International Standard

ISO/IEC 4932

First edition
2025-12

Information Technology — Learning, education and training — Access for All (AfA) metadata for accessibility core properties

Technologies de l'information — Apprentissage, éducation et formation — Accès pour tous, métadonnées pour les propriétés essentielles en matière d'accessibilité

Reference number
ISO/IEC 4932:2025(en)

© ISO/IEC 2025



COPYRIGHT PROTECTED DOCUMENT

© ISO/IEC 2025

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
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword ... **iv**

Introduction ... **v**

1 Scope ... **1**

2 Normative references ... **1**

3 Terms and definitions ... **1**

4 Abbreviated terms ... **3**

5 Resource classes from ISO/IEC 19788-1 ... **3**
5.1 Resource class "Resource" ... 3
5.2 Resource class "Information Resource" ... 3

6 AfA Properties ... **4**
6.1 General ... 4
6.2 Specification of AfA properties ... 5
6.3 Accessibility summary ... 6
6.4 Access mode ... 6
6.5 Access mode sufficient ... 7
6.6 Accessibility feature ... 8
6.7 Accessibility control ... 8
6.8 Accessibility hazard ... 9
6.9 Accessibility API ... 10

7 Generic content value rule sets from other standards or locally defined ... **10**
7.1 Generic content value rule sets from ISO/IEC 19788-1 ... 10
7.2 Generic content value rule sets introduced in this document ... 11
7.2.1 Vocabulary term list ... 11

8 Vocabularies from other standards or locally defined ... **11**
8.1 Vocabularies from other documents ... 11
8.2 Access for all (AfA) vocabularies ... 12
8.2.1 Access mode vocabulary ... 12
8.2.2 Access mode sufficient vocabulary ... 12
8.2.3 Accessibility feature vocabulary ... 13
8.2.4 Accessibility control vocabulary ... 16
8.2.5 Accessibility hazard vocabulary ... 16
8.2.6 Accessibility API vocabulary ... 18

Annex A (normative) **Language equivalents for names and labels** ... **20**

Annex B (informative) **Examples of use of accessibility metadata** ... **21**

Annex C (informative) **Example specification of an application profile** ... **29**

Bibliography ... **31**

© ISO/IEC 2025 – All rights reserved

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.

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 or www.iec.ch/members_experts/refdocs).

ISO and IEC draw attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO and IEC take no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO and IEC had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents and https://patents.iec.ch. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of 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 www.iso.org/iso/foreword.html. In the IEC, see www.iec.ch/understanding-standards.

This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 36, *Information technology for learning, education, and training*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html and www.iec.ch/national-committees.

© ISO/IEC 2025 – All rights reserved

Introduction

0.1 Purpose and overview

This document is intended to facilitate the matching of resources to individual users' needs using a description of accessibility characteristics of resources chosen by the user. It will enable accessibility services providing automatic matching of resources and resource components to individual user's accessibility needs and preferences.

The properties and definitions within this document are functional; matching can be involved in the discovery, delivery and refinement of a resource (service, product or environment) for an individual user, in a given context, for a specific goal. The document recognizes and supports human diversity. It should not be used to evaluate resources, services or environments with respect to general accessibility, usability or other measures of quality.

This document aims to maximize conformance of AfA properties with ISO/IEC 19788, Metadata for Learning Resources. That standard conforms to the W3C Resource Description Framework so this standard will too.

Within this document, disability is defined as the mismatch between the individual user's stated needs and preferences and the resources, services or environment delivered.

The functional requirements of an individual could be influenced at different times by factors such as the user's context or environment, technical requirements of the user's device, the tools or supports available (e.g., assistive technologies or an assistant), the user's background or training, the goal the user wishes to pursue, or an impairment (disability in the traditional medical sense). Non-digital forms of resources may be involved.

Recognizing the range of possibilities, the focus of this document is to support a process that enables extensible, open and accessible registration of needs and preferences that can be presented as metadata in multiple languages and vocabularies familiar to each user while maintaining interoperability.

This document defines a core set of Access for All properties (AfA properties) for description of the accessibility characteristics of resources and their components and an example of a MLR Application Profile (ISO/IEC 19788-1) is provided. As with metadata defining the subject of a resource (ISO/IEC 19788-2), the property noting the provision of text alternatives for images, for example, is available for matching the resource to the user's needs and preferences. Hence the properties are intended for use also in the description of user functional requirements (needs and preferences).

The AfA properties will be sufficient in many circumstances, but where there is additional information available, or other needs, preferences or resource attributes to be described, additional terms conformant to this document, and thus ISO/IEC 19788-1, can be defined and used without loss of interoperability.

The needs and preferences of users with disability are greatly affected by changes in technology and changes in context and purpose. Users also expect vocabularies that contain familiar words. Typically, application profiles are developed by individual entities for their use while maintaining interoperability. In the case of users with disability, it may be that they create and share application profiles within a community of users and thus keep the standard current.

When resources in their initial form lack accessibility for a user, this may be corrected by the identification or creation of a needed accessible component that can be integrated with the original by a suitable computer service.

0.2 Granularity and refinements

From a data perspective, precision is known as "granularity". In some cases, precision is necessary to avoid ambiguity, in others to increase interoperability, and in yet others to increase local utility, for example. This principle supports global interoperability at the same time as local specificity. The level of granularity required depends on the circumstances and user requirements.

Whether using an assistive technology or not, user needs and preferences of individuals with a disability (from a medical perspective) are frequently very particular with little or no room for variance. A slight

© ISO/IEC 2025 – All rights reserved

variation in font size, button (physical or digital) size, or colour, for example, can be the difference between an accessible resource and an unusable one. Ensuring access for users whose choice of access modes is restricted by impairment often requires exact matching of a resource with a user's requirements: in such a case it is not a matter of convenience or optional refinement but one of utmost importance (see ISO 24751-1).

The AfA properties recognize the need for granularity in the field of accessibility. For this reason, definitions of properties will indicate, where relevant, if they are refinements of other terms. An example of a use for an extension for detail may be to accommodate two types of users in a resource description: the expert user who is competent to change the font size and color of a resource (where possible) and another user who needs the particular font size and color to be delivered.

Types of user extensions include:

— the addition of a property required in addition to those specified in this document;

— the addition of a property that refines one of those specified in this document.

A user extension that attracts widespread and common use may become a candidate for inclusion and incorporation into this or a future version (either in a new part or future edition).

0.3 Use of existing international standards and specifications

A key strategy in the development and maintenance of this document is using relevant international standards and specifications (or applicable parts thereof) to the greatest degree possible. In particular, this document adopts the framework in ISO/IEC 19788-1 and uses it to define some AfA properties tested and adopted by an international community including those contributing to IMS Global work, the development of ISO/IEC 24751-1, and the schema.org metadata model.

It is expected that AfA properties will be used in combination with others that describe attributes of resources such as the subject of the resource, the date of the resource, the creator of the resource, etc. For these purposes, the properties specified in the ISO/IEC 19788 and ISO/IEC 15836 series are recommended.

In particular, this document aims to maximize compatibility with existing standards such as IEEE 1484.12.1-2002 (LOM), ISO 15836-1:2017 (Information and documentation – The Dublin Core metadata element set), ISO/IEC 19788 (MLR), W3C Resource Description Framework, EPUB, and schema.org specifications so that users of these standards can migrate or mix-and-match data from one context to another in an efficient and cost effective manner.

© ISO/IEC 2025 – All rights reserved

Information Technology — Learning, education and training — Access for All (AfA) metadata for accessibility core properties

1 Scope

This document specifies a common, interoperable set of extensible properties for the description of resource content, functionality, user needs and preferences, to enable network-supported individualization of resources, services and environments to match the unique needs and preferences of the individual.

This document includes all relevant mechanisms for the publication of terminology for such descriptions, including publicly available registries of properties and related metadata resources such as application profiles.

This document takes an inclusive approach to individualization, since any user can experience a mismatch of their individual needs and preferences and the content or services delivered; it is not restricted to descriptions related to stereotypical notions of disability. It provides properties for describing access attributes of resources. It does not ascribe medical conditions to such properties (e.g. 'non-visual' as a property value does not infer visual disability, as when the user's eyes are busy watching the road).

This document defines a set of core Access for All (AfA) properties that can be used in a digital resource description (DRD), an AfA record, and equally in a stored personal needs and preferences profile, also an AfA record. It also includes how to extend or add a property or its value using an application profile as defined by ISO/IEC 19788-1.

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 19788-1, *Information technology — Learning, education and training — Metadata for learning resources-Part 1 Framework*

ISO/IEC 24751-1:2008, *Information technology — Learning, education and training — Access for All Accessibility — Part 1: Framework and reference model*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 19788-1 and ISO/IEC 24751-1 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

© ISO/IEC 2025 – All rights reserved

3.1
AccessForAll property
AfA property
property (ISO/IEC 19788-1:2024, 3.49) for use in the description of the *accessibility* (3.1) characteristics of a *resource* (ISO/IEC 19788-1:2024, 3.53)

Note 1 to entry: In the case of AccessForAll, the two main use cases, search and delivery, use the same properties. They are for users in resource discovery processes and resource providers in publication processes.

3.2
AfA digital resource description
DRD
set of values of AfA properties as a *MLR record* (ISO/IEC 19788-1:2024, 3.37) describing the accessibility characteristics of a *resource* (ISO/IEC 19788-1:2024, 3.53) (and resources directly related to that resource)

Note 1 to entry: A set can be a single value.

Note 2 to entry: A DRD can be included in another record.

3.3
AfA personal needs and preferences
PNP
set of values of AfA properties as a *MLR record* (ISO/IEC 19788-1:2024, 3.37) describing an individual user's required accessibility characteristics of a *resource* (ISO/IEC 19788-1:2024, 3.53) (and resources directly related to that resource)

Note 1 to entry: A set can be a single value.

Note 2 to entry: A PNP can be included in another record.

Note 3 to entry: A PNP is similar to an AfA preference concept as used in ISO/IEC 24751-4:2008, 3.7.

3.4
accessibility summary
human-readable summary of specific accessibility features or deficiencies, consistent with the other accessibility metadata

Note 1 to entry: See property specification subclause 6.3.

3.5
access mode
human sensory characteristics of a resource through which intellectual content is communicated

Note 1 to entry: see property specification subclause 6.4.

3.6
access mode sufficient
minimum set of resource access modes which together communicate all the semantic content of a resource

Note 1 to entry: see property specification subclause 6.5.

3.7
accessibility feature
accessibility characteristic that renders accessible an otherwise inaccessible access mode

Note 1 to entry: see property specification subclause 6.6.

3.8
accessibility control
identifies one or more input methods that allow access to all of the application functionality

Note 1 to entry: see property specification subclause 6.7.

© ISO/IEC 2025 – All rights reserved

3.9
accessibility hazard
characteristic of the described resource that is physiologically dangerous to some users

Note 1 to entry: see property specification subclause 6.8.

3.10
accessibility API
indicates that the resource is compatible with the referenced accessibility API

Note 1 to entry: see property specification subclause 6.9.

4 Abbreviated terms

AfA access for all

API application programming interface

DRD digital resource description

ID Identifier

LOM learning object metadata

MLR metadata for learning resources

PNP personal needs and preferences

URI uniform resource identifier

WCAG web content accessibility guidelines

5 Resource classes from ISO/IEC 19788-1

5.1 Resource class "Resource"

Resource Class Specification	
Identifier	ISO_IEC_19788-1:2024::RC0001
Canonical identifier	ISO_IEC_19788-1::RC0001
Label	Resource
Name	Resource
Definition	Instances of this class are the entities that can be identified and referenced by an unambiguous and stable identifier in a recognized identification system.
Subclass of	-
Note	-

5.2 Resource class "Information Resource"

Resource Class Specification	
Identifier	ISO_IEC_19788-1:2024::RC0004
Canonical identifier	ISO_IEC_19788-1::RC0004
Label	Information Resource
Name	InformationResource

© ISO/IEC 2025 – All rights reserved