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**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*

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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*.

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# 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
<b>num_quality_levels</b>	4	unsigned integer
<b>lower_bound</b>	8	unsigned integer
if (lower_bound > 0)		
<b>upper_bound</b>	8	unsigned integer
<b>rgb_component_for_infinite_psnr</b>	8	unsigned integer
for (i = 1; i <= num_quality_levels; i++) {		
<b>max_rgb_component[i]</b>	8	unsigned integer
<b>scaled_psnr_rgb[i]</b>	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 )		
<b>green_metadata_type</b>	5555	u(8)
if ( green_metadata_type == 0 ) {		
<b>period_type</b>	5	u(8)
if ( period_type == 2 )		
<b>num_seconds</b>	5	u(16)
else if ( period_type == 3 )		
<b>num_pictures</b>	5	u(16)
<b>percent_non_zero_macroblocks</b>	5	u(8)
<b>percent_intra_coded_macroblocks</b>	5	u(8)
<b>percent_six_tap_filterings</b>	5	u(8)
<b>percent_alpha_point_deblocking_instances</b>	5	u(8)
}		
else if ( green_metadata_type == 1 ) {		
<b>xsd_metric_type</b>	5	u(8)
<b>xsd_metric_value</b>	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 )	
<b>green_metadata_type</b>	u(8)
if ( green_metadata_type == 1 ) {	
<b>xsd_metric_type</b>	u(8)
<b>xsd_metric_value</b>	u(16)
}	