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Chair

Mr. Pat O'Brien

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● (0900)

[*English*]

The Chair (Mr. Pat O'Brien (London—Fanshawe, Lib.)): Good morning. I'd like to call to order the 34th meeting of the House of Commons Standing Committee on National Defence and Veterans Affairs, noting that we have witnesses from DND to react to the Auditor General's chapter 4 report that we discussed at the last meeting.

Colleagues, following our witnesses, there will then be some routine but important committee business on future meetings.

As I did with the Auditor General, unless I see any disagreement, we'll go with a ten-minute round of questions for the first round. That's consistent with what we did for the Auditor General. Then we'll have a second round of five-minute questions.

Let me introduce and welcome our witnesses for today.

Lieutenant-General Marc Dumais, Deputy Chief of the Defence Staff, welcome to you, sir.

We also have Captain Darren Knight, director of joint force capabilities.

Gentlemen, welcome. We'll be happy to hear your opening comments.

[*Translation*]

LGen Marc J. Dumais (Deputy Chief, Defence Staff, Department of National Defence): Thank you, Mr. Chairman. I will begin with my opening remarks, which should take about 10 minutes. I believe you have a copy.

[*English*]

Mr. Chairman and members of the committee, I greatly appreciate the opportunity to appear before this committee to provide you with comments concerning the Office of the Auditor General's report on C4ISR activities within the Department of National Defence, and perhaps some amplifying information regarding the direction and scope of the C4ISR transformation sought by the Canadian Forces.

I'll do my best to answer all your questions in a clear and concise manner.

I'm accompanied today by navy Captain Darren Knight, director, joint force capacities, who has been at the helm of the C4ISR campaign plans since its very inception.

[*Translation*]

Let me begin by explaining the acronym C4ISR. I am aware of the fact that those outside military circles tend to look askance at acronyms such as C4ISR. Indeed, I know the Minister of National Defence himself is not particularly fond of this one.

As you may know, C4ISR stands for command and control, communications, computers, intelligence, surveillance and reconnaissance. Yes, it is a complex acronym, but it reflects a concept for supporting command decision making that is widely held and commonly used by Canada's military allies. I will say more about the concept as I proceed, but I thought it best to acknowledge your concerns with the acronym right up front.

[*English*]

For purposes of clarity, I would like to share with you the vision of where we, DND, wish to go with C4ISR. This quote is from the command decision support document: “An effective CF-wide Command and Control capability that achieves operational advantage of trusted and relevant information in a timely manner.”

It is also important to recognize that C4ISR is not just a capability, or a technology, or an end-state in itself. It is a journey rather than a destination. It's a concept, and it requires synchronization of three very important elements: doctrine, information, and structures.

Up front, let me say in broad terms that we in DND find the Auditor General's report to be generally accurate and reasonably well balanced. It is clearly useful, and it will help us focus on certain deficiencies to enhance our progress. As I will outline shortly, the NDHQ C4ISR staff, of which Captain Knight is the lead, began a self-assessment long before the audit and had essentially reached the same conclusions, which we shared openly with the Auditor General's team. We clearly saw the need for a mechanism to create synergy among C4ISR initiatives and capabilities, enhancing our military commander's ability to obtain and exploit information. To this end, a joint C4ISR campaign plan was developed and is being executed. We are pleased the audit concluded essentially that “National Defence is moving in the right direction”.

We welcome the opportunity to highlight these issues within the Auditor General's report and we agree with all the major recommendations made. The department is diligently striving to rectify problem issues in an ever-evolving transformational process. In fact, we have made significant progress in all areas since the audit was first initiated.

Without having all the background information behind the OAG report, a reader might come away with the impression that the Canadian Forces have been slow in reacting to changing conditions. This is simply not the case. We realized early on that we would need to develop and adhere to a unifying C4ISR concept if we were to achieve the goals and vision set out for the Canadian Forces in the 21st century.

A strategic document entitled Shaping the Future for Canadian Defence, A Strategy for 2020—which we call, in shorthand, "Strategy 2020"—which was released in July 1999, provided the strategic vision for the development of the Canadian Forces in the 21st century. It states: "At its core, the strategy is to position the force structure of the CF to provide Canada with modern, task-tailored, and globally deployable combat-capable forces that can respond quickly to crises at home and abroad, in joint or combined operations."

With the recent publication of the defence policy statement, this strategy has been refined and put in the context Canadian Forces transformation. Success or failure in achieving the transformation of the CF will, in large part, be determined by the CF's ability to integrate advanced information technologies with appropriate operational and organizational concepts to achieve potentially revolutionary improvements in force projection and employment. It is within this strategic context that the CF initiated the transformation of its C4ISR doctrine, concepts, and assets.

● (0905)

[*Translation*]

While the constituent parts of C4ISR have long existed in a military context, the holistic concept of C4ISR as presently enunciated is relatively new.

Along with our allies, both military and civilian, the department and the CF worked hard to understand both the limits and the opportunities inherent in the concept. There was no check list to follow, and the C4ISR concept itself is constantly evolving. Furthermore, C4ISR related technology and equipment continued to change rapidly.

It is because of this climate of constant change, and for reasons of fiscal responsibility, that the department must try to balance its investments between sustainment of existing capabilities and the transformation to new capabilities. As such, there is a great deal of risk and uncertainty inherent in developing an approach the C4ISR that is cost-effective and operationally valid in both the short and longer-terms.

[*English*]

Before I continue, let me briefly reflect on the commodity of information. It is like any other commodity we expend in the pursuit of operational objectives. Like the utilization of fuel, ammunition, or rations, the exploitation of information has a cost associated with it. Information requires storage, transport, processing, and consumption mechanisms. It is a perishable commodity and has a finite shelf life. The degree to which we are capable of conducting effective operations is linked to our ability to exploit information to the degree required by operational circumstances. As such, the underlying aim of C4ISR is to promote the commander's ability to practically exploit information at all levels of command and in all operational environments. This is achieved through the attainment of trusted, relevant, and timely information, and by providing a secure knowledge-sharing environment integrated throughout the force structure. In this regard, two distinct requirements act in opposition to each other and must be addressed in a state of balance.

The first requirement is to satisfy the mission commander's information needs, which are unique and specific to a given mission, circumstance, and environment. To this end, C4ISR solutions must be tailored specifically to meet the hard operational requirements of the army, navy, and air force, and the necessary capabilities must be created as part of the force generation activities of the three services. The creation of some elements of C4ISR capabilities is thus inherently decentralized, and admittedly, if it is left to proceed independently, the potential for individual services to evolve on divergent paths is high.

The second C4ISR requirement stems from the fact that no military unit, or single service, operates in isolation. The obvious requirement to exploit and exchange information with subordinate, superior, and flanking organizations is further complicated by a national chain of command in a continuum spanning from the seat of our government to the forward edge of military capability. It also includes lateral connections to allied governments and other government departments at all levels. In short, individual service elements must also be capable of operating in conjunction with other services, other government departments, and other nations. This requirement demands that C4ISR doctrine, concepts, and systems evolve along a single convergent path that is interoperable across all environments. We are working towards this end state, recognizing the need to protect classified or sensitive information.

It was recognized that successfully fulfilling these two divergent and difficult requirements is a complex undertaking. The solution requires both centralized coordination and decentralized execution in order to achieve a state of synergy. A document entitled Command Decision Support Capability — Principles and Goals defines a standardized context within which all CF C4ISR endeavours will transpire. Based on the interaction of doctrine, structure, and information, the command decision support capability principles and goals promote the merging and integration of various information-related functions that had been treated as independent disciplines, capabilities, or activities. This strategy is command-centric and driven by operational requirements and process, rather than by technology.

As the complexity of C4ISR and our post-9/11 operating environment increases, so too does the importance of having a fundamental framework to ensure a consistent, enduring context through which the CF will strategically develop and realize its future C4ISR capability goals.

● (0910)

[*Translation*]

The department started to address this daunting task in stages, beginning in September 2002, well before the audit began.

The first step was the compilation of a comprehensive status report that examined a wide range of C4ISR issues, providing a baseline source of information from which informed decisions and discussions could be initiated. At the same time as this baseline was being established, the C4ISR vision and goals were being developed, detailing the future context within which all C4ISR endeavours would transpire.

Based on the interaction of doctrine, structure and information, the vision promotes the merging and integration of various C4ISR-related functions, which heretofore have been treated as independent disciplines, capabilities or activities. This set the stage for the establishment and execution of a C4ISR campaign plan, which would act as the road map for C4ISR development and integration, and set the conditions for success.

Much of the initial planning effort was dedicated to understanding, establishing, and clarifying shared objectives between the services. Emphasis was placed on coordination, creating a planning methodology that is adaptive and evolutionary in nature, and also very cognizant of resource implications. The plan was meant to provide guidance for changes that are to be implemented through existing departmental funding and management mechanisms, and to do so at a rate that our resources can tolerate.

[*English*]

We determined that a flexible, iterative, and constantly re-evaluated approach to C4ISR is the best way to proceed. The C4ISR campaign plan, with a six-month spiral approach, is specifically designed to deal with the uncertainty and iterative nature of C4ISR development in both the current and the future contexts. Rather than being a one-time plan that runs for five years, the C4ISR campaign plan will be more of an ongoing planning process designed to coalesce, coordinate, and converge a large number of concurrent C4ISR activities towards a set of common objectives. When the OAG report concluded that DND is on the right track, they were referring to this campaign plan.

The C4ISR campaign plan is now well established and is entering its fourth spiral. It has succeeded in creating the conditions in which transformation and convergence of our command and control capabilities can occur. The challenge remains to make the plan work over the long term, and of course the C4ISR concept has the inherent flexibility to evolve in accordance with evolving command and control concepts in the CDS's new vision as well as with the new defence policy statement.

In closing, let me again stress that C4ISR is not simply a capability or technology or an end unto itself but a unifying concept. It will allow greater and greater interoperability among the three services, with our allies, and with other government departments.

I will again express my appreciation for being given this opportunity to appear before this committee and for the efforts of the OAG team. I hope I have given you a brief insight as to the dedication of the Canadian Forces and the nature of the effort they have made towards C4ISR integration, and let me assure you we are actively engaged in addressing the findings of the OAG report.

Thanks, Mr. Chairman.

The Chair: Thank you very much.

I'll just recall for colleagues, before we go to questions, that I want to be sure we tighten up our questioning to suit the purpose, and that is specifically chapter 4 of the Auditor General's report and General Dumais's specific remarks. From time to time parliamentarians, myself included, are tempted to spread the terms of references when we have witnesses with us, so feel free to restrict yourselves to the purposes you're here for. I'll try to assist in that, and I know all colleagues will try to be on focus as well.

With that, as I said at the start, to be consistent we'll go with a 10-minute round because we went with a 10-minute round with the Auditor General.

Let me start, please, with Mr. O'Connor.

● (0915)

Mr. Gordon O'Connor (Carleton—Mississippi Mills, CPC): General Dumais, welcome to the committee.

This is a follow-on from the Auditor General's visit to us a week or two ago. The C4ISR project in its totality, as we understand it from the Auditor General, has the potential for you to spend $10 billion in 91 projects.

From my understanding, this is basically a bottom-up activity. It's coming up out of requirements from the navy, army, and air force. Even today—maybe you've moved in the last month—you do not have an overarching concept, an overarching agreed architecture, such that this is all going to fit in. Am I wrong or am I right?

LGen Marc J. Dumais: Well, the enterprise architecture is being evolved by ADM (IM) for the department in its entirety. That's an ongoing work, but C4ISR is a separate entity that dovetails very nicely with the evolving enterprise architecture.

I don't know if I'm answering your question with that. Did you want me to speak to the $10 billion issue?

Mr. Gordon O'Connor: Well, we'll get to the $10 billion.

Let me just define it a little better. If I understand the history—and I may have it wrong and you're going to correct me if I have—it's that requirements officers came up with requirements here, there, and everywhere, and this thing built up like a Lego house, but it built up without an overall concept of where you're going.

I'm asking you to either confirm that or deny it or tell me you have a concept.

LGen Marc J. Dumais: The first point, Mr. Chair, is that the projects that are included in that $10-billion envelope, the 90-plus projects, are all projects that are driven by operational requirements. They're not C4ISR projects per se; they were derived from the requirements of the services as per the normal requirements process.

All of those projects that were cited were tagged because they have either a significant element related to C4ISR or some element related to C4ISR, because all those projects in some manner manage information or data. I'll give you some examples. One is the health information system, which is an automated system that will allow, in a classified environment, the handling of medical documents. We have under that the GPS program for the army, which is procurement of GPS capability. We have under that umbrella the Aurora upgrade program, which is for a CP140 anti-submarine warfare aircraft. It's a mid-life upgrade, but there are some significant elements of ISR in there.

But the upgrade is not entirely related to ISR. There are some elements related to communications and to the cockpit modernization and the mission computer, for example, and things of that nature. We have, for example, the red switch network, which is one of the projects listed. That essentially is a closed-circuit, secure telephone system that is used by NORAD.

So all those elements have an information dimension to them, but it really is C4ISR writ large in its broadest context. And of necessity, these projects are all generated from an operational requirement; they're not, as you say C4ISR driven. Some of these projects have been around for several years. The notion of C4ISR has matured inside the department. As I say, it's a concept; it's not a project per se. It's a concept whereby we want to, where it's appropriate, unify information management and sharing to allow a better and more timely and relevant decision-making by appropriate commanders at all levels.

So that concept has evolved over the last four years or so, and we now have some documentation, quite a bit actually, related to the command decision to support overarching documents and the campaign plan and the spiral plans for each element. I don't see a disconnect here. Increasingly—and we'll probably get into that with subsequent questions—there is a lot of governance in place to manage our capital program and all the projects. That's been in existence for many years, and it's in accordance with Treasury Board rules. And so we have adequate oversight of all our programs.

Increasingly now, the C4ISR has been articulated as a unifying concept for the Canadian Forces and DND. My intent is to ensure that programs that come up now must measure up to the C4ISR requirements in accordance with the amount of relevance of those particular projects to C4ISR.

Hopefully that answers your question.

● (0920)

Mr. Gordon O'Connor: I'm going to ask a different question, but my comment on what you just said is that essentially there isn't a C4ISR project as such. This is a bunch of projects, each of which has some element of C, or I, or S, or R, or whatever.

One of the other comments the Auditor General made was that $2.9 billion was spent on a number of these projects and these projects did not have, whatever you want to call it, official deficiencies—they were not approved deficiencies in the department—and in fact they proceeded without statements and requirements. This is what the Auditor General says.

I just wonder how you get the projects through Treasury Board. How can you get a project through Treasury Board if there's not a recognized deficiency or you don't have a statement or requirement?

LGen Marc J. Dumais: I would ask the same question. As I say, we have a very robust and mature defence management system in place. It's been there for many years, through senior review board, program management board, and ultimately through Treasury Board. Every project normally starts with a statement of operational deficiency and a statement of operational requirement. So there might be exceptions, but again when we're talking in terms of the $3 billion worth of projects, we're talking about the projects that have been around for several years and that to varying degrees have ISR components in them. And they are projects that were initiated by the Chief of the Lands Staff, Chief of the Maritime Staff, or Chief of the Air Staff for their particular operational requirements, and they follow due process. Nothing would get through PMB, project management board, if it wasn't adequately documented and justified.

Mr. Gordon O'Connor: I may have it wrong. I don't have her report in front of me, but my recollection is that she said something like that.

LGen Marc J. Dumais: That's correct.

Mr. Gordon O'Connor: I can only assume that she did it by checking documentation. Obviously, there's missing documentation for some of these projects.

LGen Marc J. Dumais: That's right. We would have to go to the project lead and project management for that particular project to find out why.

It's totally outside my purview, but I would assume that's the exception rather than the rule. We always start with that kind of documentation. What drives the genesis of project is a deficiency or a requirement.

Mr. Gordon O'Connor: Now that you're trying to apply an umbrella concept, and I assume that you want interoperability among the various projects, how are you dealing with risk? You're in a world where past experience shows high failure rates, large expenditures of money, and no result at the end.

LGen Marc J. Dumais: I won't necessarily acknowledge the high failure rates, because I'm not so sure what that would be based on.

There are two points I'd like to make.

Again, I'd like to come back to the governance issue. We have a good process in place to manage and provide oversight on our projects to preclude that from happening.

In terms of C4ISR projects and things, for example, we have the spiral development process in place for the campaign plan that we have for C4ISR. When we started that with the CF Command System, CFCS, about four years ago, it was relatively new and needed to be endorsed by Treasury Board, which they did. It wasn't the classic way for a project to evolve. We don't have a predetermined end-state in mind for the CFCS.

Mr. Gordon O'Connor: Excuse me. As you're answering the question, would you explain to the uninitiated what spiral means?

LGen Marc J. Dumais: That's what I'm getting to. It's an incremental development of a project or a capability, and it's done in incremental steps. In other words, you achieve funding for a particular evolution, you achieve that state, and then you move forward. A project incrementally evolves without predetermining what the end-state capability will be.

When you buy an army vehicle, you need a vehicle that can do A, B, and C. You do a comparison to find out which one best meets your requirements, and you prepare it. You know right at the outset that you're going to buy a vehicle.

There's no such thing as a C4ISR. You can't point to one and say that you'll take two boxes of C4ISR. That's now how it's shaped. C4ISR is a unifying concept for information. You evolve with time, experience, and the introduction of new elements.

The spiral process guards against that. In the past, in some cases of information management systems, they have defined the end-state that they wanted, and they've spent 10 to 15 years going through the procurement process. By the time they have procured the capability, it is already outdated. We all know how quickly computers evolve now, so you can imagine that if you lock in and 10 years later you deliver, it's going to be woefully out of date. That's only an example.

In terms of managing information and information systems, it's very important to be flexible. That process is endorsed by Treasury Board, and it's working very well for us.

● (0925)

The Chair: Thank you, Mr. O'Connor.

Before we go on, the committee may want to consider what we've heard from Lieutenant-General Dumais.

Mr. O'Connor, you made the point that the Auditor General said these projects went through Treasury Board without proper documentation. The lieutenant-general said he doesn't understand that.

We may want to bring people before us who would be able to tell us how that happened, such as the President of the Treasury Board and his officials. I'll leave that for your consideration.

[*Translation*]

Mr. Bachand, you have 10 minutes.

Mr. Claude Bachand (Saint-Jean, BQ): Thank you, Mr. Chairman. I'd like to welcome General Dumais and Captain Knight.

Since the beginning, I've been wondering how things would unfold and how the project would work. I find that there's a lot of money involved. Somebody mentioned $10 billion a bit earlier. Of that amount, as far as I know, $4 billion has already been spent. Is that right?

LGen Marc J. Dumais: First of all, I'd like to point out again that C4ISR is not a project per se, it's a concept. The concept involves, at most, $10 billion in individual projects that have been evaluated for very specific purposes, according to the needs of the three services. So it is not a $10 billion project.

Mr. Claude Bachand: It's a concept.

LGen Marc J. Dumais: It's a concept.

Mr. Claude Bachand: And it's evolving.

LGen Marc J. Dumais: Absolutely.

Mr. Claude Bachand: In order to follow this evolution, there's a need for two committees. I believe that you chair one of them.

LGen Marc J. Dumais: Absolutely.

Mr. Claude Bachand: There's the Joint Capability Requirement Board. Who chairs that? You?

LGen Marc J. Dumais: No, the Vice Chief of the Defence Staff does.

Mr. Claude Bachand: Do you mean Vice-Admiral Buck?

LGen Marc J. Dumais: Yes.

Mr. Claude Bachand: You chair the C4ISR Oversight Committee. Right?

LGen Marc J. Dumais: That's right.

Mr. Claude Bachand: What is the relationship between the two committees? Do you meet regularly? Is each aware of what the other is doing? How do you ensure consistency of information between the two committees?

LGen Marc J. Dumais: That's a good question. The C4ISR Oversight Committee, which I chair, attempts to unify C4ISR-related initiatives. The members of the committee are senior members: the chief of the land forces, the chief of the air force and the chief of the navy, as well as other people, both CF and non-CF, who are stakeholders in the evolution of the C4ISR concept. Together, we discuss and further the C4ISR concept.

The Joint Capability Requirement Board is a larger committee that looks at any CF initiative or project in the context of joint activities, not just C4ISR-related activities, although it often meets with Vice-Admiral Buck's committee. It is quite clear that our activities will have a critical role to play in the evolution of the concept of joint activities of the Canadian Forces. Vice-Admiral Buck's committee has a broader scope and deals with all aspects of interoperability.

Mr. Claude Bachand: Does that mean you deal with interoperability within the Canadian Forces, i.e., within the three services—army, air force, navy—and that General Buck deals with international interoperability, with friends like NATO, for example? Is that it?

LGen Marc J. Dumais: No. My area is C4ISR and interoperability within that area. The Joint Capability Requirement Board deals with all aspects related to joint activities and interoperability.

Mr. Claude Bachand: Can you describe the situation to us? Basically, in terms of information systems and the concept, as you call it, hopefully when an operation is underway in a given theatre of operations, the navy can communicate with the land forces and the air force. Today, we find out that a concept or project is being developed. There is nothing yet to integrate everything. Can you tell us where things are at?

● (0930)

LGen Marc J. Dumais: There is already some degree of integration. However, much work remains to be done to better integrate the army, air force and navy. The new defence policy statement that has just come out addresses that context. One of the aspects of interoperability is joint training. Because of a number of factors, it has not been possible to train together as much as we would have liked. In the past, there were exercises, such as the Maritime command operations training exercise. The three services —the army, the air force and the navy—would be brought together, generally on the east coast, to do an exercise. That is an example of the interoperability.

There will be exercises of that type this fall with the CF-18s. The tactical variation people always train with the army. The CF-18s will be training with the army in Wainwright in the fall. Through these exercises, we can move forward with our concepts and our doctrine of interoperability between the services. It is not that such interaction was impossible up to this point, but rather that it is always possible to improve on things. It will be necessary in view of the evolving context, as indicated in the policy.

Mr. Claude Bachand: The aim of your concept is really to ensure that, in a theatre of operations, all elements of the Canadian forces would be able to have the same information.

LGen Marc J. Dumais: Absolutely.

Mr. Claude Bachand: So the idea is to avoid the air force, the navy and the army each having its own system, which would lead to complications.

LGen Marc J. Dumais: Absolutely. Within Canada, we need to work together to be able to control our airspace, our land and Maritime approaches. There is interoperability up to a point. We want to improve it, of course, because we need to do so, but we are moving in the right direction.

Mr. Claude Bachand: Suppose that the three elements are taking part in an operation with NATO allies. I understand that things have a long way to go for that, since NATO is proposing an interoperability link that you do not seem to endorse. Can you tell us about the latest development in that area? If our three elements are able to communicate with one another, how will they also be able to communicate with our allies in an international theatre of operations, for example?

LGen Marc J. Dumais: There is an extremely high level of interoperability between our allies and ourselves. I can give you some examples. In Kosovo, the CF-18s led missions with colleagues from other NATO-member states. Our CF-18 pilots led 50 per cent of the operations in which they were involved. That shows maximum interoperability. To be able to lead a mission means that the concepts, doctrines and procedures are compatible enough to guarantee success.

The situation is the same with the navy. We have ships that are completely integrated with what we call a task group of the US 7 fleet in the Pacific. These ships are not an addition to the American task group but rather full-fledged members. So we have good interoperability with our allies on both the navy and army side. Of course, it is never perfect, since technology, procedures and doctrine all evolve. Things are always developing and evolving.

● (0935)

Mr. Claude Bachand: My last question deals with the spiral development method. When we last met with the Auditor General, I told her that I found the spiral idea a bit negative, because when you get into a spiral, you go down into a hole. She told me that there were 11 spirals. A little earlier, you mentioned four.

How can these spirals be controlled? Do they come one after another? Do they work in isolation from each other? If so, is there a clear vision of the objective? I would like you to explain the methodology behind the spirals. I am far from comfortable with this concept.

LGen Marc J. Dumais: Very well. To begin with, the spiral does not go down toward the ground, but rather up toward the sky.

Mr. Claude Bachand: I see!

LGen Marc J. Dumais: So it is a positive spiral.

Mr. Claude Bachand: It is upside down.

[*English*]

The Chair: That's the only one.

[*Translation*]

LGen Marc J. Dumais: It is simply a word to describe stage-by-stage evolution. There is a campaign plan that sets out the primary theme for each spiral, each stage of the evolution. These things are defined in advance in the campaign plan. These stages last six months, in order to complete each stage and ensure that the objectives are quite specific. As the Auditor General pointed out, more specifics can be added about the objective of each spiral, of each stage. So we are defining the objectives of each stage and trying to achieve the interim objectives every six months that will eventually lead to a vision laid out in the campaign plan.

Mr. Claude Bachand: Could we have the campaign plan?

LGen Marc J. Dumais: Yes, certainly. The Auditor General has a copy.

Mr. Claude Bachand: Could you provide a copy to the committee as well?

LGen Marc J. Dumais: With pleasure. We are now at the fourth spiral, since each one lasts six months and we started about two years ago. In a few weeks, I will be signing the plan for the fourth stage, and we will move on.

Mr. Claude Bachand: Thank you.

[*English*]

The Chair: Merci, Monsieur Bachand.

General, if you would just forward that information to the clerk, she will make sure it's distributed.

LGen Marc J. Dumais: It will be my pleasure.

The Chair: Thank you.

Now, Mr. Bagnell, please, for ten minutes.

Hon. Larry Bagnell (Yukon, Lib.): Thank you.

Thank you for coming. I'm delighted that you're here today, actually, because the Auditor General couldn't answer a number of my questions, which leads me to believe they were very narrowly focused. I would just like to broaden them a bit; there's some information I was interested in.

Communications—computers and everything—in the north is obviously even more of a challenge because of the distances and the limited coverage of satellites, at least historically. Now that it's a priority area in the new defence plan, I wonder if you could talk about the challenges and any projected improvements in communications in the north.

LGen Marc J. Dumais: Certainly. Yes, there is a greater emphasis on the north now, for obvious reasons, and there are several initiatives.

The Canadian Rangers are a key element of our capability in the north. They are our eyes and ears. In a way, they're a human sensor in the chain of C4ISR to provide information that is then fed back to us through Canadian Forces Northern Area Commander in Yellowknife. We are in the process of modernizing and updating the equipment the Rangers carry—global positioning system, new radios, and things of that nature.

In the space field, we have some very exciting initiatives that are under way related to capturing space information related to the north to give us more visibility upon the north. The intent here, the vision, is to tie that into the C4ISR concept so that this information can be manipulated and exploited to suit our needs.

Those are just two examples where from a C4ISR perspective we're enhancing our capability in the north.

We are mandated to do five company-level exercises a year up north as well. This year, I believe we've done three already. There are about 200 separate tasks that the Rangers do in addition to that, where they fan out and do patrols in the north. In fact, we just had a very successful one up to Alert last month. Those all contribute to having a presence in the north and ensuring that to the best of our abilities we have a sense of what's going on.

● (0940)

Hon. Larry Bagnell: Thank you. In fact, you answered one of my other questions, so I'll have to make up another one.

When you have something like a September 11, or even an unexpected disaster, you need a lot of interoperability, not just with our allies but internally with our own agencies; perhaps with the RCMP, or CSIS, or the Canadian Coast Guard. I wonder if you could talk about interoperability with other Canadian agencies.

LGen Marc J. Dumais: We have good interoperability with other agencies. We work regularly with the coast guard, for example, and the navy, and the SAR resources work with the coast guard on an ongoing basis. The RCMP works with our tactical aviation folks on an ongoing basis. We have good links from Ottawa here, from our National Defence Command Centre and also through J3 Continental, who is our ops officer for domestic issues. We have our liaison officers in some of those agencies—PSEPC, the RCMP, and others—and we have good relations there. Clearly, in this post-9/11 world, we need to continue to enhance interdepartmental activity.

We just did an exercise, in fact, a few weeks ago—TOP OFF 3—which engaged at the deputy minister level, and I believe even the minister level, the decision-making process with respect to a series of scenarios that were continental in nature.

That's a long answer to your question. Again, there is always need for enhancing and improving this, but we do have the fundamental links there, and we speak on an ongoing basis with our counterparts in other government departments, absolutely.

Hon. Larry Bagnell: You talked about space. I assume that also applies to increased information being achieved underwater.

LGen Marc J. Dumais: I can't speak to that one. That's more on the navy or maritime side, in terms of those sensors.

Darren, do you have anything else to add to that?

Capt(N) Darren Knight (Director, Joint Force Capabilities, Department of National Defence): Without getting into details of classified subject matter, there are sensors that can be positioned on the sea bottom that can help detect movement or activity, and we have projects like that on the books. As to whether such sensors would be placed in the Arctic, I can't say at this time, sir.

Hon. Larry Bagnell: Concerning this system that we just talked about, in the north you need some human resources, I would assume, to operate equipment. Is it possible or is it optimum to do it in Nunavut, when we have one regular troop, and in the Yukon and the other far west part, where there are only six regular troops?

LGen Marc J. Dumais: I'm sorry. What was the question?

Hon. Larry Bagnell: I'm saying, to operate the equipment—

LGen Marc J. Dumais: Where they're related to space?

Hon. Larry Bagnell: Related to just information of the whole system, of covering the whole country, if there are limited forces there to operate major equipment. Or can the Rangers do it all?

LGen Marc J. Dumais: When we're talking about C4ISR systems, that kind of thing...let's say we're talking about UAVs as a sensor that could be operated in the north. They can be programmed, and via satellite, operated remotely. That's the beauty of modern technology. You can have that long-distance approach to things. So you don't necessarily have to have resources in situ to be able to effect the mission that you want to do.

A classic is the way the U.S. was using its UAVs in Iraq. They were being flown from the United States.

● (0945)

Hon. Larry Bagnell: In our unfortunate incident in Kandahar, the friendly fire fatalities, were there any communications or interoperability problems that resulted in that and have now been fixed?

LGen Marc J. Dumais: Well, you're getting into the U.S. military issues there, and I really don't feel in the right position to comment on how they're going to address that. Certainly, from my perspective, the report that was issued by their investigation covered all the major points.

Hon. Larry Bagnell: Okay. Thank you.

The Chair: Thanks, Mr. Bagnell. There are two minutes in that slot, if somebody wants it. Otherwise, we'll pick you up later.

I told you there'd be a temptation to stray a little bit, but we're all subject to that, too, not just Mr. Bagnell. We're all guilty at times.

He's a good riding politician. He takes care of the Yukon.

All right. The second round is for five minutes. We'll start with Mr. MacKenzie, please.

Mr. Dave MacKenzie (Oxford, CPC): Thank you.

One of the deficiencies noted in the report indicated a shortage of about 700 personnel. Is there a plan to bring that up to speed with proper personnel?

LGen Marc J. Dumais: Do you mean a 700-personnel shortfall in the C4ISR context?

Mr. Dave MacKenzie: Yes.

LGen Marc J. Dumais: I don't recall seeing that particular figure, but we've often cited lack of personnel as one of the major limiting factors in carrying on with our C4ISR capability. So whether it's 700, 800, or 900 people, it's still a problem.

Mr. Dave MacKenzie: What is your plan to recruit the particularly skilled people for that?

LGen Marc J. Dumais: There are several elements to that. We do have a plan now, as directed by the government, to expand by 5,000 regular force and 3,000 reservists for the Canadian Forces. Some of those people would assist in the C4ISR realm in one fashion or other.

In terms of general capacity to manage information inside the Canadian Forces, that is a deficiency. It's a challenge because, obviously, this is a burgeoning field, and we're confined by our current military operational structure, our trades structure, inside the Canadian Forces.

So there's been a thing called the MOSART—Military Occupational Structure Analysis, Redesign and Tailoring—project that's been working through the assistant deputy minister for human resources, military, to review our military structure to ensure that it's flexible and is modified to meet today's and tomorrow's needs. Obviously, we have a big stake in ensuring that they cover the requirements of information management and information exploitation in the future. The project members sit on the C4ISR oversight committee, so we have good dialogue going on there, and they're going to be part of the solution.

For the time being, we rely on some of our experts—sensor operators, for example, on AWACS, Airborne Warning and Control System aircraft, or on our CP140 Auroras, even our Sea King sensor operators, or the maritime specialists. The navy has a great deal of expertise in sensor operation. We have intelligence analysts. We have all sorts of people with the required skill sets. But they are in demand. It's a question of sharing them. And of course you don't just recruit a new private who has those skill sets; you have to grow them and train them, so that takes time.

Mr. Dave MacKenzie: There must be some of those people out there who are not in the military.

LGen Marc J. Dumais: They tend to be retired military. Clearly, there's a role for people in uniform and public servants who are part of DND. It's a team approach in Defence. Both the military and civilian components of DND are part of the solution. But it's a highly specialized field, and it deals with essentially managing highly classified or sensitive information for the security of the country, so it has to be managed inside DND.

Mr. Dave MacKenzie: One of the things you mentioned in your opening statement is that our allies utilize the same kinds of systems. Have we looked at those systems?

● (0950)

LGen Marc J. Dumais: Again, it's not a system per se, it's a concept. With our allies, we're all in various stages of evolving our own C4ISR concepts. We sit on multinational committees. We share information with our allies, because it's a key element of interoperability, but these are national systems, ultimately. You have to be careful before you share the information that resides within a national system with other nations.

There are national solutions to national requirements. When we get together in a coalition, how do we allow information sharing? We talk about that collectively.

So there are various elements to the solution. There's process. There's technology. Nowadays the technology is becoming very powerful and is allowing us to perhaps have our cake and eat it too, protect our national interests and our national systems, but still have firewalls and processes for sharing certain tagged information.

Mr. Dave MacKenzie: Maybe I didn't ask it properly, but what we're saying is that this book is going to contain all the information. We're not going to share it with everyone else; but to get to the book, the Americans have to have interoperability between their services, and the Brits have to. That's what we're aiming for, the same kind of thing, correct?

LGen Marc J. Dumais: Yes. Again, it's important to understand that when we talk about interoperability and C4ISR, we're not talking about technology only. Technology is one of the elements, but really it's about information sharing. It's really human interaction.

There's a human dimension to this. There's a process dimension to this. There's a doctrinal and training element to it. We were talking about the human dimension earlier. You have to have highly skilled people who know what they're doing in terms of managing the information.

So it's much more than technology. Again, this needs to be driven by the operational need, not the technology.

Mr. Dave MacKenzie: How much of the $10 billion we're talking about here, then, is personnel and how much of it is technology?

LGen Marc J. Dumais: Capital programs make up most of that $10 billion, so it's mostly equipment and technology, but they're not all C4ISR per se. They're all projects that have an information dimension to them, but that will contribute to varying degrees to the concepts of C4ISR, depending on what the project is.

Mr. Dave MacKenzie: Thank you.

The Chair: Thank you.

Thank you, Mr. MacKenzie, very much. Your time is up.

Now we have Mr. Rota for five minutes, please.

Mr. Anthony Rota (Nipissing—Timiskaming, Lib.): Very good. Thank you.

Thank you, General, for being here today.

One thing that's very difficult to convey and sometimes sell is a concept. I understand the concept is a difficult thing for you to explain today, but in the field of project management, we have some very concrete steps to take, very concrete areas to measure. I was reading through the report and found it disturbing that about 72% of the C4ISR enabler and related projects were missing documentation and the ability to review, or to find out exactly where we're at. I understand that with the spiral process we don't really know where we're going, but how do we know where we're at, so we can take the next step?

My concern is that we're doing research, and it seems like pure research—it's not so much R and D—in that we are doing something that someone would do in their basement, or in their garage, or even in a government lab, developing some kind of concept, but not really knowing. Something may pop out or it may not. But they have confines. My concern is that within the military, we have set dollars and we meet set outcomes. What steps are being taken so that we can actually have something concrete by the time it's done?

LGen Marc J. Dumais: There are multiple dimensions to your question here.

Mr. Anthony Rota: Sir, I just thought I'd get them all in and then let you answer, rather than go back and forth.

LGen Marc J. Dumais: It is a challenging subject.

We don't have any missing plans per se. For each spiral we have sub-elements that we address. There was a perception that there would be a plan for each one of those. Activity was initiated in each of those areas, for the particular spiral commented on, but that didn't necessarily result in a report. For example, one was to initiate a website. That was done, so we have the website as the end result. There's no documentation missing per se.

Now, as was correctly pointed out in the Auditor General's report, we do need to articulate more clearly specific goals for each spiral, for each phase, so we can measure how we're doing, and I will endeavour to enhance that. But the issue of documentation missing is not really the way to describe the process we're undertaking, because it didn't really come down to that.

● (0955)

Mr. Anthony Rota: My concern is that you're basing yourselves on the step you've taken in order to take the next step. Correct?

LGen Marc J. Dumais: Right.

Mr. Anthony Rota: If you don't have it documented and don't know where you're at, how do you determine where you're going for the next one?

LGen Marc J. Dumais: We do have a plan for each spiral, but I think the issue was around sub-elements of that particular phase. Each spiral has a plan, a binder, a document. We need to follow through better on articulating objectives and specific goals for each of those phases, and then documenting achieving those and measuring that, and that we will do.

It's important to note that the first two spirals were in the very early stages of the development of that concept, so there was a little bit less precision around them. Certainly spiral three had more definition to it, and spiral four, which I will sign shortly, certainly will have even more.

I'm just trying to reassure the committee that we are endeavouring to ensure we have—and we do have—documentation for the overall campaign plan and for each of the spirals. We will endeavour, as pointed out in the report, to better articulate specific goals for each spiral and be in a position to measure how we're doing in that evolution.

Mr. Anthony Rota: Now, these spirals—they are spirals that come together at some point; they're not silos that keep going up individually, down the road, and then—

LGen Marc J. Dumais: No, they're a series. Each one is a step along the journey. They complement one another. They're building blocks. We're building on the previous work and developing greater and greater capability in the C4ISR realm as we evolve this.

Mr. Anthony Rota: Have I got a few more minutes?

The Chair: Yes.

LGen Marc J. Dumais: Did you want me to comment on the R and D issue as well?

Mr. Anthony Rota: Please, if you don't mind, yes.

LGen Marc J. Dumais: There are very close links between the work that we're doing and the R and D element. Research and development is a very key component of this. You were talking about raw research, which can be costly. That's in the realm of Defence Research and Development Canada, DRDC, but there are elements that, once that initial research is done, get more into the R and D, the development portion of it.

We have technology demonstration programs that we implement for promising technology. Those are funded through the assistant deputy minister, science and technology, through the DRDC, as I indicated. They work very closely with us so that we pick the right projects to develop, hopefully, with the end-state of having some operationalized outcome that we can roll into our C4ISR concept. So that's being managed within the confines of the budget they have for research and development, and I'm satisfied that the proper controls are in place there, certainly from the DCS perspective, in terms of how that contributes to C4ISR.

Mr. Anthony Rota: What is your outcome in the research? I get the concept that it is exactly that, somebody in a lab who enjoys research or someone in a garage who likes to putter, but there's no real end product that we're trying to develop towards.

LGen Marc J. Dumais: I can't speak to the research part, the lab work, because I don't see—

Mr. Anthony Rota: In the development, they both come together when you're putting something together for the end result. You have to have a vision of where you want to be, but you have some kind of concept that you know you want. It just seems that it's loose; it's not really tight.

LGen Marc J. Dumais: In terms of C4ISR, the work they do on our behalf is very much either linked to the army, air force, and navy initiatives in C4ISR or contributes to the work that we're doing. It's very closely intertwined, and their work is to validate and enable some of the things we're trying to move forward. So there is no disconnect there.

I'm not talking about research; I'm talking about the development part of it and the technology demonstrator programs we have. They're part of the team, and they contribute immensely to the developments and the successes that we're having.

The Chair: Okay, thank you.

Thank you, Mr. Rota.

● (1000)

[*Translation*]

Mr. Desrochers, you have five minutes.

Mr. Odina Desrochers (Lotbinière—Chutes-de-la-Chaudière, BQ): Thank you, Mr. Chairman.

Good morning, Mr. Dumais and Mr. Knight.

Last week, when the Auditor General came before the committee, she was not terribly optimistic about the possibility of your achieving the objective of your concept — since we cannot call it a project. She told us that you should take steps to obtain better results. In her opening remarks, she also told us that the department had created a committee to evaluate the projects, but that too many projects were not submitted to the committee before being approved.

You are talking about this spiral approach. With two military men at the table this morning, I would have expected greater rigour in your comments and a bit more clarity about how this concept works. Regrettably, every time we have officers from the Canadian Armed Forces here, it is to discuss findings about things that unfortunately are not going very well.

There are 91 projects. You said that the three services work in different ways and that two committees monitor the projects. Given what the Auditor General has said, do you not think that there has been a lack of serious preparation regarding this concept? It is now 2005 and, from what she said, the required doctrine has not yet been developed.

I find, as you say, that the structure is somewhat inadequate. The army is usually highly structured. Why, for such an important project, does it seem that this structure is lacking at the outset, that serious thought has not been given to the project, the concept or the spirals? This morning, you sound more like a meteorologist than a military officer, Mr. Dumais. Let us be clear about that.

LGen Marc J. Dumais: Thank you for your question.

In your comment and question, you have covered everything. I have to admit that, from the outside, it can look like a big ball of wool. However, I can assure you that there are a lot of structures and a lot of control measures in place for the management of our projects in general.

To begin with, you said that some projects were not passed by the Joint Capability Requirement Board, or JCRB. The Board was created five or six years ago, and some projects were already underway at that time. Since the Board was established, however, all projects involving joint capacity in any way have been submitted to it. The idea is to ensure that, from an operational standpoint, the projects support the collective objective of developing joint capability and interoperability. So I believe that the right structures are in place.

Once again, of these 90 or more projects, not all have come out of the C4ISR development framework. The army, air force and navy each have their own particular needs. These projects address interoperability and C4ISR requirements to a greater or lesser degree. So the board that I chair exist to provide governance and oversight and ensure that the projects that have been implemented over the past three or four years are increasingly linked to our long-term vision.

That may seem a bit vague to you, because it is impossible for us to demonstrate C4ISR in a room like this. It is not something that exists, it is a concept of which all the aspects—sensors, networks, procedures, computer systems, staff—are harmonized and synchronized to improve the distribution and use of the information.

Mr. Odina Desrochers: Will it work?

LGen Marc J. Dumais: It does not have an end point. It is always evolving. It will never be possible to say, for example, that we will reach our objective into 2010, because missions will evolve, as the international environment and the tasks and challenges facing us. Technology will open new doors for us that may make it possible to do things that we would never have thought we could do. Our experience as a whole will enable us to continue to evolve in that direction, but in a context where we ensure that all elements will contribute to better interoperability.

● (1005)

Mr. Odina Desrochers: Since you are talking about evolution, will the costs increase? With $10 billion, will you be able to implement your concept properly?

LGen Marc J. Dumais: Take the example of the modernization of the Aurora, a Canadian Forces' aircraft tasked with antisubmarine activities and, increasingly, ISR. Money was spent to modernize Aurora. Because that is a valid project in itself, part of the $10 billion goes there.

Mr. Odina Desrochers: I have one last question.

Could you provide us with the breakdown of the cost? We understand from you that there are a lot of projects, that a lot of information is distributed and that a great deal of money is invested. However, we do not know how it is allocated. You mentioned the modernization of a plane. You were talking earlier about computer technology and a communication system. Is there already an expenditure plan for your overall envelope of $10 billion that could help the public feel more comfortable?

LGen Marc J. Dumais: Once again, there are procedures in place that do not come under me. The deputy chief of staff is responsible for managing the Canadian Forces capital program. All projects come under the budget envelope for the acquisition of new capabilities. It is called the National Defence Strategic Capability Investment Plan. The plan is reviewed regularly to ensure that the projects being proposed are financially feasible within the funding envelope and that they have maximum impact on improving our capability and carrying out a mission. Everything is managed very carefully.

Mr. Odina Desrochers: I would like to make a brief comment, Mr. Chairman.

The Chair: Be brief.

Mr. Odina Desrochers: Given what we have just heard, perhaps we could invite the person who could give us a breakdown of the costs. I would like to make that suggestion.

[*English*]

The Chair: Yes. I think you read the minds of all of us, actually. We'll do that through General Dumais. If we can, we'll get something tabled at the committee that would detail what you just spoke to.

LGen Marc J. Dumais: We do have a list of the ninety-odd projects that were considered in the Auditor General's report. That was an annex in the report, wasn't it?

Capt(N) Darren Knight: Sir, we have a table, but are you referring to the strategic capabilities investment plan, and you would like to see a copy of that? Is that what I understood?

The Chair: Is that exactly what you're looking for, Monsieur Desrochers?

[*Translation*]

Mr. Odina Desrochers: Yes.

[*English*]

The Chair: Thank you very much.

Mr. Martin, please, for five minutes.

Hon. Keith Martin (Esquimalt—Juan de Fuca, Lib.): General Dumais and Captain Knight, thank you for being here today and for your hard work. I appreciate your presence.

The C4ISR is a bit like evolution. It seems like it will go on in perpetuity—and must, by its very nature.

One of my questions is on the technology gaps we have, particularly with the U.S. In order to meet them, with technology changing at a geometric rate, are we buying our technology off the shelf to save money or are we trying to devise this in-house through our research wing?

LGen Marc J. Dumais: That's a good question. To the extent we can, when it's possible for security and other reasons, we procure what we call COFS, commercial off-the-shelf. There are some hardware systems and software packages that exactly meet our needs or are close enough that they're the cheapest way to go, including for the service aspect and the upgrades. For every project, for every requirement, different options are explored, and if there's an easy road to take that is less expense, that meets our requirements, and that meets the laws of the land, obviously we'll proceed down that path, for sure.

Hon. Keith Martin: As to the tactical data links your commanders have to use in the field, are we in this process pursuing C4ISR with a view as to what our technological capacities with our allies are—Britain, the U.S., and others—so in the field we do have that technological interoperability that is so essential to your commanders in the field?

● (1010)

LGen Marc J. Dumais: Absolutely. Many of these projects originate at the tactical level through a need or a deficiency that's identified within the army, air force, or navy, so when we look at options for addressing that gap, it's very much in the context of interoperability.

For example, Link 11 and Link 22 are data-sharing protocols and capabilities used between fighter aircraft and ground stations or between ships and a maritime helicopter or an Aurora. That's why we're modernizing those platforms, so we can keep up with the current technology that's become the standard protocol. If we don't keep up with that technology, we will be out of the game, because we will not be able to link up and talk and share information with our allies and with each other. Clearly, when we go down those paths, we have to get systems that are interoperable with our allies' systems.

As you pointed out earlier, the Americans are big drivers in this because, obviously, they lead in a lot of that technology. So it is a question—not in all cases but in many cases—of making sure we remain compatible with our allies, because the British and others also want to be in the game. There are NATO committees, working groups, that work on these issues day in and day out to try to find standards and interoperability requirements so all the NATO partners, for example, are on the same page and on the same frequency, literally, when we're doing things. So there's a lot of that coordination going on.

Hon. Keith Martin: Thank you.

On the issue of personnel, which we mentioned to the Auditor General, she mentions in her report the deficits our armed forces have, and indeed the public has done so too.

With the average CF member leaving at about the age of 36, are we approaching those who are leaving the Canadian Forces, those we need, those who have the skills or who can be trained to acquire the skills we need? It's because in her report she states very clearly that a lot of the capabilities are going to be found among senior officers. Is there a formal process where we ask those who are about to leave, will you stay on as a reservist or would you be willing to be rehired to work in the forces in a certain capability? Is there a formal process where we ask those people?

LGen Marc J. Dumais: You're correct, it takes years to grow that kind of expertise in both the officer corps and the senior NCM corps in certain classifications. Obviously, retiring from the regular forces is a personal decision. But that doesn't mean they're necessarily lost to us; they can come back as public servants or reservists. Many of them do. Increasingly, as we try to expand our capacity, we will need to tap into these people. That's a process that goes on continuously.

We know who our recent retirees are, and they're never far from our minds as we try to retain certain expertise. We're not always successful, because these people are highly valued and sometimes go to the private sector to pursue careers in related fields.

Hon. Keith Martin: General, I'm glad you said that. I think there is an enormous opportunity here, given the youth of our retiring CF members and their extraordinary capabilities. Before they go out into the public sector, we should at least ask them to rejoin as reservists and use their capabilities. I was pleased to hear you're doing this.

The Chair: Mr. Casson.

Mr. Rick Casson (Lethbridge, CPC): Thank you, Mr. Chairman.

With respect to funding, the Auditor General pointed out that in some years you're going to spend 40% of your capital budget on this project. When does it switch from being a capital investment to being an operational project?

I agree with you that it'll constantly evolve. All businesses or organizations face this with IT equipment. You just have to do it if you're going to stay in the game. At some point, though, it should become a base budget issue, with so many dollars a year to upgrade.

It seems to me that relaying information reliably, accurately, and quickly is going to be critical to the defence of our country. We are going to need to know what's happening second by second. An ongoing project like this looks like a can of worms, with everything going in all directions and nothing to bring it all back. Being able to talk to our other emergency organizations in Canada, the ability to be part of NORAD and NATO, the capacity to talk to each other in different parts of our own defence establishment—it seems there's no way to impose a rationale or direction on it. All of these things cannot possibly go on at once and come to a conclusion on a timeline.

You're doing the best you can with what you've got, but it seems to me that there are no definitive answers to some of these questions. At some point, this snowball has to turn into something; it just can't keep rolling along.

● (1015)

LGen Marc J. Dumais: I understand and appreciate your concerns about this.

Again, looking at it from a distance, it might look like a can of worms, and perhaps there was a time before we set up some of our governance structures, 10 or 15 years ago under the Cold War approach, when the three services acted very independently. That was the nature of the beast at the time. One of my jobs is to corral those worms and get them to all line up and focus, to the extent required, in the right direction. We have achieved a lot of success in that.

It's important to appreciate that when we talk about C4ISR we're not talking about a project per se. That's, I think, part of the hang-up with this. It isn't one single initiative. It's really a way of doing business, a concept, a journey. It's the idea of articulating that we want these particular elements to all eventually contribute to better situational awareness and sharing of information and allow us to make more timely, informed decisions.

It's important to note that we are conducting operations using C4ISR capabilities now. My previous job was in Winnipeg as the commander of 1 Canadian Air Division and Canadian NORAD Region. The NORAD context is a shining example of how C4ISR, as a concept, works extremely well. We spoke about having to make decisions in a question of minutes. That's exactly the case in scenarios since September 11. We have what we call a weapons system in that whole command and control system from Cheyenne Mountain or NORAD headquarters in Peterson Air Force Base in Colorado, through Winnipeg, through the Canadian NORAD Region, through the Canadian Air Defence Sector in North Bay, and back up across to the Chief of the Defence Staff, and ultimately to the Prime Minister. We have technology, trained people, doctrine, check lists, aircraft, and all the support that goes with that all lined up to execute that mission. That is a good example of how C4ISR works.

We've introduced technology very effectively there, everything from chat lines to having automated check lists that can be shared, a common operational picture, which is really a visual portrayal of what's happening. With the technology we have and the connectivity we have—the C4ISR we have—we are able to share that between North Bay, Winnipeg, and Ottawa so that we can make timely and informed decisions.

No system is absolutely perfect, but that system just shows the potential of C4ISR, and it's here now.

On the east and west coasts we have maritime operations centres that have been active for quite a while. In fact, the maritime system is really one of the early building blocks of our CF command system that we're developing here. The navy has a very good maritime picture of what's happening at sea, and that contributes to their situational awareness and their decision-making processes on both coasts. Those are going to be evolved in the course of the defence policy statement. They already are inclusive of other government departments, but that will be expanded and they will be the lead. For example, there's going to be a similar system, or a C4ISR system if you want to say that, set up in the Great Lakes region to monitor that part.

So C4ISR is an enabler that allows commanders to have the right information to make decisions, and that happens now; we have C4ISR now. But the technology is evolving. The requirements are evolving. The need for greater interoperability in the domestic environment and in international settings is evolving.

So we have to increasingly ensure that everything we do keeps in mind the need to be compatible in terms of sharing information where it's appropriate. We have the mechanisms in place, the governance structures in place, to ensure that our needs are well articulated and continue to be well articulated and contribute to the overall vision of C4ISR as a concept.

It isn't bleak by any stretch. In fact, we're rather proud. Captain Knight has really taken this quite a way, and he'll be the first to say it's a team effort and involves not only his own staff, but also the staff in other organizations inside National Defence Headquarters. We have come a long way in the last four years since we first articulated the vision from the three CDSs and the DCDS, and we are what we call operationalizing this. It's come a long way and there are some very exciting developments that will occur in the future.

● (1020)

Mr. Chairman, if I might be so bold, one option might be for you to make a visit to our National Defence Command Centre, NDCC, and get a firsthand view of what we have developed to date.

The Chair: Good idea.

LGen Marc J. Dumais: That might go a long way. And if you ever have the opportunity to go to Winnipeg or to either coast, you need to drop in at the operation centres and see what's available to them there.

The Chair: General, we'll be doing some extensive travel in the course of our defence review work, so we'll certainly keep that idea in mind. It's a good idea.

Last question, Mr. Casson.

Mr. Rick Casson: There's just the issue of the funding, whether it's operational or capital. You're using up on this project a big whack of the capital money available to you, and it doesn't seem to me like it's all capital. It's operational, an ongoing, year-to-year thing. It's going to be there forever.

But perhaps you don't get into the finance end of it.

LGen Marc J. Dumais: The responsibility for managing the strategic capabilities investment plan, SCIP, which is our plan to prioritize our projects within a finite envelope, belongs to the Vice Chief of the Defence Staff. They have a good process in place to prioritize different needs. We can never afford everything that we want, but we make sure we spend our money on the things that are most critically relevant, the most important enablers that allow us to transform and evolve.

Again, $10 billion sounds like a big number, or it does to most of us, but it's spread out over 15 years, as well. The annual increments are not unreasonable, or are not inappropriate. They're referring to individual projects. It's not just all to a C4ISR project but to various projects that, to varying degrees, are going to be enablers and contributors to C4ISR. But all of those projects are deemed critically important to the project leader, whoever is the sponsor for those—for example, the chief of the air force, or the army, or the navy—and they want those things, they need those things. My job is to make sure that any elements of those that involve information, if it's appropriate, be interoperable and compatible so that they can plug into our network and can share with us the information that we need to have.

The Chair: Thank you, Mr. Casson.

Maybe we'll pursue this at another time, but I think I get my colleague's point. I don't know what the budget purists would say, but when you think of capital, you tend to think of something that eventually is going to be moved off the capital list, be accomplished. We're talking about an evolutionary system here, really. I see his concern; you'd almost think that at some point that would move into program.

But we can pursue that at another time, unless you have comments now.

● (1025)

LGen Marc J. Dumais: Again, just to clarify, each of the projects on that list is a project, a bona fide project, and each will come to fruition. They are capital programs.

The Chair: Right. So it's just a never-ending series of capital projects.

LGen Marc J. Dumais: But when that project comes online, when the Aurora finishes its modernization—and the cost is quite significant, at well over $1 billion, I believe—it will have some state-of-the-art, world-class intelligence, surveillance, and reconnaissance capabilities. That will contribute to our information-sharing construct and will contribute to enhanced situational awareness and decision-making capability. We'll have the right information. We'll be able to send an Aurora up north, or to Africa, to do a surveillance or reconnaissance mission, and through satellite links be able to download current photographs of the situation on the ground, which could help us and the commander in theatre make appropriate decisions.

So that's how this is going to work.

The Chair: I appreciate that. And we can continue to pursue this, too.

We have two more colleagues with questions, Mr. Rota and Mrs. Gallant. Then we have some other work to do.

Mr. Rota, five minutes.

[*Translation*]

Mr. Anthony Rota: Thank you, Mr. Chairman.

I heard what Mr. Desrochers had to say about the answers that we had been given. It was really about a business plan and a vision. You tried to describe the military vision and make it more of a management project than anything else. As Mr. Casson said, it is not really a capital project, but a management project.

[*English*]

Listening to Mr. Casson just brought everything together. I had a bunch of points here, but what it comes down to is, are we trying to make a project out of just plain management? For the military, if these are just plain management principles, maybe we should be looking at a business plan, as opposed to taking all these projects and trying to fit them in where they don't belong.

Am I looking at this in a jaded way? Am I being cynical? I'm just trying to figure out where we're going with this. I'm seeing the management group trying to figure out where we're going, looking at the best tools to fit into our organization. Are we taking everything and trying to put it into one project, as opposed to trying to fit each element into a management style?

LGen Marc J. Dumais: The individual tools you refer to are deemed to be essential by the Canadian Forces. That's why they are in the defence management system. That's why they're in the strategic capabilities investment plan, and that's why they're funded and being implemented. We are trying to corral the information dimensions of these projects. Rather than being stand-alone, stove-pipe projects and capabilities, we want them to contribute to the broader C4ISR concept and vision.

If you want to call that a management function, I guess we could. But we come at it from an operational perspective. The whole intent is to enhance the operational effectiveness of commanders, from the Chief of the Defence Staff all the way down to the commanders in the field. Their information requirements are all different. What the Chief of the Defence Staff needs to make his decisions is different from what the tactical commander in the field needs. It's a complex challenge to have the information residing where people can access it. Otherwise, we can get bombarded by information to the point where it's not contributing to our decision-making capability.

It is like harmonizing, synchronizing various initiatives. Many of them have been in place for some time. The new ones need to go through the rigorous process we have had for the last four or five years to ensure that they are joint in concept and interoperable in execution.

● (1030)

The Chair: Mrs. Gallant.

Mrs. Cheryl Gallant (Renfrew—Nipissing—Pembroke, CPC): Thank you, Mr. Chairman.

In regard to that friendly fire incident that Mr. Bagnell mentioned, I didn't hear the beginning of your response.

The Chair: The general didn't respond. Mr. Bagnell had strayed pretty far from why the general is here. I want to keep it to chapter 4 of the Auditor General's report.

Mrs. Cheryl Gallant: I only wanted to know whether there had been communications between our people and the Americans. Had there been a problem?

LGen Marc J. Dumais: The question was whether things been rectified. I said that this was an American issue.

The Chair: That's my point.

Mrs. Cheryl Gallant: Do we already have interoperability in theatre for that kind of communications?

LGen Marc J. Dumais: There are projects in place—combat identification, for example—to help all the elements in a theatre to know where all the allied forces are. We are using technology to enhance our situational awareness. This is a project that's been in the works for some time.

Capt(N) Darren Knight: That's correct.

Mrs. Cheryl Gallant: And this is part of the C4ISR?

LGen Marc J. Dumais: Yes, it would allow a better situational awareness of where our own allied forces are on the battlefield. We're moving away from what we used to call a linear battlefield, where you have a front with the good guys on one side and the bad guys on the other. In places like Iraq and Afghanistan, insurgents can pop up anywhere. So you need to have better knowledge of where your own forces are in relation to the bad guys. So that's the idea behind this combat ID.

Mrs. Cheryl Gallant: With respect to NORAD, has C4ISR had to make any adjustments in communications, given that there is a limit to the sharing of information now that Canada is excluded from the BMD program?

LGen Marc J. Dumais: Do you mean in the NORAD context?

Mrs. Cheryl Gallant: I mean in the context of NORAD communications.

LGen Marc J. Dumais: NORAD is a long-standing organization. It's binational, and that continues.

Mrs. Cheryl Gallant: Have you had to make any shifts as a result?

LGen Marc J. Dumais: No. There's a new structure that has been in place for a few years in the United States called Northern Command. In part, we're standing up Canada Command, as mentioned in the defence policy statement, primarily to enhance operations in the Canadian context. It would allow enhanced liaison with United States Northern Command.

On the NORAD side, which is aerospace surveillance and control, that entity continues and hasn't changed at all.

Mrs. Cheryl Gallant: Okay. In terms of emergency preparedness, this used to be under the umbrella of the Department of National Defence, but situational awareness is very important in disaster situations. Are provisions being made for linkages with our public security system, and the ministry as well, or is this strictly confined to defence contacts?

LGen Marc J. Dumais: You raise a very good point. We will increasingly have to enhance our interoperability with the other key government departments that sometimes have jurisdiction in terms of domestic situations. For PSEPC, the RCMP, CSIS, and provincial and municipal levels, over time we need to somehow enhance our connectivity with those organizations so that we can have a pan-government response.

In domestic situations, more likely than not, we're not the lead agency, unless we're deemed to be. It would be PSEPC, Fisheries and Oceans, or the coast guard, depending on what's happening. We're there to assist in any way we can or in any way we're asked.

We have some capabilities that we can bring to the table. Part of our vision for C4ISR is to enhance the interoperability with other government departments. There is some of that now, but it can always be improved and it needs to be improved.

Mrs. Cheryl Gallant: Thank you.

The Chair: Thank you, Mrs. Gallant.

She didn't have an opportunity before, so the final question is to Mrs. Longfield, please.

Hon. Judi Longfield (Whitby—Oshawa, Lib.): Very briefly, in regard to the work of the binational planning group and their movement towards a NORAD type of maritime thing, is C4ISR involved in that? Are you looking at that? How close is our cooperation?

● (1035)

LGen Marc J. Dumais: As I said, the defence policy statement speaks about Canada Command.

Hon. Judi Longfield: Yes.

LGen Marc J. Dumais: We're standing it up to deal with domestic command and control issues and operations. The interface will be between Canada Command and Northern Command in the United States. Right now the binational planning group makes the link between USNORTHCOM and the Canadian Forces here in Ottawa, but with the stand-up of Canada Command, that will be enhanced.

There's discussion going on now about how the interface between United States Northern Command and the Canadian Forces will evolve. On the air side with NORAD, its fairly well-established, but we need to ensure that we have a continental approach to our maritime approaches and are able to interface between our land forces as well, to deal with a domestic situation, a natural disaster, or whatever it may be.

We had agreements and plans in place. We had the combined defence plan. Obviously, with a stand-up at USNORTHCOM and the increased focus on domestic security, it needs to be further enhanced. That will evolve with Canada Command and whatever the binational planning group evolves into. There will obviously be a C4ISR concept to that because we're talking about information sharing between Canada and the United States. There's always a need for further enhancement.

The Chair: Thank you.

Thank you, Mrs. Longfield.

Lieutenant-General Dumais and Captain Knight, thank you very much for being here. Thank you for your good work in the service of the country. We look forward to the information that you're going to send us. We'll no doubt talk again, and we look forward to that.

Thank you very much.

LGen Marc J. Dumais: Thank you, Mr. Chairman and members. You have an open invitation to come to our National Defence Command Centre any time you wish.

The Chair: We'll take you up on that.

Thank you very much.

LGen Marc J. Dumais: Thank you.

The Chair: Committee, we have a couple of items of committee business before we conclude. Let's go through them. We'll go in camera.

[*Proceedings continue in camera*]

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