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

GB/T 25000.21-2019

**Systems and software engineering -- Systems and software
Quality Requirements and Evaluation (SQuaRE) -- Part 21:
Quality measure elements**

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Foreword

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1 Scope

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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. Quality measurement of systems and software products;
- 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 60. Ease of Use Test Report Industry Common Format (CIF). A general framework for information on ease of use;
- Part 62. Ease of Use Test Report Industry Common Format (CIF).

This part is the 21st part of GB/T 25000.

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

This part uses the translation method equivalent to the international standard ISO /IEC 25021.2012 "System and software engineering system and software quality

Summation Evaluation (SQuaRE) Quality Measurement Element.

The documents of our country that have a consistent correspondence with the international documents referenced in this part are as follows.

---GB/T 25000.10-2016 System and Software Engineering Systems and Software Quality Requirements and Evaluation (SQuaRE) Part 10

Points. System and Software Quality Model (ISO /IEC 25010.2011, MOD);

---GB/T 20917-2007 Software Engineering Software Measurement Process (ISO /IEC 15939.2002, IDT).

This section has made the following editorial changes.

--- In order to coordinate with the GB/T 25000 series of national standards, the "21st part" has been added to the standard name.

--- Deleted Figure 2 and Figure 3 in the introduction, and changed Figures 4 to 6 in the text

to Figure 2 to Figure 4.

--- There is a spelling mistake in the term "4.4measure(noun)" in the original text, "basemeasures, measures, andindica-

Tors" is changed to "basemeasures", derivedmeasures, and indicators.

--- In the QME with serial number 12 in Table A.1 of Appendix A of the original text, there is a spelling error in item d), and "qualifying" is changed to "quantifying".

--- In the QME with serial number 12 in Table A.1 of Appendix A of the original text, item h) is not optional. So about "QME

The description of "input" is changed to "data input with an error or processing of an error".

--- B.1 of Appendix B of the original text, "definitionofeachsubproperty, inputfortheQME,numericalrulesfor

theQME, thescaletype, contextofQME, softwarelifecycleand measurementcon-

straints.", the phrase "UnitofmeasurementfortheQME (QME measurement unit) is missing from the sentence," added

Between "inputfortheQME," and "numericalrulesfortheQME,".

--- B.5 in Appendix B of the original text refers to "AnnexE", which does not exist in the original text, and is changed to "AnnexD (Appendix D)".

--- Original Appendix C C.2, "DurationofOperation" definition has a spelling error, "action" changed to "atimeperiod

(time period)".

Introduction

This part of GB/T 25000 is intended to define and/or design an initial set of quality measure elements (QME) that can be applied to software products.

The entire life cycle is achieved for the purpose of implementing the System and Software Quality Requirements and Evaluation (SQuARE) standard. This section also gives the design

QME or a set of rules that validate existing QME designs.

The main purposes of defining and using the Quality Measurement Element (QME) in this section are.

--- Provide guidance for organizations to develop and obtain their own QME;

---Improve the consistent use of specific QMEs in order to measure and use attributes related to various product quality characteristics and sub-characteristics;

--- A set of feature sets or sub-characteristics for a given product, helping to identify the set of QMEs that are specifically needed to derive all quality measures.

QME is a common element of many quality measures. The intended use of this section is to enable users to select and define relevant valid

QME to define internal, external, data or use quality measures. Furthermore, these measures can be used but are not limited to quality requirements

Definition, product evaluation and quality assessment. Therefore, it is recommended to precede this part of GB/T 25000.20, GB/T 25000.22, GB/T 25000.

23 GB/T 25000.24 and other measurement standards are used or used together with them.

Figure 1 depicts the relationship between GB/T 25000.21 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.

Figure 1 Relationship between SQuaRE quality measurement standards

System and software engineering

System and Software Quality Requirements and Evaluation (SQuaRE)

Part 21. Quality measure elements