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**Systems and software engineering - Systems and software  
quality requirements and evaluation(SQuaRE) - Part 30: Quality  
requirements framework**

系统与软件工程 系统与软件质量要求和评价(SQuaRE) 第30部分：质量需求框架  
**(English Translation)**

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### 1 Scope

This part of GB/T 25000 provides a framework of quality requirements for systems, software products and data, including the concept of quality requirements, and And the process and method of extracting, defining and controlling them. The intended readers of

this section include but are not limited to.

--- Demand-side. Evaluate whether the system, software products and data meet their value proposition, that is, whether they meet the expected quality;

---Developer. design, implement and test systems, software products and data to ensure that they meet the expected quality;

---Testing party. verify and confirm whether the system, software products and data meet the expected quality;

---Project management party. plan, supervise and control the progress of expected quality;

--- Independent evaluation party. evaluate the system, software products and data according to objective criteria.

This part follows the technical process defined in GB/T 22032, which is related to the quality requirements of the selected stakeholders, and is related to the quality requirements.

The required analysis and definition are related to maintenance. In this part, the quality models of GB/T 25000.10 and GB/T 25000.12 are used to Requirements are classified, and according to GB/T 25000.20, GB/T 25000.21, GB/T 25000.22, GB/T 25000.23 and The quality measurement in GB/T 25000.24 lays the foundation for quantifying quality requirements.

This section does not include the definition of other requirements (such as functional requirements, process requirements, etc.). This section does not specify any specific software quality test Degree, nor does it stipulate a specific development process.

## 2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this article Pieces. For undated reference documents, the latest version (including all amendments) is applicable to this document.

GB/T 22032 System and Software Engineering System Life Cycle Process (GB/T 22032-2021, ISO /IEC / IEEE15288.2015, IDT)

GB/T 25000.1-2021 System and Software Engineering System and Software Quality Requirements and Evaluation (SQuaRE) Part 1: SQuaRE Guide (ISO /IEC 25000:2014, MOD)

GB/T 25000.10-2016 System and Software Engineering System and Software Quality Requirements and Evaluation (SQuaRE) Part 10: System and software quality model (ISO /IEC 25010:2011, MOD)

GB/T 25000.12-2017 System and Software Engineering System and Software Quality Requirements and Evaluation (SQuaRE) Part 12: Data quality model (ISO /IEC 25012:2008, MOD)

GB/T 25000.22-2019 System and Software Engineering System and Software Quality Requirements and Evaluation (SQuaRE) Part 22: Use quality measurement (ISO /IEC 25022:2016, MOD)

GB/T 25000.23-2019 System and Software Engineering System and Software Quality Requirements and Evaluation (SQuaRE) Part 23: System and software product quality measurement (ISO /IEC 25023:2016, MOD)

GB/T 25000.24-2017 System and Software Engineering System and Software Quality Requirements and Evaluation (SQuaRE) Part 24: Data quality measurement (ISO /IEC 25024:2015, MOD)

ISO /IEC TR12182:2015 System and Software Engineering IT System and Classification Framework Software and Application Guidelines (System and Can be used to measure inherent or system-dependent properties.

### **6.5.1 Sources of quality requirements**

Two types of needs should be considered according to the source of ICT products.

Directly obtained from the requirements of the relevant parties in their respective fields) and ICT requirements (due to the use of certain ICT technology solutions in the design process) New requirements introduced). Quality requirements also include the same types.

For example, the use of a web-based system (ICT technology solution) involves some user needs, such as clicking in the browser How the system responds after the back button (functional requirements), self-description of the user interface (PQR, easy to learn) and browser compatibility (PQR).

### **6.5.2 Categories of ICT products**

There are differences in quality requirements between different ICT products. Therefore, it is better to determine which quality characteristics have higher priority and appropriate When questioning which quality measures to use, it is important to consider the target system category.

ISO /IEC TR12182 provides a framework for the classification of ICT products, including a set of typical classification axes. These classification axes are in the first layer.

It is organized into five axes by level, target system's architecture/infrastructure, attributes, operating environment, data and stakeholders. These classification axes can be used to determine which quality features have higher priority. Classification axes that are important for prioritization include.

- a) Function (and its problem framework);
- b) The key points of the system and data;
- c) Characteristics of stakeholders.

**Note:** Appendix A lists examples of IT decisions that support the required quality level.

### 6.5.3 Interrelationship with functional requirements/data requirements

Quality requirements cannot be defined and analyzed separately from functional requirements and data requirements. Some quality requirements are attached to functional requirements or data requirements;

In addition, some quality requirements are fulfilled by specifying new functional requirements. Example 1. Quality requirements attached to functional requirements.

Time efficiency (response time) is defined as the response time of the function. Example 2. Quality requirements achieved by specifying new functional requirements.

- a) Some confidentiality requirements are realized through access control function requirements;
- b) Some ease-of-learning requirements are realized through help function requirements;
- c) Some easy-to-analyze requirements are realized by recording functional requirements.

**Note 1:** Unlike functional requirements, most quality requirements represent the emergency attributes of the system, which appear on a set of components, rather than a specific component on. Therefore, it is difficult to establish and maintain the traceability of quality requirements, and therefore need to be implemented and verified with confidence throughout the product life cycle.

Product requirements cannot be defined separately from data requirements. ICT products consume and generate data. Quality requirements (product quality requirements or data Quality requirements) can develop into product quality requirements/data quality requirements with the decomposition of the system.

**Note 2:** From the perspective of ICT products, there are three types of data. external input and/or output data, internal component storage data and internal configuration data.

**Note 3:** The following is an example of the interdependence of ICT products and data, and the relationship between their PQR and DQR.

- a) The configuration data file is written for the configuration of ICT products. Its DQR (e.g., flexibility requirements) is the functional and quality requirements that ICT products need to meet determine;
- b) Customer data is used as the input of the business support system, and its quality (for example, accuracy) affects the product quality of the system (for example, ease of operation and correct function Sex);