SMPTE ST 429-2:2019
Revision of SMPTE ST 429-2:2013

SMPTE STANDARD

D-Cinema Packaging — DCP Operational Constraints

Table of Contents

roved November 11, 2019

Foreword

SMPTE (the Society of Motion Picture and Television Engineers) is an internationally-recognized standards developing organization. Headquartered and incorporated in the United States of America, SMPTE has members in over 80 countries on six continents. SMPTE's Engineering Documents, including Standards, Recommended Practices and Engineering Guidelines, are prepared by SMPTE's Technology Committees. Participation in these Committees is open to all with a bona fide interest in their work. SMPTE cooperates closely with other standards-developing organizations, including ISO, IEC and ITU.

SMPTE Engineering Documents are drafted in accordance with the rules given in Standards Operations Manual.

SMPTE ST 429-2 was prepared by Technology Committee 21DC.

Intellectual Property

At the time of publication no notice had been received by SMPTE claiming patent rights essential to the implementation of this Engineering Document. However, attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. SMPTE shall not be held responsible for identifying any or all such patent rights.

1 Scope

This document specifies a D-Cinema Package (DCP), a collection of files containing d-cinema essence and related metadata to be ingested and reproduced by a d-cinema playback system.

2 Conformance Notation

Normative text is text that describes elements of the design that are indispensable or contains the conformance language keywords: "shall", "should", or "may". Informative text is text that is potentially helpful to the user, but not indispensable, and can be removed, changed, or added editorially without affecting interoperability. Informative text does not contain any conformance keywords.

All text in this document is, by default, normative, except: the Introduction, any section explicitly labeled as "Informative" or individual paragraphs that start with "Note:"

The keywords "shall" and "shall not" indicate requirements strictly to be followed in order to conform to the document and from which no deviation is permitted.

The keywords, "should" and "should not" indicate that, among several possibilities, one is recommended as particularly suitable, without mentioning or excluding others; or that a certain course of action is preferred but not necessarily required; or that (in the negative form) a certain possibility or course of action is deprecated but not prohibited.

The keywords "may" and "need not" indicate courses of action permissible within the limits of the document.

The keyword “reserved” indicates a provision that is not defined at this time, shall not be used, and may be defined in the future. The keyword “forbidden” indicates “reserved” and in addition indicates that the provision will never be defined in the future.

3 Normative References

Note: All references in this document to other SMPTE documents use the current numbering style (e.g. SMPTE ST 382:2007) although, during a transitional phase, the document as published (printed or PDF) may bear an older designation (such as SMPTE 382M-2007). Documents with the same root number (e.g. 382) and publication year (e.g. 2007) are functionally identical.

The following standards contain provisions which, through reference in this text, constitute provisions of this recommended practice. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this recommended practice are encouraged to investigate the possibility of applying the most recent edition of the standards indicated below.

SMPTE ST 377:2004[1] Material Exchange Format (MXF) — File Format Specification

SMPTE ST 377-4:2012 MXF Multichannel Audio Labeling Framework

SMPTE ST 382:2007[2] Material Exchange Format — Mapping AES3 and Broadcast Wave Audio into the MXF Generic Container

SMPTE ST 400:2012 SMPTE Labels Structure

[1] The reference to SMPTE ST 377:2004 is intentional. SMPTE ST 377-1:2011 or future versions are not appropriate for use with this document.
[2] The omission of the reference to Amendment 1:2012 to SMPTE ST 382:2007 is intentional. This Amendment is not appropriate for use with this document.

SMPTE ST 422[3]:2006 Material Exchange Format — Mapping JPEG 2000 Codestreams into the MXF Generic Container

SMPTE ST 428-1:2006 D-Cinema Distribution Master — Image Characteristics

SMPTE ST 428-2:2006 D-Cinema Distribution Master — Audio Characteristics

SMPTE ST 428-7:2014 D-Cinema Distribution Master — Subtitle

SMPTE ST 428-10:2008 D-Cinema Distribution Master — Closed Caption and Closed Subtitle

SMPTE ST 428-12:2013 D-Cinema Distribution Master — Common Audio Channels and Soundfield Groups

SMPTE ST 429-3:2007 D-Cinema Packaging — Sound and Picture Track File

SMPTE ST 429-4:2006 D-Cinema Packaging — MXF JPEG 2000 Application

SMPTE ST 429-5:2017 D-Cinema Packaging — Timed Text Track File

SMPTE ST 429-6:2006 D-Cinema Packaging — MXF Track File Essence Encryption

SMPTE ST 429-7:2006 D-Cinema Packaging — Composition Playlist

SMPTE ST 429-8:2007 D-Cinema Packaging — Packing List

SMPTE ST 429-10:2008 D-Cinema Packaging — Stereoscopic Picture Track File

SMPTE ST 429-12:2008 D-Cinema Packaging — Caption and Closed Subtitle

SMPTE ST 429-16:2014 D-Cinema Packaging — Additional Composition Metadata and Guidelines

SMPTE ST 430-2:2006 D-Cinema Operations — Digital Certificate

SMPTE ST 2029:2009 Uniform Resource Names for SMPTE Resources

SMPTE ST 429-17:2017 XML Constraints

ISO/IEC 10646:2003 Information Technology — Universal Multiple-Octet Coded Character Set (UCS)

ISO/IEC 15444-1:2004 Information Technology — JPEG 2000 Image Coding System: Core Coding System

ISO/IEC 15444-1:2004/Amd 1:2006 Profiles for Digital Cinema Applications

ISO/IEC 15948:2004 Information Technology — Computer Graphics and Image Processing — Portable Network Graphics (PNG): Functional Specification

IEC 61966-2-1:1999 Colour Measurement and Management in Multimedia Systems and Equipment — Part 2-1: Default RGB Colour Space - sRGB

Internet Engineering Task Force (IETF) (July 2005). RFC 4122 A Universally Unique Identifier (UUID) URN Namespace

Internet Engineering Task Force (IETF) (February 2006). RFC 4246 International Standard Audiovisual Number (ISAN) URN Definition

[3] The reference to SMPTE ST 422:2006 is intentional. SMPTE ST 422:2013, Amendment 1:2014 to SMPTE ST 422:2013, SMPTE ST 422:2014 or future versions are not appropriate for use with this document.