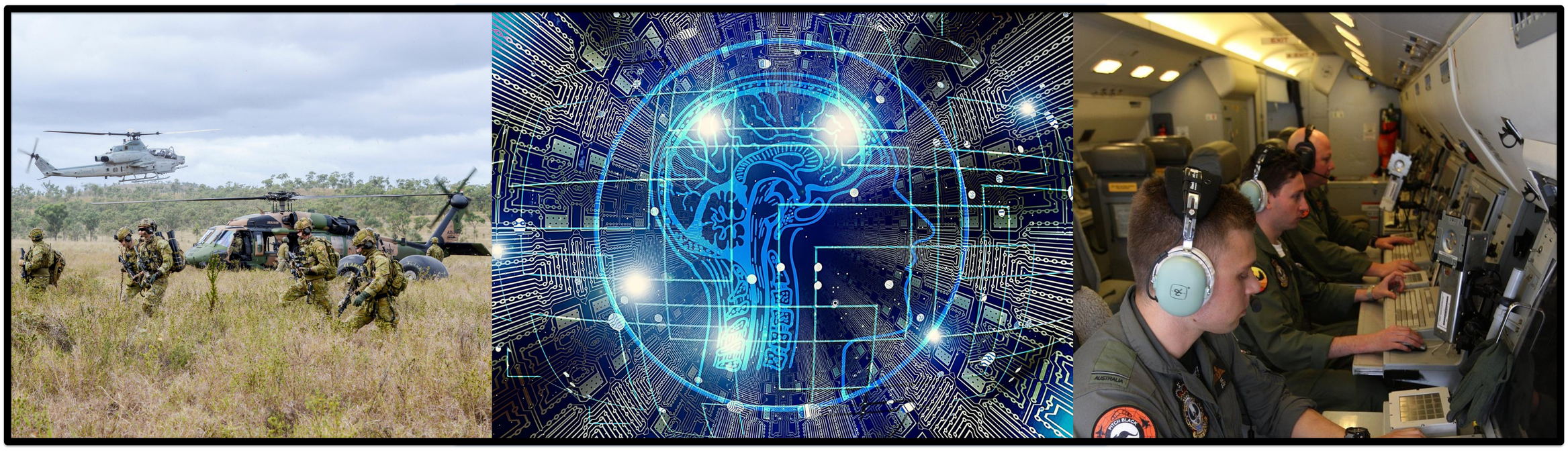
Australian Government
Department of Defence

NEXT GENERATION TECHNOLOGIES FUND

MACQUARIE University
SYDNEY·AUSTRALIA

Developing Responsive and Adaptive Artificial Agents for Team Training



Purpose

- Demonstrate how the behaviour of human team members within tactical-action and command-and-control contexts can be modelled using a hierarchical structure of dynamical, computational and machine learning techniques.
- Demonstrate how hierarchical models of human performance and communication can be employed to develop human-like, interactive *artificial agents* (AA) capable of facilitating and enhancing the training of human teams.

Partners

- Macquarie University: Michael Richardson, Rachel Kallen, Mark Dras, Patrick Nalepka, Erik Reichle.
- DST: Christopher Best and Simon Hosking

Product

- Modelling architecture for capturing the (i) perceptual-motor, (ii) decision-making, and (iii) verbal communication behaviour of human teams.
- Detailed method of how to employ the above modelling architecture to develop AA capable of robust, human interaction.
- Example AA and human-AA team training scenarios demonstrating the utility of AA for tactical-action and command-and-control team training.

Schedule

- FY19-20: Recording and modelling human behaviour and communication in simulated (virtual) tactical-action and command-and-control scenarios.
- FY21-22: AA development and validating the effectiveness of AA for team-based tactical-action and command-and-control training.