

**Informacijska tehnologija – Splošno kodiranje premikajočih slik in  
pripadajočih avdio informacij: Video**

Information technology – Generic coding of moving pictures and associated audio  
information: Video



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**Information technology — Generic coding  
of moving pictures and associated audio  
information: Video**

*Technologies de l'information — Codage générique des images animées et  
du son associé: Données vidéo*

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## 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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this part of ISO/IEC 13818 may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

International Standard ISO/IEC 13818-2 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information*, in collaboration with ITU-T. The identical text is published as ITU-T Rec. H.262.

This second edition cancels and replaces the first edition (ISO/IEC 13818-2:1996), which has been technically revised.

ISO/IEC 13818 consists of the following parts, under the general title *Information technology — Generic coding of moving pictures and associated audio information*:

- *Part 1: Systems*
- *Part 2: Video*
- *Part 3: Audio*
- *Part 4: Conformance testing*
- *Part 5: Software simulation*
- *Part 6: Extensions for DSM-CC*
- *Part 7: Advanced Audio Coding (AAC)*
- *Part 9: Extension for real time interface for systems decoders*
- *Part 10: Conformance extensions for Digital Storage Media Command and Control (DSM-CC)*

Annexes A, B and C form a normative part of this part of ISO/IEC 13818. Annexes D to K are for information only.

## Introduction

### Intro. 1 Purpose

This Part of this Recommendation | International Standard was developed in response to the growing need for a generic coding method of moving pictures and of associated sound for various applications such as digital storage media, television broadcasting and communication. The use of this Specification means that motion video can be manipulated as a form of computer data and can be stored on various storage media, transmitted and received over existing and future networks and distributed on existing and future broadcasting channels.

### Intro. 2 Application

The applications of this Specification cover, but are not limited to, such areas as listed below:

BSS	Broadcasting Satellite Service (to the home)
CATV	Cable TV Distribution on optical networks, copper, etc.
CDAD	Cable Digital Audio Distribution
DSB	Digital Sound Broadcasting (terrestrial and satellite broadcasting)
DTTB	Digital Terrestrial Television Broadcasting
EC	Electronic Cinema
ENG	Electronic News Gathering (including SNG, Satellite News Gathering)
FSS	Fixed Satellite Service (e.g. to head ends)
HTT	Home Television Theatre
IPC	Interpersonal Communications (videoconferencing, videophone, etc.)
ISM	Interactive Storage Media (optical disks, etc.)
MMM	Multimedia Mailing
NCA	News and Current Affairs
NDB	Networked Database Services (via ATM, etc.)
RVS	Remote Video Surveillance
SSM	Serial Storage Media (digital VTR, etc.)

### Intro. 3 Profiles and levels

This Specification is intended to be generic in the sense that it serves a wide range of applications, bitrates, resolutions, qualities and services. Applications should cover, among other things, digital storage media, television broadcasting and communications. In the course of creating this Specification, various requirements from typical applications have been considered, necessary algorithmic elements have been developed, and they have been integrated into a single syntax. Hence, this Specification will facilitate the bitstream interchange among different applications.

Considering the practicality of implementing the full syntax of this Specification, however, a limited number of subsets of the syntax are also stipulated by means of "profile" and "level". These and other related terms are formally defined in clause 3.

A "profile" is a defined subset of the entire bitstream syntax that is defined by this Specification. Within the bounds imposed by the syntax of a given profile it is still possible to require a very large variation in the performance of encoders and decoders depending upon the values taken by parameters in the bitstream. For instance, it is possible to specify frame sizes as large as (approximately)  $2^{14}$  samples wide by  $2^{14}$  lines high. It is currently neither practical nor economic to implement a decoder capable of dealing with all possible frame sizes.

In order to deal with this problem, "levels" are defined within each profile. A level is a defined set of constraints imposed on parameters in the bitstream. These constraints may be simple limits on numbers. Alternatively they may take the form of constraints on arithmetic combinations of the parameters (e.g. frame width multiplied by frame height multiplied by frame rate).

Bitstreams complying with this Specification use a common syntax. In order to achieve a subset of the complete syntax, flags and parameters are included in the bitstream that signal the presence or otherwise of syntactic elements that occur later in the bitstream. In order to specify constraints on the syntax (and hence define a profile), it is thus only necessary to constrain the values of these flags and parameters that specify the presence of later syntactic elements.