An International Code of Best Practice for the T&E & Experimentation of Complex, Adaptive Aerospace Mission Capabilities

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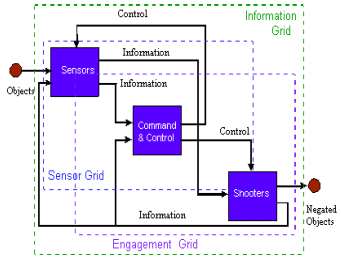
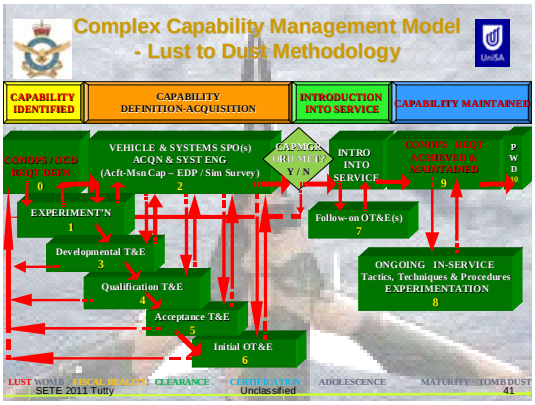
The contemporary conventional wisdom is that on the battlefields and battlespaces of the near future our soldiers, sailors and airmen will be presented with ever increasing voluminous and often conflicting data from multiple network capable systems and sources and will face 'cognition overload'. Experimentation and test & evaluation (T&E) are major activities during the capability systems development cycle and ultimately the validation, verification and operations of such systems to gain confidence in their operational suitability and effectiveness. But how do we know if a project is going to deliver operationally useful capability?

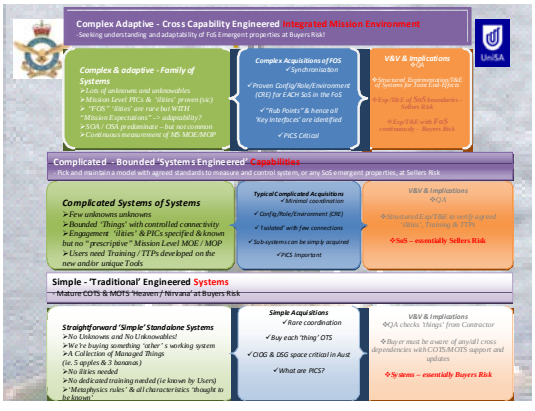


Surprisingly, there is still no accepted international standard for T&E or experimentation for today's military systems let alone tomorrow's network-enabled, complex, adaptive capabilities employing kinetic and non-kinetic effects. The techniques required to develop, experiment, test and certify ever increasingly complex, safety critical systems and/or capabilities will involve unique skills and experience which have not yet been widely available amongst most North Atlantic Treaty Organisation (NATO) nations. How the typical project centric culture used in contemporary material acquisition processes can better inform the key stakeholders as to whether future network-centric system and family of systems (SoS/FoS) is going to deliver operationally useful capabilities is key?



The research question: To what degree can experimentation be used to enhance the confidence in our future complex, adaptive, network-enabled aerospace mission capabilities.

To answer this question the candidate has reviewed the current methods used for capability development, systems engineering and management practices and identified the key elements that could enable the research question to be addressed. The supposition that a *NATO* **COD**e *of best practice for Experimentation (CODEx)* for the experimentation and testing of network-centric complex adaptive aerospace mission capabilities employing kinetic and non-kinetic effects titled: "*Joint Aerospace Integrated Mission Environment*" or "*JAIME CODEx*" (following on from successes with use of MIL-HDBK-1763 for Aircraft Stores Compatibility Certification) is being investigated and reported on.



Research activities are exploring, in collaboration with over 200 NATO Research & Technology Organisation and other participants, this area and including comments in Preliminary Drafts of the JAIME CODEx – see www.maltutty.com using visitor/Maven1. Whether such a *JAIME CODEx* and ultimately a tailorable NATO Stanag for experimentation and T&E can promote confidence in the interoperability and enhance future network-enabled SoS and FoS into operationally suitable and effective kinetic and non-kinetic capabilities will be described and then confirmed by numerous Case Studies.

50 Word Abstract

Whether a *NATO* **COD**e *of best practice for* ***Ex****perimentation* for the testing of network-centric complex adaptive aerospace mission capabilities in the*Joint Aerospace Integrated Mission Environment* (JAIME CODEx) can promote confidence in interoperability and enhance future network-enabled system/family of systems will be described and then confirmed by Case Studies.