

# Capability Engineering – An Analysis of Perspectives

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## Abstract

The terms ‘capability’ and ‘capability engineering’ are now widely used across industry and in government procurement, but it is clear that different communities use the terms with similar, but distinctly different meanings. Using a soft systems methodological approach, an INCOSE UK working group has identified eight perspectives of capability, which have been related to Ring’s value cycle and the Hitchins’ five layer model of systems engineering. It is asserted that capability is the ability to do something and that capability engineering is the overarching approach that links value, purpose, and solution of a systems problem. It is equivalent to layers 1-4 of Hitchins’ Five Layer Model and is equivalent to an holistic perspective of systems engineering. There are significant practice and examples of capability engineering from (at least) the UK rail provision, defence, and Information Services and it is the view of the working group that further INCOSE guidance may be needed to ensure engineers are properly equipped to deal with capability and capability engineering.