

## Quality measure notes

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# 1 Quality Measurement

## 1.1 Installability

It depends on a lot of factors:

- How experienced is the installer?
- How fast the destination computer?
- What is the medium from which the software is being installed (Internet download, local network, CD/DVD)?
- Are there any manual steps needed during the installation?

[Smith et al., 2018]

- Are there installation instructions?
- Are the installation instructions linear?
- Is there something in place to automate the installation?
- Is there a means given to validate the installation?
- How many steps were involved in the installation?
- How many software packages need to be installed?
- Run uninstall, if available. Any obvious problems?

[www.testingstandards.co.uk/installability\\_guidelines.htm](http://www.testingstandards.co.uk/installability_guidelines.htm)

- Can an untrained user successfully perform an initial installation of the application in an average of 10 minutes?
- When installing an upgraded version of the application, are all customizations in the user's profile retained and converted to the new version's data format if needed?
- Does installation program verify the correctness of the download before beginning the installation process???
- Following successful installation, does the installation program delete all temporary, backup, obsolete, and unneeded files associated with the application.
- What is the maximum number of installation steps
- Time that the installation process takes compared to the expected time it takes
- Install instructions available?
- Uninstall instructions available?

- Does the system handle an incomplete installation, such as one interrupted by a power failure or aborted by the user?
- Do applications need to be shut down before performing the installation?
- Does the user need the capability to install, uninstall, reinstall, or repair just selected portions of the application if required? (Can this be performed?)
- Is the user aware of successful, or unsuccessful, installation?

Installability addresses the following activities:

- *Initial installation*
- *Recovery from an incomplete, incorrect, or user-aborted installation*
- *Reinstallation of the same version*
- *Installation of a new version*
- *Reverting to a previous version*
- *Installation of additional components or updates*
- *Uninstallation*

## 1.2 Verifiability

[Smith et al., 2018] This was for Correctness and Verifiability

- Are external libraries used?
- Does the community have confidence in this library?
- Any reference to the requirements specifications of the program?
- What tools or techniques are used to build confidence of correctness? (string)
- Is there a getting started tutorial, if yes, is the output as expected?

[Wiegers, 2003]

- What reference reports or other outputs can we use to verify that the system is producing its outputs correctly?
- Is the maximum cyclomatic complexity of a module more than 20?
- Are there any portions of the system that do not yield deterministic outputs, such that it could be difficult to determine if they were working correctly?
- Is it possible to come up with test data sets that have a high probability of revealing any errors in the requirements or in their implementation?

## References

- W. Spencer Smith, Zheng Zeng, and Jacques Carette. Seismology software:  
State of the practice. *Journal of Seismology*, 22(3):755–788, May 2018.
- Wiegers. *Software Requirements*, 2e. Microsoft Press, 2003.