

Australian Standard[®]

Software reviews and audits

This Australian Standard was prepared by Committee IT/15, Software Engineering. It was approved on behalf of the Council of Standards Australia on 27 January 1992 and published on 16 April 1992.

The following interests are represented on Committee IT/15:

- Australian Bankers Association
- Australian Computer Society
- Australian Computer Society National Software Industry Committee
- Australian Information Industry Association
- Australian Software Metrics Association
- Computer Assisted Software Engineering Society
- Department of Defence
- Griffith University
- Institute of Quality Assurance
- Software Quality Association, Qld
- Software Verification Research Centre
- Telecom Australia
- University of New South Wales

Review of Australian Standards. To keep abreast of progress in industry, Australian Standards are subject to periodic review and are kept up to date by the issue of amendments or new editions as necessary. It is important therefore that Standards users ensure that they are in possession of the latest edition, and any amendments thereto.

Full details of all Australian Standards and related publications will be found in the Standards Australia Catalogue of Publications; this information is supplemented each month by the magazine 'The Australian Standard', which subscribing members receive, and which gives details of new publications, new editions and amendments, and of withdrawn Standards.

Suggestions for improvements to Australian Standards, addressed to the head office of Standards Australia, are welcomed. Notification of any inaccuracy or ambiguity found in an Australian Standard should be made without delay in order that the matter may be investigated and appropriate action taken.

Australian Standard[®]

Software reviews and audits

First published as AS 4009—1992.

PREFACE

This Standard was prepared by the Standards Australia Committee on Software Engineering. It is identical with and has been reproduced from IEEE Std 1028, *IEEE Standard for Software Reviews and Audits*.

Under arrangements made between Standards Australia and the international Standards bodies, ISO and IEC, as well as certain other Standards organizations, users of this Australian Standard are advised of the following:

Copyright of the content of this Standard remains the property of IEEE. The copyright of this edition is vested in Standards Australia.

For the purpose of this Australian Standard, the IEEE text should be modified as follows:

References The references to ANSI/IEEE Standards should be replaced by references to Australian Standards as follows:

<i>Reference to ANSI/IEEE Standard</i>		<i>Australian Standard</i>	
729	IEEE Standard Glossary of Software Engineering Terminology	—	
829	IEEE Standard for Software Test Documentation	4006	Software test documentation

© Copyright — STANDARDS AUSTRALIA

Users of Standards are reminded that copyright subsists in all Standards Australia publications and software. Except where the Copyright Act allows and except where provided for below no publications or software produced by Standards Australia may be reproduced, stored in a retrieval system in any form or transmitted by any means without prior permission in writing from Standards Australia. Permission may be conditional on an appropriate royalty payment. Requests for permission and information on commercial software royalties should be directed to the head office of Standards Australia.

Standards Australia will permit up to 10 percent of the technical content pages of a Standard to be copied for use exclusively in-house by purchasers of the Standard without payment of a royalty or advice to Standards Australia.

Standards Australia will also permit the inclusion of its copyright material in computer software programs for no royalty payment provided such programs are used exclusively in-house by the creators of the programs.

Care should be taken to ensure that material used is from the current edition of the Standard and that it is updated whenever the Standard is amended or revised. The number and date of the Standard should therefore be clearly identified.

The use of material in print form or in computer software programs to be used commercially, with or without payment, or in commercial contracts is subject to the payment of a royalty. This policy may be varied by Standards Australia at any time.

CONTENTS

SECTION	PAGE
1. Scope and References.	5
1.1 Scope	5
1.2 References	5
2. Definitions	5
3. Introduction	6
3.1 Review Process Prerequisites	7
3.2 Audit Process Prerequisites	7
3.3 Procedural Description Template	7
4. The Management Review Process	8
4.1 Objective	8
4.2 Abstract	8
4.3 Special Responsibilities	8
4.4 Input	8
4.5 Entry Criteria	8
4.6 Procedures	9
4.7 Exit Criteria	9
4.8 Output	9
4.9 Auditability	9
5. The Technical Review Process	9
5.1 Objective	9
5.2 Abstract	10
5.3 Special Responsibilities	10
5.4 Input	10
5.5 Entry Criteria	10
5.6 Procedures	10
5.7 Exit Criteria	11
5.8 Output	11
5.9 Auditability	11
6. The Software Inspection Process	11
6.1 Objective	11
6.2 Abstract	11
6.3 Special Responsibilities	11
6.4 Input	12
6.5 Entry Criteria	12
6.6 Procedures	12
6.7 Exit Criteria	13
6.8 Output	13
6.9 Auditability	13
6.10 Data Collection Requirements	13
7. The Walkthrough Process	14
7.1 Objective	14
7.2 Abstract	14
7.3 Special Responsibilities	14
7.4 Input	15

SECTION	PAGE
7.5 Entry Criteria	15
7.6 Procedures	15
7.7 Exit Criteria	15
7.8 Output	15
7.9 Auditability	16
8. The Audit Process	16
8.1 Objective	16
8.2 Abstract	16
8.3 Special Responsibilities	16
8.4 Input	16
8.5 Entry Criteria	16
8.6 Procedures	17
8.7 Exit Criteria	18
8.8 Output	18
8.9 Auditability	19

FIGURE

I Fig 1	Relation of Some Quality Assurance Processes to Products and Projects	6
---------	---	---

TABLE

I Table 1	Some Principal Processes for Achieving Quality Objectives	6
-----------	---	---

APPENDIXES

Appendix A	A Guide to Process Applications for Critical Software	20
Appendix B	A Guide to Specific Review Applications	22
Appendix C	A Guide to Specific Audit Applications	26

APPENDIX TABLES

Table A1	Critical Software Examination	20
I Table B1	Review Process Distinctions	23

Australian Standard**Software reviews and audits**

1. Scope and References

1.1 Scope. The purpose of this standard is to provide definitions and uniform requirements for review and audit processes. It does not establish the need to conduct specific reviews or audits; that need is defined by local policy. Where specific reviews and audits are required, standard procedures for their execution must be defined.

This standard provides such definition for review and audit processes that are applicable to products and processes throughout the software life cycle. Each organization shall specify where and when this standard applies and any intended deviations from this standard.

1.2 References. This standard shall be used in conjunction with the following publications:

[1] ANSI/IEEE Std 729-1983, IEEE Standard Glossary of Software Engineering Terminology.

[2] ANSI/IEEE Std 829-1983, IEEE Standard for Software Test Documentation.

2. Definitions

audit. An independent evaluation of software products or processes to ascertain compliance to standards, guidelines, specifications, and procedures based on objective criteria that include documents that specify

- (1) The form or content of the products to be produced.
- (2) The process by which the products shall be produced.
- (3) How compliance to standards or guidelines shall be measured.

review. An evaluation of software element(s) or project status to ascertain discrepancies from planned results and to recommend improvement. This evaluation follows a formal process (for example, management review process, technical review process, software inspection process, or walkthrough process).

software element. A deliverable or in-process document produced or acquired during software development or maintenance. Specific examples include but are not limited to

- (1) Project planning documents (for example, software development plans, and software verification and validation plans).
- (2) Software requirements and design specifications.
- (3) Test effort documentation (ie, as described in ANSI/IEEE Std 829-1983 [2])¹.
- (4) Customer-deliverable documentation.
- (5) Program source code.
- (6) Representation of software solutions implemented in firmware.
- (7) Reports (for example, review, audit, project status) and data (for example, defect detection, test).

For other definitions, including verification and validation, see ANSI/IEEE Std 729-1983 [1].

¹ The numbers in brackets correspond to those of the references in 1.2.