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TECHNICAL CORRIGENDUM 1

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Information technology — JPEG 2000 image coding system: Core coding system

TECHNICAL CORRIGENDUM 1

Technologies de l'information — Système de codage d'image JPEG 2000: Système de codage noyau

RECTIFICATIF TECHNIQUE 1

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INTERNATIONAL STANDARD
ITU-T RECOMMENDATION

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1) Table I.2

Replace the Image Header box Comments field with the following text:

This box specifies aspects of the reference grid geometry, number of components and bit depth.

2) Annex I.5.3

*Replace the second sentence of the **ihdr** item with the following text*:

This box specifies information about the reference grid geometry, bit depth, and number of components.

3) Annex I.5.3.1

a) *Add the following paragraph to the end of the HEIGHT item*:

The HEIGHT is not always the same as the default image height. See I.5.3.1.1 for formulae specifying the default image dimensions when no other rendering information is present. The HEIGHT value will always be an upper bound on the default image height.

b) *Add the following paragraph to the end of the WIDTH item*:

The WIDTH is not always the same as the default image width. See I.5.3.1.1 for formulae specifying the default image dimensions when no other rendering information is present. The WIDTH value will always be an upper bound on the default image width.

c) *Add a new clause I.5.3.1.1*

I.5.3.1.1 Default Image Dimensions

In instances where only image samples for individual components are needed, refer directly to the component sample dimension equation B-2.

However, when some rendering is required, lacking other rendering or expansion directives, the default image dimensions aim to maintain the image area aspect ratio and are computed from the codestream SIZ marker as a function of, M, the greatest common divisor (gcd) of all the subsampling factors ($XRsiz^c$, $YRsiz^c$) for all components of the image. Specifically:

$$M = \gcd\{XRsiz^c, YRsiz^c \mid \text{for all } c,\ 0 \le c < Csiz\} \tag{I-1}$$

And the default image dimensions are:

$$(\text{width, height}) = \left(\left\lceil \frac{Xsiz}{M} \right\rceil - \left\lceil \frac{XOsiz}{M} \right\rceil, \left\lceil \frac{Ysiz}{M} \right\rceil - \left\lceil \frac{YOsiz}{M} \right\rceil\right) \tag{I-2}$$

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If M is equal to one, then the reference grid image area dimensions shown in WIDTH and HEIGHT are equal to the default image width and height. Otherwise, when M > 1, the default image has dimensions smaller than WIDTH and HEIGHT.

NOTE – For example, suppose there is a codestream with Xsiz = Ysiz = 1024 and XOsiz = 3 and YOsiz = 2. This codestream in a JP2 file would have an Image Header box with WIDTH = 1021 and HEIGHT = 1022. The default image dimensions, however, will depend upon the values of XRsiz and YRsiz. Here are a few different possibilities:

a) If any of the subsampling factors $XRsiz^c$ or $YRsiz^c$ is one, then M = 1, and the default image dimensions will equal WIDTH and HEIGHT.

b) If XRsiz = 2 and YRsiz = 4, then M = 2 and the default dimensions are image width = 512 – 2 = 510 and image height = 512 – 1 = 511.

c) If there are 3 components all with $XRsiz^c = YRsiz^c = 4$, then M = 4 and the default image width and height are both 256 – 1 = 255.

d) If there are 3 components with $XRsiz^0 = YRsiz^0 = 2$, $XRsiz^1 = YRsiz^1 = 3$, $XRsiz^2 = YRsiz^2 = 2$, then M = 1, and the default image dimensions will equal WIDTH and HEIGHT.

4) Annex I.5.3.2 through the remainder of Annex I

Confirm equations I-1 through I-3 and any references to them are renumbered as I-3 through I-5. Manually renumber if necessary.

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