

---

---

**Information technology — Scalable  
compression and coding of  
continuous-tone still images —**

**Part 4:  
Conformance testing**

*Technologies de l'information — Compression échelonnée et codage  
d'images plates en ton continu —*

*Partie 4: Essai de conformité*

*IT Standards  
(<https://standards.iteh.ai>)  
Document Preview*

[ISO/IEC 18477-4:2017](https://standards.iteh.ai/catalog/standards/iso/fc00df34-e0bd-47de-85ac-0adc5a9e2ca1/iso-iec-18477-4-2017)

<https://standards.iteh.ai/catalog/standards/iso/fc00df34-e0bd-47de-85ac-0adc5a9e2ca1/iso-iec-18477-4-2017>



**iTeh Standards**  
**(<https://standards.iteh.ai>)**  
**Document Preview**

[ISO/IEC 18477-4:2017](https://standards.iteh.ai/catalog/standards/iso/fc00df34-e0bd-47de-85ac-0adc5a9e2ca1/iso-iec-18477-4-2017)

<https://standards.iteh.ai/catalog/standards/iso/fc00df34-e0bd-47de-85ac-0adc5a9e2ca1/iso-iec-18477-4-2017>



**COPYRIGHT PROTECTED DOCUMENT**

© ISO/IEC 2017, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
Ch. de Blandonnet 8 • CP 401  
CH-1214 Vernier, Geneva, Switzerland  
Tel. +41 22 749 01 11  
Fax +41 22 749 09 47  
[copyright@iso.org](mailto:copyright@iso.org)  
[www.iso.org](http://www.iso.org)

# Contents

Page

<b>Foreword</b> .....	<b>iv</b>
<b>Introduction</b> .....	<b>v</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>2</b>
<b>3 Terms, definitions, abbreviated terms and symbols</b> .....	<b>2</b>
3.1 Terms and definitions.....	2
3.2 Symbols.....	8
3.3 Abbreviated terms.....	8
<b>4 Conventions</b> .....	<b>8</b>
4.1 Conformance language.....	8
4.2 Operators.....	9
4.2.1 Arithmetic operators.....	9
4.2.2 Logical operators.....	9
4.2.3 Relational operators.....	9
4.2.4 Precedence order of operators.....	9
4.2.5 Mathematical functions.....	10
<b>5 Conventions</b> .....	<b>10</b>
<b>6 General description</b> .....	<b>10</b>
6.1 Overview.....	10
6.2 Parts and profiles.....	10
6.3 Decoders.....	11
6.4 Implementation conformance statement.....	11
6.5 Abstract test suites.....	11
6.6 Decoder conformance testing procedures.....	11
<b>7 Copyright</b> .....	<b>11</b>
<b>8 Conformance files availability and updates</b> .....	<b>11</b>
<b>Annex A (normative) Decoder conformance testing procedures</b> .....	<b>12</b>
<b>Annex B (normative) Decoder conformance tests</b> .....	<b>18</b>
<b>Annex C (normative) Codestream conformance</b> .....	<b>29</b>
<b>Bibliography</b> .....	<b>31</b>

## Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information*.

A list of all parts in the ISO/IEC 18477 series can be found on the ISO website.

<https://standards.iteh.ai/catalog/standards/iso/fc00df34-e0bd-47de-85ac-0adc5a9e2ca1/iso-iec-18477-4-2017>

## Introduction

The ISO/IEC 18477 series, also known under the term JPEG XT, specifies lossy and lossless codestream formats for storage of continuous-tone high and low dynamic range photographic content. All parts of the ISO/IEC 18477 series are compatible to the Recommendation ITU-T T.81 | ISO/IEC 10918, also commonly known as JPEG. That is, any decoder conforming to the latter standard will be able to reconstruct codestreams from the ISO/IEC 18477 series to an 8 bits/sample image. Additional features offered by ISO/IEC 18477, such as representation of intermediate or high-dynamic range images, or lossless reconstruction require an extended decoder that implements, in addition to the Rec. ITU-T T.81 | ISO/IEC 10918-1, also one or multiple members of ISO/IEC 18477.

This document provides the framework, concepts and methodology for testing codestreams and implementations, and the criteria to be achieved to claim conformance to the parts and profiles of ISO/IEC 18477. The objective of this document is to promote interoperability between JPEG XT decoders, and to test these systems for conformance to one or multiple specifications that are part of the JPEG XT. Conformance testing is the testing of a candidate implementation for the existence of specific characteristics required by a standard. It involves testing the capabilities of an implementation against the conformance requirements in the relevant standard.

The purpose of this document is to define a common test methodology, to provide a framework for specific abstract test suites (ATS) and to define the procedures to be followed during conformance testing.

Any organization contemplating the use of the test methods defined in this document should carefully consider the constraints on their applicability. Conformance testing does not include robustness testing, acceptance testing, and performance testing, all of which are outside the scope of this text.

iteh Standards  
(<https://standards.iteh.ai>)  
Document Preview

[ISO/IEC 18477-4:2017](https://standards.iteh.ai/catalog/standards/iso/fc00df34-e0bd-47de-85ac-0adc5a9e2ca1/iso-iec-18477-4-2017)

<https://standards.iteh.ai/catalog/standards/iso/fc00df34-e0bd-47de-85ac-0adc5a9e2ca1/iso-iec-18477-4-2017>