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Software engineering — Product evaluation —

Part 6: Documentation of evaluation modules

Ingénierie du logiciel — Évaluation du produit —

Partie 6: Documentation des modules d'évaluation

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1. 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.

Attention is drawn to the possibility that some of the elements of this part of ISO/IEC 14598 may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

International Standard ISO/IEC 14598-6 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 7, *Software engineering*.

ISO/IEC 14598-6 is intended for use in conjunction with ISO/IEC 9126-1 (in preparation) which will replace ISO/IEC 9126:1991.

ISO/IEC 14598 consists of the following parts, under the general title *Software engineering — Product evaluation*:

— *Part 1: General overview*

— *Part 2: Planning and management*

— *Part 3: Process for developers*

— *Part 4: Process for acquirers*

— *Part 5: Process for evaluators*

— *Part 6: Documentation of evaluation modules*

Annexes A, B, C and D of this part of ISO/IEC 14598 are for information only.

Introduction

Software product evaluation depends on a set of evaluation techniques and metrics that provide information about the quality characteristics of the software. Many metrics and associated methods for using the measurement results can be used for specific software product evaluation. ISO/IEC 9126-2 and ISO/IEC 9126-3 provide example metrics that correspond to one sub-characteristic. It is difficult to use these metrics consistently in an organisation. It may be necessary to develop new metrics for specific use. Therefore, it is necessary that a supporting function (see 14598-2) in the organisation specifies each metric for correct and consistent use within the organisation. The format for documenting a metric and associated methods, as well as guides for their use, should be standardised. The concept of an evaluation module provides a solution to this need.

An evaluation module specifies the evaluation methods applicable for evaluating a quality characteristic and identifies the evidence it needs. It also defines the elementary evaluation procedure and the format for reporting the measurements resulting from the application of the techniques.

A consistent way of documenting evaluation modules has a number of advantages:

— It provides a common reference in the description of the theoretical basis of evaluation modules.

— It identifies a minimal set of requirements for documenting and developing evaluation modules.

— It provides a necessary tool in collecting and cataloguing the large number of evaluation modules anticipated.

Evaluation modules provide a flexible and structured approach to making metrics applicable for evaluating intermediate and completed products. The use of evaluation modules produced according to this part of ISO/IEC 14598 helps to ensure that software product evaluations can be repeatable, reproducible and objective.

The format for documenting an evaluation module takes into account the following:

— It will be applied within the context of the evaluation of software products.

— The format supports the need for developing new metrics with respect to state of the art.

— The format provides a precise definition of metrics and their application.

— It provides the information needed for those who will use them for an evaluation.

Annex A provides guidance for the development process for new evaluation modules.

Annexes B, C and D are examples of evaluation modules.

Software engineering — Product evaluation —

Part 6: Documentation of evaluation modules

1 Scope

This part of ISO/IEC 14598 defines the structure and content of the documentation to be used to describe an Evaluation Module. Evaluation modules are intended to be used within the context of the ISO/IEC 9126 and the ISO/IEC 14598 multipart standards.

This part of ISO/IEC 14598 is intended to be used by experts in evaluation technology such as testing laboratories, research institutes and others when producing new evaluation modules.

2 Conformance

The documentation of an evaluation module conforms to this part of ISO/IEC 14598 if it meets the requirements of clause 6 (format for documentation of an evaluation module).

3 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC 14598. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO/IEC 14598 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO/IEC 9126-1, *Software engineering — Product quality — Part 1: Quality model*.

ISO/IEC 12207, *Information technology — Software life cycle processes*.

ISO/IEC 14598-1, *Information technology — Software product evaluation — Part 1: General overview*.

ISO/IEC 14598-2, *Product evaluation — Part 2: Planning and management*.

ISO/IEC 14598-3, *Product evaluation — Part 3: Process for developers*.

ISO/IEC 14598-4, *Software engineering — Product evaluation — Part 4: Process for acquirers*.

ISO/IEC 14598-5, *Information technology — Software product evaluation — Part 5: Process for evaluators*.