

DRAFT INTERNATIONAL STANDARD

ISO/DIS 15000-2

ISO/TC 154

Secretariat: SAC

Voting begins on:
2020-04-16

Voting terminates on:
2020-07-09

Electronic business eXtensible Markup Language (ebXML) —

Part 2:

Applicability Statement (AS) profile of ebXML messaging service

ICS: 35.040.50

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Full standard:
<https://standards.iteh.ai/catalog/standards/sist/83f1c9d-e6e7-44bd-994d-30321cbe8db5/iso-dis-15000-2>

THIS DOCUMENT IS A DRAFT CIRCULATED FOR COMMENT AND APPROVAL. IT IS THEREFORE SUBJECT TO CHANGE AND MAY NOT BE REFERRED TO AS AN INTERNATIONAL STANDARD UNTIL PUBLISHED AS SUCH.

IN ADDITION TO THEIR EVALUATION AS BEING ACCEPTABLE FOR INDUSTRIAL, TECHNOLOGICAL, COMMERCIAL AND USER PURPOSES, DRAFT INTERNATIONAL STANDARDS MAY ON OCCASION HAVE TO BE CONSIDERED IN THE LIGHT OF THEIR POTENTIAL TO BECOME STANDARDS TO WHICH REFERENCE MAY BE MADE IN NATIONAL REGULATIONS.

RECIPIENTS OF THIS DRAFT ARE INVITED TO SUBMIT, WITH THEIR COMMENTS, NOTIFICATION OF ANY RELEVANT PATENT RIGHTS OF WHICH THEY ARE AWARE AND TO PROVIDE SUPPORTING DOCUMENTATION.

This document is circulated as received from the committee secretariat.

FAST TRACK PROCEDURE



Reference number
ISO/DIS 15000-2:2020(E)

© ISO 2020

iTeh STANDARD PREVIEW
(standards.iteh.ai)
Full standard:
<https://standards.iteh.ai/catalog/standards/sist/83f1c9d-e6e7-44bd-994d-30321cbe8db5/iso-dis-15000-2>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2020

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
Website: www.iso.org

Published in Switzerland

Contents

Foreword.....	vii
Introduction	ix
1 Scope	1
2 Normative References	2
3 Terms and Definitions	4
4 AS4 Conformance Profiles for ebMS V3 Core Specification	5
4.1 General	5
4.2 The AS4 ebHandler Conformance Profile	5
4.2.1 General.....	5
4.2.2 Feature Set.....	5
4.2.3 WS-I Conformance Profiles	8
4.2.4 Processing Mode Parameters	8
4.2.4.1 General.....	8
4.2.4.2 General P-Mode parameters.....	8
4.2.4.3 PMode[1].Protocol	9
4.2.4.4 PMode[1].BusinessInfo	9
4.2.4.5 PMode[1].ErrorHandling	9
4.2.4.6 PMode[1].Reliability	9
4.2.4.7 PMode[1].Security.....	9
4.3 The AS4 Light Client Conformance Profile	10
4.3.1 General.....	10
4.3.2 Feature Set.....	10
4.3.3 WS-I Conformance Requirements.....	12
4.3.4 Processing Mode Parameters	12
4.3.4.1 General.....	12
4.3.4.2 General P-Mode parameters.....	13
4.3.4.3 PMode[1].Protocol	13
4.3.4.4 PMode[1].BusinessInfo	13
4.3.4.5 PMode[1].ErrorHandling	13
4.3.4.6 Pmode[1].Reliability	14
4.3.4.7 PMode[1].Security.....	14
4.4 The AS4 Minimal Client Conformance Profile	15
4.4.1 General.....	15
4.4.2 Feature Set.....	15
4.4.3 WS-I Conformance Requirements	16
4.4.4 Processing Mode Parameters	16
4.4.4.1 General.....	16
4.4.4.2 General P-Mode parameters.....	16
4.4.4.3 PMode[1].Protocol	17
4.4.4.4 PMode[1].BusinessInfo	17
4.4.4.5 PMode[1].ErrorHandling	17

ISO/DIS 15000-2:2020(E)

4.4.4.6 Pmode[1].Reliability	17
4.4.4.7 Pmode[1].Security.....	18
4.5 Conformance Profiles Compatibility	18
5 AS4 Additional Features	19
5.1 General	19
5.2 Compression	19
5.3 Reception Awareness features and Duplicate Detection.....	20
5.4 Alternative Pull Authorization.....	21
5.5 Semantics of Receipt in AS4	21
5.6 Sub-channels for Message Pulling.....	22
5.7 Additional Features Errors.....	23
6 Complementary Requirements for the AS4 Multi-Hop Profile General	24
6.1 Rationale and Context.....	24
6.2 General Constraints	25
6.3 Processing Mode Parameter.....	26
6.4 AS4 Endpoint Requirements	26
7 AS4 Usage Profile of ebMS 3.0 Core Specification	28
7.1 General	28
7.2 AS4 Usage Rules	28
7.2.1 Core Components / Modules to be Used.....	28
7.2.2 Bundling rules.....	29
7.2.3 Security Element.....	30
7.2.4 Signing Messages.....	30
7.2.5 Signing SOAP with Attachments Messages	30
7.2.6 Encrypting Messages	30
7.2.7 Encrypting SOAP with Attachments Messages.....	31
7.2.8 Generating Receipts.....	31
7.2.9 MIME Header and Filename information	32
7.3 AS4 Usage Agreements	32
7.4 General	32
7.4.1 AS4 Usage Agreement Parameters.....	33
7.4.2 Controlling Content and Sending of Receipts	33
7.4.3 Error Handling Options	33
7.4.4 Securing the PullRequest	34
7.4.5 Reception Awareness Parameters.....	35
7.4.6 Default Values of Some P-Mode Parameters	36
7.4.7 HTTP Confidentiality and Security	37
7.4.8 Deployment and Processing requirements for CPAs	37
7.4.9 Message Payload and Flow Profile.....	38

7.4.10 Additional Deployment or Operational Requirements	38
8 Conformance Clauses	39
8.1 General	39
8.2 AS4 ebHandler Conformance Clause	39
8.3 AS4 Light Client Conformance Clause	39
8.4 AS4 Minimal Client Conformance Clause.....	39
8.5 AS4 Minimal Sender Conformance Clause	40
8.6 AS2/AS4 ebHandler Conformance Clause.....	40
8.7 AS4 Multi-Hop Endpoint Conformance Clause.....	40
Appendix A Sample Messages (Informative)	41
Appendix A.1 User Message	41
Appendix A.2 User Message with Compressed Payload.....	42
Appendix A.3 Non-Repudiation of Receipt (Informative)	43
Appendix A.4 Pull Request Signal Message.....	44
Appendix B Generating an AS4 Receipt (Informative)	46
Appendix C Document Origin (Informative)	49
Bibliography	50

iTeh STANDARD PREVIEW
 (standards.iteh.ai)
 Full standard:
<https://standards.iteh.ai/catalog/standards/sis/8311c19d-e6e7-44bd-994d-30321cbe8db5/iso-dis-15000-2>

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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 ISO documents 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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO 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).

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.

This document was prepared by the OASIS ebXML Messaging Services Technical Committee, originally as "OASIS AS4 Profile of ebMS 3.0 Version 1.0", and is submitted to ISO/TC 154, Processes, data elements and documents in commerce, industry and administration.

This submission is a new ebXML specification that does not cancel or replace any existing part of ISO 15000.

The main changes compared to the previous edition of ISO 15000 are as follows:

- The original ISO 15000-2 (2004) specification for ebXML Messaging (ebMS) has been updated and refactored into multiple parts, including the "Core" specification for ebMS, submitted separately to ISO/TC 154 to become ISO 15000-1 (2019).
- This new separate "AS4 Profile of ebMS 3.0 Version 1.0.", which is to become a new ISO 15000-2 (2019), provides a select limited profile of the ebMS3 specification sufficient for Web Services business-to-business messaging applications over the HTTP transport protocol. As described in 48this specification was originally developed within the OASIS ebXML Messaging Service TC as a separate specification.
- This document profiles the basic (and some optional) ebMS3 features necessary for reliable electronic messaging and the transactional interactions that support such messaging.
- This document noted the availability of several newer methodologies, represented by normative references and nonnormative bibliographic references included here, that were not available as of the 2004 version.

A list of all parts in the ISO 15000 series can be found on the ISO website.

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.

iTeh STANDARD PREVIEW
(standards.iteh.ai)
Full standard:
<https://standards.iteh.ai/catalog/standards/sist/83f1cf9d-e6e7-44bd-994d-30321cbe8db5/iso-dis-15000-2>

Introduction

Historically, the platform for mission-critical business-to-business (B2B) transactions has steadily moved from proprietary value-added networks (VANs) to Internet-based protocols free from the data transfer fees imposed by the VAN operators. This trend has been accelerated by lower costs and product ownership, a maturing of technology, internationalization, widespread interoperability, and marketplace momentum. The exchange of EDI business documents over the Internet has substantially increased along with a growing presence of XML and other document types such as binary and text files.

The Internet messaging services standards that have emerged provide a variety of options for end users to consider when deciding which standard to adopt. These include pre-Internet protocols, the EDIINT series of IETF RFC 3355 AS1, IETF RFC 4130 AS2 and IETF RFC 4823 AS3, simple XML over HTTP, government specific frameworks, OASIS ebMS 2.0, and Web Services variants. As Internet messaging services standards have matured, new standards are emerging that leverage prior B2B messaging services knowledge for applicability to Web Services messaging.

The emergence of the OASIS ebMS 3.0 Standard, now ISO 15000-1:2019, represents a leap forward in Web Services B2B messaging services by meeting the challenge of composing many Web Services standards into a single comprehensive specification for defining the secure and reliable exchange of documents using Web Services. The ebMS 3.0 standard composes the fundamental Web Services standards W3C SOAP 1.1, W3C SOAP 1.2, W3C SOAP with Attachments, OASIS WS-Security 1.0 and 1.1, W3C WS-Addressing, and the OASIS reliable messaging standards WS-Reliability 1.1 and WS-ReliableMessaging - currently at version 1.2, together with guidance for the packaging of messages and receipts along with definitions of messaging choreographies for orchestrating document exchanges.

Like AS2, ebMS 3.0 brings together many existing standards that govern the packaging, security, and transport of electronic data under the umbrella of a single specification document. While ebMS 3.0 represents a leap forward in reducing the complexity of Web Services B2B messaging, the specification still contains numerous options and comprehensive alternatives for addressing a variety of scenarios for exchanging data over a Web Services platform.

In order to fully take advantage of the AS2 success story, this profile of the ebMS 3.0 specification has been developed. Using ebMS 3.0 as a base, a subset of functionality has been defined along with implementation guidelines adopted based on the “just-enough” design principles and AS2 functional requirements to trim down ebMS 3.0 into a more simplified and AS2-like specification for Web Services B2B messaging. The main benefits of AS4 compared to AS2 are:

- Compatibility with Web services standards.
- Message pulling capability.
- A built-in Receipt mechanism

AS4 also provides a Minimal Client conformance profile that supports data exchanges that have lower-end requirements and do not require (the equivalent of) some of the more advanced capabilities of AS2 and ebMS 3.0, such as support for multiple payloads, message receipts and signing or encryption of messages and receipts.

Profiling ebMS V3 means:

- Defining a subset of ebMS V3 options to be supported by the AS4 handler.
- Deciding which types of message exchanges shall be supported, and how these exchanges should be conducted (level of security, binding to HTTP, etc.).
- Deciding of AS4-specific message contents and practices (how to make use of the ebMS message header fields, in an AS4 context).

- Deciding of some operational best practices, for the end-user.

The overall goal of a profile for a standard is to ensure interoperability by:

- Establishing particular usage and practices of the standard within a community of users.
- Defining the subset of features in this standard that needs to be supported by an implementation.

Two kinds of profiles are usually to be considered when profiling an existing standard:

1. **Conformance Profiles.** These define the different ways a product can conform to a standard, based on specific ways to implement this standard. A conformance profile is usually associated with a specific conformance clause. Conformance profiles are of prime interest for product managers and developers: they define a precise subset of features to be supported.
2. **Usage Profiles** (also called Deployment Profiles). These define how a standard should be used by a community of users, in order to ensure best compatibility with business practices and interoperability. Usage profiles are of prime interest for IT end-users: they define how to configure the use of a standard (and related product) as well as how to bind this standard to business applications. A usage profile usually points at required or compatible conformance profile(s).

AS4 is defined as a combination of:

- Three primary AS4 conformance profiles (see section 4) that define three subsets of ebMS V3 features, at least one of which is to be supported by an AS4 implementation.
- A set of additional features (see section 17).
- An optional complementary conformance profile (see section 22) that specifies how to use AS4 endpoints with ebMS 3.0 intermediaries. This is based on a simplified subset of the multi-hop messaging feature defined in the OASIS ebMS 3.0 Part 2, Advanced Features specification.
- An AS4 Usage Profile (see section 26) that defines how to use an AS4-compliant implementation in order to achieve similar functions as specified in AS2.

The three primary AS4 conformance profiles (CP) are defined below:

- (1) The **AS4 ebHandler CP.** This conformance profile supports both Sending and Receiving roles, and for each role both message pushing and message pulling.
- (2) The **AS4 Light Client CP.** This conformance profile supports both Sending and Receiving roles, but only message pushing for Sending and message pulling for Receiving. In other words, it does not support incoming HTTP requests, and may have no fixed IP address.
- (3) The **AS4 Minimal Client CP.** Like the Light Client CP, this conformance profile does not support the push transport channel binding for the Receiving role and therefore does not require HTTP server capabilities. As its name indicates, this CP omits all but a minimal set of features.

Compatible existing conformance profiles for ebMS V3 are:

- Gateway RM V3 or Gateway RX V3: a Message Service Handler (MSH) implementing any of these profiles will also be conforming to the AS4 ebHandler CP (the reverse is not true).

NOTE: Full compliance to AS4 actually requires and/or authorizes a message handler to implement a few additional features beyond the above Conformance Profiles, as described in the Conformance Section 38. These additional features are described in Section 17.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Full standard:
<https://standards.iteh.ai/catalog/standards/sist/83f1cf9d-e6e7-44bd-994d-30321cbe8db5/iso-dis-15000-2>

1 Scope

This document describes the ISO/IEC 15000 AS4 Profile, which is Part 2 of the ISO/IEC 15000 series of International Standards. The AS4 Profile provides a subset of the functionality ISO/15000 ebXML Messaging Services Version 3.0 Core Specification, which is Part 1 of the ISO/IEC 15000:2019 series, along with implementation guidelines based on the “just-enough” design principles and electronic data interchange functional requirements to trim down ebMS 3.0 into a more simplified specification for Web Services business-to-business messaging.

It specifies:

- Three Conformance Profiles of the ISO/15000 ebXML Messaging Services Version 3.0 Core Specification (see section 4)
 - A number of AS4 Additional Features (see section 17).
 - Complementary Requirements for the AS4 Multi-Hop Profile (see section 22).
 - AS4 Usage Profile of ebXML Messaging Services Version 3.0 Core Specification (see section 26)
- 40 provides some non-normative sample messages to support implementation.

This International Standard is applicable to all types of organizations (e.g., commercial enterprises, government agencies, not-for-profit organizations) that exchange documents or data electronically using messaging.

iTeh STANDARD PREVIEW
(standards.iteh.ai)
Full standard:
<https://standards.iteh.ai/catalog/standards/sis/15000-2/e6e7-44bd-994d-30321cbe8db5/iso-dis-15000-2>

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 15000-1: 2019. *Electronic business eXtensible Markup Language (ebXML) — Part 1: Messaging Service 3.0 Core Specification*.

INTERNET ENGINEERING TASK FORCE (IETF). RFC 1952. *GZIP file format specification version 4.3*. IETF RFC. May 1996. <http://tools.ietf.org/html/rfc1952>

INTERNET ENGINEERING TASK FORCE (IETF). RFC 2045. *Multipurpose Internet Mail Extensions (MIME) Part One: Format of Internet Message Bodies*. IETF RFC. November 1996.

<http://www.ietf.org/rfc/rfc2045.txt>

INTERNET ENGINEERING TASK FORCE (IETF). RFC 2616. *Hypertext Transfer Protocol – HTTP/1.1*. IETF RFC. June 1999. Available from <http://www.ietf.org/rfc/rfc2616.txt>

OASIS. *OASIS ebXML Business Signals Schema*, 21 December 2006. OASIS Standard. <http://docs.oasis-open.org/ebxml-bp/ebbp-signals-2.0>

OASIS. *OASIS ebXML Messaging Services Version 3.0: Part 2, Advanced Features*. Committee Specification 01, 19 May 2011. OASIS Committee Specification. <http://docs.oasis-open.org/ebxml-msg/ebms/v3.0/part2/201004/ebms-v3-part2.odt>

OASIS. *Web Services Security: SOAP Message Security 1.1*. OASIS Standard incorporating Approved Errata. 1 November 2006. Available from <http://docs.oasis-open.org/wss/v1.1/wss-v1.1-spec-errata-os-SOAPMessageSecurity.pdf>

OASIS. *Web Services Security UsernameToken Profile 1.1*. OASIS Standard. 1 February 2006. Available from <http://docs.oasis-open.org/wss/v1.1/wss-v1.1-spec-os-UsernameTokenProfile.pdf>.

OASIS. *Web Services Security X.509 Certificate Token Profile 1.1*. OASIS Standard incorporating Approved Errata. 1 November 2006. Available from <http://docs.oasis-open.org/wss/v1.1/wss-v1.1-spec-errata-os-x509TokenProfile.pdf>

WEB SERVICES INTEROPERABILITY ORGANIZATION. *WS-I Attachments Profile Version 1.0*, WS-I Final Material. 20 April 2004. Available from <http://www.ws-i.org/Profiles/AttachmentsProfile-1.0.html>

WEB SERVICES INTEROPERABILITY ORGANIZATION. *Basic Profile Version 2.0*, WS-I Final Material. 9 November 2010. Available from <http://ws-i.org/Profiles/BasicProfile-2.0-2010-11-09.html>

WEB SERVICES INTEROPERABILITY ORGANIZATION. *Basic Security Profile Version 1.1*, WS-I Final Material. 24 January 2010. Available from <http://www.ws-i.org/Profiles/BasicSecurityProfile-1.1.html>

WORLD WIDE WEB CONSORTIUM (W3C). *SOAP Version 1.2 Part 1: Messaging Framework*. W3C Recommendation. 27 April 2007. Available from <http://www.w3.org/TR/soap12-part1/>

WORLD WIDE WEB CONSORTIUM (W3C). *SOAP Messages with Attachments*, W3C Note. 11 December 2000. Available from <http://www.w3.org/TR/SOAP-attachments>

WORLD WIDE WEB CONSORTIUM (W3C). *Web Services Addressing 1.0 – Core*. W3C Recommendation. 9 May 2006. <http://www.w3.org/TR/2006/REC-ws-addr-core-20060509/>

WORLD WIDE WEB CONSORTIUM (W3C). *Extensible Markup Language (XML) 1.0*. W3C Recommendation 26 November 2008. Available from <http://www.w3.org/TR/REC-xml/>

WORLD WIDE WEB CONSORTIUM (W3C). *XML-Signature Syntax and Processing (Second Edition)*. W3C Recommendation. 10 June 2008. Available from <http://www.w3.org/TR/xmlsig-core/>

WORLD WIDE WEB CONSORTIUM (W3C). *XML Encryption Syntax and Processing*. 10 December, 2002. Available from <http://www.w3.org/TR/xmlenc-core/>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Full standard:
<https://standards.iteh.ai/catalog/standards/sist/83f1cf9d-e6e7-44bd-994d-30321cbe8db5/iso-dis-15000-2>