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Information technology — User interfaces — Universal remote console —

Part 5: Resource description

Technologies de l'information — Interfaces utilisateur — Console à distance universelle —

Partie 5: Description des ressources

Reference number
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ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

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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 WTO principles in the Technical Barriers to Trade (TBT), see the following URL: Foreword — Supplementary information.

The committee responsible for this document is ISO/TC JTC 1, *Information technology*, Subcommittee SC 35, *User interfaces*.

This second edition cancels and replaces the first edition (ISO/IEC 24752–5:2008), which has been technically revised.

ISO/IEC 24752 consists of the following parts, under the general title *Information technology — User interfaces — Universal remote console*:

— *Part 1: Framework*

— *Part 2: User interface socket description*

— *Part 4: Target description*

— *Part 5: Resource description*

— *Part 6: Web service integration*

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Introduction

This is the second edition of this part of the International Standard. The main purpose of the revision is an alignment with recent developments in the Web service area, in particular with the new ISO/IEC 24752-6 on Web service integration, along with an overall simplification of the specified technologies.

This part of ISO/IEC 24752 defines a format for describing atomic resources, resource sheets, grouping resources, and grouping sheets relevant to the user interface of a device or service ("target"). For atomic resources that are stored in a resource sheet, a storage format is specified. For atomic resources that are stored externally to the resource sheet, the pertinent format type specification applies.

A *resource* is any object that is used as an entity or to support decision making in the construction of a concrete user interface. This part of ISO/IEC 24752 specifies how resources are described in the context of the universal remote console (URC) framework. It defines a format for describing atomic resources, resource sheets, grouping resources, and grouping sheets relevant to the user interface of a device or service ("target").

Atomic resources include text and non-text elements of a user interface such as labels, help text, keyboard shortcuts (access keys), associated words (keywords) and location text. Non-text elements may include icons, sounds or videos. Atomic resources can be characterized as follows.

An atomic resource is of static nature, i.e. it does not change during the user's interaction with the target.

NOTE 1 This is not meant to exclude atomic resources that contain references (placeholders) to values of socket variables. In this case the atomic resource itself (i.e. the static text with the reference to the socket variable) doesn't change, but its rendition may change when the target's state changes.

An atomic resource can be of any form, including textual, visual, auditory, and multimodal. This is reflected in the atomic resource's type. Atomic resource types include text, sound, image, animation, and video clip. In this context animations and video clips are construed as static objects because they don't change over the user interface's lifetime (the recorded bits of the video clip don't change when it is played).

An atomic resource of type "Text" is modality-independent, i.e. it can be rendered in visual, auditory, or tactile forms. Atomic resources of types other than "Text" are modality-specific.

An atomic resource is typically specific to the cultural, language, and functional accommodation of a user. For example, textual atomic resources are typically language specific; images can be culture-specific; picture symbols can be used to represent concepts that can be understood by people with certain cognitive disabilities.

An atomic resource can be replaced by a (supplemental) resource (which is itself an atomic resource).

Examples of atomic resources are the following:

— a text string used to label a window;

— a text string containing help for an interface element;

— an icon used to label a button;

— a Bliss symbol labelling a function;

— a sound file that announces help instructions;

— a text string that describes how to locate an ATM in a public building.

An *atomic resource description* specifies characteristics (as properties) of an atomic resource. Properties include its type, its use context, and the atomic resource's storage location and format. The use context specifies the usage location (specific element in a specific user interface), usage role (e.g. label or help text), and language context pertaining to the application of an atomic resource.

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An atomic resource can have more than one atomic resource description, specifying additional properties and alternative property values, and several sets of use contexts. Also, atomic resource descriptions and the atomic resource they describe don't have to be stored in one file or on one server necessarily. For example, some atomic resources (e.g. images) can be stored as binary files, and their descriptions are stored in text files.

A *grouping resource* (or short *grouping)* specifies a hierarchical grouping of user interface elements that is external to a socket description. This part of ISO/IEC 24752 applies groupings to user interface socket elements, but that is not a restriction in general. Groups of user interface (UI) elements can be nested, and subgroups and UI elements can occur multiple times within different groups. Groupings are structural hints as to how to present a concrete user interface made up of individual user interface elements, including user interface characteristics such as layout and navigation.

Supplemental resources can replace or supplement the target resources. By choosing between a set of alternative objects when constructing the concrete user interface, the result can be tailored towards user preferences and user device capabilities. The mechanism of supplemental resources facilitates the generation of specialized user interfaces that build on a common (modality-independent) user interface model, the user interface socket provided by the manufacturer of a target.

A *resource sheet* is a file that contains atomic resource descriptions of related atomic resources, plus optionally the atomic resources themselves (if they are textual). Alternatively (and for binary atomic resources) the atomic resources can be stored in individual files separate from the resource sheet. Typically, a manufacturer would provide one resource sheet per target and language. Third parties can provide additional resource sheets pertaining to the same target. See Annex A for a sample resource sheet.

A grouping sheet is a file that contains groupings. Typically, a manufacturer would provide one grouping sheet per target in a language-independent manner. Third parties can provide additional grouping sheets pertaining to the same target. See Annex A for a sample grouping sheet.

One purpose of this part of ISO/IEC 24752 is to facilitate the development and deployment of a wide variety of devices (from different manufacturers) that can act as URCs. The URC framework and its components are specified in part 1, and the user interface socket in part 2 of this International Standard. A user interface socket is a machine-interpretable description of the state and functions of the target or a part of the target. The target description is specified in ISO/IEC 24752-4.

Within the URC framework, an atomic resource makes reference to a specific element in a user interface socket (described in a user interface socket description), to a specific element in a target description, or to any form of user interface implementation description.

NOTE 2 Within the URC framework, there needs to be a common set of resource types and a common format for resource descriptions so that they can be used by any URC. This part of ISO/IEC 24752 defines both. In this part of ISO/IEC 24752, the terms "resources" and "resource descriptions" include only those objects and descriptions that conform to the International Standard formats defined in this part of ISO/IEC 24752. It is important to note that URCs can employ other types of resources and resource descriptions beyond those described in this part of ISO/IEC 24752.

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Information technology — User interfaces — Universal remote console —

Part 5: Resource description

1 Scope

ISO/IEC 24752 is a multi-part International Standard that aims to facilitate operation of information and electronic products through remote and alternative interfaces and intelligent agents.

This part of ISO/IEC 24752 defines syntax and semantics for describing atomic resources, resource sheets, groupings, and grouping sheets relevant to the user interface of a device or service ("target").

2 Conformance

An extensible markup language (XML) fragment is an atomic resource description in conformance with this part of ISO/IEC 24752 if it conforms to Clause 6. An atomic resource description may use language extensions if the extensions are coded in XML syntax, and if it follows the syntax and requirements outlined in this part of ISO/IEC 24752 for all of its non-extension parts.

An XML file is a resource sheet in conformance with this part of ISO/IEC 24752 if it conforms to Clause 7. A resource sheet may use language extensions if the extensions are coded in XML syntax, and if it follows the syntax and requirements outlined in this part of ISO/IEC 24752 for all of its non-extension parts.

An XML fragment is a grouping resource in conformance with this part of ISO/IEC 24752 if it conforms to Clause 8. A grouping resource may use language extensions if the extensions are coded in XML syntax, and if it follows the syntax and requirements outlined in this part of ISO/IEC 24752 for all of its non-extension parts.

An XML file is a grouping sheet in conformance with this part of ISO/IEC 24752 if it conforms to Clause 9. A grouping sheet may use language extensions if the extensions are coded in XML syntax, and if it follows the syntax and requirements outlined in this part of ISO/IEC 24752 for all of its non-extension parts.

NOTE URC manufacturers are encouraged to implement their URCs so that unrecognized markup (that may belong to unknown language extensions) is ignored without failing.

3 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 10646:2011, *Information technology — Universal Coded Character Set (UCS)*

ISO 15836:2009, *Information and documentation — The Dublin Core metadata element set*

ISO/IEC 24752-1, *Information technology — User interfaces — Universal remote console — Part 1: Framework*

ISO/IEC 24752-2, *Information technology — User interfaces — Universal remote console — Part 2: User interface socket description*

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ISO/IEC 24752-4, *Information technology — User interfaces — Universal remote console — Part 4: Target description*

4 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 24752-1, ISO/IEC 24752-2 and ISO/IEC 24752-4, and the following apply.

4.1
anonymous atomic resource
atomic resource that has no global identifier

4.2
anonymous resource
resource that has no global identifier

4.3
language extension
addition of elements, attributes, or values to an XML-based language beyond the original language specification

Note 1 to entry: Language extensions can be provided by standards organizations, consortia, vendors, or other organizations.

5 Relation to other standards

5.1 Relation to Dublin Core Metadata Element Set

This International Standard adopts some of the metadata properties defined within the Dublin Core Metadata Initiative (DCMI) Terms, a standard for the description of cross-domain information. Where appropriate, the syntax employed follows the Dublin Core Metadata Initiative's document "Guidelines for implementing Dublin Core in XML".

5.2 Relation to XML

This Standard defines an XML based language. Markup in XML is case sensitive.

Tag names, and attribute names and values are not localizable, i.e. they are identical for all international languages. However, the text content between tags can be language specific. As with all XML based languages, white space characters immediately surrounding tags are non-significant.

This specification makes use of the XML namespaces concept to enable the import of element and attribute names defined elsewhere.

All element and attribute names used in Clauses 6 and 7 with no namespace prefix are defined by this International Standard and are part of the resource sheet namespace with URI "http://openurc.org/ns/rsheet-2". The namespace identifier 'rs' should be used for it, if not defined as default namespace.

All element and attribute names used in Clauses 8 and 9 with no namespace prefix are defined by this International Standard and are part of the grouping sheet namespace with URI "http://openurc.org/ns/grpsheet-2". The namespace identifier 'gs' should be used for it, if not defined as default namespace.

Throughout this document, the following namespace prefixes and corresponding namespace identifiers are used for referencing foreign namespaces:

— dc: The Dublin Core Metadata Element Set V1.1 namespace (http://purl.org/dc/elements/1.1/), as specified in ISO 15836

— dcterms: The DCMI Metadata Terms namespace (http://purl.org/dc/terms)

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