

Student Name	Andrew Pemberton
Company	AWE
Research University	University of Leicester
Academic Supervisor(s)	Dr Alistair McEwan
Title	Analysis of System Requirements and Systems Engineering Architecture Framework
Abstract	<p>When considering a complex system, a number of views of that system may need a view offering much implementation details (such as redundancy and fault-tolerant algorithms), while a tester may initially require a much more obscured view in order to assess externally observable misbehaviours. Moreover, at several stages of systems design, a static view may be needed (for instance simulation purposes).</p> <p>This project will explore the relationship between different potential views of a tightly coupled system – such as who may need different views, when these views may be needed, and where they have an impact on the systems life cycle. It will explore the relationship (and assurances) between static and dynamic models of systems. It will explore the impact of standards on systems modelling tools of these views, and on standard and freely available tools and languages for systems engineering. It will consider the depth of the semantic models associated with these tools and languages. The ultimate goal of this project is to demonstrate the application of systems modelling tools and languages across the development and deployment life-cycle of a highly safety-critical system involving software, hardware, and physical components.</p>