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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

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Foreword

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

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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

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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.

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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*

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