

About This Standard

Current Status *Mandated*

Standard Identifier ISO/IEC 13818-1:2000

Title of Standard

Information technology - Generic coding of moving pictures and associated audio information, Part 1: Systems, 2000 (also known as MPEG-2 Systems)

Standards History

Introduced to Registry	Date Emerging	Date Mandated	Last Status Update	Last Status Review	Inactive/Retired
2003-04-04	n/a	2003-04-04	2003-04-04	2009-03-26	n/a

Replaced [ISO/IEC 13818-1](#)

Standards Body [ISO](#) [Broken Link?](#)
URL to Access or Acquire <http://www.ansi.org>

Working Group

Primary Owner Geospatial Intelligence (GWG)
Secondary Interest No Secondary Interest

Service Area GEOINT: Motion Imagery

KIPs KIP Family: TRANSPORT - KIP: Global Broadcast System

Standard Applicability

2009-03-27

Application areas for MPEG-2 include: - Internet - DVD - Satellite video - airborne video - surveillance - reconnaissance - intelligence - targeting - Scientific and Industrial - Digital Cinema - Image archives and databases There are a number of standards competing with MPEG-2, but MPEG-2 is by far the most widely used. See <http://www.gwg.nga.mil/misb/>

2006-02-21

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2003-10-03

Video support services specifies the structure and data formats for the production, exchange, transmission, or use of digital video data. MPEG-2 Main Profile @ Main Level (MP@ML) 4:2:0 systems are fully backward compatible with the MPEG-1 standard. MPEG-2 MP@ML can be used with all video support systems (i.e., storage, broadcast, and network) at bit rates from 3 to 10 Mbps, where limited additional processing is anticipated, operating in either progressive- or interlaced-scan mode, optimally handling the resolution of the ITU-R 601 (International Telecommunication Union) recommendation (i.e., 720 x 480 pixels for the luminance

signal and 360 x 480 pixels for the color space). This video support standard for compressed video is mandated.

Standard Abstract

2009-03-27

ISO/IEC 13818-1 defines the systems standards for the MPEG-2 video and audio coding system. It defines both transport streams or program streams. The transport stream is particularly important since it provides the basis for Xon2 . Xon2 is the name of the DoD activity to support the seamless rollout of advanced video compression technologies without disrupting current and future operations and systems. X defines existing or future video compression technologies and on2 refers to the use of MPEG-2 transport streams and files. The DoD has already successfully deployed 2on2 payloads, using standards compliant MPEG-2 compressed video elementary streams, audio elementary streams, and SMPTE KLV encoded metadata as MPEG-2 private data streams in support of unmanned aerial vehicle (UAV) operations. Building on this baseline 2on2 capability, Xon2 will provide a migration path to inject improved compressions technologies, which will yield improved image quality and / or reduced bandwidths. - Specifies decoding processes for multiple video and audio channels; - Specifies a code stream syntax at the system layer; - Specifies a file format.

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2003-04-04

MPEG-2 is an open international standard currently in 9 parts. Part 1 addresses the combining of one or more elementary streams of video and audio as well as other data into single or multiple streams suitable for storage or transmission; each is optimized for a different set of applications. Part 2 builds on the video compression capabilities of the MPEG-1 standard to offer a wide range of coding tools, including pictures with a color resolution of 4:2:2 and a higher bitrate. Part 3 is a backward-compatible multichannel extension of the MPEG-1 Audio standard. Part 4 specifies how tests can be designed to verify whether bitstreams and decoders meet the requirements specified in parts 1, 2, and 3. Part 5, technically not a standard but a technical report, gives a full software implementation of the first three parts of the MPEG-1 standard. Part 6, Digital Storage Media Command and Control (DSM-CC) specifies a set of protocols which provides the control functions and operations specific to managing MPEG-1 and MPEG-2 bitstreams. Part 7 specifies a multichannel audio coding algorithm not constrained to be backward-compatible with MPEG-2 Audio. Part 8 was discontinued for lack of industry interest. Part 9 specifies the real-time interface (RTI) to transport stream decoders which may be used to

adapt to all appropriate networks carrying transport streams. And, finally, Part 10 will address the conformance testing of DSM-CC.

Profiling Questions

GEOINT: Motion Imagery

- Does your system use MPEG-2 Systems for standard and high-definition compression or does your system require support for compressed video?

Products Incorporating This Standard

Companies with commercially available implementations/products include: Adobe, Analog Devices, Avid, Aware, BAE, Intel, ITT Industries, HP, Kodak, Leitch, Matrox Imaging, Motorola, NEC, PAR Government Systems, Panasonic, Pinnacle, Quantel, Ricoh, Scientific Atlanta, Siemens, Sony, Snell & Wilcox, Telestream, Tales, Texas Instruments, Thomson, Yahoo, and many others. Non-native (plug-in) software is also available for Internet Explorer, Netscape and Windows Media 9 Series.

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Relevant Information

This citation authored by the GWG Motion Imagery Standards Board (MISB).

Implementation Guidance

None

Standard Selection Criteria

Interoperability/Supportability

MPEG-2 is still the most widely-used video compression today. DVDs, satellite delivered services such as DirecTV and DISH, cable delivered services and the new over-the-air digital broadcast services use MPEG-2. MPEG-2 decoders are provided with all computer systems that have DVD readers. The DoD has many systems that employ MPEG-2 and they will continue using MPEG-2 in the distant future. MPEG-2 promotes ease of streaming media within a net-centric environment.

Technical Maturity

The international standard MPEG-2, completed in 1995, is the most widely implemented video technology standard in the history of ISO/IEC. DVDs, satellite delivered services such as DirecTV and DISH, cable delivered services and the new over-the-air digital broadcast services use MPEG-2. MPEG-2 decoders are provided with all computer systems that have DVD readers. MPEG-4, Part 10/ H.264 is the new standard, which will be used in many new systems. The MPEG-2 standard is so widely deployed that it will be many years before it will be significantly replaced.

Public Availability

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

Implementability

MPEG-2 is used by almost all DOD and Intelligence organizations who have video requirements. DVDs, satellite delivered services such as DirecTV and DISH, cable delivered services and the new over-the-air digital broadcast services use MPEG-2. MPEG-2 decoders are provided with all computer systems that have DVD readers.

Authority

ISO/IEC JTC 1/SC 29, Coding of audio, picture, multimedia and hypermedia information, developed and maintains this standard. This standard has been adopted by the DoD/IC Motion Imagery Standards Board (MISB) since 1996 and the MISB is the DOD/IC focal point for the open process of maintaining and future development for this standard at ISO/IEC. <http://www.gwg.nga.mil/misb/>

Standard Type Non-Military

Standard Classification Unclassified

Keywords for Search IR, ISO/IEC 13818-1, J2K, JPEG, JPEG2000, NITF, NITFS, Video, compression, hyperspectral, interchange, motion imagery, multispectral, raster