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Information technology — MPEG audio technologies —

Part 4: Dynamic Range Control

AMENDMENT 2: Reference software

Technologies de l'information — Technologies audio MPEG —
Partie 4: Contrôle de gamme dynamique

AMENDEMENT 2: Logiciel de référence

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ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

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

A list of all parts in the ISO/IEC 23003 series can be found on the ISO website.

Information technology — MPEG audio technologies —

Part 4:
Dynamic Range Control

AMENDMENT 2: Reference software

Clause 7

Add a new clause after Clause 7:

8 Reference software

8.1 Reference software structure

8.1.1 General

Clause 8 contains reference software for MPEG-D DRC which has been derived from reference models used in the process of developing this document. The software is provided as an electronic attachment to this document.

Reference software is normative in the sense that it correctly implements the MPEG-D DRC decoding processes described in this document. Complying ISO/IEC 23003-4 implementations are not expected to follow the algorithms or the programming techniques used by the reference software. Although the decoding software is considered normative, it cannot add anything to the textual technical description of MPEG-D DRC included in this document.

The software described in Clause 8 and in Annex H is divided into three categories:

a) **Bitstream decoding software** is catalogued in 8.2. This software accepts bitstreams encoded according to the normative specification in this document and applies the bitstream content to an input audio file. While this software appears in the normative part of this document, attention is drawn to the fact that the implementation techniques used in this software are not considered normative (several different implementations could produce the same result) but the software is considered normative in that it correctly implements the MPEG-D DRC decoding processes described in this document.

b) **Bitstream encoding software** is catalogued in I.1 (which is informative). This software creates bitstreams according to the normative specification in this document. Note that the techniques used for encoding are not specified by this document.

c) **Utility software** is catalogued in I.2 (which is informative). This software was found useful by the developers of this document, but their technical specification is outside of the scope of this document.

8.2 Bitstream decoding software

8.2.1 General

The provided bitstream decoding software is a normative reference implementation of the specification text in this document.

8.2.2 MPEG-D DRC decoding software

Location	Content
MPEG_D_DRC_refsoft\modules\drcTool\drcToolDecoder	MPEG-D DRC Decoder (DRC Tool Decoder)
MPEG_D_DRC_refsoft\modules\uniDrcModules	DRC Tool Sub-Modules
MPEG_D_DRC_refsoft\modules\peakLimiter	Peak Limiter Module

Annex G

Add new annexes after Annex G:

Annex H

(normative)

Reference software disclaimer

Each source code module in this document contains a copyright disclaimer which shall not be removed from the source code module.

The generic version of this disclaimer is provided below:

Software Copyright Licensing Disclaimer for MPEG Standards

This software module was originally developed *by <FN1> <LN1> (<CN1>) and edited by <FN2> <LN2> (<CN2>), <FN3> <LN3> (<CN3>),* in the course of development of the <standard> for reference purposes and its performance may not have been optimized. This software module is an implementation of one or more tools as specified by the <standard>.

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NOTE 1 In the text, <standard> should be replaced with the appropriate International Standard, e.g. ISO/IEC 23003-4.

NOTE 2 <FN> = First Name, <LN> = Last name, <CN> = Company Name.

NOTE 3 Sentences in *italics* are not required in the statement if the original developer does not wish to be identified.

NOTE 4 Sentences in **bold** are not required in the statement if the original developer allows unrestricted use of this software.

NOTE 5 Reference to "ITU Recommendation" may be omitted when the module is deemed not to be relevant for ITU Recommendations.

Annex I

(informative)

Reference software

I.1 Bitstream encoding software

I.1.1 General

The provided bitstream encoding software is an informative reference implementation that may be used to create bitstreams according to the normative specification of this document. Note that the techniques used for encoding are not specified by this document.

I.1.2 MPEG-D DRC encoding software

Location	Content
MPEG_D_DRC_refsoft\modules\drcTool\drcToolEncoder	MPEG-D DRC Encoder (DRC Tool Encoder)

I.2 Additional utility software

I.2.1 General

Software that appears in I.2 has proven to be useful to the developers of this document but it is not a normative reference implementation.

I.2.2 MPEG-D DRC utility software

Location	Content
MPEG_D_DRC_refsoft\tools\fftlib	simple FFT/STFT library
MPEG_D_DRC_refsoft\tools\qmflib	simple QMF library
MPEG_D_DRC_refsoft\tools\readonlybitbuf	bitstream reader library
MPEG_D_DRC_refsoft\tools\wavIO	wav file reader/writer library
MPEG_D_DRC_refsoft\tools\writeonlybitbuf	bitstream writer library
MPEG_D_DRC_refsoft\tools\xmlReaderLib	simple XML reader library

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