# System of Systems Engineering Collaborators Information Exchange (SoSECIE)

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**Towards the Definition of a Strategic Complexity Management Framework**

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#### Abstract

The complexity of an industrial engineered system is captured via the proposed strategic complexity management framework (SCM). The SCM functions as a strategic decision-making tool to generate holistic strategic complexity management strategies for complex engineered systems. The SCM is based on definitions of static, dynamic, and environmental dimensions of complexity and is discussed in the context of Cyber-Physical Systems (CPS) and Cyber-Physical Systems of Systems (CPSS). The SCM framework's strategic capabilities are theoretically demonstrated based on a set of generic norm strategies. First experiences out of real-world practical case application for strategic industrial system complexity analysis of the SCM are presented, briefly discussed and a short outlook for further research is provided.

#### Biographies

Lucas Freund is a PhD Student at the University of Lincoln, College of Science, School of Computer Science in the UK. His research focuses on strategic complexity management and theoretical complexity modelling for industrial systems.

Dr. Salah Al-Majeed is the acting head of the School of Computer Science at University of Lincoln in the UK.

Dr. Alan Millard is a senior lecturer for autonomous systems and robotics at University of Lincoln in the UK.