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Part 20: Contract Expression Language

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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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

The committee responsible for this document is ISO/IEC JTC 1, *Information Technology*, Subcommittee SC 21, *Coding of audio, picture, multimedia and hypermedia information*.

This second edition cancels and replaces the first edition (ISO/IEC 21000-20:2013), which has been technically revised with the following changes:

— some strengthening of the core contract part and some reordering within the extension for the exploitation of intellectual property rights have been provided;

— the set of facts available for specifying conditions has been completed;

— addition of a simple payment and notification extension;

— the relationship with acts defined in ISO/IEC 21000-5 (REL) has been refined;

— a clear mechanism for defining further future extensions is in place.

A list of parts in the ISO/IEC 21000 series can be found on the ISO website.

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Introduction

Today, many elements exist to build an infrastructure for the delivery and consumption of multimedia content. There was, however, no "big picture" to describe how these elements, either in existence or under development, relate to each other. The aim for the ISO/IEC 21000 series has been to describe how these various elements fit together. New standards, as appropriate, will be developed while other relevant standards may be developed by other bodies.

The result is an open framework for multimedia delivery and consumption, with both the content creator and content consumer as focal points. This open framework provides content creators and service providers with equal opportunities in the ISO/IEC 21000 series-enabled open market. This will also be to the benefit of the content consumer providing them access to a large variety of content in an interoperable manner. The vision for ISO/IEC 21000 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.

ISO/IEC 21000 series aims thus at defining an open framework for multimedia applications, where users distribute, consume, operate on and transact with content represented as Digital Items.

These transactions can be automatically governed by licenses using the Rights Expression Language from ISO/IEC 21000. However, beyond the operative information present in a digital license, the digital representation of the complete business agreements between the parties may prove useful for a number of purposes. The Contract Expression Language (CEL) is the ISO/IEC language to express such contracts in a structured representation.

CEL may be used to represent contracts, for content directly, or for services on content based on MPEG-21 technologies. However, CEL may also be used as electronic format for contracts on the trade of media rights also beyond the MPEG framework.

The provided features include the identification of the contract itself and of its parties, and an unambiguous expression of the agreed permissions, obligations, and prohibitions, in a machine readable way, so that their verification can be implemented in software.

In particular, the CEL deontic expressions address the rights for the exploitation of intellectual property entities, including the specification of the associated conditions, together with other contractual aspects, such as payments, notifications or material delivery.

However, CEL may also be used as electronic format for contracts on the trade of media rights also beyond the MPEG framework.

The main aspect of CEL contracts are the operative clauses, represented as machine readable deontic expressions, i.e. the agreed permissions, obligations, and prohibitions, and the associated terms and conditions.

Besides, the CEL contract includes the identification of the contract itself, its parties, and the possible relationships with other contracts.

Among the provided features, there is the possibility to insert the textual version of the contract and/or of specific clauses, in particular for the case in which the original contract is narrative, i.e. written in natural language. Also, it is possible to add metadata related to any contract entity and to have encryption of the whole contract, or any sub-part of it. As electronic format for a contract document, the agreement of the parties can be proved by their digital signature.

Eventually, CEL provides to the media companies the basic means for the collection of knowledge on held rights, also derived from multiple contracts, as rights port-folio, for business management purposes.

Various potential benefits can be associated to the use of CEL. Firstly, CEL can support the business of media companies, for product placement and maximizing reuse of archive content, implying also cost reductions in all rights related activities, e.g. rights clearance. Afterwards, it supports the respect of copyright laws with respect to new exploitation technologies, also by contributing to the reduction of

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mistakes with respect to contract compliance, implying decreasing number of controversies and other cost reductions. In general, CEL aims at increasing the quality of rights information, which gets more reliable and can be integrated with other metadata in standard way. This can bring even to improve working conditions and all the decision processes within media companies.

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Information technology — Multimedia framework (MPEG-21) —

Part 20: Contract Expression Language

1 Scope

This document specifies a language for representing contracts in the Multimedia Framework formed for the transaction of MPEG-21 Digital Items or services related to the MPEG-21 Framework.

Contract Expression Language (CEL) aims at digitally representing the agreements made in environments using ISO/IEC 21000. These agreements are contracts for transactions of content packed as Digital Items, as well as services provided around this content.

The range of contracts under scope are as follows:

— contracts about transactions on rights for the exploitation of content as MPEG-21 Digital Items;

— contracts about the provision of MPEG-21-based services, i.e. delivery, identification, encryption, search and others.

The aspects represented by CEL contracts include the following:

— the textual clauses, in natural language as they are in the narrative contract, duly structured;

— the operative clauses, as computer language expressions.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 21000-5, *Information technology — Multimedia framework (MPEG-21) — Part 5: Rights Expression Language*

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

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

3.1.1
action
something done or performed by a *party* (3.1.6) or anyone acting on her behalf

Note 1 to entry: Action also represents the exercise of a right or duty.

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3.1.2
deontic expression
generic entity encompassing the properties of an agreed machine readable contract clause regulating the *actions* (3.1.1) of the *parties* (3.1.6)

3.1.3
MPEG-21 Contract
representation of agreements formed for the transaction of MPEG-21 Digital Items or services related to the MPEG-21 Framework

3.1.4
MPEG-21 Service
system supplying utility in the MPEG-21 Framework

3.1.5
obligation
deontic expression (3.1.2) binding one of the *parties* (3.1.6) to execute an *action* (3.1.1)

3.1.6
party
organization or a user who accepts to respect the *deontic expressions* (3.1.2) defined in the contract and who expects the other *parties* (3.1.6) in the same contract to do the same

3.1.7
permission
deontic expression (3.1.2) allowing one of the *parties* (3.1.6) to execute an *action* (3.1.1)

3.1.8
prohibition
deontic expression (3.1.2) binding one of the *parties* (3.1.6) not to execute an *action* (3.1.1)

3.2 Abbreviated terms

CEL	Contract Expression Language
IPRE	Intellectual Property Rights Exploitation
IRI	Internationalized Resource Identifier
MCO	Media Contract Ontology
MPEG	Moving Picture Experts Group
MPEG-7	ISO/IEC 15938
MPEG-21	ISO/IEC 21000
OWL	Web Ontology Language
RDF	Resource Description Framework
REL	Rights Expression Language
URI	Uniform Resource Identifier (IETF Standard is RFC 3986)
URN	Uniform Resource Name (IETF Standard is RFC 2141)
W3C	World Wide Web Consortium
XML	Extensible Markup Language (W3C Recommendation)

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