Proceeding: IMPLEMENTATION OF SECTION 255 OF THE TELECOMMUNICATIONS AC Record 1 of 1

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FEDERAL COMMUNICATIONS COMMISSION

Washington, D.C.

In the Matter of	)	
	)	
Implementation of Section 255 of the Telecommunications Act of 1996	)	
	)	WT Docket No. 96-198
Access to Telecommunications Services, Telecommunications Equipment, and Customer Premises Equipment by Persons with Disabilities	)	

Comments of **(CORRECTED COPY)**

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I am a person with severe hearing loss and have first hand knowledge of the problems hard of hearing people experience using Telecommunications Equipment and Services. The FCC has done a very thorough job of exploring issues associated with the Telecommunications Act of 1996, and I, as a private US citizen, appreciate the opportunity to contribute. I file these comments on June 30, 1998 in the FCC's Notice of Proposed Rule Making, WT Docket No. 96-198. I am submitting eight comments with the titles:

1. Section 255 coverage of "Informational Services"
2. The Access Board Guidelines Should be Adopted
3. The Readily Achievable Standard Gives too Much Latitude
4. An Improved, More Effective HAC Standard
5. An Improved Specification for Auditory Output
6. All CPE Should Have an Output Connector
7. All CPE Should Have an Access Port
8. The Guidelines and the NPRM Have an Internal Inconsistency

Comment Title:

1. Section 255 Coverage of "Informational Services"

Abstract:

Hard of hearing and deaf people are having a significant amount of difficulty in using telephone service because of interactive voice response systems. People who rely on using voice communication on phones have trouble understanding the recordings and cannot press the proper key in response to the recording. People who rely on using TTY with Relay have difficulty because the recordings go too fast and the Relay operator cannot keep up and type the response question to the TTY user. Congress intended to solve this problem by issuing section 255 of the Telecommunication Act, which emphasizes that telecommunication service must be usable by people with disabilities.

References:

36. We tentatively conclude that to the extent these phrases are broadly grounded in the Communications Act, they require no further definition, and our sole task here is to elucidate their application in the context of Section 255. However, to the extent specific terms arise solely in connection with Section 255, we will consider whether further definition or clarification is appropriate. We note that the statute's use of the term "telecommunications" may have the effect of excluding from the coverage of Section 255 a number of services that might be desired by consumers. Only those services which are considered to be "telecommunications services" are subject to regulation under Title II of the Communications Act. "Information" services" are excluded from regulation. We now discuss this regulatory dichotomy further.

37. Section 3 of the Act defines "telecommunications" as: the transmission, between or among points specified by the user, of information of the user's choosing, without change in the form or content of the information as sent and received.

It defines "telecommunications service" as:
the offering of telecommunications for a fee directly to the public, or to such classes of users as to be effectively available directly to the public, regardless of the facilities used.

The Act defines an "information service" as:
the offering of a capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available information via telecommunications, and includes electronic publishing, but does not include any use of any such capability for the management, control, or operation of a telecommunications system or the management of a telecommunications service.

38. In 1996 the Commission found that all of the services it had previously considered to be

"enhanced services"77 under the regulatory structure it had established in the 1980 Computer II proceeding 78 should be considered "information services."79 Examples of services the Commission has treated as enhanced include voice mail, electronic mail, facsimile store-and-forward, interactive voice response, protocol processing, gateway, and audiotext information services. Other enhanced services include electronic store-and-forward, data processing, gateways to online databases, and alarm monitoring. Similarly, the Commission has deemed reverse directory service to be an information service and, thus, not regulated under Title II of the Act.

My Response:

While all of the above may be a reasonable explanation of how services are divided and classified, the fact remains that many hard of hearing and deaf people cannot use some of these services. In most cases, informational services are not a matter of luxury, or choice, but such services are being forced on us and they are unusable. Typically, companies do not provide any way of contact except by telephone. The ability to complete a telephone call, which is a basic Telecommunication Service, is being denied to some people with disabilities. The spirit of the Telecom Act is not being followed by omitting people with disabilities from these services. The FCC should take the lead in this matter and work with Congress to redefine those services that are causing trouble for people with disabilities.

The above is a general concern that applies to many types of companies that have nothing to do with Telecommunication. The remainder of my comment applies more specifically to companies that provide Telecommunication Services, market CPE, or are engaged in business covered by the ADA.

I recommend that the rules should say that Telecommunication Service Providers, who offer services to the public for a fee, must offer those same services to people with disabilities in a usable format. For example, Telephone companies that offer voice mail to the public should offer an equivalent form of voice mail using a TTY or other commonly used device for set up, initialization, and control. Interactive voice response menus do not provide a usable format for deaf people and people with severe to profound hearing loss.

Similarly, the ADA requires that places of public accommodation offer their accommodations to people with disabilities in a way that is usable. If a person cannot call a public accommodation facility and make arrangements and reservations because the public accommodation uses an interactive voice response system, then this may already be a violation of the ADA. I recommend that it be a violation of the Telecommunications Act.

I base my response on the following:

Section 255(c) of the Act requires that a provider of telecommunications service ensure that the service is accessible to and usable by individuals with disabilities, if readily achievable.

Furthermore,

72. The Access Board guidelines define "usable" as meaning that "individuals with disabilities have access to the full functionality and documentation for the product, including instructions, product information (including accessible feature information), documentation, and technical support functionally equivalent to that provided to individuals without disabilities, and the guidelines define "accessible" as compliance with Sections 1193.31 through 1193.43 of the rules.

And,

73. We propose to adopt the Access Board's definition of usability as part of our definition of "accessible to and usable by."155 It is our view that Section 255 does not establish separate requirements for accessibility and usability, but looks toward elimination of all impediments to the functional use of telecommunications services and equipment by individuals with disabilities. Thus, we tentatively conclude that there is no reason to distinguish the two terms for purposes of Section 255, and propose to use the term "accessibility" in the broad sense to refer to the ability of persons with disabilities to actually use the equipment or service by virtue of its inherent capabilities and functions.

Paragraph 72 above clearly states that Telecommunication Service must be in a usable format and all documentation and support provided must be usable by a person with disabilities. So to continue my reasoning, if I needed to call a Telecommunication Service provider to discuss any service offered by that company, then I must be able to get through to the company to conduct my business. Since the company does not know what I am calling about before I call, it must be prepared to communicate in a format that is usable to me. If it is prepared to do that, then the same facilities and procedures will be available for services more formally classified as "informational."

The same line of reasoning applies to companies that provide CPE. Their documentation and support facilities must be usable by people with disabilities. If the CPE company uses an interactive voice response system, it must be prepared to offer an option that will allow their system to be usable by people with disabilities, such as some mode of TTY. This is specifically stated in the Guidelines under section 1193.33:

Sec. 1193.33 Information, documentation, and training.

(3) Ensuring usable customer support and technical support in the call centers and service centers which support their products at no additional charge.

Footnote 298 below shows that the same level of usable support must be provided by

telecommunication service providers:

298 To note just one example, the Board defines CPE accessibility as including access to user guides and product support, where readily achievable. 36 C.F.R. § 1193.33. Such information is equally applicable to telecommunications services.

Comment Title:

2. The Access Board Guidelines Should be Adopted

Abstract:

It is unclear whether or not the FCC intends to adopt the Access Board Guidelines, which were published in February 1998.

Reference:

Paragraph 30
We view the Board's guidelines as our starting point for the implementation of Section 255. We note that, as a practical matter, we must strive to interpret Section 255 in a way that ensures that telecommunications services and equipment will be treated consistently. Because the Board's guidelines address only the accessibility of equipment, we must necessarily adapt the Board's guidelines to develop a coordinated approach to accessibility for both services and equipment.[58] *This coordination is particularly necessary because technological developments have resulted in a convergence between telecommunications equipment and services, requiring us to consider both as we implement the statute. We therefore tentatively conclude that while we have discretion regarding our use of the Access Board's guidelines in developing our comprehensive implementation scheme, we propose to accord the guidelines substantial weight in developing our own regulations and in our broader structure for implementation. We seek comment on this approach.*

My Response:

Congress created the Access Board specifically to become the experts on disability issues and access. The FCC should build a strong relationship with the Access Board and look to it to provide leadership and guidance on matters of disability and access. The Act directed the Access Board to conduct annual reviews of its Guidelines to ensure regulations are in keeping with current technology and advancements in disability solutions.

Reference: The Mission of the Access Board

> *The Board is the federal agency which develops minimum guidelines and requirements for standards issued under the Americans with Disabilities Act (ADA) and the Architectural Barriers Act (ABA), develops accessibility guidelines for telecommunications equipment and customer premises equipment under the Telecommunications Act, provides technical assistance on those guidelines, and enforces the Architectural Barriers Act.*

Comment Title:

3. The Readily Achievable Standard Gives too Much Latitude

Abstract:

When Congress wrote the Telecommunications Act, it adopted the term "readily achievable" from the Americans with Disabilities Act (ADA) to describe a company's obligation to make products accessible. Under the ADA, entities are not expected to undertake changes that are difficult or involve a financial burden. However, the NPRM gives CPE Manufacturers and Telecommunication Service Providers too much latitude in their determination.

References:

97. We tentatively conclude that "readily achievable," as defined by the ADA and incorporated by Section 255, simply means "easily accomplishable and able to be carried out without much difficulty or expense." We believe that this broad definition is applicable to telecommunications equipment and services.

100. We believe a useful framework for analyzing whether a particular telecommunications accessibility feature is "readily achievable" involves looking at three areas:
 # Is the feature feasible?
 # What would be the expense of providing the feature?
 # Given its expense, is the feature practical?
We seek comment on these proposed factors, as discussed more fully below. We especially seek comment on the practical implications of options we may be urged to adopt: their effect on the development and marketing of accessibility features, on the pace of innovation, and on the administrative costs associated with implementation and enforcement measures (discussed in the remainder of this Notice).

My Response:

I agree that an accessibility feature must be feasible to be readily achievable. For example, at the current stage in technology development, including a speech-to-text processor in every phone is not feasible. Even if it were feasible, it would not be practicable due to its high expense. Perhaps someday it will be feasible and practicable. The kinds of things proposed by the Guidelines are very inexpensive and by their nature should be readily achievable by any CPE manufacturer. The very definition of readily achievable specifies features that are inexpensive. Therefore, the detailed analysis of cost as a determination of readily achievable, as proposed in the NPRM, is not wise. Specifically, no manufacturer should be allowed to factor in opportunity cost, cost recovery, or market conditions. This is analogous to the seat belt law for automobiles, which does not allow Chrysler, for instance, to decide that it would

cost too much for it to include seat belts, when every other car manufacturer must provide them. Another analogy would be the FDA's allowing an entry level pharmaceutical manufacturer to market new drugs without extensive testing, like an established manufacturer must do.

Since accessibility features should apply to every CPE manufacturer equally, no manufacturer would be at an economic disadvantage. If it cost AT&T $1 more to include a feature, then it would cost about the same for Panasonic to include that feature. Consumers who buy these phones, whether they intend to use the features or not, would be financing the research and development and cost of adding the features.

Everyone benefits, even people who do not have disabilities, because it will allow all people to communicate more freely with the growing number of people with disabilities. The principle of Universal Design will make products more usable for everyone.

Comment Title:

4. An Improved, More Effective HAC Standard

Abstract:

CPE that produces auditory output should have a very strong electromagnetic field strength and independent control for field strength and auditory output.

References:

Sec. 1193.43 Output, display, and control functions.
(i) HEARING AID COUPLING. Where a product delivers output by an audio transducer which is normally held up to the ear, provide a means for effective wireless coupling to hearing aids.

My Response:

I certainly agree with this statement. However, I think it should be expanded to let CPE manufacturers know what is expected. I suggest a study be done to determine the electromagnetic field strength required to couple with hearing aids in all environments effectively.

The telecoil in a hearing aid is non selective. It will pick up electromagnetic radiation from any nearby electrical device, which is usually 60 Hz or some overtone of 60 Hz, making a hum or buzz in the hearing aid. If hearing aid manufacturers increased the sensitivity of telecoils, then hearing aids would receive signals from CPE stronger. However, they would also receive interference signals stronger by the same amount and the net effect would be the same poor signal to noise ratio. Most hearing aid users must increase the gain on their aids above a normal setting for the microphone in order to receive CPE signals. This also picks up more noise signals, just as if the telecoil were made more sensitive.

The solution is to make the signal from CPE much stronger than any nearby electrical interference. I have only one set of hearing aids and they have a good telecoil. Using my set of hearing aids as my "standard," I find extremely wide variation in CPE signals in different locations because CPE is different and the electrical noise environment is different. In some locations the signal to noise ratio is good and I can carry on a conversation. In other locations, I cannot use existing phones although the phones in those locations are new enough to be classified as Hearing Aid Compatible.

CPE should be designed to produce a very high level of electromagnetic field strength irrespective of the setting of the sound (acoustic output) control, or CPE could include two gain controls, one for field strength and one for acoustic output. Acoustic feedback

is a limiting factor when one control affects both forms of output, so this approach to HAC solves that problem. Technology is easily available to boost the signal to very adequate levels.

Comment Title:

5. An Improved Specification for Auditory Output

Abstract:

Auditory output should be specified as a minimum Sound Pressure Level (SPL) and a maximum SPL.

References:

Sec. 1193.43 Output, display, and control functions.
(e) AVAILABILITY OF AUDITORY INFORMATION FOR PEOPLE WHO ARE HARD OF HEARING
Provide audio or acoustic information, including any auditory feedback tones that are important for the use of the product, through at least one mode in enhanced auditory fashion (i.e., increased amplification, increased signal-to-noise ratio, or combination). For transmitted voice signals, provide a gain adjustable up to a minimum of 20 dB. For incremental volume control, provide at least one intermediate step of 12 dB of gain.

My response:

The referenced paragraph does not consider that some CPE could have a weak auditory output. It only expresses dB gain, which is a relative term, not a scalar. For example, suppose some CPE normally produces 20 dB SPL. Applying this rule only gives a range of 20 dB SPL to 40 dB SPL, which is not at all satisfactory. If a CPE normally produces 70 dB SPL, then the rule gives a range of from 70 dB SPL to 90 dB SPL.

I have observed a wide variation in SPL with current CPE, even though there must be a standard for a minimum level. I am only suggesting that this standard be enforced and specifying it in section 255 would highlight it and help to enforce it.

The rule should state the minimum SPL that all CPE must produce and it should further specify an adjustable gain of at least 20 dB.

Comment Title:

6. All CPE Should Have an Output Connector

Abstract:

The Guidelines, and the NPRM, specify that CPE must have an output connector (if readily achievable) if it is not readily achievable for CPE to conform to the requirements for accessibility. I will show how this works against the interests of hard of hearing people in gaining access to telecommunications.

References:

Sec. 1193.51 Compatibility.
(b) CONNECTION POINT FOR EXTERNAL AUDIO PROCESSING DEVICESProducts providing auditory output shall provide the auditory signal at a standard signal level through an industry standard connector.

85. For example, it is our tentative view that, if a telecommunications product can be used by a person with a hearing aid without any need to employ a peripheral device or specialized CPE, then the product has complied with the accessibility requirements of Section 255. If the product is usable by a person using a hearing aid only through the application of a peripheral device or CPE, then the product meets the compatibility criteria of Section 255. We believe this view is consistent with the plain language of Section 255, and does not conflict with the FDA's requirements regarding hearing aids.

My response:

Paragraph 85 above focuses on the relative difficulty of making products accessible and it ignores people who must use products. The emphasis should be on people and how they will interface with products. Hard of hearing people have considerable difficulty in hearing and understanding the spoken word on telephones because, for one reason, we cannot lip read the person with whom we are communicating. Every effort should be made to improve the quality of sound to make up for the loss in lip reading. The addition of an output connector allows connection to assistive devices that improve signal quality considerably. Hearing loss covers a very wide range from mild to profound, and people with severe to profound hearing loss need the provisions of section 255 of the Telecom Act the very most.

The statement in paragraph 85 cuts out the very people who need section 255 the most. This is because the current concept in the Guidelines and in the NPRM is that products do not have to be both accessible and compatible. The emphasis is on making products accessible. If that is successful, then few products will be produced that just meet the compatibility requirements. Since the requirement for an output connector is

listed as a compatibility requirement, there will be few products with output connectors. My comment is to move the requirement for an output connector from the compatibility list to the accessibility list. Other solutions to this problem may exist that I would also support.

Using an assistive device plugged into an output connector provides at least two benefits:

1. It allows the use of an induction coupling device, such as a neckloop or silhouette, that provides much better electromagnetic coupling than any CPE can do by itself, resulting in a vastly improved signal to noise ratio.

2. It allows listening with two ears if the user has two hearing aids, which improves understanding to an amazing degree. Synergism is created when both ears are used and the result is more than twice as good.

Many people have to use a direct connection to their hearing aids or cochlear implant rather than an assistive device, so an output connector is an absolute requirement for them. Connecting with a patch cord is the standard and most widely used method for cochlear implants, although some cochlear implant users can talk on a telephone with just the microphone on the cochlear implant. The number of cochlear inplant users is increasing because more people are reaching eligibility standards. People who use a patch cord with hearing aids are usually forced to use that method because of electromagnetic interference associated with telecoil use. "Y" arrangements are available so both hearing aids can be used.

Adding an output connector is one of the simplest things any CPE manufacturer can do, and is one of the most effective. I am not saying it is more important than the features currently listed under "accessibility," but it is just as important and it is definitely an accessibility item. It has to be readily achievable for all CPE, except the very small phones, because I am only suggesting a 25-cent part attached to existing technology. Even a $9.95 Walkman radio has an output connector.

Comment Title:

7. All CPE should have an Access Port.

Abstract:

My previous comment talked about an output connector. This comment expands on that concept by making the connector capable of input as well, and therefore qualifying the connector to be called an Access Port.

References:

Sec. 1193.51 Compatibility.
(b) CONNECTION POINT FOR EXTERNAL AUDIO PROCESSING DEVICES Products providing auditory output shall provide the auditory signal at a standard signal level through an industry standard connector.

85. For example, it is our tentative view that, if a telecommunications product can be used by a person with a hearing aid without any need to employ a peripheral device or specialized CPE, then the product has complied with the accessibility requirements of Section 255. If the product is usable by a person using a hearing aid only through the application of a peripheral device or CPE, then the product meets the compatibility criteria of Section 255. We believe this view is consistent with the plain language of Section 255, and does not conflict with the FDA's requirements regarding hearing aids.

My response:

This response should be used with my previous comment. All the things I said in that comment apply here as well. In this comment I will show how beneficial a duplex access port would be not only to people with disabilities, but to other people as well. This embodies the Universal Design goal.

This proposal just involves choosing a three-conductor jack that may already be available, such as the 3/32" phone jack, or designing a jack that takes less space inside the CPE. All CPE that produces audio must produce it in an analog form since that is the way our ears work, so the circuitry will already be in CPE, even if it is digital. If the jack is capable of input and output the following benefits are possible:

1. VCO phones and TTYs can be attached easily to any CPE that has a corresponding Access Port without the need for adapters. Currently VCO phones and TTYs are designed to be connected by way of an RJ11 jack. They have to conform to the rules of the telephone network to obtain dial tone or answer a call. However, redesigning the VCO phone or TTY so it can also be connected through the Access Port would be very

easy to do. It would then work as a slave to the primary telephone, which may be a digital business phone, a cellular phone, an analog residential phone, or a pay phone.

2. A duplex Access Port would open the door to future accessibility devices, and devices could be designed that do not connect directly to the network, making them simpler and less expensive. This is analogous to a TTY with acoustic cups. This type of TTY does not connect to the network, but depends on a host phone to do that.

3. VCO Phones and TTYs can be connected to answering machines and personal computers that perform the function of an answering machine to display messages left there. An ordinary answering machine just records sound, expecting the sound to be voice, but it could be TTY tones just as well. Some people that have the acoustic coupler type of TTY use this method with their answering machine. The Access Port would make it simpler and applicable for direct connect VCO Phones and TTYs.

4. A simple analog duplex Access Port embodies the Universal Design goal. Devices such as modems could be designed to use the Access Port, which broadens their range of usefulness. People could plug in their laptop computer to any phone, whether it is a digital phone, analog phone, or pay phone, without special adapters. New versions of text telephones could emerge that all people, not just people with disabilities, would find useful.

5. People with low speech, such as laryngectomees, could use an amplifier connected to the Access Port to boost their speech. I have not found anything in the Guidelines nor the NPRM that addresses problems of low speech. Telephones do exist that have a gain control to boost the outgoing speech, so there is evidence that such a feature is desirable and necessary.

Even people with normal speech would find this capability useful when talking to a hard of hearing person. It would also be a tremendous help for hard of hearing people talking on long distance. Quite often the signal to noise ratio is not good on long distance. Increasing the gain on the CPE that a hard of hearing
person is using amplifies both the signal and the noise, which does not help the conversation. If the hard of hearing person could tell the person on the far end to turn up the gain, the signal would come in stronger, giving a better signal to noise ratio.

Comment Title:

8. The Guidelines and the NPRM have an Internal Inconsistency

Abstract:

The concept of requiring accessibility first, and if that is not readily achievable, falling back to an easier requirement for compatibility, circumvents the intention of improving access for people with disabilities.

References:

My comment concerning the output connector

8. The 1996 Act became effective when the President signed it on February 8, 1996. Its principal provisions regarding access for persons with disabilities are contained in Section 255:

> # *If the accessibility requirements of Sections 255(b) and 255(c) are not readily achievable, Section 255(d) requires manufacturers and service providers to ensure compatibility with existing peripheral devices or specialized CPE commonly used by individuals with disabilities to achieve access, if readily achievable.*

85. For example, it is our tentative view that, if a telecommunications product can be used by a person with a hearing aid [175] without any need to employ a peripheral device or specialized CPE, then the product has complied with the accessibility requirements of Section 255. If the product is usable by a person using a hearing aid only through the application of a peripheral device or CPE, then the product meets the compatibility criteria of Section 255. We believe this view is consistent with the plain language of Section 255, and does not conflict with the FDA's requirements regarding hearing aids.

91. Several commenters note that ensuring compatibility requires coordination among, e.g., manufacturers of specialized CPE, network equipment and CPE manufacturers, and service providers. The Access Board lists five criteria for determining compatibility, subject to applicability:

> # *External access to all information and control mechanisms;*
> # *Connection point for external audio processing devices;*
> # *Compatibility of controls with prosthetics;*
> # *TTY connectability; and*
> # *TTY signal compatibility.*

My response:

Since I am a hard of hearing person, I am mostly concerned with features that affect hard of hearing people. I have a concern with the ordering or grouping features into accessibility requirements and compatibility requirements in that the order appears to be backwards. I commented on this in my comment titled "All CPE Should Have an Output Connector." To explain my concern more, suppose I am a person with a prosthetic. My prosthetic will not operate such things as touch screens, which a CPE may have.

"Compatibility of controls with prosthetics" is listed as a compatibility requirement, but it is not listed nor talked about elsewhere.

Since the Access Board and the FCC want all CPE to meet the requirements of accessibility, and if all CPE do, in fact, meet those requirements, then the obvious conclusion as things now stand, is that none of the five compatibility requirements listed above will be requirements. I, as a person with a prosthetic, will not be able to find any CPE that is operable with my prosthetic. (Unless, of course, I get one special made, or if a CPE manufacturer finds a niche that it voluntarily wants to fill with one of its products.)

My solution to this problem, and it may take an amendment to the Act to accomplish this, is to require all CPE to meet certain basic compatibility requirements, if readily achievable. That would be the starting point for all CPE. In addition to meeting basic compatibility requirements, CPE would be expected to meet accessibility requirements, if readily achievable.

I would hope that it will not take an amendment to fix this problem, but rather the Access Board and the FCC can meet with members of Congress to explain this problem and ask, "what did you really mean?"