



COMMONWEALTH GOVERNMENT

AUSTRALIAN DEFENCE STANDARD

DEF(AUST)5655

**AUSTRALIAN COST/SCHEDULE
CONTROL SYSTEMS
CRITERIA;
STANDARD**

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STANDARD

OCTOBER, 1992

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1. PURPOSE

1.1 The purpose of this Defence standard is to establish a set of Cost/Schedule Control Systems Criteria (C/SCSC or the Criteria) to be met by the management control systems of Defence contractors or subcontractors.

1.2 The objective of C/SCSC is to provide an adequate basis for responsible decision making by both contractor management and the Department. C/SCSC require contractors' management control systems to provide data which:

- a. provide timely and reliable information about work progress;

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- b. properly relate cost, schedule and technical accomplishment; and
 - c. supply managers with information at a practicable level of summarisation.
- 1.3 The Criteria do not constitute or prescribe a system and changes are not required in contractors' existing systems except those necessary to enable the systems to meet the Criteria.
- 1.4 The Criteria do not call for the use of specific management or accounting systems. The general intention is for the Commonwealth to be provided performance data drawn directly from the same systems contractors use for their own management purposes, except where a contract makes specific provision for other reporting systems.

2. SCOPE

- 2.1 Contractors for the Defence Department's major capital equipment projects may be required to comply with the Criteria. Decisions on the application of the Criteria will be made by the Department of Defence in the development of the equipment acquisition strategy for each project.
- 2.2 As a general guide, the Criteria will be applied in contracts which exceed specified price thresholds. While the thresholds may vary from time to time, at 1 July 1992 they were as follows:
- a. production contracts without a significant development component-\$100m;
 - b. contracts which contain a significant development component-\$40m;
 - c. individual, or multiple subcontracts with any company in respect of one prime contract-\$100m; or
 - d. individual or multiple subcontracts with any one company in respect of one prime contract where the subcontracts contain a significant development component-\$40m.

3. APPLICABLE DOCUMENTS

- 3.1 Reference may be necessary to the latest issue of the following documents:

Australian Department of Defence

DEF(AUST)5657 - Australian Cost/Schedule Control Systems Implementation Guide (ACSIG)

US Department of Defense

MIL-STD-881 - Work Breakdown Structures for Defense Materiel Items

4. DEFINITIONS

4.1 For the purpose of this standard the following definitions shall apply:

Actual Cost of Work Performed (ACWP). The costs actually incurred and recorded in accomplishing the work performed within a given time period.

Actual Direct Costs. Those reasonable costs identified specifically with a contract, which can be charged to the contract in accordance with sound accounting principles, accumulated within the contractor's accounting system as accepted by the Commonwealth.

Allocated Budget. See Total Allocated Budget.

Allowable. In relation to costs, a cost permitted in accordance with the Standard Conditions for the Determination of the Costs of Contracts to be allocated to the contract cost.

Applied Direct Costs. The actual direct costs recognised 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 when any of the following takes place:

- a. labour, material, or other direct resources are actually consumed;
- b. material resources are withdrawn from inventory for use;
- c. material resources are received that are uniquely identified to the contract; or
- d. major components or assemblies that are specifically and uniquely identified to a single serially numbered end item are received on a line flow basis.

Apportioned Effort. Effort that is not readily divisible into work packages but is related proportionately to measured effort.

Authorised Work. All work performed by the contractor, pursuant to the contract, within the contract price.

Authorised Unpriced Work (AUW). Includes work that is outside the scope of the contract but which is planned and/or performed by the contractor in advance of a formal contract amendment.

Baseline. See Performance Measurement Baseline.

Budgeted Cost for Work Performed (BCWP). The sum of the budgets for completed work packages and completed portions of open work packages, plus the applicable portion of the budgets for level of effort and apportioned effort.

Budgeted Cost for Work Scheduled (BCWS). The sum of the budgets for all work packages, planning packages, etc., scheduled to be accomplished (including in-process work packages), plus the amount of level of effort and apportioned effort scheduled to be accomplished within a given time period.

Budgets for Work Packages. See Work Package Budgets.

Commonwealth. The Commonwealth of Australia.

Contract. The document which constitutes or evidences the final agreement between the Commonwealth and the contractor together with such attachments as listed in its Table of Contents and includes any authorised amendment to the contract by agreement in writing between the Commonwealth and the contractor.

Contract Budget Base. The contract target cost plus the estimated cost of authorised unpriced work.

Contract Price. The price payable by the Commonwealth under the contract for the proper delivery of the supplies and services specified in the scope of work of the contract.

Contract Target Cost. The total of the sum of all cost accounts plus undistributed budget plus management reserve.

Contractor. A person who contracts with the Commonwealth.

Cost Account. A management control point at which actual costs can be accumulated and compared to budgeted cost of work performed. A cost account is a natural control point for cost/schedule planning and control since it represents the work assigned to one responsible organisational element on one Contract Work Breakdown Structure (CWBS) element.

Date of Contract Award. The effective date.

Direct Costs. Any costs which are directly related and economically traceable to performance of a unit of work, and which are charged directly and finally to the contract in accordance with sound accounting principles, without inclusion of indirect costs.

Effective Date. The date of the contract.

Estimate at Completion (EAC). Actual direct costs, plus indirect costs allocatable to the contract, plus the estimate of costs (direct and indirect) for remaining authorised work.

Indirect Costs. Costs which, because of their incurrence for common or joint objectives, are not subject readily to treatment as direct costs.

Initial Budget. See Original Budget.

Internal Replanning. Replanning actions performed by the contractor for remaining effort within the recognised total allocated budget and schedule restraints.

Level of Effort (LOE). Effort of a general or supportive nature which does not produce definite end products.

Management Reserve. (Synonymous with Management Reserve Budget). 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.

Negotiated Contract Cost. The contract target cost.

Original Budget. The budget established on or near the effective date based upon the negotiated contract cost.

Overhead. See Indirect Costs.

Performance Measurement Baseline (PMB). The time-phased budget plan against which contract performance is measured. It is formed by the budgets assigned to scheduled cost accounts and the applicable indirect budgets. For future effort, not planned to the cost account level, the performance measurement baseline also includes budgets assigned to higher level CWBS elements and undistributed budgets. It equals the total allocated budget less management reserve.

Performing Organisation. A defined unit within the contractor's organisation structure, which applies the resources to perform the work.

Person. Includes a body corporate, the Commonwealth, a State or Territory Government, and a Statutory Authority.

Planning Package. A logical aggregation of work within a cost account, normally the far-term effort, that can be identified and budgeted in early baseline planning, but is not yet defined into work packages.

Replanning. See Internal Replanning.

Reprogramming. Replanning for the effort remaining in the contract, resulting in a new budget allocation which exceeds the contract budget base.

Responsible Organisation. A defined unit within the contractor's organisational structure which is assigned responsibility for accomplishing specific tasks.

Significant Variances. Those differences between planned and actual performance which require further review, analysis, or action. Appropriate thresholds should be established as to the magnitude of variances which will require variance analysis.

Supplies. The goods and services including Intellectual Property required to be supplied under the contract.

Total Allocated Budget. The sum of all budgets allocated to the contract. Total allocated budget consists of the performance measurement baseline plus all management reserve. The total allocated budget reconciles directly to the contract budget base. Any differences will be documented as to quantity and cause.

Undistributed Budget. Budget applicable to contract effort which has not yet been identified to CWBS elements at or below the lowest level of reporting to the Commonwealth.

Variances. See Significant Variances.

Work Breakdown Structure (WBS). A product-oriented family tree division of hardware, software, services and other work tasks which organises, defines, and graphically displays the product to be produced as well as the work to be accomplished to achieve the specified product.

- a. **Project Summary Work Breakdown Structure.** A summary WBS tailored to a specific defence materiel item by selecting applicable elements from one or more summary WBSs or by adding equivalent elements unique to the project in accordance with MIL-STD-881.
- b. **Contract Work Breakdown Structure (CWBS).** The complete WBS for a contract, developed and used by a contractor within the guidelines of MIL-STD-881 and according to the contract work statement. The CWBS includes the levels specified in the contract and the contractor's extension.

Work-Package Budgets. Resources which are formally assigned by the contractor to accomplish a work package, expressed in dollars, hours, standards or other measurable units.

Work-Packages. Detailed short-span jobs, 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 distinguished from all other work packages;
- c. it is assignable to a single organisational 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, man-hours, or other measurable units;
- f. its duration is limited to a relatively short span of time or it is sub-divided by discrete value milestones to facilitate the objective measurement of work performed; and
- g. it is integrated with detailed engineering, manufacturing or other schedules.

5. REQUIREMENTS

5.1 The contractor's management control systems shall include policies, procedures, and methods to enable them to meet the following criteria.

5.2 Organisation

5.2.1 Define all authorised work and related resources to meet the contract requirements using the Contract Work Breakdown Structure (CWBS) framework.

5.2.2 Identify the internal organisational elements and the major sub-contractors responsible for accomplishing the authorised work.

5.2.3 Provide for the integration of the contractor's planning, scheduling, budgeting, work authorisation and cost accumulation systems with each other, the CWBS and the organisational structure.

5.2.4 Identify the managerial positions responsible for controlling overhead (indirect costs).

5.2.5 Provide for integration of the CWBS with the contractor's functional organisational structure in a manner that permits cost and schedule performance measurement for CWBS and organisational elements.

5.3 Planning and Budgeting

5.3.1 Schedule the authorised work in a manner that describes the sequence of work and identifies the significant task interdependencies required to meet the development, production, and delivery requirements of the contract.

5.3.2 Identify physical products, milestones, technical performance goals or other indicators that will be used to measure output.

5.3.3 Establish and maintain a time-phased budget baseline at the cost account level against which contract performance can be measured. Where applicable, initial budgets established for this purpose shall be based on the negotiated contract cost. Any other amount used for performance measurement purposes must be recognised formally by both the contractor and the Commonwealth.

5.3.4 Establish budgets for all authorised work with separate identification of cost elements (labour, material, etc.).

5.3.5 To the extent that the authorised work can be identified in discrete, short time-span work packages, establish budgets for this work in terms of dollars, hours, or other measurable units. Where the entire cost account cannot be subdivided into detailed work-packages, identify the far-term effort in larger planning packages for budget and scheduling purposes.

5.3.6 Provide that the sum of all work package budgets plus planning package budgets within a cost account equals the cost account budget.

5.3.7 Identify relationships of budgets or standards in underlying work authorisation systems to budgets for work packages.

- 5.3.8 Identify and control level of effort activity by time-phased budgets established for this purpose. Only that effort which cannot be identified as measured effort or as apportioned effort will be classed as level of effort.
- 5.3.9 Establish overhead budgets for the total costs of each significant organisational component whose expenses will become indirect costs. Reflect in the contract budgets, at the appropriate level, the amounts in overhead pools that are planned to be allocated to the contract as indirect costs.
- 5.3.10 Identify management reserves and undistributed budget.
- 5.3.11 Provide that the contract target cost plus the estimated cost of authorised unpriced work is reconciled with the sum of all internal contract budgets and management reserves.

5.4 Accounting

- 5.4.1 Record direct costs on an applied or other acceptable basis in a manner consistent with the budgets in a formal system that is controlled by the general books of account.
- 5.4.2 Summarise direct costs from cost accounts into the WBS without allocation of a single cost account to two or more WBS elements.
- 5.4.3 Summarise direct costs from the cost accounts into the contractor's functional organisational elements without allocation of a single cost account to two or more organisational elements.
- 5.4.4 Record all indirect costs that will be allocated to the contract.
- 5.4.5 Identify the basis for allocating the cost of apportioned effort.
- 5.4.6 Identify unit costs, equivalent unit costs or lot costs when applicable.
- 5.4.7 The contractor's material accounting system shall provide for the following:
 - a. accurate cost accumulation and assignment of costs to cost accounts in a manner consistent with the budgets using recognised and acceptable costing techniques;
 - b. determination of price variances by comparing planned versus actual commitments;
 - c. cost performance measurement at the time most suitable for the category of material involved, but no earlier than the time of actual receipt of material;
 - d. determination of cost variances attributable to excess usage of material;
 - e. determination of unit or lot costs when applicable; and
 - f. full accountability for all material purchased for the contract, including the residual inventory.

5.5 Analysis

- 5.5.1 Identify at the cost account level on a monthly basis using data from, or reconcilable with, the accounting system:
- a. the Budgeted Cost of Work Scheduled (BCWS) and Budgeted Cost of Work Performed (BCWP);
 - b. the Budgeted Cost of Work Performed and applied (actual where appropriate) direct costs for the same work; and
 - c. the variances resulting from the above comparisons between BCWS and BCWP and between BCWP and applied or actual direct costs classified in terms of labour, material or other appropriate elements together with the reasons for significant variances.
- 5.5.2 Identify on a monthly basis, in detail needed by management for effective control, the budgeted indirect costs, actual indirect costs and the cost variances along with the reasons for significant variances.
- 5.5.3 Summarise the data elements and associated variances listed in 5.5.1 and 5.5.2 above through the contractor organisation and WBS to the reporting level specified in the contract.
- 5.5.4 Identify significant differences on a monthly basis between planned and actual schedule accomplishment and the reasons.
- 5.5.5 Identify managerial actions taken as a result of criteria items 5.5.1 through 5.5.4 above.
- 5.5.6 Based on performance to date, commitment values for material and estimates of future conditions; develop revised estimates of cost at completion for WBS elements identified in the contract and compare these with the contract budget base and (where applicable) the latest statement of funds requirements reported to the Commonwealth.

5.6 Revisions and Access to Data

- 5.6.1 Incorporate expeditiously contractual changes recording the effect of such changes in budgets and schedules. In the directed effort before negotiation of a change, base such revisions on the amount estimated and budgeted to the functional organisations.
- 5.6.2 Reconcile original budgets for those elements of the WBS identified as priced line items in the contract, and for those elements at the lowest level of the program WBS, with current performance measurement budgets in terms of the following:
- a. changes to the authorised work; and
 - b. internal replanning in the detail needed by management for effective control.

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- 5.6.3 Prohibit retroactive changes to records pertaining to work performed that would change previously reported amounts for direct costs, indirect costs, or budgets, except for correction of errors and routine accounting adjustments.
- 5.6.4 Prevent revisions to the contract budget base except for Commonwealth-directed changes to contractual effort.
- 5.6.5 Document internally the changes to the performance measurement baseline and notify the Commonwealth expeditiously through prescribed procedures.
- 5.6.6 Provide the Commonwealth's representatives with access to the information and supporting documents necessary to demonstrate compliance with the C/SCSC.

6. NOTES

- 6.1 For guidance on the implementation of the Cost/Schedule Control Systems Criteria, refer to DEF(AUST)5657 Australian Cost/Schedule Control Systems Implementation Guide (ACSIG).
- 6.2 The Criteria stated in SECTION 5 are intended to be closely comparable to the US Department of Defense Criteria stated in US DoD Instruction 5000.2, Part 11, Section B. (They were previously promulgated in Australian Department of Defence letter FASCEP 63/90 of 29 March 1990).
- 6.3 Nothing in the Criteria is intended to affect the basis on which costs are reimbursed or progress payments made.
- 6.4 Advice of the need for compliance with the Criteria will normally be included in Requests for Tender.

6.5 Inquiries

- 6.5.1 General inquiries or suggested alterations to this standard should be addressed to:

Director
Project Management Systems
Room F-1-56
Russell Offices
CANBERRA ACT 2600

Telephone: (06) 265 1539 Facsimile: (06) 265 5888

DOCUMENT IMPROVEMENT PROPOSAL

DEF(AUST)5655: AUSTRALIAN COST/SCHEDULE CONTROL SYSTEMS CRITERIA

The purpose of this form is to solicit comments which will assist in maintaining the above document as both practical and realistic. When completed, the form and any additional papers, should be forwarded to:

Assistant Director Technical Standards
Codification and Standardisation Authority
Department of Defence
2nd Floor
370 St Kilda Road
MELBOURNE VIC 3004

NB Comments submitted do not constitute or imply authorisation to waive any requirement of the document or to amend contractual requirements.

1. Has any part of this document created problems or required interpretation in use? State paragraph no(s) and any rewording suggested.

2. Has any new technology rendered any process obsolete? Suggestions supported by examples are welcome where the new process/hardware has proved satisfactory.

3. Comments on any requirements considered to be too rigid/too expensive.

4. Remarks (attach any relevant data which may be of use in improving this document).

REQUESTS FOR DOCUMENTS

Requests for copies of this Standard, or certain of the listed Applicable Documents, may be directed to the appropriate source listed below:

DEPARTMENT OF DEFENCE (Navy Office)

Director General Naval Engineering Services
Department of Defence (Navy Office)
Campbell Park Offices (CP1-7-19)
CANBERRA ACT 2600
Attention: NAVTIC Specification Centre
Telephone: (06) 266 2046/266 2096

DEPARTMENT OF DEFENCE (Army Office)

The Head
Engineering Development Establishment
Raleigh Road
MARIBYRNONG VIC 3032
Postal Address: Private Bag No 12
PO ASCOT VALE VIC 3032
Attention: Equipment Information Officer
Telephone: (03) 319 5802

DEPARTMENT OF DEFENCE (Air Force Office)

Engineering Data Repository
HQ Support Command RAAF
360 St Kilda Road
MELBOURNE VIC 3004
Attention: ENG S1E3
Telephone: (03) 282 4527

DEPARTMENT OF DEFENCE (Defence Materiel)

Director Joint Communications Project (Switching)
Anzac Park West 2-4-15
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