

IFE Advocates Specification Document
with Provisional Industry Responses Marked in Brackets
Last revised August 15, 2016

Key:

- Bulleted text that is preceded by the word "**[Provisionally Agreed]**" indicates agreed-upon or settled criteria among the co-chairs subject to Working Group and ACCESS Committee affirmation.
- Bulleted text that is preceded by the phrase "**[Tentatively agreed pending clarification]**" indicates leadership agreement in principle, pending further discussion and clarification.
- Bulleted text that is preceded by the phrase "**[Possibly deletable pending outcome of other bulleted text]**" indicates criteria that can be deleted pending the outcome of another bulleted text.
- Bulleted text that is preceded by the phrase "**[Not yet agreed]**" indicates criteria that have not yet been fully discussed or for which no agreement has been reached.

The document is intended to represent the requirements and expectations of passengers with disabilities with respect to the accessibility of IFE systems (hardware and software) and content. The views expressed below are aligned only to the round-one issues described in the *Sequenced List of IFE/IFComs Issues* document that was distributed to the IFE subcommittee prior to the July 11/12 meeting. These round-one issues are pasted below, and the advocates' response is then presented. This initial document focuses on setting expectations regarding IFE content and, to a lesser degree, IFE systems, relative to the needs of passengers with sensory impairments (i.e., passengers who are deaf, hard of hearing, blind or visually impaired). Subsequent versions of this document will contain views on round-two issues, including but not limited to the accessibility of IFE systems themselves. In the end, the goal is to ensure that 100% of IFE offerings are accessible via closed captions and audio descriptions, and that the systems used to deliver IFE content to passengers are accessible to all users.

ROUND 1 ISSUES

IFE SYSTEMS

- 1) **Seatback displays:** Should the rule require closed-captioning/audio-description capability on seatback displays for:
 - a) New IFE installations?
 - b) Upgrades to an existing IFE installation?
 - c) Retrofits of existing IFE installations?

ADVOCATE RESPONSE

A phased-in approach, beginning when the regulations take effect, should be considered. In the first phase:

1. **[Provisionally Agreed]:** All new aircraft **ordered after y date or delivered after x date** with seat-back displays must be equipped with IFE systems with accessible controls **(as defined in section x of this document)** that are capable of conveying closed captions and audio descriptions to passengers and supporting the customizability requirements set forth in the next section.²
 - **Provisional agreement confirmed, subject to satisfactory resolution of bracketed language. [Roser/Mary Task Force]**
2. **[Provisionally Agreed]:** All installations of **new IFE systems ordered after y date or delivered after x date** with seat-back displays on existing aircraft must supply IFE systems with accessible controls **(as defined in section x of this document)** that are capable of conveying closed captions and audio descriptions to passengers and supporting the customizability requirements set forth in the next section.³
 - **Open item involving resolution of the replacement threshold (what is the appropriate replacement threshold – how many seatback displays can be replaced at a time/or cumulatively without triggering this requirement for installing a new accessible system?) [Roser/Mary Task Force]**
3. **[Provisionally Agreed]:** If an IFE system is not currently installed on the aircraft, an accessible system need not be installed solely to satisfy DoT regulations.
 - **Provisional agreement confirmed.**
4. **[Possibly deletable pending outcome of other bulleted text]:** ~~IFE systems (both hardware and software) that do not meet DoT requirements and which were installed on or after October 8, 2010, must be upgraded or replaced with systems that comply with DoT regulations by a specific date or a period to be determined. Beyond this date, airlines must provide accessible IFE systems to passengers on all aircraft.**~~
5. **[Not yet agreed]:** The advocates are willing to drop the above-mentioned requirement for mandatory upgrades of systems installed after Oct. 8, 2010 in exchange for the agreement by all parties to the following commitments:
 - **With regard to software:** MPEG 4 systems that are already installed on aircraft must be updated **[by x date]** to be accessible and to provide support for timed-text captions and caption customization, if these features can be installed through software upgrades. Inaccessible legacy systems (e.g., analog, MPEG 1 or MPEG 2) will not be required to upgrade to accessible IFE systems solely for the purpose of satisfying DoT IFE-accessibility regulations.
 - **Conversations with system providers on feasibility and cost of MPEG 4 upgrades are ongoing. [Michael Childers will report].**

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² Michael Childers: This is provisionally agreeable with the caveat that all of these systems are being delivered with bitmap support, meaning that these IFES offerings will have to be changed to support TT. In the interim, these systems will have to go through an upgrade process and the regulation will need to establish a reasonable timeline for that process to occur.

³ Michael Childers: This is provisionally agreeable with the understanding that while audio descriptions can be delivered to the aircraft in the very near future, GUI development to ensure access to the AD will follow in an as-yet-undetermined time frame. The scope for -- and timing of -- introduction of accessible hardware and software interfaces is a Round 2 issue and the subject of a IFE WG Task Force that is just beginning its work.

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- *With regard to hardware:* If hardware upgrades of legacy IFE seatback systems are necessary to provide access to IFE in compliance with this regulation, then airlines shall provide such accessibility through the following two-step process
 - *Retrofits.* Removal of inaccessible IFE hardware and its replacement with accessible IFE hardware that meets the requirements of this rule by [a sunset date to be determined].
 - *PEDs.* On any aircraft that offers inaccessible legacy IFE systems, accessible alternative IFE systems [such as airline-provided portable devices] must be available at no additional charge and provided to self-identified passengers that request them until the legacy system is replaced with an accessible system. This alternative system must provide offerings that are equivalent to the inaccessible system used by other passengers and provide accessibility features of new IFES, such as the provision of captions, audio descriptions, caption customization, and accessible controls.

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6. **[Not yet agreed]:** Pertaining to portable or other alternative IFE systems that are distributed to passengers by airline staff, staff must know the location of the hardware, must be able to explain to passengers how it works, and must be able to provide technical support when necessary. Staff must also provide instructions for operating the portable or other alternative IFE system in a printed and/or electronic format.

- **Issue to be addressed in industry's proposal.**

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7. **[Provisionally Agreed]:** Airlines must provide passengers with information regarding the accessibility of a plane's IFE system (either seat-back or alternative) in any material describing a specific flight (e.g., in a schedule or route map).

- **Provisional agreement confirmed.**

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- 2) **Personal customization:** Should the rule require carriers to enable passengers to customize IFE/IFComs text-based captions on seatbacks, portable electronic devices, and entertainment applications? If so, what customization options should be required?

- a) New IFE installations?
- b) Upgrades to an existing IFE installation?
- c) Retrofits of existing IFE installations?

RESPONSE

- **[Not yet agreed]:** Seat-back display IFE systems as well portable or other alternative IFE devices that are distributed to passengers by airline staff must support the caption style requirements outlined in current FCC 12-9, §79-103, *Closed-caption decoder requirements for all apparatus (See Annex 1)* that relate to the customization of caption display. This includes operating-system-level support for caption customization as well as within apps that passengers use to play multimedia. The ability to adjust caption size, color, contrast, and so forth is critical for ensuring the provision of accessibility to the same content for passengers who are deafblind with low-vision.

IFE CONTENT

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For each of the following categories of content:

- 1) Movies
- 2) TV (Should the rules distinguish between live TV and cached content?)
- 3) Interstitials (e.g., brief promotional videos, previews, etc.)

should the rule require closed captions and/or audio descriptions for:

- a) New content that has been captioned and/or described and such captions are available to IFE at the time of IFE release;
- b) Older content that has been offered to IFE but for which closed captions and/or audio descriptions were not made available to IFE at the time of IFE release.

RESPONSE

A phased-in approach should be considered. In the first phase, which would begin when the DoT regulations take effect:

- **[Not Yet Agreed]:** 100% of acquisitions of non-television programming (e.g., movies) must be provided with closed captions and audio descriptions;
 - Distinguish between films of U.S. and foreign origin.
 - Distinguish between English films and other languages.
 - Distinguish between theatrical releases and edited versions
 - Estimates of marginal costs for editing closed captions in edited IFE version of theatrical releases
 - Defintion of the exclusions (if any) for trailers, advertising, and other interstitials
 - Address possible compromise of a percentage closed captioned content requirement for all films in addition to the 100% closed captioned requirement for films in English
- **[Provisionally Agreed]:** Airlines must pass through (i.e., not block or otherwise exclude) existing closed captions and audio descriptions on live television programming that contains these features;
 - **Provisional agreement confirmed**
- **[Not yet agreed]:** Airlines must provide media that meets quality regulations established by current FCC 14-12 [accuracy, completeness, synchronicity, and proper placement]. (See Annex 2). Note that Annex 1 and Annex 2 contain language extracted from FCC regulations that cover television programming only. The DoT regulations would need to mirror and extend these same quality standards to cover closed captions for movies as well. Similar quality regulations would need to be developed for audio descriptions.
- **[Tentatively agreed pending clarification]:** All materials advertising or promoting the presence of IFE must clearly identify media that is closed captioned or audio described;
- **[Tentatively agreed pending clarification]:** Search mechanisms must provide a method for passengers to search IFE libraries or offerings solely for media that is closed captioned and/or audio described.
 - Michael will indicate what clarifications are needed by email to advocates.

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In the following phase (dates and/or timelines to be determined):

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- **[Not yet agreed]:** Airlines must provide X percentage of legacy/library content with closed captions and audio descriptions;
 - **Advocates will supply a proposed phase-in schedule for industry reaction. Industry will simultaneously draft its own schedule, which will be exchanged with what the advocates developed.**

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In the final phase (dates and/or timelines to be determined):

- **[Not yet agreed]:** Airlines must ensure that 100% of all IFE offerings are provided with closed captions and audio descriptions.
 - **Address audio descriptions and closed captions separately.**

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Annex 1

Current FCC Requirements for Caption Customization Capacity: Relevant Portions

47 C.F.R. § 79.103 Closed caption decoder requirements for apparatus.

(a) Effective January 1, 2014, all digital apparatus designed to receive or play back video programming transmitted simultaneously with sound, if such apparatus is manufactured in the United States or imported for use in the United States and uses a picture screen of any size must be equipped with built-in closed caption decoder circuitry or capability designed to display closed-captioned video programming pursuant to the provisions of this section, if technically feasible, except that apparatus that use a picture screen less than 13 inches in size must comply with the provisions of this section only if doing so is achievable as defined in this section.

(c) Specific technical capabilities. All apparatus subject to this section shall implement the following captioning functionality:

(1) Presentation. All apparatus shall implement captioning such that the caption text may be displayed within one or separate caption windows and supporting the following modes: text that appears all at once (pop-on), text that scrolls up as new text appears (roll-up), and text where each new letter or word is displayed as it arrives (paint-on).

(2) Character color. All apparatus shall implement captioning such that characters may be displayed in the 64 colors defined in CEA-708 and such that users are provided with the ability to override the authored color for characters and select from a palette of at least 8 colors including: white, black, red, [Not yet agreed], blue, [Agreed], [Tentatively agreed pending clarification], and cyan.

(3) Character opacity. All apparatus shall implement captioning such that users are provided with the ability to vary the opacity of captioned text and select between opaque and semi-transparent opacities.

(4) Character size. All apparatus shall implement captioning such that users are provided with the ability to vary the size of captioned text and shall provide a range of such sizes from 50% of the default character size to 200% of the default character size.

(5) Fonts. All apparatus shall implement captioning such that fonts are available to implement the eight fonts required by CEA-708 and § 79.102(k). Users must be provided with the ability to assign the fonts included on their apparatus as the default font for each of the eight styles contained in § 79.102(k).

(6) Caption background color and opacity. All apparatus shall implement captioning such that the caption background may be displayed in the 64 colors defined in CEA-708 and such that users are provided with the ability to override the authored color for the caption background and select from a palette of at least 8 colors including: white, black, red, [Not yet agreed], blue, [Agreed], [Tentatively agreed pending clarification], and cyan. All apparatus shall implement

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captioning such that users are provided with the ability to vary the opacity of the caption background and select between opaque, semi-transparent, and transparent background opacities.

(7) Character edge attributes. All apparatus shall implement captioning such that character edge attributes may be displayed and users are provided the ability to select character edge attributes including: no edge attribute, raised edges, depressed edges, uniform edges, and drop shadowed edges.

(8) Caption window color. All apparatus shall implement captioning such that the caption window color may be displayed in the 64 colors defined in CEA-708 and such that users are provided with the ability to override the authored color for the caption window and select from a palette of at least 8 colors including: white, black, red, [Not yet agreed], blue, [Agreed], [Tentatively agreed pending clarification], and cyan. All apparatus shall implement captioning such that users are provided with the ability to vary the opacity of the caption window and select between opaque, semi-transparent, and transparent background opacities.

(9) Language. All apparatus must implement the ability to select between caption tracks in additional languages when such tracks are present and provide the ability for the user to select simplified or reduced captions when such captions are available and identify such a caption track as “easy reader.”

(10) Preview and setting retention. All apparatus must provide the ability for the user to preview default and user selection of the caption features required by this section, and must retain such settings as the default caption configuration until changed by the user.

(11) Safe Harbor. Apparatus which implement Society of Motion Picture and Television Engineers Timed Text format (SMPTE ~~T~~ 2052-1:2010 incorporated by reference, see § 79.100) with respect to the functionality in paragraphs (c)(1) through (10) of this section shall be deemed in compliance with [paragraph \(c\)](#) of this section.

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Annex 2
Current FCC Requirements for Caption Quality: Relevant Portions

From FCC 14-12, Closed Captioning Quality Report and Order, February 24, 2014

Regarding the definition of caption quality:

Accuracy, Synchronicity, Completeness and Placement

“ *** the overarching goal is to ensure that the captioning . . . fully and effectively conveys the content of such programming for people who are deaf and hard of hearing to the same extent that the audio track conveys this content to people who are able to hear. To achieve this goal, we amend our rules, as described below, to require that captions (1) accurately reflect what is in the program’s audio track by matching the dialogue, music, and sounds, and identify the speakers; (2) are delivered synchronously with the corresponding dialogue and other sounds at a speed that can be read by viewers; (3) are complete for the entire program; and (4) do not obscure important on-screen information and are not obscured by other information on the screen. ***

As explained below, for purposes of assessing compliance with respect to each of these components, we will consider the type of programming at issue, *i.e.*, pre-recorded, live, or near live programming, and thereby take into account, among other things, the time available to review and edit captions on the particular type of programming prior to its distribution and display to viewers.”

Accuracy

“In order to be accurate, captions must match the spoken words in the dialogue, in their original language (English or Spanish), to the fullest extent possible and include full lyrics when provided on the audio track. Specifically, *** closed captions need to contain all words in the order spoken, without paraphrasing or substituting words for proper names and places, contain proper spelling (including appropriate homophones, such as ‘their,’ not ‘there’), and provide, as needed to understand the program, appropriate punctuation and capitalization to reflect natural linguistic breaks and the flow of the dialogue, the proper tense, and the accurate representation of numbers (including currency figures with appropriate symbols or words). Accurate captions do not rewrite dialogue, or use synonyms to replace actual dialogue because this fails to capture the program’s content and nuances. To this end, where necessary to understand a program’s content, accurate captions also convey the manner and tone of the speaker’s voice. Similarly, where slang or grammatical errors are intentionally used in a program’s dialogue, accuracy dictates that captions mirror such slang and errors, so that viewers can fully understand the speaker’s intent and message. Although we recognize that utterances (*e.g.*, ‘um’) and false starts may not be as critical to a program’s content, accuracy also requires that these be captioned if needed for the viewer to understand the program.

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In order to be accurate, captions must also provide nonverbal information that is not observable, such as who is speaking, the existence of music (even when there are no lyrics to be captioned), sound effects, and audience reaction, to the greatest extent possible, given the nature of the program. If there is more than one speaker, the proper placement of captions dictates that each speaker be identified, through caption identification or caption placement, so that viewers can understand who is speaking at any given time. When a speaker is not on the screen, identification of that individual in the caption text must also be provided if viewers not using captions are able, from the program's audio content, to discern the speaker's identity. Finally, in order to be considered accurate, captions must also be legible, with appropriate spacing between words to allow for readability."

Synchronicity

"In order to be synchronous, captions must coincide with their corresponding spoken words and sounds to the greatest extent possible, given the type of the programming. This means that captions should begin to appear at the time that the corresponding speech or sounds begin and end approximately when the speech or sounds end. In addition, synchronicity requires that captions be displayed on the screen at a speed that can be read by viewers. The requirement for synchronous captions is consistent with the Commission's prior statement, in the *1997 Closed Captioning Report and Order*, that "captions not synchronized with the video portion of the program. . . deny accessibility to persons with hearing disabilities. . ." Similarly, in the *Closed Captioning Reconsideration Order*, the Commission directed that whenever rebroadcast programming is edited, captions be reformatted if necessary to ensure that they are properly synchronized with the edited programming. We agree with commenters that when captions are not synchronized with the program's audio track, it is difficult, and sometimes impossible, to follow the content of the program."

Program Completeness

"In order for a program's captions to be complete, captions must run from the beginning to the end of the program, to the fullest extent possible. This standard is consistent with the *1997 Closed Captioning Report and Order*, in which the Commission required 'all video programming providers, regardless of distribution technology, to ensure that programming with closed captions is delivered to viewers in a complete manner.' The Commission explained that when captions end before the end of the programming, this 'den[ies] accessibility to persons with hearing disabilities even when captioning seems to be available.' To address this problem, the Commission went on to adopt the pass-through rule, requiring VPDs to deliver all programming received from an origination source containing closed captioning to television households with the original closed captioning data intact. Notwithstanding these requirements, Petitioners and several commenters to this proceeding raise concerns about captions that drop off in the middle or just prior to the end of programming. We now affirm that in order for new video programming to be considered 'fully accessible' to viewers and for captions on pre-rule programming to maximize accessibility, a program's captions must be complete for the entirety of the program."

Placement

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“Some commenters raise concerns about the placement of captions and more specifically, the tendency of some captions to obscure important textual information, moving action, or characters’ faces. Consumers do not have the technical capability to relocate captions on their screens when captions cause these obstructions. Consistent with the goal of ensuring that programming is fully accessible to those who rely on captions to the same extent that it is available to other viewers through a program’s audio stream, captions should not block other important visual content on the screen including, but not limited to, character faces, featured text (*e.g.*, weather or other news updates, graphics and credits), and other information that is essential to understanding a program’s content when the closed captioning feature is activated. Although we understand that it is technically possible for viewers to turn off the closed caption function when it blocks other material, requiring viewers who rely on captions to do this would deny them access to the same information that other viewers receive in the audio track.

Appropriate caption placement also dictates that the caption font be sized appropriately for legibility and that captions be adequately positioned so they do not run off the edge of the video screen. Each of these features is basic to providing individuals who are deaf and hard of hearing “with the same opportunity to share in the benefits provided by television programming that is available to others” as required by section 713 of the Act, and as confirmed by the Commission in the *1997 Closed Captioning Report and Order*. ”