

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

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Corrigendum 1
(01/2007)

SERIES T: TERMINALS FOR TELEMATIC SERVICES

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

Technical Corrigendum 1

ITU-T Recommendation T.800 (2002) – Technical
Corrigendum 1

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

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Summary

Corrigendum 1 to ITU-T Rec. T.800 (2002) | ISO/IEC 15444-1:2004 clarifies the default image dimensions expected for a JP2 file, which are potentially different from the JP2 WIDTH/HEIGHT fields.

Source

Corrigendum 1 to ITU-T Recommendation T.800 (2002) was approved on 13 January 2007 by ITU-T Study Group 16 (2005-2008) under the ITU-T Recommendation A.8 procedure. An identical text is also published as Technical Corrigendum 1 to ISO/IEC 15444-1.

FOREWORD

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**INTERNATIONAL STANDARD
ITU-T RECOMMENDATION**

**Information technology – JPEG 2000 image coding system:
Core coding system**

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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 (XR_{siz}^c , YR_{siz}^c) for all components of the image. Specifically:

$$M = \text{gcd}\{XR_{siz}^c, YR_{siz}^c \mid \text{for all } c, 0 \leq c < C_{siz}\} \quad (\text{I-1})$$

And the default image dimensions are:

$$(\text{width}, \text{height}) = \left(\left\lceil \frac{X_{siz}}{M} \right\rceil - \left\lceil \frac{XO_{siz}}{M} \right\rceil, \left\lceil \frac{Y_{siz}}{M} \right\rceil - \left\lceil \frac{YO_{siz}}{M} \right\rceil \right) \quad (\text{I-2})$$

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 $X_{\text{siz}} = Y_{\text{siz}} = 1024$ and $X_{\text{Osiz}} = 3$ and $Y_{\text{Osiz}} = 2$. 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 X_{Rsiz} and Y_{Rsiz} . Here are a few different possibilities:

- a) If any of the subsampling factors X_{Rsiz}^c or Y_{Rsiz}^c is one, then $M = 1$, and the default image dimensions will equal **WIDTH** and **HEIGHT**.
- b) If $X_{\text{Rsiz}} = 2$ and $Y_{\text{Rsiz}} = 4$, 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 $X_{\text{Rsiz}}^c = Y_{\text{Rsiz}}^c = 4$, then $M = 4$ and the default image width and height are both $256 - 1 = 255$.
- d) If there are 3 components with $X_{\text{Rsiz}}^0 = Y_{\text{Rsiz}}^0 = 2$, $X_{\text{Rsiz}}^1 = Y_{\text{Rsiz}}^1 = 3$, $X_{\text{Rsiz}}^2 = Y_{\text{Rsiz}}^2 = 2$, 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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