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

**Part 22:  
User Description**

*Technologies de l'information — Cadre multimédia (MPEG-21) —*

*Partie 22: Description de l'utilisateur*

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## Foreword

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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](http://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](http://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 of the voluntary nature of standards, 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 [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

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 second edition cancels and replaces the first edition (ISO/IEC 21000-22:2016), which has been technically revised. It also incorporates the Amendment ISO/IEC 21000-22:2016/Amd. 1:2018.

The main changes compared to the previous edition are as follows:

— addition of technologies related to loudness control and visual expression.

A list of all parts in the ISO/IEC 21000 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 [www.iso.org/members.html](http://www.iso.org/members.html).

## **iTeh STANDARD PREVIEW** **(standards.iteh.ai)**

ISO/IEC 21000-22:2019

<https://standards.iteh.ai/catalog/standards/sist/2896b696-ee54-4e74-8f64-86beabf70103/iso-iec-21000-22-2019>

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

## Part 22:

## User description

### 1 Scope

This document standardizes four data formats: User Description (UD), Context Description (CD), Service Description (SD), and Recommendation Description (RD). This document also specifies technologies related to loudness control and visual expression.

### 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 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

#### 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)

### 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

[ISO/IEC 21000-22:2019](https://standards.iteh.ai/catalog/standards/sist/2896b696-ee54-4e74-8f64-86beabf70103/iso-iec-21000-22-2019)

<https://standards.iteh.ai/catalog/standards/sist/2896b696-ee54-4e74-8f64-86beabf70103/iso-iec-21000-22-2019>

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 programmes on a smart TV.

### 3.10 manager

<UD/C/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

Chapters 5, 6, 7, 8 and 9 present the specification of the general description, and of the UD, CD, SD and RD, respectively. Annex A provides the schemes for all these descriptions while Annex B provides related classification schemes.

### 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
<code>commonAttributes</code>	Describes properties of each sub-element for UD, CD, SD and RD.
<code>generatedTime</code>	Specifies generated time of description.
<code>descriptionID</code>	Indicates the ID of the description. This information can be a combination of numbers, alphabets, etc. All description need to have the unique descriptionID.

#### 4.1.3 Examples

```
<ud:UD generatedTime="2015-0-25T09:30:47Z" descriptionID="UD1234">
  <ud:UserID>ID_132534</ud:UserID>
</ud:UD>
```

## 4.2 ValueTypes

These several value types can be used to precisely express the data according to various conditions. These simple types define a basic scale type and specify the constraints and information.

### 4.2.1 Syntax

```
<simpleType name="valueByNominal">
  <restriction base="NMTOKEN"/>
</simpleType>
<simpleType name="valueByOrdinal">
  <restriction base="integer"/>
```