

# A Framework for Visualizing Systems Engineering Research Coverage

*Stephen Cook (University of South Australia) - [stephen.cook@unisa.edu.au](mailto:stephen.cook@unisa.edu.au)*

*Timothy Ferris (University of South Australia) - [Timothy.Ferris@unisa.edu.au](mailto:Timothy.Ferris@unisa.edu.au)*

*Stan Nowakowski (University of South Australia) - [Sten.Nowakowski@unisa.edu.au](mailto:Sten.Nowakowski@unisa.edu.au)*

*Copyright © 2013 by Cook, Ferris, Nowakowski. Published and used by INCOSE with permission*

**Abstract.** This paper describes the evolution of a framework suitable for categorizing and displaying systems engineering (SE) research topics. The paper follows the journey traversed in the evolution of the framework and its progressive evaluation. It also provides the key influences and the rationale for each iteration. The framework was synthesised and refined in three stages. Firstly, the research team gathered a number of research-oriented SE taxonomies and compared and contrasted these with a SoSE capabilities framework that was an outcome from earlier research. This resulted in a new synthesis that was then evaluated for coverage against a set of SE research agendas. The evaluation informed further refinements that reorganised some of the categories and broadened the elements of SE capability somewhat. The final step was to validate and hone the framework through a process of mapping a representative sample of papers from the Systems Engineering journal onto the framework. The resulting mapping gave confidence that the framework is sufficiently comprehensive for its intended purpose.