

---

---

## **Software engineering — Mk II Function Point Analysis — Counting Practices Manual**

*Génie logiciel — Analyse des points fonctionnels Mk II — Manuel des  
pratiques de comptage*

**PDF disclaimer**

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

© ISO/IEC 2002

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

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)

Published in Switzerland

# Table of Contents

<b>TABLE OF CONTENTS</b>	<b>III</b>
<b>FOREWORD</b>	<b>V</b>
<b>1</b>	<b>1</b>
<b>INTRODUCTION</b>	<b>1</b>
1.1 Definition and Purpose of MkII Function Point Analysis	1
1.2 Purpose of the Counting Practices Manual ('CPM')	2
1.3 Who should read this document ?	2
1.4 Albrecht/IFPUG Function Point Analysis	2
1.5 Applicability of Mk II FPA	3
1.6 Manual Structure	4
1.7 Metrics Practices Committee	5
1.8 Procedure for raising a Query or Issue with the MPC	5
<b>2</b>	<b>7</b>
<b>THE MK II FUNCTION POINT ANALYSIS RULES</b>	<b>7</b>
Rule 1 Boundary	7
Rule 2 Functional Size and Logical Transactions	7
Rule 3 Processing Component of Logical Transactions	8
Rule 4 Input and Output Components of Logical Transactions	8
Rule 5 Logical Transaction Size	8
Rule 6 Reporting a MkII Function Point Count	9
<b>3</b>	<b>11</b>
<b>MEASUREMENT STEPS</b>	<b>11</b>
Step 1 Determine the Viewpoint, Purpose and Type of the Count	12
Step 2 Define the Boundary of the Count	12
Step 3 Identify the Logical Transactions	13
Step 4 Identify and Categorise the Data Entity Types	13
Step 5 Count the Input Data Element Types, the Data Entity Types Referenced, and the Output Data Element Types.	13
Step 6 Calculate the Functional Size	13
Step 7 Determine Project Effort	13
Step 8 Calculate Productivity and other Performance Parameters	13
Step 9 Score the Degrees of Influence	13
Step 10 Calculate the Technical Complexity Adjustment	13
Step 11 Calculate Adjusted Size and Performance Parameters	14
<b>4</b>	<b>15</b>
<b>GENERAL GUIDELINES FOR MKII FUNCTION POINT COUNTING</b>	<b>15</b>
4.1 Determining the Viewpoint, Purpose and Type of the Count	15
4.2 Drawing the Boundary for a Count	16
4.3 Interfaces	18
4.4 Identifying Logical Transactions	21
4.5 Identifying Entity Types	39
4.6 Identifying Input and Output Data Element Types	43

<b>5</b>		<b>49</b>
	<b>MEASUREMENT GUIDELINES FOR SPECIFIC SITUATIONS</b>	<b>49</b>
5.1	Counting Graphical User Interfaces (GUIs)	49
5.2	Approximate Sizing of Application Portfolios	54
5.3	Sizing Changes	55
5.4	Changes to make software Year 2000 compliant	58
5.5	Counting Application Packages	58
<b>6</b>		<b>61</b>
	<b>CALCULATING THE ADJUSTED SIZE (OPTIONAL)</b>	<b>61</b>
<b>7</b>		<b>63</b>
	<b>MEASURING EFFORT</b>	<b>63</b>
7.1	Project Start	64
7.2	Project End	64
7.3	Whose time included?	64
7.4	What time is included?	64
7.5	Project duration	64
<b>8</b>		<b>65</b>
	<b>MEASURING PRODUCTIVITY AND OTHER ASPECTS OF PERFORMANCE</b>	<b>65</b>
8.1	Development Productivity	65
8.2	Change Productivity	65
8.3	Maintenance and Support Productivity	65
8.4	Measuring and Understanding Performance in Software Activities: The Wider Issues	66
<b>9</b>		<b>68</b>
	<b>ESTIMATING EFFORT USING MKII FPA</b>	<b>68</b>
<b>10</b>		<b>70</b>
	<b>GLOSSARY OF MKII FPA TERMS</b>	<b>70</b>
	<b>APPENDIX I</b>	<b>74</b>
	<b>TECHNICAL COMPLEXITY ADJUSTMENT</b>	<b>74</b>
	<b>APPENDIX II</b>	<b>84</b>
	<b>DATA COLLECTION FORMS</b>	<b>84</b>
	Introduction	84
	Record Sheets - a Possible Structure	84
	Documentation Process	85
	<b>APPENDIX III</b>	<b>92</b>
	<b>BIBLIOGRAPHY</b>	<b>92</b>
	The International Standard:	92
	General texts on software measurement with MkII FPA:	92
	Use of MkII FPA in Estimating	92
	Other Relevant Publications	92

## 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.

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 20968 was prepared by the United Kingdom Software Metrics Association (UKSMA) and was adopted, under the PAS procedure, by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, in parallel with its approval by national bodies of ISO and IEC.

# Software engineering — Mk II Function Point Analysis — Counting Practices Manual

# 1

## Introduction

### 1.1 Definition and Purpose of MkII Function Point Analysis

For the purposes of this document, the abbreviation 'Mk II FPA' is used for 'Mark II Function Point Analysis'.

Mk II FPA is a method for the quantitative analysis and measurement of information processing applications. It quantifies the information processing requirements specified by the user to provide a figure that expresses a size of the resulting software product. This size is suitable for the purposes of performance measurement and estimating in relation to the activity associated with the software product.

In the context of Mk II FPA, 'information processing requirements' means the set of functions required by the commissioning user of the application software product (excluding any technical and quality requirements). 'The activity' could be the development, enhancement or maintenance of the software product needed to meet the requirements.

The MkII FPA method is intended to comply with ISO/IEC 14143-1: 1998, the International Standard for Functional Size Measurement (see Bibliography).