

**Background Information Paper to**

**The Northern Territory  
Defence Support Industry  
Development Strategy  
Discussion Paper**

**Contents**

Executive Summary ..... 1

Developing the Territory’s Defence Support Industry Development Strategy ..... 3

Importance of Defence to the Northern Territory ..... 4

Northern Territory Defence Support Industry ..... 7

Defence Support Expenditure in Northern Territory Industry ..... 9

The link with the NT Economic Development Framework ..... 10

Industry Development Framework ..... 12

Northern Territory Industry Potential Capabilities ..... 16

Industry Development Strategy Timescales ..... 17

Government Support for Defence Industry Development ..... 18

Current Australian Defence Industry Overview ..... 20

Factors to be considered in a Defence Support Industry Strategy ..... 28

Defence Projects/Activities with NT Industry Potential ..... 39

Key Elements of NT Defence Industry Support Strategy ..... 51

Consolidated List of Issues ..... 53

# Executive Summary

## Defence Support Industry Strategy

The Northern Territory is entering an exciting and challenging new era of opportunity as an increasing number of Australia's new Defence Force ships, aircraft and vehicles are based in the Northern Territory or exercise here. Over the next decade, Australia will spend at least \$51 billion on new defence equipment and at least three times that amount on its through life support.

An increasing number of new equipment types will be based in the Northern Territory, or will operate here regularly, and the Australian Defence Force needs NT industry to increase its capacity to support increasingly sophisticated military vehicles and systems, as well as providing a wide range of support services to the Defence personnel and facilities based in the NT. These opportunities will strengthen the NT economy, increase employment and skills, and provide careers for NT residents.

To maximise the benefits from the increasing contribution Defence makes to the economy, all NT stakeholders need to work together to understand the opportunities, agree to priorities, allocate resources to bids and proposals, form teams to win projects beyond any one company, and develop the skills and facilities needed to properly support the ADF and international forces exercising here.

The *Defence Support Industry Development Strategy* is intended to provide a roadmap — the agreed basis for Territory development of its defence industry capabilities, identifying the roles and responsibilities of Government, industry, industry associations and other stakeholders.

## Importance of Defence to the Northern Territory

Australian Defence Force operations have become a significant element of the Territory's economy and employment. Over 10% of all ADF operational personnel are based here, more than doubling in the last decade. In total, ADF personnel and their dependents here total over 13,000 or more than 6.5% of Territory population. In Alice Springs, 12% of the population are associated with the Pine Gap defence facility. Tindal accounts for approximately 634 direct and 190 indirect jobs in Katherine and contributes around \$20 million to its economy.

Defence spending on operations in the NT is now approaching \$1 billion per year: 50% on wages and 50% on operating costs. In addition, more than \$1 billion has been spent in recent years on infrastructure. Expenditure has increased at an average of 11% per annum recently and is not projected to slow in the foreseeable future.

Defence Housing Australia (DHA) is also a major contributor, managing over 2,200 properties in the NT. New housing development at Lyons and Muirhead are groundbreaking initiatives, with DHA investing over \$170 million in Lyons alone.

## Current ADF operations in the NT

Headquarters Northern Command in Darwin commands all ADF operations in northern Australia including north Queensland and northern Western Australia. It also has responsibility for offshore surveillance right around Australia along with Joint Offshore Protection Command (JOPC).

Army has concentrated the majority of its armoured fighting vehicles at Robertson Barracks, including the ASLAV light armoured vehicle, the M113 armoured personnel carrier, the Bushmaster armoured personnel carrier and the Abrams Main Battle Tank. These are

complemented by a wide variety of field vehicles and trailers. In 2007, Army will introduce the Tiger Armed Reconnaissance Helicopter and 17 of the fleet will be based at Robertson Barracks. The Abrams and Tigers will bring with them major new infrastructure including simulators.

RAAF's main presence is the RAAF Base Tindal operating F/A18 fighter planes which will be upgraded to the F35 Joint Strike Fighter in 2012–14. Tindal will also be an operating base for the Wedgetail AEW&C aircraft from 2008. RAAF operates the nearby Delamere Air Weapons Range for its own use and international defence forces.

The primary RAN presence in the NT is the Patrol Boat fleet, headquartered at HMAS Coonawarra in Darwin. The Patrol Boat Systems Project Office is also based in Darwin. New Armidale Patrol Boats are progressively replacing the Fremantle class vessels and 10 of the 14 Armidales will be home posted in Darwin.

The Australia/US Joint Defence Facility at Pine Gap near Alice Springs is a major element of international global ballistic missile early warning and intelligence monitoring systems.

## **Developing the Territory's Defence Support Industry Development Strategy**

Over the next decade, Australia will spend at least \$51 billion on new defence equipment and at least three times that amount on its through life support. The equipment to be purchased is outlined in the *Defence Capability Plan 2006–2016*, and the Northern Territory Government and the Australian Industry & Defence Network – NT are using this as a baseline to develop a Northern Territory Defence Support Industry Development Strategy.

The aim of the strategy will be to enhance the economic, employment and skills development of the Territory, maximising the amount of defence support activity taking place here, while also seeking dual use opportunities for defence skills to be used in civil industry and vice versa.

The lead in developing the new strategy will be shared by the Defence Support Division of the Department of Business, Economic and Regional Development, and the NT Branch of the Australian Industry and Defence Network.

Implementation of the strategy will be industry driven, supported by a whole-of-government approach which will link prioritised investment in infrastructure expansion, skills development and business migration to maximise the benefits to all Territorians.

### **Your chance to participate**

We want all interested Territorians to have the opportunity to participate in the development of the Territory's Defence Support Industry Development Strategy and to benefit from it in the future.

The Discussion Paper and this Background Paper outline the structure of Defence Industry in Australia and the Territory, the major opportunities, the issues likely to be addressed and the process to be followed in developing the strategy.

There will be widespread consultation to develop the strategy. Territory consultation with industry and community groups will take place in Darwin, Katherine and Alice Springs.

There will also be national consultations, particularly in Canberra, with Defence, other Government departments, industry prime contractors and other stakeholders which can contribute to raising the Territory's defence support profile.

## **Importance of Defence to the Northern Territory**

The Australian Defence Force operations have become a significant element of the Territory. Defence expenditure (salaries and operational) in the Territory was estimated at over \$839m in 2004–05. In addition, there was a large capital works program. Since 1995, when the Army relocation began in earnest, Defence expenditure in the Territory has increased at an average rate of 11% per annum.

### **Headquarters Northern Command**

The joint force headquarters of Northern Command at Larrakeyah Barracks in Darwin is responsible for the defence of Northern Australia including the Territory, northern Western Australia and northern Queensland. HQNORCOM is also engaged with the Joint Offshore Patrol Command and co-ordinates all offshore maritime security including gas and oil assets.

### **Army presence in the north**

In 1992, the Government implemented the Army Presence in the North program (APIN) which led to the significant increase of Defence personnel and their families in the Territory. The program involved the relocation to Darwin of the Army's 1st Brigade over the period 1992-2001, including around 2285 personnel, 200 armoured vehicles and 500 support vehicles, and supporting elements.

Robertson Barracks is now the largest Armoured Fighting Vehicle (AFV) base for the ADF and it houses ASLAV, Bushmaster, M113 AFVs and 41 of Army's new M1A1 Abrams tanks.

More recently, Army has been establishing facilities at Robertson Barracks for the new Tiger Armed Reconnaissance Helicopter which will be operated by 1st Aviation Regiment. The Tiger prime contractor is Australian Aerospace. They and their main subcontractors will be establishing flight line Tiger support at Robertson Barracks and NT industry subcontract opportunities are expected to follow.

### **RAAF presence in the north**

The largest RAAF presence in the Territory is at RAAF Base Tindal near Katherine. With almost 2,500 personnel and dependents, it is the base for No.75 Squadron with F/A18 fighter aircraft and support units. It is anticipated that the F35 Joint Strike Fighter will be based at Tindal from 2012–14 when it enters RAAF service, replacing the F/A18.

RAAF also administers the nearby Delamere Air Weapons Range which will in future form part of the Australian/US Joint Combined Training Capability as well as being used by other Air Forces, eg. Singapore.

A \$90 million project at RAAF Base Tindal, that will provide facilities to support the Wedgetail AEW&C aircraft and complete Stage 5 redevelopment of the Base, is expected to proceed to RFT in the latter half of 2007.

RAAF 1 RSU is responsible for the Jindalee radar at Alice Springs operated by BAE Systems which is in operational use as well as being a research and development facility used by DSTO for ongoing Over The Horizon Radar (OTHR) improvement. It complements the JORN over-the-horizon radar network operated from Edinburgh SA.

### **RAN presence in the north**

The major RAN presence in the Northern Territory is HMAS Coonawarra and the Darwin Naval Base located there. The long time principal base for Fremantle Class Patrol Boats, they are progressively being replaced by larger Armidale Class Patrol Boats. A number of landing craft and support vessels are also stationed there.

Darwin also plays host to major RAN and multi-national exercises and operations involving around 100 visiting Australian and foreign major warships each year. When the new RAN amphibious ships enter service in 2012, a significant role will be embarking armoured elements from Robertson Barracks, and Darwin port facilities will need to match the rapid deployment operating modes.

The RAN also has communications facilities in the NT, with a transmitting station at Humpty Doo and a receiving station at Shoal Bay.

### **Joint Defence Facility Pine Gap**

The Australia/US Joint Defence Facility at Pine Gap near Alice Springs is a major element of international global ballistic missile early warning and intelligence monitoring systems. It employs about 900 people and with dependents, the total of 3,000 people represents 12% of the Alice Springs population.

### **Defence operations**

Major defence operations are a regular feature of defence activity in the Territory. These operations provide a significant boost to the local economy through supply and support contracts.

The primary defence operation in the Top End is *Operation Resolute*. *Operation Resolute* is an ongoing ADF operation which targets illegal activity within Australia's northern waters, particularly illegal fishing and it contributes to Australia's whole of Government program to detect, intercept and deter vessels carrying unauthorised arrivals entering Australia through the northwest maritime approaches.

HQ Northern Command now has responsibility on behalf of the Joint Offshore Patrol Command for maritime surveillance around the entire Australian coast.

### **Defence training and exercises**

The Northern Territory has become a major location for training and exercises. Most Darwin residents are familiar with the multi-national *Exercise Pitch Black*, and to a lesser extent with the naval exercises which take place from here. *Exercise Pitch Black* is the major offensive counter air and defensive counter air exercise conducted in Australia and includes participation by the air forces of France, Singapore, Thailand, the United Kingdom and the United States. Similar exercises will continue in future and will be complemented by regular training.

In addition to Army's existing Mt Bundy Training Range, a Joint Australian/US Armoured Training Range is being developed as part of the Australian/US Joint Combined Training Capability which also incorporates Shoalwater Bay, Queensland. When operational in 2008, the base will allow operations for up to 7,000 troops, making it one of the largest exercise areas in the Pacific region. *Exercise Talisman Sabre* in 2007 is expected to be the first joint US/Australian exercise and is likely to involve up to 17,000 troops in Queensland and the NT.

Also, as part of the Joint Combined Training Capability, the RAAF Delamere Air Weapons Range is being upgraded to provide a high level of automated instrumentation. It will increasingly be used by other nations, including the USA and Singapore, and its training systems will be integrated electronically with those of Bradshaw and Shoalwater Bay.

These developments make the Territory a significant international location for Defence land, sea and air training.

## **Defence population growth and housing impact**

### **Defence population**

As a result of the APIN program the number of Australian Defence Force (ADF) personnel stationed in the Territory (including the Department of Defence civilians) has more than doubled, increasing from around 2600 in June 1992 to about 5,600 as at June 2006. Over the same period, it is estimated that the Defence community (personnel and their families) increased from 6200 to 13000. To date, the defence community represents around 6.5 % of the Territory's population, up from 3.7% in June 1992. Today around 10 % of the ADF's combat personnel are now based in the Territory.

In the Territory the Defence population contributes to the economy, not only through consumption and investment, but also through the partners of Defence personnel, often skilled, entering the workforce. The *2003 Defence Census* (counting the people who count) found that 56% of partners who were not permanent defence force members worked full time. Of all partners, 48% had formal qualifications (bachelor degree or higher, certificate or diploma, trade or vocational qualification), and 22% were doing some form of study.

### **Defence housing**

The significant (and permanent) increase of Defence to the Northern Territory's population created an additional demand for housing as well as goods and services. This influx of personnel is largely responsible for the Territory housing boom in the mid to late 1990s. Another round of construction has begun in 2007 with the Lyons subdivision.

### **Defence Housing Australia (DHA)**

Defence Housing Australia (DHA) currently manages around 2,200 dwellings in the Northern Territory. Between 1994 and 1999, Defence housing grew strongly with average growth in dwelling stock of almost 9% per annum. However, since 1999, there has been a marginal decline in the number of dwellings due to DHA divesting some stock.

In 2003, DHA opened the Vantage Point Apartment complex, a three tower, 95 unit development on the fringe of Darwin's CBD. These inner-city apartments allow DHA to provide a wider range of accommodation for Defence personnel and their families.

### **Lee Point development — suburbs of Lyons and Muirhead**

The combination of lease expiries and stock disposals, coupled with the increasing demand for housing, will require a significant increase in investment over the next few years. To ease the housing demand, DHA plans to invest around \$170 million in the Lee Point (Lyons) suburban development. This project will deliver more than 650 fully serviced residential land allotments with some 300 of these blocks to be used to construct new housing for ADF personnel. The project is one of Darwin's largest residential developments in recent years, and will increase DHA managed dwelling stock by around 13% when completed (to around 2600 dwellings).

A further major DHA mixed development has recently been announced at nearby Muirhead, totalling over 500 lots.

## **Northern Territory Defence Support Industry**

Statistics on employment in Defence-related industry in the NT are not available to date. A preliminary estimate of value, including specialist and non-specialist support services, construction and Defence housing is about \$600 million for 2005–06.

Current Defence activities in NT industry include:

- logistic support
- armoured vehicle maintenance
- field vehicle and trailer maintenance
- electronics systems design and development
- communications systems support
- radar systems operations
- signals monitoring
- provision of aircraft for target towing and logistics
- ship maintenance, repair and modification
- underwater training systems
- construction services

These activities are usually performed in conjunction with commercial activities, with few NT companies having a majority of their revenues from Defence.

The following is a preliminary capability matrix for NT industry on the same basis as shown for Australia-wide defence industry on page 23.

Capability	Provision	Maintain/ Repair	Modify/ Upgrade	Manufacture	Design	Export						
Ballistic Munitions												
Precision Guided Munitions												
Small Arms												
Military B Vehicles												
Light Armoured Vehicles												
Heavy Armoured Vehicles												
Fast Jet Combat Aircraft												
Mission Specific Aircraft												
Rotary Wing Aircraft												
Transport Aircraft												
Light Civil and Military Vessels												
Large Civil Vessels												
Navy Large Surface Ships												
Conventional Submarines												
Naval Combat and Weapons Systems												
COTS based C4I Systems												
Mil-Spec C4I Systems												
<table border="1"> <tr> <td>Activity undertaken in NT accepting that repair, maintain, modify, upgrade and manufacture are largely contingent on foreign components and intellectual property.</td> <td></td> </tr> <tr> <td>Activity undertaken with significant level of interstate/foreign support</td> <td></td> </tr> <tr> <td>Activity largely not undertaken in NT</td> <td></td> </tr> </table>				Activity undertaken in NT accepting that repair, maintain, modify, upgrade and manufacture are largely contingent on foreign components and intellectual property.		Activity undertaken with significant level of interstate/foreign support		Activity largely not undertaken in NT				
Activity undertaken in NT accepting that repair, maintain, modify, upgrade and manufacture are largely contingent on foreign components and intellectual property.												
Activity undertaken with significant level of interstate/foreign support												
Activity largely not undertaken in NT												

## Defence Support Expenditure in Northern Territory Industry

At present there is no consolidated data on total Defence expenditure with NT industry but assumptions can be made from data supplied by ABS and expenditures outlined in the *Defence Budget Papers*.

An indicative estimate is that the total current expenditure with NT-based industry is of the order of \$600 million per annum made up as follows:

Support to operational units, general support services*	\$400 million
Infrastructure construction	\$100 million
Defence Housing Australia	\$80 million

\* the split between operational support and general services is not yet available.

If these indicative figures are correct, while 10% of ADF operational personnel are in the Territory, NT industry receives about 7.6% of the ADF's expenditures in industry.

While this average figure is not far from parity, when it is analysed by sector, wide variations appear:

Defence Materiel Organisation	Acquisition	0%
Defence Materiel Organisation	Sustainment	7%*
Defence Support Group	Capital Construction	9%
Defence Support Group	Services	25%*
Chief Information Officer	IT	0%
Defence Housing Australia	Accommodation	20%

\* the sustainment/support split between DMO and DSG is an estimate; the total is correct.

## **The link with the NT Economic Development Framework**

*The Northern Territory Economic Development Framework* (EDF) and its related Action Plan released in August 2006, forms the key basis for future economic and industry development in the NT. It sets a clear direction and a basis for making decisions in the knowledge that NT stakeholders have a shared sense of direction. The vision is to build a prosperous, dynamic and sustainable economic future for the NT.

The EDF has five key objectives:

- Regional growth – sharing in our prosperity
- Investing in our Territory
- Developing our workforce
- Improving our productivity
- Integrating development with our environment

Establishing the Defence Support Industry Development Strategy is consistent with these objectives and should help underpin the potential of the EDF.

A number of the Priority Issues listed in the Action Plan have particular relevance to the establishment of the Defence Support Industry Development Strategy. They include the following (the headings and paragraph numbers are from the EDF Action Plan):

### **Improving city, town and community liveability**

8. Increased awareness of the unique NT lifestyle

### **Maintaining a competitive business environment**

11. Improved investment facilitation by Government

### **Encouraging entrepreneurship**

13. Targeted business assistance programs that match industry needs
14. Improved business knowledge of government assistance programs

### **Broadening the economy by capitalising on our comparative advantages**

15. More major industry attracted to the NT
18. More NT businesses supplying goods and services to the Defence sector

### **Developing timely and cost-effective infrastructure**

23. Essential services infrastructure developed in a timely and cost-effective manner
24. More common user infrastructure facilities

### **Encouraging greater local content in business and industry**

25. A higher proportion of goods and services sourced from NT businesses
27. Skilled and well trained workers who meet industry needs

**Economic Development Framework issues:**

1. What are the EDF consultative processes to enable the Defence Support Industry and NT Government to link their respective strategic priorities?
2. How can actions be agreed regarding each of these priority issues?
3. How do they link to individual sectors and projects?

## **Industry Development Framework**

The key aim of the Strategy is to provide an agreed Industry Development Framework for one of the important and growing sectors of the Territory's economic activity, led by industry and facilitated by government. To maximise capability growth, the Strategy is expected to link initiatives involving:

- workforce development
- infrastructure development
- industry facilitation
- opportunity development

### **Workforce development**

To be competitive in respect of the more sophisticated Defence equipment which will be based in the Territory, local industry will need to acquire new skills. The strategy, based on consultation, will address how these can be developed by a combination of business and skilled migration, new employee recruitment and training and retraining and up-skilling of existing workforces. With common requirements in some skills categories across a variety of projects, e.g. information technology, it will be important to understand the totality of industry's needs and have an integrated plan to provide appropriate teaching resources both at Vocational and University levels.

Wherever possible, consideration should be given to the growing potential indigenous workforce in the NT and what opportunities and mechanisms could be established to engage indigenous Territorians in workforce development strategies and on Defence related projects.

### **Infrastructure development**

Similarly, an integrated plan needs to be developed to address the physical and electronic infrastructure requirements of industry if it is to meet Defence's rapidly growing and changing support requirements. With the constant increase in ADF systems requirements for secure communications and data transfer, and the major IT demands of simulators, ICT high capacity and high bandwidth infrastructure will become a high priority issue.

### **Industry facilitation**

Recognising the long term, complex nature of Defence business, there is a consistent approach Australia-wide and internationally for Governments and Industry Associations to co-operate to assist individual firms, particularly SMEs, in understanding opportunities, marketing, teaming to win business, and enhancing capabilities. DBERD's Defence Support Division is the designated NT Government organisation to provide this support. AIDN-NT is recognised by the NT Government as the primary voice of industry on Defence industry matters.

### **Opportunity development**

Winning Defence work, particularly in respect of major Defence projects, is a long-term, multi-phase endeavour which is often beyond the resources of individual SMEs, and particularly in the early phases of projects, there is a widespread approach for Government and Industry Associations to undertake intelligence gathering and lobbying on behalf of local industry. A number of major Defence projects have significant potential for Territory industry and need to be prioritised by industry and plans developed for each major project and industry segment.

## Targets for growth

The Strategy will incorporate agreed targets for growth so that the success of implementation of the Strategy can be measured. With NT industry starting from a relatively low base, and with different opportunities for various sectors, defining targets will be a challenging but necessary part of the Strategy's development. It may require a range of targets, from conservative to ambitious, developed by appropriate stakeholders.

### Industry Development Framework issues

1. Is this framework appropriate for NT industry?
2. What organisations should co-ordinate the development of the Defence Industry Framework?

## Industry development categories

The Northern Territory Government tends to use three categories of Industry Development when looking at industry support strategies:

### Pioneer Industries

These are new industry sectors or sub-sectors which are new to the Territory, that have major long term potential but require significant investment, probably by a spectrum of stakeholders, in facilities, skills and opportunity development. This tends to be the highest risk, highest reward category of industry development. Examples potentially available to NT industry would include:

- advanced composite manufacturing and repair
- mission systems support
- sensor systems operations and support
- simulation
- software development and upgrades.

### Strategic industries

These are industry support sectors which have high growth potential based on workload from more than one industry sector. For example, potential synergies can be seen in the Territory by combining support workload from the following combinations:

- large vessel porting and logistic facilities
- heavy vehicle maintenance for Defence and mining
- gas turbine maintenance for defence and civil aerospace and oil and gas
- electronic systems for civil and military uses.

### Reinvestment industries

These are relatively well established industry sectors with potential for further growth requiring further investment in current capability but not involving any diversification of skills or facilities. Typical examples would be:

- small vessel support
- field vehicle and trailer support

- avionics maintenance.

Understanding where new defence support industry development opportunities fit into these categories is important because Government's willingness to make investments varies significantly in the different categories.

### **Industry Development Categorisation Issues**

1. Which defence industry sectors fall into each of the categories?
2. Will this categorisation affect sector development?

### **Industry development targets**

The strategy is intended to include targets for industry growth agreed by all Territory stakeholders. It is anticipated that there will be two complementary forms of targets:

#### **Quantitative Targets**

Quantified targets for industry revenue and employment growth at say, 3, 5 and 10 years. At a macro level targets could be set for defence industry as a whole, with subsidiary targets for key sectors, many of which are at different stages of growth.

Consideration needs to be given to what quantitative targets are appropriate. For instance, overall Defence expenditure in the NT has been growing at 11% per annum. Is this an appropriate target, or, recognising that NT industry is running below the national average in support workload, should the target be higher, perhaps 15% per annum?

Ultimately, the targets have to be related to the level of opportunities available and prospects of success, and these are likely to be built up on a sectoral level. Land systems are likely to be the area of greatest near term potential growth, coming off a modest base, with significant civil capability available for defence application and a number of opportunities. Air is likely to show a high rate of growth but from a low base. Sea/marine activities are relatively mature, so may have a lower rate of growth but significant value. Electronics and IT have major opportunities but a limited industry base at present.

Developing these quantified targets will involve further research on current Defence expenditures in the Territory by sector as well as analysis of probabilities of success on new projects. Preliminary data on NT and national expenditures are contained in later sections of this Background Paper.

#### **Qualitative targets**

Qualitative targets are likely to be established in two forms.

First, broadening the sectors in which NT industry is involved, for instance entering Defence activities for the first time including:

- simulation
- information technology
- sensors
- aerospace support
- environmental management

- health services.

Second, deepening the involvement in existing sectors, eg. widening the scope of support services, moving into manufacturing, design and research.

Current capability matrices for the Northern Territory and Australia are incorporated in other sections of this Background Paper.

A key element of the strategy will be for stakeholders to agree what capability matrices would be pursued by NT industry in future phases of industry development. The following is a blank matrix format which will be used during consultation to solicit responses:

**Industry development targets**

1. What organisations should participate in the development of NT Industry Development targets?
2. What qualitative sector involvement targets should be nominated?
3. What quantitative targets should be set?

## Northern Territory Industry Potential Capabilities

Capability	Provision	Maintain/ Repair	Modify/ Upgrade	Manufacture	Design	Export
Ballistic Munitions						
Precision Guided Munitions						
Small Arms						
Military B Vehicles						
Light Armoured Vehicles						
Heavy Armoured Vehicles						
Fast Jet Combat Aircraft						
Mission Specific Aircraft						
Rotary Wing Aircraft						
Transport Aircraft						
Light Civil and Military Vessels						
Large Civil Vessels						
Navy Large Surface Ships						
Conventional Submarines						
Naval Combat and Weapons Systems						
COTS based C4I Systems						
Mil-Spec C4I Systems						
	<p>Activity undertaken in Australia accepting that repair, maintain, modify, upgrade and manufacture are largely contingent on foreign components and intellectual property.</p> <p>Activity undertaken with significant level of foreign support for upgrade and/or design.</p> <p>Activity largely not undertaken in Australia</p>					

A key aim of the consultation process will be to obtain the views of stakeholders as to which capabilities should be targeted immediately, in three to five years, and in ten years. These targets will become part of the strategy.

## Industry Development Strategy Timescales

Industry development always involves creative tensions when allocating resources between short-term business imperatives and longer term strategic planning. Most industry stakeholders, particularly SMEs, are concerned about short-term cashflow and viability, and prefer to maximise resources in chasing immediate opportunities with short-term payback. Set against this, Defence projects have long development, approval and contracting periods.

To develop a workable Defence Support Industry Development Strategy, it is necessary to appropriately mix opportunities on differing cycles, and timescales used in Defence planning tend to fall into the following three categories:

### Short term cycle

Defence receives formal Budget approvals on an annual basis (each May) and this releases funding for contracts including phases of funding on multi-year contracts. A relatively small proportion of Defence funding (perhaps 10%) is spent on contracts negotiated in the same year and most of this funding is for minor projects or services. Most Defence work will take more than a year from initial promotion and bidding to the start of revenues.

### Medium term cycle

A significant amount of Defence expenditure is on approximately a three to four year cycle. Many support contracts are let for three years and then re-competed. The time from Second Pass Approval of projects to first delivery tends to be in the range two to four years for most major equipment. Governments also have three or four year durations. Within these timescales, project arrangements tend to firm up and slippages in timing are not usually as severe as in the earlier phases of planning. Three/four year timescales are not unusual in major construction and extractive industries in the Territory.

### Long term cycle

Major project timescales in Defence tend to be among the longest in any industry sector — for instance the Air Warfare Destroyer will not enter service until ten years after the project was approved and the Joint Strike Fighter will take between nine and eleven years from selection to enter service. The challenge for industry, particularly SMEs, is that potential primes tend to form their team early in the process and significant costs are involved in preparing registrations of interest and bids with no certainty of ultimate success. The offsetting benefit is that being part of a winning team delivers up to 20 years of Through Life Support involvement.

#### Industry development timescale issues

1. Is there any optimum time for NT industry to join projects, particularly considering the emphasis on support activities?
2. Can economies of scale be achieved by clustering or other co-operative activities?
3. Who should undertake the early lobbying and relationship building?

## Government Support for Defence Industry Development

This outline of Government support mechanisms for defence industry development is limited to specific defence programmes and excludes the more general industry assistance measures available via DITR, Austrade and various State Government schemes.

### Commonwealth Government

The Commonwealth rarely provides funding for general industry infrastructure development, limiting such funding to project specific facilities and infrastructure included in acquisition contracts. A recent exception was \$25 million provided to Australian Aerospace to assist in providing a hangar for assembly of MRH90 helicopters in Brisbane.

The Skilling Australian Defence Industry (SADI) scheme is the largest (\$250 million) general defence support scheme for skills upgrading. Funded out of the DCP forward budget, it was originally project specific but is now more general in nature.

### State and Territory support schemes

There are many schemes, and a sample of these includes:

**Funding of project specific facilities:** The Queensland Government has provided support for the construction of hangars; the SA Government has funded upgrades to existing electronics facilities.

**Provision of land:** The NSW Government and local councils in NSW and Queensland have provided land on long-term leases under favourable terms.

**Subsidy for capability establishment:** the Queensland Government provided funds to subsidise part of the establishment of a composites manufacturing capability.

**Maritime common user facilities:** the WA and SA Governments have made major investments in common user infrastructure to facilitate multi-user ships construction and support. The precincts will be Government-operated.

**Technology precincts:** The Victorian, SA and NSW Governments have funded the infrastructure development for technology precincts in aerospace and electronics.

**Subsidies for job creation:** Most states have provided subsidies for new job creation. This is less common as agreements have been reached not to overtly poach companies across state borders.

**Skills centres:** Queensland funded and owns an aviation skills centre; SA has funded industry-managed maritime and system integration skills centres.

**SME support:** The NT Government provides financial support for AIDN-NT to facilitate the development of SMEs and growth of the industry. The Defence Support Division of DBERD, NTG, also provides support to Defence and defence industry to grow the local industry and its contribution to the NT economy. Queensland provides dollar-for-dollar funding for SMEs to enhance company systems and infrastructure.

**Skilled migration:** a number of states including the NT provide skilled migration assistance.

**R&D funding:** Queensland has provided partial funding for R&D centres in composite structures and automated aircraft operations.

**Innovation development:** The Victorian Government has provided funds for an industry led innovation company focussing on aerospace development in South Melbourne.

The values of these support schemes vary widely from less than \$2 million to over \$200 million.

Given its limited resources, the NT Government will need to target carefully any support.

**Government support issues**

1. What support mechanisms would most assist NT industry to increase defence support activities?
2. What cost would be involved?
3. What matching contributions would industry make?
4. How does NT industry maximise access to Commonwealth funding, eg. SADI?

## Current Australian Defence Industry Overview

### Australian Defence expenditure

Defence is one of the largest portfolio expenditures by the Commonwealth Government and is growing strongly, particularly in the NT, making it a logical target for increased NT industry involvement.

In 2006/07, Defence will spend \$19.6 billion, representing 9.1% of all Commonwealth expenditures and 1.9% of GDP. By 2015/16, this is planned to rise to \$26.7 billion, with real growth of 3% per annum approved by Cabinet.

The 2006/07 Defence Budget expenditures are distributed as follows:

Personnel	\$6.6 B	34%
Suppliers	\$7.0 B	36%
Purchase Military Equipment	\$4.5 B	23%
Purchase Inventory	\$1.2 B	6%
Purchase Plant, Property and Equipment	\$0.6 B	3%

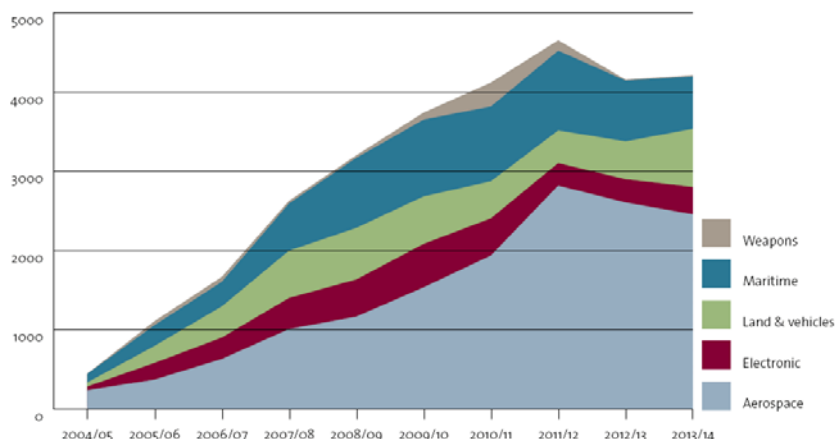
Expressed in terms of the Defence organisations which contract with industry, the 2006/07 budgeted expenditures are as follows:

Defence Materiel Organisation	New Equipment	\$5.0 billion
Defence Materiel Organisation	Support/Sustainment	\$3.6 billion
Defence Services Group	Capital Works	\$1.1 billion
Defence Services Group	Services	\$0.8 billion
Chief Information Officer	IT Services	\$0.4 billion
Defence Housing Australia	Housing/Accommodation	<u>\$0.4 billion</u>
Total Contracts with Industry 2006/07		<u>\$11.3 billion</u>

The *Defence Capability Plan 2006–2016* involves expenditures of \$51 billion on new Defence equipment and systems over ten years. This is distributed as follows:

Electronic Systems	46% (includes electronics in platforms)
Aerospace	26%
Maritime	11%
Vehicles and Land	10%
Weapons and Munitions	7%

The projected DCP annual spend by category is as follows:



The dominance of electronics has increased as major projects such as the Air Warfare Destroyer incorporate 60% to 70% electronic hardware and software. This increased emphasis on system integration and upgrades is resulting in an increasing skills shortage for hardware and software, challenging Australian industry and educational institutions if Australian content is to be maximised.

Looking forward at Australian content in DMO spend, DMO's projections for the period to 2007–2016 are as follows:

	<b>Total Value</b>	<b>Australian Content</b>
DMO Acquisition contracts	\$41 billion	20% to 50%
DMO sustainment contracts	\$40 billion	85%

DMO puts its total Australian contracts value 2007–2016 at \$48 billion and adding in other defence-related contracts, the total increases to \$70 billion over the period.

### **Minor Projects**

Within DMO contracting there is a separate category of Minor Projects, dominated by Army. The Minors program is one of the primary means of enhancing, replacing current or introducing new combat capability within Army, and is designed to facilitate the relatively quick procurement of defined capability. Minor projects involve the upgrade or acquisition of equipment at a cost of between \$0.5 million and \$20 million and are generally of less strategic significance and single service or single group in nature.

The Minors program is likely to be an entry point for NT industry because of its smaller scale and simplified processes. The 2005–06 Minors distribution was as follows:

Allocation of Minor Capital Procurement Budget for 2005–06

Defence Group	Budget \$m	Proportion %
Army	66	39
Air Force	31	18
Navy	27	16
Other (1)	25	14
Central Provision	22	13
Total	171	100

Note: (1) This category comprises the Vice Chief of the Defence Force, Chief of Information Office, Capability Development Group and Defence Information Environment.

## Australian defence industry structure

Worldwide, there has been a continuing consolidation of major defence companies and this has also occurred in Australia. The ownership of Australian-based defence companies has also become increasingly international.

Current estimates put the total Defence sales of Australian-based companies at about \$6 billion, with employment approaching 15,000 people. These statistics do not include non-defence work by the same companies.

The top ten Australian defence companies in 2005 had a combined turnover of \$3.9 billion or about two thirds of the industry total. The top ten companies are:

Rank	Company	Head Office	Sectors	Ownership	Sales
1	Thales (ADI)	NSW	Air, Sea, Land Electronics	France/Aust	\$650M
2	Tenix Defence	NSW	Air, Sea, Land Electronics	Australia	\$650M
3	BAE Systems	SA	Air, Electronics	UK	\$525M
4	Australian Aerospace	QLD	Air	France	\$390M
5	Raytheon Australia	ACT	Air, Sea Electronics	USA	\$390M
6	Boeing Australia	QLD	Air, Electronics	USA	\$375M
7	Spotless Group	NSW	Services	Australia	\$330M
8	ASC	SA	Sea	Australia	\$230M
9	Saab Systems	SA	Sea, Land Electronics	Sweden	\$170M
10	Transfield Services	NSW	Services	Australia	\$155

The increasing international trend is for primes to become project integrators and systems houses, subcontracting manufacture and lower levels of support. There is some evidence that this is happening in Australia.

There is no accurate estimate of the number of SMEs substantially involved in defence support but it could be in the region of 4,000 to 5,000 companies. On the Anzac Ship, Tenix had 1,300 suppliers, mainly SMEs, with 73% local content. The AIDN network of SMEs has approximately 1,000 members.

## Australian Defence Industry Capabilities

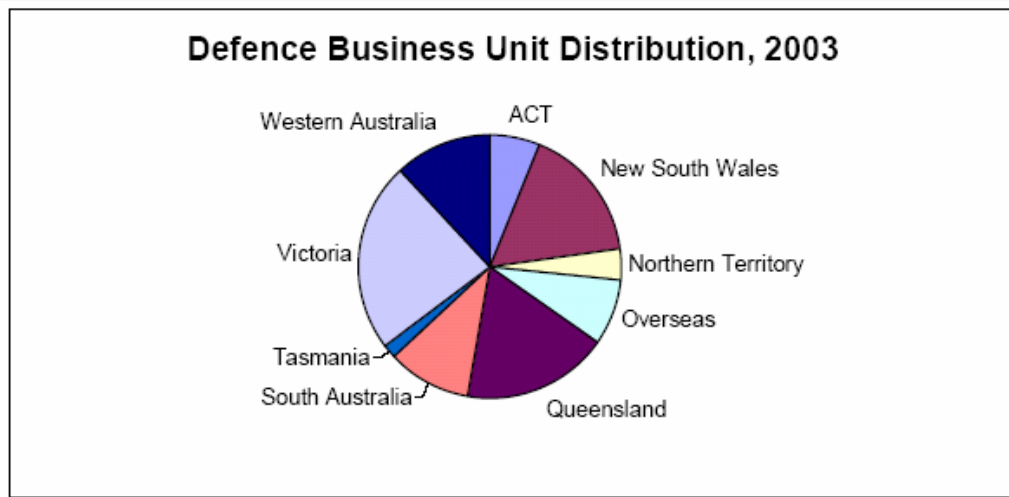
In terms of capabilities, the following tabulation provides an overview of current and near-term planned capabilities for the Australian Defence Industry. The tabulation was developed by Dr Mark Thompson of ASPI for the Australian Industry Group Defence Council, based on interviews and data from over 30 CEOs of Australian defence firms:

Capability	Provision	Maintain/ Repair	Modify/ Upgrade	Manufacture	Design	Export
Ballistic Munitions						
Precision Guided Munitions						
Small Arms						
Military B Vehicles						
Light Armoured Vehicles						
Heavy Armoured Vehicles						
Fast Jet Combat Aircraft						
Mission Specific Aircraft				Assembly Only		
Rotary Wing Aircraft				Assembly Only		
Transport Aircraft						
Light Vessels						
Civil High Speed Vessels						
Frigates and Destroyers						
Conventional Submarines						
Naval Combat and Weapons Systems						
COTS based C4I Systems						
Mil-Spec C4I Systems						
<p>Activity undertaken in Australia accepting that repair, maintain, modify, upgrade and manufacture are largely contingent on foreign components and intellectual property.</p>						
<p>Activity undertaken with significant level of foreign support for upgrade and/or design.</p>						
<p>Activity largely not undertaken in Australia</p>						

## Defence industry by State and Territory

The chart below is indicative of the percentage of business units that are currently or potentially supplying or supporting Defence in various states and territories.

Chart 1 Location of Defence business units



Data source: Defence Industry survey

The following capability overviews for states and territories are a sampling of major activities and should not be taken as comprehensive.

### Queensland

Queensland has exhibited the strongest growth in Defence industry in recent years with particular emphasis on aerospace activities, supported by State Government funding for facilities, skills development and R&D. Queensland claims to have grown aerospace employment (civil and military) from 8,000 to 14,000 since 1998.

In Brisbane and at RAAF Amberley, Boeing Australia, Australian Aerospace, Qantas, ARCAA and others are involved in:

- Helicopter assembly, integration, test and support
- Helicopter composite component manufacture (pending)
- AEW&C aircraft systems installation and test
- Multi-Role Tanker Transport support (pending)
- Tactical Transport Aircraft maintenance
- Automated flight systems R&D
- Military communications and command and control systems integration
- Tactical UAV systems integration and support (pending)
- Gas turbine engine support
- Aerospace skills training

At Townsville, support, including helicopter and vehicle maintenance, is provided to units of the Army Rapid Deployment Force.

Near Innisfail, Defence clothing trials are undertaken by DSTO.

## **New South Wales**

New South Wales has reduced in importance in Defence activities in recent years, but continues in the following areas:

- Composite aircraft component manufacture
- Naval ships support and upgrades
- Small arms manufacture
- Transport Aircraft maintenance
- Jet training aircraft maintenance
- Gas turbine engine maintenance
- Naval helicopter support and upgrades
- Basic pilot training
- Avionics systems design and production
- Mission systems design and production
- Maritime R&D (primarily DSTO)
- Hydrography
- Sonar systems development and production
- Simulator systems production and operation
- Software development
- Army command support systems (pending)
- Garrison support

Primary locations are Sydney, Lithgow, Newcastle, Williamstown and Nowra.

There has been little recent evidence of strategic investment by the NSW Government in Defence activities.

## **Victoria**

Victoria remains the largest state in Defence activities but its volume has reduced significantly with the completion of the Anzac Ship project. Turnover in 2005-06 was \$1.06 billion, with 10,200 employees. Key current areas include:

- Aircraft design services
- Composite aircraft component manufacture
- Naval ships production, support and upgrades
- Missile, ordnance and munitions manufacture
- Missile decoy development and production
- Surveillance aircraft modifications and upgrades
- UAV development and operations
- Gas turbine engine component production
- Aerospace R&D (primarily DSTO)
- Military vehicles manufacture, upgrades and support
- Military clothing and protective systems
- Defence and aerospace electronics

Primary locations are Melbourne, Bendigo, Benalla, Mulwala and Albury/Wodonga.

The Victorian Government has an active programme to sponsor industry development activities (trade show, strategy development) but has made limited investment in facilities or R&D.

## **South Australia**

South Australia is exhibiting the strongest growth in defence industry activities in maritime and electronics systems, making significant investments in a maritime precinct and skills development, particularly related to systems integration, electronic systems and maritime trade skills.

Major current areas of defence industry activity include:

- Submarine support and upgrades
- Air Warfare Destroyer construction and integration (pending)
- Airborne electronic systems integration
- Marine electronic systems integration
- Electronic warfare systems development and support
- Sensor systems development and support
- Software development
- Army command and control systems
- Military vehicles production and support
- Surveillance aircraft modifications and upgrades
- Radar systems development and operations

Almost all defence industry activity is in Adelaide with a small amount of trials activity at Woomera.

## **Western Australia**

The Western Australian Government has made a major investment in maritime production and support facilities at the Australian Maritime Complex, a common user facility south of Perth. A \$90 million upgrade is in progress.

Current WA defence industry activities include:

- Patrol boat design and manufacture
- Support vessel design and manufacture
- Naval vessel and submarine support
- Defence communications facility operations
- Software development
- International pilot training
- Training aircraft maintenance

## **Tasmania**

Except for a declining amount of leasing of large catamaran vessels for marine use, a maritime college and a defence nutrition establishment, Tasmania is not a key defence industry state.

## **Australian Capital Territory**

In addition to the large number of representative offices in Canberra for overseas defence companies, the ACT has attracted an increasing population of 'white collar' defence industry elements including:

- Radar systems development and production
- Electronic systems integration
- Software development
- Quality systems implementation

Logistics management  
Consulting engineering services  
Project management training  
Skill training

Indicatively, defence industry in Canberra employs between 1,500 and 2000 people. This does not include civilian employees in Defence and DMO, who total approximately 14,000.

## **Factors to be considered in a Defence Support Industry Strategy**

### **Working as a Northern Territory team**

It is expected that an important part of the strategy will be to continue and enhance the clustering and networking approaches already being developed by DBERD and AIDN-NT, without restricting initiatives by individual companies.

Early involvement in support discussions will inevitably require senior level contact in Defence, the ADF and the primes. SMEs will have difficulty achieving individual penetration at these levels.

Presenting Territory industry as an integrated group will help the primes to understand NT capabilities and potential, and simplify early communications. Ultimately, bids and contracts will be on an individual firm basis.

### **Teaming issues**

1. AIDN-NT has carried out initial clustering initiatives in land, sea and air industry segments. How should these be further advanced?
2. Initial project teaming has commenced, eg. with the work AIDN-NT has undertaken on Land 21 Trucks and Trailers. What other major projects should be targeted?
3. In addition to the land, sea and air clusters, what other teamings should be developed — electronics, IT, simulation and training?

### **Working co-operatively with Defence and the Commonwealth Government**

To maximise opportunities of Territory industry, it is important that Defence and the Commonwealth Government understand the strategy's goals and are comfortable that NT industry, supported by the NT Government, understands Defence's needs and is working proactively to develop improved capabilities to meet those requirements.

Once NT regional briefings on the new strategy are completed, NT industry and Government representatives will go to Canberra to outline the results of the discussions and to obtain feedback on the draft Northern Territory Defence Support Industry Development Strategy.

The Territory also needs to contribute constructively to wider discussions regarding the future of Defence industry. The Minister for Defence recently completed a Defence industry policy review and released a new Defence industry policy. The review committee, headed by the Minister Assisting the Minister for Defence, conducted industry round tables around Australia.

Members of the NT defence support industry, AIDN-NT and NT Government participated in the round table and provided a NT perspective to the review.

The Territory will also contribute views to other Defence reviews as they take place. The Minister for Defence has just announced a Defence Management Review and this could have implications for the way Defence operates in the Territory, including the presence of System Project Offices (SPOs) and the size of the Defence Materiel Organisation's (DMO) office here. With only two people, it is by far the smallest mainland office.

Territory industry associations will also work collaboratively with their national partners. AIDN held its national meeting in Darwin during September last year, and the Northern Territory Government hosted a meeting of the Australian Industry Group's Defence Council in September 2005.

## **Basing of Defence equipment in the Territory**

Recent years have seen a significant change in ADF policy as an increasing number of key ADF capabilities have been home based in the Northern Territory. These include the RAN's Fremantle and Armidale Class Patrol Boats, Army's Tiger Armed Reconnaissance Helicopter, the ASLAV armoured vehicle, the M113 armed personnel carrier and the Abrams tank.

Importantly, the new equipment types are fitted with more sophisticated electronics, sensors, mission systems and weapons systems, and require a significantly higher level of support for hardware and software than their predecessors.

The goal of the NT Defence Support Industry Development Strategy will be to maximise the support undertaken in the Territory. This will require a strategy which will involve influencing both the ADF equipment users and the prime contractors providing and supporting equipment.

In the case of the ADF, the key issues to be addressed will include the benefits of highly responsive and timely support immediately adjacent to the operating units, avoiding the time and cost of transportation south. There is a widespread view that NT industry is uncompetitive because of higher labour rates it is forced to pay and this needs to be addressed.

Another issue to be promoted is the benefit of locating the System Program Office (SPO) adjacent to the operating units rather than in Canberra or Melbourne. Experience has shown that devolved SPOs utilise local industry support to a higher degree. The Armidale Class Patrol Boat SPO in Darwin is showing good results.

In line with new Defence policy, the primary responsibility for through life support of new defence equipment will be with industry, either through the prime contractor supplying the equipment or through the prime's designated principal support contractor. This means that, for new equipment, support contracts will be placed by the prime, not the ADF user, and this increases the need to negotiate a preferred support role with the prime during the acquisition process when the prime has to finalise a Through Life Support (TLS) contract, often covering up to 20 years of equipment service. DMS as the Armidale Class Patrol Boat principal support contractor has now placed over 100 contracts with NT SMEs.

## **Attracting prime contract activities**

As discussed previously, the primary responsibility for through life support of new defence equipment will be with industry, either through the prime contractor supplying the equipment or through the prime's designated principal support contractor.

Although a number of primes have activities in the Northern Territory, few of these have principal responsibility for support of major ADF equipment. Until this happens, the Territory will not maximise the project management or logistic support management skills, which are essential to take a leading role supporting the ADF.

It is also obvious from international experience that SMEs benefit by clustering close to prime support locations.

New projects such as the Abrams tank may create opportunities for a prime to base its support in the Territory but there is no certainty this will be the case.

### **Attracting prime contractor activities issues**

1. Which are the projects with potential to attract primes to base their support activities in the Territory?
2. What infrastructure and skills development will be necessary to achieve this?

### **Understanding the *Defence Capability Plan***

Defence has a highly structured project approval and bidding process, and it is important that NT industry becomes more expert in understanding this process and monitoring projects of interest in order to maximise workload opportunities.

Doing this is simplified by the publication of the *Defence Capability Plan* (DCP) each two years which provides a ten year forward projection of proposed new Defence equipment purchases including estimated value, timing and expected Australian industry involvement categories. The current 2006–2016 DCP is available on the Internet at

<http://www.defence.gov.au/dmo/id/dcp/dcp.cfm>

AIDN-NT and DBERD recognise its importance to developing the NT Defence Support Industry Development Strategy by providing a basis to identify the projects of importance to the Territory.

Summaries of major DCP projects with relevance to the Territory are contained later in this Background Paper.

In addition to the \$51 billion of unapproved projects contained in the DCP, shorter-term opportunities exist on approved projects, those which have been approved by Cabinet and are now in the detailed planning and/or tendering phases. These total about \$8 billion. Data on these is not as easily accessible as on the DCP but individual projects can be accessed on the DMO website.

A key element of maximising Territory industry buy-in to the new strategy will be ensuring that as many firms as possible are familiar with the DCP and the forthcoming projects which are of interest to them.

### **Defence Capability Plan issues**

1. How should information on the DCP and updates be disseminated to NT industry, eg. should there be a central contact point in AIDN or DBERD?
2. Should there be an initial short seminar for SMEs on how to use the DCP?
3. Is this best handled on a sector basis (land, sea, air, electronics)?
4. How should industry be updated on progress on Defence projects between the two-yearly DCP issues?

### **Early involvement in support capability planning**

Maximising the Territory industry's role in support of new Defence equipment will require earlier, co-ordinated involvement in the capability planning process or we will miss out on support opportunities.

For instance, although the RAAF's new F35 Lightning Joint Strike Fighter is not scheduled to enter service until 2012–14, decision re basing and support contracting will be taken as part of the overall prime contract with Lockheed Martin in 2007–08.

This early involvement requires an understanding of the timescales and key milestones on new Defence equipment projects so that the case for NT industry involvement can be made both to Defence and to primes competing for the requirements. DBERD and AIDN-NT have commenced this process, and it is expected to be an integral part of the new strategy.

### **Early planning involvement issues**

1. What are the key major projects on which early basing decisions will be taken over the next two years?
2. How should the NT become involved in promoting maximum NT involvement?

### **Understanding non-DMO Defence opportunities**

While DMO dominates contracting directly associated with ADF operational equipment acquisition and support, the recently consolidated Defence Services Group (DSG) contracts a significant value of more general workload with industry.

DSG has responsibility for a \$3 billion per annum budget for facilities and services including:

- capital works and facilities maintenance
- garrison support and general support
- environmental monitoring and remediation
- professional services panels (IT, Legal, etc).

Many of these requirements are similar to those in commercial industry and are likely to be undertaken by firms already established in these fields. Many of the current NT contracts are held by larger, Australia-wide firms which subcontract smaller, specialised activities to NT subcontractors.

Most of these arrangements are via multi-year contracts and it is important that NT industry knows when these are renewed or it will have to wait several years for new opportunities.

Defence Housing Australia is also a major contracting authority on behalf of Defence. Its annual spend Australia wide is \$400 million consisting of housing construction, purchase, leasing and maintenance.

The Chief Information Officer within Defence is responsible for acquiring general IT hardware, software and support services, and has a 2006/07 budget of \$400 million.

### **Non DMO opportunity issues**

1. How can NT industry get details of forthcoming contracts for capital works, support services and accommodation requirements?
2. What role should the NT Government and industry associations play in identifying and promoting opportunities?
3. Which industry associations are relevant?
4. Should NT companies be considering forming networks or clusters to bid for larger, direct contracts?

### **Understanding Australian Defence contracting approaches**

In recent years there have been major changes in the way Defence contracts with industry for acquisition and support activities, and a suite of ASDEFCON tendering and contracting templates has evolved. A key element of the strategy will be to assist NT industry to understand and be able to effectively bid in these various categories.

#### **Equipment acquisition**

The Defence Materiel Organisation now has responsibility to purchase all new defence equipment and systems including conducting the tendering process, negotiating contracts, and project managing the introduction to service. A single industry prime contractor is responsible for delivering the total system and managing all subcontractors and suppliers. This means NT industry, if it wishes to participate in the production phase of new equipment, will have to market its capabilities to the potential prime contractors. The process can be a long one. As part of the risk management procedures under the Kinnaird Reforms, Defence/DMO is required to make at least two submissions to Cabinet on new capabilities (First Pass and Second Pass) and is usually required to conduct a series of pre-contract scoping studies to better define options and risks. The Air Warfare Destroyer project, for example, will have been running for almost four years before the construction contract is signed and first delivery will not be for another five years.

#### **Equipment support**

Under current Defence policies, most logistic support and maintenance services required for the operation of new equipment is contracted at the time of the initial acquisition via a Through-Life Support (TLS) contract covering about 20 years of operations. The only exception may be first-line maintenance by operating ADF units. This means that NT industry, if it wants to participate in the long-term support of new Defence equipment, will need to market its capabilities to the prime contractor.

#### **Capital works**

Defence has a \$3 billion per year capital works program including development of facilities for new equipment, updates and general maintenance. This is a separate contracting process administered by the Defence Services Group (DSG). A significant amount of major capital works is done by appointing a head contractor for a project which subsequently calls for registrations of interest and tenders for subcontracts.

#### **Support services**

DSG is also responsible for contracting for non-operational support services (previously the Commercial Support Program) which contracts with industry for the provision of non-core services to Defence including equipment maintenance, facilities maintenance, security, canteen, clerical, cleaning and other services. This is a mixture of individual tenders and

standing orders. The NT Garrison Support contract is due for re-tender in 2007/08. In addition to DSG, the Defence Chief Information Officers also contracts for IT equipment on a standing order basis and for IT services on a panel basis.

### **Minor services**

The ADF operating units maintain responsibility on new projects for contracting for minor services and materials, but this now represents only a small percentage of the total support value.

Contracting with Defence or primes requires systems of approvals and standardised procedures which can be daunting to new SMEs. Some of the issues relating to assisting SMEs to bid and negotiate contracts are listed below.

### **Contracting issues**

1. Are there legal firms or other service providers in the NT who can provide expertise in bidding and contracting with Defence?
2. Should AIDN-NT or DBERD consider providing short courses in Defence bidding and contracting?
3. Should Defence be asked to provide seminars in the NT on contracting?

### **NT involvement in support activities**

A combination of current industry capability and ADF needs means that the logical initial basis for enhancing NT industry involvement with the ADF is in the support area. NT industry has already started to demonstrate its abilities in this capability via long term and continuing support for patrol boats based in Darwin, on Defence communications and across a range of equipment under the DIDS contract.

Typically included in support activities for ADF platforms and systems are:

- equipment and systems maintenance, particularly at intermediate and deeper levels. In most cases the user service carries out first line maintenance.
- equipment repairs in case of accidents. This can require use of major jigs, so NT's opportunities to do major repairs will be enhanced if the equipment is initially assembled and tested here.
- modifications and upgrades. In a twenty year service life, it is common for major equipment to undergo at least two or three major upgrades in addition to rolling smaller scale upgrades. With increasingly complex installed systems, such upgrades increasingly require IT and electronic skills as well as platform expertise.

Most of the platforms based in Darwin are in relatively small numbers so economic competitiveness will probably require local industry to identify common or similar equipment on a number of platforms. DBERD is facilitating this by its technology mapping studies outlined later in this Background Paper.

In addition to the platform specific support, opportunities for general support will arise in:

- garrison support including security, catering, accommodation maintenance and facilities/grounds maintenance.

- general support services including:
  - freight and transport
  - non destructive testing
  - calibration
  - legal
  - IT

Getting involved in these requires an understanding of the timing of decisions on new equipment support arrangements and renewal cycles for general support.

### **Support activity issues**

1. What are the support sectors in which NT industry is best qualified?
2. What are the support opportunities arising over the next three years?
3. How should NT industry, with Government support, promote its capabilities?

### **NT involvement in manufacturing**

While the majority of the opportunities likely to be presented to Territory industry will be on through life support, including maintenance, repair and upgrades, manufacturing opportunities should not be ignored, particularly when they provide facilities and skills for ongoing support.

Advanced composite structures are an example of this. New generation aircraft such as the Tiger Armed Reconnaissance Helicopter have a high proportion of composite structure and will require repairs. Increasingly, composites are being used on vehicles and in armour.

When considering manufacturing, Territory industry should not just focus on the platforms but consider sub-systems, bolt-on accessories, tooling, jigs and fixtures, and test equipment. Often, equipment which is not mounted on the platform is designed to less rigorous specifications so obtaining approvals is simplified.

Some of the projects likely to involve Australian manufacture are particularly suitable for decentralised production, eg. the Air Warfare Destroyer structure will consist of modules produced around Australia and assembled in Adelaide. There is already interest by NT industry in bidding for AWD modules.

### **Manufacturing issues**

1. What manufacturing capabilities already exist in the Territory and how could these be adapted to future Defence projects?
2. What are the major projects in the DCP which could provide manufacturing opportunities for NT industry?
3. How do we persuade the primes to provide manufacturing opportunities for a currently limited NT industry base?
4. How do we assist NT industry to obtain Defence/prime manufacturing approvals?

### **NT involvement in assembly, integration and test**

A traditional Australian approach to establishing ongoing support capability when local manufacture is not economic is to have the platform assembly, systems integration and testing take place in Australia from imported sub-assemblies. This provides tooling, test equipment and skills. The Army's Tiger Armed Reconnaissance Helicopter is currently being assembled at the Brisbane facility of the prime, Australian Aerospace, and ASLAVs have been assembled at General Dynamics Land Systems facility in Adelaide.

The Land 121 Trucks and Trailers are candidates for Australian manufacture or assembly, and NT industry has capability for fitout, painting, etc. Its chances of participation are lessened because the first vehicles will go to units in Brisbane and Townsville, not Darwin.

### **Assembly and test issues**

1. What forthcoming projects might be candidates for NT assembly, fitout and testing?
2. How can NT industry improve its participation chances on Land 121 vehicles?

### **Precincts**

The proposed Defence Support Hub, adjacent to Robertson Barracks, represents a major initiative to allow defence industry to provide support capability to the armoured vehicles, Tiger Armed Reconnaissance Helicopter and other ADF resources based there, including simulators.

It provides potential to be a location for primes to establish upgraded facilities and for SMEs to cluster adjacent to the primes and the ADF operating units and to attract new contracts to the NT.

The strategy will address the development and operation of this and possibly other Defence precincts including the possibility of shared infrastructure and services for more efficient and economic operations.

With the likelihood of further increases in the use of Darwin as a port for large vessels including Australian amphibious ships embarking 1st Brigade elements for overseas deployments and US vessels bringing equipment for joint training exercises at Bradshaw, the questions arises whether some form of defence industry facility ought to be located at the port. Both Western Australia and South Australia have made major investments in multi-user maritime facilities.

The RAAF is also likely to operate larger aircraft regularly into Darwin Airport including C-17 transports and A330 multi-role tanker transports. While the basic infrastructure is adequate for air movements, temporary basing here may require upgrades.

When the F35 JSF is based at Tindal to replace F/A18, this provides an opportunity to promote increased industry support there. This may require consideration of an adjacent industry precinct.

### **Precinct issues**

1. What industry firms are interested in relocating or expanding to the Defence Support Hub?
2. What support services and infrastructure would be desirable?
3. What additional Defence support precinct locations might be explored (Darwin Airport, East Arm, Tindal)

### **Clustering and networking**

A measure of success has already been achieved in bringing together groups of firms in sectoral groupings to be able to promote NT industry capabilities in a coordinated way. Work has also been done under the DITR SBECF Program to provide industry with clustering skills. At least one significant bid has been submitted involving a group of about 10 SMEs with complementary capabilities.

Continued emphasis on clustering is expected for the following reasons:

- It is easier and more cost-effective for NT industry to market its capabilities as a group, particularly in the early stages of projects when presentations may need to be made to a number of potential prime bidders.
- Prime contractors are loath to work with individual small NT firms when larger, integrated companies may be available elsewhere.
- SADI is being restructured to allow groups of SMEs to apply for funding. To date, DMO does not want to deal with large numbers of small training proposals.

### **Clustering and networking issues**

1. What are the logical industry clusters to maximise opportunities and prospects on forthcoming significant Defence projects?
2. How should these clusters be administered — AIDN-NT, self-managing?

## Skills development

Defence industry Australia wide is suffering from increasing skills shortages, leading to the development of the Skilling Australian Defence Industry (SADI) scheme within DMO. This is in the process of being widened to allow clusters of defence SMEs to share its benefits (essentially 50% of training costs paid by Defence).

DBERD and AIDN-NT have already been involved in a review of skills shortages in the Territory and possible solutions. Part of the Defence Support Industry Development Strategy will be amplifying this to demonstrate to possible customers that NT industry has clear plans to be able to provide appropriate skills in timely fashion.

### Skills issues

1. What are the major skills gaps evident in NT industry against projected requirements?
2. To what extent can these be addressed by skilled migration schemes?
3. What NT resources exist for skills development, education and training?

## Technology mapping

DBERD has initiated a series of technology mapping studies involving the Tiger Armed Reconnaissance Helicopter, Abrams Tank and ASLAV to identify the key technologies, their sources and potential for NT industry to be involved in support. A secondary goal is to identify common technologies across a range of platforms providing potential for economies of scale, allowing easier access for NT industry.

The results of this technology mapping will be incorporated in to the Defence Support Industry Development Strategy.

### Technology mapping issues

1. What additional defence equipment should be surveyed?
2. How should the results be disseminated to NT industry?

## Defence approvals and systems

Australia-wide, a consistent concern of SMEs is the complexity and cost of becoming qualified to undertake defence work and understanding Defence contracting, security and quality systems.

Being able to meet Defence industrial security clearance requirements is a particularly important criterion. Australia also subscribes to international arrangements such as ITARS (International Traffic in Arms Regulations) which also have to be met.

DBERD has already conducted initial activities assisting SMEs and it is intended to augment this in the strategy.

**Defence approvals issues**

1. What are SMEs' priorities in obtaining Defence approvals and systems knowledge?
2. How can clusters assist to accelerate this process and reduce costs?

## Defence Projects/Activities with NT Industry Potential

### Assessing priorities for projects with NT industry potential

The development of the Defence Support Industry Development Strategy is essential to provide a planning framework for NT industry and other stakeholders to use to prioritise and maximise involvement in Defence opportunities.

Ultimately, the majority of new workload by value is likely to come from new projects in the DCP which represents 70% to 80% of Defence expenditure with industry. The following sections of this Background Paper outline, by sector, projects with NT industry workload potential and raise issues relating to each project or sector.

Inevitably, NT industry and Government will not have resources to bid for, and implement, all the projects and while individual companies will continue to take individual bidding decisions, if industry and Government are to work collaboratively on major projects, priorities will have to be agreed.

A model needs to be developed to assist in agreeing priorities and is likely to involve at least the following criteria:

- value
- timescale
- current NT capability
- competitive advantage
- Australian content guidelines on the project
- relationship with potential primes
- infrastructure requirements
- workforce/skills availability
- synergy with other activities
- relationship to NT Government priorities

Some other Governments, eg. South Australia, publish on the Internet details of opportunities which the government declares a Major Project (see [www.majorprojects.sa.gov.au/public](http://www.majorprojects.sa.gov.au/public))

#### **NT project priority issues**

1. How should Defence project priorities for NT industry involvement and NT Government support be set?
2. What are the appropriate criteria for assessing project priorities?
3. How does Government compare support for Defence activities with other industry sectors – oil and gas, mining, tourism, etc?
4. Should a Defence projects register be developed by Government and industry?
5. How should this be accessed (e.g. internet site)?

## Land projects

With the presence of Army's 1st Brigade at Robertson Barracks, the Territory has become the primary base for Armoured Vehicles including ASLAV, M113, Bushmaster, the Abrams M1-A1 Tank and its M-88 Recovery Vehicle.

The Army in the Territory also operates a significant proportion of the total fleet of trucks, trailers and other field vehicles. A summary of each of the significant Army vehicles projects is given below.

The level of support provided by NT industry has not yet equalled the growth in the vehicle population but potential exists to adapt industry capabilities used to support the transport and mining industries to support Army vehicles. DBERD is currently sponsoring a technology mapping study to identify the priority targets for this industry adaptation.

In addition to support for ADF vehicles, potential also exists to provide support when the US Defence Forces come to the Territory to use the new Field Training Area at Bradshaw. The US Army and Marines use many armoured vehicles in common with the ADF including Abrams, ASLAV and M113.

### Land vehicle issues

1. How can NT industry increase its involvement in military vehicles support using the potential economies of scale available?
2. What commercial vehicle support capabilities might be adapted to support military vehicles?
3. How do we persuade Army/DMO to establish vehicle SPOs (System Project Offices) in the Territory, or to establish a single armoured vehicle Super-SPO?

## Abrams Tank

The Australian Army acquired 59 Abrams Main Battle Tanks from the US in 2007 and the majority will be based in Darwin. All significant support facilities for the earlier tank, the Leopard, are in Victoria. Abrams utilises more sophisticated systems than Leopard including a gas turbine engine and a comprehensive electronics suite.

Army is currently conducting a competition to select an Australian Principal Support contractor for Abrams with competitors including Tenix, Thales (ADI) and General Dynamics Land Systems. While these companies have small activities in Darwin, their primary support facilities are in southern states. As a result, despite Abrams being based at Robertson Barracks, there is no guarantee that primary support will take place here.

DBERD and AIDN-NT are actively promoting the benefits of Abrams support in Darwin and the NT Government's announcement of a Defence Support Hub adjacent to Robertson Barracks provides a logical site for the prime and its SME subcontractors.

A technology mapping study is underway to identify the key technologies used in Abrams and the extent to which NT industry could adapt or extend current capabilities to provide support.

## M88 Tank Recovery Vehicle

In addition to the Abrams, Army is purchasing 7 M88 Recovery Vehicles produced in the USA by a subsidiary of BAE Systems whose Australian arm is bidding for M88 support.

The M88 is a simpler vehicle than Abrams and its structure, powerplant and systems are closer in technology to heavy mining and transport equipment already being supported in the Territory.

### **ASLAV**

The ASLAV, produced by General Dynamics Land Systems in Canada and assembled by them in Adelaide, is a well-established element of Army's armoured fighting vehicles. The majority are based at Robertson Barracks and, while GDLS has an operation in Darwin, the majority of support continues to come from elsewhere.

ASLAV is due to undergo a significant upgrade which could create opportunities for NT industry but the timing of the project has just been deferred to a decision date between 2010 and 2013 and an in-service date between 2012 and 2014.

Another technology mapping study is under way to identify the key technologies used in ASLAV and the extent to which NT industry could adapt or extend current capabilities to participate in the enhancement/upgrade project.

### **Bushmaster**

Developed and manufactured by Thales (ADI) in Australia, almost 200 Bushmaster armoured vehicles are now in service, with a growing fleet in Darwin. Thales has approached a local business to provide TLS to the Bushmaster based in the NT.

### **Land 121 Trucks and Trailers**

Land 121 is a \$3billion dollar project to replace all the Army's heavy, medium and light trucks and trailers, with preferred contractors to be chosen before 30th June 2007. Separate tenders are being sought for the three categories of truck and for the trailers.

A significant proportion (1,100 out of about 6,000) of Army's trucks and trailers are located in the Territory, and DBERD with AIDN-NT has been promoting NT industry capability to participate in the initial manufacture and ongoing support of the vehicles. Defence intends to sign a 15 year support contract at the time of the acquisition contract.

While NT industry undoubtedly has capability to participate, the NT based vehicles will not be part of the initial procurement and, on latest indications, will not enter service until 2011 to 2013. This will increase the challenge of participation in the first phase of procurement and support.

### **Land 17 Artillery**

DBERD and AIDN-NT have also been promoting NT industry participation in the procurement and support of new artillery to replace existing 105mm and 155mm guns. In the latest DCP, this procurement has been slipped with the year of decision no earlier than 2008 and in-service date now 2011 to 2013. However, latest information indicates that this may return to a 2007 YOD and 2008/09 in-service date.

### **Sea projects**

Strategically located, Darwin is the busiest naval port in Australia in terms of number of movements and the level of activity is predicted to increase due to a combination of enhanced northern surveillance and increased visits to use joint training ranges.

It is important that all NT stakeholders work together to ensure that the Port of Darwin has the facilities required to maximise the amount of support provided here, recognising that most of the new Australian vessels will be significantly larger than their predecessors.

Darwin's marine industry has a significant record supporting RAN patrol boats, starting with Fremantle and continuing with Armidale, and has demonstrated a wide variety of support capabilities. While protecting this role, the strategic challenge is to enter larger ship projects.

The next two years will see decisions made regarding two multi-billion dollar naval ships construction projects — Air Warfare Destroyer and Amphibious Ships. Although neither type will enter service until 2012 to 2014, decisions regarding basing and support will be taken and contracted by the end of 2007. If NT marine companies wish to participate in production or support, they need to be actively promoting their case with Defence, primes and potential major systems suppliers now.

### **Sea project issues**

1. What are the realistic module and equipment construction opportunities available to NT firms on the AWD and Amphibious Ship projects?
2. How should the Territory marine industry promote its capabilities to Defence and the contenders?
3. What infrastructural enhancements are required to maximise Darwin's port usage?

An outline of key RAN ships projects is as follows:

#### **Armidale Patrol Boats**

The new generation Armidale Class Patrol Boats are fitted with more sophisticated armament, sensors, communications and other systems, often COTS (commercial off the shelf) products, and NT firms have already been awarded more than 100 support contracts. This project is a key demonstrator of the ability of Territory companies to support new generation defence equipment.

To date, 8 of the 10 vessels to be home ported in Darwin have been delivered. DMS (part of P&O) is providing through life support.

#### **Air Warfare Destroyer**

This project involves \$3 billion expenditure for three vessels, the most expensive RAN naval vessels ever. ASC in Adelaide is the ship constructor, with Raytheon in Adelaide and Sydney the system integrator. The final design will not be chosen until July 2007 and the first vessel will enter service in 2013.

ASC has already called for Registration of Interest from potential suppliers, including structural modules, which will be constructed around Australia and assembled in Adelaide. NT industry has expressed interest in modules.

#### **Amphibious Ships**

The two new Amphibious Ships of more than 20,000 tonnes will have as a major role the embarkation and deployment of ADF units based at Robertson Barracks and part of the new strategy will be consideration of the port infrastructure required to efficiently handle military vessels of this size, particularly in emergency situations. The basing plan for the Amphibious Ships has not been finalised. While Darwin may not be a home base candidate, a case can be made for the vessels to spend significant periods here to practise interoperability with Army units.

While the vessels are not scheduled to enter service until 2012, a preferred tenderer is scheduled to be chosen by 30 June 2007 and contracts for acquisition and through life support will follow soon after.

## **Air projects**

A number of major ADF aircraft projects over the next decade will have major implications for NT defence industry. The projects, and the issues involved, are listed below.

### **Tiger ARH**

The first squadron of Army Tiger Armed Reconnaissance Helicopter is due to be operational with 1st Aviation Regiment at Robertson Barracks in 2007 and all 22 aircraft are due to be delivered by late 2008.

The Tiger is being assembled by Australian Aerospace at its Brisbane facility and this is also the planned primary support base. Australian Aerospace, as part of its 20-year support contract, will have approximately 20 maintenance and logistic support staff at Robertson Barracks. Some major Tiger equipment suppliers will also establish some Darwin capability but details are not yet clear.

A technology mapping study has been undertaken on Tiger and indicates areas of potential for NT industry to support Australian Aerospace.

DBERD has been active in promoting NT industry capability and will continue to do so.

### **Tiger issues**

1. How does NT industry move from promotion of capability to negotiation of contracts with Australian Aerospace and its key suppliers?
2. To what extent can complementary military and civil helicopter support workload be identified to spread establishment costs?

### **F35 Joint Strike Fighter**

The F35 Joint Strike Fighter is scheduled to replace RAAF F/A18 fighter from 2012 with 100 aircraft and a project value of \$13billion. This is likely to have a major impact on RAAF operations in the Territory, particularly at Tindal. The replacement of the F/A18 with the F35 could open up opportunities for NT industry to support the new fighter not only in the NT but Australia-wide.

The F35 is one of the most advanced military aircraft worldwide and its support represents both a major opportunity and a challenge to achieve the skill levels required.

### **F35 issues**

1. What aircraft support skills exist in the NT at present?
2. How can a credible plan be developed to upgrade these to support F35?
3. How does NT industry best present its case to Defence and Lockheed Martin for support of the F35 in the NT?

## **Unmanned Air Vehicles**

Like most other defence forces worldwide, the ADF is developing strategies to use unmanned air vehicles in a variety of surveillance and reconnaissance roles. Three of these have potential relevance to the Territory.

In 2006, the Joint Offshore Protection Command trialled the Mariner and Global Hawk high altitude, long endurance UAVs to determine their potential for North West Shelf surveillance. Flying trials were conducted from RAAF Learmonth in WA.

From 2008, Army will operate the small Boeing/IAI I-View Tactical UAV to provide brigade level reconnaissance under Project JP129. While this will be based in Brisbane, it is expected that an increasing proportion of operations will be in conjunction with units based at Robertson Barracks.

From 2012, a proportion of the wide area surveillance currently undertaken by RAAF Orion aircraft may be undertaken by large UAVs under Project Air 7000/1.

Darwin is strategically placed to act as a launch and retrieval site for the larger UAVs and to provide maintenance and repair support to all three types leading ultimately to assembly and test of new UAVs. As yet it is not under active consideration, although some civil UAV trials have taken place here and at least one UAV operator has been trained.

### **UAV issues**

1. What facilities and skills are required to support planned UAV operations in Northern Australia?
2. What existing skills could be adapted to this role?
3. How should NT industry promote its potential?

## **Wedgetail AEW&C**

Despite recently announced delays, the RAAF's new Wedgetail Airborne Early Warning and Control aircraft should enter service before the end of 2007, adding a major element to Australia's surveillance, command and control capability.

While the aircraft will be home based in southern Australia, and mission management facilities will be there, the aircraft will regularly operate from RAAF Tindal and an \$85 million upgrade of facilities there has been approved for the purpose.

Boeing Australia has prime responsibility for in-country support.

### **AEW&C issues**

1. In what areas might NT industry provide Wedgetail support?
2. Is it too late to promote these capabilities?

## **Electronic systems**

Electronic systems, both as separate systems and those imbedded in platforms, have become the largest single element of Defence acquisition expenditure with the 2006–2016 DCP estimating that electronic systems will constitute 46% of the \$51 billion acquisition costs.

This figure includes systems incorporated in major aircraft, ships and vehicles. For a modern warship, the DCP estimates electronic systems as representing 60% to 70% of the total ship value.

The DCP contains a wide variety of stand-alone electronic system projects including:

- surveillance and intelligence
- command and control
- communications
- data links
- military satellites
- electronic warfare
- cryptography
- identification friend of foe
- mobile operations centres

In addition to these stand-alone electronic projects, there are major embedded systems in new platform projects such as Wedgetail AEW&C aircraft, Air Warfare Destroyer and Joint Strike Fighter.

There are also a number of mid life upgrades of electronic systems fitted to aircraft, helicopters, ship and armoured vehicles, many of which will be based or operate in the Northern Territory.

Opportunities will also arise for NT industry to bid for through-life support of electronic systems operating in the NT, both stand-alone and embedded systems. This will include the electronic systems themselves, and support infrastructure including simulators and mission systems.

There are also a number of mid life upgrades of electronic systems fitted to aircraft, helicopters, ship and armoured vehicles, many of which will be based or operate in the Northern Territory.

Opportunities will also arise for NT industry to bid for through-life support of electronic systems operating in the NT, both stand-alone and embedded systems. This will include the electronic systems themselves, and support infrastructure including simulators and mission systems.

The Territory already has niche elements of defence-related electronic systems capabilities, particularly in secure communications, command and control, where the capability encompasses design, development, production and support. There is also a significant civil avionics support capability capable of being approved to undertake military avionics, and some avionics design and testing resources.

### **Electronic systems issues**

1. What NT electronic systems capabilities are available or adaptable to Defence applications?
2. What are the electronic systems projects potentially best suited to NT involvement taking into account geographic basing and NT capabilities?
3. How should the Territory electronics sector promote its capabilities to Defence and primes?
4. What cross sector civil and military electronics commonalities are identified?

### **Sensors**

New ADF land, sea and air platforms invariably involve a wider variety of sensors for surveillance and targeting applications, and increasingly the ADF is also using fixed, unattended sensors in Northern Australia.

The sensors include electro-optic, infra-red, ultra-violet, sonar, radar and acoustic types.

While many of the sensors are embedded in platform projects, and industry involvement needs to be promoted as part of those projects, Project Ninox (Land 53) provides a continuing focus for a range of night fighting and ground based surveillance capabilities to the Australian Defence Force. This includes night fighting equipment, thermal surveillance and target locating equipment, ground surveillance radar, perimeter surveillance equipment, and unattended ground sensors. Many of these will be used in northern Australia.

Identification of all categories of ADF sensors and commonalities in technologies and support requirements forms a part of the technology mapping currently taking place and will form a basis for developing a strategy for NT industry.

### **Sensor issues**

1. What sensors will enter service with NT based units in the next five years?
2. Which companies are the primary suppliers/supporters of these systems?
3. What capabilities exist for sensor support in NT industry?

### **Weapons systems**

The introduction of new generation armament and munitions into the Territory on land, sea and air platforms may provide an opportunity for Territory industry to become involved in a new area of support. Economies of scale may be possible, eg. the same gun is fitted to Army ASLAVs and to RAN Armidale Class Patrol Boats. The storage of ordnance may also provide opportunities.

### **Weapons system issues**

1. What capabilities will NT industry require to support new ADF weapons systems and munitions?
2. Do adaptable capabilities exist, eg. explosives storage for mining industry?

### **Network Centric Warfare**

A major ADF objective is to achieve operational superiority by developing surveillance, communications, command and control systems at all levels and on all platforms, enabling the ADF to react faster on the basis of superior information. Conceptually, the NCW Roadmap links all ADF assets from the Wedgetail Airborne Early Warning and Control aircraft to individual soldiers in the field.

The Northern Territory and the surrounding sea/air gap will be a major focus of NCW activity. Existing NT assets such as Pine Gap will be significant NCW contributors, and already plans are in place for a proportion of Wedgetail operations to take place out of Tindal.

There are a number of electronic system projects which form elements of the NCW network, including:

Air 5333	Air Defence ground Environment
Air 5405	Replacement Mobile Operations Centre
Def 7013	Joint Intelligence Support system
JP 2030	Joint Communications Support system
JP 2043	HF Modernisation
JP 2047	Wide Area Communications
JP 2065	Integrated Broadcast system Upgrade
JP 2072	Battlespace Communications system (Land)
JP 2089	Tactical Information Exchange Domain
JP 2090	Combined Information Environment
Land 75	Battlefield Command Support system

Most of these projects feature in the NCW Roadmap developed by Capability Group.

### **NCW Issues**

1. What NT group(s) should review and prioritise the NCW Roadmap potential for the NT?
2. How does Territory industry maximise its role in the acquisition, interpretation and dissemination of NCW information?
3. What skills and facilities are required to achieve this?
4. What commonalities exist with other areas of Defence support, e.g. software development, mission management systems?

## **Information technology and software**

A common feature of all new Defence equipment coming into the Territory is its far greater reliance on IT and software systems. The Tiger helicopter has massive software capacity in its weapons systems, sensors, communications and navigations systems, and is supported by ground based mission management and simulation systems which are software based.

If the Territory can demonstrate its ability to develop and sustain a high level of appropriate software skills, it is possible that important support facilities such as Mission Management Systems could be located here, maximising the interface with physical operations. At present, the Territory's IT resources do not match this demand.

### **IT and software issues**

1. Can common software requirements be mapped in new ADF systems based in the NT?
2. What software development companies and skills currently exist in the Territory?
3. How can these be adapted to ADF needs?
4. How can IT training be fast-tracked to provide resources quickly?

## **Simulation and training**

Simulation, including the use of full motion simulators, part task trainers and maintenance trainers has become a standard part of all land, sea and air systems training to reduce cost and extend available training hours.

Equipment coming to the NT as diverse as the Tiger ARH and Abrams tanks use simulation for training, and this will create an ongoing requirement for training staff and capability to update simulator hardware and software as the operational equipment is upgraded.

Supporting simulators requires:

- expertise in maintaining and modifying mechanical and electronic systems similar to those required for the real equipment
- expertise in development and modification of software to drive the simulators.

While at least one helicopter training system has been successfully produced in Darwin, at present the Territory has limited resources in the growth area of simulation and training.

Supporting simulators requires:

- expertise in maintaining and modifying mechanical and electronic systems similar to those required for the real equipment
- expertise in development and modification of software to drive the simulators.

### **Simulation and training issues**

1. What simulation systems will be installed in the NT over the next five years?
2. What NT resources could be adapted for simulation and training activities?
3. What commonality might be possible between projects, eg. Tiger and Abrams?

### **Training ranges**

The Northern Territory is increasingly recognised as a desirable location for Australian and international Defence force training.

The Delamere Air Weapons Range near Tindal is already used by the RAAF and an increasing number of international Air Forces and is to be further upgraded.

The new Bradshaw Field Training Area in the west of the Territory is to be utilised from 2007/08 for major Australian/US joint armoured training exercises and represents a major increase in regional training capability.

### **Training range issues**

1. What skills and resource does NT industry bring to the operation and sustainment of Defence training ranges?
2. What support services could be offered — transportation, environmental remediation, R&R tourism?

### **Research and development**

The level of defence-related R&D in the Territory still remains small despite the importance of the Territory and its sea/air gap as an operating environment.

While current NT R&D capabilities are limited, there are niches of expertise in communications, tropical health, environmental remediation, desert knowledge and other areas which have defence relevance.

At present DSTO has only one representative in the Territory, a major under-representation considering the major importance of the NT and its maritime approaches as operating and training areas with unique tropical and desert operating conditions.

The introduction of new Defence platforms such as the Armidale Class Patrol Boat, Tiger Armed Reconnaissance Helicopter and Abrams Tanks will necessitate a greater level of DSTO involvement as they operate in a tropical environment for the first time.

The strategy will address closer links with Defence R&D, particularly with DSTO.

### **R&D issues**

1. What NT R&D resources are relevant to Defence operations?
2. How do NT R&D organisations approach Defence?
3. What DSTO R&D might be relocated to the Territory?

### **Non-traditional defence industry opportunities**

In addition to the 'traditional' acquisition, logistics and maintenance support activities which form the majority of the DMO contracting with Defence industry, future Defence industries in the NT will provide opportunities for a wide spectrum of other industry sectors to become involved. These opportunities will also potentially be available for visiting overseas Defence Forces using the NT training ranges.

These will include:

#### **Environmental monitoring and remediation**

Defence has adopted a strict environmental policy, and in particular the new training ranges will place environmental pressures on sensitive areas.

#### **Health services**

With continually increasing numbers of service personnel operating and training in tropic and desert environments on overseas deployments as well as within Australia, effective operations require ADF personnel to be maintained in a healthy, well nourished, well hydrated and alert condition. CDU in particular, through the Menzies School of Tropical Health has an important contribution to make.

#### **Legal services**

The new Defence Legal Panel arrangements incorporate a requirement for a proportion (normally 10%) of legal services to be subcontracted to regional law firms.

#### **Travel and transport services**

In addition to the logistic services forming part of the DIDS contract, increased requirements are anticipated to move personnel and stores to training and operational areas.

#### **Leisure**

An increased level of R&R opportunities will be available, particularly for foreign forces. The US Marines, for instance, are already contracting with Australian-based firms to provide packages direct to service personnel.

### **Non Traditional Defence industry issues**

1. How can existing NT sectoral industry organisations be linked into the process of identifying and promoting such opportunities?
2. What are the appropriate Government and Industry stakeholders to be involved?
3. What role can DBERD and/or AIDN-NT play in these non-traditional areas?

## Key Elements of NT Defence Industry Support Strategy

This outline of the ultimate strategy document is work in progress and will be influenced by the feedback from consultation based on the Discussion Paper and this Background Paper.

The new strategy will be focussed and prioritised to ensure resources are not wasted chasing opportunities better handled by overseas and interstate competitors with more mature infrastructure. It is important that Defence and the ADF understand and agree, that the NT strategy provides them with logical, well-planned and well-resourced support capability which is cost-effective and self-sustaining.

The key draft elements of the NT Defence Industry Support Strategy will be as follows:

1. To base industry growth on the new Australian Defence Force equipment being based and operated in the Northern Territory, using the geographic advantage of NT industry's proximity to the operating bases and familiarity with the problems experienced in operating vehicles, vessels and aircraft in a demanding tropic environment.
2. This leads logically to an initial focus in terms of platforms (not in any priority order) on:
  - Army armoured fighting vehicles (Abrams, ASLAV, Bushmaster, M.113)
  - Army armed reconnaissance helicopters (Tiger)
  - Army field vehicles and trailers (Land 121)
  - Navy patrol boats (Armidale)
3. The mid-term platform focus would be extended to include (not in any priority order):
  - Air Force fighter/strike aircraft (F.35 JSF)
  - Air Force AEW&C (Wedgetail)
  - unmanned Air Vehicles (Air 7000, JP.129, Coastwatch)
4. There would be a complementary focus on systems, both embedded in platforms and stand-alone, which would include (not in any priority order):
  - network centric warfare systems
  - secure communications,
  - command and control
  - sensors (EO, IR, Acoustic)
5. For each category of platform or system, the strategy would at an appropriate time incorporate a Win Strategy developed by industry and government incorporating:
  - teaming arrangements
  - promotional activities
  - bidding priorities
  - Government support
  - skills and facilities development
6. The focus initially would be on logistic support, particularly maintenance, repair and modification which fit logically with existing Territory skills and facilities.
7. The current NT industry base is primarily SMEs and the strategy will extend the current AIDN-NT/DBERD activity of clustering and skilling SMEs.

8. The Strategy will recognise the need to attract prime contractor activities to establish greater support depth in the NT and will focus initially on primes with multi-project involvement here (eg. Thales).
9. The first phase of technology maturation would be to identify opportunities for enhancing involvement in new project manufacturing and upgrades, particularly those providing skills and facilities required for ongoing support.
10. To achieve economies of scale, to identify common-use technologies used for Defence and for civil support activities, eg. for oil and gas or mining.
11. Recognising the enhanced technologies incorporated in new platforms and systems, to develop a skills development plan aimed at ensuring a planned upgrade of Territory skills and employment numbers to be able to meet ADF needs. This may involve skills migration as well as skills training.
12. Recognising the current limitations, to develop a Defence Infrastructure plan which will provide physical facilities, transportation, communications and IT infrastructure to facilitate industry support to the ADF.

## **Consolidated List of Issues**

The following is a consolidated list of the issues and questions contained earlier in individual sections of this discussion paper:

### **Economic Development Framework issues**

1. Are there existing consultation structures to allow Defence-support industry to link with Government on the Economic Development Framework?
2. How can actions be agreed regarding each of these priority issues?
3. How do they link to individual sectors and projects?

### **Industry Development Framework issues**

1. Is this framework appropriate for NT industry?
2. What organisations should coordinate the development of the Defence industry development framework?

### **Industry Development categorisation issues**

1. Which Defence industry sectors fall into each of the categories?
2. How will this categorisation affect sector development?

### **Industry development targets issues**

1. What organisations should participate in the development of NT industry development targets?
2. What qualitative sector involvement targets should be nominated?

### **Industry development timescale issues**

1. Is there any optimum time for NT industry to join projects particularly considering the emphasis on support activities?
2. Can economies of scale be achieved by clustering or other co-operative activities?
3. Can AIDN-NT and/or DBERD undertake some of the early lobbying and relationship building?

### **Government support issues**

1. What support mechanisms would most assist NT industry to increase Defence support activities?
2. What cost would be involved?
3. What matching contributions would industry make?
4. How does NT industry maximise access to Commonwealth funding, eg. SADI?

### **Teaming issues**

1. AIDN-NT has carried out initial clustering initiatives in land, sea and air industry segments. How should these be further advanced?
2. Initial project teaming has commenced, eg. with the work AIDN-NT has undertaken on ADI Bushmaster support and Land 21 Trucks and Trailers. What other major projects should be targeted?
3. In addition to the land, sea and air clusters, what other teamings should be developed — electronics, IT, simulation and training?

### **Attracting prime contractor activities issues**

1. Which are the projects with potential to attract primes to base their support activities in the Territory?
2. What infrastructure and skills development will be necessary to achieve this?

### **DCP issues**

1. How should information on the DCP and updates be disseminated to NT industry, eg. should there be a central contact point in AIDN-NT or DBERD?
2. Should there be an initial short seminar for SMEs on how to use the DCP?
3. Is this best handled on a sector basis (land, sea, air, electronics)?
4. How should industry be updated on progress on Defence projects between the two-yearly DCP issues?

### **Non-DMO opportunity issues**

1. How can NT industry get details of forthcoming contracts for capital works, support services and accommodation requirements?
2. What role should the NT Government and industry associations play in identifying and promoting opportunities?
3. Which industry associations are relevant?
4. Should NT companies be considering forming networks or clusters to bid for larger, direct contracts?

### **Early planning involvement issues**

1. What are the key major projects on which early basing decisions will be taken over the next two years?
2. How should the NT become involved in promoting maximum NT involvement?

### **Contracting issues**

1. Are there legal firms or other service providers in the NT who can provide expertise in bidding and contracting with Defence?
2. Should AIDN-NT or DBERD consider providing short courses in Defence bidding and contracting?
3. Should Defence be asked to provide seminars in the NT on contracting?

### **Support activity issues**

1. What are the support sectors in which NT industry is best qualified?
2. What are the support opportunities arising over the next three years?
3. How should NT industry, with Government support, promote its capabilities?

### **Manufacturing issues :**

1. What manufacturing capabilities already exist in the Territory and how could these be adapted to future Defence projects?
2. What are the major projects in the DCP which could provide manufacturing opportunities for NT industry?
3. How do we persuade the primes to provide manufacturing opportunities for a currently limited NT industry base?

4. How do we assist NT industry to obtain Defence/prime manufacturing approvals?

#### **Assembly and test issues**

1. What forthcoming projects might be candidates for NT assembly, fitout and testing?
2. How can NT industry improve its participation chances on Land 121 vehicles?

#### **Precinct issues**

1. What industry firms are interested in relocating or expanding to the Defence Support Hub?
2. What support services and infrastructure would be desirable?
3. What additional Defence support precinct locations might be explored (Darwin Airport, East Arm, Tindal)?

#### **Clustering and networking issues**

1. What are the logical industry clusters to maximise opportunities and prospects on forthcoming significant Defence projects?
2. How should these clusters be administered — AIDN-NT, self managing?

#### **Skills issues**

1. What are the major skills gaps evident in NT industry against projected requirements?
2. To what extent can these be addressed by skilled migration schemes?
3. What NT resources exist for skills development, education and training?

#### **Technology mapping issues**

1. What additional Defence equipment should be surveyed?
2. How should the results be disseminated to NT industry?

#### **Defence approvals issues**

1. What are SMEs' priorities in obtaining Defence approvals and systems knowledge?
2. How can cluster assist to accelerate this process and reduce costs?

#### **NT project priority issues**

1. How should Defence project priorities for NT industry involvement and NT Government support be set?
2. What are the appropriate criteria for assessing project priorities?
3. How does Government compare support for Defence activities with other industry sectors — oil and gas, mining, tourism, etc?
4. Should a Defence projects register be developed by Government and industry?
5. How should this be accessed (eg. internet site)?

#### **Land vehicle issues**

1. How can NT industry increase its involvement in military vehicles support using the potential economies of scale available?
2. What commercial vehicle support capabilities might be adapted to support military vehicles?

3. How do we persuade Army/DMO to establish vehicle SPOs (System Project Offices) in the Territory, or to establish a single armoured vehicle Super-SPO?

### **Sea project issues**

1. What are the realistic module and equipment construction opportunities available to NT firms on the AWD and Amphibious Ship projects?
2. How should the Territory marine industry promote its capabilities to Defence and the contenders?
3. What infrastructural enhancements are required to maximise Darwin's port usage?

### **Tiger Helicopter issues**

1. How does NT industry move from promotion of capability to negotiation of contracts with Australian Aerospace and its key suppliers?
2. To what extent can complementary military and civil helicopter support workload be identified to spread establishment costs?

### **F35 issues**

1. What aircraft support skills exist in the NT at present?
2. How can a credible plan be developed to upgrade these to support F35?
3. How does NT industry best present its case to Defence and Lockheed Martin for support of the F35 in the NT?

### **UAV issues**

1. What facilities and skills are required to support planned UAV operations in Northern Australia?
2. What existing skills could be adapted to this role?
3. How should NT industry promote its potential?

### **AEW&C issues**

1. In what areas might NT industry provide Wedgetail support?
2. Is it too late to promote these capabilities?

### **Electronic systems issues**

1. What NT electronic systems capabilities are available or adaptable to Defence applications?
2. What are the electronic systems projects potentially best suited to NT involvement taking into account geographic basing and NT capabilities?
3. How should the Territory electronics sector promote its capabilities to Defence and primes?
4. What cross sector civil and military electronics commonalities are identified?

### **Sensor issues**

1. What sensors will enter service with NT based units in the next five years?
2. Which companies are the primary suppliers/supporters of these systems?
3. What capabilities exist for sensor support in NT industry?

### **Weapons system issues**

1. What capabilities will NT industry require to support new ADF weapons systems and munitions?
2. Do adaptable capabilities exist, eg. explosives storage for mining industry?

### **NCW issues**

1. What NT group(s) should review and prioritise the NCW Roadmap potential for the NT?
2. How does Territory industry maximise its role in the acquisition, interpretation and dissemination of NCW information?
3. What skills and facilities are required to achieve this?
4. What commonalities exist with other areas of Defence support, eg. software development, mission management systems?

### **IT and software issues**

1. Can common software requirements be mapped in new ADF systems based in the NT?
2. What software development companies and skills currently exist in the Territory?
3. How can these be adapted to ADF needs?
4. How can IT training be fast-tracked to provide resources quickly?

### **Simulation and training issues**

1. What simulation systems will be installed in the NT over the next five years?
2. What NT resources could be adapted for simulation and training activities?
3. What commonality might be possible between projects, eg. Tiger and Abrams?

### **Training range issues**

1. What skills and resource does NT industry bring to the operation and sustainment of Defence training ranges?
2. What support services could be offered — transportation, environmental remediation, R&R tourism?

### **R&D issues**

1. What NT R&D resources are relevant to Defence operations?
2. How do NT R&D organisations approach Defence?
3. What DSTO R&D might be relocated to the Territory?

### **Non-traditional defence industry issues**

1. How can existing NT sectoral industry organisations be linked into the process of identifying and promoting such opportunities?
2. What are the appropriate Government and industry stakeholders to be involved?
3. What role can DBERD and/or AIDN-NT play in these non-traditional areas?

## **Contacts**

For further information on the forthcoming regional consultations on the Defence Support Industry Development Strategy, or to make comment on the Discussion Paper and/or Background Paper, contact:

### **Peter Sims**

Manager, Industry Development  
Defence Support Division  
Department of Business, Economic and Regional Development  
GPO Box 3200  
Darwin NT 0801  
Phone 08 8999 7713  
Email [peter.sims@nt.gov.au](mailto:peter.sims@nt.gov.au)

### **Andrew Jones**

Executive Officer  
Australian Industry and Defence Network NT  
GPO Box 1721,  
Darwin NT 0801  
Phone 08 8947 2033  
Email [xo@aidnnt.com.au](mailto:xo@aidnnt.com.au)