INTERNATIONAL STANDARD

ISO/IEC 21000-22

Third edition
2022-09

Information technology — Multimedia framework (MPEG-21) —

Part 22: User description

Technologies de l'information — Cadre multimédia (MPEG-21) — Partie 22: Description de l'utilisateur

Reference number
ISO/IEC 21000-22:2022(E)

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Published in Switzerland

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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.

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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*.

This third edition cancels and replaces the second edition (ISO/IEC 21000-22:2019), which has been technically revised.

The main changes are as follows:

— technologies related to vibro-haptic devices, that convey enriched information of consecutive vibrations to help elderly/fragilized persons, like load guidance or emergency warnings, for instance.

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Introduction

The four data formats standardized in this document are represented in Figure 1: User Description (UD), Context Description (CD), Service Description (SD), and Recommendation Description (RD), where UD/CD/SD/RD indicate the formats specified by MPEG-21 User Description.

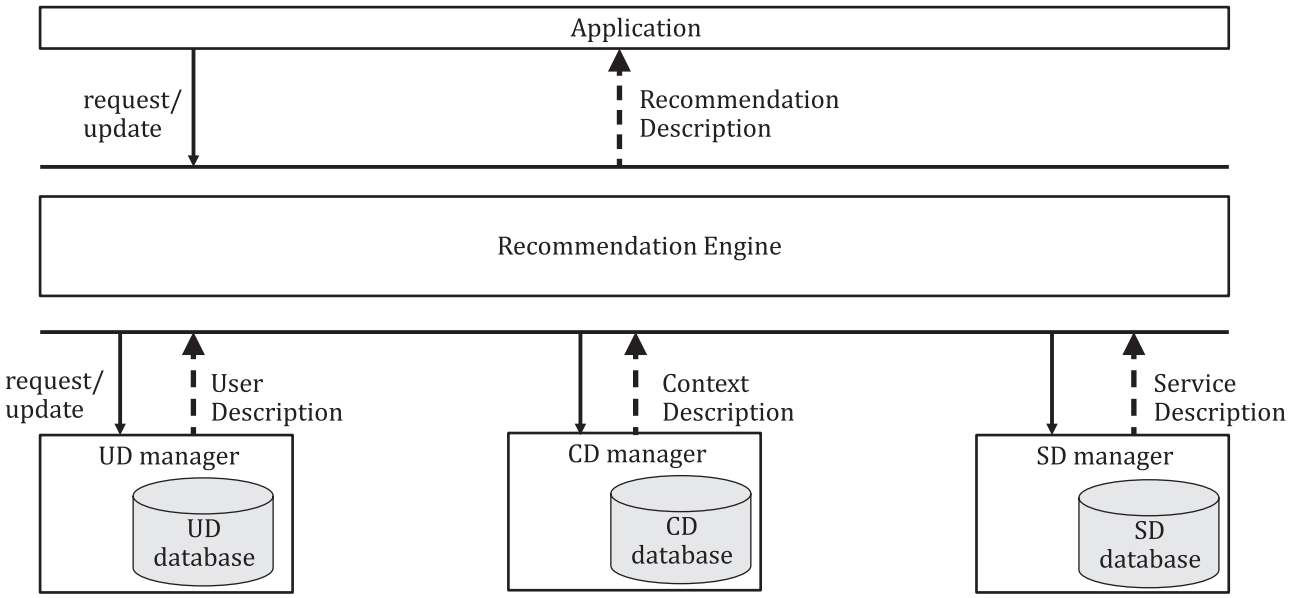


Figure 1 — Conceptual Model of MPEG-21 User Description

This document specifies User Description, Context Description, Service Description and Recommendation Description. Description Managers, Recommendation Engine and Application (in black in the figure) are outside of the scope of this document. The description managers of figure 1 are in charge of:

1) Updating UD, CD and SD e.g. as a result of a User selection

2) Providing UD, CD and SD in response to requests coming from the Recommendation Engine.

Recommendation Engines process UD, CD and SD and provide Recommendations in the form of Recommendation Description (RD) typically to an Application.

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Information technology — Multimedia framework (MPEG-21) —

Part 22: User description

1 Scope

This document specifies four data formats: User Description (UD), Context Description (CD), Service Description (SD), and Recommendation Description (RD). This document also specifies technologies related to consecutive vibration.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

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

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

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

3.1
MPEG-21 UD
four standard descriptions that contain information about user, context, service and recommendation

3.2
user description
UD
set of data which may contain static and/or dynamic information about the user

EXAMPLE Identity, interactions, preferences, security settings.

3.3
context description
CD
set of data that describes the context and environmental situation in which the user is located,

EXAMPLE Device in use, physical position, environmental variables (such as temperature and humidity), traffic conditions, security settings.

3.4
service description
SD
set of data containing pertinent information (including security settings) about services (or a set of sub-services)

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3.5
recommendation description
RD
set of recommendation data, containing subsets from *UD* (3.2), *CD* (3.3), *SD* (3.4) and additional logical relations and metadata related to the subsets

3.6
user
human or software agent, industrial process or device that is performing autonomous activities

3.7
service
independent, value-adding operation, which brings values to users, or applications providing benefits responding to user's needs

3.8
context
environmental situation for the user

EXAMPLE Device in use, physical location, etc.

3.9
application
entity in charge of responding to the users' requests

EXAMPLE An interface allowing users to choose their preferred programs on a smart TV.

3.10
manager
<UD/CD/SD> entities that provide functionalities of filtering, accessing, storing, editing, updating and securing *UD* (3.2), *CD* (3.3) and *SD* (3.4)

3.11
recommendation engine
process (or a set of processes) in charge of exploiting all available information contained in *UD* (3.2), *CD* (3.3) and *SD* (3.4) to produce a recommendation, i.e. *RD* (3.5), for an enriched user experience

4 General description

Clauses 5, 6, 7, 8 and 9 present the specification of the general description, and of the UD, CD, SD and RD, respectively. Schemes for all these descriptions shall be as provided in Annex A. Classification schemes shall be as provided in Annex B.

4.1 commonAttributes

This `commonAttributes` describes basic properties of each sub element for UD, CD, SD and RD.

4.1.1 Syntax

```
<attributeGroup name="commonAttributes">
   <attribute name="generatedTime" type="dateTime"/>
   <attribute name="descriptionID" type="anyURI" use="required"/>
</attributeGroup>
```

4.1.2 Semantics

Name	*Definition*
`commonAttributes`	Describes properties of each sub element for UD, CD, SD and RD.

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