



National
Defence

Défense
nationale



CANADIAN
ARMED FORCES

Request For Information Earned Value Management System

6 December 2023



Table of Contents

1	Legal Disclaimer	3
2	RFI Response	3
3	Acronyms List	4
4	Purpose and Nature	5
5	Background Information	5
6	EVMS within the Defence Procurement Landscape	6
7	Issue	7
8	Strategic Outcome	7
9	EVMS Strategy	8
9.1	Criteria for the Application of EVMS.....	8
9.2	EVMS Implementation Methodology.....	8
9.3	EVMS Reporting	9
9.4	EVMS Oversight	9
9.5	EVMS Compliance Process.....	10
9.6	Impact of EVMS Non-Compliance	11
10	EVMS Implementation Strategy Summary	11
11	Creation of a Defence Integrated Project Management Forum	11
12	Conclusion	12
13	Questionnaire	14
13.1	Organization Environment	14
13.2	Earned Value Management	16
13.3	Schedule Management	18
13.4	Risk Management.....	20
13.5	Scope Management.....	20
13.6	EVMS Strategy	21
14	Application of EVM to Fixed Price Contracts	23
14.1	Milestone Progress Payment Status Quo	23
14.2	Earned Value Milestone Payment Plan.....	23
14.3	EVMP Benefits	29
14.4	EVMP Challenges	29

1 Legal Disclaimer

This Request for Information (RFI) process is neither a call for tender nor a Request for Proposal (RFP). No agreement or contract will be entered into based on this RFI process. The issuance of this RFI process is not to be considered in any way a commitment by the Government of Canada, nor as authority to potential respondents to undertake any work that could be charged to Canada. The RFI process is not to be considered as representative of any Government of Canada policy. This RFI process is not to be considered as a commitment to issue a subsequent solicitation or award contract(s) for the work described herein.

Although the information collected may be provided as commercial-in-confidence (and, if identified as such, will be treated accordingly by Canada), Canada may use the information to assist in drafting performance specifications (which are subject to change) and for budgetary purposes.

Respondents are encouraged to identify information that they consider to be proprietary, third party, or personal information. Please note that Canada may be obligated by law (e.g., in response to a request under the Access of Information and Privacy Act) to disclose unidentified proprietary or commercially-sensitive information concerning a respondent (for more information: <http://laws-lois.justice.gc.ca/eng/acts/a-1/>).

Respondents are asked to identify if their response, or any part of their response, is subject to Controlled Goods Regulations. Participation in this RFI process is encouraged but is not mandatory. Participation in this RFI is not a condition or prerequisite for the participation in any potential subsequent solicitation. Respondents will not be reimbursed for any cost incurred by participating in this RFI process. The RFI closing date published herein is not the deadline for comments or input. Comments and input will be accepted any time up to the time when or if a follow-on solicitation is published.

2 RFI Response

Individual RFI responses will not be shared with other participants nor with Industry. However, consolidated Industry-wide data collected from this RFI may be shared with Industry during follow-on engagements.

Section 13 of this RFI contains a questionnaire which may be answered and submitted electronically by following this [hyperlink](#)¹.

Questions regarding the RFI may be directed to following e-mail address:

rfievm-drgva@forces.gc.ca

The RFI and the online questionnaire will both close on:

March 1st, 2024.

¹ <https://questionnaire.simplesurvey.com/f/LanguageSelection.aspx?s=d2ae8dcf-dd21-4cbe-88bd-8f6a74cf67b5>

3 Acronyms List

AUS DoD	Australian Department of Defence
BAC	Budget-At-Completion
BCWP	Budget Cost of Work Performed (i.e., Earned Value)
CP	Contract Price
CPI	Cost Performance Index
CDR	Critical Design Review
DND	Department of National Defence
EVM	Earned Value Management
EVMS	Earned Value Management System
EVP	Earned Value Payment
FP	Firm Portion
IBR	Integrated Baseline Review
IOC	Initial Operating Capability
IPMDAR	Integrated Program Management Data Analysis Report
IPMR	Integrated Program Management Report
NSS	National Shipbuilding Strategy
OAG	Office of the Auditor General
PEVP	Previous Earned Value Payment
PP	Performance Portion
PSPC	Public Services and Procurement Canada
RFI	Request for Information
SPI	Schedule Performance Index
SSE	Strong. Secure. Engaged. (Canada Defence Policy)
US DoD	United States Department of Defense
UK MoD	United Kingdom Ministry of Defence
WBS	Work Breakdown Structure

4 Purpose and Nature

The Department of National Defence (DND) is soliciting the Canadian Defence Industry's² feedback regarding the use of Earned Value Management Systems (EVMS) and project management best practices to support oversight, collaboration, and the management of large and complex defence procurements.

The purpose of this RFI is to:

1. present DND's proposed strategy regarding the implementation of an EVMS and solicit Industry feedback;
2. collect information regarding Industry's capability, experience, and use of EVMS and project management best practices;
3. solicit questions from Industry and respond openly to ensure all interested participants receive the same information; and
4. improve and align DND's EVMS implementation strategy with Industry and allied nations' best practices.

The information gathered in this RFI will be used to guide the next steps with the roll-out of the EVMS Strategy.

5 Background Information

Canada's defence policy *Strong Secure Engaged* (SSE) strives for the improvement of defence procurement and that "*Despite recent improvements, the timely delivery of projects remains a significant issue and more must be done.*"³

To address this significant issue, SSE established *Initiative 98 - Grow and Professionalize the Defence Procurement Workforce*. The Minister of National Defence reinforced this initiative within the 2022-2023 Departmental Plan⁴ with the continued roll-out of Earned Value Management (EVM) and the use of the three-point schedule estimating technique. Additionally, in response to observations made by the Office of the Auditor General of Canada (OAG)⁵ with regards to the National Shipbuilding Strategy (NSS) performance, DND, Public Services and Procurement Canada (PSPC) and the Department of Fisheries and Oceans (DFO) have committed to maturing EVM practices to support oversight by governance committees.

EVMS is a project performance management system which is used extensively by the United States Department of Defense (US DoD), the Australian Department of Defence (AUS DoD) and the United Kingdom Ministry of Defence (UK MoD) to oversee large and complex procurements. There is consistency of practice with regards to the implementation of EVMS amongst these three defence jurisdictions.

DND has observed the use of EVMS throughout Industry either as the result of contractual requirements, organizational policy, or organizational culture. However, practices and reporting formats vary from project to project, and from organization to organization.

² Canadian Defence Industry will be referred to hereafter as "Industry"

³ [Canada's Defence Policy Strong Secure Engaged](#) – Page 74

⁴ [Department of National Defence and Canadian Armed Forces 2022-23 Departmental Plan](#) – Section 5.2

⁵ [Report 2 – National Shipbuilding Strategy](#) - Section 2.36

For clarity, this RFI defines:

EVM is a methodology that combines scope, schedule, and resource measurements to assess project performance and progress.⁶ (e.g., reporting of metrics such as Schedule Performance Index (SPI) and Cost Performance Index (CPI).)

An Earned Value Management System (EVMS) is a set of principles, methods, processes, practices, and tools for managing project performance⁷. An EVMS can be assessed for compliance with an industry standard such as the EIA-748.

6 EVMS within the Defence Procurement Landscape

The use of an EVMS as a procurement tool is not a new concept for the Government of Canada. From 1994 to 2012, Treasury Board's policy for the Management of Major Capital Projects referred to Canadian General-Cost/Schedule Performance Management Standard (CGSB187.1-93), which was the predecessor of what is commonly known today as an EVMS.

At the 1992 Trilateral Defence Industrial Cooperation Forum (Washington, D.C), the US DoD, the AUS DoD and DND reached an agreement concerning the collaboration on Cost/Schedule Control System Criteria (C/SCSC) implementation (i.e., EVMS).

In 1995, these allied nations ratified the trilateral *Memorandum of Understanding Between the Department of Defense of the United States of America and the Department of Defence of Australia and the Department of National Defence of Canada Concerning Cooperative Implementation of Project Cost and Schedule Performance Management Principles in Defense Contracting*.

In 2005, the aforementioned memorandum of understanding (MoU) was renewed. The extension included an amendment where in DND recognized the American National Standard/Electronic Industries Alliance ANSI/EIA-748 EVMS as part of their cost and schedule performance management requirement, the same standard used and still recognized by the US DoD today.

In 2009, DND's Chief of Review Services identified the comprehensive use of EVMS requirements and compliance with the ANSI/EIA-748 EVMS standard as implemented best practices for the CP140 Aurora Maintenance Contract. (Unclassified ADM(RS) document 7050-28-2).

From 2014 to present day, EVMS requirements have been introduced on various complex projects and programs including:

- Fixed Wing Search and Rescue (FWSAR),
- Future Aircrew Training (FAcT), and
- National Shipbuilding Strategy (NSS) projects such as,
 - o Arctic and Offshore Patrol Ship (AOPS),
 - o Joint Support Ship (JSS),
 - o Canadian Surface Combatant (CSC), and
 - o the Offshore Oceanographic Science Vessel (OOSV).

⁶ Project Management Institute. 2017. *The PMI Lexicon of Project Management Terms*.

⁷ Project Management Institute. 2017. *The PMI Lexicon of Project Management Terms*.

Additionally, EVMS has also been implemented informally as the result of mutual collaboration and transparency between Canada and Industry for projects such as Polaris CC-150 sustainment and Griffon Limited Life Extension (GLLE).

In 2021, in light of the OAG's observations on NSS performance DND, PSPC and DFO committed to mature EVM to ensure that cost and schedule are properly managed and to support oversight by governance committees at all levels.

In 2022, the House of Commons' Standing Committee on National Defence report on the rapidly changing threat environment recommended a reform on the defence procurement process⁸. DND's response included, amongst many others, a strategic initiative for the implementation of EVM and risk-based scheduling⁹.

The implementation and use of an EVMS is not limited to the Canadian Defence Industry. Other Departments including Shared Services Canada, National Resources Canada, Crown-Indigenous Relations and Northern Affairs Canada, and Canada Border Services Agency have begun to implement EVMS as a project management best practice.

7 Issue

Unlike the environment in which US DoD operates, where compliance to the EIA-748 EVMS standard is required by [federal defense regulations](#)¹⁰, neither DND nor PSPC are subject to an equivalent Treasury Board standard. Industry has implemented EVMS best practices in response to various contractual requirements, corporate policies, or to further mature project management practices. An observed outcome is an inconsistency regarding EVMS practices, reporting formats, and EVM data interpretation within both Industry and DND alike.

The impacts of these inconsistencies are best demonstrated within a program such as the NSS where EVMS requirements are inconsistent from project to project. Consequently, reporting, interpretation, and consolidation can be challenging for stakeholders at any level.

8 Strategic Outcome

The purpose of DND's EVMS strategy is to:

- 1- Change the performance management mindset from "*on time, on cost*" to "*timely and credible*" enabling enhanced risk management, improved stakeholder collaboration, and an integrated approach to project management;
- 2- Achieve EVMS consistency of practice enabling project leaders, for DND and Industry alike, to engage in proactive, efficient, and data-driven discussions;
- 3- Standardize training to facilitate the development and collaboration of project management personnel;
- 4- Expedite performance reporting leveraging existing technology; and
- 5- Update DND, PSPC and potentially OGDs policies as required.

⁸ <https://www.ourcommons.ca/DocumentViewer/en/44-1/NDDN/report-1/page-111#29>

⁹ https://www.ourcommons.ca/content/Committee/441/NDDN/GovResponse/RP11984347/441_NDDN_Rpt01_G R/DepartmentOfNationalDefence-e.pdf

¹⁰ <https://www.acquisition.gov/dfars/subpart-234.2-earned-value-management-system>

9 EVMS Strategy

There are four elements to the proposed EVMS strategy:

- 1- Criteria for the Application of an EVMS;
- 2- EVMS Implementation Methodology;
- 3- EVMS Reporting, and;
- 4- EVMS Oversight.

9.1 Criteria for the Application of EVMS

The objective of the criteria below is to mandate and limit the implementation of an EVMS to projects that will benefit from its use.

The proposed mutually inclusive criteria are as follows:

1. Capital acquisition projects;
2. Government of Canada Project Complexity and Risk Assessment (PCRA) rating of 2 or greater;
3. Presence of developmental scope of work;
4. Anticipated project duration exceeds 18 months;
5. Contract value exceeds \$100 million CAD (exclusive of taxes); and
6. Basis of payment consists of progress payments as defined in [PSPC Supply Manual 4.70.30.15 articles c\), and potentially d\)](#). (i.e., time & materials)¹¹.

For clarity, for the purpose of above criteria the project's duration is measured from contract award to project close out. For more information on PCRA please see the [Treasury Board Policy on the Management of Projects](#)¹².

Notwithstanding the criteria defined in Section 9.1, DND is reviewing the applicability of EVMS on other types of contracts (e.g., fixed price contracts, and sustainment projects) based on the practices of allied defence departments. See Section 14 for additional information for the implementation of EVMS on fixed price contracts.

9.2 EVMS Implementation Methodology

The [EIA-748 Earned Value Management Systems](#)¹³ standard is an industry accepted framework for the implementation and application of EVMS. To facilitate a consistent interpretation and additional insight of the guidelines within EIA-748 standard, DND is proposing to adopt the National Defense Industrial Association's (NDIA) [Earned Value Management Systems EIA-748 Intent Guide](#)¹⁴ as its EVMS reference standard. The NDIA is also the author and custodian of the EIA-748 EVMS standard.

For added clarity, the NDIA EVMS EIA-748 Intent Guide is a more detailed interpretation of the conceptual EIA-748 EVMS standard.

Projects which meet the EVMS criteria as defined above, in Section 9.1, would also be required to participate in an Integrated Baseline Review (IBR). These reviews are required to ensure authorized work is adequately planned and resourced; to establish a mutual understanding of the inherent risks and opportunities; and assess the overall achievability of the contract's performance baseline. As part of these efforts, both customer and supplier can agree on the contents of the risk register, the mitigations for reducible risks, and the margins for irreducible risks, as well

¹¹ https://canadabuys.canada.ca/en/how-procurement-works/policies-and-guidelines/supply-manual/chapter-4#_4-70-30-15

¹² <https://www.canada.ca/en/treasury-board-secretariat/services/information-technology-project-management/project-management/project-complexity-risk-assessment-tool.html>

¹³ <https://www.sae.org/standards/content/eia748d/>

¹⁴ <https://www.ndia.org/divisions/ipmd/division-guides-and-resources>

as the integrated program management processes used during project execution. IBRs are performed on the initial contract baseline or whenever there is a significant change to the baseline; and in special cases at the customer's request. In all instances, an IBR is performed to insure both parties have a mutual agreement on the scope of work, resources, and schedule to meet the customer's needs. DND is proposing that IBRs be conducted in accordance with [NDIA Integrated Baseline Review Guide](#)¹⁵.

9.3 EVMS Reporting

DND is proposing to standardize EVM reporting in accordance with the US DoD EVM reporting format known as Integrated Program Management Report (IPMR), formally known as [US DoD Data Item Description \(DID\) DI-MGMT-81861 Revision A](#)¹⁶ and to eventually seek compliance with [DI-MGMT-81861 Revision C](#), known as Integrated Program Management Data and Analysis Report (IMPDAR).

9.4 EVMS Oversight

Projects with an EVMS requirement would be subject to an EVMS System Acceptance audit to assess compliance with the NDIA'S EVMS EIA-748 Intent Guide.

DND does recognize the existence of potential challenges associated with compliance to all the 32 guidelines within the NDIA'S EVMS EIA-748 Intent Guide. It is proposed that compliance would be divided into two categories:

- Mandated Guidelines; and
- Low-Risk Guidelines.

9.4.1 Mandated Guidelines

Mandated Guidelines would be mandatory for all applicable projects and are deemed essential to the integrity of EVMS as a performance management system.

The following 20 guidelines are proposed as Mandated Guidelines:

- Guideline 1 – Define Scope (WBS)
- Guideline 3 – Integrated Process
- Guideline 6 – Schedule Work
- Guideline 7 – Identify Products and Milestones for Progress Assessment
- Guideline 8 – Establish the Performance Measurement Baseline
- Guideline 9 – Authorize and Budget by Cost Element
- Guideline 10 – Determine Discrete Work and Objective Measure
- Guideline 11 – Sum Detail Budgets to Control Accounts
- Guideline 12 – Level of Effort Planning and Control
- Guideline 14 – Identify Management Reserve and Undistributed Budget
- Guideline 16 – Record Direct Cost
- Guideline 21 – Track and Record Material Costs and Quantities
- Guideline 23 – Analyse Significant Variances
- Guideline 25 – Summarize Performance Data and Variances for Management Reporting
- Guideline 26 – Implement Corrective Actions
- Guideline 27 – Revise Estimate at Completion (EAC)
- Guideline 28 – Incorporate Change in a Timely Manner
- Guideline 29 – Maintain Baseline and Reconcile Budgets
- Guideline 30 – Control Retroactive Change
- Guideline 32 – Document Performance Measurement Baseline Changes

¹⁵ <https://www.ndia.org/divisions/ipmd/division-guides-and-resources>

¹⁶ https://quicksearch.dla.mil/qaDocDetails.aspx?ident_number=278901

9.4.2 Low-Risk Guidelines

Low-Risk Guidelines consist of the remaining 12 Guidelines which are excluded from Section 9.4.1. Compliance with these guidelines would not be considered mandatory for the overall EVMS to be deemed compliant.

However, Canada, at its sole discretion, would reserve the right to deem an EVMS as non-compliant should the impact of one, or the cumulative effect of many, non-compliant Low-Risk Guidelines hinder the overall integrity of the EVMS to report timely and credible information at any moment during the execution of the project.

9.5 EVMS Compliance Process

EVMS Compliance audits would be evaluated at the following points in the project's lifecycle:

- 1- Bid Proposal;
- 2- One Year After Contract Award; and
- 3- Every Five Years.

For added clarity:

- An EVMS System Acceptance is a rigorous review of a project's EVMS for compliance with a standard.
- An EVMS Surveillance is a periodic and more discrete oversight review to ensure that the accepted EVMS is still in compliance with the required standard.

Compliance would be undertaken by Canada, or a Canada-designated third-party representative.

9.5.1 Bid Proposal

As part of the proposal, the contractor would be required to submit an Earned Value Management Plan (EVMP) which would serve as:

- A bid evaluation criterion; and
- The basis by which EVMS System Acceptance would be determined.

The EVMP outlines how the contractor plans to comply with the EVMS requirements.

9.5.2 One Year After Contract Award

Within one year after contract award, Canada or a designated representative would review the Contractor's EVMS for EVMS System Acceptance in accordance with [NDIA EVMS System Acceptance Guide](#)¹⁷.

9.5.3 Every Five Years After Contract Award

Five years after contract award, the contractor's EVMS would undergo an EVMS Surveillance Review of the project's EVMS, in accordance with the [NDIA Surveillance Guide](#)¹⁸.

9.5.4 EVMS System Acceptance Waivers

DND proposes that under either of the followings conditions, a contractor may only undergo an EVMS Surveillance review rather than an EVMS System Acceptance review:

- A contractor who has an EVMS compliance certificate from the US Defense Contract Management Agency (DCMA) in good standing may be eligible to undergo an EVMS Surveillance review in lieu of an EVMS System Acceptance.
- A contractor who has implemented a DND approved EVMS as the result of a previously awarded and currently on-going project may be eligible to undergo a EVMS Surveillance review in lieu of an EVMS System Acceptance.

¹⁷ <https://www.ndia.org/divisions/ipmd/division-guides-and-resources>

¹⁸ <https://www.ndia.org/divisions/ipmd/division-guides-and-resources>

9.6 Impact of EVMS Non-Compliance

Upon full implementation of DND's EVMS implementation strategy, in the spirit of enabling learning, improvements and collaborating with Industry, there would be no intent to apply consequences for EVMS non-compliance during an initial transition period.

After this period, DND, PSPC, and ISED will review and evaluate whether incentives and/or disincentives are appropriate and/or necessary.

10 EVMS Implementation Strategy Summary

DND's EVMS implementation strategy strives for consistency of practices such as those observed within Industry and other allied nations.

For complex projects assessed as higher risk ventures, DND's EVMS strategy would require them to:

1. Use consistent EVMS requirements;
2. Implement an EVMS in compliance with the NDIA EVMS EIA-748 Intent Guide;
3. Report performance in a manner consistent with the US DoD EVM format;
4. Undergo an EVMS System Acceptance (audit) to assess compliance with the standard, and
5. Undergo a periodic EVMS Surveillance review.

The desired outcome is to further collaboration between Canada and Industry stakeholders through proactive and timely project performance discussions, enhanced risk management, and data-driven project oversight to enable project success for all stakeholders.

11 Creation of a Defence Integrated Project Management Forum

DND is requesting Industry feedback on a proposition to create a Defence Integrated Project Management Forum (DIPMF), which would be co-chaired by Canada (DND, PSPC and ISED) and Industry. Other Government Departments (OGD) may be invited from time to time should a project's stakeholders include OGDs.

Example: National Shipbuilding Strategy with the inclusion of DND and Canadian Coast Guard.

Integrated project management refers to the practice of project management as an integrated set of disciplines (e.g., schedule management, cost management, risk management, etc.) as a system rather than individual disciplines.

The purpose of the DIPMF would be to lead the advancement of Defence project management through a Canada and Industry partnership.

The objectives of the DIPMF would be to:

- 1- Provide leadership for project management best practices;
- 2- Enable a forum where Canada (DND, PSPC and ISED), Industry executive leadership, Industry groups, academia and other relevant entities can foster the advancement of integrated project management practice; and
- 3- Develop and maintain project management standards such as establishing standardized project management requirements, reporting formats, integrated tools and processes pertaining to project governance.

12 Conclusion

The implementation of EVM is not only a step towards improving the professionalism and oversight of defence procurements but is also an initiative which seeks to achieve a smarter practice of risk management with Industry's collaboration.

“Good decisions are based on knowledge, not on numbers.”

- Plato

Defence projects are inherently complex, particularly those that meet the proposed criteria for the use of an EVMS. The management of such endeavours requires sound project controls practices and effective stakeholder engagement. While resources are finite, achieving a project “*on time and on budget*” is not in itself an indicator of successful execution. Project controls is the implementation of tools, processes, and people that, when integrated, provide timely and credible information to the right stakeholders for informed, transparent, and timely decision-making. An EVMS is a “tool of tools” to achieve such a goal.

The implementation of standards for EVM compliance, project management and reporting will inevitably raise challenges. Canada's proposal to establish a Defence Integrated Project Management Forum represents an invitation to overcome these challenges with Industry's partnership.

Adherence to US DoD EVM practices have been observed with those of our Allies, and it is worth noting that reporting requirements between the AUS DoD, the UK MoD and US DoD are consistent.

In a 2021 [update on the significant developments in integrated project controls, EVM and project reporting within and external to the Capability Acquisition and Sustainment Group](#)¹⁹, the AUS DoD shared that implemented EVM practices now broadly align with US DoD EVM requirements (EIA-748), with which many Australian and Canadian global suppliers are familiar.

The UK MoD aligns its project management practices with those of the Association for Project Management (APM). In 2004, and permanently reaffirmed in 2015, the National Defense Industrial Association (NDIA), author and custodian of the EIA-748 EVMS Standard, and the APM [recognized the equivalency of their respective EVM practices](#)²⁰.

Electing to implement EVM in a manner that is consistent with our Allies and our global suppliers will enable expeditious adoption and facilitate consistency of practice amongst a broad range of stakeholders.

While the benefits and challenges of EVM have previously been reviewed, Richard Smart, past Director of Weapons at the UK MoD's Defence Equipment and Support (DE&S) Group, shares²¹ a rather pragmatic perspective on the outcome of implementing EVM in defence procurement:

¹⁹https://www.pgcs.org.au/files/9716/2968/0758/0758/An_update_on_the_significant_developments_in_integrated_project_controls_EVM_and_project_reporting_within_and_external_to_CASG.pdf

²⁰<https://www.ndia.org/-/media/sites/ndia/meetings-and-events/divisions/ipmd/links-and-reference/earned-value-management-system-standard-equivalence-agreement.ashx>

²¹https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/823055/August-desider-online-v1.pdf

“...as a result of applying earned value management to our work,...

...people are now asking more insightful and intelligent questions of our supply chain.”



***Richard Smart
Director, United Kingdom Ministry of Defence***

13 Questionnaire

Please use the online questionnaire to submit your answers using the following [hyperlink](#)²².

Respondents are encouraged to answer all questions. However, if time is a constraint, questions marked with an asterisk (*) should be prioritized.

The estimated time required to complete the questionnaire is approximately **45 minutes**.

13.1 Organization Environment

1. *What is your organization's business name?
2. What is your organization's business address?
3. What is the size (employees) of your organization in Canada?
 - a. Small (1-99)
 - b. Medium (100-499)
 - c. Large (500+)
4. *Does your organization have a centralized centre of excellence for project management practices? (Y/N)
E.g., A centralized Project Management Office (PMO)
5. *Please provide a RFI point of contact within your organization. (Name and contact information)
6. What is your organization's project management structure? Select one:
 - a. Functional (i.e., Centralized PMO)
 - b. Project-based (i.e., Project centric PMO)
 - c. Matrixed (i.e., blend of a. and b.)
 - d. Other: please specify.
7. *Does your organization have a policy(ies) regarding project management practices? If so, does it provide guidance on the following:
 - a. Earned Value Management (EVM)
 - b. Earned Value Management System (EVMS)
 - c. Schedule Management
 - d. Risk Management
8. Is your organization willing to share its project management policies? (Y/N)
 - a. If so, please include them in the RFI's response.

²² <https://questionnaire.simplesurvey.com/f/LanguageSelection.aspx?s=d2ae8dcf-dd21-4cbe-88bd-8f6a74cf67b5>

9. Are your organizational project management policies created at the:

- a. Corporate level
- b. Divisional level
- c. Site Level
- d. Other, please specify

10. Does your organization perform internal project management audits? (Y/N)

13.2 Earned Value Management

If your organization does not practice EVM, please advance to Section 13.3.

11. *What are your organization's criteria for the use of EVM in a project?
12. *Is there any other pre-requisite for a successful implementation of an EVMS from the customer/contractor perspective?
13. *When EVM is required, in accordance with what standard is the EVMS implemented?
 - a. EIA-748
 - b. Corporate developed requirements
 - c. Compliance with a standard is not required
 - c. Other - please specify
14. What type of project is EVM applied to?
 - a. Delivery based contracts (ex: ships, planes, tanks, etc.)
 - b. Service based contracts (ex: in service support); and/ or
 - c. All projects
15. Does the project's basis of payment influence the decision for the use of EVM? (Y/N)
16. Is your organization familiar with the following:
 - a. EIA-748 EVMS standard?
 - b. NDIA EVMS EIA-748 Intent Guide?
 - c. NDIA Planning and Scheduling Excellence Guide?
 - d. NDIA suite of documents related to integrated project management ([Hyperlink to NDIA](#)²³)
17. Are projects which meet the organizational criteria for EVMS/EVM required to perform an Integrated Baseline Review? (Y/N)
18. *Is your organization familiar with the US DoD EVM reporting format ([DI-MGMT-81681](#)²⁴)? (Y/N)
19. *Is EVM data used to support corporate level financial reporting? (Y/N)
20. Is EVM data reported to leadership? (Y/N)
 - a. If so, what EVM data is presented and to what level within the organization?

²³ <https://www.ndia.org/divisions/ipmd/division-guides-and-resources>

²⁴ https://quicksearch.dla.mil/qaDocDetails.aspx?ident_number=278901

21. *What is your organization's tool for EVM data integration and reporting? (software name, version and developer)

22. Does your organization offer training to its personnel to develop and maintain EVM competencies? If so, what type of training is offered:

- a. In-house and/or corporate training
- b. Outsourced (generic)
- c. Other, please describe

23. *What are your organization's key challenges (or barriers) when implementing EVM practices?

24. *What are your organization's key challenges (or barriers) when implementing an EVMS in compliance the NDIA EIA-748 Intent Guide?

25. What criteria would your organization recommend to Canada for the mandatory use of EVM on a defence procurement which has a PCRA level of 2 or greater?

26. Does your organization have any concerns with Canada's use of a project's EVM data? (Y/N) If so, please describe.

13.3 Schedule Management

27. *Does your organization typically omit any scope from the schedule? (Y/N)

E.g., Spares, management and oversight activities, and/or project management activities.

28. *Are project schedules typically resource loaded? (Y/N)

29. *Are project resource estimates captured in a Basis of Estimate (BoE) document? (Y/N)

30. *Are BoEs under configuration control throughout the life of the project? (Y/N)

31. *Does your organization conduct Schedule Risk Assessments (SRA)? (Y/N)

If no, please skip questions 29 and 30

32. What are the key elements of your organization's SRA process?

33. What is the frequency at which SRAs are conducted on a project's schedule?

34. *Does the typical project schedule make use of schedule margin**?

***Schedule margin, which is distinct from schedule float, is defined as the insertion of a schedule task(s) to represent the time necessary to account for estimated schedule risks/uncertainties. See [Section 5.12 of the NDIA Planning and Schedule Excellence Guide](#)²⁵ for additional details.*

35. *Does the organization have specific guidance for the approval of the initial baseline schedule? (Y/N)

36. Does the organization have specific guidance for approved schedule baseline changes? (Y/N)

37. *Does the organization have specific guidance for re-baselining a project's schedule? (Y/N)

38. Does your organization perform a schedule health assessment** on a project's schedule? (Y/N)

***A schedule health assessment is often a report (display or document) containing a defined set of data or statistics reviewed for compliance to a standard, threshold, or guideline. Schedule health assessments are primarily quantitative and address the Generally Accepted Scheduling Principles (GASP). See NDIA Planning and Schedule Excellence Guide section 10.2 for additional details.*

²⁵ <https://www.ndia.org/-/media/sites/ndia/meetings-and-events/divisions/ipmd/links-and-reference/planning-and-scheduling-excellence-guide-paseg.ashx?la=en>

39. *Are project schedules required to comply with schedule health metrics?(Y/N) If so, please specify:

- a. [Defense Contract Management Agency 14 Point Schedule Metrics for Integrated Master Schedule Analysis?](#)²⁶
- b. Internally established schedule metrics
- c. Other. Please specify.

40. *Are project schedules required to undergo a Monte Carlo analysis? (Y/N) If so, at what level of the schedule is the Monte Carlo analysis performed?

- a. Lowest schedule level
- b. Summary Level (please specify if possible)

41. Does your organization's schedule management practices include:

- a. The development and maintenance (i.e., configuration control) of a schedule's baseline?
- b. The development and maintenance of a forecast schedule?
- c. Both a) and b)?

42. *What scheduling metrics are reported to leadership above the project manager?

43. Does your organization use Integrated Master Plans** (IMP)? (Y/N)

***IMP is defined as the top-level execution strategy for the program and often serves as the primary architecture or outline of the project schedule. [See Section 4.2 of NDIA Planning and Schedule Excellence Guide](#)²⁷.*

44. *What is the organization's tool for schedule management? (software name, version and developer)

45. Does your organization offer training to its personnel, to develop and maintain schedule management competencies? If so, what type of training:

- a. In-house and/or corporate training
- b. Outsourced (generic)
- c. Other, please describe.

46. Does your organization maintain project schedules with a sufficient level of detail that a direct correlation between the schedule and cash flow reporting can be established? (Y/N)

²⁶ <https://www.dcm.mil/Portals/31/Documents/Policy/DCMA-PAM-200-1.pdf?ver=2016-12-28-125801-627>

²⁷ <https://www.ndia.org/-/media/sites/ndia/meetings-and-events/divisions/ipmd/links-and-reference/planning-and-scheduling-excellence-guide-paseg.ashx?la=en>

13.4 Risk Management

47. *Does your organization require quantitative risk assessments** as part of your risk management practices? (Y/N)

***Quantitative risk assessment is defined as a process of converting a risk impact into defined cost (dollars) and schedule impacts (time) which are supported by a basis of estimate.*

48. *What is your organization's tool for risk management? (software name, version, and developer)

49. Does your organization offer training to its personnel, to develop and maintain risk management competencies? If so, what type of training:

- a. In-house and/or corporate training
- b. Outsourced (generic)
- c. Other, please describe

13.5 Scope Management

50. *Should DND develop and maintain a standardized Work Breakdown Structure (WBS) framework for various project types (for example: acquisition, development and sustainment) which would be applicable to projects with a PCRA level of 2 or greater? If yes, how might that benefit your organization?

51. *Should DND adopt [US DoD MIL-STD-881](#)²⁸ as a WBS framework for applicable projects with a PCRA level of 2 or greater? If not, what other framework might be considered?

²⁸ https://cade.osd.mil/Content/cade/files/coplan/MIL-STD-881F_Final.pdf

13.6 EVMS Strategy

52. *What challenges, if any, does your organization anticipate complying with the 20 Mandated Guidelines, as per section 9.4.1 of this RFI?

53. What challenges, if any, does your organization anticipate when complying with US DoD EVM reporting requirements?

54. *Recognizing that most complex and higher risk projects (PCRA level 2 and greater) would require a contractor to prepare, submit and maintain the following:

- A project management plan, inclusive of sub-plans such as the Schedule Management Plan, Risk Management Plan and Cost Management Plan;
- An Integrated Master Schedule (IMS);
- A risk register; and
- Costing information

Is the estimated incremental cost/effort specifically associated with the implementation of an EVMS and EVM reporting deemed to be:

- a. Minimal
- b. Moderate
- c. Significant, please provide a rationale and, if applicable, identify the key drivers.

55. Does your organization have access to in-house EVMS expertise to provide guidance with the use and implementation of the NDIA EIA-748 EVMS standard? (Y/N)

56. What is Industry's perspective on DND's strategy to segregate the Guidelines within the NDIA EIA-748 EVMS Intent Guide into High-Risk Guidelines and Low-Risk Guidelines as described in Section 9.4.1?

57. *Would your organization be willing to participate in a DND/Industry EVMS Implementation Strategy session?

58. *If compliance with the NDIA EVMS EIA-748 Intent Guide is expected to drive challenges, please sort the following causes from the most challenging to the least.

- a. Technology (software)
- b. Development of resource loaded schedule
- c. Lack of expertise/knowledge
- d. Cost of implementation
- e. Uncertainty/risk with DND's use of EVM information
- f. Other, please specify

59. *If compliance with the US DoD EVM reporting format is expected to drive challenges, please sort the following causes from the most challenging to the least.

- a. Technology (software)
- b. Development of resource loaded schedule
- c. Lack of expertise/knowledge
- d. Cost of implementation
- e. Uncertainty/risk with DND's use of EVM information
- f. Other, please specify

60. *Overall, what is your organization's perspective on DND's proposed EVMS implementation strategy?

13.7 Defence Integrated Project Management Forum

61. *How does your organization view the idea of a forum where a Canada and Industry partnership would lead the advancement of project management for defence procurements?

62. *Would the purpose of a joint Canada-Industry Defence Project Management Forum include:

- a. The standardization of Defence project management requirements and deliverables
- b. The standardization of project management training
- c. Other? Please specify.

63. Who should potentially lead this forum?

- a. Canadian Association of Defence and Security Industries (CADSI)
- b. Defence Industry Advisory Group (DIAG)
- c. Independently led, but jointly chaired by Canada and Industry
- d. Chaired by Canada only, Industry as members only
- e. Other? Please specify

13.8 Application of EVM to Fixed Price Contracts

Please read Section 14 before answering the questions below.

64. *Is the application of EVM to fixed price contracting as described in Section 14 a concept which warrants further consideration between Canada and Industry? Please explain the rationale for the answer to question 64.

65. Which approach of the Earned Value Milestone Payment Plan (EVMPP) delivers the best outcome?

- a. Milestone Approach
- b. Project Approach

14 Application of EVM to Fixed Price Contracts

The purpose of this section is to propose and gather feedback on a new approach to progress payments which makes use of EVM concepts. The objective of the Earned Value Milestone Payment Plan (EVMPP) method of payment is to increase alignment between a project's technical progress, cashflow and the determination of value for money.

For added clarity, this methodology is not currently being pursued by Canada.

This method of payment would be applicable to fixed price acquisition procurements with a PCRA rating of 2 or greater. Currently, Canada's preferred method of payment for such procurements is progress payments ([See PSPC Supply Manual Section 4.70.30.15](#)) based on an agreed milestone payment plan.

Comprehension of Section 14 requires the reader to be knowledgeable with EVM and EVMS best practices.

14.1 Milestone Progress Payment Status Quo

Payment milestones are often a reflection of a project's technical progress. However, technical progress and project cashflow do not necessarily align with one another.

Payment for an achieved milestone typically occurs in arrears of the costs incurred by the contractor for its completion. Consequently, there is a lag between the contractor's expenditures and associated income. When a project incurs delays and payments occur on a milestone basis, there is potential for a contractor to find itself in a negative cashflow position. For Canada, these delays can be an administrative burden.

When this occurs, Canada may, from time to time and at its sole discretion, agree to revise and re-negotiate the milestone payment to bring the project to a cash neutral position and/or to minimize the impacts of a negative cashflow without increasing the contract price. This process can be an administrative burden for both Canada and the contractor alike.

14.2 Earned Value Milestone Payment Plan

The Earned Value Milestone Payment Plan (EVMPP) is essentially a hybrid of cost plus and milestone payment methods of payments. Two approaches are presented below.

14.2.1 EVMPP – Milestone Approach

14.2.1.1 Establish the Milestone Payment Plan

This step is consistent with the current practice of progress payments where Canada and the contractor mutually agree to a milestone payment plan.

14.2.1.1.1 Establish a Risk Profile for Each Milestone

Each milestone is assigned a risk profile. The purpose of the risk profile is to identify the percentage of the milestone which will be paid based on a performance basis and the percentage of the milestone which will be paid upon either the completion of the milestone or an aggregate of milestones. Milestone risk profiles may be subject to negotiation. However, to maintain a procurement process which is open, fair and transparent, risk profile guidelines would need to be developed.

The portion of the milestone paid on a performance basis is referred to as the *Performance Portion* (\$PP).

The portion of the milestone paid on completion is referred to as the *Firm Portion* (\$FP).

Risk profile indicators are expressed as follows: “PP/FP” where the aggregate of both PP and FP is equal to 100. A 70/30 split indicates that 70% of a milestone would be paid on a performance basis (i.e., earned value) and 30% of the milestone would be paid on its completion or the aggregate multiple completed milestones.

Expressed differently, a milestone is payable on a performance basis (i.e., \$PP), however, there is a holdback (i.e., \$FP) until completion.

Risk profiles are deemed as:

- A *high-risk* profile when the PP value is lower than 50.
- A *low-risk* profile when the PP value is greater than 50.
- A *balanced-risk* profile when the PP has a value of 50.

$$\$PP = \text{Milestone Value} * PP$$

$$\$FP = \text{Milestone Value} * FP$$

As a rule of thumb, a milestone’s risk profiles would not only be determined on its own technical complexity, but predominately on the overall impact that milestone has on the outcome of the project.

Example A

Milestone A has a contractual value of \$1,000,000. The assigned risk profile is a “70/30” split, indicating a low-risk milestone. In this scenario:

- \$700,000 (70%) of the milestone would be payable on performance, (i.e., earned value) and,
- \$300,000 (30%) of the milestone would be payable on completion, based on the successful completion of the accomplishment criteria as defined in the IMP.

14.2.1.1.2 Establishing a Milestone’s Earned Value

The Performance Portion (\$PP) of a milestone would be payable in proportion to progress as reported in the project schedule. Consequently, adherence to strong schedule management practices is imperative for the success of this methodology.

For the purposes of demonstrability and brevity, the following assumptions are established:

- The Performance Measurement Baseline (PMB) equates to the sum of all the project milestones.
- All schedule activities (tasks) would be assigned to a relevant milestone.
- Milestones would be represented as a summary task within the project schedule.

The sum of the work accomplished in the schedule at the activity level would determine the percent complete of a milestone. The established percent complete would become the basis for determining a milestone’s earned value.

Example A (continued)

Based on the sum of the progress of the schedule activities, Milestone A is determined to be 40% completed.

14.2.1.2 Determining Earned Value Payment

Earned Value Payments (EVP) are determined according to the equation below:

$$EVP = (\text{Milestone Value} \times \text{PCTC}) - \sum PEVP$$

- PEVP: Previous Earned Value Payments
- PCTC: Milestone percent complete,
 - o where the PCTC cannot exceed the PP value as identified in the milestone risk profile
 - o $PCTC \leq PP$

At 1 Month After Contract Award (MACA) the value of the payment in Example A would be:

$$EVP = (\$1,000,000 \times 40\%) - \$0 = \mathbf{\$400,000}$$

At 2 MACA, Milestone A's PCTC is now 60%, consequently payment would be:

$$EVP = (\$1,000,000 \times 60\%) - \$400,000 = \mathbf{\$200,000}$$

At 3 MACA, Milestone A's PCTC is now 80%, consequently payment would be:

$$EVP = (\$1,000,000 \times 70\%) - \$600,000 = \mathbf{\$100,000}$$

Note that the PCTC value is limited to 70% as the milestone's risk profile is 70/30.

At 4 MACA, Milestone A's PCTC is now 90%, consequently payment would be:

$$EVP = (\$1,000,000 \times 70\%) - \$700,000 = \mathbf{\$0}$$

Note that the PCTC value is limited to 70% as the milestone's risk profile is 70/30.

At 5 MACA, Milestone A's PCTC is now 100%, and the Firm Portion (\$FP) which represents \$300,000 of the milestone's value is now eligible to for payment.

$$\text{Final Milestone A Payment} = \mathbf{\$300,000}$$

The overall total payment for Milestone A is **\$1,000,000** where, in accordance with milestone's 70/30 risk profile:

\$700,000 (70%) was paid on a performance basis; and
\$300,000 (30%) was paid on completion of the milestone.

14.2.2 EVMPP – Project Approach

14.2.2.1 Establish the Milestone Payment Plan

As with the EVMPP Milestone Approach, this step is consistent with the current practice of progress payments where Canada and the contractor mutually agree to milestone payment plan.

14.2.2.1.1 Establish a Risk Profile for Project

Under this framework, the risk profile is determined at the project level, not per milestone. As a result, the overall contract price (CP) would be divided into two components:

The Performance Portion (\$PP) which would be paid on a performance basis. \$PP is equal to the Budget-At-Completion (BAC).

The Firm Portion (\$FP) which is paid on completion of the milestone. The \$FP is equal to sum of all the milestones on the milestone payment plan.

$$CP = \$PP + \$FP$$

$$\$PP = BAC$$

$$\$FP = \sum \text{All Contractual Milestones}$$

Risk profile indicators are expressed as follows: “PP/FP” where the aggregate of both PP and FP is equal to 100%. (e.g. a 80/20 split indicates that 80% of the contract value would be paid on performance basis (i.e. earned value) and 20% of the contract value would be paid on upon the completion of milestones.

Risk profiles are deemed as:

- A high-risk profile when the PP value is lower than 50.
- A low-risk profile when the PP value greater than 50.
- A balance-risk profile when PP has a value of 50.

The financial value of \$PP and \$FP are determined using the project’s risk profile and are calculated as follows:

$$\$PP = CP * PP$$

$$\$FP = CP * FP$$

Consequently,

$$CP = (CP * PP) + (CP * FP)$$

Example B

A project has a Contract Price (CP) of \$100 million and has an 80/20 risk profile, therefore:

$$\$PP = \$100 \text{ M} * 0.80 = \$80 \text{ M}$$

$$\$FP = \$100 \text{ M} * 0.20 = \$20 \text{ M}$$

Consequently,

- *BAC* = \$80 M
- *Budget to be distributed amongst all contractual milestones* = \$20 M

14.2.2.2 Determining Payment Value

Earned Value Payments (EVP) are based on following equations:

$$\text{Payment} = \text{EVP} + \sum \text{Completed Milestones}$$

$$\text{EVP} = (\text{CP} - \$\text{FP}) * \left(\frac{\text{BCWP}}{\text{BAC}} \right) - \sum \text{PEVP}$$

EVP: Earned Value Payment

PEVP: Previous Earned Value Payments

CP: Contract Price

\$\$FP: Firm Portion (\$)

BCWP: Budget Cost of Work Performed (i.e., Earned Value)

BAC: Budget-At-Completion

PDR: **Milestone A** - Preliminary Design Review – Milestone Value: \$5 Million

CDR: **Milestone B** - Critical Design Review – Milestone Value: \$9 Million

IOC: **Milestone C** - Initial Operating Capability – Milestone Value: \$6 Million

Total value of all contractual milestones: \$20 million. (i.e., \$FP = \$20 million)

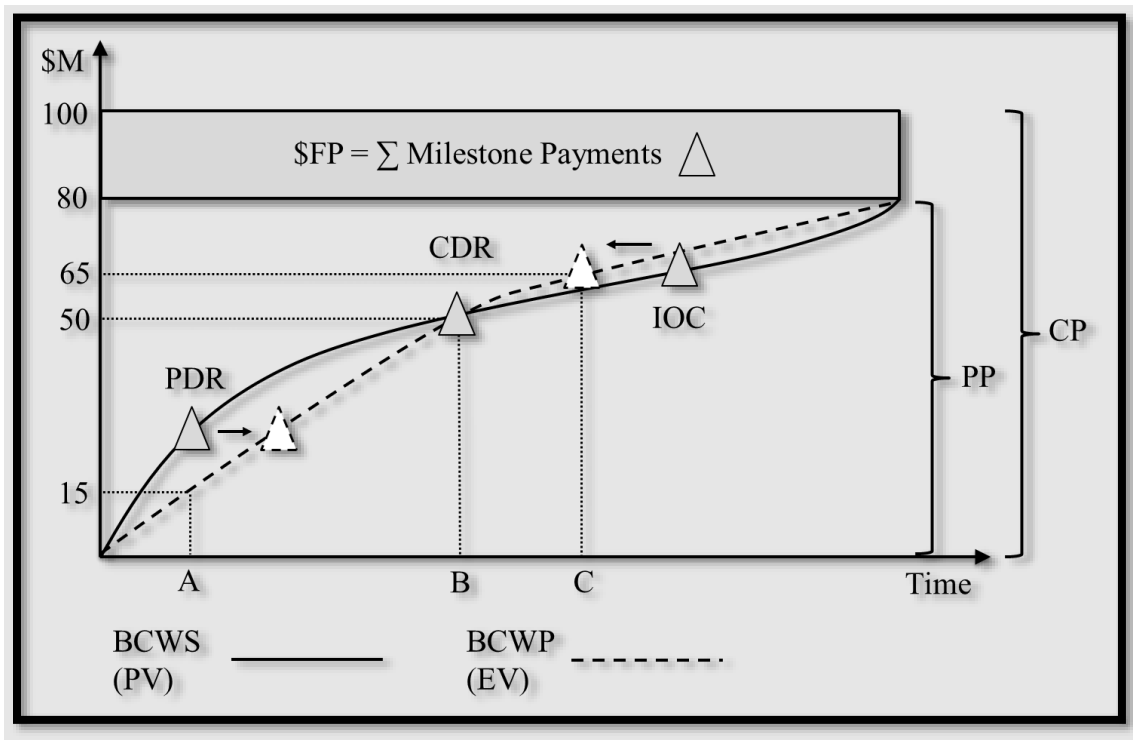


Figure 1 - EVP Scenario

Figure 1 demonstrates that at:

Time A, the project did not accomplish PDR as per the schedule baseline (missed)

Time B, the project achieved CDR as per the schedule baseline (on-time)

Time C, the project achieved IOC ahead of the schedule baseline (early)

14.2.2.2.1 Time A – Missed Milestone

Building on the data presented in **Example B** and the occurrence of events as in Figure 1 we can establish that:

PEVP = 0
BAC = 80
BCWP = 15
CP = 100
FP = 20

$$\$PP = \$100 \text{ M} * 0.80 = \$80 \text{ M}$$

$$\$FP = \$100 \text{ M} * 0.20 = \$20 \text{ M}$$

$$EVP = (CP - \$FP) * \left(\frac{BCWP}{BAC}\right) - \sum PEVP$$

$$EVP = (100 - 20) * \left(\frac{15}{80}\right) - 0 = 15$$

At Time A, the EVP is \$15 million and the contractor does not receive the value assigned to the PDR Milestone. For clarity, the contractor will receive the \$5 million payment when PDR is completed.

14.2.2.2.2 Time B – On-Time Milestone

Building on the data presented in **Example B** and the occurrence of events as in Figure 1 we can establish that:

PEVP = 15
BAC = 80
BCWP = 50
CP = 100
FP = 20

$$EVP = (100 - 20) * \left(\frac{50}{80}\right) - 15 = 35$$

At Time B, the EVP is \$35 million and the contractor receives the \$9 million assigned to the CDR Milestone. It is assumed that PDR milestone was previously achieved.

14.2.2.2.3 Time C – Early Milestone

Building on the data presented in **Example B** and the occurrence of events as in Figure 1 we can establish that:

PEVP = 50
BAC = 80
BCWP = 65
CP = 100
FP = 20

$$EVP = (100 - 20) * \left(\frac{65}{80}\right) - 50 = 15$$

At Time C, the EVP is \$15 million and the contractor receives the \$6 million assigned to the IOC Milestone.

14.3 EVMPP Benefits

The benefits and challenges (Section 14.4) below are applicable to the two proposed approaches to EVMPP.

14.3.1 Holistic Vision of Project Oversight

Payment by milestone only provides a limited degree of control and performance insight. The contractor may focus attention and effort on the next payment milestone, sometimes to the detriment of other parts of the projects. This can result in problems and delays later-on in the project's lifecycle.

Payment by EVMPP allows and encourages the contractor to focus attention across the entire project rather than at specific elements of it.

EVM on its own can be highly incentivizing, but a mixture of EVM and milestone payment, if carefully negotiated, can represent the optimum method for contractor incentivization and customer oversight.

14.3.2 Cash Flow

All things being equal, the use of Earned Value Milestone Payment Plan (EVMPP) methodology would reduce the lag time between a contractor's expenditures and corresponding income in comparison to traditional use of progress payments. Therefore, the impact of this method should result in better cash flow throughout the life of the project. Additionally, this may result in reduced interest charges.

Furthermore, in the event that a project faces challenges resulting in the delays of a near term milestone, the work performed on medium- and/or long-term milestone could provide a source of interim funding without the need to re-negotiate the milestone payment plan.

As payments reflect project progress, cash flow trends are likely to be more stable in comparison to traditional milestones payment where cash flow tend can have "peaks and valleys."

14.3.3 Implementation of EVM Philosophy

Although EVM is best known for its output of performance metrics, the outcome of implementing EVM is the integration of all project management disciplines in a holistic performance management system. As a result, projects equipped to be better managed, and project stakeholders are better informed and positioned to drive success.

14.4 EVMPP Challenges

14.4.1 Data Credibility

As payments are based on performance, the credibility of project reporting is of critical importance. Canada and Industry would need to develop a verification process which is auditable, transparent and, most importantly, efficient.

14.4.2 Revenue in Lieu of Performance

Inversely to benefit described in Section 14.3.1 - Holistic Vision of Project Oversight, when a project faces near term challenges, a contractor may elect to focus its efforts and resources on medium- and/or long-term efforts to achieve near-term reporting targets at the detriment of achieving timely project performance.

14.4.3 Maintenance of the Project Baseline

Defence procurements are often complex which can be a driver for change. The process of implementing contract changes into the Performance Measurement Baseline (PMB) (i.e., project baseline) in a controlled and agreed-to manner may necessitate efforts and rigorous baseline configuration control practices.