



Standards

**Association of
Australia**



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SOFTWARE QUALITY MANAGEMENT SYSTEM

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The following interests are represented on Committee QR/3:

Australian Computer Society
Australian Computer Society Software Industries Association
Australian Electrical & Electronic Manufacturers Association
Australian Information Industry Association
Australian Organization for Quality Control
Confederation of Australian Industry
Civil Aviation Authority
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AUSTRALIAN STANDARD

SOFTWARE QUALITY MANAGEMENT SYSTEM

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PREFACE

This Standard was prepared by the Association's Committee on Software Quality Assurance under the direction of the Quality and Reliability Standards Committee.

It is recognized that the principles contained within this Standard are representative of sound management practice and hence, are recommended for use when either invoked as a contractual requirement or for the purpose of providing a control system within an organization.

It is intended to provide a common means for establishing an effective quality management system when related to software, which, together with procedures for the specification, design, implementation and evaluation, allow development of software in a controlled manner. This should result in creation of software in the most cost effective way, having due regard to the whole life cycle of the product, and should instil a high degree of confidence that the software will meet the operational requirements.

It is believed that integration of these principles, together with the ability to demonstrate their effectiveness, will also lead to greater confidence in potential purchasing organizations when evaluating a developer's capability.

In format, this Standard closely follows that of AS 1821-23, *Suppliers quality systems*, and thus is suitable for adoption in parallel with hardware requirements under any of these Standards.

To assist in the implementation of this Standard, guidance has been inserted after some clauses where necessary. Further assistance has been incorporated in Appendix A, which gives definitions of a number of terms used in Quality Assurance, and these should be read in conjunction with the requirements of this Standard.

The Association's Committee on Software Quality Assurance is currently developing a guide for the establishment of a software quality assurance system. This will probably take the form of a user's guide, which would be used by organizations attempting to set up a software quality assurance system for the first time, or review existing software quality assurance functions.

In preparing this Standard, cognizance was taken of Australian Standards AS 1821-23; AS 2000, *Guide to AS 1821-1823, Suppliers quality systems*; AS 1057, *Quality assurance and quality control—Glossary of terms*, and NATO Standards AQAP-13 and AQAP-14.

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FOREWORD

The development and acquisition of computerized systems may be characterized by a recognized combination of two major components: hardware and software. The successful integration of these two major components is essential for compliance with overall user requirements. Essential to this successful integration is the application of a disciplined approach to management provided by a quality system.

This Standard is presented as a statement of requirements which may be nominated by individual customers, as a condition of contract or agreement, when seeking to obtain software for which they have need for assurance of quality prior to acceptance. The Standard is also recommended to developers whose software is distributed for general sale, as a guide to identifying the requirements of effective and economical management systems to control and assure the quality of their software.

It should be noted that the Standard only defines the essential features of the system and does not attempt to prescribe how the system shall be implemented. Guidance to the implementation is given after each clause identified as requiring such guidance. It is for each developer to establish procedures appropriate to his own scale, methodologies and organization to achieve the requirements of the Standard. In the case of a potential customer, the developer's means of implementing the required system should be agreed on when signing a contract.

This Standard may be used as a supplement to AS 1821-23, *Suppliers quality systems*, in stipulating a Software Quality Management System which will be considered a part of the quality system prescribed by AS 1821-23 or may be used as support to the application of AS 1821-23 in the procurement of software.

STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

SOFTWARE QUALITY MANAGEMENT SYSTEM

SECTION 1. SCOPE AND GENERAL

1.1 SCOPE. This Standard establishes requirements for a software developer's comprehensive quality management system. It identifies each of the elements of a quality management system to be designed, developed and maintained by the developer for the purpose of ensuring that the software will conform to the requirements of the contract, purchase order or other agreement (collectively referred to as the 'contract').

1.2 APPLICATION. When referenced in a contract, this Standard shall apply to the development of software whether the contract is for software alone or for software as a portion of a system. This Standard may also be applied to 'in-house' software development where the 'customer' can be taken to be that part of the organization requesting the development. This

Standard shall also apply to non-deliverable software developed under the contract, which affects the quality of the deliverable product unless specifically exempted. If an inconsistency exists between the contract requirements and this document the contract requirements shall prevail.

1.3 REFERENCED DOCUMENTS. The following Standards are referred to in this Standard:

AS
1057 Quality assurance and quality control—
Glossary of terms
1821–1823 Suppliers quality systems

1.4 DEFINITIONS. For the purpose of this Standard the definitions in AS 1057 and those listed in Appendix A apply.