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TECHNICAL REPORT

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Multimedia home server systems – Implementation of digital rights permission code

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MULTIMEDIA HOME SERVER SYSTEMS – IMPLEMENTATION OF DIGITAL RIGHTS PERMISSION CODE

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IEC 62636, which is a technical report, has been prepared by technical area 8: Multimedia home server 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
100/1561/DTR	100/1611/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.

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INTRODUCTION

IEC 62227, which defines the digital rights permission code, is structured so that information required by engineers familiar with how permission information is coded can easily access it. However, for engineers who are not familiar with the code, there are few descriptions of specific service scenarios and the permission code that corresponds to them. For these engineers it is therefore difficult to understand how to implement a digital rights permission code using just the information given in IEC 62227.

This Technical Report provides guidelines for digital rights permission code technology to supplement the information presented in IEC 62227 and to foster the use of digital rights permission code.

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MULTIMEDIA HOME SERVER SYSTEMS – IMPLEMENTATION OF DIGITAL RIGHTS PERMISSION CODE

1 Scope

This Technical Report provides guidelines to implement the digital rights permission code. It gives examples of fixed length permission codes derived from restricted code length profiling by using 23 specific usage scenarios to profile the variable-length digital rights permission code defined in IEC 62227 as fixed length digital rights permission code.

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.

IEC 62227, *Multimedia home server systems – Digital rights permission code*

3 Terms, definitions, and abbreviations

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3.1 Terms and definitions

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3.1.1
permission
act by a certain issuing entity to authorize the use of content to a certain receiving entity under a certain set of permission classifications and usage conditions

NOTE The issuing entity and/or the receiving entity may not only be human, but also a device, storage medium, organization, domain or another entity.

3.1.2
home server
client device that serves as a gateway to a home domain

3.1.3
compliant device
device that possesses functions to control content access as specified in a compliant license

3.1.4
domain
set of actors to which a common set of rules apply in the context of content management

3.1.5
subscription
fee-based permission that charges per time period

3.1.6
coupon
fee-based permission that uses coupons, a form of alternative currency that can be exchanged for a given piece of content

NOTE Coupons are distributed to users by the content sponsor in order to increase user contact with that sponsor.

3.1.7
move
usage type that permits the moving of content to a compliant medium under a reuse permission

NOTE Permission conditions are further specified in the condition parameters.

3.1.8
copy
usage type that permits the copying of content to a compliant medium under a reuse permission

NOTE Permission conditions are further specified in the condition parameters.

3.1.9
export
usage type that permits the exporting of content to a non-compliant medium under a reuse permission

NOTE Permission conditions are further specified in the condition parameters.

3.1.10
permission code
code system that represents codes through a common system so that permissions from two parties with differing DRM implementations can interact with each other

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3.1.11
parent permission code
permission code issued for a group of content

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3.1.12
child permission code
permission code issued for an individual piece of content belonging to a larger group

3.2 Abbreviations

CD	Compact Disc
CPRM	Content Protection for Recordable Media
DCF	DRM Content Format
DRM	Digital Rights Management (System)
DRPC	Digital Rights Permission Code
DVD	Digital Versatile Disk
HD	High Definition
HDD	Hard Disk Drive
ID	Identifier
SAFIA	Security Architecture For Intelligent Attachment
WMT	Windows Media Technology

4 Purpose and justification for this TR

4.1 General

The digital rights permission code defined in IEC 62227 is variable-length, and there is no upper limit to the code length. This is because it was designed to be a very versatile specification capable of encoding permission conditions for a great variety of anticipated usage scenarios.

However, when digital rights permission code is used to provide actual services, it will be used in environments where there are practical limitations on computation and distribution resources, so it is necessary to take steps such as shortening the overall code length for the permission code to lower the cost of distribution resources and making the code length for individual permissions fixed-length so that computation can be more efficient.

Therefore, it is necessary to create guidelines for the individual permission code lengths within the overall digital rights permission code in order to restrict the length of the variable-length digital rights permission code defined in IEC 62227 when providing actual services.

To that end, this TR presents typical content usage scenarios anticipated for actual services and validates the permission code lengths for the usage conditions used in these scenarios to define restricted-length individual digital rights permission code profiles and presents guidelines for the use of digital rights permission code.

4.2 Pupose

The following applies to this Technical Report.

- The digital rights permission code lengths are fixed-length.
- The number of occurrences for each digital rights permission code unit are counted.

In addition to the scenarios that are supported under the existing digital rights management described in IEC 62227, the anticipated usage scenarios were selected based on usage scenarios required for a home server environment.

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The specific usage scenarios specified in this Technical Report are the following:

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- content purchase (see Figure 1);
- rental with time or playback limits (see Figure 2);
- subscription (see Figure 3);
- direct retrieval of content from a device: Scenario 1 (see Figure 4);
- direct retrieval of content from a device: Scenario 2 (see Figure 5);
- unlimited play (see Figure 6);
- preview (see Figure 7);
- multiple permissions for a multipart DCF (see Figure 8);
- inheritance (see Figure 9);
- export of OMA DRM content (see Figure 10);
- combinations of constraint elements (see Figure 11);
- FairPlay (see Figure 12);
- CPRM (see Figure 13);
- SAFIA (see Figure 14);
- ringtones (see Figure 15);
- download of content free with advertising (see Figure 16);
- streaming of content free with advertising (see Figure 17);
- giveaways (see Figure 18);
- coupons (discount points) (see Figure 19);
- privacy information disclosure (see Figure 20);
- copying 9 times with unlimited moving (see Figure 21);
- subscription games (see Figure 22);

- software rental (see Figure 23).

Detailed information about the digital rights permission code generated for each usage scenario is also provided in Annex B.

5 Usage scenarios

5.1 General

This clause presents the usage scenarios profiled in this report. The details of the permission units that were used in each scenario are described in Annex B.

5.2 Content purchase

Mr. S purchases a song from a content provider, downloads it, and plays it back on Device Y, which belongs to domain D, and he exports it to a CD, see Clauses B.2 to B.5, No.1

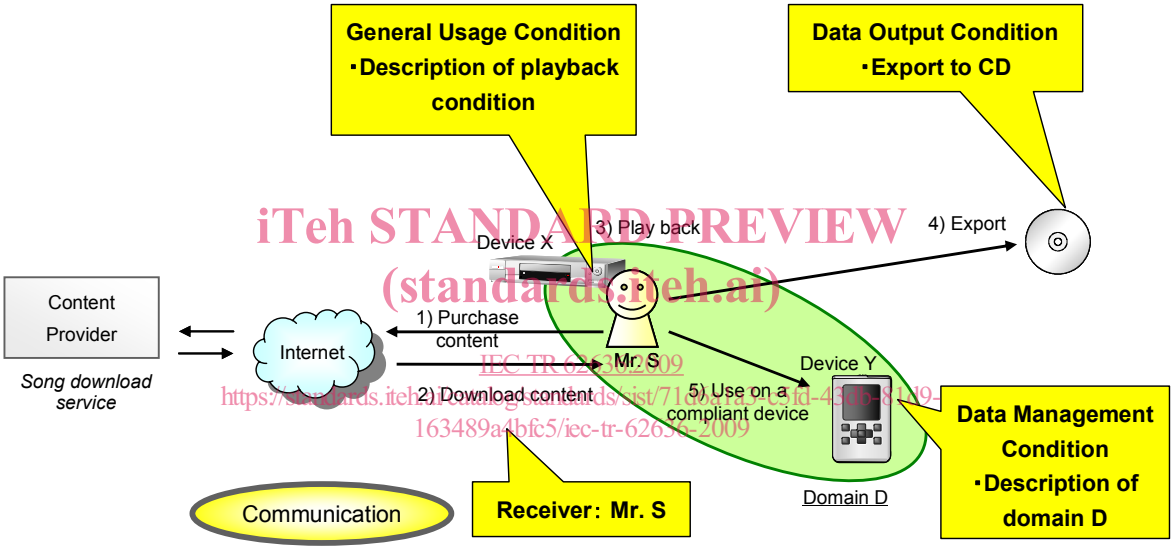

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Figure 1 – Content purchase

5.3 Rental with time or playback limit

Mr. S rents video content from a content provider. He downloads it and plays it back. It has a playback condition stipulating that the playback time is limited to 48 h, see Clauses B.2 to B.4, No.2.