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Information technology — MPEG audio technologies —

Part 1: MPEG Surround

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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. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. 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.

ISO/IEC 23003-1 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information*.

ISO/IEC 23003 consists of the following parts, under the general title *Information technology — MPEG audio technologies*:

— *Part 1: MPEG Surround*

Introduction

The following MPEG International Standard describes the coding of multi-channel signals based on a downmixed signal of the original multi-channel signal, and associated spatial parameters. It offers lowest possible data rate for coding of multi-channel signals, as well as an inherent mono or stereo downmix signal included in the data stream. Hence, a mono or stereo signal can be expanded to multi-channel by a very small additional data overhead. Furthermore, the International Standard describes binaural decoding of the MPEG Surround stream, enabling a surround sound experience over headphones. The International Standard furthermore defines an Enhanced Matrix Mode that enables a multi-channel upmix from a stereo signal without any spatial parameters.

The International Organization for Standardization (ISO) and International Electrotechnical Commission (IEC) draw attention to the fact that it is claimed that compliance with this document may involve the use of a patent.

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Information technology — MPEG audio technologies —

Part 1:
MPEG Surround

1 Scope

This International Standard describes the MPEG Surround standard (Spatial Audio Coding, SAC), that is capable of re-creating N channels based on M<N transmitted channels, and additional control data. In the preferred modes of operating the spatial audio coding system, the M channels can either be a single mono channel or a stereo channel pair. The control data represents a significant lower data rate than required for transmitting all N channels, making the coding very efficient while at the same time ensuring compatibility with both M channel devices and N channel devices.

This International Standard incorporates a number of tools enabling a number of features that allow for broad application of the International Standard. A key feature is the ability to scale the spatial image quality gradually from very low spatial overhead towards transparency. Another key feature is that the compatible decoder input can be made compatible to existing matrix surround technologies. All tools are grouped to cover certain profiles.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 13818-7, *Information technology — Generic coding of moving pictures and associated audio information — Part 7: Advanced Audio Coding (AAC)*

ISO/IEC 14496-3, *Information technology — Coding of audio-visual objects — Part 3: Audio*