AS ISO/IEC 18975:2025
ISO/IEC 18975:2024

Australian STANDARD®

STANDARDS Australia

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

urrently in preview, click buy full versi

AS ISO/IEC 18975:2025

This Australian Standard® was prepared by IT-034, Automatic Identification and Data Capture Techniques. It was approved on behalf of Standards Australia's Standards Development and Accreditation Committee on 07 February 2025.

This Standard was published on 21 February 2025.

The following are represented on Committee IT-034:

Australian Industry Group
Australian Institute of Traffic Planning and Management (AITPM)
Australian Packaging and Processing Machinery Association
Australian Steel Institute
Bureau of Steel Manufacturers of Australia
GS1 Australia
Intelligent Transport Systems Australia
National Association of Testing Authorities Australia
Steel Reinforcement Institute of Australia

This Standard was issued in draft form for comment as DR AS ISO/IEC 18975:2024.

Keeping Standards up-to-date

Ensure you have the latest versions of our publications and keep up-to-date about Amendments, Rulings, Withdrawals, and new projects by visiting:
www.standards.org.au

ISBN 978 1 76175 052 6

Currently in preview, click buy full version

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

First published as AS ISO/IEC 18975:2025.

COPYRIGHT

© ISO/IEC 2025 — All rights reserved
© Standards Australia Limited 2025

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher, unless otherwise permitted under the Copyright Act 1968 (Cth).

urrently in preview, click buy full versi

Preface

This Standard was prepared by the Standards Australia Committee IT-034, Automatic Identification and Data Capture Techniques.

The objective of this document is to specify the different approaches for using HTTP URIs to encode globally unique identifiers, as well as to specify 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 used as a pointer to additional information.

This document is identical with and has been reproduced from ISO/IEC 18975:2024, *Information technology — Automatic identification and data capture techniques — Encoding and resolving identifiers over HTTP*.

As this document has been reproduced from an international document, a full point substitutes for a comma when referring to a decimal marker.

Australian or Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably. Refer to the online catalogue for information on specific Standards.

The terms "normative" and "informative" are used in Standards to define the application of the appendices or annexes to which they apply. A "normative" appendix or annex is an integral part of a Standard, whereas an "informative" appendix or annex is only for information and guidance.

urrently in preview, click buy full versi

© Standards Australia Limited 2025

Contents

Preface ii
Foreword iv
Introduction v
1 Scope 1
2 Normative references 1
3 Terms, definitions and abbreviated terms 1
3.1 Terms and definitions 1
3.2 Abbreviated terms 1
4 URI structures 2
4.1 Framework 2
4.2 Structured path approach 2
4.3 Query string approach 4
4.4 Semantic differences 4
4.5 Canonicalization 4
5 Resolution 5
5.1 Linkset 5
5.2 LinkType parameter 5
6 Online considerations 5
Annex A (informative) **Examples** 7
Annex B (informative) **Code size optimization** 8
Annex C (informative) **Background information** 9
Annex D (informative) **Querying an identified item** 11
Bibliography 14

urrently in preview, click buy full versi

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*, SC 31, *Automatic identification and data capture techniques*.

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.

Currently in preview, click buy full version

© Standards Australia Limited 2025

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[3] 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.

Currently in preview, click buy full version

© Standards Australia Limited 2025

NOTES

urrently in preview, click buy full versi

Australian Standard®

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 http://www.electropedia.org/

3.1.1
dereference
look something up on the internet

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

3.2 Abbreviated terms

AI Application Identifier, as defined in ISO/IEC 15418[14]

AIDC Automatic Identification and Data Capture (barcodes, RFID tags, etc.)

© Standards Australia Limited 2025

currently in preview, click buy full version