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Information technology — Automatic identification and data capture techniques — Encoding and resolving identifiers over HTTP

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Foreword

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This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, SC 31, *Automatic identification and data capture techniques*.

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Introduction

There are many identifier systems in use today, some of which enjoy widespread usage and long histories. Examples include the International Air Travel Association (IATA) airport codes and identifiers such as digital object identifiers (DOIs) (see ISO 26324[5]), and country and currency codes. The ISO/IEC 15459 series[7] provides the basis for all identifier issuing agencies in the field of Automatic Identification and Data Capture (AIDC).

The ISO/IEC 15459 series[7] defines methods for ensuring that identifiers are globally unique in the world of AIDC without any reliance on, for example, the internet's domain name system or any given data service. This is critical for use cases where internet connectivity and the availability of online services cannot be allowed to affect whether a process can be completed, such as the purchase of an item.

However, existing identifiers can be usefully encoded in Hypertext Transfer Protocol Uniform Resource Identifiers (HTTP URIs) following Linked Data principles so that when connectivity is available, they can be used in multiple methods of online lookup, data query and data integration.

It is important to note that identity on the internet is defined by the domain name system. The Internet Engineering Task Force (IETF)'s Best Current Practice[2] makes it clear that each domain is sovereign over the URIs under that domain. This document brings the internet, Linked Data[8] and AIDC together to allow the discovery of online data related to physical objects in a way that recognizes and respects both approaches to globally unique identity. It further defines a common approach to how those URIs can be associated with links to multiple sources of data in addition to the one encoded directly in the HTTP URI.

This document focuses primarily on environments in which the URI is parsed offline to extract identifiers that are globally unique in their own right, irrespective of the internet domain name used. This applies especially, but not only, to identifiers that conform to the ISO/IEC 15459 series[7]. For use cases and environments where it is appropriate to rely on the internet domain name to confer global uniqueness on some or all aspects of identification, the IEC 61406 series[17][18] is likely to be relevant, especially for technical/engineering industries.

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Information technology — Automatic identification and data capture techniques — Encoding and resolving identifiers over HTTP

1 Scope

This document specifies the different approaches for using HTTP URIs to encode globally unique identifiers. It specifies a dual use data structure. It is both an HTTP URI and a composition of structured item identification properties and optionally descriptive attributes. These can be decomposed and interpreted on their own and/or be used as a pointer to additional information.

Methods are described to enable identification uniqueness in the context of AIDC. These rely on either:

a) identifiers, such as described in the ISO/IEC 15459 series[7], in the path or query string independent of the internet domain name; or,

b) the internet domain name.

The document further defines a basic common API for querying online services for information about identified items.

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 19762, *Information technology — Automatic identification and data capture (AIDC) techniques — Harmonized vocabulary*

RFC 3986, *Uniform Resource Identifier (URI): Generic Syntax. T Berners-Lee, R Fielding, L Masinter. IETF 2005*

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 19762 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/

3.1.1
dereference
look something up on the internet

Note 1 to entry: For a full definition, see RFC 3986.

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