

---

---

**Information technology — User  
interfaces — Universal remote  
console —**

**Part 8:  
User interface resource framework**

*Technologies de l'information — Interfaces utilisateur —  
Télécommande universelle —*

*Partie 8: Cadre de ressources pour les interfaces utilisateur*

**Document Preview**

[ISO/IEC 24752-8:2018](https://standards.iteh.ai/catalog/standards/iso/f950a33e-0bfd-4ef8-a011-e0347f11e4cf/iso-iec-24752-8-2018)

<https://standards.iteh.ai/catalog/standards/iso/f950a33e-0bfd-4ef8-a011-e0347f11e4cf/iso-iec-24752-8-2018>



**iTeh Standards**  
**(<https://standards.iteh.ai>)**  
**Document Preview**

[ISO/IEC 24752-8:2018](https://standards.iteh.ai/catalog/standards/iso/f950a33e-0bfd-4ef8-a011-e0347f11e4cf/iso-iec-24752-8-2018)

<https://standards.iteh.ai/catalog/standards/iso/f950a33e-0bfd-4ef8-a011-e0347f11e4cf/iso-iec-24752-8-2018>



**COPYRIGHT PROTECTED DOCUMENT**

© ISO/IEC 2018

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
CP 401 • Ch. de Blandonnet 8  
CH-1214 Vernier, Geneva  
Phone: +41 22 749 01 11  
Fax: +41 22 749 09 47  
Email: [copyright@iso.org](mailto:copyright@iso.org)  
Website: [www.iso.org](http://www.iso.org)

Published in Switzerland

# Contents

	Page
Foreword .....	v
Introduction .....	vi
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>2</b>
<b>4 Conformance</b> .....	<b>3</b>
<b>5 Use cases (informative)</b> .....	<b>4</b>
5.1 General .....	4
5.2 User interface localisation .....	4
5.3 User interface personalisation .....	4
5.4 User interface accessibility .....	4
5.5 User interface responsiveness .....	5
5.6 User interface settings .....	5
<b>6 Workflow model (informative)</b> .....	<b>5</b>
6.1 General .....	5
6.2 Storing and retrieving a user-context .....	5
6.3 Storing and retrieving a task-context .....	5
6.4 Storing and retrieving an equipment-context .....	6
6.5 Storing and retrieving an environment-context .....	6
6.6 Describing resources .....	6
6.7 Finding and retrieving matching resources .....	7
6.8 Describing user interface settings .....	8
6.9 Finding and retrieving matching user interface settings .....	8
<b>7 REST interfaces for services</b> .....	<b>8</b>
7.1 General .....	8
7.1.1 REST architecture (informative) .....	8
7.1.2 Request and response parameters .....	9
7.1.3 Response codes .....	9
7.1.4 Authentication .....	10
7.1.5 Other general requirements .....	10
7.2 User-context .....	10
7.2.1 General .....	10
7.2.2 CREATE user-context (mandatory) .....	12
7.2.3 GET user-context (mandatory) .....	13
7.2.4 UPDATE user-context (mandatory) .....	14
7.2.5 DELETE user-context (optional) .....	14
7.2.6 GET user-context-list (mandatory) .....	15
7.3 Task-context .....	17
7.3.1 General .....	17
7.3.2 CREATE task-context (mandatory) .....	17
7.3.3 GET task-context (mandatory) .....	18
7.3.4 UPDATE task-context (mandatory) .....	19
7.3.5 DELETE task-context (optional) .....	20
7.3.6 GET task-context-list (mandatory) .....	20
7.4 Equipment-context .....	22
7.4.1 General .....	22
7.4.2 CREATE equipment-context (mandatory) .....	22
7.4.3 GET equipment-context (mandatory) .....	23
7.4.4 UPDATE equipment-context (mandatory) .....	24
7.4.5 DELETE equipment-context (optional) .....	25
7.4.6 GET equipment-context-list (mandatory) .....	26
7.5 Environment-context .....	28

7.5.1	General	28
7.5.2	CREATE environment-context (mandatory)	28
7.5.3	GET environment-context (mandatory)	29
7.5.4	UPDATE environment-context (mandatory)	30
7.5.5	DELETE environment-context (optional)	31
7.5.6	GET environment-context-list (mandatory)	32
7.6	Resource	34
7.6.1	General	34
7.6.2	CREATE resource (mandatory)	34
7.6.3	GET resource-by-ID (mandatory)	35
7.6.4	GET resource-from-listing (mandatory)	36
7.6.5	UPDATE resource (optional)	37
7.6.6	DELETE resource (optional)	38
7.7	Resource-description	38
7.7.1	General	38
7.7.2	CREATE resource-description (mandatory)	39
7.7.3	GET resource-description-by-ID (mandatory)	40
7.7.4	GET resource-description-from-listing (mandatory)	41
7.7.5	UPDATE resource-description (mandatory)	41
7.7.6	DELETE resource-description (optional)	42
7.8	Listing	43
7.8.1	General	43
7.8.2	CREATE listing (mandatory)	43
7.8.3	GET listing (mandatory)	44
7.8.4	DELETE listing (optional)	45
7.8.5	CONFIRM user-rating (optional)	46
<b>8</b>	<b>Security considerations</b>	<b>47</b>
<b>Annex A</b>	<b>(normative) Mapping for XML</b>	<b>48</b>
<b>Annex B</b>	<b>(normative) Mapping for JSON</b>	<b>67</b>
<b>Bibliography</b>		<b>86</b>

[ISO/IEC 24752-8:2018](https://standards.iteh.ai/iso-iec-24752-8-2018)

<https://standards.iteh.ai/catalog/standards/iso/f950a33e-0bfd-4ef8-a011-e0347f11e4cf/iso-iec-24752-8-2018>

## 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](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 on 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 the following URL: [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 35, *User interfaces*.

A list of all parts in the ISO/IEC 24752 series can be found on the ISO website.

<https://standards.iteh.ai/catalog/standards/iso/f950a33e-0bfd-4ef8-a011-e0347f11e4cf/iso-iec-24752-8-2018>

## Introduction

Adaptive user interfaces change their presentation and behaviour according to the specific context of use, including the user's needs and preferences, their devices and environmental parameters. Such changes are to be considered at development time. At runtime, the user interface can take all aspects of the context of use into consideration.

Changes at runtime often require that some custom-tailored user interface resources be prepared in advance. Examples include captions and audio description for videos, alternate text for images, a simplified version of an online banking app, a sign language video explaining how to take HDR photos on an online camera guide, and a help item in easy language for a tax report software. Such user interface resources will often be made available by third parties, for example human factors experts, user groups and individual users. They will upload and describe these resources on resource services from which adaptive user interface implementations can discover and retrieve them at runtime.

To make this process work, two aspects need standardization: First, user interface resources should be clearly and unambiguously described so that they can be discovered at runtime. Second, resource services hosting these user interface resources should be discoverable and have a clearly described interface for querying and retrieving user interface resources.

This document addresses both aspects in a flexible way. It specifies syntax and semantics for a RESTful resource service interface while not restricting the clients in using whatever vocabulary and terms they choose for the description of user interface resources. Since HTTP is used as the most common REST implementation, this document defines a light-weight protocol that can be used on virtually all user interface platforms, including web browsers, mobile apps and software agents.

NOTE Though this document is part of the Universal Remote Console (URC) framework, it can be used independently from the other URC technologies. In particular, a user interface implementation can benefit from a user interface resource service without being connected to a URC target and without employing the user interface socket approach.

[ISO/IEC 24752-8:2018](https://standards.iteh.ai/catalog/standards/iso/f950a33e-0bfd-4ef8-a011-e0347f11e4cf/iso-iec-24752-8-2018)

<https://standards.iteh.ai/catalog/standards/iso/f950a33e-0bfd-4ef8-a011-e0347f11e4cf/iso-iec-24752-8-2018>

# Information technology — User interfaces — Universal remote console —

## Part 8: User interface resource framework

### 1 Scope

This document defines a RESTful protocol for the provision and delivery of resources that are related to user interface adaptation based on context of use.

This document addresses requirements and recommendations for the following services:

- user-context service;
- task-context service;
- equipment-context service;
- environment-context service;
- resource service;
- resource-description service;
- matching service (for finding appropriate resources based on specific contexts and other match criteria).

<https://standards.iteh.ai/standards/iso/f950a33e-0bfd-4ef8-a011-e0347f11e4cf/iso-iec-24752-8-2018>

<https://standards.iteh.ai/standards/iso/f950a33e-0bfd-4ef8-a011-e0347f11e4cf/iso-iec-24752-8-2018>

### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 10646, *Universal Multiple-Octet Coded Character Set (UCS)*

IETF RFC 2046<sup>1)</sup>, *Multipurpose Internet Mail Extensions (MIME) Part Two: Media Types*

IETF RFC 3986<sup>2)</sup>, *Uniform Resource Identifier (URI): Generic Syntax*

IETF RFC 7159<sup>3)</sup>, *The JavaScript Object Notation (JSON) Data Interchange Format*

IETF RFC 7230<sup>4)</sup>, *Hypertext Transfer Protocol (HTTP/1.1): Message Syntax and Routing*

IETF RFC 7231<sup>5)</sup>, *Hypertext Transfer Protocol (HTTP/1.1): Semantics and Content*

1) November 1996, <https://tools.ietf.org/html/rfc2046>.

2) January 2005, <https://tools.ietf.org/html/rfc3986>.

3) March 2014, <https://tools.ietf.org/html/rfc7159>.

4) June 2014, <https://tools.ietf.org/html/rfc7230>.

5) June 2014, <https://tools.ietf.org/html/rfc7231>.