

SMPTE STANDARD

D-Cinema Packaging —
Caption and Closed Subtitle



Table of Contents	Page
Foreword	2
Intellectual Property	2
1 Scope	3
2 Conformance Notation	3
3 Normative References	3
4 Glossary	4
5 Overview	4
6 Composition Playlist Extensions (Normative)	4
6.1 Extension Elements	4
6.2 Namespace	4
6.3 ClosedCaption [Optional]	5
6.4 ClosedSubtitle [Optional]	5
6.5 MainCaption [Optional]	5
6.6 CaptionTrackFileAssetType	5
6.6.1 Language [optional]	6
7 Schema	6
8 Samples (Informative)	7
9 XML Diagram Legend (Informative)	9
9.1 Element Symbols	9
9.1.1 Examples	9
9.2 Model Symbols ("Compositors")	10
9.3 Types	10
9.4 Model Groups and References	11

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 Part XIII of its Administrative Practices. This SMPTE Engineering Document was prepared by Technology Committee DC28.

Intellectual Property

At the time of publication no notice had been received by SMPTE claiming patent rights essential to the implementation of this Standard. 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 defines the [SMPTE 429-7] Composition Playlist asset type extensions required for inclusion of [SMPTE 428-10] Closed Captions and Closed Subtitles, as well as the asset type extension required of Open Captions created per [SMPTE 428-7].

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.

A conformant implementation according to this document is one that includes all mandatory provisions ("shall") and, if implemented, all recommended provisions ("should") as described. A conformant implementation need not implement optional provisions ("may") and need not implement them as described.

3 Normative References

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.

1. SMPTE 428-7-2007, D-Cinema Distribution Master — Subtitle
2. SMPTE 428-10-2008, D-Cinema Distribution Master — Closed Caption and Closed Subtitle
3. SMPTE 429-7-2006, D-Cinema Packaging — Composition Play List
4. World Wide Web Consortium (W3C) (2004, February 4). Extensible Markup Language (XML) 1.0 (Third Edition)
5. World Wide Web Consortium (W3C) (2004, October 28). XML Schema Part 1: Structures (Second Edition)
6. World Wide Web Consortium (W3C) (2004, October 28). XML Schema Part 2: Datatypes (Second Edition)
7. Internet Engineering Task Force (IETF) (1996, November). RFC 2396 — Uniform Resource Identifiers (URI): Generic Syntax

4 Glossary

The reader is directed to the glossary terms defined in [SMPTE 428-10], and should be aware of the terminology defined in [SMPTE 429-7].

5 Overview

This specification defines the `ClosedCaption`, `ClosedSubtitle`, and `MainCaption` asset type extensions to [SMPTE 429-7] Composition Playlist. These extensions are used to describe Closed Caption essence, Closed Subtitle essence, and Open Caption essence, respectively. Definitions for Closed Caption, Closed Subtitle, and Open Caption essence can be found in [SMPTE 428-10].

6 Composition Playlist Extensions (Normative)

6.1 Extension Elements

To reference the Closed Caption essence, Closed Subtitle essence, and Open Caption essence in a Composition, the extension elements defined in this section shall be used to extend the Reel element of a Composition Playlist, as specified in SMPTE 429-7.

6.2 Namespace

The `ClosedCaption`, `ClosedSubtitle`, and `MainCaption` extension elements defined in this specification shall be associated with a unique XML namespace name that shall be the string value “`http://www.smpte-ra.org/schemas/429-12/2008/TT`”. This namespace name conveys both structural and semantic version information, and serves the purpose of a traditional version number field.

XML namespace names used in this standard are identified in Table 1. Namespace names are represented as Uniform Resource Identifier (URI) values [RFC 2396]¹.

Table 1 – XML Namespaces

Qualifier	URI
Cpl	<code>http://www.smpte-ra.org/schemas/429-7/2006/CPL</code>
Tt	<code>http://www.smpte-ra.org/schemas/429-12/2008/TT</code>

URIs listed in Table 1 are normative, whereas the namespace qualifier values themselves (used in Table 1 and elsewhere in this standard) are not normative. Thus, namespace qualifier values may be replaced in instance documents by any arbitrary XML compliant namespace qualifier, meaning that conformant implementations shall expect any XML compliant namespace qualifier value that is associated with a URI from Table 1.

Datatypes from other schemas that are used in this document will be prefixed with the appropriate namespace qualifier (e.g. `xs:dateTime`). See [XML Schema Part 2: Datatypes] for further information about these types.

¹ Readers unfamiliar with URI values as XML namespace names should be aware that although a URI value begins with a “method” element (“http” in this case), the value is designed primarily to be a unique string and does not necessarily correspond to an actual on-line resource. Applications implementing this standard should not attempt to resolve URI values on-line.