Next Generation Performance-Based Support Contracts – Achieving the Outcomes that Defence Requires
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Executive Summary

“Implementing a performance-based support agreement is one of the most difficult tasks in [the] DoD.”

1. The Department of Defence has made a commitment to the Australian Government to undertake a Strategic Reform Program (SRP) that will enable efficiencies to be re-invested back into future Defence capability. The Defence Materiel Organisation (DMO) will lead a number of reform initiatives, including the use of Performance-Based Contracts (PBCs) to achieve two Key Objectives, namely:

   ▪ enhancing the ability to meet Capability Preparedness requirements, and
   ▪ reducing the Total Cost of Ownership (TCO).  

2. The objectives of this paper are:

   ▪ to address the extant version of ASDEFCON (Support) to identify the best approach for a standardised framework for PBCs to enable support contracts to appropriately contribute to the outcomes that Defence requires; and
   ▪ to identify changes that need to be made to the extant processes and organisational arrangements to enable this standardised framework to be effectively implemented and applied.

3. For the purposes of this paper, a PBC is defined as a contract that is structured to motivate the supplier to achieve particular outcomes, rather than on the performance of individual activities. Key characteristics of PBCs are:

   ▪ a focus on outcomes, outputs and quality, rather than how the work is performed;
   ▪ the use of measurable performance standards that are tied to the required outcomes;
   ▪ clear accountability for contract outcomes (ie, the supplier should have control over the processes to deliver goods and/or services);
   ▪ the inclusion of a range/combination of monetary and non-monetary contractual incentives and disincentives (rewards and remedies), which are specifically aimed at motivating contractor performance towards achievement of the required outcomes while also providing an appropriate governance framework for the contract; and
   ▪ that the contracts are typically part of a larger performance-based framework.

4. This view of PBCs is different from other organisations and prior practice in the DMO, in that it integrates the range of rewards and remedies into a single framework to promote performance across both Key Objectives, while ensuring sufficient governance is effected consistent with cost and risk. Performance measurement is a key part of this framework (as it is in all PBCs), but performance measurement and the associated rewards and remedies tied to this measurement are only considered to be one part of a PBC. An overview of PBCs is provided in Section 2 of the paper.

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1 Dean Newman, “DoD PBL – an Example of Entrepreneurial Public Management”, Defense Acquisition University, 10Jan06, page viii.
2 TCO in relation to a Capability System is the sum total of all costs, both direct and indirect, incurred over the total life-cycle from concept through to disposal.
5. PBCs have been used in the DMO, other Defence groups, and overseas for a number of years. Aerospace System Division (ASD) has taken the lead in the DMO for a standard approach through the ASD PBC Handbook and has established a number of PBCs that address the Capability Preparedness requirements, but has not yet focussed on reducing TCO. Other DMO Divisions have also implemented a number of PBCs.

6. Internationally, the US has been developing a PBC approach for about a decade as part of its broader Performance Based Logistics (PBL) program. The UK has also implemented contracts for availability and capability along similar lines. Both make significant claims regarding the benefits of PBCs; however, not all of these may translate into the Australian environment. The international Defence experience with PBCs is discussed in Section 3 of the paper, while the Australian Defence experience is discussed in Section 4.

7. The success of an outcome-based PBC framework will depend on beneficial objectives for both Defence and defence industry. Broadly, a viable defence industry is a joint objective. More specifically, defence industry objectives should include such aspects as:

- achieving security of supply,
- achieving diversity of supply,
- maintaining industry capability in defiance of workforce skills shortages, and
- retaining profitability from a shrinking Defence support budget.

8. These objectives are unlikely to be achieved unless structured within a framework where the continuous improvement of industry performance is incentivised to align with Defence’s objectives. Instead of transactional activities, process and product improvements enabled by a performance-based regime could promote efficiency and reduce the need for scarce labour resources. At the same time, more efficient processes should mean greater profit per unit of input cost, and allow profitability to be maintained while reducing the TCO to Defence, and all fitting within a capped or shrinking sustainment budget.

9. The governance framework for any contract must recognise that the quality of an outcome is often dependent upon the quality of the processes used to produce that outcome. To this end, any PBC approach must ensure that all aspects of the contract-management framework are aligned and harmonised to provide assurance of the required outcomes. In other words, while PBCs focus on outcomes, the overall governance of the contract must also be addressed to ensure that a manageable contract results. This additional focus requires an understanding of the business and the necessary interactions between all parties involved in support, which must span the different types of services required and the various products being supported.

10. In light of the above, particularly the imperatives arising out of the SRP, a standardised approach to PBCs is now required, which satisfies the support contract requirements and integrates into the bigger picture. This standardised approach to PBCs (ie, the ‘Next Generation PBC framework’) must be one that:

- addresses both Key Objectives;
- ensures that the implementation is (relatively) straightforward for each drafting team;
- is scalable (to the maximum practicable extent) across a wide range of support contracts (ie, whole of system, subsystem, components, common items, etc);
- is applicable (to the maximum practicable extent) across all environments (ie, land, sea, aerospace, Information Technology (IT), etc);
appropriately motivates and ultimately drives contractor behaviour in line with the contribution of
a contract to the Key Objectives; and

provides options to the DMO to achieve the best outcome across the envisaged contract-
management situations.

11. A staged approach to the implementation of PBCs in the DMO is suggested, which enables the key aspects
of the proposed approach to be developed and implemented quickly, while also allowing extra time to
resolve the more challenging aspects.

Issues and options

Consideration 1

Ensure that Next Generation PBCs are developed and implemented within a broader
performance-management framework, consistent with the Key Objectives of enhancing
Preparedness and Reducing Total Cost of Ownership (TCO).

a. Support contracts do not exist in isolation, and are an integral part of the Support System for a
product. The effective implementation of Next Generation PBCs will require changes to the
capability-development, acquisition and in-service support processes. To this end, issue 1 is
supported by the following improvement considerations:

Options:

1.1 Develop and document the Support Procurement Strategy (SPS) early in the life-cycle, concurrent
with the Acquisition Strategy (AS) for system procurement.

1.2 Develop SPSs consistent with the Defence needs, as defined through the capability-development

1.3 Give greater prominence to Key Performance Indicators (KPIs) in the Preliminary MSA in the
capability-development process and have them agreed before any solicitation activities occur.

1.4 Implement a process to ensure that an SPS is based on a rigorous analysis process to identify the
optimum solution for new/replacement support contracts, integration with existing support
arrangements, performance management, and reducing TCO.

1.5 Adopt the concept of a Product Support Integrator (PSI) as the person or entity responsible for
integrating organic and contractor support services to achieve the Key Objectives for each
Materiel System.

12. The Next Generation PBC framework recognises that PBCs are part of a bigger picture and that the best
time to ‘get it right’ and establish a framework that maximises the likelihood of achieving the Key
Objectives is early in the capability life-cycle, prior to solicitation. Oversights at this time get magnified
as the life-cycle progresses and can preclude the adoption of more cost-effective options for support. To
help to avoid these outcomes, this paper considers that the upfront analysis processes for support
contract(s) should be strengthened through the adoption of a Support Procurement Strategy (SPS). This
process is integral to the development of performance-based agreements in the US, where it is
underpinned by a Business Case Analysis (BCA) process. The requirement for an SPS is already part of
ASD’s process framework, and this report envisages that this particular practice would be enhanced and
expanded to align with approach for the Next Generation PBC framework.

13. The Preparedness requirements placed on a Materiel System are derived from capability requirements,
with resulting performance measures and conditions defined in the DMO’s MSA Product Schedules. The
Mortimer Report states that the DMO needs to further develop key performance indicators in MSA Product Schedules. These improvements are also important for developing effective PBCs because the performance measures in these schedules are part of a hierarchy of measures that are devolved down into the requirements for both the products being obtained through acquisition contracts and the DMO-managed PBCs. Moreover, improved governance and planning processes need to be applied during the ongoing capability-cost trade-off process to ensure that Preparedness requirements are validated and to properly inform cost-conscious decision-making throughout the capability lifecycle.

14. Preparedness is the combination of readiness and sustainability. Some of the factors that affect the ability to achieve Preparedness are within the control of the acquisition contractor (eg, reliability and maintainability), others are in the contract of the support contractor (eg, supply chain responsiveness and efficiency), while the remaining factors are within the control of Defence, including the DMO. The Next Generation PBC framework needs to be built upon the recognition that a support contractor is only responsible for certain elements of Preparedness.

15. The initial solicitation in a project will establish the baseline for moving forward; hence, there is an imperative to agree the KPIs in the Preliminary MSA before solicitation activities occur. There are often interactions between an acquisition contract and the associated support contract(s), which can affect the ability to establish appropriate support contract arrangements over the Life Of Type (LOT) of a product. For example, the acquisition contractor is responsible for the detailed design of the Support System to meet the required KPIs for support, which are included in the Operational Concept Document (OCD) and the Function and Performance Specification (FPS).

16. The US implementation of PBL recognises the role of a Product Support Integrator (PSI), which is the person or entity that is responsible for producing an integrated Support System solution across all of the product support providers and for managing this integration over the LOT of a product. This concept could be adopted into the DMO’s process framework for implementing and managing support arrangements during all stages of the life-cycle.

Consideration 2
Develop the DMO Next Generation PBC Template using ASDEFCON (Support).

17. The ASDEFCON (Support) template is already an outcomes-oriented template, which is suitable for enhancement to incorporate the Next Generation PBC framework with minimal impact upon most aspects of the template. The V2.1 update to the template makes it more suited to PBCs by removing many of the current conflicts and obstacles and by streamlining aspects of performance reporting and reviews. This revision establishes a baseline that will better enable the integration of the Next Generation PBC framework, which is currently planned for V3.0. Issue 2 is supported by the following improvement considerations:

Options:

2.1. Develop a contracting template for PBCs that is integrated into the structure of ASDEFCON (Support) to ensure a standardised approach and to provide greater contract consistency.

2.2. The Next Generation PBC framework should be derived from, and build upon, the ASD PBC framework (noting that elements of the framework will need to be changed and other elements added to accommodate both Key Objectives and the range of DMO support contracting requirements).
2.3. In recognition of the development of ASDEFCON (Shortform Support), which will address lower-level, transaction-based support contracts, the Next Generation PBC framework should only address larger-scale support contracts at this time.

2.4. Retain and enhance the ASDEFCON Guiding Principles and the Seven Principles for Improving Procurement Processes [Mortimer Report] as the basis for developing the Next Generation PBC framework.

2.5. Open-book accounting is a necessary condition for the implementation of PBCs, and should be adopted both during solicitation and throughout the contract term.

18. The Next Generation PBC framework should be integrated into the ASDEFCON (Support) template and not developed as a ‘bolt-on’ module. ASDEFCON (Support) was always intended to be a performance-oriented contract, and this proposed approach accords with the original vision for the template. A new framework of this type also needs to be woven through the template to ensure that it is consistent and coherent, which would be much more difficult to achieve if undertaken as a ‘bolt on’ module. Moreover, the complexity of implementing a sound PBC would increase significantly if this framework were to be separated from the template. Finally, this approach recognises that there are few options, other than to use PBCs, for implementing larger-scale support contracts.

19. The ASD PBC framework is mature (and continuing to grow in maturity) and represents a sound basis for moving forward. Many DMO Divisions have utilised the approach, including Helicopter Systems Division (HSD) and Electronic Systems Division (ESD), and there is a growing body of experience and expertise in this methodology across both DMO and industry. Any significant change in direction, therefore, will involve considerable rework and retraining and is likely to have significant cost implications that should not be underestimated. For all of these reasons, this paper considers that the Next Generation PBC framework be derived from, and build upon, the ASD PBC framework.

20. Neither the ASD PBC approach nor the existing ASDEFCON (Support) template (which does not specify any performance measures) address time-variant performance measures (eg, the changing system availability given scheduled maintenance and upgrade programs) or the requirement to review and update elements of the performance-measurement framework over the contract period. These elements are considered for inclusion in the initial tranche of work to develop the Next Generation PBC framework.

21. An ASDEFCON (Shortform Support) is currently under development, which enables the current template to address the PBC requirements, while the Shortform version can be used to address the performance-management framework for transaction-based support contracts. This approach significantly simplifies the development of the Next Generation PBC framework for ASDEFCON (Support) because the framework does not have to accommodate the lower end of the spectrum for which a different, and much simpler, approach should be developed. As this template is still under development, this paper considers that the Next Generation PBC framework should concentrate at the higher end of complexity for the first tranche of development. This approach simplifies the development efforts, while concentrating attention at the level where the maximum return on investment is likely to be achieved.

22. ASDEFCON (Support) was developed using a set of guiding principles, which are listed at Annex A and which were agreed with Defence industry during the initial development of the ASDEFCON templates. Additionally, the Mortimer Report includes a set of higher-level contracting principles that have been agreed between DMO and Defence industry. The ASD PBC framework was developed based on a set of principles and LSD has developed a draft set of principles for PBCs in the Land environment (refer Annex B). In keeping with these principles-based approaches, the Next Generation PBC framework should be developed using a set of agreed principles. The Mortimer Report principles and the current ASDEFCON (Support) principles are considered to still be valid, relevant and applicable to the Next Generation PBC
framework; however, they need to be supplemented with additional PBC-specific principles, potentially along the following lines:

- Support contracts must be developed and implemented as part of a broader performance-management regime to promote the Key Objectives of enhancing Preparedness and reducing TCO.
- Acquisition contracts must be developed in due consideration of the need for support contracts to promote the Key Objectives.
- Acquisition and support contracting strategies should promote competitive tension to the maximum practicable extent over the LOT, commensurate with value-for-money considerations.
- The performance-management regime for a PBC for support should be commensurate with the scope of the contract and the associated risks being borne by both parties.
- The PBC framework should not result in safety being compromised or the required safety-management processes and practices being undermined.
- Firm-priced contracts should remain the standard approach for support contracting, but contractual mechanisms must accommodate scope uncertainties.
- PBCs for support should utilise a standardised approach that is applicable DMO-wide, while providing sufficient flexibility to accommodate differences arising out of the respective environments, SPO orientations (i.e., platform or commodity), products being supported, outsourcing models, support imperatives, and contract scopes.
- Support contracting strategies should promote the strategic imperatives in relation to security of supply and diversity of supply.
- PBCs for support should be developed and implemented in due consideration of the integration of these PBCs into the overall Support System. This integration must be managed and adjusted, as required, over the LOT of the products being supported.
- PBCs for support should encourage innovation in the provision of support services.
- Performance measures in PBCs should be Specific, Measurable, Aligned/Attainable, Relevant and Timely (SMART). The performance-measurement regime should be as simple and straightforward, to implement and operate, as the situation allows.

23. The principles identified here are targeted at the contract level, but they explicitly and implicitly address the bigger picture as well as covering issues that are the subject of later options.

24. Open-book accounting is considered to be an essential aspect of PBCs because it is necessary to understand the nature of the input costs and how they relate to the outcomes sought to ensure that the performance-management framework for a PBC is sound and will be effective in motivating the contractor to achieve these outcomes. This cost visibility needs to be retained over the life of a contract to ensure that, as changes occur, the performance-management regime can be adjusted appropriately so that it can continue to remain valid.

**Consideration 3**

Enhance performance through a framework for a performance-management regime that is both consistent and adaptable to the needs of DMO PBCs.

25. While ASDEFCON (Shortform Support) has been excluded from the initial tranche of development, the Next Generation PBC framework must be sufficiently flexible to accommodate the depth and breadth of
support contracting required in the DMO. This framework must be underpinned by a performance-management regime that is also flexible and scalable commensurate with the scope, cost and risk for each support contract requirement. Issue 3 is supported by the following improvement considerations:

**Options:**

3.1 The solution for the Next Generation PBC should include a ‘toolbox’ of performance measures, rewards, remedies and contract-management tools.

3.2 In parallel with the development of the Next Generation PBC framework, environmental working groups should be assembled to address the performance-measurement requirements to integrate with this framework, which provide suitable measures for the differing environments, SPO orientations, products being supported, Rates Of Effort (ROEs) and surge requirements, outsourcing models, support imperatives, and contract scopes.

26. Section 6 of the paper provides an overview of the rewards and remedies available to motivate performance as well as a discussion of the nature and role of performance measurement in the context of performance management. A number of additional rewards and remedies are included in the ASDEFCON (Support) template V2.1 update, including remediation plans and step-in rights. Notwithstanding, there is no ‘one-size fits all’ approach and the Next Generation PBC framework must be scalable and adaptable to accommodate the differences arising out of the respective environments, SPO orientations (ie, platform or commodity), products being supported, outsourcing models, support imperatives, and contract scopes.

27. As stated above, some elements of the ‘toolbox’ of options available to the drafter are not able to be resolved at this time. Issue 7 identifies the more significant issues in this regard.

28. Enhancing Preparedness is one of the Key Objectives, which is affected by the nature of the equipment and the performance of the Support System. The nature of the equipment and its operational use will vary depending upon the environmental domain (eg, maritime, land, air and electronic) and the usage characteristics (eg, ROE, operational environments and distribution of assets). The performance of the Support System will also vary depending upon the nature of the equipment and the operational characteristics, as well as in relation to specific support issues, such as the SPO orientation (eg, platform or commodity) and the scope of particular support contracts.

29. PBCs do not work effectively without sound performance measures. While ASD has developed a range of suitable performance measures that are applicable to the aerospace environment, the other Divisions need to develop a similar suite of measures. As such, this paper considers that, in parallel with the development of the Next Generation PBC framework, environmental working groups should be assembled to address the performance-measurement requirements to integrate with this framework.

30. Individual performance measures must have certain characteristics to make the effective, which can be summarised using the SMART acronym, as follows:

- **Specific.** The performance measures and what is being measured are both clearly understood by those involved. The measures are not ambiguous or open to interpretation.

- **Measurable.** The performance measures are easily measurable in terms of the time, effort, and cost to collect quality data.

- **Aligned / Attainable.** The measures are aligned with the service outcomes required and for which the contractor has responsibility. The measures are achievable, reasonable and credible under the conditions expected.
- **Relevant.** The measures are derived from, and act as suitable indicators of, the outcomes that Defence requires, which includes the notion of adequate scope.

- **Timely.** The performance measures are current. If required, the measures will scale automatically or be adapted to forecast variations in the system or services, without the need for contract change.

31. The DMO needs staff with the skills to define performance measures that are suited to the scope of the different contracts and the individual nature of the systems, subsystems or components being supported. Once the performance-measurement regime has been defined, DMO needs staff to be able to interpret the data and analyse the associated trend information.

### Consideration 4:

**Ensure ongoing reductions in Total Cost of Ownership (TCO) over the Life Of Type (LOT) of systems and equipment through a range of contractual and other mechanisms that promote this Key Objective.**

32. Achieving reductions in TCO is one of the Key Objectives and primary outcomes required of the SRP. The DMO’s main strategy for reducing TCO has been, and will remain, through the use of competitive tension. Nevertheless, there are strategies that can reduce TCO by encouraging competitive tension and by collecting savings during a support contract. These strategies are embraced by the following improvement considerations:

#### Options:

4.1 Adopt strategies to promote competitive tension over the LOT.

4.2 Provide internal contract mechanisms to facilitate reductions in TCO.

4.3 Incorporate Award Terms, to implement rolling contract extensions, as a primary mechanism for reducing TCO in a competitive environment.

4.5 Initial contract terms should be a minimum of five years in length, award terms should be a year, and the decision to grant an award term should be made at least two years in advance.

33. Competitive tension is unlikely to be maximised at the platform level because there may only be limited competition for the support of a complete platform. There may be significantly increased competition, however, at the lower levels of the product breakdown structure for that system. There may also be better levels of competition for non-platform elements, such as a simulator or standalone items of test equipment. Even if there is only limited competition for these lower-level items, the use of lower-level contracts reduces the likelihood of non-value-added processes and overhead costs being applied by the prime contractor.

34. Strategies to promote competitive tension should be addressed in the SPS and may result in different structures being adopted for individual support contracts. The role of the PSI will also be paramount if greater numbers of support contracts are implemented. Notwithstanding, the adoption of this strategy will require strong analytical processes and supporting governance arrangements. Promoting competitive tension is considered to be consistent with the DMO’s objectives to promote the strategic imperatives in relation to security of supply and diversity of supply.

35. Award terms, or ‘rolling contract extensions’, entitle the contractor to an extension to the length of the contract as a reward, within the provisions defined in the contract. In the context of performance management, award terms can be integrated into the contract-management framework to reward achievement against both of the Key Objectives. Award terms are particularly suited to reducing TCO, however, given that the performance of the services is able to be effectively incentivised through other,
more immediate, rewards and remedies. Reductions in TCO often take longer to formulate and implement, can involve upfront costs to achieve downstream savings, and can require changes to more than just the contractor (e.g., changes to interfaces between the various parties and changes to the division of responsibilities between the various parties). Given that many initiatives to reduce TCO will involve upfront costs, which require time to amortise, the use of award terms at the end of an initial contract period makes them more in-tune with achieving reductions in TCO.

36. There are some significant challenges with implementing award terms, which will need to be worked through as part of the development of the Next Generation PBC framework. Some of these challenges have already been resolved, particularly in relation to initial contract terms, award term lengths, and decision timeframes for granting award terms, as follows:

- A minimum initial contract term of five years is suggested because this period represents the best balance between achieving Defence’s goal to reduce TCO, informed decision-making, resource utilisation, and tender costs.
- Award terms of one year are considered to be the best balance between the effectiveness of the incentive, contract administration, and the timeframe for a contractor to obtain a return on investment for an initiative to achieve improvements and reductions in TCO.
- The minimum decision period for granting an award term is approximately 21 months to provide the DMO with sufficient time to develop and implement a replacement contract.

37. The exact mechanisms for harvesting savings are still being assessed, but this paper does not recommend setting savings targets for reductions in TCO because this could result in these savings targets being included in the contract price. However, objective measures for assessing reductions in TCO are likely to be problematic without the use of savings targets. Semi-objective measures could be implemented through the use of word pictures on an ordinal scale. The measures for assessing reductions in TCO could also be wrapped into the Defence Company ScoreCard process.

Consideration 5
Develop the required staff capabilities and support.

38. The development and implementation of the Next Generation PBC framework will not be successful without accompanying guidance and training. In fact, the biggest risk to the success of the Next Generation PBC framework is assessed as the lack of appropriately experienced and skilled PBC practitioners. Furthermore, given that many performance measures will be unique to the environmental domains, the practitioners will need to be located within each of these domains, with access to a central coordinating and standardisation area. In light of these issues, Consideration 5 is supported by the following Sub-Options:

Options

5.1 Develop guidance for all parts of the ASDEFCON implementation of the Next Generation PBC framework to provide DMO staff with an accurate reference source.

5.2 Expand on existing training to provide DMO staff with the essential core knowledge and skills to implement PBCs with ASDEFCON (Support) templates.

5.3 Expand on the core ASDEFCON (Support) Contracting Helpdesk, with the capability to provide technically oriented advice for tailoring the Statement of Work and performance-management process.
5.4 Develop Centres of Expertise for each environmental domain to provide contract developers and managers with advice and assistance relevant to the Preparedness and performance-measurement requirements particular to the systems and environments. (Expand the existing ASD PBC support and develop like-support in other divisions).

39. Guidance for all parts of the ASDEFCON (Support), referring to the Conditions of Tender, Conditions of Contract, Statement of Work and supporting attachments and standard assets, provide the necessary basis for understanding the templates and identifying the likely nature for tailoring clauses, including optional clauses that can be transferred to the contract and the linkages between clauses throughout the template. These are also the basis for training and the knowledge needed for those providing advice. The possible combinations of work streams for different activities within a contract, performance measures, rewards, remedies and management activity will be significantly increased by the Next Generation PBC framework; creating even greater need for this guidance.

40. The existing ASDEFCON (Support) training is generic to the understanding of the Statement of Work, and related clauses of the Conditions of Contract and Conditions of Tender, with only minimal discussion on the principles of performance-based contracting. The introduction of PBCs as the principle support contracting approach will necessitate an extension to existing training for those who have already attended ASDEFCON (Support) courses, and complete template training for those new to the templates. The need to provide some level training for contractors should be considered also.

41. Procurement and Contracting Branch currently provide help desk support for the commercial provisions of the ASDEFCON templates. The technical help desk has not been staffed for some years, which is a noted shortfall. The complex nature of PBCs, and limited existing experience within the DMO, will make the success of implementing the Next Generation PBCs dependent up on both readily available advice and assistance (assistance that will be supplementary to environmental domain specific guidance, A technically-oriented help desk is required to address the existing shortfall and to enable a timely introduction of effective PBCs.

42. Each environmental domain has a need for performance-management regimes that are suited to their environments, the various systems supported, and primary inputs to their contracts (including technical regulatory requirements). In addition to the need for core ASDEFCON (Support) and Next Generation PBC framework advice and assistance, Centres of Expertise are required for each environmental domain in order to develop and maintain domain-specific guidance and provide contract drafting and management assistance. ASD has started down this path in support of the ASD PBC framework; however, this needs to be expanded and duplicated across the DMO.

**Consideration 6**

Adopt a phased approach to the development and implementation of the Next Generation PBC framework.

43. A staged approach to the implementation of PBCs in the DMO is suggested, which enables the key aspects of the proposed approach to be implemented quickly, while also allowing extra time to resolve the more challenging aspects. The following options highlight the major areas that will not be included in the initial tranche of work for the development of the Next Generation PBC framework.

**Options:**

6.1 Develop the PBC framework for ASDEFCON (Shortform Support) to address lower-level, transaction-based support contracts.
| 6.2 | Develop the PBC framework for the management of larger-scale engineering services, such as the development and implementation of major engineering changes. |
| 6.3 | Develop the PBC framework for, the most appropriate approach for managing situations of significant cost uncertainty in a sole-source environment. |
| 6.4 | Expand the ASD PBC approach in the Next Generation PBC framework to be a full pain share / gain share model. |
| 6.5 | Consider options to increase or decrease the length of award terms based on either exceptional performance or sub-standard performance. |
| 6.6 | Consider including the option for Periodic Cost Reviews in the Next Generation PBC framework after more detailed analysis of the relative benefits, costs and risks has been undertaken. |
1. Introduction

1.1. This paper, ‘Next Generation Performance-Based Support Contracts – Achieving the Outcomes that Defence Requires’, has the following objectives:

- to address the extant version of ASDEFCON (Support) to identify the best approach for a standardised framework for Performance-Based Contracts (PBCs) to enable support contracts to appropriately contribute to the outcomes that Defence requires (‘Next Generation PBCs’); and
- to identify changes that need to be made to the extant processes and organisational arrangements to enable this standardised framework to be effectively implemented and applied.

1.2. Under current policy and corporate-level direction, particularly in relation to the Strategic Reform Program (SRP), the acquisition, operation and sustainment of Defence’s Capability Systems need to be focussed on two Key Objectives, namely:

- enhancing the ability to meet Preparedness requirements\(^3\), and
- reducing the Total Cost of Ownership (TCO).

1.3. PBCs for support have been put forward as one of the mechanisms for achieving the Defence Materiel Organisation’s (DMO’s) contribution towards the Key Objectives, noting that these Key Objectives are not the purview of DMO alone, given that:

- Preparedness embraces all of the eight Fundamental Inputs to Capability (FIC), which are personnel, organisation, collective training, major systems, supplies, facilities, support, and command and management\(^4\); and
- TCO in relation to a Capability System is the sum total of all costs, both direct and indirect, incurred over the total life-cycle from concept through to disposal\(^5\).

1.4. The achievement of these Key Objectives will involve trade-offs between the various FIC elements and between different cost components for a Capability System (as well as across different Capability Systems). It is essential to understand this bigger picture to ensure that all considerations are addressed and the likelihood of sub-optimisation is reduced. There are two significant views of this bigger picture that affect the objectives of this paper, namely:

- the capability life-cycle and the associated processes for the acquisition and support of Capability Systems (ie, the time dimension); and
- the organisational view, which includes all of the different organisations that can be involved in the support of a Capability System, as illustrated in Figure 1 (ie, the structural dimension).

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\(^3\) The direction has actually been specified as enhancing system availability; however, the change to preparedness is considered to be more applicable to warfighting and capability considerations. Preparedness is the combination of Readiness and Sustainability (and embraces system availability). See ADDP 00.1, ‘Preparedness and Mobilisation’ for further discussion of Preparedness.

\(^4\) Refer to DCDM (2006) for further explanation of the FIC.

\(^5\) For a Capability System, TCO is equivalent to Life Cycle Cost (LCC).
Many different organisations are involved in the support of a Capability System. The Capability Manager is responsible for coordinating the support services provided by these organisations.

**Figure 1: Organisational Arrangements for Support**

1.5. In relation to the bigger picture and the achievement of the (often opposing) Key Objectives, Defence needs to implement arrangements that optimise the functions of the various support organisations for a Capability System. These arrangements must be based on, and structured around the achievement of, the Key Objectives. The role of the DMO in this process is to design, contribute to the implementation of, and manage the Support System for a Product, where:

- the term ‘Product’ is used as it is in the DMO to refer to an item or a group of items that provide the focus for support, which could be a standalone Mission System (eg, ship, tank or aircraft) or could be a set of items (eg, combat radios or Support and Test Equipment (S&TE)); and

- the term ‘Support System’ means “the organisation of hardware, software, materiel, facilities, personnel, processes, and data required to enable the Mission System to be effectively operated and supported so that the Mission System can meet its operational requirements. The Support System includes the support required for Support System components. The Support System embraces the support responsibilities undertaken by Defence, in-service support contractors and in-service support subcontractors”⁶.

1.6. The DMO typically satisfies the majority of the materiel support needs required by the Capability Manager through contracts with industry. The implementation of these contracting arrangements, including the contracts themselves, must integrate into the bigger picture and must support the achievement of the Key Objectives. In other words, the role of support contracting in the achievement of the Key Objectives must include consideration of:

- the overall outcomes required (which encompass the Key Objectives) from the support contracting arrangements needed for a Product;

- the set of support contracts required to achieve these overall outcomes (eg, a lower TCO may be achieved through multiple contracts than through a single large contract);

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⁶ Adapted from DI(G) LOG 03-6, Defence Policy on Integrated Logistics Support.
where in the life-cycle the support contracts need to be implemented and the opportunities through this process to enhance achievement of the Key Objectives (eg, through obtaining and retaining maximum competitive tension); and

the individual outcomes required from each of the support contracts, including the contribution of each of the contracts to the achievement of the Key Objectives.

1.7. The DMO, therefore, needs to implement arrangements for the support of a Product that:

promote the Key Objectives by:

- adopting strategies that promote competitive tension, both upfront and over the Life Of Type (LOT) of the Product;
- establishing a set of contracts that, collectively, represents the best value for money overall; and

use an array of contracting techniques that makes the achievement of the contractor’s contribution to the Key Objectives part of the contractual performance framework and linked to appropriate rewards and remedies;

accord with the Commonwealth Procurement Guidelines (CPGs) and applicable Defence procurement and logistics policies; and

promote the DMO key theme, ‘Improve Industry Relations and Performance’.

1.8. PBCs for support have been put forward as one of the tools to help achieve the DMO’s contribution towards the Key Objectives. There are many definitions of PBCs; however, for the purposes of this paper, a PBC is defined as a contract that is structured to motivate the supplier to achieve particular outcomes, rather than on the performance of individual activities. Key characteristics of PBCs are:

- a focus on outcomes, outputs and quality, rather than how the work is performed;
- use of measurable performance standards that are tied to the required outcomes;
- clear accountability for contract outcomes (ie, the supplier should have control over the processes to deliver goods and/or services);
- inclusion of a range/combination of monetary and non-monetary contractual incentives and disincentives (rewards and remedies), which are specifically aimed at motivating contractor performance towards achievement of the specified outcomes while also providing an appropriate governance framework for the contract; and
- the contracts are typically part of a larger performance-based framework.

1.9. PBCs have been used in the DMO and other Defence groups, such as Defence Support Group (DSG), for a number of years. In the DMO, Aerospace System Division (ASD) has taken the lead in relation to PBCs, issuing the first version of its Performance Based Contracting Handbook in September 2005 and a second version in February 2007. This work followed on from earlier ASD contracts, such as the Lead-In Fighter (LIF) support contract and the F-111 Business Unit contracts, with the latter contracts implementing an early version of PBCs that was derived from work in the United States (US) along

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7 Acquisition contracts are almost always performance-based, in that the contractor always has to meet a set of performance criteria, two of which are typically performance and schedule.

8 This approach is already inherent in ASDEFCON, which was developed based upon a set of Guiding Principles (refer Annex A), which include focussing on outcomes (not process) and working in the contractor’s process domain where suitable.
similar lines. Other DMO Divisions have developed PBCs, including Maritime Systems Division (MSD) (e.g., Armidale Class support) and Helicopter Systems Division (HSD), and, in early 2008, Land Systems Division (LSD) initiated discussions with industry to derive a broad set of principles for PBCs applicable to the Land environment.

1.10. The success of an outcome-based PBC framework will depend on beneficial objectives for both Defence and defence industry. Broadly, a viable defence industry is a joint objective. More specifically, defence industry objectives should include such aspects as:

- achieving security of supply,
- achieving diversity of supply,
- maintaining industry capability in defiance of workforce skills shortages, and
- retaining profitability from a shrinking Defence support budget.

1.11. These objectives are unlikely to be achieved unless structured within a framework where the continuous improvement of industry performance is incentivised to align with Defence’s objectives. Instead of transactional activities, process and product improvements enabled by a performance-based regime could promote efficiency and reduce the need for scarce labour resources. At the same time, more efficient processes should mean greater profit per unit of input cost, and allow profitability to be maintained while reducing the TCO to Defence, and all fitting within a capped or shrinking sustainment budget.

1.12. Internationally, the US has been developing its approach to performance-based support agreements for many years, and now considers that these agreements form part of a larger set of arrangements that it calls Performance Based Logistics (PBL). Grand claims are often made in the literature about the improved performance and significant savings obtained from these performance-based support agreements; however, it is not clear that these types of improvements will translate into the Australian environment, given the different contracting and logistics environments between the two countries. In the United Kingdom (UK), PBCs are also becoming more prominent and similar claims are made; however, it is also unclear that the UK experiences would translate into the Australian environment for similar reasons.

1.13. Notwithstanding the good work that has been done by particular DMO and other Defence organisations in relation to PBCs, the implementations adopted to-date have not been focussed on the achievement of both Key Objectives. The ASD approach, for example, (which is the most mature approach) has focussed on the performance outcomes required and has not focussed on reductions in TCO. While the ASD approach can lead to cost savings over a contract term, the harvesting of any such savings has not yet been incorporated into ASD’s implementation.

1.14. While PBCs are focussed on outcomes, the governance framework for any contract must recognise that the quality of an outcome is often dependent upon the quality of the processes used to produce that outcome. This is one of the ASDEFCON Guiding Principles (refer Annex A). To this end, any PBC approach must ensure that all aspects of the contract-management framework are aligned and harmonised to provide assurance of the required outcomes. In other words, while PBCs focus on outcomes, the overall governance of the contract must also be addressed to ensure that a manageable contract results. This additional focus requires an understanding of the business and the necessary interactions between all

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9 These principles are included at Annex B.
10 Security of supply and diversity of supply were identified by the Chief Executive Officer (CEO) DMO in a recent speech to the 2009 Defence and Industry (D&I) Conference.
parties involved in support, which must span the different types of services required and the various products being supported\textsuperscript{11}.

1.15. In light of the above, particularly the imperatives arising out of the SRP, a standardised approach to PBCs is now required, which satisfies the support contract requirements identified in paragraphs 1.6 and 1.7 and integrates into the bigger picture. This standardised approach to PBCs (ie, the ‘Next Generation PBCs’) must be one that:

- addresses both Key Objectives;
- ensures that the implementation is (relatively) straightforward for each drafting team;
- is scalable (to the maximum practicable extent) across a wide range of support contracts (ie, whole of system, subsystem, components, common items, etc);
- is applicable (to the maximum practicable extent) across all environments (ie, land, sea, aerospace, Information Technology (IT), etc);
- appropriately motivates and ultimately drives contractor behaviour in line with the contribution of a contract to the Key Objectives; and
- provides options to the DMO to achieve the best outcome across the envisaged contract-management situations.

\textsuperscript{11} For example, achievement of schedule is often a key outcome for a contract, but delivery of a contract schedule is generally not a key outcome. Nevertheless, a contract will normally involve appropriate contract levers to ensure that a contract schedule is delivered because of the DMO’s governance requirements and the necessary interactions with the DMO’s stakeholders (including government).
2. Overview of Performance-Based Contracts

Introduction

2.1. PBCs are outcome-based contracts, where the outcomes are defined in a way that aligns with the true customer’s needs (ie, a Capability Manager’s needs for DMO contracts). A contract can include performance measures, but is not classified as a PBC in this paper unless the performance measures are linked to, or derived from, the Key Objectives (ie, the performance measures must be linked to reductions in TCO or capability outcomes, such as system availability). In defining the required outcomes, PBCs must consider the business model that is being implemented (eg, standard support contract (platform-oriented), standard support contract (fleet-oriented), Public-Private Partnership (PPP) or alliance contract). They must also be driven by the true output, not the physical product being supported. For example, the true output for Lead-In Fighter (LIF) and the Helicopter Aircrew Training System (HATS) is trained pilots, not the operation and support of particular aircraft. PBCs, however, do not have to be situated at the system level, and can exist at any level (eg, LIF and HATS could include maintenance PBCs to provide system or subsystem availability, which is directly traceable to the needs of a Defence-managed training program).

2.2. PBCs involve less process prescription, thereby enabling the contractor to determine the best way of achieving the required outcomes. This approach also means that the inputs, such as resources, should be controlled by the contractor. Some implementations of PBCs in the DMO have retained control over certain inputs, such as the numbers and types of personnel, or the quantities of, or budget for, spares over a particular period. While control of some inputs can be unavoidable (eg, particular spares may only be available through Foreign Military Sales (FMS)), this approach should be avoided wherever possible because it prevents the contractor from providing the most efficient service and presents them with a ready excuse for any performance shortfalls.

2.3. Some process prescription will always be necessary in PBCs for reasons of governance, safety, Technical Regulatory Framework (TRF) requirements, and the nature and complexity of the work being contracted. The SRP may even drive some process prescription in contracts because, in some cases, it is more cost-effective to direct a particular approach, even if this causes the contract price to be higher. For example, directing that maintenance will be undertaken on a Repairable Item (RI) immediately upon receipt by the contractor is likely to increase the contract price; however, it results in the need for Defence to hold fewer spare RIs and, therefore, the cost to Defence is lower overall.

2.4. This section of the paper will address particular aspects of PBCs to provide a general overview of some of the main issues and complexities associated with implementing a standardised PBC framework in the DMO, namely:

- aligning objectives,
- different types of PBCs,
- different categories of services,
- scope issues,
- transaction-based versus performance-based contracts,
- incentivising performance,
the impact of other sources of revenue, and
- capability life-cycle implications.

Aligning Objectives

2.5. The objective of a PBC is to align Defence and contractor objectives, so that a contractor’s return is maximised at the point where Defence’s outcomes are achieved in full, as illustrated in Figure 2 (where return is equated to profit).

![Figure 2: Optimal Alignment of Payments vs Costs for Desired Performance](image)

2.6. Greater profit and greater availability may appear contradictory (because it is unusual to pay less and get more), but it may represent a win-win situation under a performance-based approach where the contractor is free to make process and/or product improvements. The following well-known example provides an explanation.

2.7. Rolls Royce often uses “power-by-the-hour®” support contracts for aero-engines. Customers pay an amount per operating hour. As such, the more reliable the engines, the greater the operator’s aircraft availability and the lower the maintenance costs for Rolls Royce, resulting in greater profit. It may be perceived that too much is being charged to support reliable engines; however, profits are reinvested in upgrades and more reliable designs, further improving availability for customers, reducing maintenance, and increasing profit. The AE2100, used in business jets, Global Hawk and the core of C-130J engines, has been supported using this model to become one of the most reliable aero-engines in the world.

® “power-by-the-hour” is a registered trademark of Rolls Royce plc (UK).

12 Increased profit can also be indirect, such as a reduced price relative to competitors resulting in increased market share and profit from both future sales and support.

13 'Power by the Hour': Can Paying only for Performance Redefine How Products are Sold and Serviced? Knowledge@Wharton, Wharton School of the University of Pennsylvania, 21 Feb 07. Of note, it is questionable whether such an outcome could be achieved by an acquirer, given that this approach appears to have been driven by the supplier.
2.8. As an example, power-by-the-hour illustrates how PBCs can align customer and service provider objectives to achieve desired outcomes of availability and cost, rather than creating (maintenance) transactions to increase supplier profit at the expense of customer objectives.

2.9. In the Defence context, finding the ‘sweet spot’ shown in Figure 2 is generally not feasible because the underlying cost curve is rarely known to Defence and, depending on available supportability data, the actual level of effort may not be fully understood by the contractor.

2.10. While point estimates of costs are often sought, the way that these costs change for differing levels of performance is typically not examined, which will almost certainly lead to misalignment between the maximum profit and the desired performance, as illustrated in Figure 3. In this figure, payments are calculated across three bands of performance; however, the underlying costs also increase (through ‘diminishing returns’). As a result, lower performance in the middle region can be more profitable than the performance linked to maximum payment.

![Cost to Contractor vs effort](image)

**Figure 3: Sub-optimal Alignment of Payments vs Costs for Desired Performance**

2.11. This illustration highlights the following key points for implementing PBCs in the Australian context, namely:

- cost visibility is essential, not just at the time of solicitation but continuing throughout the contract term (ie, open-book accounting);

- as part of solicitation, a range of cost vs performance points (probably no more than three) should be sought to enable a pseudo cost curve to be developed\(^{14}\);

- analysis of the input costs should be a key aspect of solicitation response evaluation for support contracts\(^{15}\); and

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\(^{14}\) This approach would also facilitate cost-capability trade-off discussions with the Capability Manager’s representatives.

\(^{15}\) It is acknowledged that one of the most difficult aspects of an evaluation is assessing the validity of the cost information presented because neither Defence nor DMO has the expertise to evaluate whether or not the proposed effort to undertake particular activities is valid. Likewise, a local contractor may not have the supportability data needed to accurately assess the support cost of a foreign system, or one with limited real-world use (creating risk). Nevertheless, comparative evaluations of pricing information can assist here, as can detailed analysis of the underpinning assumptions, associated constraints, minimum sustainable organisations, and points where assumptions no longer hold true (eg, where a second work shift becomes necessary).
- PBCs require considerable intellectual rigour in getting the right performance measures, performance payments, and outcomes aligned.

**Different Types of PBCs**

2.12. The ASD PBC Handbook identifies a number of different types of support contracts based around the required scope of work, namely:

- through-life support contracts, which are whole-of-system support contracts (with the exception of any support provided by the ADF);
- contracted maintenance support contracts, which includes both scheduled and unscheduled maintenance as well as modification incorporation;
- RI support contracts for support of avionics equipment;
- aero engine support contracts; and
- engineering services support contracts.

2.13. With the exception of the engineering services support contracts (which is yet to be developed), ASD has developed different standardised PBC regimes for each of these different types of support contracts, which involve different performance measures. While these contract types are aligned to the aerospace environment, some of them do translate into other environments. Notwithstanding, the development of any standardised PBC framework for use in the DMO must be cognisant of the differences across the environments and accommodate these differences to the maximum practicable extent. Further discussion on the ASD approach is contained in subsequent sections of this paper.

2.14. ASDEFCON (Support) recognises four standardised contract frameworks, which are termed support scenarios in the associated guidance\(^\text{16}\), namely:

- Scenario #1 – whole-of-system support contracts, where the contractor is responsible for (virtually) all support for a system and the resulting operational availability;
- Scenario #2 – system-level support contracts, but the ADF performs operational level (including deployable) maintenance and supply support;
- Scenario #3 – Subsystem (eg, engine) and lower-level RI support contracts, where the contractor is responsible for the requirements determination (ie, for determining when RIs are to be inducted into maintenance); and
- Scenario #4 – RI support contracts, where the DMO conducts the requirements determination and which may be used to support common RIs for multiple systems.

2.15. Each of these scenarios reflects the primary driver for performance, but each scenario can also include engineering, training and supply services, including warehousing and distribution. The focus of these contracts (ie, which scenario) is used to establish the primary performance measures, but other performance measures are likely to be required for the other types of services (eg, availability of spare RIs is relatively independent of engineering change activities). This highlights another key aspect of PBCs, in that each type of support contract will require different performance measures, which then need to be supplemented by other measures appropriate to the scope of the contracted services.

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\(^{16}\) Detailed descriptions of these scenarios are included in the Statement Of Work (SOW) Tailoring Guide (SOWTG) for ASDEFCON (Support). These scenarios are used to structure the guidance and assist with tailoring the template.
2.16. Instead of using a whole-of-system support contract, a different approach could be to use a set of smaller support contracts that, in combination, provide the entire support for the system. Additionally, particular items fitted to a system may be the subject of standalone support contracts due to the need to access specialist skills or to make use of common item support arrangements (eg, all aircraft tyres could be the subject of a single contract). These approaches might be adopted because they represent better value for money overall because they:

- enable competitive tension to be maximised by facilitating competition at the lower levels of the system breakdown structure;
- remove components with restricted competition from higher-level system support contracts;
- reduce cost because they tap into existing, lower-cost and more-responsive supply chains; and
- reduce risk loading (and, therefore, cost) because a whole-of-system support contractor does not have to undertake or outsource the support of system elements for which it has little-to-no experience.

2.17. There are obvious trade-offs and risk analyses here that need to be assessed to establish a set of support contracts and arrangements that represent the best value for money over the LOT of a system. The process framework for PBCs needs to accommodate these types of trade-offs, which are addressed through a process known as Business Case Analysis (BCA). This type of analysis is discussed in more detail in later sections of this paper, specifically The US Approach and Support Procurement Strategies.

**Different Categories of Services**

2.18. The discussion so far has identified that different categories of services are required to address the full scope of support that needs to be incorporated into a contract, as illustrated in Figure 4. This figure highlights that these different categories of services are required to cater for differences in the certainty within which cost and scope can be defined upfront.
2.19. These different categories of services present another significant consideration in developing a support contract; that is, which services will be:

- included within the firm-priced portion of the contract price (ie, routine single delivery services or routine ongoing services, with the latter known as Recurring Services under ASDEFCON (Support));
- identified as Task-Priced Services;
- established as Pre-Authorised Ad Hoc Services; and
- classified as Survey and Quote (S&Q) Services (ie, those services that are unable to be quantified at the outset, but the acquirer knows will be required over the contract term (eg, engineering changes)).

2.20. While these considerations are not unique to a PBC, there are issues associated with these different categories of services that have implications for the PBC framework, namely:

- understanding the implications of having different categories of services either included in, or excluded from, the main performance-management framework for a contract;
- if categories of services are excluded from the main performance-management framework, determining how their performance will be managed; and
- whether or not a lower-level performance-management framework needs to be applied to any categories of services that do not directly contribute to the primary outcomes for a contract (eg, do

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17 Pre-Authorised Ad Hoc Services provide pre-authorisation to the contractor to undertake particular services, such as Task-Priced Services, when the circumstances dictate (eg, when there is an emergency or when delays would cause greater cost to the Commonwealth) and the Commonwealth Representative is not reasonably contactable. Under normal circumstances, these pre-authorised services are manually initiated by the Commonwealth Representative.
the provisions for S&Q Services need to include the ability to specify performance measures for each or some individual S&Q Services?).

Support Contract Scope Issues

2.21. A major issue for categorising contract services and assigning performance measures is ensuring that there is a clear definition of scope. One of the ASDEFCON Guiding Principles is “Firm Price = Firm Scope” (ie, without the scope being firm, the price cannot be firm). When the scope is not properly defined or bounded, this can increase the risk to one or more of the parties, which, in turn, can affect the price paid for those services. As illustrated in Figure 4, scope in support contracts is defined by four attributes, namely whether or not:

- all of the products to be supported are either identified or able to be determined by the contractor;
- all of the services to be provided to the supported products are either identified or able to be determined by the contractor;
- the scope of each of the required services is adequately specified or bounded or is adequately able to be determined by the contractor; and
- the contractor can determine the work involved with undertaking the required services.

2.22. Different types of services also have different scope drivers, including for example:

- preventive maintenance, which is generally driven by the Rate Of Effort (ROE) or usage (although some preventive maintenance is calendar based);
- corrective maintenance, which is driven by the failure rates of the respective products being supported and the scope of work required to conduct a repair (including the number of people required, associated skill sets, and the likely effort required), which can change over time (eg, early and late in the life of a product) and due to usage and environment;
- supply services, which are generally driven by usage factors (eg, ROE and location) and required maintenance;
- engineering services, which are driven by a number of factors, including likely defect densities, degree of change, obsolescence, and the likely requirements for technical data review; and
- training services, which are typically driven by the number of people requiring training, but can also be driven by the degree of change (eg, in relation to the upkeep of training materials).

2.23. Ensuring that the scope is adequately bounded is one of the most problematic aspects of a support contract because, in any large-scale system, there are typically thousands of products to be supported. The DMO must first be able to bound the scope of services sought and then each tenderer must be able to adequately scope the work associated with each of these products to provide a firm price. There are some categories of services that provide unique challenges in this regard. For example, software support, which is a major Life Cycle Cost (LCC) driver, is problematic because the degree of support needed can be difficult to determine upfront. Engineering changes are another problematic area because the number of engineering changes required over the LOT and the scope of each change are virtually impossible to define upfront. Many of these changes are driven by the Capability Manager in response to changing threats, while other changes are driven by obsolescence factors, which can also be difficult to predict in advance. The other categories of services are more straightforward, but the principle issue with these services relates to the availability of data and information to enable the tenderers to be properly able to scope the support required.
2.24. The support contract for the KC-30A Multi-Role Tanker Transport aircraft provides a good example of the challenges that often arise due to scope issues. The KC-30A is a modified version of the Airbus A330 commercial aircraft, for which the support contract was initiated after the acquisition contract had been let. In relation to the commercial elements of the KC-30A, there were no issues with the expected scope of work and these elements were readily incorporated into a firm-priced contract using the ASD PBC framework for a through-life support contract, with one of the required outcomes being platform availability. The militarised elements of the KC-30A were more challenging, however, because the support contractor was unable to scope the likely effort associated with the maintenance and support of these elements.

2.25. To overcome these challenges, the elements were incorporated into the contract as S&Q Services, with the aim being that, over time and as the contractor becomes properly conversant with the required scope of work, these elements can be incorporated into the firm-priced portion of the contract. In the meantime, however, the DMO is required to process ongoing requirements for S&Q Services whenever a militarised element requires maintenance or other support. Under this support contract, these S&Q Services are tied into the PBC framework, which means that the DMO must raise the orders for S&Q Services within particular timeframes to ensure that the contractor is not provided with DMO-caused performance relief in relation to the required outcomes.

2.26. The real issue with scope relates to ‘who bears the risk’ and whether or not the DMO is responsible for defining a significant portion of the required scope, particularly in relation to identifying every product to be supported, the associated arisings, and the required effort. This risk equation can vary depending upon the life-cycle application of a support contract, which is discussed later in this section under the heading, Capability Life-cycle Implications. Notwithstanding, as exemplified by the KC-30A case study, the degree of scope certainty can mean that different management frameworks, including PBC arrangements, may need to be implemented for the elements where the scope certainty is adequate versus the elements where it is not adequate. For certain engineering services, for example, it is almost always the case that scope is unable to be bounded upfront and that a separate performance-management framework is required for this work.

2.27. Where the DMO is responsible for defining the major elements of the required scope (e.g., the lists of products to be supported), omissions from this scope can undermine any PBC framework because these omissions result in unexpected requirements for S&Q Services (or contract changes), which enables the contractor to earn additional (and, perhaps, unwarranted) income, while also often providing a source of performance relief. Scope omissions can also undermine the benefits that Defence may gain through competition. This means that an adequate definition of scope underpins both of the Key Objectives and, therefore, the DMO must ensure that any proposed PBC is underpinned by an adequate definition of scope.

2.28. Ongoing change to contract scope through engineering changes is a corollary issue that also affects the efficacy of a PBC, particularly where there is a primary support contractor for a system. The ongoing support for these changes is typically achieved through sole-sourcing to the primary support contractor, where the DMO’s bargaining power is often poor. Support must be put in place for any new and/or modified equipment and it is often not practicable to implement separate support arrangements. These sole-source changes to a support contract can open up elements of the contract to ‘rebalancing’ (e.g., where particular provisions are not in the contractor’s favour) and, therefore, can work against the achievement of the Key Objectives.
Transaction-Based versus Performance-Based Contracts

2.29. To better appreciate the benefits of PBCs, it is useful to look at an alternative approach, which is termed transaction-based contracting. In a transaction-based contract, the contract refers to a list of individual work activities that the contractor is required to perform, and payment is calculated from the sum of individual activities. This alternative approach involves the acquirer controlling the flow of work (eg, the flow of RIs into a maintenance venue), with the contractor expected to provide a consistent response (eg, turn-around time) regardless of the current needs of the capability or options for more efficient work flow (eg, through better scheduling). This alternative approach can lead to higher management overheads, lower efficiency and higher overall costs; lower efficiency because the contractor is often excluded from work planning until late in the process, and higher overall costs because both the contractor and the acquirer require additional personnel to manage the number of transactions.

2.30. In a transaction-based contract, profit is generally included within each transaction; hence, the more transactions, the greater the profit18. This is often contrary to Defence’s objectives because more transactions (eg, maintenance actions resulting in system downtime) can mean poorer system availability and increased cost. Opposing desires for greater and fewer transactions can result in inefficient contracting solutions and counter-productive contractual relationships.

2.31. Notwithstanding, transaction-based contracts can be appropriate where there are a relatively small number of expected transactions over a period of interest (eg, a year), particularly at the component level. With small quantities of low failure-rate items, for example, it can be much more cost-effective for the DMO to implement standing-offer arrangements where maintenance is initiated only when required. The performance outcomes for these types of transaction-based contracts are often internal to the contract and not related to the true customer’s needs (eg, turn-around time or delivery lead-time).

2.32. Under a PBC, all services can be priced under groups of activities (eg, all maintenance services), whereas under a transaction-based contract a separate price is required for each transaction (eg, maintenance of RI #1, maintenance of RI #2, and so on). A transaction-based contract for whole-of-system support, therefore, would require considerable resources to initiate and monitor each of the transactions. PBCs provide a better option for large-scale support contracts because individual activities are not the focus of attention. Notwithstanding, one of the downsides with PBCs is that there is a much less tangible link between the payments being made and the actual activities being performed, which can make the cost of non-performance much more difficult to assess. Typically, therefore, the financial implications of non-performance under a PBC are addressed through a performance-management framework that is defined upfront by the acquirer in its solicitation package (and modified, as required, through the processes leading to contract signature). This framework, which links performance to payment, is addressed later in the paper under Achieving Enhanced Performance: Rewards, Remedies and Performance Measurement.

2.33. Under certain types of PBCs (eg, whole-of-system support contracts), elements of these contracts may need to be transaction-based because it is cost-effective for these elements to be managed in this way. Under ASDEFCON (Support), these categories of services are known as either Task-Priced Services or S&Q Services. These categories of services typically sit outside the main performance framework for a contract; however, some of the individual services within these categories can be brought under the main performance framework through other mechanisms (eg, using Pre-Authorised Ad Hoc Services)19.

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18 The converse is also true. If there are insufficient transactions, the contractor will not be able to achieve an adequate return.

19 For example, an RI maintenance contract may only include three arisings per year as Recurring Services for a particular RI, with any additional arisings to be undertaken as Task-Priced Services. If the primary outcome for the contract is RI availability, then the inclusion of this Task-Priced Service as a Pre-Authorised Ad Hoc Service enables the contractor to
Incentivising Performance

2.34. Critical to the development of a PBC is a proper understanding of what really motivates contractor performance. Financial incentives are often touted as effective motivators; however, if they only provide opportunities for the contractor to make short-term gains (or losses), they may not be totally effective. In many PBC models, for example, an amount of each payment is used to provide financial motivation. This can be achieved either via providing incentives for higher levels of performance or via holding an amount at-risk (or a combination of the two).

2.35. The at-risk portion is the amount of each payment that is linked to a contractor’s performance, and is the initial amount that the contractor can potentially lose for under-performance. Often, the at-risk portion is linked to the contractor’s profit, but this approach does not have to be used. The use of an at-risk amount, which is linked to profit, is the main approach used in the ASD PBC model\(^\text{20}\), but this approach is also used in other PBC models internationally.

2.36. To illustrate the issue of whether or not financial incentives of this nature are effective motivators, an example (using rounded numbers from a real contract) can be useful (and this may be a useful activity for anyone developing a PBC). The example provided in Figure 5 shows one year of a $100M, 10-year contract, with quarterly payments and an at-risk portion of 10% (noting that, in this example, the contractor would always receive 90% of the available payment).

![Figure 5: At-Risk Portions]

2.37. While additional profit will usually be sought, the example raises the question as to whether or not the proposed at-risk portion is sufficient to motivate the contractor to obtain all of it (and thus meet Defence’s desired objectives). Could the additional resources needed to maximise profit be used more profitably elsewhere? What if the last 20% of performance achieved is important to Defence, but not worthwhile for the contractor because of additional input costs (given that 20% of the at-risk portion only equates to $50,000 in the above example)? This example deliberately uses a large-scale support contract to highlight that the at-risk portion for each quarterly payment, even for such a large-scale contract, is not a large sum of money, which raises the additional question as to the contract size at which it is no longer cost-effective to implement a PBC regime of this nature.

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\(^{20}\) The ASD PBC Handbook, for example, suggests that the at-risk portion should be “at least equal to the Contract Profit Margin”. 

provide the required maintenance should a situation occur such that the availability requirement would not be achieved (subject to the other conditions associated with Pre-Authorised Ad Hoc Services, as defined in the template).
2.38. The at-risk portion in this example could be increased from 10% to 20%, which would raise the incentivising power of the regime; however, there are issues with this approach, particularly if DMO has limited leverage (e.g., there is effectively only one source of supply due to, for example, constraints associated with Intellectual Property (IP) or availability of expertise). Nevertheless, the PBC framework must address the use of differing at-risk portions because, as this example illustrates, the at-risk portion for relatively large-scale support contracts may not provide sufficient motivation to achieve the required objectives.  

2.39. This example also highlights that the PBC framework must address the full range of possible rewards and remedies to ensure that, to the maximum practicable extent, each contract is appropriately focussed on the performance of the contractor in achieving the outcomes required. By necessity, this will include a mix of financial and non-financial mechanisms to motivate the contractor. Non-financial mechanisms include such things as enhanced reputation through a satisfied customer and recognition of good performance.

2.40. The length of the contract term is an important consideration here because a longer contract term provides stability and enables a contractor to project forward with certainty, develop efficient supply chains, and recover front-loaded costs. When a longer contract term is implemented under a firm-priced arrangement, a contractor can also work out how to undertake the work more efficiently and, therefore, can increase its profit or, if there is motivation to do so, can provide a better service at a lower cost. In this regard, the motivational power associated with extensions to the contract term provides another ‘non-financial’ mechanism. Good performance can be rewarded with additional ongoing work and contract extensions. This stability can also assist with realising reductions in TCO from productivity improvements, but only if the contract framework explicitly addresses this aspect of performance. This issue is addressed in a later section of the paper under the heading, Award Terms (or Rolling Contract Extensions).

2.41. At this juncture, it is worth extending the discussion to briefly address the relationship between PBCs and contract management. A PBC, for example, will typically require less contract administration than a transaction-based contract of similar size and scope. Nevertheless, PBCs are generally structured around “big-picture” objectives, and elements of the contract work can either fall outside the PBC regime (e.g., many engineering activities can end up not being covered by an availability-based PBC regime) or are lower-level activities for which the PBC methodology is unsuited and more immediate contract levers are required (e.g., the Commonwealth Representative could need to take immediate action if there were a safety-related issue or incident).

2.42. This discussion highlights that a PBC regime based around short-term financial measures may not adequately incentivise the outcomes required, and that a harmonised set of rewards and remedies will be required to provide a manageable contract that achieves the necessary outcomes.

The Impact of Other Sources of Revenue

2.43. Other revenue sources can also influence the achievement of outcomes. Set-up costs and new equipment costs, amortised in the first few years, may be a source of profit in subsequent years. Profit on S&Q work is also in addition to the contract price (with additional delegate approval). Figure 6 is not based on a real contract but it illustrates these ideas.

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21 Another consideration here is whether or not the Commonwealth should specify its required at-risk portion in its solicitation documents or whether it should request a proposed amount from the offerors (or some in between model, such as specifying a minimum amount).

22 Note that the diagram does not consider tax deductions for depreciation, using GFF and GFE for other revenue creating purposes, or re-employing under-utilised personnel that have already been paid for under a firm-priced contract.
2.44. Figure 6 illustrates that performance-based payments may become less significant than other sources of profit, which can undermine the incentive power of the PBC implementation for a contract. Of the two additional profit areas, post-amortised amounts will reduce (thereby, reducing the cost base and increasing the profit), but is constrained. Ongoing S&Q work, however, can provide greater opportunities for increased profit.

2.45. If the increased effort needed to obtain all of an at-risk or incentive payment is more than the payment received, or if the gain is less than can be obtained through other transactional work (eg, S&Q), then the PBC is unlikely to provide the desired motivation. The gains from additional S&Q work could reasonably outweigh the at-risk profit or incentives, particularly when it represents a sizeable portion of the contract. While other remedies normally become applicable when a contractor’s performance under a PBC falls below a certain level for long enough, the issue here is similar to the one discussed in the preceding section, in that the contractor’s performance may be above the minimum level required, but may not achieve the full requirement due to greater profits being available through other means.

2.46. A contract where a complex system enters deeper maintenance, which is conducted via sole-sourced S&Q transactions, possibly represents a worst-case scenario for constraining TCO because the transactions are likely to outweigh any performance-based payment regime.

2.47. Avoiding unnecessary S&Q seems logical; however, some S&Q tasks are unavoidable. For S&Q tasks related to the engineering of modifications, which are often unavoidable, performance-management techniques similar to acquisition programs may be useful, depending on the scale of the task.

2.48. The key point here is that unnecessary S&Q work should be avoided and that marginal S&Q work should be subject to thorough analysis to assess the costs, benefits and risks. The level of uncertainty associated with particular activities often drives the selection of S&Q by the DMO in its solicitation documents because of the risk dollars that are expected to be added to this work if it were to be included in the firm-priced portion of the contract. This consideration, however, must be balanced against the ability of the contractor to make additional profit at a later time (particularly in a sole-source environment). The BCA process identified earlier should also address these and other considerations as part of the development of the Acquisition Strategy (or equivalent for stand-alone support contracts).
2.49. As illustrated in Figure 7, a support contract can arise under a number of different circumstances, including if:

- a combined Request For Tender (RFT) for the acquisition and support contracts is issued to the same tenderer(s) (i.e., the successful tenderer would become both the acquisition and support contractor);
- the support requirement is sole sourced to the contractor from whom the Commonwealth procured the capability (i.e., the acquisition contractor would become the support contractor);
- the Commonwealth decides to seek tenders for a new support contract following a support contract period, or where Defence was conducting support in-house and subsequently decided to test the market for provision of support; and
- the Commonwealth decides to seek tenders for a new support contract, having acquired equipment through a separate contract or other arrangement (e.g., through FMS) that did not include support.

2.50. While most of the considerations associated with these differing application requirements are not unique to PBCs, there are some specific considerations that have implications for the PBC framework, mainly in relation to the availability and adequacy of data required to underpin any proposed PBC (e.g., with respect to numbers and frequency of maintenance arisings, required skills and associated effort, and costs of consumables). The availability of data to the tenderers or the Commonwealth (or both) means that particular approaches for implementing PBCs may be required (e.g., data collection periods during interim or transitional contract arrangements) and that particular PBC methodologies may not be viable or represent value for money.

2.51. The availability and transfer of data between acquisition and support contractors, and from one support contractor to another, is a source risk that needs to be considered in the development of an Acquisition Strategy (or equivalent for a standalone support contract), particularly in relation to, for example, inaccuracies in forecast failure rates and adequacy of spares predictions. This risk is borne differently across the different support contract applications identified in Figure 7. Where a competitive, combined RFT is issued, for example, each tenderer generally bears the risk in relation to scoping and pricing the support contract (noting, however, that these risks typically come back to the Commonwealth in terms of reduced flexibility, minimalist interpretations of requirements, and significant costs for any changes).
2.52. Using a combined RFT is not always feasible, particularly when products are sourced through FMS. Under this type of application, more risk is borne by the Commonwealth because the DMO is normally sourcing and providing the data. In-service application of a support contract (following a period of either Commonwealth-provided or contractor-provided support) has similar risk considerations. If data is not available or only partially available, then the tenderers are unable to properly scope the requirement or provide a firm price.

2.53. The Commonwealth Procurement Guidelines state that, “As a general principle, risks should be borne by the party best placed to manage them […]” and “[…] where an agency is best-placed to manage a particular risk, it should not seek to inappropriately transfer that risk to a supplier”23. In this regard, arising rates and other scope-related requirements should be seen as part of the Commonwealth’s requirements and not a risk that should be transferred to the contractor under a firm-priced contract.24 From a PBC perspective, it is inappropriate to try to hold a contractor to outcomes when the contractor cannot determine the input requirements.

2.54. There are a number of contractual mechanisms for handling incomplete data, such as:

- providing estimated arisings against which the contractor can provide a firm price, with any arisings above the estimated levels being undertaken as S&Q Services;
- using due diligence periods to enable the contractor to gather the required data and gain an adequate understanding of the scope drivers; and
- using contracting approaches other than firm-priced contracts.

2.55. These types of mechanisms have implications for the PBC framework because they may require the PBC regime to be ‘inactive’ for a period or to have one regime apply to work with certain scope and another regime for work with uncertain scope (as discussed earlier under Support Contract Scope Issues). The degree of competitive tension can also be a factor in these considerations because the Commonwealth has less bargaining power when there is less competition. All of these considerations are discussed in the later section of the paper Achieving Reductions in TCO.

2.56. Ramp up, which is illustrated in Figure 8, is another significant life-cycle issue that has implications for the implementation of PBCs.

24 This situation is considered to be a parallel one to having missing or incomplete requirements in a specification under an acquisition contract.
For a support contract that comes into operation during an acquisition contract, there are issues that arise due to the increasing numbers of products that require support as more and more products are delivered under the acquisition contract, namely:

- whether or not a proposed PBC will operate effectively upfront, when there are only a small numbers of products being supported;
- whether or not a proposed PBC will scale appropriately as more and more products are delivered; and
- the implications for the acquisition contract to make the proposed PBC operate effectively.\(^{25}\)

Considerations in relation to competitive tension and how to maximise competition will be relevant under each of these circumstances, but any consideration of competition must also address Intellectual Property (IP) rights. This issue will be of most significance when solicitation is undertaken during the Requirements Phase because mistakes made or difficulties experienced at this time will have implications over the LOT of a system.

Issues of data availability, transitional arrangements (including ramp up), competitive tension and IP are addressed in more detail later in the paper in the sections, Aerospace Systems Division Approach and Achieving Reductions in TCO.

Key Points:

- PBCs are often seen as superior because they align customer and supplier objectives, while transaction-based contracts can create conflicting objectives for more and less transactions.
- Next Generation PBCs in the DMO must be focussed on both of the Key Objectives.

\(^{25}\) For example, spares delivery requirements may also need to be staged to align with the Mission System delivery schedule. If this does not occur, then there could be too many spares for too few Mission Systems, which would undermine the PBC.
- Incentivising contractor performance requires consideration of an appropriate range and combination of financial and non-financial mechanisms. Financial mechanisms alone may not result in the achievement of both of the Key Objectives.

- While PBCs involve less process prescription, some processes will always need to be specified in these types of contracts for reasons of governance, TRF requirements, and the nature and complexity of the work being contracted.

- The development of any standardised Next Generation PBC framework for use in the DMO must be cognisant of the differences across the environments and accommodate these differences to the maximum practicable extent.

- Analysis of input costs should be a key aspect of solicitation response evaluation under PBC arrangements.
3. **The International Defence Experience with PBCs**

### The US Approach

3.1. In the US, the Department of Defense (DoD) has adopted an approach called Performance-Based Life-Cycle Product Support\(^\text{26}\) (PBL), which is defined in the ‘PBL Guide’ as follows:

> “PBL is the purchase of support as an integrated, affordable, performance package designed to optimize system readiness and meet performance goals for a weapon system through long-term support arrangements with clear lines of authority and responsibility. Simply put, performance-based strategies buy outcomes, not products or services.”\(^\text{27}\)

3.2. PBL has been promoted within the US DoD and is attributed with succeeding in providing improvements in readiness and reducing the cost of supporting platforms, electronic systems, equipment and commodities across the department. The US Government Accountability Office (GAO) has countered those statements with arguments that cost benefits have not been proven and that readiness improvements haven’t been substantiated.\(^\text{28}\) Despite questions concerning the accuracy of results, and given that it is not possible to run parallel PBL and non-PBL programs for the same system, the US DoD continues to pursue and improve PBL as the preferred solution (and GAO continues to recommend following this path).

3.3. In terms of the relevance and priority of PBL, US DoD policy (DoD Instruction 5000.02) states:

> “The PM [Program Manager] shall employ effective Performance-Based Life-Cycle Product Support (PBL) planning, development, implementation, and management. [...] PBL offers the best strategic approach for delivering required life cycle readiness, reliability, and ownership costs. Sources of support may be organic, commercial, or a combination, with the primary focus optimizing customer support, weapon system availability, and reduced ownership costs.”\(^\text{29}\)

3.4. The US DoD policy statement contains the current objectives for implementing PBL, in providing operational readiness, mission reliability, and reduced ownership costs. The above quotes, from the policy and the PBL Guide, also hint at some of the major requirements for the application of PBL, namely:

- finding the “best strategic approach” for support from organic and commercial sources, which is undertaken via a process of Business Case Analysis (BCA);
- having “clear lines of authority and responsibility”, which are articulated through Performance-Based Agreements (PBAs) and the appointment of Product Support Integrators (PSIs); and
- a primary, and common, focus on the objectives, which ensures that performance measures are derived from operational needs and then dissected and allocated through the entire Support System (government and industry).

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\(^{26}\) DoDI 5000.02, ‘Operation of the Defense Acquisition System’, 8 Dec 08, Enclosure 2.8.(d). PBL is the latest evolution of ‘Performance-Based Logistics’, with the same acronym being used for both terms.

\(^{27}\) Performance Based Logistics: A Program Manager’s Product Support Guide’ (PBL Guide), Nov 04, p6.


\(^{29}\) DoDI 5000.02, ‘Operation of the Defense Acquisition System’, 8 Dec 08, Enclosure 2.8.(d).
3.5. Within PBL, the allocation of product support responsibilities, derived from the top-level objectives, are captured in PBAs. Some PBAs are based on commercial contracts, some include more than one contract, and others are memoranda of agreement/understanding (MOAs/MOUs) between different parts of Defense (eg, between a program manager and a product manager or depot maintenance unit). In PBL terms, the Australian Defence Organisation’s Materiel Sustainment Agreement (MSA) Product Schedules are high-level PBAs within a hierarchical framework that includes subordinate commercial contracts as well as agreements between the DMO and other Defence groups. The importance of this approach is that it depends upon performance-based outcomes from the whole Support System and is much broader than the performance requirements of individual contracts.

3.6. The US DoD has defined a BCA process to address the particular requirements for product support and find an optimal solution by analysing alternatives and implementing a PBL solution. The results of the BCA process may recommend various combinations of organic and contractor support in order to obtain the best value from both government and industry product service providers. The BCA also considers the performance-management regime and the performance requirements for each PBA.

3.7. A concept that supports the BCA is the use of Product Support Boundaries (PSBs). The PSBs do not impose additional requirements but they consolidate and clarify government and departmental policy and strategic directives across 10 key support areas that include the use of defence and industry support. Within these boundaries, acceptable product support solutions can be optimised for operational effectiveness and cost. The PSBs are similar to the ‘sustainment solutions envelope’ used by the UK Ministry Of Defence (MOD), where the boundaries are defined at a corporate level, instead of program by program, allowing greater efficiency and a basis for assessing compliance.

3.8. From a DMO perspective, the BCA is a focussed application of Logistic Support Analysis (LSA), specifically those activities for defining supportability requirements and analysing Support System alternatives. The depth of analyses for the BCA appears to be considerably greater in defining an in-service support solution than the DMO’s current processes for developing support concepts and the support aspects of the Acquisition Strategy, particularly with respect to establishing an optimised set of support contracts and other agreements. Notwithstanding, a BCA-like process is considered essential for the adoption of an effective PBL process in Australia. Most of the documents are already a part of the CDG / DMO process, although the underlying detail and analysis may be lacking. There will also be resource and training implications for the Materiel Logistics profession during the Requirements Phase.

3.9. The responsibility for integrating the various support providers, to achieve the negotiated performance outcomes detailed in each PBA, is allocated to a PSI. The PSI may be government, contractor, or a government-contractor team. The product manager can delegate PSI responsibilities to PSIs at the system, sub-system, or component level. The essential characteristic is that the PSI has the responsibility, and corresponding risks, for making decisions that integrate all of the outputs of the relevant product support providers. The PSI must also be the party best placed to manage the risks. Of note, a US GAO study analysed this issue and identified the following finding:

"DOD policy promotes using performance-based contracting differently from the way private-sector firms use it in supporting complex and expensive systems. The companies we reviewed generally used performance-based contracting at the subsystem level for engines and certain other components rather than at the platform level, as proposed by DOD."

31 The support concepts are embedded in the Operational Concept Document (OCD) for Major Capital Equipment (MCE) projects.
Furthermore, when using performance-based contracting, these companies do not contract out the program integration function, as the military services are doing.”33

3.10. The PSI concept is significant in the US DoD’s implementation of PBL. It recognises that the effective support of major products (Mission Systems) is dependent upon a central person or entity to integrate the various sources of support, including maintenance, supply, engineering and potentially training, from both government and industry sources, to an end-user-focussed set of performance measures contained in a single agreement. PSIs are often government personnel in order to integrate Defense and industry support. The support functions themselves are not new, but the PSI provides a focal point for the integration of all support functions. A similar concept should be introduced into the Australian Defence Organisation.

Case Study: US Navy T-45 Goshawk Engines

3.11. The US Navy operates T-45 Goshawks as jet trainer aircraft for Navy and Marine training for carrier aviation and tactical strike. Having established a whole-of-aircraft contract, the program office updated the BCA with collected data for the T-45 aircraft support contract and realised that the contractor was not meeting the aircraft availability performance measure, with cost per flying hour higher than estimated, due to reduced hours. As a result the program office negotiated separate contracts for the airframes and engines, which resulted in estimated cost savings of US$144 million over 5 years.34

3.12. The US GAO determined that one of the reasons for commercial companies to maintain the program integration function was to avoid the administrative costs of the prime integrator. In the context of the US Navy T-45, in discussing this integration role, the savings were US$118 million for the airframe and US$25 million for the engine contract.35 The GAO implies that much of the savings from the airframe contract were as a result of removing the integration responsibilities for the engine from the airframe prime contractor.

3.13. The engine contract with Rolls Royce was a power-by-the-hour® contract that motivates Rolls Royce to produce maximum engine ‘time on wing’ via product upgrades and other reliability improvements. The results included the delivered engine availability, mean time between removals and parts delivery exceeding contract requirements. The flat fee per flying hour also discouraged overflying (Rolls Royce leaving the aircraft on-wing for too long) due to the increased costs associated with over-use.36

3.14. The value of this case study is in the confirmed benefits of both reduced cost and improved system availability enabled by an appropriate allocation of contracts, which is made possible by taking the responsibility for coordinating support in-house.

3.15. The point is not that aircraft engine support should be contracted for separately; rather, that significant benefits can be achieved by allocating contract risks appropriately, and that this can be achieved when the PSI role is understood, defined and their responsibilities are effectively discharged.

3.16. Throughout the BCA process, allocation of PSIs and formulation of PBAs (including contracts), the focus is retained on the primary objectives of operational readiness, mission reliability and ownership cost. Individual performance measures, for each PBA, are derived from these primary objectives within a system, subsystem, equipment or component-specific context.

36 Dean Newmaun, ‘DoD PBL – an Example of Entrepreneurial Public Management’, Defense Acquisition University, 10 Jan 06, page 38.
3.17. Any analysis of the relative merits of PBL approaches, however, needs to differentiate between the US and Australia defence business contexts.

3.18. The US DoD regulates its contracting environment, relying in part on highly prescriptive legislation and on greater cost visibility and specific cost-accounting standards to exercise controls on market and contractor behaviour. Under PBL, shifting away from the US DoD’s ‘cost-plus’ contracting preference towards ‘fixed-price’ contracting is considered to be a form of PBA. In other cases, the cost visibility has been used to pursue mutual objectives and avoid rorting. Another difference in the US environment is that the amount and type of government depot work is legislated\(^\text{37}\). The US DoD retains the capability to compete and take work in-house, which creates competitive tension where otherwise there would be none.

3.19. The Australian Defence Organisation, on the other hand, operates in a commercial environment, with a strong preference for ‘fixed-price’ contracting\(^\text{38}\), a standardised contracting framework (ASDEFCON) with appropriate rewards and remedies, and a reliance on market forces to drive behaviour. The ADF also typically operates small numbers of Mission Systems and other equipments, the ‘competitive depot’ environment does not exist, and the local Defence marketplace is small, with few players in many Defence equipment/technology domains. In this light, the shift to PBL implies a more significant paradigm shift in the US context than it does in Australia.

### Case Study – C-17 Support

3.20. The RAAF’s C-17A fleet is supported by a Performance-Based Agreement (PBA), managed by the USAF and including UK and Canadian aircraft, known as the Globemaster III Sustainment Partnership (GSP). The PBA comprises two contracts: the first contract is for the majority of services and comprises 65% of the total value as a fixed-price contract with an award fee, and the second contract, for the other 35% value, is a cost-plus contract with an incentive fee. The award fee is given for achieving a Global Sustainment Aircraft Availability (GSAA) measurement (weighted at 85%) and a customer survey (15%). The incentive fee is for achieving cost targets of the global spares pool with a maximum incentive of 13.7% profit and a minimum of 5%\(^\text{39}\).

3.21. The GSAA, which is the primary measure and Key Performance Indicator (KPI), is one of six performance measures, including the customer survey. The required GSAA is calculated for each month over a period of 12 months (using an off-contract Requirements Measurement Plan) and measures mission capable aircraft. It also considers the outcomes of the Air Forces’ organic maintenance and is a meaningful measure for the ‘warfighter’. To include organic maintenance, the calculation allocates a portion of the down-time (to return an aircraft to a mission capable state) to both the contractor and operating units – given that both are motivated by a common outcome. The GSAA also considers the number of aircraft delivered from production, depot maintenance, scheduling of upgrades, and other factors. The remaining four performance measures identify the effectiveness of the support program, problem areas, and help to validate the GSAA calculation (eg, the ‘issue effectiveness’ of repair parts from both contractor and Air Force providers)\(^\text{40}\).

\(^{37}\) Section 2466, Title 10 of the US Code limits the contracting out of ‘core’ government skills.

\(^{38}\) The preference for firm-priced contracting in Australia occurs because of the recognition of the significant overhead that cost-plus contracting requires. In the US, there are mandatory cost-accounting standards that are invoked with cost-plus contracting and an “army” of contract managers and auditors (eg, Defense Contract Management Agency (DCMA) and Defense Contract Audit Agency (DCAA)). Australia cannot afford the reduction in capability that would result from any large-scale introduction of cost-plus contracting.


3.22. The cost-plus incentive fee contract, with a target cost, requires the supplier to determine requirements and buy spares for the USAF-owned supplier-managed spares pool. Under the target cost the incentive increases contractor profit and retains some savings for the USAF, while for costs over the target price the incentive reduces contractor profit as the USAF pays for additional spares. This motivates the supplier to achieve the GSAA and customer satisfaction of the first contract while minimising the cost of the spares and the services for managing the pool. The supplier cannot overstock the spares pool and its logistics pipeline in order to achieve the GSAA without incurring a reduction in the incentive payment.

3.23. In many contracts, responsibility for the delivery of available and capable systems is transferred to the contractor, and the program office retains the responsibility for controlling costs. As usual for a contract, this situation provides an opportunity for further ‘business development’, expanding the services for an increased contract price, and the contractor has no responsibility for reducing the government’s costs. In the GSP case, at least some of the responsibility for reducing total cost of ownership is transferred and the supplier must manage the balance of aircraft availability and the cost of the spares pool.

3.24. Although due for replacement, the GSP was identified as the best example of a contract, which tied performance to an overall availability metric, by the Air Force (USAF) Logistics Management Agency in 2004.

3.25. Anecdotally, both USAF and RAAF have remarked on the high levels of availability achieved under this arrangement; however, it is not possible to determine how the overall cost compares to an alternative and more traditional contracting arrangement.

3.26. There are many example support contracts from the US that identify benefits of PBL. This case study was chosen for its assessment as a ‘best example’ and for local relevance.

The UK Approach

3.27. The UK MOD is undertaking a process of ‘logistics transformation’, which includes rationalising in-house support, streamlining processes, market testing, and moving towards outcomes-based contracting.

3.28. The UK approach originates from PBL and includes ‘contracts for availability’ and ‘contracts for capability’. The ‘contracts for availability’ consider the availability of the Mission System to Defence, with payments often based on the number of days the system is operationally available, or the availability of the components supported by the contract. A ‘contract for capability’ is a further extension of the pay for performance concept, where a contractor is to maintain the capability of the mission system (eg, including responsibility for upgrades) and may own the major systems that are provided to Defence on a lease basis (eg, river class offshore patrol vessels).

3.29. UK performance-based contract have included Naval radar systems, air defence systems and the Nimrod aircraft fleet. Typical cost savings from performance-based contracting have been given as a generic figure of over 20% from a range of contracts. As a further example, the Royal Navy’s Astute-class submarine will be supported by a performance-based contract, which will measure the submarines

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41 Presumably through stock optimisation, economically sized batch orders, and competitive contracting where feasible.
42 As above, Pettingill and Knipper.
43 As above.
44 Heavy Air Lift Project Office and USAF 516AESG.
'available' to provide 'continuous at sea deterrence' (ie, not undergoing maintenance, even though they may not be deployed). Savings from this approach are expected to be significant\textsuperscript{46}.

3.30. The concept for the future strategic tanker aircraft, yet to be implemented, is an example of contracting for capability. The public-private partnership will own the aircraft and the Royal Air Force (RAF) will operate the aircraft as a tanker or military transport. Payment is made per use, while the contractor undertakes maintenance and is able to use the aircraft for commercial passenger operations when not required by the RAF.\textsuperscript{47}

3.31. As per the examples above, the UK approach to performance-based management of support is focused on the key objectives of system availability, reduced ownership costs, and contract solutions that provide operationally capable systems as well as opportunities for industry. This approach is embedded within the UK Defence Industrial Strategy\textsuperscript{48} and also influences reform within the Defence Equipment and Support (DE&S) organisation, via the PACE (Performance-Agility-Confidence-Efficient) programme\textsuperscript{49}, with some aspects such as ‘customer supplier agreements’ not dissimilar to the MSA Product Schedules by the DMO and ADF.

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**Case Study – Harrier Support**

3.32. The UK National Audit Office (NAO) has reviewed some of the UK’s new outcomes-based contracts, including those for Tornado and both RN and RAF Harrier aircraft\textsuperscript{50}. These contracts are part of a reform program that, over a six-year period, has resulted in stated cumulative savings of £1.3 billion and £109 million for Tornado and Harrier respectively. The major cost of change was associated with the closure of the super-hangar at St Athan (£140 million) but this spend-to-save investment has been significantly outweighed by the savings.\textsuperscript{51}

3.33. Harrier maintenance support has improved due to there being fewer aircraft in ‘depth’ repair and, as of 2006, was at or close to the revised target despite pressures from operations in Afghanistan (a lower target but still higher than previously achieved). Improved repair processes have reduced engine turn-around time by 59 percent. The time to update of a Harrier GR7 to GR9 standard was also reduced by 43 percent.\textsuperscript{52}

3.34. As indicated, the logistics transformation included a number of initiatives, not just PBCs, so a summary of the scope of change is useful in analysis. The RAF Harrier jets were serviced by a maintenance system with four levels of repair: operational level, off-aircraft repairs conducted at each operational site, third line repair at RAF St Athan, and then contractor sites. These levels of repair have been consolidated into two levels with forward repair at operational sites and all ‘depth’ repairs, including that formerly done at operational sites, now undertaken at Cottesmore (a total reduction in uniformed maintenance personnel of 8.7%). Contractor engine support has also been established at the depth hub at Cottesmore, via contracts for availability, with a number of specialist contractor staff replacing some of the all-Defence workforce at the third line of repair. A ‘pulse line’ for aircraft depth maintenance performed largely by uniformed staff was set up using lean techniques, reducing turn around by 19% from previous maintenance. A separate but related initiative with greater contractor support was established for engines.\textsuperscript{53}

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\textsuperscript{46} Hardy, R., ‘Submarine Support: Achieving Affordable Availability’, RUSI Defence Systems, Oct 08.


\textsuperscript{48} ‘Defence Industrial Strategy – Defence White Paper’, Dec 05 (currently subject to update).


\textsuperscript{50} National Audit Office, ‘Transforming logistics support for fast jets’, 17 Jul 07.

\textsuperscript{51} Ibid, para 5.

\textsuperscript{52} Ibid, paras 2.6 – 2.16.

\textsuperscript{53} Ibid.
3.35. The improvements from the transformation are impressive; however, from the range of changes undertaken concurrently, including consolidating maintenance levels and locations, reducing the uniformed workforce, applying lean techniques, and implementing contracts for availability, it is not possible to determine what benefits are attributable to each, only as a whole. It is difficult, therefore, to determine the benefits of the contracting model (or ‘lean’) from the gains that would have been achieved simply from consolidating maintenance and the resulting staff reductions.

3.36. In Australia, where consolidation and outsourcing has already been undertaken (through reforms such as the Commercial Support Program (CSP)) and the associated savings have been reaped, and where in-house competition is not available for deeper maintenance contracts, the equivalent improvements may be more difficult to achieve without further ground-breaking steps forward. Nevertheless, the UK initiatives of performance-based ‘contracting for availability’ (at weapon system and major subsystem levels) and the application of ‘lean techniques’ provide the possibility of some further gains.

3.37. The value of analysing the UK approach is that the contracting environment is similar to Australia (particularly when compared to the US) and our objectives are similar. In Australia, ASDEFCON templates provide a basis for an outcomes-based contracting framework, but they do not appear to have been expanded and applied to the level of performance-based contracting being undertaken in the UK.

**Using the US or UK Approaches in Australia**

3.38. Both the US and UK have performance-based and outcomes-based contracting models as part of their PBL and Defence and Industry Strategies, respectively. Both have achieved success in cost savings and improved availability. Adopting either the US or UK approach can, at first, appear like a good idea, but on closer examination our situation is quite different.

3.39. Significant differences exist between Australia and US financial regulations that provide the US DoD with much greater insight into a contractor’s costs and profits. Title 10 of the US Code also requires a government-owned, deeper-maintenance capability to be maintained that, depending on your perspective, offers the opportunity to cut costs or to ensure competitive bids from industry. Benefits gained by changing from cost reimbursement to fixed/firm priced contracts are not particularly applicable in the Australian context, given the DMO’s propensity for firm-priced contracts.

3.40. In comparison to the UK, where the legal contracting environment is more like our own, many UK improvements have been achieved by contracting out or forming public-private partnerships to perform deeper maintenance previously performed in Defence depots. The UK also consolidated the numbers and locations of maintenance. In Australia, many of these changes have already been made.

3.41. Both the US and UK have retained Defence skills and organisations performing deeper maintenance to provide at least one source of competition for any contract, which is competition that the Australian Defence Organisation cannot generate. Both countries conduct support alongside major manufacturing capabilities, which in Australia is limited to a small number of contractors for different military systems. The US and UK also support larger fleets of systems, with the volume of work creating economies of scale that small Australian fleets could not generate.

3.42. The US DoD has undertaken PBAs involving multiple PBCs in order to achieve common objectives, where each contract needs to be managed or incentivised differently. The US DoD also use PBAs to cover a succession of contracts to progress from cost-plus contracts when available data is limited and needs to be collected (and cost risk is high) to fixed-price PBCs using the collected data to provide greater certainty (and to lower risk and cost). The UK MOD has adopted contracts for availability in a wide range of deployable combat systems, an area that traditionally present challenges. The UK MOD
has also sought to remove MOD influence from contractors’ control of availability by contracting out the management of commodities used on multiple systems.

3.43. A substantial amount can be learned from the US and UK; however, the differences in the Defence industry environment and business practices mean that adopting either framework would require significant adaptation. The progress being made in both countries also indicates that, while there are lessons to learn, Australia is not necessarily too far behind the progress being made overseas and, in some ways (such as contracting out deeper maintenance), it is clearly ahead.

Key Points:

- The US DoD uses PBL, which provides a framework that is significantly broader than PBCs.
- A formal BCA process is conducted by the US DoD to determine the optimal mix of government and contractor support, and the number and scope of agreements (including contracts) required. The BCA process begins early in the life-cycle and the results are formally considered at major milestones (eg, during capability development and prior to project approval).
- PBAs are part of the PBL framework and are all traceable to end-user needs. PBAs include internal agreements (like MSA Product Schedules) and contracts (sometimes more than one contract per PBA).
- PSIs are appointed at system and lower levels to take on the responsibility of integrating the support to be provided to their assigned product(s), and as described by their PBA. The PSI may be a government, industry or joint team. The essential characteristic is that the PSI has the responsibility, and is best placed to manage the corresponding risks, for integrating all of the outputs of the product support providers.
- Despite mixed interpretations of results, largely due to the level of reporting, Defense and critics alike are striving to further develop PBL as a fundamentally sound approach.
- While the UK MOD approach originates from PBL, it considers the broader performance-management framework of defence and industry, and includes ‘contracts for availability’ and ‘contracts for capability’.
- The UK has made significant and quantified improvements in availability and cost reductions, using PBCs as part of a larger logistics transformation process. The proportion of benefits that can be attributed to each of PBCs, ‘lean techniques’, or more traditional consolidation and personnel reduction strategies, is unclear.
- The US DoD, the UK MOD, and the Australian Defence Organisation share common objectives from performance-based initiatives and, despite different contracting environments, there are useful lessons for Australia when transferred to a local context.
- The US and UK have both made advances but, due to differences in environment and existing business practices, neither approaches could be adopted by the DMO without significant adaptation.
- The US and UK experiences provide a source of lessons learned and some new opportunities to be evaluated for use in Australia.

54 Defence Equipment and Support, CAPS website: [www.mod.uk/DefenceInternet/MicroSite/DES/OurTeams/BusinessGroups/CommodityAvailabilityProcurementStrategycaps.htm](http://www.mod.uk/DefenceInternet/MicroSite/DES/OurTeams/BusinessGroups/CommodityAvailabilityProcurementStrategycaps.htm)
4. The Australian Defence Experience with PBCs

Introduction

4.1. The DMO has been using different approaches to support contracting that focus on performance for over ten years. LIF provides an early example and, from around the same time, the support contracts for the Tactical Air Defence Radar System (TADRS) and the Air Defence Ground Environment (ADGE) Command and Control System (Vigilare) provide other examples.

4.2. Currently, there are two main approaches defined for use in DMO for specifying a performance-based support contract (although only one of these is fully realised), namely:

- the approach embedded within the ASDEFCON (Support) template; and
- the approach defined in the ‘ASD Performance Based Contracting Handbook’.

4.3. The two approaches use different rewards and remedies to incentivise contractor performance; however, neither of them currently addresses reducing TCO. Both of these approaches are discussed in the following subsections. Additionally, an overview of the PBC approach used by DSG will be provided. As the Chief Information Officer Group (CIOG) is understood to be implementing the IT Infrastructure Library (ITIL) process framework, an overview of the performance-management aspects of this framework is also provided.

4.4. Performance-based support contracts within the DMO have not been limited to these two approaches, and there have been a variety of support contracts that have applied performance-based techniques. Implementing any new approach, particularly one to be applied to a broad range of support contracts, requires both considerable effort and an in-depth understanding of the existing clauses of the ASDEFCON (Support) template.

ASDEFCON (Support) Approach

4.5. Currently, there is only a single template for support contracting, which attempts to cover the full gamut of DMO materiel support contracting requirements. In response to stakeholder feedback, however, an ASDEFCON (Shortform Support) is currently under development that will address the lower end of the support contracting spectrum, where the principal requirement is for transaction-based support contracts using a pay-for-service approach. From a PBC perspective, this development means that the Next Generation PBC framework for ASDEFCON (Support) does not need to address the lower end of the support contracting spectrum.

4.6. The ASDEFCON (Support) template is intended for developing outcomes-based contracts, as required by the ASDEFCON Guiding Principles. Although outcomes focussed, the performance-management regime is not mature. The template includes clauses for managing the verification and validation of services, measurement programs, reporting and a number of standard contract remedies; however, the provisions included for performance-measures, KPIs and incentives are little more than placeholders available for development by the individual contract drafter.

55 Other DMO Divisions have implemented performance-based support contracts (eg, MSD for the Armidale Class Patrol Boat and the Mine Hunter Coastal).
56 From an ASDEFCON (Support) perspective, these types of contracts fit into Scenario #4, which was earlier described under the heading, Different Types of PBCs.
4.7. The ASDEFCON (Support) template was established with only two performance-related payment options. The first is the use of incentive payments based on establishing a minimum level of performance and profit, and then defining a relationship between performance and payment, such that each step closer to an optimum level of performance is rewarded. This incentive-based approach can be problematic, however, because the DMO may not wish to incentivise levels of performance above the minimum required (in part because the value-for-money equation can be difficult to establish). The second option involved the use of Liquidated Damages (LDs) linked to performance objectives, starting at a maximum level of profit for optimal performance and LDs applied for shortfalls – likely to be both a source of dispute and excessive administration. The two options, still embedded within the current version of the ASDEFCON (Support) template, are mutually exclusive (due to potential overlap), unsophisticated and inadequate. There is also limited guidance accompanying this framework; hence, it is largely left to the drafters to determine how to implement this methodology to suit their particular circumstances.

4.8. The Conditions Of Contract (COC) includes two types of performance measures: KPIs and Reporting KPIs. KPIs are the performance measures used with incentive payments, while Reporting KPIs (according to the ASDEFCON (Support) Handbook) are intended to be used for performance monitoring. Reporting KPIs, however, are tied into the contract terms in a way that belies this intention. For example, they establish minimum performance standards for particular contract services (as identified through particular Reporting KPIs) and are tied into the fitness-for-purpose warranty and termination. A Reporting KPI can also be identified as a KPI to ensure that the different rewards and remedies are applied appropriately to suit the particular circumstances. The different logic underpinning the two different types of performance measures, however, makes the implementation of a sound management framework for a particular contract particularly challenging.

4.9. A secondary concern with Reporting KPIs is that, by tying them into the contractual remedies, they cannot include lead indicators of contract or system performance problems and they cannot be used to monitor elements that may not be within the contractor’s control (eg, system reliability, where the support contractor is not the system designer). This means that a separate performance-measurement framework is required for these types of measures, which is not catered for in the current template.

4.10. The COC also states that Liquidated Damages (LDs) “should only be incorporated if the Contract Price does not include a performance payment regime”57. LDs in the template are linked to one or more ‘Objectives’, with an Objective being defined as, “an outcome or event specified under the ‘Objective’ heading in Attachment D and includes [achieving or maintaining] an Industry Requirement in the AII Plan”. While this approach does enable LDs to be tied into the performance-management framework as a remedy (eg, for costs incurred by the Commonwealth due to inadequate performance by the contractor against particular KPIs, which are also defined as Objectives), the template guidance does not establish this link. Additionally, LDs in the current version of the template are linked to delay, which is problematic if particular performance measures are not schedule-related (eg, system availability or demand satisfaction rate for spares, which are two of the more common performance measures that are not schedule-related).

4.11. The COC also includes stop payment events, which could be tied into the performance-management framework (eg, for inadequate performance against particular performance measures), but once again, the template guidance does not establish this link.

4.12. The COC includes the standard ASDEFCON postponement clauses, but does not include a standardised performance-relief process for those performance measures that are not schedule-related (eg, for

57 V2.1 of the template, which is due for release at end of 2009, amends this guidance to, “Care should be taken if this clause is to be used in conjunction with a performance payment regime as part of the Contract Price”.
excusable non-performance), although clauses for this process are being revised in V2.1 of the ASDEFCON (Support) template. 58

4.13. The Statement Of Work (SOW) also includes clauses that allow performance measures to be specified. These performance measures may be related to either the determination of KPIs or Reporting KPIs. Again, however, the templates and guidance do not establish this link. 59

4.14. The Conditions Of Tender (COT) requires particular information to be provided in relation to incentive payments; however, the clauses here require tenderers to provide details of “the tenderer’s proposed assessment periods, key performance indicators and weightings, if applicable”. This approach is problematic because KPIs provide the cornerstone for contract performance management and, therefore, should be defined by the DMO (consistent with Defence customer needs and MSA Product Schedules) and the option for tenderers to propose their own KPIs should not be available.

4.15. Overall, the performance-management approach built into the current version of the template (ie, V2.0) is somewhat confused, primarily because it is incomplete, and the few basic performance-management inclusions have been inconsistently implemented across the different parts of the template. It is possibly for these reasons that the authors of this paper were unable to identify a single RFT that had implemented this performance-management framework without making substantial changes to the framework, such as the ASD PBC Module (discussed next), which was developed to ‘bolt onto’ the ASDEFCON (Support) template.

4.16. Despite the incomplete development of the performance-management regime, ASDEFCON (Support) retains a robust outcomes-based contracting framework, which is a necessary prerequisite for PBCs. Proposed version 2.1 updates to the template will also remove some of the current confusion and inconsistency, thus providing a suitable foundation for the development of a coherent PBC template.

**Aerospace Systems Division Approach** 60

4.17. Under the ASD approach, the main component of the PBC framework is based on a ‘payment-at-risk’ model, where a portion of each payment is linked to a contractor’s performance and is the amount that the contractor can potentially lose for under-performance. Typically, the at-risk portion is linked to the contractor’s profit, but this does not have to be the case.

4.18. The ASD PBC Handbook defines PBC in the following way, which is derived from one of the US definitions for PBL:

> “Performance Based Contracting is defined as a product support strategy utilised by Program Managers (PMs) to achieve measurable war-fighter selected performance Outcomes for a weapon system or subsystem. PBC utilises performance Outcomes such as availability, reliability, maintainability, supportability and total ownership cost. The primary means used to accomplish this end are incentivised, long-term performance based contracts with specific and quantifiable levels of operational performance as defined by the user. A Business Case Analysis (BCA) justifies the PM’s decision to enter PBC contracts and includes thorough life-cycle cost and risk assessments of the expected operational performance targets selected.”

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58 Of note, there are many elements of the current COC that need to be modified to change this schedule focus (eg, Government Furnished Material clauses), which are included in the V2.1 update.

59 The V2.1 template update removes the specification of performance measures from any part of the SOW and tidies up a number of other lower-level inconsistencies that worked against the implementation of a sound management framework using performance measures.

60 Most of the material in this section has been derived from the ASD PBC Handbook (Version 2).
4.19. The ASD PBC Handbook identifies the following potential benefits of a PBC framework:

- It allows Defence Industry to be a true partner in the delivery of Capability Outcomes.
- It rewards the contractor fairly for achieved performance and is therefore a measure of the value for money of the contract.
- It can be less contentious than relying on contractual remedies for underperformance such as Liquidated Damages.
- It can provide valuable evidence in decisions relating to contract extensions and additional work.
- It can be beneficial to the contractor in their future dealings with the Division as ‘past performance of contractual obligations of the tenderer’ can be used as a discriminating factor in tender evaluation.

4.20. The ASD PBC framework is based around a set of key principles, namely:

- The achievement of Value for Money contractual outcomes for the Commonwealth is essential.
- The Key Performance Metrics used to measure contracted outcomes should be simple, measurable and meaningful.
- In return for longer term contracts, there is an expectation of continued performance improvement and/or reduced cost of ownership over the life of the contract.
- The overall profit rate applied to the contract pricing should relate to the level of risk involved, and the at-risk margin is enduring for the life of the contract.
- The level of profit awarded should be linked to an agreed level of performance. The level of contractor exposure should be sufficient to incentivise performance to the agreed level.
- The Commonwealth will retain the right to terminate in whole or part for consistent under performance.

4.21. In relation to these principles, the following points are noteworthy:

- The first of these principles is Government policy, while the remainder to a greater or lesser extent are applicable to the Next Generation PBC framework being proposed through this paper.
- The nature of performance measures, as per the second of these principles, is discussed later in the paper at Achieving Enhanced Performance: Rewards, Remedies and Performance Measurement.
- The length of the contract term and issues of reducing TCO are addressed later in the paper at Achieving Reductions in TCO.
- Whether or not profit, as an issue for PBC, will manifest itself to the same extent as in the ASD approach was addressed, in part, in the earlier section of the paper under Incentivising Performance, and is discussed further in the later section of the paper at Pain Share / Gain Share Models with Cost as an Objective (under the subsection relating to Regulatory Requirements).
- Termination will remain as one of the set of remedies available to the DMO for poor performance, which will include performance as assessed through the PBC performance-measurement processes. Notwithstanding, as identified throughout this paper, the proposed, Next Generation PBC framework needs to consider a harmonised set of rewards and remedies that are not just focussed on the Key Objectives, but also address the governance framework for the whole of the contract.
4.22. The ASD PBC framework uses two types of performance measures: KPIs and System Health Indicators (SHIs). KPIs are the performance measures linked to payments, while SHIs are intended to be used to monitor the health of the Mission System and Support System, particularly the contractor’s component of the Support System. KPIs are lag indicators of past performance and are used to motivate the contractor to remain focussed on the specified outcomes. SHIs, on the other hand, are intended to be used to give lead indications of future performance trends and thereby facilitate proactive management of potential performance anomalies. SHIs are intended as management aids, often process related, and the contractor is not paid against their achievement.

4.23. While the SHIs are not explicitly integrated into the contractual rewards and remedies, the ASD PBC Handbook states, “In the absence of a payment driver, Defence can rely upon the Performance Review process and reporting tools such as the Company Scorecard to influence corrective action against negative trending of SHIs”. Additionally, the handbook states that an unsatisfactory trend in an SHI that is not corrected will be eventually reflected in the contractor’s performance against a KPI, which “will provide the key driver for the respective contractor to actively manage SHIs”.

4.24. While these approaches might work, they lack immediacy and seem overly optimistic. For example, conducting technical information review (as required under the Aerospace TRF) and maintaining the currency of technical publications are safety issues\(^{61}\), for which SHIs are often identified. Notwithstanding, the Commonwealth Representative needs to be able to take immediate action when problems with these types of issues (particularly safety-related ones) are identified. The ASD PBC Handbook is particularly clear about this point, stating, “While the focus of the ASD PBC Handbook is primarily on performance management, it does not reduce or negate the responsibility of the contractor to produce and maintain materiel to a specified level of safety […]”\(^{62}\).

4.25. SHIs are intended to be lead indicators\(^{63}\), but care needs to be taken in their use to ensure that elements of the contract are not over-emphasised simply because they can be measured (noting that this is a problem with any performance-measurement regime). This issue is further discussed later in the paper at Classes of Performance Measure for the Next Generation PBC Framework.

4.26. While the main component of the ASD approach is based around performance payments tied to at-risk amounts, the approach provides the flexibility to integrate three different rewards and remedies: performance payments, incentive payments and LDs. This integration is illustrated in Figure 9. Note that the 100% Achieved Performance in this figure does not mean that the DMO is seeking 100% of possible performance for a particular KPI. Instead, the 100% point relates to the highest level of performance that is established in the contract against a KPI (eg, 95% demand satisfaction rate could be established as the 100% performance target).

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\(^{61}\) For example, the loss of the RAAF Boeing 707 aircraft into the ocean in Oct 91 was traced to inadequacies with the management and updating of technical data.

\(^{62}\) The recent UK Government Report, ‘The Nimrod Review: An independent review into the broader issues surrounding the loss of the RAF Nimrod MR2 Aircraft XV230 in Afghanistan in 2006’, Charles Haddon-Cave QC, 28Oct09, provides a salient recent example of the need to maintain safety standards in an environment of cost saving, such as under the current Defence SRP.

\(^{63}\) Lead indicators can also be lag indicators. For example, the number of outstanding publication amendments is a lag indicator (of work not performed or not yet performed), but when provided as a trend over time, becomes a lead indicator of potential future performance shortfalls.
4.27. Figure 9 shows that the ASD PBC approach is based around four performance bands for each KPI, with each band defined, as follows:

- **Band I - Minor Variation.** The first band is a small margin at the top end of the performance spectrum, which provides for minor variations in performance. The adjusted performance in this range generally falls more slowly than the actual decrease in Achieved Performance.

- **Band II - Major Variation.** The next band represents a level of contractor performance that, while satisfactory in meeting minimal short-term tasking requirements, should be strongly discouraged. As an increased disincentive, the adjusted performance in this range falls faster than the actual decrease in Achieved Performance.

- **Band III - Exceedingly Poor Performance.** At the bottom end of performance, the value to Defence may be considered to be negligible and the contractor would not receive performance payments against that KPI. LDs may also be considered at this point to address the costs to Defence resulting from the degraded level of performance.

- **Band IV - Exceeding Contracted Levels of Performance.** The final band of performance that may be included in the payment regime is that which exceeds the targets associated with 100% of the contracted level required. This band is optional, depending upon the utility of the over-performance to Defence.

4.28. Under the ASD PBC approach, incentive payments do not have to be used for rewarding the same functions or types of performance that receive performance payments. For example, performance payments could be attached to the on-going availability of systems for Defence use, while incentive payments are attached to separate events that benefit Defence, such as achieving a modification.
installation program ahead of schedule or a particular level of local content under Australian Industry Capability (AIC).  

4.29. The ASD PBC approach identifies five different types of support contracts based around the required scope of work (as illustrated in Figure 10), namely:

- through-life support contracts, which are whole-of-system support contracts (with the exception of any support provided by the ADF);
- contracted maintenance support contracts, which include both scheduled and unscheduled maintenance as well as modification incorporation;
- RI support contracts for support of avionics equipment;
- aero engine support contracts; and
- engineering services support contracts.

![Figure 10: ASD Targeted Contract Types for Implementing PBCs](image)

4.30. With the exception of the support contracts for engineering services (which is yet-to-be developed), the ASD PBC Handbook mandates particular Outcomes and associated KPIs for each of these contract types as well as defining some candidate and mandatory SHIs. In general, however, specific SHIs are not mandated because they are intended to be linked to the critical process solutions of the contractor. Instead, specific SHIs are intended to be negotiated and agreed for each contract and managed within the contract’s performance-review processes. This approach is not dissimilar to the Measurement Plan, which is included as part of the various ASDEFCON templates.

4.31. For the through-life support contracts, the ASD PBC framework uses a three-tier performance-review process, as follows:

- Executive Review, which is generally held annually and which is used to provide “an opportunity to appraise the contract’s effectiveness in terms of both Defence’s Capability Outcomes and the contractor’s legitimate commercial expectations”;

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64 The ASD PBC Module simply integrates the extant ASDEFCON (Support) provisions for incentive payments in COC Attachment B to achieve this outcome.
- Capability Management Review, which is generally held quarterly and which is used to “discuss each [KPI] and agree payment based on contractor performance”; and

- System Health Review, which is generally held monthly and which is used to provide “regular opportunity to discuss critical process issues affecting system performance”, including discussions of SHIs and progress reports on KPIs (to ensure that any discrepancies can be resolved prior to Capability Management Reviews).

4.32. The performance-review process is less clear for the other contract types, but the general principle specified is that the timing, frequency and composition of the reviews “should be commensurate with the financial and technical risk in the contract”.

4.33. The ASD PBC framework incorporates a process for developing a PBC framework for a contract, structured around the following six generic steps:

- Step 1 - Specify the Outcome;
- Step 2 - Select the Performance Measure;
- Step 3 - Set the Contracted Level;
- Step 4 - Define the Payment Regime;
- Step 5 - Define the Incentive Regime; and
- Step 6 - Insert PBC Framework into Contract Construct.

4.34. The ASD PBC framework includes the option for a Transition Period, during which the contractor’s performance is monitored, but the PBC payment regime is not applied in full. Figure 11 illustrates a possible example of a Transition Period, noting that at-risk payments only are shown, but the concept extends to include any incentive payments or LDs that are linked to KPIs.

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65 This six-step process appears to have been derived from the US DoD 12-step process for implementing PBL. The US DoD approach, however, encompasses the total Support System, while the ASD approach only looks at the required support contract(s). For further information on the US DoD approach, refer to ‘Performance Based Logistics: A Program Manager’s Product Support Guide’, DAU, March 2005.

66 The Transition Period is optional because it may not be required, particularly where an existing contractor has been awarded a new support contract that now includes the PBC regime (unless there has been a significant change in scope).
4.35. The Transition Period provides the opportunity to ensure that an appropriate baseline for average performance is established before the performance-payment regime is fully applied. Performance in the early review periods can be quite unrepresentative of the true performance that a particular contractor will achieve because the support system (e.g., organisational responsibilities and interfaces, management systems (including responsibilities, processes and procedures), performance reporting, and system failure characteristics and associated support requirements) takes some time to properly bed down. The ASD PBC Handbook also makes it clear that:

“The Transition Period should not be viewed as a research phase for selection of appropriate Metrics or achievable Targets. The Metrics and Targets should be agreed prior to contract signature and the Transition Period is merely a validation of the accuracy and significance of the data, given possible transition problems.”

4.36. The Transition Period can also be used to overcome the ramp-up implications discussed earlier under Capability Life-cycle Implications. Figure 12 illustrates a possible approach to implementing a PBC regime during ramp up, with this figure linking the degree of application of the PBC regime to the Materiel Release milestones.
4.37. The ASD PBC framework has been incorporated into an ASD PBC Module, which ‘bolts onto’ ASDEFCON (Support). This module has a number of good aspects (eg, performance against KPIs is tied into the contract remedies, such as stop payment and termination); however, it also has a number of issues, which makes it problematic in use, including that the module:

- is incomplete (eg, the necessary modifications to the COT and SOW are not included);
- only currently caters for through-life support contracts (although tailoring it for the other contract types is relatively straightforward);
- embeds the KPIs and SHIs into a new Contract Attachment; however, there are situations where it is better to manage these performance measures ‘off-contract’ (eg, where time-variant performance measures are required – see next paragraph);
- embeds work (ie, reviews and reporting) in a new Contract Attachment, which introduces conflicts and overlaps with the SOW and is contrary to the ASDEFCON Guiding Principles – see Annex A;
- requires at-risk portions to be identified in all S&Q rates and payments, which means that, for many contracts, a detailed performance-based accounting activity will be incurred for what are often small, unavoidable time-and-materials costs without performance measures;
- does not include a formalised performance relief process (ie, equivalent to the postponement process included in the COC)\(^\text{67}\);
- requires all KPIs to be measured over a common period (eg, quarterly), which is not always practicable; and
- embeds a four-stage process (as illustrated in Figure 13) to convert recorded performance measures to calculated payments, which provides for a highly adaptable solution, but it could

\(^{67}\) This formalised process is currently proposed for inclusion in V2.1 of the ASDEFCON (Support) template.
result in overly complicated administration for smaller contracts and may cause the measures to appear remote from the payment.

Figure 13: ASD PBC Module Four-step Process

4.38. Of note, the four-step process could be simplified without losing any of the integrity of the model (eg, by treating each KPI separately), but even this change may not be sufficient for contracts at the lower end of complexity. Annex E proposes an alternative approach using look-up tables, which would be easier to administer in-contract (however, it does not change the complexities associated with establishing the performance-management framework in the first place (eg, in relation to selecting the KPIs and scaling the associated performance payments)).

4.39. Figure 14 illustrates an example planning schedule for a fleet of ten Mission Systems, including a minor and major servicing, and a single approved modification program. The number of Mission Systems available to the user varies between seven and nine regardless of contractor performance. If the systems are generally available 75% of the time, the normal variation in fleet availability is around 15%. Mathematically, the percentage variation is greater for small fleets compared with larger ones.

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68 In the DMO’s QEMS, this planning schedule is known as the Mission System Availability Schedule.
4.40. When the performance measures are embedded in the Contract (as per the ASD PBC Module), a Contract Change Proposal (CCP) is required each time these performance measures need to be changed. This approach is unnecessarily cumbersome if a system needs a rolling forecast of performance (eg, to forecast a realistic availability, as illustrated in Figure 14). In the US, such time-variant performance measures are often detailed in measurement plans that, for example, forecast out for 12 months and are updated and Approved by the Contract Authority every six months. Performance is assessed against the Approved plan. While reducing contract overheads, the management of time-variant performance measures ‘off-contract’ is ultimately limited by the variation that can be achieved without the need for a CCP to amend the firm price. Accordingly, annual updates to the Approved plans may need to be accompanied by a CCP for price adjustments consistent with the forecast fleet program (ideally at the same time as other adjustments for indexation).

4.41. Given that Defence often has small fleets of Mission Systems, the Next Generation PBC framework needs to include one or more options to enable performance measures to be managed ‘off-contract’, potentially through a separate measurement plan. There may also be other good reasons for managing performance measures ‘off-contract’, including the ability to fine-tune the performance measures over time.

4.42. One of the more significant risks associated with any PBC approach is the ability to ‘get it right’, to understand and minimise any unintended consequences, to ensure contractor behaviour is being motivated consistent with Defence’s requirements, and to ensure that all aspects of the contract are adequately accommodated within the PBC framework (eg, S&Q Services, particularly in relation to engineering activities). This risk is exacerbated by the lack of experience in the DMO in the creation of PBC approaches and associated performance measures that are relevant across the depth and breadth of DMO sustainment business. The significance of this risk will only be partially mitigated by a standardised PBC framework because the critical consideration here is the selection of a set of KPIs for each contract that is appropriate for the required scope of work.

4.43. To ensure that this risk is appropriately mitigated, the Next Generation PBC framework should include the ability for the Commonwealth Representative to modify elements of the PBC approach in a contract over time (eg, annually) to ensure that it continues to be relevant and represent value for money as the

Figure 14: Time-variant Performance-measurement Requirements
contract progresses.\textsuperscript{69} Of course, the return risk associated with this risk treatment is that the contractor will be concerned about the ability to modify the approach (particularly if it is a unilateral right), and will either be non-compliant or price its tender response accordingly (or both). There may be ways to mitigate this return risk, however, such as limiting the aspects that the DMO can change.

4.44. Notwithstanding the issues identified with the ASD PBC framework and, in particular, the ASD PBC Module, the approach is mature (and continuing to grow in maturity) and represents a sound basis for moving forward. Many DMO Divisions have utilised the approach, including Helicopter Systems Division (HSD) and Electronic Systems Division (ESD)\textsuperscript{70}, and there is a growing body of experience and expertise in this methodology across both DMO and industry. Any significant change in direction, therefore, will involve considerable rework and retraining and is likely to have significant cost implications that should not be underestimated. For all of these reasons, this paper considers that the Next Generation PBC framework be derived from, and build upon, the ASD PBC framework.

\textbf{Defence Support Group (DSG) Approach}\textsuperscript{71}

4.45. While somewhat similar to the DMO’s outcome-oriented approach, the DSG PBC framework is structured to measure and assess the quality of service outcomes delivered by the contractor, not the extent to which the contractor undertakes activities or inputs to deliver the outcome. Notwithstanding, due to the nature of the work being contracted, the outcomes are measured at the level of the individual services. As a simple example, performance assessment is not assessed as to whether or not the floor in a particular facility has been vacuumed in accordance with a set schedule, but rather whether the floor is ‘in a clean state, unstained and free of an unreasonable accumulation of dust, debris and grit’. The DMO would use a similar approach for transaction-based support contracts where capability outcomes are not applicable and individual service outcomes need to be measured (eg, for small-scale contracts for RI maintenance, where the outcome being measured would be the turn-around time).\textsuperscript{72}

4.46. DSG contracts use a detailed performance-management approach based around a three-tier measurement process, as illustrated in Figure 15, and an associated Risk/Reward Remuneration Model.

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\textsuperscript{69} For example, this may adjust availability-related KPIs for the underlying changes to product reliability as the system ages.

\textsuperscript{70} In ESD, for example, a number of support contracts for communications systems have adopted the ASD approach because the ASD approach for through-life support contracts is structured around availability, which is equally as applicable for communications systems.

\textsuperscript{71} This discussion is derived from analysis of two DSG-WA RFTs from 2006: one for Garrison Support Services and one for Contracted Maintenance Services.

\textsuperscript{72} Under this example, the DMO is the PSI and responsible for integrating all low-level outputs to ensure that the capability outcomes are achieved.
4.47. There is a single KPI for each different category of service, which is defined as, ‘The overall quality of performance in [name of service (eg, hospitality and catering)]’. Results against each KPI are expressed as a score out of 100, known as the Performance Score. This score is automatically calculated from the results against the Performance Indicators, using a mandated performance-management and contract-management tool, known as CAPMAN, which is a web-based application that provides the means to record and share performance-related information at the desktop.

4.48. Under the DSG approach, Performance Indicators are used to measure the quality/performance of particular aspects of each service. Performance Indicators can reflect objective assessments or subjective assessments (such as overall quality of office cleaning). Results against Performance Indicators are expressed as a score out of 100, known as the Assessment Rating.

4.49. Supporting Criteria are used for particular services where objective assessment of performance is difficult, such as grounds maintenance, cleaning and hospitality/catering. The Supporting Criteria provide a structured aid for assessing these services by answering ‘Yes’ or ‘No’ to a number of relevant questions associated with each Performance Indicator. An equally weighted calculation of results against the Supporting Criteria provides the Assessment Rating for the respective Performance Indicator (eg, eight (8) ‘Yes’ and two (2) ‘No’ responses results in an Assessment Rating of 80).

4.50. The framework also includes another type of indicator, known as Compliance Indicators, which are used to objectively measure compliance against a clear contractual requirement. These Compliance Indicators are recorded as either ‘Pass’ or ‘Fail’. Any failure of any Compliance Indicator for services covered by the Risk/Reward Remuneration Model at any Defence establishment will mean that no margin is payable for that service in that region for that month, unless the Contract Authority invokes a ‘Prevention Event’.

4.51. Under the DSG approach, the preferred situation is where the contractor undertakes a self-assessment of performance and compliance that, subsequently, will be accepted or not accepted by DSG staff. The framework requires a Consideration and Confirmation process, whereby the Contract Authority satisfies him/herself that the contractor’s self-assessment is a fair and reasonable assessment of performance. This process can include joint assessments, independent assessments, client feedback, full service audits, major service audits, and random sampling of a service by location. There is also an independent audit process, which is undertaken for high risk and high profile services.

4.52. The different indicators are specified in considerable detail, which includes the method of measurement, as indicated by the examples in the following table:
### Table 1: Example Performance & Compliance Indicators used by DSG

<table>
<thead>
<tr>
<th>Performance and/or Compliance Indicator</th>
<th>How Measured</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contractor’s staff hold the qualifications and competencies that were proposed and accepted in order to deliver the service and the qualifications and competencies that were stipulated by the ADO against certain services. Any changes to these qualifications and competencies are to be approved by CA.</td>
<td>Direct assessment using information provided by contractor. Incidents of non-compliance are to be fully detailed. Any unusual circumstances that have impacted on the overall result are to be reported. Information provided by contractor will be subject to random audits by Defence.</td>
</tr>
<tr>
<td>All Environmental incidents and near misses have been reported in line with procedures and timeframes specified within Defence Environmental Management System.</td>
<td>To be reported quarterly (or monthly if there are outstanding, non-compliant issues). Indicator may be suspended between review months. Evidence of 100% conformance with Contract EMP incident reporting requirements to be compliant. Incidents of non-compliance are to be fully detailed. Any unusual circumstances that have impacted on the overall result are to be reported. Information provided by contractor will be subject to random audits by Defence.</td>
</tr>
<tr>
<td>Contractor is actively seeking effective innovation opportunities.</td>
<td>Number of continuous improvement initiatives proposed over preceding quarter. To be reported quarterly. Indicator may be suspended between review months.</td>
</tr>
<tr>
<td>All instances of required repair and maintenance are reported in a timely manner.</td>
<td>Report from contractor is to be provided each month that includes a self assessment of overall performance (out of 100) against this Indicator. Any unusual circumstances that have impacted on the overall result are to be reported. Defence will consider, investigate (if deemed necessary) and discuss matters raised in the report prior to acceptance of assessment or otherwise. All information provided within the report may be subject to random audit at any time.</td>
</tr>
</tbody>
</table>

4.53. For each different type of service, three Quality Targets are set, namely:

- Minimum Quality Target (Min QT), which reflects the point at which performance quality begins to adversely impact on operational capability and is unacceptable to Defence;
- Agreed Quality Target (AQT), which is the point at which performance is equivalent to Defence’s expectations and reflects customer capability requirements, group and base level customer supplier agreements, affordability, past performance etc; and
- Maximum Quality Target (Max QT), which reflects the point at which remuneration will be capped for performance greater than AQT.

4.54. The first two of these Quality Targets are used as trigger points for traffic light reporting in CAPMAN and all three are used within the Risk/Reward Remuneration Model to define the range of margin payments payable, as illustrated in Figure 16.
4.55. In addition to Contract Service Delivery performance and Contract Compliance Performance, the
approach also looks at other Strategic Performance Indicators, including the Level of Engagement of
Small-to-Medium Enterprises, the Health of Collaborative Contract Relationship, Corporate Performance
(eg, engagement of regional workforce and Occupational Health and Safety (OHS) and environmental
management), Achievement of Continuous Improvement and Innovation, High Customer Satisfaction,
and Contract Financial Outcome for the Contractor.

4.56. The framework also includes a Due Diligence process at the start of the service delivery period for a
contract, which is used to validate the activity rates and associated cost schedules and that the quality
targets are fair and reasonable. During this Due Diligence period, all elements of the Risk/Reward
Remuneration Model and the performance-management framework are subject to close scrutiny to
ensure the overall framework is operating effectively before the full application of the Risk/Reward
Remuneration Model.

4.57. The DSG approach is a rigorous one, which has clearly been built up over time. Some aspects of the
approach are applicable to the DMO, while other aspects have only limited applicability (if any). The
nature of the work undertaken by DSG is very different from that undertaken by DMO and it is these
differences that affect the degree of applicability. For example, DSG work:

- is very structured and very similar across the various regions and environments;
- generally involves reasonable levels of competition;
- is of a general nature, which enables DSG to readily undertake full and proper cost investigations
  using groups, such as quantity surveyors, to assess the reasonableness of quoted prices;
- involves reasonably constant levels of outsourcing across the different regions (eg, operational
  maintenance requirements do not typically affect the degree of outsourcing); and
- involves fewer capability-based requirements that drive the need for more flexible support
  contracts (eg, varying rates of effort over the LOT, short-notice operational surges at heightened
  tempos, and overseas deployments with extended supply chains).

4.58. The greater constancy of DSG work enables it to build up a PBC framework that has broad applicability
and that can readily grow over time. The general nature of the work means that establishing the quality
targets and associated pain share / gain share framework is much more readily achieved, particularly
given the ability to build up historical data and to use quantity surveyors and similar groups to assess the reasonableness of quoted prices. This conclusion is not suggesting that DMO should not undertake similar practices, but the nature of the DMO’s work means that these practices are much more difficult to implement. For example, pain share / gain share models rely on the ability to identify a realistic target cost, which is particularly difficult to achieve for materiel support contracts due to differences both within and across Materiel Systems in relation to, for example, technologies (including software), outsourcing models, capability-based requirements, customer-supplier relationships, and design/technical support networks.

4.59. DSG’s Due Diligence period appears to be similar to the Transition Period under the ASD PBC Model, but it may be better adopting the name used by DSG to avoid confusion with the more general transition processes under the acquisition process framework. There would also be value in analysing the operation of DSG’s Due Diligence processes to identify any detailed lessons for the DMO, particularly if a pain share / gain share model is adopted as part of the Next Generation PBC framework.

4.60. The different types of performance measures in the DSG framework are another aspect that should be considered for possible inclusion in the Next Generation PBC framework. While the approach of only having a single KPI for each category of service does not translate well into the DMO environment (eg, because availability-based KPIs aggregate outputs across multiple services), the use of Compliance Indicators and Strategic Performance Indicators should be investigated further. The use of different types of performance measures is discussed later in the paper at Classes of Performance Measure for the Next Generation PBC Framework.

The ITIL Framework

4.61. This section has been included because it is understood that CIOG is utilising the ITIL process framework. While this framework is not suitable for application across the DMO (unlike the Capability Maturity Model Integration (CMMI)), it could have application for IT-oriented systems. Unfortunately, feedback from CIOG on the application of this process framework was unable to be obtained within the timeframes of this report. Notwithstanding, aspects of the ITIL framework have been used for support contracts within the DMO (eg, within the Command and Intelligence Systems Support Office (CISSO) and for SEA1442 Phase 3, Maritime Communications and Information Management Architecture Modernisation).

4.62. ITIL is a collection of management practices for IT service management, which is based around a number of process areas, as illustrated in Figure 17:

73 The discussion in this section is derived from two articles: ‘ITIL Availability Management: Beyond the Framework’, James Yaple, Jul 06 and ‘ITIL Availability Management Process’, Elyse, Oct 08. Readers should note that, since these articles were written, ITIL V3.0 has been released, which may have changed some of the information provided.
4.63. This section will discuss the Availability Management process area because this area is considered to be the one most closely linked to the Key Objective of enhancing Preparedness. Availability Management covers defining, analysing, planning, measuring and improving all aspects of the availability of IT services. Availability Management is responsible for ensuring that all IT infrastructure, processes, tools, roles, etc are appropriate for the agreed service level targets for availability.

4.64. Availability levels depend on the reliability of the IT infrastructure, its resilience to failure, and the quality of maintenance. Planning and monitoring for Availability Management is structured around the following terms:

- **Availability** – the ability of the IT service or component to perform during a stated period of time;
- **Reliability** – the IT service is available for a negotiated period without interruptions or failure;
- **Maintainability** – the ability of an IT component to remain in or be restored to an operational state (with maintainability, it is the organisation’s internal IT staff members who are responsible for returning the component to an operational state);
- **Serviceability** – an external supplier’s capability to maintain the availability of a component or function covered under a third-party service contract;
- **Resilience** – a measure of freedom from operational failure and a method of keeping services reliable (ie, the minimisation of the consequences of component failure; one popular method of resilience is redundancy); and
- **Security** – security refers to the confidentiality, integrity, and availability of that data.

4.65. While only limited information is available on the application of the ITIL methodology in Defence, it does appear to have many common characteristics and performance measures to those used for the support of other materiel and, indeed, the adoption of this standardised terminology and methodology for the support of electronic systems is likely to be beneficial and could provide a ‘leg up’ to the electronics domain in developing the unique aspects of its particular performance-management regime, particularly the KPIs. In this regard, consideration should be given to producing an ITIL-compliant version of ASDEFCON (Support) for use when supporting IT systems and for possible adaptation for supporting electronic systems.
4.66. The F-111 Business Unit (BU) contracts were highly innovative support contracts, which flowed from a CSP initiative to outsource the support of the F-111 aircraft. There were initially four RFTs, which all embodied very similar performance frameworks; however, these frameworks were modified during contract negotiations. These contracts included a Performance Award Fee (PAF) as well as a lower-level performance-management process. While they were innovative, they were also complex contracts, which proved challenging for DMO contract managers. The discussion here describes some of the innovative elements, while also drawing out the lessons for the Next Generation PBC framework.

4.67. The F-111 Weapon System Business Unit (WSBU) contract was the largest of the four contracts and included the most complete performance-management framework; hence, this discussion concentrates on that contract. Notwithstanding, each of the BU contracts was based on an approach to support contracting, known as Tabular Format 2 (TF2), which required a particularly rigorous approach to the development of a Statement Of Requirement (SOR) (which was not too different in detail to the DSG approach discussed earlier). Using Microsoft Excel®, TF2 required a separate row for each line item (or work requirement) in the SOR, which included the estimated quantities and associated performance measure(s) for that line item.

4.68. TF2 was also accompanied by a detailed price breakdown, linked directly to the SOR line items, known as the TF2 Spreadsheets. The intent behind the TF2 framework was to enable the effective management of change, including what the TF2 framework identified as ‘Variation In Quantity (VIQ)’. Over a period of interest (eg, a year), the actual quantities of work were intended to be measured and then compared against the estimated quantities in the SOR, with the price paid for the actual work performed being either increased or decreased based on the pricing information in the TF2 Spreadsheets, depending upon whether more or less work had been undertaken. If the change to the quantities was considered to be permanent, the VIQ process enabled the contract to be changed to accommodate these differences for all subsequent years.

4.69. In the F-111 WSBU contract, there were hundreds of line items in the SOR to address the full scope of work, which resulted in hundreds of performance measures. TF2 used a software tool, known as SeeSOR, for the purposes of reporting against these performance measures. The requirement to include a performance measure against each line item, however, resulted in many measures that were not particularly useful and focussed the performance outcomes at the individual work requirement, rather than at the capability outcomes (noting that the PAF provided some ability to focus the contract on the capability outcomes). The reporting requirements were also extremely burdensome, as were the DMO’s auditing requirements. This framework was eventually removed from the BU contracts; however, it has been included here to highlight, firstly, the problems created by having too many performance measures and, secondly, the need to consider the workload associated with any performance-management framework.

4.70. The performance reporting through SeeSOR was intended to tie into the DMO’s contractual remedies. The F-111 WSBU contract, for example, included a process known as Non-Performed Work (NPW) for work (in whole or in part) either not delivered or performed, or incorrectly delivered or performed. The value of any NPW was linked to the line items in the TF2 Spreadsheets and included a payment-withholding regime (for work that the contractor subsequently reworked) and a payment-deduction

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74 This lower-level process is assessed as being similar to the use of Reporting KPIs under the current ASDEFCON (Support) template, in the way that the performance measures were tied into the contractual remedies.
regime (for work that the Commonwealth decided would be undertaken by a party other than the contractor) that reduced the contract price.

4.71. The F-111 WSBU contract also included a process for Non-Performance (including excusable Non-Performance), which was a broadening of the standard DMO processes for postponement. This process recognised that key performance requirements for a support contract may not be schedule-oriented (eg, the aircraft simulator was availability-oriented).

4.72. The SeeSOR and Non-Performance processes were focussed at the detailed work level, which was too prescriptive and overly burdensome for the DMO to manage, and helps to highlight why an outcomes-based approach is required. These experiences, however, do highlight a particular issue with any performance-management framework, in that the relationships between the performance measures and the contractual rewards and remedies must be firmly established and understood (as discussed earlier in relation to Reporting KPIs and SHIs).

4.73. Another problem with these processes, including VIQ, was that they were linked to the actual costs incurred by the contractor, which meant that the DMO contract managers had to have a detailed understanding of the contractor’s price basis. While the TF2 Spreadsheets provided some of this insight, the TF2 Spreadsheets did not accurately represent the suppliers’ price breakdown because they had built up their prices in their own accounting systems and then set up the TF2 Spreadsheets to approximately match. For any non-performance or VIQ adjustment, therefore, the DMO contract managers found themselves in a detailed cost analysis, which was time-consuming, often identified few real costs, and acted as a disincentive to take action.

4.74. Even with open-book accounting in the future (which should be an essential element of any PBC framework), understanding the price breakdown for any reasonably complex support contract will be very difficult. This discussion highlights one of the strong benefits of the ASD PBC approach – the cost of non-performance is built into the process upfront and, while detailed cost analysis is required to initially establish the regime, it does not require ongoing cost analysis for any non-performance (although it does for any contract variation).

4.75. The VIQ process, while solid in intent, had one other significant flaw. The process required retrospective analysis of costs based on the actual number of work instances (eg, maintenance arisings) over a year; however, the contractor had already incurred all of the costs for labour and materials by the end of a year based on the expected quantities. As such, retrospective price reductions through this type of process are not really feasible in a standard PBC framework.

4.76. The lesson here is to recognise that the scope of almost all support contracts is defined by the estimated arisings over a period of interest. To understand the cost basis underpinning any support contract, therefore, it will be essential for the DMO to have access to the contractor’s assumptions associated with these arisings (derived from the manufacturer’s reliability forecasts and/or historical data), including expected quantities and the associated effort, materials and other direct costs.

4.77. If the DMO provides the arising information (which is not unusual), the Next Generation PBC template also needs a standard mechanism to establish the basis for equitably adjusting the contract into the future for any ongoing changes to these arisings (eg, as a system ages) and, potentially, for any additional costs incurred due to unexpected and high-cost(?) arisings in the current period of interest (noting that this would also require analysis of the risk basis underpinning the contract price). S&Q Services could be used, but this approach tends to work against the achievement of capability outcomes because it places the Commonwealth (and the associated financial processes) in the loop. If this adjustment mechanism were not to be provided, then it would not be unreasonable to expect a significant risk premium to be built into a tendered price. Equally importantly, this adjustment mechanism would need to be carefully drafted to minimise the likelihood of ‘gaming’ by either party. These types of processes are clearly
linked to the Transition or Due Diligence period, although different contractual mechanisms may need to be employed early in the LOT as opposed to near the end of the LOT.

4.78. The scope of the F-111 WSBU contract included platform deeper-level maintenance responsibilities as well as the maintenance of RIs and the delivery of spares to the user unit to enable them to undertake operational-level maintenance. This scope highlights a number of challenges with establishing any performance-management framework for a contract, particularly where system availability is the outcome of interest.

4.79. Firstly, if a Defence user unit is undertaking operational-level maintenance, it is very difficult to cleanly hold a contractor to an overall availability target.

4.80. Secondly, the performance of the Defence user unit is dependent upon the performance of the contractor in supplying spares (ie, RIs and consumables) required for operational-level maintenance. This means that, if the contractual performance-management framework over-emphasises either one of these aspects (eg, schedule performance for platform deeper maintenance is given greater prominence than spares delivery), then overall platform availability is likely to suffer. This possibility highlights that the performance-management framework must be derived based on a sound understanding of how the contract work integrates into the broader Support System and achievement of Defence’s objectives, which is discussed in more detail in the section, The Bigger Picture.

4.81. Thirdly, the contractor will be undertaking maintenance of some RIs to provide to the user unit, but could also be undertaking maintenance of the same RIs for its own purposes (eg, to enable a serviceable RI to be fitted during platform deeper-level maintenance or to ensure that sufficient reserve stocks are held). Additionally the contractor may choose to, or be directed by the Commonwealth to, cannibalise an RI from a platform in deeper maintenance for the operational-level maintenance, shifting the achievement from one KPI to another. A similar situation (excluding cannibalisation) could also occur for consumables, where these consumables have to be delivered both to the user unit and, internally, to the contractor (which could result in one KPI being sacrificed for another, based on progress against KPIs instead of operational need). While this possibilities also support the need to understand how the contract work integrates with the broader Support System, it also highlights the level of complexity associated with implementing sound support contracts, particularly in relation to interactions of KPIs and the impact on contractor behaviour, and being able to evaluate costs upfront and in response to contract changes over the LOT.

4.82. This possibility also highlights a challenge in terms of the Preparedness framework. One method of promoting Preparedness, for example, is to define Reserve Stockholding Levels (RSLs), which are the minimum number of serviceable items that a contractor must hold in accordance with Preparedness requirements. The business requirements, in relation to the work undertaken by the contractor both for its internal reasons and for delivery to Defence, must be understood to enable these RSLs to be set satisfactorily (particularly where the DMO is providing all of the available RIs upfront, as was the case for the F-111 BU contracts).

4.83. For budget-management reasons, the F-111 BU contracts controlled the funding available for consumables. This approach meant that the DMO was effectively controlling one of the contract inputs, but it also meant that the contractor had built-in performance relief. While the contracts included provisions and work requirements to maximise the alignment of responsibility with accountability as well as appropriate performance-relief processes, the approach (perhaps unnecessarily) transferred risk and work to the Commonwealth. The lesson here is that any Defence or DMO process that is necessary for a contractor to achieve the required contract outcomes should be identified to the delegate and

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75 This is the approach used in the ASDEFCON (Support) template. DI(G) LOG 4-3-003, ‘Australian Defence Force requirements determination and management of reserve stocks’ provides the applicable policy coverage for this approach.
approved before being included in any solicitation documents. Additionally, data collection of the DMO activity may be required to verify contractor claims for excusable non-performance.

4.84. The F-111 WSBU contract included multiple performance-management regimes (each of which would require their own set of KPIs and, potentially, SHIs if implemented under the current ASD PBC approach). For example, the aircraft deeper-level maintenance activities were structured around schedule performance, while the aircraft simulator was structured around availability to the user. This is not an unusual situation in support contracts, where different aspects of the work need to be managed under distinct and separate performance-management regimes (eg, engineering services and product availability often need different regimes). The lesson for future PBC arrangements is that the interactions between these different regimes need to be understood, to ensure that contractor behaviour is not being driven inappropriately towards any particular outcome at the expense of the other. This challenge is more complex where there are shared work elements between the regimes (eg, in the aircraft/simulator case, where spares may need to be shared between the aircraft and the simulator).

4.85. The F-111 BU contracts required items (including aircraft and spares) to be picked-up from, and delivered to, the user unit. In discussing this issue with staff at RAAF Base Amberley, they highlighted that, where the measurement of performance requires customer involvement (eg, against measures such as availability), this involvement needs to be established upfront. The lesson here is that, in selecting performance measures, the measurement process must be assessed, understood by all concerned, and agreed in advance, including consideration of the point of measurement, the criteria for scoring (eg, in relation to assignment of particular scores and handling minor defects and omissions), who will be involved, the likelihood for errors, reporting mechanisms and timeframes, and quality assurance.

4.86. Each of the F-111 BU contracts included a PAF, which was “made available to encourage the successful Tenderer to strive to achieve superior performance in meeting its contractual obligations under any resultant Contract”. In offering a PAF, the DMO’s intent was that the tenderers would reduce their profit margins and use the PAF to make up the shortfall, with ‘superior performance’ resulting in above-normal returns. The PAF was not an insignificant amount of money, being established at approximately 9% of the contract price. The PAF was scored against a range of factors, and the scores were the consolidated and converted into a percentage. This percentage was then applied to the money available for the PAF.

4.87. In practice, not all tenderers reduced their profit margins and they treated the PAF as a performance bonus. One of the resultant contractors rolled the PAF down to the ‘workers’ as a performance incentive, while others retained the PAF solely as part of profit. While the PAF may have been successful in motivating the contractors, it is unclear whether sufficient value was obtained for the amount of PAF that was paid.

4.88. A complicating factor with the PAF was that it was mainly based around subjective factors (eg, ‘cooperativeness and responsiveness’ and ‘communication’). This approach led to a complex process of measurement and justification, where DMO staff had to document instances of, for example, above-average or below-average ‘cooperativeness’. This became an ongoing activity because it was found that if people did not document issues as they occurred, they were unable to adequately recall these issues at the end of each six-monthly evaluation period. The scoring process was highly subjective and open to interpretation. Even with word pictures to assist with the scoring process, achieving consistency of measurement was particularly difficult. It also made the process open to negotiation with the contractors and, therefore, the process was not ‘clean’.

4.89. A key lesson arising from the F-111 PAF experiences is that performance measures should always be objectively measurable. The difficulty in establishing the value-for-money arguments, however, also means that award fees, as a method of incentivising contractor performance, are difficult to justify when subjective performance measures are used. When objective performance measures are used and award
fees are provided to incentivise performance above the minimum levels required, the award fees incur the same difficulties, in terms of justifying value for money, as the incentive payments discussed earlier.

4.90. The F-111 WSBU contract included a concept, which was entitled the ‘Limited Prime’, which required the contractor to “present a single integration agency for F-111 in-service and selected [DMO] project activities. In this ‘Limited Prime’ role the Contractor shall interact with and, in some instances, co-ordinate the activities of other Commonwealth contractors and agencies.” The ‘Limited Prime’ had responsibilities at the total system level and was also responsible for a number of system-level functions, including, for example, for incorporating all maintenance and engineering changes from all support contractors into the platform-specific databases. Clearly, this role was an early forerunner of the PSI role discussed earlier.

4.91. One of the challenges of the ‘Limited Prime’ role was defining it in a way that enabled the work to be adequately scoped, particularly where the F-111 WSBU contractor did not have contractual relationships with the other “Commonwealth contractors and agencies”. The lesson for the Next Generation PBC framework is that, where the DMO allocates the PSI role to a particular support contractor and retains the responsibility for the overall suite of support contracts, the contract provisions need to appropriately address this potentially variable scope of work.

4.92. A related issue to the PSI role involved ongoing changes to the F-111, which were developed and incorporated through contractual arrangements that were separate from the F-111 BU contractors, but which then needed to be supported through these BU contractors. This proved to be quite challenging because these new support requirements needed to be incorporated through sole-source arrangements and, therefore, it was more difficult to establish the value-for-money equation. The lesson for the Next Generation PBC framework is that it needs to recognise that systems will evolve over the LOT and that the PBC framework needs to be able to accommodate these changes without undermining the initial contractual bargain.

Case Study – Naval Communications System Harold E. Holt (NCSHEH) Draft RFT

4.93. The draft RFT for a new support contract for NCSHEH is another case study that warrants discussion because it brings out other PBC-related considerations. This draft RFT has been developed using ASDEFCON (Support) and the ASD PBC Module. The draft RFT is somewhat unique because it integrates garrison support provisions with the standard Materiel System support provisions, which entailed significant drafting for the SOW to capture the garrison support services (because the baseline template does not cater for these elements). The garrison support services were divided into two parts: Fire Safety Services and Facilities, Grounds and Ground Structures (FGGS) Support Services76.

4.94. The performance-management framework for the Materiel System support services used a modified version of the ASD PBC Module, which amended elements of the module to suit the performance measures required and to provide better integration with the ASDEFCON (Support) SOW. The performance measures identified were required to have different review periods, which required modification of the standard four-step process inherent in the ASD PBC framework to treat each KPI as a separate entity (as opposed to producing a weighted performance score across all KPIs), as illustrated in Figure 18.

76 FGGS Support Services included janitorial services, pest control services, facilities maintenance services, water quality services, base painting services, sewerage system services, electrical distribution system services, water system services, and grounds and ground structures maintenance services.
After each of the KPIs had been selected and the levels for each of them defined, the procurement team recognised that the different KPIs interacted with each other and that further analysis and modelling was required to ensure that contractor behaviour would not be driven in unexpected and undesirable ways (e.g., in pursuing one KPI at the expense of another). The recognition of this possibility highlights the need for a standard process to ensure that the effects of particular KPI regimes are appropriately analysed to maximise the likelihood that Defence’s required outcomes will be provided. This analysis process needs to be built into the procurement framework, potentially as part of the BCA that underpins the Acquisition Strategy or Support Procurement Strategy.

Another issue that arose during the development of the KPIs was the relationship between KPI levels and value for money, particularly in terms of Defence’s requirements. The BCA process needs to incorporate a framework to enable trade-off discussions to be held with the Capability Manager’s representative in relation to the cost of particular levels of performance. This approach would help to ensure that performance levels were established in full cognisance of the associated costs (e.g., particularly where a small increase in performance results in a large increase in cost), thereby informing the development of the draft contract and the MSA Product Schedules. This discussion would also help to establish the responsibilities of the users in the performance-management framework (e.g., particularly where the users’ behaviour can either enhance or undermine the framework), which is discussed in more detail in the section, The Bigger Picture.

The ASD PBC Module does not include a standard performance-relief process, and the procurement team decided to include a KPI Relief clause in the COC. Additionally, LDs were determined to be necessary for one of the KPIs; however, this KPI was not schedule-based. As such, the standard LDs clause in the COC needed to be modified to accommodate a different regime.

In relation to the NCSHEH RFT, the procurement team also decided that it would be appropriate to mandate a minimum percentage at-risk amount, which is a different approach to the one incorporated into the ASD PBC module, in which tenderers are required to propose an amount in their tender.

Changes of this nature are now being considered for the V2.1 update to the template.
responses. This alternative approach was adopted for a number of reasons, including, firstly, to enhance its incentive power; secondly, to enable the DMO to establish its expectations for this amount; and, lastly, to try to ensure that a common basis was provided for tender evaluation. The downside of this approach is that the tenderers are likely to simply build it into their tendered prices (and this downside provides further support for open-book accounting). The Next Generation PBC framework needs to establish policy on which approach should be adopted by procurement teams; however, this paper suggests that the NCSHEH approach could be adopted (ie, the DMO should establish its expectations in the RFT). In this light, therefore, the policy also needs to address whether or not different situations warrant differing minimum amounts or different approaches (eg, sole-source situations).

4.99. As stated earlier, the ASD PBC Module includes the reporting and review requirements in a new Contract Attachment, which introduces conflicts with the SOW. The NCSHEH draft RFT has removed these elements and integrated them into the SOW. This was not a simple or straightforward activity, requiring changes to the intent of the reviews currently defined in the SOW. The complexity of these types of changes, however, reinforces the need for a standardised template PBC approach that reduces the amount of drafting required by each procurement team for a support RFT.

4.100. While the ASD PBC Module provided a suitable performance-management approach for the Materiel System support services, it was considered to be too complex for both of the garrison support services. To develop a suitable approach for these services, an analysis was undertaken of the approach used in DSG in their contracts. This approach was also considered to be too complex for either of the garrison support services, particularly given that these services were not core to the required capability outcomes. Instead, two separate, but overlapping, approaches were developed for the Fire Safety Services and the FGGS Support Services, respectively, as illustrated in Figure 19.

![Figure 19: NCSHEH Work Streams](image)

4.101. The FGGS Support Services were assessed as only requiring a minimalist performance-management framework, commensurate with the personnel available for contract management and the significance of any performance shortfall to the capability outcomes. In this regard, contractual provisions for ‘step-in rights’ were considered to provide sufficient performance-management incentive. In the case of contractor non-performance (eg, in relation to lawn mowing or facilities maintenance), the DMO could employ a local contractor to undertake this work and then deduct the cost from payments due to the
prime contractor. If the non-performance were to become more serious, then the DMO could require a remediation plan to be developed, which was linked into stop payments.78

4.102. For the Fire Safety Services, ‘step-in rights’ were not deemed appropriate for two reasons: firstly, because local contractors were unlikely to have the necessary skills and, secondly, because of the immediacy of action required if a fire were to occur. As the chief outcome for fire-fighting is the ability to turn up when required with a suitably qualified team of fire-fighters, a performance requirement to this effect was built directly into the SOW. The DMO can initiate a call-out and, if the contractor does not meet the response time performance requirements, there is an immediate requirement for a remediation plan, which links into stop payments. The DMO can also initiate additional call-outs to confirm whether or not any improvements resulting from the remediation plan have actually been achieved.

4.103. Of note, remediation plans can also be required for specific instances of non-performance. One of the issues with the ASD PBC approach, which has already been highlighted, is that it can lack immediacy (ie, the remedy may not come into effect for a number of months). Generally, this is appropriate when managing outcomes; however, there can be non-performance issues where more immediate action is required. Remediation plans, which are linked into stop payments, can achieve this greater level of immediacy and provide a second string to the PBC framework.

4.104. Remediation plans have also been linked into the NCSHEH implementation of the ASD PBC Module. Under the proposed approach, if a contractor does not perform within Performance Band I for a KPI, then there is an immediate requirement for a remediation plan. The stop payment provisions in relation to remediation plans also have three considerations that can result in payments being stopped: non-delivery of a remediation plan, delivery of a remediation plan that is not able to be approved by the Commonwealth, and non-performance against an approved remediation plan.

4.105. The NCSHEH draft RFT also implements a framework for addressing the Key Objective of reducing TCO. The main day-to-day component of this framework is an Efficiencies Implementation Plan (EIP), which captures the detailed plan for implementing each approved Efficiency, where ‘Efficiency’ is defined as, ‘any means by which the Contractor is able to more efficiently, cost effectively, or professionally perform any or all of the Services, including operating and supporting the Products to be Supported in accordance with the Contract’.

4.106. The EIP is tied into the draft contract through COC provisions that require the contractor to continually monitor and consider Efficiencies. The framework is also tied into the contract reporting and review processes. The provisions provide the option to fund any one-off implementation costs, which may be required where an identified Efficiency, for example, requires the system to be modified to improve reliability, thereby saving Defence money over the LOT through reduced maintenance (ie, a spend-to-save initiative). The contractor’s performance against the Efficiency provisions is one of the considerations as to whether or not an option to extend the contract term is exercised by the Commonwealth.

4.107. The NCSHEH draft RFT also seeks input from tenderers as to how this process might be incentivised, with tenderers required to submit a draft EIP as part of their tender responses to identify proposed Efficiencies, which are required to include ‘those elements of the draft SOW that the tenderers consider unnecessarily drive scope and increase risk’.

4.108. The NCSHEH also includes provisions to enable the Commonwealth to engage an external reviewer to evaluate the performance of the contractor and the performance of the services. This external reviewer is...

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78 Step-in rights and remediation plans (appropriately tied into stop payments) are both proposed for the V2.1 update to ASDEFCON (Support).
intended to be used to assist the Commonwealth in making its decision as to whether or not to exercise its option to extend the contract term.

4.109. The NCSHEH draft RFT provides a good case study to highlight some of the practical considerations associated with implementing a PBC framework. In any reasonably complex support contract, there will always be elements of the services for which the outcomes-based KPI framework is not applicable for reasons of cost-effectiveness, inability to define appropriate measures, lack of applicability to the particular services, the need for immediacy, and contract-management efficiency. Obtaining reductions in TCO is also difficult to achieve through an outcomes-based KPI framework, and this issue is addressed further in the section, Achieving Reductions in TCO.

4.110. For these and other reasons, this paper has defined the Next Generation PBC as one that not only appropriately motivates and ultimately drives contractor behaviour in line with the contribution of a contract to the Key Objectives, but also one that provides options to the DMO to achieve the best outcome across the envisaged contract-management situations.

Case Study – Armidale Class Patrol Boats

4.111. The contract for the Armidale Class Patrol Boats was let as a joint acquisition and in-service PBC under Project SEA 1444. Notwithstanding the complications of merging acquisition and support contracts, the combined approach ensured that the contractor (or partnership) was automatically responsible for the availability and suitability in-service of the patrol boats. This approach also reduced the complications of determining work claims of an in-service contractor versus warranty claims against the acquisition contractor.

4.112. The support component of the contract is performance-based and tied to the required outcomes of the RAN, which are defined as the number of ‘at-sea-days’ per year for the fleet, in accordance with the programmed operational and training schedule. The contract also requires the ability for a surge in the number of available patrol boats to meet the operational needs of this fleet.

4.113. The performance-management regime uses a system of abatement points. The contractor is given a number of abatement points each quarter. On days when the crews are to board their assigned patrol boat and for each ‘at-sea-day’, the patrol boats must be fully capable of performing their missions; otherwise, abatement points will be incurred (deducted from the number of points granted each quarter). The number of abatement points to be deducted is scaled for the severity of defects identified, in descending order:

- Priority 1 (Safety) – failure of a safety system (eg, fire detection) and/or compromise of seaworthiness;
- Priority 1 (Mission) – inability to complete the mission due to the loss of a mission essential function;
- Priority 2 (Mission) – loss of mission enabling functions that results in degraded mission capability; and
- Priorities 3 & 4 (Non-Mission) – patrol boat support and non-mission functions are reduced.

4.114. The occurrence of each event results in the loss of abatement points and additional points are deducted if shortfalls are not rectified within the ‘cure period’.

4.115. The abatement points are linked to financial incentives and contract term extensions. As an adjustment, good service in one quarter results in more abatement points assigned to the following period, reducing the likelihood of the contractor incurring penalties for ‘one-off’ incidents of poor performance in an
otherwise good performance record. The reverse is also true, however, with poor performance in one quarter resulting in fewer abatement points for the next period, requiring the contractor to work harder to regain an acceptable level of performance or otherwise incur further penalties.

4.116. Unfortunately, feedback on the veracity of this approach was unable to be obtained; however, it does illustrate one approach for incorporating severity of impact into a PBC, which is an important consideration in establishing the required contractual performance measures.

4.117. The Armidale Class Patrol Boat PBC shows clear linkages to required Defence outcomes; however, an important part of its implementation was the impact and cultural changes required of the RAN personnel. Previously, officers and sailors were posted to crew an individual patrol boat, building a sense of identity and pride with that particular ship, but their operations were also tied to the availability of that ship. The new approach meant that crews could be assigned to any available vessel each time they went to sea. To achieve the desired outcomes, therefore, changes were also required by Defence personnel.

Case Study – Contractor Standing Capability (CSC)

4.118. As highlighted earlier in this paper, implementing a PBC framework for engineering services is problematic because of the variable nature and scope of the work, particularly in relation to engineering changes. A number of different DMO contracts have attempted to implement a performance-management framework for engineering services, but with varying degrees of success. One of the main challenges with this type of framework is that each engineering activity typically needs to be undertaken in a sole-source environment for reasons of expertise and expediency, which means that the framework can be undermined as part of the process of quoting for these services. Additionally, this type of work is often undertaken as S&Q Services, which are not resourced by the contractor because the scope is not firm, the work is not levelled (i.e., it can have peaks and troughs), and it may not be ongoing. This lack of work certainty and resulting reduction or loss of dedicated resources often means that there can be extensive delays in having work performed.

4.119. One of DMO’s joint acquisition/support contract arrangements included the provision of a standing capability to provide engineering services under the support contract, known as the Contractor Standing Capability (CSC). This approach was adopted to enable a base level of dedicated personnel to be available to undertake engineering work as and when required. This base level of resources could be supplemented, on a task-by-task basis, to enable each task to be properly resourced to accord with the DMO’s priorities and budget. While some aspects of the DMO’s performance-management framework were modified during negotiations, this case study will describe a hybrid version that includes some aspects of the DMO’s initial framework and some aspects of the negotiated version. This approach better exemplifies some of the possibilities and challenges with implementing a performance-management framework for engineering services.

4.120. While the CSC involved a base level of resources, the management framework was structured around approved tasking plans, with a dedicated task-management system used to manage and control all proposed, pending, authorised, suspended and completed CSC Tasks. Tasks were divided into two categories based on the amount of effort required to perform the task, with Category 1 CSC Tasks > 400 hours and Category 2 CSC Tasks ≤ 400 hours. The tasking plan requirements for a Category 1 CSC Task were more detailed than for a Category 2 CSC Task, with the development of the tasking plan for a Category 1 CSC Task required to be undertaken as a Category 2 CSC Task. The tasking plans were specifically excluded from modifying any contract terms, thereby preventing the liability regime from being undermined through the tasking process.

4.121. Two different schedules were specified: one for each individual task and one for the set of tasks that may be current at any one time. This approach enables project office personnel to ascertain the implications
of newly proposed tasks on the set of current tasks, to better appreciate resourcing implications across tasks, and to better understand the impact of any changes in priorities. The CSC team is under the direction of the Commonwealth Representative; hence, the DMO can change priorities based on operational and other imperatives. The CSC team members were all also identified as key persons, which provided the DMO with some authority over the individuals employed within the CSC.

4.122. Three different types of tasks were established: Configuration Change Tasks, Study Tasks and Other Tasks. This approach enabled different management arrangements and work requirements to be established for each different type of task (eg, Study Tasks were set up as time-and-materials tasks, while Other Tasks were set up as firm-priced tasks). Configuration Change Tasks were also broken down into a set of stages, with each of these stages subject to a separate tasking plan (except where otherwise agreed). This approach was adopted to mitigate both parties’ risks, particularly where complex changes were envisaged. By staging the development of a configuration change, the contractor was not locked into a firm price for the whole of the work and the DMO was less likely to receive inflated and risk-averse pricing in a sole-source situation. This approach also enabled the DMO to stop work on a particular change at the end of each stage if the costs for subsequent stages were to become prohibitive. Finally, the early stages were set up as time-and-materials tasks, while the later stages were set up as firm-priced tasks.

4.123. The DMO is paying for a standing capability; hence, it may appear strange to be identifying particular tasks as either firm priced or time and materials. Notwithstanding, this approach was integral to the performance-management framework. For firm-priced tasks, if the contractor failed to complete two or more CSC Tasks that were required to be completed in any quarter, then the CSC fee payable for that quarter would be reduced by X%. Furthermore, the contractor was required to complete the task at its sole cost and risk. If the contractor used CSC resources to complete the task, then these costs would also be deducted from the CSC fee; however, if non-CSC resources were used, then this would be transparent to the DMO. For time-and-materials tasks, the contractor was not allowed to exceed the approved task budget. Of note, the Commonwealth’s obligations also included the requirement to maintain sufficient work to keep the CSC fully occupied.

4.124. The aspects of the performance-management framework described in the preceding paragraph were deliberately established to be relatively simple and straightforward to operate. For example, separate KPIs do not need to be identified and negotiated for each CSC Task, which enables the tasking process to proceed relatively quickly within a pre-agreed framework. Under this approach, the DMO has effectively established a single payment-related performance measure, which is the achievement of the DMO’s requirements within the agreed schedule. While this approach may appear somewhat simplistic and readily able to be ‘gamed’ by inflating task times, other provisions helped to mitigate this possible outcome.

4.125. Firstly, all tasks were required to be costed on an open-book basis, with full price breakdown. This approach enables the DMO to assess the reasonableness of any quoted prices. Secondly, the Commonwealth Representative can take any CSC Task out of the hands of the contractor and have the CSC Task (or any part thereof) carried out by another party. Lastly (and, perhaps, most importantly), the CSC was established for an initial term of 12 months only, with options available to extend the CSC term for one or more periods, each of 12-months duration, with three-months notice. No conditions were attached to these optional extensions, but the DMO would clearly be assessing value for money in making a decision to extend. As such, while the pricing for individual tasks can be ‘gamed’, the framework has incorporated other provisions to mitigate this risk. Of note, the option to extend also included the ability of the Commonwealth Representative to adjust the quantity and type of CSC resources to be provided for the next term.

4.126. This description has highlighted some of the key considerations and rationale underpinning the establishment of the CSC under the support contract. There are lessons here for the Next Generation
PBC framework, particularly in relation to the intertwining of the managerial, technical, and commercial provisions to achieve a manageable framework that can be enacted quickly, but one that also has sufficient governance built into it to promote performance and achieve the best value for money. Note, however, that this approach would be less effective if there were no alternative suppliers or the DMO did not have appropriate IP rights to exploit other sources of supply. Clearly, therefore, competition is a key ingredient in the Next Generation PBC framework to enable the Key Objectives to be realised.

4.127. While the description of the CSC has highlighted some of the challenges and possible solutions in establishing a PBC framework for engineering services, it is suggested that further analysis be undertaken to assess other possible approaches and to recommend a standardised approach (if feasible) for a PBC framework for these types of services. In this regard, therefore, it is further suggested that engineering services not be included in the initial tranche of development for implementing the Next Generation PBC framework.

**Key Points:**

- The performance-management framework built into the current version of ASDEFCON (Support) is not sufficiently complete or comprehensive enough to form a basis for the Next Generation PBC; however, the outcomes-based nature of the template provides a suitable foundation for further development of the template to better accommodate PBCs.

- Whichever approach to PBC is adopted, the framework should not cause safety to be compromised or result in a weakening of safety-management practices.

- The ASD PBC framework, as described in the ASD PBC Handbook, is mature (and continuing to grow in maturity) and represents a sound basis for moving forward. The Next Generation PBC framework should be derived from, and build upon, the ASD PBC framework (noting that elements of the framework will need to be changed and other elements added to accommodate both Key Objectives and the range of DMO support contracting requirements).

- The nature and scope of a required support contract (e.g., whole-of-system or RI maintenance) affects the PBC framework, with the primary outcomes driving the definition of the main performance measures. However, different work streams may be present within the one contract, requiring separate and relatively independent performance-management regimes. For example, in the NCSHEH contract, different work streams were required for maintaining the communications system, garrison support and fire services; other examples of work streams include on-going maintenance and separate engineering development programs. The Next Generation PBC framework must be able to handle the different work streams. Consideration also needs to be given to the management framework for any secondary outcomes that may not be within the scope of performance-measures.

- Consideration should be given to producing an ITIL-compliant version of ASDEFCON (Support) for use when supporting IT systems and for possible adaptation for supporting electronic systems.

- The case studies demonstrate that the depth and breadth of DMO support contracts is enormous and complex. Existing standard approaches are assessed as insufficient for the variations in Materiel Systems and operational demands. The Next Generation PBC framework must accommodate this depth and breadth to the maximum practicable extent within a standardised approach. This requirement is likely to result in the need for a number of variations in performance-management regimes using a ‘toolbox’ of options available to the drafter; however, it is unlikely that all options will be accommodated in the first template issued.

- Different elements of a performance-management framework will interact with each other, and it is necessary to understand and analyse these interactions to ensure that a sound framework is implemented that achieves Defence’s required outcomes.
Contracts that are highly transaction-based with performance measures on each transaction, or group of like transactions, provide a valuable source of lessons learned. However, these will not be included in the development of Next Generation PBCs, which must be outcomes-based and aligned to the Key Objectives. The performance-management framework for transaction-based support contracts will be developed as part of the proposed development of an ASDEFCON (Shortform Support).

Open-book accounting is a necessary condition for the implementation of PBCs, both during solicitation and throughout the contract term, particularly when seeking a reduction in TCO.

Due to the challenges with implementing a standardised PBC framework for engineering services under a support contract, it is suggested that these types of services not be included in the first tranche of development work for the Next Generation PBC framework. Instead, further study should be undertaken to determine whether or not a standardised framework for these types of services can be implemented and, if so, to provide the recommended approach.

There are many lessons to be gained from the case studies considered. Although not listing them individually, they will be considered within the development of the Next Generation PBC framework.
5. **The Bigger Picture**

**Introduction**

5.1. The SRP provides the backdrop for, and the imperatives driving, the need to enhance support contracting. The SRP clearly states that contracts are only part of the picture and that it is necessary for the set of arrangements that provide support (ie, the Support System), including the interface with operations, be investigated to reduce waste and improve efficiency. The US experiences, as discussed in an earlier section, focus on PBL for similar reasons because PBCs need to be considered in a framework that extends beyond each contract and integrates them into the overall support arrangements. The SRP includes a number of elements that have the potential to impact upon PBCs, including:

- the sustainment-related recommendations from ‘The Report of the Defence Procurement and Sustainment Review’ (Mortimer Report); and
- reforms relating to Smart Sustainment.

5.2. The broader framework within which PBCs need to be addressed includes two separate dimensions, namely:

- the capability life-cycle and the associated processes for the acquisition and support of Capability Systems (ie, the time dimension); and
- the organisational view, which includes all of the different organisations that can be involved in the support of a Capability System (ie, the structural dimension).

5.3. This section of the paper will provide an overview of the applicable elements of the SRP and will further discuss key aspects of the two dimensions identified above, with the aim of identifying a number of key considerations that will be necessary for the successful implementation of PBCs. Specifically, this section will discuss:

- capability and Preparedness;
- the different elements of the SRP identified above;
- the derivation of Support System and support contract requirements from capability and Preparedness documents;
- developing an appropriate Support Procurement Strategy from a Business Case Analysis;
- applying the seven principles to improve procurement processes, as identified in the Mortimer Report;
- the implications of Preparedness for PBCs;
- integrating Smart Sustainment and other savings initiatives into the PBC framework;
- the challenge for PBCs created by single item management policies and common inventory management systems;
- dealing with the different DMO business models for systems and commodities and the need for domain specific expertise in developing PBCs,
the challenge for assigning responsibilities when mixing Materiel System, common subsystem, and common RI contracts; and

achieving the best performance by allocating risk and responsibility appropriately.

**Capability and Preparedness**

5.4. To understand how PBCs for support fit into the bigger picture, it is first necessary to understand the DMO’s role in this picture, particularly in relation to Capability and Preparedness. Capability is defined as:

*The power to achieve a desired operational effect in a nominated environment within a specified time and to sustain that effect for a designated period. Capability is generated by Fundamental Inputs to Capability comprising organisation, personnel, collective training, major systems, supplies, facilities, support, command and management.*

5.5. Each different capability (e.g., strategic strike, reconnaissance and transportation) is provided by one or more Capability Systems, with each Capability System being the necessary combination of the FIC to provide that capability. The FIC are illustrated in Figure 20, with the definitions for each of the FIC provided in the Defence Capability Development Manual.

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5.6. During the In-Service Phase, capabilities are managed by the Capability Managers, who have the role of raising, training and sustaining these capabilities through the coordination of the FIC. Of note, the DMO does not have total responsibility for any of the FIC during the In-Service Phase. In relation to the DMO’s responsibilities during this phase, the following points are worth noting:

- Major Systems – the DMO is generally only responsible for arranging support for, and undertaking required modifications to, these systems;

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Command and Management – the DMO is only responsible for the materiel support aspects of Command and Management (eg, SPO command-and-management arrangements), except for those materiel support aspects that are the province of other Groups (eg, Commander Joint Logistics (CJLOG));

Supplies – the DMO is only responsible for the materiel supplies, with the exception of those materiel supplies provided by other Groups (eg, fixed plant is supported by DSG, fuels and many consumables by CJLOG, and most commercial information technology is supported by CIOG);

Facilities – the DMO has only limited responsibilities here, principally for some specialist materiel support facilities;

Collective Training – the DMO may participate in Collective Training, but has no responsibility for developing or arranging Collective Training;

Personnel – the DMO is responsible for ensuring that sufficient personnel are available to perform the DMO’s functions and may also arrange for the provision of specialist training to Defence and other personnel;

Organisation – the DMO is responsible for organising itself to be able to undertake its materiel support functions; and

Support – the DMO is only responsible for arranging for support from the wider national support base for the materiel for which it has the responsibility to support.

5.7. Capability is also defined as the combination of Force Structure and Preparedness, as illustrated in Figure 21.

5.8. In relation to the elements identified in Figure 21:

- Force structure relates to the type of force required, including personnel, equipment, facilities and military doctrine, to achieve the level of capability necessary to conduct operations effectively. Force structure is the force-in-being, including Reserve forces, linked to Government guidance, which would be required to achieve a desired effect. Force structure is the more constant component of military capability, although it is adjusted to meet developing needs through the
capability development process. The level of capability available for operations is determined by Defence’s management of Preparedness of the current force.

- Preparedness is a measure of the state of the force-in-being to undertake military operations to achieve the required effects. It describes the combined outcomes of readiness and sustainability.
- Readiness denotes a force’s ability to be committed to operations within a specified time. Readiness refers to the availability and efficiency/serviceability of personnel, equipment, facilities and consumables allocated to a force.
- Sustainability denotes a force’s ability to maintain the necessary level of combat power for the duration required to achieve its objectives.

5.9. For the DMO, the Readiness and Sustainability factors should be two of the primary inputs to its sustainment planning processes. In particular, the DMO needs to be able to determine the demands placed on Materiel Systems and the resulting resource implications of Preparedness, so that it can plan and subsequently provide the necessary materiel support. Additionally, the KPIs in its MSA Product Schedules should be derived from the Preparedness requirements. Further derivation of the requirements in these schedules identifies the high-level service outcomes to be provided through DMO-managed support contracts.

5.10. Further information on Preparedness and the implications for the DMO are provided at Annex C, while the following subsections will bring out more-specific issues in relation to Capability and Preparedness that need to be addressed in the Next Generation PBC framework.

The Mortimer Report and Sustainment Performance Measurement

5.11. Recommendation 4.2 of the Mortimer Report states:

DMO and Defence need to further develop the key performance indicators in Materiel Sustainment Agreements and the systems needed to record sustainment performance and costs.\textsuperscript{82}

5.12. The specification of the Key Objectives, the key performance indicators in MSA Product Schedules, and the specification of performance measures in DMO contracts, should be seen as a hierarchy of measures, as illustrated in Figure 22.

\textsuperscript{82} The Report of the Defence Procurement and Sustainment Review, pp 48-49.
5.13. In this hierarchy of performance measures, DMO retains the responsibility, as the PSI, for ensuring that the outputs from the different support organisations come together effectively to provide the outcomes agreed in the MSA Product Schedule. In other words, the performance framework for the work undertaken by the DMO support agency, and the performance frameworks identified in each of the support contracts for a Product, need to be defined and managed to ensure that this integration occurs effectively and at a minimised cost over the LOT.

5.14. In looking at the derivation of the key performance indicators in MSA Product Schedules, it is important to understand the relationships between the upfront processes in the capability-development life-cycle and the downstream interactions as the formal MSA Product Schedules are established. Figure 23 illustrates the relationships between a number of the key documents that define support needs (noting that the Acquisition Strategy is not shown) and that either form a part of, or are directly referenced from, the Materiel Acquisition Agreement (MAA), namely:

- the Operational Concept Document (OCD), which includes the Preparedness requirements and the support concepts for the new or modified Capability System;
- the Function and Performance Specification (FPS), which includes the support requirements and constraints for the new system; and
- the Preliminary MSA, which includes the preliminary agreement on performance requirements.
5.15. It is interesting to note that the MAA template (which includes the Preliminary MSA) states that the preliminary performance requirements “should provide a basis for identifying future customer performance requirements expressed in terms of the standard DMO performance indicators”. In contrast, the OCD and FPS specify the exact Preparedness requirements and Support System needs, including the required KPIs that the Mission System and Support System must be able to achieve (noting that operational availability, for example, is a measure that encompasses the inherent availability of the Mission System and the performance of the Support System).

5.16. The approach defined in the OCD and FPS is required because it is not feasible to design a Support System without having these parameters fully defined. While there are a number of strategies that can be employed to acquire the required Mission System and Support System (eg, FMS for acquisition followed by Direct Commercial Sale (DCS) for the support contract(s), PPP, or evolutionary acquisition with phased implementation of support), Figure 24 shows the standard arrangements where:

- there is a single, main, DCS acquisition contract for the delivery of the Mission System (which may or may not involve design and development) and the design of the Support System, and the delivery of the required Support System components and training;
- there is a single, DCS, support contract, which is linked to the acquisition contract, to provide the main support for the Mission System and Support System components;
- the OCD and FPS are attached to the acquisition contract (shown via the solid arrows) and provide the basis for the support contract (shown via the dotted arrows);
- the KPIs and other performance measures to be used in the support contract are also identified in the OCD and FPS (because they provide the inputs required for the design of the Support System); and
- the support contract performance measures may be updated as the acquisition contract progresses and the design of the Support System matures (shown via the dotted line from the bottom of the acquisition contract to the support contract).

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83 Even when a Mission System is off-the-shelf, it is always the case that the Support System is not off-the-shelf (although, elements of the Support System will be).
5.17. The approach shown in Figure 24 is the standard one used by the DMO for DCS because it maximises the Commonwealth’s competitive advantage for the support contract. This approach also means that the KPIs in the Preliminary MSA must be given greater prominence in the capability-development process and need to be agreed before any solicitation activities occur. The ability of the DMO to meet the KPIs in any future MSA Product Schedule (eg, at the time of transition and during the In-Service Phase) will be directly linked to the success of the PBC that is developed during the Requirements Phase.

5.18. The derivation of the contract performance measures from the agreed KPIs in the Preliminary MSA should also be given greater prominence in the capability-development process, in due recognition that upstream decisions constrain downstream options. This is implicitly recognised for TCO (or LCC) in Figure 25, which highlights that the analysis of the required support arrangements and associated PBC framework must be undertaken with sufficient rigor and early enough in the life-cycle to maximise the likelihood of being able to reduce TCO as the life-cycle progresses.

Figure 24: Contract Relationships and the Preliminary MSA

Figure 25: The Ability to Influence TCO / LCC over the Capability Life-cycle
5.19. Figure 26 provides a different view of this approach, with the perspective being changes to address the costs of “getting it wrong”. While Figure 26 was derived from analysis of developmental projects in the US, there are parallel implications for PBCs. If the support arrangements and PBCs are incorrectly defined upfront, then the costs to fix these inadequacies (including redefining and possibly re-tendering more appropriate contracts) are likely to be significant later in the life-cycle.

![Figure 26: Cost to Extract Defects over the Capability Life-cycle](image)

5.20. This discussion highlights that strong processes for analysing and defining the Support System requirements (including for PBCs) during the Requirements Phase are necessary to ensure that:

- appropriate analysis is undertaken early enough in the capability life-cycle to guide and influence the development of the MAA, Preliminary MSA, and the Acquisition Strategy in relation to support;
- the analysis and the associated rationale for the selection of particular support options are captured and endorsed by appropriate stakeholders as part of the capability-development processes; and
- the suite of documents that define the support needs and the support outcomes to be provided by the DMO are endorsed prior to solicitation for acquisition contract(s) and PBC(s) that encapsulate these needs and outcomes.

5.21. These issues are discussed later in the paper at Support Procurement Strategies.

**Developing Strategies for PBCs in the DMO**

5.22. The basis of a process to extend the definition of the Support System requirements and to develop PBCs, traceable to user needs, is available from the current CDG-DMO capability development and acquisition processes, although some current areas would seem to require greater emphasis than they are currently given. Figure 27 outlines the progression of information through key documents in these processes.
5.23. DMH (ACQ) 2/2006 V3.0, ‘DMO Acquisition Strategy Development Handbook’ requires the Acquisition Strategy (AS) to address the implementation of the Support System, including the support contract elements of that system. However, there is no equivalent process for standalone support contracts and, as stated above, the support contract elements of the AS for a major capital project are often underdone.

5.24. The Support Procurement Strategy (SPS), as shown in Figure 27, is included to refer specifically to the acquisition of support services for a Materiel System. During the Requirements and Acquisition Phases this may refer to a part of the AS, but the strategy would need to be stand-alone when used in-service. In the In-Service Phase, the performance information being fed into the development (or update) of the SPS would be based on the MSA Product Schedules and capability management plans (ie, when an OCD and the support concepts are not available or current).

5.25. Developing an SPS requires a methodical process to achieve consistency and address all relevant issues. The US DoD, in applying PBL, requires a product support strategy for each new major system, which is the result of a BCA. The BCA considers the required support outcomes, the possible mix of organic and contractor support, product support boundaries, the scope of the required PBAs (including PBCs), and related issues such as legislation and industry involvement. The BCA and product support strategy are updated as Mission System requirements are defined. A BCA and the product support strategy are also

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84 The proposed Gate Review process will implement revised governance arrangements that should address these concerns, but only if the right stakeholders are involved.
85 The product support strategy may be included within a document that is generically called a Life-Cycle Sustainment Plan.
86 ‘Product Support Boundaries’ are a concept that defines boundaries in which acceptable support solutions can be developed. The idea originates from the UK MOD’s ‘Support Solutions Envelope’. The boundaries or envelope are defined by categorising considerations into key support areas (eg, cost of ownership, contractor support) and then collating the policies, strategic guidance and corporate initiatives applicable to each.
required for existing support contracts being assessed for conversion to PBL agreements and the renewal of these agreements.

5.26. As an example of the need for an SPS, a US Government Accountability Office (GAO) audit found that it was often more cost-effective to separate major components from end-to-end contracts (specifically aero-engines from aircraft support contracts), due to the risk premium placed on major subsystems by lead contractors. This was confirmed by USAF investigations, resulting in increased emphasis on BCAs to consider end-to-end, subsystem, and component level contracting options. The same conclusions do not automatically apply in Australia, although many risks are similar. The point to be taken is that without a BCA-like process, the more cost-effective contracting strategies may not be found and the requirements for the implemented contracts may be less well planned. The BCA and SPS should be treated as the required process and resulting product of that process. The potential scope and details for an SPS are included at Support Procurement Strategies.

5.27. Based on these findings, a clear policy is needed for the investigation of the most appropriate support procurement solution. Supporting guidance (potentially in an update to the DMO Acquisition Strategy Development Handbook or as a separate SPS volume to address both acquisition and in-service phases) is needed to direct inquiry to the numbers of contracts needed, their scope at a system or component level, and how a performance-based approach can be most effectively used. These would need to be applied to each new Materiel System and, where feasible, for the renewal of existing support contracts. The outcomes of these investigations should include an SPS that defines and justifies the implementation of the support contract or contracts.

The Mortimer Report and Contracting

5.28. Recommendation 3.7 of the Mortimer Report states:

Defence should continue to refine its approach to contracting so as to align with commercial practice. Contracts should reflect the risks of the procurement being undertaken. 89

5.29. This recommendation followed the identification of the seven principles to improve procurement practice that were agreed between the DMO and Australian Industry Group (AIG) in November 2007, as follows:

- Principle 1: Risks should be allocated to the party best able to manage those risks. To achieve this, each party should take responsibility for its actions (including the actions of its agents, subcontractors, and third party contractors).
- Principle 2: All Contract terms need to be certain, not capable of being changed except by mutual agreement, and should reflect the entire agreement of the parties.
- Principle 3: The Contract terms should reflect both the Commonwealth’s requirement for value for money and industry’s (including Small-to-Medium Enterprises) need for commercially realistic terms, recognising the nature of contracting with the Commonwealth.
- Principle 4: The Contract terms should not allow a party to undermine fundamentally the essential bargain between the parties through the exercise of a unilateral discretion.

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- Principle 5: The Contract terms should provide for appropriate rights and obligations of the Commonwealth and industry (including Small-to-Medium Enterprises) in relation to the protection, ownership and usage of Intellectual Property.

- Principle 6: Generally, any issue arising under the Contract should be able to be referred to a dispute resolution process. The dispute resolution process should be clear, balanced and efficient.

- Principle 7: The Contract terms should be reasonably capable of being agreed and administered without undue burden.

5.30. The Mortimer Report further stated that, ‘The Review supports this principle-based approach and encourages the continuing refinement of these principles to improve contracting practice’. The Next Generation PBC framework will obviously need to accord with these principles, but they may need to be adjusted to provide the DMO with some unilateral rights to adjust the performance-management framework over the contract life, as highlighted earlier in this paper.

5.31. The requirement for certain unilateral rights arises because of the need to ensure that the performance-management framework remains relevant and continues to represent value for money over the life of the contract. For example, where a particular performance-management framework is found to not be motivating contractor behaviour in a way that is consistent with Defence’s requirements or the framework is having unintended consequences, the Commonwealth Representative should have the ability to adjust the framework accordingly. The ability to adjust the framework may also be required because improvements, when incorporated, may change the fundamental inputs to a support process for which performance is measured. Also, when seeking to achieve ongoing cost reductions, the contractor may have agreed to incorporate the reductions to the contract price when productivity improvements are made, but the Commonwealth may require unilateral authority to reset the productivity parameters to ensure further improvements are actively sought. In discussions with DMO staff who have been utilising PBCs to-date, they have highlighted that, without a unilateral right, the ability to adjust the framework in a way that is satisfactory to the DMO and accords with Defence’s needs is well-nigh impossible.

5.32. This issue is exacerbated by the potential length of the contract term, which could be a considerable period (noting that it is not reasonable to assess a contractor’s performance negatively when it is performing well against an inadequate performance-management framework). There may also be reasons that fall within the contractor’s purview for a contract having an inadequate performance-management framework (eg, hidden profit).

5.33. This paper is not advocating that the Commonwealth Representative be provided with the ability to make wholesale changes to the performance-management framework (eg, the at-risk amount under the ASD PBC framework would be one element that should probably not be able to be unilaterally adjusted). Notwithstanding, it would seem appropriate for the Commonwealth Representative to have the ability to modify KPIs, replace existing KPIs with new ones, or change the weightings of KPIs at particular points in the contract (eg, annually), noting that the contractor could need to be given sufficient time to adjust if the changes are significant enough. In addition to the abovementioned rationale, this approach would be particularly useful to enable the contract to be responsive to changing operational imperatives. Additionally, government policy may dictate that a changed emphasis is required (eg, to respond to a new initiative to promote small-to-medium enterprises or to reduce environmental impacts).

**Preparedness and PBCs**

5.34. Improving Preparedness is more often cited as the principle advantage of PBCs, rather than reducing TCO. This is largely as a result of paying for performance that is linked to required Defence outcomes,

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90 Refer to Annex C for an overview of preparedness.
rather than paying for transaction-based work. These benefits are identified in several locations in this paper. This subsection discusses more directly how Preparedness itself can be enhanced or impaired under a PBC arrangement and some of the major considerations.

5.35. The readiness of a system for operational use is usually measured as availability. However, availability has a number of different meanings (eg, the system may be available to the Defence unit for organic support or the system is mission capable and either operating or able to commence operations within a normal start-up period). The measure is further complicated if a system is partially mission capable (ie, able to perform some missions but not others or can perform missions at a reduced level of capability). Another component of availability is the ability to ‘stay available’ by completing a mission once started (eg, ‘mission success rate’). The measure of availability in a PBC will change, depending upon the nature of the product being supported (eg, Mission System), the operational requirements, and the scope of the services to be provided.

5.36. Primary factors that can improve availability are system reliability, maintainability and supply system effectiveness. Reliability is primarily a factor of the design of a product (eg, Mission System) and is largely beyond the control of the support contractor. Reliability is also affected by how a product is used (by Defence) and environment, which is also largely outside of the contractor’s control but should be allowed for in the assessment of contract work effort, based on the arising rate and usage data provided by Defence – poor data results in increased risk and cost as discussed in this paper. Reliability can also be influenced by the quality of the maintenance and supply services (eg, for the latter, in relation to provided consumables), which is in the contractor’s control but often difficult to measure. This is often addressed through defect warranties, but less detectable shortfalls can be shown through monitoring the health and usage of a product, the arising rates and the defect reports of installed systems. Analysis of these types of measures can be used to trigger investigations and corrective measures. Reliability can be improved by modifications and, under a PBC, this approach is encouraged where the support contractor can implement modifications that reduce arising rates and, therefore, improve availability and reduce costs (refer to the later sections on Funding Upfront Change Costs and One-off Financial Incentives).

5.37. Maintainability, which is primarily measured in terms of repair times, is both a factor of the design of a product and the effectiveness of the Support System, primarily through the efficiency and suitability of the maintenance system to the product design. Maintainability of a product can be improved through modifications, as per reliability improvements discussed. The use of total quality management, ‘Six Sigma’, and ‘lean’ techniques to the maintenance system all seek to improve maintainability via the Support System and also reduce costs, sometimes with dramatic effect. This process improvement is encouraged by PBCs with firm contract prices, as the improvements that lead to faster and more effective maintenance with fewer or lower cost maintenance task also reduce costs below the firm contract price, thus increasing profits.

5.38. The effectiveness of the supply system to provide supplies to operations and maintenance activities is a significant driver of availability. When combined with deeper levels of contractor maintenance, supply system effectiveness is also referred to as supply chain effectiveness. Delays in the delivery of critical parts can leave a system, which may be located with the Defence user, in a non-mission-capable state for days or weeks, which is dramatic in comparison to operational level maintenance periods that are often less than a couple of hours. The speed of the supply pipeline enhances Preparedness, the faster a supply is delivered to the required location the sooner availability is restored. Like maintenance, the speed of the pipeline can also be improved by the use of total quality management, ‘Six Sigma’, and ‘lean’ techniques. Not only does this improve Preparedness but it may also save costs by reducing the number of items needed to ‘fill’ the pipeline. Maintenance efficiency and supply chain responsiveness are both discussed in the next subsection on Smart Sustainment. Challenges for improving supply in a PBC are many, including (but not limited to):
the impact of external actors (e.g., customs delays and third party transportation contractors);

- the management and use of common spares (refer DMO Business Models and A Structural Dilemma in the following sub-sections);

- the need to use Defence and allied supply lines when deployed, which are beyond PBC contractor control when (perhaps) required most; and

- the ownership of RIs (e.g., Commonwealth ownership takes control of an input away from the contractor, while contractor ownership can reduce competitive contracting options and is largely incompatible with Defence and allied supply chains and information systems for common items).

5.39. **Sustainability** is the second key component of Preparedness. Within PBL, the objective to ‘reduce the logistics footprint’ was directly intended to improve the ability to quickly deploy, remain responsive to mobile operations, and minimise the scale and cost of logistics support both at home and when deployed. Routine In-Service sustainment, like availability, can be enhanced under a PBC where a steady and predictable stream of work enables the contractor to optimise resources for the on-going provision of services at minimum cost – supporting the Key Objective to reduce TCO. The most difficult area in addressing sustainability is the support of deployed forces.

5.40. A challenge for a PBC and the sustainment of operations is the need for a surge capacity. However, a surge capacity to cope with an increased ROE and extended supply chains for deployed systems requires additional resources as a latent capacity, often at a cost. To complicate the matter, latent capacity to be used for surge could also result in routine use of that capacity (because Defence is paying for it) and performance measures being more readily met. This tends to undermine the effectiveness of performance measures in maintaining a cost for performance balance, but may be essential to Defence capability. Some of this spare capacity can be in the form of Defence Members Required in Uniform (MRU) working with the contractor to retain core skills for maintenance during deployment – this form of spare capacity can be taken from the contractor when a surge is actually required, adding to the detrimental effect. While there is no easy solution to holding and paying for spare capacity to meet surge requirements, it should be considered in each contract where a surge in effort and/or deployment requirements demand additional support resources.

5.41. The above considerations, summarising major contributors for the performance of a product and its associated Support System, will vary significantly for each environmental domain and each product being supported by a PBC. Understanding these factors and applying them to the development of a performance-measurement regime, within a PBC, will require considerable expertise and most probably assistance to the individual SPO or fleet manager drafting a contract.

**Smart Sustainment**

5.42. Under the Smart Sustainment element of the SRP, Defence is looking to reap savings from enhancing the maintenance and associated supply chain processes, as follows:

‘Smart Sustainment reform will pursue opportunities to significantly increase effectiveness and efficiency in the maintenance of military equipment and inventory. This will result in savings of $5.1 billion [...]’.

‘Reform in this area of business will focus on becoming more productive and eliminating waste in the maintenance processes. It will also reduce inventory costs through smarter procurement processes and reducing the size of inventory holdings.

‘[...] Industry suppliers to Defence will also have a big part to play in the success of this program. Defence Materiel Organisation will develop appropriate incentive arrangements in
its future maintenance contracts to encourage industry to implement ongoing productivity improvements. Defence and Defence Materiel Organisation will establish an improved framework for the development and implementation of future materiel support concepts to ensure efficiencies introduced now are not eroded by the introduction into service of new or replacement capabilities.  

5.43. The message is clear in relation to PBCs, but there are subtler aspects to this initiative that are worth exploring in the context of the Next Generation PBC framework. For example, one way to make maintenance efficient is to batch the maintenance activities (ie, to wait until a particular number of an RI are unserviceable before commencing work because this results in only one test equipment set-up as well as familiarity (or learning curve) efficiencies). From a TCO perspective, however, this can increase costs because additional RIs are required to populate the supply chain. This example highlights that a PBC framework that only looks at the contract costs is likely to result in sub-optimisation and that, instead, a whole-of-capability view of TCO needs to be adopted.

5.44. A corollary point here is that a contractor may identify improvements that require Defence to change or that cause cost and risk to be shifted to Defence without any overall reduction in TCO. These types of initiatives will need to be accommodated within the Next Generation PBC framework to ensure that the contract provisions and the rewards and remedies associated with achieving reductions in TCO adequately cater for ‘rejected’ initiatives.

5.45. Accelerating the supply and maintenance processes is a key outcome for reducing inventory costs and, therefore, for reducing TCO. These processes can be accelerated by removing non-value-adding processes (eg, unnecessary maintenance, handling, storage and transportation), streamlining the remaining processes, structuring maintenance to provide best flow, and using the fastest method of transportation available.

5.46. If the supply and maintenance processes can be accelerated, then items will spend less time in the supply chain, which generally results in reductions in stockholding requirements because fewer items are required to fill the pipeline. Furthermore, the increased responsiveness of the supply chain means that less ‘spare inventory’ is required to buffer the peaks and troughs associated with the variations in supply and demand (which lessens the requirements for safety stock), including the variations between peacetime and contingency demand requirements (ie, Preparedness). This means that accelerating the supply and maintenance processes has implications for both of the Key Objectives.

5.47. Accelerating these processes requires and end-to-end view of the multiplicity of supply chains that comprise the support to individual Materiel Systems. Currently, however, the supply chains are effectively split, with the Defence portion of the supply chain being managed (principally) through the Standard Defence Supply System (SDSS) (and, in the future, the Military Integrated Logistics Information System (MILIS)) and using CIOLOG-managed warehousing and distribution contracts (not specific to a particular Materiel System), and the non-Defence portion of the supply chains through various contractor-operated inventory-management systems.

5.48. Contractor-owned spares can travel through the Defence-portion of the supply chain (of Australia and its NATO allies) as long as the spares are codified; however, the mechanisms for achieving this outcome are

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92 This example also highlights that it may be more cost-effective for the SOW to mandate a first-in, first-out maintenance process for particular RIs; however, the best solution must be determined from failure rates, the premium for higher-priority maintenance, other delays in the supply chain (eg, customs), and the cost of additional RIs.
93 When the RAF and USAF introduced ‘lean logistics’ in the mid-1990s, they both identified that distribution was the low-cost component in the provision of support to Materiel Systems.
not straightforward due to policy and procedural requirements associated with the use of SDSS\textsuperscript{94}. These requirements, however, have the unfortunate effect of reducing the ability of the DMO to be able to hold a support contractor accountable for spares delivery to the end-user (ie, they impact upon the available options for establishing a PBC that ties a contractor’s performance to the required capability outcomes). The extant policy that governs this issue is DI(G) LOG 4-3-017, ‘Supply Aspects of Contractor Owned Spares’, which is currently being reviewed and updated by DMO staff. To ensure that this policy does not unnecessarily constrain PBC options and limit the ability to accelerate the supply chain, it is suggested that the issue of contractor-owned spares, the use of SDSS/MILIS, and the interactions between the Defence and external portions of the supply chains be subject to a detailed review by the Sustainment Reinvestment Office (SRO). (Of note, this issue becomes more pressing as time progresses because more and more projects are setting up support arrangements using contractor-owned spares.)

5.49. Under current Defence policy, each item of supply is required to only have a single item manager, known as the ADF Logistics Manager (ADFLM)\textsuperscript{95}. This means that, where there are multi-fit items (eg, cryptographic equipment) or multi-use items (eg, general purpose electronic S&TE), these items must only have a single manager. For many product support requirements, therefore, there are likely to be items that are either supported or provided by other support agencies and need to be demanded from them, as well as items that need to be demanded by them for the support of their products. The requirement for DMO support agencies to support multiple customers has implications for PBCs because it means that, typically, a contract cannot just focus on the support of the main products of interest, and the PBC framework must address the interfaces with other support agencies and associated support contracts.

5.50. The review of contractor-owned spares should also include single item management. The governing policy for this issue is DI(G) LOG 4-1-003, which is also currently being reviewed and updated. The requirement for each item of supply to only have a single manager was introduced around 2003 to overcome issues with the Defence financial accounts. Nevertheless, this requirement is also problematic for PBCs because Commonwealth-owned, contractor-managed spares, which have been procured for the support of a particular Materiel System, can be demanded by other users once the spares appear on SDSS/MILIS. This possibility affects the accountability arrangements that underpin an effective PBC (eg, impacting demand satisfaction rate, which is a common KPI), but it also shifts the focus from capability management to item management, thereby potentially undermining the Key Objectives. It is also driving behaviour, whereby DMO teams are investigating mechanisms to codify every spare for a Materiel System as a unique item, which may not be in the best interests of Defence overall.\textsuperscript{96} Single item management is discussed further in relation to common support contracts in a subsequent subsection, entitled A Structural Dilemma.

5.51. As highlighted by the Chief Executive Officer (CEO) DMO in a recent speech to the 2009 Defence and Industry (D&I) Conference:

‘[…] domain experts in the various fleets […] gave us a metric, and it’s going to vary from fleet to fleet, but 50 per cent is actually demand driven. You get these savings by changing the way that operators use the platforms. About 30 per cent is going to come through

\textsuperscript{94} For example, SDSS only allows a single item owner, which causes difficulty for contractor-owned stock where an ADFLM has already been assigned as the owner.

\textsuperscript{95} See DI(G) LOG 4-1-003, ‘Assignment of Australian Defence Force logistics managers and their associated high level roles and responsibilities’.

\textsuperscript{96} It may also be contrary to Australia’s commitments under the NATO Codification System (NCS). As highlighted in DI(G) LOG 4-3-019, ‘Item identification and recording of Defence assets’, ‘Australia, as a sponsored non-NATO country, has agreed to adopt the principles of the NCS as set out in [various] NATO Standardisation Agreements (STANAGs) […]. NCS policies and procedures are contained in the Allied Codification Publication No 1 (ACodP–1), also known as the NATO Manual on Codification’.
industry doing productivity work and better contracts, and about 20 per cent is the responsibility of DMO to get better process; so we’re working the 50-30-20 rule.’

5.52. Changing the demand patterns with the operators helps to align the demand profile with the maintenance regime and helps to iron out the peaks and troughs in the programmed maintenance effort (eg, if an airframe still has 50 hours left before it requires maintenance, but the maintenance is programmed, then the airframe is inducted into maintenance, rather than waiting for the 50 hours to be flown). This approach means that the operators will need to be adjusting their usage to align with the forecast maintenance program, and that there will need to be ongoing dialogue between the operators and the maintenance contractors.

5.53. Implicit in this approach is the need for strict rules to be captured in the MSA Product Schedules and for rigorous specification of demand drivers to be captured in sustainment contracts. The conditions associated with this approach will also need to be worked through and incorporated into the Next Generation PBC framework, particularly in regards to how the ROE will be specified and how changes to the baseline ROE to satisfy Preparedness requirements and operational imperatives will be accommodated.\textsuperscript{97} As any ‘misstep’ in the planned maintenance program is likely to cause the maintenance contractor to incur additional costs (eg, by holding under-utilised staff and then later when a delayed item results in the need to work overtime to ‘catch up’ the maintenance schedule), the Next Generation PBC framework will also need to include costs of excusable non-performance, for which supplementary funding should be available through the Capability Manager.

5.54. As the specification of ROE and the associated availability requirements are often unique to the system and the environment, it is suggested that each environment define standard ways for specifying these two elements in both their MSA Product Schedules and in their PBCs. As guidance, it is further suggested that the specification of these two parameters should be linked to the cost drivers (in an activity-based costing sense) to ensure that changes in activity can be linked to changes in costs.\textsuperscript{98}

**System and Process Improvements**

5.55. In the US, the broader PBL focus recognises that long-term gains and reductions in TCO can be made by encouraging Materiel System and support process improvements.

5.56. Reliability-based logistics, a US program, is an approach where the contractor invests in the modification of components for reliability improvements, reducing failure rates and system maintenance costs, and improving availability within a firm contract price. Its application can be limited by the relative cost of the investment and the time remaining in the contract versus that needed to produce a gain, but it can also enable system-level changes to be implemented, significantly improving long-term outcomes. There can also be significant Materiel System improvements through modification and replacement to manage obsolescence.

5.57. Secondly, if the contractor has ‘responsibility’ at the system, subsystem or component level, and the price is firm under a long-term contract, then the contractor’s main avenue to increase profit is through process improvement or by reducing the input costs for the same (or diminishing) level of total revenue. This requires that the contract include all or most of the expected tasks for on-going support, and reliance by Defence on S&Q is minimised to prevent the contractor from using it to increase revenue, rather than

\textsuperscript{97} ASDEFCON (Support) includes provisions for specifying ROE as well as provisions for Surge, which is defined as having two levels: Exigency (known and planned short-term increases in ROE) and Contingency (unknown increases in ROE for unknown periods of time).

\textsuperscript{98} For example, while flying hours may appear to be one of the main cost drivers, the number of take-offs and landings might drive these costs also. In the maritime environment, steaming hours may appear to be a key cost driver, but steaming on two engines as opposed to one engine may be a secondary cost driver.
reducing costs\(^99\). The contractor is only likely to undertake these types of improvements, however, if the length of the contract is sufficient to enable it to achieve a return on any investment or if the Commonwealth funds the cost of the change.

5.58. Improvements in the UK through availability-based contracts often cite major benefits and cost savings through process improvements, including ‘lean’ techniques, and logistics transformation (often by restructuring distributed defence deeper maintenance activities into centralised defence and industry partnerships). While Australia may not be able to reap equivalent benefits by comparison, having already undertaken many similar initiatives, significant potential remains.

5.59. Both Materiel System improvements and process improvements can be achieved through collaborative spend-to-save measures (eg, system modifications) and the appropriate allocation of responsibility and the freedom to make the necessary changes. This approach often involves both parties contributing to the upfront investment to make a change and both parties reaping the benefits of that change through shared savings (refer to ‘\textit{Funding Upfront Change Costs}’ in Section 8, \textit{Achieving Reduction in TCO}).

5.60. ASDEFCON (Support) recognises that there are many types of opportunities that can be investigated to assist with enhancing Preparedness and reducing TCO, including opportunities relating to:

- enhancements to the supported products;
- the contractor’s organisation, including changes to resources, personnel skills mix, and subcontractor arrangements;
- the systems, processes, procedures and tools employed by the contractor’s and subcontractors’ organisation(s);
- interactions between the various services provided under the contract;
- interactions between the contractor’s and subcontractors’ organisation(s) and the Commonwealth, including the Commonwealth Representative, and other Commonwealth support and user organisations (if applicable); and
- any other identified opportunities.\(^{100}\)

5.61. The lesson from PBL is that long-term containment of costs or ongoing reductions in TCO, while retaining or enhancing system availability, rests in finding either or both Materiel System and process improvements. The challenge here, however, is ensuring that a portion of any cost savings generated by the contractor under a firm-priced contract is passed onto the Commonwealth in the form of reduced contract prices. Many support contracts to-date have not experienced price reductions\(^{101}\), which means that appropriate contractual mechanisms are needed to remove the barriers and to incentivise this aspect of performance. This issue is discussed further in the section, \textit{Achieving Reductions in TCO}.

\(^{99}\) This consideration needs to be factored into the upfront analysis of S&Q, as discussed in the preceding section.

\(^{100}\) The requirement for the Contractor to identify these types of opportunities has been included in V2.1 of ASDEFCON (Support).

\(^{101}\) The CEO DMO made this observation in a recent speech to the Australian Defence Magazine (ADM), “But long-term contracts don’t always work well for the customer because unless you can somehow get productivity improvements written into a contract after a few years the contractor can work out how to do things better, but the customer doesn’t benefit”. [2009 ADM Congress Meeting, Hyatt Hotel, 17Feb09]
DMO Business Models

5.62. As highlighted in the DMO Acquisition and Sustainment Manual:

‘The DMO’s SPOs sustain close to 100 diverse categories of Defence specialised military equipment, servicing the needs of a single Defence customer in the case of major platforms (e.g. aircraft and ships) and to multiple customers for common usage items such as vehicles, rifles, tents, support and clothing.\textsuperscript{102}

5.63. Approximately half of the DMO’s SPOs support a major platform, while the other half support fleets of equipment or commodities. These two major types of SPOs differ considerably in their relationships with the customer and with the way that Preparedness is defined and managed. Typically, platform-oriented SPOs have only a single customer (or user) and there is a much closer relationship between the SPO and the customer. This closeness enables platform-oriented SPOs to be highly responsive to their customers and, therefore, to be much closer to the Preparedness imperatives.

5.64. Commodity-oriented SPOs, on the other hand, normally have multiple customers and are often remote from these customers. Typically, a representative within the Capability Manager’s organisation is nominated as the de facto customer. This remoteness affects the SPOs’ understanding of the operational imperatives, with the level of service being provided by these SPOs dependent upon assigned priorities, which are sometimes not totally clear. Preparedness is managed through an entitlements system, whereby users are identified as being entitled ‘to have’ an item, but not necessarily ‘to hold’ the item, and the entitlement doesn’t necessarily translate to the serviceability of the items located with each customer. Resourcing is managed by each ADFLM against these entitlements in accordance with the priorities established by the Capability Managers.\textsuperscript{103}

5.65. The two different types of SPOs tends to result in different contractual arrangements, as highlighted in the DMO Acquisition and Sustainment Manual:

‘At one end, there is a totally outsourced model, where a contractor delivers all of the necessary support constituents and the SPO performs a major contract management function to ensure the delivery of supplies and services to meet outcome-based performance requirements. This arrangement is usually found in in-service support of major platforms and systems, where contracts are arranged on a long-term basis so as to retain and maintain expertise and provide a level of certainty and continuity for the investments that companies have to make to provide the necessary level of capability and resources.

‘At the other end, some SPOs integrate and coordinate the delivery of support constituents across a range of service providers and perform a significant number of transaction-based activities. This is more prevalent in the in-service support across a range of commodities such as general stores.’\textsuperscript{104}

5.66. Even within the platform-oriented SPOs, there are quite different arrangements for the levels of organic maintenance undertaken by Defence versus the levels of outsourced maintenance undertaken by contractors. Additionally, while platform-oriented SPOs tend to have a small number of large-scale support contracts, this is not always the case.

5.67. Within the two types of SPOs, the different environments also have different support imperatives; for example:

\textsuperscript{102} Refer DMO Acquisition and Sustainment Manual, p89.
\textsuperscript{103} Refer DI(G) LOG 4-3-020, ‘Defence Materiel Entitlements’.
\textsuperscript{104} Refer DMO Acquisition and Sustainment Manual, p90.
- the Aerospace environment tends to be focussed on support to complex weapon systems at fixed bases;
- the Land environment tends to be focussed on support to highly mobile combat forces in diverse locations (which is highlighted in the LSD principles at Annex B, particularly the discussion under the heading, ‘Maximise Operational Availability (Ao)’);
- the Maritime environment tends to be focussed on support to complex weapon systems at sea, with only limited opportunities for logistics supply and resupply;
- the military electronic systems environment tends to be focussed on fleets of common or like equipment, often from specialised suppliers, which are distributed across a range of platforms and static facilities; and
- the Information and Communications Technology (ICT) environment tends to be focussed on Commercial Off The Shelf (COTS) equipment, with a high rate of technology growth and associated obsolescence concerns.

5.68. In relation to the Next Generation PBC framework, all of these differences mean that, while a standardised framework can be developed relatively quickly, the real issue will be the development of appropriate performance measures that suit the respective environments, SPO orientations (ie, platform or commodity), systems, outsourcing models, support imperatives, and contract scopes. The Aerospace environment has established the required performance measures for the majority of its support needs and some of these measures can translate into other environments. Nevertheless, it is suggested that working groups in each of the environments be assembled to address the performance-measurement requirements to integrate with the Next Generation PBC framework.

A Structural Dilemma

5.69. In looking at the different types of support arrangements that can be implemented, the focus on capability outcomes tends to suggest that support contracts for individual Materiel Systems would be the better option for assigning responsibility; however, the Key Objective to reduce TCO may suggest that support contracts for common items should be maximised for economies of scale. This leads to a structural dilemma as to how these two approaches can be supported by a standard PBC contracting framework.

5.70. Common support contracts represent ‘horizontal’ structures because they support common or similar items. Where the same or similar items are used on multiple platforms, Defence uses common support contracts (eg, a single contract for both C-130H and P3-C engines). Electronic systems that are hosted on multiple platforms provide further examples. The contractor may provide engineering, maintenance, supply, and possibly training for the common items.

5.71. The benefits of common support contracts stem from the support organisation specialising in a particular item, maximising the benefits of efficient resource utilisation, bulk purchasing, consistent and repeated processes, concentration of work skills, and sometimes making an otherwise expensive bespoke function into an economically viable business.

5.72. Defence has also uses horizontal organisational structures, having some ADF units maintain like items used on multiple systems. ADFLMs also manage contracts and inventory for use on or with multiple Mission Systems, as described by commodity-oriented SPOs in the previous subsection.

5.73. When contracts and SPO functions are based on horizontal lines, an individual Materiel System depends on inputs from many sources of support. The manager for each host platform must integrate the inputs from other SPOs and common support contractors to achieve desired outcomes like system availability. The PSI could be a SPO or the function could be contracted out, but a contractor is not in control of the SPOs and contractor entities providing support.
5.74. The alternative is to use system-level support contracts, which represent ‘vertical’ structures. The SPO, in this case is the platform-oriented SPO from the previous subsection. A contractor provides the integration of the support functions for all of the components in the particular Materiel System, fleet, or installation, either by themselves or with subcontractors. In pursuing desired outcomes for a capability, this approach has benefits of clear accountability, with the contractor responsible for system-level performance and being in control of the inputs, enabling resources, and internal processes.

5.75. In reality, full system-level support contracts are rare because Defence units and other contractors continue to provide inputs that remain beyond the contractor’s control. Further challenges occur if the contractor must establish new support capabilities that may not be economical for small work quantities. The PSI contractor typically engages subcontractors where they lack skills internally and, while Defence does not need to manage these subcontracts, the overhead costs and costs to mitigate the potential risk of poor subcontractor performance are passed on to Defence.

5.76. For its close correlation with desired capability outcomes, vertical contract structures are most commonly associated with PBCs because they allow the contractor’s responsibilities to best match system-level performance measures like availability. One of the principles of PBCs is that the risk and responsibility for the required outcomes must sit with the party who has the control (see next subsection); however, it is difficult to transfer all control to a contractor due to Defence common item management, inventory management systems, extant horizontally structured contracts, and for supporting any system that is hosted on multiple platforms. Where important inputs to performance are outside of a contractor’s control, then legitimate (and sometime subjective) claims of excusable non-performance may arise.

5.77. Some initiatives can increase contractor control, such as quarantining a pool of common spares under one contractor. This approach, however, means that another Defence system could be inoperable, while an unused but serviceable spare is held by the contractor, just in case it is needed to address a part failure that impacts on a contract performance measure. The quarantined spares pool concept does not work well with SDSS/MILIS, and contractor-owned spares can worsen this situation because Defence ultimately pays for many contractors to own, hold and manage the same spares. This approach can also create duplicate supply lines for deployed systems and cause cross-contamination of common spares that are owned by Defence and contractors. A solution to enhance additional contractor control can, therefore, create inefficiencies across contracts, systems, and the Defence organisation as a whole.

5.78. While horizontal structures create economies of scale, numerous contracts must be coordinated for all of the components needed by major systems. After this, system-specific support must be undertaken by Defence and/or other specific-to-type vertical contracts with very limited control over inputs.

5.79. To achieve system-level performance and the benefits of common item support, a combination of vertical and horizontal materiel support contracts must be integrated with Defence-wide logistic support systems and logistics services contracts. Both the vertical and horizontal structures could include PBCs, but neither approach can satisfy all of the needs on its own. This mixing of systems and commodities is illustrated generically in Figure 28.
In Figure 28, for example, a vertical contract is used for a class of ships and a separate vertical contract is used for land vehicles, both use a common communications system, supported by a horizontal contract, with all contracts depend upon Defence warehousing and distribution services/contracts. Each platform and the communications system would have different ADFLMs and contract managers.

In the context of PBCs and performance management, the matrix of horizontal and vertical sources of support creates a significant challenge. Horizontally-organised support, established by other parties, may not accord with the performance levels required of particular Mission Systems. A system-specific (vertical) PBC would need to have exemptions or modified performance measures to carve out those areas beyond the contractor’s control, creating unwanted complexity. Failure to allow for the horizontally-organised support, either for commodities shown in Figure 28 or common services provided by Defence, will result in the system-oriented contractors taking on, and pricing, risk for the performance of inputs that are outside of their control. Combining the sources of support requires a good understanding of interfaces before drafting each contract.

In light of the issues created by horizontal and vertical organisational structures within Defence and through contracts, the achievement of an available and mission-capable system requires input from the system PBC, subordinate component PBCs, and other service providers, as depicted in Figure 29.
5.83. The complexity of this mix of inputs reinforces the importance of the PSI role, and the need to determine, on a case-by-case basis, if the contractor or the Defence SPO / fleet manager is better placed to undertake the responsibility for the integration of support.

5.84. The situation reinforces a number of common themes that have been identified throughout this paper, namely:

- performance-based solutions are broader than one contract;
- careful planning (in an SPS) and execution (via a contract management plan) is required;
- a BCA (or similar) process is needed to identify the best combination of support from Defence and multiple-contractor inputs;
- the PSI roles (and organisations) must be established from the needs of the systems, rather than defaulting to a system-level contractor wherever possible; and
- skilled staff will be needed to assemble each performance-based solution.

5.85. The imperatives of the SRP mean that all avenues for reducing TCO should be investigated. Given that many acquisition projects are vertically-oriented, there are likely to be opportunities to achieve greater efficiencies and reductions in TCO through bundling like-technology equipments into common support contracts. Notwithstanding, any such move in this direction would increase the risks associated with enhancing Preparedness for the major systems upon which these like-technology equipments reside. It is
also likely that individual SPOs would not be motivated to pursue these types of efficiencies due to the increased risk, the loss of control, and the increased requirement for integration. In this regard, it is suggested that a broad-based study be implemented (perhaps by the SRO) to investigate:

- opportunities for greater use of common support contracts for like-technology equipments across the DMO; and
- mechanisms to enhance the integration of ‘horizontal’ support contracts with ‘vertical’ support contracts to reduce any risks arising out of any increased use of ‘horizontal’ support contracts (noting that there is a strong overlap between this option and the earlier option to investigate the issue of contractor-owned spares, the use of SDSS/MILIS, and the interactions between the Defence and external portions of the supply chains).

### Aligning Risk and Responsibility

5.86. Allocating risk to the party best placed to manage it is an ASDEFCON principle (see Annex A); however, if the default solution is to allocate almost all responsibility to one support contractor in the first instance, the opportunity to examine if that party is best placed to manage the associated risks becomes limited. The solution is often to allocate everything predictable to this contractor under a firm price, with the remainder becoming S&Q, with the Commonwealth bearing the cost risk for this work because it is sole-sourced to this one contractor (eg, refer to the KC-30 case study described earlier under Scope Issues).

5.87. PBL includes the concept of a Total System Support Responsibility (TSSR) contract. Two aspects of a TSSR are of interest. Firstly, and most obviously, this is a whole-of-system support contract (with the challenges of ‘vertically-oriented’ contracts, as described in the previous subsection). Secondly, TSSR means that the contractor is responsible for almost all support activities, including things that the DMO would traditionally consider to be S&Q tasks. Tasks like unquantified corrosion repairs are expected and included in the fixed price.

5.88. This approach can increase the risk to the contractor if it does not fully understand the system, the operating environment, or how the system is (or will be) operated in that environment (ie, because the contractor cannot properly determine the resulting workload). In situations of limited competition, this risk can translate into a significant cost premium in the firm price to Defence, which is why S&Q for this work has been the traditional approach (noting that S&Q can create its own problems due to delays in processing S&Q requirements, which affects availability). Nevertheless, it might be more appropriate for the DMO to undertake more detailed analysis of contracting options upfront and to develop solicitation approaches (eg, Commonwealth-Initiated Options) to enable the best approach to be identified before contract signature (ie, part of the firm-priced scope or S&Q). Standard contractual mechanisms to transfer work from firm-priced to S&Q (and vice-versa) could also be of assistance to ensure that the risk / responsibility equation is appropriate and represents a minimum cost to Defence over the life of the system.

5.89. A disadvantage of a TSSR contract can occur when the prime contractor takes responsibility for complex subsystems that it is not necessarily capable or competent to manage, which translates into risk and, therefore, increased cost. Although TSSR contracts were initially heralded as ‘commercial best practice’, the US GAO evaluated the PBCs of 14 comparable commercial companies (such as air carriers, maritime shipping and energy exploration) and found that the private sector only used PBCs at subsystem and component levels (citing several reasons)\(^\text{105}\). PBCs were generally used for complex subsystems with

expensive components and limited competition, such as aero-engines\textsuperscript{106}. A key difference to the US DoD was that industry took overall responsibility for support and system availability, rather than trying to transfer that responsibility to another contractor.

5.90. Benefits of careful allocation of contract responsibilities were also demonstrated when the US Navy’s T-45 Goshawk program office (refer case study under \textit{The US Approach}) updated its BCA and found that cost savings and performance were not being achieved by a TSSR contract. It subsequently separated the airframe and engine contracts, resulting in a saving of US$144M over five years\textsuperscript{107}. Similarly in the UK, the RAF and RN Harrier Rolls Royce Pegasus engines are now covered by an availability-based contract that has reduced engine turn-around time by 59\%\textsuperscript{108}. The UK has now structured a number of aircraft availability and multi-aircraft commodity contracts based on availability\textsuperscript{109}.

5.91. From the PBL experience, risks and costs can be reduced by partitioning contracts or agreements sensibly according to knowledge and responsibility, dealing directly with major component suppliers rather than defaulting to selection of a single PSI who may not have detailed knowledge or control of all the components. The BCA (which should be conducted early in the Capability System lifecycle to define the PBC(s)) must consider whether, when and how the PSI role will be best placed with a lead contractor or retained within the DMO. The PSI will assume responsibility for total system performance, integration, and for the allocation of scope and performance measures for each contract or agreement established within its wider performance-management framework.

5.92. The lessons from PBL include the notion that support responsibilities can include some tasks that may otherwise be subject to S&Q, under either a firm-priced or incentive-based contract, but only if the contractor has the knowledge and control. Allocating system support to a single prime contractor may not be the best solution for complex subsystems, especially where that will separate responsibility and control of the associated risks, creating a higher cost contracting framework.

\textbf{Key Points:}

- The SRP provides the imperative for enhancing support contracting practices, including elements from the ‘The Report of the Defence Procurement and Sustainment Review’ and Smart Sustainment reforms. PBCs must also be consistent with the broader Defence processes for Capability Management, the capability life-cycle, and the range of organisations involved in supporting a Capability System.

- The Preparedness requirements placed on a Materiel System are derived from capability requirements, with resulting KPIs and conditions defined in MSA Product Schedules. Further derivation of these requirements will provide the high-level outcomes required from DMO-managed PBCs.

- In developing a PBC, or set of complementary PBCs, the broader framework must be considered and appropriate information derived. The progression of information to develop and implement PBCs includes: Capability / Preparedness Requirements; Support Concepts (in the CDD); the Support Procurement Strategy (SPS); Performance-Based Contracts; and Contract Management Plans.

\textsuperscript{106} The reason for using PBCs when competition was limited is unclear; however, it seems likely that support was included in the acquisition decision. For example, an airliner can be purchased with a choice of engine, with engine selection based on operating and support costs.

\textsuperscript{107} As per footnote 105, p15. Also GAO-05-966, p8. The total value of the contract was not stated.

\textsuperscript{108} National Audit Office report HC 825, ‘\textit{Transforming logistics support for fast jets}’, 17 Jul 07. Note that improvements are with respect to a distributed RAF maintenance program rather than a single support contract.

\textsuperscript{109} BAE Systems News Release, ‘BAE Systems awarded contracts worth £119 million to enhance support of RAF aircraft’, 6 Feb 09.
- An SPS is an essential prerequisite for an effective contracting framework to assure performance in providing support. The strategy must also be based on an objective BCA that considers the possible contracting options.

- The Mortimer Report identified seven principles to improve procurement practices, of which the PBC framework will need to accord; however, the DMO may need to refine these principles to allow certain unilateral rights necessary to ensure that the performance-management framework remains relevant, continues to represent value for money, and motivates the contractor.

- Smart Sustainment reforms will make a contribution to SRP savings, with significant savings from contracts. Next-Generation PBCs will need to incentivise reductions in TCO achieved by savings from within PBCs or from other Defence processes enabled by changes to the contract. Managing demand patterns from Defence units will be an essential aspect in reducing contract costs.

- In parallel with the development of the Next Generation PBC framework, working groups for each environmental domain should be assembled to address the performance-measurement requirements to integrate with this framework, which provide suitable measures for the differing environments, SPO orientations, systems, ROEs and surge requirements, outsourcing models, support imperatives, and contract scopes.

- The DMO has different business models for managing materiel around either system-based or commodity based support. This creates challenges where single or common item managers are supporting multiple systems (ie, platforms); Defence policy, processes and information technology prevent the support for an individual system from being placed fully under one SPO’s control.

- These DMO business model challenges are increased for PBCs developed along system (vertical) and commodity (horizontal) lines of support. Horizontal structures, like common support contracts, can be performance-based and have benefits of efficiencies created by volume, specialisation, and shared resources. Vertical structures, like system-level support contracts, can best align with system-level performance objectives but are difficult to isolate without compromising broader organisational efficiencies of the common support contracts and services.

- Integration of these vertically and horizontally organised sources of support strengthens the case of implementing a PSI concept and clearly identifies that the PSI will often have to be in the DMO, rather than trying to place responsibilities on a prime contractor who has limited control over many inputs. This also reinforces the need for the planning, analysis, skills, and execution of a solution that is broader than a single contract.

- An important task for the working groups for each environmental domain, and the SPOs and project teams that will perform a BCA and prepare the SPS and draft contract documents, includes the close examination and appropriate allocation of risks and responsibilities to Defence and one or more contractors. Having separate contracts for systems and significant sub-systems, where risks are reduced by appropriate allocation of work to expertise and knowledge, has saved significantly on contract costs in the US and UK. This does not presuppose a solution because each situation must use a BCA to consider the best solution for partitioning contracts and the roles of the PSI(s).

- In parallel with the development of the Next Generation PBC framework, environmental working groups should be assembled to address the performance-measurement requirements to integrate with this framework, which provide suitable measures for the differing environments, SPO orientations, products being supported, ROEs and surge requirements, outsourcing models, support imperatives, and contract scopes.

- The issue of contractor-owned spares, the use of SDSS/MILIS, and the interactions between the Defence and external portions of the supply chains should be subject to a detailed review by the
SRO to ensure that the most cost-effective support arrangements can be implemented and that potential barriers to PBCs are removed.

- A broad-based study could also be undertaken to investigate opportunities for greater use of common support contracts for like-technology equipments across the DMO; and to identify mechanisms to enhance the integration of ‘horizontal’ support contracts with ‘vertical’ support contracts to reduce any risks arising out of any increased use of ‘horizontal’ support contracts.
6. **Achieving Enhanced Performance: Rewards, Remedies and Performance Measurement**

**Rewards and Remedies**

6.1. There are many mechanisms and methodologies that attempt to assure contractual performance and achieve the outcomes/objectives required. Many of these mechanisms recognise the practical reality of contracting, which is that, “If you do not have a remedy, you do not have a right”. In other words, an acquirer can put any requirement into a contract, but if there is no real remedy for non-performance, then the clauses may not be effective. Remedies must also be available that suit or fit the range of likely contract-management and performance-management situations. For example, termination is not an appropriate or practical remedy for most normal performance-management situations, given (amongst other things) lead times to replace contractors and potential disruption to the services. Similarly, the threat of recovery of damages through a court process for a failure to perform can be a hollow one if there needs to be a continued working relationship with the contractor.

6.2. The following list summarises the rewards and remedies that the DMO can use as levers to influence contractor performance\(^1\). Some are built into the ASDEFCON (Support) template, while some others have been used within individual DMO contracts:

- **Incentive Payments.** Performance is rewarded as a payment above the ‘normal’ payment calculated on a variable scale, generally against objective criteria.\(^2\)

- **Award Payments.** Performance is rewarded as a lump sum payment, or a number of set payments, above the ‘normal’ payment based upon periodic (often subjective) evaluations of ongoing contractor performance.

- **Award Terms (or rolling contract extensions).** The contract term may be extended as a reward for consistently good performance (although some regimes also allow terms to be shortened for below-expected performance).

- **At-Risk Amounts.** This is the model that underpins the ASD PBC framework. Performance is linked to a portion of the contractor’s ‘normal’ payment, which is similar in operation to the pain share portion of a pain share / gain share model described below.

- **Periodic Cost Review.** The contractor keeps any costs savings achieved from productivity improvements for a defined period and, at the end of this period, a review is conducted into the contractor’s actual costs, with the support price then being ‘ratcheted’ back to a lower level for the next period. Periodic cost reviews provide an incentive for contractors to pursue efficiencies in order to enjoy the immediate benefits, while allowing Defence to recoup ownership costs in the medium term. Periodic cost reviews may also be linked to award terms or replacement contracts (eg, as part of the Commonwealth’s assurance in relation to the validity of any cost-reduction programs that may have been implemented up to the date of the review).

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\(^1\) Some of these remedies are discussed in Chapter 6.5 of the DPPM and in the ASD PBC Handbook.

\(^2\) The term ‘incentive payment’ is not always used with the definition provided here. In the US, for example, the Federal Acquisition Regulations (FARs) define a range of incentive contract types, including Fixed-Price Incentive (Firm Target), Fixed-Price Incentive (Successive Targets), Fixed-Price with Award Fees, Cost-Plus-Incentive-Fee, and Cost-Plus-Award-Fee. With the exception of the award fee contracts, the other three are all a form of pain share / gain share contracts, which are classified into a separate category in this paper. The use of the term ‘incentive payment’ here is consistent with its usage in the current version of ASDEFCON (Support) and in the ASD PBC framework.
- **Pain Share / Gain Share.** Pain share / gain share models can be linked to cost, schedule and other outcomes, with the parties sharing in the risks and rewards of the contractor’s performance in meeting (or not meeting) the identified outcomes. The sharing of risk and reward is achieved through the fee arrangements, whereby the contractor’s fee is adjusted in accordance with a specified ‘formula’, depending upon its performance against the required outcomes. If the contractor exceeds the required performance, it is rewarded with additional payment (‘gain share’); however, if it underperforms, it receives less payment (‘pain share’).

- **Efficiency Dividend Programs.** In certain contracting situations it may be appropriate to build a predetermined cost reduction into the contract price. The cost reduction would occur at a predefined milestone, such as the periodic cost review event discussed above and would not necessarily account for actual changes in costs during the period. A weakness in this approach is the risk that the efficiency dividend is built into the original contract price and does not act as an incentive to achieve efficiencies.

- **Step-in Rights.** The Commonwealth can step in and have the services performed by itself or another party, with the costs of this work being at the expense of the contractor.

- **Withholding Payments.** The Commonwealth can withhold payments associated with a particular milestone or delivery date until the required performance is achieved. This is one of the more typical remedies in an acquisition contract, but it is also applicable in any contractual situation where schedule is a significant performance parameter.

- **Stop Payments.** The Commonwealth can stop future payments due under a contract until particular events are achieved or situations are remedied.

- **Remediation Plans.** Plans are required to explain and manage a return to acceptable performance in order to avoid a more onerous remedy (eg, stop payments).

- **Repatriation of Services.** Services can be removed from the contract by the Commonwealth and allocated to another party (contractor or organic support), which can be used to reduce the scope of a contract, either at Defence’s discretion up to a pre-agreed scope or pricing cap (eg, up to 20% of the annual contract price) or, perhaps, for poor performance. Repatriation of services that prove to be not cost-effective may also be built into the process (eg, at the end of a contract term, such that the Commonwealth may not include this element for the next term). This approach has issues for structuring the contract to make it easy to remove these elements.

- **Liquidated Damages.** Payment is claimed by the Commonwealth to compensate for losses caused by the contractor failing to fulfil nominated events or outcomes.

- **Warranties.** The contractor is requested to provide an assertion as to the ‘rightness’ of different aspects of a contract, including general warranties, fitness for purpose warranties, latent defects, and technical data warranties. Where this ‘rightness’ is discovered to not be the case, remedies to fix the identified deficiencies are usually included.

- **Performance Securities.** A financial security is provided by the contractor to secure the due and proper performance of the contract.

- **Deed of Substitution and Indemnity.** A deed is obtained from the contractor’s parent company or other entity, which is exercisable by Defence where it has a right to terminate the contract for default.

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112 This discussion of the pain share / gain share model has been derived from three sources: the US FARs; a Blake Dawson Legal Brief, ‘How smart is your sustainment?’; and a Grosvenor Management Consulting report, ‘Development of Performance Management Guidelines’, which was developed for the DMO in June 2004.

- **Termination for Default.** This remedy provides the ability to terminate the contract, in whole or in part, in response to default (including poor performance) by the contractor.

6.3. To assure performance across the range and breadth of requirements within individual support contracts in the DMO, it is likely that many combinations of these rewards and remedies will be required to provide a regime of both positive and negative incentives / disincentives appropriate to each contract. Tiered rewards and remedies are also likely to be required, with the tiering linked to either the significance of the above-required or below-required performance or the immediacy within which action needs to be taken (e.g., safety incidents). Ultimately, the rewards and remedies may be required as selectable options from a ‘toolbox’ for DMO contract managers to develop the wide variety of PBCs needed.

6.4. Importantly, each contract will include a number of rewards and/or remedies linked to performance. When using any combination of rewards and remedies, the developer of the performance-management regime needs to understand how these different rewards and remedies will operate and the types of circumstances in which they are envisaged to be applicable. This understanding should be derived from the risk assessment conducted as part of the development of the solicitation documents.

6.5. When performance measures are used, particularly the ones linked to rewards and remedies, the drafter needs to understand how these measures interact and, where applicable, how any underlying performance measures can interact (e.g., performance measures that contribute to a KPI). That is, the DMO should not provide a reward and a remedy at the same time, for related performance, as a result of a poorly constructed regime. All contract rewards and remedies must be applied consistently within a single performance-management regime, not as independent or internally conflicting schemes.

6.6. As a general principle, the number of performance measures should be kept to a minimum, consistent with management requirements. The performance measures that are linked to the rewards and remedies must be independent of each other (i.e., orthogonal) to minimise interactions and unexpected consequences. These considerations dictate that only a small number of KPIs (i.e., probably no more than four-five) should be included in a contract.

### Introduction to Performance Measurement

6.7. A performance measure is a unit or standard of measurement pertaining to a particular action, deed, or proceeding. Performance measures have a range of applications. Some performance measures assess the provision of particular services, some assess progress during design-and-development activities, and others may be used to assess commercial issues (e.g., achievement of AIC requirements or reductions in cost). Performance measures may be classified as KPIs, be used to calculate a KPI, or be used to confirm a level of support or system health. A standardised DMO-wide approach needs to consider the different classes of performance measures by their nature and use.

6.8. Performance measures are generally divided into lead and lag indicators, depending on the information that they provide. Lead indicators are used for insight into the future situation and provide a tool for planning (e.g., to identify areas of risk to performance such as degrading component reliability), even though they are based on past measurement. Lag indicators are used to report on past events where that information is required. Some activities measured will be under a contractor’s control, while other measures may only be under partial control or not controlled by the contractor at all, but are still useful for managing the Materiel System. For a performance measure to be used in determining a reward or

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114 This ‘definition’ is made by combining definitions from the Macquarie Dictionary.
115 ‘Services’ is given the same meaning as in ASDEFCON (Support): services provided in support of a materiel system, which can include technical services (e.g., engineering, maintenance and supply), managerial services, and commercial services (e.g., invoicing).
remedy (a KPI), it should be a lag indicator, which is predominantly under the contractor’s control (ie, it is not appropriate to attribute a reward or remedy to a contractor for an event that has not yet happened or is outside of their control).

6.9. Performance measures may also be considered as ‘static’ or ‘dynamic’. Static measures remain unchanged over a long period, such as the contract duration. Dynamic (time-variant) measures can be changed periodically to adjust for varying conditions (eg, the available fleet size as affected by modifications and/or fleet expansion, or progressive measures to promote year-on-year improvements).

Qualities of Performance Measures

6.10. Although different performance measures will suit different situations and contracts, all performance measures should have the following ‘SMART’ characteristics:116

- **Specific.** The performance measures and what is being measured are both clearly understood by those involved. The measures are not ambiguous or open to interpretation.
- **Measurable.** The performance measures are easily measurable in terms of the time, effort, and cost to collect quality data.
- **Aligned / Attainable.** The measures are aligned with the service outcomes required and for which the contractor has responsibility. The measures are achievable, reasonable and credible under the conditions expected.
- **Relevant.** The measures are derived from, and act as suitable indicators of, the outcomes that Defence requires, which includes the notion of adequate scope.
- **Timely.** The performance measures are current. If required, the measures will scale automatically or be adapted to forecast variations in the system or services, without the need for contract change.

6.11. Furthermore, in relation to their use:

- **KPIs must be outcomes-based.** KPIs should be traceable to Defence requirements, which may be defined in strategic guidance, an OCD, or an MSA Product Schedule. *Note: some OCMs will not be linked to operational outcomes and may be linked to other policy objectives (eg, AIC).*
- **The responsible party must have control.** If a contractor is being held responsible and accountable for achieving measured outcomes, it must also have relative control over the process and inputs.

6.12. The DMO needs staff with the skills to define performance measures that are suited to the scope of the different contracts and the individual nature of the systems, subsystems or components being supported. Once the performance-measurement regime has been defined, DMO needs to staff to be able to interpret the data and analyse the associated trend information.

Classes of Performance Measure for the Next Generation PBC Framework

6.13. Table 2 identifies three different classes of performance measure, which have been divided based on their use in relation to particular rewards and remedies:

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116 Summarised from the ASDEFCON (Support) training course, ASD PBC Handbook, and the PBL Guide.
### Table 2: Different Classes of Performance Measures

<table>
<thead>
<tr>
<th>Class of Measure</th>
<th>Description and Use</th>
</tr>
</thead>
</table>
| **Strategic Performance Indicators (SPIs)** | SPIs can be used to identify and promote matters of strategic importance to the Commonwealth, such as those linked to government policies (eg, matters relating to employment of SMEs and environmental citizenship).  
A KPI is a significant and quantitative measure of performance pertaining to the provision of support services. KPIs must reflect the desired outcomes of Defence at a level applicable to the products being supported (eg, an RI support contract is measured in terms of item availability to support fleet maintenance requirements). KPIs need to be within the contractor’s control and are typically linked to particular rewards and remedies.                                                                 |
| **Key Performance Indicators (KPIs)** | OCMs are derived from the information needed to manage the contract or system, and:  
- can be either lead or lag indicators;  
- can relate to any part of the Contract (ie, technical services, managerial services, AIC achievement, etc); and  
- may or may not be within the contractor’s control.  
System Health Indicators (SHIs) under the ASD PBC model are examples of OCMs, as are Reporting KPIs under the current ASDEFCON (Support) template. The ASDEFCON Measurement Plan, which includes an Information Needs and Measures Specification, is another methodology for describing and obtaining OCMs.  
Some OCMs can be lead indicators for the health of a contract (in terms of on-going capability), Materiel System and/or particular products being supported. As indicators of future happenings, these types of OCMs are not generally linked to contract rewards or remedies.  
Some OCMs will not be in a contractor’s full control (eg, staff turnover) and, therefore, will not be suitable for use with contract rewards or remedies, but are useful to flag management issues. Materiel System OCMs often relate to the supportability of Commonwealth-owned items (eg, to detect changes in reliability as a system ages).  
Some OCMs may be measures of compliance (eg, the Compliance Indicators under the DSG contracting approach).  
Different types of OCMs may need to be listed separately within contracts if reported and reviewed separately. |
| **Other Contract Measures (OCMs)** | OCMs are derived from the information needed to manage the contract or system, and:  
- can be either lead or lag indicators;  
- can relate to any part of the Contract (ie, technical services, managerial services, AIC achievement, etc); and  
- may or may not be within the contractor’s control.  
System Health Indicators (SHIs) under the ASD PBC model are examples of OCMs, as are Reporting KPIs under the current ASDEFCON (Support) template. The ASDEFCON Measurement Plan, which includes an Information Needs and Measures Specification, is another methodology for describing and obtaining OCMs.  
Some OCMs can be lead indicators for the health of a contract (in terms of on-going capability), Materiel System and/or particular products being supported. As indicators of future happenings, these types of OCMs are not generally linked to contract rewards or remedies.  
Some OCMs will not be in a contractor’s full control (eg, staff turnover) and, therefore, will not be suitable for use with contract rewards or remedies, but are useful to flag management issues. Materiel System OCMs often relate to the supportability of Commonwealth-owned items (eg, to detect changes in reliability as a system ages).  
Some OCMs may be measures of compliance (eg, the Compliance Indicators under the DSG contracting approach).  
Different types of OCMs may need to be listed separately within contracts if reported and reviewed separately. |

6.14. SPIs are not widely used at present, except under the DSG contracting approach. In all likelihood, these types of measures would be driven by corporate policy direction and established at that level (ie, individual support contracts would not develop their own at the working level). Nevertheless, they have been included here for completeness and possible consideration as part of the ‘toolbox’ of options for inclusion in the Next Generation PBC framework. Given their strategic nature, it would seem appropriate that these types of measures would be tied into incentive payments.

6.15. Many DMO contracts will use both KPIs and OCMs, and often a number of different types of OCMs will be used in the one contract. The actual performance measures will vary for almost every contract, depending upon operational (eg, Preparedness), design, and contract-management needs. KPIs and OCMs should be chosen to address particular information needs; not chosen as an interesting or ‘typical’ measure for which a need must then be found. Identifying performance measures to meet specific

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117 This paper acknowledges that different measurement regimes and naming conventions have been implemented under various environments. To avoid alignment with any particular model, the authors have chosen to use the generic term, ‘Other Contract Measures’ to embrace all of the different possibilities for a measurement program.
purposes, and categorising them accordingly, will ensure that they are used appropriately by the correct placement within contract clauses, attachments and annexes.

6.16. For the Next Generation PBC framework, common classifications and needs for grouping the different types of performance measures will be required, based on the information they provide and how they will be used. KPIs will clearly be required to provide the performance measures that are tied into the rewards and remedies. OCMs that support these KPIs (eg, where multiple OCMs are used as inputs to, or to assist with calculating, a KPI score) may also be necessary, but this requirement may be better handled on a case-by-case basis for individual contracts, rather than build them into the Next Generation PBC framework. Notwithstanding, if required, these elements can be added into the framework as the detailed drafting is undertaken to implement the agreed framework.

6.17. OCMs to monitor lower-level aspects a contractor’s performance (including compliance), however, are not considered necessary because, in any reasonably large support contract, this could result in hundreds of these measures to cover the full scope of contract work. As identified through the F-111 case study, having too many performance measures can be administratively burdensome and can potentially detract from the connection with required outcomes. On the other hand, if only a subset of these measures were to be selected, this would have the effect of unnaturally weighting certain aspects of contract performance, potentially at the expense of other more important aspects. In this regard, therefore, it is suggested that Reporting KPIs be omitted from the ASDEFCON (Support) template and the clauses that tie these measures into the contract terms be removed.

6.18. Lead-indicator OCMs (ie, those OCMs that provide lead indicators of contract, system/equipment and Support System performance) are considered to be an optional, but important, requirement, which should be included in the Next Generation PBC framework. These types of OCMs in a support contract have strong parallels with the practical systems and software measurement aspects included in the ASDEFCON acquisition contracts, which have proven to be useful for providing advance notice of possible difficulties. These lead-indicator OCMs should not be tied into the rewards and remedies, which also enables them to be used for reporting on aspects that are not within the contractor’s control (eg, increasing failure rates when the support contractor is not the Original Equipment Manufacturer (OEM)).

6.19. Notwithstanding that lead-indicator OCMs are not tied into the rewards and remedies, care needs to be taken in their development because they can also act to imbalance a contract, particularly where these OCMs are also contract requirements in the SOW (eg, a lead-indicator OCM could be whether or not operator manuals are being kept current, which is likely to be both a compliance issue and a safety issue). This particular example helps to reinforce why a range of rewards and remedies are required in any reasonably complex support contract, and why performance measurement is viewed as only part of the performance-management framework for a contract.

6.20. The KPIs and OCMs to be used by individual contracts will vary by environmental domain and system, but they will be essential for the successful operation of the Next Generation PBC framework. Each of the DMO Divisions must formulate a core set of KPI and OCMs for their systems and equipment, with guidance for their development and use, similar to the work that has already been undertaken by ASD. This issue is discussed further in the next subsection.

**Performance Measures for Different Domains and Systems**

6.21. Performance measures need to reflect desired Defence outcomes. As these outcomes vary from one environmental domain to another (aerospace, land, maritime and electronic) and for each system, the typical performance measures use will also vary. The following table identifies some typical measures for each environmental domain, engines, and common item management.
### Table 3: Typical Performance Measures for Various Environments

<table>
<thead>
<tr>
<th>Domain</th>
<th>Objectives / Function</th>
<th>Performance Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerospace</td>
<td>Achieve a level of availability</td>
<td>Availability of aircraft to operating unit (ASD)</td>
</tr>
<tr>
<td></td>
<td>Targeted Flying Rate / Program</td>
<td>Mission Capable Aircraft (LIF, C-17A)</td>
</tr>
<tr>
<td></td>
<td>Mission Completion</td>
<td>Depot/scheduled maintenance effectiveness (minimum time)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Flying Hours Achieved</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mission Reliability / Success Rate</td>
</tr>
<tr>
<td>Electronic</td>
<td>Continuous operations</td>
<td>Availability / Allowable Downtime</td>
</tr>
<tr>
<td></td>
<td>User Support</td>
<td>Number of re-starts / re-boots</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Help desk response times and resolution times</td>
</tr>
<tr>
<td>Land</td>
<td>Availability</td>
<td>System/equipment availability. This may include an overall availability figure and a minimum availability at each location, due to the wide distribution of equipment.</td>
</tr>
<tr>
<td></td>
<td>System Use</td>
<td>Scheduled maintenance effectiveness (minimum time)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cost per operating hour / day</td>
</tr>
<tr>
<td>Maritime</td>
<td>Availability</td>
<td>At sea days per fleet (Armidale)</td>
</tr>
<tr>
<td></td>
<td>Available Capability</td>
<td>Achievement of usage and upkeep program</td>
</tr>
<tr>
<td></td>
<td>System Use</td>
<td>Scheduled / dockside maintenance effectiveness (minimum time)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ships operationally deployed or able to be deployed (eg, UK submarines).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Steaming hours</td>
</tr>
<tr>
<td>Engines</td>
<td>Availability</td>
<td>Number of unscheduled removals</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Power-by-the-hour® / cost per unit use</td>
</tr>
<tr>
<td>Common / Component level</td>
<td>Availability of spares</td>
<td>Demand Satisfaction Rate / Issue Effectiveness</td>
</tr>
<tr>
<td></td>
<td>Waiting time for spares</td>
<td>Order Response Time (prioritised)</td>
</tr>
<tr>
<td></td>
<td>System upgrades</td>
<td>Schedule achievement (others as per acquisition program)</td>
</tr>
<tr>
<td></td>
<td>Safety</td>
<td>Certification compliance and Technical Data accuracy</td>
</tr>
<tr>
<td></td>
<td>Maintenance Effectiveness</td>
<td>Maintenance turn-around time / recovery time</td>
</tr>
</tbody>
</table>

6.22. The performance measures in Table 3 are a relatively small, but indicative, selection. Furthermore, even where different systems use the same KPI or other measure, the performance level required will be individually defined for that system based on its individual reliability characteristics, operational use, environment and other factors, such as fleet size or performance level adjustments for upgrade programs.

6.23. While KPIs, in particular, should be derived from and reflect the achievement of required Defence outcomes, there is no single solution that can be universally applied to the selection and specification of performance measures and the required level of performance for each measure. The implications of the variety in performance measures, and the various levels of performance to deliver required Defence outcomes, results in the need for flexibility and expertise in the selection and contract-unique definition of each performance measure.
Performance-Measurement and Performance-Management Regimes

6.24. As indicated by the different categories of performance measures and the discussion on the selection of appropriate performance measures, the establishment of a performance-management framework for a contract is not straightforward. The collective specification and use of performance measures under a contract must contribute to Defence’s required outcomes, including the Key Objectives, consistent with the contribution of the contract of these outcomes. As discussed in the NCSHEH case study under The Australian Defence Experience with PBCs, however, a performance-management regime for a contract does not need to rely on performance measures at all because performance can be managed through other contractual mechanisms, such as warranty, step-in rights, or remediation plans. The selection and use of performance measures as part of an overall performance-management regime for a contract is a decision that needs to be made as part of the development of the procurement strategy for a support contract. For example, it may be the case that particular elements of a support contract are better suited to the use of performance measures, whereas other elements are better suited to other performance-management levers.

6.25. The following list identifies some of the main issues for setting up performance-measurement regimes:

- **Simple and Straightforward.** Any performance-measurement regime must be readily understandable, simple to implement, and straightforward to manage. The resource implications of any performance-measurement regime (including the skills sets required for implementation and monitoring) must be an integral consideration in setting up such a regime. This type of consideration must also be taken into account for ‘non-core’ work, such as S&Q services.

- **Having or Obtaining Suitable Data.** Establishing a performance-measurement regime needs considerable technical data, particularly reliability and other supportability data. For new Materiel Systems, or new to ADF use, this data may not be available or accurate enough and a transition period to establish baseline data may be required. The same situation can occur to in-service systems if the need for measurement was not known or measures were not adequately collected. Uncertainty about arising rates and the nature of failures in a PBC translates into a risk that the tendered prices will be increased excessively.\(^{118}\)

- **Intellectual Property (IP).** Although the technical data may exist, additional IP rights may be required either to establish a performance-measurement regime or to be able to open an existing contract to competition.

- **Consistency.** Where used together, multiple performance measures must be consistent with each other and the required outcomes. Inappropriate combinations of measures, or inputs to measures, can either prevent optimal solutions from being reached or compound rewards and remedies.

- **Not Promoting Undesirable Behaviour.** Individual or combined performance measures linked to payments can, if not structured correctly, result in higher profits when sub-optimal performance is provided, driving the contractor away from Defence’s desired outcomes. Developing a regime requires the application of sensitivity analysis to consider how performances measures linked to rewards and remedies might be traded off against each other by the contractor.

- **Staff Skills.** An effective regime requires skills from both technical and commercial domains to determine appropriate payments for what can be achieved, the relative value of increases or decreases in services, and the realism of reducing TCO. The regime, not just the individual measures, must be understood by a number of Defence and contractor staff.

6.26. Having identified KPIs as the high level performance measures that reflect the achievement of Defence’s required outcomes, the rewards and remedies that can be used in motivation, and the necessary qualities of a performance-management regime (above), these components must be brought together in order to develop an effective regime.

6.27. The linking of KPIs to rewards and remedies needs to be carefully constructed. Bringing KPIs together in a regime where they overlap, complement each other, or conflict, can also be counter-productive, unless deliberately constructed to create a balance. For example, a contract with one KPI for availability and another for reducing cost (e.g., using a variable cost component of the contract or by affecting an external expense to the Commonwealth) can be constructed to involve the contractor in achieving the cost-capability balance. Alternatively a contract with KPIs for availability and scheduled maintenance effectiveness can be counter-productive because maintenance effectiveness contributes to availability. If both were linked to rewards and remedies, there could be ‘double-dipping’. The contractor could also ‘game’ / trade-off the two KPIs (e.g., if the achievement of depot maintenance effectiveness is looking poor, but availability is on target, resources could be switched from other activities to depot maintenance because reducing availability for a small penalty may be better than taking a larger penalty on the maintenance). In these cases, it can be better to keep the main KPI (i.e., availability) and use the other as a performance measure for the ‘health’ of the contract and subsequently use the measurement information to help fault find causes of availability shortfalls.

6.28. The level of performance required to obtain an incentive (or to minimise disincentives) must also be considered. Setting the level too high when additional performance is desired, but the system itself is not readily supported at that level (i.e., due to its supportability characteristics) or Defence has control of inputs (e.g., quantities of spares), is more likely to encourage the contractor to factor the penalties / limited rewards into an increased contract price, rather than encourage greater performance and value for money. Even subtle changes in the setting of KPI performance levels can have unintended consequences, as illustrated in Figure 30.

Figure 30: Setting KPI Performance Levels
6.29. The two regimes in Figure 30, linking KPIs to payments, are identical, except that the one on the right has its incentive (or the end of disincentives) ending slightly higher than the required Defence outcomes. In the situation on the left, the end of incentives right on the level of performance means that, due to the increasing input costs resulting from increased effort to provide the services, profit falls sharply should the contractor add resources and exceed the desired outcome. A risk-reduction strategy would be to target resource levels at just below the turning point and hope to achieve the desired outcome a reasonable number of times within the ‘normal variation’ of the system. In the situation on the right, with the incentive extending just beyond the desired Defence outcomes, the profit does not drop away so sharply and so the contractor is more likely to target the resource level for the desired outcomes; however, within the ‘normal variation’ of the system, the Commonwealth may end up paying for additional performance that it does not use on a regular basis.

6.30. In this single KPI-to-payment example, the developer establishing the regime may need to consider trade-offs between paying slightly more to ensure performance, or spending slightly less but suffering occasional shortfalls. Additionally, the developer will need to consider how the regime will be impacted by process improvements that change the contractor’s cost curve. The cost curve itself raises further issues, with the most obvious one being that the contractor’s cost at a single point is rarely understood by Defence, and how it varies for levels of required performance is less understood and well-nigh impossible to obtain prior to issuing the RFT when the regime is set up. This reinforces the need for open book accounting, obtaining multiple cost/performance points in the tender responses, the ability to amend the performance-management regime when in contract (within given boundaries), and possibly even policies on profit and cost regulation (which are discussed in the subsequent subsection, A Note on Pain Share / Gain Share Models).

6.31. To ensure the successful implementation of a performance-measurement regime, DMO staff will need to have the skills, or be able to draw on additional skilled resources when required, to define performance measures, interpret data, and assemble the performance measures into an overall, integrated, performance-management regime, which involves tiered rewards and remedies that encourage the Defence’s required outcomes in a cost-effective manner.

A Note on Safety

6.32. As highlighted earlier, the ASD PBC approach clearly states that, “While the focus of the ASD PBC Handbook is primarily on performance management, it does not reduce or negate the responsibility of the contractor to produce and maintain materiel to a specified level of safety […]”. The recent UK Government Report into the loss of a Nimrod aircraft in 2006119 provides a salient reminder that the drive to achieve the Key Objectives should not be undertaken at the expense of safety.

6.33. The Technical Regulatory Authorities (TRAs) have the responsibility on behalf of the Capability Managers for defining requirements for safety (as part of technical integrity), and these requirements are currently built into ASDEFCON (Support). The respective TRFs address technical integrity through consideration of people, process, data and organisations. Notwithstanding, it is necessary to consider how safety can be built into the performance-management framework.

6.34. Safety can be a difficult characteristic to parameterise into one or more performance measures because of its pervasiveness. For example, safety embraces:

- OHS;

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- safety in design, including human system integration;
- accuracy and completeness of technical data;
- practices and processes employed for operating support, engineering, maintenance, supply and training; and
- management, supervision and organisational culture and values.

6.35. While particular aspects can be parameterised (eg, “all OH&S incidents were reported in line with procedures and timeframes specified” or “the amount of lost time due to safety-related incidents or injuries was less than x days”), it is particularly difficult to define a single KPI that embraces all aspects of safety (noting that, as stated earlier, the number of KPIs should be kept to a minimum, which effectively dictates that each key contractual outcome should typically be covered by a single KPI only). More importantly, performance measures for safety can be problematic because they can also send the wrong message, implying that something less than “100%” is acceptable120.

6.36. The case study of the Armidale Class Patrol Boats, which was discussed under The Australian Defence Experience with PBCs, showed an alternative approach, whereby the assessment of performance was scaled according to the severity of particular defects identified. Safety was identified as a Priority 1 concern, which included failure of a safety system (eg, fire detection) and/or compromise of seaworthiness. Of note, a similar categorisation process is used in ASDEFCON (Strategic Materiel) to classify the severity of any failures identified during a verification program. These types of categorisation processes have some level of subjectivity associated with them; however, if the word pictures are constructed well enough, this subjectivity does not normally cause significant problems.

6.37. In light of the preceding discussion, safety is (perhaps) best managed as a “go / no-go” parameter, rather than as a KPI on a sliding scale. In this sense, safety should not be considered as having degrees of compliance and that the level of safety management is either acceptable or unacceptable. Potentially, a number of OCMs could be used to assess the ‘health’ of the safety-management system, which could then be supplemented by an audit framework. Unacceptable safety management could then be tied into contractual remedies for Remediation Plans, Stop Payments and, if significant enough, termination.

Reports and Reviews for Performance Management

6.38. Reports and reviews complete the performance-management regime for a contract by providing the mechanisms to obtain ongoing feedback on achieved results, including risks, issues, problems and opportunities. Meetings and reviews also provide the forums for making decisions regarding required actions and, where applicable, the application of rewards and remedies. Reports and reviews provide management focus for the contractor and the level of insight that Defence requires to monitor and manage the contract. Reports and reviews provide ongoing visibility into performance and, therefore, they facilitate early management intervention, where required, to help avoid services heading ‘off-track’. They also provide for the monitoring of any recovery program where services have failed to meet requirements.

6.39. Reporting is often achieved through both formal contract deliverables and from automated systems (eg, maintenance and supply management systems). Customer surveys are an optional source for subjective reporting. Generally, the less effort to collect reported information the better, noting that the expense of reporting should not outweigh the benefits or the amount of reward or remedy linked to the reported

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120 It is acknowledged that there is probably nothing that is 100% safe, but it is the emotional message associated with trying to define objective measures for safety that creates the challenge, particularly given that safety is normally addressed through subjective constructs, such as ‘As Low As Reasonably Practicable (ALARP)’.
performance. Care must be taken, however, to ensure that the data collected and processed for reporting is accurate, interpreted correctly and a true representation of the performance measure. For example, maintenance data can be distorted where an item is reported as failed but, subsequently, during maintenance testing by a contractor, there is no-fault found. System availability may be degraded, increased numbers of spares demanded, and contractor effort and cost increased, when the fault may actually lie with an interface that has not been repaired.

6.40. Within PBCs, both the DMO and contractor need to be aware of activities that occur during or can fall outside of the reporting period. For example, if a fixed level of availability is required (rather than being time-variant), a Defence unit stand-down period can boost the measured performance through lack of use; alternately, Defence units have been known to quietly carry forward partially mission-capable systems and then ‘dump’ the backlog of work on maintainers (Defence and contractor) just prior to stand-down. An outstanding demand can also be reported as outstanding in one period and arrive on the first day of the following period to provide an extremely responsive result. Likewise, if a demand is ‘closed’ when re-prioritised and a new demand opened for an item already in transit, measures of responsiveness at both priority levels can be distorted.

6.41. There are many other examples, similar to the above, that can distort performance reporting. Setting up defined performance measures, measurement plans and procedures in a system to collect, purify and report data, can become complicated. While this is true for all contracts, it can have a greater impact for PBCs under a firm price where linked to rewards and remedies.

6.42. For details of the current reporting options in ASDEFCON (Support), refer to the earlier discussion under the ASDEFCON (Support) Approach.

6.43. Reviews provide a forum to discuss reported performance, factors influencing performance, and to decide on the achieved performance to be assigned rewards or remedies in accordance with the contract. Generally, two levels of review are required, a working or technical review, and a commercial review. Preferably, these would be conducted separately to avoid mixing of their purposes; however, on smaller contracts they could be held as part of the same meeting.

6.44. Firstly, a working level or technical review of services needs to confirm, from a technical stand-point, the performance levels achieved by the contractor over the reporting period, as well as the source(s) of limitations or shortfalls and any services impacted by excusable non-performance (ie, by Defence activities or a third party). The technical review should avoid discussing how these might relate to rewards and remedies, and simply establish the ‘facts’ regarding the services provided and any technical actions that need to be taken.

6.45. The second level of review, being commercially-oriented, confirms or determines the rewards and remedies that are, in many cases, based on the technical assessments of the reports and working level / technical review. These reviews would be used to monitor remediation activities by the contractor, if performance has fallen below desired levels, and confirm the granting of any rewards and remedies with a subjective component, such as the granting of an award term based partially on the assessed efforts to reduce TCO. Commercial reviews, with technical input, would also discuss necessary changes to the performance-management regime if it does not appear to be acting effectively.

6.46. While ASDEFCON (Support) has these kinds of reviews, they require redevelopment to better suit PBCs, as highlighted in the discussion under the ASDEFCON (Support) Approach and at Annex D.

6.47. The ASD PBC Module incorporates an additional executive-level review, as highlighted in the earlier discussion of the Aerospace Systems Division Approach.
Key Points:

- There are a range of different rewards and remedies that can be incorporated into a contract to influence contractor performance. A tiered set of rewards and remedies should be considered when building a performance-management regime, which is simple and straightforward to enact and relevant to the environment, system, outcomes required, and risks involved. The performance-measurement regime is only a part of the performance-management regime for a contract.

- Different classes of performance measure are used for different purposes and have different characteristics – a consistent framework within DMO contracts is needed to apply them in their applicable roles.

- Individual performance measures must have certain characteristics to make the effective, which can be summarised as Specific, Measurable, Aligned / Attainable, Relevant and Timely. KPIs, in particular, should be outcomes-based and within a contractor’s control.

- The number of performance measures should be kept to a minimum, consistent with management requirements. The performance measures that are linked to the rewards and remedies must be independent of each other (ie, orthogonal) to minimise interactions and unexpected consequences. These considerations dictate that only a small number of KPIs (ie, probably no more than four-five) should be included in a contract.

- Establishing performance-measurement regimes, to combine and apply performance measures effectively, requires a number of key inputs to make them effective, including skills, data, careful construction to avoid internal conflicts or combinations that drive undesirable behaviour, and convertible to the rewards and remedies in the contract.

- Reporting includes both formal contract reports and those delivered through information management systems – care is always required for the correct processing and interpretation of data.

- Reviews are generally required at two levels: a working/technical review and a commercial review. The technical reviews confirm the performance measures, causes of limitations and the impact of external factors on non-performance. The commercial reviews confirm rewards and remedies, make decisions on subjective measures (such as granting award terms based on efforts to reduce TCO), and review the effectiveness and required changes to the performance-management regime.

- Consideration should be given to expanding the ASD PBC approach in the Next Generation PBC framework to be a full pain share / gain share model. This approach does not need to be implemented in the first tranche of development for the Next Generation PBC framework, but should be developed as an advanced option in the ‘toolbox’ of options available to the drafter.
7. Achieving Reductions in TCO

Introduction

7.1. Achieving reductions in TCO is one of the Key Objectives and primary outcomes of the SRP, as highlighted earlier. As TCO for a Capability System is only partially within the control of a contractor, the strategies for achieving reductions in TCO must be cognisant of the differing cost sources and cost drivers and must ensure that strategies that simply transfer costs from one organisation to another, without actually reducing TCO, are minimised.

7.2. While acknowledging that some strategies for reducing TCO\(^{121}\) have been adopted across different Defence contracts with varying degrees of success, a complete framework for reducing TCO, which straddles both acquisition and support contracts, has rarely (if ever) been implemented. Under the older DEFPUR contracting arrangements, for example, Defence had a program known as the Value Management Incentive Program (VMIP). This program attempted to encourage contractors to develop and submit Value Management Change Proposals (VMCP) to Defence and, if such proposals were accepted, the VMIP allowed for the payment of an agreed proportion of the savings generated from the implementation of that idea. If a contractor developed an approved VMCP without financial assistance from the Commonwealth, it retained 50% of the savings; however, if the parties shared the implementation costs, the Commonwealth retained 75% of the savings and the contractor retained 25%.

7.3. While well-meaning, the VMIP did not result in many cost-saving initiatives. It is mentioned here because it highlights that the use of financial incentives to achieve productivity improvements and associated reductions in TCO is likely to be challenging, particularly where the contractual arrangements work against achieving these improvements (eg, where the contractor can make more profit by not improving). It also highlights that an initiative-based approach to cost savings is likely to be unsuccessful and that a more comprehensive, potentially whole-of-contract, strategy will be required to achieve the required SRP outcomes.

7.4. To-date, the DMO’s main strategy for reducing TCO has been through the use of competitive tension, and this strategy is expected to remain a major component of the DMO’s toolkit for achieving this Key Objective under the Next Generation PBC framework. Nevertheless, there are strategy and structural decisions in relation to acquisition and support contracts that can affect the degree of competitive tension and the ability to tap into greater levels of competition over the LOT of a Materiel System.

7.5. In a recent speech to the Australian Defence Magazine (ADM), the CEO DMO made the following statement in relation to productivity improvements, which can lead to enhanced performance and reductions in TCO:

"[…] Every one of us in industry - when I was in industry and I guess you now - like long-term contracts. They provide certainty. They provide for investment in assets and staff training.

“But long-term contracts don’t always work well for the customer because unless you can somehow get productivity improvements written into a contract after a few years the contractor can work out how to do things better, but the customer doesn’t benefit. Where we’re heading - this is a bit of an advance notice - is a lot of contracts in future will be say..."

\(^{121}\) For example, the ASDEFCON acquisition contracts include LCC clauses, which are aimed at producing a Materiel System that minimises LCC while satisfying the other requirements of the contract.
three years and if you perform well in year one you’ll get a fourth year. And the rolling series of one year extensions on a two to three year lead time out such that we’ve got a chance to switch supplier if the productivity improvements aren’t being delivered. We understand the need by contractors for certainty. We also understand the need for Defence and DMO to get a better deal on the long-term contracts. So that’s the way we’re heading and I think everyone can gear themselves up for that now. The intention is clear.”

7.6. Clearly, the CEO DMO has flagged the use of award terms (or rolling contract extensions) as one of the key mechanisms for achieving ongoing productivity improvements. This initial indication of reducing TCO through changes to support contracts was shortly followed with its inclusion in the SRP. An award term enables some of the limitations of firm-priced contracts to be overcome by enabling price reductions below the initial firm price to be incorporated into a contract extension.

7.7. This section of the paper will address the available mechanisms for achieving reductions in TCO, some involving both Defence and industry, which include:

- maximising the ability to realise the benefits of competitive tension over the LOT;
- using pain share / gain share models that focus on cost;
- using award terms (or rolling contract extensions);
- additional contractual mechanisms for reducing TCO, including the role of tendering in this process;
- managing the uncertainty in scope during the start-up of complex support contracts;
- DMO funding the upfront change costs, in whole or in part, to also obtain longer-term savings through contract price reductions (ie, spend-to-save initiatives);
- periodic cost reviews; and
- efficiency dividend programs.

7.8. This section will separately discuss each of these mechanisms to assess their applicability or useability to support contracts generally, to particular categories of support contracts, and/or to particular situations that may be experienced over the capability life-cycle. Firstly, however, it is necessary to understand the barriers to achieving reductions in TCO to be better able to assess the pros and cons of each of these mechanisms.

Barriers

7.9. The previous sections of this paper have identified that PBCs can assist with achieving reductions in TCO because, inter alia, the framework is outcomes-focussed, which enables the contractor to determine the best approach to meeting these outcomes. As the contractor gets more familiar with the system and its operations, it can streamline its activities to gain efficiencies, while still achieving the required outcomes. It may also be motivated to implement longer-term cost-reduction measures (eg, improvements in reliability) if a return on investment is available within a manageable timeframe.

7.10. While a contractor can often achieve reductions in its costs, it can be challenging for Defence to share in these savings, particularly under firm-priced contracting arrangements. Notwithstanding, this paper does not advocate a wholesale shift towards cost-plus contracting mechanisms because of the costs of

122 See transcript of CEO DMO speech at the 2009 ADM Congress Meeting, Hyatt Hotel, 17Feb09.
governance and because it can work against any TCO reductions achieved through competitive tension (due to the initial ‘savings’ becoming consumed by potentially uncapped cost-plus price increases).

7.11. There are many other barriers for Defence to achieve reductions in TCO over time, which can include one or more of the following:

- The contractor has underestimated the scope of work in bidding a support contract, and is unable to achieve any reductions in cost. There are some well-known examples of this outcome in the DMO, which is more prevalent when a combined acquisition and support RFT is used, where the scope of support is more difficult to judge so far in advance.

- The contractor deliberately underbids to ‘buy into’ a market with the intention of expanding business once the foothold is gained, which also makes it difficult to achieve ongoing cost reductions.

- Competition is limited due to, for example, matters of expertise, system knowledge, IP, and directed support arrangements. The lack of feasible alternatives limits the DMO’s leverage to obtain ongoing reductions in TCO.

- A DMO support agency places too many process and other restrictions in its support contract, thereby constraining the contractor’s ability to achieve efficiencies. Trying to control inputs in an outcomes-oriented contract provides an example of these types of restrictions, although unnecessarily prescriptive statements of work can also achieve the same effect.

- The contractor does not control all of the costs, which means that reductions in total cost, where the contractor’s costs actually increase, can be difficult to achieve without either DMO intervention or appropriate contractual mechanisms. Implementing a change may also involve considerable upfront costs, which may also need to be accommodated through appropriate contractual mechanisms.

- The contractor can make more profit by maintaining the status quo. For example, a contractor may be able to sell under-utilised personnel for other, unrelated work (effectively selling the same person twice). A contractor is unlikely to achieve efficiencies if it can make money on its spare capacity.

- The DMO support agency inappropriately packages the work into its support contracts, which causes the contractor to add risk premiums because, for example, it does not have the expertise. Similarly, the DMO support agency may unnecessarily remove elements of work from the firm-priced portion of a contract (eg, by packaging perceived risky work into S&Q), thereby removing possibilities for ongoing efficiencies from a more continuous work program.

- Funding for longer-term or higher-cost efficiency gains may require the use of capital funds, which may not be available or recoverable in the remaining contract period.

7.12. Some of these barriers are not within the DMO’s ability to control (eg, underestimation of scope and deliberate underbidding), but others are controllable through proper planning and the provision of appropriate tools and guidance. Notwithstanding, if appropriate provisions for ongoing cost reductions are built into the contract framework, this may reduce the likelihood of deliberate underbidding. There are also mechanisms that can help with underestimation of scope (eg, interim arrangements until the requisite data is available), but these mechanisms can also act to reduce the DMO’s competitive leverage.

7.13. The following topics in this section address the mechanisms for achieving cost savings and ensuring that some of those savings are transferred to Defence, while also considering how to address the identified barriers.
Maximising Competitive Tension over the LOT

7.14. As highlighted by the CEO DMO in a recent speech to the 2009 D&I Conference:

‘The Government has confirmed [...] it is a competitive environment for defence procurement. Competition is the nature of it. It forces innovation. Innovation is what ultimately leads to better equipment for the ADF. So the competitive environment is very important to everybody in the system.

‘We are after two things. We’re after security of supply and we’re after diversity of supply. [...] [D]iversity of supply [is required] because things can happen to companies. You can have bottlenecks in infrastructure, equipment and with people. You can have bad management in companies. That happens occasionally. You can have commercial problems. So relying on a sole supplier is often a very fraught way to do business, and particularly if you’re supporting troops overseas. So diversity of supply is not just about competition policy. It’s about making sure that we’ve got options. So right through the DMO, the culture we’re pushing is security of supply and diversity of supply.’

7.15. One of the key considerations in looking at competitive tension is to understand the level at which this tension might be maximised. For example, there may only be limited competition for the support of a complete platform, but there may be significantly increased competition at the lower levels of the product breakdown structure for that system. There may also be better levels of competition for non-platform elements, such as a simulator or standalone items of S&TE. Even if there is only limited competition for these lower-level items, the use of lower-level contracts reduces the likelihood of non-value-added processes and overhead costs being applied by the prime contractor.

7.16. The obvious counter to the use of these lower-level contracts is that, if the use of a single, large-scale support contract for a platform were not to be pursued, this might preclude any single contractor from being able to be held responsible for platform availability, with the responsibility for this outcome potentially falling to the SPO to achieve through the coordination of various contractor outputs (ie, as the PSI). Additionally, where there are more contracts, there will also be an increase in the requirements for contract management and, therefore, SPO personnel numbers. Nevertheless, the significant savings and associated lessons from separating the aircraft platform contracts from the aircraft engines contracts, which were described earlier123, should not be ignored. There is clearly a trade-space here that should be investigated and analysed periodically over the life-cycle to investigate possibilities for enhancing competitive options, reducing TCO, and achieving greater value for money over the LOT.

7.17. The timing of a support contract is also a key consideration here. For example, early in the capability life-cycle, it may be preferable to issue a combined RFT for both acquisition of a system and its complete support because this approach maximises the Commonwealth’s competitive leverage at the time. During the In-Service Phase, when a large-scale support contract becomes due for renewal (eg, at the end of the initial term), it may be appropriate to test the market for different aspects of support (eg, chassis / hull / airframe, engine, combat system, electronic RIs, mechanical RIs, and Commonwealth-owned S&TE).

7.18. Notwithstanding, it may be more appropriate during the Requirements Phase to issue a combined RFT that only includes a full support contract for particular aspects of the support (eg, that make sense to bundle with the acquisition contract), with a basic ordering agreement (or other mechanism) included in the RFT to provide coverage for the support of the system elements that will be separately market tested at the appropriate time (eg, to coincide with an interim Materiel Release). This approach would be useful

123 See the earlier discussions in relation to the US Navy’s T-45 Goshawk program and the Rolls Royce engines.
where it is known that the support for particular system elements will be significantly cheaper than would occur if incorporated into a large-scale support contract.

7.19. Where acquisition is undertaken through other means (eg, FMS), this type of thinking is not required and the DMO can implement the most cost-effective arrangements through market testing at the levels where competitive tension is maximised\(^\text{124}\). In the case of FMS, care must be taken regarding the release of essential product data to tenderers (needing approvals under the International Traffic in Arms Regulations (ITARs)).

7.20. Where various contractors are established for the support of a particular platform, one of these contractors could be established as the coordinating contractor for the other contractors (eg, similar to the ‘Limited Prime’ role under the F-111 WSBU contract described earlier) and taking on aspects of the ADFLM role normally undertaken by the SPO for these other contractors (eg, in relation to requirements determination). The set of support contractors for a system could be contractually linked under some form of head agreement, which sets out the necessary interactions and interfaces (including with the SPO), communication channels, requirements for cooperation and coordination, who bears responsibility for performance and non-performance, and conflict resolution processes. This head agreement could also be used to set out the arrangements for promoting ongoing reductions in TCO, whereby the parties have to work together to streamline the supply chain processes, minimise waste, and reduce any unnecessary on-costs. Where proposed reductions in TCO result in transfer of costs or risks between various parties (including the Commonwealth), this head agreement could establish the role of the DMO (or an independent body) as the arbiter of the way forward.

7.21. As an alternative approach to establishing multiple support contracts upfront, it may be appropriate to structure a large-scale support contract so that potential elements, which prove to be not cost-effective when included within the bounds of this large-scale contract, can be readily removed at a later time (eg, at the time of the award term announcement). This approach would be similar in concept to the one used in the NCSHEH RFT for the FGGS Services and the Fire Safety Services. The ‘Repatriation of Services’ contractual mechanism described earlier could also be used to achieve this outcome.

7.22. Notwithstanding, the contract would need to be structured accordingly to enable the identified system elements to be readily removed (although an adjustment to central contract management functions may be harder to isolate). For example, the SOW requirements and associated prices and payments for these system elements would need to be partitioned within the contract. The implications for the proposed PBC regime would also need to be worked through to ensure that it would continue to operate effectively when any partitioned elements are removed, which could include:

- having a separate regime for the partitioned elements,
- having provisions that enable the regime to be adjusted when these elements are removed, and/or
- simply ensuring that the removal of any partitioned elements does not upset the regime.

7.23. At the more detailed level, there are other considerations in relation to maximising competitive tension, which relate to support contracts generally, as opposed to being specific to PBCs; however, they are included here because they can affect or influence the power of a performance-management framework. Firstly, IP rights are required to enable other parties to undertake work and, therefore, to provide the Commonwealth with alternatives and the associated bargaining power that comes with the availability of competitive tension. Secondly, access to expertise is required to enable the IP to be exploited for Defence purposes. Lastly, it is considered that support contracts include the rights to:

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\(^{124}\) Although, in using FMS, there is the loss of the competitive tension that would be obtained through a combined acquisition and support RFT through DCS.
have in-scope work, which would normally be undertaken by the contractor, be undertaken by another party (including the Commonwealth) when the contractor under-performs (eg, through such provisions as step-in rights); and

have optional work (eg, S&Q Services) undertaken by another party (including the Commonwealth), particularly when a quote for optional work does not represent value for money.

7.24. The division of a proposed support contract into work streams, as illustrated in Figure 19 under the case study for the NCSHEH RFT, provides a framework of thinking that can assist with the development of the set of support contracts, or the partitioning of work within a single support contract, to promote competitive tension. These work streams can be structured around:

- particular products or groups of products (which may or may not be part of a performance-based common support contract);
- particular services or sets of services;
- particular levels maintenance (eg, for Aerospace: R3 or R4 maintenance); and/or
- the level of certainty associated with the scope of work associated with particular products (eg, in terms of arising rates and the availability of data).

7.25. This discussion emphasises the need for a strong analytical process associated with the establishment of support contracts, particularly PBCs. The need to have an SPS and a standard process to develop this SPS are the subject of separate options in this paper. This discussion, however, provides additional support for these options, as well as reinforcing the need to understand the role of the PSI and to determine the most cost-effective way to implement this role at the various levels of the system breakdown structure over the LOT. Moreover, as access to appropriate IP rights is typically an acquisition issue, the analysis activities that underpin the SPS must be completed early enough to influence the solicitation processes for the prime equipment.

7.26. This paper is not advocating the use of mechanisms, such as ‘Repatriation of Services’, in the initial implementation of the Next Generation PBC framework. Nevertheless, this paper is considering that this approach be included for further investigation and possible inclusion in any subsequent update to the initial implementation. The paper is advocating, however, that the considerations in relation to competitive tension, which have been raised in this subsection, be included in the proposed procedure for the development of an SPS.

Pain Share / Gain Share Models with Cost as an Objective

Introduction

7.27. Cost can be made the focus of a contract through the use of pain share / gain share models that explicitly target cost\textsuperscript{125}. These types of contractual mechanisms specifically seek to manage costs by ensuring that risk associated with the cost of a contract varying from an initial estimate or ‘target’ are distributed efficiently between Defence and its suppliers.

7.28. When predicting the final cost of a contract is inherently imprecise but a company is restricted to a target figure which includes contingency, that company will be exposed to risk if costs exceed the target. Equally, Defence may be exposed to risk if the ultimate costs of executing the contract turn out to be lower than the target and no provision has been made for a portion of subsequent savings to be shared with the Department.

\textsuperscript{125} Pain share / gain share models can also target performance against KPIs and schedule.
7.29. Cost-oriented pain share / gain share mechanisms allocate these kinds of risks by requiring that Defence and its suppliers share the losses when a cost overrun occurs. They also apportion risk by asking each party to share the gains should a cost underrun eventuate.

7.30. If a company knows it can increase its profits by completing a contract below budget, the company is likely to be encouraged to improve its efficiency; however, this does not allow Defence to share in the savings made. Additionally, when a contract includes a cost-oriented pain-share / gain-share mechanism, a company will understand that it does not have to absorb all of a loss if costs exceed an initial estimate; hence, a risk-averse company should be less inclined to build unnecessary contingencies into its original price estimates.

7.31. After the initial contract price has been established, these types of contract mechanisms provide a contractual framework for incentivising efficiencies in relation to those elements of the work and associated costs that are under the contractor’s control. Other mechanisms are required for incentivising cost reductions in relation to product-support matters that are broader than the contract.

**Overview of the Model**

7.32. Cost-oriented pain share / gain share models can be used with both firm-priced and cost-plus contracts. When used with a firm-priced contract, a ceiling contract price is specified, which is the maximum amount that may be paid to the contractor and within which it must perform the required contractual outcomes. A similar ceiling price may also be set for cost-plus contracts; however, the contractor does not have to perform the required contractual outcomes within this ceiling price. Floor prices are also often used to establish a point below which a company can retain as extra profit the full extent of the cost underruns. This full model is illustrated in Figure 31, which shows a hypothetical 50:50 price-sharing formula.

![Figure 31: Pain Share / Gain Share with Cost as an Objective](image)

7.33. As can be inferred from Figure 31, a cost-oriented pain share / gain share model can be viewed as a specialised form of the adjusted ASD PBC model illustrated in Error! Reference source not found.,
with cost established as one of the KPIs. One of the major differences in this type of model is that the slope of the line represents the sharing of cost overruns and underruns between the parties.

7.34. Another difference is the period over which the incurred costs are measured. While performance is typically measured quarterly, this period would be too short for measuring costs because the contract cost base is often derived from statistical parameters, such as the likely maintenance arisings in a particular period. A longer period is generally required to allow the statistically-driven parameters to ‘level out’. Notwithstanding, if the period is too long, then the cost base and the sources of cost reduction become more difficult to identify and manage. On balance, a contract year would appear to be a reasonable period over which to assess the contractor’s performance in reducing costs.

7.35. In a recent speech to the 2009 D&I Conference, the CEO DMO made the following statement about cost-plus contracts:

‘We’re not trying to lower profits. There are two types of profit in my view. There’s a badness type and a goodness type. It depends on which lens you look through. What’s badness? Well, badness I think are cost-plus contracts, because the only way a company can make more profit is to increase your customer’s costs. To get an extra dollar of profit you might have to increase our cost by 10 dollars. That’s a bad form of profit from the customer’s point of view.’

7.36. In light of the CEO’s comment, cost-oriented pain share / gain share models should only be implemented under firm-priced contracting arrangements, which require a ceiling price to be negotiated within which the contractor must perform the required work.

7.37. In relation to the cost-sharing parameters, it is difficult to devise a general formula for their application, given that contracts can vary significantly in relation to the type of work being undertaken, duration, internal phasing and stage of development. Nonetheless, for complex Defence procurements, the minimum sharing ratio should probably be 50:50. This reflects the need for industry to help manage cost uncertainty, recognises that Government is relatively well placed to deal with unavoidable risk in relation to cost, and communicates a message of equity and fairness.

7.38. So-called split ratios are also an option, where different ratios are set according to whether a cost overrun or underrun is being considered, the costs in question are fixed or variable, and the contract is in the early or later stages of its operation. An example of a split ratio is 80:20 for cost overruns and 50:50 for cost underruns.

7.39. Split ratios based on cost overruns and underruns might be appropriate if the steps required for a company to keep costs from moving above an initial target price are significantly less demanding than the steps required to push cost to sub-target levels. A split ratio based on type of cost – fixed or variable – might be useful if fixed costs are easily forecast and therefore associated with relatively low levels of risk. Splitting ratios on the basis of phases of a contract – early or late – might be beneficial if the degree of difficulty associated with achieving cost savings changes substantially as the contract evolves. It is often the case that savings become more difficult to achieve as a contract progresses and easier avenues for improvement give way to more intractable obstacles to industrial reform.

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126 For example, a highly reliable item might only fail, on average, once every six months. A longer period would help to ensure that the number of actual arisings is closer to the average.

127 This approach was used, for example, in the UK MOD’s Tornado support contract, where certain fixed costs (eg, management) were treated under a different regime to the variable costs (eg, maintenance linked to ROE). This approach is another variant of the ‘work streams’ approach discussed earlier.
Establishing the Pricing Parameters

7.40. Much of the value in a cost-oriented pain share / gain share model comes when a target price (or cost) estimate can be established that is truly representative of the underlying costs. If the target price were to be set too high, contractor profit would be increased with minimal risk and Defence’s objective for reducing TCO would be unlikely to be achieved. On the other hand, if the target price were to be set too low, a contractor would be likely to ‘bust through’ the ceiling point and, under a cost-plus contract (ie, with no ceiling price), there would be little incentive to further minimise costs.

7.41. The set of pricing parameters (ie, target price (or cost), ceiling price, floor price, and the sharing ratios both above and below the target price must be established as a set to ensure that the incentivising power of the mechanism is optimised, while reflecting the best balance of risk and each party’s appetite for risk. These mechanisms also need to be established so that cost reductions resulting from changes to the way that the parties interact are distinguished from cost reductions due to productivity improvements.

7.42. Setting the target price will be challenging, particularly in circumstances where there is only limited or no competition. The DMO would be expecting this target price to be set below the price that would otherwise be obtained through firm-priced contracting models. Other reasons why setting the target price is likely to be problematic include:

- the asymmetry of information between the DMO and the tenderer(s);
- the minimalist approach to-date in relation to cost and profit regulation in Australia128 (see next subsection);
- difficulties with mandating a standardised approach to the build-up of costs (eg, see the earlier discussion under the F-111 BU case study in relation to the use of TF2); and
- difficulties with DMO staff in being able to fully understand and validate a tenderer’s cost estimates, except where these estimates are grossly under- or over-stated (eg, due to a limited understanding of the nature of the business and the asymmetry of information highlighted earlier)129.

7.43. In relation to the ceiling price, however, this element must necessarily take into account the DMO’s appetite for risk because the DMO does not wish to be exposed to amounts that would result in it paying significantly more than it would have under a firm-priced contract. Setting the floor price would need to take into account the point where, arguably, the DMO has received enough return and the contractor should reap the full additional benefits from its productivity improvements, particularly where these productivity improvements have involved upfront investment.

7.44. Notwithstanding, Defence industry is likely to have views on how these parameters should be established and their views should be sought in the first instance if this particular approach to seeking reductions in TCO is pursued.

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128 In Australia, Defence has relied on the Australian Accounting Standards and associated Generally Accepted Accounting Principles, and has tended not to mandate more stringent requirements (although the TF2 example quoted under the F-111 BU case study was counter to this normal approach).

129 This point is not intended to be derogatory, but it can be very difficult to assess whether or not a particular maintenance task, for example, will take 10 hours or 20 hours. Historical information and detailed basis of estimates can assist here, but this type of information may not be available to the DMO. Even if the information were to be made available, undertaking this level of analysis for a largish support tender would be very challenging and probably prohibitive in both time and cost. It would also be likely to suffer from the “inability to see the wood for the trees” problems that can occur when detailed cost analyses are undertaken.
Regulatory Requirements

7.45. In the US, the problems with setting the initial pricing parameters and then monitoring the contractor’s subsequent performance in relation to costs are partially overcome by a high degree of regulation and associated overheads. The US has implemented detailed Cost Accounting Standards (CAS) as well as the Federal Acquisition Regulations (FARs) and the Defense FAR Supplement (DFARS). In the US DoD, these standards and regulations are managed and overseen by a veritable army of contract managers (through the Defense Contract Management Agency (DCMA)) and auditors (through the Defence Contract Audit Agency (DCAA)).

7.46. The overheads associated with this type of regulation are significant, and should not be underestimated in the Australian context. Notwithstanding, if this type of contract model is to be pursued, a suitable regulatory framework must be implemented, which addresses the single question as to whether or not the costs and profits of the suppliers are necessary and reasonable.

7.47. This approach requires Defence to inquire into the fundamental issues driving efficient company performance, including the following questions: is company activity limited to work which is absolutely necessary, is the level of resourcing for specific tasks optimal and could some other process, design, component or material meet Defence’s contractual requirements more economically? These issues touch on whether companies are adopting best-practice processes for efficiency improvement like Lean, Six Sigma, or their functional equivalents.

7.48. Under this type of contract model, the regulatory tasks that must be performed by Defence include: setting a target price, price ceiling and price floor for at least the initial contract term, particularly in the absence of market competition; verifying the final price for the initial term; setting the target price for an award term; verifying the final price for that term; and ensuring that the declared profit rates of companies are reasonable, particularly if these are used to cap company exposure to risk.

7.49. As part of the regulatory process, consideration should be given to the return on investment that companies require to adapt their activities to contracts based on final outcomes rather than underlying processes and to generate the growth in productivity on which cost savings depend. Regulation must also reflect the added business risk companies may face in tackling obstacles to productivity improvement and the need for companies to retain a proportion of the benefits from higher productivity in order to strive for greater efficiency on a long-term basis.

7.50. Close attention must also be paid to how price ceilings and floors can be established. The task of setting a price ceiling – above which Defence will not be prepared to pay any more for a good or service – can be data-intensive, needing to take into account factors such as recent contract experience, the prices submitted by competing tenderers, and the overall budget constraints. Setting a price floor may be even more difficult, requiring Defence to estimate how far it thinks a supplier might reasonably or readily go in improving its efficiency and what Defence expects as an efficiency dividend.

7.51. When the contract is underway, the regulatory framework will need to be sensitive to the ease with which costs can be shifted from one assessment period to the next (eg, by deferring work or not ordering particular high-cost spares). It would be imprudent for the DMO to not be able to validate the costs incurred against the cost baseline to determine the outcome against the pain share / gain share parameters. This will require DMO staff to have full visibility of the cost baseline for each assessment period (eg, year) and to be able to map the actual costs incurred against this baseline. Without pre-empting a particular solution, these requirements could be met through adapting earned value management to a support contract.\(^{130}\)

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\(^{130}\) Earned value management is used in the US to undertake this type of activity in cost-plus contracts.
7.52. Regulatory strategies, therefore, raise a myriad of issues that need to be resolved. These include how company accounting data can be adjusted to match the economic concepts underpinning regulation, the necessity for those data to ‘ring fence’ relevant contract activity within companies who may be managing multiple projects, support arrangements and plants, and how adjustments for inflation are factored into company cost estimates.

7.53. Regulation also raises the issues associated with how Government-furnished assets should be treated for regulatory purposes, including the estimation of depreciation expenses, asset rental charges and rates of return on equity, what constitutes a legitimate company overhead expense, the method used to quantify financial risk for Australian-based companies whose shares may not be traded locally, what constitutes an optimal ratio of company debt to equity, how comprehensive cost benchmark data can be collected, and how productivity growth can ultimately be forecast and verified.

7.54. Open-book accounting is a necessary but not sufficient condition for these issues to be addressed. Under these types of contracting models, stricter overall governance arrangements are needed compared to simpler firm-priced contracting models. These greater governance arrangements impose costs on both industry and Defence.

**Interactions with the Performance Management Regime**

7.55. A critical issue here in relation to achieving cost reductions is how the respective contractual mechanisms interact. For example, under a support contract an availability performance indicator can be linked into certain rewards and remedies, while cost reductions can be linked into other rewards and remedies, with the possibility of some remedies, such as award terms, linking into both. On the surface, the simplest approach would be to mandate that a minimum level of performance must be achieved before the cost incentives are considered; however, this might not result in the best outcome for Defence where multiple bands of performance have been specified, as would occur using the ASD model.

7.56. Although incentive regimes for cost reduction and ensuring performance may appear independent within a contract, in reality they are both related to common contractor processes. For example, a reduction in costs will achieve one incentive but may be to the detriment of performance; however, the resultant drop in performance would reduce the incentive related to it. In principle, therefore, the dual objectives of cost reduction and performance will balance, but a key question is whether or not they will balance where the solution best meets Defence’s required outcomes. Accordingly, the critical success factor is the ability to craft appropriate contract management regimes that balance the two priorities of cost and performance for the best ‘whole-of-contract’ outcome.

7.57. In setting cost-optimised performance parameters in its support contracts, the DMO needs to be able to hold cost/capability trade-off discussions with its customers, the Capability Managers. To enable these discussions, the DMO needs to obtain insight into the underlying cost versus performance relationships. One methodology for achieving this insight is to request each tenderer to provide multiple cost points for specified levels of performance. The downside to this approach is that it increases the cost of tendering. An alternative approach might be to request the cost for a nominated performance level and to request each tenderer to provide what it considers to be the optimised cost/performance point as an alternative. This alternative approach, however, does not provide the DMO with the necessary insights into the underlying cost/performance curve.
Award Terms (or Rolling Contract Extensions)

Introduction

7.58. Award terms, or ‘rolling contract extensions’, entitle the contractor to an extension to the length of the contract as a reward, within defined contract terms. In the context of performance management, award terms can be integrated into the contract-management framework to reward achievement against both of the Key Objectives. Award terms are particularly suited to reducing TCO, however, given that the performance of the services is able to be effectively incentivised through other, more immediate, rewards and remedies. Reductions in TCO often take longer to formulate and implement, can involve upfront costs to achieve downstream savings, and can require changes to more than just the contractor (eg, changes to interfaces between the various parties and changes to the division of responsibilities between the various parties). Given that many initiatives to reduce TCO will involve upfront costs, which require time to amortise, the use of award terms at the end of an initial contract period makes them more in-tune with achieving reductions in TCO.

7.59. The use of firm-priced contracts in a competitive environment should act to reduce the contract price (at least initially). The firm price can act as an incentive for the contractor to identify savings from risk reduction or process improvements and, therefore, to increase profit within the negotiated price. The firm price, however, limits any savings from being passed on to the Commonwealth (unless found in S&Q or other ‘cost-plus’ portion of a contract), except where a cost-oriented pain share / gain share model is employed. One method of reaping contract savings and, therefore, reducing TCO is to allow the contractor to make improvements and retain above-normal profits for the current contract term and then set the firm price for the award term at a reduced cost, thus transferring some of the savings to the Commonwealth. Obviously, this has implications for the length of the initial contract term and the length of each award term. If the length of the initial term is too short, there is only limited time to recoup costs; whereas, if it is too long, the incentive power is reduced.

7.60. While award terms are well-suited to incentivising reductions in TCO, they should not be used just for this purpose because they can also be tied into the set of rewards and remedies for incentivising enhanced performance in relation to Preparedness. In this regard, the judgement as to whether or not an award term should be granted should be based on achievements against both Key Objectives (to the extent applicable to the contract131).

7.61. Award terms are assessed as being an essential component of the ‘toolbox’ of options available to the drafter. They provide another reward to motivate contractor performance; however, they are not a ‘silver bullet’ and, in some cases, will not be appropriate. To flesh out these types of issues, this subsection will discuss a number of the considerations associated with implementing award terms, including:

- setting the initial contract term,
- deciding when to initiate an award term,
- setting the length of the award term,
- contractual mechanisms for implementing award terms, and
- assessing reductions in TCO for award terms.

131 Realising reductions in TCO may not be applicable to all support contracts (eg, near the end of the LOT of a system) and may not be feasible (eg, where a contractor has accidentally or deliberately underbid). Additionally, enhancing Preparedness will only be applicable to the extent that the scope of the contract allows. Typically, the relationship between enhancing Preparedness and contract scope will be defined through the KPIs selected.
**Setting the Initial Contract Term**

7.62. Currently, the initial contract term is set somewhat arbitrarily, based on such considerations as the LOT of the capability, duration of the roll-out of systems from acquisition, anticipated value for money, operational requirements, the nature of the market, and the Commonwealth’s relationship with industry. Initial periods of five and ten years are not uncommon. Notwithstanding, there is currently no policy on the length of these initial periods, or on the criteria that should be taken into account in either extending or not extending a contract term.

7.63. A minimum initial contract term of five years is suggested because this period represents the best balance between achieving Defence’s goal to reduce TCO, informed decision-making, resource utilisation, and tender costs, as explained at Annex F. In summary, this period is required to provide:

- sufficient time for contractor performance to be accurately measured;
- a recovery period if performance is marginal and the Commonwealth Representative wishes to give extra time to provide the opportunity for the contractor to demonstrate recovery; and
- sufficient time to develop and implement a replacement contract.

7.64. There are also significant resource issues for the DMO if an initial contract term of less than five years were to be used. For example, if the initial term were only three years, this would imply that the DMO would have to commence a new RFT less than 18 months after having signed a contract, which would seem to be an inappropriate use of resources, given the costs and personnel involved in a typical tendering activity.

**Deciding When to Initiate an Award Term**

7.65. An award term decision must be at least two years in advance (known as the ‘minimum decision period’) for the reasons outlined at Annex F. In summary, this minimum decision period is required to:

- provide sufficient time for the contractor to amortise any development and implementation costs associated with (then) current initiatives to reduce TCO;
- provide sufficient time for the DMO to develop and implement a replacement support contract; and
- minimise the likelihood of contract roll-off and the subsequent decline in Defence capability near the end of a contract term.

**Setting the Length of the Award Term**

7.66. The length of each award-term extension can influence its effectiveness as an incentivising mechanism. The term should not be too long because this would reduce its effectiveness once the award had been announced, and it should not be too short because this could reduce its incentive power and would increase contract administration. The length of an award term also affects the timeframes within which a contractor calculates its return on investment for any upfront investment to achieve improvements and reductions in TCO, with longer award terms being more beneficial here. Overall, however, award terms of one year would appear to be a suitable middle ground, as indicated by CEO DMO in the earlier quote.

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132 In the last year of a contract term, contractors often do not order spares and other items that will not be used within the remaining period and they may reduce maintenance activity and maintenance and other staff because sufficient serviceable assets are available for use. This approach means that, if the decision to extend a contract is made too late, there will be a capability impact because necessary spares and personnel may not be available when required.
The issues of the timeframe for calculating return on investment would be partially addressed by making the award term two-three years in advance. (Of course, circumstances can change significantly in two-three years, which is one of the main problems with making such a decision so far in advance.)

7.67. Exceptional performance could be rewarded by awarding a longer extension to the contract (eg, two years) in accordance with the contractual provisions governing the award terms. For the Next Generation PBC framework, it is suggested that this approach be included in the ‘toolbox’ of options available to the drafter, but be limited to the advanced options because it adds another layer of complexity to the development of a PBC regime for a contract. As such, it does not need to be included in the initial tranche of development for the Next Generation PBC framework.

Contractual Mechanisms for Implementing Award Terms

7.68. While there are a number of ways that an award term concept could be implemented (eg, replacement contracts, CCPs, or option clauses), the best approach, which is the most straightforward and is assessed as minimising the commercial and legal risks, is to embed a number of options into a contract, which provide the ability to extend a contract in accordance with the governing contractual provisions. These provisions would need to set out the conditions for awarding an extension to the contract term in terms of performance against the KPIs and in relation to identifying, defining and implementing initiatives for reducing TCO. Under this approach, a tailored CCP would be required to enable only those elements that need to be changed to be incorporated into a contract at the time of the award (eg, to amend the Price and Payment Schedule (P&PS)).

7.69. The award-term concept will need to be well thought through because it does involve a number of commercial and legal risks and considerations, including the following:

- The criteria used to determine whether or not an award term can be given should be as objective as possible and set out clearly in the contract; otherwise, the process could be subject to dispute. This requirement should be readily achievable for performance against the KPIs, but might be more problematic for performance in relation to reducing TCO (as explained in the next Subsection, Assessing Reductions in TCO for Award Terms).

- The contractor must be given a level of certainty that, having met the contract terms and associated performance measures or cost savings targets, an award term will be granted under ‘normal’ circumstances. Not awarding a contract extension due to the Commonwealth Representative’s discretion has the potential to undermine the incentive power of this mechanism and reduce a contractor’s confidence and willingness to invest in system or process improvements and other cost-reduction initiatives across all DMO contracts that use award terms.

- Notwithstanding the previous point, there may be good reasons for the Commonwealth Representative to not award a contract extension, even though the contractor has met the criteria (eg, the contract scope is not correct or will be substantially changed by system modification, prolonged military deployment or other event, the Government has approved a Defence decision to withdraw the system from service earlier than previously planned, or there are overriding reason why the DMO believes that it must retest the market – although this last point may be viewed as a subjective decision). To avoid representation as a unilateral decision, such conditions for not granting award terms should be identified within the contract. Accordingly, if Defence wishes to periodically look at alternative contracting strategies to seek solutions that represent better value for money, the setting of a maximum contract term may be the best option.

133 Consistent with the Mortimer Review, ‘the Report of the Defence Procurement and Sustainment Review’ (2008), page 37: “The contract terms shall not allow a party to undermine fundamentally the essential bargain between the parties through the exercise of unilateral discretion” (Principle 4 of the ‘Seven Principles to Improve Procurement Practice’).
Notwithstanding the need for certainty in the granting of award terms, the DMO must retain termination provisions within the contract that override previously granted award terms.

The cost of each contract extension should be bounded by the terms set out in the contract (eg, using option pricing), with appropriate provisions to accommodate the outcomes from the TCO-reduction initiatives. Any contract extension must also be subject to the same terms as the existing contract work (ie, there should be no opportunity for the contractor to open up elements of the contract for renegotiation (eg, liability) just because an award term is allowed). This latter point, however, could be expanded to enable the Commonwealth Representative to change elements of the contract within the general terms of the deal described by the contract (eg, a moderate change in the scope of work).

There may need to be a period over which the Commonwealth Representative can make a decision to grant a contract extension because, for example, the contractor may have only just missed out on meeting the criteria (beyond an inbuilt recovery period), and the Commonwealth Representative wishes to provide additional time to enable the contractor to improve or because it has become necessary to adjust the performance-measurement regime. In these situations, care must be taken to ensure that this is not undertaken as an award term, which would set a precedence of not applying the criteria consistently, and leave the Commonwealth open to future dispute. Alternatively, a reduced award term could be enacted, in which the contractor could attempt to justify its entitlement to the further full award term.

Clear rules are required to either limit the granting of award terms to contract-only savings or to manage the situation where the reduction in TCO is dependent upon both Commonwealth and contractor actions, but the Commonwealth chooses not to implement the necessary changes (eg, because it may reduce capability).

Award terms linked to cost savings must consider, and be relative to, price changes over time, particularly in the period between the award being granted and the award term beginning (eg, 18 months or two years). Accordingly, a cost that stays fixed relative to inflation over the period, or does not rise as much as inflation, needs to be considered as part of the percentage cost saving.

Conditions must be considered when continued savings can no longer be extracted due to the degrading state of an ageing system or all ‘reasonable’ attempts to extract savings have been exhausted. Evidence for this outcome may need to be supported with performance indicators (eg, reliability of ageing systems). If costs increase, savings may still be considered in relative terms if there are sufficient grounds to determine what the increased cost would otherwise have been. These conditions may allow the contractor additional award terms on lesser criteria, or force the services to be re-competed to seek new ideas – this doesn’t presume a particular outcome, only that the actions to be taken must be clearly stated.

Where conditions for an award term are not met, the contractual provisions should capture the Commonwealth Representative’s intent (at the Commonwealth Representative’s discretion) to allow the contractor a period to re-establish acceptable levels of performance, and the point at which no award terms will be granted (ie, the point when the Commonwealth must start preparing to re-compete the contract (in whole or part)).

In general, the award-term process remains sensitive to the degree of available competition. The contract-management framework would be severely undermined if the Commonwealth Representative had to grant an award term extension, even if the contractor did not meet the required criteria, because there was no other party that could perform the required work. Likewise, the process would be undermined if the award terms were not granted and only the incumbent contractor was in a position to bid for the replacement contract. Where there is very limited competition, and competition cannot be created by breaking up the contract services, then other contract rewards and remedies may be more appropriate than award terms.
7.71. Term reductions may also be possible where the services are being performed poorly, but there may be other, more effective contractual mechanisms, which could also be used where the services were found to not represent value for money, including:

- repatriation of services from the contract to ‘remove’ services that have been found to not represent value for money (eg, this approach could have been used in the earlier example where the aircraft engines were removed from the whole-of-system support contract);
- providing a contract-management framework that integrates poor performance into stop payment events (eg, through the use of remediation plans, which are linked to stop payment provisions);
- step-in rights, where the DMO can employ a third party to undertake the poorly-performed or non-performed work and can invoice the contractor as a debt due to the Commonwealth; and
- as a last resort, termination for default (in whole or in part).

Assessing Reductions in TCO for Award Terms

7.72. As stated above, the criteria used to determine whether or not an award term can be given should be as objective as possible and set out clearly in the contract, which may be difficult to achieve for reductions in TCO because of factors such as the nature of TCO, the asymmetry of information between the DMO and the contractor, and the ability of the DMO to properly assess a contractor’s costs, including in relation to cost-saving initiatives.

7.73. The simplest method for implementing objective criteria would be to establish targets for cost reductions in the RFT, which would be assessed on an annual or semi-annual basis (ie, an Efficiency Dividend Program). This approach, however, is assessed as highly problematic, particularly where there is limited competition, because it is likely to result in the target savings being built into the contract price.134 This issue would not be such a concern if the DMO had the ability to fully understand the contractor’s cost base and to be able to identify when this approach had been taken; however, for the reasons previously stated, it is unlikely that the DMO will have this level of understanding.

7.74. A second method for assessing the contractor’s performance in relation to reductions in TCO would be to use some form of ordinal scale based around word pictures (eg, one of the word pictures could be something like, ‘The contractor has made significant savings in the performance of services, given the remaining life of the equipment, the operational imperatives, and the point in the contract term’). While this approach could suffer from similar concerns to those highlighted for the specific targets in the preceding method, it is (perhaps) less likely to be subject to the identified manipulation due to its subjectivity. Contractor concerns with this subjectivity could be partially overcome through ongoing reporting of performance by the contractor (eg, quarterly) and timely feedback from the Commonwealth Representative. This approach would help to set the expectations early and, therefore, engender a process of ‘no surprises’.

7.75. A third method of assessment is to integrate the process into the Defence Company ScoreCard. Industry Division within the DMO is currently working on an approach to achieve this outcome.

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134 Anecdotally, the authors of the paper were advised that this is exactly what happened when this approach was tried in the IT industry in the 1990s, which is an industry with reasonable levels of competition.
Additional Contractual Mechanisms for Reducing TCO

7.76. As many of the costs for a Capability System are not within the control of the contractor, specific contractual mechanisms will be required to incentivise the contractor to investigate opportunities to reduce TCO by looking at the bigger picture, including initiatives in relation to:

- generating efficiencies associated with the interactions between the Commonwealth and the contractor (e.g., by changing either Commonwealth or contractor practices to minimise disruptive and costly effects, such as streamlining maintenance and distribution);
- implementing ‘spend-to-save’ initiatives that reduce TCO by lowering costs external to the contract, even if this would cause the contract price to increase; and
- investigating changing the work share between the various parties to reduce cost.

7.77. A contractual framework will be required to ensure that these and other types of cost-reduction initiatives are appropriately identified, investigated and managed, particularly where:

- insight into the costs and benefits is required;
- the initiatives are significant in terms of cost, time and scope;
- transfer of cost and risk is involved; and/or
- the initiatives involve multiple parties.

7.78. In this regard, it is suggested that the management framework built into the NCSHEH RFT for this purpose (as discussed in the earlier case study) be used as the template for the required ASDEFCON (Support) provisions. The NCSHEH RFT included an Efficiency Implementation Plan (EIP) and appropriate governing clauses in the COC and SOW, with an early version of the EIP required as part of the tender response. This approach helps to ensure that any transfer of cost or risk to other parties, particularly the Commonwealth, will not occur without first having Commonwealth concurrence.

7.79. The tendering process should also be used to achieve reductions in TCO through investigating unnecessary scope, cost and risk drivers inherent in the RFT, as well as opportunities to generate efficiencies through the types of investigations identified above. This could be facilitated through the submission of a draft EIP as part of the tender responses. Tenderers could also be requested to propose cost-reduction targets to be achieved over the life of the contract. An Offer Definition Activities (ODA) phase (similar to the one used under ASDEFCON (Strategic Materiel)) could then be used to further investigate opportunities to reduce TCO prior to, and during, the contract, as well as seeking refinement of the tenderer’s proposed reduction targets. Similarly to the approach used for ASDEFCON (Strategic Materiel), it is envisaged this ODA phase would be conducted in a competitive environment for the purposes of commercial certainty. This ODA would be subject to the same considerations as required for ASDEFCON (Strategic Materiel), including in relation to resourcing, probity, tender evaluation and contract negotiations.

Reducing Costs when Starting Complex Support Contracts

7.80. In relation to support contracts, estimating uncertainty can be a significant source of risk, particularly where there is inadequate data to properly define the scope (e.g., in relation to maintenance arising rates and associated effort estimates). As a general principle, proper understanding of contract scope enhances price estimation. This suggests that mechanisms need to be employed to increase the probability that the range of bidders includes companies who have performed similar work before.
7.81. The need to manage estimating uncertainty is a problem that occurs with the introduction of new systems into service without adequate in-service data, a lack of similar systems (in similar use and environment) as a basis for comparison, and/or incomplete supportability and logistics engineering activities during the acquisition phase. In these situations, the Commonwealth cannot de-risk the situation effectively through a better division of responsibility – the uncertainty is applicable to all parties. (Notwithstanding, as highlighted in the earlier discussion under the heading, Support Contract Scope Issues, the Commonwealth does not always need to consider estimating uncertainty in its procurement strategies.)

7.82. Where the Commonwealth does need to be concerned (eg, in sole-source support contracting situations), an alternative contracting approach could be used to avoid the significant levels of uncertainty from translating into either excessive contract pricing or inappropriate performance risk. The approach, from the US PBL Guide, involves shifting the support contract through various phases as certainty is progressively achieved:

As a general rule, until price risk is minimized to a level of confidence for both DoD and the contractor, fixed price contracts should be avoided. Consequently, PBL strategies will generally have a phased contracting approach, initiated by cost plus cost reimbursement type contracts to cost plus incentive contracts to fixed price incentive contracts, over time.\(^{135}\)

7.83. While this is described as the general method for initiating PBL contracts within the US system, this subsection will discuss how this general method might be applied in the context of ASDEFCON (Support) contracts to reduce contract cost and TCO.

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\(^{135}\) PBL Guide, paragraph 3.1.10.
7.84. Figure 32 depicts a two-stage contract framework, which enables uncertainty to be addressed early in the contract, while providing a mechanism to enable the contract to transition across to a firm-priced arrangement after a period to ‘bed down’ the system (eg, one – two years, depending on system complexity and the level of uncertainty) and collect data. Transferring a targeted amount of work, or specific functions, from a cost-oriented pain share / gain share model to firm price could be incentivised (eg, using an award payment at the end) provided that adequate target prices can be set and/or the Commonwealth has sufficient cost visibility to ensure that new firm-priced tasks are not inflated.

7.85. During the staging process, an overarching agreement (or set of clauses only intended for this period) would describe the obligations to move from one stage to the next. The agreement or clauses would include such matters as the stage duration, any initial cost reduction targets, and any incentives offered during this period. At the end of the staging process, the agreement or clauses would expire. In some ways, this staged approach is an enhancement of the ASD Transition Period discussed earlier; however, it is likely to be much more challenging to implement contractually.

7.86. The risk balance for the DMO under this staged approach is that the costs associated with the loss of competitive tension through the move from one stage to the next is more than offset by the benefits associated with the price reduction by not forcing a firm-priced contract from the outset. If this balance will result in the lowest cost to Defence, then it clearly should be pursued; however, there will be challenges in determining and assessing the factors underpinning this balance, particularly in advance of an RFT process.

7.87. Given the complexities associated with this staged approach, it is suggested that it not be included in the first tranche of development for implementing the Next Generation PBC framework. Instead, a study should be undertaken to determine whether this or another approach is the most appropriate one for managing high levels of cost uncertainty, particularly in a sole-source environment. The approach should be subsequently developed for use as part of the ‘toolbox’ of options available to the drafter in the Next Generation PBC framework.

### Funding Upfront Change Costs

7.88. As the contractor is often not responsible for all (or even a substantial majority of) the costs associated with the support of a Materiel System, the financial savings to Defence from an improvement could be substantially greater than the potential returns to the contractor. Additionally, the upfront investment to make an improvement (eg, a reliability improvement) may be significant and the contractor may be unwilling to make this investment because the timeframes for return are too long and/or the remaining contract support period is insufficient to obtain a return, while Defence may obtain benefits over a much longer period. Notwithstanding that an award term may be in the offing, the incentive power of this contract extension may be insufficient (ie, the time needed to recoup the investment and return a profit is greater than that of the contract with the addition of the award term).

7.89. In these types of circumstances, the DMO will need to consider funding all, or a substantial portion of, the upfront costs to implement the improvements. Where reductions in TCO are possible, this can be seen as a spend-to-save opportunity, with the value of the potential savings assessed against implementation costs in order to determine if the improvement should be approved. As this type of option can be subject to ‘gaming’, the governing provisions will need to be crafted carefully to minimise the likelihood of these types of behaviours.

7.90. Where improvements are related entirely to reducing TCO (ie, no significant impact on performance measures), and some of the savings must be obtained through a reduction in the contract price, the contractual provisions need to allow Defence to obtain the significant contract savings (based on its substantial investment) without disadvantaging the contractor. If the contractor is disadvantaged by the
outcome, its incentive to seek further improvements would fail and the harvesting of all savings by the Commonwealth could promote resistance to future changes.

7.91. The nature of the improvement also impacts on how and where savings can be made and, therefore, complicates the evaluation of the return from the initial investment. For example, a reliability improvement on a reasonably reliable item with an expensive repair cost might generate savings if the change were to be funded by the Commonwealth (eg, to cover non-recurring engineering and installation costs) through:

- a reduction in the number of expensive repairs (including necessary packaging, handling and transport costs); and

- a reduction in the number of spares that are required.

7.92. A reduction in the number of repairs will rarely result in a proportional reduction in cost due to the need for certain fixed costs (eg, S&TE and trained personnel) that may be partially independent of the work volume. Additionally, the individual transactions may not be individually listed within the price and payment schedule (even though the Commonwealth is aware that it is an expensive repair, the actual cost may be hidden). Without a detailed cost investigation, the Commonwealth’s savings are essentially limited by what reduction the contractor offers. Furthermore, if the Commonwealth already owns a quantity of spares of the item, but needing fewer because they are more reliable, does not allow the value of the item to be recovered. Notwithstanding, these above-requirement spares can provide a return in the future by not requiring additional outlays when there is an increase in the required rate of effort or by not having to by additional items to replace an item that is beyond economic repair.

7.93. Accordingly, the value decision for an upfront investment by the Commonwealth may not be straightforward. Sharing the savings, to promote continued improvement, is also complicated where savings are created by avoiding future costs external to the contract. The profit made by the contractor through the additional work to implement the change should be considered as one of the benefits to the contractor that may offset any reduction in the price for the remaining duration of the contract.

7.94. Some improvement opportunities will impact upon system performance / product availability, which make it easier or less costly for the contractor to achieve the associated performance measures. Under these circumstances, implementation of the change in terms of savings becomes more complicated. Take the following two examples:

- The contractor is often falling short of the full performance requirement, thus missing out on some portion of the possible payments. The Commonwealth-funded change creates some savings, but will also enable the contractor to regularly achieve the performance measures, thus ensuring that a greater amount of the possible payments will be received.

- The contractor is regularly achieving the full performance requirement. The Commonwealth-funded change enables performance measures to be exceeded, enabling the contractor to always achieve the full payment available.

7.95. In the first case, the increased payments may consume any savings made (assuming a reduction in baseline contract price to pass the saving back to the Commonwealth). This may be an acceptable situation and considered a reasonable investment to result in a performance improvement rather than savings. It could also appear to be spending money to let the contractor ‘off-the-hook’ but Defence achieves the performance required.

7.96. In the second case, the required performance is being exceeded, even though there may be little impact on ongoing costs (ie, minor price reduction is similar to the minor increase in incentives or paying all of the at-risk payments). If the performance levels were set correctly initially, then the Capability Manager will be receiving excess performance for the money that they have paid the DMO. While the
performance-measurement regime is not broken, it becomes less effective in motivating the contractor to find further improvements unless a removal of excess performance and a commensurate reduction of the contract price can be made.

7.97. In a transactional contract, the individual costs for each transaction are clearly identified and the savings on a significant Commonwealth investment can be readily determined by the reduction in the number of transactions or their costs; however, with profit in each transaction the contractor is not motivated and not necessarily a willing participant in Commonwealth spend-to-save initiatives.

7.98. In a PBC, determining the value of, and return on, the Commonwealth’s investment is complicated by paying for outcomes rather than transactions. In this situation, the skills to determine the equitable cost for performance balance are likely to be more advanced than those needed for transactional calculations. At an outcomes level, however, if a contractor can share in savings with greater profit (through lower input costs) while passing savings back to Defence, spend-to-save initiatives may actually create savings from the Commonwealth’s initial investment where transactional contracts have failed.

7.99. Of note, many companies have, and continue, to measure internal performance on revenue rather than profit. This assumes that profit is a steady portion of revenue (at least for each business unit or product line) and thus simplifies regular reporting and profit forecasts in between the preparation of accounts for annual reports and tax purposes. Hence, offering a long term drop in revenue, even with increased profit, can sometimes be resisted by a company’s accounting systems.

7.100. As a final point, where award terms or other incentives are linked to reducing TCO but the Commonwealth opts not to implement the improvement (eg, due to limited funds availability to implement the up-front changes), guidance and possible contract terms will be required to determine the impact on the contractor’s eligibility to part or all of the incentive.

**Periodic Cost Reviews**

7.101. Periodic cost reviews are conducted at key points in a contract to evaluate the current cost base and to determine whether or not additional opportunities to achieve efficiencies may exist\(^{136}\). These reviews can be used by the Commonwealth to assist with:

- deciding whether or not an award term should be offered (eg, in relation to satisfactory and sufficient progress by the contractor in identifying and implementing opportunities to reduce TCO);
- setting the contract pricing for the forthcoming award term (ie, by ‘ratcheting’ back the pricing to the current cost base); and
- determining any cost-reduction targets for the forthcoming award term (and, possibly, subsequent terms).

7.102. If these reviews are not implemented with other contractual mechanisms that enable Defence to harvesting savings from efficiencies (eg, cost-oriented pain share / gain share mechanisms), then the approach would normally be implemented to enable the contractor to keep any cost savings until after the review, at which time, the contract price would be ‘ratcheted’ back. Periodic cost reviews provide an incentive for contractors to pursue efficiencies in order to enjoy the immediate benefits, while allowing Defence to recoup savings in the medium term.

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\(^{136}\) These types of reviews are sometimes called independent cost reviews, should-cost reviews, or contract cost reviews. These types of reviews do not have to be undertaken during the contract period and could reasonably be conducted pre-contract, such as during the ODA phase.
7.103. Notwithstanding the possible benefits from this type of contractual mechanism, there are some challenges with implementing them. Firstly, they are costly to implement, with anecdotal evidence suggesting that figures in the order of $0.5m-$1m are not unusual. These costs are understandable because the purpose of these reviews is to investigate the contractor’s cost base and associated practices for providing the required support. To have validity, therefore, the reviews must be undertaken by a reputable group, with considerable experience in the relevant technologies, process areas and management practices.

7.104. These reviews are also likely to take considerable time to achieve the necessary outcomes (eg, 2+ months), particularly where independent reviewers are used, including time to:

- assemble the review team and establish any contracts with external entities;
- undertake the necessary activities, including analysing schedules and bases of estimates, examining resource allocations and usage, conducting time-and-motion studies and workflow analyses, and assessing possible alternatives to overcome constraints and blockages that are hampering further productivity improvements;
- producing the necessary reports, including supporting justification; and
- depending upon the methodology employed and the specific provisions of the contract, obtaining agreement from the contractor to implement the necessary changes.

7.105. It can often be the case that these types of reviews are best conducted as a joint Commonwealth and contractor activity because this approach helps to ensure that the outcomes are accepted by both parties. If conducted independently, the contractor may dispute the findings, while the Commonwealth may not fully appreciate some of the contractor’s constraints. Recent independent reviews of certain DMO projects, for example, have been highly successful when conducted this way.

7.106. The use of periodic cost reviews can sometimes be a double-edged sword and they need to be applied with caution. While they can offer utility in achieving cost reductions, they can also cause difficulties for the Commonwealth. For example, in the situation where the contractor disagrees with the Commonwealth’s assertions that contract costs are able to be reduced through further productivity improvements, the contractor could insist that a periodic cost review be used as an independent arbiter. The Commonwealth may not wish to expend the required funds and may not have the time to conduct the independent review, but is unable to achieve any substantive cost reductions without undertaking such a review.

7.107. This discussion leads to two principal conclusions:

- periodic cost reviews should only be used on large-scale support contracts; and
- the associated contractual provisions will need to be crafted carefully to ensure that they do not have unintended consequences.

**Efficiency Dividend Programs**

7.108. Efficiency dividend programs enable savings to be harvested by building predetermined cost reductions into the contract price. The cost reduction would occur at a predefined milestone, such as the periodic cost review event discussed above and would not necessarily account for actual changes in costs during the period. This particular approach was discussed earlier, where it was highlighted that a weakness in this approach is that the efficiency dividend is built into the original contract price and does not act as an incentive to achieve efficiencies.
7.109. Notwithstanding, this approach may best be achieved by careful management of the tender and negotiation processes. For example, the RFT could flag that the Commonwealth is interested in conducting upfront analyses to identify targets for productivity improvements and subsequent cost savings, without specifying particular targets. These analyses would then be undertaken pre-contract, with the initial targets being established as one of the outcomes of negotiations. Subsequent targets could be established using periodic cost reviews prior to any award term.

7.110. In longer-term contractual relationships, where the parties have been working together for some time, there are also likely to be benefits in having discussions across the range of cost drivers associated with supporting a capability and agreeing to a program of change and associated cost-reduction targets over any forthcoming terms. This approach may result in beneficial changes to both parties without compromising capability or any unnecessary or unreasonable transfers of cost or risk.

Key Points:
- Initiative-based mechanisms for achieving cost reductions in contracts are unlikely to be successful unless they can be integrated into a broader framework that targets cost as a central objective of a contract.
- There are many barriers to realising reductions in TCO, some of which must be accepted, but others can be overcome through sound procurement strategies. The SPS should ensure that these strategies are addressed early enough in the procurement process to ensure that sufficient time exists to analyse the barriers and available strategies to achieve the best possible outcome.
- Better guidance is required to ensure that planners and drafters adopt strategies that promote competitive tension over the LOT of materiel. This may require a change to the default ‘single support contract’ strategy as well as requiring individual contracts to be structured to enable elements to be readily removed should they prove to be not cost-effective.
- A study should be undertaken to develop the business case for whether or not a cost-oriented pain share / gain share model should be implemented as part of the ‘toolbox’ for Next Generation PBCs. This study should address the implementation approach (particularly in relation to setting the pricing parameters), cost and profit regulation, governance requirements, expected benefits, costs to all parties to implement and maintain, and training and guidance needs for practitioners.
- Award terms are likely to be effective motivators in most cases, but the effectiveness depends upon the ability to hold a competitive tender should the award term not be granted.
- A minimum initial contract term of five years is suggested because this period represents the best balance between achieving Defence’s goal to reduce TCO, informed decision-making, resource utilisation, and tender costs.
- The minimum decision period for granting an award term is approximately 21 months to provide the DMO with sufficient time to develop and implement a replacement contract.
- Award terms of one year are considered to be the best balance between the effectiveness of the incentive, contract administration, and the timeframe for a contractor to obtain a return on investment for an initiative to achieve improvements and reductions in TCO. Options to increase or decrease the length of award terms based on either exceptional performance or sub-standard performance should also be considered.
- Objective measures for assessing reductions in TCO are likely to be problematic without the use of savings targets. Semi-objective measures could be implemented through the use of word pictures on an ordinal scale. The measures for assessing reductions in TCO could also be wrapped into the Defence Company ScoreCard process.
- A study should be undertaken to develop the business case for whether or not ‘Repatriation of Services’ should be implemented as part of the ‘toolbox’ of options available to the drafter in the Next Generation PBC framework.

- A study could be undertaken to determine the most appropriate approach for managing high levels of cost uncertainty in a sole-source environment. The approach should be subsequently developed for use as part of the ‘toolbox’ of options available to the drafter in the Next Generation PBC framework.

- A study could be undertaken to assess the costs, benefits and risks associated with Periodic Cost Reviews. If this study demonstrates that these reviews are beneficial, the approach should be subsequently developed for use as part of the ‘toolbox’ of options available to the drafter in the Next Generation PBC framework.
8. Moving Forward - What Is Needed

Support Contracting Templates

8.1. The ASDEFCON (Support) template is already an outcomes-oriented template, which is suitable for enhancement to incorporate the Next Generation PBC framework with minimal impact upon most aspects of the template. The V2.1 updates to the template\(^{137}\) make it more suited to PBCs by removing many of the current conflicts and obstacles and by streamlining aspects of performance reporting and reviews. This revision establishes a baseline that will better enable the integration of the Next Generation PBC framework, which is currently planned for V3.0.

8.2. In parallel with the development of this update, an ASDEFCON (Shortform Support) is currently under development, which enables the current template to address the PBC requirements, while the Shortform version can be used to address the performance-management framework for transaction-based support contracts. This approach significantly simplifies the development of the Next Generation PBC framework for ASDEFCON (Support) because the framework does not have to accommodate the lower end of the spectrum for which a different, and much simpler, approach should be developed.

8.3. The Next Generation PBC framework should be integrated into the template and not developed as a ‘bolt-on’ module. ASDEFCON (Support) was always intended to be a performance-oriented contract, and this proposed approach accords with the original vision for the template. A new framework of this type also needs to be woven through the template to ensure that it is consistent and coherent, which would be much more difficult to achieve if undertaken as a ‘bolt-on’ module. Moreover, the complexity of implementing a sound PBC would increase significantly if this framework were to be separated from the template. Finally, this approach recognises that there are few options, other than to use PBCs, for implementing larger-scale support contracts.

8.4. The ASD PBC Module provides a good starting point for the Next Generation PBC framework; however, it needs to be modified and supplemented to accord with the outcomes of the considerations identified in this paper. Further template development is also required to reduce individual effort and improve consistency in the way DMO implements PBCs. More detailed discussion of changes required in the ASDEFCON (Support) template are provided at Annex D.

PBC Guiding Principles

8.5. ASDEFCON (Support) was developed using a set of guiding principles, which are listed at Annex A and which were agreed with Defence industry during the development of the ASDEFCON templates. Additionally, the Mortimer Report includes a set of higher-level contracting principles that have been agreed between DMO and Defence industry. The ASD PBC framework was developed based on a set of principles and LSD has developed a draft set of principles for PBCs in the Land environment (refer Annex B). In keeping with these principles-based approaches, the Next Generation PBC framework should be developed using a set of agreed principles. The Mortimer Report principles and the current ASDEFCON (Support) principles are considered to still be valid, relevant and applicable to the Next

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\(^{137}\) This draft version has been in development over the past year and has not yet been formally released. V2.1 removes the specification of performance measures from any part of the SOW, thereby enabling a cleaner integration with the current COC performance-management framework and other Divisional implementations of PBC, such as that used by ASD. All reporting requirements have been reworked to enable reporting on any type of performance measure specified in the Contract. The Verification and Validation (V&V) clauses and associated data items have also been updated to improve integration with the various performance-management approaches. The different reviews have also been reworked to provide a cleaner distinction between technical and commercial performance.
Generation PBC framework; however, but they need to be supplemented with additional PBC-specific principles, potentially along the following lines:

- Support contracts must be developed and implemented as part of a broader performance-management regime to promote the Key Objectives of enhancing Preparedness and reducing TCO.
- Acquisition contracts must be developed in due consideration of the need for support contracts to promote the Key Objectives.
- Acquisition and support contracting strategies should promote competitive tension to the maximum practicable extent over the LOT, commensurate with value-for-money considerations.
- The performance-management regime for a PBC for support should be commensurate with the scope of the contract and the associated risks being borne by both parties.
- The PBC framework should not result in safety being compromised or the required safety-management processes and practices being undermined.
- Firm-priced contracts should remain the standard approach for support contracting, but contractual mechanisms must accommodate scope uncertainties.
- PBCs for support should utilise a standardised approach that is applicable DMO-wide, while providing sufficient flexibility to accommodate differences arising out of the respective environments, SPO orientations (ie, platform or commodity), products being supported, outsourcing models, support imperatives, and contract scopes.
- Support contracting strategies should promote the strategic imperatives in relation to security of supply and diversity of supply.
- PBCs for support should be developed and implemented in due consideration of the integration of these PBCs into the overall Support System. This integration must be managed and adjusted, as required, over the LOT of the products being supported.
- PBCs for support should encourage innovation in the provision of support services.
- Performance measures in PBCs should be Specific, Measurable, Aligned / Attainable, Relevant and Timely (SMART). The performance-measurement regime should be as simple and straightforward to implement and operate as the situation allows.

**Guidance for Drafters and Managers**

8.6. Another component in instigating contracts that ensure performance is through guidance for their development and application. Essentially this is part of a larger educational process that is specific to the DMO and Defence Industry and not covered by generic contracting and procurement training.

8.7. Considering written guidance specifically, the ASDEFCON (Support) template is flexible enough to cover performance-management frameworks for whole-of-system support contracts through to transactional ‘standing-offer’ style repairable item contracts; hence, drafters depend heavily on guidance to prepare contracts that are suitably customised for each situation. The existing guidance includes the handbook for the COC, the Tailoring Guide for the SOW, and guidance sections in the front of each DSD. The guidance required for the proposed, standardised, performance-management framework is more expansive. Annex D includes explanation of the guidance that is believed to be required, and which is summarised below:

- **Policy and Supporting Guidance.** A policy and supporting guidance on the new PBC framework is required, including for associated practices, such as the development of an SPS. The scope
should include the requirements for a BCA, SPS, and integration into, firstly, the two-pass capability development processes and, secondly, the in-service stand-alone contracting and re-contracting processes. The scope should also set out the factors that affect the use of this PBC framework, including when and when not to use all or some of the framework.

- **Contract Philosophy.** Like the ASDEFCON handbook philosophy volume\(^{138}\), guidance is required that explains the principles of the PBC framework and how the various components of the templates are intended to work together as a complete solution.

- **Tailoring Guidance.** Like the existing ASDEFCON (Support) SOW Tailoring Guide and COC Handbook, tailoring guidance will continue to provide section and clause level guidance to drafters when developing an RFT package under the new PBC framework.

- **Performance Measures.** Guidance will be required for selecting performance measures and implementing regimes. Generic guidance could be included in the ‘contract philosophy’, but due to the different environments and materiel systems, specific guidance will most likely be needed for each DMO Division, similar the ASD PBC handbook.

8.8. The consistency of the different sources of guidance is important, along with consistency in additional reference sources, such as training materials, help-desk support and any on-line guidance.

**Governance**

8.9. A GAO criticism of PBL in the US DoD was that the DoD could not demonstrate if costs were actually reduced and if system availability was really being improved. Results were difficult to substantiate due to poor visibility and inadequate validation\(^{139}\). To evaluate the success or otherwise of any new performance-management framework, and to provide future direction, the DMO will need a governance framework that both establishes baselines and reviews achievement.

8.10. The governance framework should not only look within individual contracts, but also at the linkages to acquisition, transition from acquisition or a different support contract model, supporting the targets of MSA Product Schedules, and enabling other DMO strategic objectives. A governance framework could take a number of forms; however, the following three levels are suggested:

- **Strategic**, comprising a board or steering committee, with the ability to look across multiple contracts and the DMO’s corporate-level objectives to provide high-level guidance and review to business cases, procurement strategies and contract implementation (different boards / committees may also be required for different categories of support contract);

- **Operational**, to evaluate and provide guidance for contract implementation, including the selection of performance measures, effectiveness of the contract in achieving desired outcomes, and to provide experienced advice to contract managers; and

- **Tactical**, to gather or independently review the data for the provision of services against the performance measures and to determine the effectiveness of the measures themselves for the purpose of informing the contract manager, higher-level review, and for lessons learned and benchmarking activities.

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\(^{138}\) The published philosophy volume is based on ASDEFCON (Strategic Materiel) but is being expanded to cover all materiel acquisition and support templates.

\(^{139}\) GAO-05-966, ‘DOD Needs to Demonstrate That Performance-Based Logistics Contracts are Achieving Expected Benefits’, US Government Accountability Office, Sep 05. This finding was reinforced in a more recent GAO Report, GAO-09-41, ‘Improved Analysis and Cost Data Needed to Evaluate the Cost-effectiveness of Performance Based Logistics’, Dec 08.
8.11. During the capability development process, DMO Gate Reviews or project boards need to ensure that their assurance role promotes reductions in TCO of Materiel Systems while improving system availability through life. The three-level approach outlined above provides corporate level direction, assistance to the manager, and the level of detail necessarily to objectively assess progress, which should overcome shortfalls that are commonly cited. While this approach may not be required for the whole life of a contract, it would be more effective in the initial years of a contract and in preparation for replacing a contract.

**Product Support Integrators**

8.12. A number of sections in this paper have highlighted the role of the PSI, and the concept of responsibility and control for outcomes has become a common theme. In the opinion of the DMO PBC Working Group, the concept of a PSI is worth adopting in Australia as a number of benefits can be seen. Before listing those benefits, this opinion has been reached from observations of the current environment, which appears to have the following attributes:

- to transfer and enable contractors to manage risk there is a tendency to award ‘whole-of-system’, or otherwise large, contracts so that as many interfaces as possible are managed by one contractor;
- Commonwealth Procurement Guidelines require that risk is managed by the party best able to do so, the common and apparently untested assumption is that this party is the contractor;
- contractors often don’t have the expertise to provide all services and will subcontract out significant portions of work that may have otherwise been competitively tendered (and with provisions to cover any risk of subcontractors not performing);
- despite contracting out major support activities, assuming that a contractor is effectively a PSI, Defence maintains control over numerous inputs\(^\text{140}\), thus increasing the risk to the contractor (and their subcontractors) of achieving specified outcomes they are responsible for;
- the transfer of risk is increased when the certainty of a firm-priced contract is required,
- risk transfer comes at a cost; and
- there does not appear to be a DMO process to determine if the amount paid for the risk transferred represents value for money.

8.13. Perhaps the most critical conclusion to draw from the above points is that DMO staff may sometimes believe that they have transferred responsibility, risk and control for integrating support to the contractor when, in reality, Defence\(^\text{141}\) still controls key inputs, inadvertently increasing risk and cost. Adopting a PSI concept, in a PBL like approach, doesn’t immediately remove all risk or dramatically change contracting practice, but it will help to identify control and responsibility and thereby identify risks created by allocating responsibility to parties where there isn’t a complementary level of control. This may lead to changes in risk and the procurement strategy for support contracts on a case by case basis.

8.14. The discussion inevitably leads to a number of questions, such as:

- Which existing DMO contracts include high amounts of contingency or management reserve that could have been avoided if the DMO had assumed PSI responsibilities and the associated risk for integrating outputs from carefully allocated contracts?

\(^{140}\) For example: controlling common inventory, quantities of Commonwealth-owned spares, availability of some technical data, and the timing of products entering maintenance.

\(^{141}\) Specifically ‘Defence’ as some inputs are substantially affected by the operating units (eg, entry into maintenance) and Joint Logistics Group (timing and distribution for Commonwealth-owned items).
How much risk and responsibility should DMO managers take on, assuming that they have the resources to manage that risk, or how much is the DMO prepared to pay for the risk of integrating support being transferred to prime contractors?

How do we identify and avoid the inappropriate allocation of risk for integrating the outputs of support providers, before seeking tenders for a contract?

8.15. As identified in the section on international PBC experience, there is an answer to the last question. PBL requires a BCA, and the development of a product support strategy, prior to the allocation of PSI responsibilities and PBAs. PSI responsibilities can be allocated at system, subsystem and lower levels. Where sufficient control and responsibility cannot be outsourced, due to government control of inputs, the PSI role would belong with Defence, in Australia’s case this will be a DMO SPO.

8.16. If the PSI role belongs to the DMO, with overall responsibility for performance, then the value for money of having a prime contractor manage subcontractors, and cost in the risk of subcontractor management and performance, may not be as good as the proposition of managing additional contracts directly, even if the SPO needs additional staff to do so. However, if the PSI role is taken in-house, then the appropriate skills are necessary and the PSI has to determine the allocation of control and responsibility for performance for each contract, and that the combined outputs of those contracts will meet Defence needs.

8.17. Another example of the benefits of replacing whole-of-system contracts with smaller ones, enabled by an in-house PSI responsibility, is in the well-documented US Navy T-45 Goshawk example described earlier under the section, The US Approach.

8.18. To obtain the benefits requires that the PSI concept, or similar, be adopted and supported by a thorough BCA process and the development of appropriate procurement strategies for support contracts.

Support Procurement Strategies

8.19. To enable effective implementation of PBCs, a Support Procurement Strategy (SPS) will need to identify the scope of services, matching responsibilities, expected performance, and other key decision-making criteria necessary to determine the nature of each PBC and its feasibility. As part of a bigger perspective, the SPS needs to identify the number and type of contracts required, including PBCs and other sources of support. The SPS must show how the different sources of support will combine and, although similar to a support concept, would provide details for each contract and the approval delegates.

8.20. ASD use a procedure for ‘Sustainment Procurement Strategy Development’ and, while the necessary scope is covered, only the major headings for the strategy document are included. Accordingly, for the purposes of illustrating what is needed in a strategy, and undermining changing the scope or intent of the ASD document, a different basis has been used for explanation. By modelling on the current DMO Acquisition Strategy, being applicable to all DMO divisions, an SPS would have the following interpretations of scope for each of the key elements:

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142 The product support strategy is like a detailed support concept; it covers both contractor and Defence responsibilities; noting that the US also has sizeable government depots.

143 ASD QEMS Procedure 4-3-4-18, ‘Sustainment Procurement Strategy Development’, paragraph 7.2.1.
<table>
<thead>
<tr>
<th>Element</th>
<th>Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decision Drivers</td>
<td>This element summarises the major decision drivers that will affect development and selection of support contracts. While cost of ownership is likely in all cases, different systems will have different driving needs. Other drivers could include integration with existing defence operations and support, deployability of support, duration of remaining mission system life, and the need to interface with existing or other proposed contracts.</td>
</tr>
<tr>
<td>Business Element</td>
<td>This element is an explanation of what represents value for money. This should be linked to the level of performance required, as described in the OCD, MSA, or Preparedness directives. Consideration should be given to the minimum level or threshold of performance to be acquired from support contracts (as a whole) in order to be effective. This element may also consider additional performance that is desirable and what that represents in terms of capability and cost (ie, the minimum level of capability may incur additional Defence effort and costs in other parts of Defence).</td>
</tr>
<tr>
<td>System Solution Element</td>
<td>This element includes a brief summary of the support concept, with reference to OCD section 5.6 and related sections (eg, for personnel) if required. The OCD will provide context and summarise the scope of Defence and contractor responsibilities for each of the major support service functions (eg, operating support, engineering, maintenance, supply and training).</td>
</tr>
<tr>
<td>Procurement Element</td>
<td>This element details the scope of services to be acquired from sources external to Defence (a subset of the support concept in the previous section). This includes contracts and other sources, such as FMS. This element would describe the entire scope of required support services, while the following contracting element will divide this into individual contract needs. This element must identify who will be the PSI(s). Where the PSI is in the DMO, this section is to identify how the PSI will work with other SPOs to obtain system performance. Where the PSI will be a contractor, this section is to identify how that contractor is expected to interface with other parties (eg, ADFLM and common support contractors) in order to integrate the performance required from all sources of support. This element would also describe the procurement processes relevant to the strategy including transition requirements from the previous acquisition / support contract(s) and implementation requirements (eg, scheduled delivery of products). Where linked to acquisition, this section would identify major milestones when the responsibility for support transfers (eg, system acceptance).</td>
</tr>
<tr>
<td>Contracting Element</td>
<td>This element identifies the nature and scope of each new contract and amendments to each existing contract required to enable the procurement of support. The ‘nature’ of the contract identifies if it is new or existing, performance-based, transactional or a standing-offer, and the milestones for preparation, tendering, award and operative date(s). This section should also identify the contract period, options to extend, and the use of award terms to extend the contract. The scope would briefly describe the range of products and the applicable services to be included within each contract, FMS case, or other source. For a PBC, this section should also describe the performance measures to be used and the division or limits of responsibility. That is, where the products are part of a larger system the responsibility for performance would be a devolved from, and contribute to, the system level performance requirement (eg, the availability of a subsystem consistent with the higher level system needs).</td>
</tr>
<tr>
<td>Industry Element</td>
<td>This section summarises the anticipated level of Australian and New Zealand industry involvement in each support contract, and where these are aimed at developing or sustaining critical in-country capabilities. The section should also identify key dependencies on overseas support providers that are enablers for local support (eg, access to IP or technology transfer).</td>
</tr>
<tr>
<td>Delegations</td>
<td>This element identifies the delegates for each new contract and/or FMS case, and for existing contracts/FMS cases that need to be amended. The list should include each delegate (eg, funds availability, procurement) and the committees that must provide endorsement of the procurement proposal / business case.</td>
</tr>
</tbody>
</table>
### Element | Scope
--- | ---
Overarching Acquisition Strategy | The overarching acquisition strategy summarises the strengths, weaknesses and dependencies of the procurement strategy, providing key recommendations where necessary. This section also provides a summary relevant for the determination of a preferred materiel system solution class and preparation of the business case for first pass government approval.

8.21. An SPS, as outlined in Table 4, would address the key criteria to inform the Defence decision making process through a description of scope, contractor responsibilities, the number and nature of contracts required (and FMS cases or other), the performance that is expected, and other major decision criteria for choosing the support solution presented.

8.22. When presented for first pass government approval, as an annex to or embedded within the Acquisition Strategy, the SPS will have minimal detail but must be sufficient to uncover any major support issues that would limit the implementation of each materiel system option being considered. After first pass approval, the SPS must be developed in full to guide the development of support contracting tender documents. The SPS will also inform the acquisition tender documents, due to the further definition of the support system and the delivery of support resources from the acquisition to the in-service support phase.

8.23. Where a system is already in-service, the SPS must be prepared with adequate time to inform key decisions and the development of the replacement contract. For example, if the existing contractor’s performance is inadequate or cost savings are sought by a competitive tender process, Defence may wish to revisit the scope of the services contracted, particularly the responsibilities for integration of services and whether individual contracts should be split up into smaller contracts or merged into larger ones. Defence may also need to consider a change in scope for capability reasons, or the impact of major system upgrades. Due to the processing times to prepare and evaluate tenders, negotiate contracts and gain committee approvals at each stage, a minimum of 21 months is likely for medium and more complex support contracts (refer discussion on implementing award terms at Annex F).

8.24. If PBCs were the simplest and most obvious form of support contract, then they would likely be the most common in use by the DMO today. A BCA-like process, to identify and evaluate PBC options, and a resulting SPS to inform decisions and guide the development of PBCs are seen as necessary prerequisites to implementing successful PBCs in the DMO.

8.25. To better address the acquisition of support and the development of PBCs, the preparation of an SPS for each materiel system to be supported is suggested by the PBC Working Group. In similar fashion to the BCA process, there may be some benefit in promoting the SPS as an aspect of change rather than having it perceived as a minor amendment to the Acquisition Strategy.

### Data and Skills

8.26. Establishing a contracting framework that assures performance and constrains cost will depend on the availability of suitable data and skills. Finely tuned contracts will have different performance measures and target values or bands due to the differences of each Materiel System, subsystem or RI being supported by a contractor. Differences will emerge from system use, environment, contract strategy and the physical characteristics of the items themselves (eg, design reliability).

8.27. Establishing performance measures for each support contract will require suitable data and skills to develop meaningful performance measurement regimes. Suitable data will depend upon either the availability of acquisition contractor data or data collected in-service, and associated IP rights. Where a new system does not have adequate data, IP rights, or suitable data hasn’t been collected for an in-service
system, a transition period to collect that data may be required – this is considered further in the next section.

8.28. Specific skills for developing the performance measurement regime will come from a range of disciplines with expertise required for:

- Reliability Availability and Maintainability (RAM), to analyse related data from contractor and/or in-service maintenance reporting systems and develop or update system reliability, reliability growth and allowable maintenance downtime measures.
- Life Cycle Costing Analysis (LCCA), to determine potential costs of alternative contracting strategies and to establish cost benchmarks for future reference from existing contracts.
- Supportability Analysis (Logistic Support Analysis), makes use of RAM and LCCA disciplines, and operational and workforce requirements to analyse alternative support system solutions to help define contract strategies and the performance measures within them.
- Financial analysis, to model options for and to develop an effective financial rewards and penalties regime that is correctly weighted and suitably adaptable to drive contractor performance.
- Program management, to combine the above activities (via a BCA) and plan the appropriate support contract strategy and performance measurement regime. It includes gaming theory or stress testing skills to assess the possibilities for ‘gaming’ the proposed performance-management regime and identifying risks of encouraging sub-optimal solutions because of the interaction of co-dependent performance measures, weightings and the total financial result.

8.29. The DMO has these skills, but may not have enough resources to manage the volume of work. Centres of excellence providing advice and opinion are unlikely to be sufficient given the holistic considerations and detail needed to develop a contract that assures performance. If resources are limited, as expected, the DMO will need a strategy to deploy these skills effectively, across the large number of support contracts managed in DMO’s many locations.

8.30. Similar skills will be required for the ‘tactical’ level of governance (described previously) and longer term analysis of outcomes and requirements for the ongoing improvement of DMO’s standardised performance-based contracting framework.

**Key Points:**

- The standardised, contractual, performance-management framework must be integrated into the ASDEFCON (Support) template, not treated as a ‘bolt-on’ module.
- As part of a performance-based solution, ASDEFCON (Support) templates will require changes to the COC, SOW and supporting documents – these must be coordinated but none appear to be prohibitively difficult.
- Guidance for the ASDEFCON (Support) templates must be expanded on several levels from the policy level through to tailoring individual clauses and the use of a performance measurement regime.
- A governance framework to provide strategic direction, operational support and tactical level analysis, is suggested.
- Even with a template that includes a standardised performance-management framework, successful implementation will depend on the right data, adequate numbers of skilled personnel, and integration into the higher-level performance-management framework.
Annex A: ASDEFCON Template Objectives and SOW Guiding Principles

Template Objectives

The ASDEFCON templates are a corporate-level risk treatment to ensure that the typical risks encountered in Defence procurement are properly and systematically addressed. When the more detailed objectives are examined, these objectives highlight some of the more specific risks and opportunities that the use of contracting templates helps to mitigate and promote, respectively. The nine ASDEFCON objectives are:

- Obtain Value For Money;
- Ensure Governance and Accountability;
- Minimise Overhead;
- Promote Schedule Realism and Effective Schedule Performance;
- Encourage DMO and Industry to Adopt ‘Best Practice’;
- Be More Commercially Oriented;
- Improve Consistency both Within and Across the Suite of Templates;
- Encourage Use of Contractor Standard Processes;
- Achieve a Sensible Balance between Technical, Contractual and Managerial Risks.

SOW Guiding Principles

The SOWs for the ASDEFCON materiel acquisition and support templates are based on a number of guiding principles, which were originally identified to guide the initial development of the templates, but have been retained to help to ensure that ongoing improvements to the templates will continue to accord with these principles and to ensure that any draft contracts developed from the templates will also be consistent with the principles. These principles, including any sub-principles, are intended to support the primary objectives behind the ASDEFCON materiel acquisition and support templates.

The SOW guiding principles are:

- Principle 1 – Risks should be Allocated to the Party best able to Manage the Risks;
- Principle 2 – SOW is the Principal Document Driving Template and Solicitation Document Development;
- Principle 3 – Essential Supply Terms should be Certain and Reflect the Entire Scope of the Agreement, which includes the following sub-principles:
  - SOW Contains All Work;

144 These objectives and guiding principles are discussed in detail in the draft update to the ASDEFCON Philosophy Volume, which provides the background to, and explanation of the architecture of, the ASDEFCON materiel acquisition and support templates.
- Firm Price = Firm Scope (ie, if scope is not firm, neither is price);
- Contract Terms and Conditions must Support the Deal;
- Flow-down of Obligations to Subcontracts is required for Governance and Risk Management;
- Reference to Defence Policy will be Minimised;
- Government Policy will be Expected and Normal; and
- External Agencies should be Transparent;

- Principle 4 – Integrated Management Framework, which includes the following sub-principles:
  - Avoid stove-piping of work & management;
  - Integrate disciplines - Standard approach to common tasks/data;
  - Implement industry policy within the framework and tighten alignment with related provisions (eg, Integrated Logistics Support) across both materiel acquisition and sustainment contracts; and
  - Better integrate Intellectual Property and Technical Data requirements to ensure that rights are provided, protected and managed;

- Principle 5 – Focus on Outcomes (not Process);

- Principle 6 – Work in Contractor Process Domain where Suitable, which includes the following sub-principles:
  - Minimise the Mandating of Process; and
  - Use Commercial Standards wherever Practicable;

- Principle 7 – Contract Plans Complete by Effective Date / Operative Date, which includes the following sub-principles:
  - Plans form an integral part of the governance framework for a contract;
  - Plans define how contractors tailor their standard processes to perform a contract; and
  - Plans finalised during pre-contract/phase-in stage will improve contract start-up;

- Principle 8 – Products and Processes Linked but Distinct, which includes the following sub principles:
  - The quality of a product is typically defined by the quality of the processes used to develop the product; and
  - Criteria are needed for evaluating both contractor processes and products (deliverables);

- Principle 9 – Contract Data Requirements List (CDRL) includes all Data Deliverables; and

Maximise Operational Availability ($A_o$)

**Principle - The purpose of the Support System is to optimise the $A_o$ of materiel, whether required for operations or training, over the planned Life-Of-Type (LOT).** The measure of effectiveness of the Support System must be its ability to contribute to the timely $A_o$ of fully functional materiel for use on operations or for training programs. Time spent early in the process in developing, assigning and agreeing to Key Performance Indicators (KPI), at all stages of the supply chain between 4th and 1st line, is critical to understanding how the required $A_o$ will be delivered and measured. These KPI’s will ensure that materiel is fit for purpose, safe to operate and meets environmental requirements. In addition, there is a requirement for the Support System to have a clear escalation and resolution process when the KPI’s are not achieved, regardless of the source of the issue. The Support System should be capable of sustaining the total fleet in each specific materiel class.

**Principle - In conjunction with the Land Materiel Maintenance System (LMMS), the Support System should aim at managing and optimising scheduled and unscheduled maintenance in order to reduce unscheduled maintenance.** The management of the Support System from a national fleet perspective is a fundamental requirement that requires a holistic view of the total fleet being supported. This management regime must also take into consideration the regional support requirements commensurate with the national priority for the capability or materiel being supported. When the need for unscheduled maintenance arises (breakdown repair or failure to forecast), it means that the materiel is not functional or available for operations. Whilst many factors can influence the need for unscheduled maintenance, it is important that, to the extent practicable, failures should not be caused by the maintenance system itself. In addition, the LMMS should specifically consider the following aspects:

- employment of effective fleet management practices and systems;
- ensure effective workforce composition, noting the specific needs of Training Command Army (TC-A) and the Army Reserve;
- contribute to the reduction of the impact of the maintenance liabilities at 1st and 2nd line;
- be capable of providing a surrogate 1st line maintenance system support to TC-A;
- be capable of supplementing 1st and 2nd line maintenance units with civilian tradesmen;
- minimising the requirement for technicians to undertake clerical duties so that productivity is enhanced in the management and delivery of maintenance; and
- the requirement for adequate pools to guarantee agreed $A_o$ can be achieved.

**Principle – The Support System must be cognisant of the point(s) of delivery of the delivered service.** The point of delivery is the place at which the service or materiel is handed to Defence. This delivery point should be considered as a Forward – Depth boundary. The forward component is the Australian Defence Force which would deploy on operations (eg, 1st and 2nd line units); and the depth component is either the Department of Defence or an Industry organisation (eg, 3rd and 4th line units) which normally does not deploy. The depth component provides available materiel and technical or managerial advice to the forward component. The depth component should have an ability to ‘lean forward’ into the forward component and provide additional support as the situation requires.
Value for Money

Principle – The Support System should take into account the tenure of support contracts and certainty of demand to encourage Industry investment and innovation. Industry will be encouraged to invest in development and innovation, via performance based contracts that provide reasonable profit incentives. The Support System should incorporate longer term contractual support underpinned by a minimum level of demand. Innovative solutions that require up front investment should be encouraged and allow for a reasonable return on investment to be realised. Public private partnerships should be encouraged and may involve both federal and state government investment proposals.

Principle - Value for money must remain a key tenet of any contractual arrangement for Support System. Value for money must remain a key tenet of government procurement principles. The Support System must incorporate an effective method of testing the value for money principle including the benefits of incentives from a Defence and Industry perspective. The value for money proposition should give consideration to the sustainability of the service provider, the ability to deliver both tangible and intangible outcomes, include surge capacity, flexibility in service delivery, workforce innovation, resource coordination and development with Defence.

Principle - TLS contracts must be able to demonstrate commercial viability. The Support System can have strategic consequences and should have mutually beneficial outcomes to ensure acceptable behaviour on both sides of the contracting paradigm for the life of the contract. Key to this tenant is the management of risk and understanding that circumstances can change post contract signature. Contractual arrangements that are not commercially viable will undermine the foundation of the contractual construct and contribute to a lack of stability and reliability of the Support System. Commercial viability is not just about financial issues, but also includes the need to minimise prescribed processes, link payments to performance outcomes and the creation of an environment that encourages contractor innovation and productivity improvement.

Standard Processes that Comply with National and State Legislative and Defence Regulatory Requirements

Principle - The Support System must complement operational doctrine and be consistent with extant Defence logistic doctrine and procedures without limiting innovative practices. Operational doctrine describes the way the Army intends to fight and the Support System must reflect the need to primarily meet the requirements of the ‘war fighter’. The Support System should also be flexible enough to meet the requirements of the operational, training and business environments and be able to meet the Ao requirements of the customer or specific materiel being supported. The Support System in particular should have an ability to meet the operational Ao needs during peacetime, contingency and war thereby allowing for surge requirements and unforeseen operational demands as necessary. The way to achieve this is for the Support System to be optimised to support the worst case scenario – warlike operations in several different geographic regions at short notice. The use of standardised processes and minimal organisational interfaces, where possible, will increase the ability of the Support System to meet the intent of this principle. This does not mean that innovative approaches to delivering TLS, as proposed by Industry, should not be considered and adopted where appropriate.

Principle - The Support System must align with all Australian legislative and Defence regulatory requirements. The Support System must take into consideration key national legislative requirements, as well as Defence regulatory requirements, in particular the Technical Regulatory Framework (TRF) and International Traffic in Arms Regulations (ITARs) where United States of America equipment manufacturers are involved.

Principle – The Support System should be considered under a systems-engineering approach early in the Capability Life Cycle (CLC) considerations to ensure the most appropriate TLS supportability option is obtained for a particular capability. The Support System should ensure that all Support Elements are
considered in the provision of services during the acquisition of the capability using a systems engineering approach. This integrated acquisition and logistics process for providing mission systems should consider the following ten standard Support Elements as a minimum: engineering support; maintenance support; supply chain support; training support; packaging handling storage and transport (PHS&T); facilities; support and test equipment (S&TE); personnel, technical data; and computer support. This consideration process should be underpinned by the integrated application of the following disciplines or tools: Requirements Definition, Failure Mode Effects and Criticality Analysis, Fault Tree Analysis, Level Of Repair Analysis and Reliability Centred Maintenance to ensure the Support System is appropriate for its future use. A ‘supportability matrix’, which identifies the best Defence and Industry relationship, should be developed fleet by fleet early in the CLC consideration process. This matrix should show the likely responsible owner of all key Support System activities as well as the interfaces that exist in the process between 4th and 1st line. During transition from acquisition to sustainment phases, these elements will remain high on the priority of project staff and sustainment staff to ensure the Support System is delivered and managed effectively within the agreed Fleet Management Plan (FMP).

**End-to-end Process Risk Management Strategy that Includes Industry**

**Principle** - The Support System must encourage/facilitate mutually beneficial relationships between Defence and Industry that encourages partnering, continuous improvement, manages risk collaboratively and fosters a single culture with a single business process owner. The Support System must be underpinned by a conceptual model which all stakeholders understand and agree to. It should also be supported by sound seamless business processes at all levels and complementary information management systems. This would enable the best use of public and private sector capabilities focused on ways to strengthen Ao, outputs, but still meet governance requirements. The relationship approach is through a partnering mechanism, characterised by mutual respect and understanding; an established culture of openness and trust; and a regime that rewards initiative and innovation. Critical to the relationship is a risk management strategy that caters for routine reviews of the Defence posture (emerging White Papers); changed operational commitments; and technical or contractual changes that place stresses upon the Support System. The Support System will have relevant and measurable performance indicators against specific materiel being supported that allows for feedback leading to continuous improvement of services provided at a national and regional level. The Support System must understand the key interfaces through all lines of maintenance between 4th and 1st line. The support provider will require a single point of contact within Defence to liaise with regarding Support System issues.

**Principle – The Support System should consider technology refresh and obsolescence.** The Support System should consider the reliability and obsolescence of the materiel being supported and under the leadership of the relevant national fleet manager, opportunities should be taken to upgrade or technologically refresh platforms, systems or equipment, including their technical data, to improve operational or technical efficiency. Modern Support System contracts should also provide the option of considering mid-life upgrades or ongoing supportability requirements and improvements.

**Security of Supply**

**Principle – The Support System should avoid single points of failure and must always consider diversity and security of supply & service.** To maximise Industry participation, viability and minimise single points of failure to the support system, multiple layers of support should be sought at a reasonable cost. Key to this principle is a risk management plan that identifies alternate mechanisms to address support issues as the Defence requirement changes or Industry strategic alliances shift.
National Approach to Infrastructure

Principle - The Support System must encourage Defence and Industry to invest in long term skills transfer and consider opportunities for technical mastery for all managers and tradespersons. To increase the technical mastery of the Army tradespersons, Industry should provide opportunities to take qualified and competent tradespersons for employment and experiences within their 4\textsuperscript{th} line maintenance activities. This level of access to Industry is a key requirement that builds teamwork and trust at all levels as well as providing the technical skills that have degraded due to the outsourcing of 3\textsuperscript{rd} and 4\textsuperscript{th} level maintenance to Industry. Similarly, Industry should be provided with access to similar opportunities and fully participate in Defence training programs that allows them to grow and renew the competencies of their workforce, addresses skills shortages and ageing workforce issues.

Principle – The Support System should take into account access, investment and upgrade to national infrastructure and facilities. The Support System should take into account the requirement for ready access to existing infrastructure such as rail, sea and air ports, manufacturing capacity, workforce requirements, workshop facilities and interaction with the various contributors to the Support System. It should also take cognisance of the current or developing Defence facilities which are considered national assets and may be available, in whole or part, to Industry. To maximise the Support System effectiveness, government, Defence and Industry should be encouraged to invest in upgrading or building new regional facilities, tools and processes to maximise support throughput. Phased investment against contract length will be considered to reduce Industry exposure to up front costs. Public private partnerships will be an increasing feature of Defence and Industry collaborations. New or upgraded facilities do not necessarily need to be built on Government land or Defence bases.

Principle – The Support System should have an inherent ability to plan and vary capacity in the event of increased Defence need, contingencies or Government direction. Circumstances may dictate a need to vary the amount of support to Defence. Modern Support System contractual arrangements should facilitate planning to underpin changing circumstances and therefore be able to cater for surge or a reduction in support. The contract should identify the mechanisms and cost methodologies by which the contractor will meet surge or other requirements which have mutual benefits to both Defence and Industry. Workload variations would take into consideration the impacts upon contractual arrangements, workforce (Defence and Industry) and performance and should be considered within the agreed risk strategy.

Information Systems Management

Principle – The Support System should use common data and information systems where possible. The Support System should use a single integrated logistics information system that allows for access to common data sets. This goal may be unachievable within the current regime and available cost structure; however this aspirational goal should be at the fore-front of any relationship between Defence and Industry in the future. The aim should be to use a common set of data many times, minimise intellectual property issues, reduce double handling or manual manipulation of data and provide for a common defect reporting system, regardless of whether the user is Defence or Industry. Defence will look favourably on proposals for value-adding aspects of data management within future contractual arrangements.

Intellectual Property (IP)

Principle – The Support System must take into consideration the management and protection of IP. The Support System should consider barriers to the effective use of IP early in the life of a new capability with a view to mitigating risk of poor IP availability. The portability of IP to service providers whilst protecting individual IP interests of equipment manufacturers, other service providers or other Countries arms traffic
regulations must be considered. Providers of support systems, especially software or systems that use support
data, will be encouraged to develop open interfaces or open architecture to enhance Industry involvement.
Annex C: Overview of Preparedness and the Implications for the DMO

Preparedness Overview

Preparedness is a measure of the state of the force in being to undertake military operations to achieve the required effects. Readiness denotes a force’s ability to be committed to operations within a specified time – it refers to the availability and efficiency/serviceability of personnel, equipment, facilities and consumables allocated to a force. Sustainability is the ability of a force to maintain the necessary level of combat power for the duration required to achieve its objectives.

Future Capability is significantly influenced by Force Structure, and is the primary driver for Acquisition. Current Capability is mainly focussed on Preparedness, so is the primary driver for Sustainment. As such, Sustainment Planning needs to be responsive to Preparedness requirements.

Preparedness is defined in terms of levels of Capability. ADDP 00.2, ‘Preparedness and Mobilisation’ addresses Capability and Preparedness concepts in detail, describes the Preparedness management system, and provides details about mobilisation and the sustainment of operations. ADDP 00.2 describes the following three levels of Capability summarised below:

- Operational Level of Capability (OLOC). OLOC is the task-specific level of capability required by a force to execute its role in an operation at an acceptable level of risk.
- Directed Level of Capability (DLOC). DLOC is the funded level of capability maintained during a specific budget period.
- Minimum Level of Capability (MLOC). MLOC is the lowest level of capability from which a force element can achieve its Operational Level of Capability within Readiness Notice.

The Figure below (from ADDP 00.2) illustrates the relationship between the different levels of Capability.
Preparedness evolves over phases that reflect operational or activity periods as follows:

- **Preparation** – ensuring the appropriate frameworks and mechanisms are established;
- **Work up** – when appropriate training is undertaken to move to OLOC;
- **Operations** – involving force assignment, deployment and employment for the Force Element; and
- **Reconstitution** – being the period required to revert a Force Element to DLOC in a specified time.

Each phase has distinct resource requirements. Operations are often sustained beyond the single engagement represented above, requiring detailed planning to overcome effects such as concurrency, and to provide sufficient warning for force rotation. Force Elements at lower levels of readiness will generally require fewer resources to sustain this level in the latent period and will have a wider gap between OLOC and DLOC. Therefore, resources will need to be identified and made available within appropriate times to allow for work-up when assigned for operations. Resource allocation will be maintained at a level consistent with the rate of effort during the operations phase, with sustainment requirements being identified and applied, if required. Reconstitution may require the application of significant resources, particularly if capabilities are required quickly for further operational tasking.

ADDP 00.2 further explains how Preparedness requirements are derived from Government strategic guidance and associated high-level Defence requirements. In a nutshell, Australia’s Military Strategy (AMS) and the Chief of the Defence Force Preparedness Directive (CPD), promulgate the Military Strategic Effect (MSE), Military Strategic Objective (MSO) and the Military Response Options (MROs).
The Joint Operations Command Operational Preparedness Requirement (JOCOPR) promulgates the requirement in terms of the Force Element, their role and operational outcome to meet each MRO. A force, unit or element is at OLOC when it has attained the necessary levels of the FIC for a specified operational requirement.

The resulting OLOC/MLOC assignments are an ideal case; however it is impractical and costly to maintain forces at the operational level. So when risks are assessed, and realistic budget constraints are applied, the resulting Preparedness construct is agreed and funded as DLOC. The difference between the ‘top-down’ derived level of Preparedness and the DLOC resourced level is the risk level accepted by SEC/CDF.

**Preparedness Factors and DMO Planning**

Examples of operational factors that should be considered in DMO planning to meet Preparedness requirements include:

- the difference between DLOC and OLOC in determining resource requirements (eg, IT systems may have no difference and, therefore, no work-up requirements);
- Readiness Notice (eg, a short Readiness Notice means that ramp-up will need to occur faster and therefore more stock will need to be held on-hand);
- the ROE during work-up given it will impact on resource usage;
- the difference between DLOC and OLOC in determining stock for contingency situations (ie, if there is no difference, reserve stock does not need to be held);
- the length of the Sustainment Period (in conjunction with other factors, such as the operational tempo) will affect such things as reserve stock requirements;
- the operational environment, and the concurrency and intensity of operations will impact upon failure rates and, therefore, stock requirements;
- the location of operations and distances between maintenance and supply locations will affect turn-around times, and the ability to share spares between locations;
- assumptions on attrition and battle damage can affect all aspects of planning; and
- Reconstitution, which may involve significant planning in order to ‘reconstitute’ materiel back to a particular DLOC readiness level (eg, repatriation back to Australia, expansion of maintenance contracts to conduct bulk reconstitution, recovering the configuration status, and re-establishment of priorities with the Capability Managers).

Examples of support factors that should be considered in DMO planning to meet Preparedness requirements include:

- provisioning lead-times and maintenance turn-around times, as these will affect stockholding requirements for work-up and ongoing sustainment;
- maintenance scheduling may need to be changed to move away from batching of maintenance activities (eg, first-in, first-out);
- economic order quantity considerations as they may impact upon the stock required for Readiness;
- storage requirements and shelf-life considerations;
- adjustment of support priorities, given some tasks might have to be deferred in order to focus on work up;
- the need to conduct Rapid Acquisition, and all that entails (eg, resources and time).
- lines of supply and adjustments to the supply chain, because it cannot necessarily be assumed that the lines of supply will always be assured;
- availability of support in-theatre, as the supply chain might need to be adjusted which may involve changes in processing requirements (eg, under support contracts);
- changes to maintenance requirements, which might be adjusted to maximise equipment availability, while managing the associated risks (eg, safety);
- cannibalisation and ability to share deployed stock, for which constraints are likely to be relaxed during the sustainment period;
- changes to failure rates (eg, mechanical failures tend to increase as operations intensify, while electronic failures tend to decrease);
- ability to ‘surge’ contractor-provided support will require contracts to include provisions to enable surge requirements to be met;
- loss of embedded military workforce will affect productivity, or else might require additional non-military workforce in order to maintain required level of support;
- configuration changes will need to be managed sufficiently so that the operational enhancements or BDR implications can be recovered (even during a contingency);
- item identification throughout the Defence supply chain, and asset visibility beyond the Defence supply chain;
- environmental constraints (eg, for disposal);
- lead-time for skills development; and
- retrospective support arrangements for items purchased under Rapid Acquisitions.
Annex D: Required Changes to ASDEFCON (Support)

Introduction

The ASDEFCON (Support) template was developed to be an outcomes-based contract, as opposed to being prescriptive in the processes for which work is to be undertaken. An outcomes focus is a fundamental prerequisite for PBCs, but this is insufficient in itself. While the ASDEFCON (Support) template also has performance-management features, a detailed understanding is required to appreciate how the various parts of the template link together into a performance-management framework, and also to recognise those parts that are incomplete.

This annex identifies the existing components of the ASDEFCON (Support) templates, explains their basic function, and identifies their role in a performance-management framework and where shortfalls are known to exist. Also included are the changes incorporated through the update to version 2.1, which do not solve the needs of PBCs, but will enable further development in this area.

This annex also lists potential changes to the ASDEFCON (Support) templates, and guidance, in order to implement PBCs. The changes are a mix of those that would be applied by directly changing clauses, as suggested, or indirectly by requiring a method or approach to be implemented that would likely amend many clauses. These changes are suggestions only, and likely to evolve on receipt of strategic level direction and further investigation.

This annex has not included the broader performance-management framework and organisational requirements, including governance and skills development, which would be required for PBC implementation as part of the ASDEFCON process; however, it begins with a discussion of the framework for a performance-management regime within the templates.

ASDEFCON (Support) Contract Framework

The structure of the COC and SOW, including supporting DIDs, DSDs and attachments, needs a framework to collect and act on the different types of performance measures that may be used. The framework must link performance measures (including their specification, collection, analysis, reporting and use) to appropriate rewards and remedies, with the framework tying all of this together into one process so that the performance measures can be used coherently for contract-management purposes.

Once planned, the framework will add, delete and alter clauses and component documents throughout the ASDEFCON (Support) templates, in order to enable the implementation of each contract’s performance measurement regime with a reasonable range of options. The framework itself, at least conceptually, would be explained in guidance and be referenced by notes to drafters as its full extent will not be evident from individual clauses.

In addition to the ‘static’ framework, at least two other processes will be added to the ASDEFCON (Support) process in general. These will result in additional documents and clauses, and variations to existing ones. The two processes identified to be added to the ASDEFCON (Support) process framework at this time are:

- A process to transition contracts between an initial implementation and data collection period, into a full or partial implementation of a new performance-management framework. This applies to existing contracts being converted from transaction-based models, and for newly introduced systems where there is insufficient data (high-risk) for implementation in an ADF-like use and environment. The Measurement Plan, or similar, may be adapted with appropriate clauses.
• A process to review and update of the performance measures on a periodic basis, dependent on the contract, to ensure that they remain effective over the life of the contract. Current clauses for implementing change to the Rate of Effort may assist for developing this process.

Statement of Work (SOW)

The SOW forms the backbone for the technical work effort contained in the contract, structured around the five Support System Constituent Capabilities (SSCCs)\(^{145}\), sustaining enabling resources, program and quality management, and the V&V program. On its own, the SOW is mostly about the management of the contract services, including planning, reporting and reviews, while the DSDs provide the means for requesting the deliverable (as opposed to enabling) services.

The outcomes focus of the templates is partly achieved by the contractor’s plans describing or referring to the processes that they will apply, reports to summarise the performance of the services, and review meetings held to discuss the outcomes. Due to the ASDEFCON principle of capturing all work through the SOW, these management activities include those to perform commercially-oriented reporting and reviews, particularly clause 3, Support Services Management. The reports and reviews with a commercial component, where rewards and remedies for performance would be considered, are the Contract Status Report (CSR) and Contract Performance Review (CPR).

Contract Status Report (CSR). The CSR was developed as the top-level report for the contract and was intended to inform the CPR. The CSR includes contract and subcontractor status reports, business resource planning, risk and performance measurement, and reports covering all service areas. The CSR will be updated in V2.1 to include a finance report and the performance measurement report will be expanded to explicitly request KPIs, Reporting KPIs and any other performance measures. It is the only commercially-oriented report in the current template and therefore the logical place to report performance that is linked to rewards and remedies.

The CSR has a broad scope and reporting some aspects will become excessive if delivered more frequently (eg, monthly or quarterly), particularly for smaller and mid-range contracts. A more frequent commercially-oriented form of reporting is necessary. This could be achieved through an additional report, as is used in the ASD PBC Module\(^{146}\). An alternative is to modify the CSR for conditional reporting requirements and use it to present results in between CPRs (ie, the scope of the delivered report varies and is reduced to core performance management information when not linked to a CPR). Either option is likely to involve use of the SSVM in an appropriate manner.

Contract Performance Review (CPR). The CPR is the top-level review for the contract, expected to be held annually or six monthly, depending on contract needs, and informed by the CSR. The review covers overall performance and commercial issues, such as the identification and mitigation of the adverse effects of contractor and/or Commonwealth team performance or to deal with external changes impacting on the contract. The CPR is currently a 360° review, linked to the Defence Company ScoreCard. It is envisaged that this review will need to be modified to integrate performance-based payments, partly as a result of changes to the CSR.

Being held once or twice a year is inadequate if performance measures are related to rewards and/or remedies that are determined more frequently (eg, quarterly or monthly). ASDEFCON (Support) needs an additional level of commercially-oriented review, to discuss performance that is related to payments, held on a more frequent basis. This could be achieved with a new review or adaptation of the Combined Services Performance Reviews. This review would be conducted in between the CPRs and could be ‘rolled-up’ into the CPR when one is held.

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145 The SSCCs are the major activities in the standard Support System model (see DI(G) LOG 4-5-006, ‘Defence Policy on Integrated Logistics Support’) providing service outcomes; namely, Operating Support, Engineering Support, Maintenance Support, Supply Support and Training Support.

146 A standard template solution would call for these from the SOW rather than the COC.
Verification and Validation Clause

Due to the outcomes-based approach used by ASDEFCON, the V&V clause is quite short. The detail of how work will be performed is included in the contractor’s Approved V&VP and in preparing the SSVM.

Required changes to the V&V clause itself should be minimal; a number of minor changes are incorporated by the version 2.1 updates. Most change will be effected through the DIDs for the related plans and SSVM. Changes to the DIDs are included below.

Detailed Service Descriptions (DSDs)

Using DSDs

The DSDs are modules of SOW created by grouping together related clauses that describe various technical services. DSDs are added to or taken off the SOW, via the Contract Services Requirements List (CSRL), as the primary method of tailoring the template to the many different combinations of support services that may be required. To make DSDs manageable and consistent with the SOW, they are organised by SSCCs.

DSD Changes for Performance Management

In ASDEFCON (Support) version 2.0, each DSD contains a section for performance measures. For simple contracts, where performance levels may be assigned to individual services, this would be sufficient. In more complex support contracts, and where KPIs are calculated from a number of measures, the SSVM would consolidate performance measures and calculate KPIs. Performance measures are removed from the DSDs by the version 2.1 update, but they will continue to be included in the SSVM as this is a better approach for an outcomes-based PBC.

DSDs that use Performance Measures

Although no longer listing performance measures, DSDs will remain important for scoping the work required. The following DSDs also make use of collected performance measures through optional clauses:

- **Engineering Services (DSD-ENG-SERV).** The Supportability and Engineering Analyses clause in this DSD enables the collection and analysis of supportability and engineering data, principally for the Mission System, but also for engineering-related supportability analyses that, for example, include trade-offs between reliability enhancements versus procuring additional spares. The DSD also includes the request for Life-Cycle Costing Analysis to evaluate the impact of system change or cost saving initiatives. There are likely to be links between these analyses, the impact on KPIs, and the use of applicable OCMs.

- **Supply Services (DSD-SUP-SERV).** The Support System Supportability Analysis clause addresses supportability analysis of specific aspects of the Support System (eg, turn-around times and delivery lead-times for supply items needed to achieve required levels of availability) to update stock level requirements using historic data. The historic data used in these analyses are likely to include OCMs.

- **Stock Assessment, Codification and Cataloguing (DSD-SUP-SACC).** The stock assessment activities requested can vary depending on contractor stock management responsibility and the need for stock requirements determination to complement a modification program, address a change in rate of effort, or other occurrence. The activity will use existing supply and arising rate data (which may include KPIs and OCMs) and forecast reliability data to develop recommended spare parts lists.
Data Item Descriptions

In addition to the function of plans and reports in general, a number of data items support performance management. The DIDs used to request these data items are introduced briefly in the subsequent paragraphs and then, due to the number of possible options and overlaps, the potential changes are discussed collectively.

Existing DIDs

Verification and Validation Plan (V&VP) and Support Services Verification Matrix (SSVM). V&V in the ASDEFCON (Support) context refers to the V&V (primarily verification) of the services provided. The V&VP describes the management of the V&V program, the V&V organisation, data collection activities, use of the SSVM, how performance measures are calculated, and scheduling of time-variant performance measures (eg, monthly availability targets), if applicable. The SSVM is the focal point for tabling performance measures and the achieved results for the provision of services. It lists performance measures, their definition, raw results, and whether the requirement is being met.

The V&VP is envisaged as a key plan under a standardised performance-based contracting framework. Changes for version 2.1 have made the V&VP and SSVM more useable with current performance management activities and this is expected to evolve again for a PBC template. Furthermore, the SSVM has been set up to be provided as a regular report with results, status and trend information.

The location of all types of performance measures within the contract, other than KPIs, needs to be clarified. The V&VP will describe the overall program while the SSVM seems to be the logical place to list all measures, required performance levels, and the results. The DIDs for both the V&VP and the SSVM are likely to require update to separate the different groupings of OCMs. For example, it would seem beneficial to separate performance measures related to contractor services, used to calculate a KPI, from those related to the reliability of the Commonwealth-owned system being supported. Separation, or further classification, may be required for management purposes; for example, to link collected performance data to the applicable analysis within the DSD-ENG-SERV, DSD-SUP-SERV, or elsewhere.

Furthermore, while groups and classifications can be built into the standard DIDs for the V&VP and SSVM, the actual performance measures will vary and the required performance levels will be different for each contract – these need to be specified somewhere. These could be included in a COC attachment, as per the ASD PBC module, but this can have a number of drawbacks including access by the contractor’s technical staff and subcontractors (who have to deliver on the majority of measures) and additional contract management effort when time-variant performance measures are needed. The alternative is to tailor the V&VP or SSVM DID for each contract, to include the measures, or create a new subordinate plan or annex to the V&VP.

Services Summary Reports. There are six services summary reports in the ASDEFCON (Support) template. For scalability and to minimise management overheads all reports can be rolled-up into a single report, the Combined Services Summary Report, if appropriate. The number of reports depends on how the Commonwealth wants to manage the contract, based on the scale and range of services. For the applicable Services, each report includes contractor achievements against performance measures and details the level of activity, over the reporting period. Regular delivery of the SSVM will enable reports to cross-refer to the SSVM for detail.

In future the services summary reports are likely to specifically use the SSVM as the performance measurement mechanism for each of the required Services. The solution could be ensure concurrent delivery or for each report to include an extract from the SSVM, relevant to the Services being reported, similar to the manner in which a contract master schedule is presented by different views within a project’s program management plans.
Measurement Plan. The measurement plan can be used to define a program for the measurement of contractor processes in order to obtain objective information and then inform decision making. The DID for this plan is a standard asset from ASDEFCON (Strategic Materiel) designed for use also with ASDEFCON (Support). The tailoring guide identifies the current use of the measurement plan for in-service development activities of a Systems Engineering program only. Functionally the measurement plan, or something similar, could be used to measure other contractor activities in order to inform decision on processes improvements, reducing TCO, or altering the performance management regime.

The role of the measurement plan needs to be reviewed with respect to broader application. It could be determined that new plans are required instead of adapting the measurement plan, however, similar planning would be required for:

- **Transferring Contract Types.** To inform the process when transferring from a traditional contract to a PBC, where a plan is required to measure demand and contractor processes, in order to establish a baseline from which the performance measurement regime can be established. This could be applied to an existing contract in order to prepare a replacement PBC, under an existing contract that is to be amended, or, in a PBL sense, used within a PBA (head agreement) to assist in transferring from one contract type to another (eg, from cost plus to fixed price).

- **Process Improvement.** To define a baseline and inform decision making to invest in process improvements, particularly where Commonwealth investment is required, in order to achieve improvements in the performance of services or reductions in TCO. This application could extend beyond contractor processes to also measure the impact of contractor/Commonwealth interactions on performance and TCO.

- **Award Term Cost Reductions.** In order to obtain cost reductions from successive fixed-price contract periods, a measurement plan could be used to baseline process costs and demonstrate savings (that the contractor retains during each fixed-price term). The plan and projected outcomes could be prerequisites for award terms, particularly if savings are obscured by inflation or changes in user demands (eg, increases to the rate of effort).

- **Validating the Performance Management Regime.** An effective performance management regime needs to align contractor and Defence interests by matching profit to capability. A significant challenge is getting access to and understanding how the contractor’s true cost base varies with different levels of output, such that profit is maximised at Defence’s targeted level of performance. The measurement plan can validate the effectiveness of the performance measurement regime in achieving this outcome.

Conditions of Contract (COC)

Existing Clauses

The COC contains the rewards and penalties components of the performance management framework, as well as terms for compliance that may be prerequisite for rewards and/or trigger remedies. The scope within the COC has been limited, primarily to incentive payments, liquidated damages, stop payments, Reporting KPIs and termination. The performance management framework will be improved by minor changes introduced through the version 2.1 updates, partly to provide a suitable basis for the future development of a more versatile PBC solution.

PBC Changes to the COC

A PBC solution will include addition performance management clauses in the COC, such as reward and remedy clauses for a standard approach to award terms, remediation plans, and partial terminations. The range of other
options for performance management will depend on further investigation of ways to implement a standard DMO approach. Options to consider will include standard clauses for award payments, at-risk payments, abatement/credit point schemes, and further development (and explanation) of incentives used to increase and decrease normal profit.

There are a range of changes that will be required to the COC clauses. The actual changes will be developed following careful consideration of the performance management regime as a whole. The follow areas, which relate to one or several clauses, would be considered to either implement or better enable the performance management regime within the contract:

- **ASDEFCON (Support)** inherited a schedule-based focus within the COC from its acquisition counterparts – this is inadequate for a support template. Numerous COC clauses link penalties, such as the stop payment clause, to postponement and delay. While this is effective in schedule-driven acquisition programs it has limited relevance by not linking other performance shortfalls during the provision of recurring services, such as a reduction of system availability in a previous period (ie, delaying payment does not rectify a previous shortfall). Schedule delay remains relevant for some in-service activities (eg, modification programs), but these comprise a minority within the scope of performance measures. The COC needs clauses that better deal with degraded performance, where schedule is one of many measures, particularly for services provided within the ‘previous reporting period’.

- The COC clauses for ownership are transactional in nature and do not efficiently support a PBC where the focus is on outcomes rather than each transaction where ownership may change. The clauses need to be amended to suit a support-focussed service contract that deals with services rather than Supplies.

- The COC S&Q clauses need to be more restrictive in preventing S&Q work from circumventing the other provisions within the COC, particularly where S&Q purchase orders can include their own terms relief from performance measures or limitations on warranty or remedies. Limitations on the ability of S&Q work to undermine performance measures will need to be investigated (ie, if S&Q profit is higher than a deduction for a minor drop in performance, encouraging resources to be redirected). A general limitation clause, to prevent S&Q work avoiding contract terms, should be a beneficial change for all support contracts.

- If applied in a total system support context, where some traditional S&Q tasks become part of the fixed price, the pre-authorised ad hoc services clauses (which improve the efficiency of managing minor S&Q tasks) may need to be removed – as an optional clause this may only require a change to handbook guidance and notes to drafters.

- As noted above, additional COC clauses will be needed to define the terms for applying rewards and remedies associated with performance measures. These will include clauses to implement award terms linked to performance and, potentially, cost reductions forecast across successive contract terms.

- A place in the contract is required for the Commonwealth to identify and define OCMs that are lead indicators of contract health but that, unlike Reporting KPIs, are not subject to warranty or liquidated damages (because the impact hasn’t occurred yet). The COC or an attachment is the most likely location in the contract, but tailoring the V&VP or SSVM is another option. The location and supporting clauses need to be created in the COC with associated reporting and, if applicable, analysis included through the SOW.

- The template needs to be reconstructed to avoid or minimise the likelihood of both rewards and remedies being applied concurrently to the same or related KPIs. For example, so that at-risk payment deductions (as per the ASD PBC module) could not occur at the same time a contractor is being paid an incentive for related work in COC Attachment B Annex G. The first step will be to minimise the number of locations in the COC documents for performance measure linked to
payments. The template could also be amended to include ‘pain share – gain share’ incentives, whereby profit is reduced for substandard results and increased where additional performance, useable by Defence, is provided. In this way, the incentive calculation results in a disincentive, like at-risk payments, and incentive for the one KPI or set of KPIs. This would need to be included if cost-plus incentive fee contracts (or parts of) with target prices were used in order to reduce TCO.

Some of the above changes may be incorporated through version 2.1 updates, depending on the schedule for development and to obtain necessary approvals. In addition to the above changes for the ASDEFCON (Support) template, key clauses of the COC that are enablers, such as IP, may require review and further update.

COC Attachments

Of the existing ASDEFCON (Support) template attachments, the two most relevant are the incentive payments within the price and payment schedule, Annex G to Attachment B, and Reporting KPIs, Attachment R.

**COC Attachment B, Annex G, Incentive Payments.** This annex is intended to link KPIs to the calculation of incentive payments. This is one of the ‘not fully complete’ parts from the template’s initial development. Substantial development is required to provide standard and efficient contract-management process for converting from KPIs to incentives, as part of a PBC.

A single standard KPI to incentive conversion process may not be possible and a number of optional standard approaches may be required as a basis for individual tailoring. One approach could be derived from the ASD PBC module’s four-step process to calculate at-risk payment reductions. Other simpler approaches, with fewer steps involved, may be preferable for sub-system and component level maintenance and supply based contracts. An abatement point scheme, like that used for SEA1444, Armidale Class Patrol Boat, may be another suitable regime particularly with respect to award terms.

Furthermore, the annex will need to cater for different incentive programs running in parallel but related to completely independent KPIs (eg, provision of supplies and training programs within the one contract). Some of the KPIs and the reward and remedies will be physically separated, such as on-going maintenance services separated from engineering development activities managed under an individual work order or contract amendment.

**COC Attachment R, Reporting KPIs.** This attachment is used to list ‘Reporting KPIs’. Reporting KPIs are a type of performance measure that are not linked to payment, but are more generally suited to performance and compliance with contract terms (eg, Australian Industry Capability) that are linked to warranty, liquidated damages and/or termination. Reporting KPIs are likely to be changed or relocated as part of a standard and more integrated approach to performance-based contracting that includes Reporting KPIs, KPIs and OCMs.

Guidance

This section does not list the sections of existing guidance that need to be upgraded. Rather, the discussion intends to provide an awareness of the scope of the effort to develop guidance.

Drafters using ASDEFCON (Support) templates are guided by a handbook for the COC, a tailoring guide for the SOW, embedded guidance in subordinate documents, and notes to drafters throughout. Despite options for clauses, DIDs and DSDs to be included, excluded or altered, all of these sources of guidance are currently coordinated and aid in achieving consistency when drafters tailor the templates to suit their contract.

The multiple options necessary to implement a range of performance-management regimes, from a standard contracting framework, will make the guidance for the different parts of the template complex to follow. The
ASD PBC module attempted to overcome this coordination problem with a single COC Attachment with embedded guidance; however, this created other inconsistencies with the COC and SOW, and was limited to the application of a single remedy, reductions of at-risk payments. A contract may feasibly wish to use at-risk payments for one set of services (eg, providing available systems), incentives for another set (eg, software support), and a third but overlapping process to determine the award of additional contract terms. Ensuring that the guidance developed informs consistent solutions will be considerably more challenging to develop in order to cater for the possible combination of performance-management options.

If the DMO decides to maintain the option for both ‘traditional’ contracts and PBCs, based on a common core, then the implementation of a performance-management framework for ASDEFCON (Support) will most likely require separate guidance documents to the existing set. If all major support contracts are to be performance-based, then only one set of guidance would be required147.

Specifically, guidance will be required to explain the different categories and types of performance measures (KPIs and different types of OCMs) and how they are used, general concepts for applying performance measures, factors in choosing and developing appropriate performance measures, and linking them to rewards and remedies. Much of this is part of an ASDEFCON process that is conducted prior to tailoring the templates. Some of this guidance will apply across the DMO; other aspects are more likely to be domain or division specific, such as guidance for the ASD PBC module.

Accordingly, DMO-wide and domain specific guidance will be required. This requirement in expected to result in two forms of written guidance. The first must be common across the DMO and explain the application of the template and where the different types of measures may be used. This first requirement for guidance could be achieved in a single set of documents. The second set of guidance must be domain specific, based upon the performance measurement for the materiel systems within each of the DMO’s Systems Divisions, but still consistent with the common core guidance.

This second set of guidance may also need to include options for the different style of contracts within each domain; for example, for total system support, subsystem support, or repairable items. This second set will actually comprise of a set for each domain, meaning a minimum of four additional guidance documents to be developed, maintained, and supported by domain experts familiar in their use.

Obviously, a level of consistency between the core guidance and each domain’s guidance would be beneficial to the drafter who must refer to both sets. The more information that can be centralised in a common core, the more this is likely to achieved. Making guidance manageable and promoting consistency will require the coordination of ASDEFCON (Support) developers and experts in each domain.

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147 This assumes that an ASDEFCON (Support) template will be developed for smaller support contracts where the added complexity of a performance-management regime would outweigh the benefits. Such a template will need to have its own guidance.
Annex E: A Simplified Performance-Management Regime

Performance payments can be established to provide a continuous scale of reward or remedy for achieved performance. Under the standard ASD model, resulting rewards and remedies are calculated by formulae converting achieved performance scores into adjusted scores, the application of weightings, and summation of the various weighted scores for each of the KPIs. The conversion from achieved to adjusted scores is calculated using the formula for the slope of each line. This process can be simplified by omitting the summing of the various weighted scores, but this approach requires the management of separate amounts of funds (ie, for each KPI). The conversion from achieved to the adjusted scores can be depicted graphically as shown at left.

Note: the diagram depicts an integrated at-risk and incentive regime for a single KPI, with the incentive arrangement achieved by extending the line above the 100% point.

A key characteristic of these types of performance payments is that they are based on objective measurement. Notwithstanding, they may still be based on the assumptions that:

- the measurement process is completely accurate and not influenced by subjective interpretation or inaccuracy in data input;
- the contractor has total control of the process (ie, there are no inputs by Defence including how many spares there are in the pool, the time for a failed item to be returned for repair, etc);
- if necessary, the Commonwealth Representative will make a perfect assessment of the impact of excusable non-performance (ie, if Defence inputs do influence performance) to adjust scores and calculate the true reward / remedy.

If the assumptions cannot be met, then a robust solution would consider a range for the possible errors or uncertainty, but calculating such as range could be even more challenging. Hence, in anything less than a perfect world there will be an unknown degree of variation. In this case, the parties are effectively making a judgement that the variation is inconsequential to the outcome and, that the results are ‘close enough’. This level of accuracy depends on trust in a reliable, and possibly expensive, data collection and analysis process.

An alternative approach, which divides the measurement process into bands, can avoid some of the challenges with a continuous measurement process and can simplify ongoing performance measurement. For example, the performance payment for Demand Satisfaction Rate (DSR) for spares could be determined from a one-dimensional look-up table, as follows:

<table>
<thead>
<tr>
<th>DSR achieved / exceeded:</th>
<th>&lt;70%</th>
<th>70%</th>
<th>80%</th>
<th>85%</th>
<th>90%</th>
<th>93%</th>
<th>95%</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of Performance Payment:</td>
<td>0%</td>
<td>30%</td>
<td>60%</td>
<td>75%</td>
<td>90%</td>
<td>95%</td>
<td>100%</td>
</tr>
</tbody>
</table>
Note that the increments in this table do not need to be equal. In this way, the achieved performance relationship to the adjusted result can roughly approximate the separate lines of an incentive regime.

A second table would be needed for a second KPI, and so on. With separate amounts awarded for separate KPIs, a weighted solution can be calculated fairly simply (ignoring the overhead of managing separate amounts of money). The advantage of having incremental performance payments is that minor inaccuracies and assumptions underpinning the measured result have limited consequences. Once on a step or increment, the amount of the performance payment is set.

To make the regime both an incentive for good performance and disincentive for poor performance, rules for the payment can be established. For a simple example, in a competitive environment, the performance payment could be calculated from 5% below to 5% above the baseline recurring services fees – an award of less than 50% is a disincentive, above 50% is a reward.

The main shortfalls of having more than one KPI calculated this way is that Defence will not want to award highly on one KPI when a shortfall on another results in an overall poor outcome for the end user. In this instance, a two-dimensional look-up table enables appropriate interaction and weighting to be applied, but the percentage performance payment is still determined in a single step, as illustrated in Table 6

![Table 6: Look-up Table for Determining Performance Payments – Two KPIs](image)

While appearing detailed, establishing the percentage performance payment is determined by following down the column of KPI #1 to the row for KPI #2. For example, if KPI #1 = 77% and KPI #2 = 82%, the answer is 80%.

As an example, KPI #1 could be system availability to Defence, and KPI #2 DSR. If availability is less than 60% and DSR less than 50%, then no performance payment would be made. Consider 50% as the baseline payment, this provides both an incentive and disincentive. In the table, KPI #1 is more heavily weighted by the higher percentages to the right hand side of the table, rather than being evenly distributed around the diagonal axis. Hence, this represents a two-KPI weighted regime involving inter-dependent measures. This could reflect system availability as being more important, but realising that, due to the inter-dependence between KPIs, a poor DSR will impact on the ability to perform organic maintenance and reduce operational availability.
Alternatively, KPI #1 could be DSR for ‘high priority demands’ (a platform is inoperable), while KPI #2 is DSR for ‘routine’ demands (in preparation for routine maintenance to be conducted next week). This may suit repairable item contracts, or a separate one-dimensional look-up table (Table 1) could be added for availability in a platform-based contract. As another alternative, KPI #1 could be for ‘high priority’ units (eg, on deployment) and KPI #2 for ‘lower priority’ units (eg, reserves) that depend on common commodities – in this case, the KPIs are not as dependent on each other, but different priorities across a range of customers can be included.

Obviously, the look-up tables, either one-dimensional or two-dimensional, require a considerable degree of supporting information and technical expertise to establish (like any regime); however, once they are established, they are simple to use.

One issue that can occur is that a contractor may make an appeal to the Commonwealth if scores are very close to the next step / increment (eg, 74.9% in KPI #1). In this case, the Commonwealth Representative’s judgement of a claim that Defence created an excusable ‘non-performance’ could allow an increase to next higher increment, but no further. Rules such as this must be written into the contract terms.

The simplicity of regimes like these should also enable straightforward incorporation into a contract, as one of a number of PBC tools for different situations.

In summary, this approach could be used for medium-to-lower value performance-based contracts and offer a way to:

- convert from measured results to a percentage performance payment in a single and simple step;
- cater for one or more KPIs (which may require more than one look-up table);
- enable inter-related and weighted KPIs to be used;
- provide both rewards and remedies;
- allow for less complex measurement systems and a moderate level of uncertainty in the data; and
- be relatively simple to include in contracts.
Annex F: Some Considerations for Implementing Contracts with Award Terms

Award terms can act as an incentive for contractors to maintain or improve performance and to find ongoing cost savings. Importantly, they provide a way of transferring some of the cost savings to Defence while still operating under predominantly firm-priced contracting arrangements. Whilst offering these benefits, there are a number of factors that must be considered to make award terms work as a contract mechanism and as an incentive to the contractor. This annex discusses some of the major issues, without being exhaustive on all aspects of the subject.

Primary considerations for using award terms as a contract mechanism include the associated timeframes for contract-management activities, conditions for granting or not granting award terms, and the ongoing presence of competition should award terms not be granted. Timeframes for contract-management activities that require attention and forward planning include:

- the minimum length of the initial contract (with no award terms);
- the length of the award terms;
- the time the Commonwealth will allow for a contractor to recover from sub-standard performance and resume access to award terms; and
- the minimum length of the decision and RFT period needed to replace the current contract.

Currently, the initial contract term is set somewhat arbitrarily, based on such considerations as the LOT of the capability, duration of the roll-out of systems from acquisition, anticipated value for money, operational requirements, the nature of the market, and the Commonwealth’s relationship with industry. Initial periods of five and ten years are not uncommon. Notwithstanding, there is currently no policy on the length of these initial periods, or on the criteria that should be taken into account in either extending or not extending a contract term.

To determine a minimum initial contract term, the procurement manager will need to consider and sum a number of contract-activity periods, as shown in Figure 34:

![Figure 34: Minimum Contract Term](image)

Briefly, Figure 34, depicting a reasonably significant support contract, requires a five-year minimum term that contains:

- an initial data collection period of one year (which is required to enable systems and processes to properly bed down and to preclude unrepresentative performance);
- a minimum period to measure performance of one year before considering an award term;
- a recovery period if performance measures are not met and, in this example, allowing up to three quarters in a year to demonstrate recovery;
- no award terms;
- a buffer, which, in this example, includes the entire ‘minimum decision period’ needed to replace the current contractor (explained below); and
- a ‘Phase-out’ period, as the incumbent contractor runs down services and hands over to the new contractor\(^{148}\).

The ‘minimum decision period’ represents the minimum available time between not granting an award term and having a replacement contract ready before the current contract begins to Phase-out. Figure 35 illustrates that, for a reasonably significant support contract where an award term is not granted, approximately 21 months should be allowed for any re-tendering activity (taking into account typical schedule risks in any solicitation process, including unforeseen events and delays in internal approvals).

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\(^{148}\) Commencement of ‘Phase-out’ should coincide approximately with the Operative Date for the in-coming contractor.
Figure 36: Rolling Contract Extensions through Award Terms

Figure 36 shows an example of two successive years, from which performance and initiatives to reduce TCO are assessed for granting award terms of a year each. After the first year, the Contract Performance Review (CPR) concludes that an award term should be granted under the terms of the contract, resulting in the first award year. After the second year, the award term is assessed at CPR as not having been earned. In this instance, the contractor is given two quarters (the ‘recovery period’) in which to demonstrate a return to acceptable performance. If this recovery does not eventuate, the minimum decision period will be reached and the Commonwealth will be forced into activating an RFT process for a replacement contract. This example has a happy ending because the contractor demonstrates changes within the recovery period that result in a long-lasting return to acceptable performance (or cost-reduction program) and the second award year is granted as an outcome of the quarterly review.

There are a couple of additional points to take from the process described in the figures above. Firstly, if three measurement and award terms were shown, the buffer period would become part of one of the awarded terms. Also, granting the second award term in Figure 36 would also restore a six-month recovery period between the next CPR (award term decision) and the next minimum decision period. The award terms, if implemented this way, will not result in a ‘one-strike and you’re out’ situation.

Although this may appear to be working backwards, the sum of the timeframes for the minimum decision period (including buffer), recovery period and other durations required, lead to the conclusion that the initial contract term should be no less than four years, or five years if data must first be collected and performance baselines established, because:

- in the first year of a contract, the contractor is bedding down its personnel, systems and processes and, therefore, there are unlikely to be any substantive productivity improvements or reductions in TCO in this timeframe;
- an additional year (increasing the four year minimum to five) may be required for data collection (eg, under the US PBL framework, the first year(s) of a contract is(are) often a cost-plus period used to transition to the full performance-measurement framework – needed due to uncertainties in the support environment, such as reliability characteristics)\(^{149}\);
- the DMO needs appropriate performance and trend data to determine whether or not an award term should be provided, which is unlikely to be sufficiently representative of contractor performance in less than two years;

\(^{149}\) The ASD PBC Handbook states, “ASD Performance Based Contracting framework does not envisage the introduction of the performance Payment Regime until an appropriate baseline for average performance has been established. This would normally occur no later than 12 months from the delivery of the equipment, but more importantly should be tied to a realistic milestone to ensure that it does not delay the introduction indefinitely. Benefits from a Transition Period include the opportunity to bed-in support systems and reporting mechanisms, avoid initial and unrepresentative performance discrepancies and to properly gauge equipment Reliability.”
the contract needs to provide some opportunity for the contractor to re-establish an acceptable level of performance if they were to fall short for one or two measurement periods (e.g., one or two quarters in a year, as illustrated in Figure 35) or if there were to be some form of excusable non-performance (e.g., delayed delivery of GFE or access to GFF);

the minimum decision period of 21 months is somewhat variable and depends upon DMO resources to prepare and evaluate tenders (with a variable number of responses), gain statutory approvals, negotiate contracts and have the replacement contractor complete Phase-in;

if immediately following an acquisition contract, the initial lay-in of serviceable spares and extended build up of a fleet numbers may mean that the contractor’s supply and maintenance processes are not fully stressed in the first year or two;

if the initial term were to be less than four years (i.e., without a data-collection period), this would imply that the DMO is likely to commence a new RFT within two years from having signed the current contract, which would seem to be an inappropriate use of resources, given the costs and personnel involved in a typical tendering activity;

a short initial term requires the amortisation of set up costs in a short time period, which can increase the relative cost for the performance of services provided; and

an initial term of less than four years could result in the DMO having to extend the contract term (but not by using the award terms) to provide DMO staff with sufficient time to develop an RFT, which would send the wrong message in this performance-based contracting framework.

In light of this discussion, a four-year minimum initial term (or five-years to include initial data collection or system roll-out) would seem to represent the best balance between achieving Defence’s goal to reduce TCO, being locked into a long-term under-performing contract, making informed decisions, resource utilisation, and tender costs.

The ‘minimum decision period’ is an important concept for award terms. US research into PBL and the use of award terms have highlighted some interesting findings, in particular:

- award terms were mainly perceived as ‘off-ramps’ for the Government rather than effective incentives;
- award term durations of one year were ineffective at encouraging the implementation of savings measures because there was insufficient time for the contractor to benefit from the savings; and
- in most cases award decisions were not made until close to the end of the contract (within a year), that in most cases forced the DoD to award the next option year in order to have 18-24 months to put a new contract in place (i.e., the decisions were generally made very late in the contract).

Despite the third point above pointing to late decision-making on award terms, the USAF award term plan for JSTARs required the ‘off-ramp’ process to be initiated once the remaining period of the contract was two years or less. This acknowledges the need for a minimum period between the award-term decision and re-tendering. Of note, within the JSTARs award-term process it was also possible to deduct award terms.

Use of a minimum decision period concept as part of the contract-management regime will demonstrate that the award term is not an off-ramp, but an incentive designed to encourage further performance and cost reductions that provides sufficient time to benefit from savings and ensures that Defence is not caught out with insufficient time to prepare for, and re-test, the market. The preceding discussion on minimum contract duration, buffer

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periods and award terms is premised on the use of a minimum decision period to overcome the problems of implementing award terms.

There are other considerations associated with award terms, which include the period of each award term, total number of award terms (i.e., maximum possible contract length), how frequently the assessment for granting an award term is made, and the commercial/legal risks associated with their implementation (including managing inconsistent performance and the process for agreeing award term pricing).

The minimum lead-time for an award-term decision has already been discussed, but there are other considerations that affect this lead-time, with one of the main ones being the normal contractor ‘roll-off’ in the last years of a contract term. When the end of a contract term is approaching, contractors will typically not order spares and other items that will not be used within the remaining period and may reduce maintenance activity and staff because sufficient serviceable assets are available for use. This means that, if the decision to extend a contract is made too late, there will be a capability impact because necessary spares and personnel may not be available when required. Additionally, tenderers will have priced their initial contract price based on this “roll-off” and the DMO will need to pay a premium for any extension to avoid the capability shortfalls if the decision is left too late. Accordingly, the minimum decision period for the Commonwealth to activate the RFT process and establish a replacement, plus the Phase-out period, may not be sufficient to avoid some of the roll-off occurring in more complex contracts.

These types of considerations lead to the following conclusions to try to avoid this “roll-off”:

- the decision on an award term must be made at least two years in advance (noting that there are unlikely to be many items that have a lead-time of longer than two years);
- the solicitation processes must ensure that the option prices for each award term are negotiated in advance and included in the contract (with appropriate mechanisms to incorporate the savings from TCO-reduction activities); and
- the contract provisions and contract-management processes must ensure that there are limited opportunities to reprice any award term (e.g., due to scope changes).

The length of each award-term extension can also influence its effectiveness as an incentivising mechanism. The term should not be too long because this would reduce its effectiveness once the award had been granted, and it should not be too short because this could reduce its incentive power and increase contract administration. The length of an award term also affects the timeframes within which a contractor calculates its return on investment for any upfront investment to achieve system or process improvements and reductions in TCO, with longer award terms potentially being more beneficial here (in the example illustrated in Figure 35, the award terms provide a continuation of approximately three years from when the award term is granted). On balance, award terms of one year would appear to be a suitable middle ground, as indicated by CEO DMO in the earlier quote.

Exceptional performance could be rewarded by awarding a longer extension to the contract (e.g., two years) in accordance with the contractual provisions governing the award terms. For the Next Generation PBC framework, this approach should be included in the ‘toolbox’ of options available to the drafter, but be limited to the advanced options because it adds another layer of complexity to the development of a PBC regime for a contract. As such, it does not need to be included in the initial tranche of development for the Next Generation PBC framework.

In conclusion, award terms have the potential to be a cornerstone incentive in the performance-management regime of future DMO PBCs; however, considerable care will be required in establishing this mechanism within ASDEFCON (Support) templates and their terms will most likely require expert tailoring for each contract that uses them.
Annex G: Transitioning to the New Performance-Management Framework

Introduction

Defence is now focussed, particularly through the SRP, on achieving the Key Objectives of enhancing Defence’s Capability Systems to meet Preparedness requirements while also reducing the TCO. Critical aspects for the direction of change, and KPIs for implementation, are summarised by:

“Where we’re heading we need about a 10 percent real reduction over the next three years. [...] We have got to find a way to put more incentives into contracts so that people can reduce the cost base, so we’re looking at systems of rolling contract extensions and extra profit for key performance indicator achievement. They’re some of the contracting changes that will be coming in the next 12 months.”152

While some reductions in TCO over the next three years will be generated through efficiencies in Defence, much efficiency will be achieved through support contracts and the way in which Defence interacts with support contractors. With long-term contracts in place, and the duration needed to develop and tender a fully fledged replacement PBC for those to be renewed, these savings will be dependent upon:

- renewal of existing contracts with new-generation PBCs;
- revision of existing long-term contracts into an appropriate PBC, where it makes sense; and
- revision of support contracts that are signed, linked to acquisition contracts, but not yet operative.

This section highlights some of the opportunities and issues for each of these three situations.

Renewal of Existing Support Contracts

As identified at Annex F, the time necessary to fully define, develop contract documents for, tender, evaluate, gain approvals and reach the point where services can be delivered, may take 18 – 21 months. This includes the time necessary to conduct a BCA to determine the performance-management regime and if an alternative contract approach, such as splitting a contract into lower-risk and more cost-effective contracts, is beneficial.

As a prerequisite, establishing an effective PBC performance-management regime also requires good quality systems data and an understanding of the cost base. The time required to obtain and make use of this data will vary, but data collected from the existing contract may provide a useful head-start. Support contracts will often collect data, in addition to that which can be obtained through maintenance and supply management systems. This data is often in a ‘transaction-based’ form and requires significant effort to transform into useful information for a PBC, but this is still be preferable to a year or more of data collection. Although essential for the BCA, SPS and developing the RFT, some of this process can be conducted in parallel with the initial BCA working on rough-order data and the performance-management regime refined just prior to RFT release. Even so, this may add up to three months to the process with adequate data and expertise.

The combination of the basic tendering requirements and data collection and analysis are illustrated in Figure 37.

152 Gumley, S., Defence and Industry Conference 2009 (transcript), 1 Jul 09.
If the task is to be directly (sole) sourced, due to limitations on industry capability or IP, then the changes of such contracts could be accelerated without the tender preparation and evaluation stages – the replacement contract could be cooperatively drafted and negotiated (assuming PBC can obtain improvements in a non-competitive environment). However, it may still be worth considering additional contracts to support subsystems where the cost can be reduced because competitive tension exists. These contracts could be prepared in parallel and subsequently removed from the principle contract if the existing contractor is not competitive in those areas.

**Existing Support Contracts not due for Renewal**

For existing support contracts, not due to be replaced, a decision to replace the content of the contract with a PBC framework while keeping the basic intent of the contract (eg, scope, duration, price-cap) needs to be based on potential benefits and the willingness by both parties, given the remaining contract duration. An appropriately modified BCA process would need to identify tangible cost benefits created by opportunities for process improvement, which would be enabled by the change to a PBC framework.

As a transfer of this nature must offers benefits to both parties, both would be involved in the BCA and framing the replacement contract terms and work descriptions. Transitioning from an existing contract, which is not near the end of its contract period, to a new PBC framework would be challenging and have pitfalls. However, if reductions in TCO and other reforms are included via the Defence Company ScoreCard, industry may provide willing volunteers, with selected contracts, in order to become industry leaders in the change process. Even if only one contract is nominated per major company, the nominated contracts should be those that the companies see as the most likely to benefit from transferring to a PBC. These would also be used for the learning experience of both the contractors and Commonwealth, as there would be a vested interest in making them work if the motivation included gaining industry leadership.

If the Commonwealth’s existing position is not weakened by opening up the contract, then this transfer approach may offer the fastest way to initiate PBC arrangements if the analysis, contract drafting and agreement could all be achieved in under a year.
Support Contracts linked to Current Acquisitions

For new support contracts, following on from acquisition contracts and yet to become operative, the opportunity to transition to a PBC may be feasible, but the approaches will vary depending on scale and access to quality data. If data is available from a comparable fielded system\(^{153}\) then that data may be used as the basis for defining performance measures and moving more directly to a fully implemented PBC solution. Significant changes to support contracts, started at combined effective dates, are often required for large developmental programs due to the lack of support information available prior to tender\(^{154}\). This update provides a window of opportunity to implement a changeover to a PBC, if shown to be viable through an initial BCA. The high-level flow of information from acquisition to support, and the most appropriate window in the schedule to redevelop the support contract (subject to available resources) is shown in Figure 38.

![Figure 38: Transfer from Acquisition to Support Contracts](image)

In many circumstances, particularly for complex systems with limited measured data, a process with intermediate phases to ‘transition-in’ a full PBC solution will be required. This could take the form of a phased contract (as discussed at [Reducing Costs when Starting Complex Support Contracts](#)) or a period of relief from calculating performance payments, as included in the ASD PBC framework (refer to section on [Aerospace Systems Division Approach](#)). A phased introduction of the support PBC, in order to gather and validate data, can also suit the staged delivery of mission systems and equipment from the production line.

Materiel Systems already being acquired may have used a combined acquisition and support tender process. Although these support contracts could be renegotiated, one of the key conditions would be that the change does not diminish the value of the current position, negotiated for the Commonwealth, as obtained through the competitive joint-tender process.

**Common Issues**

Both existing and future support contracts provide opportunities to implement PBCs in pursuit of reform objectives, subject to a BCA and SPS for each support contract to identify the potential cost of change, benefits and risks. Transfer from existing arrangements to a PBC will be implemented differently in every case, so while some consistency would be beneficial the changeover process must be uniquely planned in every case.

The allocation of additional resources to contract development teams, or changes to the review and approval process could, in all cases, enable the schedule for changeover to be reduced.

\(^{153}\) There are stringent conditions of use, environment and technical design for a system to be considered comparable.

\(^{154}\) The mechanism was built into the unpublished ‘linkages module’, but the requirement for update will be inherent in any ASDEFCON (Support) contract following a developmental acquisition program.
Implementing PBCs in the projected timeframe is still dependent upon the broader requirements for a performance management framework identified in this paper. Requirements include the ability to perform the analysis, to justify and define an appropriate contracting strategy, the accessibility of suitable data, and the skills of individuals to develop a performance measurement regime that achieves the desired outcomes. An initial surge in training for the DMO, Defence Industry and DMO’s professional service providers may be necessary to gain momentum in the implementation of PBCs.

**Key Points:**

- Existing support contracts, due to be replaced, are candidates for conversion to PBCs, if there is sufficient time for the prerequisite analysis, drafting and tender processes needed for implementation.

- Existing support contracts not yet due for replacement, and new support contracts linked to acquisition contracts but not yet operative, could be converted to PBCs if mutual objectives and other conditions can be met.

- The conversion of existing support contracts, with some time remaining before scheduled renewal, may offer the early opportunities to implement reforms.

- All support contracts that are to adopt an effective performance-management regime, in the short or longer term, will remain dependent upon suitable system and process data, skills, a favourable business case and a suitable implementation strategy.
# Annex H: Acronyms and Abbreviations

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<td>Acquisition Category</td>
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