

I n t e r n a t i o n a l T e l e c o m m u n i c a t i o n U n i o n

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

T.800

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**

Technical Corrigendum 1

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

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications. The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

Compliance with this Recommendation is voluntary. However, the Recommendation may contain certain mandatory provisions (to ensure e.g. interoperability or applicability) and compliance with the Recommendation is achieved when all of these mandatory provisions are met. The words "shall" or some other obligatory language such as "must" and the negative equivalents are used to express requirements. The use of such words does not suggest that compliance with the Recommendation is required of any party.

INTELLECTUAL PROPERTY RIGHTS

ITU draws attention to the possibility that the practice or implementation of this Recommendation may involve the use of a claimed Intellectual Property Right. ITU takes no position concerning the evidence, validity or applicability of claimed Intellectual Property Rights, whether asserted by ITU members or others outside of the Recommendation development process.

As of the date of approval of this Recommendation, ITU had received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementers are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database at <http://www.itu.int/ITU-T/ipr/>.

© ITU 2007

All rights reserved. No part of this publication may be reproduced, by any means whatsoever, without the prior written permission of ITU.

CONTENTS

	<i>Page</i>
1) Table I.2	1
2) Annex I.5.3	1
3) Annex I.5.3.1	1
4) Annex I.5.3.2 through the remainder of Annex I	2

INTERNATIONAL STANDARD
ITU-T RECOMMENDATIONInformation technology – JPEG 2000 image coding system:
Core coding system

Technical Corrigendum 1

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:

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

And the default image dimensions are:

$$(\text{width}, \text{height}) = \left(\left\lceil \frac{\text{X}siz}{M} \right\rceil - \left\lceil \frac{\text{XO}siz}{M} \right\rceil, \left\lceil \frac{\text{Y}siz}{M} \right\rceil - \left\lceil \frac{\text{YO}siz}{M} \right\rceil \right) \quad (\text{I-2})$$

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 $Xsiz = Ysiz = 1024$ 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.

SERIES OF ITU-T RECOMMENDATIONS

Series A	Organization of the work of ITU-T
Series D	General tariff principles
Series E	Overall network operation, telephone service, service operation and human factors
Series F	Non-telephone telecommunication services
Series G	Transmission systems and media, digital systems and networks
Series H	Audiovisual and multimedia systems
Series I	Integrated services digital network
Series J	Cable networks and transmission of television, sound programme and other multimedia signals
Series K	Protection against interference
Series L	Construction, installation and protection of cables and other elements of outside plant
Series M	Telecommunication management, including TMN and network maintenance
Series N	Maintenance: international sound programme and television transmission circuits
Series O	Specifications of measuring equipment
Series P	Telephone transmission quality, telephone installations, local line networks
Series Q	Switching and signalling
Series R	Telegraph transmission
Series S	Telegraph services terminal equipment
Series T	Terminals for telematic services
Series U	Telegraph switching
Series V	Data communication over the telephone network
Series X	Data networks, open system communications and security
Series Y	Global information infrastructure, Internet protocol aspects and next-generation networks
Series Z	Languages and general software aspects for telecommunication systems