
**Systems and software engineering —
Systems and software assurance —**

**Part 1:
Concepts and vocabulary**

Ingénierie des systèmes et du logiciel — Assurance des systèmes et du logiciel —

Partie 1: Concepts et vocabulaire

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

In exceptional circumstances, the joint technical committee may propose the publication of a Technical Report of one of the following types:

- type 1, when the required support cannot be obtained for the publication of an International Standard, despite repeated efforts;
- type 2, when the subject is still under technical development or where for any other reason there is the future but not immediate possibility of an agreement on an International Standard;
- type 3, when the joint technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example).

Technical Reports of types 1 and 2 are subject to review within three years of publication, to decide whether they can be transformed into International Standards. Technical Reports of type 3 do not necessarily have to be reviewed until the data they provide are considered to be no longer valid or useful.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

ISO/IEC TR 15026-1, which is a Technical Report of type 2, was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 7, *Software and systems engineering*.

ISO/IEC 15026 consists of the following parts, under the general title *Systems and software engineering — Systems and software assurance*:

- *Part 1: Concepts and vocabulary*
- *Part 2: Assurance case*

System integrity levels and assurance in the life cycle will form the subjects of future parts.

ISO/IEC 15026:1998, IEEE Std 1228-1994 and IEEE Standard for Safety Plan were used as base documents in the development of ISO/IEC TR 15026-1.

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.

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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.