

About This Standard

Emerging

Standard Identifier ISO/IEC 15444-2:2004

Title of Standard

Information technology -- JPEG 2000 image coding system: Extensions

Standards History

Introduced to Registry	Date Emerging	Date Mandated	Last Status Update	Last Status Review	Inactive/ Retired
2005-09-06	2005-09-06	n/a	2005-09-06	2008-07-14	n/a

Standards Body [ISO](#)

[Broken Link?](#)

URL to Access or Acquire <http://www.ansi.org>

Working Group

Primary Owner Geospatial Intelligence TWG (GWG)

Secondary Interest No Secondary Interest

Service Area GEOINT: Still Imagery

KIPs No KIP Found

Standard Applicability

2005-09-06

JPEG 2000 provides a new means of image representation containing a rich set of features, all supported within the same compressed bit stream. Part I of JPEG 2000 contains mandatory features. Part II of JPEG 2000 is a published International Standard (IS) that contains optional features beyond those in Part I including:- More flexible forms of wavelet decomposition and coefficient quantization,- Advanced region-of-interest capability,- Expanded file format (.jpx) based on .jp2 but supporting multiple compositing layers, animation, extended color spaces, - Increased capability for multi-spectral/hyper-spectral compression, - A rich metadata set for photographic imagery (based on the DIG25 specification),- Low complexity implementation, and - Trellis quantized compression. Only those features that are needed for specific applications need be implemented. To assist interoperability, mechanisms are provided at both the code stream and the JPX file format level for signaling the use of extensions. Since use/application of this standard is emerging, those considering use/application of this standard should make contact with the NITFS Technical Board (NTB) [<http://www.ismc.nga.mil/ntb/>].

Standard Abstract

2005-09-06

ISO/IEC 15444-2:2004 defines a set of lossless (bit-preserving) and lossy compression methods for coding continuous-tone, bi-level, gray-scale, color digital still images, or multi-component images. ISO/IEC 15444-2:2004: - Specifies extended decoding processes for converting compressed image data to reconstructed image data; - Specifies an extended code stream syntax containing

information for interpreting the compressed image data; - Specifies an extended file format; - Specifies a container to store image metadata; - Defines a standard set of image metadata; - Provides guidance on extended encoding processes for converting source image data to compressed image data; - Provides guidance on how to implement these processes in practice

Profiling Questions

GEOINT: Still Imagery • Does your system have specialty image compression requirements not addressed by the JPEG 2000 Part 1 standard?

Products Incorporating This Standard

The known implementers of selected features from Part 2 include the Kakadu product and software from Aware and Liratech.

Relevant Information

This standard reviewed by the GWG's NITFS Technical Board (NTB)

Implementation Guidance

None

Standard Selection Criteria

Net-Centric Interoperability

JPEG 2000 is designed to promote ease of access to imagery, to include extremely large imagery data sets, in a manner that promotes scalability and interactive image viewing and exploitation within a net-centric environment. ISO/IEC 15444, Part 2 provides extensions to ISO/IEC 15444, Part 1, JPEG 2000, which is the preferred imagery compression standard for use with the National Imagery Transmission Format Standard (NITFS). The NITFS is the common thread of interoperability for the formatting, imagery library storage and cataloging, dissemination, and exploitation of National Technical Means (NTM), Tactical Airborne, and Commercial imaging sources. At this time (Jun2005), JPEG 2000 Part 2 is considered an emerging standard designed to meet special needs not supported in Part 1; however, specific application of Part 2 within the National System for Geospatial Intelligence (NSG) has not yet been identified.

Technical Maturity

Development and publication of this standard is complete. Part 2 of the JPEG 2000 standard will likely never have strong support in the commercial marketplace since the marketplace focus for JPEG 2000 is on Part 1. Part 2 was developed to address the special needs of the scientific and military remote sensing industry that are not addressed in Part 1.

Public Availability

Available for purchase from the ISO Store (online):
<http://www.iso.org/iso/en/prods-services/ISOstore/store.html>

Implementability

As of June 2005, there is no known use of this standard within the Intelligence Community (IC); however, representatives from the IC provided capability needs

and solutions during the development of this international standard in anticipation of using the standard to meet future operational requirements. Application of this standard is emerging in anticipation of future operational requirements that cannot be met with Part 1 of the standard.

Authority

ISO/IEC JTC 1/SC 29, Coding of audio, picture, multimedia and hypermedia information, developed and maintains this standard. The NITFS Technical Board (NTB) [<http://www.ismc.nga.mil/ntb/>] is the DOD/IC focal point for the open process of maintaining and future development for this standard at ISO/IEC.

Standard Type Non-Military

Keywords for Search None