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Information technology — Rich media user interfaces —

Part 1: Widgets

Technologies de l'information — Interfaces d'utilisateur au support riche —

Partie 1: Widgets

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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

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.

ISO/IEC 23007-1 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information*.

ISO/IEC 23007 consists of the following parts, under the general title *Information technology — Rich media user interfaces*:

— *Part 1: Widgets*

— *Part 3: Conformance and reference software*

Advanced user interaction interface will form the subject of a future Part 2.

Introduction

User interface represents a crucial feature for many consumer devices and services. User interfaces have recently evolved to support more media types including audio, video, 2D or 3D graphics and rich media functionalities. User interfaces are also evolving towards flexible and composite collections of small dedicated applications retrieved from different sources and aggregated into an effective and user friendly interface. Such applications are generally called widgets, a widget being a self-contained entity, with an interactive and dynamic visualization.

Additionally, more and more devices are capable of displaying rich media user interfaces, from desktop computers, to mobile devices, to home appliances, including TV sets. In this heterogeneous environment, users expect a homogeneous, unified experience when interacting with their devices.

The objective of this part of ISO/IEC 23007 is to provide normative interfaces between widgets and widget managers, to allow widgets from different service providers to run, communicate and be transferred within a unique framework.

In this part of ISO/IEC 23007, widgets can be processed by entities running on different devices, called widget managers, in charge of processing and managing the life cycle of the widgets supporting communications with other entities locally or remotely deployed and enabling widget mobility across devices.

This part of ISO/IEC 23007 is also known as “MPEG-U”. This part of ISO/IEC 23007 addresses the normative aspects of the MPEG-U widgets. In particular, it specifies widget packaging formats, aspects for widget communications with external entities and for widget mobility. It also contains a technical annex describing a list of use cases and examples to address such use cases. ISO/IEC 23007-2 will specify advanced user interaction interfaces to support various advanced user interaction devices. ISO/IEC 23007-3 addresses reference software and conformance aspects.

This part of ISO/IEC 23007 builds upon the W3C specification for widgets, packaging and configuration:

— to ensure that the widget packaging format and configuration documents are compatible with the MPEG media types which can be used to describe widgets (e.g. 2D or 3D content, MPEG-4 BIFS or MPEG-4 LASeR). For restricted profiles of these languages, this implies in particular the ability to create meaningful widgets which do not rely on scripting languages.

— to ensure that widgets can be transported on any existing transport mechanisms, in particular those defined by MPEG (e.g. ISO base media file format and the MPEG-2 Transport Stream).

— to ensure that it is targeted for domains in addition to Web-connected devices, e.g. broadcast, mobile or home networking domains.

— to enable interoperable communications between a widget and other entities (including widgets), these entities being remote (e.g. UPnP services [4]) or local services, or other widgets running in the same environment.

— to enable MPEG-specific requirements, such as the ability to dynamically update the widget presentation or to display a widget in a dynamic and interactive simplified representation.

— to enable widgets, mobility across devices while maintaining the state of the widget.

A general description of the architectures of this part of ISO/IEC 23007 is provided first, to clearly identify normative and non-normative entities.

This is followed by descriptions of behaviour and syntax of the normative elements, and syntax and examples of the normative elements for which a definition of new XML syntax is needed, namely widget manifest and widget API.

Annex A and Annex B provide registration forms for two media types defined within this part of ISO/IEC 23007. A complete example of the standardized technology can be found in Annex C. Examples of use cases which can be realized using MPEG-U are provided in Annex D. Finally, a description of the relationship of this specification with the W3C widgets family of specifications is provided in Annex E.

Information technology — Rich media user interfaces —

Part 1:
Widgets

1 Scope

This part of ISO/IEC 23007 defines a specification for the exchange, the control and the communication of widgets with other entities, a widget being a self-contained living entity, with an interactive and dynamic visualization.

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/IEC 14496-12, *Information technology — Coding of audio-visual objects — Part 12: ISO base media file format (technically identical with ISO/IEC 15444-12)*

W3C WPC "Widgets 1.0: Packaging and Configuration", W3C Working Draft 24 February 2009, available at http://dev.w3.org/2006/waf/widgets