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**Information technology — Software  
engineering — Guidelines for the  
adoption of CASE tools**

*Technologies de l'information — Ingénierie du logiciel — Lignes  
directrices pour l'adoption d'outils CASE*

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ISO copyright office  
Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 01 11  
Fax + 41 22 749 09 47  
E-mail [copyright@iso.org](mailto:copyright@iso.org)  
Web [www.iso.org](http://www.iso.org)

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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 14471, 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*.

This second edition cancels and replaces the first edition (ISO/IEC TR 14471:1999), which has been technically revised.

## Introduction

Historically, there have been problems experienced by organisations in adopting CASE (computer aided software engineering) tools. Because organisations have not gained the expected benefits of CASE technology, it is hoped that the use of a well-founded CASE adoption process will help achieve successful adoption of CASE tools.

A survey conducted by ISO/IEC JTC1/SC7/WG4 (See Annex A: Analysis of CASE adoption questionnaire) offers some hope that these problems may be improving. This survey suggests that CASE tools are performing new capabilities and getting easier to use, that users' expectations are getting more sophisticated, and that CASE tools are more likely to meet their goals. However, according to the survey, there remain a number of continuing problems. There has not been sufficient attention given to pilot trials of CASE technology before using it on actual projects, and users report a need for additional top management support, a total process for CASE adoption, and a preparation of the organisation for the introduction of the technology. This Technical Report addresses the continued needs reported by users.

The purpose of this Technical Report is to provide a recommended practice for CASE adoption. It provides guidance in establishing processes and activities that are to be applied for the successful adoption of CASE technology. The use of this Technical Report will help to maximise the return and minimise the risk of investing in CASE technology. However, this Technical Report does not establish compliance criteria.

# Information technology — Software engineering — Guidelines for the adoption of CASE tools

## 1 Scope

Since CASE adoption is a subject of the broader technology transition problem, this Technical Report addresses the adoption practices appropriate for a wide range of computing organisations. This Technical Report neither dictates nor advocates particular development standards, software processes, design methods, methodologies, techniques, programming languages, or life-cycle paradigms.

This Technical Report will:

- identify critical success factors (CSF);
- propose a set of adoption processes;
- guide successful adoption in consideration of organisational and cultural environment.

The following groups are targeted as potential audiences:

- CASE users;
- information systems managers;
- chief information officers (CIO);
- CASE suppliers;
- software engineering consultants;
- those involved in the acquisition of CASE tools and technology.

Therefore this Technical Report addresses aspects of CASE tools adoption. It is best used with ISO/IEC 14102 for CASE tool evaluation and selection. It is complementary to related ISO/IEC documents which deal with the general aspects of these topics.