

Australian Standard™

**Information technology— JPEG 2000  
image coding system**

**Part 4: Conformance testing**

This Australian Standard was prepared by Committee IT-029, Coded Representation of Picture, Audio and Multimedia/Hypermedia Information. It was approved on behalf of the Council of Standards Australia on 14 May 2004.  
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Information technology—JPEG 2000  
image coding system

Part 4: Conformance testing

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## PREFACE

This Standard was prepared by the Standards Australia Committee IT-029, Coded Representation of Picture, Audio and Multimedia/Hypermedia Information.

This Standard is identical with, and has been reproduced from ISO/IEC 15444-4:2002, *Information technology—JPEG 2000 image coding system, Part 4: Conformance testing*.

The objective of this Standard is to specify the framework, concepts, methodology for testing, and criteria to be achieved to claim compliance to ITU-T Recommendation T.800 ISO/IEC 15444.1. It provides a framework for specifying abstract test suites and for defining the procedures to be followed during compliance testing.

This Standard is Part 4 of AS ISO/IEC 15444, *Information technology—JPEG 2000 image coding system*, which is published in parts as follows:

- Part 1: Core coding system
- Part 4: Conformance testing (this Standard)
- Part 6: Compound image file format
- Part 12: ISO base media file format

At the time of publication, Parts 2, 8, 18 and 19 were under development and had not been published by ISO/IEC.

The terms ‘normative’ and ‘informative’ are used to define the application of the annex to which they apply. A normative annex is an integral part of a standard, whereas an informative annex is only for information and guidance.

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- (a) Its number appears on the cover and title page while the international standard number appears only on the cover.
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References to International Standards should be replaced by references to Australian or Australian/New Zealand Standards as follows:

<i>Reference to International Standard</i>		<i>Australian Standard</i>	
ISO/IEC		AS	
15444	Information technology—JPEG 2000 image coding system	15444	Information technology—JPEG 2000 image coding system
15444-1	Part 1: Core coding system	15444.1	Part 1: Core coding system

Only referenced documents that have been adopted as Australian or Australian/New Zealand Standards have been listed.

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## INTRODUCTION

ITU-T T.800 | ISO/IEC 15444-1 is a specification that describes an image compression system that allows great flexibility, not only for the compression of images but also for access into the codestream. The codestream provides a number of mechanisms for locating and extracting portions of the compressed image data for the purpose of retransmission, storage, display, or editing. This access allows storage and retrieval of compressed image data appropriate for a given application without decoding.

This Recommendation | International Standard provides the framework, concepts, and methodology for testing and the criteria to be achieved to claim compliance to ITU-T T.800 | ISO/IEC 15444-1 standard. The objective of standardization in this field is to promote interoperability between JPEG 2000 encoders and decoders and to test these systems for compliance to this specification. Compliance testing is the testing of a candidate product for the existence of specific characteristics required by a standard. It involves testing the capabilities of an implementation against both the compliance requirements in the relevant standard and the statement of the implementation's capabilities.

The purpose of this Recommendation | International Standard is to define a common test methodology, to provide a framework for specifying abstract test suites (ATS), and to define the procedures to be followed during compliance testing.

Any organization contemplating the use of test methods defined in this Recommendation | International Standard should carefully consider the constraints on their applicability. Compliance testing does not include robustness testing, acceptance testing, and performance testing.

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# AUSTRALIAN STANDARD

## INFORMATION TECHNOLOGY – JPEG 2000 IMAGE CODING SYSTEM — PART 4: CONFORMANCE TESTING

### 1 Scope

This Recommendation | International Standard specifies the framework, concepts, methodology for testing, and criteria to be achieved to claim compliance to ITU-T Recommendation T.800 | ISO/IEC 15444-1. It provides a framework for specifying abstract test suites and for defining the procedures to be followed during compliance testing.

This Recommendation | International Standard

- specifies compliance testing procedures for encoding and decoding using JPEG 2000 Part 1 (ITU-T Recommendation T.800 | ISO/IEC 15444-1);
- specifies codestreams, decoded images, and error metrics to be used with the testing procedures;
- specifies abstract test suites;
- provides guidance for creating an encoder compliance test.

This Recommendation | International Standard does not include the following tests:

Acceptance testing: the process of determining whether an implementation satisfies acceptance criteria and enables the user to determine whether or not to accept the implementation. This includes the planning and execution of several kinds of tests (e.g., functionality, quality, and speed performance testing) that demonstrate that the implementation satisfies the user requirements.

Performance testing: measures the performance characteristics of an Implementation Under Test (IUT) such as its throughput, responsiveness, etc., under various conditions.

Robustness testing: the process of determining how well an implementation processes data which contains errors.

### 2 References

The following references document the technical details and legal codestream syntax that serve as a basis for this Recommendation | International Standard. At the time of publication, the editions indicated were valid. All Recommendations and Standards are subject to revision, and parties to agreements based on this Recommendation | International Standard are encouraged to investigate the possibility of applying the most recent edition of the Recommendations and Standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards. The Telecommunication Standardization Bureau of the ITU maintains a list of currently valid ITU-T Recommendations.

- ITU-T Recommendation T.800 | ISO/IEC 15444-1, Information technology — JPEG 2000 Image Coding System.
- ITU-T Recommendation T.800 | ISO/IEC 15444-1 Amendment 1, Information technology — JPEG 2000 Image Coding System, Amendment 1.
- ITU-T Recommendation T.800 | ISO/IEC 15444-1 Amendment 2, Information technology — JPEG 2000 Image Coding System, Amendment 2.