

# ISO/IEC 24570:2018-02 (E)

## Software engineering - NESMA functional size measurement method - Definitions and counting guidelines for the application of function point analysis

---

### Contents

Page

Foreword .....	v
Introduction to this Standard .....	vi
<b>1</b> <b>Scope .....</b>	<b>1</b>
1.1      Purpose .....	1
1.2      Conformity .....	1
1.3      Applicability .....	1
1.4      Focus .....	1
<b>2</b> <b>Introduction to FPA .....</b>	<b>2</b>
2.1      Brief description of FPA .....	2
2.1.1    Background, purpose and application of FPA .....	2
2.1.2    Rationale behind FPA .....	2
2.2      Use of FPA: application versus project functional size .....	3
2.3      Types of function point analyses .....	3
2.4      Function point analyses during a project .....	3
2.5      Scope of the analysis and boundary of the application to be analyzed .....	4
2.6      Users .....	4
2.7      Functions and function types .....	4
2.8      The complexity of a function .....	5
2.9      The valuing of functions .....	6
2.10     The functional size .....	6
<b>3</b> <b>Guidelines to perform an FPA .....</b>	<b>7</b>
3.1      Step-by-step plan to perform an FPA .....	7
3.2      Types of function point analyses and their accuracy .....	7
3.2.1    Indicative function point analysis .....	8
3.2.2    High level function point analysis .....	9
3.2.3    Detailed function point analysis .....	9
3.3      Role of the quality of the specifications .....	10
3.4      FPA during a project .....	10
3.5      Determining the functional size of an application .....	11
3.5.1    Determining the application boundary .....	11
3.5.2    Functional size of new applications .....	12
3.5.3    Functional size of enhanced applications .....	12
3.5.4    Functional size of re-built applications .....	12
3.6      Determining the functional size of a project .....	13
3.6.1    Determining the scope of a project function point analysis .....	13
3.6.2    Functional size of development projects .....	14
3.6.3    Functional size of enhancement projects .....	15
3.6.4    The project function point analysis during the replacement of an application .....	16
3.7      Definition of functional change .....	16
3.7.1    General .....	16
3.7.2    Modification of a transactional function .....	16
3.7.3    Modification of a data function .....	16
3.7.4    Modification of a DET .....	17
3.8      FPA in specific situations .....	17
3.8.1    Analyzing on the basis of traditional design .....	17
3.8.2    Analyzing packaged software .....	17
3.8.3    Analyzing screens or windows .....	19

3.8.4	Analyzing when prototyping .....	20
3.9	Illustration: FPA and the application life cycle .....	21
3.9.1	FPA during the requirements phase .....	21
3.9.2	FPA during the analysis phase .....	22
3.9.3	FPA during the functional design phase .....	23
3.9.4	FPA during the construction phase .....	24
3.9.5	FPA during the implementation phase .....	24
3.9.6	FPA during the operation and maintenance phase .....	24
4	General FPA guidelines .....	25
4.1	Analyzing from a logical perspective .....	25
4.2	Applying the rules .....	25
4.3	No double counting .....	25
4.4	Built functionality, non-requested functionality .....	25
4.5	Production of re-usable code .....	26
4.6	Re-use of existing code .....	26
4.7	Screens, windows and reports .....	26
4.8	Input and output records .....	26
4.9	Security and authorization .....	26
4.10	Operating systems and utilities .....	27
4.11	Report generators and query facilities .....	27
4.12	Graphs .....	27
4.13	Help facilities .....	27
4.14	Messages .....	28
4.15	Menu structures .....	28
4.16	List functions .....	28
4.17	Browse and scroll functions .....	28
4.18	Cleanup functions .....	29
4.19	Completeness check on the function point analysis .....	29
4.20	FPA tables .....	29
4.21	Deriving logical files (data functions) from a normalized data model .....	30
4.21.1	Introduction .....	30
4.21.2	Denormalization rules .....	30
4.21.3	The nature of the relationship (cardinality and optionality) .....	31
4.21.4	Independence or dependence of an entity type .....	31
4.21.5	Conversion table: from normalized entity types to logical files .....	33
4.22	Shared use of data .....	34
4.23	Generic rule for counting data element types .....	37
5	Internal Logical Files .....	37
5.1	Definition of an internal logical file .....	38
5.2	Identifying internal logical files .....	38
5.3	Determining the complexity of internal logical files .....	39
6	External Logical Files .....	40
6.1	Definition of an external logical file .....	40
6.2	Identifying external logical files .....	41
6.3	Determining the complexity of external logical files .....	43
7	External Inputs .....	43
7.1	Definition of an external input .....	44
7.2	Identifying external inputs .....	45
7.3	Determining the complexity of external inputs .....	46
8	External Outputs .....	48
8.1	Definition of an external output .....	48
8.2	Identifying external outputs .....	50
8.3	Determining the complexity of external outputs .....	52
9	External Inquiries .....	53
9.1	Definition of an external inquiry .....	54

9.2 Identifying external inquiries .....55  
9.3 Determining the complexity of external inquiries .....56  
Annex A (normative) Summary features for valuing function types .....58  
Annex B (normative) Function Point Analysis glossary .....63  
Annex C (informative) Increase in Functional Size .....68