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## **EXQUISITE CAPABILITIES VS STRATEGIC INTEGRATION: US AND UK APPROACHES TO MULTI-DOMAIN OPERATIONS AND IMPLICATIONS FOR THE CANADIAN ARMY**

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AND IMPLICATIONS FOR THE CANADIAN ARMY**

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# EXQUISITE CAPABILITIES VS STRATEGIC INTEGRATION: US AND UK APPROACHES TO MULTI-DOMAIN OPERATIONS AND IMPLICATIONS FOR THE CANADIAN ARMY

## AIM

1. With the release of *Advancing with Purpose: The Canadian Army Modernization Strategy* in January 2021, the Canadian Army (CA) announced an in-horizon effort to re-balance its organizational structures through *Force 2025* and set the conditions for a more deliberate design of the future force on the next horizon through *Force 2030*. Concurrent to this effort, allied doctrinal developments, notably the *U.S. Army in Multi-Domain Operations 2028* concept and Canada's own *Pan-Domain Force Employment Concept*, have created great enthusiasm within the CA for multi-domain operations and the development of cyber and space capabilities. The CA risks however, importing foreign doctrine and concepts without adapting them to suit our national objectives, military strategy, or resource constraints. The aim of this service paper is to summarize significant concepts related to multi-domain operations (MDO) and make recommendations to guide CA adaptations for future operations.

## INTRODUCTION

2. The origins of MDO lie in the overwhelming success of the US AirLand Battle concept in Operation Desert Storm in 1991. The ease with which the US was able to use precision fires paired with surveillance and target acquisition systems to defeat Iraq had the unintended consequence of re-writing Chinese military strategy. China quickly undertook significant modernization efforts including the development of long-range air, sea, and land weapons. Designed to keep American military forces at stand-off range from their territory and unable to employ their own advanced weapon systems, this complex of doctrine and technology would be defined as Anti-Area Access Denial (A2AD) by American strategists.<sup>1</sup> A resurgent Russia would soon follow in China's footsteps with its own programs, including air-launched cruise missiles and hypersonic weapons, along with highly advanced integrated air-defence systems.<sup>2</sup> Beyond conventional military power, these adversary states also began to employ other aspects of their total national power, including political, economic, and information power, to achieve their objectives. While Western militaries had separately pursued capabilities in the space and cyber domains, the strategic catalyst of their efforts to integrate tactical and operational effects in all domains came from Russia's 2014 invasion of Crimea as well as China's ongoing militarization of the South China Sea.<sup>3</sup>

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<sup>1</sup> Roger Cliff et al., "Shaking the Heavens and Splitting the Earth: Chinese Air Force Employment Concepts in the 21st Century" (RAND Corporation, 2014), <https://search-proquest-com.cfc.idm.oclc.org/docview/1820769674?accountid=9867>, 35.

<sup>2</sup> Jeffrey M. Reilly, "Multidomain Operations: A Subtle but Significant Transition in Military Thought," *Air & Space Power Journal* 30, 30, no. 1 (Spring 2016): 61–73, [https://www.airuniversity.af.edu/Portals/10/ASPJ/journals/Volume-30\\_Issue-1/V-Reilly.pdf](https://www.airuniversity.af.edu/Portals/10/ASPJ/journals/Volume-30_Issue-1/V-Reilly.pdf), 61.

<sup>3</sup> Andrew Feickert, "Defense Primer: Army Multi-Domain Operations (MDO)," Congressional Research Service, December 8, 2020, <https://crsreports.congress.gov/product/pdf/IF/IF11409/3>.

3. Since 2017 the CA has participated in FVEY MDO exercises through the Joint Warfighter Assessment series, sponsored by US Joint Modernization Command, leading to the circulation of American tactical concepts. Concurrently, Canadian Joint Operations Command (CJOC) has begun to develop strategic level MDO concepts to guide pan-CAF development. It should be noted however that these approaches reflect two distinct activities within MDO, which are typified by both U.S. Army operational perspective and British Ministry of Defence strategic thought. A comparison and contextualization of these approaches will highlight both opportunities and challenges for CA planning throughout *Force 2025* and *2030*.

## DISCUSSION

4. While individual components of MDO theory have developed separately in Western military thought and organization (notably information, cyber, and space operations), current attempts to integrate them have developed into two distinct areas of effort. In the United States, individual services have pursued bottom-up MDO development, focussed on generating **cross-domain capabilities** to both protect themselves from and generate effects within each of the domains of land, sea, air, space, and cyberspace. This has produced effective tactical and operational doctrine but has also created significant replication of capability development across the services without addressing global integration of other elements of national power. In contrast, the United Kingdom has focused on coordinating joint and national efforts through a unified concept of MDO nested in a four-star integrated command, focused on harnessing multi-domain combat power, including information and national elements of political and economic power to achieve **multi-domain integration**.

### U.S. Army and Cross-Domain Capabilities

5. US Army MDO doctrine and capability programs represent a system designed to defeat Chinese A2AD ‘bubbles’ in the Pacific theatre, although it is equally applicable to potential engagements with Russia.<sup>4</sup> The US Army anticipates a conflict where opposing A2AD weapons deny access to the air support systems they have relied upon to generate combat power and where they are unable to build up expeditionary forces at uncontested air and seaports as they have in past conflicts. The development of cross-domain capabilities to substitute for denied joint combat power is the primary focus of their Army’s multi-domain efforts, resulting in the establishment of Multi-Domain Task Forces (MDTF) created from artillery regiments enabled with an intelligence, information operations, cyber, electronic warfare, and space coordination element known as I2CEWS.<sup>5</sup> These MDTFs are designed to defeat adversary A2AD zones and their purpose is to enable land forces to achieve tactical effects into and from the air, sea, space, and cyber domains to penetrate and dis-aggregate enemy defenses, allowing for the return to traditional joint operations. The key to this mission is the ongoing development and acquisition of exquisite capabilities including extreme long-range surface to surface fires, land based anti-

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<sup>4</sup> “The Future Force in Multi-Domain Operations - by LTG Eric Wesley,” YouTube video, 1:32:14, posted by U.S. Army Joint Modernization Command, 27 Jan 2020, <https://www.youtube.com/watch?v=RItpEV0enYU>.

<sup>5</sup> Sean Kimmons, “Army to Build Three Multi-Domain Task Forces Using Lessons from Pilot,” U.S. Army News Service, October 15, 2019, [https://www.army.mil/article/228393/army\\_to\\_build\\_three\\_multi\\_domain\\_task\\_forces\\_using\\_lessons\\_from\\_pilot](https://www.army.mil/article/228393/army_to_build_three_multi_domain_task_forces_using_lessons_from_pilot).

ship missiles, and a multi-layered shield of air-defence assets.<sup>6</sup> These kinetic weapons are enabled by non-kinetic effects generated from the I2CEWS directly and through reach back to national space and cyber assets.<sup>7</sup>

6. The US is expected to release a joint war-fighting concept in late 2021 that will fuse individual services approaches, which is likely to be named “All-Domain Warfare.”<sup>8</sup> Unlike the UK or Canada where operations are centrally coordinated from a single headquarters, US military operations are coordinated under the Combatant Command structure (COCOM). Each COCOM is a four-star joint command with defined geographic or functional areas of responsibilities, with forces assigned as necessary from the component services as required. In the American context, MDO would be executed at the regional COCOM level with assigned joint forces as well as multi-domain assets provided by US Cyber and Space Commands, or national assets like the National Security Agency (NSA). Due to the dispersion of command authority across regionally focussed COCOMs, and the lack of central coordination of service efforts, US MDO efforts continue to reflect the pursuit of cross-domain capabilities and have yet to integrate them into a cohesive multi-domain integration of all aspects of both combat and national power.

### **The UK and Multi-Domain Integration**

7. While the US has focussed on the tactical and operational challenges posed by China in the South Pacific, the UK seeks to respond to Russian provocations in Eastern Europe. The UK Ministry of Defence (MOD) has approached multi-domain integration by adapting their institutional structure to coordinate effects and better steward the development of emerging military capabilities. In 2011 the UK stood up Joint Forces Command, a four-star command with responsibility to command and generate joint capabilities, while working to deepen cross-Government, national, and allied integration.<sup>9</sup> In 2019 this command was renamed to Strategic Command and assigned additional responsibilities including leading cyber warfare efforts and generating and developing defence capabilities in the land, sea, air, cyber, and space domains. Although command of British operations remains centralized within their Permanent Joint Headquarters (PJHQ), Strategic Command is now responsible for a wide range of joint enablers including the Joint Forces Cyber Group, Intelligence Group, the Directorate of Special Forces, the UK MOD information technology group, and the Directorates of Joint Capability and Joint Force Development. While some functions of Strategic Command are replicated within CJOC

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<sup>6</sup> MGen Cedric T. Wins, “CCDC’S Road Map to Modernizing the Army: Air and Missile Defense,” United States Army, September 10, 2019, [https://www.army.mil/article/226920/ccdc\\_road\\_map\\_to\\_modernizing\\_the\\_army\\_air\\_and\\_missile\\_defense](https://www.army.mil/article/226920/ccdc_road_map_to_modernizing_the_army_air_and_missile_defense).

<sup>7</sup> Kimberly Underwood, “Putting a Spotlight on Information,” Signal (Armed Forces Communications and Electronics Association, March 1, 2019), <https://www.afcea.org/content/putting-spotlight-information>.

<sup>8</sup> Colin Clark, “Gen. Hyten On The New American Way of War: All-Domain Operations,” Breaking Defense, February 18, 2020, <https://breakingdefense.com/2020/02/gen-hyten-on-the-new-american-way-of-war-all-domain-operations/>.

<sup>9</sup> United Kingdom. *Defence Reform: An Independent Report into the Structure and management of the Ministry of Defence*, Ministry of Defence (United Kingdom, June 2011), [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/27408/defence\\_reform\\_report\\_struct\\_mgt\\_mod\\_27june2011.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/27408/defence_reform_report_struct_mgt_mod_27june2011.pdf), 77

and the VCDS Group, the significant difference is that Strategic Command has the responsibility, authority, and resources to both provide strategic direction for the British Army, Navy, and Air Force capability development, while directly force generating joint forces such as SOF and cyber.<sup>10</sup>

8. Unlike the US, UK doctrine is developing at the strategic level first, with their *Joint Concept Note on Multi-Domain Integration* (MDI) released in November 2020. MDI is similar to MDO but focuses more significantly on adversary employment of political and information warfare than strictly military capabilities. The UK makes an explicit note that they do not maintain the expeditionary ambitions of the United States but aim to configure “the Whole Force for dynamic and continuous integration of all global capabilities together, inside and outside the theatre, munitions and non-munitions, above and below the threshold of armed conflict.”<sup>11</sup> The UK model allows for an integrated concept of multi-domain requirements to be generated centrally, and then specific force development remits assigned to either Strategic Command or individual services to develop. The UK is also tightly integrated with their national instruments of power, as exemplified by their National Cyber Force (NCF) - a joint military element integrated with their national security intelligence counterpart, the Government Communications HQ (GCHQ). The development of the NCF is emblematic of the UK priority to develop joint strategic multi-domain capabilities rather than exquisite cross-domain weapons.

### **Considerations for Canadian Army MDO Adaptations**

9. While the requirement in *Strong, Secure, Engaged* for the CA to maintain combat ready forces makes the need to adapt for MDO unambiguous, both resources and scale will be significant obstacles. The CA must establish a clear understanding of the missions and tasks it must be capable of in the future. The CA has neither the resources nor the strategic imperative to deliver a complete suite of cross-domain enablers to allow it to compete in major combat operations against Russia or China. While Canadian Force Development largely transitioned to capability-based planning from threat-based planning in 2000,<sup>12</sup> the re-emergence of specific high-end adversary threats against both the CAF and Canada demands a return to the more specific assessment of required CA capabilities offered by the pacing threat model adopted by our allies. Threat-based planning must also be situated in more discrete tactical and operational employment scenarios and will require a more detailed examination of the CA’s potential role in coalition warfare than currently expressed in defence policy.

10. Throughout *Force 2025* and *2030*, the CA will be required to make difficult choices to select between cross-domain capabilities and multi-domain integration, which will be exacerbated if planners attempt to model US Army structures or capabilities. The US approach would be challenging to adopt due to the relatively high echelons at which their concept

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<sup>10</sup> “Joint Forces Command to Strategic Command, the Journey,” U.K. Ministry of Defence, December 9, 2019, <https://www.gov.uk/government/news/joint-forces-command-to-strategic-command-the-journey>.

<sup>11</sup> United Kingdom. Chiefs of Staff. *Joint Concept - Multi-Domain Integration*, JCN 1/20. (UK Ministry of Defence, November 2020), 11.

<sup>12</sup> Canada. Department of National Defence. *Capability Based Planning for the Department of National Defence and the Canadian Forces* Ottawa: Vice Chief of Defence Staff, 2002, 2.

envisions integrating MDO enablers. US doctrine prefers that a “Theatre Army” be established to coordinate high level multi-domain effects such as space control, with a subordinate “Field Army” to coordinate “complex joint convergence” of air and naval power along with cyberspace effects. In absence of a theatre or field army, joint convergence cannot be achieved below the level of the corps, with divisions tasked to coordinate electromagnetic warfare, information operations, and land manoeuvre. Brigades are only tasked to coordinate simple convergence of ground and air manoeuvre but must be able to integrate “complex converge” into their operational plans with the assistance of higher echelons.<sup>13</sup>

11. The importance of establishing “echelons above brigades” is a primary theme in US Army’s MDO doctrine where MDTFs are employed as divisional assets. The CA’s own modernization policy is notably more ambitious: *Advancing with Purpose* states that the “brigade group will be the level at which the Canadian Army trains to fight in order to execute pan-domain operations. The brigade group also functions as a force generation tool for the integration of capabilities.”<sup>14</sup> Careful consideration will be required if the CA is to integrate pan-domain effects at the brigade group when the much larger and better resourced American Army is unwilling to assign them below the division. It must be noted that both *MDO 2028* and the *PFEC* are aligned in their guidance that multi-domain capabilities need not be embedded within every echelon of a force. The drafters of *MDO 2028* have cautioned that warfare will not look significantly different at the battalion and brigade level, but that commanders will need to be able to recognize opportunities where the employment of MDO by being able to “think, access, and employ all domains.”<sup>15</sup> Similarly, the *PFEC* recognizes that “not every force element the CAF employs will have a full range of integral pan-domain capabilities” and proposes that elements “possess a sufficient combination of integral capabilities and external support to maintain pan-domain situational awareness (and) integrate pan-domain effects.”<sup>16</sup>

12. The more challenging exercise for the CA will be to develop appropriate information, cyber, and space capabilities that provide meaningful and measurable effects in those domains, and to determine to what depth and level of effectiveness these elements need to be generated, and at which echelon they will be integrated. The obvious question posed by *MDO 2028* is how the CA can replicate MDO capabilities at the Brigade level that the U.S. Army does not envision below the Divisional level. Furthermore, while the U.S. Army has the resources and scale to experiment first and then adjust their programs once a national strategy is developed, the CA should wait until the CAF appropriately aligns authorities, responsibilities, and accountabilities (ARA) for joint and multi-domain forces through a comparable organization to the UK Strategic

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<sup>13</sup> United States. Army Training and Doctrine Command. *The U.S. Army in Multi-Domain Operations 2028*, TRADOC 525-3-1 (Washington, D.C.: Chief of Staff of the Army), C-5-6.

<sup>14</sup> Canada. Department of National Defence, *Advancing with Purpose: The Canadian Army Modernization Strategy 4<sup>th</sup> Ed*, Ottawa: Canadian Army, 2021, 17.

<sup>15</sup> “The Future Force in Multi-Domain Operations - by LTG Eric Wesley,” YouTube video, 1:32:14, posted by U.S. Army Joint Modernization Command, 27 Jan 2020, <https://www.youtube.com/watch?v=RItpEV0enYU>.

<sup>16</sup> Canada. Department of National Defence, *Pan-Domain Force Employment Concept: Prevailing in an Uncertain World*, Ottawa: Canadian Joint Operations Command, 2020, 18.



Command. This does not however preclude the CA taking initial steps within *Force 2025* to posture the force for MDO.

13. The sequential build models of *Force 2025* and *Force 2030* offer the CA an incremental opportunity to move towards a MDO capable force. As survivability and minimum combat effectiveness against pacing threats are currently imperilled by deficient capabilities, the objective of *Force 2025* should be to secure a **Cross-Domain Capable** Canadian Army. This effort would focus on advancing the Army's established modernization priorities and embarking on a rigorous campaign of doctrinal and technological education to enable the next generation of MDO leaders. In the absence of a specific CAF plan for joint MDO enablers, the *Force 2025* structure optimization efforts should resist efforts to dedicate personnel to exquisite but poorly defined MDO capabilities such as "tactical cyber." Instead, *Force 2025* could set conditions for a rapid transition to new requirements once CA responsibilities are delineated from those of the CAF, and as space and cyber domain requirements mature. Alternative organizational models offering increased flexibility should be studied, such as the reduction of stovepiped combat arms trades in redundant organizations into simpler 'manoeuvre' forces, freeing up personnel to adapt to future roles through specialization rather than trade assignment. Concurrently, ongoing development of a CAF wide organization for the management of multi-domain efforts would allow the Army to identify the appropriate mix of integral, joint, and national capabilities for its future organization, culminating in *Force 2030* building the **Multi-Domain Capable** CA nested within a MDO CAF.

## CONCLUSION

14. While the CA of the future will undoubtedly be called upon to fight in multi-domain operations, the lack of a more precisely defined CAF multi-domain strategy creates significant challenges for in-horizon adaption efforts. Although the ongoing Combat Systems Integration (CCSI) effort under the VCDS is likely to provide more detail on the ARAs for joint and multi-domain forces, this work will be conducted concurrently to *Force 2025* planning. Until the required fidelity is available, *Force 2025* should set an objective to build a Cross-Domain Capable Canadian Army, with more dramatic movements towards a Multi-Domain capable CA reserved for *Force 2030*.

## RECOMMENDATIONS

15. The following recommendations are made with respect to CA MDO adaptations:
  - a. Advocate for the establishment of a CAF joint-enabler command to resolve MDO capability ARAs, leading to the development of a true strategic headquarters.
  - b. Establish a dedicated MDO study team to determine a credible, threat-based ambition for CA MDO capabilities in line with strategic policy and resources.
  - c. Examine opportunities to enable future CA change responsiveness by studying if extant trade structures could be reduced to unified combat functions.
  
16. The following MDO planning guidance is recommended with respect to *Force 2025/30*:
  - a. Force 2025. To develop a cross-domain capable force, defined as one enabled to defend against critical cross-domain threats; able to communicate across the force and with allies through effective and agile command and control systems; and operated by personnel trained and educated to understand multi-domain technologies, multi-domain enablers, and who can think and plan in MDO.
  - b. Force 2030. To develop a multi-domain capable force, defined as one enabled to achieve effects across all operational domains; executing long-range modernized fires and offensive cyber operations; and employing both integral and joint multidomain specialist personnel and organizations.

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