

COST/SCHEDULE CONTROL SYSTEMS

GOVERNMENT/INDUSTRY SYMPOSIUM 8-10 OCTOBER 1990

Summary of Proceedings

INTRODUCTION

The importance of the Symposium in developing implementation plans and procedures for the policy announced by FASCEP on 29 March 1990 was recognised by the number and level of Government representatives and the presence of senior representatives from most of Australia's major Defence Industry contractors. The forum lived up to our expectations in that industry representatives, many of whom had privately expressed concerns and opinions about how an American based Cost/Schedule Control policy could be applied in the Australian industrial and contracting environment, were prepared to clearly express those concerns in front of a very receptive audience of Government policy makers and implementers. Similarly it was equally apparent that the Government position was not "locked in" and there was room for a flexible approach to the policy implementation scheme in light of commercial concerns and realities in the Australian contracting environment.

The forum clearly agreed on one issue that forms the foundation for the way ahead - the 35 criteria as expressed in the FASCEP policy paper are valid in the Australian environment and can be applied to benefit both Government and industry. The detailed discussion that constituted most of the business sessions of the Symposium was therefore concerned primarily with matters of interpretation and how the implementation instructions could best be modified to suit Australian commercial and contracting reality.

PAYMENT BY EARNED VALUE

The most difficult issue raised during the Symposium was the linkage between using the concepts of Earned Value to measure real progress on a project and also using it as the basis for contract progress payments. Both sides of the debate were equally suspicious of each other. The argument on the one hand suggests that the Commonwealth, having mandated the use of a criteria based performance measurement system, should be prepared to use progress reports generated by that system as the basis for contract progress payments. Some Commonwealth representatives however, believe that when faced with commercial pressures to maintain cash flow, contractors would be inclined to corrupt or inflate their reporting data to ensure payments continued, even when things are not proceeding according to plan. There is a tendency, therefore for some Commonwealth representatives to favour a milestone payment program where clearly observable physical achievement or completion of contract deliverable items determine progress payments.

The contractual figure of 180 days is unlikely to be changed - provided a contractor is clearly moving towards achieving validation in a reasonable time, a liberal interpretation of this figure, with goodwill on both sides, is seen to offer a more flexible approach than a rigid figure (270? 360? 450? days) accompanied by strictly enforced penalties.

C/SCSC DUALITY WITHIN THE COMMONWEALTH

A number of industry delegates questioned the Commonwealth's long term commitment to applying and enforcing the C/SCSC approach to project management both internally and externally. In the past, industry believed it had borne the cost of implementing many types of Government sponsored schemes that had been only marginally effective, if at all, in achieving their stated aims. Would the C/SC initiative be yet another scheme that demands considerable up front commitment from contractors but fades away as political or financial circumstances change?

The evidence to date, as pointed out by DPMS, clearly indicates that Government has made a long term commitment to the concepts and, as in the US, believes the approach could be beneficially applied in other departments outside Defence. But all concerned parties should keep in mind that what has taken 20 years to evolve in the US will not happen overnight in Australia. A significant education effort is required in Departmental and commercial circles. Within Defence, a major thrust is being directed at removing many of the present ambiguities in the Commonwealth's C/SCSC stance.

The differing views expressed by various Project Offices and the regulatory environment surrounding Defence contracting and finance activities must be rationalised if Government is to be perceived as presenting a consistent policy front to industry. Existing contracts that require C/SCSC compliance, but still impose additional reporting and monitoring requirements such as CMACS and CDAMS, transmit a message to industry that the Government does not fully trust or believe in the C/SCSC approach, despite statements to the contrary.

DPMS believes that the on-going internal education process within Defence and other Departments will gradually result in the development of regulations and policy that will ensure consistent application and interpretation of the C/SCSC concepts across all the Government/commercial interfaces. It must be recognised, however, that some of the existing anomalous situations may take considerable time and effort to resolve.

ARBITRATION AND THE UNWRITTEN RULES

A number of symposium speakers referred to the mass of rules, regulations, procedures and legislation that surrounds the C/SCSC environment in the US. A contractor seeking a validation is evaluated by the Joint Implementation Guide (JIG) but matters of interpretation and requirement that are implied in the JIG are actually contained in surrounding the US regulatory and documentary environment.

If a contract is proceeding exactly according to plan, either approach is acceptable to both parties. In the rare event that a major contract gets significantly ahead in both schedule and planned physical achievement (milestones), the Commonwealth may encounter some difficulties if claims for payment exceed the forecast draw down rates. But it is when a contract fails to meet schedule, encounters cost overruns or does meet the physical performance milestones that the real difficulties arise.

Having failed to meet a milestone, most contractors would prefer to revert to some sort of Earned Value or cost reimbursement payment to ensure that cash flow is maintained. But many Commonwealth representatives expressed concern about the veracity of claims based on reporting data that is perceived as having the primary role of keeping the money flowing. Industry's general reluctance to expose real costs to the Commonwealth in a firm fixed price environment begins to be a major handicap if costs and Earned Value get substantially out of step for a variety of perfectly valid reasons. The Commonwealth expressed a general willingness to be flexible and sympathetic towards contractors experiencing difficulty provided they are satisfied that real costs have been incurred even though Earned Value expectations have not been met.

The Symposium could not resolve the issue satisfactorily. Contractors expect the Commonwealth to "bale them out" when major difficulties arise but under the usual variable price contracting basis they are reluctant to allow the Commonwealth access to the data that provides the degree of early warning that is needed to make appropriate budgetary adjustments. A compromise, recognising that in major contracts both parties have equal interests in the success of a project, is part of the solution while the firm fixed price scenario persists. In the long term, a move towards cost plus or fixed price incentive contracting would see the problem of cost exposure virtually disappear.

IMPLEMENTATION SCHEDULE

There was a general concern that the times laid down by the Commonwealth for contractors to achieve a C/SCSC validation were unrealistic. The Commonwealth is considering extending the US standard 90 days to perhaps 180 days. In over 20 years of operation in the US, the average time to achieve initial validations is approx 11 months.

The Commonwealth expressed a willingness to treat the contractually stated period similar to many road speed limits or the carry-on baggage limits on an aircraft - reasonable departures from the contract figure are expected but the outrageous will normally not be accepted. As a guide, DPMS believes an established company should be able to achieve validation inside 12 months, but a new company created for a particular project may take considerably longer than that. For long term projects, there was discussion on the concept of a phased validation process able to cope with the lengthy transition periods between contract award and the actual commencement of physical activity that can be meaningfully monitored or measured.

The contractual figure of 180 days is unlikely to be changed - provided a contractor is clearly moving towards achieving validation in a reasonable time, a liberal interpretation of this figure, with goodwill on both sides, is seen to offer a more flexible approach than a rigid figure (270? 360? 450? days) accompanied by strictly enforced penalties.

C/SCSC DUALITY WITHIN THE COMMONWEALTH

A number of industry delegates questioned the Commonwealth's long term commitment to applying and enforcing the C/SCSC approach to project management both internally and externally. In the past, industry believed it had borne the cost of implementing many types of Government sponsored schemes that had been only marginally effective, if at all, in achieving their stated aims. Would the C/SC initiative be yet another scheme that demands considerable up front commitment from contractors but fades away as political or financial circumstances change?

The evidence to date, as pointed out by DPMS, clearly indicates that Government has made a long term commitment to the concepts and, as in the US, believes the approach could be beneficially applied in other departments outside Defence. But all concerned parties should keep in mind that what has taken 20 years to evolve in the US will not happen overnight in Australia. A significant education effort is required in Departmental and commercial circles. Within Defence, a major thrust is being directed at removing many of the present ambiguities in the Commonwealth's C/SCSC stance.

The differing views expressed by various Project Offices and the regulatory environment surrounding Defence contracting and finance activities must be rationalised if Government is to be perceived as presenting a consistent policy front to industry. Existing contracts that require C/SCSC compliance, but still impose additional reporting and monitoring requirements such as CMACS and CDAMS, transmit a message to industry that the Government does not fully trust or believe in the C/SCSC approach, despite statements to the contrary.

DPMS believes that the on-going internal education process within Defence and other Departments will gradually result in the development of regulations and policy that will ensure consistent application and interpretation of the C/SCSC concepts across all the Government/commercial interfaces. It must be recognised, however, that some of the existing anomalous situations may take considerable time and effort to resolve.

ARBITRATION AND THE UNWRITTEN RULES

A number of symposium speakers referred to the mass of rules, regulations, procedures and legislation that surrounds the C/SCSC environment in the US. A contractor seeking a validation is evaluated by the Joint Implementation Guide (JIG) but matters of interpretation and requirement that are implied in the JIG are actually contained in surrounding the US regulatory and documentary environment.

In the event of a dispute arising between Government validators and the contractor under review, the Performance Measurement Joint Executive Group (PMJEG) can act as a house of review and court of appeal. Thus the PMJEG in conjunction with some other representative bodies, provides the core of an arbitration system for C/SCSC matters in the US.

There are no direct equivalents to either the regulatory environment or the arbitration system in Australia. The potential difficulty in using the JIG as the validation vehicle for Australian contractors, in the absence of a suitable support environment, was recognised by Government and industry delegates alike. An adequate solution to the problem was not arrived at during the Symposium, but DPMS recognises that the establishment of a suitable arbitration body requires serious consideration in the near rather than far term.

C/SSR - A RELAXED C/SCS?

Throughout the Symposium there was reference to the Cost/Schedule Status Report (C/SSR) as a relaxed or less than "full blown" C/SCSC validated system. In the US, the C/SSR was introduced as a contract data item some years after the introduction of the C/SCSC based project performance measurement system. The requirement to produce the report, which contains many data elements that are common to a criteria based management system, was generally levied on contractors that already had a C/SCSC validation, and thus a system that could produce the data elements required for the report. The C/SSR was regarded as a "relaxed" requirement largely because the system which produced the data would not be subject to validation.

In Australia, the C/SSR is being introduced in parallel with the C/SCSC based approach to project management and is a required output of contractors who may not have had any previous exposure to C/SCSC concepts. As the C/SSR is only a report and not a management system, nor an approach to management in itself, there presently exists no mechanism to determine a contractors' ability to produce the report. The American tendency to use the JIG as an assessment vehicle, but not go through the validation process, is not valid in Australia because contractors will normally not have a C/SCSC based system in place. Thus there is a clear need to produce a "de-tuned" version of the JIG providing guidance on how to conform to a less rigorous interpretation of the criteria.

Navy is currently involved in developing C/SSR implementation guidelines but there was general recognition among both Government and industry delegates that individual service or project related proposals may not be the most effective way of developing a universal set of C/SSR guidelines that enjoy the standing and flexibility of application inherent in the JIG.

DPMS accepted that with something of a vacuum currently existing in the C/SSR area, there is a danger that individually developed short term solutions to the problem could be detrimental to the long term development of a cohesive C/SCSC to C/SSR layered approach to project management performance measurement. US agencies are also currently tackling this problem and developments will be closely monitored by DPMS.

COSTS, BENEFITS AND WHO PAYS

The majority of industry delegates transmitted directly or indirectly their concerns about the costs of implementing a C/SCS and who would pay, but few indicated they had given any thought to the benefits attributable to having a system in place. There were some exceptions - these were organisations who had invested the time and effort required to find out what the criteria were all about and how they would impact their operations. But it was clear that many organisations had pre-conceived negative impressions about C/SCS being a Government imposed system that would cost a fortune to implement and do little more than generate large volumes of paperwork for the contractor.

Many of the concerns about timetables, costs to achieve validation, operating costs and real benefits to the contractor had been relieved by the end of the Symposium. Formal presentations, case examples that arose during the workshops and informal discussions resulted in a general awareness and perception that the concepts were sound and would significantly raise the standard and effectiveness of project management practice in both Government and industry circles.

But the question of who pays remained of paramount importance to many delegates. Government representatives made it clear that they expected to find the cost of implementing and running a criteria based C/SCS embedded in a contractor's tender response, albeit not overtly, and that in the final analysis the Government usually pays. They did not however, accept the carte blanche allocation of all C/SCS implementation costs to a particular contract, instead expecting some recognition on behalf of the contractor that there were benefits accrueable across the whole of their organisation once the system was in place.

VALIDATION - THE WORKUP AND REWARD

One of the most important elements in a contractor's plan to achieve validation is continual liaison between the company development team and DPMS staff. There should be no surprises for either the Government or contractor team when a system is presented at a Readiness Review, if continual contact during the development process has been effectively used to monitor each other's perceptions and expectations. DPMS made it abundantly clear however, that his staff could not be used as unpaid consultants who would provide a solution to every problem raised by a contractor. However, Government staff would provide strategic guidance and comment on proposed methodologies or interpretations of the JIG etc, but will not provide solutions or act as a system development team.

Misplaced confidence and going it alone without involving DPMS staff during the development process could be doubly costly to a contractor as DPMS indicated that in his view the Government should consider charging for the effort involved in mounting a Readiness Review if it became obvious that a contractor had made only a token effort in the expectation that the review team would identify and fix all the deficiencies.

The considerable cost involved in achieving a validation led to a perception by some delegates that they should be given preferential treatment when bidding for future Defence contracts. DPMS advised that the Commonwealth would not give any preferential treatment to validated contractors over non-validated contractors during the competitive bid process. During bid evaluation, a validated contractor may receive maximum points for his management system, but so may a non-validated contractor if his plan to achieve validation is good enough. The advantage for a validated company should come from not having to include the cost of achieving a validation in new contract work. In addition, a validated company's more effective project management system should provide a competitive edge when tendering for non-Defence contracts.

SUBCONTRACTOR FLOW DOWN

Application of the C/SCSC requirements to current and projected major Defence contracts will only require a limited number of prime and major subcontractors to gain a full validation over the next several years. However, the number of subcontractors who will be required to supply information to support validated systems will be substantial, and it was delegates from this group that voiced concern at the type of requirement being placed on them by major contractors.

The discussion highlighted a significant problem in prime contractors' present ability to correctly interpret supporting C/SCSC requirements and produce appropriately worded subcontract clauses. Lacking contract administration and project control staff who had an in depth understanding of the C/SCSC spectrum of reporting possibilities, most major contractors tended to play safe and simply attempt to directly pass on to their subcontractors all the requirements placed on them to operate a validated system.

This has produced a distorted view of what the lower contract level of requirements really are, and a perception that the reporting paperwork and staff required to produce it is out of all proportion to the nature and size of many medium to small subcontracts. Solution of this problem requires an educational effort on the part of prime or major contractors who are required to operate validated system and their supporting subcontractors. Major contractors must produce specifically developed contract clauses that more accurately reflect only relevant data and reporting requirements for a range of contract types, while subcontractors must gain sufficient understanding of the total C/SCSC requirements to recognise a reasonable from an unreasonable contract clause and support their own position.

Individual companies must decide whether they can afford to gain this interpretative skill by trial and error or if the likely financial penalties of getting it wrong the first time justify an investment in staff training and expert assistance.

On major contracts such as the ANZAC Ships Project, the prime contractor has a responsibility to accept major subcontractor's systems where their involvement meets the C/SCSC implementation policy thresholds. Most delegates representing Australian subcontractors were aware of the future advantages of obtaining a Defence "validation" rather than a prime contractors' "acceptance", which would only be applicable to the current contract. Defence, however, were not in a position to automatically carry out all possible validations and DPMS advised that major subcontractors who wish to gain a Defence validation rather than a prime contractor "acceptance" should begin negotiations with the Department at the earliest possible stage.

He also advised that the Government may require prime contractors to compensate the Department for undertaking the validation task where it was not a contractual responsibility.

Delegates representing Australian companies expressed a concern that overseas based subcontractors may have enjoyed a financial advantage when bidding for work because of the limited ability of the Commonwealth or local prime contractors to enforce or monitor compliance with the criteria. The perception was not satisfactorily put to rest but it was pointed out that so long as the responsible agency has confidence in the validity of cost (price) or schedule in a fixed price environment, there is no real advantage in attempting to enforce a strict C/SCSC compliance particularly when the subcontractor concerned may have a 50 year history and a gross annual turnover equal to the Australian GNP. It is anticipated that a more realistic understanding of what information must be gained from a subcontractor will be reflected in future correctly structured flow-down clauses and agreements that should result from increasing levels of experience and education among all parties concerned. The perception of a dual standard, one for overseas and one for local contractors, should then rapidly fade away.

WORK BREAKDOWN STRUCTURES

The relationship between the WBS used to bid for a contract and the WBS required to actually do the work was the subject of considerable discussion.

It was widely recognised that where the Government dictates details of the WBS at several levels below the Summary Level, then the WBS used for bidding was essentially a pricing WBS, usually developed according to the Commonwealth's requirement to have some means of comparing competitive tenders. Where this occurs, the winning contractor may have to recast the lower levels of the WBS to reflect the way the work would actually be done, particularly in respect to the requirement of subcontractors. For these cases, there was general recognition that a considerable amount of duplicated effort was involved in developing a dual WBS structure, particularly for large contracts. Delegates were unable to suggest an alternative approach that would meet both the equal basis for comparison criteria and the physical work criteria.

THE FORUM FOR FUTURE DEVELOPMENTS

The implementation of C/SCSC as the basis for project management performance measurement in the US was marred for many years by an adversarial relationship that developed between the Government and the commercial contracting community. Even now, over 20 years down the track, there are major areas of dispute that have remained largely unsolved because no suitable mechanism was developed to permit open discussion on neutral ground between the Government and contracting community. Recent developments in the US have recognised and addressed this situation and much progress is now being made toward understanding the boundaries and expectations of each other's positions.

With less than a year passed since Australia's C/SCSC policy was announced in March 1990, the clear recognition by both the Commonwealth and the contracting community of the value and importance of consultation was manifest in the October Government/Industry Symposium. Many misconceptions about the requirements and expectations of both parties were quickly set to rest before they could unnecessarily develop into issues of contention.

However, there are many other major issues, a number of which have been discussed in the preceding paragraphs, that will require ongoing discussion between contractor and Commonwealth representatives to develop solutions and policies tailored to the Australian contracting environment. A number of options for this future discussion forum were raised during the Symposium:

- a. run an event similar to the Symposium on an annual basis.
- b. establish an industry working party to develop position papers for presentation to the Commonwealth.
- c. use the Australian Performance Management Association as the medium for C/SCSC discussion and policy development.

There was no clear agreement achieved during the Symposium on the exact nature of the Government/Industry consultative forum, but the need for some mechanism to further exploit the open, co-operative discussions begun at the Symposium was universally agreed.

The two most pressing issues for discussion were the development of an Australianised JIG and a set of guidelines for evaluating C/SSR compliance. The opportunity for an all party group to develop these documents would ensure that the contracting community could identify with and have some ownership of the policies they are required to implement, a factor that is vital if the Australian C/SCSC implementation is to avoid degenerating into the adversarial situation that has characterized the US C/SCSC community for so long.

CONCLUSION

The Australian Defence contracting community has received a clear indication that the Commonwealth is committed to raising the quality of project management in this country using the Defence dollar to attract converts to its cause. The Government does not have the resources to develop its own implementation from the ground up and has therefore elected to base its program on proven US doctrine, recognising that variations and interpretations will be required to cope with the Australian commercial and legal situations. The Government has committed a sizeable resource to the venture and expects industry to shoulder its share of the initial burden involved in establishing the will and the capability to achieve an aim that is intended to enhance our international level of commercial competitiveness.

A successful C/SCSC implementation will require industry to invest in training for staff at all levels and review some of their management styles. To gain the maximum benefit from a criteria based performance measurement system will require a shift from the traditional authoritative management style, widely practised in Australian industry, toward a more participative approach that delegates responsibility and authority as close as practicably possible to where the work is actually done. An enlightened approach to industrial relations and work practices will be required from management and unions if the benefits of the C/SCSC approach are to be felt by both parties.

There will be difficulties, obstacles, delays and excuses but participants in the process at all levels are reminded of the President of the PMA, Joe Houser's final advice:

**"If you are not part of the solution,
you must be part of the problem."**