BAE SYSTEMS
INSPIRED WORK

Submission to the First Principles Review of Defence

Introduction

1. This paper uses the framework of through life capability management to present ideas from the perspective of the defence industry sector for reducing waste and inefficiency in the practices and processes of the Department of Defence.

2. The principal areas of concern for industry are detailed in the paragraphs below but are summarised as follows:

   a. Recognition that the Australian Defence industry sector is a Fundamental Input to Capability (FIC) that is vital for the ability of the ADF to field forces.

   b. The unwillingness of Defence to engage with industry to better understand the cost/benefit/risk profile of requirements that could lead to improved performance and/or substantially reduced acquisition and through life support costs.

   c. The cost of bidding for Defence contracts caused by excessive time on the part of Defence, use of prescriptive specifications and the lack of meaningful consultation to adequately define the requirement.

3. Many of the problems that hamper efficiency and effectiveness can be attributed to the lack of implementing a strategic industry policy that recognises the defence industry sector as an integral part of Defence capability that has important features for Australia's growth as a nation. The sector is typically portrayed as only being about jobs; this is not correct. More fundamentally it incorporates important long-term considerations of national security: sovereignty and the ability for independent action by the Government; the development and sustainment of technological knowledge and understanding; infrastructure; and the expertise that resides in the people. All of these factors take considerable to time to develop and if lost can be replaced only at great cost, as characterised by recent events in the shipbuilding industry.

Industry as a Fundamental Input to Capability (FIC)

4. After a series of efficiency and productivity reforms in the last two decades, the military Services are no longer able to provide organic deeper maintenance of major platforms and complex weapons systems. Instead, this function is now performed by Australian industry.

5. Except for arrangements made under Foreign Military Sales (FMS), and sometimes even with these, this also applies for acquisition of capability.

6. In other words, the Defence industry sector is an integral part of Defence capability – a Fundamental Input to Capability (FIC). For this to be successful there

must be much earlier engagement between Defence and industry; the establishment of a much closer relationship as a trusted partner; a better managed process; and public transparency.

Needs Analysis

7. Sponsor of Joint Capabilities. Poor integration of operational capabilities across the main war-fighting domains of land, sea and aerospace is a perennial problem. Joint Force Integration is mainly concerned with joint or enabling capabilities in the C^4ISREW domain that lack a Capability Manager. Instead, the VCDF is designated the Joint Capability Authority but lacks the authority and the resources of a Capability Manager to fulfil this role. A Capability Manager for these joint and enabling capabilities is an urgent requirement.

8. Early Engagement. Industry participation at the definition phase would lead to a deeper understanding of the operational requirements on the part of industry and a better appreciation of the industrial capability and commercial benefits on the part of Defence. Risks resulting in cost over-runs, delayed delivery or poor performance can be ameliorated or eliminated by early engagement with industry together with preliminary studies targeted at specific aspects. DSTO interaction with industry to present relevant technology trends and TTCP programs would assist in program risk reduction.

9. Alignment of R&D. Close engagement of industry and the DSTO to align in-country research and development would improve the transfer of intellectual property and technological expertise. In turn, this would enhance the development of an appropriate indigenous industrial capability at the high end of the technology spectrum.

Proposal Development

10. Tailored Acquisition Strategy. The acquisition strategy should be tailored to build on the Australian industrial base and to further develop it if perceived as involving a strategic industry capability. A high level of Australian industry participation should be an essential requirement of any acquisition strategy not a ‘nice to have’ or ‘tick the box’ exercise. As an advanced economy with a well-educated and highly-skilled workforce, there are few areas of military equipment/complex weapons systems that cannot be manufactured and produced in Australia. The only question concerning the role of Australian industry in any acquisition contract is cost and value for money (not the same thing) that will be mainly determined by economies of scale.

11. Global Supply Chains. Combat aircraft are one example of a complex weapons system that is beyond the scope of Australian industry and will be acquired from an overseas’ Original Equipment Manufacturer (OEM) or *via* Foreign Military Sales (FMS). Sovereignty considerations and operational requirements should always demand some level of in-service support of systems such as these by Australian industry. In this case, a condition of purchase must be access to intellectual property

and transfer of technology to enable Australian industry to perform this task. In addition, Australian industry should be guaranteed in the terms of purchase to provide systems or major sub-systems as a primary or second source supplier. Providing an advanced technology system in the global supply chain of a major complex weapons systems such as the F-35 greatly strengthens the economic viability of the defence industry sector while at the same time injecting new technology, sustaining capability, particularly concerning jobs and workforce expertise, and providing export income.

12. Programs *vice* Projects. A major opportunity for Defence to reduce risks and costs would be to adopt a program-based methodology in lieu of project-based. Implementation of an operational architecture (framework) to describe the operational concepts and requirements that can then be translated into a programmatic approach would almost certainly lead to better integrated capability, faster delivery and reduced costs.

13. Systems Options Trade-Offs. Failure to produce an operational architecture often means that there is no systems architecture to test and evaluate possible systems solutions to meet the operational requirement. A systems architecture allows a disciplined assessment of options to trade-off performance, cost, delivery schedule and other risks according to customer priority.

14. Preliminary Studies. Many problems resulting in cost over-runs, delayed delivery or poor performance can be ameliorated or eliminated by early engagement with industry together with preliminary studies targeted at specific aspects such as concept definition and risk reduction.

Request for Tender

15. Replacement *vice* MLU. There comes a point during the life cycle of a complex weapons system when greater economy is achieved by replacement of the platform rather than mid-life upgrade (MLU) and modernisation. The technology cycle of digital systems is very much faster than platforms and they will normally be replaced at relatively short intervals as each system become obsolete, difficult or expensive to maintain, or performance limited. Usually these systems can be replaced individually without a significant impost to availability. However, when many systems are allowed to become obsolete simultaneously or individual system replacement is delayed to give this result, the subsequent integration required will invariably result in significant loss of availability. This can be aggravated when platform systems also require modernisation or upgrade. At this point replacement of the complete weapons system should be carefully considered rather than a MLU. Regular replacement also plays into another requirement for continuous production and predictable workload (see paragraph 23).

16. Prime Systems Integrator. Significant savings will accrue from reducing the degree of project supervision and monitoring by the DMO. The situation of over-supervision has arisen because the DMO has adopted the role(s) of project director and/or prime systems integrator (PSI), for which it is patently ill-equipped to perform.

Instead, the RFT should specify outcomes required rather than methods/ways of these being achieved and seek a PSI that in turn can select best-of-breed sub-contractors to carry out specialist tasks.

Source Selection

17. Competition. Competition policy needs to be more carefully implemented than is presently the case. Competition is best applied for selection of the PSI after which a closer customer/contractor partnership arrangement will enable a more optimal solution, faster delivery and lower cost. Competition is particularly inappropriate when most or all of Australian industry capacity is required to deliver the capability required as is the case with naval ship building. Over time, consolidation and rationalisation of parts of the defence industry sector may occur or could be encouraged, or a 'Team Australia' approach adopted.

18. Strategic Industry Capabilities. Industry capabilities that are deemed to be strategic should be accorded greater weighting in source selection than is presently the case. Strategic industry capabilities should be prime candidates in the selection of systems or sub-systems in FMA or MOTS purchases of major weapons systems that are a pre-condition for acquisition by Australia.

19. Wasted Time. A major cost for industry that must be eventually transferred to the Commonwealth is the cost of building up and then maintaining the specialist team through the period between preparation of a bid and final award of a contract. Time seems to be treated as a free good by the DMO but the cost to industry is always substantial.

Contract Award

20. Tailoring of Contracts. Existing Commonwealth contracting regulations inhibit the ability to tailor contracts to deal with risk associated with integration, solution development, sub-contractor performance, access to intellectual property and a host of other unforeseen events. In contracting, one size does not fit all especially when there is preference for supporting Australian industry and sustaining an indigenous defence industry sector capability.

21. Performance Based Contracts. Except in unusual circumstances sustainment contracts should be based on performance in meeting operational, technical or commercial requirements.

Contract Execution

22. Contract Administration. As explain above (paragraph 16) the DMO is not now and is unlikely ever to be capable of project management and integration of complex systems. Reverting to contract administration by the DMO and transferring project management and system integration to the contractor would reduce the time and associated cost with the duplication of effort inherent in the present inefficient and time wasting oversight. Amongst other changes, and with appropriate guidelines

and regulations, this will require industry to be treated as a partner and not as a necessary evil.

23. Continuous Production. Creating and sustaining the workforce expertise, knowledge and skills including advanced manufacturing and production techniques for the Australian defence industry sector to be competitive in the global market requires continuous production with predictable workloads. This is not a one way street with the Commonwealth bearing the burden because predictable funding will provide the incentive for industry to invest in enhanced capability. The Commonwealth should further develop its thinking on how to enter into long term performance based agreements with industry that permit delivery of the capabilities needed by Defence. This thinking must necessarily involve industry.

Through Life Support/Sustainment

24. Long Term Sustainment Contracts. Sustainment contracts should be for longer terms than at present to provide the incentive and certainty for industry investment; particularly in people. Transparent accounting and realistic performance indicators provide the means for the Commonwealth to monitor the contract and for ensuring it continues to receive value for money. The contract should be re-tendered only in the case of performance failure and not to demonstrate some artificial competition construct - because the costs associated with this are eventually borne by the Commonwealth. Sustainment contracts of long-life platforms should involve DSTO advice and assistance on a continuing basis.