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SHOULD THE U.S. NAVY ADOPT A TRUE MULTI-LEVEL SECURITY ENVIRONMENT?
JOINT ALL DOMAIN COMMAND AND CONTROL CROSS FUNCTIONAL TEAM (JADC2 CFT) ESTABLISHMENT

by

Ashley M. Mannix

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Thesis Advisor: Dan C. Boger
Co-Advisor: Sue L. Higgins

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While the Department of Defense experiments with initiatives that move toward a more seamless and integrated repository of data through cloud computing, it is essential to consider the most effective technologies that will provide Commanders with the tools necessary to make timely decisions, yet at the same time not cause unnecessary risk and sacrifice to national security. This thesis outlines the advantages and disadvantages of the Navy adopting variations of a Multi-Level Security (MLS) architectures in comparison to its current Cross Domain Solutions (CDS) architectures. This thesis also analyzes current CDS policies to determine needed improvements which account for emerging CDS technology.

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APPENDIX C. JOINT ALL DOMAIN COMMAND AND CONTROL CROSS FUNCTIONAL TEAM (JADC2 CFT) ESTABLISHMENT

(FOUO) In a memorandum released by the Deputy Secretary of Defense on 31 January 2020, JADC2 is defined as, "the art and science of decision-making to rapidly translate decisions into action, leveraging capabilities across all domains and with mission partners (e.g., Joint, Interagency, Intergovernmental, Multi-national) to achieve operational and information advantage in both competition and conflict" (Norquist, 2020). Through the guidance of this memorandum, the Department of Defense Chief Information Officer (DoD CIO) and the Vice Chairman of the Joint Chiefs of Staff (VCJCS) were directed by the Deputy Secretary of Defense to establish the JADC2 Cross Functional Team (CFT) (Deputy Secretary of Defense, 2018).

(FOUO) The JADC2 CFT Charter/Terms of Reference (TOR) states that it is no longer feasible for one service to approach C2; rather, effective C2 requires all efforts to be combined across the DoD to achieve a truly joint approach in this arena. Additionally, the JADC2 CFT must ensure that its efforts accomplish the following tasks:

- Enable secure, resilient C2, battlespace awareness, enabling and integrated fires;
- Encompass any sensor, any shooter;
- Connect forces from headquarters to tactical edge;
- Provide a coherent architecture that empowers forces at the tactical edge through:
  - Computing/processing
  - Data storage
  - Search/machine learning/artificial intelligence;
- Enable operations over multi-trust/zero-trust networks;
- Enable a multi-spectrum mesh infrastructure;
- Tolerate disconnected, intermittent, low-bandwidth (DIL) environments;
- Provide a means to condition and index both new and legacy data; and
- Identify mechanisms for coalition partner participation. (Norquist, 2020).

(FOUO) In addition to JADC2 joint, Service, and OSD representation, the JADC2 CFT Charter/TOR lists a three-tiered governance structure with representation of an appropriate 3/4-star Flag/General from the Defense Advanced Research Projects Agency

(DARPA), the National Security Agency, (NSA), National Geospatial-Intelligence Agency (NGA), Defense Intelligence Agency (DIA), Missile Defense Agency (MDA), and Defense Information Systems Agency (DISA), The Joint Artificial Intelligence Center (JAIC), and Defense Digital Service (DDS) (Norquist, 2020).

(FOUO) This varied representation aims to create a synergistic research strategy to realize JADC2 efforts. Phase I efforts of the JADC2 CFT will:

> [i]dentify a framework to guide capability development that includes, but is not limited to, joint force and Services integrated and synchronized capability development across the employment, development and design timelines, DOTMLPF-P approaches, Joint Capability Areas (JCAs), research & development opportunities, experimentation, and joint/Service exercises to effect enhancements in validated gaps/Lines of Effort (LOEs) that include, but are not limited to, programs/capabilities, Joint Mission Threads, and joint/Service migration initiatives. (Norquist, 2020)

(FOUO) A few of the missions that the JADC2 CFT is tasked with is to encompass any sensor and any shooter, and to enable secure and resilient C2 to include connections from headquarters to the tactical edge (Norquist, 2020).

(FOUO) The creation of a synergistic research strategy is not trivial. Although the JADC2 CFT can only recommend top-line growth or zero-sum funding realignment to the Program and Budget Review Process and the Strategic Portfolio Review, the JADC2 CFT does also have the authority to assess each president's budget for JADC2 capability development. The assessment of sufficiency of funds in each Future Years Defense Program (FYDP) will be submitted in coordination with DoD CIO beginning for FY 2020.

The establishment of the JADC2 CFT is a positive step to achieve a concerted effort to address All-Domain Operations, and it will aid not only in the armed service integration of JADC2 capability, but it will also likely synchronize efforts from several agencies who are separately working on research and development for All-Domain Operations applications.

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