

Australian Standard™

**Information technology— Multimedia
framework (MPEG-21)**

Part 5: Rights Expression Language

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**Information technology—Multimedia
framework (MPEG-21)**

Part 5: Rights Expression Language

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PREFACE

This Standard was prepared by the Standards Australia Committee IT-029, Coded Representation of Picture, Audio and Multimedia/Hypermedia Information.

This Standard is identical with, and has been reproduced from ISO/IEC 21000-5:2004, *Information technology—Multimedia framework (MPEG-21), Part 5: Rights Expression Language*.

The objective of this Standard is to define an authorization model to specify whether the semantics of a set of Rights Expression permit a given Principal to perform a given Right upon a given optional Resource during a given time interval based on a given authorization context and a given trust level.

This Standard is Part 5 of AS ISO/IEC 21000, *Information technology—Multimedia framework (MPEG-21)*, which is published in parts as follows:

Part 2: Digital Item Declaration

Part 3: Digital Item Identification

Part 5: Rights Expression Language (this Standard)

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3166	Codes for the representation of names of countries and their subdivisions	2632	Codes for the representation of names of countries and their subdivisions
3166-1	Part 1: Country codes	2632.1	Part 1: Country codes
3166-2	Part 2: Country subdivision code	2632.2	Part 2: Country subdivision code
3166-3	Part 3: Codes for formerly used names of countries	2632.3	Part 3: Codes for formerly used names of countries
4217	Codes for the representation of currencies and funds	3759	Codes for the representation of currencies and funds

ISO/IEC		AS/NZS	
9548	Information technology—Open Systems Interconnection—The Directory	4019	Information technology—Open Systems Interconnection—The Directory
9594-8	Part 8: Public-key and attribute certificate frameworks	4019.8	Part 8: Authentication framework
10021	Information technology—Message Handling Systems (MHS)	4033	Information technology—Text communication—Message oriented text interchange systems
10021-2	Part 2: Overall architecture	4033.2	Part 2: Overall architecture
ISO/IEC		AS ISO/IEC	
21000	Information technology—Multimedia framework (MPEG-21)	21000	Information technology—Multimedia framework (MPEG-21)
21000-2	Part 2: Digital Item Declaration	21000.2	Part 2: Digital Item Declaration
21000-3	Part 3: Digital Item Identification	21000.3	Part 3: Digital Item Identification

Please note patent statements in Annex K. Standards Australia as a member of ISO and IEC shall not be held responsible for identifying any or all such patent rights.

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INTRODUCTION

The growth of the Internet has enabled worldwide distribution and consumption of valuable multimedia resources, reduced the cost of doing business, enabled new business models for industry participants, and provided consumers with unprecedented access to high-quality multimedia resources. Internal distribution, external distribution, and retail sales now are conducted on the Internet to establish cost effective, reliable, flexible, highly available, and secure means of managing the delivery of multimedia resources. Consumers routinely search for and download multimedia resources from sources world-wide and can conveniently redistribute those resources. This has fuelled the development of technologies to manage, secure, control, and automate the flow of multimedia resources over the Internet.

The free and convenient flow of multimedia resources through the Internet presents many challenges to content owners and distributors. Before making high-quality and valuable multimedia resources available online, content owners want to be assured that their rights to those resources are respected. In addition, the business models and contracts of content distributors often involve conditions regarding distribution, such as fees, territory restrictions, time limits, and so on.

To meet these requirements, the players involved in the online distribution and consumption of multimedia resources need to exchange information about the rights, terms, and conditions associated with each resource at each step in the multimedia resource lifecycle. For example, a publisher needs to communicate the available consumption rights and the terms and conditions under which those rights may be exercised. To use the multimedia resources, a consumer needs to know the types of usage allowed and the terms and conditions that must be met. In distribution and super distribution business models, this information needs to be communicated to each participant in the distribution chain.

Depending on the business model, expressing rights, terms, and conditions can be simple or complex. In a simple example, a consumer might pay a flat fee to obtain unlimited rights to play a video file. In a more complex example, a video publisher might grant a distributor the right to sell usage rights for classic movie titles to consumers. The distribution agreement might specify the rights that consumers may purchase, the maximum fee the distributor may charge, and a percentage of the fee that must be paid to the publisher.

In an end-to-end system, other considerations such as authenticity and integrity of Rights Expressions become important. For example, any party who issues rights to use or distribute multimedia resources must be identified and authorized. In addition, a Rights Expression may be accessed by different participants during its life cycle, which requires mechanisms and semantics for validating the authenticity and integrity of the Rights Expression.

To address many of these issues, a common Rights Expression Language that can be shared among all participants in this digital workflow is required. A common Rights Expression Language addresses important aspects of the interoperability issues inherent in digital multimedia resource distribution; the issues relating to exchanging Rights Expressions during their life cycle; and the system issues such as trust, authorization, and authentication.

This part of ISO/IEC 21000 addresses a part of the overall vision for ISO/IEC 21000, which is to define a multimedia framework to enable transparent and augmented use of multimedia resources across a wide range of networks and devices used by different communities.

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NOTES

AUSTRALIAN STANDARD

Information technology — Multimedia framework (MPEG-21) —

Part 5: Rights Expression Language

1 Scope

This part of ISO/IEC 21000 specifies the syntax and semantics of a Rights Expression Language.

This part of ISO/IEC 21000 does not give any permission, including permissions about who is legally or technically allowed to create Rights Expressions. It does not specify the security measures of trusted systems, propose specific applications, or describe the details of the systems required for accounting (monetary transactions, state transactions, and so on). It also does not specify if or when Rights Expressions shall be consulted.

However, this part of ISO/IEC 21000 does define an authorization model to specify whether the semantics of a set of Rights Expressions permit a given Principal to perform a given Right upon a given optional Resource during a given time interval based on a given authorization context and a given trust root.

Clause 1 gives the scope of this part of ISO/IEC 21000. Clause 2 gives the normative references. Clause 3 gives pertinent terms, definitions, symbols, and abbreviated terms. Clause 4 gives the namespaces and conventions. Clause 5 specifies the authorization model. Clause 6 defines architectural concepts. Clause 7 specifies the syntax and semantics integral to the architecture. Clause 8 specifies syntax and semantics peripheral to the architecture but still useful in many domains beyond multimedia. Clause 9 specifies syntax and semantics specific to multimedia. Annex A uses W3C XML Schema to normatively specify the syntax of the types and elements defined throughout this part of ISO/IEC 21000. Annex B normatively defines Qualified Names for identifying countries, regions, and currencies. Annex C gives an informative simplified equality algorithm. Annex D gives some example Rights Expressions. Annex E describes the design philosophy for extensions and profiles of this part of ISO/IEC 21000. Annex F demonstrates how to introduce new rights as an extension to this part of ISO/IEC 21000. Annex G gives an example profile of this part of ISO/IEC 21000. Annex H describes the relationship between ISO/IEC 21000-6 and this part of ISO/IEC 21000. Annex I describes the relationship between ISO/IEC 21000-2 and this part of ISO/IEC 21000. Annex J describes an example revocation mechanism and gives a walk-through of revocation.

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 3166 (all parts), *Codes for the representation of names of countries and their subdivisions*

ISO 4217, *Codes for the representation of currencies and funds*

ISO/IEC 9594-8, *Information technology — Open Systems Interconnection — The Directory: Public-key and attribute certificate frameworks*

ISO/IEC 10021-2, *Information technology — Message Handling Systems (MHS): Overall architecture*

ISO/IEC 21000 (all parts), *Information technology — Multimedia framework (MPEG-21)*