

DRAFT: Conveying Text Equivalents of Cabin Announcements

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Definitions

Announcement: A message that is conveyed by the airline, the flight crew, or the cabin crew; to all passengers in order to convey information (not entertainment) relating to safety or otherwise.

Audio Announcement: An announcement conveyed solely by audio, including both Passenger Address and in-seat headset interface.

Built-in Display: Passenger-facing displays, including, but not limited to, overhead or seatback monitors. Built-in Displays may be stowed, not operational, or not visible during taxi, takeoff/departure, approach/landing, or as a result of certain aircraft failures. Built-in Displays offer a supplementary, or “not required means” of, conveyance for cabin announcements as a convenience to the passenger, and may not be operational under non-normal situations.

IFE: In-Flight Entertainment is an optional system, provided by the operator for the benefit of the passengers. Built-in Displays are considered part of the IFE, as are wireless networks that communicate with passenger-owned devices.

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PA Pause: From ARINC 628 Part 3: where priority is given to flight crew or cabin crew PA announcements, such that entertainment systems should pause and compel the passenger to direct their attention to the PA.

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Passenger-Owned Device: A passenger may provide their own device to display text-equivalent announcements. This device may be a smartphone, a tablet, or other portable device with a compatible wireless capability to connect to the IFE (e.g. Wi-Fi). The passenger-owned device hosts client applications that allow the user to interact with server applications hosted by the IFE. The passenger-owned device client announcement applications may be provided by the operator, by a third-party on behalf of the operator, or as a part of the device operating system (browser).

PSS: Passenger Services System is provided as a basic feature of each passenger airplane. The PSS includes Passenger Address (PA), fasten seatbelt and attendant call functions.

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PRAM: A generic term for any Pre-Recorded Announcement Machine as a function; not limited to any specific form factor or fitment. The PRAM stores and may playback either audio or video/audio announcements. The PRAM is an optional function; each operator may choose to utilize a PRAM or to not utilize a PRAM. PRAM installations that are not utilized by the operator for conveying cabin announcement are exempt.

Deleted: The PRAM may be separate from IFE, or it may be fully integrated within the IFE.

Text Equivalents: Words that reflect the contents of an audio announcement, or the audio track of a video announcement. Text equivalents should be verbatim, or as close to verbatim as possible. In the context of video announcements, text equivalents would typically be displayed in a manner similar to closed captions on a built-in display. Text equivalents may be presented in any suitable manner.

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Uplink Cabin Announcement: Cabin Announcements that are delivered to the airplane using a radio uplink.

Video Announcement: An announcement provided through a built-in display or through a passenger-owned device. A video announcement may include a multiple audio tracks and captions.

1. Closed-Captioning for Video Announcements

- a. **High-contrast open captions are already required for video announcements presented on built-in displays.**
- b. Beginning on [Z date], any wireless communication, with passenger-owned devices, must make captions available to any associated application used to present video announcements, and display captions as a feature of any associated application provided on behalf of the operator for video announcements.

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Minimum Acceptable Functional Compliance Criteria

1. PA Pause.
2. Display high-contrast open captions.
3. Captions should be presented in the same language as the audio.

COMMENT: "Z date" must give carriers adequate time to caption any existing video safety announcements that they make via wireless communication networks – no less than six months. Time may also need to be built in for FAA review (uncertain).

RESPONSE: Proposals are welcome.

COMMENT: Announcements occurring at certain phases of flight may be inappropriate for streaming to portable devices, particularly if they are already being provided in visual format elsewhere within the aircraft cabin. For safety reasons, airlines would discourage passengers from paying attention to their devices instead of to the safety videos and/or live demonstrations, etc. In addition, FAA regulations require passengers to stow larger portable devices during certain phases of flight, making PEDs inappropriate as a primary or- depending on the timing of announcements – even a secondary means of communication with passengers.

RESPONSE: Unless flight attendants plan to offer sign language, the overhead PA and personal safety demonstration leaves hearing impaired individuals disadvantaged. Under this circumstance, a video pre-recorded safety briefing with suitable captioning would be more beneficial to those individuals. With adequate public awareness, individuals so motivated would ensure to use appropriate devices in an acceptable manner.

There are reports that a growing number of individuals prefer to receive information through a digital device, rather than in a personal manner. The availability of Wi-Fi personal safety briefings may offer a more complete solution to reaching passengers. This might include a variety of programs that are targeted to children, the aged, or those speaking other languages.

COMMENT: For Item #1, scope should be same as is required of video announcements presented on built-in aircraft displays. "Video announcements" is too broad, as it could take in interstitials, short promotional videos and other "announcements" that have been considered out of scope for IFE captioning requirements under consideration, which are often unrelated to the specific flight on which they are being presented in any case.

RESPONSE: Title revised, added definitions for announcements.

COMMENT: "communicates [or communicating] with passengers" is probably not clear enough – does this include "communications" that are generally considered entertainment only (TV, videos, etc.)?

RESPONSE: Revised to be specific to passenger-owned devices.

COMMENT: PA pause requirements should mirror, and be no more inclusive, than those that already apply under FAA regulations (if any). Otherwise, additional modifications may be required, adding time and expense.

RESPONSE: Peter Lemme here – I was not able to determine the source of the requirement to pause, except for intended function. I did locate ARINC 628 Part 3 which describes how pause is expected to operate. Part of my thinking was to be sure to capture PA pause as a contingent feature, to be sure it was accounted for in compliance (not hidden away and assumed applicable).

COMMENT: do you mean communication with passenger owned devices using the carrier's own proprietary app?

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RESPONSE: There are several flavors:

- 1) Airline provided application may have specific features
- 2) Content may be reached through web portal – using a browser not an app
- 3) Devices may interact directly (this is objective 5, study for now)

Proposed wording says that captions should be provided in a manner that browsers can utilize (not knowing yet where this is, possibly a moving target) ---- Make Available.

For airline apps, there is no barrier to ensuring captions are displayed, so these would be compelled to demonstrate functionality.

In order to operate, the user would have to attach their device to the Wi-Fi network on-board. This normally redirects their browser to a landing page, from which link can be offered to access announcements in some manner. If the user leaves to landing page (portal), they may not have any awareness of announcements.

Applications may offer the capability, if configured advantageously, to provide for alerts even if operating in the background.

2. Pre-recorded Announcement Text Equivalents

- a. Beginning on [X date; Advocates: ED], any existing aircraft which implements a PRAM to convey pre-recorded cabin announcements, must also convey text equivalents of these announcements on each built-in display. After [X date; Advocates: ED], any newly-installed PRAM used to convey pre-recorded cabin announcements on an existing aircraft, must also convey text equivalents of these announcements on each built-in display.
- b. All new PRAM installations used to convey pre-recorded cabin announcements on new aircraft ordered after the Effective Date of the final rule – or delivered more than [Y;

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Advocates: 2] years after the Effective Date of the final rule, must convey text equivalents of these announcements on each built-in display.

c. Beginning on [Z date], any wireless communication with passenger owned devices onboard aircraft must make text equivalent PRAM cabin announcements available to any associated application as captions (or equivalent) used to present video announcements, and display captions (or equivalent) as a feature of any associated application provided on behalf of the operator.

Minimum Acceptable Functional Compliance Criteria

1. PA Pause.
2. Each PRAM message must be conveyed in a text-equivalent announcement.
3. "Fasten Seatbelt" must be conveyed in a text-equivalent announcement when changing state.
4. Text equivalents should be presented in the same language as the audio.

COMMENT: "X date" must be three years after each carrier's existing IFE provider has a product or upgrade providing the required functionalities for that carrier that is fully ready for order by and delivery to the customer carrier. The full three years is necessary for procurement, installation and testing of the product across carriers' fleets and for training of flight attendants and service technicians who will be responsible for operating and maintaining it.

Note that United Airlines has specifically requested information from its primary IFE equipment provider and been told that such functionality would require airline-specific, custom development. This would require United to (a) purchase design revisions, (b) order/fund the supplier's development of core software changes, and (c) order/fund the supplier's development of custom graphical user interface (GUI) changes before the necessary product or upgrade could be considered ready for order by and delivery to United, and therefore before the three years required for fleet-wide procurement, installation, testing and training could begin. This supplier would also have to respond to similar custom-development orders from each of its customers, subject to any new regulatory requirement, further delaying a date by which the industry could reasonably be required to be in compliance.

RESPONSE: It is important to account for realistic industry time-frame and economy when setting goals. One approach to compliance is to provide for a companion text file for every audio file – an entirely new PRAM development. Another approach is to migrate audio announcement to video announcements with captioning, possibly accomplished with existing equipment, new content and new procedures. It may be appropriate to segment the compliance into subsets based on equipage – this would need further discussion to clarify. Proposals are welcome.

COMMENT: any "X date" must meet the same requirements noted for the first phrase in sub-a. Products capable of the required functionality must be available for each carrier to acquire from its supplier (understanding that suppliers may need to customize their product offerings to fit

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each carrier's cabin-systems ecosphere) and adequate time must be afforded for fleet-wide procurement, installation, testing and training.

RESPONSE: Proposals are welcome

COMMENT: "Y" date must meet the same requirements noted for the first phrase in sub-a. Products capable of the required functionality must be available for each carrier to acquire from its supplier (understanding that suppliers may need to customize their product offerings to fit each carrier's cabin-systems ecosphere) and adequate time must be afforded for fleet-wide procurement, installation, testing and training.

RESPONSE: Proposals are welcome.

COMMENT: Note – manufacturers would have to speak to whether there are limits on the number of announcements that the systems could handle.

RESPONSE: Regardless of the number of announcements, each would be expected to be conveyed in a text equivalent manner.

COMMENT: Request to delete clause (c) – no reason given

RESPONSE: No action taken without justification – will be further discussed.

COMMENT: PA pause requirements should mirror, and be no more inclusive, than those that already apply under FAA regulations (if any). Otherwise, additional modifications may be required, adding time and expense.

RESPONSE: See above, same comment under item (1)

COMMENT: "Fasten seatbelt" messages are already accompanied by visual signage aboard all aircraft. Unclear why this is considered inadequate. Further, even carriers that use pre-recorded announcements may not make one when the FSB sign is extinguished, meaning "when changing state" is overly inclusive even if FSB is considered within scope (which we believe it should not be).

RESPONSE: Peter Lemme here – I agree with the commentary. The intention was to modify the existing PA Pause function be discriminating to annunciate fasten seatbelt specifically from other PA announcements in text equivalent manner. Once reliant on a text equivalent annunciation, the opposite state must be revealed so the passenger is aware they may unbuckle. It is reasonable to take the alerting for turning on fasten seat belt to be compelling – text equivalent display. It may be reasonable to promote the PSS seat belt indication as a means to confirm whether it is safe to unbuckle without any other indication. This means the passenger receives text equivalent annunciation in all possible means when fasten seat belt is turned on, but may have to rely solely on the PSS indications to determine when it is turned off.

3. Uplink Announcement Text Equivalents

- a. Beginning on [X date; Advocates: ED], any existing aircraft with any built-in display, and which implements uplink cabin announcements, must convey text equivalents of these announcements on each built-in display. After [X date; Advocates: ED], any newly-installed IFE system on an existing aircraft which implements uplink cabin announcements, must also convey text equivalents of these announcements on each built-in display.
- b. All new IFE installations on new aircraft ordered after the Effective Date of the final rule – or delivered more than [Y; Advocates: 2] years after the Effective Date of the final rule-- with any built-in display, and which implement uplink cabin announcements, must convey text equivalents of these announcements on each built-in display.
- c. Beginning on [Z date], any wireless network that communicates with passengers onboard aircraft must make text equivalent uplink cabin announcements available as a feature within each associated application.

Minimum Acceptable Functional Compliance Criteria

1. **PA Pause.**
2. **Each uplink cabin announcement must be conveyed in a text-equivalent announcement.**
3. **Text equivalents should be presented in the same language as the audio.**

4. Speech to Text Recognition of all PA audio

Report from Industry/User Community Feasibility Study: due by May 31, 2017

1. Candidate system architectures
2. Speech scoring based on real-flight data profiles
3. Recommendations

Minimum Acceptable Functional Objective

1. **PA Pause**
2. **Text equivalent of every PA word**
3. **Text equivalents should be presented in the same language as the audio.**

5. Standard Interface between Announcement wireless interface and User device

Report from Industry/user community feasibility study: due by May 31, 2017

1. System Architecture
2. Network Protocol
3. Network Interface
4. Network Security

Minimum Acceptable Functional Objective

- 1. Text equivalent of every cabin announcement on personal device.**
- 2. Text equivalents should be presented in the same language as the audio.**