Increasing Collaboration in Force Design

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Introduction

• STELaRLab Introduction

• Ideas to improve collaboration in force design
  – Industry’s contribution to thought leadership
  – Analysis of new capability life cycle
    • Capability to support experimentation, virtual exercises, wargaming
  – Development of Australian high-speed R&D network
  – Development of open scenarios illustrating Defence opportunities
  – Improving education opportunities
  – VCDF sponsorship of strategic testbeds
STELaRLab - Lockheed Martin

- STELaRLab is a national laboratory, headquartered in Melbourne;
- Lockheed Martin has committed $13M over three years;
- Collaboration with industry and multiple universities across Australia;
- The first multi-disciplinary R&D facility to be established by Lockheed Martin outside of the United States;
- R&D Focus Areas:
  - Advanced C4ISR technologies and architectures
  - Hypersonics
  - Advanced analytics for information processing
  - Machine reasoning and artificial intelligence
  - Space Systems / Space Security
Industry Engagement in Thought Leadership

• Proposal: Force Design “thoughtpieces”

• Associated Challenge

• Initial Answer: Inform the art of the possible through a solution, not decide the acquisition by choosing the solution
Analysis of New Capability Life Cycle

- Opportunities where industry and academia can provide timely and valued input

Baseline:
- Innovation (& analysis of disruption)
- Modelling and Simulation Capability

Collate & Understand:
- Collaborative Research Studies
- Experimentation
- Wargames

Prioritise & Develop:
- Prototype Development & Analysis
Collaboration Capability - Infrastructure

• Lockheed Martin has many networked sites located throughout the world providing collaboration facilities

• Lockheed Martin is building a set of networked labs and collaboration space in Melbourne, Adelaide and Canberra that will support a range of problem solving options for Defence and industry

• STELaRLab has already developed a close relationship with the Center For Innovation, The Lighthouse.
  – We have already demonstrated out ability to integrate our capabilities
Collaboration Capability - Process

- Proven process
- An environment for ‘Stovepipes of Excellence’
- Analysis based wargaming
- Value for all participants
- Shared outcomes
Collaborative Prototype Development

• Local R&D conducted by the STELaRLab supporting C4ISR

• Underlines the importance of prototypes and how they can increase collaboration
Australian RDT&E Network

- Equivalent in concept to the US Defense Research and Engineering Network (DREN/SDREN)
- Managed as a Virtual Private Network
- Connects partners and facilities
- US cost (2017 appropriation) ~AUD$220M/annum for >150 user sites (includes High Performance Supercomputing sites).
- Allows sharing of models, T&E data, fast and early prototyping of integration concepts, …

MAINTAIN THE INTEGRITY OF THE OPERATIONAL NETWORKS. ENABLE AGILE, EVOLUTIONARY CAPABILITY UPGRADES.
Development of Open Scenarios

• Supporting analysis of future Defence opportunities/capability gaps

• Allow industry/academia to focus innovation

• Forum to compare, analyse and discuss results
Education Possibilities

The role of Force Design/OA in student development?

• Potential Avenues

• Example Force-level, enduring OA options:
  – *impact of autonomous operations*
  – *space operations*
  – *game-changing weapons*

• Establishment of a Defence/Industry Personnel Rotation Program
Defence Sponsorship of Strategic Testbeds

• Definition of Strategic Testbeds

• Force Design Concepts (qualitative)  Force Design Guidance (quantitative)

• Example “enduring theme”
  – US Information Interoperability  DCGS  DDF Testbed & campaign-like engagement in AUS/US information integration wargames (e.g. Enterprise Challenge)
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