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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 42588-2023

**Systems and software engineering - Functional size
measurement - NESMA method**

系统与软件工程 功能规模测量 NESMA方法

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Foreword

This document is in accordance with the provisions of GB/T 1:1-2020 "Guidelines for Standardization Work Part 1: Structure and Drafting Rules for Standardization Documents" drafting: This document is modified to adopt ISO /IEC 24570:2018 "Software Engineering NESMA Functional Scale Measurement Method Function Point Analysis Application Guidelines for the definition and counting of : Compared with ISO /IEC 24570:2018, this document has more structural adjustments: Structure number change comparison between two files See Appendix A for a list: The technical differences between this document and ISO /IEC 24570:2018 and their reasons are as follows:

--- Changed the relevant expressions of term concepts (see 3:1:1, 3:1:3, 3:1:5, 3:1:9, 3:1:14, 3:1:20, 3:1:24, 3:1:25, 3:1:27, 3:1:35, 3:1:36, 3:1:38, 3:1:39, 3:1:57, and 3:1:60), ensuring terminology is consistent with current standards, and enhancing functional size measurements Harmonization among standards;

--- Added graphical user interface, logic file, Dutch software measurement association abbreviations (see 3:2), because these acronyms are in the standard use;

--- Deleted Figure 1 of ISO /IEC 24570:2018, because the content of the item cost and productivity attributes in the figure is not in this document The technical content of the document, the relevant requirements are put forward in other documents; complies with the writing rules of the term; Thinking, "estimating function point analysis" is easier to understand;

--- Deleted the content of multiple suspension paragraphs of ISO /IEC 24570:2018 (see 1:4, Chapter 2~Chapter 9), because it is an introduction or description Sexual content, has nothing to do with technology and does not conform to the rules for compiling Chinese

standards: The following editorial changes have been made to this document:

- In order to coordinate with existing standards, change the name of the standard to "NESMA Method for Measuring Functional Scale of Systems and Software Engineering";
- The symbols in the formula (3) of 5:5:3 were amended because the original text was missing;
- Added bar title and bar number for suspended sections;
- The numbering of the figure has been corrected, and the reference to the figure has been added;
- Added article numbers for the titles without article numbers in Appendix B and Appendix C;
- Added Appendix D (informative) "Application Cases of this Document": Please note that some contents of this document may refer to patents: The issuing agency of this document assumes no responsibility for identifying patents: This document is proposed and managed by the National Information Technology Standardization Technical Committee (SAC/TC28): This document was drafted by: China National Petroleum Corporation Planning Institute, Beijing Software Cost Evaluation Technology Innovation Alliance, China Electronic Technology Standardization Research Institute, Beijing High Quality System Technology Co., Ltd., Shanghai Software Industry Association, Dopp Information Technology Co., Ltd., Cloud China Southern Power Grid Co., Ltd: Information Center, Zhejiang Electronic Information Product Inspection and Research Institute, and National Application Software Product Quality Inspection and Testing Center Xin, Guangxi Dayi Technology Co., Ltd., Shandong Provincial Computing Center (National Supercomputing Jinan Center), Shandong Shanke Digital Economy Research Institute Co., Ltd: Company, China Academy of Aerospace Systems Science and Engineering, Shanghai Computer Software Technology Development Center, Guangdong Science and Technology Basic Conditions Platform Center, Shanghai Baosight Software Co., Ltd., Shanghai Tongshiting Software Technology Co., Ltd., Beijing Software and Information Service Exchange Co., Ltd., Institute of Software, Chinese Academy of Sciences, Beijing Zhongji Datalink Technology Co., Ltd., Beijing Huayu Information Technology Co., Ltd., Shanghai Xuansi Intelligent Technology Co., Ltd: Ltd: The main drafters of this document: Ren Chang, Li Wenpeng, Yang Lei, Zhang Yangyang, Dong Fenglian, Yan Liang, Yang Genxing, Xu Zongmin, Wang Haiqing, Su Wei, Lou Li, Han Mingjun, Li Gang, Liu Mengyun, Ying Zhihong, Li Lingfan, Che Jiangtao, Yin Jiming, Luo Xian, Li Min, Li Wang, Cui Yan, Wu Dilong, Shen Ying, Wei Kewei, Xu Zejin, Feng Kuan, Zhuangzhuang, Chen Xiaojia, Pan Shiqi, Fude Peng, Han Delong, Wu Haijun, Ji Yongwei, Yuan Qian, Zhang Chaohui, Guo Dong, Hu Yun, Hao Lin, Chen Xiaowu, Lu Zhikun, Ouyang Shusheng, Yang Xin, Liu Lin, Zhao Zhiyu, Zhao Yi, Li Weihong, Dou Wensheng, Liu Fen, Liu Yongchao:

Function Point Analysis (FPA) method, as one of the measurement methods of software

function scale, was originally developed by AJ Albrecht in 1974: Developed in 1979, FPA is the result of productivity studies conducted on a large number of projects: The first version of FPA was launched in 1979, subsequently revised in 1983 and 1984 based on practical experience: FPA introduces a unit, the function point, to help measure the size of a developed or maintained application: In the framework of FPA Here, "application" means "an automated information system": Function points represent the amount of information processing that the application provides to the user: This unit of measurement is independent of how information processing is technically implemented: A function point is an abstract term, and so-called "lease points" carry analogy: The rental point is determined according to the number of rooms in the house, the area of the room, the number of facilities, and the location of the house: These are the balance of housing Quantitative standards are provided to potential tenants: FPA was first used to measure the productivity of system development and system maintenance after application construction, and this technology is also used to support software Project budgeting and evaluation work: This document is one of the FPA methods: The method FPA is divided into estimated function points according to the stage of the project and the degree of detail of the requirements: Analysis, estimation function point analysis and detailed function point analysis methods provide help and guidance for function point analysts: System and software engineering functional size measurement NESMA method

1 Scope

GB/T 42588-2023 specifies the NESMA method of functional size measurement, adopting ISO/IEC 24570 with modifications. Function point analysis exists because software cannot be measured in lines of code without rewarding verbosity: the size that matters is how much function the software delivers to its users, counted from the specification and independent of the language it is written in, which is what makes it usable for pricing contracts, estimating effort and benchmarking productivity. The standard sets the general principles and requirements of function point analysis, the operating principles and the general rules, then the counting of each element type: internal logical files, external interface files, external inputs, external outputs and external enquiries, with annexes giving the summary properties of the functional type assignments, the treatment of enhancement and functional size increase, and worked application cases. It took effect on 1 December 2023.

1 Purpose This document specifies a collection of definitions, rules and guidelines for the application of the NESMA Function Point Analysis method (FPA): 1:

2 Consistency This document complies with all the required clauses in ISO /IEC 14143-1:2007: 1:

3 Applicability This document applies to all functional areas: 1:

4 Key points This document focuses on how to determine the functional size of application software: This document is not sufficient when formulating project budgets based on

function point size: Roles such as productivity criteria and productivity attributes:

2 Normative references

The contents of the following documents constitute the essential provisions of this document through normative references in the text: Among them, dated references For documents, only the version corresponding to the date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to this document: ISO /

IEC 14143-1:2007 Information Technology Software Measurement Functional Size Measurement Part 1: Concept Definition of concepts)

GB/T 18491:1-2001 Information Technology Software Measurement Functional Scale Measurement Part 1: Concept Definition (ISO / IEC 14143-1:1998, IDT)

3 Terms, Definitions and Abbreviations 3:

1 Terms and Definitions The following terms and definitions apply to this document: 3:1:1 application application A cohesive collection of automated processes and data that is composed of one or more components, modules, or subsystems that supports business objectives: Examples: accounts payable, accounts receivable, payroll, purchasing, shop floor production, assembly line control, air search radar, target tracking, weapons launches, flight scheduling and Passenger booking: