

AS 4008—1992
ANSI/IEEE Std 1016—1987

Australian Standard[®]

Software design description

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which subscribing members receive, and which gives details of new publications, new editions and amendments, and of withdrawn Standards.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.

AS 4008—1992

Australian Standard[®]

Software design description

First published as AS 4008—1992.

PUBLISHED BY STANDARDS AUSTRALIA
(STANDARDS ASSOCIATION OF AUSTRALIA)
1 THE CRESCENT, HOMEBUSH, NSW 2140

ISBN 0 7262 7359 7

PREFACE

This Standard was prepared by the Standards Australia Committee on Software Engineering. It is identical with and has been reproduced from ANSI/IEEE Std 1016, *IEEE Recommended Practice for Software Design Descriptions*.

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, it should be noted that there are no Australian equivalents to the ANSI/IEEE Standards referred to in this Standard.

© 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	4
2. References	4
3. Definitions	4
4. Considerations for Producing a Software Design Description (SDD)	4
4.1 Software Life Cycle	5
4.2 Software Design Description (SDD) within the Life Cycle	5
4.3 Purpose of a Software Design Description (SDD)	5
5. Design Description Information Content	5
5.1 Introduction	5
5.2 Design Entities	5
5.3 Design Entity Attributes	5
5.3.1 Identification	6
5.3.2 Type	6
5.3.3 Purpose	6
5.3.4 Function	6
5.3.5 Subordinates	6
5.3.6 Dependencies	6
5.3.7 Interface	6
5.3.8 Resources	6
5.3.9 Processing	7
5.3.10 Data	7
6. Design Description Organization	7
6.1 Introduction	7
6.2 Design Views	7
6.2.1 Decomposition Description	7
6.2.2 Dependency Description	8
6.2.3 Interface Description	9
6.2.4 Detailed Design Description	9
TABLE	
Table 1 Recommended Design Views	8
APPENDIX	10

STANDARDS AUSTRALIA

Australian Standard
Software design description

1. Scope

This is a recommended practice for describing software designs. It specifies the necessary information content, and recommended organization for a software design description. A software design description is a representation of a software system that is used as a medium for communicating software design information.

The practice may be applied to commercial, scientific, or military software that runs on any digital computer. Applicability is not restricted by the size, complexity, or criticality of the software.

This practice is not limited to specific methodologies for design, configuration management, or quality assurance. It is assumed that the quality design information and changes to the design of description will be managed by other project activities. Finally, this document does not support nor is it limited to any particular descriptive technique. It may be applied to paper documents, automated databases, design description languages, or other means of description.

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.¹

[2] ANSI/IEEE Std 730-1984, IEEE Standard for Software Quality Assurance Plans.

[3] ANSI/IEEE Std 828-1983, IEEE Standard for Software Configuration Management Plans.

[4] ANSI/IEEE Std 830-1984, IEEE Guide to Software Requirements Specifications

[5] Freeman, P. and A.I. Wasserman. *Tutorial on Software Design Techniques*. 4th Edition, IEEE Computer Society Press, Annotated Bibliography, pp 715-718, 1983.

3. Definitions

The definitions listed here establish meaning in the context of this recommended practice. Definitions of other terms used in this document can be found in ANSI/IEEE Std 729-1983 [1].²

design entity. An element (component) of a design that is structurally and functionally distinct from other elements and that is separately named and referenced.

design view. A subset of design entity attribute information that is specifically suited to the needs of a software project activity.

entity attribute. A named characteristic or property of a design entity. It provides a statement of fact about the entity.

software design description (SDD). A representation of a software system created to facilitate analysis, planning, implementation, and decision making. A blueprint or model of the software system. The SDD is used as the primary medium for communicating software design information.

4. Considerations for Producing a Software Design Description (SDD)

This section provides information to be considered before producing an SDD. How the SDD fits into the

² Numbers in brackets correspond to those of the references in Section 2 of this standard.