

First edition
2015-07-15

AMENDMENT 1
2016-08-01

**Information technology — MPEG
systems technologies —**

Part 11:
**Energy-efficient media consumption
(green metadata)**

**AMENDMENT 1: Carriage of green
metadata in an HEVC SEI message**

Technologies de l'information — Technologies des systèmes MPEG —

*Partie 11: Consommation des supports éconergétiques
(métadonnées vertes)*

*AMENDEMENT 1: Transport des métadonnées vertes dans un
message HEVC SEI*

IECNORM.COM : Click to view the full PDF of ISO/IEC 23001-11:2015/Amd 1:2016



COPYRIGHT PROTECTED DOCUMENT

© ISO/IEC 2016, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

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

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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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 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.

Amendment 1 to ISO/IEC 23001-11:2015 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information*.

IECNORM.COM : Click to view the full PDF of ISO/IEC 23001-11:2015/Amd 1:2016

Information technology — MPEG systems technologies —

Part 11:

Energy-efficient media consumption (green metadata)

AMENDMENT 1: Carriage of green metadata in an HEVC SEI message

Page 1, Normative references

Add the following reference:

ISO/IEC 23008-2, *Information technology — High efficiency coding and media delivery in heterogeneous environments — Part 2: High efficiency video coding*

Page 5, Symbols and abbreviated terms

Replace the term AVC with the following:

AVC Advanced Video Coding - ISO/IEC 14496-10

Add the following term:

HEVC High Efficiency Video Coding - ISO/IEC 23008-2

Page 13, 6.2.2, second table

Replace the second table with the following:

	Size (bits)	Descriptor
num_quality_levels	4	unsigned integer
lower_bound	8	unsigned integer
if (lower_bound > 0)		
upper_bound	8	unsigned integer
rgb_component_for_infinite_psnr	8	unsigned integer
for (i = 1; i <= num_quality_levels; i++) {		
max_rgb_component[i]	8	unsigned integer
scaled_psnr_rgb[i]	8	unsigned integer
}		

Replace the text in Annex A with the following text:

A.1 Green Metadata SEI message syntax and semantics carried in AVC NAL units

Clause A.1 describes the payload syntax and semantics if payloadType 56 appears in an AVC NAL unit with nal_unit_type set to 6.

A.1.1 Syntax

	C	Descriptor
green_metadata(payload_size)		
green_metadata_type	5555	u(8)
if (green_metadata_type == 0) {		
period_type	5	u(8)
if (period_type == 2)		
num_seconds	5	u(16)
else if (period_type == 3)		
num_pictures	5	u(16)
percent_non_zero_macroblocks	5	u(8)
percent_intra_coded_macroblocks	5	u(8)
percent_six_tap_filterings	5	u(8)
percent_alpha_point_deblocking_instances	5	u(8)
}		
else if (green_metadata_type == 1) {		
xsd_metric_type	5	u(8)
xsd_metric_value	5	u(16)
}		

A.1.2 Semantics

green_metadata_type – specifies the type of metadata that is present in the SEI message. If green_metadata_type is 0, then complexity metrics are present. Otherwise, if green_metadata_type is 1, then metadata enabling quality recovery after low-power encoding is present. Other values of green_metadata_type are reserved for future use by ISO/IEC.

A.2 Green Metadata SEI message syntax and semantics carried in HEVC NAL units

Clause A.2 describes the payload syntax and semantics if payloadType 56 appears in an HEVC NAL unit with nal_unit_type set to PREFIX_SEI_NUT.

A.2.1 Syntax

	Descriptor
green_metadata(payload_size)	
green_metadata_type	u(8)
if (green_metadata_type == 1) {	
xsd_metric_type	u(8)
xsd_metric_value	u(16)
}	