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S T A N D A R D S

Digital Video Subcommittee

SCTE OPERATIONAL PRACTICE

SCTE 248 2018

Operational Practice on Multiple Audio Signaling

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1. Introduction

1.1. Executive Summary

Cable operators, many program networks, and local broadcast affiliates routinely support up to two audio streams for programs they distribute. The first audio stream contains the main or primary audio for the program, typically in English; the second audio stream contains the audio description or a second language (typically Spanish). However, this legacy two-stream model can conflict with the desire to offer additional languages, video description service (VDS), emergency information and other audio services simultaneously. Newer equipment, including set-top boxes, and IP delivered content can support this capability; advanced audio technologies, such as object-based audio, will allow the consumer more choice of what they hear. This document provides guidance and recommendations to cable operators and program providers on distributing multiple audio streams, languages and services while supporting legacy requirements.

1.1.1. Background

The technical capability to offer more than one audio service was born of a desire to provide stereo audio in analog television channels to consumers. The method chosen to do this also allowed for a lower bandwidth Second Audio Program (SAP) channel. The cable industry embraced this capability and began delivering a second language in analog channels via the SAP feature, part of the Multichannel Television Sound (MTS) standard developed by the National Television Systems Committee (NTSC). This method of delivering program audio in English as well as in a second language was carried forward and replicated in the digital delivery of video services provided today.

In 2011, pursuant to the Twenty-First Century Communications and Video Accessibility Act of 2010, (CVAA), the Federal Communications Commission (FCC) reinstated video description rules requiring MVPDs serving 50,000 or more subscribers to provide 50 hours of video-described prime time or children's programming per calendar quarter on each of the top five non-broadcast networks -- currently USA, TNT, TBS, History, and Disney Channel. In July 2017 the FCC increased the total number of required video-described hours by 75%, up to 87.5 hours per calendar quarter, as of the calendar quarter beginning July 1, 2018.¹

Also pursuant to the CVAA, in April 2013 the FCC adopted revised "emergency information" rules that make emergency information provided in non-news video programming accessible to individuals who are blind or visually impaired. Cable operators retransmitting emergency information audio, typically from broadcast stations, must pass through that audio in the secondary audio stream to customers. Emergency information audio supersedes all other programming on the secondary audio stream, including VDS and second language.

The regulatory requirement to carry an increasing number of hours of video described programming, emergency information, and the business interest in supporting second language audio must now be considered when planning the delivery of audio service to customers.

¹ The list of top five networks is updated every three years, with the next update occurring on July 1, 2018. Broadcast stations affiliated with ABC, CBS, Fox, or NBC located in the top 60 TV markets are subject to the same hours requirement.

1.2. Scope

This document describes methods and practices for distributing multiple audio streams, languages and services within cable and program provider systems, while continuing to support legacy equipment requirements.

1.3. Benefits

Under current practice, the second audio stream can become oversubscribed. The guidance and recommendations provided in this operational practice document will help cable operators and program providers address this concern and improve the delivery of audio services to the consumer.

1.4. Intended Audience

Program providers (especially producers and engineers involved with content creation and operation of program distribution technologies) and multi-channel video programming distributors (MVPDs) (especially technicians and engineers responsible for receiving and processing program content for distribution to their customers) comprise the intended audience for this operational practice. It *may* also benefit vendors involved in the design, development and manufacturing of equipment and software for content distribution.

2. Normative References

The following documents contain provisions, which, through reference in this text, constitute provisions of this document. At the time of Subcommittee approval, the editions indicated were valid. All documents are subject to revision; and while parties to any agreement based on this document are encouraged to investigate the possibility of applying the most recent editions of the documents listed below, they are reminded that newer editions of those documents might not be compatible with the referenced version.

2.1. SCTE References

- No normative references are applicable.

2.2. Standards from Other Organizations

- No normative references are applicable.

2.3. Published Materials

- No normative references are applicable.

3. Informative References

3.1. SCTE References

- ANSI/SCTE 30 2017, Digital Program Insertion Splicing API
- ANSI/SCTE 35 2017, Digital Program Insertion Cueing Message for Cable
- ANSI/SCTE 54, Digital Video Service Multiplex and Transport System Standard for Cable Television
- ANSI/SCTE 224 2015, Event Scheduling and Notification Interface (ESNI)
- SCTE 236 2017, Content Metadata
- SCTE 243-1 Next Generation Audio Carriage Constraints for Cable Systems: Part 1 – Common Transport Signaling
- OC-SP-CEP3.0-C01-161026 Content Encoding Profiles 3.0

3.2. Standards from Other Organizations

- ATSC A/53, Part 1:2013, Digital Television System
- ATSC A/53, Part 3:2013, Service Multiplex and Transport Subsystem Characteristics
- ATSC A/53, Part 5:2014, AC-3 Audio System Characteristics
- ATSC A/53, Part 6:2013, Enhanced AC-3 Audio System Characteristics
- ATSC A/52:2015, Digital Audio Compression (AC-3) (E-AC-3) Standard
- ATSC A/85:2015, Digital Audio
- ATSC TG1-1013r1 ATSC Technology Group Report: ATSC Audio Language Signaling
- ATSC A/342 Parts 1-3 Audio
- OC-SP-CEP3.0 Content Encoding Profiles 3.0 Specification
<https://apps.cablelabs.com/specification/content-encoding-profiles-3-0-specification>
- ISO 639-1, Code for the representation of Names of Languages - Part 1: Alpha-2 code
- ISO 639-2, Code for the representation of Names of Languages - Part 2: Alpha-3 code
- ISO/IEC 23000-19:2018, Information technology – Multimedia application format (MPEG-A) – Part 19: Common media application format (CMAF) for segmented media
- IETF RFC 8216, HTTP Live Streaming <https://tools.ietf.org/html/draft-pantos-http-live-streaming-23>

3.3. Published Materials

- Video Description: Implementation of the Twenty-First Century Communications and Video Accessibility Act of 2010, Report and Order, FCC 17-88
(<https://docs.fcc.gov/public/attachments/FCC-17-88A1.pdf>), MB Docket No. 11-43 (rel. July 12, 2017).
- Video Description: Implementation of the Twenty-First Century Communications and Video Accessibility Act of 2010, Report and Order, FCC 11-126
(<https://docs.fcc.gov/public/attachments/FCC-11-126A1.pdf>), MB Docket No. 11-43 (rel. August 25, 2011).
- Video Description. (2016, November 16). Retrieved August 24, 2017, from <https://www.fcc.gov/general/video-description>
- Codes for the Representation of Names of Languages Part 2: Alpha-3 Code. (2011, April 8). Retrieved August 24, 2017, from <http://www.loc.gov/standards/iso639-2/langhome.html>