NAVAL ENGINEERING

NAVY

STRATEGIC PLAN
2017-2022

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Statement of Expectation

Chief of Navy

Vice Admiral Tim Barrett AO CSC RAN

The Navy is on the cusp of major reinvestment and organisational changes that will chart a course to re-equip itself with new offshore patrol vessels, a new class of frigate, a new and expanded submarine force, new replenishment ships, modern aviation assets, and the new *Hobart* class Air Warfare Destroyer. Navy faces a significant challenge ahead to prepare itself for the shape of things to come.

Through me, as the Navy Capability Manager, Navy needs to be a smart owner of Navy's maritime assets. Through smart ownership, Navy will:

- articulate what maritime capability is needed and why,
- cost effectively use the capability to meet Government direction, and
- manage the capability risks across the Capability Life Cycle.

As the Capability Manager, I have defined 5 core elements that Navy must balance to ensure that the materiel element of capability remains fit for purpose. These elements are:

Deterrence, Lethality, Availability, Sustainability and Affordability.

The national continuous shipbuilding program will foster a strategic capability through which Navy will produce a modern, fit for purpose, operational Navy for the decades to come. It must draw upon industry, education, research, finance and technology sectors and our Australian Defence and International partners to enable seaworthy materiel.

Naval Engineering is fundamentally important to the delivery of seaworthy materiel. We all have an obligation to provide and foster a climate in which an appropriate balance of priorities is applied to the assessment of the materiel state of our equipment among the many tasks that we have to manage.

In exercising my duties as the Capability Manager, I require Naval Engineering, through this Strategic Plan, to establish policies, standards and specifications that support delivery of seaworthy materiel; maintain an innate knowledge of maritime technology; and to maintain a competent engineering and technical workforce that will deliver and maintain platform capability. I also require Naval Engineering to be at the forefront of the implementation of the Defence Seaworthiness Management System and to introduce a risk based assurance program for maritime materiel.

I look to all personnel to play their part in meeting our seaworthiness obligations and to deliver the future fleet; we are all stewards of our equipment, our people, our reputation and our Navy.

T.W. Barrett, AO, CSC
Vice Admiral, Royal Australian Navy
Chief of Navy

Statement of Need

Head Navy Capability

Rear Admiral Jonathan Mead AM RAN

As Head Navy Capability, I bear the responsibility to the Chief of Navy as the Capability Manager for defining, designing and delivering Navy's future maritime capability, consistent with the Government's Force Design requirements as articulated by the Vice Chief of the Australian Defence Force.

In delivering Navy's future force, I am dependent upon Naval Engineering to provide engineering advice and assurance, to ensure that it is materielly seaworthy and meets the capability, cost and schedule requirements as directed by Government.

In achieving my objectives, I expect that Naval Engineering will harness its best engineering talent and thinking across Navy, Defence, Industry and the research community in the provision of its products and services via tailored support to my programs.

Specifically, to ensure that Navy is able to meet its mission in the decades to come, I require timely, accurate and technically robust engineering advice across all relevant areas of the Capability Life Cycle. This advice would involve thorough consideration of technical risk, collaborative and constructive engagement across the Shipbuilding Enterprise and knowledge of the technology frontier that may provide Navy with a war fighting edge into the future.

Consistent with CN's expectations, the engagement of Naval Engineering in the definition, design and delivery of a materially seaworthy future force will allow the Navy to fight and win at sea.

J.D. Mead AM, RAN
Rear Admiral, Royal Australian Navy
Head Navy Capability

Statement of Need

Commander Australian Fleet

Rear Admiral Stuart Mayer CSC RAN

As the Commander of the Australian Fleet, I bear the responsibility to the Chief of Navy for readying and sustaining Navy's war fighting capability resident in the force-in-being to meet the operational requirements of the Government.

To do so, Navy must ensure that it readies and sustains its war fighting capability as outlined in the *Navy War fighting Strategy 2018.* This strategy requires Navy to be flexible and adaptable in delivery of a scalable and structured naval force.

In addition to engineering and maintenance services, I require timely, accurate and robust technical advice to maintain a materially seaworthy fleet that can achieve Navy's operational objectives.

The 2011 review by Paul Rizzo bluntly outlines the consequences to the force-in-being of diminished naval engineering capability, capacity, and knowledge.

This Naval Engineering Strategy provides the roadmap of how Naval Engineering will deliver seaworthy materiel for both the future force and the force-in-being, building on the successful efforts to build naval engineering capability under the Rizzo Reform Program.

Consistent with CN's expectations, I am reliant on Naval Engineering as an essential foundation to deliver a seaworthy force-in-being that is well placed to achieve all missions assigned.

S.C. Mayer, AO,CSC and Bar
Rear Admiral, Royal Australian Navy
Commander Australian Fleet

Statement of Intent

Head Navy Engineering

Rear Admiral Col Lawrence AM RAN

Since the release of the *Naval Engineering Strategic Plan 2013 – 2017*, we have laid the foundation to rebuild the Naval Engineering capability, consistent with the outcomes of the Rizzo Reform
Program.

The significant changes occurring within Navy and Defence more broadly as a consequence of the First Principles Review, One Defence and the announcement of a National shipbuilding enterprise, place great emphasis on the Naval Engineering discipline to ensure that the force-in-being and the future force are materially seaworthy.

Naval Engineering is a discipline; it is a body of knowledge and practice that delivers seaworthy materiel within a culture of demanding professional behaviour and accountability. The application of this discipline underpins the *Naval Engineering Strategic Plan 2017-22* which builds on the engineering aspects of the ten enduring principles described in the Australian Maritime Logistics Doctrine to set our goals for the next five years.

In taking the 'weight' as HNE, I seek to build on Naval Engineering's strong foundation to add value to the performance and reliability of mission systems and their enablers across the Capability Life Cycle through the provision of engineering and technical advice, products, and services. It is my intent to:

- Clearly define how Naval Engineering contributes to the definition and acquisition of seaworthy materiel.
- Optimise Naval Engineering services for the effective and sustained delivery of seaworthy materiel.
- Promulgate Naval Engineering policy for implementation across the Defence maritime domain.
- Organise the Naval Engineering workforce to efficiently and effectively support the sustained delivery of professional engineering and maintenance functions.
- Implement an effective Naval Engineering operating model with a capability focus.
- Provide confidence in materiel seaworthiness through a risk based assurance program.

Over the next five years, implementation of the Defence Seaworthiness Management System will be a priority. In doing so, it is imperative that the engineering management regime clearly allocates responsibility and accountability within the Naval Engineering community for the delivery of materiel seaworthiness, safe and operationally effective outcomes and environmental protection. The delivery of seaworthy materiel will be assured through an independent and contemporary materiel assurance program.

Naval Engineering will deliver the best possible outcomes for Navy within the constraints of the environment in which we operate.

C.J. Lawrence, AM
Rear Admiral, Royal Australian Navy
Head Navy Engineering

Purpose of the Naval Engineering Strategic Plan

The *Naval Engineering Strategic Plan 2017-2022* defines the vision and mission of the Naval Engineering and Maintenance Discipline and how it will achieve these through an articulated set of goals and objectives for the period 2017 to 2022.

This document outlines the key values and behaviours to which the Naval Engineering and Maintenance Discipline will adhere, and provides the framework within which Naval Engineering and Maintenance practice will achieve its mission: to contribute to the delivery of seaworthy materiel.

The goals, objectives and Key Performance Indicators (KPIs) within this document have been developed utilising the framework of the *Naval Engineering Strategic Plan 2013-2017*. This document includes strategies, timeframes, accountabilities and responsibilities relating to each KPI.

Our Vision is to:

Deliver engineering and maintenance services that our Navy needs to fight and win at sea.

Our Mission is to:

Contribute to the delivery of seaworthy materiel.

We will do this by:

Conceptualising, designing, constructing and maintaining maritime materiel, and assuring its seaworthiness over the lifecycle utilising a professional One Defence workforce that utilises its technical mastery and operates under a business-excellence framework.

Our Primary Goal is to:

Contribute to the delivery of seaworthy materiel to ensure that Navy, and thus Defence, is best positioned to fight and win at sea.

DEFENCE FIRST PRINCIPLES

Clear authorities and accountabilities that align with resources: Decision-makers are empowered and held responsible for delivering on strategies and plans within agreed resourcing.

Focus on core business: Defence doing only for itself what no one else can do more effectively and efficiently.

Outcome orientation: Delivering what is required with processes, systems and tools being the 'means not the end'.

Professionalism: Committed people with the right skills in appropriate jobs.

Transparency: Honest and open behaviour which enables others to know exactly what Defence is doing and why.

Simplicity: Eliminating complicated and unnecessary structures, processes, systems and tools.

Timely, contestable advice: Using internal and external expertise to provide the best advice so that the outcome is delivered in the most cost-effective and efficient manner.

NAVY VALUES

Honour is the fundamental value on which the Navy's and each person's reputation depends. To demonstrate honour demands honesty, courage, integrity and loyalty and to consistently behave in a way that is becoming and worthwhile.

Honesty is always being truthful, knowing and doing what is right for the Navy and ourselves.

Courage is the strength of character to do what is right in the face of personal adversity, danger or threat.

Integrity is the display of truth, honesty and fairness that gains respect and trust from others.

Loyalty is being committed to each other and to our duty of service to Australia.

NAVY SIGNATURE BEHAVIOURS

People:

- Respect the contribution of every individual
- Promote the wellbeing and development of all Navy people
- Communicate well and regularly

Performance:

- Challenge and innovate
- Be cost conscious
- Fix problems, take actions
- Drive decision making down

Professionalism:

- Strengthen relationships across and beyond Navy
- Be the best I can
- Make Navy proud, make Australia proud

NAVY CULTURAL INTENT

Trusted to defend: A Navy that is trusted to defend Australia and its interests by being ready to fight and win at sea.

Proven to deliver: A Navy that is proven to deliver seaworthy and mission ready forces.

Respectful always: A Navy that is diverse and respectful always, where we live our Signature Behaviours and Values every day.

AUSTRALIAN MARITIME LOGISTICS DOCTRINE: TEN ENDURING PRINCIPLES

Principle 1 - Keep sight of operating intent

Principle 2 - Acquire reliable ships, submarines and aircraft

Principle 3 - Provide seamless support across the life cycle

Principle 4 - Aggregate views of acquired capability

Principle 5 - Consolidate class-by-class accountabilities

Principle 6 - Maintain tight configuration control in a continuously changing environment

Principle 7 - Optimise end-to-end supply chain to fleet and class demands

Principle 8 - Manage by total cost of ownership throughout the life cycle

Principle 9 - Generate a positive seaworthiness delivery culture

Principle 10 - Achieve good asset stewardship through continuous improvement

Approach to the Naval Engineering Strategy

The Engineering and Maintenance Discipline is applied widely within Defence and Industry and is central to the materiel element of Capability across the Capability Life Cycle (CLC). It is a discipline that is practiced by skilled, trained and authorised personnel who observe professional standards and uphold the ethics and values of the Discipline in conjunction with the ethics, values, and behaviours of the organisations they represent within Defence or Industry.

The Naval Engineering (NE) Strategy detailed in this document seeks to further develop and mature the Discipline such that its practice and the outcomes it delivers are respected and valued by all Maritime Capability stakeholders.

This revision to the original NE Strategy reflects key changes in the Government and Defence environment including the release of the 2016 Defence White Paper, the First Principles Review (FPR), and Plan Pelorus. The NE Strategy moved from development of concepts and strategic intents to taking actions to deliver and implement policy, plans and procedures. This document details the higher level outcome goals that have been developed over previous NE Strategies and their scheduled dates of effect.

Public value model

Operating as a servant of Government, the practitioners of the Naval Engineering and Maintenance Discipline must generate public value. Guidance relating to public sector governance and accountability is available in a number of publicly available policy documents.

The Public Governance, Performance and Accountability Act 2013 and the Public Governance, Performance and Accountability Rule 2014 state the accountabilities and governance requirements of Defence as a Non-Corporate Commonwealth Entity. The practitioners of the Naval Engineering and Maintenance Discipline must support Defence in meeting its responsibilities, including proper management and use of public resources, promotion of financial sustainability, and adhering to an appropriate system of risk oversight, risk management and internal controls. Adhering to the Act, and through our principles, officials are also encouraged to work with others to achieve common objectives. Authorities and practitioners of the Naval Engineering and Maintenance Discipline are of crucial importance in ensuring public resources are managed effectively. The following diagram, Figure 1, illustrates the basis for Naval Engineering Strategic elements in relation to the three underlying enablers for value creation in the public sector:

- Ensuring legitimacy and authorisation;
- Building operational capability;
- Delivering values.

Ensuring Legitimacy and Authorisation	• Authorisation and delegation of authority • Governance, roles and responsibilities • Engagement and legitimacy with stakeholders (Navy, Defence and Industy) • Recognition of contribution by other functional areas • Credibility with Defence and civil society actors
Building Operational Capability	• Organisational outputs (master-set) • Operational efficiency • Seaworthiness • Staff morale, capacity, development • Industry morale, capacity, development • Organisational learning and innovation
Delivering Value	• Organisational vision, mission, strategic goals aligned to end user (Capability Manager's) requirements. • Links among goals, activities, outputs and objectives (to ensure effort is directed to the right areas to create value for the end user). • Execute activities and outputs that achieve objectives. • Ensure outcomes are realised.

Figure 1: Creation of Public Value by the Naval Engineering and Maintenance Discipline

Public Value: Seaworthy Materiel

Goal: Contribute to the delivery of seaworthy materiel to ensure that Navy, and thus Defence, is best positioned to fight and win at sea

Contributing to the delivery of seaworthy materiel is the public value goal of the Naval Engineering and Maintenance Discipline. Australian people realise the value from the Defence's maritime capability only when it is in a Seaworthy state. Naval Engineering's contribution towards Seaworthiness manifests in a range of public value benefits to the Navy, Defence and Industry.

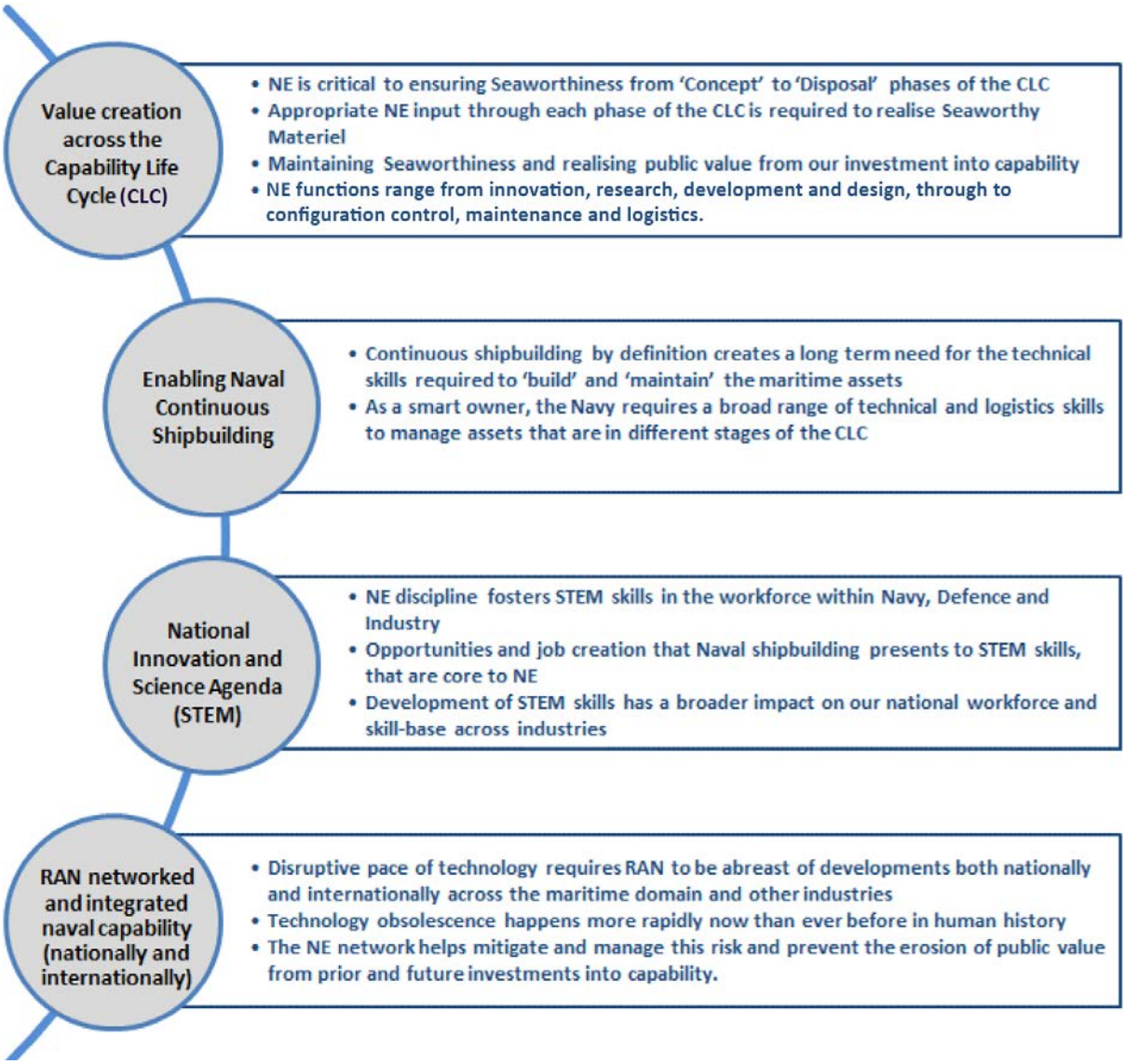


Figure 2: Public Value Model

Naval Engineering strategies that contribute to the delivery of seaworthy materiel

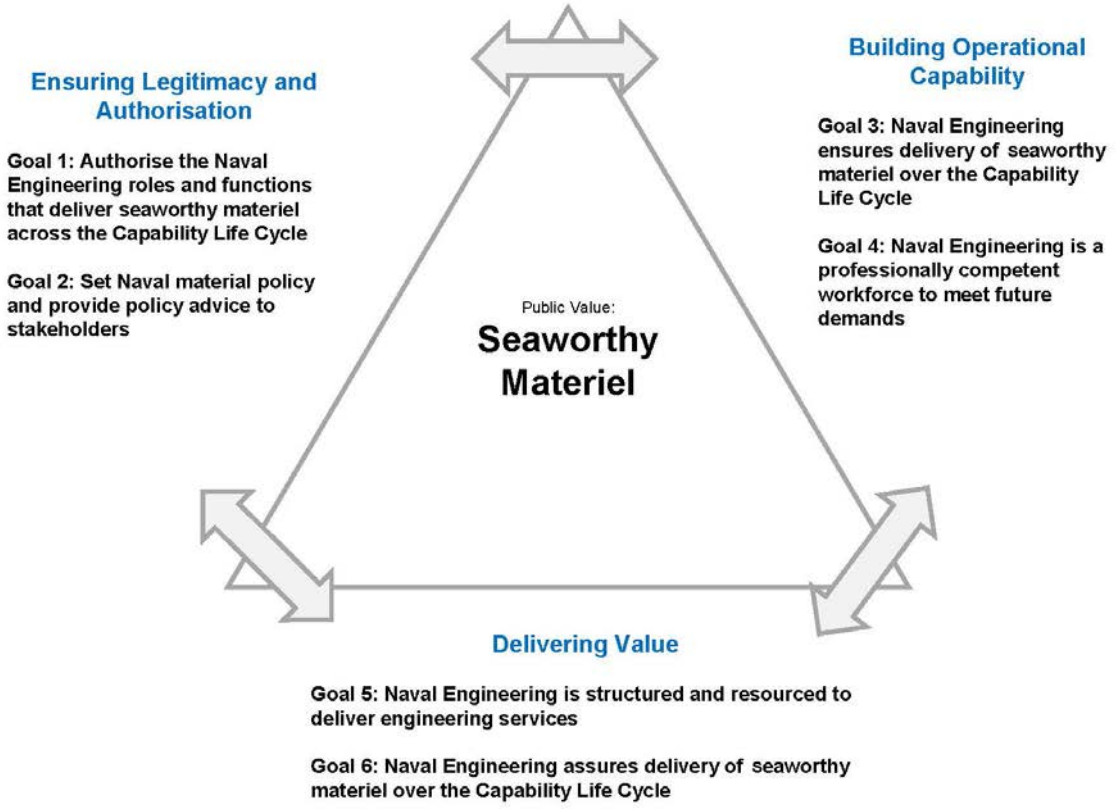


Figure 3: Alignment of Strategic Goals and the Public Value Model

Naval Engineering Strategic Planning and Governance

Naval Engineering Strategic Plan implementation

This document is the foundational strategy document of the Naval Engineering and Maintenance Discipline. The Strategic Plan makes the argument as to why NE exists and the vision, mission, goals and objectives of the discipline that operates across Navy, Defence and Industry.

The Strategic Plan provides the expected outcomes from the discipline over the 2017-2022 period. It presents a view of the future state and those parts of the discipline that remain to be conceptualised, designed and built, or further matured to achieve that future state. The foundations for the future state are a culmination of the NE Strategic goal outcomes, which are the “head mark” events and are achieved with the advancement of the Engineering Divisions Strategy and Plans.

Review cycle and Governance

This document has been designed to evolve and will be refreshed over a bi-annual review cycle. Chief of Navy, Head of Navy Capability and the Fleet Commander naturally constitute the NE Strategic Planning Review Board and assist HNE on the way forward. The working group that assists HNE is the establishment of the Engineering Advisory Council (EAC). Members of the EAC are responsible for their respective goal outcomes from the NE Strategic Plans, and will provide recommendations so as to continuously improve the Naval Engineering Strategic Plan.

The bi-annual review process will be arranged by the EAC for HNE to recognise goals that have been achieved, those parts of the NE strategic intent that have been built over the previous five years and recalibrate the Plan to align with the current needs and demands of Navy and Defence for the next five years.

Cascading program and business planning

The goals and objectives of the Naval Engineering Strategic Plan, cascade down to program and business plans within the relevant areas that are required to execute the goals and objectives in Navy and Defence. It is the responsibility and challenge for all authorities and practitioners of the discipline to manage public resources effectively in implementing the NE goals and objectives. These outcomes should be reflected not only in the individual plans and objectives of areas that have NE disciplines, as a performance measurement, but also the practitioners’ reportable achievements for each period.

AMSDO relationship to the NE Strategic Plan

The adaptation process that was incorporated under Recommendation 17 - Rebuild Navy Engineering Capability of the 2011 Plan to Reform Support Ship Repair and Management Practices (Rizzo Review), which stated that “Navy engineering should be rebuilt and reorganised to reduce fragmentation, increase authority, clarify accountability and enable the Head Navy Engineering to fulfil his role as the Technical Regulatory Authority.” The team that delivers seaworthy materiel for a given Class of ships, or group of similar classes, is described as an Authorised Materiel Seaworthy Delivery Organisation (AMSDO). For some, its constituent components like an Authorised Engineering Organisation (AEO) are familiar, but the terms like the Authorised Maintenance Organisation (AMO) and Authorised Support Organisation (ASO) are less known. Nonetheless, even the familiar AEO is being reshaped and its delegation basis recast to enable Navy to meet our future delivery challenges with clear lines of accountability and authority.

The key delivery tool for materiel seaworthiness within the Naval Engineering and Maintenance Discipline is the AMSDO, and this makes it a fundamental enabler for the Naval Engineering Strategic Plan. With its required plans for implementations the AMSDO will bring together all of the individual business units plans. These correlated plans under each respective AMSDO’s Materiel Seaworthiness Management Plan (MSMP) and Materiel Seaworthiness Assurance Plan (MSAP) will reflect the Naval Engineering Strategic Plan’s intent to pragmatically deliver the required outcomes and objectives within the Naval Enterprise, and in turn the whole of Defence.

The AMSDO is the real, not virtual, solution to the Australian Maritime Logistic Doctrine’s (AMLD) Principle 3: Provide seamless support across the life cycle. It embraces all the governing, assurance, management, engineering, maintenance, and support entities that must come together and be governed for the singular purpose of delivering seaworthy mission systems of a class. The AMSDO construct will force us out of our parochial and tribal past with its artificial boundaries, by redefining the meaning of and the accountable individuals for materiel delivery. The N4 Library describes, through the MSwFMS, what matters and why, and in doing so, empowers the AMSDOs to be the change agents that drive the continuous delivery of seaworthy materiel to their respective maritime Force Commands.

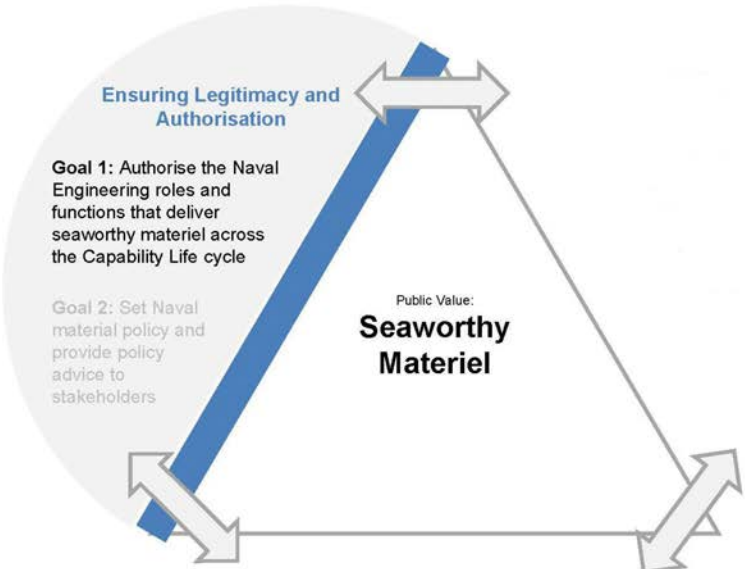
The AMSDO construct makes real, at the working level, the narrative of the Naval Enterprise – it generates the materiel component of capability. To empower, assist and support those who do the work in the AMSDO, whether they are in the CASG, industry or Navy.

Naval Engineering Goals and Objectives

Goal 1 **Authorise the Naval Engineering roles and functions that deliver seaworthy materiel across the Capability Life Cycle**	1.1	NE authorities are defined across the enterprise
	1.2	NE meets the requirements and expectations set by the CM for seaworthy materiel over the life cycle
	1.3	NE drives materiel input across the CLC from force design through to disposal
	1.4	NE supports materiel Centres of Expertise where appropriate
	1.5	NE provides strategic level input into future force delivery
Goal 2 **Set Naval materiel policy and provide policy advice to stakeholders**	2.1	NE derives the materiel policy framework (N4 library) from the MSwFMS
	2.2	NE implements materiel policy through Navy's ANP framework
	2.3	NE provides policy advice across the CLC through delegated authorities
	2.4	NE educates the Naval engineering workforce and stakeholders on the MSwFMS and N4 Library
	2.5	NE transitions from the ABR and DI(N) system to the N4 Library to enable the replacement of the NTRF with the DSwMS
Goal 3 **Naval Engineering ensures delivery of seaworthy materiel over the Capability Life Cycle**	3.1	NE enacts the policy, processes, and procedures in N4 Library through plans
	3.2	NE sustains the N4 Library and supports the broader ANP framework
	3.3	NE adopts an Information Management Function for materiel data
	3.4	NE implements a Performance Management Function to monitor and evaluate the effectiveness of materiel seaworthiness management
	3.5	NE identifies current and emerging technological issues that may impact the delivery of seaworthy materiel
Goal 4 **Naval Engineering is a professionally competent workforce to meet future demands**	4.1	NE is resourced with a professional competent workforce that encompasses a community of professionals that values knowledge and applies it with integrity
	4.2	NE influences the shape and function of the future NE workforce profile, including identifying the competence and levels required across the NE workforce for the future National Ship Building Plan
	4.3	NE assures the competence levels and employment of the workforce provided to the CM, including identifying career paths for current and future demand
	4.4	NE actively and directly influences the shape, function and use of the current and future NE workforce profile
Goal 5 **Naval Engineering is structured and resourced to deliver engineering services**	5.1	NE defines and implements an operating model that meets the needs of the CM
	5.2	NE is resourced through the operating model to meet the needs of the CM
	5.3	NE demonstrates the operating model optimises public value
Goal 6 **Naval Engineering assures delivery of seaworthy materiel over the Capability Life Cycle**	6.1	NE will operate a risk based assurance program for seaworthy materiel

Naval Engineering Strategies 2017-2022

Goal 1

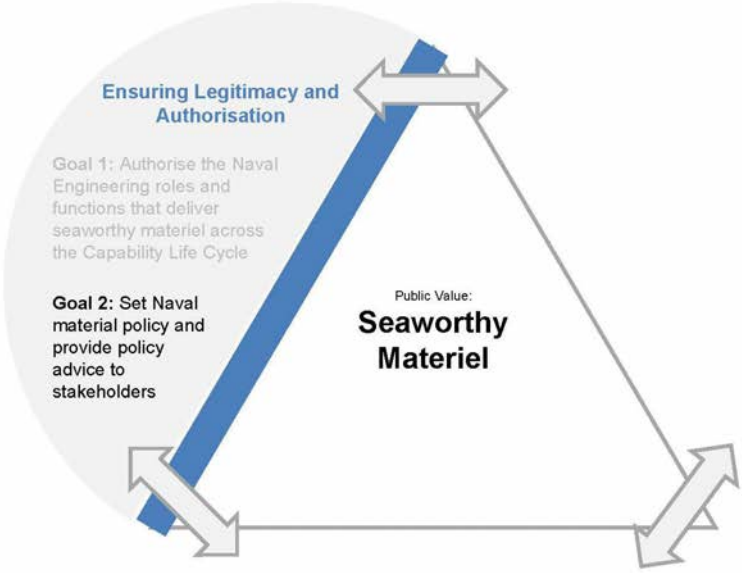


No.	Objective	Strategies	Key Performance Indicators	Expected Completion	Responsibility/ Accountability
1.1	Naval Engineering authorities are defined across the enterprise	· HNE to define the NE roles across Defence and Industry · HNE to delegate authority for NE roles to deliver the NE functions across Defence and Industry	· HNE's defines the NE roles across Defence and Industry · HNE delegates appropriate authority to qualified NE professionals · NE discipline and practicing professionals are recognisable across Navy, Defence and Industry	Jun 18	A: HNE R: Office of HNE
1.2	Naval Engineering meets the requirements and expectations set by the CM for seaworthy materiel over the life cycle	· CN communicates to Navy, Defence and Industry, the role of NE in contributing to the delivery of seaworthy materiel · DG-ENG, EDNTB ensure regular engagement with CM areas and promote visibility of the scope and outcomes of work carried out by NE to support CM	· NE is consulted and is the dominant voice in delivering seaworthy materiel for Naval capability across the CLC · DG-ENG, EDNTB to have regular engagement with CM to ensure awareness of the scope and level of support that is being provided to future force and the force in being.	Jun 18	A: CN/ HNE R: DGENG-N R: EDNTB

1.3	Naval Engineering drives materiel input across the CLC from force design through to disposal	• CN to communicate to Navy, Defence and Industry that HNE and delegates are the authoritative entities to provide advice on engineering and materiel seaworthiness related matters throughout the CLC • HNE, with CN's sponsorship, to establish NE branch as a supplier of engineering and innovation advice to VCDF on force design • FuFLEO to define the engineering and technical requirements on behalf of HNC and to fulfil them using the appropriate NE capabilities • DGENG-N to establish the annual NE strategic planning cycle to ensure that the Naval Engineering functions are aligned to broader Navy and Defence plans and are resourced appropriately for the future	• HNE/ delegates are consulted at each stage of the CLC by Navy, Defence and Industry • An ongoing stream of work is established, where by HNE/DGENG-N provide technological and innovation advice to VCDF in relation to force design • Service agreement is established with HNC's division for the mechanisms by which NE would fulfil the engineering and technical needs of the capability projects • Bi-annual reviews of the NE Strategic Plan are conducted to ensure appropriate resourcing and alignment	Jun 19	A: CN/ HNE R: DGENG-N R: PSO to HNE R. DFuFLEO
1.4	Naval Engineering sponsors Materiel Centres of Excellence where appropriate	• HNE supports the establishment of materiel Centres of Expertise (CoE) within the Navy, Defence and Industry, wherever they are most appropriate • HNE provided the appropriate authorisation/delegation for NE CoE to provide authoritative input/advice on behalf of HNE to Navy, Defence and Industry • HNE to create alliances with appropriate Engineering Professional bodies to access the required talent to maximise the engineering expertise of the CoEs	• CoEs are established across Navy, Defence and Industry • CoEs are recognised as the authoritative NE delegates to provide engineering and technical advice on behalf of HNE • Appropriate service agreements are entered into with CoEs in the Industry • CoEs are able to provide high quality and comprehensive professional advice on all Naval Technical matters for Navy, Defence and Industry	Jun 19	A: HNE R: DGENG-N
1.5	Naval Engineering provides strategic level input into future force delivery	• NE supports capability projects, as per 'Smart Buyer' framework, through appropriate NE roles established within Navy, Defence and Industry[1] • NE supports HNC in the assessment and management of 'technological' and 'supportability' risk for capability projects[2] • NE leads the development of the Materiel Acquisition Support and Delivery Strategy (MASDS) for all new materiel capability projects • Appropriate CoE is involved in the mission system design process from the concept stage of the CLC • DFuFLEO utilises NE capability to provide advice and input to HNC on future force materiel development	• NE is able to support HNC's needs for engineering and technical advice • HNE/ delegates are involved in all future force delivery projects • NE provides authoritative advice on technology and supportability risks to future force delivery projects • NE leads MASDS development for capability projects • CoE provide authoritative technical advice on all naval materiel design work from the concept stage of the CLC	Dec 18	A: HNE/ HNC R: DGENG-N R: DFuFLEO R: EDNTB

[1]Smart Buyer Framework would determine if the core 'Engineering' function within a future force delivery project would be undertaken within Defence/ Navy or by Industry. In either case, the roles delivering NE input should be those authorised by HNE.
[2]Smart Buyer Framework identified 'Technology' as a risk in the Acquisition Phase and 'Supportability' is identified as a risk in the in-service phase.

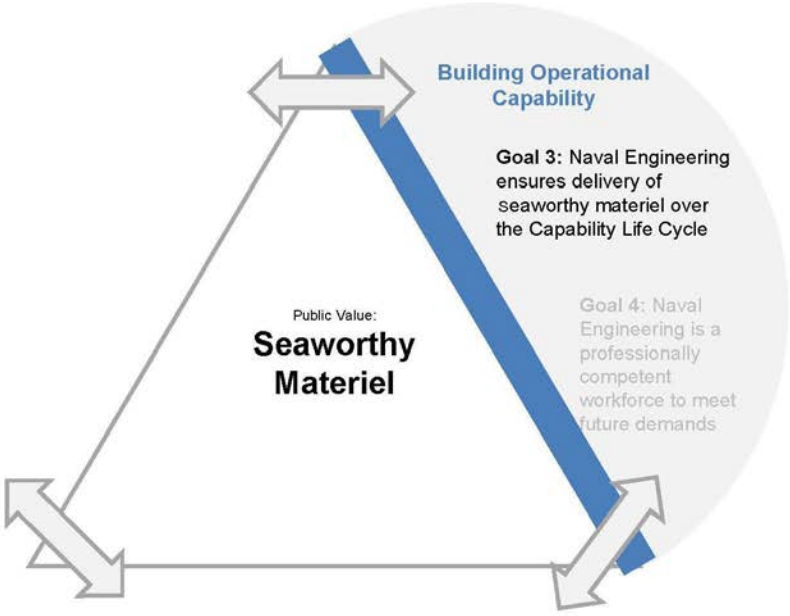
Goal 2



No.	Objective	Strategies	Key Performance Indicators	Expected Completion	Responsibility/ Accountability
2.1	Naval Engineering derives the materiel policy framework (N4 Library) from the MSwFMS	· DNEPPP to develop and implement a plan to maintain alignment between the N4 Library and the MSwFMS · DNEPPP to conduct a comprehensive stocktake of materiel data, guidance and policy to standardise and align the information with the N4 Library · DNEPPP to undertake periodic upkeep, update and upgrade activities to maintain the N4 library	· N4 Library is established as the Naval Materiel Seaworthiness policy · N4 Library Management Plan	Jun 18	A: DGENG-N R: DNEPPP
2.2	Naval Engineering implements materiel policy through Navy's ANP framework	· DNEPPP to establish the N4 Library as the single source of Maritime Capability Manager's publications and instructions to address the Defence Seaworthiness Management System compliance obligations in relation to materiel · CN as the Maritime Capability Manager instructs Navy, Defence and Industry to use the N4 library as the authoritative policy source to manage materiel seaworthiness for naval mission systems	· Usage of N4 Library by Defence and Industry to meet policy obligations	Dec 18	A: CN R: DNEPPP
2.3	Naval Engineering provides policy advice across the CLC through delegated authorities	· DNEPPP to develop and implement a plan to build awareness and train NE personnel on how to adapt to the N4 Library	· N4 Library training and education package · MSwFMS training and education package	Dec 18	A: DGENG-N R: DNEPPP

2.4	Naval Engineering educates the Naval engineering workforce and stakeholders on the MSFMS and N4 library	• DNEPPP to develop and implement a plan to communicate the purpose and usage of the N4 Library and the MSwFMS to Navy, Defence and Industry • DNEPPP engages with the training forces to ensure that all training material is changed to reflect the new NE policy	• N4 Library is widely known and tested with individual qualification boards recognising good level of knowledge • N4 Library policy is seen as the Naval Enterprise's authority for policy and specifications throughout Navy, Defence and Industry	Dec 18	A: DGENG-N R: DNEPPP
2.5	Naval Engineering transitions from the ABR and DI(N) system to the N4 Library to enable the replacement of the NTRF with the DSwMS	• NE will transition from the NTRF to the DSwMS. DG-ENG will enable transition methodology that is constructed to ensure that the transition enables Mission Systems Material to continue to be supported and assured • To prevent reversion to previous business practises and/or confusion, the NTRF, its policy, publications, plans, and procedures are retired from service, by DG-ENG	• Mission Systems are all compliant with DSwMS • NTRF retired • Technical DI(N)s and ABRs retired • All AMSDO publications are transitioned in to the N4 Library	Dec 20	A: DGENG-N R: DNEPPP R: NMSwAA R: FLEO/ CLEO R: DFuFLEO

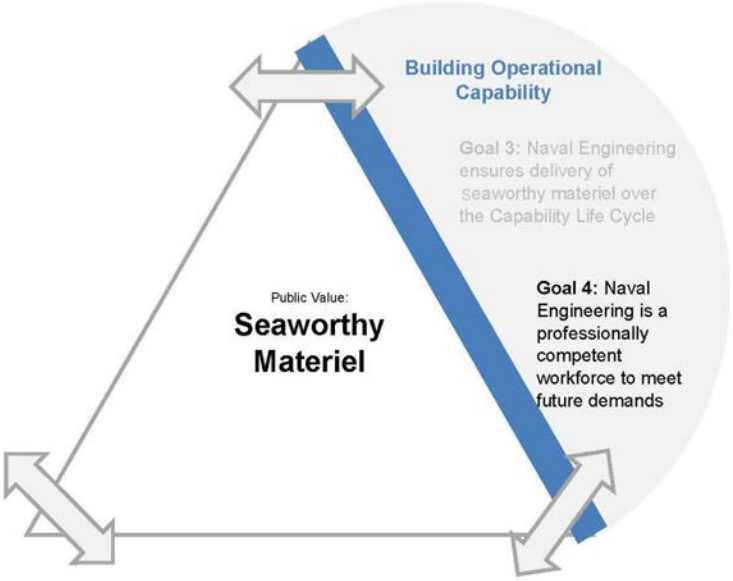
Goal 3



No.	Objective	Strategies	Key Performance Indicators	Expected Completion	Responsibility/ Accountability.
3.1	Naval Engineering enacts the policy, processes, and procedures in N4 Library through plans	• DNEPPP to develop appropriate guidance on how NE personnel utilise the MSwFMS and the N4 Library as the comprehensive set of everything there is to do in NE and derive MSMPs that use a subset of functions for specific materiel (i.e. equipment, platform and class) • MSwFMS is reviewed and updated annually • MSwFMS and the N4 Library are aligned and ongoing work is undertaken to establish them as the authoritative 'body of knowledge' for the NE discipline	• MSwFMS and the N4 Library are aligned and up to date • There are MSMPs and MSAPs derived from MSwFMS and the N4 Library for all platforms and classes • MSwFMS and the N4 Library are recognised as the comprehensive 'body of knowledge' by all NE personnel	Dec 18	A: HNE R: DNEPPP
3.2	Naval Engineering sustains the N4 Library and supports the broader ANP framework	• FLEO and DFuFLEO develop MSMPs of their platforms, classes and future capability as per the MSwFMS and the N4 Library • DGENG-N on behalf of HNE endorses the MSMPs before they are approved by capability sponsors • MSMPs are first developed by the DFuFLEO at the conceptualise stage of the CLC. Subsequent major versions are completed each time the capability moves from one phase of the CLC to the next, or when there are major 'Updates' or 'Upgrades' carried out on the materiel • DNEPPP to assist with the development of MSMPs for the force-in-being • Major equipment support entities to develop and maintain the equipment management plans for major equipment classes that are common across platforms	• MSMPs are developed in line with the MSwFMS and the N4 Library • MSMPs are endorsed by DGENG-N and approved by capability sponsors • The standard content format for the MSMPs each stage of the CLC is defined in the N4 Library • MSMPs are available for all classes in future force and force in being • Major equipment support entities are identified and established	Dec 19	A: HNE/ HNC/ FC R: DGENG-N R: DNEPPP R: NTSwAA R: FLEO/ CLEO R: DFuFLEO R: EDNTB

3.3	Naval Engineering adopts an Information Management Function for materiel data	• DNEPPP implements the policy and program to establish and maintain the tools and methodologies to collate materiel data from CLEOs, FLEO and DFuFLEO to create an integrated view of materiel data across the force in being and the future force • An appropriate information system is identified and implemented to be the single source of truth for all materiel data held across Navy, Defence and Industry • NE Enterprise uses the collated materiel data to assess, forecast, manage and report on materiel seaworthiness	• All technical information is collated and in one place • Appropriate IT system/s are identified and commissioned for information collection and management of technical data • Lead indicators are designed • Plan Mercator requirements for information Management of equipment and systems is defined as what is considered configured items. Then managed through the use of RFID and unique identification tags to correlated data to items	Dec 19	A: HNE/ DGENG-N R: DNEPPP R: CLEO, FLEO, FuFLEO
3.4	Naval Engineering implements a Performance Management Function to monitor and evaluate the effectiveness of materiel seaworthiness management	• DNEPPP implements the policy and program to establish and maintain the tools and methodologies to collate reporting through CLEOs, FLEO and DFuFLEO of planned and completed materiel seaworthiness management activities • Anomalies from performance effectiveness monitoring activity are reported to the CLEO, FLEO and NMSwAA and escalated appropriately • Remediation plans are developed and filed with NMSWAA by responsible CLEO, FLEO, and DFuFLEO. NMSwAA conducts reviews on completion on remediation action	• Reporting framework is established and enterprise view of Materiel Seaworthiness Management is available to appropriate stakeholders • Effective reporting function is in place to report and escalate any anomalies • Remediation plans are available or being developed to address any anomalies	Dec 18	A: CN/ HNE/ HNC/ FC R: DGENG-N R: NMSwAA R: FLEO/ CLEO R: DFuFLEO R: AMOSDO/ AEO/ AMO
3.5	Naval Engineering identifies current and emerging technological issues that may impact the delivery of seaworthy materiel	• CoEs conduct periodic environmental scans and research to identify technological trends in their domain areas and how those trends impact the future force and force in being • CoEs identify any emerging risks and issues at the major equipment level, i.e. impacting multiple classes of platforms in the force-in-being and future force • 'Technological' and 'Supportability' risks in the Smart Buyer framework are linked to the research and environmental scans conducted by the relevant CoEs • Current and emerging technical risk factors are identified, reported and monitored	• Quarterly publications on technological trends impacting their domain areas • Publications are referenced by project managers as the authoritative evidence on technological and obsolescence risks • Current and emerging technological risks and issues are identified, tracked and reported on a quarterly basis	Jun 18	A: HNE R: DGENG-N R: EDNTB R: CASG CoE

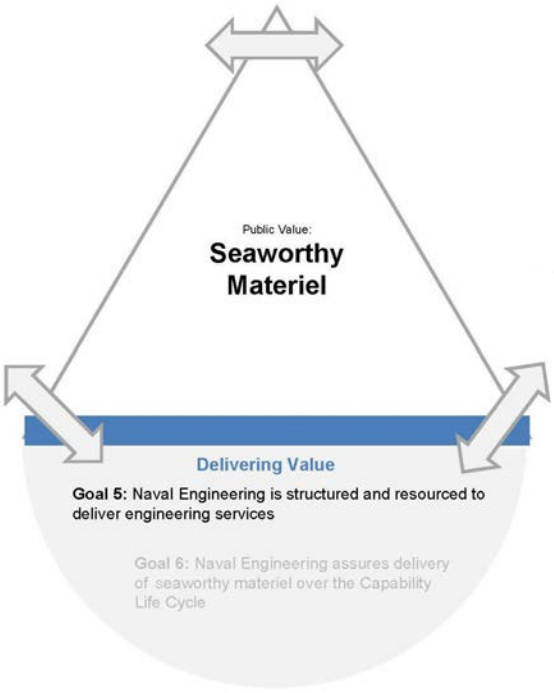
Goal 4



No.	Objective	Strategies	Key Performance Indicators	Expected Completion	Responsibility/ Accountability
4.1	Naval Engineering is resourced with a professional competent workforce that encompasses a community of professionals that values knowledge and applies it with integrity	• HNE to engage with DGNP to assess the present and future demand for trained and certified NE personnel (SQEP) in Navy, Defence and Industry • HNE to ensure NTB and FSU undertake a program of work to identify and establish specific, specialised skills environments to support NE workforce requirements • DNWM with HNE guidance is to review the engineering and technical training, coaching and certification required to perform the NE (SQEP) roles established in Navy, Defence and Industry • DGENG-N to implement a knowledge management system that captures institutional knowledge and allows for the effective on-boarding of new personnel • CEDP to continue as a mechanism to bring in suitable qualified and experienced personnel to NE • HNE through DGENG-N fosters a professional community that values knowledge and applies integrity	• NE future state workforce profile is published • Specialised skills environments are identified where necessary • NE workforce needs are clearly understood by Navy, Defence and Industry • NE Body of Knowledge is comprehensive and is recognised as the core of the NE discipline • NE personnel have a reputation as professionals • NE workforce shares knowledge, skills and expertise with the broader engineering community through conferences and journal articles • There is a direct channel of communication available to all NE personnel within Navy, Defence and Industry to raise professional ethics and related matters, through the Delegation Framework • NE workforce is drawn from diverse avenues	Jun 20	A: HNE / DGENG-N R: DNEPPP R: DDNWM R: EDNTB R: EDFSU R: DDNWM

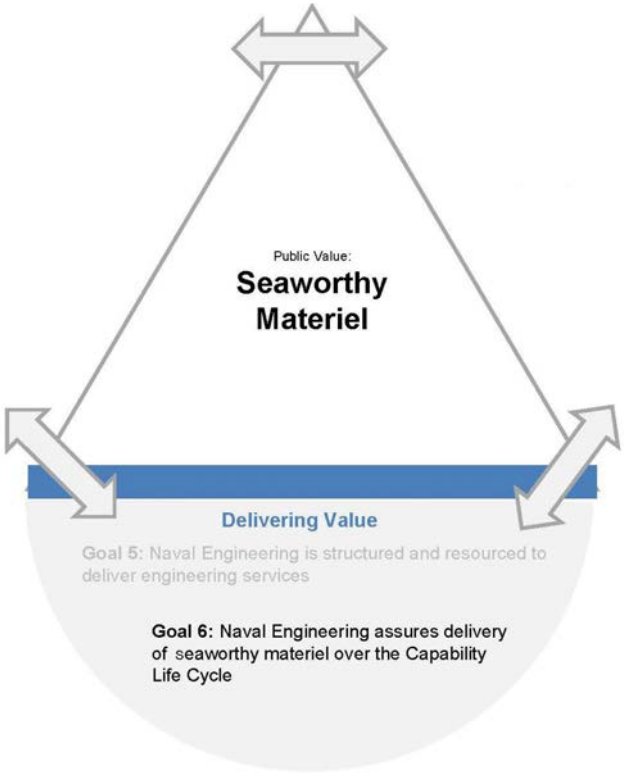
4.2	Naval Engineering influences the shape and function of the future NE workforce profile, including identifying the competence and levels required across the NE workforce for the Future National Ship Building Plan	• HNE to specify the requirements for succession and continuity planning that is adopted by AMSDOs to ensure ongoing availability of NE specialists (SQEP). • HNE to ensure that DGNP has a program for movement of NE personnel across ADF, APS and Industry while performing NE roles to broaden the knowledge and competency base • HNE to communicate the NE Employment Value Proposition (EVP) for Navy, Defence and Industry; to attract, recruit and retain suitable qualified and experienced personnel • DGENG-N to define and circulate delegations to NE personnel	• Succession and continuity is planned for at least 75% of technical positions in AMSDOs • NE personnel are able to move between Navy, Defence and Industry with full, documented acknowledgement of competence/ mastery • NE EVP developed and communicated across Defence and Industry • NE personnel understand that their obligations as a professional workforce are paramount to ensuring the delivery of seaworthy materiel	Jun 21	A: HNE R: DGENG-N R: DGNP R: EDNTB R: DDNWM
4.3	Naval Engineering assures the competence levels and employment of the workforce provided to the CM, including identifying career paths for current and future demand	• HNE to initiate a program of work to conduct a stocktake of skills of the NE workforce to undertake the functions of the MSwFMS, towards identifying skill gaps • NE to engage with the STEM skills program in schools and tertiary institutions through targeted activities to encourage a steady inflow of potential NE workforce for Navy, Defence and Industry • HNE to support maritime engineering through integrating with, and providing mentoring for Centre of Expertise within Navy, Defence and Industry • Explore and pursue options to communicate with the non-technical audience through other Navy-wide forums and communication channels	• Completed skill gap analysis • Targeted programs to address key gaps. e.g. Skill development within the NE workforce • Partnerships with leading Australian universities to promote NE as a career of choice • Sponsoring academic or industry research into NE innovation and emerging technology • The non-technical workforce is made aware of the role of NE at least once a year through Defence, Navy or group-specific communication channels	Dec 20	A: HNE R: DGENG-N R: DNEPPP R: DDNWM
4.4	Naval Engineering actively and directly influences the shape, function and use of the current and future NE workforce profile	• HNE to communicate the NE EVP for Navy, Defence and Industry • HNE to ensure that there is a direct channel of communication available to all NE personnel within Navy, Defence and Industry to raise professional matters • DGENG-N to define and circulate delegations to NE personnel • HNE to engage with DGNP on current and future workforce demand • DNEPPP generates policy that ensures Commonwealth NE community members are utilised fully in a cost benefit analysis approach for materiel support and advice	• NE EVP developed and communicated across Defence and Industry. • NE personnel have a reputation as professionals • NE personnel understand that their obligations as a professional workforce are paramount to ensuring the delivery of seaworthy materiel • Industry, CASG, Navy and the greater Defence organisations actively challenge to utilise Commonwealth NE Services over commercial arrangements because of value for money, competence and responsiveness • Organisations and agents external to the NE Community acknowledge, and activity fund, the professional development of the NE members as a cost benefit based on established ROI	Jun 22	A: HNE / DGENG-N R: DNEPPP R: EDFSU R: EDNTB

Goal 5



No.	Objective	Strategies	Key Performance Indicators	Expected Completion	Responsibility/ Accountability.
5.1	Naval Engineering defines and implements an operating model that meets the needs of the CM	• HNE to establish and CN to endorse, the NE Operating Model (matrix model) with two lines of reporting for NE personnel. Line management reporting to respective managers and professional reporting based on NE delegations to HNE/DGENG-N for both Future Fleet and Fleet in Being • NE Operating Model is communicated to HNC, FC and other key stakeholders in Navy, sDefence and Industry • Define a work program framework (based on the Australian Business Excellence Framework) to facilitate the execution of this NE Strategic Plan • Establish a Program Management Office to coordinate the implementation of the work program to support this NE Strategic Plan	• NE personnel understand the matrix model of reporting • NE Operating Model is understood by Navy, Defence and Industry • NE Operating Model meets the needs of Navy, Defence and Industry stakeholders • NE Program Management Office funded and established	Dec 18	A: HNE/DGENG-N R: DNEPPP
5.2	Naval Engineering is resourced through the operating model to meet the needs of the CM	• Determine the business resource requirements to successfully execute the functions of NE • Appropriate personnel with business skills and experience are recruited, trained and retained	• Business resource requirements for the delivery of the NE functions are defined and provided as input to the CM/delegate • Business and program plans to execute	Jun 18	A: HNE/ HNC/ FC/ DGENG-N R: NEEPO R: NE Functional Managers
5.3	Naval Engineering demonstrates the operating model optimises public value	• Empower NE roles through delegations and access to skills and resources across the Naval Enterprise • NE ensures that Defence is not only a 'smart buyer' but also a 'smart owner', by ensuring that decisions made across the CLC do not adversely impact the seaworthiness of materiel. • Initiate work to capture the 'Smart Owner' concept into the policy guidance	• NE Operating Model allows CLEO, FLEO, DFuFLEO and AMSDOs to tap into NE capability across Navy, Defence and Industry • Smart Owner concept is further developed and documented	Jun 18	A: HNE/ DGENG-N R: NEEPO R: NE Functional Managers R: DNEPPP

Goal 6



No.	Objective	Strategies	Key Performance Indicators	Expected Completion	Responsibility/ Accountability.
6.1	Naval Engineering will operate a risk based assurance program for seaworthy materiel	• Launch a work program to identify all relevant governing legislations applicable to the NE functions • Authorise the engineering policies, procedures and processes that align with governing legislation, Defence policy, regulations and engineering processes • Initiate work program to define the risk based model operated by the two lines of defence NE personnel provide in assuring materiel seaworthiness i.e., platform/ equipment level (technical delegate), and NMSwAA	• NE compliance environment is defined • Adherence to governing legislation and Defence-wide policies and regulations is monitored and reported to CN • Two lines of defence for materiel seaworthiness and risk based assurance model are defined and documented	Dec 18	A: HNE R: DGENG-N R: NMSwAA

Further information

The Directorate of Naval Engineering Policy, Publications and Program is responsible for all master copies of this document. The Directorate can be contacted via email at: DNEPPP@defence.gov.au

Glossary of Terms

No.	Term	Definition
1.	ADF	Australian Defence Force
2.	AMSDO	Authorised Materiel Seaworthiness Delivery Organisation
3.	ANP	Australian Navy Publications
4.	APS	Australian Public Service
5.	CASG	Capability Acquisition and Sustainment Group
6.	CEDP	Civilian Engineering Development Program
7.	CLC	Capability Life Cycle
8.	CLEO	Class Lifecycle Engineer Officer
9.	CM	Capability Manager
10.	CN	Chief of Navy
11.	DNEPPP	Director Naval Engineering Policy, Publication and Program
12.	DGENG-N	Director General Engineering – Navy
13.	DNECC	Director Naval Engineering Communications and Coordination
14.	DNMSwAA	Director Navy Materiel Seaworthiness Assurance Agency
15.	EDNTB	Executive Director Naval Technical Bureau
16.	EVP	Employment Value Proposition
17.	FC	Fleet Commander
18.	FLEO	Force (in Being) Lifecycle Engineer Officer
19.	DFuFLEO	Director Future Force Lifecycle Engineer Officer
20.	FSU	Fleet Support Unit
21.	HNC	Head Navy Capability
22.	HNE	Head Navy Engineering
23.	KPI	Key Performance Indicator
24.	MSAP	Materiel Seaworthiness Assurance Plan
25.	MSwFMS	Materiel Seaworthiness Functional Master Set
26.	MSMP	Materiel Seaworthiness Management Plan
27.	NE	Naval Engineering
28.	NMSwAA	Navy Materiel Seaworthiness Assurance Agency
29	NTB	Naval Technical Bureau
30.	N4 Library	Maritime Capability Manager's publications and instructions to address Defence Seaworthiness Management System compliance obligations in relation to Materiel.
31.	OSI	Operating and Support Intent
32.	RAN	Royal Australian Navy
33.	RADM	Rear Admiral
34.	SPO	System Program Office
35.	SQEP	Suitably Qualified and Experienced Personnel
36.	STEM	Science, Technology, Engineering and Maths
37.	VCDF	Vice Chief of Defence Force