



Modelling complex warfighting strategic research investment

Rational decision-making under extreme complexity

A modern Defence Force consists of a wide range of disparate capabilities, from infantry soldiers to cyber-defence. Selecting the best balance of these capabilities to assure national security is a challenging task that needs to take into account Government objectives and budgetary resources, as well as analysis of likely future scenarios. This process relies increasingly on analytic tools such as modelling, simulation and optimisation techniques.

The Modelling Complex Warfighting (MCW) Strategic Research Investment (SRI) seeks to revolutionise how we undertake operations analysis to better handle the interaction of complex geopolitical, social, technological, economic and cultural factors for design of the future force. The MCW SRI aims to address future defence force employment problems under four broad research themes: conquering uncertainty, innovative simulations, knowledge synthesis, and modelling complexity.

The MCW SRI is a five-year research initiative and is one of a portfolio of strategic research programs sponsored by the Chief Defence Scientist.

Partnering Opportunities

DST is seeking to collaborate with industry and academia in the following areas to assist future force design:

- Machine-discovered behaviour
- Simulation for future operating concept development

- Modelling complex human systems
- Force effectiveness modelling
- Concepts for complexity-enabled warfare
- Data-driven operational analysis
- Modelling unknowns



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