INTERNATIONAL STANDARD

ISO/IEC 23000-18

First edition 2018-05

Information technology — Multimedia application formats (MPEG-A) —

Part 18: **Media linking application format**

Technologies de l'information — Formats des applications multimédia (MPEG-A) —

Partie 18: Format des applications de liaison de médias



ISO/IEC 23000-18:2018(E)



COPYRIGHT PROTECTED DOCUMENT

© ISO/IEC 2018

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 Page Foreword. Introduction viii 1 2 Normative references 1 3 Terms and definitions 1 4 Abbreviated terms 5 MLAF model 5.1 General 5.2 Functional requirements..... 6 MLAF specification 6.1.1 Schema header elements 6.1.2 7 Bridget Representation 7.1 General..... 7.2 MLAF Root element..... 7.2.1 General 7 Syntax 7.2.2 7.2.3 Semantics 8 7.2.4 7.3 MLAF Container 7.3.1 General 7.3.2 Syntax 7.3.3 Semantics 7.3.4 Example 7.4 Bridgets. 7.4.1 General 7.4.2 Syntax 10 7.4.3 Semantics 10 7.4.4 Example 10 7.5 Source Item 10 7.5.1 General 10 7.5.2 7.5.3 Semantics 11 7.5.4 Example 11 7.6 Bridget... 7.6.1 General 11 7.6.2 Syntax 12 7.6.3 Semantics ______12 7.6.4 Example 12 7.7 Destination Item 12 7.7.1 General 12 7.7.2 Syntax 13 7.7.3 Semantics _______13 7.7.4 Example 13 7.8 Media Segments 13 7.8.1 7.8.2 Syntax 14 7.8.3 Semantics 14 7.8.4 7.9 Structural Annotation 14 7.9.1 General 14

ISO/IEC 23000-18:2018(E)

	7.9.2	Syntax	
	7.9.3	Semantics	
	7.9.4	Example	
7.10	Structi	ural Anchor	
	7.10.1	General	
	7.10.2	Syntax	
	7.10.3	Semantics	
	7.10.4	Example	
7.11	Spatiot	16	
	7.11.1	General	
	7.11.2	Syntax	16
	7.11.3	Semantics	
	7.11.4	Example	
7.12	Source	17	
	7.12.1	17	
	7.12.2	Syntax	
	7.12.3	Semantics	
	7.12.4	Example	
7.13		17	
	7.13.1	Syntax	
	7.13.2	Semantics	
	7.13.3	Example	
7.14	Media	Descriptor	
	7.14.1	General	
	7.14.2	Syntax	18
	7.14.3	Semantics	
	7.14.4	Example	18
7.15	Bridge	t Descriptor	19
	7.15.1	General	
	7.15.2	Syntax	
	7.15.3	Semantics	
	7.15.4	Example	
7.16	EBU Co	ore Media Descriptor	
	7.16.1	19	
	7.16.2	Syntax	20
	7.16.3	Semantics	20
	7.16.4	Example	20
7.17	EBU Co	ore bridget Descriptor	20
	7.17.1	General	20
	7.17.2	Syntax	20
	7.17.3	Semantics	20
	7.17.4	Example	21
7.18	EBU Co	ore Statement	21
	7.18.1	General	21
	7.18.2	Syntax	21
	7.18.3	Semantics	21
	7.18.4	Example	21
7.19	MPEG-	·7 media descriptor	21
	7.19.1	General	21
	7.19.2	Syntax	22
	7.19.3	Semantics	
	7.19.4	Example	
7.20	MPEG-	·7 Statement	22
	7.20.1	General	22
	7.20.2	Syntax	22
	7.20.3	Semantics	
	7.20.4	Example	23
7.21	Bridge	t Multimedia Representation Descriptor	23

	7.21.1	General	23
	7.21.2	Syntax	
	7.21.3	Semantics	
	7.21.4	Example	
7	.22 Bridget	Multimedia Representation Statement	
	7.22.1	General	
	7.22.2	Syntax	24
	7.22.3	Semantics	24
	7.22.4	Example	24
7	.23 Target (Condition	24
	7.23.1	General	24
	7.23.2	Syntax	24
	7.23.3	Semantics	25
	7.23.4	Example	25
8 B	ridget Prese	ntation	25
		Ref	
O	8.2.1	General	
	8.2.2	Syntax	
	8.2.3	<pre>Semantics</pre>	
	8.2.4	Example	
8		yout Ref	
O	8.3.1	General	
	8.3.2	Syntax	
	8.3.3	Semantics	
	8.3.4	Example	
8		Layout Scene	
	8.4.1	General	
	8.4.2	Syntax	
	8.4.3	Semantics	
	8.4.4	Example	
8	.5 Bridget	Layout Descriptor	
	8.5.1	General	
	8.5.2	Syntax	
	8.5.3	Semantics	
	8.5.4	Example	28
8	.6 Bridget	Layout Statement	
	8.6.1	General	
	8.6.2	Syntax	28
	8.6.3	Semantics	29
	8.6.4	Example	29
8	.7 Main La	ayout Descriptor	29
	8.7.1	General	29
	8.7.2	Syntax	29
	8.7.3	Semantics	29
	8.7.4	Example	30
8	.8 Main La	ayout Statement	30
	8.8.1	General	
	8.8.2	Syntax	30
	8.8.3	Semantics	
	8.8.4	Example	31
Annex A	(normative)	MLAF XML schema	32
Annex B	(normative)	XMTA restricted scene for MLAF presentation	40
	•	Bridget presentation in BIFS	
Annex D	(informative) Examples	61

ISO/IEC 23000-18:2018(E)

Bibliography 68

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. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC 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 on 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 the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information*.

A list of all parts in the ISO/IEC 23000 series can be found on the ISO website.

Introduction

ISO/IEC 23000 (also known as "MPEG-A") is an MPEG standard that supports a fast track to standardization by selecting readily tested and verified technologies taken from the MPEG corpus of standards and combining them to form a Multimedia Application Format (MAF). If a needed piece of technology is not available from the said corpus, then additional technologies originating from other organizations may also included by reference in order to facilitate the envisioned MAF.

The development of the MAF called "Media Linking Application Format" (MLAF) has been prompted by existing many examples of services where media transmitted for consumption on a primary device give hints to users to consume related media on a secondary or companion device. To facilitate interoperability of such services, it is beneficial to define a data structure (a "format") that codifies the relationship between the two information sources.

The core of MLAF structure is the representation of the structure of bridgets. A bridget is a pivotal information element that links Source Content and Destination Content. A bridget is associated to its Presentation Information. <u>Clause 7</u> specifies the representation of bridgets. <u>Clause 8</u> specifies the presentation of bridgets.

The XML Schema of MLAF is defined in <u>Annex A</u>. Technology for bridget Presentation based on XMT is included in <u>Annex B</u>. Bridget presentation in BIFS is defined in <u>Annex C</u>. <u>Annex D</u> reports some examples.

Information technology — Multimedia application formats (MPEG-A) —

Part 18:

Media linking application format

1 Scope

This document specifies a data structure called "bridget". A bridget is a link between a "source" content and a "destination" content. The bridget contains information on the source content and on the destination content, on the link between the two and on how the information contained in the bridget is to be presented to users consuming the source content in order to enable them to make considerate decisions about whether to consume the destination content.

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 14496-11:2015, Information technology — Coding of audio-visual objects — Part 11: Scene description and application engine