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Informing Strategic Decision-Making on Force Posture and Readiness

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Abstract

We explain how we used a combination of strategic analysis and operational analysis to inform decisions on the Force Posture and Readiness (FP&R) of the Canadian Armed Forces (CAF). Force posture characterizes elements of the CAF in relation to the roles and missions outlined in Canada's defence policy, whereas readiness represents the preparedness of these elements to respond to government direction in a timely fashion. First, we describe a strategic outlook process that identifies challenges and threats likely to emerge over a five-year horizon. This process generates a body of literature that serves as the analytical basis for setting FP&R direction. Second, we describe the Strategic Managed Readiness Tool, a database application that we developed to improve how FP&R is managed by and reported to CAF's leaders. The application is a means of systematically articulating CAF's missions and tasks, linking them to force elements, and identifying risks of not being able to meet readiness requirements.

Introduction

Armed forces strive to be ready to deploy effective capabilities, whenever and wherever they are required. In Canada, the Chief of the Defence Staff (CDS) is the principal military advisor to the Government of Canada and is responsible to provide direction on the Force Posture and Readiness (FP&R) expected of the Canadian Armed Forces (CAF). Force posture characterizes elements of the CAF in relation to the roles and missions outlined in Canada's defence policy [1], whereas readiness represents the preparedness of these elements to respond to government direction in a timely fashion.

The Strategic Joint Staff (SJS) provides military advice, analysis and decision support to the CDS, including the task of assisting the CDS in setting FP&R direction and issuing an annual FP&R Directive that provides direction to the CAF for a horizon of zero to five years (Horizon One). The CDS Directive for FP&R [2] aims to establish a clear relationship between the Government of Canada's defence policy, operational requirements, and CAF's readiness to meet them. It is the primary mechanism through which the CDS directs the CAF to prepare for contingencies, support ongoing commitments, and apply resources to ensure delivery of military capability when and where it is needed. The SJS must periodically report to the CDS on how well FP&R requirements are being met, based on information it gathers from different components of the CAF and the Department of National Defence (DND).

Issues

The provision of FP&R direction to the CAF requires a deep understanding of the strategic environment and how it is expected to change over Horizon One. Until recently, however, CAF's strategic analysis efforts were mostly focused on the long term (beyond 10 years), for instance in characterizing the future security environment [3] for force development purposes. There was no credible, rigorous and systematic means of analyzing the near-term strategic environment to inform the CDS's direction, especially as it pertained to FP&R.

Furthermore, the mechanisms used to manage FP&R once direction was issued were inadequate. The SJS produced semi-annual FP&R reports for the CDS through a spreadsheet application called the FP&R Collection Tool, but it had some deficiencies. One problem was that it reported on "force generational capabilities" that were loosely defined and interpreted differently from one organisation to another.[1] Because of these inconsistencies, the FP&R Collection Tool did not provide a clear picture of what was ready to be deployed (or not) against the range of tasks the CAF may be asked to perform. The vague nature of the "force generational capabilities" it reported on made it difficult to identify which force element(s) of the CAF should be ready for specific task(s). The tool also lacked detailed, quantitative data on FP&R requirements since it did not capture the amount and type of equipment, personnel, resources, and infrastructure needed by ready forces.

The way the FP&R Collection Tool depicted readiness data was also problematic. The spreadsheet presented data in a single, static matrix format. This "one size fits all" format was too detailed for some audiences, and not detailed enough for others. Because the distribution and collection of spreadsheets had to be done by email, the process was unnecessarily time consuming and it was difficult for the SJS to maintain an up-to-date picture of CAF's FP&R.

[1] For instance, in the FP&R Collection Tool, the Air Force described its capabilities in terms of effects it may need to achieve (e.g., control of the air, air mobility). The Navy described them in terms of force packages it may have to deploy (e.g., a naval task group, a ready-duty ship). The Army described them in terms of the organisations generating forces (e.g., 2nd Canadian Division, 3rd Canadian Division). The nature of the "force generational capabilities" varied significantly among (and within) the dozen or so organisations reporting through the spreadsheet.

For all these reasons, FP&R reports were seldom used for planning and decision support, and senior CAF leadership relied heavily on *ad hoc* readiness reports. For instance, at the early stage of planning a deployment, different commanders briefed the CDS on their forces' readiness through different means (e.g., briefing notes, emails, slide decks) with wide discrepancies in the nature and the level of detail provided. Such *ad hoc* reporting made it difficult for SJS and senior leadership to depict a complete picture of CAF readiness, even less so to understand the implications of a potential deployment on its readiness for other tasks.

Aim and outline

To help the SJS address these issues, DRDC initiated in 2013 a project on 'Strategic Military Planning Analysis.' The project was conceived and delivered by a team of strategic and operational analysts from the DRDC Centre for Operational Research and Analysis (DRDC CORA). The team is embedded with the SJS to provide evidence-based decision support to the SJS and to the CDS. Two key objectives of this project were to:

1. Develop and contribute to a **strategic outlook process** that would enable the CDS in providing direction to CAF with regard to challenges and threats likely to emerge over Horizon One.
2. Develop a database application called the **Strategic Managed Readiness Tool (SMaRT)** that would improve how FP&R is managed by and reported to senior leaders of the CAF.

The next two sections describe how these objectives were accomplished. An additional section then discusses the benefits and limitations of the results.

Strategic outlook process

The strategic outlook process is a means to "develop better and shared understanding and assessments of emerging threats and challenges in order to inform and develop joined-up military and departmental advice to the Minister [of Defence] and the government [of Canada]," particularly as it affects FP&R [4]. The process is an annual one and feeds into the preparation of the FP&R Directive. Archambault and Dickson [5] originally proposed such a process to the SJS. They considered various aspects of it, including its rationale, guiding principles, governance, and linkages to FP&R. Figure 1 depicts a simplified view of the process as it was applied in 2015. It is summarized in the following pages.

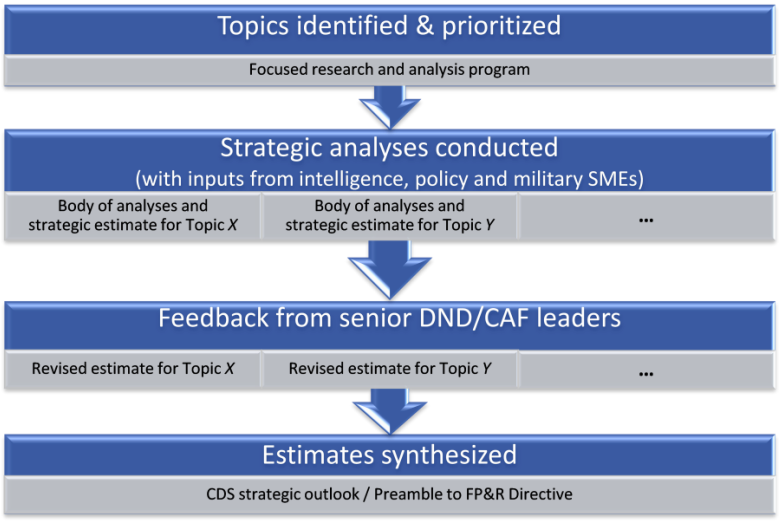

Figure 1: *Strategic outlook process.*

Identification and prioritization of topics

The foundation of the strategic outlook is a program of research and analysis focusing on near-term challenges, threats and opportunities from a military perspective. To build such program, a list of candidate topics or issues of a strategic-military nature potentially requiring analysis is first compiled. These may be, for example, regional developments, military threats, or potential CAF engagements with other nations.

The SJS then reviews candidate topics in a systematic fashion. DRDC developed a review sheet for doing so [6], which is illustrated in Figure 2. The review sheet considers many guiding principles described in [4], and captures the following information:

- **Topic**: Short name of the topic or issue of interest.
- **Guiding question**: The main question that will guide the analysis.
- **H1 issue (yes/no)**: Does the topic or issue require resolution within Horizon One (H1)? If an issue's resolution lies beyond five years, it is generally not a factor for FP&R direction and it may be better resolved by other means (e.g., the CAF's capability development process).
- **Actionable (yes/no):** There must be an expectation that the analysis will lead to recommendations that are actionable by the DND/CAF, in particular through the FP&R Directive. The outcomes should go beyond simply raising stakeholders' situational awareness.
- **Not addressed elsewhere (yes/no)**: Is the issue or topic already being addressed by another forum within the Department (e.g., a Joint Operational Planning Group, Defence Capability Board) or within another Department (e.g., Public Safety Canada)? In such cases, there is a risk of duplicating analysis efforts.
- **Government priority (yes/no)**: Is the topic or issue aligned with Government of Canada priorities or the national interest?
- **Likelihood of requiring L0 direction**: What is the estimated likelihood that the issue of interest (e.g., an event, a threat, a Government initiative, a military intervention, or other) will actually materialize in Horizon One and require changes to existing Level Zero (L0) direction from the CDS (and possibly the Deputy Minister), or will require new L0 direction (in particular as it pertains to FP&R)? A five-point scale is used to describe the likelihood.
- **Potential consequences of ignoring issue**: What is the expected magnitude of negative consequences potentially arising from not addressing the issue or not being prepared for it? A five-point scale is used to assess the strategic, operational, reputational and financial dimensions of the consequences.
- **Decision/Status**: Decision made with respect to a particular topic and/or current state of analysis for that topic.
- **Remarks**: Additional comments about the assessment and status of a particular topic.

Once the review is completed, the SJS produces a shorter list of priority issues or topics deemed to require in-depth analysis, based on the criteria above. Within this short list, the CDS ultimately selects four or five topics to be covered during the year to come.

Note that the review sheet does not provide any explicit, aggregated priority metric for each topic. This is avoided on purpose. Although some algorithm could be used to combine ratings, the results could be misleading or misused. A more pragmatic approach is to simply present relevant data to senior members of the SJS and the SJS Director of Staff (DOS), and let the SJS leadership reach a verdict on which topics should be recommended the CDS. The review sheet is merely a decision aid and the CDS ultimately decides what topics are covered or not.

Strategic Outlook

Topic Review & Selection Sheet

✓ Yes
☐ No

● Highly likely (>90% chance)
● Likely (60%-90%)
● As likely as not (40%-60%)
○ Unlikely (10%-40%)
○ Highly unlikely (<10%)

■ Catastrophic
■ Severe
■ Moderate
□ Marginal
□ None/Negligible

Topic	Guiding question	H1 issue?	Actionable?	Not addressed elsewhere?	Gov priority?	Likelihood of requiring L0 direction (wrt FP&R or other)	Potential consequences of ignoring issue				Decision/Status	Remarks
							Op	Strat	Rep	Fin		
Topic A	Guiding question here	✓	✓	✓	✓	●	■	■	■	■	**Recommended to DOS**	
Topic B	Guiding question here	✓	✓	✓	✓	●	■	■	■	■	**Approved**	Inputs required from X, Y, Z. Due March xx.
Topic C	Guiding question here	✓	✓	✓	✓	●	■	■	■	■	**Recommended to DOS**	
Topic D	Guiding question here	✓	✓	✓	✓	●	■	■	■	□	**After action required**	Brief to CDS required April xx
Topic E	Guiding question here	✓	✓	✓	✓	●	□	■	□	■	**Approved**	Inputs required from X,Y,Z. Due April xx
Topic F	Guiding question here	✓	✓	☐	✓	●	■	☐	■	□	Not recommended / Closed	Issue already addressed by a JOPG
Topic G	Guiding question here	✓	✓	✓	☐	●	■	□	■	■	Not recommended / Closed	Not a GOC priority.
Topic H	Guiding question here	☐	☐	✓	✓	○	■	□	□	□	Not recommended / Closed	Not an actionable H1 issue.
Topic I	Guiding question here	☐	✓	☐	☐	○	□	☐	□	■	Not recommended / Closed	
Topic J	Guiding question here	✓	☐	☐	✓	○	☐	☐	□	□	Not recommended / Closed	

Figure 2: *Topic review and selection sheet for Strategic Outlook, with notional data.*

Analyses and strategic estimates

Each of the selected topics is then broken down into typically four to eight subtopics or specific research questions. For each of them, DRDC analysts produce a strategic analysis paper over the course of approximately two months. Other subject-matter experts (SMEs) of the DND/CAF provide inputs. The result is a body of literature combining strategic analysis, intelligence analysis, policy considerations, and military planning analysis. From this, the SJS produces an initial "strategic estimate" of the issue that includes key deductions from the analysis and recommendations to senior leaders of the DND/CAF.

Feedback from senior DND/CAF leadership

An important element of the process is to obtain feedback from senior DND/CAD leadership on the strategic estimate. This is done through a series of meetings chaired by the CDS and Deputy Minister of Defence, and attended by commanders of Navy, Army, Air Force, as well as other senior leaders of the DND/CAF. Each meeting focuses on a single issue.[2] First, the analysis and the strategic estimate are briefed. Then, members deliberate on the issue and its implications for the CAF. Based on the results of these deliberations and guidance from the CDS, the strategic estimate is revised, as necessary. In some cases, a second meeting may have to be convened to allow for further analysis and deliberations.

Strategic outlook

The strategic estimates obtained through the process are then synthesized to produce a broader assessment of the near-term strategic environment, which is the CDS's strategic outlook. Estimates obtained from previous cycles, when still relevant and generally accurate, are also considered in the production of the outlook. A draft outlook is presented to senior DND/CAF leaders and revised based on their feedback, in the same way as the individual strategic estimates are. The strategic outlook is typically issued once a year in the form of a preamble to the FP&R Directive. It establishes force posture priorities for Horizon One, based on internal drivers (e.g., resource constraints and policy considerations) of Canada's military power and external drivers (e.g., global military developments, emerging threats and alliance developments) of the international security environment.

The Strategic Managed Readiness Tool (SMaRT)[3]

Though the strategic outlook provides guidance on force posture, it does not provide detailed direction. This direction is given in the main body of the FP&R Directive and in the Strategic Managed Readiness Tool (SMaRT). SMaRT is an adjunct to the annual CDS Directive for FP&R in the form of a database application.[4] It is a means of systematically articulating the CAF's missions and tasks *while* preparing the directive, linking them to force elements, and identifying risks of not being able to meet readiness requirements over Horizon One.

As its name indicates, SMaRT concentrates on the strategic level of readiness management. As such, it focuses on the *outputs* of force generation (i.e., ready force elements) and allows different Level 1 (L1) organisations within the DND/CAF to report on them to the SJS in a common and systematic fashion. Here, L1 organisations are those being directly tasked by the FP&R Directive. Most of them correspond to organisations reporting directly to the CDS and/or the Deputy Minister of Defence from a DND/CAF

[2] In 2015, strategic estimates were briefed in the context of look-ahead meetings dedicated to a single topic at a time. At time of writing, alternative CDS-chaired fora were being considered for briefing strategic estimates.
[3] SMaRT has already been documented by Gauthier in a DRDC report [7]. Portions of this report are repeated throughout this paper, without being explicitly quoted.
[4] The latest version of SMaRT, version 1.1, is powered by Microsoft SQL Server 2012 with a front end user interface written in Microsoft Access 2010.

corporate perspective. They include the Royal Canadian Navy (RCN), the Canadian Army (CA), the Royal Canadian Air Force (RCAF), the Canadian Special Operations Forces Command (CANSOFCOM), the Canadian Joint Operations Command (CJOC), the Canadian Forces Intelligence Command (CFINTCOM), the Military Personnel Command (MILPERSCOM), the Assistant Deputy Minister (Information Management) organisation, and a few other organisations directly tasked by the Directive.

However, the tool is not a means to manage processes that generate outputs (e.g., procurement, maintenance, training). The nature and scope of these processes may differ significantly from one organisation to another, and are primarily under the responsibility of the organisations generating forces.

For the same reason, the tool does not attempt to infer by itself what CAF elements are ready to conduct tasks or not. There are too many variables to consider in doing so, and these variables may vary widely from one task to another, or from one organisation to another. It is a commander's responsibility to assess and report on the readiness of his force elements. This does not mean that fit-for-purpose models cannot assist commanders in making readiness assessments and forecasts. In recent years, for instance, the MARS model [8], the TYCHE model [9], and the ASTRA model [10] were used to study force structure and force generation issues in support of the Army, Navy and Air Force, respectively. The purpose of SMaRT is not to replicate what all these models can already do.

Tool structure and workflow

The user interface (UI) of SMaRT is divided into four main sections, which serve to:

1. **Define FP&R tasks and requirements**, as per the CDS' direction.
2. **Assign force elements to each FP&R task**, by organisation and reporting period.
3. **Rate the readiness of assigned force elements to perform tasks**, by organisation and reporting period.
4. **Generate reports** combining information from previous sections and present it in different formats, depending on the intended purpose and audience.

Users will typically review or enter data into these four sections sequentially, as shown in Figure 3, although they can consult sections in any particular order.

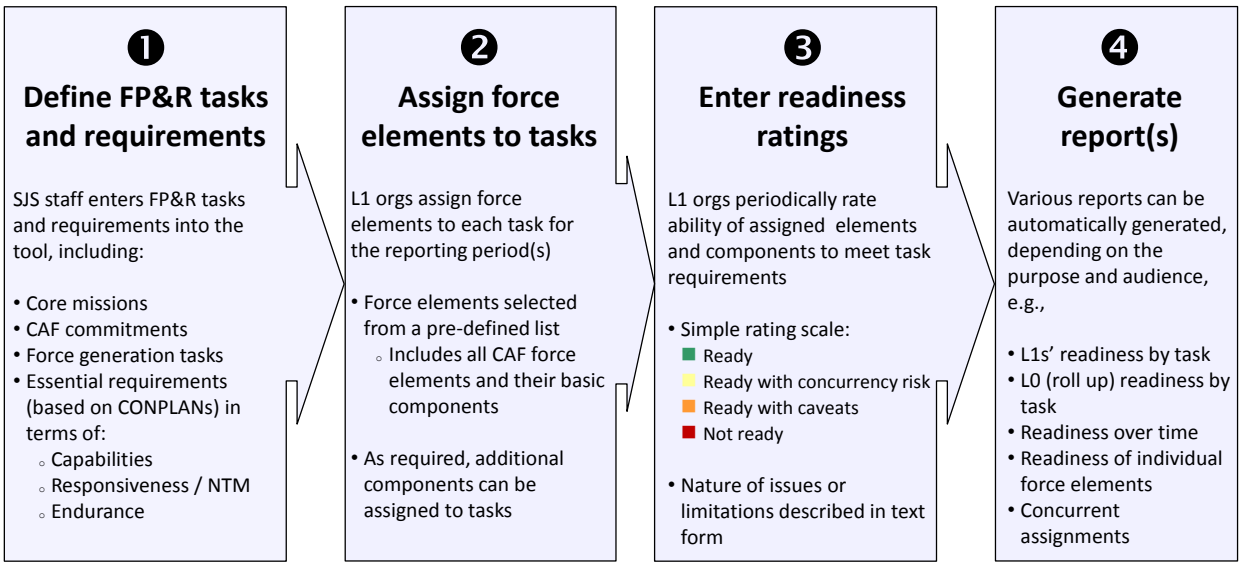

Figure 3: *Typical workflow in SMaRT.*

Each of these sections is briefly explained in the following pages. More detailed instructions on how to use SMaRT are in its user guide [11] and more technical descriptions of the database structure and logic are described at [7][12]. Nevertheless, the following pages should give the reader a good appreciation of the tool's structure and capabilities.

Section 1: Defining FP&R tasks and requirements

The first section of the tool is used by the SJS to systematically define and articulate all the tasks that appear in the CDS Directive for FP&R, in accordance with guidance from the CDS' strategic outlook and other authoritative documents. The information captured in this section includes:

- the six **core missions** listed in the Canada First Defence Strategy (CFDS) [1]. For example, CFDS Mission 4 is "support civilian authorities during a crisis in Canada, such as a natural disaster";
- **CAF commitments** associated with each core mission. These include commitments related to NORAD, NATO, and the various contingencies for which the CAF must be ready. For example, "respond to a Major Air Disaster (MAJAID)" is a CAF commitment listed under CFDS Mission 4.
- **force generation (FG) tasks** associated with each CAF commitment. An example of FG task would be "generate forces able to provide initial response to a major air disaster followed by a sustained rescue effort";
- linkage of each FG task to the **program alignment architecture** [13], which is a mandated approach to the identification of Government of Canada programs and to the reporting of information relative to those programs;
- reference to a **contingency plan** (CONPLAN), for example CONPLAN MAJAID [14], or other plan/order/directive related to each FG task;
- **lead and supporting force generators** for each FG task. The lead force generator is the L1 organisation (e.g., the RCAF) that is responsible to provide the preponderance of ready forces. Supporting force generators are L1 organisations providing additional forces, as required;
- level of **responsiveness** (normal, high, or immediate response) and notice to move (NTM) required from the ready forces generated by each FG task;
- level of **endurance** (sustained effort or surge/single-rotation) required from the ready forces generated by each FG task;
- **capabilities** to be generated by the lead and supporting organisations for each FG task. These describe, in broad terms, the military operational output or outcome that the generated forces must be able to deliver (e.g., "conduct strategic lift of personnel and equipment"). Capabilities are stated using terminology of the CAF's joint capability development framework [15]; and
- **essential requirements** describing in more detail the desired outputs of each FG task, by organisation. They are also expressed in capability terms, but are more detailed than the generic capabilities listed in the CAF's joint capability development framework. Without being exhaustive or replicating all the information already contained in CONPLANs, essential requirements must be detailed enough for the concerned DND/CAF organisations to work out what is minimally expected from them, so that they can generate appropriate force elements for the task.

Once this information is entered for all CFDS missions, CAF commitments, FG tasks and associated requirements, the amount of information captured in this section of the database is significant. In fact, such a comprehensive and systematic collation of FG requirements from approved CONPLANs and other reference documents is unprecedented for the CAF. It makes the FP&R direction presented in SMaRT more detailed, more logically structured, and much less ambiguous than it was before. It offers a clear picture of what is expected from the DND/CAF, which can be used not only for FP&R management but also for various military planning applications.

Section 2: Assigning force elements

Once FP&R tasks and requirements are defined by the SJS, the lead and supporting L1 organisations have to identify **force elements** that must be made ready for each task. Force elements are defined here as organisational entities consisting of various components (personnel, resource, equipment, infrastructure, etc). Force elements typically represent the smallest entities that can be employed operationally. For example, a frigate (including its crew and some basic equipment) is a force element. A naval task group, on the other hand, is not a force element since the ships that compose it can be deployed individually. Similarly, the crew of a ship is only a component of a force element, since it generally cannot be employed in isolation.

Ready force elements are tangible outputs of the FG process. Unlike the "force generational capabilities" formerly used in the FP&R Collection Tool, force elements are unambiguous.[5] They can be identified, counted, costed, and employed in theatre. Because of this, force elements are central to SMaRT and the FP&R management framework. They compel reporting organisations to be explicit about what they can generate (or not) to meet FP&R requirements. It also becomes clear when an organisation assigns a same force element to multiple tasks. This allows senior leadership to identify any risk that a force element may have to fulfil concurrent demands before deploying it into theatre, and to manage this risk accordingly.

In the second section of the tool, authorized users assign force elements to each FG task on behalf of their respective L1 organisations. This is done by entering:

- the force element **type** (e.g., "Halifax-class frigate", "CC-177 GlobeMaster", "Immediate Response Unit (IRU)");
- the force element **identifier** (e.g., "HMCS Regina", "CC-177 (702)", "IRU Valcartier");
- the **force generator's subordinate organisation** that is mainly responsible to generate the force element (e.g., "CFB Esquimalt" for the Navy, "2nd Canadian Division" for the Army, "8 Wing" for the Air Force);
- the force element's **notice to move** (in minutes, hours, or days), which should be equal or less[6] than the notice to move specified in the task requirements;
- a checkbox indicating whether the force element is **dedicated** to (i.e., reserved for) the task. If so, it cannot be assigned to any other tasks during the same period of interest. Dedicated force elements are typically assigned to tasks requiring an immediate response (e.g., search and rescue) or a specialized capability (e.g., counter-terrorism). Force elements preparing to deploy to theatre may also be considered dedicated; and
- a flag indicating whether the force element is a "**primary**" choice for potential employment, or if it is seen as an "**alternative**" to the primary assignment(s). This flag primarily serves to give users some flexibility to force generators while assigning a force package to a task. In general,

[5] An example of an ambiguous "force generational capability" formerly assigned to FP&R tasks is "Intelligence, Surveillance, and Reconnaissance (ISR)." Such assignment merely reflects a requirement of the tasks without describing what is made ready by force generators to conduct ISR.

[6] A force element may be ready to deploy on a shorter notice than what is required by the task, for instance if the force element is also assigned to other tasks requiring a higher level of responsiveness.

more than a single package of force elements can be assigned to a given task. Choosing the right package may not be straightforward, for many reasons. First, the nature, magnitude, and location of the contingency that forces must be ready to respond to is usually uncertain. Second, the availability of force elements may vary over the reporting period of interest. Third, there might be different packages of force elements equally capable to accomplish a same task (e.g., deploying two CC-130Js instead of a single CC-177). For all these reasons, it may be difficult to assign a single, "primary" package of force elements to a task. The "alternative" flag essentially allows users to describe a secondary package of force elements able to meet requirements.[7]

The package of force elements assigned to a task is specific to a given period of interest. For a different period, a different set of force elements can be assigned, if need be. Force generators have control on which force elements they assign to tasks, provided that the force elements are not under the responsibility of a different organisation.

Section 3: Readiness ratings

The next step is for L1 organisations to rate the readiness of force elements to conduct tasks. They do this for each assigned force elements, using the four-point scale of Table 1.

Table 1: *Readiness rating scale*

Ready	The force element exists, is trained and equipped to task requirements, ready at the required NTM, and its employment will not affect readiness for other FP&R tasks.
Ready with Concurrency Risk	The force element exists, is trained and equipped to task requirements, ready at the required NTM, **however** its employment will affect readiness for other FP&R tasks.
Ready with Caveats	The force element may lack personnel, equipment, training, or may not be ready at specified NTM, however its employment remain possible given additional time, resource, and acceptance of risk.
Not Ready	The force element does not exist, or is not trained/equipped to task requirements, or cannot meet the specified NTM, or is currently committed/employed and therefore is unavailable.

The first two ratings (in green and yellow) are essentially the same, except that the second one highlights a concurrency risk when a force element is assigned to more than one task. In the event of a contingency, employing such force element would have knock-on effects on CAF's readiness for other tasks. Hence the use of the yellow colour to warn senior leaders that a deployment would have implications on FP&R potentially requiring some mitigation. Even when force elements are not physically deployed (e.g., in the case of joint enablers such as command headquarters), such yellow rating may still be used since the elements may not have sufficient capacity to conduct additional tasks. The third rating (in orange) essentially indicates that not all readiness requirements are met but that employment remains possible, which is not the case for the last rating (in red). L1 organisations must review all of their readiness ratings on a monthly basis, and update them whenever necessary.

[7] There is only one flag per assigned force element and it describes if the element is part of the "primary" or "alternative" package. There is currently no option to build tertiary packages or lower-order combinations of force elements, even though such combinations may exist. The purpose of the tools is not to account for all force packages that can be generated for a task, but to determine if at least one adequate package can be made ready for the task.

Once the readiness of assigned force elements is rated, interactive dashboards exist in the tool to display and edit the readiness information. For instance, Figure 4 shows a Level 0 (L0) rollup of the readiness ratings for each task. In this notional example, the rating for Task 4b, which is about responding to a major air disaster, is ready with caveats (orange). Clicking on the orange cell displays readiness ratings of every L1 organisation for that particular task. Clicking on the orange cell again displays the readiness of specific RCAF elements and the user can readily identify readiness issues and update the ratings, as required.

Note that readiness ratings are rolled up from one level to the other by taking the lowest readiness rating (orange in this example). This keeps the rollup approach simple and avoids any questionable colour arithmetic (e.g., two greens plus one red equals yellow). Moreover, the package of force elements assigned to a task should represent what is necessary to meet the *essential* requirements of the task. Accordingly, if one force element is not ready, some essential requirements are presumably not met and this information should cascade up the chain of reports.

This does not mean that a task showing as orange or red in the rollup could not, in practice, be executed. Senior CAF leaders need to look at the nature of the readiness shortfalls and determine if they would represent critical failures in the event of a contingency. As such, the tool is not there to make decisions on their behalf, but merely to flag potential problems and inform their decisions. Command judgment is ever necessary.

Section 4: Generating reports

Beyond the readiness dashboards previously described, SMaRT can produce many other reports tailored to specific purposes of audiences. These reports are not interactive or editable, but they can be printed, saved, or emailed in Portable Document Format (PDF). Here is a non-comprehensive list of questions for which the database can generate reports automatically:

- What are the FP&R tasks and essential capability requirements of a given CONPLAN?
- What are the FP&R tasks and essential capability requirements for a given L1 organisation?
- What force elements would be ready to deploy if a given CONPLAN had to be activated in 201x?
- Would a given L1 organisation be ready to deploy if a given CONPLAN had to be activated in 201x?
- How is the CAF’s readiness expected to change over Horizon One across the spectrum of FP&R tasks?
- What force elements are concurrently assigned to multiple FP&R tasks during a given period?

Many other questions can also be answered by querying the database, provided that the information required has been captured and is accurate.

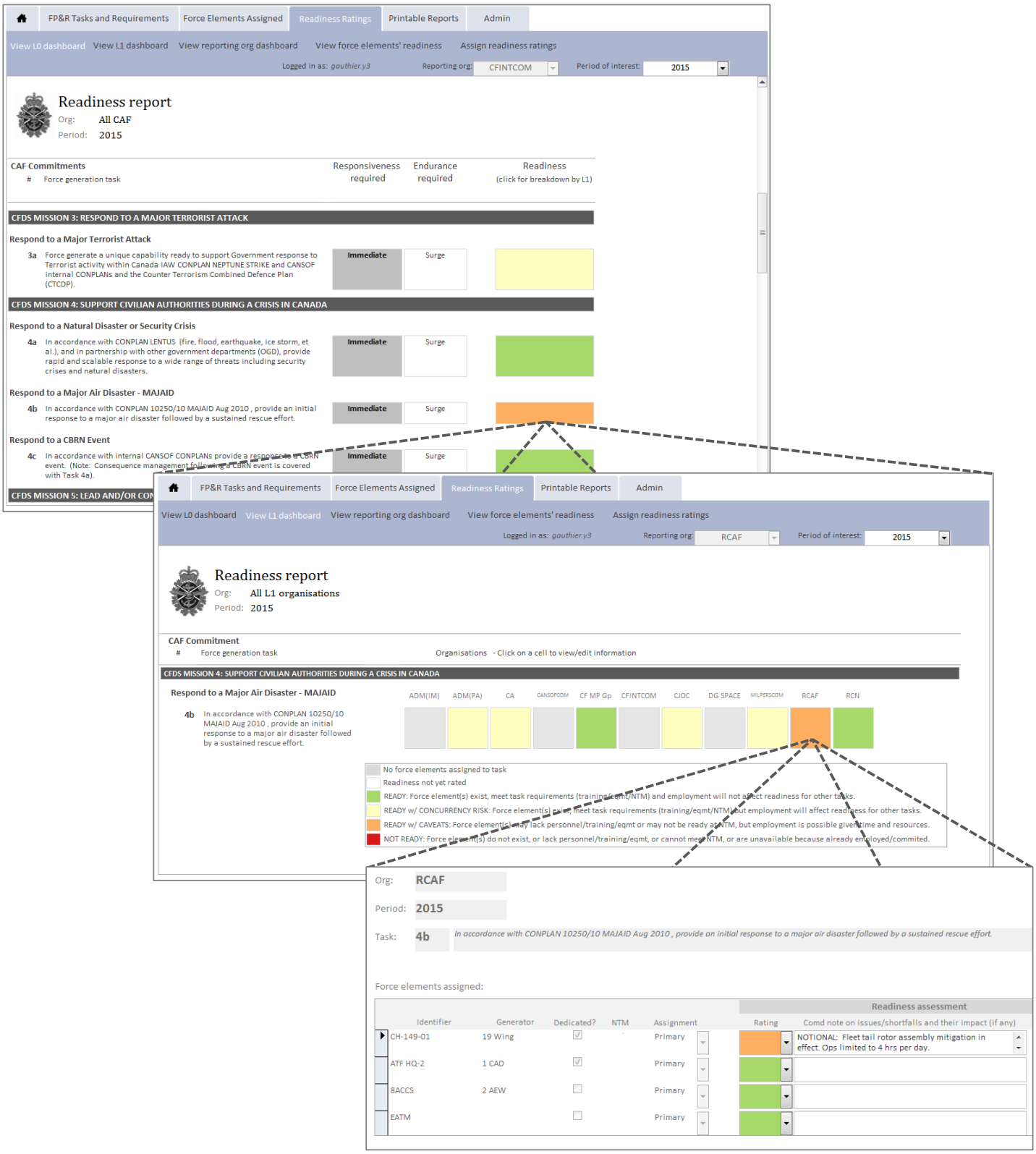

Figure 4: *Drilling down from the L0 readiness report (top), to the L1 readiness report (middle), to specific force element readiness ratings (bottom). Data are notional.*

Discussion

Benefits

Figure 5 shows how CAF's strategic FP&R management has evolved over the last five years. Specifically, it shows how FP&R was directed, resourced, and reported on at different points in time, including when the DRDC project started in 2013. Both the strategic outlook process and SMaRT have contributed to the improvement of CAF's FP&R management by enabling the CDS to give informed strategic direction. These two contributions, combined with improved departmental practices in costing readiness [16], allow the CDS to allocate resources more strategically by better linking resources to operational outputs.

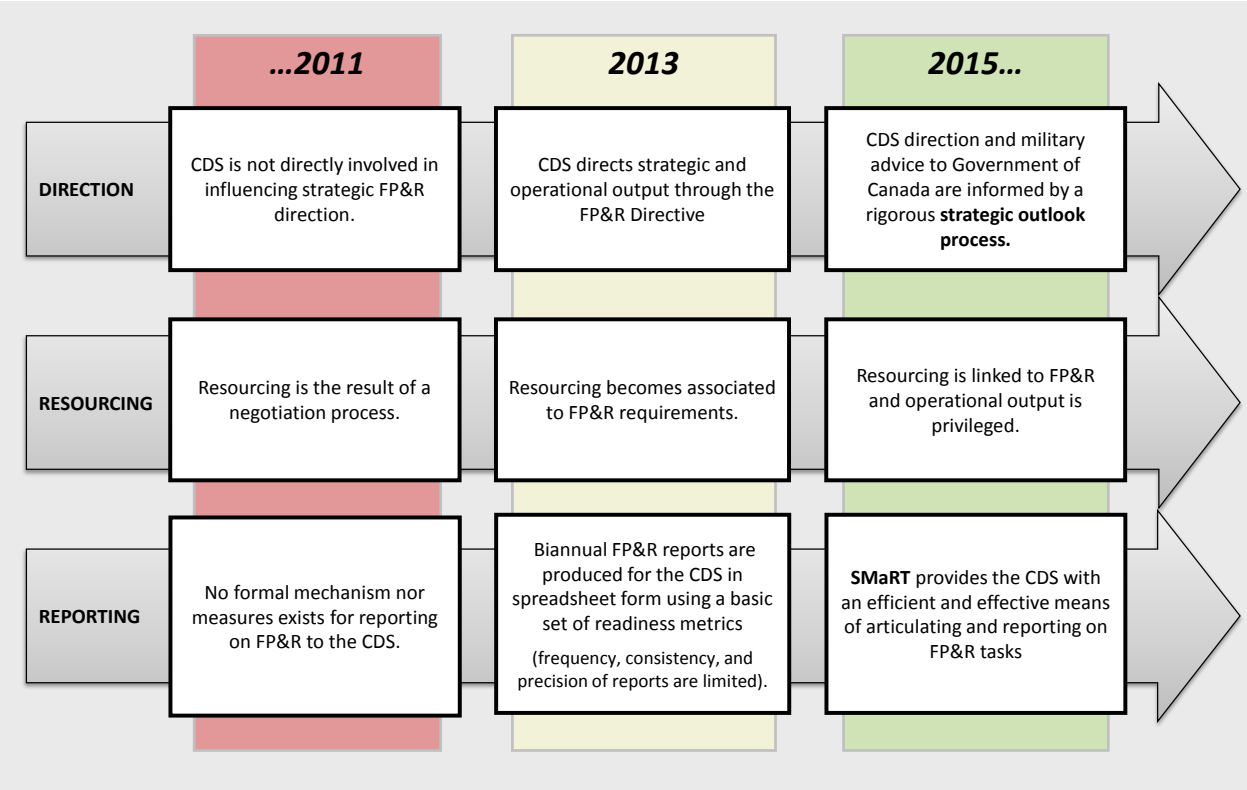

***Figure 5**: Evolution of CAF's strategic FP&R management in recent years*

The SMaRT database in particular represents a significant step forward in how CAF's FP&R is managed and reported. By migrating from spreadsheet-based reporting to a database application, SMaRT makes FP&R management more *efficient* in many ways. For example, the distribution and compilation of spreadsheet reports through emails are no longer necessary. Furthermore, the tool captures the multiple dimensions of FP&R and their relationships in a more comprehensive and more logical fashion, without the limitations of two-dimensional reports. Because the database can be queried, specific questions can be answered more quickly than by browsing matrices of raw data, as was the case in the FP&R Collection Tool. Finally, interactive dashboards allow users to "drill down" into the data and better understand it, from high-level L0 readiness reports to detailed reports focusing on specific L1 organisations and their force elements.

More importantly, the tool is more *effective* than its predecessor. It improves the utility of the information it captures for FP&R management, by providing more useful information to reporting organisations as well as senior DND/CAF leaders. FP&R tasks and requirements are described in more detail and are less ambiguous to the concerned organisations. The information reported refers to tangible, clearly-defined force elements, which are less ambiguous than the "force generational capabilities" formerly used. As a result, FP&R reporting is more systematic, more logical, and more consistent from one organisation to another. Fit-for-purpose reports, focusing on specific organisations, specific periods, or specific tasks can be generated. This makes the tool more useful for planning and decision support.

Limitations

As stated earlier, SMaRT focuses on the outputs of force generation and is not a means to manage force generation processes (training, maintenance, etc.) internal to specific organisations. As such, it cannot replace planning tools and mechanisms already used by force generators to produce their own readiness plans. It does not attempt to assess or predict the readiness of force elements, and does not automatically pull data from L1s' information systems either. It merely captures readiness ratings manually entered by reporting users, which are assumed accurate and up-to-date.

Furthermore, the tool currently does not consider ongoing CAF operations, except to account for baseline routine operations such as CAF's contribution to NORAD. This limitation is not due to the tool itself, but comes from the scope of the FP&R Directive, which focuses on force generation tasks and preparedness.

The way the tool is used for concurrency risk analysis could be improved. Currently, the tool can generate concurrency reports describing which force elements are multi-tasked. This enables users to identify what tasks are at risk of not being supported if a particular force element becomes deployed or unavailable for some reason. A more sophisticated what-if analysis feature could be implemented in future versions to determine the first-order, knock-on effects of deploying a particular force element during a particular period. This feature could, for instance,

1. identify other FP&R tasks relying on the force element (as already done in concurrency reports);
2. determine if there are alternative force elements available for these tasks;
3. if so, re-compute readiness ratings for the task by considering the ratings of the alternative force elements, while optimising the allocation of alternatives when many options exist;
4. for tasks where no alternative exists to the deployed force element; set the readiness rating to red ("not ready") in the what-if analysis report(s);

A similar what-if analysis feature could be implemented to determine the implications of deploying *all* force elements assigned to a particular task. In other words, this feature would determine the effect of conducting a task (i.e., activating a contingency plan) using the assigned force elements on CAF' readiness to conduct other tasks.

Cost data is currently not captured by the tool. It remains unclear if SMaRT should do so since readiness costing requires lower-level information about force generation processes, which are outside the scope of the current tool. A complicating factor is that the tool resides on a classified network, whereas financial data resides on unclassified networks. Nevertheless, the tool could inform readiness costing by producing lists of force elements that must be generated in order to meet FP&R tasks requirements.

Conclusion

The strategic outlook process fills a gap in Horizon One strategic analysis. It now provides a framework to systematically scope and analyse critical issues, in order to better guide CAF efforts and allocate resources in a way that effectively addresses near-term defence and security challenges and threats. Based on the strategic direction resulting from this process, the SJS can then use SMaRT to articulate FP&R tasks and requirements in more detail, and to identify risks areas where the CAF might not be able to fulfil some FP&R requirements.

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