

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



**Audio archive system –  
Part 1-1: DVD disk and data migration for long term audio data storage**

**Système d'archivage audio –  
Partie 1-1: Disque DVD et migration de données pour le stockage à long terme  
des données audio**



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**AUDIO ARCHIVE SYSTEM –**

**Part 1-1: DVD disk and data migration for long term audio data storage**

**FOREWORD**

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International Standard IEC 62702-1-1 has been prepared by technical area 6: Storage media, storage data structures, storage systems and equipment, of IEC technical committee 100: Audio, video and multimedia systems and equipment.

The text of this standard is based on the following documents:

CDV	Report on voting
100/2449/CDV	100/2518/RVC

Full information on the voting for the approval of this standard 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

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## INTRODUCTION

Sound recordings such as music, speech, and storytelling are an important human heritage and should be preserved for as long as possible. However, we were not able to record sounds in order to preserve them in the past. The first recoding was achieved by Edison in 1877.

Although various technologies were invented later, most of them have limitations for audio archives because storage life time is limited and the sound quality deteriorates when it is transferred to the next generation storage device.

The progress of LSI technology made digital recording of recorded sound possible. The digital recording is very suitable for audio archiving because the migration is performed by copying digital data.

For this purpose various recording materials exist, such as optical disks, magnetic disks, magnetic tape and nonvolatile memory such as a phase change memory.

This International Standard specifies physical and logical aspects for a standard of audio archives of various storage types which are typically used for audio archives in markets.

The IEC 62702 series currently consists of:

Part 1 specifies the minimum requirements on physical aspects of optical disks for digital sound recordings. Part 1-1 specifies DVD optical disks and Part 1-2 specifies BD optical disks.

Part 2 specifies the minimum requirements for digitization of content, format of digitised content, content information and media inspection.

## AUDIO ARCHIVE SYSTEM –

### Part 1-1: DVD disk and data migration for long term audio data storage

#### 1 Scope

This part of IEC 62702 specifies a method of data-quality assurance for writable DVD disks (hereinafter disks) which are specified for long term data storage, and a data migration method which can sustain the recorded data on disks for long term audio data presentation. The writable disks include recordable disks such as DVD-R, and +R format, and rewritable disks such as DVD-RW, +RW format and DVD-RAM.

#### 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 16448:2002, *Information technology – 120 mm DVD – Read-only disk*

ISO/IEC 16963, *Information technology – Digitally recorded media for information interchange and storage – Test method for the estimation of lifetime of optical media for long-term data storage*

ISO/IEC 29121:2013, *Information technology – Digitally recorded media for information interchange and storage – Data migration method for DVD-R, DVD-RW, DVD-RM, +R, and +RW disks*

#### 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

##### 3.1

##### **BER max**

maximum byte error rate at any consecutive 32 ECC blocks on a disk as measured in the first pass of the decoder before correction

Note 1 to entry: BER max is applied to DVD-RAM disks.

Note 2 to entry: This note applies to the French language only.

##### 3.2

##### **High Life**

lifetime for use of data migration and identical to  $B_{0,0001}$  Life which is 0,000 001 quantile of the lifetime distribution (i.e. 0,000 1 % failure time) or 99,999 9 % survival lifetime

##### 3.3

##### **$B_5$ Life**

5 percentile of the lifetime distribution (i.e. 5 % failure time) or 95 % survival lifetime