Validation (glossary)

validation

> (1a) *Confirmation, through the provision of objective evidence, that the (stakeholder) requirements for a specific intended use or application have been fulfilled.* (ISO 9000:2015)

> (1b) *The set of activities ensuring and gaining confidence that a system is able to accomplish its intended use, goals and objectives (i.e., meet stakeholder requirements) in the intended operational environment. The right system was built.* (ISO/IEEE 2015, 1, Section 6.4.8)

> (2) *The assurance that a product, service, or system meets the needs of the customer and other identified stakeholders. It often involves acceptance and suitability with external customers. Contrast with verification.* (PMI 2013)

> (3) *The process of providing evidence that the software and its associated products satisfy system requirements allocated to software at the end of each life cycle activity, solve the right problem, and satisfy intended use and user needs.* (IEEE 1012-2004, 3.1.35)

Source

(1) ISO/IEC/IEEE. 2015. *Systems and Software Engineering - System Life Cycle Processes*. Geneva,

Switzerland: International Organization for Standardization (ISO)/International Electrotechnical Commission (IEC)/Institute of Electrical and Electronics Engineers (IEEE). ISO/IEC/IEEE 15288:2015 (E).

(2) PMI. 2013. *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)*. 5th ed. Newtown Square, PA, USA: Project Management Institute (PMI).

(3) IEEE. 2004. *IEEE Standard for Software Verification and Validation.* Institute of Electrical and Electronics Engineers (IEEE) Standards Association: 3.1.35. IEEE 1012-2004.

Discussion

Definition (1a) refers to the outcome of providing evidence that a particular system realization is validated (i.e., Does it satisfy the customer and user needs as stated and agreed?). The word (stakeholder) has been added to clarify the definition.

Definition (1b) is based on the introduction to the validation process and refers to the process of achieving validation through a set of activities conducted across a system's life cycle to ensure that the system that has been built will serve its intended purpose. The term (engineered) system has been added to conform to SEBoK terminology.

Definition (3) refers to the validation of software components in terms of satisfying both allocated system requirements as well as user needs.

Validation builds on the activities and outcome of verification, a process that confirms that the system has been built correctly (i.e., Does it satisfy the system requirements?).

For a full discussion of the role and importance of validation in systems engineering see the System Validation article.

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