INTERNATIONAL STANDARD

ISO/IEC 24752-1

Second edition
2014-12-15

Information technology — User interfaces — Universal remote console —

Part 1: General framework

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

Partie 1: Cadre général

Reference number
ISO/IEC 24752-1:2014(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. 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).

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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*, SC 35, *User interfaces*.

This second edition cancels and replaces the first edition (ISO/IEC 24752-1:2008), 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 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, along with an overall simplification of the specified technologies.

This part of ISO/IEC 24752 is one of a set of International Standards to facilitate operation of information and electronic products through remote and alternative interfaces and intelligent agents. The purpose of ISO/IEC 24752-1 is to facilitate the development and deployment of a wide variety of devices (from different manufacturers) that can act as universal remote consoles (URCs) for an equally varied range of target devices and services (targets), also from different manufacturers. It allows users to control any number of information and electronic products in their environment.

The targets include both devices and services. They can range from things as simple as light switches and thermostats to more complex items such as audio-visual equipment, home appliances, in-car electronics, web services, and any other devices or services that can be controlled electronically (or via information technology).

Targets can be in the same location as the individual who desires to control the target through the URC, or at any distance from the URC/user as long as there is some type of network connection between the URC and the target. This is possible since a URC provides the user with all of the necessary controls as well as the prompts and other information displayed by the target.

The URCs could be software running on common mainstream devices such as personal computing and information technology devices (e.g. computers, laptops, tablet computers, smartphones, cell phones, or other telecommunications devices). They could also be functions implemented in assistive technology devices, or they could be devices which were specially built to function as URCs. They could be devices which were built to function primarily as a remote console for a particular family of products (e.g. a remote console designed to be part of a home audio-visual system), but could also serve to control any other devices compatible with this part of ISO/IEC 24752. They are similar to the behaviour of universal remote controls today, except for the following:

a) they have much greater function and scope,

b) they synchronize with the target in both directions (i.e. they can display the current status of the target),

c) they do not need to be programmed by the user (since they will automatically discover devices that are controllable in a user's vicinity, discover the abstracted user interface of the targets, and present it in the way preferred by the user and their URC), and

d) they can be used out of sight of the product they are controlling.

The URCs could be all visual, all tactile, or all verbal in nature, or any combination thereof, because this International Standard specifies the content of a target user interface independently from the form in which it is presented. Thus, URCs could be designed that an individual could talk to and, through the URC, the user could have speech access to any compatible target listed above without any of these targets having any voice recognition or voice control functionality themselves. A person might, therefore, be able to say to their URC, "Record channel 12 and show me 'Law and Order'". Or they could lie in bed and say, "Set the alarm to 6:30 AM, start brewing the coffee at 6:00 AM, and now set the home security system to 'active'". Or, if one's spouse is already asleep, a person could pick up their smartphone or any other compatible URC device and accomplish these same tasks silently either by calling up control panels or by issuing the instructions in writing.

NOTE The URC framework does not provide the natural language control, but would provide all of the information and control necessary for control by a natural language processing URC.

Note that, although a URC implementation can involve hardware, requirements on this hardware such as safety and design requirements are not within the scope of this International Standard.

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A more detailed overview of the URC framework is provided on the OpenURC Alliance's website, at http://openurc.org/urc-overview.[6]

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Information technology — User interfaces — Universal remote console —

Part 1: General framework

1 Scope

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

This part of ISO/IEC 24752 defines a framework of components that combine to enable remote user interfaces and remote control of network-accessible electronic devices and services through a universal remote console (URC). It provides an overview of the URC framework and its components.

2 Conformance

2.1 URC

A conforming URC shall conform to the URC requirements as specified in Clauses 4 and 8.

Table 1 summarizes the requirements on URCs.

Table 1 — Summary of URC requirements

Requirement ("A URC shall ...")	See subclause
Retrieve documents from a target, including recognition of MIME types	4.2.3
Interpret a target description so that it can identify a target and open a control session with one of its sockets	4.2.4
Support the invocation of a target's locator function	4.2.5
Support an open session request to a target	4.3.2
Support a URC close session event to a target	4.3.5
Support an abort session event from a target	4.3.6
Track connection status information from the underlying network (TUN)	4.3.7
Synchronize values of socket variables	4.4.2
Request invocation of a socket command, including support for local parameters and command state updates	4.4.3
Receive and acknowledge notifications, including support for stacking notifications and their states	4.4.4
Synchronize actual indices of socket sets and elements	4.4.5
Support the 'timeout' attribute on notifications	4.4.7
Provide at least one target-URC network link (see 7.2 for TUN requirements)	4.5.1
Support reception and updating of dynamic atomic resources at runtime	4.5.2
Provide a concrete user interface for a control session with a target's socket	4.7
Implement the security and privacy functions available from the implemented TUNs	8.2

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