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Technical Report

Systems and software engineering—Systems and software assurance

Part 1: Concepts and vocabulary

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Systems and software engineering—Systems and software assurance

Part 1: Concepts and vocabulary

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PREFACE

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

The objective of this Technical Report is to define terms and establishes an extensive and organized set of concepts and their relationships, thereby establishing a basis for shared understanding of the concepts and principles central to the AS/NZS ISO/IEC 15026 series across its user communities It provides information to users of the subsequent parts of AS/NZS ISO/IEC 15026, including the use of each part and the combined use of multiple parts.

This Technical Report is identical with, and has been reproduced from ISO/IEC TR 15026-1:2010, *Systems and software engineering—Systems and software assurance*—Part 1*: Concepts and vocabulary,* and its Corrigendum 1 (2012) which has been added at the end of the source text.

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

(a) In the source text 'this part of ISO/IEC 15026' should read 'this Technical Report'.

(b) A full point substitutes for a comma when referring to a decimal marker.

The term 'informative' has been used in this Technical Report 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

Within software and systems assurance and closely related fields, many specialties and subspecialties share concepts but have differing vocabularies and perspectives. This part of ISO/IEC 15026 provides a unifying set of underlying concepts and an unambiguous use of terminology across these various fields. It provides a basis for elaboration, discussion, and recording agreement and rationale regarding concepts and the vocabulary used uniformly across all parts of ISO/IEC 15026.

This part of ISO/IEC 15026 clarifies concepts needed for understanding software and systems assurance and in particular, those central to the use of subsequent parts of ISO/IEC 15026. This part of ISO/IEC 15026 supports intellectual mastery of software and systems assurance primarily at the level of shared concepts, issues and terminology applicable across a range of properties, application domains, and technologies.

The appreciation of the contents of this part of ISO/IEC 15026 might undergo change as work proceeds on the other parts of ISO/IEC 15026. A revision of this part of ISO/IEC 15026 reflecting any such changes is expected to be later published as an International Standard.

TECHNICAL REPORT

Systems and software engineering—Systems and software assurance

Part 1: Concepts and vocabulary

1 Scope

This part of ISO/IEC 15026 defines terms and establishes an extensive and organized set of concepts and their relationships, thereby establishing a basis for shared understanding of the concepts and principles central to ISO/IEC 15026 across its user communities. It provides information to users of the subsequent parts of ISO/IEC 15026, including the use of each part and the combined use of multiple parts.

Coverage of assurance for a service being operated and managed on an ongoing basis is not covered in ISO/IEC 15026.

2 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

2.1
assurance
grounds for justified confidence that a claim has been or will be achieved

2.2
assurance case
representation of a claim or claims, and the support for these claims

NOTE An assurance case is reasoned, auditable artefact created to support the contention its claim or claims are satisfied. It contains the following and their relationships:

- one or more claims about properties;
- arguments that logically link the evidence and any assumptions to the claim(s);
- a body of evidence and possibly assumptions supporting these arguments for the claim(s).

2.3
approval authority
entity with the authority to decide that the assurance case and the extent of assurance it provides are satisfactory

NOTE 1 The approval authority may include multiple entities, e.g. individuals or organizations. These can include different entities with different levels of approval and/or different areas of interest.

NOTE 2 In two-party situations, approval authority often rests with the acquirer. In regulatory situations, the approval authority may be a third party such as a governmental organization or its agent. In other situations, e.g. the purchase of off-the-shelf products developed by a single-party, the independence of the approval authority can be a relevant issue to the acquirer.