First edition
2008-09-01

Digital cinema (D-cinema) distribution master —

Part 1:
Image characteristics

Souche de la distribution du cinéma numérique (cinéma D) —

Partie 1: Caractéristiques d'image

Reference number
ISO 26428-1:2008(E)

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Published in Switzerland

Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

ISO 26428-1 was prepared by the Society of Motion Picture and Television Engineers (as SMPTE 428-1-2006) and was adopted, under a special “fast-track procedure”, by Technical Committee ISO/TC 36, *Cinematography*, in parallel with its approval by the ISO member bodies.

ISO 26428 consists of the following parts, under the general title *Digital cinema (D-cinema) distribution master*:

— *Part 1: Image characteristics*

— *Part 2: Audio characteristics*

— *Part 3: Audio channel mapping and channel labeling*

Introduction

This International Standard comprises SMPTE 428-1-2006 and the following informative notes.

— Informative reference: The French national standard NF S27-100, *Cinematography — Electronic projection rooms of digital cinema type*, provides additional regional information.

— Image structures (see Clause 3): Within a national entity, anamorphic lenses may be required under certain circumstances in which masking limitations would not otherwise permit non-anamorphic projection.

— Digital cinema image aspect ratios (see Annex A): An additional example aspect ratio of 1:66 to 1 would be achieved in:

  — level 1 by using 3 584 horizontal pixels by 2 160 vertical pixels, and

  — levels 2 and 3 by using 1 792 horizontal pixels by 1 080 vertical pixels.

The International Organization for Standardization (ISO) draws attention to the fact that it is claimed that compliance with this document may involve the use of a patent.

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SMPTE STANDARD

D-Cinema Distribution Master — Image Characteristics

Table of contents

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.

SMPTE Standard 428-1 was prepared by SMPTE Technology Committee DC28.

Approved
September 29, 2006

Introduction

This standard describes the image characteristics of the Digital Cinema Distribution Master (DCDM). The image characteristics and parameters are not subject to any further image processing prior to the compression process described elsewhere.

In order for content creators to convert a Digital Source Master (DSM) into a Digital Cinema Distribution Master (DCDM), this standard will define all of the metrics required for the image structure of the DCDM. This DCDM image structure may then be transported by being mapped into either real time interfaces or into file formats.

In the process of creating theatrical releases, a Digital Source Master, or DSM, is produced from which many distribution elements are created, (e.g., Film Distribution Masters, Digital Cinema Distribution Masters (DCDM), Home Video Masters, Airline Version Masters and Broadcast Masters). It is not the goal of this specification to define the DSM. It is recognized that the DSM may consist of any color space, pixel matrix (spatial), frame rate (temporal), bit depth and many other metrics.

This standard defines sets of operational levels, in terms of the maximum number of pixels, H pixel count and V pixel count. In combination with the frame rate this determines the operational level, 1-3 as defined in Table 1.