Australian Standard™

Information technology—Multimedia framework (MPEG 21)

Part 7: Digital item adaptation

STANDARDS AUSTRALIA

This Australian Standard was prepared by Committee IT-029, Coded Representation of Picture, Audio and Multimedia/Hypermedia Information. It was approved on behalf of the Council of Standards Australia on 24 February 2005.
This Standard was published on 17 March 2005.

The following are represented on Committee IT-029:

Australian Broadcasting Authority
Australian Broadcasting Corporation
Australian Consumers' Association
Australian Subscription Television and Radio Association
CSIRO Information Communication Technologies Centre
DSTC
Department of Defence (Australia)
Free TV Australia
Special Broadcasting Service
The University of New South Wales
University of Wollongong
Victoria University of Technology

This Standard was issued in draft form for comment as DR 04551.

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Part 7: Digital item adaptation

First published as AS ISO/IEC 21000.7—2005.

Published by Standards Australia GPO Box 5420, Sydney, NSW 2001, Australia

ISBN 0 7337 6538 6

PREFACE

This Standard was prepared by the Standards Australia Committee IT-029, Coded Representation of Picture, Audio and Multimedia/Hypermedia Information.

This Standard is identical with, and has been reproduced from, ISO/IEC 21000-7:2004, *Information technology—Multimedia framework (MPEG 21)*—Part 7: *Digital item adaptation*.

The objective of this Standard is to provide Australian multimedia designers with tools for adaptation of digital items and set constraints on transmission, consumption and storage.

This Standard is Part 7 of AS ISO/IEC 21000, *Information technology—Multimedia framework (MPEG 21)*, which is published in parts as follows:

Part 2: Digital Item Declaration
Part 3: Digital Item Identification
Part 5: Rights Expression Language
Part 6: Rights data dictionary
Part 7: Digital item adaptation (this Standard)

The term 'normative' has been used in this Standard to define the application of the appendix to which it applies. A 'normative' appendix is an integral part of a Standard.

As this Standard is reproduced from an international standard, the following applies:

(a) Its number appears on the cover and title page while the international standard number appears only on the cover.

(b) In the source text 'this International Standard' should read 'this Australian Standard'.

(c) A full point substitutes for a comma when referring to a decimal marker.

References to International Standards should be replaced by references to Australian or Australian/New Zealand Standards, as follows:

Reference to International Standard		*Australian Standard*	
ISO/IEC		AS/NZS	
14496	Information technology—Coding of audio-visual objects	14496	Information technology—Coding of audio-visual objects
14496-1	Part 1: Systems	14496.1	Part 1: Systems
14496-2	Part 2: Visual	14496.2	Part 2: Visual
15938	Information technology—Multimedia content description interface	15938	Information technology—Multimedia content description interface
15938-3	Part 3: Visual	15938.3	Part 3: Visual
ISO/IEC		AS ISO/IEC	
15938-5	Part 5: Multimedia description schemes	15938.5	Part 5: Multimedia description schemes
21000	Information technology—Multimedia framework (MPEG 21)	21000	Information technology—Multimedia framework (MPEG 21)
21000-2	Part 2: Digital Item Declaration	21000.2	Part 2: Digital Item Declaration
21000-3	Part 3: Digital Item Identification	21000.3	Part 3: Digital Item Identification
21000-5	Part 5: Rights Expression Language	21000.5	Part 5: Rights Expression Language
21000-6	Part 6: Rights data dictionary	21000-6	Part 6: Rights data dictionary

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INTRODUCTION

The multimedia industry is increasing at a rapid pace. For this industry, the term content is widely used across different segments and applied in many different ways. For this reason the term is deliberately avoided within the context of ISO/IEC 21000 specifications, where it has been replaced by the defined terms Digital Item, media resource and resource. Of equal importance for the specifications of the multimedia framework is the notion of the User. A User of a system includes all members of the value chain (e.g., creator, rights holders, distributors and consumers of Digital Items).

Access devices, with a large set of differing terminal and network capabilities, are making their way into peoples' lives. Additionally, these access devices are used in different locations and environments: anywhere and at anytime. The Users, however, are currently not given tools to deal efficiently with all the intricacies of this new multimedia usage context.

Solutions with advanced multimedia functionality are becoming increasingly important as individuals are producing more and more digital media, not only for professional use but also for their personal use. All these "resource providers" have many of the same concerns: management, re-purposing based on consumer and device capabilities, protection of rights, protection from unauthorised access/modification, protection of privacy of providers and consumers, etc. For example, it is becoming increasingly difficult to identify and understand the different intellectual property rights that are associated with the elements of multimedia resources. The boundaries between the delivery of audio (music and spoken word), accompanying artwork (graphics), text (lyrics), video (visual) and synthetic spaces will become increasingly blurred. New solutions are required to manage the access and delivery process of these different resource types in an integrated and harmonized way, entirely transparent to the many different Users of multimedia services.

The need of these solutions motivates the initiatives of the ISO/IEC 21000 Multimedia Framework, which aims to enable transparent and augmented use of multimedia resources across a wide range of networks and devices.

This seventh part of ISO/IEC 21000 specifies tools for the adaptation of Digital Items (as specified in ISO/IEC 21000-2).

AUSTRALIAN STANDARD

Information technology — Multimedia framework (MPEG-21) —

Part 7:
Digital Item Adaptation

1 Scope

1.1 General

This part of ISO/IEC 21000 specifies the syntax and semantics of tools that may be used to assist the adaptation of Digital Items, i.e., the Digital Item Declaration and resources referenced by the declaration. The tools could be used to satisfy transmission, storage and consumption constraints, as well as Quality of Service management by the various Users. It is important to emphasize that the adaptation engines themselves are non-normative tools of this part of ISO/IEC 21000.

1.2 Organization of the document

This document describes the various Digital Item Adaptation tools specified in part 7 of the ISO/IEC 21000 standard. In the remainder of this part of ISO/IEC 21000, each tool is described by the following subclauses:

— Syntax: Normative specification of the syntax of the tool using XML Schema.

— Semantic: Normative specification of the semantics of the tool and its components.

— Informative examples: Optionally, informative examples illustrating use of the tool.

1.3 Overview of Digital Item Adaptation

The goal of the Terminals and Networks element described in ISO/IEC 21000-1 is to achieve interoperable transparent access to (distributed) advanced multimedia content by shielding Users from network and terminal installation, management and implementation issues. To achieve this goal, the adaptation of Digital Items is required. This concept is illustrated in Figure 1. As shown in this conceptual architecture, a Digital Item is subject to a resource adaptation engine, as well as a description adaptation engine, which together produce the adapted Digital Item.