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# NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

# GB/T 42651-2023

## Space data and information transfer systems - Image data compression

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## foreword

This document is in accordance with the provisions of GB/T 1:1-2020 "Guidelines for Standardization Work Part 1: Structure and Drafting Rules for Standardization Documents"

drafting:

This document was drafted with reference to ISO 26868:2009 "Image Data Compression for Spatial Data and Information Transmission Systems", and the degree of consistency is very high:

equivalent:

Please note that some contents of this document may refer to patents: The issuing agency of this document assumes no responsibility for identifying patents:

## 1 Scope

This document establishes the general principles of image data compression for spatial data and information transmission systems, and describes the principles of discrete wavelet transform and bit-plane coding:

method:

This document is applicable to the design and application of image data compression in spatial data and information transmission systems:



## 2 Normative references

The contents of the following documents constitute the essential provisions of this document through normative references in the text: Among them, dated references

For documents, only the version corresponding to the date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to

this document:

GB/T 42041 Terminology for Space Data and Information Transmission in Aerospace

## 3 Terms and Definitions

The following terms and definitions defined in GB/T 42041 apply to this document:

3:1

weight factor weightfactors

The proportion of wavelet coefficients:

3:2

DC coefficientDCcoefficient

DC component, wavelet coefficients of the lowest subband:

3:3

AC coefficientACcoefficient

AC component, the wavelet coefficients of subbands except the lowest subband:

3:4

block block

A set of 64 wavelet coefficients consisting of 1 DC coefficient in the lowest subband and 63

AC coefficients in the remaining 9 subbands:

3:5

segment segment

A collection of S consecutive blocks:

Note: S can be customized, for example, the range is 16<=S<=220:

3:6

Code segment codedsegment

Compressed code stream, a data segment beginning with a segment header:

3:7

group gaggle

Consists of a number of consecutive blocks within a segment:

NOTE: Segments can be divided into clusters, each cluster (except the last one) consisting of 16 blocks: