# Annex E: ISO 9126 Quality Characteristics

***From ISO/IEC 9126-1 (2001), Software engineering - Software product quality - Part 1: Quality model, International Organization of Standardization***

**Functionality** A capability of the software product to provide function which meet stated and implied needs when the software is used under specified conditions.

* Suitability The capability of the software product to provide an appropriate set of functions for specified tasks and user objectives.
* Accuracy The capability of the software product to provide the right or agreed results or effects with the needed degree of precision.
* Interoperability The capability of the software product to interact with one or more specified systems.
* Security The capability of the software product to protect information and data so that unauthorized persons or systems cannot read or modify them and authorized persons or systems are not denied access to them.
* Compliance The capability of the software product to adhere to standards, conventions or regulations in laws and similar prescriptions relating to functionality.

**Reliability** The capability of the software product to maintain a specified level of performance when used under specified conditions.

* Maturity The capability of the software product to avoid failure as a result of faults in the software.
* Fault-tolerance The capability of the software product to maintain a specified level of performance in cases of software faults or of infringement of its specified interface.
* Recoverability The capability of the software product to re-establish a specified level of performance and recover the data directly affected in case of a failure.
* Compliance The capability of the software product to adhere to standards, conventions or regulations relating to reliability.

**Usability** The capability of the software product to be understood, learned, used and attractive to the user, when used under specified conditions.

* Understandability The capability of the software product to enable the user to understand whether the software is suitable, and how it can be used for particular tasks and conditions of use.
* Learnability The capability of the software product to enable the user to learn its application.
* Operability The capability of the software product to enable the user to operate and control it.
* Attractiveness The capability of the software product to be attractive to the user.
* Compliance The capability of the software product to adhere to standards, conventions, style guides or regulations relating to usability.

**Efficiency** The capability of the software product to provide appropriate performance, relative to the amount of resources used under stated conditions.

* Time behavior The capability of the software product to provide appropriate response and processing times and throughput rates when performing its function, under stated conditions.
* Resource utilization The capability of the software product to use appropriate amounts and types of resources when the software performs its functions under stated conditions.
* Compliance The capability of the software product to adhere to standards or conventions relating to efficiency.

**Maintainability** The capability of the software product to be modified. Modifications may include corrections, improvements or adaptations of the software changes in environments, and in requirements and functional specifications.

* Analysability The capability of the software product to be diagnosed for deficiencies or causes of failures in the software, or for the parts to be modified to be identified.
* Changeability The capability of the software product to enable a specified modifications to be implemented.
* Stability The capability of the software product to avoid unexpected effects from modifications in the software.
* Testability The capability of the software product to enable modified software to be validated.
* Compliance The capability of the software product to adhere to standards or conventions relating to maintainability.

**Portability** The capability of the software product to be transferred from one environment to another.

* Adaptability The capability of the software product to be adapted for different specified environments without applying actions or means other than those provided for this purpose for the software considered.
* Installability The capability of the software product to be installed in a specified environment.
* Co-existence The capability of the software product to co-exist with other independent software in a common environment sharing common resources.
* Replaceability The capability of the software product to be used in place of another specified software product for the same purpose in the same environment.
* Compliance The capability of the software product to adhere to standards or conventions relating to portability.