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Part 15: Compact descriptors for video analysis

Technologies de l'information — Interface de description du contenu multimédia —
Partie 15: Descripteurs compacts pour analyse de vidéo

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Foreword

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

A list of all parts in the ISO/IEC 15938 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at http://www.iso.org/members.html.

Introduction

ISO/IEC 15938 (all parts), also known as "Multimedia content description interface", provides a standardized set of technologies for describing multimedia content. It addresses a broad spectrum of multimedia applications and requirements by providing a metadata system for describing the features of multimedia content.

The following are specified in this ISO/IEC 15938 (all parts):

Description schemes (DS) describe entities or relationships pertaining to multimedia content. Description schemes specify the structure and semantics of their components, which may be description schemes, descriptors or datatypes.

Descriptors (D) describe features, attributes or groups of attributes of multimedia content.

Datatypes are the basic reusable datatypes employed by description schemes and descriptors.

Description definition language (DDL) defines description schemes, descriptors and datatypes by specifying their syntax, and allows their extension.

Systems tools support delivery of descriptions, multiplexing of descriptions with multimedia content, synchronization, file format, etc.

The ISO/IEC 15938 series is subdivided into 15 published parts with further parts in development:

— **Part 1: Systems**: specifies the tools for preparing descriptions for efficient transport and storage, compressing descriptions, and allowing synchronization between content and descriptions.

— **Part 2: Description definition language**: specifies the language for defining the series set of description tools (DSs, Ds and datatypes) and for defining new description tools.

— **Part 3: Visual**: specifies the description tools pertaining to visual content.

— **Part 4: Audio**: specifies the description tools pertaining to audio content.

— **Part 5: Multimedia description schemes**: specifies the generic description tools pertaining to multimedia including audio and visual content.

— **Part 6: Reference software**: provides a software implementation of the series.

— **Part 7: Conformance testing**: specifies the guidelines and procedures for testing conformance of implementations of the series.

— **Part 8: Extraction and use of MPEG-7 descriptions**: provides guidelines and examples of the extraction and use of descriptions.

— **Part 9: Profiles and levels**: provides guidelines and standard profiles.

— **Part 10: Schema definition**: specifies the schema using description definition language.

— **Part 11: MPEG-7 profile schemas**: listing of profile schemas using description definition language.

— **Part 12: Query format**: contains the tools of the MPEG query format (MPQF).

— **Part 13: Compact descriptors for visual search**: specifies an image description tool for visual search applications.

— **Part 14: Reference software, conformance and usage guidelines for compact descriptors for visual search**: provides the reference software and guidelines, specifies the conformance testing.

— **Part 15: Compact descriptors for video analysis (this document)**: specifies a video description tool designed to enable efficient and interoperable video analysis applications, allowing visual content matching in videos.

The structure of this document is as follows:

— Clause 5 specifies the binary representation syntax and descriptor component semantics for a CDVA descriptor.

— Clause 6 specifies the extraction and encoding process for a CDVA descriptor.

— Annex A specifies recommended values for the parameters of the encoding process of Clause 6.

— Annex B specifies parameters and a neural network model of the deep feature extraction process.

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