and third-party access software to increase accessibility of select features and functions; or (c) buy an iPhone. There are no fully accessible moderate-to-low-cost handsets available for blind consumers.

In addition to providing only inaccessible or partially accessible equipment, the wireless marketplace also fails to provide accessible services to blind users. Online management of wireless services can be problematic as some carriers' Web sites are inaccessible. Because the print user manuals and promotional materials are inaccessible, blind users rely on their service carrier's Web sites to learn about the capabilities and accessibility features of their phones. If this documentation is inaccessible due to an inaccessible Web site, blind or deaf-blind users cannot learn about their phones or the accessibility options available on them. Furthermore, accessible documentation is traditionally unclear or vague on accessibility features for phones. Service carriers should ensure that their Web sites are fully accessible, and that all documentation is both accessible and detailed, so that blind and deaf-blind users can fully understand their access options.

While the majority of manufacturers and carriers are overwhelmingly behind in providing accessible options for blind consumers, some carriers have taken positive steps to achieve full accessibility for the blind. The NFB is working with Motorola to promote technologies that improve the accessibility of cell phones to blind consumers. Certain future Motorola cell phones will provide verbal readouts of information such as the time and date, battery level, signal strength, user's phone number, caller ID information for incoming calls, missed and received calls, and voice mail alerts. Blind users will also be able to take advantage of verbal readouts and voice-command features for ring tone status, inputting and accessing contacts, and various other settings. Motorola expects these cell phones to be available in 2010, and we are working together to make additional phones and features accessible to blind users.

2. What is the extent to which gaps in accessibility are preventing wireless communication access by the blind?

   The extent to which gaps in accessibility are preventing wireless communication access by the blind is far reaching and has major consequences. When blind users are essentially barred from purchasing basic mobile telephone technologies, they are

excluded from the ability to have access to the same wireless services available to other users with similar financial means. The lack of affordable, accessible mobile communication technology prevents blind users from accessing text messaging and even from conducting simple tasks like retrieving a phone number without purchasing expensive hardware and software. With a 70 percent unemployment or under-employment rate among working-age blind people, this cost prohibition keeps blind consumers from having affordable access to some of the most fundamental and broadly used communication technology.

Furthermore, the limited and expensive solutions to access are not promoted by carriers and phone manufacturers, leaving blind consumers unaware of the few options they may have. This can be attributed to the fact that even some carriers are unaware of what features on their phones are accessible for a blind user, and most carriers are unaware of the third-party access software or the flaws with low-cost handsets.

3. What is the cost and feasibility of technical solutions to achieve wireless accessibility for the blind?

   Manufacturers can create accessible phones and achieve wireless accessibility for the blind in a number of ways. Existing phone software can be designed with text-to-speech technology so that prompts are spoken; and manufacturers can utilize Bluetooth technology, which is already incorporated into most phones, to output prompts to refreshable Braille displays for deaf-blind users. Regardless of which method a manufacturer chooses to pursue, the NFB believes it is most cost-effective and most feasible if technical accessibility solutions are utilized during the design phase instead of after the fact. Third-party access software is both costly and complicated, while Apple has demonstrated with the iPhone that built-in accessibility is the most ideal solution for both consumers and manufacturers. While we do not have a specific cost analysis of including accessibility in a phone's native hardware and firmware, Apple has proven that it is technically feasible and cost effective.

4. Please explain the reasons why there are not a greater number of wireless phones (particularly among less expensive or moderately-priced handset models) that are accessible to people who are blind or have vision loss.

   The NFB has found that there is both lack of interest and lack of awareness among phone manufacturers. Many are unwilling to address the needs of blind consumers, and because there are no established accessibility guidelines for any consumer products, most wireless phone manufacturers are unaware of the inexpensive modifications they can make to achieve full accessibility. Furthermore, carriers are not requiring accessible models to be made for them to sell. In order to solve this problem, effort has to be made by the government, wireless service carriers, and manufacturers to work together toward establishing the common goal of full accessibility.

The NFB will continue to urge Congress to pass the Technology Bill of Rights for the Blind (H.R. 4533), which would set accessibility guidelines for phone manufacturers; to encourage carriers to demand accessible options for their customers; and to educate manufacturers on the needs of blind consumers and the low-cost solutions that can meet those needs.

5. Please explain the technical obstacles, if any, to making wireless technologies compatible with Braille displays, as well as the cost and feasibility of technical solutions to achieve other forms of compatibility with wireless products and services for people who are deaf-blind.

   There are many steps needed to make wireless technologies compatible with Braille displays, but these obstacles can be easily surmounted. Currently, Braille display technology requires software to "drive" the remote display. Screen access software is required to generate the letters and Braille symbols on the display. Because there is not a one-to-one correlation between print letters and Braille symbols in contracted Braille (there are Braille characters that represent partial or whole words), software to do this translation is required. The software purchased to provide access to Windows Mobile and Symbian devices provides the translation algorithms necessary to display the correct Braille output. The NFB has designed Braille translation software that is readily available in the marketplace to blind people without charge. This illustrates the feasibility and cost-effectiveness of these innovations. Many Braille displays also provide the option to enter text or control the device through a built-in Braille keyboard. In order for this to function correctly, software on the mobile device must be capable of receiving this input and translating the entered Braille character into its print equivalent. As with speech output, Apple has built the ability to interface with a Braille display into its iPhone line of devices. Once other manufacturers accomplish the above steps, Braille displays can then be used with any phone that incorporates Bluetooth technology.

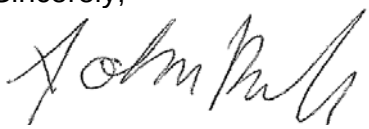
6. Please make recommendations on the most effective and efficient technical policy solutions for addressing the needs of consumers with vision disabilities, including those who are deaf-blind, and recommendations on actions that the Bureaus or the Commission should take to address the current lack of access. For example, is additional guidance needed on specific access features that should be included in wireless products? Should the Bureaus or the Commission facilitate a dialogue among stakeholders in order to reach a specific agreement to address the accessibility concerns outlined herein?

   The NFB encourages the Commission to work with stakeholders to develop guidelines to define mobile device accessibility and access to wireless services. We would like to be included in the development of these guidelines, as we are the largest organization of blind individuals in the nation. We also urge Congress to pass the Technology Bill of Rights for the Blind (H.R. 4533) to ensure that these guidelines are written into law for all consumer products and that blind people are no longer left behind in the marketplace. When developing said guidelines, the Commission must adopt a standard of usability

rather than just technical requirements. The Commission should also work with carriers and manufacturers to spread awareness about accessibility and devices that incorporate it. Although it is important for innovators to continue to create new ways to make devices accessible through nonvisual means, Apple has demonstrated that there are many cost-effective solutions already in use for manufacturers to employ. However, until manufacturers see the mutual benefit of creating accessible phones (thus gaining new customers and selling more products), it is important for the Commission to make resources available in a centralized manner so blind and deaf-blind users can learn about accessible devices and services available to them.

In conclusion, the National Federation of the Blind recognizes that wireless communication has become fundamental to an individual's ability to function in society. As technology becomes more advanced, the digital divide will continue to widen and leave blind people behind in the marketplace unless aggressive action is taken. The severely limited choice of mobile phones available for blind people is unacceptable, and we believe companies can, should, and will benefit from following Apple's example in creating accessible products. If you have any additional questions, please do not hesitate to call me at (410) 659-9314, extension 2227. Thank you for considering our comments. We look forward to working together to achieve full access for blind people in wireless communication.

Sincerely,



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