

Australian/New Zealand Standard™

**Information technology—Software
measurement—Functional size
measurement**

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

AS/NZS ISO/IEC 14143.5:2004

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PREFACE

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

This Standard is identical with, and has been reproduced from ISO/IEC TR 14143-5:2004, *Information technology—Software measurement—Functional size measurement—Part 5: Determination of functional domains for use with functional size measurement*.

The objective of this Standard is to describe the characteristics of Functional Domains and the procedures by which characteristics of Functional User Requirements (FUR) can be used to determine Functional Domains.

This Standard is Part 5 of AS/NZS ISO/IEC 14143, *Information technology—Software measurement—Functional size measurement*, which is published in parts as follows:

Part 1: Definition of concepts

Part 2: Conformity evaluation of software size measurement methods to AS/NZS 14143.1:1999

Part 3: Verification of functional size measurement methods

Part 4: Reference model

Part 5: Determination of functional domains for use with functional size measurement (this Standard)

The term ‘informative’ has been used in this Standard to define the application of the appendix to which it applies. An ‘informative’ appendix is only for information and guidance.

As this Standard is reproduced from an international standard, the following applies:

- (a) Its number appears on the cover and title page while the international standard number appears only on the cover
- (b) In the source text ‘this Technical Report’ should read ‘this Australian/New Zealand Standard’.
- (c) A full point substitutes for a comma when referring to a decimal marker.

References to International Standards should be replaced by references to Australian or Australian/New Zealand Standards, as follows:

<i>Reference to International Standard</i>		<i>Australian/New Zealand Standard</i>	
ISO/IEC		AS/NZS	
14143	Information technology—Software measurement—Functional size measurement	14143	Information technology—Software measurement—Functional size measurement
14143-1	Part 1: Definition of concepts	14143.1	Part 1: Definition of concepts

CONTENTS

Page

Introduction	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Abbreviations	2
5 Requirements	2
5.1 General requirements for Functional Domains	2
5.2 General requirements for characteristics of Functional Domains	2
5.2.1 Requirements for an FDC method	2
6 Procedures	3
6.1 Determining the Functional Domain for a given set of FUR	3
6.2 Determining the applicability of an FSM Method to a particular Functional Domain	3
7 Example FDC methods	3
Annex A (informative) CHAR Method to determine Functional Domains	5
Annex B (informative) BFC type method to determine Functional Domains	17

INTRODUCTION

Functional Size Measurement (FSM) is a technique used to measure the size of software by quantifying the Functional User Requirements of the software¹⁾. 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. Users of these methods have made various claims regarding the usefulness and limitations of a particular method when applied to different *types* of software. Examples of these *types* of software quoted include, amongst others, Management Information Systems (MIS), Embedded Software, Process Control Software, Decision Support Software, Military Software, Engineering and Real Time Software.

The terms and the phrase “*software types*” have been loosely defined. They are widely used to differentiate between categories of user functions performed by the software (what it does), software performance issues, degrees of internal processing complexity, physical implementation requirements and development environments. There is no universally consistent definition of these terms or of the characteristics of FUR relevant to assessing Functional Size. The consequences of this are:

- a) it is difficult for a potential user of a particular FSM Method to assess the Method’s applicability for measuring the size of a specific set of FUR; and
- b) owners and developers of an FSM Method are not able to describe the Functional Domain(s) to which the FSM Method can be applied.

This Technical Report addresses these difficulties by describing how the characteristics of FUR may be used to determine software types. The phrase “software types” for the purposes of this Technical Report is replaced by the defined term Functional Domain. A Functional Domain is defined in ISO/IEC 14143-1:1998 as “a class of software based on the characteristics of FUR which are pertinent to Functional Size Measurement.”

ISO/IEC 14143-1:1998 requires that an FSM Method shall describe the Functional Domain(s) to which it can be applied. The purpose of this Technical Report is to define how Functional Domains may be defined and to provide example methods that may be used to generate Functional Domains.

To ensure that this Technical Report did not unnecessarily duplicate established Functional Domains, were these to exist in general information technology, a literature search consisting of formal library retrievals, informal library reviews, personal correspondence, conference proceedings and on-line searches was conducted between June 1995 and May 1997 referencing topics pertinent to this project. Over 700 abstracts were reviewed in addition to articles, periodicals, conference presentations and other references as background to this Technical Report.

This Technical Report satisfies the unique needs of FSM, and therefore takes a different approach from ISO/IEC TR 12182. The classification categories of ISO/IEC TR 12182 were considered, and have been mapped in the informative annex.

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

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Information technology — Software measurement — Functional size measurement —**Part 5:
Determination of functional domains for use with functional size measurement****1 Scope**

This Technical Report describes the characteristics of Functional Domains and the procedures by which characteristics of Functional User Requirements (FUR) can be used to determine Functional Domains. Two example methods for implementing these principles are provided in the Informative Annexes.

Either of the methods may be used directly, or using Functional Domains defined locally by:

- FSM Method to determine if a particular FSM Method is applicable to the Functional Domain(s) represented by their specific FUR;
- Describing, for a given set of FUR, the Functional Domain to which the FUR belong; and
- FSM Method owners and designers describing the Functional Domain(s) to which the FSM Method can be applied, as outlined in ISO/IEC 14143-1:1998.

NOTE Use of the Informative Annexes to specify Functional Domains will allow comparisons of FUR from different sources and comparisons of the applicability of FSM Methods.

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*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 14143-1:1998 and the following apply.

**3.1
characteristic of FUR**

a distinctive property of the FUR that is important for identifying the Functional Domain to which a specific set of FUR belongs