

Adaptability (glossary)

adaptability

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(1) *An adaptive system is one that is able to change itself or its environment if its effectiveness is insufficient to achieve its current or future goals or objectives.* (Ackoff 1971)

(2) *Attributes of software that bear on the opportunity for its adaptation to different specified environments without applying other actions or means than those provided for this purpose for the software considered.* (INCOSE 1998)

(3) *The ability of a system to acclimate physically and functionally to a new operating environment with a minimal degree of degradation to capability performance.* (Wasson 2006)

(4) *the ability of the system to become suitable for a new use or purpose and to what range or sources of variation.* According to Jackson (2016) adaptability is an attribute of a resilient system.

Sources

(1) Ackoff, R.L. 1971. "Towards a System of Systems Concepts." *Management Science* 11: 11.

(2) INCOSE. 1998. INCOSE SE Terms Glossary. In: *INCOSE Concepts and Terms*, Working Group (ed.). Seattle, WA, USA:

International Council on Systems Engineering.

(3) Wasson, Charles S. 2006. *System Analysis, Design, and Development*. Edited by A. P. Sage, Wiley Series in Systems Engineering and Management. Hoboken, NJ, USA: John Wiley & Sons.

(4) Jackson, Scott. 2016. "Evaluation of resilience principles for engineered systems." PhD Research, Engineering, University of South Australia.

Discussion

(1) A system science definition, which applies to any level of system

(2) The term in a software context where it is frequently used, the same idea could apply to human systems. The 1998 INCOSE SE Terms Glossary is an authoritative source.

(3) A more general definition, which applies to complex engineered systems. The book by Wasson is a standard systems engineering textbook.

SEBoK v. 2.10, released 06 May 2024

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This page was last edited on 2 May 2024, at 23:11.