TECHNICAL REPORT

# ISO/IEC TR 14143-3

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# Information technology — Software measurement — Functional size measurement —

## Part 3: Verification of functional size measurement methods

*Technologies de l'information — Mesurage du logiciel — Mesurage de la taille fonctionnelle —*

*Partie 3: Vérification des méthodes de mesure de la taille fonctionnelle*

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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 14143-3, 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 system engineering*.

This document is being issued in the Technical Report (type 2) series of publications (according to the Procedures for the technical work of ISO/IEC JTC 1) as a "prospective standard for provisional application" in the field of software measurement because there is an urgent need for guidance on how standards in this field should be used to meet an identified need.

This document is not to be regarded as an "International Standard". It is proposed for provisional application so that information and experience of its use in practice may be gathered. Comments on the content of this document should be sent to the ISO Central Secretariat.

A review of this Technical Report (type 2) will be carried out not later than three years after its publication with the options of: extension for another three years; conversion into an International Standard; or withdrawal.

ISO/IEC 14143 consists of the following parts, under the general title *Information technology — Software measurement — Functional size measurement*:

— *Part 1: Definition of concepts*

 

— *Part 2: Conformity evaluation of software size measurement methods to ISO/IEC 14143-1:1998*

— *Part 3: Verification of functional size measurement methods*

— *Part 4: Reference model*

— *Part 5: Determination of functional domains for use with functional size measurement*

# Introduction

Functional Size Measurement (FSM) is a technique used to measure the size of software by quantifying the Functional User Requirements of the software[1)]. The first published method to embrace this concept was Function Point Analysis, developed by Allan Albrecht in the late 1970s. Since then, numerous extensions and variations of the original method have been developed. The end user may have many variants from which to choose - each with its own advantages in specific situations. This part of ISO/IEC 14143 was developed to provide a process to assist the user in choosing a method appropriate to their needs, by providing a process for verifying the extent to which statements made for certain performance properties of an FSM Method are true.

Tests are carried out according to the provisions of this Technical Report, concerning statements made for performance properties of a particular FSM Method. The results of these tests will be helpful to prospective users of the FSM Method in judging whether it is appropriate to their needs.

ISO/IEC 14143-1:1998 was developed to define the concepts of FSM and provides a basis against which all variants can be compared.

This part of ISO/IEC 14143

a) establishes a framework for verifying certain performance properties of an FSM Method,

b) defines several performance properties against which an FSM Method can be verified,

c) describes the types of tests which can be performed,

d) defines the process for verification of an FSM Method, and

e) provides an example template for the verification report.

Verification is conducted by a verification team that has the competencies described in this part of ISO/IEC 14143. This part of ISO/IEC 14143 assumes familiarity with the concepts and definitions described in ISO/IEC 14143-1:1998.

The verification process is designed to meet the requirements of the verification sponsor and involves

a) identifying the performance properties that need to be verified,

b) identifying the tests that need to be conducted,

c) conducting the tests, and

d) reporting the verification test results.

1) Refer ISO/IEC 14143-1:1998, *Information technology — Software measurement — Functional size measurement — Part 1: Definition of concepts*.

The output from the verification is the verification report, which provides objective evidence of the extent to which an FSM Method exhibits certain performance properties. The verification report consists of the results for each test carried out, and can be used to

a) determine the correctness of the statements made by a particular FSM Method,

b) determine the extent that a particular FSM Method exhibits the particular performance properties tested, and

c) assist prospective users of the FSM Method to make informed decisions about which method best meets their needs.

# Information technology — Software measurement — Functional size measurement —

# Part 3: Verification of functional size measurement methods

## 1 Scope

This part of ISO/IEC 14143 establishes a framework for verifying the statements of an FSM Method and/or for conducting tests requested by the verification sponsor, relative to the following performance properties:

— repeatability and reproducibility;

— accuracy;

— convertibility;

— discrimination threshold;

— applicability to Functional Domains.

NOTE Statements and test requests relative to other performance properties are outside the scope of this document.

It aims to ensure that the output from the verification is objective, impartial, consistent and repeatable.

The verification report, produced as a result of applying this part of ISO/IEC 14143, will enable the prospective user to select the FSM Method which best meets their needs.

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 14143-1:1998, *Information technology — Software measurement — Functional size measurement — Part 1: Definition of concepts*

ISO/IEC 14143-2:2002, *Information technology — Software measurement — Functional size measurement — Part 2: Conformity evaluation of software size measurement methods to ISO/IEC 14143-1:1998*

ISO/IEC 14143-4:2002, *Information technology — Software measurement — Functional size measurement — Part 4: Reference model*