

# INTERNATIONAL STANDARD



**Content management – Monitoring and management of personal digital content**



## THIS PUBLICATION IS COPYRIGHT PROTECTED

Copyright © 2017 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

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

Tel.: +41 22 919 02 11  
Fax: +41 22 919 03 00  
[info@iec.ch](mailto:info@iec.ch)  
[www.iec.ch](http://www.iec.ch)

### About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

### 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.

#### IEC Catalogue - [webstore.iec.ch/catalogue](http://webstore.iec.ch/catalogue)

The stand-alone application for consulting the entire bibliographical information on IEC International Standards, Technical Specifications, Technical Reports and other documents. Available for PC, Mac OS, Android Tablets and iPad.

#### IEC publications search - [www.iec.ch/searchpub](http://www.iec.ch/searchpub)

The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee,...). It also gives information on projects, replaced and withdrawn publications.

#### IEC Just Published - [webstore.iec.ch/justpublished](http://webstore.iec.ch/justpublished)

Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and also once a month by email.

#### Electropedia - [www.electropedia.org](http://www.electropedia.org)

The world's leading online dictionary of electronic and electrical terms containing 20 000 terms and definitions in English and French, with equivalent terms in 16 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

#### IEC Glossary - [std.iec.ch/glossary](http://std.iec.ch/glossary)

65 000 electrotechnical terminology entries in English and French extracted from the Terms and Definitions clause of IEC publications issued since 2002. Some entries have been collected from earlier publications of IEC TC 37, 77, 86 and CISPR.

#### IEC Customer Service Centre - [webstore.iec.ch/csc](http://webstore.iec.ch/csc)

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: [csc@iec.ch](mailto:csc@iec.ch).

# INTERNATIONAL STANDARD



**Content management – Monitoring and management of personal digital content**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

ICS 35.040.99; 35.100.01

ISBN 978-2-8322-4897-3

**Warning! Make sure that you obtained this publication from an authorized distributor.**

## CONTENTS

|   |    |
|---|----|
| FOREWORD.....   | 4  |
| INTRODUCTION.....   | 6  |
| 1 Scope.....  | 7  |
| 2 Normative references .....  | 7  |
| 3 Terms, definitions and abbreviated terms .....                      | 7  |
| 3.1 Terms and definitions.....  | 7  |
| 3.2 Abbreviated terms.....  | 8  |
| 4 Basic system structure .....  | 8  |
| 4.1 View of digital content.....                                      | 8  |
| 4.2 Consumption of digital content .....                              | 10 |
| 5 Requirements .....  | 11 |
| 5.1 General.....  | 11 |
| 5.2 Required functionalities.....                                     | 11 |
| 5.2.1 Content devices.....  | 11 |
| 5.2.2 Content information server.....                                 | 11 |
| 5.2.3 Personal content monitoring device .....                        | 11 |
| 6 General measures for visualizing personal content .....             | 12 |
| 6.1 Protocol .....  | 12 |
| 6.2 Application layer .....   | 12 |
| 6.2.1 General requirement.....  | 12 |
| 6.2.2 HTML5 .....   | 12 |
| 6.2.3 Improved view of my library .....                               | 12 |
| 7 Sending content information to servers or cloud .....               | 13 |
| 7.1 General.....  | 13 |
| 7.1.1 Content meta and base information .....                         | 13 |
| 7.1.2 Content meta information.....                                   | 13 |
| 7.1.3 Content base information.....                                   | 13 |
| 7.1.4 Content extension information .....                             | 14 |
| 7.2 Data format of content preservation information .....             | 14 |
| 7.2.1 Basic structure content preservation information.....           | 14 |
| 7.2.2 Entire content information.....                                 | 19 |
| 7.2.3 Addition and deletion information for content on devices .....  | 19 |
| 7.2.4 Modification information for content on devices.....            | 20 |
| 7.2.5 Clear all.....  | 21 |
| 7.3 Application-type dependent content information .....              | 21 |
| 7.3.1 General .....   | 21 |
| 7.3.2 Meta information.....   | 21 |
| 8 Managing content information on servers or cloud .....              | 22 |
| 8.1 Receiving content information from devices .....                  | 22 |
| 8.1.1 Receiving entire content information .....                      | 22 |
| 8.1.2 Receiving addition/deletion request on content information..... | 22 |
| 8.2 Saving content information.....                                   | 22 |
| 8.3 Interface for extracting content information .....                | 22 |
| 8.3.1 General .....   | 22 |
| 8.3.2 Extract content information by user ID units.....               | 23 |

|  |    |
|--|----|
| 8.3.3 Extract the summary data from content information .....  | 23 |
| 9 Creating and sending HTML to browser .....   | 23 |
| Annex A (informative) Communication between content information servers and monitoring clients ..... | 24 |
| Bibliography .....   | 25 |
| Figure 1 – Sending content preservation information to servers or cloud .....                        | 9  |
| Figure 2 – Request for extracting content information .....  | 9  |
| Figure 3 – Request for viewing digital content .....   | 10 |
| Figure 4 – Consumption of digital content .....  | 11 |
| Figure 5 – Example of view of my library .....   | 12 |
| Figure 6 – Content preservation information .....  | 18 |
| Figure 7 – Entire content preservation information .....   | 19 |
| Figure 8 – Added content preservation information .....  | 20 |
| Figure 9 – Deleted content preservation information .....  | 20 |
| Figure 10 – Modified content preservation information .....  | 21 |
| Figure A.1 – Protocol .....  | 24 |
| Figure A.2 – Operating sequence .....  | 24 |
| Table 1 – Management table for application type .....  | 14 |
| Table 2 – List of meta_head_XXXX .....   | 22 |

This document is a preview generated by EVS

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

# **CONTENT MANAGEMENT – MONITORING AND MANAGEMENT OF PERSONAL DIGITAL CONTENT**

## 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.

International Standard IEC 62919 has been prepared by technical area 8: Multimedia home systems and applications for end-user network, of IEC technical committee 100: Audio, video and multimedia systems and equipment.

The text of this International Standard is based on the following documents:

| CDV          | Report on voting |
|--------------|------------------|
| 100/2803/CDV | 100/2924/RVC     |

Full information on the voting for the approval of this International Standard 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.

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

Users have ICT devices on which they store various digital content, such as movies, photos, music, e-books and documents. Since the capacity of each ICT device is getting larger and online storage services are provided, digital content can be stored on a wide range of devices. Users also create backup copies of digital content on multiple devices. That causes the production of multiple generations of digital copies from an original and the digital content can be put somewhere in any order. As a result, digital content goes into hiding and users can be unaware of the location where the digital content is stored. Therefore, users have difficulties in searching for and finding the digital content they want, or it takes a lot of time to find the content.

Since users may forget the provenance of the digital content saved on their devices, the information to identify the distribution channel is helpful for the users.

Even if users can easily recognize digital content, its location or its directory on a specific device, it is not enough to solve the difficulties.

This document specifies the method in which each device makes content preservation information in the specified format and sends it to the server system. The operation enables the visualization of all their digital content, which is separately stored on various devices, and an easy way to find the desired content.

In addition, the central server, which gathers the content preservation information from many users' own devices, provides the interface to derive the summary from the gathered information. By deriving users' content preservation information, a service provider can analyse the users' usage and preference information, and it helps launch new flexible digital content distribution structures.



## CONTENT MANAGEMENT – MONITORING AND MANAGEMENT OF PERSONAL DIGITAL CONTENT

### 1 Scope

This document specifies requirements, the protocol and the data format to visualize personal content saved on the various devices, such as mobile phones, music players, personal computers, hard disk recorders and e-book devices.

This document also specifies methods for gathering information of digital content saved on personal devices and shared within a group, and to extract the gathered information by uniform application interface.

### 2 Normative references

There are no normative references in this document.

### 3 Terms, definitions and abbreviated terms

#### 3.1 Terms and definitions

For the purposes of this document, the following terms and definitions 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>

##### 3.1.1

##### **content preservation information**

information on content that is preserved in a user's device

##### 3.1.2

##### **content information server**

server which receives and stores content preservation information

##### 3.1.3

##### **personal content**

digital content stored on user devices

Note 1 to entry: Personal content includes content that users purchase or create by themselves.

##### 3.1.4

##### **content device**

user device where content is stored

##### 3.1.5

##### **device ID**

identifier to specify a device