POLICY CHALLENGES IN THE DEVELOPMENT OF INTEGRATED NETWORK ENABLED OPERATIONS IN CANADA

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ABSTRACT

The Canadian Forces and the Department of National Defence are in the process of formulating a roadmap and policy for the adoption of Network Enabled Operations. The decision to develop this policy in conjunction with joint, interagency, multinational and public (JIMP) partners has resulted in a number of challenges, including language, cultural, fiscal, procedural and political. For instance, whereas the Government of Canada has directed a "3 D" (diplomacy, defence and development) approach to international affairs, the practices and procedures within the Departments of Foreign Affairs and Defence, and the Canadian International Development Agency are disparate and institutional goals vary. A solution proposed for coordinating these efforts is Network Enabled Operations, which is seen as providing the means of establishing a collaborative environment, thereby moving towards the integration of the major components of national power.

This paper will provide an overview of policy and initiatives taken to date, examine two case studies and lessons learned related to integrating defence, diplomacy and development efforts, detail some of the issues associated with the establishment of a collaborative approach, and outline a proposed Network Enabled Operations framework intended to resolve these issues.

Introduction

In 2004, the Canadian Government released *Securing an Open Society: Canada's National Security Policy*, which, amongst other things, advocated an integrated "3 D" (defence, diplomacy and development) approach to international security. This approach was designed, in part, to leverage Canadian experience in support of peace, order and good government for developing, failed and failing states. As part of the Government's overall approach to security, it has taken steps towards facilitating a multi-agency

response to crisis, including enhancement of intelligence, emergency planning and management, and security measures. Despite these, there remains room for improved delivery of the "3 Ds".

This paper will argue that the concept of Network Enabled Operations (NEOps) needs to be adopted by governmental agencies as a means of better delivering and supporting a national and international response to new and emerging conflicts. While such an approach is anticipated to provide a significantly improved capability for participating agencies, a wide variety of challenges exist, including language, cultural, fiscal, technical, procedural and political. For instance, crucial to the level of civil-military cooperation needed for NEOps is a clear understanding of interagency areas of responsibility and capability. This paper will discuss issues related to the adoption of this concept and propose solutions.

There also will be discussion on relevant past and ongoing Canadian initiatives to promote domestic civil-military cooperation through NEOps, as well as details on measures to assess the effectiveness of interagency coordination in a NEOps environment. The paper will conclude by identifying lessons learned and discussion on approaches for future initiatives.

NEOps

While many are undoubtedly familiar with the concept of Network Enabled Operations (NEOps), by this or any of its other names (Network Centric Warfare in the United States, Network Enabled Capabilities in the United Kingdom, or Network Based Defence in Sweden), for those that may not be aware of this concept, a quick overview is provided.

NEOps in an information age concept that contends that a robustly networked force improves information sharing. With information sharing and collaboration, the quality of information and shared situational awareness is improved. Shared situational awareness results in improved collaboration and self-synchronization, and these, in turn, increase mission effectiveness.[1]

[1] David S. Alberts, John J. Garstka and Frederick P. Stein, *Network Centric Warfare: Developing and Leveraging Information Superiority* (2nd Edition) (DoD C4ISR Cooperative Research Program, Feb 2000), pp. 88-90.

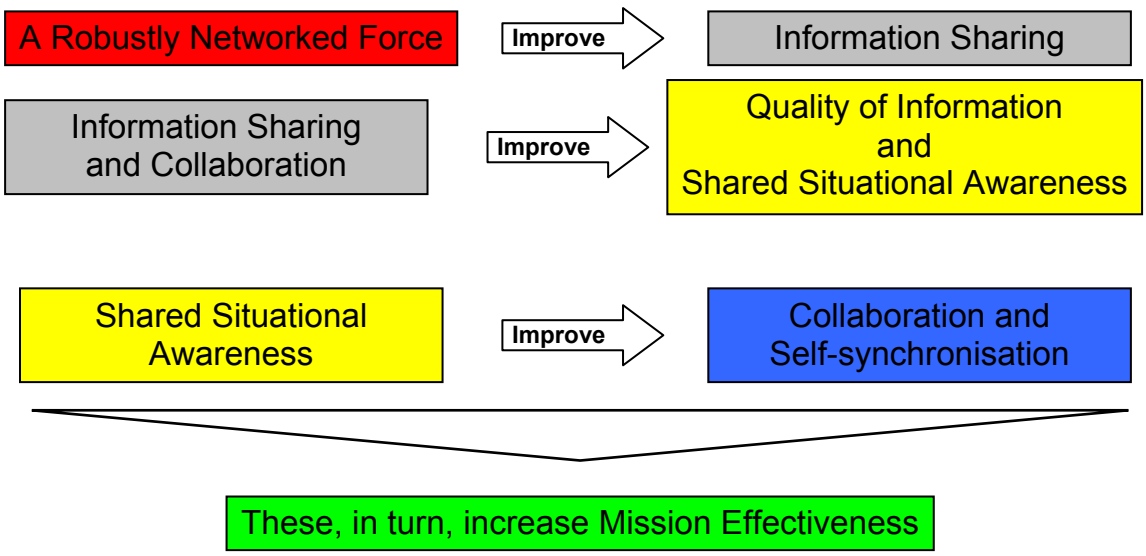

Figure 1: NEOps Processes

As a working definition for this concept within Canada, the following is provided:

> Based upon an emerging concept, NEOps seek to improve planning and execution of operations through the use of information and communications technology linking people, processes and ad hoc networks. Such operations are intended to allow joint, interagency, multinational and public stakeholders, as appropriate, to seamlessly access information and data from a wide range of sources in order to facilitate effective and timely interaction between sensors, leaders and effects. The result is an expanded awareness and comprehension of the environment, improved access to timely, relevant information, improved reaction time and synchronization of activity, and ability to act.[2]

A related concept is effects-based operations (EBO), which, from a Canadian perspective, may be seen as:

> Operations designed to influence the long- or short-tem ***state of a system*** through the achievement of desired physical or psychological effects. Operational objectives are sought to achieve directed policy aims using the integrated application of ***all applicable*** instruments of hard or soft power. Desired effects, and the actions required to achieve them, are concurrently and reactively planned, executed, assessed (and potentially adapted) within a ***complex adaptive system***.[3]

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[2] *Network Enabled Operations: DND/CF Responding to the New Security Environment* (Draft), dated 5 November 2004, pp. 26-27.

[3] Robert Grossman-Vermaas, *The Effects-Based Concept and Multinational Experiment 3: An Analysis of the Inter-Agency Role*, Research Note 05/2004, (Ottawa: Operational Research Division, DND), p. 7.

A way to conceptualize these concepts is that EBO is about "what" to do and NEOps is about "how" to do it. The next section will examine the current Canadian operating environment and relevant policy statements.

Current Canadian Policy and the Delivery of 3D

Canada, as a nation, has a long history of involvement in international responses to new and emerging conflicts. As an example of this, of the 59 United Nations peacekeeping missions to date, Canada has taken part in 50 of them[4], representing a participation rate of 84.7%. Furthermore, Canada has participated in a range of other stability and observer missions, including the International Commission for Control and Supervision South Vietnam, Observer Team Nigeria, Multinational Force Observers Sinai Peninsula Egypt, International Commission for Supervision and Control Cambodia, Laos and Vietnam and the European Community Monitoring Mission in Yugoslavia. More recently, Canada participated in Operation Desert Storm in Iraq, Operation Enduring Freedom in Afghanistan and NATO's ongoing International Security Assistance Force (ISAF) in Afghanistan. Yet despite this long history of international involvement, there has been increasing recognition within Canada that, like in other countries, we are operating in an increasingly complex and dangerous environment, thereby requiring a more integrated approach to how the defence, diplomacy and development elements of national power are provided during foreign deployments.[5]

This was addressed, in part, in the 2004 policy statement *Securing an Open Society: Canada's National Security Policy*, in which the federal government initiated various significant measures towards the establishment of a collaborative security environment. This was especially so in reference to domestic operations. For instance, Public Security and Emergency Preparedness Canada (PSEPC) was provided with the mandate to test and audit the level of security readiness and capabilities across departmental lines. PSEPC was also assigned the responsibility for establishing and operating a Government Operations Centre during a national emergency. In support of this Operations Centre, a National Emergency Response System (NERS) will provide the emergency response framework in support of incident identification, warning and notification, information sharing, incident analysis, planning, and operations coordination. Beyond the boundaries of PSEPC, this policy also led to the appointment of a National Security Advisor, the creation of an Integrated Threat Assessment Centre, networked Maritime Security Operations Centres, and a range of other intelligence, emergency planning and management, public health, transport security and border security measures.[6]

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[4] Canada did not take part in UNOMIG, UNOMSIL, UNOMIL, UNASOG, MONUA, UNAVEM I, UNAVEM III, UNMOT and UNPSG. Participation in the various 50 UN missions included the deployment of small and large military forces, diplomatic contributions to missions and federal, provincial and municipal police deployments to assist in establishing law and order and training missions. See www.un.org/Depts/dpko/dpko/index.asp and www.forces.gc.ca/commelec/brhistory/anxa_e.htm .

[5] *Securing an Open Society: Canada's National Security Policy*, (Ottawa: Privy Council Office, 2004), pp. iii and 51.

[6] Ibid., pp. vii-x.

While the term NEOps is not directly used in reference to these upgrades to Canadian domestic security, there are indications that, in some instances, NEOps-related precepts are being adopted. For instance, PSEPC has participated in some of the NEOps developmental work within Department of National Defence/Canadian Forces (DND/CF) and is advocating an approach of "information push vice information pull" for their National Emergency Response System and a collaborative environment as part of inter-departmental response to incidents.[7] However, NERS is still in the planning stage and is designed to operate only in times of domestic emergency. There is, in fact, no collaborative network in place at the strategic level for planning activities between government departments for domestic or international operations. As another example of some of the nascent steps taken towards the establishment of a NEOps environment, the aforementioned Maritime Security Operations Centres, which are co-located with Canadian naval establishments, have been set-up using net-centric practices, such as the maintenance of a Common Operating Picture and the provision of network connectivity between select departments to provide the supporting infrastructure to plan and conduct joint operations at the regional level.

Turning to the international environment, *Securing an Open Society* was intentionally less directive regarding operations outside of Canada, indicating that a currently ongoing International Policy Review, once finished, would give priority to national security concerns and reflect an increasingly integrated approach to defence, diplomacy and development.[8] Specific mention was made of the need for Canada to help restore peace, order and good government in failed and failing states,[9] and it will be argued here that the best way of achieving such an integrated Canadian approach to 3D is through NEOps.

Importantly, while the NEOps concept is about the enhanced effectiveness that may be achieved through the collaborative environment made possible through networking, as opposed to being about the network itself, it should be noted that a significant portion of the following discussion is about issues related to the physical establishment of the network between the national security partners. The absence of such interconnectivity is a major barrier to the collaboration needed for an integrated approach to 3D for Canada.

Case Studies

The purpose of this section is to provide details from recent Canadian experiences relevant to NEOps in order to demonstrate some of the issues associated with adopting this concept. Specifically, the Atlantic Littoral ISR Experiment and aspects of the Canadian participation in ISAF and Afghanistan will be examined.

[7] FN – Scala's briefing
[8] Ibid., p. 47.
[9] Ibid., p. 50.

ALIX: Between 10-31 August, 2004, the Canadian Forces Experimentation Centre conducted an Integrated Intelligence, Surveillance and Reconnaissance Architecture (IISRA) experiment off the Atlantic coast using an Uninhabited Aerial Vehicle (UAV). This event, the Atlantic Littoral ISR Experiment (ALIX), was the first Canadian pragmatic assessment of a net-enabled operation and a significant component of it was the development and use of a collaborative sharing environment, in the form of a Common Operating Picture (COP), between various government departments. In addition to the Department of National Defence (DND), another 13 federal government departments[10] and two provincial agencies were invited to participate. While the analysis of ALIX is still ongoing, there are some preliminary indications of the success of this aspect of the experiment.

As background, there were four major planning conferences preceding ALIX, the first of which was in October 2003. Invitations for these events were sent to a variety federal departments, with between seven and 11 representatives taking part from up to six different organizations.[11] Although wider participation had been hoped for, those that did attend, typically from the national level of their organizations, expressed support and interest in taking part in ALIX and in the enhanced capability a COP could provide for their work environment.

ALIX activities were designed to be of use to the non-Defence departments in a couple of ways. First of all, experiment scenarios were designed to stimulate inter-departmental cooperation over a network and through the use and maintenance of a COP. These scenarios included a domestic operation involving a simulated satellite crash in the far North, a UN peace support operation, and a fishery protection mission with exercise injects related to a potential terrorist attack operation. Associated with these scenarios, metrics were designed to assess the reach, completeness and accuracy of data passed over the network.[12] The network in question, the Canadian Maritime Network (CANMARNET), was already in existence and used by a range of government departments, but the number and location of non-Defence users was to be increased and the volume and richness of the information on system enhanced for the purposes of ALIX. Secondly, imagery collected by the UAV while transiting an area was made available to various government departments for their internal usage. Consequently, as examples, shoreline erosion imagery was provided to Department of Fisheries and Oceans, Environment Canada was provided imagery of a potential new national park, and New Brunswick Public Security and Emergencies was supplied with imagery of critical infrastructure.[13]

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[10] These federal departments included Canada Customs & Revenue Agency – Canadian Border Services Agency, Citizenship & Immigration Canada, Department of Fisheries & Oceans – Canadian Coast Guard, Department of Foreign Affairs & International Trade, Department of Justice Canada, environment Canada, Industry Canada, Privy Council Office, Public Safety and Emergency Preparedness Canada, Public works & Government Services Canada, Royal Canadian Mounted Police, Transport Canada, and Treasury Board.
[11] Lieutentant Colonel S.J. Newton et al, *Experimentation Report IISRA 2004-1 (Draft), Atlantic Littoral ISR Experiment (ALIX),* Canadian Forces Experimentation Centre, p. 93
[12] Interview of Paul Comeau, ALIX Lead Analyst, 14 March 2005.
[13] Ibid.

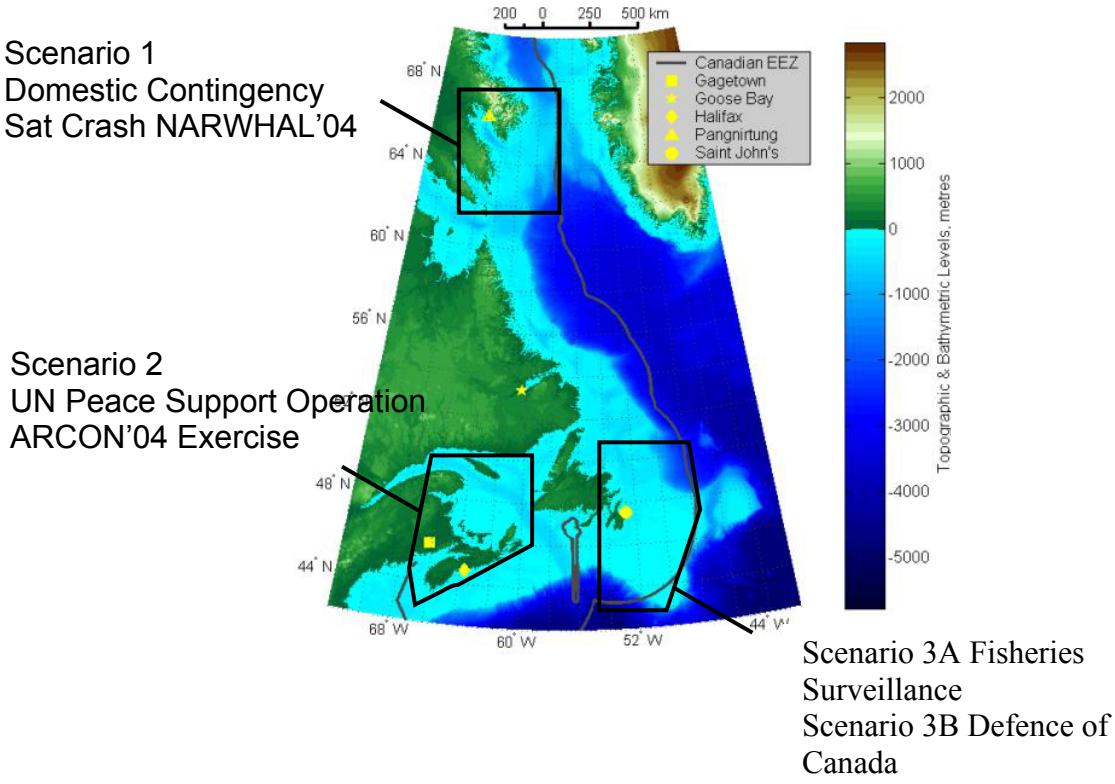

Figure 2: ALIX Scenarios

The actual conduct of the experiment, which was very successful overall, identified a number of issues related to inter-departmental cooperation. For instance, while the national level of various federal departments supported participation in ALIX and use of CANMARNET to establish and maintain a COP, those at the regional level did not participate and make use of the technology as anticipated. While this may reflect communication or delegation issues between national and regional offices within these departments, it does demonstrate a natural and well-known reluctance of people to use new technology and processes. Certainly the ALIX planners within DND and the CF did not facilitate the introduction of NEOps to the other government departments as well as they could have, since training sessions associated with the experiment, new collaborative tools, the COP and CANMARNET for new users had to be compressed or cancelled due to time constraints.[14]

Furthermore, it was a common occurrence for many of those accessing the COP, whether from DND or other government departments, initially to use it and related network-based assets passively instead of proactively searching for relevant data and taking appropriate actions according to the developing situation. While increased familiarity with the system and processes at times resulted in improved performance,

[14] Ibid.

most non-defence representatives did not have sufficient exposure to make this adjustment, thereby not making the paradigm shift from "need to know" to "need to share". [15]

Another partial barrier to improved inter-departmental cooperation relates to questions of security. Whereas most within DND/CF have a working knowledge of security regulations related to the classification of information and the passage of such information over networks, this was not necessarily so amongst all government departments. Technical issues related to security also intruded on the experiment, as all government departments did not have the ability to receive, process, store or transmit classified data.[16]

Finally, there are questions of familiarity and availability of information technology. National Defence has a high degree of information technical penetration, including many complex, highly capable systems. This is not necessarily so amongst the other government departments, partially due to their mandate and requirements, but also as a question of financial resources to acquire such capabilities. Therefore, there were some structural and organizational impediments to close, network-based collaboration between departments.

As a consequence of these and other factors, enhanced operational effectiveness between DND and the other government departments was not achieved to the extent desired. Still, there were a number of appropriate lessons learned in relation to interdepartmental operations. Firstly, it is easier to build a robust network than it is achieve robust networking. Organizations and individuals need to be trained and practiced in a new networked environment. Secondly, net-enabled operations blurred classic organizational boundaries, as strategic level oversight and involvement was possible during a tactical or regional activity. This indicates a requirement for organizations to delineate areas of responsibility and to follow a clear and practiced chain of command, which may not be as practiced an experience within other government departments as it is within DND/CF. Thirdly, information exploitation and fusion support tools are required, which would help make collaborative information environment more accessible to users from outside of the defence environment. Finally, it was concluded that NEOps was an enabler for Maritime Security Operations Centres and for interdepartmental/interagency collaboration, especially in support of effects-based operations.[17] However, in order to achieve the increased effectiveness available through NEOps during interdepartmental operations, it is evident that a range of cultural, technical, financial, procedural and training issues remain to be addressed.

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[15] Interview of Captain (Navy) Kevin Laing, Commandant, Canadian Forces Experimentation Centre, 17 March 2005.
[16] Comeau interview, op. cit.
[17] Paul Comeau, *Integrated ISR Architecture Concept Development and Experimentation*, .ppt presentation, slide 33, at SMi Conference on Persistent Surveillance, The Hatton, London, England, 6 February 2005.

ISAF: During early 2004, Canada led the ISAF mission in Afghanistan and significantly contributed to the Kabul International Brigade.[18] As well, there was a Canadian diplomatic mission headed by an ambassador and a small team from the Canadian International Development Agency (CIDA), thereby bringing together all of the main players in Canada's stated "3D" approach. What, then, was the extent and experience of collaboration between these agencies? As a caveat, the following observations are made from information obtained solely from DND/CF sources.

First of all, there was no direct network connectivity between the Foreign Affairs, DND/CF and CIDA representatives in Kabul. Although all participants were cooperative, helpful and available to meet operational requirements, meetings between these players largely took place on an ad hoc, as required basis. DND/CF dealings with CIDA often took place through the ambassador, although those direct CF civil-military liaison visits with a CIDA representative proved to be resource and time intensive due to the distance between them.[19] Reach-back to the strategic level in Ottawa was done through three departmental stovepipes, with no direct connectivity between the three departments at this national level either, thereby making combined planning and coordination difficult. Even many of these departmental stovepipes had bandwidth issues and the level of information technology support available was, to an extent, limited. Therefore, even with the best of intentions between the 3D elements on the ground in Kabul, there were some constraints on the amount of information that could be shared and on how integrated their efforts could be.[20] As a consequence of this, it appears that planning and operations would have benefited and been better coordinated between the 3Ds through wider access to the range of tactical, operational and strategic information available.

While there are no direct metrics to demonstrate this, there are reasons to be that the operational effectiveness of Canada's support to ISAF could have been enhanced through improved interconnectivity and coordination. For example, while there were periodic reports available, the military force would have benefited from having on-line access to additional information sources, such as cultural experts, to support their activities. The creation and ready sharing of such things as databases, planning documents, intelligence requirements, threat information and related material would have facilitated synchronization between defence, diplomacy and development activities. As well, it is clear that the relative size of the 3D teams on the ground resulted in limitations on the amount of coordination that could take place in-theatre, with, for example, Foreign Affairs having only two political representatives, one of which was the ambassador, in Kabul on a full time basis. Accordingly, a robust and shared reach-back capability would have allowed for additional resources to be available on-line.[21]

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[18] Although no longer leading this mission, Canada continues to contribute a large number of troops to ISAF.
[19] Mr. Alden Skidd, presentation entitled "*3D Approach to Canadian CIMIC*", Cornwallis X Conference, Kingston, Ontario, 27 March 2005.
[20] Interview with Canadian ISAF participant, 17 March 2005.
[21] Ibid.

As well, there were some in-theatre organizational and cultural issues that mitigated mission performance. For instance, the Canadian Forces sought to conduct an information operation with the intent of fostering loyalty to the central government, encouraging trust and cooperation between ISAF and the local population, and possibly establishing information sources in an Afghani community by installing an electric pump to draw water from a local well. Such an operation should be seen as having short-term goals and requiring fairly quick decision making to provide required funding to support military operational requirements. CIDA, which is responsible for development projects, has a mandate and planning horizon focused on fostering long-term stability within a country and an internal funding approval process reflective of their mandate and responsibilities. It would be unfair of Kabul-based DND/CF personnel to perceive the lack of funding support in such circumstances from CIDA as being unsupportive of Canada's overall mission, a subtly that may not have been appreciated by all of the military on the ground. This, then, speaks to the need for an improved appreciation of the respective roles, mandates and capabilities between Canada's 3D partners, and a political decision to allow a more flexible approach to 3D through, for example, an increase in the funding provided to the Canadian Forces for short-term and relatively inexpensive development initiatives intended to support military operations.[22]

United States Joint Interagency Coordination Group

Before proceeding with a Canadian proposal for optimizing the delivery of 3D to new and emerging societal conflicts, the US solution to aspects of this issue will first be examined. It is contended that this review, in part, will demonstrate that different national experiences and practices results in the need for alternative approaches to this issue.

In support of American Effects-Based Operations, the concept of providing Joint Interagency Coordination Groups (JIACGs) has been prototyped, whereby full-time, multifunctional advisory elements from a wide range of civilian agencies and departments are attached to various US Regional Combatant Commanders. Such Coordination Groups, which are explicitly prohibited from challenging or replacing existing US civilian government activities or to interfere with internal agency processes, are designed to inform Combatant Commanders of the planning, sensitivities and support requirements, capabilities and limitations of participating agencies. It also serves to inform represented agencies of the operational requirements, concerns, capabilities and limitations of the Combatant Commanders. These JIACGs are designed to coordinate with and on behalf of the various agencies, diplomatic staff, the Combatant Commanders' staff, and other multinational and multilateral bodies within the area of operations. The JIACGs are the lead advocates with the Combatant Commanders for the interagency process and provides civilian perspective on military operational planning and execution. This concept has been tried successfully during a number of experiments and deployments, including Operation Iraqi Freedom and recent Tsunami relief operations in

[22] Ibid.

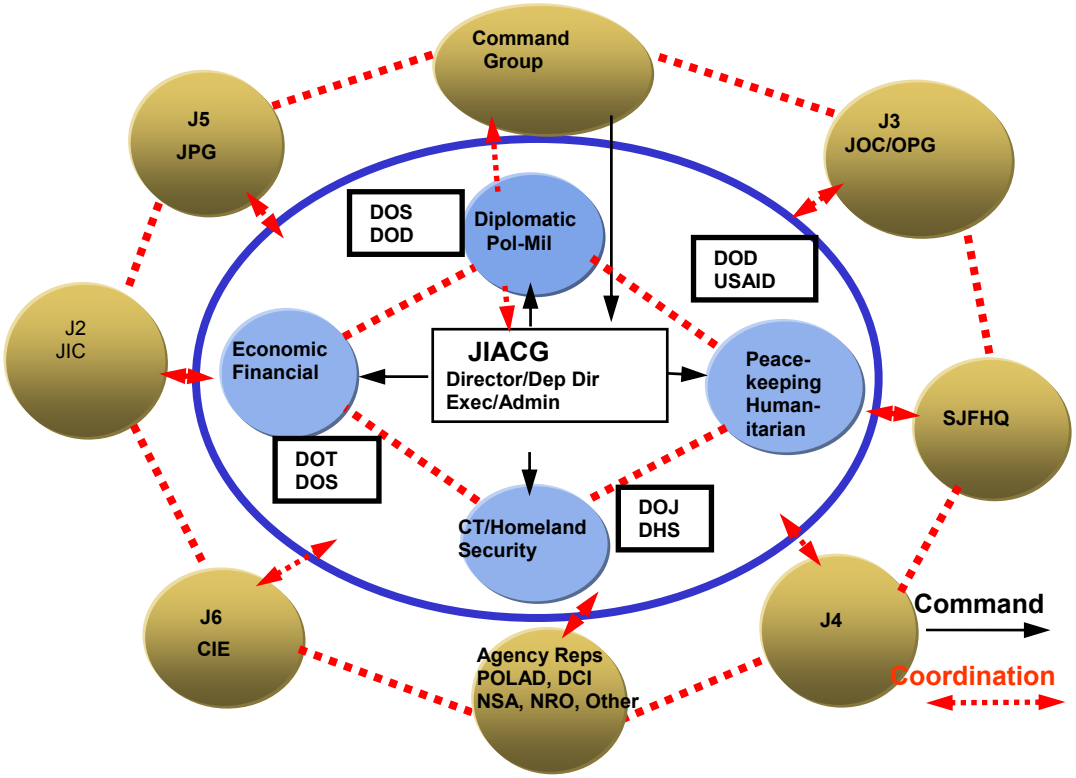

Figure 3: Notional JIACG Construct and Staff Interaction[23]

Southeast Asia. US Joint Forces Command is currently staffing a proposed fielding solution for this concept to the Chairman, Joint Chiefs of Staff and the Secretary of Defense.[24]

However, despite the overall success of this concept, its applicability for other nations may be questioned. For instance, a number of cultural and organizational issues have been identified between the military and the participating civilian agencies. There are differences in roles and priorities, rivalries and tensions among and within agencies, there is reluctance within civilian agencies to buy into the concept, and concern that such coordination will lead to ceding control.[25] Civilians taking part in the JIACG have expressed concern that interagency coordination is critical yet undervalued, that training and education is important to JIACG participation, but not widely available,[26] and that the Department of Defense does not work well with civilian agencies.[27] As well, many civilians associate negative career implications with working with the JIACG (i.e. FBI

[23] www.ca.dtic.mil/doctrine/July04_jiacg brief.ppt, Mr. Phil Kearley, GS, Joint Interagency Command Group (JIACG), Joint Faculty Education Conference, Slide 10.
[24] www.jfcom.mil/about/fact_jiacg.htm , United States Joint Forces Command Fact Sheet, Joint Interagency Coordination Grouip (JIACG) – A Prototyping Effort, Jan 2005.
[25] www.t2net.org/briefs/TIM2/Brief_TIM2JIACGBRIEF.pdf, PPT presentation by John Oppenhuizen, USJFCOM J9, May 04, "*Joint Interagency Coordination Group"*, slide 6.
[26] www.thoughtlink.com/ppt/TLI-JIACGSurvey-FinalBrief-Revised.ppt , Marcy Stahl, Joint Interagency Coordination Group (JIACG) Training and Education Survey, January 15, 2004, slide 4.
[27] Ibid., slide 16.

agents indicated that there was a "negative" affect and State Department employees indicated that there was a "very negative" affect), resulting in some difficulties in recruiting representatives from civilian agencies to serve with the JIACGs.[28] Finally, the personnel resource bill, with up to 50 full time civilian and 75 command staff, was found to be a concern.[29] It should be noted, however, that overall JIACGs have been considered a successful innovation and work is proceeding with overcoming any issues.

Many of these concerns would resonate with non-DND members of the Canadian federal government asked to serve with the Canadian Forces in a similar capacity. For instance, there are cultural and organizational differences between DND/CF and the other government departments. Accordingly, the level of trust between DND/CF and the other departments would have to be enhanced and nurtured before such a collaborative coexistence could be adopted. Moreover, the relative relationship, authority and interactions between the US State Department and their Department of Defense differ from the experience in Canada between the Department of Foreign Affairs and the Department of National Defence, with Foreign Affairs having the clear lead role and historically not required to have personnel organizationally subordinate to the military as a matter of routine during a deployment. Also, the personnel requirements of such a permanent structure are unlikely to be supported by government. Additionally, the scope and purpose of JIACGs is more in line with the roles foreseen for US Combatant Commanders, which is more at the operational and strategic level, vice what the Canadian experience would likely be, as shown by the more tactical and operational level experience in Kabul. Accordingly, a different structure from that being implemented in the United States to facilitate interagency cooperation would be required north of the border.

Framework Proposal

At present, Canadian infrastructure is not set-up to optimize the integrated delivery of defence, diplomacy and development. In order to achieve any framework for such an integrated approach, first and foremost, there is a requirement for high-level political sponsorship, such as in the forthcoming International Policy Review. Unless the bureaucratic and organizational barriers between defence, diplomacy and development to robust information sharing, and joint and dynamic planning and operations are overcome, a truly integrated approach is unlikely, if not impossible.

Secondly, while sceptics remain, the overall merits of NEOps have been accepted by many of the western democratic armed forces.[30] Although the precise extent of the operational advantage achieved through NEOps remains elusive, there is a growing body of work detailing the merits of this concept.[31] Despite this, before adopting a NEOps framework for interagency cooperation, a rigorous experimentation programme would be

[28] Ibid., slide 18.
[29] Ibid., slide 26.
[30] Clear advocates of this concept include the United States, the United Kingdom, Sweden and Australia.
[31] See, for example, the Network Centric Operations case studies sponsored by the US Office of Force Transformation at http://oft.ccrp050.biz/docs/NCO/short-course-ndu-oct-2004/3-forsythe-nco-case-studies .

well advised in order to arrive at the best framework for Canadian purposes.[32] This framework should be expanded to include all components involved in security and development policy, including non-traditional federal and provincial participants, as different missions, including domestic contingencies, will require teams comprising different skill sets.[33] A critical element of such an experimentation programme would be determining the means of overcoming the traditional delay associated with interagency decision-making.[34]

Thirdly, it is assumed that the merits of the improved operational effectiveness foreseen as a result of adopting a NEOps construct would be sufficient to justify the allocation of a relatively modest financial commitment from government to provide the network infrastructure needed to implement this concept. The term modest is used since the majority of the cost involved largely would be associated with the networking of existing infrastructure and fielding of collaborative tools. The over $8 billion committed to address security gaps noted in last year's *National Security Policy*[35] suggests that this is achievable. Since significant aspects of the improved operational effectiveness sought through NEOps include collaborative pre-deployment planning at the strategic level and the reach back capabilities and support for those deployed in-theatre, a critical component of this network infrastructure would also have to be funded and built at the various department head offices in the Ottawa region.

Fourthly, there is the practical issue of where the expertise and ability would reside to field and operate such a network infrastructure. While some federal departments do have a degree of experience in establishing and maintaining a network in foreign locals, the Department of National Defence and Canadian Forces have conducted numerous missions in austere environments. As part of this, they have personnel with the required skill sets and experience in supporting systems and networks in such conditions. A logical location for such capability is with the Canadian Forces Joint Operations Group (JOG), which provides a rapidly deployable, joint operational-level command and control capability for domestic and international missions for DND/CF. Since JOG personnel typically operate this command and control capability for the first portion of any deployment, it is submitted that the other government departments taking part in such deployments, especially from Foreign Affairs and CIDA, should be required to designate a few personnel to accompany initial deployments of the JOG to help establish the required infrastructure and procedures needed to facilitate an integrated approach to 3D. Through the familiarization that would develop by working together over a series of deployments, such an arrangement would help facilitate the creation and maintenance of a trusted relationship between the participants required of NEOps. However, it is acknowledged that limitations on the number of personnel available to

[32] One of the cultural barriers associated with engaging other government departments in NEOps relates to the different "language" used in each department. For instance, it proved to be surprisingly difficult for the author to brief personnel from outside of DND/CF about participating in a NEOps symposium held in Ottawa 30 Nov – 2 Dec 04 in a context they could relate to their own environment.
[33] For example, the ongoing ISAF mission could perhaps benefit from advise from Agricultural Canada in regards to replacing traditional Afghani opium grow operations with those focusing on food staples.
[34] For more on this issue, see Grossman-Vermaas, op. cit., p.10.
[35] *Securing an Open Society: Canada's National Security Policy*, op.cit., p. iii.

CIDA and Department of Foreign Affairs would prove to be an impediment to such arrangements. As well, the culture of professional training found within the Canadian Forces would be difficult to replicate in the other government departments due to differences in missions and work environment, and the relative opportunity to take such training in the face of day-to-day responsibilities.

A range of practical benefits could be acquired by channelling all defence, diplomacy and development traffic from deployed missions back to national offices through a single pipeline set-up by the JOG. It would be more economical to establish a single, highly capable connection back to Canada than three separate departmental systems. Notably, this framework does not advocate changes in current work relationships, as deployed defence, diplomacy and development missions would still be tasked and responsible to their respective departments. To facilitate this, encryption could maintain security between system users to preserve departmental areas of responsibility. Such a single network approach could be expected to have higher overall capacity than some of the individual departmental systems currently in use, given CF experience and operational requirements for high performance information technology support. Moreover, given the presence of CF technicians as part of the deployment, a higher degree of network reliability may be expected than likely experienced currently by small diplomatic and development missions.

Finally, there is the issue of the overall power relationship between participating agencies in a NEOps environment. However, there is no reason for any changes from the current inter-department relationship during international deployments, in which Foreign Affairs is typically the lead agency. NEOps would simply provide the means for better control and coordination of activities and operations, not only within theatre but also from the strategic level. As well, an integrated NEOps framework would provide the opportunity for better political oversight of the defence, diplomacy and development components of national power through reach back to the strategic level. For instance, in addition to connectivity to the national level offices associated with delivery of the 3Ds, the network could be extended to include the Privy Council Office, which is responsible for coordinating political input into Government departments.

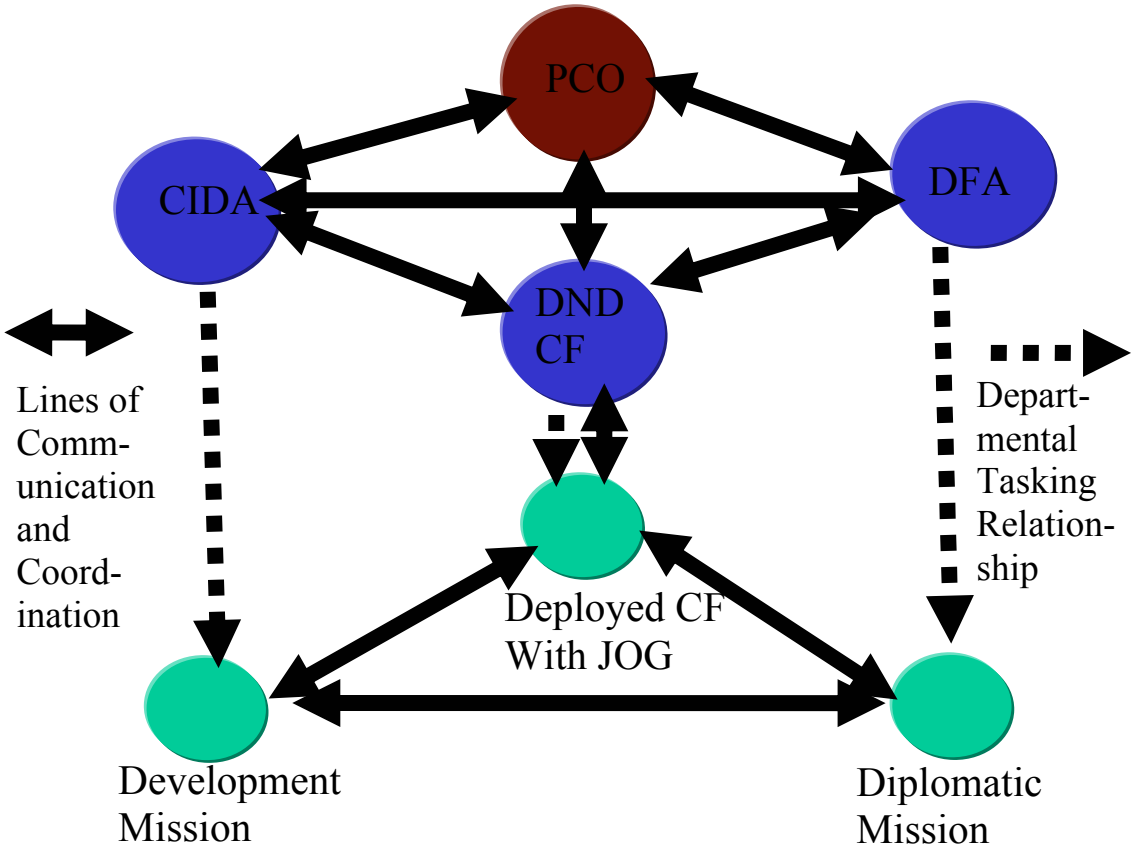

Figure 4: Proposed Canadian Framework for NEOps
Coordination of Delivery of 3D

Conclusion

In summary, it has been argued that the stated intention of the Canadian government to better integrate the defence, diplomacy and development elements of national power is achievable through the government-wide adoption of NEOps, and that doing so would also lead to increased effectiveness, better reach back, oversight and coordination, and reduced planning cycles. Given the relative size, capabilities and experiences of the defence, diplomacy and development communities, it has also been argued that the capability to field and support the required infrastructure for NEOps should reside in the CF JOG. A distinction between the proposed framework and that used within the US is that it is designed to facilitate the operations of all elements of national power, not just the military, and it is intended to be fielded down to the tactical level. However, given traditions, bureaucratic inertia and stovepipes, and related issues, it is clear that this state can only be achieved through high-level political leadership.