

SMPTE STANDARD



Material Exchange Format — Mapping ACES Image Sequences into the MXF Generic Container

Table of Contents	Page
Foreword.....	2
Intellectual Property.....	2
Introduction.....	2
1 Scope.....	3
2 Conformance Notation.....	3
3 Normative References.....	3
4 Terms and Definitions.....	4
4.1 UL.....	4
4.2 ACES image.....	4
5 Essence Container Constraints.....	4
6 Homogeneous Essence.....	4
7 Key and Value Coding.....	5
7.1 Picture Element Key.....	5
7.2 Picture Element Value.....	5
8 SMPTE Label Values.....	5
8.1 Essence Container Label.....	5
8.2 Picture Essence Coding Label.....	6
9 Application Issues.....	7
9.1 Index Table Usage (Informative).....	7
9.2 Essence Container Partitions.....	7
10 Essence Descriptors.....	8
10.1 General.....	8
10.2 Generic Picture Essence Descriptor.....	8
10.3 RGBA Picture Essence Descriptor.....	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 its Standards Operations Manual.

SMPTE ST 2065-5 was prepared by Technology Committee 31FS.

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.

Introduction

This section is entirely informative and does not form an integral part of this Engineering Document.

This standard specifies the mapping of a sequence of ACES (SMPTE ST 2065-4) coded still images into the MXF generic container, as specified in SMPTE ST 379-2.

ACES is an image-by-image coding scheme where each image is coded in an entirely independent bitstream and can be processed as an independent entity.

This essence mapping does not constrain the use of any particular operational pattern.

1 Scope

This standard specifies frame- and clip-based mappings of a sequence of monoscopic ACES coded still pictures, as specified in SMPTE ST 2065-4, into the MXF generic container, as defined in SMPTE ST 379-2.

This standard specifies the key, the length, and the value fields of the ACES coded picture element. This standard also defines the essence container and label values and the essence descriptor.

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.

Unless otherwise specified, the order of precedence of the types of normative information in this document shall be as follows: Normative prose shall be the authoritative definition; Tables shall be next; then formal languages; then figures; and then any other language forms.

3 Normative References

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

SMPTE ST 298:2009, Universal Labels for Unique Identification of Digital Data

SMPTE ST 377-1:2011, Material Exchange Format (MXF) — File Format Specification

Amendment 1:2012 to SMPTE ST 377-1:2011

Amendment 2:2012 to SMPTE ST 377-1:2011