Procurement procedures for Defence capital projects

Department of Defence submission

Executive Summary

Defence procurements deliver equipment and capabilities to meet the national security requirements of government. The Department of Defence welcomes this inquiry and the opportunity to make a submission.

Defence procurement is complex. Defence must acquire leading edge capabilities and technologies to give our military and intelligence services an operational advantage. This invariably involves significant degrees of cost, capability and/or schedule risk not normally accepted by major companies, or found in most of the projects that they manage. Unlike commercial organisations, Defence must invest in developmental capability options. Many Defence projects are long term in nature with major capabilities taking many years to be introduced into service. Those capabilities may then go on to serve for twenty or thirty years, with numerous upgrades and additional capabilities added to keep pace with changing threats or requirements. These environmental factors dictate that some consequences of procurement decisions are not often felt until several years after they are taken, which can have an ongoing effect on Defence's ability to effectively deliver a particular capability outcome.

Much has been done and is being done to improve Defence procurement. Defence capability project procurement has been subject to substantial investigation and reform over the last decade, in particular through the Kinnaird (2003), Mortimer (2008) and Pappas (2009) Reviews. The Government has accepted and implemented the majority of the recommendations of these reviews.

Defence manages a large number of procurements including: over 230 approved major acquisition projects; over 100 minor projects; a wide range of non- acquisition procurements; around 100 major equipment fleets in service; and approximately 150 projects that have not yet been approved. As a result, the effects of reviews such as Kinnaird, Mortimer and Pappas, which primarily affect new projects, take some time to impact on the procurement system as a whole.

On budget, over schedule. The Defence major capability equipment procurement system is delivering within 0.7% of the overall budget (2009-10 Major Projects Report capabilities). More effort is needed however, to bring major procurements in on schedule. The overall slippage for projects listed in the 2009-10 Major Projects Report was 30 per cent, however this rate does compare favourably with our allies.

Further reform. Over the next decade, Defence will engage in a substantial procurement program to meet the requirements of the 2009 White Paper. At the same time it will undertake a comprehensive Strategic Reform Program. The Government has also announced that it will bring forward a series of further reforms to the procurement process in Defence to improve rigour and accountability.

Background: The Defence Procurement Environment

Leading-edge capabilities and comprehensive support services are essential to give Australia an advantage in military operations and intelligence activities.

In assessing Defence procurement, it is important to understand: the scale of the procurement program, both in terms of acquisition and in the subsequent sustainment (through-life support) phases; the level of complexity (which translates into risk); and the nature of the Defence procurement marketplace.

Scale. In 2010-11 Defence will spend over $10 billion acquiring and sustaining military equipment and services. The capital and sustainment budgets are of roughly similar proportions. There are over 230 approved major acquisition projects underway, over 100 minor projects and a wide range of other procurements associated with supporting services and infrastructure. Defence also maintains and sustains around 100 major equipment fleets. Defence is preparing approximately 150 not yet approved projects for consideration by government.

The most complex procurements undertaken in Defence are major capability acquisitions. Since the 2009 White Paper and until the end of February 2011, the Government approved a total of $7.3 billion of major projects, ranging across First, Second and Other Pass approvals.

Complexity of Projects. Defence projects are inherently complex because of their scale and the levels of new or emergent technology employed. Complexity is a key factor in determining risk and the risk mitigation measures to be applied.

The Helmsman Institute[1] (Helmsman) was engaged to assess the complexity of major Defence acquisitions. Helmsman evaluated 32 projects and delivered its final report in December 2009. It found that the Defence Materiel Organisation (DMO) managed projects of greater complexity than other Australian organisations and that it managed more of those complex projects at any one time compared to other organisations - see Figure 1.

[1] Figure 1 compares the probability distribution between the Defence projects reviewed and similar projects reviewed in other sectors. Project complexity for other organisations is around 5.1 on the Helmsman scale, (or "Normal" for large organisations). The reviewed Defence projects average 6.3, which is the level of the most "Complex" projects normally undertaken by large Australian Organisations.

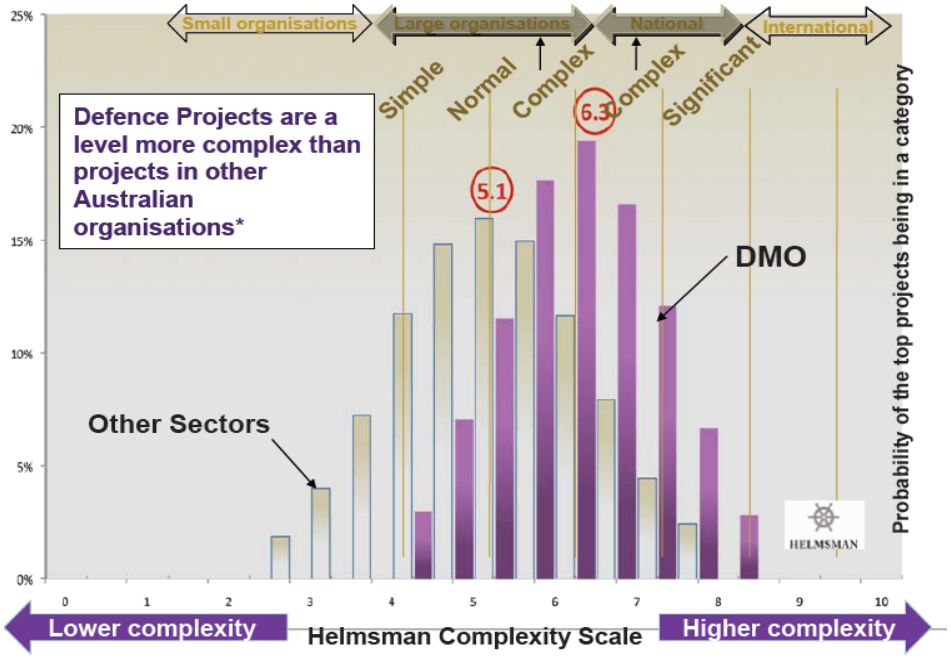


Figure 1: Comparison of Defence project complexity with other organisations in Australia

Figure 2 shows the relative complexity of key major equipment procurements examined against the average for the organisations in Helmsman's database.

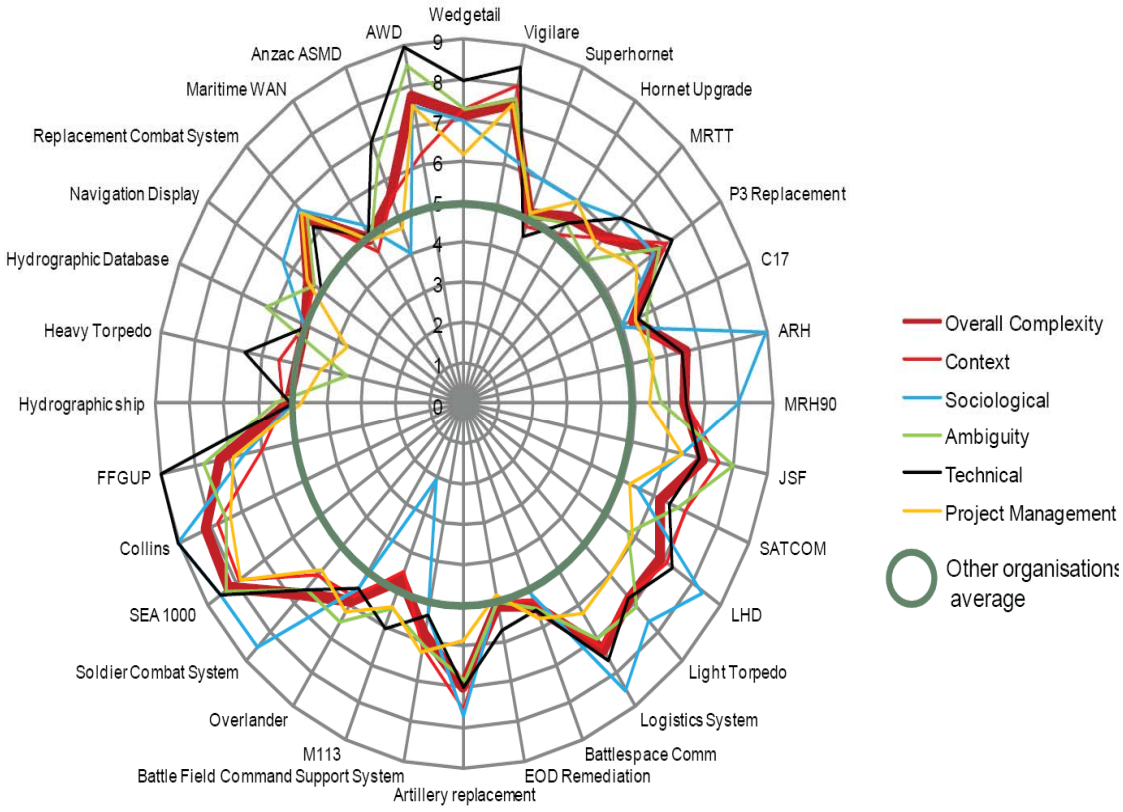


Figure 2: Complexity scope for specific projects

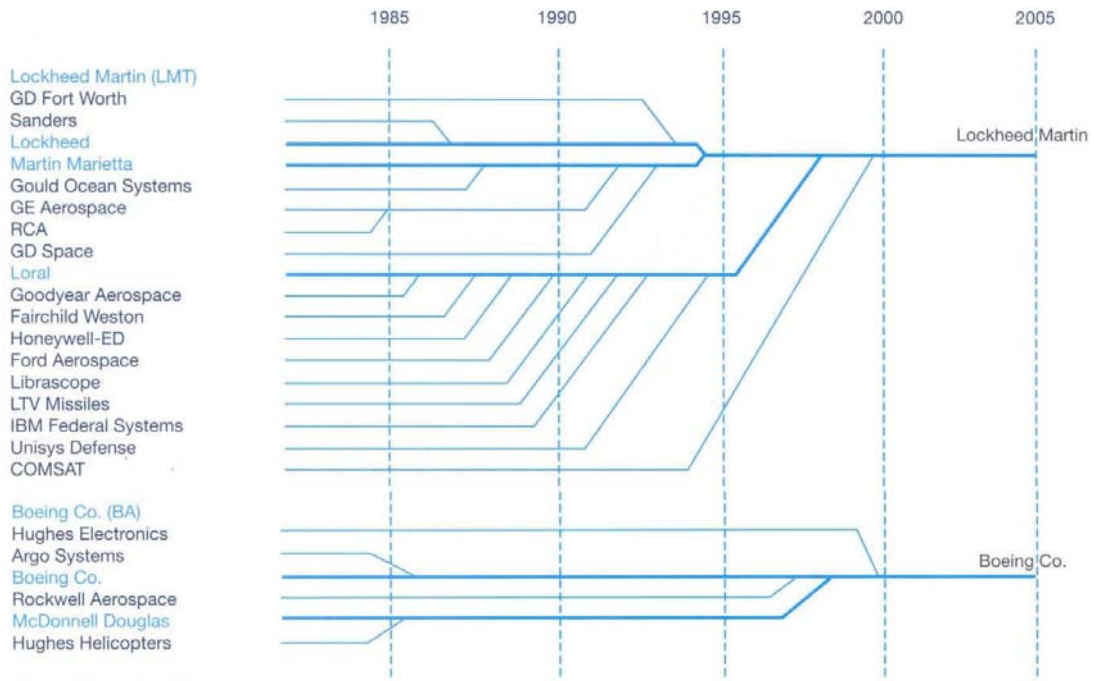
This level of complexity has a range of implications:

- Compared to other activities in government, there is a greater need for oversight and highly detailed pre and post acquisition analysis and consideration of procurements, including substantial internal quality assurance processes which include a range of internal and external committees;
- The chances of failure or substantial acquisition difficulty are higher than for most other areas of government activity; and
- The workforce has to be professional, highly skilled and experienced in Defence acquisitions.

The level of complexity does not diminish after equipment enters service. Defence purchases assets with the expectation that many of them will be in use for decades. Over this time Defence equipment will need to be upgraded to meet emergent requirements or threats. This requires further complex procurement and systems integration activities. Further work by the Helmsman Institute in 2010 on sustainment complexity also concluded that sustainment of Defence vehicle and other fleets is more complex than non-Defence fleets. Diagrammatic representation of this complexity is at Attachment A.

The Marketplace for Defence Equipment: Defence procurement takes place in a constrained marketplace. This marketplace is changing in important ways that will impact future equipment acquisitions. Australia's major allies are increasingly developing single lines of development for complex platforms through spiral acquisition processes that require very early Australian engagement if our specific needs are to be taken into account. Highly complex and integrated weapons systems such as the F-35 fighter aircraft cannot be purchased and then developed to suit Australian needs within reasonable cost or risk parameters and there is no other suitable fifth generation fighter to choose from. While providing opportunities for Defence to be involved in the early stages of major new allied capabilities, this type of international acquisition process limits choice, and limits our ability to influence cost and the timing of equipment delivery.

This situation has been compounded by substantial consolidation in the global defence industrial base since the Cold War. This is illustrated by the concentration in the US Defense aerospace industry see Figure 3 below:



As the majority of Australian defence companies are subsidiaries of major foreign Defence suppliers, Australia's defence industrial base is following this international trend.

As noted in the 2009 Defence White Paper, Defence is seeking to drive down the costs of ownership of military capability. This will include where appropriate, a focus on military- and commercial-off-the shelf equipment. However, while off the shelf equipment minimises procurement risk, such equipment will not always meet the needed long-term capability requirement. Further it may not readily integrate with other capabilities in service, is not always necessarily available, may not suit Australia's geographic and strategic circumstances and/or may not be available in a timeframe that allows Australia to avoid gaps in its Defence capability.

Australia's Defence industry plays an important role in delivering and sustaining Australian Defence Force (ADF) capability. At present, Australia's defence industry employs approximately 29,000 people and supplies in excess of $5 billion worth of materiel and services to Defence each year. Industrial capacity needs to be planned, built, managed and continually re-shaped – and industry must plan to ensure it can play its part. The Defence Industry Policy Statement released in July 2010, and the regularly updated public Defence Capability Plan, are important in outlining to Australian industry Defence's requirements and expectations and helping in that re-shaping. In addition, Defence releases substantial amounts of other public information about its reform agenda and its procurement requirements. Further details are at Attachment C.

The Defence Industry Policy Statement noted the need for a strong, successful and skilled defence industry if Defence is to deliver the ADF that Australia needs for the future. Local industry needs to be competitive and efficient. The Government's defence industry policy is based on four principles:

- setting clear investment priorities;
- establishing a stronger Defence - industry relationship;
- seeking opportunities for growth; and
- building skills, innovation and productivity.

The global marketplace for defence equipment is dynamic and occasionally procurement opportunities emerge that provide value for money and appropriate capability enhancement opportunities that meet our strategic needs. In those circumstances, Defence will act to secure such capabilities. Examples of this include the recent purchase of a Bay Class amphibious ship from the United Kingdom and the ordering of a 5th C-17A Globemaster III heavy lift aircraft from the United States.

Major Defence Equipment Procurement Reviews and Reforms

There have been a number of reviews of Defence procurement and its elements over the past three decades. They include:

- The Joint Committee of Public Accounts (the forerunner to the Joint Committee of Public Accounts and Audit) Report 243 Review of Defence Project Management [1986];
- The Defence Efficiency Review (McIntosh Review) [1997];
- The Auditor General's Audit Report No 13 1999-2000 Management of Major Equipment Acquisition Projects [1999];
- The Inspector General Division review of Major Capital Equipment Projects [2001];
- The Foreign Affairs, Defence and Trade References Committee Report on the inquiry into materiel acquisition and management in Defence [2003];
- The Defence Procurement Review (Kinnaird Review) [2003];
- The Defence Procurement and Sustainment Review (Mortimer Review) [2008];
- Audit of the Defence Budget (Pappas Review) [2009]; and
- The ANAO Report No 48 - Planning and Approval of Major Capital Equipment Projects [2009].

The Kinnaird Review investigated systemic failures that had caused delay and cost increases in major Defence acquisition projects. The key actions flowing from the Government's adoption of the review's recommendations included:

- Strengthening the capability development and assessment process by forming the Capability Development Group (CDG). The CDG is responsible for prioritising all of Defence's major procurements in line with strategic guidance and ensuring that project proposals put to Government have reliable capability, cost, risk and schedule estimates.
- Strengthening the current two-pass approval system to facilitate early engagement with industry and provide a better basis for project scope and cost estimates. The early involvement of the Defence Science and Technology Organisation (DSTO) and the Department of Finance and Deregulation (DOFD) was mandated to provide external evaluation and verification of project proposals.
- Establishing additional Defence project analysis capability in DOFD to provide an additional, external quality assurance role for the Government.
- Establishing the DMO as a prescribed agency under the *Financial Management and Accountability Act* and giving the Chief Executive Officer of the Defence Materiel Organisation (CEO DMO) greater scope to make improvements to the delivery of Defence projects and improve the management of the DMO.
- Establishing the Defence Procurement Advisory Board to support the establishment of the DMO and to report to the Ministers for Defence and Finance

and Deregulation at regular intervals on the implementation of the Defence Procurement Review recommendations.

The Mortimer Review made 46 recommendations. The Government endorsed the majority of the recommendations along with a 20 point plan to improve the way Defence develops, acquires and sustains military capability. Key recommendations included:

- ensuring Defence provides the best available information to Government;
- clearer guidance on the different responsibilities and accountabilities of the CDG, the DMO and the Capability Managers early in the acquisition process;
- a more active and stronger role for Capability Managers throughout the acquisition process;
- improving the commercial discipline in procurement and sustainment processes through better estimation, disciplined scope management and performance measurement; and
- ensuring that any move beyond the requirements of an off-the-shelf solution are based on a rigorous cost-benefit analysis.

From May 2008 to February 2009, Mr George Pappas led an independent Audit of the Defence Budget (Pappas Review), undertaken in parallel with the preparation of the 2009 White Paper. The Pappas Review recommended fundamental reforms to make Defence more accountable, transparent and efficient. These included reforms to: Defence's annual budget; develop a funding model that reflected Defence cost drivers; and improve the management of funding for acquiring and sustaining capability. It also included a number of recommendations to improve the financial management of Defence. The review also made a number of recommendations concerning the major procurement process including improving:

- the link between strategy and capability;
- the quality of documentation, cost estimation and management of technical risk issues;
- the skill base;
- business processes and planning; and
- consistency of approach across Defence to capability planning, estimating and forecasting.

Government accepted most of the Pappas recommendations, which are being delivered through the Strategic Reform Program (SRP).

The SRP is delivering reform initiatives through a number of reform 'streams' that are outlined at Attachment B. The SRP incorporated the Mortimer Review reforms as one of the streams. SRP reforms target all stages of the capability life cycle and are designed to enhance alignment between strategic planning and capability development. The SRP also contains recommendations to improve the procurement process and increase effectiveness and efficiency in the maintenance of defence capability. Reform streams that will contribute to these objectives are the Strategic Planning, Capability Development, Mortimer, and Smart Sustainment streams.

Reform Outcomes

There have been substantial benefits from the reforms introduced since 2000. These improvements include:

- Better capability cost and risk estimates presented to Government through improvements in the capability development and assessment process before Second Pass approval. In particular, there have been improvements in the quality of cost information provided by Defence, enhancement of the skills base and an enhanced commercial focus.
- Better project delivery. A random sample of pre-Kinnaird major projects 1992-2004 has been assessed against all post-Kinnaird major projects currently underway. The analysis demonstrated that:
  - in relation to cost, projects after Second Pass approval continue, on average, to be delivered under budget, noting that reviews continue to identify that this is not the main issue in delivery; and
  - in relation to schedule, the data demonstrates an improvement in post-Kinnaird projects. While this means that some projects are still suffering, or likely to suffer, schedule delays, these delays will be significantly less for post-Kinnaird projects. Clearly the data on post-Kinnaird projects includes many that are still open, meaning that delays can occur in the future. This has been taken into account in the analysis. The results of the analysis are depicted in Figures 4 – 9 below.

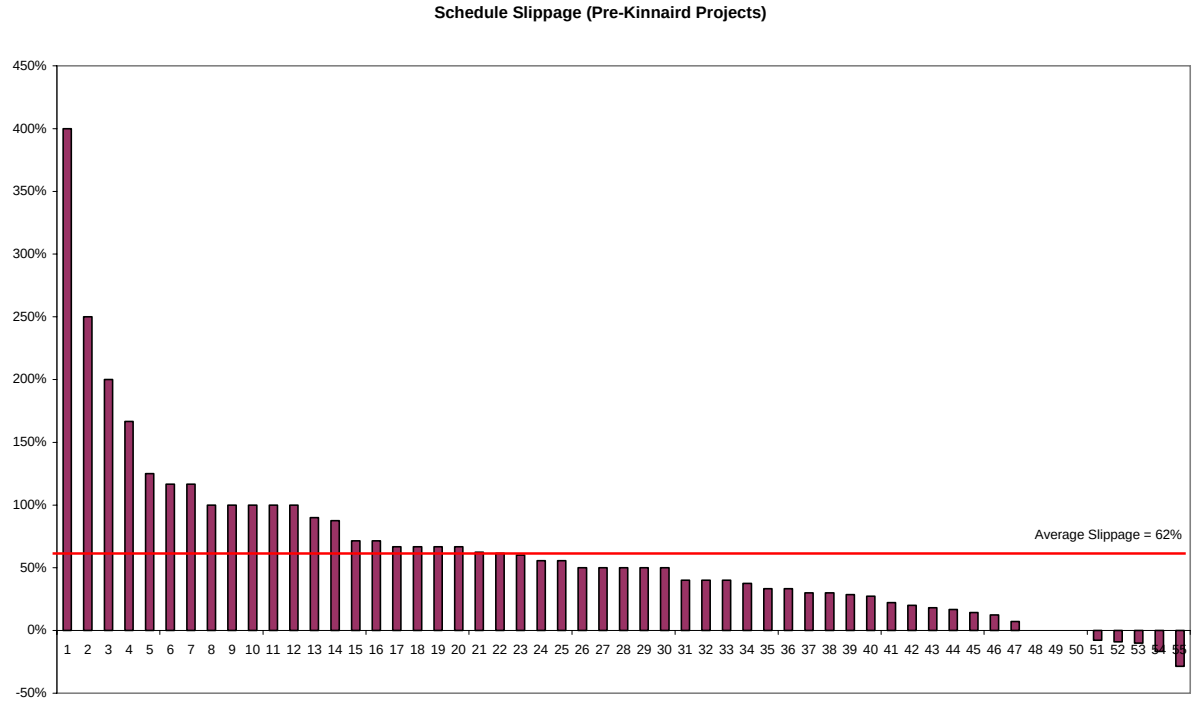


Fig 4: Slippage rates for pre-Kinnaird Projects

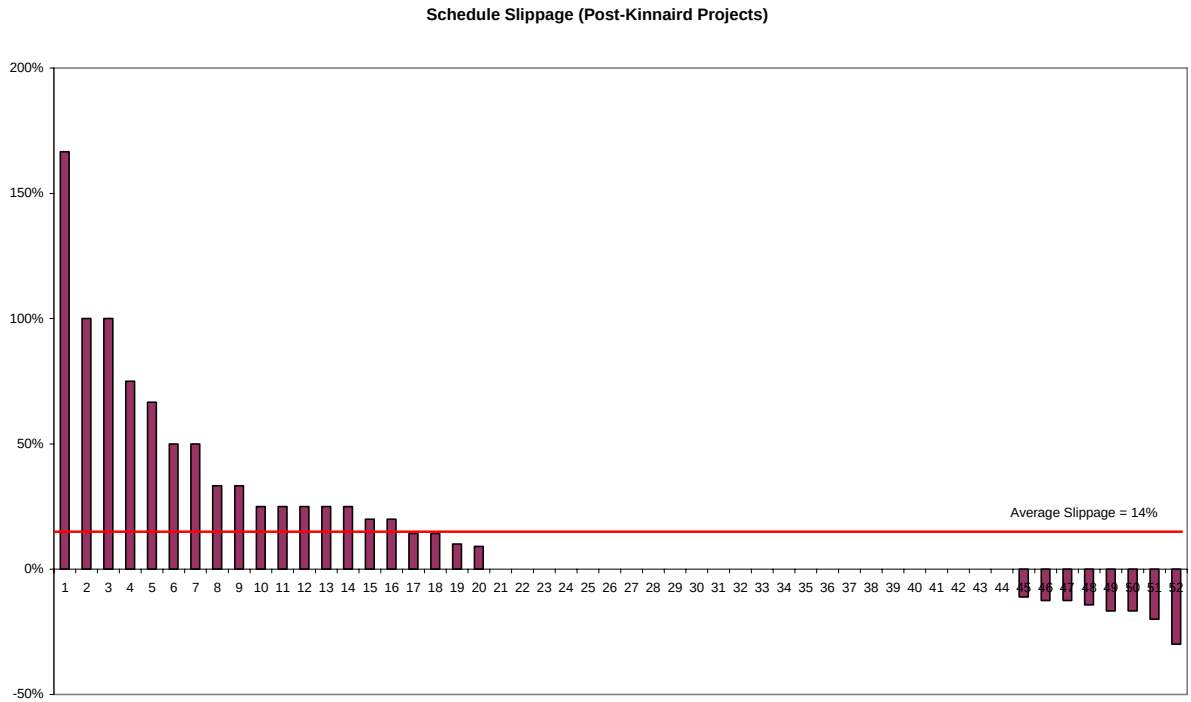


Fig 5: Slippage rates for post-Kinnaird Projects

In relation to capability, there is an increase in the number of projects where project managers expect to deliver the full required capability (an increase from 77 percent to 86 percent). The results of this analysis are depicted in Figures 6 and 7 below.

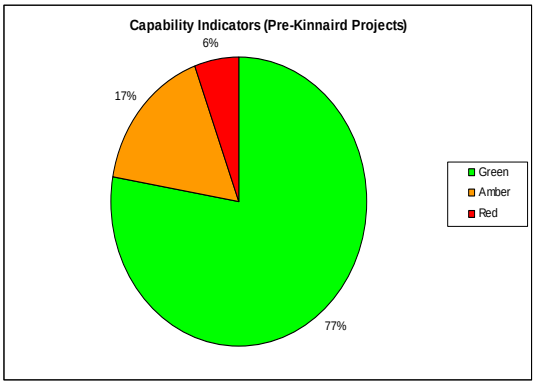


Fig 6: Forecast Achievement of Capability pre-Kin Projects

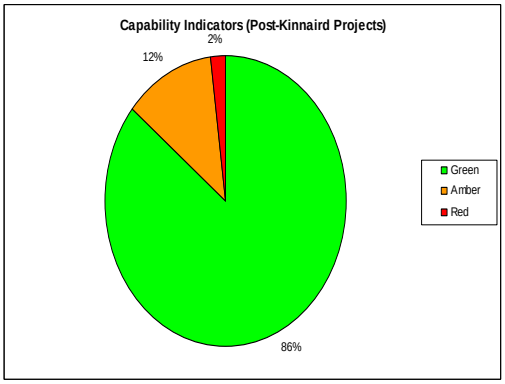


Fig 7: Forecast Achievement of Capability post-Kin Projects

Further analysis of projects pre- and post-Kinnaird demonstrates significant differences between pre-2000 (Fig 8) and post-2000 (Fig 9) data.

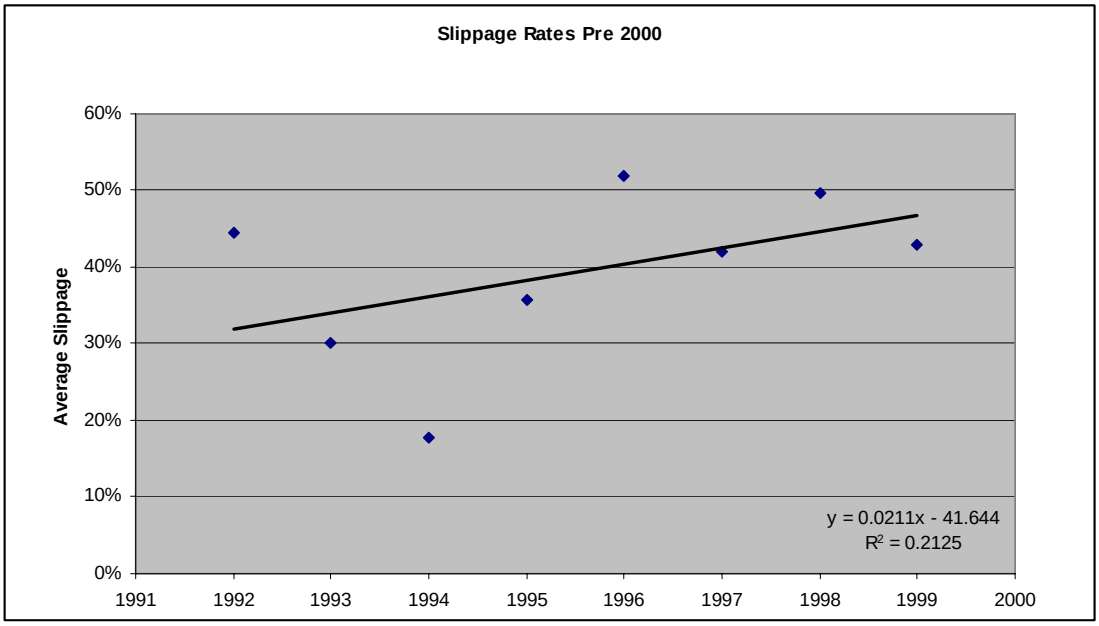


Fig 8: Average slippage rates of projects approved between 1992 and 2000

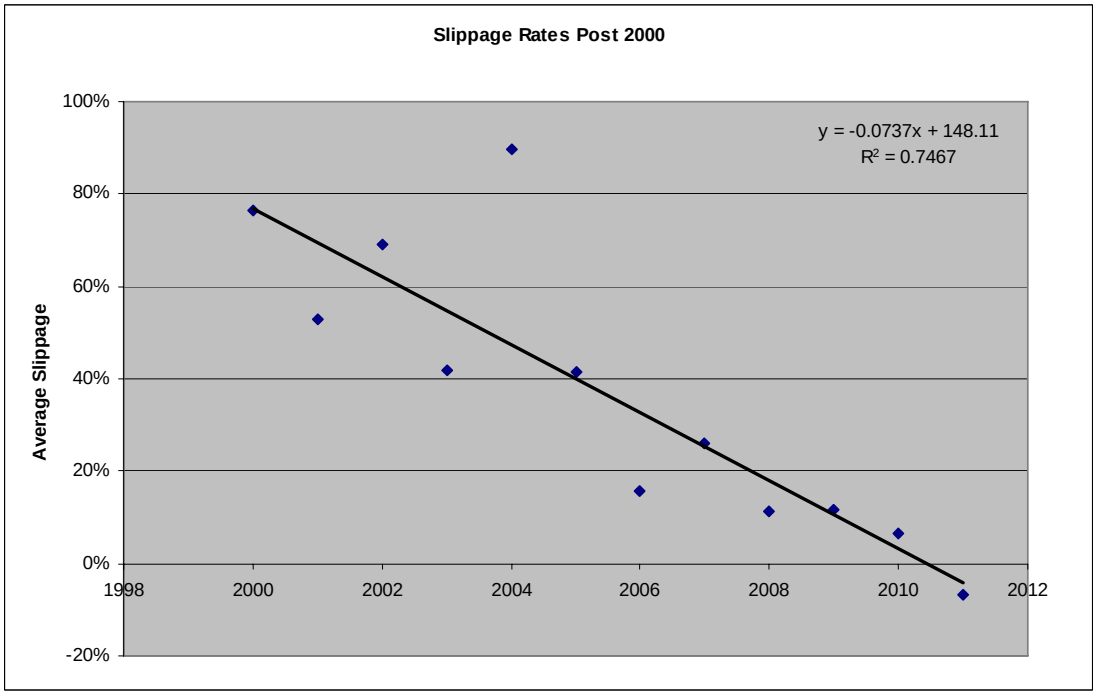


Fig 9. Average slippage rates of projects approved from 2000

Overall, there has been a continuing improvement in schedule performance in projects managed by the DMO since 2000, steadily decreasing from about 70 percent delay to around 20% in the past few years. Clearly, the most recent projects have not had sufficient time for all potential slippage to be realised but at this point the correlation of the data remains strong. Projects will still suffer schedule delay; however we expect this delay to be less in post-Kinnaird projects.

Future Reform

In December 2009, Dr Rufus Black was commissioned by the Secretary and the Chief of the Defence Force to conduct a review into accountability and governance in the Defence Department (the Black Review). The Black Review considered Defence's accountability framework from a whole-of-Defence perspective and considered the efficiency and effectiveness of Defence's governance and accountability framework and the associated decision making arrangements. The Black Review did not consider ADF chain-of-command arrangements. Dr Black presented his final report to the Secretary and Chief of the Defence Force in early 2011 and the government is now considering the implications of the findings of this report.

Ongoing Reform to Defence Procurement

Defence is continuing to implement a number of major reforms to procurement.

Reforms to Improve Procurements at an Early Stage

A better understanding of capability projects at the earliest stages of the procurement development process is essential to reducing risks at later stages of the cycle. A range of initiatives are underway to ensure the right decisions are made at the earliest stage of project development:

- implementation of the five-year strategic planning process is underway to provide annual planning guidance updates agreed by government;
- CDG is actively improving the accuracy of Defence Capability Plan and Net Personnel and Operating Costs (NPOC) forecasts including capturing the cost of current capabilities to assist with future force planning;
- CDG is developing standardised costing methodologies and processes including cost growth rate assumptions;
- the Force Structure Development Directorate in the Strategy Group will help ensure the implementation of the Force Structure Review (FSR). This review underpinned the 2009 Defence White Paper and FSRs will be a normal part of the process to underpin Defence White Papers;
- the CEO DMO provides independent advice to the Defence Ministers and the Cabinet on the cost, schedule and other commercial aspects of military equipment procurements in each capability development Cabinet submission; and
- A range of other reforms to process are incorporated into new editions of the Defence Capability Development Handbook (details of which are at Attachment D).

Reforms to Improve Project Management

Defence is also taking a number of steps to improve the management of procurements across the department:

- consistent business and management processes across Defence will facilitate the understanding of costs and risks that can be applied to help manage approved projects;
- Capability Managers are now co-signatories with CDG of the DMO's Material Acquisition Agreements (MAA) - this reinforces their acceptance of the equipment being acquired for their use;
- Project Charters are developed for managers of complex and demanding projects to provide individual accountability for project delivery; and
- the introduction and ongoing development of the Australian Defence Contracting suite of templates has increased flexibility since the previous Defence Purchasing (DEFPUR 101) guidelines. Defence has been working in consultation with

industry to reduce costs driven by excessive data requirements in tenders and contracts.

Reforms to Improve the Management of Existing Capabilities

Defence has recognised and taken steps to remediate and improve the management of existing capabilities, particularly in relation to in-service equipment. The key reforms underway include:

- improving the performance indicators in customer-supplier agreements known as Material Sustainment Agreements (MSAs); and
- as part of the SRP's Smart Sustainment Reform stream, Defence is partnering with industry in the application of improved maintenance and inventory management techniques that will deliver the same or improved levels of capability at a lower cost. Demand management and sourcing of clothing, explosive ordnance and fuel will also be enhanced.

Reforms to Remediate Existing Projects - Projects of Concern

The Projects of Concern management processes were introduced in 2008. A project or a sustainment activity may be listed as a Project of Concern if it has significant problems relating to schedule, cost, scope, business relationships, stakeholder interactions or risk. Two projects of concern that date from the mid-1990s - Watercraft and Seasprite Helicopters - have been cancelled, while five projects have been remediated and returned to normal management regimes.

Common causes of poor project performance noted from past and current Projects of Concern are:

- unachievable expectations in terms of technology, performance or schedule;
- scope changes;
- ineffective Defence stakeholder engagement and interaction; and
- challenging commercial or business relations.

Successful remediation of a project of concern is achieved through senior management support from both Defence and the contractor combined with a collaborative approach to identification and resolution of critical issues. The most fundamental lesson from the Projects of Concern process is that fixing problems requires change to project management: the tools, techniques and methods previously used on the project enabled the major issue to occur and their continued application is unlikely to resolve that issue.

All projects that are currently on or were on the Projects of Concern list were approved either pre-Kinnaird or during the transition post-Kinnaird. None have been subject to the full two-pass process implemented since the Kinnaird Review. The current list of projects of concern is at Attachment E.

The Defence Major Capability Procurement Process

The Defence major capability procurement process sits within a comprehensive force development process. This process links strategic policy to individual equipment purchases, prioritises capabilities across Defence and ensures that capabilities are interoperable in a joint environment as outlined below.

- Defence White Papers outline the strategic interests and the priorities of Government, which in turn provide broad direction of Defence policy and tasks for the ADF. The 2009 White Paper also outlined a five year cycle of review, which included a Force Structure Review in the fourth year of this cycle as well as an independent audit of the Defence enterprise.
- A FSR underpins the White Paper. The FSR aims to strengthen the link between strategic guidance, force development and capability decisions.
- The FSR determines the capability needs that become projects within the Defence Capability Plan (DCP). In turn, the DCP provides a costed and scheduled plan for major capabilities identified in the White Paper and any that emerge as necessary between White Papers (the public DCP is updated six-monthly).
- A Forward Work Program, with a near term 12 month view and a broader 48 month view sets out how CDG will bring specific capabilities forward for internal and government consideration. The status of the Forward Work Program is reviewed on a weekly basis.
- A rigorous series of internal quality assurance processes and committees, working groups, stakeholder groups and gate reviews examine each project's capability, cost, schedule and risks in detail to ensure that each project is positioned to deliver as required.
- Government considers major projects through the first and second pass stages and as necessary thereafter.
- Defence reviews its performance in its annual report cycle.

The 2009 White Paper commenced a five yearly cycle of White Paper development for Defence. The processes and assumptions underpinning the 2009 White Paper will be subject to detailed analysis and as necessary adjustment prior to the commencement of the next White Paper. Further details of how Defence categorises and manages individual projects are outlined at Attachment F and a detailed flow chart of how a major capability progresses through the Requirements Phase is outlined at Attachment G.

The Operations of CDG

CDG develops and provides quality assurance for future Defence capabilities for the consideration of Government. In particular, the work of the Group focuses primarily on Defence's Major Capital Expenditure investment program and on the requirements phase of the capability life cycle. The CDG works very closely with the individual Services, the DMO and the intelligence community to ensure that identified needs can be best met through proposed acquisitions.

Defence Procurement Quality Assurance Processes

To confirm options for Government consideration at First or Second Pass, Defence projects must pass through a number of internal quality assurance processes. These processes, which include internal committees, assess and test advice from Capability Managers and Defence Groups. The quality assurance processes ensure that a robust and compelling case can be developed for capability proposals before they are put to Government for consideration at First and Second Pass. In doing so, Defence stakeholder views are drawn together to ensure critical interdependencies are acknowledged and addressed.

Capabilities can take many years to progress from initial requirements consideration to actual purchase. This is because Defence identifies potential new requirements, replacements or upgrades to in-service capabilities many years in advance of a requirement needing to be met or an extant capability reaching its life-of-type.

Complex Project: SEA 4000 The Air Warfare Destroyer is a project worth over $8 billion. It took around six years to develop the proposal through various Defence and Government processes. The project's contract has in excess of 16,000 individual specifications being managed down to the sub-system level, with each ship made up of 31 blocks fabricated at three shipyards, with the construction of each ship requiring 51 kilometres of piping, 427 kilometres of electrical cable, 4,700 tonnes of steel, 138,000 litres of paint, 4,700 mechanical valves and 1.5 million fasteners. Details of these and other requirements are examined in detail through the Defence committee processes to ensure the advice to Government has had sufficient scrutiny to justify the requested expenditure.

Further selected examples of the progression of projects through Defence quality assurance processes and government considerations are at Attachment H.

The major pre-approval quality assurance considerations are as follows:

a. **Options Review Committee (ORC) -** meets early in the Requirements Phase to provide direction on the options to be developed for First Pass consideration. Where necessary, this is also the stage where any tailoring of the standard two-pass process and requirements for supporting analysis and documentation is considered and internally approved. The ORC allows for early Defence stakeholder involvement in shaping the direction for options that will be considered by Government and also allow for identifying any specific capability issues. In considering the options to be progressed to First Pass consideration, the ORC also looks at the opportunities for off-the-shelf purchases that would aid in minimising cost, schedule and risks. The ORC also considers the overall anticipated affordability of options that are proposed to be developed to ensure only viable, affordable options are brought forward to government.

b. **Capability Development Board (CDB) -** undertakes a rigorous and detailed review of the complete set of capability development documentation to underpin Defence's submission to government. The CDB's review considers fully developed options, with a focus on the capability required, cost, schedule and risk. Once endorsed by the CDB, a proposal is ready for consideration by the Defence

Capability Committee (DCC) or Defence Capability and Investment Committee (DCIC).

c. **DCC.** The DCC reviews the capability proposal and associated business cases to provide assurance that the proposal will provide the capability within cost, schedule, capability parameters and as agreed by the Government in the DCP. Proposals approved by this committee form the basis of a Cabinet Submission or Ministerial Submission for the Secretary and Chief of Defence Force to submit to Government. In response to a series of reforms, future DCCs are proposed to consider the draft Cabinet Submissions, thereby allowing more time for the resolution of all issues before the Secretary and CDF forward the proposed Cabinet Submission to the Minister.

d. **DCIC -** which is chaired by the Secretary, allows the Secretary and the CDF to review projects of significant strategic imperative (including projects of concern) and develops the management strategy for those projects. The DCIC also assess the overall affordability and achievability of the major investment program and has responsibility for overall program management (in particular the DCP).

In exceptional circumstances, the government may approve an accelerated or rapid acquisition. These acquisitions are requested when a capability is to be acquired in a short timeframe – particularly in support of operations or when an unexpected market opportunity emerges that will meet a particular Defence requirement. In these cases, there is a reduced documentation and formal committee clearing requirement. Normally, an accelerated acquisition would seek to acquire a system directly off the shelf. Examples of accelerated acquisitions include the fifth C-17, Largs Bay and Abrams Tank.

Defence Procurement Challenges

Defence faces a number of major challenges in meeting its procurement and capability development requirements. Principal among these are: the challenges of delivering the full range of capabilities identified in the 2009 White Paper; the amount of time taken during the major procurement process; and cost and schedule management.

Meeting the Procurement Needs of the 2009 White Paper

The 2009 Defence White Paper outlined strategic priorities to 2030 including deterring and defeating armed attacks on Australia, contributing to stability in the South Pacific and East Timor and contributing to military contingencies in the Asia-Pacific region and the rest of the world.

As is evident in the White Paper, the Force Structure Review found that the ADF needed to become a more potent force in certain areas. These areas include undersea warfare, anti-submarine warfare, surface maritime warfare, air superiority, strategic strike, Special Forces, Intelligence, Surveillance and Reconnaissance and cyber warfare. The major new direction provided by the White Paper was enhancing Defence's maritime capabilities by replacing the Collins class submarines and the Anzac class frigates and enhancing Defence's capability for offshore maritime warfare, border projection and mine countermeasures. All these capabilities are at the higher end of the cost/risk spectrum.

The implementation of Force 2030, a 20 year program, is a significant task and will require the ongoing focus and effort of Government, Defence and defence industry. Overall, because of scale, cost and the long timeframes, the risks associated with the achievement of Force 2030 are significant. These risks will reduce over time as technologies mature and requirements are refined.

The timeline for the achievement of individual components of Force 2030 is subject to a number of factors, both external and internal.

- Force 2030 is an ambitious program.
- There is competition within the DCP for resources for operational projects at a time of high operational activity.
- Delivery of Force 2030 requires progressing approval of a large number of projects complex in their own right but made more complex due to interdependencies between them and in an environment with changing interoperability and certification requirements.
- Reform of enabling functions necessary to support Force 2030 and the resultant funds freed up is progressing but the most substantial reforms are yet to be achieved.
- Market forces and opportunities and the capacity of the marketplace to cope with constructing the most substantial capability objects need to be taken into account.

Details of capability approvals given by the Government since the White Paper are at Attachment I. In the forthcoming FSR Defence will examine closely the forward program to ensure it has the capacity to prepare and deliver major projects.

The Time Taken to Progress Major Capabilities

Large, complex proposals take time, regardless of whether they are in the public or private sector or in the Defence or non-Defence part of the economy. They also involve a lot of people, have multiple stakeholders and need professional input from a wide variety of players. First pass to second pass approval processes take on average over two years as illustrated at Figure 10 (note that this is not the time from entry into the DCP to final approval which can be considerably longer):

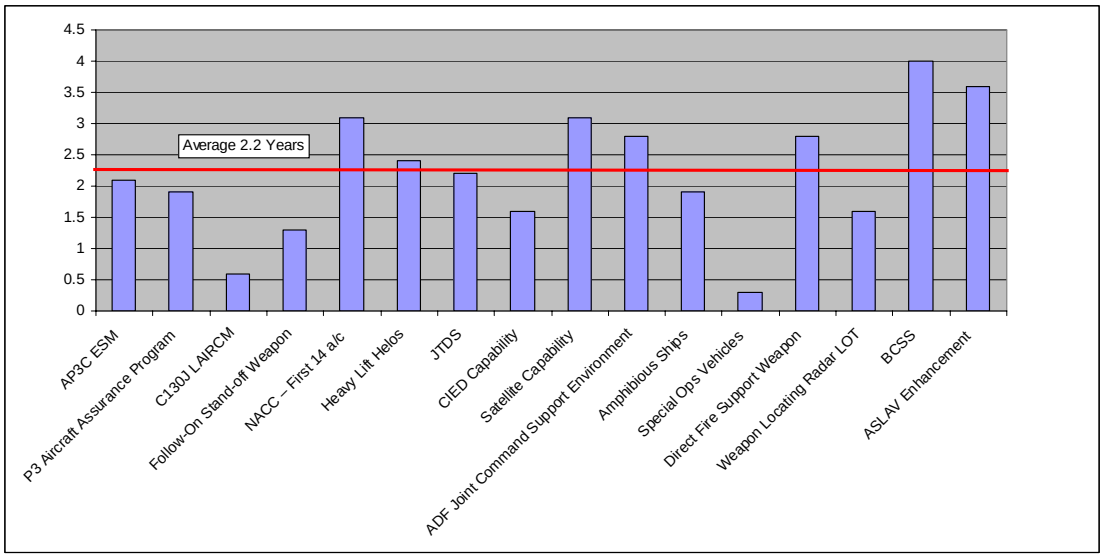


Figure 10: Time from First to Second Pass

There are a number of reasons for this. After first pass, Defence builds a detailed acquisition strategy and specifications for the various options to be pursued. New technologies or capabilities may add additional time for project specification and test prior to second pass. Additionally, Defence usually seeks tender quality costs from major suppliers – such tenders can take a year or more to develop for a complex, major procurement and then further time to be evaluated in detail through Defence's quality assurance processes. Both the Kinnaird and Mortimer Reviews explained the importance of undertaking detailed analysis at the early stages of the acquisition process.

Once approved, Defence projects, by their nature, take years to deliver. For example, Figure 11 shows the duration of the current Major Project Review (MPR) projects. MPR projects have been under management for an average of eight years.

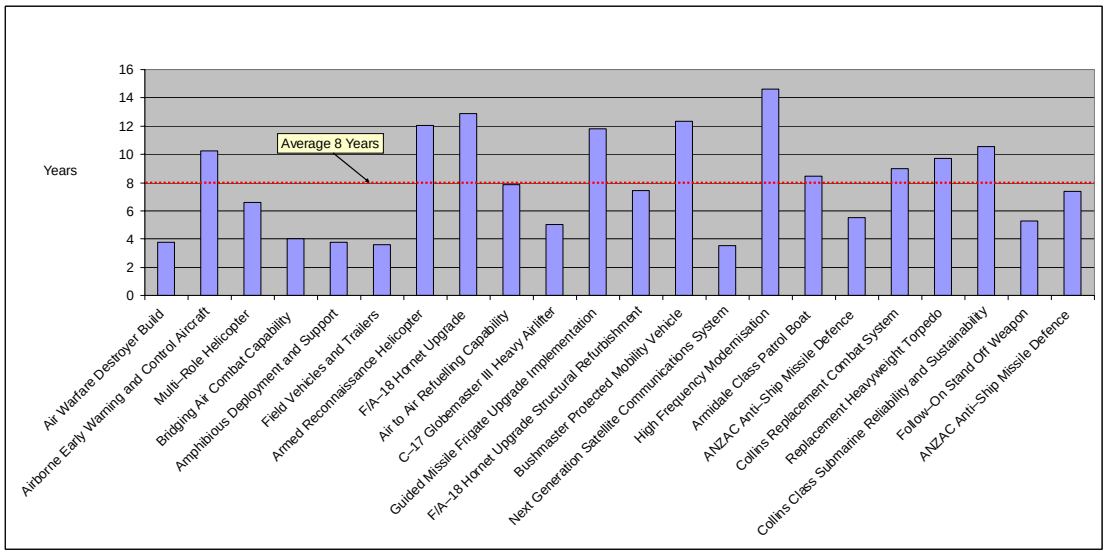


Figure 11: MPR Projects Time from Decision to Actual Delivery

Procurement Performance

Defence is establishing benchmarks to facilitate the analysis of procurement performance. External analysis of Defence's major capability projects most often focuses on cost and schedule overruns. An analysis of performance in these areas is below.

Analysis of the information contained in the 2009-10 Major Projects Report indicates that performance against programmed costs is overall good - while schedule performance is of concern.

Average Aggregate Cost Performance	Aggregate Schedule Performance (over project life)
-0.7%	1.30 (or 30%)

Table 2: Major Projects 2009-10 – Cost and schedule performance

Performance Against Cost Parameters: analysis of 260 projects, closed between 1997 and 2007, found that on average projects achieved delivery of the required capability using 98 percent of their budget, including contingency.

There is a perception that Defence projects commonly suffer from major cost blowouts. This perception principally develops from a misunderstanding of the impact of price and exchange as Defence is heavily exposed to overseas market and currency fluctuations. An example of how a misunderstanding on cost growth in Defence projects might occur is outlined below.

Variance Attribute	Total Budget Variation to 30 June 2009 $m	Net Budget Variation for 2009-10 $m	Total Budget Variation to 30 June 2010 $m
Price Indexation	5,378.2	533.5	5,911.7
Foreign Exchange	2,020.1	-3,898.0	-1,877.9
Scope Changes	4,820.1	0.0	4,820.1
Transfers	-698.5	0.0	-698.5
Budgetary Adjustments	-340.8	0.0	-340.8
Total	**11,179.1**	**-3,364.5**	**7,814.6**

Table 3: Details of major project cost variation 2009-10

Project budgets are managed in accordance with the budget rules provided by DOFD. As per DOFD's policy to retain purchasing power, projects in the past have been supplemented for movements in the non-Farm Gross Domestic Product (GDP) indicator ($5.9 billion). From 2009-10 this changed to a static index agreed with Defence for at least 10 years. Movements in foreign currency are governed by the Finance Management Guidance "Australian Government Foreign Exchange Risk Management Guidelines: September 2006", with the MPR reporting a decreased movement of -$1.9 billion. Other movements are governed by more specific rules between Defence, DOFD and Government.

Although the above results demonstrate overall good performance against cost post second pass, more can be done to improve cost estimation. The Pappas Review concluded there was a systemic underestimation of costs in Defence projects. A major stream of strategic reform is focussed on improving cost estimation and modelling.

Performance Against Schedule: the 2009-10 MPR reported a schedule delay of approximately 30 precent for the 21 selected post second pass projects. Analysis of the type of project against schedule slippage indicates that there is a correlation between those projects that are military off-the-shelf (MOTS), those that are MOTS but altered further for Australian use (Australianised MOTS), and those that are developmental.

Project Type	Average Schedule Variance as at 30.6.10 (against FOC) %	Range %
Developmental	66%	22 to 114%
Australianised MOTS	23%	0 to 73%
MOTS	-4%	-16 to 0%

Table 4: Details of Schedule Variance 2009-10

This data explains why Defence now leans toward off the shelf solutions in the procurement process where appropriate.

Defence has benchmarked its schedule performance against similar countries and the results are favourable. The table below measures the delay between forecast Initial Operating Capability (IOC) (at time of Main Gate (UK) or Milestone C (US) approval) and actual or current IOC.

	UK	US	AUS
Top projects/programs UK Top 14 projects US Top 39 programs AUS Top 21 projects	25.4%	29.3%	20.4%
Additional analysis UK 87 projects/ US Not Available AUS Additional 6 projects in the 2010-11 MPR	28%	NA	16.5%

Table 5: Comparison of Australian and US/UK schedule variance

Defence has examined the actual causes of in year budget underspends which demonstrate that the majority of schedule delay was caused by slower than forecast supply from industry in the acquisition stage as illustrated in Table 6.

Source of Schedule Slippage\Year	03/04	04/05	05/06	06/07	07/08	08/09
Foreign Industry Performance	40%	31%	35%	46%	30%	31%
Domestic Industry Performance	32%	35%	38%	28%	22%	51%
Defence	27%	33%	25%	21%	44%	7%
Savings (actual reductions in cost when compared to Estimate)	1%	0%	2%	5%	4%	11%

Table 6: Details of sources of schedule variance

Defence's project schedule performance has been noted in a number of reviews of the procurement process, including in the Pappas Review. As a result, there is a strong management focus on improving schedule performance across Defence.

Conclusion

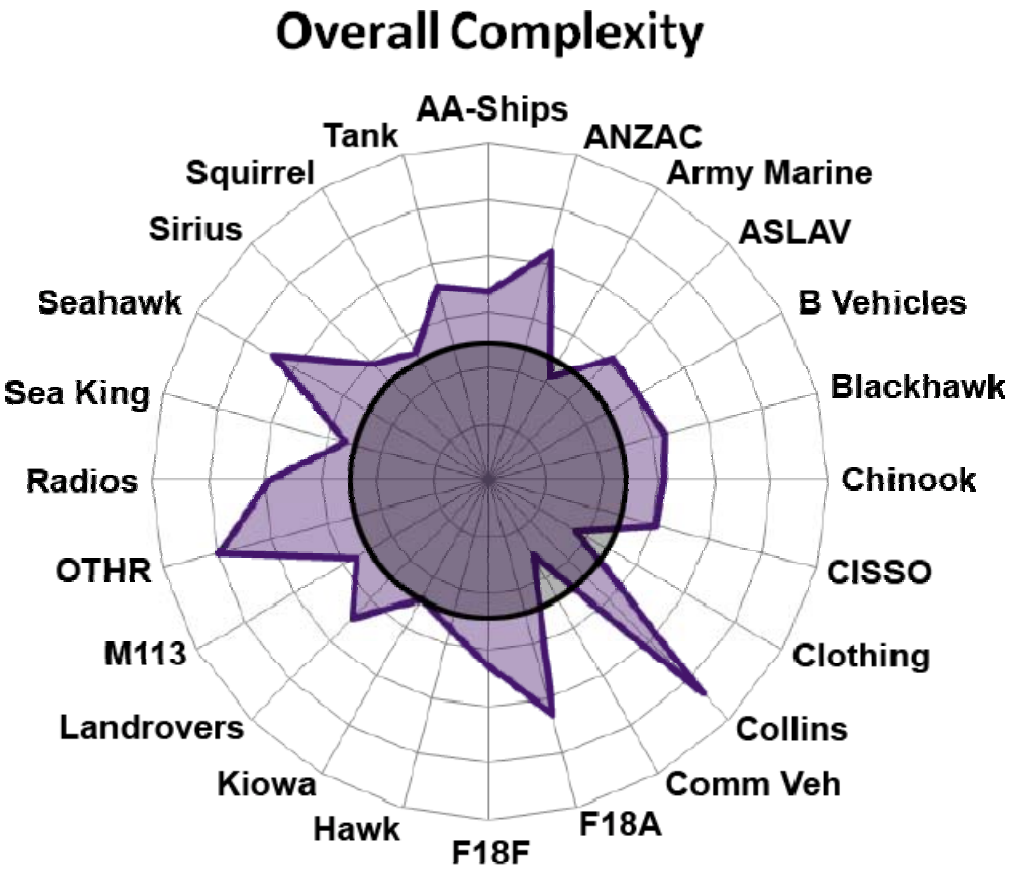
As outlined above, Defence procurement is complex, long term and large scale. To provide leading edge capabilities, Defence must accept a high level of procurement risk. There has been ongoing reform of the Defence procurement system resulting from a number of reviews, with more reform underway.

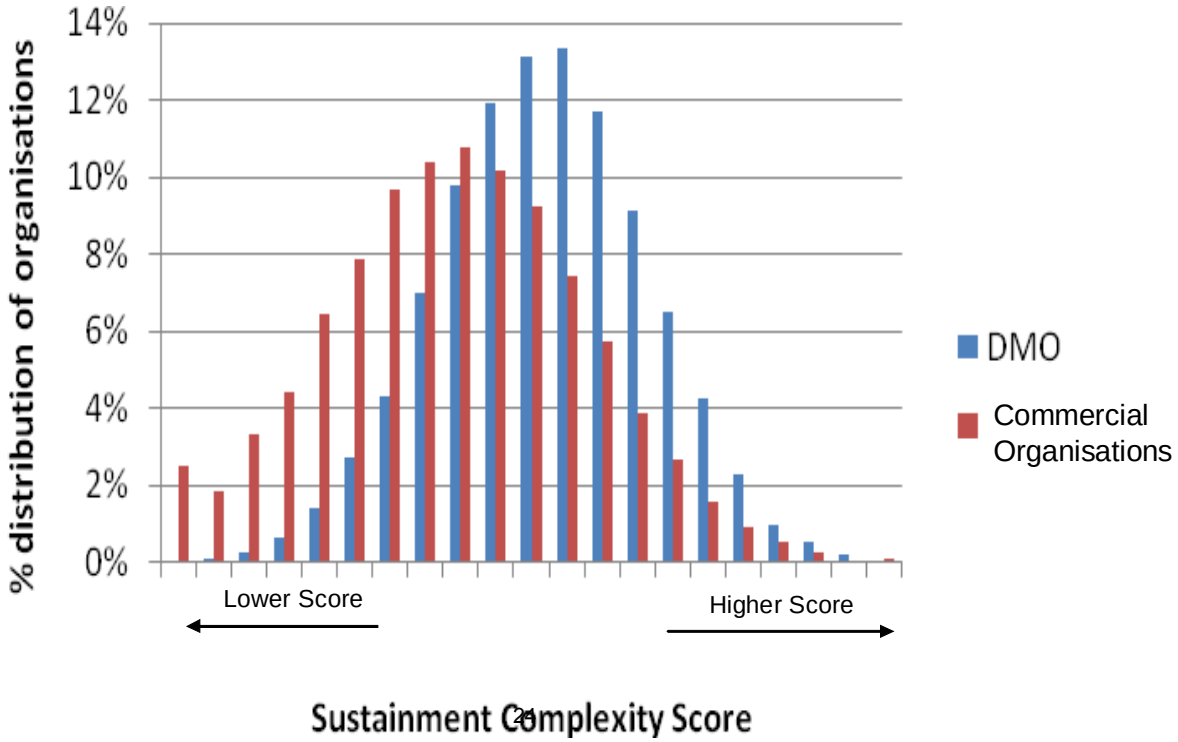
Again, Defence welcomes the inquiry and the opportunity to make a submission.

Attachment A

Diagrammatic Representation of Sustainment Complexity

The following diagrams show the relative sustainment complexity across DMO product lines as compared to the maintenance activity for large Australian organisations.





Attachment B

The Strategic Reform Program

The SRP will be delivered through 15 reform streams that will each implement a program of reform. Some streams will deliver direct savings that have been earmarked for reinvestment in Force 2030, while others will put downward pressure on costs through improved governance, planning, and processes.

Streams that drive more efficient and effective outcomes but do not have cost reductions attached to them.

- Strategic Planning
- Capability Development
- Procurement and Sustainment (Mortimer)
- Preparedness, Personnel and Operating Costs
- Intelligence
- Science and Technology
- Estate
- Output focused budget model

Streams that drive more efficient and effective outcomes and have cost reductions directly attached to them.

- Smart Sustainment
- Non-Equipment Procurement
- Workforce and Shared Services
- Information and Communications Technology
- Reserves
- Logistics
- Defence Savings Program.

Attachment C

Public Information on Defence Procurement

Defence makes available substantial amounts of public information.

- White Papers provide policy guidance.
- Government makes regular statements on capabilities and acquisitions.
- The public DCP provides industry with detail on future requirements.
- Statutory reports (such as Annual Reports) and budget documentation provide substantial financial and regulatory information.
- Defence provides substantial amounts of evidence to Parliament including through Senate Estimates Committees, the Joint Committee of Public Accounts and Audit and Committees on Foreign Affairs, Defence and Trade.
- ANAO financial and performance audit reports provide substantial background material on Defence activity.
- Defence produces a wide range of lesser publications and industry and community consultation processes.

To support procurement Defence releases substantial amounts of data and information to make the public and industry aware of major project decisions so that competition for contracts can be encouraged and best prices and outcomes achieved. This needs to be balanced against Defence's legitimate need to protect the Government's bargaining position to ensure best value for money outcomes and to also take into account the security considerations that are associated with Defence capabilities.

Attachment D

Defence Capability Development Handbook (DCDH)

Consistent with the findings of the Mortimer and Pappas Reviews and a number of the White Paper Companion Reviews, Defence acknowledged that capability development and acquisition performance could be improved by more effective governance and administration for the definition, planning and execution of Major Capital Equipment Projects; clearer allocation of responsibilities and accountabilities; and better coordination of the introduction into service of all of the fundamental inputs to a new capability.

Under two Strategic Reform Program reform streams, the Mortimer (Procurement and Sustainment) Reform Stream and the Capability Development Reform Stream, improved processes and activities have been and continue to be implemented. These reforms will be captured in the promulgation of an updated Defence Capability Development Handbook (DCDH) to record the improved processes and governance arrangements and provide guidance on capability development documentation (currently on interim release on Defence's internal computer systems).

The DCDH acts as a guide to the capability development body of knowledge. The DCDH primarily addresses the Requirements Phase, spanning the period from strategy (as outlined in *The Strategy Framework*) and the Acquisition Phase (as outlined in DMO's *Acquisition and Sustainment Manual* – revision forthcoming). These reference guides are supported by DSTO's *Technical Risk Assessment Handbook*.

The aim of the DCDH is to provide guidance to Defence employees on the process for developing proposals that enable Government to approve the acquisition of new capability. The handbook explains the high-level framework and processes for developing the supporting documentation required to implement Government's decisions.

The DCDH builds on the foundation of the 2006 Defence Capability Development Manual (DCDM) and takes into account the recommendations of both the SRP and the Mortimer Reviews, and a 2009 ANAO Audit of *The Planning and Approval of MCE Projects*. Importantly, the new DCDH has encompassed all of the improvements that have already been made to Defence's processes since the 2006 DCDM was released, and therefore largely reflects the way Defence is currently doing its business. The interim DCDH has been promulgated internally to Defence.

The DCDH provides guidance, and is the template of the process for the conduct of capability development in Defence. It is not in itself a policy document. The name was changed from the DCD Manual to the DCD Handbook to reflect this and to remove any potential confusion with the System of Defence Instructions definition of a 'manual' that was commented upon in the 2009 ANAO audit report.

The ANAO report also noted that any tailoring of the process should be properly authorised and that the key elements of the process are identified and tailoring guidance is provided. The DCDH now includes guidelines on tailoring, with approval for tailoring of specific projects being controlled through Defence internal committee governance systems, specifically the ORC, the CDB, the DCC and the DCIC.

The DCDH has been reorganised with:

a) more emphasis on First and Second Pass, and with significantly increased guidance on the individual capability development documents and specialist areas of knowledge;

b) formalisation of Project initiation;

c) strengthening of guidance on options;

d) strengthening of guidance on workforce considerations; and

e) greater definition of the role of the Fundamental Inputs to Capability providers.

The new Technical Risk Assessment, which requires that risks are identified, assessed and treatment strategies developed at the start of the capability development process has been included in the DCDH.

Attachment E

Projects of Concern List (March 2011)

Project	First Pass Approval	Second Pass or Original Govt Approval	Kinnaird Status
JP 129 Ph 2 *Tactical Unmanned Aerial Vehicle (UAV)*	Jul 04 Pre-Kinnaird	Nov 05 Post Kinnaird	Mixed
JP 2043 Ph 3A *High Frequency Communications System Modernisation*	N/A	Dec 1996	Pre-Kinnaird
JP 2070 *Lightweight Torpedo*	N/A	Jul 2001	Pre-Kinnaird
AIR 5077 Ph 3 *Airborne Early Warning and Control Aircraft 'Wedgetail'*	N/A	Dec 00	Pre-Kinnaird
AIR 5333 *Air Defence Command and Control System 'Vigilare'*	N/A	Apr 1992	Pre-Kinnaird
LAND 121 Ph 3 *Field Vehicle Replacement Program 'Overlander' (Medium Heavy Capability)*	Dec 03 Jun 04 Pre-Kinnaird	Aug 2007 Post Kinnaird	Mixed
SEA 1448 Ph 2B *ANZAC Frigate Anti-Ship Missile Defence*	N/A	Sep 2005 Post Kinnaird	Mixed
AIR 5402 *AAR Capability*	N/A	May 2003	Pre-Kinnaird
AIR 5276 Ph 8B *AP-3C Electronic Support Measures Upgrade*	Aug 04 Transition	Oct 06 Post Kinnaird	Mixed
AIR 5418 Ph 1 *Joint Air to Surface Stand off Missile*	Aug 04 Transition	Dec 2005 Post Kinnaird	Mixed
CN 10 *Collins Submarine Sustainment*	N/A	N/A	N/A

Attachment F

The Capability Systems Life Cycle

The Defence Capability Systems Life Cycle (CSLC) (figure 1-1) is a planning tool to facilitate consideration of the life of capability systems from the identification of a need (an existing or arising capability gap) to the acquisition of a working physical capability system which is operated and supported until disposal. The CSLC is the basis for the strategy-led capability development process and begins with the development of a simple statement of user need that is developed into a capability solution for acquisition, implementation, operation and sustainment. The life cycle is completed with disposal of the Capability System.

Within Defence, the CSLC is divided into the following phases:

a. **Needs.** In this phase, statements of user needs that address identified capability gaps are developed. Capability gaps are derived from consideration of strategic guidance, threat assessments, current and future operational concepts, future technology, the current and emerging force structure and current or potential threats. Government endorses the need to address the identified gaps as a capability project, and includes it and an indicative budget provision in the DCP.

b. **Requirements.** Projects included in the DCP are progressively transformed from a broad consideration of possible capability options into well-defined and costed solutions with a schedule for acquisition leading to operational release through a two-pass approval process. Net whole-of-life workforce numbers and budgetary provisions to acquire, operate and support the capability solution are also developed.

c. **Acquisition.** The approved capability solution is acquired or established by the DMO and entered into service by the Capability Manager (CM).

d. **In-service.** The CM operate, support and manage the capability solution, and the individual FIC that make up the capability system are operated, supported and modified as required to deliver the capability. The In-service Phase is covered in the *DMO Acquisition and Sustainment Manual* and various Service and support Group documents. Requirements for the In-Service phase are described in the Support Concept and later in the Integrated Logistics Support Plan.

e. **Disposal.** Major systems and other materiel elements of the capability system are withdrawn from service (in what is usually a process rather than an event) and disposed of or redeployed, depending on the nature of the individual capability. The Disposal Phase is covered in the *DMO Acquisition and Sustainment Manual* and various Service documents. Requirements for the Disposal phase are described in the Support Concept and later in the Integrated Logistics Support Plan.

Figure 1: The Capability Systems Life Cycle

Attachment H

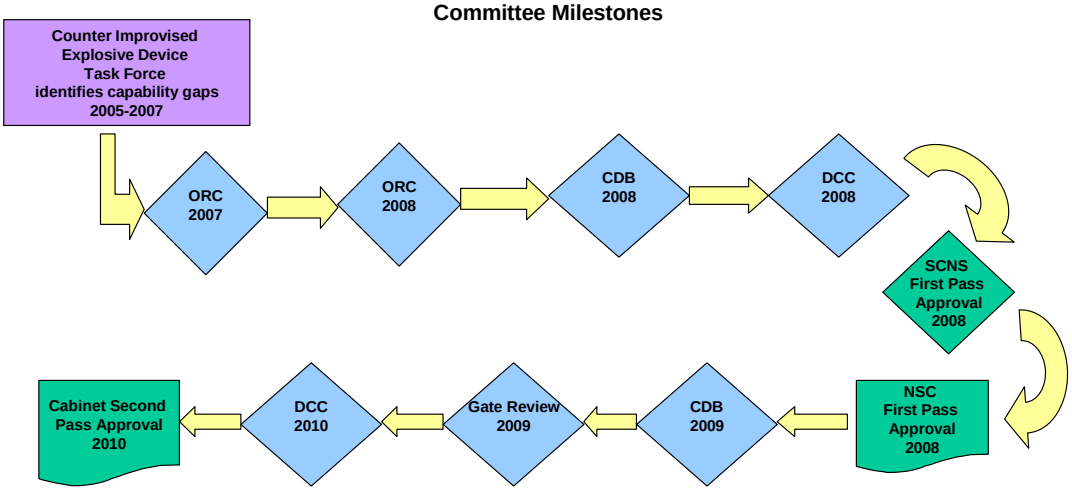
Examples Major Project Progression

JP 154 Phase 1

Joint Counter Improvised Explosive Device Capability - Standard Kinnaird Project

Consideration of the Project	Date
Options Review Committee endorsed the project's entry into the Defence Capability Plan	2007
Options Review Committee endorsed two broad capability options with seven acquisition approaches, and multiple second passes.	2008
Capability Development Board considered the suitability of the First Pass Capability Proposal and the schedule for First and Second Pass approvals. The board agreed to develop three options for consideration by Government, and to develop a draft Cabinet Submission.	2008
Defence Capability Committee considered the options and agreed to progress the project to first pass with only one of the three options to be presented to government.	2008
Secretaries Committee on National Security considered the first pass submission	2008
National Security Committee of Cabinet approved first pass	2008
Capability Development Board endorsed the project documentation for second pass approval.	2009
Gate Review	2009
Defence Capability Committee agreed that one option would be presented at second pass, with the other option presented as considered but not developed.	2010
Cabinet approved the project's second pass.	2010

JP 154 Phase 1 – Standard Kinnaird Two Pass Capability Development Process Committee Milestones



ORC – Options Review Committee
CDB – Capability Development Board
DCC – Defence Capability Committee
SCNS – Secretaries Committee on National Security
NSC – National Security Committee of Cabinet

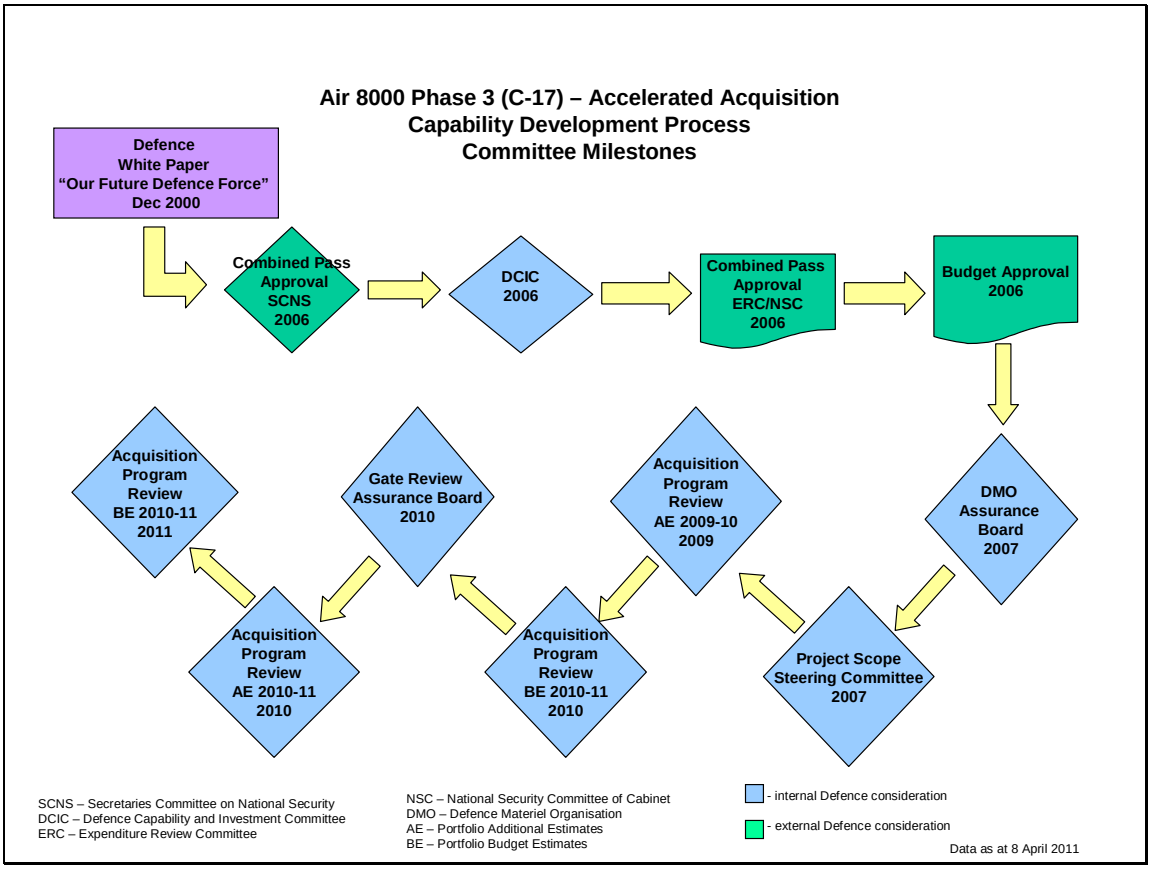
- internal Defence consideration
- external Defence consideration

Data as at 8 April 2011

AIR 8000 Phase 3

C-17 Aircraft Accelerated Acquisition

Consideration of the Project	Date
Defence Capability and Investment Committee	2006
Secretaries Committee on National Security	2006
National Security Committee of Cabinet/ Expenditure Review Committee	2006
Budget First and Second pass approval	2006
ASD Assurance Board	2007
AIR8000 Phase 3 Scope Steering Committee	2007
Acquisition Program Review (AE 2009-10)	2009
Acquisition Program Review (BE 2010-11)	2010
Gate Review Assurance Board	2010
Acquisition Program Review (AE 2010-11)	2010
Acquisition Program Review (BE 2011-12)	2011



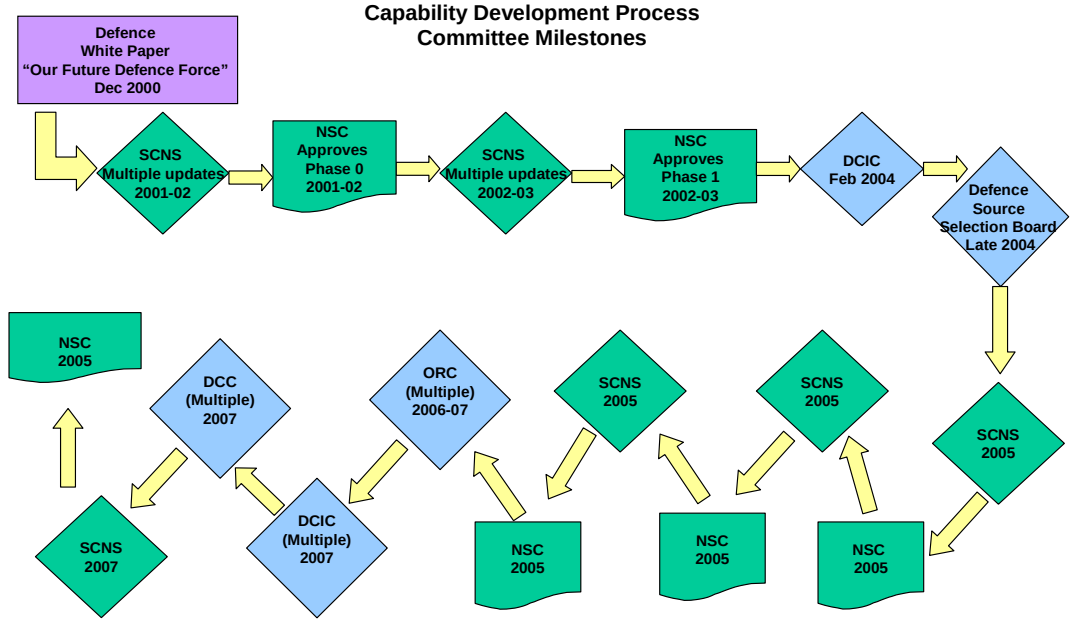
SEA 4000

Air Warfare Destroyer – Pre-Kinnaird Project

Consideration of the Project	Date
SCNS – Multiple Considerations	2001–2002
Phase 0 Capability Studies approved by Government	2001–2002
SCNS – Multiple Considerations	2002–2003
Phase 1 Project Definition approved by Government	2002-2003
Defence Capability and Investment Committee consideration of the Aegis System	2004
SCNS Consideration of Aegis	2004
Government approved US Navy Aegis Combat System as core capability of the AWD.	2004
Defence Source Selection Board for Raytheon	2004
SCNS considers shipbuilder and engineering requirements	2005
AWD Combat System–Systems Engineer selection approved by NSC	2005
First Pass Approval AWD shipbuilder selection approved by NSC	2005
Further SCNS Consideration	2005
Development of the AWD Evolved Design option by Gibbs & Cox approved by Government via NSC	2005
SCNS Consideration	2005
Government approval of the purchase of three shipsets of core Aegis Combat System equipment	2005
Options Review Committee consideration of evolved versus existing design (multiple considerations)*	2006-2007*
Defence Capability and Investment Committee*	2007*
Defence Capability Committee *	2007*
SCNS Consideration of final approval for SEA 4000	2007
Second Pass approval, selection of the Spanish F-100.	2007
SEA 4000 Phase 3 enters build stage	2007–2018

* These Defence committees considered SEA 4000 on numerous occasions.

Sea 4000 – Air Warfare Destroyer Capability Development Process Committee Milestones



DCIC – Defence Capability and Investment Committee
DCC – Defence Capability Committee
ORC – Options Review Committee

NSC – National Security Committee of Cabinet
SCNS – Secretaries Committee on National Security

Data as at 19 April 2011

Attachment I

Government Approvals since the release of the White Paper 2009 to February 2011

Summary

	Projects Approved	Total ($m)
Second Pass	22	6,500
First Pass	11	210
Other	13	575
Total	46	7,285

Second Pass Approvals

Env	No	Ph	Project Title	Total ($m)
AIR	5416	4B.1	C-130J Radar Warning Receiver	50
AIR	5416	4B.2	C-130J Large Aircraft Infrared Countermeasures (Long Lead Items)	20
AIR	5440	1	C-130J Block Upgrade Program 7	60
AIR	6000	2A/2B	New Air Combat Capability - first 14 Aircraft	3,200
AIR	9000	5C	Additional Heavy Lift Helicopters	760
JP	154	1	Force Protection Electronic Counter Measures	30
JP	2008	3F	Military Satellite Capability	90
JP	2008	5A	Military Satellite Capability	190
JP	2030	8	ADF Joint Command Support Environment	100
JP	2089	2B	Tactical Information Exchange Domain (Data Links)	40
JP	2110	1A	Chemical, Biological, Radiological and Nuclear Defence	20
JP	154	1	Joint Counter Improvised Explosive Device Capability	120
LAND	17	1A	Artillery Replacement	500
LAND	17	1B	Digital Terminal Control System	30
LAND	19	7A	Counter – Rocket, Artillery and Mortar	280
LAND	40	2	Direct Fire Support Weapon	170
LAND	75	3.4	Battlefield Command Support System 3.4	150
LAND	112	4	ASLAV Enhancement	300
LAND	125	3A	Soldier Enhancement Version 2 - C4I component	100
SEA	1397	5A	Nulka Missile Decoy Enhancements	110
			2 Classifed Projects	180
			Total (22 Projects)	**6,500**

Note: All figures have been rounded

First Pass Approvals

Env	No	Ph	Project Title	Total ($m)
AIR	5416	4B.2	C-130J Large Aircraft Infrared Countermeasures	1.0
AIR	5428	1	Pilot Training System	50.0
AIR	5431	1	Deployable Defence Air Traffic Management and Control Systems	5.0
AIR	9000	8	Naval Combat Helicopter Capability	20.0
JP	2047	3	Wide Area Communications Network Replacement	15.0
JP	2090	1C	Combined Information Environment	1.0
JP	2097	1B	REDFIN - Special Operations Capability	20.0
SEA	1442	4	Maritime Communications Modernisation	10.0
SEA	1448	4A	Improved ANZAC Tactical Electronic Support Capability	10.0
			2 Classified Projects	80
			Total (11 Projects)	**210**

Note: All figures have been rounded

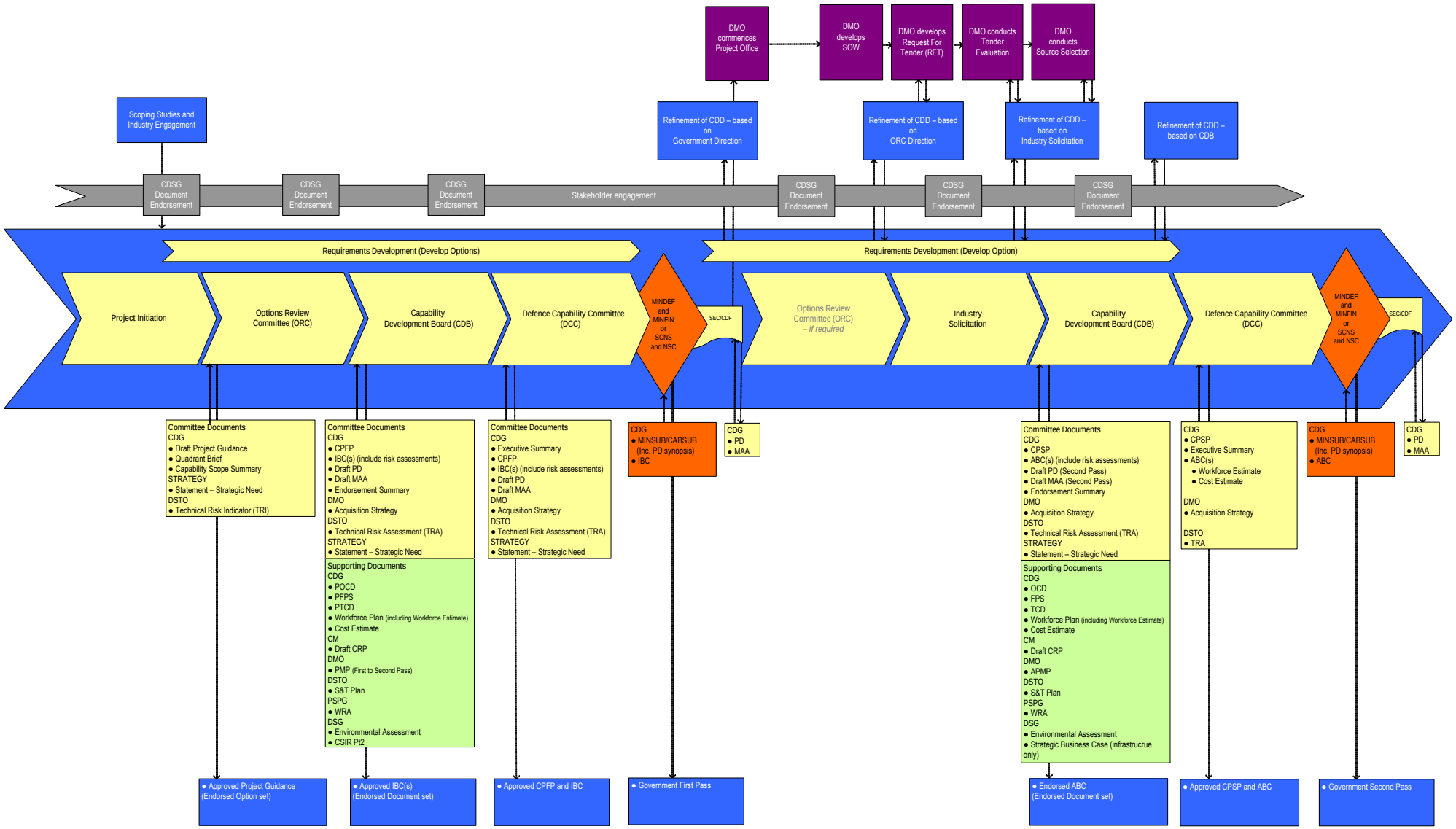
Other Approvals

(including initial studies, scoping and design activities)

Env	No	Ph	Project Title	Total ($m)
AIR	5376	HUG	Hornet Structural Assurance Consolidation Program	300
AIR	5440	1	C-130J Block Upgrade Program 7.0 (Further Global PA Payment)	5
AIR	9000	8	Future Naval Aviation Combat System (from PDF)	1
CTD	13		Capability Technology Demonstrator	10
CTD	14		Capability Technology Demonstrator	15
JP	129	2	Airborne surveillance for land operations	120
LAND	121	4	Overlander	30
PDF	2009		Project Development Funding	40
PDF	2010		Project Development Funding	35
SEA	1000		Future Submarine Project Development Funding	10
SEA	1000		Future Submarine Project Development Funding	5
SEA	1439	6	Collins Sonar Replacement	1
SEA	1448	2B	ANZAC Anti Ship Missile Defence Upgrade	-
			Total (13 Projects)	**575**

Notes:

1. All figures have been rounded.
2. AIR 5376 Phase HUG and JP 129 Ph 2 are re-scoping of previous approvals.



Schematic Representation of the Defence Major Capital Equipment Requirements Phase

Attachment G