

ICS 35.080

CCS L 77



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

GB/T 25000.23-2019

**Systems and software engineering -- Systems and software
Quality Requirements and Evaluation (SQuaRE) -- Part 23:
Measurement of system and software product quality**

Issued on: August 30, 2019

Implemented on: March 1, 2020

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

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Foreword

GB/T 25000 "System and Software Engineering System and Software Quality Requirements and Evaluation (SQuaRE)" is divided into the following sections.

- Part 1. SQuaRE Guide;
- Part 2. Planning and Management;
- Part 10. System and software quality models;
- Part 12. Data quality model;
- Part 20. Measurement reference models and guidelines;
- Part 21. Quality measurement elements;
- Part 22. Use quality measurement;
- Part 23. System and software product quality measurement;
- Part 24. Data quality measurement;
- Part 30. Quality requirements;
- Part 40. Evaluation process;
- Part 41. Evaluation guidelines for developers, acquirers and independent reviewers;
- Part 45. Evaluation module for recoverability;
- Part 51. Quality requirements and test details for Ready-to-Use Software Products (RUSP);
- Part 62. Ease of Use Test Report Industry Common Format (CIF).

This part is the 23rd part of GB/T 25000.

This part is drafted in accordance with the rules given in GB/T 1.1-2009.

This part replaces GB/T 16260.2-2006 "Software Engineering Product Quality Part 2. External Measurement" and GB/T 16260.3-

2006 "Software Engineering Product Quality Part 3. Internal Measurements". This part and GB/T 16260.2-2006 and GB/T 16260.3-

Compared with.2006, the main technical changes are as follows.

--- Combine the external metrics and internal metrics in GB/T 16260.2-2006 and GB/T 16260.3-2006, renamed the system

System and software product quality measurement, and adjust the quality metrics of its six characteristics to 8 quality measures, revision details

as follows.

a) Remove functional security and confidentiality metrics, add information security measures, and measure sub-features including confidentiality measures,

Compliance measures for integrity measures, non-repudiation measures, verifiability measures, authenticity measures, and information security;

b) increased compatibility measures, sub-feature measures including coexistence measures (original portability sub-feature measures), interoperability

Compliance measure (original functional sub-feature measure) and compatibility compliance measure;

c) The measurement of the following sub-characteristics is added. functional functional completeness measure, performance efficiency capacity measure, ease of use

Household error defensive measure and accessibility measure, reliability usability measure, maintainability modular measure and reusability

Sex measure

d) combine the maintainability changeability measure and the stability measure into a new measure, ie an easy modification measure;

e) Modified the name of the feature or sub-feature measure, the new name is more accurate, including. the accuracy measure is renamed to the function correctness test

Degree, suitability measure changed to function suitability measure, efficiency measure changed to performance efficiency measure, efficiency compliance measure

Changed to the performance efficiency of the compliance measure, the comprehensibility measure changed its name to the identifiability measure, the attraction measure changed its name

User interface comfort measure.

--- The quality measurement table given includes ID, name, description, measurement function and method, which simplifies GB/T 16260.2-2006,

GB/T 16260.3-2006 content of the meter.

--- Added a description of the relationship between quality model, quality measure, quality measure element, quantitative attribute, and target entity in 6.1.

--- Where appropriate, the measurement of characteristics and sub-characteristics should be extended to the scope of computer systems, not just software.

This section uses the redrafting method to modify the use of ISO /IEC 25023.2016 "System and Software Engineering Systems and Software Quality Requirements and Evaluation (SQuaRE) System and Software Product Quality Measurement.

This section has some structural adjustments compared to ISO /IEC 25023.2016, which is listed in Appendix A.

A summary of the chapter numbering of ISO /IEC 25023.2016.

The main technical differences between this part and ISO /IEC 25023.2016 are as follows.

--- According to the system and software product quality model defined in GB/T 25000.10-2016, the measurement of each quality characteristic of this part is

Added compliance measures, namely. functional compliance measure, performance efficiency compliance measure, compatibility compliance test

Degree of compliance, ease of compliance measurement, reliability compliance measure, information security compliance measurement, maintenance compliance test

Compliance measure of degree and portability;

--- Chapter 7 added a description of the "method";

--- In each of the quality measures in this section, the "Method" column has been added, giving the method selected in the quality measure;

--- Appendix B Table B.1 adds a description of the compliance of each quality characteristic.

This section also made the following editorial changes.

--- In order to coordinate with the GB/T 25000 series of national standards, the "name 23" has been added to the standard name.

--- Adjusted the reference order.

Introduction

This part of GB/T 25000 provides a set of quality measures for system/software product

characteristics that can be combined with the system and

Other standards for software quality requirements and evaluation (SQuaRE), especially with GB/T 25000.10, GB/T 25000.30,

GB/T 25000.40 and GB/T 25000.41, used to specify system/software product quality requirements, measurement and evaluation. Developer, evaluation party,

Users of quality management, demanders, suppliers, maintainers, and target systems/software products can select the appropriate quality measures as needed. This can

Used to define requirements, evaluate systems/software products, perform quality management activities, or some other purpose.

The quality measures in this section are selected based on their value in practice and are divided into general (G) and specific (S)

class. These quality measures are not exhaustive and encourage users of this section to refine them as necessary.

Figure 1 Structure of the quality measurement division

Figure 1 depicts the relationship between GB/T 25000.23 and other SQuaRE quality measurement standards.

a) GB/T 25000.20---Measurement Reference Models and Guidelines. Provides reference models and guidelines for measuring quality characteristics.

b) GB/T 25000.21---Quality measure element. Provides a format for specifying the elements of the quality measure and can be used for construction

Several examples of quality measurement elements for building software quality measures.

c) GB/T 25000.22---Use quality measurement. provide measures, including correlation measurements using quality characteristics in the mass model

function.

d) GB/T 25000.23---System and software product quality measurement. provide measures, including quality characteristics in the product quality model

Associate measurement functions and quality measure elements.

e) GB/T 25000.24---Data quality measurement. Provides measures, including associated measurement functions for quality characteristics in the data quality model

Number and quality measure elements.

System and software engineering