INTERNATIONAL STANDARD

ISO/IEC 13522-7

First edition
2001-04-01

Information technology — Coding of multimedia and hypermedia information —

Part 7: Interoperability and conformance testing for ISO/IEC 13522-5

Technologies de l'information — Codage de l'information multimédia et hypermédia —

Partie 7: Essais d'interopérabilité et de conformité pour l'ISO/CEI 13522-5

Reference number
ISO/IEC 13522-7:2001(E)

© ISO/IEC 2001

PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

© ISO/IEC 2001

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.ch
Web www.iso.ch

Printed in Switzerland

© ISO/IEC 2001 – All rights reserved

Contents

Page

Foreword v

1 Scope 1
1.1 Context of the scope 1
1.2 Scope 1

2 Normative references 2

3 Terms and definitions 2

4 Document structure 4

5 Objectives of conformance testing 4

6 Rationale for MHEG-5 application conformance testing 4

7 Test suite complexity 5

8 MHEG-5 profile identifier 5
8.1 Definition of the profile identifier 5
8.2 Attribute registration 6
8.2.1 Issuer 6
8.2.2 ProfileName and Version 6
8.3 Syntax description of the profile identifier 6
8.4 How to use the profile identifier 6

9 Framework for conformance testing 6
9.1 Overview of the testing process 6
9.2 Documents for testing 7
9.2.1 Protocol Implementation Conformance Statement (PICS) 7
9.3 Test notation 12
9.3.1 Table for the description of test cases 12
9.3.2 Format of the Scenario section 13
9.3.3 Macro format used in test case 14
9.3.4 Macro names 14
9.3.5 Encoding format 14

Annex A (informative) **UK Digital Terrestrial Television application domain profile** 16
A.1 MHEG-5 profile for the UKEngineProfile1 application domain 16
A.2 Object interchange format 16
A.3 Set of classes 16
A.4 Set of features 16
A.5 Content data encoding 17
A.6 Attribute encoding 17
A.7 UserInput registers 17
A.8 Semantic constraints on the MHEG-5 applications 18
A.9 EngineEvent 18
A.10 GetEngineSupport 19
A.11 Protocol mapping and external interaction 19

Annex B (informative) **ISDB (Integrated Services Digital Broadcasting) application domain profile** 20
B.1 MHEG-5 profile for the ISDB application domain 20
B.2 Object Interchange Format 20
B.3 Set of classes 20
B.4 Set of features 21
B.5 Content data encoding 21
B.5.1 Content encoding 21
B.5.2 Attribute encoding 23

© ISO/IEC 2001 – All rights reserved

B.6 UserInput registers **23**
B.7 Semantic constraints on the MHEG-5 applications **24**
B.8 EngineEvent **24**
B.9 GetEngineSupport **24**
B.10 Protocol napping and external interaction **25**
B.11 Resident programs **25**
B.11.1 Date and time functions **25**
B.11.2 Random number function **26**
B.11.3 String manipulation functions **26**
B.11.4 Table manipulation functions **26**
B.11.5 EPG related functions **26**
B.11.6 Group program reservation functions **27**
B.11.7 Program Index functions **27**
B.11.8 Persistent memory functions **27**
B.11.9 WWW related functions **27**
B.11.10 Other MHEG related functions **27**
B.11.11 Two way transmission related functions(base level) **28**
B.11.12 Two way transmission related functions(high level) **28**

Annex C (informative) **JISC (Japanese Industrial Standards Committee) Application Domain Profile** **29**
C.1 MHEG-5 profile for the JISC application domain **29**
C.2 Object interchange format **29**
C.3 Set of classes **29**
C.4 Set of features **29**
C.5 Content data encoding **30**
C.5.1 Content encoding **30**
C.5.2 Attribute representation **30**
C.6 InputEventRegister **31**
C.7 Semantic constraints on the MHEG-5 applications **32**
C.7.1 Constraints on GetEngineSupport **32**
C.8 EngineEvent **32**
C.9 GetEngineSupport **32**
C.10 Protocol mapping and external interaction **32**
C.11 ResidentPrograms **33**

Annex D (informative) **DAVIC Application Domain Profile** **34**
D.1 Introduction **34**
D.2 Object interchange format **34**
D.3 Set of dlasses **34**
D.4 Set of features **34**
D.5 Content data encoding **34**
D.5.1 Attribute Encoding **36**
D.6 UserInput registers **36**
D.7 Constraints on the use of variables **37**
D.8 Semantic constraints on the MHEG-5 applications **37**
D.9 EngineEvent **38**
D.10 GetEngineSupport **38**
D.11 TransitionEffect parameter of the TransitionTo elementary action **38**
D.12 MHEG-5 resident programs **41**
D.12.1 Date and time functions **41**
D.12.2 Random number function **43**
D.12.3 String manipulation functions **43**
D.12.4 Miscellaneous functions **45**
D.13 Protocol mapping and external interaction **45**

Annex E (informative) **Examples for profile identifiers** **47**
E.1 Japanese profile JTC1 ..... **47**
E.1.1 International ID **47**
E.1.2 Domestic ID **47**

Annex F (informative) **PICS table** **48**
F.1.1 PICS Table template **48**

 © ISO/IEC 2001 – All rights reserved

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this part of ISO/IEC 13522 may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

International Standard ISO/IEC 13522-7 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information*.

ISO/IEC 13522 consists of the following parts, under the general title *Information technology — Coding of multimedia and hypermedia information*:

— *Part 1: MHEG object representation — Base notation (ASN.1)*

— *Part 3: MHEG script interchange representation*

— *Part 4: MHEG registration procedure*

— *Part 5: Support for base-level interactive applications*

— *Part 6: Support for enhanced interactive applications*

— *Part 7: Interoperability and conformance testing for ISO/IEC 13522-5*

— *Part 8: XML notation for ISO/IEC 13522-5*

Annexes A to F of this part of ISO/IEC 13522 are for information only.

© ISO/IEC 2001 – All rights reserved

Information technology — Coding of multimedia and hypermedia information —

Part 7:
Interoperability and conformance testing for ISO/IEC 13522-5

1 Scope

1.1 Context of the scope

ISO/IEC 13522 specifies the coded representation of multimedia/hypermedia information objects (MHEG objects) for interchange as final form units within or across services and applications, by any means of interchange including local area networks, wide area telecommunication or broadcast networks, storage media, etc.

ISO/IEC 13522-5:1997 defines the MHEG-5 object classes for interchange and use in base-level applications intended to be run on limited resource terminals such as set-top-boxes in such contexts as interactive broadband services.

Annex F of ISO/IEC 13522-5:1997 specifies the features that need to be defined by a specific MHEG-5 application domain. The informative annexes of this part of ISO/IEC 13522-5:1997 give illustrative examples of profiles of some common application domains.

1.2 Scope

MHEG-5 engines are system or application components that handle, interpret and present MHEG-5 objects. The scope of this part of ISO/IEC 13522 is to define a test suite that can be used to test an MHEG-5 engine's conformance to a specific application domain. It also defines a format for test cases that can be used to extend the test suite, either for more detailed testing or for extensions defined by the application domain.

It is beyond the scope of this part of ISO/IEC 13522 to define tests for engine performance, engine memory usage or for MHEG-5 applications that run on these engines.

This part of the ISO/IEC 13522 specifies test cases for *all* features of ISO/IEC 13522-5:1997. Application domains define a *subset* of MHEG-5 features that must be supported. In order to test conformance to a specific application domain, a corresponding *subset* of the test cases must be defined. This subset of the test suite is then used to test the conformance of the engine.

This part of ISO/IEC 13522 tests conformance of the behaviour of an MHEG engine. It does not validate the physical presentation of MHEG-5 objects.

The test suite comprises a set of test cases and a corresponding set of test objects. The test cases are defined in terms of:

— test purpose;

— objects and procedures which are to be used to test one or more MHEG-5 features;

— expected result.

© ISO/IEC 2001 – All rights reserved