



Systems and Software Quality Requirements and Evaluation



Background

The ISO/IEC 250xx family of standards is based on and originates from the ISO 9126 which still widely used. While the terminology is somewhat different, the spirit is the same. ISO 250xx has 16 parts, including:

- 25010 Quality model & guidelines
- 25012 Model of data quality
- 25030 Quality Requirements
- 25040 Evaluation process

Examples

As the terms of this standard are somewhat ambiguous, procedural refinement is provided to add precision and rigour, where needed. On the right, there are three examples for breaking down sub-attributes into metrics and defining these in turn by detailed measurement procedures. In any practical setting, further refinement is required, down to the (organisational or software) implementation level.

Quality Attribute	Learnability
Quality Metric	Effort necessary to learn to do a specific task with a specific level of efficiency
Measurement Procedure	<ul style="list-style-type: none">- Specify Users in terms of capabilities (e.g. level of experience and qualification)- Specify Tasks by goals, expected result, difficulty- Specify Efficiency level in terms of effort (time, load), and quality (errors)
Quality Attribute	Availability
Quality Metric	Mean time to failure for specific failure types and side conditions
Measurement Procedure	<ul style="list-style-type: none">- Run program with a given set of constraints and stimuli, take time- Count and classify issues (e.g. by analysing a log file)- Compute MTTF
Quality Attribute	Modularity
Quality Metric	Coupling and binding of modules
Measurement Procedure	<ul style="list-style-type: none">- Create call dependency graph of programm- Count call dependencies within and across module boundaries- Compute size of modules, Compute coupling and binding