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Follow-up on Internal Audit: Tactical Armoured Patrol Vehicle



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Caveat

The result of this work does not constitute an audit of the Tactical Armoured Patrol Vehicle project. Rather, it was prepared to provide an assessment on the level of completion of the outstanding management action plans (MAP) from the 2011 audit.

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Acronyms and Abbreviations

ADM(Mat)	Assistant Deputy Minister (Materiel)
ADM(RS)	Assistant Deputy Minister (Review Services)
CA	Canadian Army
CRS	Chief Review Services
DND	Department of National Defence
FLCV	Family of Land Combat Vehicles
MAP	Management Action Plan
O&M	Operations and Maintenance
OPI	Office of Primary Interest
PAD	Project Approval Directive
TAPV	Tactical Armoured Patrol Vehicle
VCDS	Vice Chief of the Defence Staff

1.0 Introduction

The Internal Auditing Standards for the Government of Canada require Assistant Deputy Minister Review Services (ADM(RS)) to follow-up on the progress of implementation of MAPs. The objective of this audit follow-up is to assess the level of completion of the MAPs in the 2011 audit by Chief Review Services (CRS)¹ on the Tactical Armoured Patrol Vehicle (TAPV) project.

The TAPV project is a major capital project that was initiated as part of a procurement program entitled the Family of Land Combat Vehicles (FLCV). This program sought to procure four new lines of Canadian Army (CA) land vehicles to provide a robust and flexible capability for Canada's soldiers on high-risk missions abroad. A provision in the program allowed funds to be reallocated between the four projects. The FLCV term may still be used in documents prepared for bodies external to the Department of National Defence (DND),² but the FLCV program no longer exists in the DND Capital Investment Plan. The major capital acquisition projects that were part of this FLCV are now managed separately.

The purpose of the TAPV project is to acquire a modern fleet of general-utility armoured vehicles that are extremely versatile and that provide a high degree of crew protection in domestic and expeditionary operations. It is anticipated that up to 500 TAPVs will be acquired, and delivery is expected to begin in the 2016-2017 timeframe. There is also an option for an additional 100 vehicles. The project is estimated to cost \$1.25 billion,³ sponsored by the CA, and managed by a project management team in Assistant Deputy Minister (Materiel) (ADM(Mat)). The directives regarding the departmental project approval process are managed by the Vice Chief of the Defence Staff (VCDS).

The 2011 CRS audit of TAPV had a total of five MAPs, related respectively to the following:

- analyzing funding of fleet requirements to address any allocation imbalances between the four projects of the FLCV;
- developing detailed project schedules of major activities and prioritizing interdependencies;
- amending directives regarding sequencing of project pricing and availability;
- including estimates of ammunition, infrastructure, personnel, and operations and maintenance (O&M) costs; and
- amending the risk management plan to include clearer risk tolerance and cost impact thresholds.

¹ CRS is the former designation of ADM(RS), the latter having come into effect on May 13, 2015.

² FLCV was referenced in the Department of National Defence and the Canadian Armed Forces Report on Plans and Priorities 2015-16.

³ This is a substantive project cost estimate, all Vote 5 funds. An indicative estimate of the additional future maintenance costs of the vehicles is \$1.2 billion, Vote 1 funds.

2.0 Objective

The objective of this audit follow-up is to assess the level of completion of the approved MAPs of the 2011 CRS audit of TAPV project. As such, this audit follow-up did not examine whether the issues and conditions identified in the 2011 CRS audit have been in fact resolved as this would require a higher assurance level as provided by a full audit.

3.0 Methodology

3.1 Approach

This audit follow-up does not represent a second audit of the same issues, but rather is an assessment of the progress made in implementing the MAP items. No retesting was done to determine if these action plans were achieving the desired results. The following methods were used:

- interviews with the TAPV project team and other stakeholders to obtain the status of MAP completion;
- review of the following key documents: the Project Charter, presentations to the Senior Review Board, the acquisition contract, project risk management plan, project approval documentation, and the DND Project Approval Directive (PAD) 2011.
- Follow-up discussions with the offices of primary interest (OPI) to clarify understanding of actions and documentation taken to date toward full completion of the MAPs.

The overall criteria to assess the progress can be found at [Annex A](#).

3.2 Statement of Conformance

The audit follow-up conclusions contained in this report are based on sufficient and appropriate audit evidence gathered in accordance with procedures that meet the Institute of Internal Auditors' *International Standards for the Professional Practice of Internal Auditing*. The audit follow-up thus conforms to the Internal Auditing Standards for the Government of Canada as supported by the results of the quality assurance and improvement program. The opinions expressed in this report are based on conditions as they existed at the time of the audit follow-up and apply only to the entity examined.

4.0 Overall Assessment

Significant progress was made on the MAPs developed in 2011 for the original audit. Four of the five MAPs of the 2011 audit on TAPV were fully implemented and one MAP was considered obsolete.

Three MAPs that relate specifically to improving the management of the TAPV project were fully implemented. A more detailed schedule has been prepared to track the critical path items of each major project activity, including other projects that may impact the TAPV timeline. Cost estimates of project ammunition, infrastructure, personnel, and O&M have been determined for overall project budgeting. Finally, the project risk management capability has been improved with a more detailed risk management plan that identifies risk thresholds and risk indicators that should be monitored to track problems in advance of major impacts on the project.

The MAP relating to the sequencing of pricing in the life of a project was fully addressed in the departmental PAD in October 2011.

The MAP relating to funding fleet distribution imbalance was considered obsolete. The FLCV capital program, which had a provision for redistribution of funds, no longer exists. Therefore, completion of this MAP is no longer relevant or possible.

A scorecard of the MAP items can be found at [Annex B](#), and a more detailed assessment of the progress can be found at [Annex C](#).

Annex A—Assessment Criteria

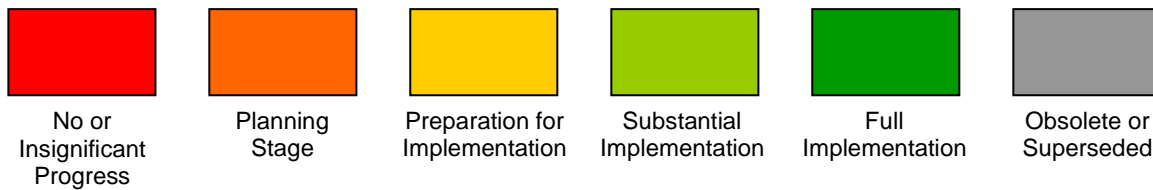
The following criteria were used to assess the level of completion for each MAP item:

- **Obsolete or Superseded**
MAPs that are deemed to be obsolete or have been superseded by another MAP.
- **No Progress or Insignificant Progress (0-24% complete)**
No action taken by management or insignificant progress. Actions such as striking a new committee, having meetings, and generating informal plans are insignificant progress.
- **Planning Stage (25-49% complete)**
Formal plans for organizational changes have been created and approved by the appropriate level of management (at a sufficiently senior level, usually at the Executive Committee level or equivalent) with appropriate resources and a reasonable timetable.
- **Preparation for Implementation (50-74% complete)**
The entity has begun necessary preparation for implementation, such as hiring or training staff, or developing or acquiring the necessary resources to implement the MAP.
- **Substantial Implementation (75-99% complete)**
Structures and processes are in place and integrated in some parts of the organization, and some achieved results have been identified. The entity has a short-term plan and timetable for full implementation.
- **Full Implementation (100% complete)**
Structures and processes are operating as intended and are implemented fully in all intended areas of the organization.

Annex B—Management Action Plan Scorecard

Recommendation	MAP	OPI	ADM(RS) Assessment of Progress on MAP(s)
1. Requirements Definition	Fleet requirements and funding will be revisited prior to effective project approval to address any fleet distribution imbalances in the Land Force 2013 Force Structure and exercise fleet options, upon the availability of FLCV fleet unit prices and funding.	CA	Obsolete
2. Schedule Management	More detailed schedules will be developed for each major activity of the TAPV project, and project interdependencies will be prioritized.	ADM(Mat)	Full Implementation
3. Price and Availability	To better inform the approval documents and definition costs, price and availability will be planned early in the life of the project where possible.	VCDS	Full Implementation
4. Project Resources Estimates	The full project ammunition, personnel, infrastructure, and O&M cost estimates for the implementation phase of the TAPV project will be included in the project approval.	ADM(Mat)	Full Implementation
5. Project Risk Management	The TAPV risk management plan will be amended by setting more appropriate criteria for costs impact thresholds, and it will be reviewed to develop clear risk tolerance thresholds.	ADM(Mat)	Full Implementation

Table B-1. MAP Scorecard. This table shows the ADM(RS) assessment of progress on the MAPs.



Annex C—Summary of Management Action Plan Status

Recommendation 1 – Requirements Definition				
The CA funding plan should address any FLCV fleet funding distribution imbalances.				
MAP 1	OPI	Target Date	Progress to Date	Status of Action Item
Once FLCV fleet unit prices are known by February 2012, fleet requirements and funding will be revisited prior to effective project approval to address any FLCV fleet distribution imbalances in the Land Force 2013 Force Structure. Should funding be available, the first priority with respect to fleet options will be the Light Armoured Vehicle III fleet upgrade. The second priority will be the largest quantity of the 100 TAPV option as both the Light Armoured Vehicle III and TAPV fleets will provide the most flexibility for force generation and employment. The option of providing additional Close Combat Vehicles requires further review.	CA/ ADM(Fin)/CFO/ ⁴ FPA ⁵	April 2012	<p>The FLCV was a program announced in 2009. The FLCV term may still be used in documents prepared for bodies external to DND, but the FLCV program no longer exists in the DND Capital Investment Plan.</p> <p>A provision in the program allowed funds to be reallocated between projects. Now, each of the projects (e.g. TAPV) that were included in the FLCV is managed separately, and any financial imbalances between these capital projects cannot be redistributed at the discretion of DND.</p> <p>The Close Combat Vehicles procurement, one of the four FLCV projects, was cancelled in 2012.</p> <p>As a result, the MAP of identifying budgeting imbalances and then reallocating such funds amongst the included projects is obsolete.</p>	Obsolete

Table C-1. Status of the Implementation of the MAP Items for Recommendation 1. This table summarizes progress on implementing the MAP items for Recommendation 1.

⁴ Assistant Deputy Minister (Finance)/Chief Financial Officer.

⁵ Director Financial Planning and Analysis.

Recommendation 2 – Schedule Management				
The project office should improve schedule control and rank the impact and likelihood of project interdependencies in order of priority.				
MAP 2	OPI	Target Date	Progress to Date	Status of Action Item
More detailed schedules have and will continue to be produced for each major activity. There are only three dependencies on other projects that are being monitored as risks within the project's risk management plan. Prioritization of dependencies has occurred.	ADM(Mat)	November 30, 2011	<p>The TAPV project manager now maintains an integrated master schedule to track all major activities of the TAPV project. These activities are derived from many sources, such as statements of requirements, policy, process requirements, and contracts.</p> <p>Comparing the existing schedule to the 2011 schedule shows further granularity and detail in the schedule, which includes the sub-activities.</p> <p>A thorough review found that all major activities of a TAPV acquisition contract are included in this master schedule.</p> <p>An interdependency is a deliverable from another project that the TAPV project requires. At the time of the 2011 audit, TAPV documentation listed up to 19 interdependencies that could impact the project schedule to some degree. There are now three interdependencies, and this was reflected in the project's submission.</p>	Full Implementation

Table C-2. Status of the Implementation of the MAP Items for Recommendation 2. This table summarizes progress on implementing the MAP items for Recommendation 2.

Recommendation 3 – Price and Availability				
Sequencing of price and availability activity should be established in the PAD.				
MAP 3	OPI	Target Date	Progress to Date	Status of Action Item
It is agreed that the sequencing of price and availability, where possible, should be planned early in the life of a project so that the definition costs will be better informed. Consultation with ADM(Mat), Assistant Deputy Minister (Policy), and Director Cabinet Liaison will occur in order to have this amendment made to the PAD.	VCDS	March 31, 2012	<p>At the time of the audit, the PAD was being developed to replace the Project Approval Guide. The PAD places more discipline on concept development before allowing a project to start, and it requires this discipline to continue throughout the project life.</p> <p>The PAD defines five phases of major projects: Identification, Options Analysis, Definition, Implementation, and Close-out. As a project progresses through approval of each phase, the project management team must present the Senior Review Board with a more complete understanding of project factors. Rough cost projections (based on price and availability) are prepared in the Options Analysis phase. Highly reliable cost projections are prepared for approval to initiate the Implementation project phase. All cost estimates must be validated by departmental costing experts.</p>	Full Implementation

Table C-3. Status of the Implementation of the MAP Items for Recommendation 3. This table summarizes progress on implementing the MAP items for Recommendation 3.

Recommendation 4 – Project Resource Estimates				
Project cost estimates should include ammunition, infrastructure, personnel, and O&M costs for the implementation phase approval.				
MAP 4	OPI	Target Date	Progress to Date	Status of Action Item
The full project ammunition, infrastructure, personnel, and O&M cost estimates for the implementation phase will be included in the project approval documentation for project approval once the winner has been selected and costs are known.	ADM(Mat)	March 31, 2012	The TAPV project ammunition, infrastructure, personnel, and O&M cost estimates for the implementation phase were included in the project approval documentation.	Full Implementation

Table C-4. Status of the Implementation of the MAP Items for Recommendation 4. This table summarizes progress on implementing the MAP items for Recommendation 4.

Recommendation 5 – Project Risk Management				
Adopt a more robust risk identification, ranking, and monitoring process to ensure there are sufficient risk indicators on the effectiveness of risk responses.				
MAP 5	OPI	Target Date	Progress to Date	Status of Action Item
<p>The Project Management Office TAPV has already amended the TAPV risk management plan by setting more appropriate criteria for cost impact thresholds. Project Management Office TAPV will further review the TAPV risk management plan to develop clear risk tolerance thresholds. In addition, Project Management Office TAPV will review all risk identification sheets to do the following:</p> <ul style="list-style-type: none"> • improve the level of detail in risk identification; • identify risk triggers where applicable; • reassess residual risk levels in light of standard DND internal controls; and • develop risk indicators to better measure the effectiveness of risk responses. 	ADM(Mat)	November 30, 2011	<p>Cost impact thresholds are included in the TAPV risk management plan that has been approved by the Senior Review Board.</p> <p>Comparison of the risk management plans of 2011 and 2014 found the following:</p> <ul style="list-style-type: none"> • enhanced level of detail in risk identification; • descriptions of risk triggers, where applicable; • the requirement to reassess residual risk levels on a monthly basis, and • risk indicators that measure effectiveness of risk responses. <p>The TAPV project team updates its risk register during distinct risk management meetings that are held on a monthly basis. Effectiveness of risk responses is tracked in the risk register.</p>	Full Implementation

Table C-5. Status of the Implementation of the MAP Items for Recommendation 5. This table summarizes progress on implementing the MAP items for Recommendation 5.