



IEC/TR 62712

Edition 1.0 2011-10

TECHNICAL REPORT

Professional tape-less camera recorder

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

PRICE CODE

T

ICS 33.160.40

ISBN 978-2-88912-764-1

CONTENTS

FOREWORD.....	3
INTRODUCTION.....	5
1 Scope.....	6
2 Result of product survey.....	6
2.1 General.....	6
2.2 Codec.....	6
2.2.1 Video codec.....	6
2.2.2 Audio codec.....	7
2.3 File format.....	8
2.4 Metadata.....	9
2.5 Recording media.....	10
2.6 Interface.....	11
3 Guideline for standardization.....	12
3.1 Summary of current issues.....	12
3.2 Proposed guideline for standardization.....	12
3.2.1 Product based standardization.....	12
3.2.2 Essence technology based standardization.....	12
4 Conclusion.....	14
Annex A PRODUCT list.....	15
Bibliography.....	23
Table 1 – Video codec.....	7
Table 2 – Audio codec.....	7
Table 3 – Audio codec for PRODUCT-D.....	8
Table 4 – MXF based PRODUCT list.....	8
Table 5 – File format of PRODUCT-B and PRODUCT-G.....	8
Table 6 – File format of PRODUCT-B and PRODUCT-G.....	9
Table 7 – File format of PRODUCT-D.....	9
Table 8 – Metadata specification examples of MXF based camera recorder.....	10
Table 9 – Proprietary recording media.....	10
Table 10 – Non proprietary recording media.....	11
Table 11 – Interface specification-1.....	11
Table 12 – Interface specification-2.....	11
Table 13 – PRODUCT list based on MXF and other related technologies.....	13

INTERNATIONAL ELECTROTECHNICAL COMMISSION

PROFESSIONAL TAPE-LESS CAMERA RECORDER

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

The main task of IEC technical committees is to prepare International Standards. However, a technical committee may propose the publication of a technical report when it has collected data of a different kind from that which is normally published as an International Standard, for example "state of the art".

IEC 62712, which is a technical report, has been prepared by technical area 6: Storage media, data structures, equipment and systems, of IEC technical committee 100: Audio, video and multimedia systems and equipment.

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

Enquiry draft	Report on voting
100/1781/DTR	100/1839/RVC

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

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

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

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

INTRODUCTION

During the last few years, various types of tape-less camera recorders with different formats have emerged to the broadcast and professional video market. It is desirable to ensure interoperability and to establish its operation. The stage 0 project “Professional tape-less camera recorder” was established to meet these requirements and the purpose of this project was to study the possibility of standardization of this type of products in the current market. The initial step of study was to understand the current status of the products in the market. (Performance comparison is out of the scope of this Technical Report.)

This Technical Report was created as a summary of the project and includes the result of the product survey along with the possibility of standardization. Although the investigation is limited to the products in the market, it does not obstruct or exclude standardization of future products.

PROFESSIONAL TAPE-LESS CAMERA RECORDER

1 Scope

This Technical Report summarizes the results of the study on products and market status of professional tape-less camera recorders. This report also includes the guideline on the possibilities of standardizations for professional tape-less camera recorders, including the following components:

- codec;
- file format;
- metadata;
- recording media;
- interface.

NOTE 1 Each professional tape-less camera recorder used for the product survey is defined as “PRODUCT”.

NOTE 2 Since each PRODUCT is also defined as a “product series” of each manufacturer, PRODUCT may include two or more models with different product specifications.

NOTE 3 Some of the names described in this report represent a trademark or registered trademark of the respective companies. However, symbols such as TM and © are omitted in this report.

NOTE 4 The interface specifications investigated in this project were limited to a file transfer or compressed bit stream transfer since this report is focusing on a file-based specification.

NOTE 5 The detail specification of each PRODUCT is shown in Annex A.