

Australian/New Zealand Standard™

Information technology—CDIF semantic metamodel

Part 6: State/event models



AS/NZS ISO/IEC 15476.6:2007

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee IT-015, Software and Systems Engineering. It was approved on behalf of the Council of Standards Australia on 3 November 2006 and on behalf of the Council of Standards New Zealand on 17 November 2006.
This Standard was published on 17 January 2007.

The following are represented on Committee IT-015:

Australian Computer Society
Australian Electrical and Electronic Manufacturers Association
Australian Society of Technical Communications
Australian Software Metrics Association
Engineers Australia/ACTS Joint Board in Software Engineering
Griffith University
National Association of Testing Authorities Australia
National ICT Australia
New Zealand Organisation for Quality
Software Quality Association, ACT
Software Quality Association, NSW
Systems Engineering Society of Australia
The University of Queensland
University of Auckland, NZ
University of South Australia
University of Technology, Sydney
Vendor Interests, NZ

Keeping Standards up-to-date

Standards are living documents which reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued. Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments which may have been published since the Standard was purchased.

Detailed information about joint Australian/New Zealand Standards can be found by visiting the Standards Web Shop at www.standards.com.au or Standards New Zealand web site at www.standards.co.nz and looking up the relevant Standard in the on-line catalogue.

Alternatively, both organizations publish an annual printed Catalogue with full details of all current Standards. For more frequent listings or notification of revisions, amendments and withdrawals, Standards Australia and Standards New Zealand offer a number of update options. For information about these services, users should contact their respective national Standards organization.

We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Please address your comments to the Chief Executive of either Standards Australia or Standards New Zealand at the address shown on the back cover.

This Standard was issued in draft form for comment as DR 06510.

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

RECONFIRMATION

OF

AS/NZS ISO/IEC 15476.6:2007

Information technology—CDIF semantic metamodel

Part 6: State/event models

RECONFIRMATION NOTICE

Technical Committee IT-015 has reviewed the content of this publication and in accordance with Standards Australia procedures for reconfirmation, it has been determined that the publication is still valid and does not require change.

Certain documents referenced in the publication may have been amended since the original date of publication. Users are advised to ensure that they are using the latest versions of such documents as appropriate, unless advised otherwise in this Reconfirmation Notice.

Approved for reconfirmation in accordance with Standards Australia procedures for reconfirmation on 30 October 2015.

Approved for reconfirmation in New Zealand on behalf of the Standards Council of New Zealand on 18 May 2016.

The following are represented on Technical Committee IT-015:

Australian Computer Society
Australian Society for Technical Communication (NSW)
Charles Sturt University
Department of Defence (Australian Government)
Griffith University
Institute of IT Professionals New Zealand
IT Service Management Forum Australia
La Trobe University
National Association of Testing Authorities Australia
NEHTA
New Zealand Organisation for Quality
NSW Business Chamber
Quantitative Enterprise Software Performance
Systems Engineering Society of Australia
University of Technology, Sydney

NOTES

Australian/New Zealand Standard™

Information technology—CDIF semantic metamodel

Part 6: State/event models

First published as AS/NZS ISO/IEC 15476.6:2007.

COPYRIGHT

© Standards Australia/Standards New Zealand

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.

Jointly published by Standards Australia, GPO Box 476, Sydney, NSW 2001 and Standards New Zealand, Private Bag 2439, Wellington 6020

ISBN 0 7337 7969 7

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee IT-015, Software and Systems Engineering.

The objective of this Standard is to provide vendors and users of modelling tools and meta-data repositories with a definition of the State/Event Subject Area of the CDIF semantic metamodel. (This subject area contains meta-objects that describe the entities of state transition diagrams and state transition tables, and also meta-relationships and meta-attributes that are necessary for available state transition).

This Standard is identical with, and has been reproduced from ISO/IEC 15476-6:2006, *Information technology—CDIF semantic metamodel—Part 6: State/event models*.

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/New Zealand 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:

<i>Reference to International Standard</i>		<i>Australian/New Zealand Standard</i>	
ISO/IEC		AS/NZS ISO/IEC	
15474	Information technology—CDIF framework	15474	Information technology—CDIF framework
15474-1	Part 1: Overview	15474.1	Part 1: Overview
15474-2	Part 2: Modelling and extensibility	15474.2	Part 2: Modelling and extensibility
15476	Information technology—CDIF semantic metamodel	15476	Information technology—CDIF semantic metamodel
15476-1	Part 1: Foundation	15476.1	Part 1: Foundation
15476-2	Part 2: Common	15476.2	Part 2: Common

Only normative references in the source document that have been adopted as Australian or Australian/New Zealand Standards have been listed.

CONTENTS

Page

1	Scope	1
2	Conformance	2
2.1	General	2
2.2	Input conformance	2
2.3	Output conformance	2
2.4	Round-trip conformance	3
3	Normative references	3
4	Terms and definitions	3
4.1	From other International Standards	4
5	Symbols (and abbreviated terms)	4
5.1	Naming, diagramming and definition conventions	4
5.2	Abbreviations	4
6	State/Event subject area overview	4
6.1	Introduction	4
6.2	Diagram	5
6.3	State/Event model	5
6.4	State	5
6.5	Transition	6
6.6	Condition	6
6.7	Action	6
7	State/Event subject area summary	6
7.1	AttributableMetaObject hierarchy	6
7.2	MetaEntity summary	7
7.3	MetaRelationship summary	8
8	State/Event subject area specification	10
8.1	Introduction	10
8.2	Subject area definition	10
8.3	Meta-entity definitions	10
8.4	Meta-relationship definitions	15

INTRODUCTION

This International Standard will assist the vendors and users of modelling tools and meta-data repositories in developing mechanisms for interchanging information. This International Standard specifies an element of a family of related International Standards. When used together, these International Standards specify a mechanism for transferring information between tools.

ISO/IEC 15474-1:2002, *Information technology - CDIF framework - Part 1: Overview* and ISO/IEC 15474-2:2002, *Information technology - CDIF framework - Part 2: Modelling and extensibility* should be read first when initially exploring CDIF. The first explains the overall CDIF architecture and how the family of International Standards fits together. The second explains the scope, and modelling approach in CDIF. The CDIF meta-metamodel and extensibility mechanism are also defined in that document.

This International Standard explains the State/event models subject area of the CDIF semantic metamodel, that defines objects in state transition diagrams and state transition tables. The CDIF semantic metamodel is used to ensure that the information transferred by tools communicating using CDIF is expressed with an agreed meaning.

This International Standard has been developed with the wide support and participation of vendors, users, academia and government involved in or familiar with the CASE industry, its products and the general requirements associated with interchanging information between these products.

This document is organized into the following Clauses:

— Clause 1 to 5 are prescribed ISO/IEC Clauses.

— Clause 6: Subject area overview:

This Clause gives an overview of the coverage of this subject area.

— Clause 7: Subject area summary:

This Clause gives an overview of the content of this subject area.

— Clause 8: Subject area specification:

This Clause gives the formal specification of all the objects defined in the subject area, and the formal reference to those used, but not defined in the subject area.

This document is intended to be used by anyone wishing to understand and/or use CDIF. This document provides a definition of a single subject area of the CDIF semantic metamodel. It is suitable for:

— Those evaluating CDIF;

— Those who wish to understand the principles and concepts of a CDIF transfer; and

— Those developing importers and exporters.

This document, ISO/IEC 15474-1:2002, *Information technology - CDIF framework - Part 1: Overview*, and the framework document ISO/IEC 15474-2:2002, *Information technology - CDIF framework - Part 2: Modelling and extensibility*, should be read first when initially exploring CDIF and before attempting to read other documents in the CDIF family of standards.

While there are no specific prerequisites for reading this document, it will be helpful for the reader to have familiarity with the following:

- Entity-Relationship-Attribute modelling;
- Modelling (CASE) tools;
- Information repositories;
- Data dictionaries;
- Multiple meta-layer modelling.

NOTES