INTERNATIONAL STANDARD

**ISO/IEC 24752-2**

Second edition
2014-12-15

Corrected version
2016-04-01

# Information technology — User interfaces — Universal remote console —

## Part 2: User interface socket description

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

*Partie 2: Description de "socket" d'interface utilisateur*

Reference number
ISO/IEC 24752-2:2014(E)

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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/IEC JTC 1, *Information technology*, Subcommittee SC 35, *User interfaces*.

This second edition cancels and replaces the first edition (ISO 24752-2:2008), which has been technically revised.

This corrected version of ISO/IEC 24752-2:2014 incorporates the following modifications.

Clause 8: in the last line of paragraph 2 of 8.9.3, <relevant> has been changed to <write> and the reference has been amended to 7.4.3 instead of 8.9.3.

Clause 11: in the EXAMPLE in 11.3, the spaces contained in the values of the value attribute have been removed.

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

— *Part 1: General 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 ISO/IEC 24752. 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.

A user interface socket is an abstract concept that, when implemented, exposes the functionality and state of a target in a machine-interpretable manner. A user interface socket is independent of any specific implementation platform.

A user interface socket contains variables, commands, and notifications, optionally structured in sets that may be nested in a hierarchical fashion. The variables include all of the dynamic data a user can perceive and/or manipulate, and may also include additional dynamic supporting data that is not presented to the user. Example variables include the volume of a television, the current floor of an elevator, or an internal variable representing the current state of a transaction that is used to control dynamic features of the interface. A command is a core function that a user can request a target to perform and that cannot be represented by a variable. The commands include all target functions that can be called by users. Examples include the 'search' command of an airline reservation system or the 'seek' command of a CD player. A user interface socket does not include commands for accessing the values of the variables. There are typically no commands that simply change the values of variables. An exception would be a 'reset' operation which puts the target into a specific state. The notifications are special states where normal operation is suspended, such as an exception state. Notifications are special states triggered by the target. Examples include an announcement made by a public address system in an airport, a clock alarm, or a response to invalid input for a field of a form.

A user interface socket specification is an XML document that uses the constructs defined in this part of ISO/IEC 24752 to describe a user interface socket.

See Annex A for an example user interface socket description.

NOTE Additional information is needed before the socket can be presented to a user, including natural language labels and help text associated with the elements of the user interface. This information is provided externally to the socket description. Resources reference socket elements using the socket's name (as given in the socket descriptions 'about' attribute value, see 6.2) and the element 'id' attribute (see 7.2, 9.2 and 10.2). Refer to ISO/IEC 24752-5 for further details.

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# Information technology — User interfaces — Universal remote console —

# Part 2: User interface socket 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.

A user interface socket is an abstract user interface that describes the functionality and state of a device or service (target) in a machine-interpretable manner that is independent of presentation and input capabilities of a user interaction device. This part of ISO/IEC 24752 defines an Extensible Markup Language (XML)-based language for describing a user interface socket. The purpose of the user interface socket is to expose the relevant information about a target so that a user can perceive its state and operate it. This includes data presented to the user, variables that can be manipulated by the user, commands that the user can activate, and exceptions that the user is notified about. The user interface socket specification is applicable to the construction and adaptation of user interfaces.

## 2 Conformance

An XML file conforms to this part of ISO/IEC 24752 (i.e. is a user interface socket description) if it fulfils all of the following requirements:

a) it has an MIME type as specified in 6.1, if applicable;

b) it is coded in UCS (see 6.1);

c) its root element is the <uis:uiSocket> element (with uis representing the namespace "http://openurc.org/ns/uisocketdesc-2"), as specified in Clause 6;

d) it contains all required elements and attributes with their proper values, as specified in Clause 6;

e) if it contains recommended or optional elements or attributes with their values, these are presented as specified in Clause 6.

NOTE 1 Strict language conformance (i.e. no additional elements or attributes allowed) is not required because future versions of this part of ISO/IEC 24752 might add new elements, attributes, and values. Therefore, URC manufacturers are encouraged to implement their URCs so that unrecognized markup is ignored without failing.

NOTE 2 Target manufacturers who want to add manufacturer-specific information to a socket description beyond the elements, attributes, and values specified in this part of ISO/IEC 24752 can do so by externally providing (proprietary) resource descriptions that point into the structure of a socket description. Refer to ISO/IEC 24752-5 for details.

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

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

ISO/IEC 14977:1996, *Information technology — Syntactic metalanguage — Extended BNF*

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

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

W3C Recommendation: XML Path Language (XPath) 2.0 (Second Edition), W3C Recommendation 14 December 2010 (Link errors corrected 3 January 2011)[1)]

W3C Recommendation: XQuery 1.0 and XPath 2.0 Functions and Operators (Second Edition), W3C Recommendation 14 December 2010[2)]

W3C Recommendation: XML Schema Part 1: Structures Second Edition, W3C Recommendation 28 October 2004[3)]

W3C Recommendation: XML Schema Part 2: Datatypes Second Edition, W3C Recommendation 28 October 2004[4)]

# 4 Terms and definitions

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

**4.1**
**context element**
element to which a dependency pertains

# 5 Relation to other standards

## 5.1 Relation to XML

This specification defines an extensible Markup Language (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 this document with no namespace prefix are defined by ISO/IEC 24752 series and are part of the namespace with URI reference http://openurc.org/ns/uisocketdesc-2. If not defined as the default namespace, the namespace identifier 'uis' should be used.

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

— dc: The Dublin Core Metadata Element Set namespace (http://purl.org/dc/elements/1.1/) (Element Set defined by ISO 15836);

1) File can be accessed in http://www.w3.org/TR/2010/REC-xpath20-20101214/

2) File can be accessed in http://www.w3.org/TR/2010/REC-xpath-functions-20101214/

3) File can be accessed in http://www.w3.org/TR/2004/REC-xmlschema-1-20041028/

4) File can be accessed in http://www.w3.org/TR/2004/REC-xmlschema-2-20041028/


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