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Standard Terminology Relating to Computerized Systems[1]

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1. Scope

1.1 This standard contains definitions and descriptions of terms that are necessary for the understanding and use of ASTM standards for computerized systems.

1.2 For computer-related terminology not defined here, readers should refer to IEEE Standard 100 and to standard glossaries in the IEEE 610 series. Definitions of terms related to information processing systems that are not in IEEE 100 or the IEEE 610 series may be found in American National Standard X3.172.

2. Referenced Documents

2.1 *ASTM Standards:*

E 622 Guide for Developing Computerized Systems[2]

E 1340 Guide for Rapid Prototyping of Computerized Systems[2]

2.2 *Other Standards:*

IEEE 100 Standard Dictionary of Electrical and Electronics Terms[3]

ANSI/IEEE 610 Series Standard Glossaries of Computer-Related Terminology[3]

ANSI X3.172 American National Standard Dictionary for Information Systems[4]

3. Significance and Use

3.1 IEEE 100 is the preferred source for terminology relating to computerized systems because of its comprehensive coverage of computer-related terminology in a single volume. It is a complete compilation of terms from all IEEE standards. New standard glossaries in the IEEE 610 series that are issued between editions of IEEE 100 contain new or updated definitions of computer-related terms that are missing from IEEE 100.

3.2 For definitions of terms related to information processing systems that are not in IEEE 100 or the IEEE 610 series, X3.172 is a useful source. X3.172 has been adopted by the U.S. Government as a reference for information processing terminology.

3.3 Terms and definitions given in Section 4 below and in IEEE 100, IEEE 610 series, and X3.172 should be uniformly and consistently used in ASTM standards for computerized systems. The purpose is to promote clear understanding and interpretation of standards in which they are used.

4. Definitions

4.1 Terms and their definitions are given in alphabetical order.

customized system, *n*—an off-the-shelf system or computerized system built to a manufacturer's design that is subsequently modified to meet the specifications of the purchaser.

functional design, *n*—(*1*) a detailed description of a system that includes all flows of information, timing diagrams, and state transition diagrams, and which is independent of particular hardware and software. (*2*) a document containing a functional design (definition 1). (*3*) a phase in a computerization project in which a functional design (definition 1) is prepared and documented. **(E 622)**

functional requirements, *n*—detailed descriptions of system inputs, system outputs, and transfer functions that are needed to produce outputs from inputs. (*2*) a document containing functional requirements (definition 1). (*3*) a phase in a computerization project in which functional requirements (definition 1) are identified, described, and documented. **(E 622)**

implementation design, *n*—(*1*) a complete detailed description of a computerized system that specifies all hardware and software components as well as implementation, training, operation, and maintenance procedures. (*2*) the collection of documents containing an implementation design (definition 1). (*3*) a phase in a computerization project in which an implementation design (definition 1) is prepared and documented. **(E 622)**

off-the-shelf system, *n*—a computerized system, possibly with options, that is readily available at the time of purchase, manufactured in quantity, and sold without modification.

project definition, *n*—(*1*) a brief statement of what is to be accomplished in a computerization project and why. (*2*) a written agreement containing a project definition (definition 1). (*3*) a phase at the beginning of a computerization project in which the project definition (definition 1) is prepared. **(E 622)**

prototype, *n*—an original or model from which a system is copied. **(E 1340)**

prototype, *v*—to create an original or model. **(E 1340)**

rapid prototyping, *n*—an iterative method for developing prototypes of components, subsystems, or complete computerized systems, in which the time between successive versions of the prototype is short. **(E 1340)**

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[1] This terminology is under the jurisdiction of ASTM Committee E-49 on Computerization of Material and Chemical Property Data and is the direct responsibility of Subcommittee E49.03 on Terminology.

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[2] *Annual Book of ASTM Standards,* Vol 14.01.

[3] Available from the Institute of Electrical and Electronics Engineers, 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1331.

[4] Available from the American National Standards Institute, 11 West 42nd St., 13th Floor, New York, NY 10036.