AS/NZS ISO/IEC 25010:2013 ISO/IEC 25010:2011

Australian/New Zealand Standard™

Systems and software engineering— Systems and software Quality Requirements and Evaluation (SQuaRE)—System and software quality models





## **AS/NZS ISO/IEC 25010:2013**

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Australian/New Zealand Standard<sup>™</sup>

Systems and software engineering— Systems and software Quality Requirements and Evaluation (SQuaRE)—System and software quality models

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The objective of this Standard is to define a quality in use model composed of five characteristics (some of which are further subdivided into subcharacteristics) that relate to the outcome of interaction when a product is used in a particular context of use. This system model is applicable to the complete human-computer system, including both computer systems in use and software products in use. It also defines a product quality model composed of eight characteristics (which are further subdivided into subcharacteristics) that relate to static properties of software and dynamic properties of the computer system. This model is also applicable to both computer systems and software products.

This Standard is identical with, and has been reproduced from ISO/IEC 25010:2011, Systems and software engineering—Systems and software Quality Requirements and Evaluation (SQuaRE)—System and software quality models.

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

- (a) In the source text 'this International Standard' should read 'this Australian/New Zealand Standard'.
- (b) A full point substitutes for a comma when referring to a decimal marker.

The term 'informative' has been used in this Standard to define the application of the annex to which it applies. An 'informative' annex is only for information and guidance.

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## INTRODUCTION

Software products and software-intensive computer systems are increasingly used to perform a wide variety of business and personal functions. Realization of goals and objectives for personal satisfaction, business success and/or human safety relies on high-quality software and systems. High-quality software products and software-intensive computer systems are essential to provide value, and avoid potential negative consequences, for the stakeholders.

Software products and software-intensive computer systems have many stakeholders including those who develop, acquire, use, or who are customers of businesses using software-intensive computer systems. Comprehensive specification and evaluation of the quality of software and software-intensive computer systems is a key factor in ensuring value to stakeholders. This can be achieved by defining the necessary and desired quality characteristics associated with the stakeholders' goals and objectives for the system. This includes quality characteristics related to the software system and data as well as the impact the system has on its stakeholders. It is important that the quality characteristics are specified, measured, and evaluated whenever possible using validated or widely accepted measures and measurement methods. The quality models in this International Standard can be used to identify relevant quality characteristics that can be further used to establish requirements, their criteria for satisfaction and the corresponding measures.

This International Standard is derived from ISO/IEC 9126:1991, *Software engineering* — *Product quality*, which was developed to support these needs. It defined six quality characteristics and described a software product evaluation process model.

ISO/IEC 9126:1991 was replaced by two related multipart standards: ISO/IEC 9126, *Software engineering — Product quality* and ISO/IEC 14598, *Software engineering — Product evaluation*.

This International Standard revises ISO/IEC 9126-1:2001, and incorporates the same software quality characteristics with some amendments.

- The scope of the quality models has been extended to include computer systems, and quality in use from a system perspective.
- Context coverage has been added as a quality in use characteristic, with subcharacteristics *context completeness* and *flexibility*.
- Security has been added as a characteristic, rather than a subcharacteristic of functionality, with subcharacteristics confidentiality, integrity, non-repudiation, accountability and authenticity.
- Compatibility (including interoperability and co-existence) has been added as a characteristic.
- The following subcharacteristics have been added: *functional completeness, capacity, user error protection, accessibility, availability, modularity* and *reusability.*
- The compliance subcharacteristics have been removed, as compliance with laws and regulations is part of overall system requirements, rather than specifically part of quality.
- The internal and external quality models have been combined as the product quality model.
- When appropriate, generic definitions have been adopted, rather than using software-specific definitions.
- Several characteristics and subcharacteristics have been given more accurate names.

Full details of the changes are in Annex A.

This International Standard is intended to be used in conjunction with the other parts of the SQuaRE series of International Standards (ISO/IEC 25000 to ISO/IEC 25099), and with ISO/IEC 14598 until superseded by the ISO/IEC 2504n series of International Standards.