

Canadian General Standards Board

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**CGSB 187.1-93
November/Novembre 1993**

WITHDRAWAL

May 2001

**CANADIAN GENERAL
STANDARDS BOARD**

**COST/SCHEDULE PERFORMANCE
MANAGEMENT STANDARD**

This standard is hereby withdrawn. As far as can be determined it is no longer being used in quantities that would warrant its continued maintenance.

RETRAIT

Mai 2001

**OFFICE DES NORMES
GÉNÉRALES DU CANADA**

**NORME DE GESTION DU RENDEMENT EN
MATIÈRE DE COÛTS ET DE DÉLAIS**

Cette norme est retirée par le présent avis. Dans la mesure où il est possible de le constater, elle n'est plus utilisée en quantité suffisante pour la maintenir en vigueur.

Canada

CGSB 187.1-93

November 1993

**Cost/Schedule
Performance
Management Standard**



QUALITY

Canadian General Standards Board

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Canadian General Standards Board

CGSB 187.1-93
November 1993

COST/SCHEDULE PERFORMANCE MANAGEMENT STANDARD

Prepared by the
Canadian General Standards Board 

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FOREWORD

The Cost/Schedule Performance Management Standard (C/SPMS) has been developed based on the work of several industry associations and government departments during the period 1990-92. This initiative was aimed at improving the effectiveness of the cost, schedule and technical performance management of Major Crown and other high-profile government projects. As a result the C/SPMS and data items for reporting were issued in July 1992.

A standards committee was established in February 1993 with the objective of creating CGSB standard 187-GP-1 that would be useful to any Canadian company wishing to implement a system and to assess its capability against the standard and associated documents. In this way Canadian companies can position themselves to bid on projects which require the standard and reporting. This standard can also be used by companies assessing the capabilities of Major Subcontractors in controlling complex projects.

This standard will allow for an accreditation process through a registered authority. Accreditation of a company is favourably considered by government project organizations evaluating proposals for contractor project management when the standard and data reporting is required.

Industry and government participants in the C/SPMS initiative recognize the importance of performance management in achieving project objectives. The potential benefits of early visibility for decision making is well known to experienced project managers. The standard is aimed at realizing the potential of more effective project management, including cost effectiveness and more efficient management systems.

The core of performance management is the "earned value" concept, which links the scope, schedule and budget so that progress measurement compares "work performed" with the budget planned for that work. This improves upon traditional budget and actual comparison by providing measures of cost and schedule status, and trends that can be used to project the final cost and schedule performance of the project. These trends may also be used to assess the impacts and corrective action for technical problems, and to compare with other project progress assessment information (e.g. product assurance, configuration and subcontract management) to get an overall picture of project health.

The implementation of this standard will create a base for Canadian companies using these management techniques. The standards committee is the forum for continuous improvement of this standard.

This standard has been prepared for the Canadian environment and is also intended to assist companies wishing to meet foreign government requirements of a similar nature.

CANADIAN GENERAL STANDARDS BOARD
COST/SCHEDULE PERFORMANCE MANAGEMENT STANDARD

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CANADIAN GENERAL STANDARDS BOARD

COST/SCHEDULE PERFORMANCE MANAGEMENT STANDARD

1. SCOPE

- 1.1 This standard provides requirements for companies (also referred to as Contractors and subcontractors) implementing cost/schedule performance management systems for application to major Crown and other high-profile projects that require this visibility in support of cost, schedule and technical performance objectives.
- 1.2 This standard is advocated for both government and industry projects that have significant risk. This standard can also be used by companies to assess the capabilities of subcontractors and to manage the performance of complex projects.

2. PRINCIPLES OF APPLICATION

- 2.1 Wide use of this standard is recommended. However, it is not normally applied to low-risk delivery of commercial products or services. It is applied on high-risk projects where the Contractor and the Contract Authority share the risk of cost growth. Exceptions can be made by the Contractor and the Contract Authority based on the risk assessment. Where risks so warrant, this standard may be applied to firm price contracts.

A risk assessment should be performed to determine the extent of control and visibility necessary to manage the project. The Contractor and Contract Authority should, through contract definition, agree on the management system and reporting requirements. Requirements should be reviewed periodically to ensure they remain effective and to determine whether they are still necessary.

- 2.2 Principles of application apply equally to companies implementing systems for internal project business management, and to Contractors and selected subcontractors managing government projects.
- 2.3 This standard provides the requirements for management systems to obtain uniform, accurate and timely data for appropriate management decisions and actions. Contractors intending to do business on significant government contracts can maintain an acceptable system by meeting the standard with recognized accreditation.

- 2.4 Nothing in the standard requires any change to the cost accounting practices applicable to government contracts, or to the basis on which costs are incurred, distributed to contracts, or reimbursed to Contractors.
- 2.5 Companies may be deemed to comply with this standard, provided they have validations in good standing from a U.S. government authority based on DoDI 5000.2, Part 11, Section B, subject to provisions of the appropriate details of this standard, including the report data specified in Appendix A.
- 2.6 The Contractor should ensure that data reported to the customer is, at the reporting level, the same as used by the Contractor to manage the project.
- 2.7 For contracts which do not require this standard, the Contractor or Contract Authority may require selected formats of the Integrated Cost and Schedule Report (ICSR, Appendix A, Part I) based on the need for cost and schedule visibility and contract considerations.

3. TERMINOLOGY

For the purposes of this standard the following definitions apply:

- 3.1 **Actual Cost of Work Performed (ACWP):** The costs incurred and recorded in accomplishing the work performed within a given time period.
- 3.2 **Actual Direct Costs:** Those costs identified specifically with a contract, based upon the Contractor's cost identification and cost accumulation system as accepted by the Contract Authority. (See also par. 5.5)
- 3.3 **Applied Direct Costs:** The amount recognized in the time period associated with the consumption of labour, material, and other direct resources, without regard to the date of commitment or the date of payment. These amounts are to be charged to work-in-process in the time period that any of the following takes place:
- a. When labour, material and other direct resources are actually consumed, or
 - b. When material resources are withdrawn from inventory for use, or
 - c. When material resources identified uniquely to the contract are received, accepted and recorded as accounts payable, or
 - d. When planned payments for milestone accomplishment are achieved and recorded as cost incurred, or
 - e. When other direct resources are consumed.
- 3.4 **Apportioned Effort:** Effort that by itself is not readily divisible into short-span Work Packages but is related in direct proportion to measured effort.

- 3.5 **Authorized Work:** The work that has been contractually authorized. The authorized work, for which a defined contract price has not been agreed to, is referred to as Authorized Unpriced Work (AUP).
- 3.6 **Budgeted Cost of Work Performed (BCWP):** The sum of the budgets for completed Work Packages and completed portions of open Work Packages, plus the appropriate portion of the budgets for Level of Effort and Apportioned Effort. Also known as Earned Value. (See also par. 5.2)
- 3.7 **Budgeted cost of Work Scheduled (BCWS):** The sum of budgets for:
- all Work Packages (including planned portions of in-process Work Packages),
 - Planning Packages,
 - the amount of Level of Effort, and
 - the amount for Apportioned Effort scheduled to be accomplished within a given time period.
- 3.8 **Contract Authority:** An official designated to enter into contract on behalf of the organization for which the work is being performed.
- 3.9 **Contract Budget Base (CBB):** The contract cost plus the estimated cost of authorized unpriced work or other baseline budget agreed with the Contract Authority.
- 3.10 **Contractor:** An entity in industry that enters into contracts with the Contract Authority.
- 3.11 **Cost Account:** The work assigned to one responsible Organizational Element for one CWBS element. It is used as a management control point, at which actual costs can be accumulated and compared to the budgeted cost of the work performed.
- 3.12 **Direct Costs:** Any costs that can be identified specifically with a particular final cost objective. (See also par. 3.2)
- 3.13 **Estimated Cost at Completion or Estimate at Completion (EAC):** Actual Direct Costs, plus Indirect Costs applicable to the contract, plus a realistic estimate or projection of costs (direct and indirect) for Authorized Work remaining.
- 3.14 **Indirect Costs:** Costs incurred for common or joint objectives that are not readily subject to treatment as Direct Costs.
- 3.15 **Internal Replanning:** Replanning actions performed by the Contractor for remaining effort within the recognized Total Allocated Budget, and within the scope of work authorized in the Contract Budget Base.

- 3.16 **Level of Effort (LOE):** Effort of a general or supportive nature that does not produce definite end products or results.
- 3.17 **Major Subcontractors:** Subcontractors assigned a significant portion of the contract work and specifically identified in the contract.
- 3.18 **Management Reserve (MR):** An amount of the Total Allocated Budget withheld for management control purposes, rather than designated for the accomplishment of a specific task or set of tasks. It is not a part of the Performance Measurement Baseline.
- 3.19 **Organizational Element:** An operational unit within a Contractor's organization to which contract tasks can be assigned, and which has a common management point of responsibility.
- 3.20 **Original Budget:** The first total budget established for performance measurement purposes based on the negotiated contract cost.
- 3.21 **Performance Measurement Baseline (PMB):** The time-phased budget plan against which contract performance is measured. It is formed by the performance-oriented budgets assigned to scheduled Cost Accounts and the applicable indirect budgets. For future effort, not planned to the Cost Account level, the PMB also includes budgets assigned to higher level CWBS elements, and Undistributed Budgets. It equals the Total Allocated Budget less Management Reserve. All use of the term performance herein is related to this definition.
- 3.22 **Performing Organization:** A defined unit within the Contractor's organization structure that applies the resources to perform the work. (See also par. 3.26)
- 3.23 **Planning Package:** A logical aggregation of work within a Cost Account, normally the far-term effort, which is identified and budgeted in early baseline planning (unless all work is planned in detail at the outset), but is not yet defined into Work Packages.
- 3.24 **Rates and Factors:** Labour, material and overhead rates, foreign exchange rates and escalation indices as contained in the Performance Measurement Baseline which impact the comparison of actual costs with budgets.
- 3.25 **Reprogramming:** Replanning of the effort remaining in the contract, resulting in a new budget allocation that exceeds the Contract Budget Base. (See also par. 3.15)

- 3.26 **Responsible Organization:** A defined unit within the Contractor's organization structure that is assigned responsibility for accomplishing specific tasks. (See also par. 3.22)
- 3.27 **Significant Variance:** Those differences between planned and actual performance that require further review, analysis or action.
- 3.28 **Total Allocated Budget:** The sum of all budgets allocated to the contract. Total allocated budget consists of the Performance Measurement Baseline and all Management Reserves.
- 3.29 **Undistributed Budget:** Budget not yet identified to CWBS elements at or below the lowest level of CWBS reporting to the Contract Authority.
- 3.30 **Work Breakdown Structure (WBS):** The WBS is a family tree breakdown of work to be accomplished, developed to reflect the division of hardware, software, services, and other work tasks in a manner that organizes, defines, and graphically depicts the work. Two important Work Breakdown Structures are:
- a. **Contract Work Breakdown Structure (CWBS):** The complete WBS for a contract, developed and used by a Contractor in accordance with the contract provisions.
 - b. **Project Work Breakdown Structure (PWBS):** A summary WBS tailored to a specific material item by selecting one or more summary WBS's, or by adding equivalent elements unique to the project. PWBS is the responsibility of the customer, i.e. the Contractor or the government as appropriate.
- 3.31 **Work Package Budgets:** Resources formally assigned by the Contractor to accomplish a Work Package, expressed in dollars, hours or other measurable units.
- 3.32 **Work Packages:** Detailed short-span labour tasks or material items, identified by the Contractor for accomplishing work required to complete the contract. A work package has the following characteristics:
- a. It represents units of work at levels where work is performed;
 - b. It is clearly distinguishable from all other Work Packages;
 - c. It is assignable to a single responsible Organizational Element;
 - d. It has scheduled start and completion dates and, as applicable, interim milestones, all of which are representative of physical accomplishment;

- e. It has a budget or assigned value expressed in terms of dollars, hours or other measurable units;
- f. Its duration is limited to a relatively short span of time or it is subdivided by measurable milestones to facilitate the objective measurement of work performed;
- g. It is integrated with detailed engineering, manufacturing or other schedules.

4. REQUIREMENTS FOR IMPLEMENTATION

- 4.1 The Contractor's Cost/Schedule Performance Management System (hereinafter referred to as management system) shall meet the requirements specified in this standard. Nothing in this standard shall be construed as requiring the use of specific systems or methods for cost/schedule performance management and reporting, or require Contractors to use specific accounting methodologies.
- 4.2 Appropriate project plans shall be developed to apply the detailed requirements of this standard for specific contract characteristics.
- 4.3 Where the Contractor's systems for cost/schedule performance management and reporting is an element in the evaluation of proposals, the proposing Contractor shall fully describe the management system to be used. The management system shall be evaluated to determine whether it meets the requirements of this standard. In the event that the management system does not meet the requirements, remedial action shall be taken by the Contractor as mutually agreed with the Contract Authority.
- 4.4 The Contractor shall agree to operate a compliant management system throughout the contract period, if awarded the contract, and an advance agreement may be established for future contracts. Alternatively, the management system may be accepted for individual contracts on the basis of a certification letter issued by the Contract Authority. The Contract Authority shall rely on the Contractor's management system and shall not impose any separate management system requirements for cost and schedule monitoring and reporting.
- 4.5 The onus shall be on the Contractor to implement an effective and efficient management system. Implementation principles encourage Contractor flexibility in specific management processes and systems as long as the requirements of this standard are met.
- 4.6 The Contractor shall demonstrate compliance of the management system with the requirements of this standard to the Contract Authority. In order to facilitate the demonstration a checklist may be used. The Contractor may propose a modified checklist for review purposes, but it shall require approval by the Contract Authority.

5. REQUIREMENTS FOR MANAGEMENT SYSTEMS

5.1 **Management System Criteria**-- The management system shall include policies, procedures, and methods to ensure the following:

5.1.1 *Organization*

- 5.1.1.1 *Criterion 1: Contract Work Breakdown Structure (CWBS)* -- All Authorized Work and related resources to meet the requirements of the contract shall be defined using the framework of the CWBS.
- 5.1.1.2 *Criterion 2: Organization Definition and Responsibility Assignment* -- The Organizational Elements, including Major Subcontractors responsible for accomplishing the Authorized Work, shall be identified.
- 5.1.1.3 *Criterion 3: Systems Integration and Performance Measurement Levels* -- The Contractor's planning, estimating, scheduling, budgeting, work authorization and cost accumulation sub-systems shall be integrated with each other, with the CWBS and with the Organizational Elements at the levels selected for cost and schedule performance measurement.
- 5.1.1.4 *Criterion 4: Indirect Cost Management* -- The managerial positions or Organizational Elements responsible for controlling Indirect Costs shall be identified.
- 5.1.1.5 *Criterion 5: CWBS, Organization Relationship* -- The CWBS shall be integrated with the Organizational Elements in a manner that permits cost and schedule performance measurement for CWBS and Organizational Elements.

5.1.2 *Planning and Budgeting*

- 5.1.2.1 *Criterion 6: Scheduling* -- The Contractor shall schedule the Authorized Work in a logical sequence and identify all significant task interdependencies to meet the delivery requirements of the contract.
- 5.1.2.2 *Criterion 7: Milestone Definition* -- The Contractor shall identify the physical products, milestones, technical performance goals or other discrete indicators that will be used to measure work progress.
- 5.1.2.3 *Criterion 8: Time-Phased Budget Baseline* -- A time-phased budget baseline shall be established and maintained at the Cost Account level for performance measurement. Original Budgets shall be based on the Contract Budget Base. Significant changes to the time-phased budget baseline must be identified to the Contract Authority.

- 5.1.2.4 *Criterion 9: Cost Element Budgets* -- Budgets shall be established and maintained for all Authorized Work with separate identification of cost elements (labour, material, etc.).
- 5.1.2.5 *Criterion 10: Work Package Planning* -- The Contractor shall establish and maintain budgets for near-term work in measurable units, identified in short-time Work Packages. The Contractor shall also identify, schedule and budget the far-term work in Planning Packages or Work Packages.
- 5.1.2.6 *Criterion 11: Cost Account Budgets* -- The sum of all Work Package Budgets plus Planning Package budgets within a Cost Account shall equal the Cost Account budget.
- 5.1.2.7 *Criterion 12: Level-of-Effort Activities* -- Level-of-effort activities shall be identified and controlled by time-phased budgets.
- 5.1.2.8 *Criterion 13: Indirect Cost Budgets* -- The Contractor shall establish budgets for the total costs of each significant Organizational Element whose expenses will become Indirect Costs. The Contractor shall include in contract budgets (at the appropriate level) Indirect Costs that are planned to be allocated to the contract. (See also par. 5.5)
- 5.1.2.9 *Criterion 14: Management Reserve and Undistributed Budget* -- The Contractor shall identify Undistributed Budget and Management Reserve. (See also par. 5.3)
- 5.1.2.10 *Criterion 15: Budget Reconciliation* -- The Contract Budget Base shall reconcile with the sum of all internal contract budgets and Management Reserves. (See also par. 5.5)
- 5.1.3 **Accounting**
- 5.1.3.1 *Criterion 16: Direct Cost Recording* -- Direct Costs shall be recorded in a formal cost accounting system that is controlled by the general books of account. They shall be recorded on an applied Direct Cost or other acceptable basis, consistent with budgets. (See also par. 5.5)
- 5.1.3.2 *Criterion 17: Direct Cost Summarization into CWBS* -- Direct Costs shall be summarized from Cost Accounts into the CWBS without allocation of a Cost Account to two or more CWBS elements.
- 5.1.3.3 *Criterion 18: Direct Cost Summarization into Organization* -- Direct Costs shall be summarized from Cost Accounts into the Contractor's organization without allocation of a Cost Account to two or more Organizational Elements.

5.1.3.4 *Criterion 19: Indirect Cost Recording* -- All Indirect Costs to be allocated to the contract shall be recorded. (See also par. 5.5)

5.1.3.5 *Criterion 20: Material Accounting* -- The Contractor's material accounting system shall provide for accurate cost accumulation, performance measurement and assignment of costs to Cost Accounts in a manner consistent with budgets using recognized and acceptable costing techniques. (See also par. 5.2.2 and 5.5)

5.1.4 *Analysis*

5.1.4.1 *Criterion 21: Data Elements* -- The following data elements shall be identified at the Cost Account level on a monthly basis:

- a. Budgeted Cost of Work Scheduled (BCWS)
- b. Budgeted Cost of Work Performed (BCWP)
- c. Actual Cost of Work Performed (ACWP)

The actual cost elements shall be derived from or be reconcilable with the accounting system. (See also par. 5.2.1, 5.2.2 and 5.5)

5.1.4.2 *Criterion 22: Variance Analysis* -- The following comparisons shall be made at the Cost Account level on a monthly basis:

- a. A comparison of BCWP and ACWP
- b. A comparison of BCWP and BCWS

The significant cost and schedule variances and trends resulting from the above comparisons shall be analyzed in the detail needed by management for effective control, and as necessary to support the contract data reporting requirements. The variances shall be classified in terms of labour, material or other elements as appropriate. (See also par. 5.2.3 and 5.5)

5.1.4.3 *Criterion 23: Indirect Cost Control* -- Budgeted and actual Indirect Costs, and the reasons for significant cost variances shall be identified on a monthly basis, in the detail needed by management for effective control. (See par. 5.3.5)

5.1.4.4 *Criterion 24: Data Summarization* -- The data elements listed in par. 5.1.4.1 and 5.1.4.2 shall be summarized through the Contractor organization and CWBS to the reporting level specified in the contract.

- 5.1.4.5 *Criterion 25: Schedule Status* -- Significant differences between planned and actual schedule accomplishments and reasons for these differences shall be identified on a monthly basis.
- 5.1.4.6 *Criterion 26: Management Actions* -- Significant cost and schedule performance variances identified shall result in management attention and corrective actions as appropriate.
- 5.1.4.7 *Criterion 27: Estimate at Completion* -- Based on performance to date and on estimates of future conditions, revised estimates of cost at completion shall be developed for CWBS elements identified in the contract. Estimates at completion shall be compared with the Contract Budget Base and the latest contract forecast billings.
- 5.1.5 *Revisions and Access to Data*
- 5.1.5.1 *Criterion 28: Contract Changes* -- Contractual changes shall be incorporated in a timely manner and the effects of such changes in budgets and schedules shall be recorded.
- 5.1.5.2 *Criterion 29: Budget Traceability* -- The current performance measurement budget within CWBS shall be traceable to the original performance measurement budget in terms of approved contract changes and Internal Replanning. The original CWBS budgets shall be traceable to lowest level elements of the PWBS by the Contract Authority.
- 5.1.5.3 *Criterion 30: Retroactive Changes* -- Retroactive changes to records pertaining to work performed that would change previously reported amounts are prohibited, except for correction of errors and routine accounting adjustments.
- 5.1.5.4 *Criterion 31: Changes to the Contract Budget Base* -- Changes to the Contract Budget Base are prohibited, unless authorized by the Contract Authority.
- 5.1.5.5 *Criterion 32: Baseline Management* -- Changes to the Performance Measurement Baseline and Management Reserve(s) shall be recorded.
- 5.1.5.6 *Criterion 33: Access to Data* -- The Contract Authority shall be provided with access to the performance measurement information and documentation at the Contractor's site as necessary to demonstrate compliance with this standard.
- 5.2 **Earned Value** -- In establishing earned value, the management system shall meet the following:

- 5.2.1 **Labour Earned Value** -- The labour earned value shall be the budget value of labour work performed in hours (or other time units) or dollars for selected measurable labour tasks of the contract. In selecting the appropriate labour tasks for earned value, the risk and the need for visibility in such areas as development and production shall be considered.
- 5.2.2 **Material Earned Value** -- The material earned value shall be the budget value of work performed for planned milestone or budget accomplishment of major system, material and equipment procurement. Material earned value shall include budgeted payment values for achieved (accounted) milestones in subcontracts or other material procurement as established in the Performance Measurement Baseline.
- 5.2.3 **Effects Due to Variance of Rates and Factors** -- Assessment of earned value data in dollars shall be consistent with Performance Measurement Baseline dollars. Rates, foreign exchange adjustment and escalation, which are contained in the Performance Measurement Baseline, therefore shall be part of pertinent data elements. The effects of Significant Variances in actual versus budgeted rates, foreign exchange adjustment, and escalation on cost performance shall be evaluated at the total Contractor organization and at total CWBS level. Changes to rates, foreign exchange or economic price adjustments may, if agreed, be reflected in updates to the Performance Measurement Baseline.
- 5.3 **Cost and Schedule Performance Reporting** -- In reporting cost and schedule performance, the management system shall meet the following, with requirements flowed down to Major Subcontractors in accordance with contract provisions:
- 5.3.1 **Report Data** -- Contractor cost and schedule reporting must accurately reflect cost and schedule performance data elements, variance analysis and trends. Data shall be consistent with that used by the Contractor to manage the contract work and shall form the basis for periodic progress reviews and briefings to the Contractor and the customer. Data shall be formatted by the Contractor in the simplest aggregation of pertinent data for Contractor organization and CWBS levels. Data from prime and selected subcontractors shall be integrated in accordance with contract provisions.
- 5.3.2 **Standard Reports** -- The management system shall include policies, procedures and practices to prepare, validate and deliver the required data and reports, including the ICSR and CCR as identified below.

- 5.3.3 ***The Integrated Cost and Schedule Report (ICSR)*** -- The ICSR (see Part I of Appendix A) shall present data in five formats. The formats shall be tailored for applicability and frequency in the contract provisions.
- a. Executive summary
 - b. Summary master schedule status
 - c. Cost performance (by CWBS with problem analysis)
 - d. Master schedule status
 - e. Network, critical paths and logic listing
- 5.3.4 ***The Cash Constraint Report (CCR)*** -- The CCR (see Part II of Appendix A) shall present data in a single format for actual and forecast billings of Contractor costs, Major Subcontractors, and planned milestone billings.
- 5.3.5 ***Reporting of Significant Problems*** -- Appropriate problem reporting within the data items shall be established in the contract based on performance thresholds or other considerations. Such considerations should be flexible and revised as appropriate during execution of the contract to avoid unnecessary reporting and to concentrate analyses on the most important problems.
- 5.4 **Surveillance Data** --The Contractor and the Contract Authority may agree on access to other specific trends and indicators available from the management system, for example, labour loading or rates trends, and may identify them in the contract.
- 5.5 **Cost Recognition and Reconciliation** -- The Contractor's system for recognition and reconciliation of actual direct or Indirect Costs , including frequency of adjustments, shall not require change solely for compliance with the standard. An objective in relation to this standard shall be to minimize retroactive adjustments that can severely impact performance measurement and analysis.
6. **NOTES**
- 6.1 **Appendix A** -- Parts I and II of Appendix A provide guidance on the content of cost/schedule management reporting for government projects. Sections A of the Parts I and II include tailoring provisions. Appendix A forms part of the standard.

6.2 **Appendix B** -- An implementation guide will be published as Appendix B to this standard. It is intended to provide industry and government guidance for implementation of a management system which will meet the requirements of this standard. The guide is not intended as an extension of the requirements, nor is it intended to restrict other effective implementations. Appendix B will be a non-mandatory part of the standard.

6.3 **Related Publication**

6.3.1 Department of Defense, U.S.A.

Defense Acquisition Management Policies and Procedures, Instruction DoDI 5000.2, Part 11, section B.

6.4 **Source of the Related Publication** --The publication referred to in par. 6.2.1 may be obtained from the U.S. Department of Commerce, National Technical Information Service, Springfield, VA 22161, U.S.A.

DATA ITEM DESCRIPTIONS

COST/SCHEDULE PERFORMANCE MANAGEMENT STANDARD (C/SPMS)

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PART I **INTEGRATED COST AND SCHEDULE REPORT (ICSR)**

SECTION A **APPLICATION AND TAILORING GUIDANCE**

1.0 **Introduction**

- 1.1 Part I provides government and industry personnel with guidance in respect to the interpretation, application and tailoring of the Data Item Description DID MP-001: Integrated Cost Schedule Report as set out in Section B, and its associated Contract Data Requirements List (CDRL) as outlined in Section C.
- 1.2 Any questions, concerns or suggestions for improvement regarding the content of Part I should be directed to the Interdepartmental Performance Measurement Support Organization, Supply & Services Canada, 4th Floor, 90 Elgin Street, Ottawa, Ontario K1A 0S5. Telephone 943-2807. Fax 943-8792.

2.0 **Guidance**

- 2.1 The Integrated Cost and Schedule Report (ICSR) is required on significant contracts on which C/SPMS is applied. Where the ICSR is a requirement, it must be established as a contractual requirement as set forth by calling up the ICSR Data Item Description (DID), DID MP-001 (See Section B) and in the Contract Data Requirements List (CDRL) (See Section C.)

The ICSR replaces DI-F-6000C, Cost Performance Report, (previously used in conjunction with DoDI 7000.2).

- 2.2 The ICSR supports the contractual requirement for contractor compliance with the Cost/Schedule Performance Management Standard (C/SPMS). The ICSR is to be applied to designated subcontractors in accordance with contract provisions. ICSR data elements and formats must reflect the Contractors management system processes. If compliance with C/SPMS is not contractually required, for example firm price contracts without significant cost risk, the data elements and formats should be reduced based on this risk assessment.
- 2.3 ICSR data elements must be taken from the contractor's performance measurement baseline and master schedule. Data elements and formats will be used directly by the contractor for cost and schedule performance measurement and management, and must be traceable to the Contract Statement of Work (CSOW) and the Contract Work Breakdown Structure (CWBS). The performance measurement baseline must reflect the latest baseline content, including replanning or reprogramming actions implemented by the contractor, with traceability from the original performance measurement baseline.

- 2.4 Recommended frequency for delivery of ICSR formats is contained in par. 6.9, Section C. Contract requirements will be as specified in the Contract Data Requirement List (CDRL). Reporting reflects data dates provided in the contract based on the contractor's accounting period cutoff, contract or calendar month end, and/or specified planned contract milestone completions.
- 2.5 ICSR data covers all authorized contract work, including priced and unpriced effort. The routine level of reporting should normally be established at level 3 of the CWBS, except for high-cost, high-risk, or other high-interest elements, which may be at a lower level. If a significant problem is indicated at a lower level of the CWBS, contractor C/SPMS plans should require that more detailed data will be provided in the ICSR.
- 2.6 The contractor will provide to the government "read only" access to more detailed data on an exception basis, to support investigation of problems and risk areas in accordance with contract provisions. Access to information and documentation for demonstration and surveillance purposes will also be in accordance with contract provisions.
- 2.7 The ICSR will be tailored in accordance with the CDRL to require an appropriate level of report content over the duration of the contract. Data formats and elements should be reduced (or increased) consistent with the overall change in risk as technical and delivery milestones are achieved (or not achieved).
- 2.8 When finalized for incorporation in a contract, the ICSR must contain all contractually required cost and schedule management reporting. When ancillary detail schedule reporting is required in support of specific project activities, no duplication of reporting will be authorized by the contracting authority. The ICSR integrates cost performance, master schedule, manpower, risk, and rates and factors with respect to cost/schedule performance reporting.
- 2.9 Whenever in the foregoing paragraphs reference has been made to "contract provisions", it will be necessary to ensure that such provisions are covered properly in the contractor's C/SPMS plans. A partial list of items to be mutually agreed between the contracting authority and the contractor includes:
- a. Subcontractors to which C/SPMS applies
 - b. Conditions for variance identification and assessment, including reporting and default thresholds where appropriate
 - c. WBS levels for reporting
 - d. Nature and type of access
 - e. Variance in reporting elements due to
 - i. stage of project
 - ii. change in risk and/or progress
 - f. Duration between reporting period cutoff date and report delivery.

Where applicable, the foregoing items should be identified in RFP documentation, and addressed in appropriate contractor C/SPMS plans.

- 2.10 It is expected that tailoring of the ICSR will normally occur in respect to the application content outlined in par. 2.9 above. Any tailoring of the ICSR Data item itself should not be undertaken without consultation with the IPMSO (See par. 1.2).

Withdrawn/Retirée

SECTION B INTEGRATED COST AND SCHEDULE REPORT (ICSR)
DID MP-001

1.0 Introduction

- 1.1 Attachment A to this Section is the complete ICSR Data Item Description. This DID should be called up in RFPs where the C/SPM standard is to be applied, to provide contractors (bidders) a clear indication of the Implementation Phase C/SPM reporting required by the government. In some cases this may also be required for an earlier definition phase, depending on the project.

2.0 Guidance

- 2.1 See Section A regarding degree of "tailoring" permitted.
- 2.2 It should be noted that the DID permits the contractor to use the contractor's own formats provided that all of the data elements are reported on.
- 2.3 It is recommended that the final format of this DID should replace (wherever applicable) the "sample" formats (A to E) with the agreed actual contractor formats by the time of contract award, or as soon as possible thereafter.

DATA ITEM DESCRIPTION

1. TITLE INTEGRATED COST AND SCHEDULE REPORT (ICSR)		2. IDENTIFICATION NUMBER MP-001	
3. DESCRIPTION/PURPOSE 3.1 This report consists of the five formats reporting the contractor's cost and schedule performance. The relationship of formats is shown in Figure 1. The purpose of the report is to monitor overall contract cost/schedule performance, identify and assess the impact of significant cost/schedule performance problems and risks to the project objectives, and communicate them to the contractor and government management for decisions and corrective action. (continued...)			
4. APPROVAL DATE 92-07-31	5. OFFICE OF PRIMARY INTEREST (OPI) IPMSO	6. GIDEP APPLICABLE	
7. APPLICATION/INTERRELATIONSHIP 7.1. This data item description contains the format and content preparation instructions for that data generated under Statement of Work task statement <u>ABC</u> . (continued...)			
8. ORIGINATOR IPMSO		9. APPLICABLE FORMS Figures 2-8	
10. PREPARATION INSTRUCTIONS 10.1 Output of the contractor management system may be substituted for ICSR sample formats, provided it contains all the required data elements at the specified reporting levels in a form suitable for use by government managers. For all formats, equivalent computer database access and a joint review meeting may be preferable to hardcopy output. ICSR formats shall be completed in accordance with the following instructions: (Continued.....)			

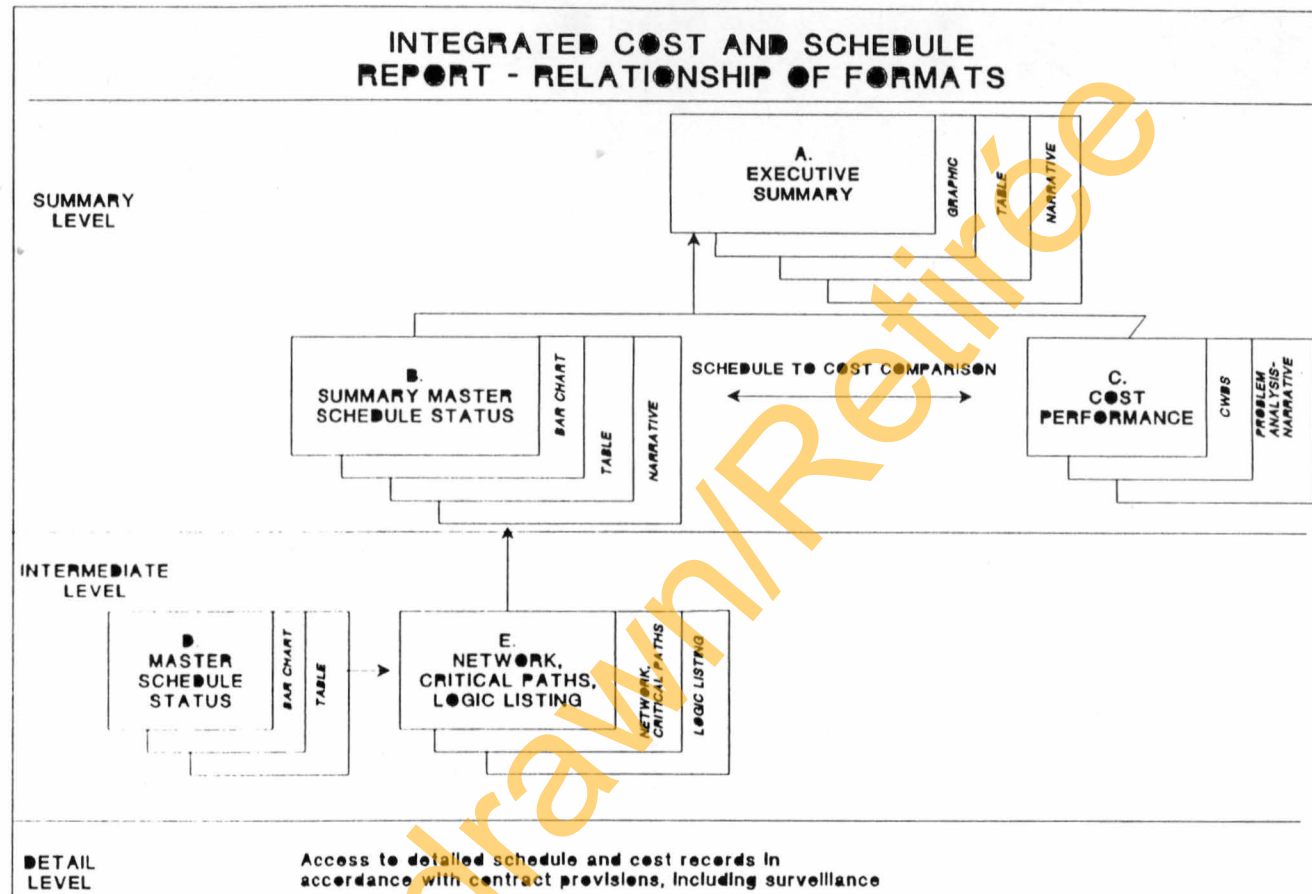


Figure 1.

Rev: 0
Date: 92-07-31
File: GOV.DTA

DATA ITEM DESCRIPTION

3. Description/Purpose (Cont'd)

- 3.2 These report formats and contents shall be consistent with contractor management system processes, including internal reporting functions.
- 3.3
- a. **Format A** provides an executive summary of cost and schedule performance with graphics, and a 1-2 page narrative.
 - b. **Format B** provides the status of selected major milestones and all deliverable end items in the summary master schedule, and 1 page narrative.
 - c. **Format C** provides cost performance by summary level contract work breakdown structure elements and significant problem analysis.
 - d. **Format D** provides the master schedule status identifying delays, impact to the contract and corrective action.
 - e. **Format E** provides the master schedule network, critical paths and logic listing.
 - f. Trend graphics, content and format as used by the contractor are provided in support of the above Formats as applicable.
- 3.4 ICSR data will be used by government managers to: (a) evaluate contract cost and schedule performance, (b) identify the magnitude and impact of actual and potential problem and risk areas causing significant schedule delays, cost and at completion variances; and (c) provide valid and timely contract status information for government reporting.

7. Application/Interrelationship (Cont'd)

- 7.2. The data herein is generated by the requirement for C/SPMS application.
- 7.3. This data item may be applied to contractors delivering the Cash Constraint Report MP-002. A comparison of some data elements in the two reports is required.
- 7.4. For further guidance on the application of this data item refer to the DID/CDRL Tailoring Guidance for DID MP-001, CDRL 001X (A-E).

DATA ITEM DESCRIPTION

10. Preparation Instructions (Cont'd)

10.2 Specific Preparation Instructions

10.2.1 The header information in subparagraphs 10.2.1.1-10.2.1.5 is required for all formats. The header content is shown in each format figure and identified by item numbers 1-5.

10.2.1.1 CONTRACTOR: Enter the name and division (if applicable) of the reporting contractor.

10.2.1.2 CONTRACT TYPE AND NUMBER: Enter the contract type, contract serial number, and the number of the latest approved contract change applicable to the contract.

10.2.1.3 CONTRACT NAME: Enter the name, acronym or other designation of the deliverable end items purchased under the contract.

10.2.1.4 REPORT PERIOD: Enter the beginning and ending dates of the period covered by the report.

10.2.1.5 SIGNATURE, TITLE AND DATE: The project manager shall sign and approve each format of the report and enter the date of signature.

10.2.2 Format A - Executive Summary

The purpose of this format is for the contractor project manager to provide an overview of progress, and the most immediate and significant trends, problems, and risks using cost, schedule and other outputs of the management system. It also includes the impact of existing problems and risks on contract objectives such as projected final cost, schedule and technical performance. This format's graphic segments (Figure 2) may be on two or more pages for legibility, and shall contain the following data elements:

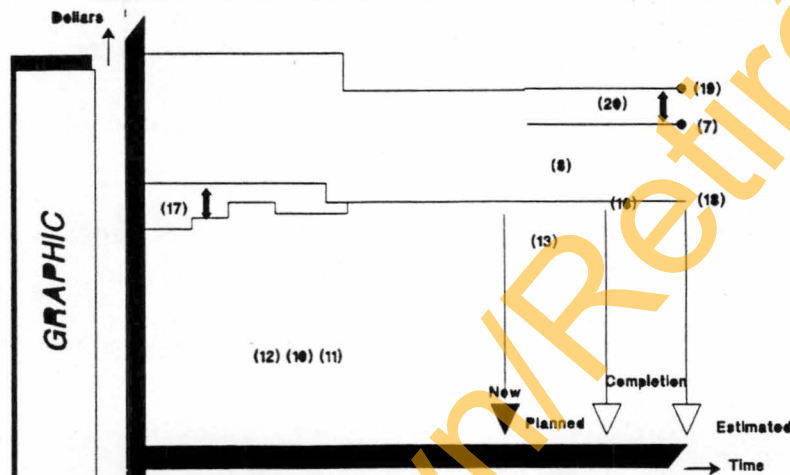
10.2.2.1 The status of selected major milestones and deliverable end items contained in the Summary Master Schedule. Identification of the planned, contractual, actual and/or projected dates (Item 6).

10.2.2.2 The Estimate at Completion (EAC) (Item 7). Identification of the trend of actual costs (ACWP) to EAC (Item 8).

10.2.2.3 The projected (schedule) completion date of the contract based on the final delivery or work completion milestone (Item 9).

10.2.2.4 The work plan (Budgeted Cost for Work Scheduled (BCWS))(Item 10).

(1) CONTRACTOR:	(2) CONTRACT TYPE & NO.:	(3) CONTRACT NAME:	(4) REPORT PERIOD:	(5) SIGNATURE, TITLE AND DATE:
--------------------	--------------------------------	--------------------------	--------------------------	--------------------------------------



Index 1.0

Selected Milestones, Deliverables and Items	Planned • Contractual • Actual • Projected
1.	(8)
12.	(9)

(21)

SAMPLE
FORMAT

- Legend
- (6) Milestone - DEI Dates
 - (7) Estimates at Completion (EAC)
 - (8) Actuals Trend
 - (9) Projected contract completion (Sched.)
 - (10) Work Plan - BCWS
 - (11) Earned Value - BCWP
 - (12) Actual Cost - ACWP
 - (13) Earned Value Trend
 - (14) CUM Cost Performance Index (CPI)
 - (15) CUM Schedule Performance Index (SPI)
 - (16) Budget at Completion (BAC)
 - (17) Management Reserve (MR)
 - (18) Target Cost (TC)
 - (19) Ceiling Price (CP)
 - (20) Risk Range (RR)
 - (21) Narrative

Figure 2

Rev: 0
Date: 92-07-31
File: GOV.DTA

DATA ITEM DESCRIPTION

10. Preparation Instructions (Cont'd)

- 10.2.2.5 The Earned Value (Budgeted Cost for Work Performed (BCWP)) (Item 11) and Actual Cost (Actual Cost of Work Performed (ACWP)) (Item 12). Identification of the trend of earned value (BCWP) to estimated completion (Item 13).
- 10.2.2.6 The cumulative cost (Item 14), and schedule (Item 15) performance indices on a scale relative to the index value of 1.0. The contractor may propose alternate indices for government approval.
- 10.2.2.7 The original Budget at Completion (BAC) (Item 16), Management Reserve (MR)(Item 17), Target Cost (TC) (Item 18), Ceiling Price (CP) (Item 19), and Risk Range (Item 20), and changes to each from contract award to the report date.
- 10.2.2.8 Provide a 1-2 page narrative which integrates the data elements in paragraphs 10.2.2.1-10.2.2.7, and gives a contract overview (Item 21). Identify existing or anticipated risks which impact on the contract objectives. For significant variance trends, for example labour application, describe the impact and corrective action. The contracting authority may identify problems for the narrative and will advise the contractor in writing to address such problems in a subsequent issue of the format.

10.2.3 Format B - Summary Master Schedule Status

The purpose of this format is to provide the status of all Summary Master Schedule (SMS) major milestones and deliverable end items. This format (Figure 3) shall consist of a bar chart schedule, table and narrative containing the following data elements:

- 10.2.3.1 The status of all major milestones and deliverable end items in the SMS (Item 6). Identification of the planned, contractual, actual and/or projected dates. (Item 7).
- 10.2.3.2 Identification of the schedule impact of significant delays within the SMS (Item 8) focusing on major milestones and deliverable end items.
- 10.2.3.3 Identification of significant risk associated with major milestone and deliverable end item schedule projections (Item 9).
- 10.2.3.4 Identification of workarounds and corrective action and indication of any resulting actual or predicted recovery to the current schedule (Item 10).

FORMAT B - SUMMARY MASTER SCHEDULE STATUS

(1)	(2)	(3)	(4)	(5)
CONTRACTOR	CONTRACT TYPE & NO	CONTRACT NAME	REPORT PERIOD	SIGNATURE, TITLE AND DATE
EVENT COMPLETIONS	MONTHS AFTER CONTRACT			
	CALENDAR - MONTHS			
• CONTRACT AWARD	NOTE: ACTIVITY DESCRIPTIONS ARE FOR EXAMPLE ONLY NOW	SAMPLE FORMAT		
• DESIGN COMPLETE				
• PURCHASED ORDERS PLACED				
• PURCHASED MATERIAL RECEIVED				
• FABRICATION COMPLETE				
• ASSEMBLY COMPLETE				
• TEST & TRIALS COMPLETE				
• DELIVERY 1				
• DELIVERY 2				
• DELIVERY 3				
SELECTED MAJOR MILESTONES & DELIVERABLE END ITEMS	CURRENT SCHEDULE			STATUS
	PLANNED-CONTRACTUAL-ACTUAL-PROJECTED			IMPACT-RISK-WORKAROUND-RECOVERY
(6)	(7)	(8)	(9)	(10)
(11)	<u>Legend</u> Baseline Plan Completed Completed Ahead Completed Behind Forecast Ahead Forecast Delay <u>Note:</u> When milestone are combined with activities, an activity legend is also required (see Figure 6).			

FIGURE 3

BAR CHART

TABLE

NARRATIVE

DATA ITEM DESCRIPTION

10. Preparation Instructions (Cont'd)

- 10.2.3.5 The complete SMS is in bar chart format (Item 6). The table contains only SMS activities-events scheduled to start or complete in the next "x" months. Completed activities-events need not be listed in subsequent table deliveries. Activities-events beyond the "x" month window shall be analyzed when delays to deliverable end items are projected.
- 10.2.3.6 The SMS is a management level summary of the Master Schedule, a planned and logical sequence of contract work consistent with the contract based critical path.
- 10.2.3.7 Provide a one (1) page narrative (Item 11) relating the data elements in paragraphs 10.2.3.1-10.2.3.6 and describing significant schedule achievements, problems and risks. Schedule impact of delays on major milestones, deliverable end items, and contract completion shall also be explained.

10.2.4 Format C - Cost Performance

The purpose of the CWBS format is to provide an overview of cost performance, schedule trends, and projections of final cost. This format (Format C) (Figure 4) is in escalated dollars, or hours and material dollars, and shall contain the data elements below. The related problem analysis (Format C) (Figure 5) shall identify the cause, impact, and corrective action for significant variances, problems and risks.

10.2.4.1 CONTRACT DATA

Item (6) - ORIGINAL TARGET COST: For an incentive contract, enter the negotiated contract target cost.

Item (7) - CONTRACT CHANGES: Enter the cumulative cost (excluding fee or profit) applicable to contract changes which have been approved since the beginning of the contract.

Item (8) - CURRENT TARGET COST: Enter the sum of Items (6) and (7). The amount shown should equal the current dollar value (excluding fee or profit) on which contractual agreement has been reached.

Item (9) - ESTIMATED COST OF AUTHORIZED, UNPRICED WORK: Enter the estimated cost (excluding fee or profit) for approved contract changes for which prices have yet to be negotiated.

Item (10) - CONTRACT BUDGET BASE: Enter the sum of Items (8) and (9).

FORMAT C - COST PERFORMANCE - CWBS

CONTRACTOR (1)	CWBS FORMAT					SIGNATURE, TITLE AND DATE (5)		
	CONTRACT TYPE AND NUMBER (2)	CONTRACT NAME (3)		REPORT PERIOD (4)				
CONTRACT DATA								
(6) ORIGINAL TARGET COST	(7) CONTRACT CHANGES	(8) CURRENT TARGET COST (6) + (7)		(9) ESTIMATED COST OF AUTHORIZED, UNPRICED WORK	(10) CONTRACT BUDGET BASE (8) + (9)			
PERFORMANCE DATA								
CONTRACT WORK BREAKDOWN STRUCTURE	CUMULATIVE TO DATE					AT COMPLETION		
	BUDGETED COST FOR		ACTUAL COST OF WORK PERFORMED (4)	VARIANCE		BUDGET (7)	ESTIMATE (8)	VARIANCE (9)
	WORK SCHEDULED (2)	WORK PERFORMED (3)		SCHEDULE (ACCOMPLISHMENT) (5)	COST (6)			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
OVERHEAD								
GENERAL & ADMINISTRATIVE								
UNDISTRIBUTED BUDGET								
MANAGEMENT RESERVE								
TOTAL								

FIGURE 4

DATA ITEM DESCRIPTION

10. Preparation Instructions (Cont'd)

10.2.4.2. COST/SCHEDULE PERFORMANCE DATA (CUMULATIVE):

COL.(1) - CONTRACT WORK BREAKDOWN STRUCTURE (CWBS):

Enter the CWBS code and noun description of the (CWBS) elements for which cost information is being reported. CWBS elements and levels required are those specified in the contract.

COL (2) - BUDGETED COST FOR WORK SCHEDULED (BCWS):

Enter the numerical representation of the value of all work scheduled to be accomplished as of the reporting cut-off date.

COL (3) - BUDGETED COST FOR WORK PERFORMED (BCWP):

Enter the numerical representation of the value of all work accomplished as of the reporting cut-off date.

COL (4) - ACTUAL COST OF WORK PERFORMED (ACWP):

Enter the cumulative actual costs applicable to work accomplished as of the reporting cut-off date. Actual costs and budgeted costs shall be reported on a comparable basis.

COL (5) - SCHEDULE (ACCOMPLISHMENT) VARIANCE (SV): Enter the difference between the Budgeted Cost for Work Scheduled and the Budgeted Cost for Work Performed by subtracting Col. (2) from Col. (3). A negative figure indicates an unfavourable variance and should be so indicated. Significant calculated variances based on contract provisions shall be explained in the Problem Analysis with respect to a related delay in the Master Schedule.

COL (6) - COST VARIANCE (CV): Enter the difference between the Budgeted Cost for Work Performed and the Actual Cost of Work Performed by subtracting Col. (4) from Col.(3). A negative figure indicates an unfavourable variance and shall be so indicated. Significant variances based on contract provisions shall be fully explained in the Problem Analysis.

COL (7) - BUDGET AT COMPLETION (BAC): Enter the total budget identified to each CWBS element listed in Col. (1). Assigned budgets will consist of the original budgets plus or minus budget adjustments resulting from contract changes, internal replanning, and application of management reserve.

DATA ITEM DESCRIPTION

10. Preparation Instructions (Cont'd)

COL (8) - ESTIMATE AT COMPLETION (EAC): Enter the latest revised Estimate (of Cost) At Completion (EAC) including the estimated overrun/underrun for all authorized work. The EAC consists of the sum of the actual costs plus the associated latest estimate of costs for work remaining.

COL (9) - VARIANCE AT COMPLETION (VAC): Enter the difference between the Budget at Completion (BAC) Col. (7) and the Estimate at Completion (EAC) Col. (8), by subtracting Col. (8) from Col. (7). A negative figure indicates an unfavourable variance and shall be so indicated. Significant calculated variances based on contract provisions shall be fully explained in the Problem Analysis.

OVERHEAD AND GENERAL AND ADMINISTRATIVE (G&A): Enter in Columns (2) through (9) the appropriate Overhead and G&A costs as separate lines. Overhead may be included in the individual costs reported above. If G&A has been included in the costs reported above, G&A shall be shown as a non-add entry line with an appropriate notation. If Overhead and/or G&A classification is not used, no entry is made other than an appropriate notation to that effect.

UNDISTRIBUTED BUDGET (UB): Enter in Cols. (7) and (8) the amount of budget applicable to authorized contract effort which has been identified to CWBS elements at or below the reporting level. All UB shall be fully explained in the Problem Analysis.

MANAGEMENT RESERVE (MR): Enter in Col. (7) the amount of budget identified as MR as of the end of the reporting period. Enter in Col. (8) the amount of MR expected to be consumed before the end of the contract. Enter in Col. (9) the difference between Col. (7) and (8). Amounts of MR applied during the reporting period and the rationale for the figure in Col. (8) are explained in the Problem Analysis. (The entry in Col. (8) is discretionary and may be zero if the contractor does not wish to make an estimate). Application of MR during the reporting period is explained in terms of amounts applied by transaction, CWBS elements to which it is applied, and reasons for application.

TOTAL: Enter the sum of the direct, indirect and G&A budgets and costs in Cols. (2) through (9). In Cols. (7), (8) and (9), also add the Undistributed Budget and Management Reserve.

DATA ITEM DESCRIPTION

10. Preparation Instructions (Cont'd)

10.2.5 Problem Analysis

10.2.5.1 Format C is a 1-2 page narrative to provide data elements in accordance with Figure 5. Variance identification and problem analysis shall be in accordance with contract provisions including identification of the Top "X" problems impacting contract cost/schedule performance. Explanations of problems shall be accurate and concise. The EAC data element shall reflect the most current and realistic bottom-up estimate, updated at least annually, in accordance with contract provisions.

10.2.5.2 Variances shall be systematically identified. Responsible managers shall analyze significant variances, determine problems, and explain corrective action taken. At the contracting authority's discretion, contractor's identification and analysis may default to specific thresholds based on cumulative performance trends as specified in contract provisions.

10.2.5.3 Note: Normally in the CWBS format (Figure 4) the amount shown on the Total line in Col. (7), Budget at Completion, will equal the amount shown in Item (10), Contract Budget Base. This relationship is necessary to ensure that the Budgeted Cost for Work Scheduled and the Budgeted Cost for Work Performed provide meaningful indicators of contractual progress. If the amount shown on the Total line in Col. (7), Budget At Completion exceeds the amount shown in Col. (10), Contract Budget Base, fully explain the reasons for the additional budget allocation and identify by CWBS element the specific amounts added to each element.

10.2.6 Format D - Master Schedule Status

The purpose of this format is to provide the status of the Master Schedule. Performance milestones and deliverable end items shall be defined in sufficient quantity and quality to clearly indicate monthly schedule status, delays, and projected completion dates. This format (Figure 6) shall contain a bar chart and table with the following data elements :

10.2.6.1 Provide the status of the Master Schedule. (Item 6). Identification of the planned, contractual, actual and/or projected dates (Item 7).

10.2.6.2 Identification of the schedule impact of delays within the Master Schedule (Item 8) focusing on subsequent milestones and deliverables.

FORMAT C - COST PERFORMANCE-PROBLEM ANALYSIS

(1)	(2)	(3)	(4)	(5)
CONTRACTOR	CONTRACT TYPE AND NUMBER	CONTRACT NAME	REPORT PERIOD	SIGNATURE, TITLE AND DATE

FIGURE 5

- (6) **SECTION A - COST AND SCHEDULE VARIANCE CWBS FORMAT:** All variances shall be explained in accordance with contract provisions. Explanations of variances shall clearly identify the nature of the problem, the reasons for cost or schedule variance, and impact on the immediate task. Corrective action taken and results, and significant impact at the total contract level shall also be explained.

The following specific variance types shall be explained:

- Schedule variances (Budgeted Cost for Work Scheduled vs. Budgeted Cost for Work Performed) with explanation in terms of schedule delay or projections in the Master Schedule.
- Cost variance (Budgeted Cost for Work Performed vs Actual Cost of Work Performed)
- Cost variance at completion (Budget at Completion vs Estimate at Completion)

- (7) **SECTION B - OTHER ANALYSIS:** The following analysis shall be provided:

- Identify the effort to which the undistributed budget applies
- Identify the amount of management reserve applied during the reporting period by transaction, the CWBS and organizational elements, and the reasons for application.
- Explain reasons for significant shifts in time-phasing of the PM Baseline
- Explain reasons for significant shifts in time-phasing of planned or actual labour application, and the revised profile to completion.
- If significant cost variances are related to variances in planned/actual/forecast rates or factors identify and explain the associated changes.

- (8) **SECTION C - OVER TARGET BASELINE (OTB):** If an OTB is implemented or significantly increased the following shall be provided prior to requesting Contracting Authority approval:

Reasons for the additional budget such as:

- | | |
|-------------------------------------|-------------------------------|
| (1) In scope engineering changes | (4) Economic Price Adjustment |
| (2) In scope support effort changes | (5) Other (specify) - rates |
| (3) In scope schedule changes | - factors |

- (9) **SECTION D - PERFORMANCE TREND GRAPHICS:** Explanation of variance trends, schedule impact, estimate at completion, or other problems and risks in Section A to C above using appropriate graphics as available.

FORMAT D - MASTER SCHEDULE STATUS

BAR CHART

TABLE

(1)	(2)	(3)	(4)	(5)
CONTRACTOR:	CONTRACT TYPE & NO:	CONTRACT NAME:	REPORT PERIOD:	SIGNATURE, TITLE AND DATE:
ACTIVITY EVENTS DESCRIPTION ¹	CALENDAR			
•CONTRACT AWARD	NOTE: ACTIVITY DESCRIPTIONS ARE FOR EXAMPLE ONLY.	<div style="text-align: center;"> <p>(10)</p> <p>SAMPLE FORMAT</p> </div>		
•DESIGN				
•PURCHASE ORDERS				
•MATERIALS RECEIVED				
•FABRICATION				
•ASSEMBLY				
•TESTING COMPLETE				
•DELIVERY 1	NOW			
•DELIVERY 2				
•DELIVERY 3				
ACTIVITY EVENT	CURRENT SCHEDULE			STATUS
(6)	PLANNED-CONTRACTUAL-ACTUAL-PROJECTED			IMPACT-WORKAROUND-RECOVERY
	(7)	(8)	(9)	

For milestone legend see Figure 3.

Activities:

Baseline Plan
Completed
On schedule
Behind schedule
Forecast Ahead
Forecast Delay

FIGURE 6

¹Activities and events shall be at the intermediate level of master schedule

DATA ITEM DESCRIPTION

10. Preparation Instructions (Cont'd)

- 10.2.6.3 Identification of workarounds and corrective action, and indication of any resulting actual or predicted recovery to the current schedule. (Item 9).
- 10.2.6.4 The bar chart shall contain all intermediate level Master Schedule content (Item 10) including all significant milestones and/or events.
- 10.2.6.5 The table contains only Master Schedule activities and events scheduled to start or complete in the next "x" months. Completed activities and events need not be listed in subsequent table deliveries. Activities and events beyond the "x" month window shall be analyzed, and if a delay is projected in a major milestone or deliverable end item, this shall be reported.
- 10.2.6.6 This format shall contain the current schedule at an intermediate level of the Master Schedule, consistent with and supported by the scope of cost accounts in the performance measurement baseline. It shall contain a logical sequence of the contract work, supported by detail level schedules.

10.2.7 Format E - Network, Critical Paths and Logic Listing

The purpose of this format is to provide the Master Schedule network, critical path analysis and logic listing, at intermediate level (see Figure 1), including all major project milestones and deliverable end items, in accordance with contract provisions. It shall contain the following data elements:

- 10.2.7.1 Provide in network form, the overall contract work logic using ADM or PDM techniques (Format E) (Figure 7). Identification of critical activities or events and paths (Item 6), free float (Item 7), early and late start/finish (Item 8), activity-event description (Item 9), original and remaining duration (Item 10), and total float (Item 11).
- 10.2.7.2 Provide the network logic listing (Format E) (Figure 8). Identification of the activity-event description and coding (Item 6), early and late start/finish (Item 7), original and remaining duration (Item 8), constraints (Item 9), all predecessors and/or successors (Item 10), percentage complete (Item 11), and total float (Item 12).

FORMAT E - NETWORK AND CRITICAL PATHS

(1) CONTRACTOR:	(2) CONTRACT TYPE & NO:	(3) CONTRACT NAME:	(4) REPORT PERIOD:	(5) SIGNATURE, TITLE AND DATE:
--------------------	----------------------------	-----------------------	-----------------------	--------------------------------------

Arrow diagram
method (ADM) or I-J

SAMPLE
FORMAT

Precedence Diagram
Method (PDM)

(6) (7) (11)
Orig FREE TOTAL
Rem Duration FLOAT

(9)
Description

Early start Early Finish
Late Late

(6) IMS CODE	(7) ORIG. BUR	(8) REM BUR	(9) FREE FLOAT	(10) TOTAL FLOAT
(10) DESCRIPTION (9)				
Early Start			Late Start	
Early Finish			Late Finish	

Figure 7.

Rev. 1
Date: 12-11-31
File: GPM.B16

FORMAT E - LOGIC LISTING

(1) CONTRACTOR	(2) CONTRACT TYPE & NO		(3) CONTRACT NAME				(4) REPORT PERIOD	(5) SIGNATURE, TITLE AND DATE			
LOGIC (ACTIVITY) LISTING											
(6)	(7)			(8)	(9)	(10)	(11)	(12)			
DESCRIPTION AND CODING	EARLY START	EARLY FINISH	LATE START	LATE FINISH	ORIG DUR	REM DUR	CONSTRAINTS (e.g. SNE, FNL, XF)	PRED/SUCC LISTING	% COMPL	TOTAL FLOAT	
<p>SAMPLE FORMAT</p>											

FIGURE 8

SECTION C

ICSR - SAMPLE CDRL

1.0 Introduction

- 1.1 The following pages contain sample CDRL entries for the five formats of the ICSR Data Item.

2.0 Guidance

- 2.1 Recommended frequencies for the five ICSR formats are as follows:

<u>FORMAT</u>	<u>FORMAT TITLE</u>	<u>FREQUENCY</u>
A	Executive Summary	Monthly
B	Summary Master Schedule Status	Monthly
C	Cost Performance (a) CWBS (b) Problem Analysis	Monthly
D	Master Schedule Status	Quarterly
E	(a) Network and Critical Paths (b) Logic Listing	Quarterly Quarterly

- 2.2 The length of time between the effective date of the report (e.g. accounting or calendar month end) and receipt by the PMO should be as short as possible if it is to be utilized effectively, while recognizing the need for the contractor to check and verify the data prior to delivery. The earliest practical delivery date relative to the effective date should be negotiated with the contractor, subject to the nature and complexity of the project, for example in respect of subcontracts. Staggered delivery of reports (e.g. formats A, B, C(a) initially, with other formats delivered a few days later) may also be considered, and if required, clearly defined in the CDRL.

- 2.3 If it is intended to deliver the ICSR data electronically in lieu of hard copy, such requirement should be incorporated in the contract provisions and defined in the CDRL.

1. 001X-A	2. INTEGRATED COST AND SCHEDULE REPORT 3. EXECUTIVE SUMMARY - FORMAT A	6. IPMSO	10. MONTHLY	12. SEE BLK 16	14. PMO 8/1	17. CONTRACT FILE/DOCUMENT NUMBER
4. MP-001	5. SOW PAR.	7.	8.	9.	11. EOM	13. SEE BLK 16
16. REMARKS BLK 12. - 6 MACA BLK 13. - MONTHLY						15. TOTAL 8/1
						18. ESTIMATED NUMBER OF PAGES
						19. ESTIMATED PRICE

1. 001X B	2. INTEGRATED COST AND SCHEDULE REPORT 3. SUMMARY MASTER SCHEDULE STATUS - FORMAT B	6. IPMSO	10. MONTHLY	12. SEE BLK 16	14. PMO 8/1	17. CONTRACT FILE/DOCUMENT NUMBER
4. MP-001	5. SOW PAR.	7.	8.	9.	11. EOM	13. SEE BLK 16
16. REMARKS BLK 12. - 6 MACA BLK 13. - MONTHLY						15. TOTAL 8/1
						18. ESTIMATED NUMBER OF PAGES
						19. ESTIMATED PRICE

1. 001X-C	2. INTEGRATED COST AND SCHEDULE REPORT 3. COST PERFORMANCE - CWBS AND PROBLEM ANALYSIS	6. IPMSO	10. MONTHLY	12. SEE BLK 16	14. PMO 8/1	17. CONTRACT FILE/DOCUMENT NUMBER
4. MP-001	5. SOW PAR. - FORMAT C(a) and (b)	7.	8.	9.	11. EOM	13. SEE BLK 16
16. REMARKS BLK 12. - 6 MACA BLK 13. - MONTHLY						15. TOTAL 8/1
						18. ESTIMATED NUMBER OF PAGES
						19. ESTIMATED PRICE

1. 001X-D	2. INTEGRATED COST AND SCHEDULE REPORT		6. IPMSO		10. QUARTERL Y OR REPLANNI NG	12. SEE BLK 16	14.		17.CONTRACT FILE/DOCUMENT NUMBER
	3. MASTER SCHEDULE STATUS - FORMAT D								
4. MP-001		5. SOW PAR.	7.	8.	9.	13. SEE BLK 16			18.ESTIMATED NUMBER OF PAGES
16. REMARKS BLK 12. - 6 MACA BLK 13. - QUARTERLY OR REPLANNING						13. SEE BLK 16			19.ESTIMATED PRICE
								15.	

1. 001X-E	2. INTEGRATED COST AND SCHEDULE REPORT		6. IPMSO		10. QUARTERL Y OR REPLANNI NG	12. SEE BLK 16	14.		17.CONTRACT FILE/DOCUMENT NUMBER
	3. NETWORK, CRITICAL PATHS, LOGIC LISTING - FORMAT E								
4. MP-001		5. SOW PAR.	7.	8.	9.	13. SEE BLK 16			18.ESTIMATED NUMBER OF PAGES
16. REMARKS BLK 12. - 6 MACA BLK 13. - QUARTERLY OR REPLANNING						13. SEE BLK 16			19.ESTIMATED PRICE
								15.	

PART II

CASH CONSTRAINT REPORT (CCR)

SECTION A

APPLICATION AND TAILORING GUIDANCE

1.0 Introduction

- 1.1 Part II provides government and industry personnel with guidance in respect to the interpretation, application and tailoring of the Data Item Description DID MP-002: Cash Constraint Report, as set out in Section B, and its associated Contract Data Requirements List (CDRL) as outlined in Part C.
- 1.2 Any questions, concerns or suggestions for improvement regarding the content of Part II should be directed to the Interdepartmental Performance Measurement Support Organization, Supply & Services Canada, 4th Floor, 90 Elgin Street, Ottawa Ontario K1A 0S5. Telephone 943-2807. Fax 943-8792.

2.0 Guidance

- 2.1 The Cash Constraint Report (CCR) as set out in Section B is used for annual expenditure management relative to the Annual Cash constraint set out in multi-year contracts, and is required on all contracts where the C/SPM standard is called up. The CCR may also be required to support contract management in contracts where cost performance visibility is not required.

The CCR replaces DI-F-6004B, Contract Funds Status Report (CFSR) (previously used in conjunction with DoDI 7000.2).

- 2.2 Both contractor and government personnel must be made aware that the "billings" (i.e. costs incurred and billed to the government for payment under the cost reimbursable and/or milestone provisions of the contract) may be quite different to the values provided by ACWP under the performance measurement requirements of the contract, depending on the specific cost recognition and earned value methods utilized. The contractor must ensure that the values reported and projected in the CCR are based on billings.
- 2.3 Notwithstanding item 2.2, the phasing of annual CCR actual and forecast billings should be compared to (and if necessary rationalized with) the timephased budget, cost, and at-completion estimate in the ICSR. Significant differences should be identified and explained in the narrative remarks of the CCR (Item 13).

- 2.4 The CCR must be taken from the contractor financial management system, and be traceable to the data elements in the cost/schedule management system. Data elements should reflect the latest financial and workplanning status of the contract. The applicability of the CCR to subcontractors will be in accordance with contract provisions.
- 2.5 Recommended frequency for delivery of the CCR is calendar quarter, with two submissions in the final quarter as set out in Section C. Contract requirements will be as specified in the Contract Data Requirements List (CDRL). Reporting should reflect data dates based on the contractor's accounting period cutoff, with as short a period as possible for delivery under the contract.
- 2.6 This report should cover all authorised work including priced and unpriced work. The only level of reporting is at level 1 of the Contract Workbreakdown Structure (CWBS) with the data elements identified in Item 9. The PMO may wish to modify the data elements depending on the type of the contract. (i.e. Firm price or other).
- 2.7 Once finalized the CCR should contain all contractually required cash constraint reporting.
- 2.8 For Item 12 of the data item, Forecast billings of certain contract costs which fall inside the Annual Cash Constraint (e.g. Insurance Premiums, Foreign Exchange Adjustment) will be identified as separate elements in Item 9. If such items fall outside the Annual Cash Constraint the PMO should determine the need for such data (if any), and modify the CCR DID where such additional data is required.

SECTION B CASH CONSTRAINT REPORT (CCR) DID MP-002

1.0 Introduction

- 1.1 Attachment "B" to this Section contains the recommended CCR Data Item. This DID should be called up in all RFPs where Cash Constraint Reporting is required for the Implementation Phase Contract.

2.0 Guidance

- 2.1 See Section A regarding degree of "tailoring" permitted.
- 2.2 It should be noted that the DID permits the contractor to use the contractor's own formats provided that all of the data elements are reported on.
- 2.3 It is recommended that the final format of this DID should replace (wherever applicable) the "sample" format with the agreed actual contractor format by the time of contract award, or as soon as possible thereafter.

DATA ITEM DESCRIPTION

1. TITLE <p style="text-align: center;">CASH CONSTRAINT REPORT (CCR)</p>	2. IDENTIFICATION NUMBER <p style="text-align: center;">MP-002</p>	
3. DESCRIPTION/PURPOSE <p>3.1 The Cash Constraint Report (CCR) consists of one format in tabular form and 1-2 pages of narrative remarks. The purpose of the report is to provide the government and contractor with current and reliable information on planned and actual forecast billings in relation to the contract annual cash constraint. This data will be used by government and contractor managers to: (a) update and forecast contract cash requirements; (b) develop budgets and forecasts; (c) where variances exist between the contract annual cash constraint and forecast billings facilitate the rephrasing of expenditures; and (d) assess the need to amend the annual cash constraint.</p> <p>3.2 CCR format and content will be consistent with contractor management system processes, and financial management practices. A high degree of precision will be provided for the current fiscal year forecast billings compared with subsequent fiscal years.</p> <p>3.3 Nothing herein should be construed as altering any contractual provisions, including the contract annual cash constraint.</p>		
4. APPROVAL DATE <p style="text-align: center;">92-07-31</p>	5. OFFICE OF PRIMARY INTEREST <p style="text-align: center;">IPMSO</p>	6. GIDEP APPLICABLE
7. APPLICATION/INTERRELATIONSHIP <p>7.1 This data item description contains the format and content preparation instructions for that data generated under statement of work task statement ABC.</p> <p>7.2 This data item may be applied to contracts delivering the Integrated Cost and Schedule Report (ICSR), DID MP-001. A comparison of some data elements in the two reports is required. (continued...)</p>		
8. ORIGINATOR <p style="text-align: center;">IPMSO</p>	9. APPLICABLE FORMS <p style="text-align: center;">Figure 1</p>	
10. PREPARATION INSTRUCTIONS <p>10.1 Output of the contractor management system may be substituted for the CCR format, provided it contains all the required data elements in a form suitable for government managers. Equivalent computer data submission is acceptable as mutually agreed upon and specified in the CDRL. (continued...)</p>		

DATA ITEM DESCRIPTION

7. APPLICATION/INTERRELATIONSHIP

- 7.3 For further guidance on the application of this data item, refer to the DID/CDRL Tailoring Guidance for DID MP-002, CDRL-002X.

10. PREPARATION INSTRUCTIONS (Cont'd)

10.2 Specific Preparation Instructions

- 10.2.1 Item 1 Contract Serial Number: Enter the contract serial number and indicate the latest contract amendment-change on which agreement has been reached.

- Item 2 Contract Type: Enter the contract basis of payment type, for example:

Firm Price Incentive Fee (FPIF)

Target Incentive Ceiling Price (TICP)

- Item 3 Current Report Period: Enter the cut-off date applicable to this report. (Year, Month, Day)

- Item 4 Contractor Name: Enter the name, and division (if applicable) of the reporting contractor.

- Item 5 Project Name: Enter the project name associated with the prime contract.

- Item 6 Current Contract Price: Enter the dollar amount of the current price in millions of Canadian dollars, including all approved contract amendments or changes.

- Item 7 Signature, Title and Date: The project manager shall sign and approve the report and enter the date of signature.

- Item 8 Forecast/Actual Billings-Total Contract

- Col (a) Actual Billings to Date - Previous Fiscal Years

Enter the dollar amounts billed and paid under the contract provisions to the end of the previous fiscal year(s). Indicate the fiscal years covered. Within 60 days of the end of any government fiscal year, the contractor shall confirm with the contracting authority the actual amount paid and charged against the annual cash constraint.

- Col (b)i. Forecast Billings-Current Fiscal Year-Quarterly

Enter the dollar amounts of actual and forecast billings for the first three (3) quarters of the current government fiscal year.

DATA ITEM DESCRIPTION

Col (b)ii. Forecast Billings - 4th Quarter - Monthly

In the first 2 quarterly reports, show the 3 months total in the 4th quarter. For the 3rd and 4th quarter reports, show monthly forecast billings for the 4th quarter.

Col (c) Total Forecast Billings - Current Fiscal Year

Summation of the information in (b)i. and (b)ii. above. The contractor shall identify and explain in the narrative remarks significant forecast variances between the planned current year forecast billings and the current year annual cash constraint. Where the difference is a shortfall of forecast billings to the annual cash constraint, the contractor shall identify, options (if any) to minimize the shortfall along with the associated impact on the balance of the contract annual cash constraint. At the end of the third quarter, and monthly thereafter, the contractor shall also include a probability assessment (risk range) of achieving the forecast billings to the end of the current fiscal year.

Col (d) Forecast Billings - Future Fiscal Years

Enter the dollar amounts of forecast billings for the five fiscal years after the current fiscal year. The contractor shall indicate in the narrative remarks significant planned differences in forecast billings with the contract annual cash constraint for these periods.

Col (e) Forecast Billings - Remaining Fiscal Years

Enter the dollar amounts of Billings Forecast for the Remaining Fiscal Years to contract completion. The contractor shall identify in the narrative remarks if any of the forecast billings are planned to occur in fiscal years that occur later than the contract annual cash constraint.

Col (f) Total Forecast Billings

Enter the dollar amount for the Total Forecast Billings. (Sum of (a) to (e)). The contractor shall identify and explain significant variance in (f) and the Estimate at Completion (EAC). Variance in total forecast billings and timephasing shall be addressed in Item 13.

Item 9

Actual/Forecast Billings-Elements: In the columns provided, enter the forecast billings dollar amount in millions of Canadian dollars for total cost (including labour, material, overhead; excluding major subcontractors), major subcontractors (those which constitute a major element of the cashflow including prime contractor overhead), and fee or profit.

DATA ITEM DESCRIPTION

- Item 10 Total Billings: In the columns provided, enter the dollar amount for total billings. (sum of all elements in Item 9).
- Item 11 Annual Cash Constraint: In the columns provided, enter the dollar amount of the contract Annual Cash Constraint.
- Item 12 Annual Cash Constraint Under(Over) Billings: In the columns provided, enter the dollar amount of under(over) billings. In the narrative remarks, explain the rephasing of billings in different fiscal periods to account for under(over) billings in current or prior periods. Identify the contract work and/or reasons related to the rephasing of cash constraint billings in Item 13.
- Item 13 Narrative Remarks: Attach a separate sheet(s) to the table format providing remarks to explain the report, highlighting the reasons for significant variances of forecast billings from the annual cash constraint and options to minimize the impact to the contract.

CASH CONSTRAINT REPORT (CCR)

1 CONTRACT SERIAL NUMBER	2 CONTRACT TYPE	3 CURRENT REPORT PERIOD	4 CONTRACTOR NAME				5 PROJECT NAME	6 CURRENT CONTRACT PRICE	7 SIGNATURE, TITLE AND DATE						
8 FORECAST/ACTUAL BILLINGS-TOTAL CONTRACT															
	(a) ACTUAL BILLINGS TO DATE- PREVIOUS FISCAL YEARS FOR	(b)i FORECAST BILLINGS-CURRENT FISCAL YEAR-QUARTERLY			(b)ii FORECAST BILLINGS-4TH QUARTER-MONTHLY			(c) TOTAL FORECAST BILLINGS- CURRENT FISCAL YEAR	(d) FORECAST BILLINGS-FUTURE FISCAL YEARS					(e) FORECAST BILLINGS- REMAINING FISCAL YEARS	(f) TOTAL FORECAST BILLINGS
		1ST QTR	2ND QTR	3RD QTR	4TH QTR				19-- YEAR 1	19-- YEAR 2	19-- YEAR 3	19-- YEAR 4	19-- YEAR 5		
					JAN	FEB	MAR								
9 ACTUAL/FORECAST BILLINGS ELEMENTS															
1 COST (INCL LABOUR, MATERIAL, OVERHEAD)															
2 MAJOR SUBCON TRACTORS (SEPARATELY IDENTIFIED)															
3 FEE															
10 TOTAL BILLINGS															
11 ANNUAL CASH CONSTRAINT															
12 ANNUAL CASH CONSTRAINT UNDER(OVER) BILLINGS															

13 NARRATIVE REMARKS (1-2 pages attached)

FIGURE 1

SECTION C

CCR -- SAMPLE CDRL

1.0 Introduction

1.1 The following page contains a sample CDRL for the CCR Data Item.

2.0 Guidance

- 2.1 The recommended frequency of submission of this data item is Quarterly, with two extra submissions at the end of January and February each year. The additional two submissions are required to closely monitor probable expenditures to be incurred on the contract relative to the government fiscal-year end (March 31 of each year).
- 2.2 The CCR may be critical to effective client department year-end cash management, and therefore the length of time between the effective date of the report (i.e. accounting (or calendar) month end) and receipt by the PMO should be as short as possible, and clearly defined in the CDRL. The earliest practical delivery date relative to the effective date should be negotiated with the contractor, subject to the nature and complexity of the project, for example in respect of subcontracts.
- 2.3 If it is intended to deliver CCR data electronically in lieu of hardcopy, such requirement should be incorporated in the contract provisions and defined in the CDRL.

1. 002X	2. CASH CONSTRAINT REPORT 3.		6. IPMSO		10. QTRLY	12. SEE BLK 16	14. PMO 8/1	17.CONTRACT FILE/ DOCUMENT NUMBER	
4. MP-002	5. SOW PAR.		7.	8.	9.	11. EOM	13. SEE BLK 16		18.ESTIMATED NUMBER OF PAGES
16. REMARKS BLK 12. - 6 MACA BLK 13. - QRTLY WITH 2 SUBMISSSIONS IN 4TH QUARTER - JAN, FEB							15. TOTAL 8/1		19.ESTIMATED PRICE