

TECHNICAL REPORT

Overview of Universal Archival Disk Format (UADF)



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IEC Secretariat
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

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Overview of Universal Archival Disk Format (UADF)

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OVERVIEW OF UNIVERSAL ARCHIVE DISK FORMAT (UADF)

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IEC 63475 has been prepared by technical area 6: Storage media, storage data structures, storage systems and equipment, of IEC technical committee TC 100: Audio, video and multimedia systems and equipment. It is a Technical Report.

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

The language used for the development of this Technical Report is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

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- withdrawn, or
- revised.

INTRODUCTION

To date, many kinds of storage media and storage devices for digital data storage have been used. For example, flexible disks, optical disks, magnetic tape cartridges, secure digital (SD) cards, flash drives, hard disk drives (HDD), solid-state drives (SSD). Each of them has different characteristics in terms of volatility, mutability, accessibility, and addressability, where different management methods for recorded data files and different systemization technologies are applied. However, it is not easy to manipulate the characteristics properly, especially in personal, home and small office environments. As a result, many files recorded on storage media in the past cannot be recovered due to media age, digital rights management (DRM), compatibility between PC and drive interfaces, drives and media, operation systems (OS) and file systems, applications and file formats, and so on, making storage media unusable. This situation will continue for future generations.

This document describes the significant perspectives to solve the problems of file system compatibility and also the age of the media and DRM by specifying a volume and file structure for interchanging files in a data archive system capable of preserving data for the long term.

OVERVIEW OF UNIVERSAL ARCHIVE DISK FORMAT (UADF)

1 Scope

This document describes a universal volume and file format for interchanging files on archive storages in personal computing and home entertainment environments.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

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

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

3.1

space

physically contiguous region

3.2

volume

physically or logically contiguous *space* (3.1) where the file system operates

3.3

physical volume

storage device (3.15) such as HDDs or SSDs, or *disks* (3.16) such as optical disks delivering a single *space* (3.1) or multiple *spaces*

Note 1 to entry: A single *space* is provided with no partitioning and plural *spaces* are provided with partitions, for example 128 in GUID partition table (GPT) format.

3.4

physical partition

contiguous *space* (3.1) created by partitioning a *physical volume* (3.3)

3.5

logical volume

logically contiguous region as a *volume* (3.2) consisting of *physical volumes* (3.3)

3.6

multi-volume

region consists of more than one *volume* (3.2)

3.7

operational volume

volume (3.2) assigned to a file system to work