

# System engineering

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Systems engineering Systems engineering is a branch of engineering that focuses on designs of complex structures and projects and manages such complexities through the projects' existence. This paper analyzes an article to demonstrate its application of principles of systems engineering.

The author, Griffin, identifies two cultures that are applicable to the general scope of engineering. Based on his informed opinion, he defines engineering as the art of creation towards problem solution. He further identifies the science of process analysis as an integral aspect of engineering. While artistic concepts have been retained from pre enlightenment period, analytical concepts of engineering are modern. One of the systems engineering principles that Griffin applies in his paper is maintenance of “ integrity of the system” to ensure purpose (Leffingwell and Widrig, p. 69). This is expressed in his argument that failure is inevitable in processes and cannot be controlled by “ additional processes, safety measures and alerts” (Griffins, p. 5). Consequently, high level of integrity, both in a system's development process and in the system's components is essential in successful systems engineering (Griffins, p. 5, 7). This further identifies the principle of identification and management of systems' needs, instead of establishing control measures to protect and sustain a system (Griffins, p. 5).

Griffins' definition of system's engineering (p. 6) also identifies the system's principles of identifying the problem to be solved and client's needs from the system. He achieves this by identifying the engineering scope that involves satisfying specifications under constraints. He also addresses principles such as developments of, and adherence to plans, exploration of alternatives, and validation of processes through the scientific approach of process analysis

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(Griffins, p. 5-7; Leffingwell and Widrig, 69).

The paper therefore effectively explores systems engineering principles.

#### Works cited

Griffin, Michael. " System engineering and the two cultures of engineering." Purdue University. March 28, 2007. Web. September 11, 2012. < [http://www.nasa.gov/pdf/173108main\\_mg\\_purdue\\_20070328.pdf](http://www.nasa.gov/pdf/173108main_mg_purdue_20070328.pdf)> Leffingwell, Dean, and Widrig, Don. Managing software requirements: A use case approach. Boston, MA: Addison-Wesley Professional, 2003. Print.