TECHNICAL REPORT

# ISO/IEC TR 23002-6

First edition
2017-10

# Information technology — MPEG video technologies —

## Part 6: Tools for reconfigurable media coding implementations

*Technologies de l'information — Technologies vidéo MPEG —*
*Partie 6: Outils d'implémentation du codage média reconfigurable*

Reference number
ISO/IEC TR 23002-6:2017(E)

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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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*.

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# Introduction

This document provides a description of a set of tools that are intended to be helpful for developing reconfigurable media coding implementations based on ISO/IEC 23001-4, ISO/IEC 23002-4 and ISO/IEC 23002-5. The description includes the following guidelines:

— guidelines on good practices to implement specifications based on ISO/IEC 23001-4, ISO/IEC 23002-4 and ISO/IEC 23002-5;

— guidelines on usage of a monitoring tool for specifications based on ISO/IEC 23001-4, ISO/IEC 23002-4 and ISO/IEC 23002-5.

— guidelines on usage of a design exploration and optimization tool for specifications based on ISO/IEC 23001-4, ISO/IEC 23002-4 and ISO/IEC 23002-5.


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# Information technology — MPEG video technologies —

# Part 6:
# Tools for reconfigurable media coding implementations

## 1 Scope

This document provides a description of a set of tools that are intended to be helpful for developing reconfigurable media coding implementations based on ISO/IEC 23001-4, ISO/IEC 23002-4 and ISO/IEC 23002-5.

## 2 Normative references

There are no normative references in this document.

## 3 Terms, definitions and abbreviated terms

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

### 3.1 Terms and definitions

**3.1.1**
**Reconfigurable Video Coding**
**RVC**
framework defined to support coding standards at the tool level while maintaining interoperability between solutions from different implementers

**3.1.2**
**functional unit**
**FU**
modular tool characterized by its input/output behaviour, consisting of a processing unit

Note 1 to entry: Also referred to as “actor”.

**3.1.3**
**token**
data entity exchanged among *functional units* (3.1.2), such that a functional unit performs operations on input tokens, produces output tokens and modifies its state

**3.1.4**
**connection**
link from output ports to input ports of *functional units* (3.1.2) that enable *token* (3.1.3) exchange between the corresponding functional units

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**3.1.5**
**functional unit network language**
**FU network language**
**FNL**
language that describes a network of *functional units* (3.1.2)

**3.1.6**
**functional unit network description**
**FU network description**
**FND**
*functional unit* (3.1.2) *connection* (3.1.4) used to build a decoder and modelled using the *functional unit network language* (3.1.5)

**3.1.7**
**RVC-CAL**
dataflow specification language for specifying of *functional units* (3.1.2) and the reference software

**3.1.8**
**video tool library**
**VTL**
collection of *functional units* (3.1.2)

**3.1.9**
**MPEG video tool library**
*video tool library* (3.1.8) that contains *functional units* (3.1.2) drawn from existing MPEG standards

### 3.2 Abbreviated terms

| | |
|---|---|
| API | Application Programming Interface |
| BXDF | Buffer-size XML Dataflow Format |
| CAL | CAL Actor Language |
| DSE | Design Space Exploration |
| ETG | Execution Trace Graph |
| FIFO | First-In, First-Out |
| FSM | Finite State Machine |
| HEVC | High-Efficiency Video Coding |
| IDE | Integrated Development Environment |
| L1_DCM | L1 Data Cache Misses |
| NoL | Number of Lines |
| PAPI | Performance API |
| PMC | Performance Monitoring Counter |
| RMC | Reconfigurable Media Coding |
| TOT_INS | TOTal Number of INStructions |
| XDF | XML Dataflow Format |
| XML | eXtensible Markup Language |


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