ISO/IEC 25010 is an international standard that provides a comprehensive framework for software quality evaluation and measurement. It is part of the Software Product Quality Requirements and Evaluation (SQuaRE) series and is used to assess and specify various aspects of software quality. The model is designed to help organizations and software professionals ensure that software products meet specific quality standards and user expectations. Here is a detailed description of ISO/IEC 25010:

**1. Hierarchical Structure:**

ISO/IEC 25010 uses a hierarchical structure to organize software quality characteristics and sub-characteristics. At the highest level, it categorizes software quality into two main branches:

**a. Product Quality:** This branch focuses on the inherent characteristics of the software product itself. It includes eight primary sub-characteristics:

- **Functional Suitability:** The software's ability to provide the necessary functions to meet user needs.

- **Reliability**: The software's ability to perform without failure under specified conditions.

- **Performance Efficiency:** The software's ability to perform efficiently and use system resources effectively.

- **Compatibility:** The software's ability to operate and interact with other systems and environments.

- **Usability:** The software's ability to be user-friendly and easy to learn and use.

- **Security:** The software's ability to protect data and functionality from unauthorized access and attacks.

- **Maintainability:** The software's ability to be easily modified and maintained.

- **Portability:** The software's ability to be adapted for different environments and platforms.

**b. Quality in Use:** This branch considers how users perceive and interact with the software. It comprises two sub-characteristics:

- Effectiveness: The extent to which users can achieve their goals with the software.

- Satisfaction: The user's overall satisfaction and comfort when using the software

**2. Characteristics and Sub-characteristics:**

Each of the sub-characteristics mentioned above is further divided into attributes and sub-attributes. These attributes provide a more detailed breakdown of the characteristics, allowing for precise evaluation and measurement.

**3. Quality Requirements:**

ISO/IEC 25010 assists organizations in defining quality requirements for software projects. It specifies target levels or criteria for each characteristic, sub-characteristic, attribute, or sub-attribute. These requirements serve as a guideline for development, testing, and quality assurance efforts.

**4. Evaluation and Assessment:**

The model offers guidance on how to evaluate and assess software quality. It includes various techniques, methods, and metrics for measuring each quality characteristic. For example, reliability might be assessed using metrics like Mean Time Between Failures (MTBF) or Failure Rate.

**5. Flexibility and Adaptability:**

ISO/IEC 25010 is flexible and adaptable to different types of software and contexts. Organizations can select and prioritize the most relevant characteristics and sub-characteristics based on their specific project goals and user needs.

**6. Relationship with Other Standards:**

ISO/IEC 25010 is closely related to other standards in the ISO/IEC 25000 series, such as ISO/IEC 25000 (the overarching SQuaRE standard). These standards collectively provide a comprehensive framework for software product quality requirements and evaluation.

In summary, ISO/IEC 25010 is a vital standard in the field of software quality engineering. It offers a structured and internationally recognized approach to assessing, specifying, and achieving software quality. By using this model, organizations can better understand and meet the quality expectations of their software users while ensuring that their products are reliable, efficient, secure, and user-friendly.