IEC/TR 62291

Edition 2.0 2009-02

TECHNICAL REPORT

Multimedia data storage – Application program interface for UDF based file systems

IEC/TR 62291:2009(E)

IEC Central Office
3, rue de Varembé
CH-1211 Geneva 20
Switzerland
Email: inmail@iec.ch
Web: www.iec.ch

About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigenda or an amendment might have been published.

- Catalogue of IEC publications: www.iec.ch/searchpub
The IEC on-line Catalogue enables you to search by a variety of criteria (reference number, text, technical committee,…). It also gives information on projects, withdrawn and replaced publications.

- IEC Just Published: www.iec.ch/online_news/justpub
Stay up to date on all new IEC publications. Just Published details twice a month all new publications released. Available on-line and also by email.

- Electropedia: www.electropedia.org
The world's leading online dictionary of electronic and electrical terms containing more than 20 000 terms and definitions in English and French, with equivalent terms in additional languages. Also known as the International Electrotechnical Vocabulary online.

- Customer Service Centre: www.iec.ch/webstore/custserv
If you wish to give us your feedback on this publication or need further assistance, please visit the Customer Service Centre FAQ or contact us:

Email: csc@iec.ch
Tel.: +41 22 919 02 11
Fax: +41 22 919 03 00

IEC/TR 62291

Edition 2.0 2009-02

TECHNICAL REPORT

Multimedia data storage – Application program interface for UDF based file systems

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

PRICE CODE Q

ICS 33.160.40; 35.220

ISBN 2-8318-1031-0

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

MULTIMEDIA DATA STORAGE – APPLICATION PROGRAM INTERFACE FOR UDF BASED FILE SYSTEMS

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 provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with an IEC Publication.
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 62291, which is a technical report has been prepared by IEC technical committee 100: Audio, video and multimedia systems and equipment.

This second edition cancels and replaces the first edition, published in 2002, and constitutes a technical revision.

The significant changes with respect to the first edition are the following:

- reference document ISO/IEC 9945-1:1990 is replaced with ISO/IEC 9945-2:2003.
- reference document UDF 2.00 is replaced with UDF 2.01.

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

Enquiry draft	Report on voting
100/1452/CDV	100/1499/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 maintenance result 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.

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

INTRODUCTION

Interchangeable storage media have been widely employed for information interchange; the following extensions to their media format should therefore be standardized:

a) additional facilities including security (access control, originality management, etc.);

b) volume and file structure supporting the facilities;

c) API (Application Program Interfaces) to the volume and file structure.

For a number of disc media, ISO/IEC JTC1/SC15 developed a generic standard of volume and file structure and it was actually used for rewritable, recordable and read-only DVD and recordable CD file systems with some subsetting by OSTA (Optical Storage Technology Association). The subsetting specification is called a UDF (Universal Disk Format).

Additional facilities and an API for the UDF have been discussed in OITDA (Optoelectronic Industry and Technology Development Association). OITDA drafted their specifications and submitted them to JISC (Japanese Industrial Standard Committee). METI (Ministry of Economy, Trade and Industry, Japan) approved them and JSA (Japanese Standards Association) published them in July 2001 as

a) JIS/TR X 0040:2001 Security Extension to Universal Disk Format (UDF);

b) JIS/TR X 0041:2001 Application Program Interface for UDF based File Systems.

IEC/TC100 National Committee of Japan then submitted the English version of JIS/TR X 0041:2001 to IEC/TC100.

MULTIMEDIA DATA STORAGE – APPLICATION PROGRAM INTERFACE FOR UDF BASED FILE SYSTEMS

1 Scope

This Technical Report (TR) specifies an application program interface (API) for reading and writing the files which conform to the Universal Disk Format (UDF) ®[1] specification revision 2.00 developed by the Optical Storage Technology Association (OSTA) and its security extension.

2 Normative references

The following referenced documents are indispensable for the application 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 9945-2:2003, *Information technology – Portable Operating System Interface (POSIX) – Part 2: System Interfaces*

Universal Disk Format (UDF) Specification Revision 2.01, Optical Storage Technology Association (OSTA), 2000

Secure UDF, Revision 1.00, OSTA, 2002

JIS/TR X 0040:2001, *Security Extension to Universal Disk Format (UDF)*

NOTE JIS/TR X 0040 was translated into English under the title *Secure UDF Specification* (2002), see reference above.

3 Terms and definitions

For the purposes of this technical report, the following definitions apply.

3.1
access logging
security feature to record and refer to operations for each file; an access logging contains information on when the operation is applied, who applies the operation, and what type of operation is applied

3.2
security function
function that ensures that an implementation applies to each file when the implementation accesses to the files

NOTE A security function contains access logging, etc.

---

[1] Universal Disk Format (UDF) is a registered trademark developed by the Optical Storage Technology Association. This information is given for the convenience of users of this document and does not constitute an endorsement by IEC of the product named. Equivalent products may be used if they can be shown to lead to the same results.