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Information technology — MPEG video technologies —

Part 5: Reconfigurable media coding conformance and reference software

Technologies de l'information — Technologies vidéo MPEG —

Partie 5: Conformité du codage média reconfigurable et logiciels de référence

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Contents

Page

Foreword ..... **iv**
Introduction ..... **v**
1 Scope **1**
2 Normative references **1**
3 Terms and definitions **2**
4 Conformance testing of ISO/IEC 23002-4 Media tool library **2**
5 Conformance to ISO/IEC 14496-2 Simple Profile **3**
6 Conformance to ISO/IEC 14496-10 Constrained Baseline Profile **5**
7 Conformance to ISO/IEC 14496-10 Progressive High Profile **7**
8 Conformance to ISO/IEC 14496-16, SC3DMC **10**
9 RMC Simulation Model (RSM) **11**
10 Structure of the RMC reference software **12**
Annex A (informative) **Information on compiling the RMC reference software** **13**

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information*.

This second edition cancels and replaces the first edition (ISO/IEC 23002-5:2013), of which it constitutes a minor revision. It incorporates ISO/IEC 23002-5:2013/Amd 1 and ISO/IEC 23002-5:2013/Amd 2.

The changes compared to the previous edition are as follows:

— The Scope is updated and Annex A is added to clarify the purpose and usage of the reference software.

— Reference software implementations from the incorporated amendments are newly included in the electronic attachment, available at http://standards.iso.org/iso-iec/23002/-5/ed-2/en.

A list of all parts in the ISO/IEC 23002 series can be found on the ISO website.

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Introduction

Two International Standards define the Reconfigurable Media Coding (RMC) framework: ISO/IEC 23001-4 and ISO/IEC 23002-4.

ISO/IEC 23001-4 defines the overall framework as well as the standard languages that are used to specify a codec configuration of an RMC decoder. The Abstract Decoder Model (ADM) is an executable description that uses the modular data flow computation model and constitutes the only necessary specification for defining a codec configuration.

ISO/IEC 23002-4 specifies, in the form of a unified library of video coding algorithms, the modular components called Functional Units (FU) that in given configurations build the ADM of some profile and levels of the current existing decoding standards.

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Information technology — MPEG video technologies —

Part 5: Reconfigurable media coding conformance and reference software

1 Scope

This document describes:

— what is meant by conformance of what is specified in ISO/IEC 23002-4,

— the structure of the reference software related to what is specified in ISO/IEC 23002-4.

Currently the following profiles are included in ISO/IEC 23002-4 and in this document as reference software:

— ISO/IEC 14496-2 Simple Profile,

— ISO/IEC 14496-10 Constrained Baseline Profile,

— ISO/IEC 14496-10 Progressive High Profile,

— ISO/IEC 14496-16 SC3DMC, and

— ISO/IEC 23008-2 Main Profile.

NOTE The reference software supports the decoding of bitstreams that conform to the Main Profile of ISO/IEC 23008-2, but does not support display-related features indicated in supplemental enhancement information (the support for which is a display capability that is outside the scope of ISO/IEC 23008-2).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 14496-2, *Information technology — Coding of audio-visual objects — Part 2: Visual*

ISO/IEC 14496-4, *Information technology — Coding of audio-visual objects — Part 4: Conformance testing*

ISO/IEC 14496-10, *Information technology — Coding of audio-visual objects — Part 10: Advanced Video Coding*

ISO/IEC 14496-16, *Information technology — Coding of audio-visual objects — Part 16: Animation Framework eXtension (AFX)*

ISO/IEC 23001-4, *Information technology — MPEG systems technologies — Part 4: Codec configuration representation*

ISO/IEC 23002-4, *Information technology — MPEG video technologies — Part 4: Video tool library*

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3 Terms and definitions

For the purposes of this document, terms and definitions given in ISO/IEC 23001-4 and 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 https://www.iso.org/obp

3.1
CBP
Constrained Baseline Profile
profile of the advanced video coding standard defined in ISO/IEC 14496-10

3.2
PHP
Progressive High Profile
profile of the advanced video coding standard defined in ISO/IEC 14496-10

3.3
RMC
Reconfigurable Media Coding
framework defined with support for media coding standards at the tool level

3.4
SP
Simple Profile
profile of the MPEG-4 Part 2 standard defined in ISO/IEC 14496-2

4 Conformance testing of ISO/IEC 23002-4 Media tool library

A decoder in RMC is specified as a network (i.e. configuration) of FUs instantiated from the Media tool library. The conformance testing of an instantiated RMC decoder shall undergo the same procedure established for testing conformance to a given standard.

Therefore, the conformance tests for the Media tool library and the standard configurations specified in ISO/IEC 23002-4 consist of giving as input to the instantiated RMC decoder configurations the corresponding set of conformance bitstreams provided in ISO/IEC 14496-4 and of verifying that the generated outputs result identical to the set of uncompressed video sequences decoded as specified in ISO/IEC 14496-4.

Figure 1 illustrates the conformance concept and procedure. Functional units instantiated from the Media tool library specified in ISO/IEC 23002-4 and configured with the network configurations specified in ISO/IEC 23002-4 builds an ADM that decodes a bitstream and generates a video sequence that is compared to the one decoded by a reference software.

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