



BSI Standards Publication

Professional video storage products – Tape-less camera recorder using MXF file format – Encoding guidelines

Part 2: Mapping MPEG-2 and AVC Streams into MXF

National foreword

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A list of organizations represented on this committee can be obtained on request to its secretary.

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**Professional video storage products – Tape-less camera recorder using MXF file format – Encoding guidelines –
Part 2: Mapping MPEG-2 and AVC Streams into MXF**

INTERNATIONAL
ELECTROTECHNICAL
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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TAPE-LESS CAMERA RECORDER USING MXF FILE FORMAT –
ENCODING GUIDELINES –**

Part 2: Mapping MPEG-2 and AVC Streams into MXF

FOREWORD

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- the required support cannot be obtained for the publication of an International Standard, despite repeated efforts, or
- the subject is still under technical development or where, for any other reason, there is the future but no immediate possibility of an agreement on an International Standard.

Technical specifications are subject to review within three years of publication to decide whether they can be transformed into International Standards.

IEC TS 62871-2, which is a technical specification, has been prepared by technical area 6: Storage media, storage data structure, storage systems and equipment, of IEC technical committee 100: Audio, video and multimedia systems and equipment.

The text of this technical specification is based on the following documents:

Enquiry draft	Report on voting
100/3152/DTS	100/3218/RVDTS

Full information on the voting for the approval of this technical specification can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 62871 series, published under the general title *Professional video storage products – Tape-less camera recorder using MXF file format – Encoding guidelines*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

The professional camera recorder has evolved from a traditional tape-based system into a file-based system, taking advantage of recent advances in information technology. Instead of using conventional magnetic tape as the recording medium, video and audio streams can now be stored as files that can be read directly by a personal computer (PC).

Several file format specifications exist, and most broadcasters are using the Material eXchange Format (MXF), which has been standardized by the Society of Motion Picture and Television Engineers (SMPTE). As reported in IEC TR 62712:2011, the MXF file format has been adopted for various types of professional tape-less camera recorders. MXF is being used by many broadcast stations around the world. Since the MXF file format provides a multiplicity of functions and options in order to satisfy the needs of various applications in a range of situations, it is important to address interoperability issues between equipment. Therefore, it is essential for interoperability that there is an appropriate Technical Specification that specifies guidelines for MXF implementations and operational usage.

The IEC 62871 series gives encoding guidelines for professional tape-less camera recorders using the MXF file format to ensure interoperability.

The IEC 62871 series currently consists of:

- IEC 62871-1, which gives guidelines for MXF operational patterns for professional tape-less camera recorders and also outlines the general parts of the MXF file format.
- IEC 62871-2, which gives guidelines for mapping MPEG-2 and AVC Streams into MXF files which are used for professional tape-less camera recorders.

PROFESSIONAL VIDEO STORAGE PRODUCTS – TAPE-LESS CAMERA RECORDER USING MXF FILE FORMAT – ENCODING GUIDELINES –

Part 2: Mapping MPEG-2 and AVC Streams into MXF

1 Scope

This part of IEC 62871, which is a technical specification, specifies implementation guidelines for mapping MPEG-2 video and AVC streams into MXF file format for professional tape-less camera recorders.

The guidelines are applicable to the creation of an MXF file in professional tape-less camera recorders. They are also applicable for content management software and to equipment that supports MXF files generated by professional tape-less camera recorders.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 13818-2:2013, *Information technology – Generic coding of moving pictures and associated audio information – Part 2: Video*

ISO/IEC 14496-10:2014, *Information technology – Coding of audio-visual objects – Part 10: Advanced Video Coding*

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

SMPTE ST 381-2:2018, *Material Exchange Format (MXF) – Mapping MPEG Streams into the MXF Constrained Generic Container*

SMPTE ST 381-3:2017, *Material Exchange Format (MXF) – Mapping AVC Streams into the MXF Constrained Generic Container*

3 Terms and definitions

For the purposes of this document, the terms, definitions and abbreviated terms given in ISO/IEC 13818-2, ISO/IEC 14496-10, SMPTE ST 377-1, SMPTE ST 381-2 and SMPTE ST 381-3 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>