



Chapter 1

Introduction

SECTION 1-1

The Concept of Capability

What is capability?

- 1.1 In ordinary usage, 'capability' means the capacity to be or do or affect something. The term can refer to a quality, capacity or ability. In the context of the Australian Defence Organisation (ADO), being a complex and diverse organisation, the term can similarly have a variety of meanings. In the context of the Capability Development Group (CDG), however, which focuses on developing proposals for Major Capital Equipment (MCE) to be used by the Australian Defence Force (ADF), 'capability' has a more specific meaning, namely, the capacity or ability of the ADF to achieve a particular operational effect. That operational effect may be defined or described in terms of the nature of the effect and of how, when, where, and for how long it is produced.
- 1.2 'Capability' in the Defence context is the combined effect of multiple inputs. It is not the sum of those inputs, but the synergy that arises from the way those inputs are combined and applied that determines the level of capability in a particular context. In Defence, the 'Fundamental Inputs to Capability' (FIC), are categorised and broadly defined as:
- a. **Personnel.** All people within Defence, both military (permanent and Reserves) and civilian. The input incorporates recruiting, individual training and all conditions of service and employment, including entitlements, salaries and wages, superannuation and allowances;
 - b. **Organisation.** Flexible functional groupings with an appropriate balance of competency, structure and command and control to accomplish their tasks. This input also includes critical organisations that directly support the ADF effort;
 - c. **Collective training.** A defined training regime undertaken by organisations that is validated against the preparedness requirements for operations, derived from Government guidance. The regime is to include frequency and depth of competency in skills with a particular emphasis on long-term readiness critical war fighting skills;
 - d. **Major Systems.** Systems that have a unit cost of A\$1m or more, or have significant Defence policy or joint Service implications designed to enhance Defence's ability to engage military power. Input includes, but is not limited to, ships, tanks, missile systems, armoured personnel carriers, major surveillance or electronic systems, and aircraft;
 - e. **Supplies.** Supplies needed for Defence to operate including stock holdings, provisioning lead times, serviceability and configuration status. Ten supply classes are described in Australian Defence Doctrine Publication (ADDP) 4-Defence Logistics and ADDP 4.2-Support to Operations;
 - f. **Facilities.** Buildings, structures, property, plant, equipment, training areas, civil engineering works, through life maintenance and utilities necessary to support capabilities, both at the home base and at a deployed location. Input may involve direct ownership or leasing;


- g. **Support.** Infrastructure and services from the wider national support base within Australia or offshore which are integral to the maintenance of Defence effort. The input is encompassing and could originate from civil/private industry/contractors, other Government agencies and international support base agencies; and
 - h. **Command and Management.** Written guidance such as regulations, instructions, publications, directions, doctrine, tactical level procedures and preparedness documents required for Defence to support decision making, administration and operations. Input also includes funding not readily attributable to any other FIC element (eg. discretionary funding).
- 1.3 When developing capability proposals for Government approval, CDG ensures that all of the capability elements listed above are examined with a view to determining how individual FIC need to change in order to bring about a desired change in ADF capability. This comprehensive approach to capability not only focuses attention on the combination and integration of the FIC, rather than on the individual inputs separately, but also enables Defence to better understand the whole of life funding implications of the new capability. Capability is thus viewed as a 'system' of interlocking and inter-dependent FIC.
- 1.4 The definition of capability used in CDG, incorporating both the operational and systems aspects outlined above is:

Capability is 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.

Capability Life Cycles

- 1.5 Capability systems have a 'life cycle' that begin with the identification of the need to address a current or prospective capability gap. This need is progressively translated into a working capability system that is operated and supported until it is ultimately withdrawn from service. Once a capability is withdrawn from service, the associated physical and personnel assets can either be disposed of (for physical assets), redeployed or reallocated as an offset for another capability.
- 1.6 The capability life cycle is divided into the following phases:
- a. **Needs** - capability gaps, derived from consideration of strategic guidance, current and future operational concepts, future technology and the current and emerging force structure, are identified by Defence. Government endorses the need to address the identified gaps and approves the inclusion of a project with an indicative budget provision in the Defence Capability Plan (DCP);
 - b. **Requirements** - each capability need endorsed by Government is transformed progressively into a costed, defined solution to that need, and approved by Government with a schedule for acquisition leading to operational release, and budgetary provision to both acquire the capability solution and to fund through-life personnel and operating costs;
 - c. **Acquisition** - an approved capability solution is acquired/established and, in the case of platforms, weapons systems and other materiel, entered into service;



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- d. **In-service** - the individual FIC that make up the capability system are operated, supported, modified as necessary and managed by the relevant authorities in Defence (who are referred to generically in Defence as Capability Managers (CM)); and
 - e. **Disposal** - the capability system as a whole is 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 input.
- 1.7 In Defence, capability is developed and managed with both a system perspective and a life cycle perspective. The key challenges of capability management in Defence are to:
- a. optimise the design and development of the system to satisfy the capability gap(s), meet operational requirements and manage risk;
 - b. manage the system in the most cost effective way over the whole life cycle, that is, optimise the capability system Life Cycle Costs (LCC); and
 - c. orchestrate the development and life cycles of various capabilities so that collectively they optimise the ability of the ADO to carry out its missions and roles.
- 1.8 Capability development can occur via a number of means, but will primarily be conducted through Major & Minor Capital Acquisition Programs. This manual relates specifically to the framework for developing MCE proposals, and does not detail the Minor Capital Acquisition Program or other capability programs (such as Rapid Acquisition), as these processes are specific to each Service/Group. It should be noted that minor capital equipment can contribute to rectifying capability deficiencies, and CMs coordinate their Minors programs along processes aligned to the capability life cycle. Reviews of relevant minors documentation by appropriate Branches within Capability Systems Division (CS Div) and CMs ensures appropriate coordination and integration between the Major and Minor Programs.
- 1.9 This manual focuses on the two life cycle phases within the MCE Program for which CDG is responsible, being the Needs and Requirements phases. CDG must, however, consider all phases when identifying and assessing capability needs and requirements, and CDG shares responsibility across other phases as detailed below.

Organisational Arrangements over the Life Cycle

- 1.10 The responsibilities for managing the phases of the capability life cycle in the ADO are dispersed and, usually, shared. Those organisational units responsible for managing, coordinating or developing policies or activities across the capability life cycle need to consult widely across the ADO. In particular, the Single Services, as CM, play an important contributing role, and sometimes the primary role, at all stages of the capability life cycle.
- 1.11 In relation to Defence's MCE program, which is the aspect of capability development of primary interest to CDG, the main allocation of responsibilities at each stage of the capability life cycle is:
- a. The **Needs Phase** - Responsibility is shared by:
 - (1) Deputy Secretary, Strategy (DEPSEC S) - for development and articulation of the strategic guidance and military strategic priorities that form the starting point of the needs analysis; and

- (2) Chief, Capability Development Group (CCDG) - for conducting the 'gap analysis', based on input from DEPSEC S and in consultation with CMs, from which a statement of capability needs, consistent with resource guidance, is developed for Government consideration.
- b. The **Requirements Phase** - Responsibility for this phase rests with CCDG. CDG, in consultation with a wide range of stakeholders, develops the options for Government decisions on MCE acquisitions that meets the defined strategic need and also explores the non-equipment aspects of capability development.
- c. The **Acquisition Phase** - Responsibility for this phase rests with Chief Executive Officer, Defence Materiel Organisation (CEO DMO), however:
 CMs (usually Single Service Chiefs) are key stakeholders during the Acquisition Phase and are closely involved in the process of accepting MCE through the Acceptance into Service (AIS) process. As sponsor, CCDG is also an important stakeholder throughout the Acquisition Phase and plays an important role in monitoring and reporting progress, agreeing any changes to the Capability Baseline and closing the Business Case against the original project approval once the project has achieved the Final Operating Capability (FOC). Additionally, CCDG has a supporting role in the development of FIC not under the management of CEO DMO; and
 The Chief Information Officer (CIO), Information Systems Division, is responsible, in lieu of CEO DMO, for the acquisition of MCE specific to the Information Capability Program.
- d. The **In-Service Phase** - Responsibility is shared by:
- (1) Capability Managers;
 - (2) CEO DMO, Commander Joint Logistics (CJLOG) and other agencies, responsible for aspects of sustainment and support; and
 - (3) CCDG - for requirements aspects of any upgrade programs (noting that significant capability upgrades will normally be managed under the two pass process described in this manual)
- e. The **Disposal Phase** - Responsibility is shared by:
- (1) Capability Managers, and
 - (2) CEO DMO.



SECTION 1-2

Capability Planning Principles

Key Principles

- 1.12 The aim of capability planning is to develop and maintain the most operationally effective and cost efficient mix of capabilities for achieving the Australian Government's strategic objectives.
- 1.13 The capability planning system needs to support these decisions in a way that is rational and robust, yet simple and manageable. The following principles are part of Defence's approach to capability planning:
- a. **Top down** - Capability decisions need to be traceable back to the Government's judgement of its strategic priorities - in particular, what roles it wants the ADF to undertake, what contingencies it wants the ADF to respond to and what threats need to be deterred and/or defeated. Ultimately, it is the ability of actual military and non-military capabilities to contribute to meeting Government's strategic priorities that determines the value of those capabilities.
 - b. **Bottom up** - Where the top-down perspective starts with the highest goals of the organisation, the bottom-up approach starts with the building blocks of capability. This approach seeks to understand how to perform specific tasks most effectively, within conceivable operational and strategic scenarios, employing the most effective mix of capabilities - new and/or old. This approach also looks at what are the ADF's current and programmed platforms, weapons and systems and their performance characteristics, limitations, and anticipated in-service life.
 - c. **Value for money** - The *Commonwealth Procurement Guidelines* states that "value for money" is the core principle underpinning Australian Government procurement. This principle applies equally to Defence procurement and requires the ADO to analyse all relevant costs and benefits of any given capability throughout the life of that capability. Undertaking an appropriate régime of Test and Evaluation (T&E) is a core contributor to ensuring the user's needs are met and value for money is achieved.
 - d. **Long range view** - Inevitably there is a lag, usually of several years, between capability planning and when that planned capability enters service. Once introduced, that capability may remain in service for decades. Thus, planning needs to take a long-term view and consider the relevance of a capability throughout its effective life, ongoing operating costs, potential for upgrades and the lead times for new acquisition.
 - e. **Flexibility** - Notwithstanding the usually long range view that is needed for effective capability planning, the capability development system also needs the agility to respond to short notice change in the operational and strategic environment by re-ordering capability development priorities, and by rapid acquisition to fill newly revealed gaps.

- f. **Concept led** - It cannot be assumed that today's doctrine will be suitable for future threats and technologies. New concepts need to be developed in parallel with the development of new capabilities. The concept-led approach calls for thinking broadly about the available concepts and assessing them rigorously to determine which ones represent best value for money.
 - g. **Capability based** - The capability-based approach is in contrast to the threat-based approach. A force designed against one or two specific threats is likely to be inflexible. Capability-based planning does not mean that a particular threat or threats can be ignored. Rather, this approach aims to think more broadly about the nature and severity of possible threats, and to test capability options against a diverse set of scenarios. This approach also recognises that intentions can generally change more quickly than capabilities.
- 1.14 **Capability Roadmaps** may be produced to coordinate specific areas of capability development through or across phases of the capability life cycle. Guidance on developing Capability Roadmaps is provided in Section 7-9.

SECTION 1-3

Role of Capability Development Group

General

- 1.15 CDG is responsible, as Sponsor, for developing capability proposals, consistent with strategic priorities, funding guidance, legislation and policy, for consideration and approval by Government. In particular, the work of the Group focuses on:
- a. Defence's MCE investment program ("major" here meaning equipment projects of \$20 million or more, or of less than \$20 million but with individual items of \$1 million or more, or equipment projects of less than \$20 with strategic significance); and
 - b. capability definition, comprising the Needs Phase and the Requirements Phase, both referred to earlier.
- 1.16 As depicted in the Defence Business Model, CDG is headed by the Chief of Capability Development (CCDG). CCDG, along with the Vice Chief of the Defence Force, the Chief Finance Officer (CFO) and Chief Defence Scientist, comprise the "Owner Support Executives" who report to the Chief of the Defence Force (CDF) and the Secretary, Department of Defence.
- 1.17 CDG consists of a number of Divisions/other primary units, including:
- a. **Capability Systems Division (CS Div)** - CS Div manages the development of future capability options to assist Government decision making on investment in MCE for the ADF.





- b. **Capability, Investment and Resources Division (CIR Div)** - CIR Div provides independent analysis and review of capability issues and related costs, including the overall balance of investment in current and future capability, the future structure of the ADF, major investment proposals, preparedness, and priorities. The Division is responsible for ensuring that the DCP is appropriately programmed, for independently reviewing capital and operating costs for all projects going to the Defence Capability Committee (DCC), and for management of the Net Personnel and Operating Costs (NPOC) estimates for all unapproved MCE projects.
- c. **Capability and Plans Branch (C&P)** - C&P seeks to ensure that Defence capabilities match the Government's strategic objectives. C&P also provides mechanisms for identifying, managing and assessing the future and planned forces.
- d. **Office of Interoperability** - The Office of Interoperability oversees interoperability issues concerning capability development. The Office is also responsive to the Chief of Joint Operations for managing interoperability issues arising from a warfighting perspective.
- e. **Directorate of Trials (DTRIALS)** - DTRIALS coordinates Defence T&E policy; provides T&E advice and assistance throughout the capability life cycle; manages Defence trials, tasks and demonstrations; and provides customers with independent, objective trial reports. DTRIALS is the CDG authority for the development of the Test Concept Document (TCD), which is a part of the Capability Definition Documentation (CDD) set.
- f. **Australian Defence Simulation Office (ADSO)** - ADSO develops and oversees the implementation of Defence simulation policy and the Defence Simulation Plan.
- g. **DSTO Planning and Guidance Branch** - The Planning and Guidance Branch of DSTO is embedded within CDG to ensure the incorporation of science and technology advice and technical risk assessments.

SECTION 1-4

Capability Managers

- 1.18 The role of a CM is to raise, train and sustain in-service capabilities through the coordination of FIC. CMs are often the proponents of proposals and play an important contributing role, and sometimes the primary role, during all stages of the capability life cycle. There are seven CMs, each responsible for the following areas of ADF capability:
- a. **Chief of Navy** for Maritime force capability management;
 - b. **Chief of Army** for Land and Special Forces capability management;
 - c. **Chief of Air Force** for Air Force capability and airworthiness management;
 - d. **Chief Joint Operations** for Joint capability management, including Joint logistics;
 - e. **Chief Information Officer** for Defence Information Environment (DIE) capability management;
 - f. **Deputy Secretary Intelligence and Security (DEPSEC I&S)** for Defence intelligence agencies capability management; and

- g. **Deputy Secretary Corporate Services (DEPSEC CS)** for Estate and infrastructure management, including key Government ownership issues connected to the Estate, such as sustaining capability through management of environmental impacts.
- 1.19 During the Needs Phase, the CM contributes to the identification of capability gaps through a number of mechanisms including Force Options Testing (FOT), Experimentation, Operations Research and the Key Assets Review, and are also major contributors to the subsequent development of Capability Definition Statements (CDS) required to enter new capabilities into the DCP.
- 1.20 In the Requirements Phase, the CM is involved in development of First and Second Pass capability proposals, including the CDD, and will endorse proposals prior to them being submitted to Defence Committees and Government for consideration and approval. This endorsement includes any consideration or clearance required by the relevant single service committees. Capability Managers and Sponsors jointly ratify the Initial Operational Capability (IOC), the point in time when the first subset of a capability system is proven suitable and effective for operational employment and the FOC, the point in time at which the final subset is proven suitable and effective.
- 1.21 During the Acquisition Phase the CMs are involved in the process of accepting MCE into service through end-user involvement at the critical milestones requiring operational validation.
- 1.22 During the In-service phase, the CMs manage the in-service capability (with support from DMO, CJLOG and other Defence Groups) through the individual FIC that make up the capability system which is operated, supported, modified as necessary.
- 1.23 CMs are also directly involved in the Disposal Phase, and will work primarily with the DMO to determine how a capability can best be disposed of.

