This is a preview - click here to buy the full publication

# INTERNATIONAL STANDARD

ISO/IEC 10918-7

Second edition 2021-09

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

Part 7: **Reference software** 

Technologies de l'information — Compression numérique et codage des images fixes à modelé continu —

Partie 7: Logiciel de référence







#### **COPYRIGHT PROTECTED DOCUMENT**

#### © ISO/IEC 2021

All rights reserved. Unless otherwise specified, or required in the context of its implementation, 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 CP 401 • Ch. de Blandonnet 8 CH-1214 Vernier, Geneva Phone: +41 22 749 01 11 Email: copyright@iso.org Website: www.iso.org Published in Switzerland

#### **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.

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 document should be noted (see <a href="www.iso.org/directives">www.iso.org/directives</a> or <a href="www.iso.org/members\_experts/refdocs">www.iso.org/members\_experts/refdocs</a>).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC 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 <a href="www.iso.org/patents">www.iso.org/patents</a>) or the IEC list of patent declarations received (see <a href="patents-iec.ch">patents</a>.

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

For an explanation of 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 <a href="https://www.iso.org/iso/foreword.htm">www.iso.org/iso/foreword.htm</a>. In the IEC, see <a href="https://www.iec.ch/understanding-standards">www.iec.ch/understanding-standards</a>.

This document was prepared by ITU-T as Rec ITU-T T.873 (06/2021) and drafted in accordance with its editorial rules, in collaboration with Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 29, *Coding of audio*, *picture*, *multimedia and hypermedia information*.

This second edition cancels and replaces the first edition (ISO/IEC 10918-7:2019), which has been technically revised.

The main changes compared to the previous edition are as follows:

- the reference software implementations are updated to version 1.58 for reference software 1, and to version 2.0.5 for reference software 2. These versions do not include any new features, they correct implementation errors and improve the overall stability of the software.

A list of all parts in the ISO/IEC 10918 series can be found on the ISO and IEC websites.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at <a href="https://www.iso.org/members.html">www.iso.org/members.html</a> and <a href="https://www.iec.ch/national-committees">www.iec.ch/national-committees</a>.



#### **CONTENTS**

			Page
1	Scope		1
2	Norma	ative references	1
3	Defini	tions	1
4	Abbre	viations	1
		entions	
6		ence software	
	6.1	Purpose	
	6.2	Examples of use.	
	6.3	General	
		npacking and compiling reference software A	
		sing reference software A	
	В – U:	General	5
	B.2	Encoder options defining the quality of the image.	
	B.3	Ontions controlling the colour space	5
	B.4	Options controlling the colour space	5
	B.5	Options controlling the quantizer	6
	B.6	Options controlling the subsampling of components	6
	B.7	Missallaneous antions	6
	B.8	Decoder options.	6
Annex	$C - U_1$	Decoder options  npacking and compiling reference software B	7
Annex	D – U	sing reference software B.	9
	D.1	General	9
	D.2	Encoder options defining the quality of the base and full image.	9
	D.3	Encoder options controlling the colour space	9
	D.4	Encoder options controlling the scan generation and entropy coding	9
	D.5	Encoder options controlling the DCT implementation	
	D.6	Encoder options controlling the subsampling of components	
	D.7	Miscellaneous encoder options	
	D.8	Decoder options controlling the choice of the inverse discrete cosine transform	
	D.9	Decoder options selecting the output file format	
		Decoder options controlling the rendering of the output image	11
	D.11	Miscellaneous decoder options	
		Decompressing to pgx	
Bibliog	graphy		13
Electro	mia att	achievent with two reference implementations of Pag. ITLLT T 81   ISO/IEC 10018 1	

#### ISO/IEC 10918-7:2021 (E)

#### Introduction

Rec. ITU-T T.81 | ISO/IEC 10918-1 specifies the codestream format and the decoding process, and is designed primarily for compression of continuous-tone photographic content.

This Recommendation | International Standard provides reference software for Rec. ITU-T T.81 | ISO/IEC 10918-1. The software has been successfully compiled and tested on Linux and Windows operating systems and conforms to the decoder requirements set forth in Rec. ITU-T T.83 | ISO/IEC 10918-2. It has also been tested for conformance to Rec. ITU-T T.86 | ISO/IEC 10918-4 and ISO/IEC 18477-4.

Instructions for unpacking and building the software are found in Annexes A and C. Instructions for its use are listed in Annexes B and D.



### INTERNATIONAL STANDARD ITU-T RECOMMENDATION

## Information technology – Digital compression and coding of continuous-tone still images: Reference software

#### 1 Scope

This Specification provides reference software for the coding technology specified in Recommendation ITU-T T.81 | ISO/IEC 10918-1. While the reference implementations also provide an encoder, conformance testing of their encoding process is beyond the scope of this Specification.

#### 2 Normative references

The following Recommendations and International Standards contain provisions which, through reference in this text, constitute provisions of this Recommendation | International Standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies. At the time of publication, the editions indicated in dated references 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.

- Recommendation ITU-T T.81 (latest) | ISO/IEC 10918-1 (latest), Information technology - Digital compression and coding of continuous-tone still images: Requirements and guidelines.

