System of Systems (SoS) (glossary)

From SEBoK
system of systems (sos)

> *(1) Two or more systems that are separately defined but operate together to perform a common goal.* (Checkland 1999)
>
> *(2) an assemblage of components which individually may be regarded as systems, and which possess two additional properties:*
>
> > (a) Operational Independence of the Components: If the system-of-systems is disassembled into its component systems the component systems must be able to usefully operate independently. That is, the components fulfill customer-operator purposes on their own.
> >
> > *(b) Managerial Independence of the Components: The component systems not only can operate independently, they do operate independently. The component systems are separately acquired and integrated but maintain a continuing operational existence independent of the system-of-systems.* (Maier 1998, 267-284)
>
> *(3) System-of-systems applies to a system-of-interest whose system elements are themselves systems; typically these entail large scale inter-disciplinary problems with multiple, heterogeneous, distributed systems.* (INCOSE 2012)

Source

(1) Checkland, P. B. 1999. *Systems Thinking, Systems Practice*. Chichester, UK: John Wiley & Sons Ltd.

(2) Maier, M. W. 1998. "Architecting principles for systems-of-systems." *Systems Engineering, the Journal of the International Council on Systems Engineering (INCOSE)* 1 (4).

(3) INCOSE. 2012. *Systems Engineering Handbook: A Guide for System Life Cycle Processes and Activities*, version 3.2.2. San Diego, CA, USA: International Council on Systems Engineering (INCOSE), INCOSE-TP-2003-002-03.2.2

Discussion

e the Systems of Systems Knowledge Area in Part 4: Applications of Systems Engineering.e

---