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# THESIS

INDUSTRY PERCEPTIONS OF THE COST/SCHEDULE CONTROL SYSTEMS CRITERIA (C/SCSC)

by

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June 1982

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The purpose of this study was to determine industry perceptions of the Department of Defense's Cost/Schedule Control Systems Criteria (C/SCSC) and to determine whether or not the original objectives of the C/SCSC have been fulfilled. Interviews were conducted with contractors from highly varied fields of endeavor in order to achieve opinions from a wide spectrum of the defense industry. Responses were analyzed to ascertain what areas require improvement and to form conclusions on the value of the C/SCSC.

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# Industry Perceptions of the Cost/Schedule Control Systems Criteria (C/SCSC)

by

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## ABSTRACT

The purpose of this study was to determine industry perceptions of the Department of Defense's Cost/Schedule Control Systems Criteria (C/SCSC) and to determine whether or not the original objectives of the C/SCSC have been fulfilled. Interviews were conducted with contractors from highly varied fields of endeavor in order to achieve opinions from a wide spectrum of the defense industry. Responses were analyzed to ascertain what areas require improvement and to form conclusions on the value of the C/SCSC.

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# I. INTRODUCTION

## A. PURPOSE

It has been 15 years since Department of Defense (DOD) Instruction 7000.2, entitled "Performance Measurement for Selected Acquisitions," promulgated the formal Cost/Schedule Control Systems Criteria (C/SCSC) implementation. While the concept has not changed materially through the years, a multitude of detailed guidance procedures have ensued. A program which contractors initially felt to be a passing management fancy has evolved into a highly sophisticated and demanding management control system [Ref. 1].

The C/SCSC has had ample time to mature in the major systems acquisition environment, but the debate over its relative merit has continued [Ref. 2]. The primary purpose of this study is to survey defense contractors to obtain their perceptions of the C/SCSC. The contractor's opinions on whether or not the objectives of DOD Instruction 7000.2 are being met within its stated policy guidelines is of particular interest to the author. A secondary purpose is to determine where the major problem areas exist and to explore the relative cost effectiveness and utility of C/SCSC. By providing a vehicle for contractor opinions, it is hoped that their perceptions will receive appropriate visibility.

## B. SCOPE

The study centered on interviews with five defense contractors. The contractors were selected from highly varied sectors of the military industrial complex. Special care was taken to achieve a sample which was representative of the United States (U.S.) Navy, U.S. Air Force, and U.S. Army contractors. The sample was purposely held small due to time and travel constraints on the part of the author. In order to elicit sincere responses, the contractors were insured anonymity; therefore, no reference to a specific company will be found in the study.

## C. RESEARCH METHODOLOGY

The method for conducting this study included a combination of questionnaires, follow-up phone conversations, and actual interviews. The study was supplemented by a comprehensive literature review. Knowledge gleaned through past research was utilized as a basis for further investigation.

The author made several assumptions to facilitate this research. First, the contractors selected for participation in this study are representative of typical defense contractors operating under the C/SCSC. Second, those individuals who participated in the study gave the viewpoint of the corporate entity rather than personal opinions. Finally, C/SCSC has been refined for 15 years,

yet it still can be improved as a management tool. Both the government and industry will benefit from any concrete suggestions for improvement of the C/SCSC.

D. THESIS ORGANIZATION

Chapter II - Historical evolution of the C/SCSC from inception through implementation

Chapter III - Contractor perceptions of the C/SCSC with emphasis on its advantages, limitations, and cost effectiveness.

Chapter IV - Conclusions and Recommendations

## II. HISTORICAL EVOLUTION

This chapter will portray the historical evolution of the C/SCSC. It covers the creation of the system, its basic fundamentals, the implementation process, surveillance process, and the reporting methodology.

The Department of Defense has recognized the need for improved methods of controlling costs and of determining program progress since the early 1950's [Ref. 3]. This recognition led to several innovative systems or methods from the various agencies of DOD. Among the first to be developed was the Department of the Navy's (DON) Program Evaluation Review Technique (PERT). It gained popularity and acclaim when it was developed and utilized on the highly successful Polaris Program [Ref. 3]. Subsequently, PERT grew to have several modifications, such as PERT/COST and PERT/TIME, each an attempt to better understand program cost, schedule, and performance. PERT dominated the scene of management information techniques throughout the 50's and into the 60's; however, it was not without its problems. A multitude of status reports flourished; each report based upon a different agency's requirement and differing formats. To further complicate the situation, many contractors were unwilling to sacrifice their own

internal management systems which has taken years to evolve [Ref. 1]. The government established PERT Cost Groups whose purpose was to transpose data from the contractor's management system into PERT formats. This process was costly, and relevant data was often lost or made untraceable during transposition [Ref. 3].

The Assistant Secretary of Defense (Comptroller) decided that DOD should remove itself from the business of management systems design, and it should rely upon the contractor's internal control systems. This decision necessitated some assurance that all contractors would integrate their data about some common baseline which would be effective for government analysis purposes. The common baseline was developed in 1966 though the Director, Defense Research and Engineering, and it was in the form of a standard work breakdown structure (MIL-STD-881). The assurance of effectiveness was addressed through a set of criteria developed by the Department of the Air Force's Cost/Schedule Planning and Control Systems (C/SPCS). C/SPCS evolved from the Air Force's experience over the years with aerospace contractors. In 1967, the new criteria was promulgated through DOD Instruction 7000.2, "Performance Measurement for Selected Acquisitions," and the criteria was named the Cost/Schedule Control Systems Criteria (C/SCSC) [Ref. 4].

The C/SCSC established the characteristics a contractor's internal management system must possess to insure effective planning and to control contract costs and schedules. These characteristics were based on the premise that the following basic features should exist in some form in every management control system [Ref. 5]:

1. Organization - define contractual effort and assign responsibilities for the work;
2. Planning - plan, schedule, budget and authorize resources;
3. Accounting - accumulate costs of work and material;
4. Reporting - compare planned and actual costs and analyze variances; and
5. Revisions - incorporate changes and develop estimates of final costs.

DOD Instruction 7000.2 delineates the following policy and procedures:

1. Minimizes changes to contractor's existing systems;
2. Single system for internal management and government reporting;
3. Avoid imposition of specific systems; and
4. Avoid proliferation of demands for demonstrations of systems.

The following objectives of C/SCSC are illustrated in DOD Instruction 7000.2:

1. To insure that DOD contractors use effective management control systems and procedures; and
2. To insure that contractors' systems provide data which: indicate work progress; properly relate cost, schedule, and technical performance; are valid, timely, and auditable; and, supply DOD managers with a practicable level of summarization.

The basic concepts of C/SCSC are as follows:

1. Plan the entire contractual effort;
2. Determine accomplishment at a level where work is done;
3. Measure accomplishment objectively;
4. Summarize for higher levels; and
5. Analyze variances and forecast impact [Ref. 5].

The contractor's internal system must provide the following data:

1. Budgeted cost for work scheduled to be performed,
2. Budgeted cost for work actually performed,
3. Actual cost of work performed,
4. Budgeted cost for completed contract,
5. Latest estimate of cost at completion,
6. Cost and schedule variances and their reasons, and
7. Ability to trace problems to their source [Ref.5].

A viable illustration of a contractor's work breakdown structure (WBS) is in the shipbuilding industry. Work is

required to be broken down into nine categories called cost groups (CG): CG100-hull, CG200-propulsion, CG300-electrical, CG400-command and control, CG500-auxiliary systems, CG600-outfitting, CG700-weapons, CG800-engineering and integration, and CG900-support systems. Each cost group is further broken down into individual cost accounts. The cost account is the key management control point in the C/SCSC. Functional responsibility, work planning and assignment, cost collection, data summation, and corrective action are all focused by the cost account. Various work package data is summed up to the appropriate cost account level. For example, ventilation systems is cost account 512.

The contractor is then required to plan and budget all work to be accomplished in every cost account. The budget is considered the standard, and all performance is measured in relation to the established budget. Actual performance is quantified through a job order costing system which is summed up from each individual work order. The actual performance in each cost account is compared to the budgeted standard, and the applicable variances are available for analysis. The cost variance is the difference between the budgeted cost of work performed (BCWP) and the actual cost of work performed (ACWP). The schedule variance is the difference between the budgeted cost of work performed (BCWP) and the budgeted cost of work scheduled (BCWS).

After thorough analysis, corrective action can be taken by management on an individual case basis. A credible Cost/Schedule Control System is maintained through constant auditing by the contractor and systematic monthly auditing by government personnel.

Implementation of C/SCSC is prescribed by DOD Instruction 7000.2 for selected contracts designated as major defense systems according to DOD Directive 5000.1, "Acquisition of Major Defense Systems." Programs are designated major defense systems based upon one of the following: an estimated Research, Development, Test and Evaluation (RDT&E) cost in excess of $100 million; an estimated production cost in excess of $500 million; simply on national urgency; or, by recommendations of DOD components or the Secretary of Defense. Subcontracts may be selected for application of C/SCSC by mutual agreement between the prime contractor and the procuring activity, according to the criticality of the subcontract to the program. Fixed price contracts or fixed price (Economic Price Adjustment) contracts or subcontracts cannot be selected for application of C/SCSC. All other types of contracts, including fixed-price incentive, may have C/SCSC applied [Ref. 6,7].

The procuring activity has the responsibility for determining if a procurement requires C/SCSC on new or existing programs. Once the decision is made to apply

C/SCSC on a new procurement, the proper Defense Acquisition Regulation (DAR) clause is included in the solicitation document. A contractor responding to the solicitation is required to indicate the extent to which the existing management control system meets the criteria in DOD Instruction 7000.2, and how the present system could be changed to comply with the criteria. The procuring activity has the responsibility of evaluating the response [Ref. 7].

Prior to contract award, the Contract Administration Office (CAO) and Defense Contract Audit Agency (DCAA) will respond to any of the procuring activity's queries regarding the contractor's response to the solicitation, its present operation, and its ability to meet the C/SCSC. Where there is a current contract which has C/SCSC provisions, the CAO can answer questions relative to how the contractor is performing in accordance with C/SCSC requirements. They can also provide any other pertinent information.

Normally for a new program, an evaluation review is accomplished as part of the Pre-award Survey procedures. The review is basically an analysis of the contractor's management control system proposed in response to the solicitation. Normally, an on-site examination of the contractor's system in operation will not be required

during the evaluation review. However, when any part of the contractor's system is not clearly understood, on-site examination of that part may be necessary to clarify the contractor's intent. Approval of the activity responsible for source selection must be obtained if the on-site audit is utilized.

Following the evaluation review, a written report must be prepared by the evaluation review team. It should attest to whether or not the contractor's system description in the proposal adequately describes compliance with the criteria. If not, the report will identify the specific deficiencies, and it will be forwarded to the Source Selection Evaluation Board for final resolution [Ref. 7].

The contractor must be prepared within 90 days after award of the contract to demonstrate that its management system meets the criteria of DOD Instruction 7000.2. Usually within 30 days of contract award, representatives of the C/SCSC review team go to the contractor's plant for an implementation visit. This visit is to insure the proper communication of the requirements and to demonstrate the procedures.

A readiness assessment is held shortly before the actual demonstration review, insuring that the contractor is ready for the full-scale demonstration. During the

official demonstration review, the contractor's entire C/SCSC operation is scrutinized. The contractor is required to make available the documents used in its management control system; for example, budgeting, work authorization, accounting, and other functional documents which apply to the specific contracts being reviewed. The documentation must be current and accurate. The burden of proof for demonstrating compliance with the criteria necessarily rests with the contractor.

Any major discrepancies which are uncovered will be subsequently reexamined to determine acceptability by the review director. Some of the most common problems encountered are as follows:

1. Organization - inadequate work breakdown structure (WBS) and poor work definition at working levels;
2. Planning and Budgeting - over allocation of budget, and poor integration of budget, schedule, and work authorization;
3. Accounting - inability to account for cost of material on an applied basis;
4. Analysis - determination of status not based on work package completions, and comparisons of actual vs planned costs at improper levels;
5. Revisions - failure to maintain valid measurement baseline.

At the conclusion, a formal C/SCSC report is prepared and forwarded to the procuring activity and to the major command responsible for implementation of the criteria (NAVMAT 023 in the case of the Navy). Upon receipt of the report, the Procuring Contracting Officer (PCO) will inform the contractor regarding the acceptance or nonacceptance of its system [Ref. 7].

Acceptance of the contractor's management control system is not intended to inhibit continuing innovations and improvement of its system. However, the contractor is contractually obligated to maintain its system in a state which satisfies the criteria.

Surveillance to insure that the contractor does not comply is a DOD management responsibility accomplished by the cognizant CAO and DCAA. Immediately following acceptance of the contractor's validated system, surveillance should be formalized to include a comprehensive program covering the complete scope of the criteria. Such a program should provide for verifying, tracing, and evaluating the information contained in reports submitted to DOD procuring components. It also should insure that the contractor's management control system continues to operate as validated, and any proposed or actual changes comply with DOD Instruction 7000.2.

The surveillance plan should support the program manager's needs and avoid duplication of effort. The CAO and program manager's representative establish a mutual understanding in a Memorandum of Agreement (MOA) as to their particular responsibilities. The surveillance plan should be written to satisfy these requirements. C/SCSC does not obviate any of the techniques, functions, or responsibilities normally accomplished by the CAO. However, it does facilitate the use of the more classical methods of contract administration [Ref. 8]. For example, the monthly Cost Performance Report (CPR) shows the cost/schedule status of the contract for the previous monthly period. It highlights significant cost/schedule variances that have occurred and their probable causes. The data in the CPR quantify the magnitude of existing problems and potential problems and immediate cost/schedule trends which are used for estimating contract completion costs. The CPR consists of five formats [Ref. 9]:

1. Format 1 - Work Breakdown Structure: provides data to measure cost and schedule performance by summary level work breakdown structure elements;
2. Format 2 - Functional Categories: provides data to measure cost and schedule performance by organization or functional cost categories;
3. Format 3 - Baseline: provides the budget baseline plan against which performance is measured;

4. Format 4 - Manpower Loading: provides manpower loading forecasts for correlation with the budget plan and cost estimate predictions;
5. Format 5 - Problem Analysis: provides a narrative report used to explain significant cost and schedule variances and other identified contract problems.

The CPR is not intended to provide the first indication of a problem on a program. Its purpose is to furnish the program manager with the impact or quantification of such problems, to outline any trends which may be developing, and to furnish a basis for a detailed analysis of the financial status of the contract. Reliable data in this format is very useful for effective contract administration as well as program management decision making.

The C/SCSC provides the following major benefits to the Program/Project Office:

1. Confidence in the contractor's internal management system,
2. Objective (rather than subjective) contract status information,
3. Cost impact of known problems,
4. Capability to trace problems to the source through the work breakdown system (WBS) to the cost account level,

5. Quantitative measure of schedule deviation,

6. Measurement against a contract oriented baseline.

In August 1974, DOD Instruction 7000.10 established the Cost/Schedule Status Report (C/SSR) as a standard means for reporting summarized cost/schedule performance on contracts which do not qualify as major acquisitions. Unlike the C/SCSC CPR approach, the C/SSR requirement neither establishes any minimum requirements with respect to the contractor's management systems nor involves the evaluation, acceptance, or rejection of the contractor's internal management procedures. Incentive or cost-reimbursable type contracts larger than $2 million, and with a duration exceeding one year, are candidates for C/SSR application.

While the actual C/SSR appears to be a scaled down version of the CPR, there are some differences which should be noted. The C/SSR neither requires cost performance reporting on a functional (organizational) basis nor requires incremental, current period reporting. In addition, the C/SSR does not require the baseline and manpower loading required by the CPR. For CPR reporting, budgeted cost of work scheduled (BCWS) and budgeted cost of work performed (BCWP) must be the result of the direct summation of work packages. The C/SSR permits the determination of these values through any reasonably accurate, mutually acceptable means. Data required on the C/SSR are organized

by summary level work breakdown structure (WBS) elements. Generally, reporting does not extend below level 3 of the contract WBS, and, in some applications, level 2 will suffice [Ref. 10].

In summary, the government has taken a systematic approach at achieving commonality in the management control and reporting of major weapon system contractors. The next chapter will investigate contractor perceptions of the C/SCSC with emphasis on its advantages, limitations, and cost effectiveness.

## III. CONTRACTOR PERCEPTIONS

This chapter centers on discussions with five defense contractors who were selected from the aerospace, electronics, and shipbuilding industries. The author choose contractors with seasoned experience and appreciable contract dollar variance with the C/SCSC, and the judgemental sample was considered to be representative of the U.S. Navy, U.S. Air Force, and U.S. Army contractors. The participating firms are dispersed geographically throughout the entire United States.

The author encountered no difficulties in eliciting responses from the sampled contractors. In fact, they welcomed the opportunity to give their candid opinions in this forum. The following contractor opinions are a compilation of those responses with emphasis on the conformity of the various replies. No statistical inferences are implied due to the very small sample size, but the author feels that the participating firms are well qualified to give meaningful opinions.

In an effort to originate discussions, both on-site and telephone, the author used a brief guided questionnaire. The subsequent discussions were intentionally handled in an open-ended manner to allow the contractors to openly discuss their perceptions of the C/SCSC.

Again, the author reiterates that the following pages depict the C/SCSC as the sampled contractor's viewpoint, not the government or statistical inference.

The major advantages and limitations of utilizing the C/SCSC became readily apparent during the course of this research study.

The C/SCSC discipline helps to insure that all work is properly planned, and the budget, schedule, manpower, and organizational elements are all considered in the planning process. C/SCSC requires all work to be subdivided into elements down to the level where the work is to be performed. The general requirement specifies that work packages be planned in detail six months in advance of the work start date. All other work beyond this time frame must be planned at a more general level. Advanced planning helps insure that all of the work necessary to complete a major program is included in the master plan; therefore, nothing is overlooked or put off to the last moment. The C/SCSC insures that the cost of performing all work is considered from the outset and insures that budgets are appropriately applied early in the program. The initial planning and budgeting discipline gives management an early overview of the entire program, thereby helping to establish the relative priorities of each facet of the endeavor.

Management is obligated to closely consider the requirements of accomplishing each task and to insure that schedule and cost projections are as realistic as possible. This condition is brought about since the budgets become the baseline against which future performance is measured, thereby enforcing discipline within the planning process as well. Work which has been closely scrutinized and planned is normally accomplished to a higher degree of efficiency.

The C/SCSC improves communications, not only within the organization, but between the corporation and the government. Communications are simpler and better as a result of the common language and standardized documentation. Managers at all levels have no problem discussing program status, since the Criteria provides a vocabulary and a control system which is understood by all parties involved in the acquisition process.

The contractors are in strong agreement when it comes to the primary advantages of the C/SCSC: formalized forward planning, budgeting discipline, and better communications.

There is less agreement among the contractors on the limitations of the C/SCSC as opposed to almost total congruity toward the major advantages. The contractors were asked to give the top problem encountered with the C/SCSC, and their replies varied between the following three areas:

1. Validation team C/SCSC interpretations,

2. Required system documentation,

3. Work breakdown structure (WBS).

Validation team interpretations of the C/SCSC during the implementation phase has been very controversial with 4 of the 5 sampled contractors. The contractors feel C/SCSC is a set of criteria which their internal management system must satisfy, and not a specific system with which a validation team forces them to comply. Validation team inflexibility, coupled with the varied experience level of the team members, has been detrimental to the objectives and outcome of implementation. Of course, the degree of resistance depends on the company's past management philosophy and practices and the level of rigidity emanating from the validation team. In rare instances, the company's existing management control system is in close agreement with the criteria, consequently creating little or no friction between the contractor and the government. In summary, the degree of difficulty experienced by a contractor transitioning to the C/SCSC is related to the complexity of the existing system and the interpretations of the validation team.

Additional frustration can surface on subsequent application reviews (SAR). One contractor had recently been awarded a production contract by a different military

service than the one who was currently administering another contract at the same plant. The subsequent application review team was very flexible in its interpretation of the C/SCSC, affording the contractor greater latitude in controlling the new program. The contractor resented the fact that such a differential could exist between different review teams' interpretation of the same criteria.

The voluminous documentation requirements of validated systems are questioned as to their cost effectiveness in meeting the objectives of the C/SCSC. The following summary of monthly documentation volume, extrapolated across the total estimated number of industry applications, gives an indication of the order of magnitude [Ref. 2].

| | | |
|---|---|---|
| 1. | Customer reports | 16,206 pages |
| 2. | Cost account documents | 1,056,000 pages |
| 3. | Work package documents | 1,288,000 pages |
| 4. | Schedule documents | 214,485 pages |
| 5. | Routine estimate documents | 161,923 pages |
| 6. | System review reports | 2,116 pages |

The total equates to 2,738,730 pages per month and 32,864,760 pages on an annual basis. Paper work volume is directly proportional to the number of cost isolations created by the contractor's particular C/SCSC application. The number of cost isolations is driven by contract requirements, individual contractor techniques, and the

interpretation of system requirements by the validation team. The depth of each cost isolation element is contingent upon the procedural interpretations and particular visibility desired by the government. The depth can vary considerably on future applications depending on the contract scope and the military service conducting the subsequent application review.

The WBS is not the normal method of management control in industry. A functional breakdown is utilized in order for specific departments or functions to be directly responsible for their cost/profit centers. This factor is not accomplished with the hardware oriented WBS; since, it usually crosses multi-functional lines. Commercial enterprises stress unit cost information; whereas, the government requires system level information for total program visibility. The C/SCSC forced contractors to convert to the WBS, and many of them have encountered difficulty in changing their approach to doing business. A large portion of the firms have used a matrix approach to accommodate the WBS orientation into their functional organizational structure. This has been accomplished by assigning sole responsibility for each work package to a specific organizational element. Military Standard 881A (MIL-STD-881A), as interpreted by validation teams, requires contractors to drive the cost account levels further down the WBS than is

deemed practical. In addition, the validation teams have displayed inflexibility to the functional orientation of the companies. These factors have combined to substantially increase costs to the government due to their inherent inefficiencies.

Several additional limitations were addressed during contractor discussions. The Cost Performance Report (CPR) which is the required reporting instrument, is lacking in several areas. Managers are not utilizing the report, because it lacks the timeliness and scope of information required to run their area(s) of responsibility. The formal CPR is submitted to the government on the average of one month after the reporting period. The company's internal CPR utilized for actual management information usually takes one week to develop. Actually, contractor identification of problems occurs as a result of daily contact with the in-process effort, and not by the monthly CPR. The CPR benefits the contractor only to the extent of quantifying the cost impact of previously known problems. The time factor for the internal CPR is dependent on how the data formats are generated. Some companies manually prepare their CPR. The majority of contractors utilize a combination of manual and computer prepared data formats. The formal CPR is further delayed due to the requirement for a detailed explanation of all cost and schedule

variances which exceed predetermined thresholds. Explanations of variances must clearly identify the nature of the problem, the reasons for the cost or schedule variance, the impact on the immediate task, the impact on the total program, and the corrective action to be taken by the contractor. Cost variance should identify amounts attributable to rate changes separately from amounts applicable to manhours. The specific variances must be explained as follows:

1. Schedule variances (budgeted cost for work scheduled vs budgeted cost for work performed);
2. Cost variances (actual cost for work performed vs budgeted cost for work performed);
3. Cost variance at completion (budgeted at completion vs latest revised estimate at completion).

In addition to the above variance explanation, the following analyses are mandatory [Ref. 9]:

1. Identify the effort to which the undistributed budget applies;
2. Identify the amount of management reserve applied during the reporting period, the WBS elements to which applied, and the reasons for application.

One can imagine the enormity of this task if a large amount of cost accounts are over the variance reporting thresholds. Predetermined thresholds vary among the different

applications of C/SCSC, but a variance range of 10-15% is quite common.

The rigidity of the C/SCSC and its interpretation by government personnel does not allow the desired contractor flexibility in rebudgeting open work. Many contractors initially budget their work packages and resultant cost accounting very conservatively, in order to incentivize their workers to achieve greater efficiencies. This methodology has some degree of success in attaining the desired results, but generally the outcome is a substantial number of cost accounts over threshold. The average C/SCSC application has over 600 cost accounts with individual firms in the population having as low as 50 and as high as 6,700 [Ref. 2]. The amount of time required to document only 10% of the average total number of cost accounts, which possess an adverse variance, is a substantial task. This documentation, coupled with its additive time effect on subsequent monthly CPR's, produces a late product. Since the CPR provides only summary level data, its usefulness is relegated to upper level management for overall program visibility. Lower level managers require additional reports to satisfy their need for information below this summary level.

A thorough understanding of the significance of schedule variance data on the CPR is lacking. Unlike cost

variance, which is a very clear and substantive indicator of performance, schedule variance is quite vague in its apparent aggregate meaning to a program. Contractors employ various methods to schedule their work, since the C/SCSC is silent on specific guidance. Activity scheduling (start/end Gantt type) and milestone scheduling are the most widely utilized techniques. In many instances, they are used in conjunction with each other. Critical path techniques are utililzed by only one third of the firms. Contractor's use of a deterministic rather than a probabilistic scheduling approach results in schedules which are overly optimistic. A high level of confidence does not exist in the scheduling process due to the lack of a fully integrated probabilistic networking approach [Ref. 11]. The general lack of sophistication and capability in the scheduling methodologies produces schedule variances which are deficient in their relative impact to the overall program. The relative impact of a particular delay or series of delays can only be achieved through the use of a sophisticated networking procedure.

The technical significance of a particular cost variance has also been a problem. Cost performance measurement is more of an indicator of success or failure in the estimating effort rather than a true measure of technical accomplishment. The author contends that measuring

progress of technical performance requires a thorough understanding and involvement of personnel in the engineering effort. Their on-site assessments of variances are a necessity for proper problem analysis. The manager can not afford to stay in the vacuum of a C/SCSC report and expect to attain a realistic picture of what is transpiring on a program.

Misconceptions have developed in the government's analysis of CPR data. One of the largest problems becomes apparent when historical comparisons are attempted between different contractors and/or programs. Costs on the CPR can vary greatly depending on the way earned value is calculated, how the work was planned, the level and manner which overhead is collected, and the procedures applied in the particular accounting system. For those reasons, it can be misleading to try and make meaningful analogies. The government persists in developing comparisons even though their true value is suspect.

It is crucial for the use of management reserve (MR) to be fully understood by the government. MR usage depends a great deal on the individual management philosophy which varies among contractors. In many cases, MR's are usually held at a summary level and controlled by the project manager, while others provide reserves to individual functional managers. Some managers use the reserve as the

problems develop, while others prefer to show the cost variances and simply maintain the reserve as a kind of balancing account at the summary level. If the latter method is exercised, one must be very alert to the total unallocated management reserve and the magnitude of the cost variance. In many instances, the total cost variance unknowingly creeps above the remaining MR, and the actual cost status is misjudged.

The 90 day requirement, after contract award, for the contractor to be prepared to demonstrate the operation of its C/SCSC system is deemed unrealistic. In fact, two-thirds of all formal reviews occur 200 days beyond contract award [Ref. 2].

The principal reason for the delay is the massive amount of planning and documentation necessary to stabilize and to expose the system to review. The massive effort originated from the shear volume of cost isolations experienced by the firms. Another prevalent reason is the impact of having the C/SCSC forced upon the corporation. The organization has an existing equilibrium of personal, political, and cognitive factors, which are disturbed by the introduction of the C/SCSC. There is resistance to change, a reasonable response from members of an existing system in steady state. Those individuals want to avoid the upheaval, the effort, and the envisioned risks brought

about by change. The organization can also be described in terms of coalitions; each of which has its own goals, priorities, and focus of attention. These coalitions will likewise be threatened by change. They do not feel a need for the C/SCSC; therefore, resistance to change is hard to overcome. Sincere, top level management support provides the most incentive for organizational momentum toward successful implementation.

The cost effectiveness of the C/SCSC is hard to quantify. The author did not attempt a full cost/benefit analysis of the C/SCSC applications due to time and required data base constraints. Contractors were asked to give their best estimate of the cost savings which might accrue from a less rigorous system, such as the C/SSR. The potential cost savings ranged from 1/2-2% per contract. This cost savings is quite significant, since only a single $100 million contract could save anywhere from $.5-2.0 million. The entire DOD Procurement and Research, Development, Test and Evaluation (RDT&E) budgets are approaching $100 billion, and the C/SCSC has a bearing on a large portion of that total. The total savings to the government by going to the C/SSR concept could conservatively reach several hundred million dollars a year. The DOD could purchase much needed additional hardware with these savings.

It becomes the nebulous task of attempting to assign a utility value to the stringent C/SCSC requirements.

Is the federal government getting its money's worth out of the C/SCSC? The author could not find any literature where a quantified approach had been attempted to ascertain the utility of the C/SCSC. Since government opinions were not within the purview of this study, contractor usage of the C/SCSC on a non-contractual basis could be an indicator of its relative utility. The author feels that profit motivation dictates contractors will attempt to use the most cost effective management control system consistent with the desired amount of control. Contractors interviewed never use the full C/SCSC requirements unless contractually required. However, many large contracts utilize a less detailed and costly version of the C/SCSC, which is closer to the C/SSR. Cost isolations are greatly reduced, and the reporting system is modified to be more responsive. The monthly cost/schedule cycle is not frequent enough for internal trend analysis of costs. They are tracked weekly at higher levels than demanded by the C/SCSC. In summary, there are good indications that the full C/SCSC requirements are not optimally cost effective as evidenced by the following:

1. Low contractor perceived utility of the full C/SCSC requirements, and

2. High cost differential between the stringent C/SCSC requirements and a less rigorous system, such as the C/SSR.

The next chapter will provide the author's conclusions and recommendations.

# IV. CONCLUSIONS AND RECOMMENDATIONS

This chapter will provide a summary of the significant conclusions and recommendations gleaned from the author's examination of five validated C/SCSC contractors.

## A. CONCLUSIONS

1. The contractors who participated in this study do not feel the original objectives of the C/SCSC have been fulfilled. Although some aspects of the C/SCSC, such as formalized forward planning, budgeting discipline, and better communications, were considered beneficial; the rigidity of the system was deemed an overriding weakness. Contractors interpreted the C/SCSC as a framework in which they could flexibly modify their existing system to satisfy the Criteria. Instead of a stable set of criteria which their internal management system must satisfy, contractors have experienced the evolution of a myriad of detailed guidance. To further exasperate the situation, government review teams have forced them to comply with specific interpretations of the Criteria. Continuity is lacking between validation teams, and the level of expertise also varies among the individual components of the teams. Many contractors, who were optimistic prior to the implementation process, became frustrated and possessed more interest

in achieving validation status than modifying their existing systems in a useful manner. Their general attitude toward the C/SCSC concept was directly proportional to the degree of difficulty encountered during the implementation process.

2. The voluminous documentation requirements of the C/SCSC are questioned by the contractors as to their cost effectiveness. The depth of the cost isolations dictates the amount of paper work produced by the contractor. The procedural interpretations and visibility desired by the particular validation team determines this depth. Where is the utility in driving cost centers to such unreasonably low levels? It is estimated that the average monthly documentation volume for all industry C/SCSC applications is 2,738,730 pages. This astonishing figure equates to 32,864,760 pages per year [Ref. 2].

3. The cost effectiveness of utilizing the C/SCSC in its present form is suspect. Contractors interviewed never employ the full C/SCSC unless contractually required. A modified version is utilized on some large contracts, but the cost isolations are reduced, and the reporting system changed to increase responsiveness. Internal trend analysis is performed on a weekly basis at higher levels than demanded by the C/SCSC. Contractors indicated a potential 1/2-2% savings could be realized by employing a

less rigorous system, such as the C/SSR. The government could conceivably accrue a several hundred million dollar savings per year by applying this concept.

4. Contractor responses to this study leave doubt to the value of the strict proceduralization, detail, and documentation currently being demanded of accepted systems. It is felt a consistent, less rigid interpretation of the Criteria would provide an adequate basis for responsible decision making. At the same time, the Criteria would furnish a more cost effective mode of doing business. Of course, this contractor viewpoint is made under the assumption the C/SCSC is firmly entrenched, and it will remain a viable requirement. Philosophically, contractors question why the government, in concern for a product, spends so much time, money, and other resources for regulatory control. The only true value to the government, as perceived by industry, is possibly for historical data purposes. It is highly questionable, considering the costs, whether the government is justified in forcing compliance with the C/SCSC solely for that reason.

5. The C/SCSC is counterproductive, and it fails to recognize the substantial improvement in the quality of industry management practices of the last two decades. Many firms feel the C/SCSC is in conflict with the current national policy of streamlining the acquisition process,

and the task of advancing the management state of art should be left to the more efficient competitive marketplace.

## B. RECOMMENDATIONS

The conclusions of this study were drawn from an extremely small sample of the defense industry. It would be presumptuous to recommand broad changes to the C/SCSC based on the limited extent of the sample. Nevertheless, there was great conformity among many of the opinions expressed during the study. This trend supports these viewpoints as symptoms of industry as a whole. The following recommendations are considered to be the most reasonable approach for further investigation and probable improvement of the C/SCSC:

1. Determine the actual cost effectiveness of the C/SCSC. Has the C/SCSC appreciably lowered the cost overruns and late deliveries on major weapon system acquisitions and by how much? Is the level of utility worth the high price being paid for the C/SCSC? A thorough cost/benefit analysis is long overdue, and the results would be very beneficial to the future decision making process.
2. Contract value should not necessarily dictate the inclusion of the C/SCSC requirements into a contract. The various Systems Commands should have

the latitude to determine whether or not to include the C/SCSC in a particular program.

3. The program manager should have the flexibility to tailor the C/SCSC to meet program office objectives and to play the leading role in the validation process.
4. Every program office should assure their C/SCSC personnel are thoroughly trained and qualified to perform their increased role in the implementation and subsequent review processes.

These recommendations are not a panacea for every disagreement encountered with the C/SCSC. Hopefully, they represent an intelligent approach at easing the discord among contractors and at helping to streamline the acquisition process.

# APPENDIX A

NUMBER 7000.2
DATE June 10, 1977

ASD(C)

## Department of Defense Instruction

SUBJECT Performance Measurement for Selected Acquisitions

References:
(a) DoD Directive 7000.1, "Resource Management Systems of the Department of Defense," August 22, 1966
(b) DoD Directive 5000.1, "Major System Acquisitions," January 18, 1977
(c) DoD Directive 5000.2, "Major System Acquisition Process," January 18, 1977
(d) through (i), see enclosure 2.

A. REISSUANCE AND PURPOSE

This Instruction reissues reference (f) and sets forth objectives and criteria for the application of uniform DoD requirements to selected defense contracts. The provisions of this Instruction specifically require the use of Cost/Schedule Control Systems Criteria (C/SCSC) in selected acquisitions. Reference (f) is hereby superseded and cancelled.

B. APPLICABILITY AND SCOPE

1. The provisions of this Instruction apply to all Military Departments and Defense Agencies (hereafter referred to as "DoD Components") which are responsible for acquisitions during systems development and production.

2. The acquisitions governed by this Instruction are in selected contracts and subcontracts within programs designated as major system acquisition programs in accordance with reference (b). Firm-fixed-price and firm-fixed-price-with-economic-price-adjustment contracts are excluded. Application of the C/SCSC to major construction projects is also encouraged where appropriate.

C. OBJECTIVES

1. To provide an adequate basis for responsible decision-making by both contractor management and DoD Components, contractors' internal management control systems must provide data which (a) indicate work progress, (b) properly relate cost, schedule and technical accomplishment, (c) are valid, timely and auditable, and (d) supply DoD managers with information at a practicable level of summarization.

2. To bring to the attention of, and encourage, DoD contractors to accept and install management control systems and procedures which are most effective in meeting their requirements and controlling contract performance. DoD contractors also should be continuously alert to advances in management control systems which will improve their internal operations.

D. POLICY

1. It shall be the general policy to (a) require applications of the C/SCSC as stated in enclosure 1 to programs that are within the scope of section B., above, (b) require no changes in contractors' existing cost/schedule control systems except those necessary to meet the C/SCSC, and (c) require the contractor to provide to the Government performance data directly from the same system used for internal management.

2. The policies and criteria contained herein will not be construed as requiring the use of specific systems or changes in accounting systems which will adversely affect (a) the equitable distribution of costs to all contracts, or (b) compliance with the standards, rules, and regulations promulgated by the Cost Accounting Standards Board.

3. Subcontracts within applicable programs, excluding those that are firm-fixed-price, may be selected for application of these criteria by mutual agreement between prime contractors and the contracting DoD Component, according to the criticality of the subcontract to the program. Coverage of certain critical subcontracts may be directed by the Department of Defense, subject to the changes article of the contracts. In those cases where a subcontractor is not required to comply with the criteria, the Cost/Schedule Status Report (C/SSR) approach to performance measurement set forth in DoD Instruction 7000.10 (reference (g)) will normally be used. The limitations in reference (g) apply.

4. The applicability of C/SCSC and provisions concerning the acceptability and use of contractor's cost/schedule control systems shall be (a) included in the Decision Coordinating Papers (DCP) leading to the decisions for full-scale development and production, (b) addressed in procurement plans, (c) set forth in Requests for Proposal (RFP), and (d) made a contractual requirement in appropriate procurements.

a. Reviews of Systems. To ensure compliance with the Cost/Schedule Control Systems Criteria, contractors' systems will be reviewed during various phases of the contracting process.

(1) Where the C/SCSC are included as a requirement in the RFP, an Evaluation Review will be performed as an integral part of the source selection process.

(2) After contract award, an in-plant Demonstration Review will be made to verify that the contractor is operating systems which meet the criteria.

(3) Upon successful completion of the Demonstration Review, contractors will not be subjected to another Demonstration Review unless there are positive indications that the contractor's systems no longer operate so as to meet the criteria.

(4) Subsequent contracts may require a review of shorter duration and less depth to ensure the appropriate and effective application of the accepted systems to the new contract.

(5) Detailed procedures relating to contractual application, interpretative guidance, interservice relationships, and conduct of systems reviews are contained in the Cost/Schedule Control Systems Criteria Joint Implementation Guide (reference (h)).

b. Memorandum of Understanding. After determination that a management system meets C/SCSC, a Memorandum of Understanding may be established between the Department of Defense and the contractor to apply to future contracts.

(1) The use of a Memorandum of Understanding contemplates the execution of a written instrument which references the C/SCSC and negotiated provisions which (a) reflect an understanding between the contractor and the DoD of the requirements of the DoD criteria, and (b) identify the specific system(s) which the contractor intends to use on applicable contracts with DoD Components.

(2) The Memorandum of Understanding will include or make reference to a written description of the system(s) accepted in a Demonstration Review. The system description should be of sufficient detail to permit adequate surveillance by responsible parties. The use of a Memorandum of Understanding is preferred where a number of separate contracts between one or more DoD Component(s) and the contractor may be entered into during the term of the Memorandum of Understanding. It contemplates the delegation of authority to the DoD Component negotiating the Memorandum of Understanding with the contractor to make the agreement on behalf of all prospective DoD contracting components.

(3) Action to develop a Memorandum of Understanding may be initiated by either the contractor or the DoD Component, but will usually be in connection with a contractual requirement. In a proposal, reference to a Memorandum of Understanding satisfies the C/SCSC requirement in RFP's and normally obviates the need for further Evaluation Review during source selection. Procedures for executing Memorandums of Understanding are included in the Cost/Schedule Control Systems Criteria Joint Implementation Guide (reference (h)).

c. Surveillance. Recurring evaluations of the effectiveness of the contractor's policies and procedures will be performed to ensure that the contractor's system continues to meet the C/SCSC and provides valid data consistent with the intent of this Instruction. Surveillance reviews will be based on selective tests of reported data and periodic evaluations of internal practices during the life of the contract. Guidance for surveillance is set forth in the C/SCSC Joint Surveillance Guide (reference (i)).

E. RESPONSIBILITIES

Pursuant to authority contained in DoD Directive 7000.1 (reference (a)):

1. The Assistant Secretary of Defense (Comptroller) will establish policy guidance pertaining to the Cost/Schedule Control Systems Criteria and will monitor their implementation to ensure consistent application throughout the Department of Defense.

2. The Secretaries of the Military Departments will issue appropriate instructions which promulgate the policies contained herein and which assign responsibilities for accomplishing the actions required to validate contractors' compliance with the C/SCSC.

3. The Joint Logistics Commanders will develop and issue joint implementing instructions which outline the procedures to be used in applying, testing and monitoring the C/SCSC on applicable contracts and will ensure that adequate reviews of contractors' systems are performed. The joint implementing procedures and their revisions will be coordinated among all affected DoD Components and submitted to the Assistant Secretary of Defense (Comptroller) for review prior to publication.

4. The Defense Contract Audit Agency and the appropriate Contract Administration Service office will participate in reviews of contractors' systems under their cognizance and will perform required surveillance, collaborating with each other and with the procuring DoD Component in reviewing areas of joint interest.

F. EFFECTIVE DATE AND IMPLEMENTATION

This Instruction is effective immediately. Forward two copies of the implementing documents to the Assistant Secretary of Defense (Comptroller) within 60 days.

Fred P. Wacker

Assistant Secretary of Defense
(Comptroller)

Enclosures - 2
1. Cost/Schedule Control Systems Criteria
2. List of additional references

## COST/SCHEDULE CONTROL SYSTEMS CRITERIA

1. GENERAL

a. Any system used by the contractor in planning and controlling the performance of the contract shall meet the criteria set forth in paragraph 3., below. Nothing in these criteria is intended to affect the basis on which costs are reimbursed and progress payments are made, and nothing herein will be construed as requiring the use of any single system, or specific method of management control or evaluation of performance. The contractor's internal systems need not be changed, provided they satisfy these criteria.

b. An element in the evaluation of proposals will be the proposer's system for planning and controlling contract performance. The proposer will fully describe the system to be used. The prospective contractor's cost/schedule control system proposal will be evaluated to determine if it meets these criteria. The prospective contractor will agree to operate a compliant system throughout the period of contract performance if awarded the contract. The DoD will agree to rely on the contractor's compliant system and therefore will not impose a separate planning and control system.

2. DEFINITIONS

a. ACTUAL COST OF WORK PERFORMED (ACWP). The costs actually incurred and recorded in accomplisning the work performed within a given time period.

b. ACTUAL DIRECT COSTS. Those costs identified specifically with a contract, based upon the contractor's cost identification and accumulation system as accepted by the cognizant DCAA representatives. (See Direct Costs.)

c. ALLOCATED BUDGET. (See Total Allocated Budget.)

d. APPLIED DIRECT COSTS. The amounts recognized in the time period associated with the consumption of labor, 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 one of the following takes place:

(1) When labor, material and other direct resources are actually consumed, or

(2) When material resources are withdrawn from inventory for use, or

(3) When material resources are received that are uniquely identified to the contract and scheduled for use within 60 days, or

(4) When major components or assemblies are received on a line flow basis that are specifically and uniquely identified to a single serially numbered end item.

e. APPORTIONED EFFORT. Effort that by itself is not readily divisible into short-span work packages but which is related in direct proportion to measured effort.

f. AUTHORIZED WORK. That effort which has been definitized and is on contract, plus that for which definitized contract costs have not been agreed to but for which written authorization has been received.

g. BASELINE. (See Performance Measurement Baseline.)

h. BUDGETED COST FOR 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.

i. BUDGETED COST FOR WORK SCHEDULED (BCWS). The sum of 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.

j. BUDGETS FOR WORK PACKAGES. (See Work Package Budgets.)

k. CONTRACT BUDGET BASE. The negotiated contract cost plus the estimated cost of authorized unpriced work.

l. CONTRACTOR. An entity in private industry which enters into contracts with the Government. In this Instruction, the word may also apply to Government-owned, Government-operated activities which perform work on major defense programs.

m. COST ACCOUNT. A management control point at which actual costs can be accumulated and compared to budgeted costs for 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 organizational element on one contract work breakdown structure (CWBS) element.

n. DIRECT COSTS. Any costs which can be identified specifically with a particular final cost objective. This term is explained in ASPR 15-202.

o. ESTIMATED COST AT COMPLETION OR ESTIMATE AT COMPLETION (EAC). Actual direct costs, plus indirect costs allocable to the contract, plus the estimate of costs (direct and indirect) for authorized work remaining.

p. INDIRECT COSTS. Costs, which because of their incurrence for common or joint objectives, are not readily subject to treatment as direct costs. This term is further defined in ASPR 3-701.3 and ASPR 15-203.

q. INITIAL BUDGET. (See Original Budget.)

r. INTERNAL REPLANNING. Replanning actions performed by the contractor for remaining effort within the recognized total allocated budget.

s. LEVEL OF EFFORT (LOE). Effort of a general or supportive nature which does not produce definite end products or results.

t. 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.

u. NEGOTIATED CONTRACT COST. The estimated cost negotiated in a cost-plus-fixed-fee contract, or the negotiated contract target cost in either a fixed-price-incentive contract or a cost-plus-incentive-fee contract.

v. ORIGINAL BUDGET. The budget established at, or near, the time the contract was signed, based on the negotiated contract cost.

w. OVERHEAD. (See Indirect Costs.)

x. PERFORMANCE MEASUREMENT BASELINE. 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.

y. PERFORMING ORGANIZATION. A defined unit within the contractor's organization structure, which applies the resources to perform the work.

z. 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.

aa. PROCURING ACTIVITY. The subordinate command in which the Procuring Contracting Office (PCO) is located. It may include the program office, related functional support offices, and procurement offices. Examples of procuring activities are AFSC/ESD, AFLC/OC-ALC, DARCOM/MIRADCOM, and NMC/NAVAIRSYSCOM.

bb. REPLANNING. (See Internal Replanning.)

cc. REPROGRAMMING. Replanning of the effort remaining in the contract, resulting in a new budget allocation which exceeds the contract budget base.

dd. RESPONSIBLE ORGANIZATION. A defined unit within the contractor's organization structure which is assigned responsibility for accomplishing specific tasks.

ee. 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.

ff. TOTAL ALLOCATED BUDGET. The sum of all budgets allocated to the contract. Total allocated budget consists of the performance measurement baseline and all management reserve. The total allocated budget will reconcile directly to the contract budget base. Any differences will be documented as to quantity and cause.

gg. 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 Government.

hh. VARIANCES. (See Significant Variances.)

ii. WORK BREAKDOWN STRUCTURE. A product-oriented family tree division of hardware, software, services, and other work tasks which organizes, defines, and graphically displays the product to be produced, as well as the work to be accomplished to achieve the specified product.

(1) Project Summary Work Breakdown Structure. A summary WBS tailored to a specific defense materiel item by selecting applicable elements from one or more summary WBS's or by adding equivalent elements unique to the project (MIL-STD-881A).

(2) Contract Work Breakdown Structure (CWBS). The complete WBS for a contract, developed and used by a contractor within the guidelines of MIL-STD-881A, and according to the contract work statement.

jj. WORK PACKAGE BUDGETS. Resources which are formally assigned by the contractor to accomplish a work package, expressed in dollars, hours, standards, or other definitive units.

kk. 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:

(1) It represents units of work at levels where work is performed.

(2) It is clearly distinguishable from all other work packages.

(3) It is assignable to a single organizational element.

(4) It has scheduled start and completion dates and, as applicable, interim milestones, all of which are representative of physical accomplishment.

(5) It has a budget or assigned value expressed in terms of dollars, man-hours, or other measurable units.

(6) Its duration is limited to a relatively short span of time or it is subdivided by discrete value-milestones to facilitate the objective measurement of work performed.

(7) It is integrated with detailed engineering, manufacturing, or other schedules.

3. CRITERIA

The contractors' management control systems will include policies, procedures, and methods which are designed to ensure that they will accomplish the following:

a. Organization

(1) Define all authorized work and related resources to meet the requirements of the contract, using the framework of the CWBS.

(2) Identify the internal organizational elements and the major subcontractors responsible for accomplishing the authorized work.

(3) Provide for the integration of the contractor's planning, scheduling, budgeting, work authorization and cost accumulation systems with each other, the CWBS, and the organizational structure.

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

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

b. Planning and Budgeting

(1) Schedule the authorized work in a manner which describes the sequence of work and identifies the significant task interdependencies required to meet the development, production and delivery requirements of the contract.

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

(3) Establish and maintain a time-phased budget baseline at the cost account level against which contract performance can be measured. Initial budgets established for this purpose will be based on the negotiated target cost. Any other amount used for performance measurement purposes must be formally recognized by both the contractor and the Government.

(4) Establish budgets for all authorized work with separate identification of cost elements (labor, material, etc.).

(5) To the extent the authorized work can be identified in discrete, short-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.

(6) Provide that the sum of all work package budgets, plus planning package budgets within a cost account equals the cost account budget.

(7) Identify relationships of budgets or standards in underlying work authorization systems to budgets for work packages.

(8) Identify and control level of effort activity by time-phased budgets established for this purpose. Only that effort which cannot be identifed as discrete, short-span work packages or as apportioned effort will be classed as level of effort.

(9) Establish overhead budgets for the total costs of each significant organizational component whose expenses will become indirect costs. Reflect in the contract budgets at the appropriate level the amounts in overhead pools that will be allocated to the contract as indirect costs.

(10) Identify management reserves and undistributed budget.

(11) Provide that the contract target cost plus the estimated cost of authorized but unpriced work is reconciled with the sum of all internal contract budgets and management reserves.

c. Accounting

(1) Record direct costs on an applied or other acceptable basis in a formal system that is controlled by the general books of account.

(2) Summarize direct costs from cost accounts into the WBS without allocation of a single cost account to two or more WBS elements.

(3) Summarize direct costs from the cost accounts into the contractor's functional organizational elements without allocation of a single cost account to two or more organizational elements.

(4) Record all indirect costs which will be allocated to the contract.

(5) Identify the bases for allocating the cost of apportioned effort.

(6) Identify unit costs, equivalent unit costs, or lot costs as applicable.

(7) The contractor's material accounting system will provide for:

(a) Accurate cost accumulation and assignment of costs to cost accounts in a manner consistent with the budgets using recognized, acceptable costing techniques.

(b) Determination of price variances by comparing planned versus actual commitments.

(c) Cost performance measurement at the point in 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 the excess usage of material.

(e) Determination of unit or lot costs when applicable.

(f) Full accountability for all material purchased for the contract, including the residual inventory.

d. Analysis

(1) Identify at the cost account level on a monthly basis using data from, or reconcilable with, the accounting system:

(a) Budgeted cost for work scheduled and budgeted cost for work performed.

(b) Budgeted cost for work performed and applied (actual where appropriate) direct costs for the same work.

(c) Variances resulting from the above comparisons classified in terms of labor, material, or other appropriate elements together with the reasons for significant variances.

(2) Identify on a monthly basis, in the detail needed by management for effective control, budgeted indirect costs, actual indirect costs, and variances along with the reasons.

(3) Summarize the data elements and associated variances listed in (1) and (2) above through the contractor organization and WBS to the reporting level specified in the contract.

(4) Identify significant differences on a monthly basis between planned and actual schedule accomplishment and the reasons.

(5) Identify managerial actions taken as a result of criteria items (1) through (4) above.

(6) Based on performance to date and on 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 the latest statement of funds requirements reported to the Government.

e. Revisions and Access to Data

(1) Incorporate contractual changes in a timely manner recording the effects of such changes in budgets and schedules. In the directed effort prior to negotiation of a change, base such revisions on the amount estimated and budgeted to the functional organizations.

(2) Reconcile original budgets for those elements of the work breakdown structure identified as priced line items in the contract, and for those elements at the lowest level of the DoD Project Summary WBS, with current performance measurement budgets in terms of (a) changes to the authorized work and (b) internal replanning in the detail needed by management for effective control.

(3) Prohibit retroactive changes to records pertaining to work performed that will change previously reported amounts for direct costs, indirect costs, or budgets, except for correction of errors and routine accounting adjustments.

(4) Prevent revisions to the contract budget base (paragraph 2.k.) except for Government directed changes to contractual effort.

(5) Document, internally, changes to the performance measurement baseline (paragraph 2.x.) and, on a timely basis, notify the procuring activity through prescribed procedures.

(6) Provide the contracting officer and his duly authorized representatives access to all of the foregoing information and supporting documents.

REFERENCES

(d) Armed Services Procurement Regulation (1976 Edition)
(e) MIL-STD-881A, "Work Breakdown Structures for Defense Material Items," April 25, 1975
(f) DoD Instruction 7000.2, "Performance Measurement for Selected Acquisitions," April 25, 1972 (hereby cancelled)
(g) DoD Instruction 7000.10, "Contract Cost Performance, Funds Status and Cost/Schedule Status Reports," August 6, 1974
(h) AFSCP/AFLCP 173-5, DARCOM-P 715-5, NAVMAT P5240, DSAH 8315.2 "Cost/Schedule Control Systems Criteria Joint Implementation Guide," October 1, 1976
(i) DARCOM-P 715-10, NAVMAT P5243, AFLCP/AFSCP 173-6, DSAH 8315.1, DCAAP 7641.46, "C/SCSC Joint Surveillance Guide," July 1, 1974 and Change 1, October 1, 1976

# APPENDIX B



| EVALUATION/DEMONSTRATION REVIEW CHECKLIST FOR C/SCSC | | | |
|---|---|---|---|
| CHECKLIST ITEMS | YES | NO | REMARKS |
| I. ORGANIZATION | | | |
| 1. DEFINE ALL THE AUTHORIZED WORK AND RELATED RESOURCES TO MEET THE REQUIREMENTS OF THE CONTRACT, USING THE FRAMEWORK OF THE CWBS. | | | |
| a. Is only one CWBS used for the contract (attach copy of CWBS)? | | | |
| b. Is all contract work included in the CWBS? | | | |
| c. Are the following items included in the CWBS (annotate copy of CWBS to show elements below)? | | | |
| (1) Contract line items and end items (if in consonance with MIL-STD-881A). | | | |
| (2) All CWBS elements specified for external reporting. | | | |
| (3) CWBS elements to be subcontracted, with identification of subcontractors. | | | |
| (4) Cost account levels. | | | |
| 2. IDENTIFY THE INTERNAL ORGANIZATIONAL ELEMENTS AND THE MAJOR SUBCONTRACTORS RESPONSIBILE FOR ACCOMPLISHING THE AUTHORIZED WORK. | | | |
| a. Are all authorized tasks assigned to identified organizational elements? (This must occur at the cost account level as a minimum. Prepare exhibit showing relationships.) | | | |
| b. Is subcontracted work defined and identified to the appropriate subcontractor within the proper WBS element? (Provide representative example.) | | | |
| 3. PROVIDE FOR THE INTEGRATION OF THE CONTRACTOR'S PLANNING, SCHEDULING, BUDGETING, WORK AUTHORIZATION, AND COST ACCUMULATION SYSTEMS WITH EACH OTHER, THE CWBS, AND THE ORGANIZATIONAL STRUCTURE. (Reference format 1.) | | | |
| a. Are the contractor's management control systems listed above integrated with each other, the CWBS, and the organizational structure at the following levels: (Use matrix to illustrate the relationships.) | | | |
| (1) Total contract? | | | |
| (2) Cost account? | | | |
| 4. IDENTIFY THE MANAGERIAL POSITIONS RESPONSIBLE FOR CONTROLLING OVERHEAD (INDIRECT COSTS). | | | |
| a. Are the following organizational elements and managers clearly identified? | | | |
| (1) Those responsible for the establishment of budgets and assignment of resources for overhead performance? | | | |

Appendix E–continued

| CHECKLIST ITEMS | YES | NO | REMARKS |
|---|---|---|---|
| (2) Those responsible for overhead performance control of related costs. | | | |
| b. Are the responsibilities and authorities of each of the above organizational elements or managers clearly defined? | | | |
| 5. PROVIDE FOR INTEGRATION OF THE CWBS WITH THE CONTRACTOR'S FUNCTIONAL ORGANIZATIONAL STRUCTURE IN A MANNER THAT PERMITS COST AND SCHEDULE PERFORMANCE MEASUREMENT FOR CWBS AND ORGANIZATIONAL ELEMENTS. (Provide matrix showing integration.) | | | |
| a. Is each cost account assigned to a single organizational element directly responsible for the work and identifiable to a single element of the CWBS? | | | |
| b. Are the following elements for measuring performance available at the levels selected for control and analysis: | | | |
| (1) Budgeted cost for work scheduled? | | | |
| (2) Budgeted cost for work performed? | | | |
| (3) Actual costs of work performed? | | | |
| **II. PLANNING AND BUDGETING** | | | |
| 1. SCHEDULE THE AUTHORIZED WORK IN A MANNER WHICH DESCRIBES THE SEQUENCE OF WORK AND IDENTIFIES THE SIGNIFICANT TASK INTER-DEPENDENCIES REQUIRED TO MEET THE DEVELOPMENT, PRODUCTION, AND DELIVERY REQUIREMENTS OF THE CONTRACT. | | | |
| a. Does the scheduling system contain (Prepare exhibit showing traceability from contract task level to work package schedules.)– | | | |
| (1) A master program schedule? | | | |
| (2) Intermediate schedules, as required, which provide a logical sequence from the master schedule to the cost account level? | | | |
| (3) Detailed schedules which support cost account and work package start and completion dates/events? | | | |
| b. Are significant decision points, constraints, and interfaces identified as key milestones? | | | |
| c. Does the scheduling system provide for the identification of work progress against technical and other milestones, and also provide for forecasts of completion dates of scheduled work? | | | |
| d. Are work packages formally scheduled in terms of physical accomplishment by calendar dates (Gregorian, Julian, or manufacturing day)? | | | |
| 2. IDENTIFY PHYSICAL PRODUCTS, MILESTONES, TECHNICAL PERFORMANCE GOALS, OR OTHER INDICATORS THAT WILL BE USED TO MEASURE OUTPUT. | | | |

Appendix E—continued

| CHECKLIST ITEMS | YES | NO | REMARKS |
|---|---|---|---|
| a. Are meaningful indicators identified for use in measuring the status of cost and schedule performance? (Provide representative samples.) | | | |
| b. Does the contractor's system identify work accomplishment against the schedule plan? (Provide representative examples.) | | | |
| c. Are current work performance indicators and goals relatable to original goals as modified by contractual changes, replanning, and reprogramming actions? (Provide exhibit showing incorporation of changes to original indicators and goals.) | | | |
| 3. ESTABLISH AND MAINTAIN A TIME-PHASE BUDGET BASELINE AT THE COST ACCOUNT LEVEL AGAINST WHICH CONTRACT PERFORMANCE CAN BE MEASURED. INITIAL BUDGETS ESTABLISHED FOR THIS PURPOSE WILL BE BASED ON THE NEGOTIATED TARGET COST. ANY OTHER AMOUNT USED FOR PERFORMANCE MEASUREMENT PURPOSES MUST BE FORMALLY RECOGNIZED BY BOTH THE CONTRACTOR AND THE GOVERNMENT. (Reference formats 2 and 8.) | | | |
| a. Does the performance measurement baseline consist of the following? | | | |
| (1) Time-phase cost account budgets. | | | |
| (2) Higher level CWBS element budgets (where not yet broken down into cost account budgets). | | | |
| (3) Undistributed budget, if any. | | | |
| (4) Indirect budgets, if not included in the above. | | | |
| b. Is the entire contract planned in time-phased cost accounts to the extent practicable? | | | |
| c. In the event that future contract effort cannot be defined in sufficient detail to allow the establishment of cost accounts, is the remaining budget assigned to the lowest practicable CWBS level elements for subsequent distribution to cost accounts. | | | |
| d. Does the contractor require sufficient detailed planning of cost accounts to constrain the application of budget initially allocated for future effort to current effort? (Explain constraints.) | | | |
| e. Are cost accounts opened and closed based on the start and completion of work contained therein? | | | |
| 4. ESTABLISH BUDGETS FOR ALL AUTHORIZED WORK WITH SEPARATE IDENTIFICATION OF COST ELEMENTS (LABOR, MATERIAL, ETC.). (Reference formats 2, 3, and 4.) | | | |
| a. Does the budgeting system contain: (Provide exhibit.) | | | |
| (1) The total budget for the contract (including estimates for authorized but unpriced work)? | | | |

Appendix E—continued

| CHECKLIST ITEMS | YES | NO | REMARKS |
|---|---|---|---|
| (2) Budgets assigned to major functional organizations? (See checklist Item II, 9ab.) | | | |
| (3) Budgets assigned to cost accounts? | | | |
| b. Are the budgets assigned to cost accounts planned and identified in terms of the following cost elements? (Reference Formats 3 and 4.) | | | |
| (1) Direct labor dollars and/or hours. | | | |
| (2) Material and/or subcontract dollars. | | | |
| (3) Other direct dollars. | | | |
| c. Does the work authorization system contain: (Prepare sample exhibit.) | | | |
| (1) Authorization to proceed with all authorized work? | | | |
| (2) Appropriate work authorization documents which subdivide the contractual effort and responsibilities within functional organizations. | | | |
| 5. TO THE EXTENT THE AUTHORIZED WORK CAN BE IDENTIFIED IN DISCRETE, SHORT-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: (Reference formats 6, 6a, and 6b.) | | | |
| a. Do work packages reflect the actual way in which the work will be done and are they meaningful products or management-oriented subdivisions of a higher level element of work? (Provide representative sample.) | | | |
| b. Are detailed work packages planned as far in advance as practicable? | | | |
| c. Is work progressively subdivided into detailed work packages as requirements are defined? | | | |
| d. Is future work which cannot be planned in detail subdivided to the extent practicable for budgeting and schedule purposes. (Provide sample.) | | | |
| e. Are work packages reasonably short in time duration or do they have adequate objective indicators/milestones to minimize the in-process work evaluation? | | | |
| f. Do work packages consist of discrete tasks which are adequately described? (Provide representative sample.) | | | |
| g. Can the contractor substantiate work package and planning package budgets? | | | |
| h. Are budgets or values assigned to work packages and planning packages in terms of dollars, hours, or other measurable units? | | | |

Appendix E–continued

| CHECKLIST ITEMS | YES | NO | REMARKS |
|---|---|---|---|
| i. Are work packages assigned to performing organizations? | | | |
| 6. PROVIDE THAT THE SUM OF ALL WORK PACKAGE BUDGETS PLUS PLANNING PACKAGES WITHIN A COST ACCOUNT EQUALS THE COST ACCOUNT BUDGET. (Reference format 2.) | | | |
| a. Does the sum of all work package budgets plus planning packages within cost accounts equal the budgets assigned to those cost accounts? | | | |
| 7. IDENTIFY RELATIONSHIPS OF BUDGETS OR STANDARDS IN UNDERLYING WORK AUTHORIZATION SYSTEMS TO BUDGETS FOR WORK PACKAGES. | | | |
| a. Where engineered standards or other internal work measurement systems are used, is there a formal relationship between these values and work package budgets? (Provide samples showing relationships.) | | | |
| 8. IDENTIFY AND CONTROL LEVEL OF EFFORT ACTIVITY BY TIME-PHASE BUDGETS ESTABLISHED FOR THIS PURPOSE. ONLY THAT EFFORT WHICH CANNOT BE IDENTIFIED AS DISCRETE, SHORTSPAN WORK PACKAGES OR AS APPORTIONED EFFORT WILL BE CLASSED AS LOE. (Reference format 6.) | | | |
| a. Are time-phase budgets established for planning and control of level of effort activity by category of resource; for example, type of manpower and/or material? (Explain method of control and analysis.) | | | |
| b. Is work properly classified as measured effort, LOE, or apportioned effort and appropriately separated? | | | |
| 9. ESTABLISH OVERHEAD BUDGETS FOR THE TOTAL COSTS OF EACH SIGNIFICANT ORGANIZATIONAL COMPONENT WHOSE EXPENSES WILL BECOME INDIRECT COSTS. REFLECT IN THE CONTRACT BUDGETS AT THE APPROPRIATE LEVEL, THE AMOUNTS IN OVERHEAD POOLS THAT WILL BE ALLOCATED TO THE CONTRACT AS INDIRECT COSTS. (Reference DCAA Audit Manual and DAR 15-203.) (Reference format 7.) | | | |
| a. Are overhead cost budgets (or projections) established on a facility-wide basis at least annually for the life of the contract? | | | |
| b. Are overhead cost budgets established for each organization which has authority to incur overhead costs? | | | |
| c. Are all elements of expense identified to overhead cost budgets or projections? | | | |
| d. Are overhead budgets and costs being handled according to the disclosure statement when applicable, or otherwise properly classified (for example, engineering overhead, IR&D)? | | | |
| e. Is the anticipated (firm and potential) business base projected in a rational, consistent manner? (Explain.) | | | |
| f. Are overhead costs budgets established on a basis consistent with the anticipated direct business base? | | | |
| g. Are the requirements for all items of overhead established by rational, traceable processes? | | | |

Appendix E—continued

| CHECKLIST ITEMS | YES | NO | REMARKS |
|---|---|---|---|
| h. Are the overhead pools formally and adequately identified? (Provide a list of the pools.) | | | |
| i. Are the organizations and items of cost assigned to each pool identified? | | | |
| j. Are projected overhead costs in each pool and the associated direct costs used as the basis for establishing interim rates for allocating overhead to contracts? | | | |
| k. Are projected overhead rates applied to the contract beyond the current year based on— | | | |
| (1) Contractor financial periods; for example, annual? | | | |
| (2) The projected business base for each period? | | | |
| (3) Contemplated overhead expenditure for each period based on the best information currently available? | | | |
| l. Are overhead projections adjusted in a timely manner to reflect— | | | |
| (1) Changes in the current direct and projected base? | | | |
| (2) Changes in the nature of the overhead requirements? | | | |
| (3) Changes in the overhead pool and/or organization structures? | | | |
| m. Are the WBS and organizational levels for application of the projected overhead costs identified? | | | |
| 10. IDENTIFY MANAGEMENT RESERVES AND UNDISTRIBUTED BUDGET. | | | |
| a. Is all budget available as management reserve identified and excluded from the performance measurement baseline? | | | |
| b. Are records maintained to show how management reserves are used? (Provide exhibit.) | | | |
| c. Is undistributed budget limited to contract effort which cannot yet be planned to CWBS elements at or below the level specified for reporting to the Government? | | | |
| d. Are records maintained to show how undistributed budgets are controlled? (Provide exhibit.) | | | |
| 11. PROVIDE THAT THE CONTRACT TARGET COST PLUS THE ESTIMATED COST OF AUTHORIZED BUT UNPRICED WORK IS RECONCILED WITH THE SUM OF ALL INTERNAL CONTRACT BUDGETS AND MANAGEMENT RESERVES. (Reference formats 3, 4, and 5.) | | | |
| a. Does the contractor's system description or procedures require that the performance measurement baseline plus management reserve equal the contract budget base? | | | |

Appendix E—continued

| CHECKLIST ITEMS | YES | NO | REMARKS |
|---|---|---|---|
| b. Do the sum of the cost account budgets for higher level CWBS elements, undistributed budget, and management reserves reconcile with the contract target cost plus the estimated cost for authorized unpriced work? (Provide exhibit.) | | | |
| III. ACCOUNTING | | | |
| 1. RECORD DIRECT COSTS ON AN APPLIED OR OTHER ACCEPTABLE BASIS CONSISTENT WITH THE BUDGETS IN A FORMAL SYSTEM THAT IS CONTROLLED BY THE GENERAL BOOKS OF ACCOUNT. | | | |
| a. Does the accounting system provide a basis for auditing records of direct costs chargeable to the contract? | | | |
| b. Are elements of direct cost (labor, material, and so forth) accumulated within cost accounts in a manner consistent with budgets using recognized acceptable costing techniques and controlled by the general books of account? | | | |
| 2. SUMMARIZE DIRECT COSTS FROM THE COST ACCOUNTS INTO THE WBS WITHOUT ALLOCATION OF A SINGLE COST ACCOUNT TO TWO OR MORE WBS ELEMENTS. (Reference format 3.) | | | |
| a. Is it possible to summarize direct costs from the cost account level through the CWBS to the total contract level without allocation of a lower level CWBS element to two or more higher level CWBS elements? (This does not preclude the allocation of costs from a cost account containing common items to appropriate using cost accounts.) | | | |
| 3. SUMMARIZE DIRECT COSTS FROM THE COST ACCOUNTS INTO THE CONTRACTOR'S FUNCTIONAL ORGANIZATIONAL ELEMENTS WITHOUT ALLOCATION OF A SINGLE COST ACCOUNT TO TWO OR MORE ORGANIZATIONAL ELEMENTS. (Reference format 4.) | | | |
| a. Is it possible to summarize direct costs from the cost account level to the highest functional organizational level without allocation of a lower level organization's cost to two or more higher level organizations? | | | |
| 4. RECORD ALL INDIRECT COSTS WHICH WILL BE ALLOCATED TO THE CONTRACT. | | | |
| a. Does the cost accumulation system provide for summarization of indirect costs from the point of allocation to the contract total? | | | |
| b. Are indirect costs accumulated for comparison with the corresponding budgets? | | | |
| c. Do the lines of authority for incurring indirect costs correspond to the lines of responsibility for management control of the same components of costs? (Explain controls for fixed and variable indirect costs.) | | | |
| d. Are indirect costs charged to the appropriate indirect pools and incurring organization? | | | |
| e. Are the bases and rates for allocating costs from each indirect pool consistently applied? | | | |

Appendix E—continued

| CHECKLIST ITEMS | YES | NO | REMARKS |
|---|---|---|---|
| f. Are the bases and rates for allocating costs from each indirect pool to commercial work consistent with those used to allocate such costs to Government contracts? | | | |
| g. Are the rates for allocating costs from each indirect cost pool to contracts updated as necessary to ensure a realistic monthly allocation of indirect costs without significant year-end adjustments? | | | |
| h. Are the procedures for identifying indirect costs to incurring organizations, indirect cost pools, and allocating the costs from the pools to the contracts formally documented? | | | |
| 5. IDENTIFY THE BASES FOR ALLOCATING THE COST OF APPORTIONED EFFORT. | | | |
| a. Is effort which is planned and controlled in direct relationship to cost accounts or work packages identified as apportioned effort? | | | |
| b. Are methods used for applying apportioned effort costs to cost accounts applied consistently and documented in an established procedure? | | | |
| 6. IDENTIFY UNIT COSTS, EQUIVALENT UNIT COSTS, OR LOT COSTS AS APPLICABLE. | | | |
| a. Does the contractor's system provide unit costs, equivalent unit or lot costs in terms of labor, material, other direct, and indirect costs? (Describe procedure.) | | | |
| b. Does the contractor have procedures which permit identification of recurring or nonrecurring costs as necessary? | | | |
| 7. THE CONTRACTOR'S MATERIAL ACCOUNTING SYSTEM WILL PROVIDE FOR: ACCURATE COST ACCUMULATION AND ASSIGNMENT OF COSTS TO COST ACCOUNTS IN A MANNER CONSISTENT WITH THE BUDGETS USING RECOGNIZED, ACCEPTABLE COSTING TECHNIQUES; DETERMINATION OF PRICE VARIANCES BY COMPARING PLANNED VERSUS ACTUAL COMMITMENTS; COST PERFORMANCE MEASUREMENT AT THE POINT IN THE MOST SUITABLE FOR THE CATEGORY OF MATERIAL INVOLVED, BUT NO EARLIER THAN THE TIME OF ACTUAL RECEIPT OF MATERIAL; DETERMINATION OF COST VARIANCES ATTRIBUTABLE TO THE EXCESS USAGE OF MATERIAL; DETERMINATION OF UNIT OR LOT COSTS WHEN APPLICABLE; AND FULL ACCOUNTABILITY FOR ALL MATERIAL PURCHASED FOR THE CONTRACT INCLUDING THE RESIDUAL INVENTORY. | | | |
| a. Does the contractor's system provide for accurate cost accumulation and assignment to cost accounts in a manner consistent with the budgets using recognized acceptable costing techniques? | | | |
| b. Are material costs reported within the same period as that in which BCWP is earned for that material? | | | |
| c. Does the contractor's system provide for determination of price variances by comparing planned vs actual commitments? | | | |
| d. Is cost performance measurement at the point in time most suitable for the category of material involved, but no earlier than the time of actual receipt of material? | | | |

Appendix E—continued

| CHECKLIST ITEMS | YES | NO | REMARKS |
|---|---|---|---|
| e. Does the contractor's system provide for the determination of cost variances attributable to the excess usage of material? | | | |
| f. Does the contractor's system provide unit or lot costs when applicable? | | | |
| g. Are records maintained to show full accountability for all material purchased for the contract, including the residual inventory? | | | |
| IV. ANALYSIS | | | |
| 1. IDENTIFY AT THE COST ACCOUNT LEVEL ON A MONTHLY BASIS USING DATA FROM, OR RECONCILABLE WITH, THE ACCOUNTING SYSTEM; BCWS AND BCWP; BCWP AND APPLIED (ACTUAL WHERE APPROPRIATE) DIRECT COSTS FOR THE SAME WORK; VARIANCES RESULTING FROM THE ABOVE COMPARISONS CLASSIFIED IN TERMS OF LABOR, MATERIAL, OR OTHER APPROPRIATE ELEMENTS, TOGETHER WITH THE REASONS FOR SIGNIFICANT VARIANCES. | | | |
| a. Does the contractor's system include procedures for measuring performance of the lowest level organization responsible for the cost account? (Provide typical example.) | | | |
| b. Does the contractor's system include procedures for measuring the performance of critical subcontractors? | | | |
| c. Is cost and schedule performance measurement done in a consistent, systematic manner? | | | |
| d. Are the actual costs used for variance analysis reconcilable with data from the accounting system? | | | |
| e. Is budgeted cost for work performed calculated in a manner consistent with the way work is planned? (For example, if work is planned on a measured basis, budgeted cost for work performed is calculated on a measured basis.) | | | |
| f. Does the contractor have variance analysis procedures and a demonstrated capability for identifying (at the cost account and other appropriate levels) cost and schedule variances resulting from the system (provide examples) which— | | | |
| (1) Identify and isolate problems causing unfavorable cost variances? | | | |
| (2) Evaluate the impact of schedule changes, workaround, etc? | | | |
| (3) Evaluate the performance of operating organizations? | | | |
| (4) Identify potential or actual overruns and underruns? | | | |
| 2. IDENTIFY ON A MONTHLY BASIS, IN THE DETAIL NEEDED BY MANAGEMENT FOR EFFECTIVE CONTROL, BUDGETED INDIRECT COSTS, ACTUAL INDIRECT COSTS, AND VARIANCES, ALONG WITH THE REASONS. (Reference format 7.) | | | |

Appendix E–continued

| CHECKLIST ITEMS | YES | NO | REMARKS |
|---|---|---|---|
| a. Are variances between budgeted and actual indirect costs identified and analyzed at the level of assigned responsibility for their control (indirect pool, department, etc.)? | | | |
| b. Does the contractor's cost control system provide for capability to identify the existence and causes of cost variances resulting from– | | | |
| (1) Incurrence of actual indirect costs in excess of budgets, by element of expense? | | | |
| (2) Changes in the direct base to which overhead costs are allocated? | | | |
| c. Are management actions taken to reduce indirect costs when there are significant adverse variances? | | | |
| 3. SUMMARIZE THE DATA ELEMENTS AND ASSOCIATED VARIANCES LISTED IN ITEMS 1 AND 2 ABOVE THROUGH THE CONTRACTOR ORGANIZATION AND WBS TO THE REPORTING LEVEL SPECIFIED IN THE CONTRACT. (Reference formats 2, 3, 4, 5, 10, and 11.) | | | |
| a. Are data elements (BCWS, BCWP, and ACWP) progressively summarized from the detail level to the contract level through the CWBS? (Provide exhibit.) | | | |
| b. Are data elements summarized through the functional organizational structure for progressively higher levels of management? (Provide exhibit.) | | | |
| c. Are data elements reconcilable between internal summary reports and reports forwarded to the Government? | | | |
| d. Are procedures for variance analysis documented and consistently applied at the cost account level and selected WBS and organizational levels at least monthly as a routine task? (Provide examples.) | | | |
| 4. IDENTIFY ON A MONTHLY BASIS SIGNIFICANT DIFFERENCES BETWEEN PLANNED AND ACTUAL SCHEDULE ACCOMPLISHMENT TOGETHER WITH THE REASONS. | | | |
| a. Does the scheduling system identify in a timely manner the status of work? (Provide representative examples.) | | | |
| b. Does the contractor use objective results, design reviews, and tests to trace schedule performance? (Provide examples.) | | | |
| 5. IDENTIFY MANAGERIAL ACTIONS TAKEN AS A RESULT OF CRITERIA ITEMS 1 THROUGH 4 ABOVE. | | | |
| a. Is data disseminated to the contractor's managers timely, accurate, and usable? (Provide examples.) | | | |
| b. Are data being used by managers in an effective manner to ascertain program or functional status, to identify reasons for significant variance, and to initiate appropriate corrective action? (Provide examples.) | | | |

Appendix E—continued

| CHECKLIST ITEMS | YES | NO | REMARKS |
|---|---|---|---|
| c. Are there procedures for monitonng action items and corrective actions to the point of resolution and are these procedures being followed? | | | |
| 6. BASED ON PERFORMANCE TO DATE AND ON 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 THE LATEST STATEMENT OF FUNDS REQUIREMENTS REPORT TO THE GOVERNMENT. (Reference formats 12, 13, and 14.) | | | |
| a. Are estimates of costs at completion based on— | | | |
| (1) Performance to date? | | | |
| (2) Actual costs to date? | | | |
| (3) Knowledgeable projections of future performance? | | | |
| (4) Estimates of the cost for contract work remaining to be accomplished considenng economic escalation? | | | |
| b. Are the overhead rates used to develop the contract cost estimate to complete based on— | | | |
| (1) Historical expenence? | | | |
| (2) Contemplated management improvements? | | | |
| (3) Projected economic escalation? | | | |
| (4) The anticipated business volume? | | | |
| c. Are estimates of cost at completion generated with sufficient frequency to provide identification of future cost problems in time for possible corrective or preventive actions by both the contractor and the Government program manager? | | | |
| d. Are estimates developed by program personnel coordinated with those responsible for overall plant management to determine whether required resources will be available according to revised planning? | | | |
| e. Are estimates of cost at completion generated by knowledgeable personnel for the following levels: | | | |
| (1) Cost accounts? | | | |
| (2) Major functional areas of contract effort? | | | |
| (3) Major subcontracts? | | | |
| (4) WBS elements contractually specified for reporting of status to the Government (lowest level only)? | | | |
| (5) Total contract (all authorized work)? | | | |
| f. Are the latest revised estimates of costs at completion compared with the established budgets at approonate levels and causes of variances identified? | | | |

Appendix E–continued

| CHECKLIST ITEMS | YES | NO | REMARKS |
|---|---|---|---|
| g. Are estimates of cost at completion generated in a rational, consistent manner? Are procedures established for appropriate aspects of generating estimates of costs at completion? | | | |
| h. Are estimates of costs at completion utilized in determining contract funding requirements and reporting them to the Government? | | | |
| i. Are the contractor's estimates of costs at completion reconcilable with cost data reported to the Government? | | | |
| V. REVISIONS AND ACCESS TO DATA | | | |
| 1. INCORPORATE CONTRACTUAL CHANGES IN A TIMELY MANNER, RECORDING THE EFFECTS 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 ORGANIZATIONS. | | | |
| a. Are authorized changes being incorporated in a timely manner? | | | |
| b. Are all affected work authorizations, budgeting, and scheduling documents amended to properly reflect the effects of authorized changes? (Provide examples.) | | | |
| c. Are internal budgets for authorized, but not priced changes based on the contractor's resource plan for accomplishing the work? | | | |
| d. If current budgets for authorized changes do not sum to the negotiated cost for the changes, does the contractor compensate for the differences by revising the undistributed budgets, management reserves, budgets established for work not yet started, or by a combination of these? | | | |
| 2. RECONCILE ORIGINAL BUDGETS FOR THOSE ELEMENTS OF THE WBS IDENTIFIED AS PRICE LINE ITEMS IN THE CONTRACT, AND FOR THOSE ELEMENTS AT THE LOWEST LEVEL OF THE DOD PROJECT SUMMARY WBS, WITH CURRENT PERFORMANCE MEASUREMENT BUDGETS IN TERMS OF CHANGES TO THE AUTHORIZED WORK AND INTERNAL REPLANNING IN THE DETAIL NEEDED BY MANAGEMENT FOR EFFECTIVE CONTROL. (Reference formats 8 and 9.) | | | |
| a. Are current budgets resulting from changes to the authorized work and/or internal replanning, reconcilable to original budgets for specified reporting items? | | | |
| 3. PROHIBIT RETROACTIVE CHANGES TO RECORDS PERTAINING TO WORK PERFORMED THAT WILL CHANGE PREVIOUSLY REPORTED AMOUNTS FOR DIRECT COSTS, INDIRECT COSTS, OR BUDGETS, EXCEPT FOR CORRECTION OF ERRORS AND ROUTINE ACCOUNTING ADJUSTMENTS. | | | |
| a. Are retroactive changes to direct costs and indirect costs prohibited except for the correction of errors and routine accounting adjustments? | | | |
| b. Are direct or indirect cost adjustments being accomplished according to accounting procedures acceptable to DCAA? | | | |

Appendix E–continued

| CHECKLIST ITEMS | YES | NO | REMARKS |
|---|---|---|---|
| c. Are retroactive changes to BCWS and BCWP prohibited except for correction of errors or for normal accounting adjustments? | | | |
| 4. PREVENT REVISIONS TO THE CONTRACT BUDGET BASE EXCEPT FOR GOVERNMENT-DIRECTED CHANGES TO CONTRACTUAL EFFORT. | | | |
| a. Are procedures established to prevent changes to the contract budget base (see definition) other than those authorized by contractual action? | | | |
| b. Is authorization of budgets in excess of the contract budget base controlled formally and done with the full knowledge and recognition of the procuring activity? Are the procedures adequate? | | | |
| 5. DOCUMENT, INTERNALLY, CHANGES TO THE PERFORMANCE MEASUREMENT BASELINE AND, ON A TIMELY BASIS, NOTIFY THE PROCURING ACTIVITY THROUGH PRESCRIBED PROCEDURES. | | | |
| a. Are changes to the performance measurement baseline made as a result of contractual redirection, formal reprogramming, internal replanning, application of undistributed budget, or the use of management reserve, properly documented and reflected in the Cost Performance Report? | | | |
| b. Are procedures in existence that restrict changes to budgets for open work packages, and are these procedures adhered to? | | | |
| c. Are retroactive changes to budgets for completed work specifically prohibited in an established procedure, and is this procedure adhered to? | | | |
| d. Are procedures in existence that control replanning of unopened work packages, and are these procedures adhered to? | | | |
| 6. PROVIDE THE CONTRACTING OFFICER AND DULY AUTHORIZED REPRESENTATIVES ACCESS TO ALL OF THE FOREGOING INFORMATION AND SUPPORTING DOCUMENTS. | | | |
| a. Does the contractor provide access to all pertinent records to the C/SCSC Review Team and surveillance personnel? | | | |

JUNE 1980

C/SCSC IMPLEMENTATION STATUS

LIST OF ACCEPTED SYSTEMS
(BY CONTRACTOR)

| CONTRACTOR'S NAME | PLANT IDENTIFICATION | PLANT LOCATION | TYPE | PROGRAM NAME | ACCEPTANCE DATE | LEAD SERVICE |
|---|---|---|---|---|---|---|
| AEROJET GENERAL | SOLID PROPULSION | SACRAMENTO, CA | PROD | MINUTEMAN | SEP72 | USAF |
| | SOLID PROPULSION | SACRAMENTO, CA | SAR | TITAN 34I | MAR80 | USAF |
| | ELECTROSYSTEMS | AZUSA, CA | R&D | DEFENSE SUPPORT | JAN72 | USAF |
| | ELECTROSYSTEMS | AZUSA, CA | PROD | DEFENSE SUPPORT | JAN73 | USAF |
| | ELECTROSYSTEMS | AZUSA, CA | SAR | S2 | JUL77 | USAF |
| | ELECTROSYSTEMS | AZUSA, CA | SAR | SED | NOV79 | USAF |
| | LIQUID ROCKET | SACRAMENTO, CA | PROD | TITAN III | OCT69 | USAF |
| | ORDNANCE & MANUFACTURING | DOWNEY, CA | PROD | GAU-8 AMMO | APR79 | USAF |
| ATLANTIC RESEARCH | PROPULSION DIVISION | GAINESVILLE, VA | R&D | CRUISE MISSILE | JAN78 | NAVY |
| | PROPULSION DIVISION | GAINESVILLE, VA | SAR | STINGER | NOV78 | ARMY |
| AVCO | GOVERNMENT PRODUCTS GROUP | WILMINGTON, MA | R&D | ABRES | DEC70 | USAF |
| | GOVERNMENT PRODUCTS GROUP | WILMINGTON, MA | SAR | TECH REV VEHICLE | FEB76 | USAF |
| | GOVERNMENT PRODUCTS GROUP | WILMINGTON, MA | SAR | ABRES | AUG77 | USAF |
| | GOVERNMENT PRODUCTS GROUP | WILMINGTON, MA | SAR | ABRES(RV-4) | NOV79 | USAF |
| | LYCOMING DIVISION | STRATFORD, CT | R&D | A-X | NOV72 | USAF |
| | LYCOMING DIVISION | STRATFORD, CT | PROD | MINUTEMAN | SEP71 | USAF |
| | LYCOMING DIVISION | STRATFORD, CT | SAR | XM-1 | JAN75 | ARMY |
| | LYCOMING DIVISION | STRATFORD, CT | SAR | T-53-L-703 ENGINE | OCT76 | ARMY |
| | LYCOMING DIVISION | STRATFORD, CT | SAR | XM-1 | AUG77 | ARMY |
| | LYCOMING DIVISION | STRATFORD, CT | SAR | XM-1 | DEC78 | ARMY |
| AVONDALE SHIPBUILDING | | NEW ORLEANS, LA | CONST | FLEET OILER | FEB79 | NAVY |
| BATH | IRON WORKS | BATH, ME | RES | FFG | DEC74 | NAVY |
| | IRON WORKS | BATH, ME | CONST | FFG | DEC74 | NAVY |
| BOEING | AEROSPACE GROUP | SEATTLE, WA | R&D | SRAM | SEP69 | USAF |
| | AEROSPACE GROUP | SEATTLE, WA | R&D | AWACS | JUN71 | USAF |
| | AEROSPACE GROUP | SEATTLE, WA | R&D | MINUTEMAN | | |
| | AEROSPACE GROUP | SEATTLE, WA | PROD | AWACS | JUN71 | USAF |
| | AEROSPACE GROUP | SEATTLE, WA | PROD | MINUTEMAN | | |
| | AEROSPACE GROUP | SEATTLE, WA | PROD | SRAM | | |
| | AEROSPACE GROUP | SEATTLE, WA | SAR | US ROLAND | NOV75 | ARMY |
| | AEROSPACE GROUP | SEATTLE, WA | SAR | E-3A NATO | FEB76 | USAF |
| | AEROSPACE GROUP | SEATTLE, WA | SAR | E-4 | APR76 | USAF |
| | AEROSPACE GROUP | SEATTLE, WA | SAR | IUS FREE DESIGN | DEC76 | USAF |
| | AEROSPACE GROUP | SEATTLE, WA | SAR | COMPASS COPE | MAR77 | USAF |
| | AEROSPACE GROUP | SEATTLE, WA | SAR | B-1 AVIONICS | APR77 | USAF |
| | AEROSPACE GROUP | SEATTLE, WA | SAR | LAUNCH SERVICES | AUG77 | USAF |
| | AEROSPACE GROUP | SEATTLE, WA | SAR | ABRES-RSLP | SEP77 | USAF |
| | AEROSPACE GROUP | SEATTLE, WA | SAR | SRAM LOAD | DEC77 | USAF |
| | AEROSPACE GROUP | SEATTLE, WA | SAR | GSRS | FEB78 | ARMY |
| | AEROSPACE GROUP | SEATTLE, WA | SAR | MINIATURE REV PROG | APR78 | USAF |
| | AEROSPACE GROUP | SEATTLE, WA | SAR | E-3A | JUL78 | USAF |
| | AEROSPACE GROUP | SEATTLE, WA | SAR | IUS | SEP78 | USAF |
| | AEROSPACE GROUP | SEATTLE, WA | SAR | MX VERTICAL SHELTER | JAN79 | USAF |
| | AEROSPACE GROUP | SEATTLE, WA | SAR | ESIS | JUL79 | USAF |

JUNE 1980

C/SCSC IMPLEMENTATION STATUS

LIST OF ACCEPTED SYSTEMS
(BY CONTRACTOR)

| CONTRACTOR'S NAME | PLANT IDENTIFICATION | PLANT LOCATION | TYPE | PROGRAM NAME | ACCEPTANCE DATE | LEAD SERVICE |
|---|---|---|---|---|---|---|
| BOEING | AEROSPACE GROUP | SEATTLE, WA | SAR | ALCM | OCT79 | NAVY |
| | WICHITA DIVISION | WICHITA, KS | R&D | B-52/KC-135 TRAINER | OCT78 | USAF |
| | WICHITA DIVISION | WICHITA, KS | PROD | B-52D ECP 1581 | MAY75 | USAF |
| | WICHITA DIVISION | WICHITA, KS | SAR | B-52 OFF AVIONICS | MAR79 | USAF |
| | VERTOL COMPANY | KIDLEY, PA | R&D | HLH | FEB72 | ARMY |
| | VERTOL COMPANY | KIDLEY, PA | SAR | OTTAS | FEB73 | ARMY |
| | VERTOL COMPANY | KIDLEY, PA | SAR | CH-47 MOD | FEB77 | ARMY |
| | MARINE SYSTEMS | SEATTLE, WA | R&D | FHM | SEP78 | NAVY |
| | MARINE SYSTEMS | SEATTLE, WA | PROD | FHM | SEP78 | NAVY |
| CADILLAC GAGE | | WARREN, MI | R&D | XM-1 | JUN74 | ARMY |
| | | WARREN, MI | SAR | XM-1 | AUG77 | ARMY |
| CHRYSLER | STERLING DEFENSE DIVISION | STERLING HEIGHTS, MI | R&D | XM-1 | MAY74 | ARMY |
| | STERLING DEFENSE DIVISION | STERLING HEIGHTS, MI | SAR | XM-1 | APR77 | ARMY |
| | DEFENSE DIVISION | WARREN, MI | R&D | XM-1 | JUN74 | ARMY |
| | DEFENSE DIVISION | WARREN, MI | SAR | XM-1 | APR77 | ARMY |
| | DEFENSE DIVISION | WARREN, MI | SAR | XM-1 | MAR79 | ARMY |
| | DEFENSE DIVISION | WARREN, MI | SAR | XM-1 | MAY79 | ARMY |
| CLARK EQUIPMENT | | BENTON HARBOR, MI | R&D | FAMECE | APR76 | ARMY |
| COLLER HAMMER | AIL | DEER PARK, L.I., NY | R&D | B-1 | OCT75 | USAF |
| E-SYSTEMS | OAKLAND DIVISION | DALLAS, TX | R&D | CRUISE MISSILE | MAY76 | NAVY |
| FAIRCHILD | REPUBLIC DIVISION | FARMINGDALE, NY | R&D | A-10 | SEP73 | USAF |
| | REPUBLIC DIVISION | FARMINGDALE, NY | PROD | A-X | JUL72 | USAF |
| FMC | NORTHERN ORDNANCE DIVISION | MINNEAPOLIS, MN | PROD | MARK 75 GUN MOUNT | AUG76 | NAVY |
| | ORDNANCE ENG. DIVISION | SAN JOSE, CA | R&D | AASV | JUL73 | ARMY |
| | ORDNANCE ENG. DIVISION | SAN JOSE, CA | R&D | MICV | | |
| | ORDNANCE ENG. DIVISION | SAN JOSE, CA | SAR | FVS | APR78 | ARMY |
| FORD COMM & AEROSPACE | AERONUTRONICS DIVISION | NEWPORT BEACH, CA | R&D | F-15 | SEP72 | USAF |
| | AERONUTRONICS DIVISION | NEWPORT BEACH, CA | PROD | CHAPARRAL | APR77 | ARMY |
| | AERONUTRONICS DIVISION | NEWPORT BEACH, CA | SAR | LASER DESIGNATOR | JUN73 | ARMY |
| | AERONUTRONICS DIVISION | NEWPORT BEACH, CA | SAR | MICV GUN | DEC76 | ARMY |
| | AERONUTRONICS DIVISION | NEWPORT BEACH, CA | SAR | CHAPARRAL | APR77 | ARMY |
| | AERONUTRONICS DIVISION | NEWPORT BEACH, CA | SAR | FAVE TACK | JUL78 | USAF |
| | WESTERN DEVELOPMENT LABS | PALO ALTO, CA | R&D | NATO III | JAN74 | USAF |
| | WESTERN DEVELOPMENT LABS | PALO ALTO, CA | SAR | AN/MSC60 | OCT74 | ARMY |
| GENERAL DYNAMICS | AEROSPACE DIVISION | FT. WORTH, TX | R&D | F-16 | FEB76 | USAF |
| | AEROSPACE DIVISION | FT. WORTH, TX | R&D | F-16 | FEB80 | USAF |
| | AEROSPACE DIVISION | FT. WORTH, TX | PROD | F-111 | FEB71 | USAF |
| | AEROSPACE DIVISION | FT. WORTH, TX | PROD | F-16 | FEB80 | USAF |
| | AEROSPACE DIVISION | FT. WORTH, TX | SAR | ADVANCED FIGHTER TECH | MAR80 | USAF |
| | ELECTRONICS | SAN DIEGO, CA | R&D | DFS | AUG76 | USAF |

# C/SCSC IMPLEMENTATION STATUS

## LIST OF ACCEPTED SYSTEMS (BY CONTRACTOR)

| CONTRACTOR'S NAME | PLANT IDENTIFICATION | PLANT LOCATION | TYPE | PROGRAM NAME | ACCEPTANCE DATE | LEAD SERVICE |
|---|---|---|---|---|---|---|
| GENERAL DYNAMICS | ELECTRONICS | SAN DIEGO, CA | SAR | F-16 AIS | NOV76 | USAF |
| | | POMONA, CA | R&D | STINGER | FEB73 | ARMY |
| | | POMONA, CA | PROD | STINGER | AUG75 | ARMY |
| | | POMONA, CA | SAR | MINIATURE DEV | MAR76 | USAF |
| | | POMONA, CA | SAR | SPARROW III | DEC76 | NAVY |
| | | POMONA, CA | SAR | VIPER MISSILE | FEB77 | ARMY |
| | | POMONA, CA | SAR | POST STINGER | JAN78 | ARMY |
| | | POMONA, CA | SAR | STINGER | NOV78 | ARMY |
| | | POMONA, CA | SAR | PHALANX | SEP79 | NAVY |
| | | POMONA, CA | SAR | | NOV79 | ARMY |
| | CONVAIR | SAN DIEGO, CA | R&D | TOMAHAWK | OCT75 | NAVY |
| | CONVAIR | SAN DIEGO, CA | PROD | ALCM | APR80 | NAVY |
| | ELECTRIC BOAT DIVISION | GROTON, CT | R&D | NAUTV | JUN78 | NAVY |
| | ELECTRIC BOAT DIVISION | GROTON, CT | CONST | TRIDENT | MAR80 | NAVY |
| GENERAL ELECTRIC | RESD | PHILADELPHIA, PA | R&D | MINUTEMAN | APR69 | USAF |
| | RESD | PHILADELPHIA, PA | SAR | MARK 12A | JUL79 | USAF |
| | AIRCRAFT ENGINE GROUP | EVENDALE, OH | R&D | B-1 | DEC70 | USAF |
| | AIRCRAFT ENGINE GROUP | EVENDALE, OH | PROD | C-5A | SEP70 | USAF |
| | SPACE SYSTEMS | VALLEY FORGE, PA | R&D | DSCS III | DEC78 | USAF |
| | MILITARY ENGINE DIVISION | LYNN, MA | R&D | T 700 ENGINE | JUL73 | ARMY |
| | MILITARY ENGINE DIVISION | LYNN, MA | PROD | IFA | MAY72 | USAF |
| | MILITARY ENGINE DIVISION | LYNN, MA | SAR | T-700 ENGINE | NOV75 | ARMY |
| | MILITARY ENGINE DIVISION | LYNN, MA | SAR | F-404 ENGINE | MAY76 | NAVY |
| | MILITARY ENGINE DIVISION | LYNN, MA | SAR | T-700 ENGINE | OCT78 | ARMY |
| | MILITARY ENGINE DIVISION | LYNN, MA | SAR | T-700 ENGINE | APR79 | NAVY |
| | ARMAMENT SYSTEMS GROUP | BURLINGTON, VT | R&D | GAU-8 | APR74 | USAF |
| | ARMAMENT SYSTEMS GROUP | BURLINGTON, VT | PROD | GAU-8 | NOV75 | USAF |
| | ELECTRICAL SYSTEMS DIVISION | SYRACUSE, NY | R&D | SITE DEFENSE | APR73 | ARMY |
| | ELECTRICAL SYSTEMS DIVISION | SYRACUSE, NY | SAR | OTH-B | JUN78 | USAF |
| | ELECTRICAL SYSTEMS DIVISION | SYRACUSE, NY | SAR | SEEK IGLOO | JAN80 | USAF |
| | RESD | VALLEY FORGE, PA | PROD | MINUTEMAN | OCT71 | USAF |
| GENERAL MOTORS | DETROIT DIESEL ALLISON | INDIANAPOLIS, IN | R&D | HLH | MAR73 | ARMY |
| | DETROIT DIESEL ALLISON | INDIANAPOLIS, IN | SAR | XM-1 | NOV73 | ARMY |
| | DETROIT DIESEL ALLISON | INDIANAPOLIS, IN | SAR | XM-1 | APR77 | ARMY |
| | DETROIT DIESEL ALLISON | INDIANAPOLIS, IN | SAR | XM-1 | MAY79 | ARMY |
| | MILITARY VEHICLE OPERATIONS | WARREN, MI | R&D | XM-1 | AUG74 | ARMY |
| | DELCO DIVISION | SANTA BARBARA, CA | SAR | XM-1 | FEB74 | ARMY |
| | DELCO DIVISION | MILWAUKEE, WI | R&D | TITAN III | NOV76 | USAF |
| GOODYEAR | AEROSPACE CO | AKRON, OH | R&D | CAPTOR | DEC74 | NAVY |
| | AEROSPACE CO | AKRON, OH | PROD | CAPTOR | DEC74 | NAVY |
| GRUMMAN | AEROSPACE | BETHPAGE, L.I., NY | R&D | EF 111 | OCT75 | USAF |
| | AEROSPACE | BETHPAGE, L.I., NY | PROD | F-14 | MAR75 | NAVY |
| | AEROSPACE | BETHPAGE, L.I., NY | SAR | EF 111 | AUG79 | USAF |
| GTE-SYLVANIA | [illegible] | [illegible] | R&D | MINUTEMAN | FEB71 | USAF |

# C/SCSC IMPLEMENTATION STATUS

## LIST OF ACCEPTED SYSTEMS (BY CONTRACTOR)

| CONTRACTOR'S NAME | PLANT IDENTIFICATION | PLANT LOCATION | TYPE | PROGRAM NAME | ACCEPTANCE DATE | LEAD SERVICE |
|---|---|---|---|---|---|---|
| GTE-SYLVANIA | EASTERN DIVISION | NEEDHAM, MA | FROD | MINUTEMAN | FEB73 | USAF |
| | COMM SYSTEMS DIVISION | NEEDHAM, MA | R&D | MINUTEMAN | FEB73 | USAF |
| | COMM SYSTEMS DIVISION | NEEDHAM, MA | SAR | AN/TTC-39 | OCT75 | ARMY |
| | ELEC SYS GROUP (WEST) | MOUNTAIN VIEW, CA | R&D | SEA NYMPH | MAR77 | NAVY |
| HARRIS INTERTYPE | RADIATION SYSTEMS DIV | MELBOURNE, FL | R&D | DEFENSE SUPPORT | AUG72 | USAF |
| | RADIATION SYSTEMS DIV | MELBOURNE, FL | FROD | DEFENSE SUPPORT | AUG72 | USAF |
| HONEYWELL INC. | AERO-FLORIDA DIV | ST. PETERSBURG, FL | FROD | MINUTEMAN | APR70 | USAF |
| | DEFENSE SYSTEMS DIV | HOPKINS, MN | R&D | ADAM | APR74 | ARMY |
| | DEFENSE SYSTEMS DIV | HOPKINS, MN | FROD | GAU-8 AMMUNITION | JUN78 | USAF |
| | DEFENSE SYSTEMS DIV | HOPKINS, MN | SAR | 30MM AMMO | AUG78 | ARMY |
| | AVIONICS | ST. LOUIS PARK, MN | R&D | ADAM | APR74 | ARMY |
| | AVIONICS | ST. LOUIS PARK, MN | SAR | IHADSS | AUG78 | ARMY |
| HUGHES AIRCRAFT | | CANOGA PARK, CA | R&D | MAVERICK | OCT69 | USAF |
| | | CANOGA PARK, CA | SAR | IMPROVED COBRA | JUN72 | ARMY |
| | | CANOGA PARK, CA | SAR | HELLFIRE | OCT74 | ARMY |
| | | CANOGA PARK, CA | SAR | US ROLAND | MAR76 | ARMY |
| | | CANOGA PARK, CA | SAR | MAVERICK | FEB78 | USAF |
| | | CANOGA PARK, CA | SAR | WEAPON SYS DEV | MAR79 | ARMY |
| | | CANOGA PARK, CA | SAR | TOW MAVERICK | APR79 | USAF |
| | | TUCSON, AZ | FROD | MAVERICK | APR71 | USAF |
| | AEROSPACE GROUP | CULVER CITY, CA | R&D | F-15 AVIONICS | JUL71 | USAF |
| | AEROSPACE GROUP | CULVER CITY, CA | R&D | GELD | NOV74 | ARMY |
| | AEROSPACE GROUP | CULVER CITY, CA | FROD | F-15 AVIONICS | JUL71 | USAF |
| | AEROSPACE GROUP | CULVER CITY, CA | SAR | 30MM AMMO | OCT78 | ARMY |
| | AEROSPACE GROUP | CULVER CITY, CA | SAR | SEA LITE BEAM | APR80 | NAVY |
| | GROUND SYSTEMS GROUP | FULLERTON, CA | R&D | US ROLAND | JUN76 | ARMY |
| | GROUND SYSTEMS GROUP | FULLERTON, CA | SAR | SUNTASS | MAY76 | NAVY |
| | GROUND SYSTEMS GROUP | FULLERTON, CA | SAR | FLKS | JAN78 | ARMY |
| IBM | ELECTRONICS SYSTEMS CENTER | OWEGO, NY | R&D | DNA | JUL72 | USAF |
| | ELECTRONICS SYSTEMS CENTER | OWEGO, NY | FROD | DNA | JUL72 | USAF |
| | ELECTRONICS SYSTEMS CENTER | OWEGO, NY | SAR | LAMPS MK III | JUL78 | NAVY |
| | ELECTRONICS SYSTEMS CENTER | OWEGO, NY | SAR | WILD WEASEL | FEB80 | USAF |
| | FEDERAL SYSTEMS DIVISION | WEST LAKE, LA | R&D | DEFENSE SUPPORT | OCT75 | USAF |
| | FEDERAL SYSTEMS DIVISION | MANASSAS, VA | R&D | TRIDENT SONAR | SEP74 | NAVY |
| | FEDERAL SYSTEMS DIVISION | MANASSAS, VA | FROD | TRIDENT SONAR | SEP74 | NAVY |
| | FEDERAL SYSTEMS DIVISION | GAITHERSBURG, MD | R&D | TRIDENT SYS INTEG | AUG75 | NAVY |
| | FEDERAL SYSTEMS DIVISION | GAITHERSBURG, MD | SAR | SACDIN | DEC78 | USAF |
| INTERSTATE ELECTRONICS | | LOS ANGELES, CA | R&D | TRIDENT MISSILE | SEP75 | NAVY |
| KAMAN | AEROSPACE | BLOOMFIELD, CT | R&D | HUMS | MAR72 | USAF |
| LITTON | DATA SYSTEMS DIVISION | VAN NUYS, CA | R&D | AN/ISH-73 | JAN72 | ARMY |
| | DATA SYSTEMS DIVISION | VAN NUYS, CA | SAR | IOS | APR74 | ARMY |
| | INGALLS SHIPBUILDING DIV | PASCAGOULA, MS | CONST | DD-963 | NOV77 | NAVY |

C/SCSC IMPLEMENTATION STATUS

LIST OF ACCEPTED SYSTEMS
(BY CONTRACTOR)

| CONTRACTOR'S NAME | PLANT IDENTIFICATION | PLANT LOCATION | TYPE | PROGRAM NAME | ACCEPTANCE DATE | LEAD SERVICE |
|---|---|---|---|---|---|---|
| LOCKHEED | MISSILE & SPACE | SUNNYVALE, CA | R&D | ABRES | JUN70 | USAF |
| | MISSILE & SPACE | SUNNYVALE, CA | R&D | TRIDENT MISSILE | JUN73 | NAVY |
| | MISSILE & SPACE | SUNNYVALE, CA | R&D | ARSV | JAN74 | ARMY |
| | MISSILE & SPACE | SUNNYVALE, CA | SAR | FLSS | MAR78 | USAF |
| | MISSILE & SPACE | SUNNYVALE, CA | SAR | SPACE TEST PROGRAM | JAN79 | USAF |
| | MISSILE & SPACE | SUNNYVALE, CA | SAR | P30-2 | FEB79 | USAF |
| | MISSILE & SPACE | SUNNYVALE, CA | SAR | HOMING OVERLAY | APR79 | ARMY |
| | GEORGIA | MARIETTA, GA | R&D | C-141 STRETCH | AUG76 | USAF |
| | GEORGIA | MARIETTA, GA | PROD | C-141 STRETCH | NOV79 | USAF |
| | GEORGIA | MARIETTA, GA | SAR | C-5 WING MOD | APR78 | USAF |
| | CALIFORNIA | BURBANK, CA | R&D | S-3A | NOV70 | NAVY |
| | CALIFORNIA | BURBANK, CA | PROD | S-3A | NOV70 | NAVY |
| | SHIPBUILDING | SEATTLE, WA | CONST | AS | MAY76 | NAVY |
| LTV | MISSILES & SPACE DIV | GRAND PRAIRIE, TX | R&D | DEFENSE SUPPORT | FEB70 | USAF |
| | AEROSPACE(MICHIGAN DIV) | WARREN, MI | PROD | LANCE | OCT71 | ARMY |
| MARTIN MARIETTA | DENVER DIVISION | DENVER, CO | R&D | TITAN III | APR70 | USAF |
| | DENVER DIVISION | DENVER, CO | R&D | PAYLOAD INTEGRATION | JUL79 | USAF |
| | DENVER DIVISION | DENVER, CO | PROD | TITAN III | APR70 | USAF |
| | DENVER DIVISION | DENVER, CO | SAR | TITAN III | MAR79 | USAF |
| | DENVER DIVISION | DENVER, CO | SAR | MIX ASSEMBLY | FEB80 | USAF |
| | ORLANDO DIVISION | ORLANDO, FL | R&D | SITE DEFENSE | JUN72 | ARMY |
| | ORLANDO DIVISION | ORLANDO, FL | R&D | CLOP | FEB74 | ARMY |
| | ORLANDO DIVISION | ORLANDO, FL | R&D | SAM-D | | |
| | ORLANDO DIVISION | ORLANDO, FL | PROD | SAFEGUARD | JUN75 | ARMY |
| | ORLANDO DIVISION | ORLANDO, FL | SAR | SITE DEFENSE | APR74 | ARMY |
| | ORLANDO DIVISION | ORLANDO, FL | SAR | PERSHING II | NOV75 | ARMY |
| | ORLANDO DIVISION | ORLANDO, FL | SAR | ARS/SLA | NOV75 | ARMY |
| | ORLANDO DIVISION | ORLANDO, FL | SAR | ASAM/PTV | JUN76 | USAF |
| | ORLANDO DIVISION | ORLANDO, FL | SAR | COPPERHEAD | MAR77 | ARMY |
| | ORLANDO DIVISION | ORLANDO, FL | SAR | TCCF | APR77 | USAF |
| | ORLANDO DIVISION | ORLANDO, FL | SAR | TADS/PNVS | AUG77 | ARMY |
| | ORLANDO DIVISION | ORLANDO, FL | SAR | VERTICAL LAUNCHER | AUG78 | NAVY |
| | ORLANDO DIVISION | ORLANDO, FL | SAR | COPPERHEAD | AUG78 | ARMY |
| | ORLANDO DIVISION | ORLANDO, FL | SAR | NAVY 5" GF | JUL79 | ARMY |
| | ORLANDO DIVISION | ORLANDO, FL | SAR | PATRIOT(IFF) | FEB80 | ARMY |
| | VANDENBERG TEST OPS FACILITY | VANDENBERG, CA | R&D | DOD | JAN78 | USAF |
| | VANDENBERG TEST OPS FACILITY | VANDENBERG, CA | R&D | STS GROUND SUP SYS | | |
| | VANDENBERG TEST OPS FACILITY | VANDENBERG, CA | SAR | GROUND SUPPORT SYST | OCT78 | USAF |
| | DENVER DIVISION | WAKEFIELD, MA | R&D | OASIS | APR80 | USAF |
| MCDONNELL DOUGLAS | AIRCRAFT | ST. LOUIS, MO | R&D | F-15 | JUL70 | USAF |
| | AIRCRAFT | ST. LOUIS, MO | PROD | F-15 | JUL70 | USAF |
| | AIRCRAFT | ST. LOUIS, MO | PROD | F-15 | SEP75 | USAF |
| | AIRCRAFT | ST. LOUIS, MO | SAR | EARLY COMM | OCT76 | USAF |
| | AIRCRAFT | ST. LOUIS, MO | SAR | F-18 | JUN77 | NAVY |
| | ASTRONAUTICS CO EAST | ST. LOUIS, MO | R&D | ABRES | DEC70 | USAF |
| | ASTRONAUTICS CO EAST | ST. LOUIS, MO | R&D | CRUISE MISSILE | FEB77 | NAVY |

# C/SCSC IMPLEMENTATION STATUS

## LIST OF ACCEPTED SYSTEMS (BY CONTRACTOR)

| CONTRACTOR'S NAME | PLANT IDENTIFICATION | PLANT LOCATION | TYPE | PROGRAM NAME | ACCEPTANCE DATE | LEAD SERVICE |
|---|---|---|---|---|---|---|
| MCDONNELL DOUGLAS | ASTRONAUTICS CO-EAST | ST. LOUIS, MO | PROD | HARPOON | MAR77 | NAVY |
| | ASTRONAUTICS CO-WEST | HUNTINGTON BEACH, CA | R&D | SITE DEFENSE | OCT72 | ARMY |
| | ASTRONAUTICS CO-WEST | HUNTINGTON BEACH, CA | R&D | ACE | MAR75 | USAF |
| | ASTRONAUTICS CO-WEST | HUNTINGTON BEACH, CA | R&D | SITE DEFENSE | MAR75 | ARMY |
| | ASTRONAUTICS CO-WEST | HUNTINGTON BEACH, CA | PROD | SAFEGUARD | OCT72 | ARMY |
| | ASTRONAUTICS CO-WEST | HUNTINGTON BEACH, CA | SAR | AMARV | JAN77 | USAF |
| | ASTRONAUTICS CO-TICO | TITUSVILLE, FL | PROD | DRAGON | JAN75 | ARMY |
| NAT. STEEL & SHIPBUILDING | | SAN DIEGO, CA | CONST | DESTROYER TENDER | JAN79 | NAVY |
| NORTHROP | AIRCRAFT DIVISION | HAWTHORNE, CA | R&D | IFA | JUL71 | USAF |
| | AIRCRAFT DIVISION | HAWTHORNE, CA | PROD | IFA | JUL71 | USAF |
| | ELECTROMECHANICAL SYS. DIV | ANAHEIM, CA | R&D | IADS/FINVS | APR78 | ARMY |
| | ELECTROMECHANICAL SYS. DIV | ANAHEIM, CA | SAR | SEAFIRE | MAR80 | NAVY |
| | ELECTRONICS | HAWTHORNE, CA | R&D | MX AIRS | APR79 | USAF |
| | ELECTRONICS | HAWTHORNE, CA | SAR | MX | MAY80 | USAF |
| RAYTHEON | MISSILE SYSTEMS DIVISION | ANDOVER, MA | PROD | HAWK | OCT72 | ARMY |
| | MISSILE SYSTEMS DIVISION | ANDOVER, MA | SAR | PATRIOT(IFF) | FEB80 | ARMY |
| | MISSILE SYSTEMS DIVISION | BEDFORD, MA | R&D | SAM-D | OCT72 | ARMY |
| | MISSILE SYSTEMS DIVISION | BEDFORD, MA | SAR | SPARROW | JUN79 | NAVY |
| | MISSILE SYSTEMS DIVISION | LOWELL, MA | PROD | SIDEWINDER | OCT72 | ARMY |
| | EQUIPMENT DIVISION | WALTHAM, MA | PROD | HAWK | OCT72 | ARMY |
| | EQUIPMENT DIVISION | WAYLAND, MA | R&D | AEGIS | OCT72 | ARMY |
| | EQUIPMENT DIVISION | WAYLAND, MA | SAR | EDMA JUDY | AUG79 | USAF |
| | EQUIPMENT DIVISION | NORTH DIGHTON, MA | PROD | SAFEGUARD | OCT72 | ARMY |
| | EQUIPMENT DIVISION | SUDBURY, MA | SAR | DIGITAL MULTIPLEXER | MAR76 | ARMY |
| RCA | GOVERNMENT COMM SYST | CAMDEN, NJ | R&D | SMALL TERMINALS CONT | MAY73 | ARMY |
| | GOVERNMENT COMM SYST | CAMDEN, NJ | SAR | SATCOM | MAY73 | ARMY |
| | GOVERNMENT COMM SYST | CAMDEN, NJ | SAR | KEMBASS | JUL79 | ARMY |
| | MISSILE & SURFACE RA | MOORESTOWN, NJ | R&D | 441 | OCT69 | USAF |
| | MISSILE & SURFACE RA | MOORESTOWN, NJ | R&D | AEGIS | APR71 | NAVY |
| | MISSILE & SURFACE RA | MOORESTOWN, NJ | PROD | AEGIS | SEP79 | NAVY |
| | AUTOMATED SYSTEMS | BURLINGTON, MA | R&D | AAH | DEC78 | ARMY |
| | AUTOMATED SYSTEMS | BURLINGTON, MA | SAR | KEMBASS | DEC78 | ARMY |
| ROCKWELL INTERNATIONAL | ELECTRONICS GROUP | ANAHEIM, CA | R&D | MINUTEMAN | JUN72 | USAF |
| | ELECTRONICS GROUP | ANAHEIM, CA | R&D | SKAM | | |
| | ELECTRONICS GROUP | ANAHEIM, CA | PROD | MINUTEMAN | OCT69 | USAF |
| | ELECTRONICS GROUP | ANAHEIM, CA | PROD | MINUTEMAN | JUN72 | USAF |
| | ELECTRONICS GROUP | ANAHEIM, CA | PROD | SKAM | | |
| | B-1 DIVISION | LOS ANGELES, CA | R&D | B-1 | FEB71 | USAF |
| | SPACE DIVISION | SEAL BEACH, CA | R&D | GPS | JAN76 | USAF |
| | SPACE DIVISION | SEAL BEACH, CA | SAR | GPS | MAR80 | USAF |
| | MISSILE SYSTEM DIVIS | ANAHEIM, CA | R&D | LASER MAVERICK | MAR77 | USAF |
| | MISSILE SYSTEMS DIV | COLUMBUS, OH | R&D | HELLFIRE | JUL75 | ARMY |
| | MISSILE SYSTEMS DIV | COLUMBUS, OH | SAR | HELLFIRE | MAY77 | ARMY |
| | MISSILE SYSTEMS DIV | COLUMBUS, OH | SAR | AAH | DEC78 | ARMY |

C/SCSC IMPLEMENTATION STATUS

LIST OF ACCEPTED SYSTEMS
(BY CONTRACTOR)

| CONTRACTOR'S NAME | PLANT IDENTIFICATION | PLANT LOCATION | TYPE | PROGRAM NAME | ACCEPTANCE DATE | LEAD SERVICE |
|---|---|---|---|---|---|---|
| ROCKWELL INTERNATIONAL | SPACE & SECURE TELECOM DIV | NEWPORT BEACH, CA | R&D | AFSATCOM | MAY79 | USAF |
| | SPACE & SECURE TELECOM DIV | NEWPORT BEACH, CA | PROD | AFSATCOM | OCT78 | USAF |
| | COLLINS (TELECOM DIV) | CEDAR RAPIDS, IA | R&D | AFSCS | MAY74 | USAF |
| | COLLINS (TELECOM DIV) | CEDAR RAPIDS, IA | PROD | AFSATCOM | OCT78 | USAF |
| | COLLINS (TELECOM DIV) | CEDAR RAPIDS, IA | SAR | SINCGARS | SEP79 | ARMY |
| | COLLINS (TELECOM DIV) | DALLAS,TX | PROD | AFSATCOM | OCT78 | USAF |
| | ROCKETDYNE DIV | CANOGA PARK, CA | R&D | HIGH ENERGY LASER | AFR80 | USAF |
| ROHR | SURFACE EFFECT SHIP DIV | SAN DIEGO, CA | R&D | SURFACE EFFECT SHIP | OCT75 | NAVY |
| SINGER | KEARFOTT DIVISION | LITTLE FALLS, NJ | R&D | SHIP | DEC74 | USAF |
| | LINK DIVISION | BINGHAMTON, NY | R&D | C-130E SIMULATOR | DEC77 | USAF |
| | LINK DIVISION | BINGHAMTON, NY | PROD | C-130E SIMULATOR | DEC77 | USAF |
| | LINK DIVISION | BINGHAMTON, NY | SAR | F-16 SIM | MAY78 | USAF |
| | LINK DIVISION | BINGHAMTON, NY | SAR | B-52/KC-135 SIM | MAY78 | USAF |
| SPERRY RAND | UNIVAC DEFENSE SYSTEMS DIV | ST. PAUL, MN | R&D | MINUTEMAN | FEB71 | USAF |
| | UNIVAC DEFENSE SYSTEMS DIV | ST. PAUL, MN | PROD | MINUTEMAN | JUN73 | USAF |
| | SYSTEMS MGT DIV | GREAT NECK, LI, NY | R&D | FF COMBAT SYSTEM | OCT73 | NAVY |
| | SPERRY GYROSCOPE | GREAT NECK, LI, NY | R&D | NEMI ANTENNA COVER | JUL75 | ARMY |
| | SPERRY GYROSCOPE | GREAT NECK, LI, NY | PROD | MK92 FIRE CONTROL | JUL78 | NAVY |
| SUMMA CORP | HUGHES HELICOPTERS | CULVER CITY, CA | R&D | AAH | NOV74 | ARMY |
| | HUGHES HELICOPTERS | CULVER CITY, CA | SAR | AAH | FEB79 | ARMY |
| TELEDYNE | CONTINENTAL MOTORS | MUSKEGON, MI | R&D | XM-1 | JUL74 | ARMY |
| | RYAN AERONAUTICAL | SAN DIEGO, CA | R&D | AAH | JUN78 | ARMY |
| TEXAS INSTRUMENTS | EQUIPMENT GROUP | DALLAS, TX | R&D | CLGP | MAR75 | ARMY |
| | EQUIPMENT GROUP | DALLAS, TX | PROD | LASER GUIDED BOMB | AFR78 | USAF |
| | EQUIPMENT GROUP | DALLAS, TX | SAR | TOW-CCM | AFR75 | ARMY |
| | EQUIPMENT GROUP | DALLAS, TX | SAR | M-60TD | DEC77 | ARMY |
| | EQUIPMENT GROUP | DALLAS, TX | SAR | IMAGERY INTEGRATION | JAN78 | USAF |
| | EQUIPMENT GROUP | DALLAS, TX | SAR | EGP | FEB78 | USAF |
| | EQUIPMENT GROUP | DALLAS, TX | SAR | NAAM | MAR79 | NAVY |
| TEXTRON | BELL AEROSPACE | BUFFALO, NY | R&D | MINUTEMAN | JUL72 | USAF |
| | BELL AEROSPACE | BUFFALO, NY | PROD | MINUTEMAN | JUL72 | USAF |
| | BELL AEROSPACE | BUFFALO, NY | SAR | | AUG73 | ARMY |
| | BELL HELICOPTER | FT. WORTH, TX | R&D | 214(IRAN) | JUN74 | ARMY |
| | BELL HELICOPTER | FT. WORTH, TX | PROD | 214(IRAN) | JUN74 | ARMY |
| | BELL HELICOPTER | FT. WORTH, TX | SAR | AAH | JUN74 | ARMY |
| | BELL HELICOPTER | FT. WORTH, TX | SAR | TOW/COBRA U | AUG74 | ARMY |
| | BELL HELICOPTER | FT. WORTH, TX | SAR | COBRA TOW S | FEB76 | ARMY |
| | BELL HELICOPTER | FT. WORTH, TX | SAR | IRAN 214C | DEC76 | ARMY |
| | BELL HELICOPTER | FT. WORTH, TX | SAR | AH 1S | AFR78 | ARMY |
| | BELL HELICOPTER | FT. WORTH, TX | SAR | COBRA FIRE CONTROL | AFR78 | ARMY |
| | BELL HELICOPTER | FT. WORTH, TX | SAR | UNIVERSAL TURRET | AFR78 | ARMY |
| | BELL HELICOPTER | FT. WORTH, TX | SAR | AH 1S | JUN79 | ARMY |

C/SCSC IMPLEMENTATION STATUS

LIST OF ACCEPTED SYSTEMS
(BY CONTRACTOR)

| CONTRACTOR'S NAME | PLANT IDENTIFICATION | PLANT LOCATION | TYPE | PROGRAM NAME | ACCEPTANCE DATE | LEAD SERVIC |
|---|---|---|---|---|---|---|
| TEXTRON | BELL HELICOPTER | AMARILLO, TX | PROD | COBRA TOW | AUG76 | ARMY |
| | BELL HELICOPTER | AMARILLO, TX | SAR | AH-1S | MAR79 | ARMY |
| | NEW ORLEANS OPERATIONS | NEW ORLEANS, LA | R&D | SURFACE EFFECT SHIP | MAR76 | NAVY |
| | PALMO-VICTOR | BELMONT, CA | PROD | AN/ALR-62 | FEB78 | USAF |
| THIOKOL | CHEMICAL | BRIGHAM CITY, UT | PROD | MINUTEMAN | OCT70 | USAF |
| TODD | SHIPYARDS | SEATTLE, WA | CONST | FFG | MAR77 | NAVY |
| | LOS ANGELES | SAN PEDRO, CA | CONST | FFG | JUL77 | NAVY |
| TRACOR | AUSTIN GROUP | AUSTIN, TX | PROD | MINUTEMAN | SEP71 | USAF |
| TRW | SYSTEMS GROUP | REDONDO BEACH, CA | R&D | DEFENSE SUPPORT | NOV70 | USAF |
| | SYSTEMS GROUP | REDONDO BEACH, CA | PROD | DEFENSE SUPPORT | NOV70 | USAF |
| | SYSTEMS GROUP | REDONDO BEACH, CA | PROD | FLTSATCOM | NOV78 | USAF |
| | SYSTEMS GROUP | REDONDO BEACH, CA | SAR | SIIE DEFENSE | FEB73 | ARMY |
| | SYSTEMS GROUP | REDONDO BEACH, CA | SAR | FLTSATCOM | FEB76 | USAF |
| UNITED TECHNOLOGIES | UT CENTER | SUNNYVALE, CA | PROD | TITAN III | JUL71 | USAF |
| | UT CENTER | SUNNYVALE, CA | SAR | TITAN III | OCT76 | USAF |
| | UT CENTER | SUNNYVALE, CA | SAR | TITAN III | MAY80 | USAF |
| | P&W AIRCRAFT DIV | WEST PALM BEACH, FL | R&D | F-14B | AUG71 | USAF |
| | P&W AIRCRAFT DIV | WEST PALM BEACH, FL | R&D | F-15 | | |
| | P&W AIRCRAFT DIV | WEST PALM BEACH, FL | SAR | F-100 ENGINE | DEC78 | USAF |
| | P&W AIRCRAFT DIV | EAST HARTFORD, CT | PROD | F-14B | JAN72 | USAF |
| | P&W AIRCRAFT DIV | EAST HARTFORD, CT | PROD | F-15 | | |
| | P&W AIRCRAFT DIV | EAST HARTFORD, CT | SAR | F-100 ENGINE | DEC78 | USAF |
| | SIKORSKY | STRATFORD, CT | R&D | UTTAS | APR73 | ARMY |
| | SIKORSKY | STRATFORD, CT | SAR | RSR AIRCRAFT | SEP74 | ARMY |
| | SIKORSKY | STRATFORD, CT | SAR | BLACK HAWK | FEB78 | ARMY |
| | SIKORSKY | STRATFORD, CT | SAR | SH-60B | DEC78 | NAVY |
| VOUGHT | | DALLAS, TX | R&D | TOMAHAWK | MAY76 | NAVY |
| | | DALLAS, TX | SAR | ADV SPACE PROGRAM | JAN78 | USAF |
| | | DALLAS, TX | SAR | GSRS | APR78 | ARMY |
| WESTERN ELECTRIC | | GREENSBORO, NC | PROD | SAFEGUARD | JUN72 | ARMY |
| | | WINSTON-SALEM, NC | PROD | SAFEGUARD | JUN72 | ARMY |
| | | BURLINGTON, NC | PROD | SAFEGUARD | OCT72 | ARMY |
| WESTINGHOUSE | NAVY ELEC EQUIP DIV | SUNNYVALE, CA | R&D | TRIDENT LAUNCHER | AUG74 | NAVY |
| | DEF & ELEC SYS CENTER | BALTIMORE, MD | R&D | F-16 | AUG77 | USAF |
| | DEF & ELEC SYS CENTER | BALTIMORE, MD | R&D | 618A MODEM | | |
| | DEF & ELEC SYS CENTER | BALTIMORE, MD | PROD | AEW-121 FORS | AUG78 | USAF |
| | DEF & ELEC SYS CENTER | BALTIMORE, MD | SAR | HELKATS | MAY77 | USAF |
| | DEF & ELEC SYS CENTER | BALTIMORE, MD | SAR | E-4A KAPAK | JUN78 | USAF |
| | DEF & ELEC SYS CENTER | BALTIMORE, MD | SAR | 618A MODEM (E-4) | APR79 | USAF |
| | DEF & ELEC SYS CENTER | BALTIMORE, MD | SAR | AN/ALQ 153 | JUN79 | USAF |
| | DEF & ELEC SYS CENTER | BALTIMORE, MD | SAR | [illegible] TAIL WARNING SY | | |

JUNE 1980

C/SCSC IMPLEMENTATION STATUS

LIST OF ACCEPTED SYSTEMS
(BY CONTRACTOR)

| CONTRACTOR'S NAME | PLANT IDENTIFICATION | PLANT LOCATION | TYPE | PROGRAM NAME | ACCEPTANCE DATE | LEAD SERVICE |
|---|---|---|---|---|---|---|
| WESTINGHOUSE | DEF & ELEC SYS CENTER | BALTIMORE, MD | SAR | F-16 FIRE CONTROL | JAN80 | USAF |
| WILLIAMS RESEARCH | | WALLED LAKE, MI | RDT | ALCM | MAR76 | USAF |

# C/SCSC IMPLEMENTATION STATUS

SUMMARY

TOTAL DOD

| TYPE | NUMBER |
|---|---|
| R&D | 108 |
| PROD | 68 |
| DES | 1 |
| CONST | 8 |
| SAR | 148 |
| | 333 |

BY SERVICE

| LEAD SERVICE | TYPE | NUMBER |
|---|---|---|
| ARMY | R&D | 34 |
| | PROD | 15 |
| | SAR | 73 |
| * | | 122 |
| NAVY | R&D | 19 |
| | PROD | 10 |
| | DES | 1 |
| | CONST | 8 |
| | SAR | 14 |
| * | | 52 |
| USAF | R&D | 55 |
| | PROD | 43 |
| | SAR | 61 |
| * | | 159 |
| | | 333 |

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