

SMPTE STANDARD

D-Cinema Packaging — MXF JPEG 2000 Application



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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 document was prepared by the Technology Committee DC28 on Digital Cinema Technology in coordination with the Technology Committee W25 on Metadata and Wrappers.

Introduction

SMPTE 422M defines the mapping of any compliant JPEG2000 codestream into the MXF generic container and defines Keys, ULs and Essence Descriptor definitions. This document further defines the MXF mapping for Digital Cinema application.

1 Scope

SMPTE 422M defines the mapping of any compliant JPEG 2000 codestream into the MXF generic container and provides Keys, ULs and essence descriptor definitions. This standard further defines the MXF mapping details and constraints for application within D-Cinema.

2 Normative References

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

SMPTE 377M-2004, Television — Material Exchange Format (MXF) — File Format Specification

SMPTE 422M-2006, Material Exchange Format (MXF) — Mapping JPEG 2000 Codestreams into the MXF Generic Container

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

SMPTE 429-3-2006, D-Cinema Packaging — Sound and Picture Track File

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

3 Introduction

The MXF Generic Container (GC) is fully described in SMPTE 379M. SMPTE 422M specifies the mapping of JPEG 2000 codestreams as a Picture Element that may be used in the Picture Item of the MXF Generic Container. ISO-IEC 15444-1 Amd 1 specifies the JPEG 2000 profiles for use in D-Cinema applications.

This standard specifies the mapping of D-Cinema profiles of JPEG 2000 coded pictures into the MXF Generic Container.

Glossaries of acronyms, terms and data types used by the Material Exchange Format (MXF) are defined in SMPTE 377M and SMPTE 379M.

Glossaries of definitions, abbreviations and symbols used by JPEG 2000 are defined in ISO-IEC 15444-1.

3.1 Acronyms (Informative)

Some of the acronyms used in this document are listed here for information:

- DCDM: Digital Cinema Digital Master
- KAG: KLV Alignment Grid
- KLV: Key Length Value
- UL: Universal Label

4 Sampling Constraints

The source picture sampling shall comply with SMPTE 428-1.