

Submission  
No 35

## INQUIRY INTO DEFENCE INDUSTRY IN NEW SOUTH WALES

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**INQUIRY INTO THE DEFENCE INDUSTRY IN  
NEW SOUTH WALES (NSW)**

**NSW LEGISLATIVE COUNCIL  
STANDING COMMITTEE ON STATE DEVELOPMENT**

**SUBMISSION FROM THE  
UNIVERSITY OF NEWCASTLE**

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## **1. INTRODUCTION**

The University of Newcastle (UON) welcomes the opportunity to provide a submission to the NSW Legislative Council, Standing Committee on State Development as part of the Inquiry into the Defence Industry in NSW.

With reference to the *'New South Wales: Strong, Smart and Connected, the NSW Government Defence and Industry Strategy 2017'* and the Inquiry's terms of reference, a response is provided below to identify opportunities to incentivise and continue to grow this sector to provide economic development opportunities in NSW.

At UON we are committed to the role we play in driving regional economic growth through collaboration with partners locally and globally, and delivering outstanding education and research outcomes. Our proximity to regional Australian Defence Force (ADF) bases, including the Royal Australian Air Force (RAAF) Base Williamtown and Singleton's Lone Pine Army Barracks, has contributed to our close alignment with Defence and Defence Industry. We work with local, regional and international partners to promote the Defence Industry in NSW through education and research.

## **2. UNIVERSITY OF NEWCASTLE: A WORLD-CLASS UNIVERSITY FOR ITS REGIONS**

UON is a research-intensive regional university with more than 37,000 students across campuses in Newcastle, the Central Coast, Sydney, Port Macquarie and Singapore. We rank in the top 225 universities globally in the QS World University rankings. We also stand among the top eight universities in the country for research quality and the top ten for industry-led research income, building on our research strengths in health and medicine, science, engineering, energy and the environment, and our emerging presence as a leader in creative industries.

UON is a major contributor to the regional economy, with current estimates of UON outputs and expenditure totalling an estimated net present value of \$5.5 billion of flow-on economic benefit to the Hunter region over the ten years from 2013 to 2022. UON is also one of the largest employers in the regions it serves, with more than 2,600 staff in campuses located in Newcastle, the Central Coast and Port Macquarie.

Our degrees ensure graduates are globally competitive and career-ready. Approximately 95 per cent of our undergraduate programs include work-integrated and experiential learning. Our students voted us in the top ten of Australia's universities for quality teaching, graduate satisfaction and developing skills valued by employers. We're a leader in Indigenous education through our work at the Wollotuka Institute.

Through our Creative Arts, Business, Law and Education (CABLE), Science, Technology, Engineering, Mathematics, and Medicine (STEMM) Enterprises and Global Impact Clusters, our researchers work across disciplines to solve the world's greatest challenges in the fields of Energy, Resources, Food and Water; Better Health, Healthcare and Treatment; Future Industries and Strong Cities and Regions. We're committed to gender equity and are proud to be among the first Australian universities to pilot the Science in Australia Gender Equity (SAGE) program.

We've established strong partnerships with government and industry to drive innovation across areas of national and global significance. Our flagship research institutes, the Newcastle Institute for Energy and Resources<sup>1</sup> (NIER) and the Hunter Medical Research Institute<sup>2</sup> (HMRI) deliver cross-disciplinary research translated into world-class innovation.

The significance of our research is reflected in the Australian Government's Excellence in Research Australia assessment, which awarded UON the highest possible '5' rating across 22 research fields, placing us in the top eight Australian universities for research quality 'well above world standard'.

Innovation in integrated healthcare delivery is a key driver, particularly as more than 30 per cent of Australia's population lives in regional and rural areas. Supported by \$52.5 million in investment from the Commonwealth and NSW governments, UON is working with its key partners in the region to support the education of the future health workforce and associated infrastructure.

We're transforming our region with the \$95 million NeW Space – an education and research precinct and with the support of the NSW Government's Boosting Business Innovation program, the development of an Integrated Innovation Network (I2N) across the Hunter regions, key of which is the Defence Security Aerospace 18 Hub (DSA18) which is due to open in November 2017.

As a provider of research services, an economic partner and an avenue to government collaboration, UON is in a strong position to leverage funds and expertise across the region to form effective and productive partnerships.

### **3. OUR LOCAL REGION**

Our region is Defence-oriented with the proximal location of the RAAF Williamtown - Air Combat Group and Surveillance and Response Group, and Singleton's Lone Pine Army Barracks, School of Infantry and the Special Forces Training Centre. This presence has drawn numerous Primes including BAE Systems, Thales, Boeing, Lockheed Martin, Northrop Grumman, Raytheon, Forgacs and Varley to locate or open regional offices in the Hunter Region and drawing many Defence and Defence related industry providers.

Locally we are supported by HunterNet which is widely recognised within Australian manufacturing and academia as the most successful industry 'cluster' of its type. The organisation connects over 200 companies, active in national and international infrastructure and asset management, energy and resources, Defence and advanced manufacturing supply chains.

As reported by HunterNet, Defence activity within our region has an extensive history of completed Defence contracts. Past performance and proven success is integral to the region's capacity to win a greater share of Defence expenditure in the future. Through HunterNet, UON has a direct pipeline to the expertise needed to engage in large scale Defence related research endeavours.

With campuses and partnerships across the Hunter Region and Central Coast to encourage and facilitate industry engagement, we have the necessary foundation to meet the requirements for the development and expansion of the Defence and Defence related industry sector in NSW.

<sup>1</sup> <https://www.newcastle.edu.au/research-and-innovation/centre/nier/about-us>

<sup>2</sup> <https://hmri.org.au/>

#### **4. ACTING GLOBALLY: UON GLOBAL IMPACT CLUSTERS (GIC's)**

As a forward-thinking institution committed to excellence and equity we have consistently demonstrated that innovation grounded in world-class research can lead to lasting impacts for communities across our increasingly connected world.

The establishment of four GICs is a key initiative under UON's NeW Futures Strategic Plan 2016-2025 and will ensure UON continues to be recognised for research of quality, depth and impact. Over the next two years, four GICs will be launched:

- Energy, Resources, Food and Water (established in 2016)
- Better Health, Healthcare and Treatment (established in 2016)
- Future Industries (pending 2017)
- Strong Cities, Communities and Regions (pending 2017)

GICs address global challenges built on the base of UON's research concentrations and work across disciplines and national boundaries to drive innovation, business development, commercialisation and impact. GICs are enablers for industry collaboration and research translation at a broad level.

The GICs allow UON students and staff to:

- address global challenges through collaboration and an interdisciplinary approach, providing access to world class facilities to develop innovative solutions and enabling technologies
- strengthen excellence in research and its economic and commercial relevance through the generation of high quality, high impact research and the facilitation of access to new and emerging markets and industries
- develop introductions and build collaborations between our students, researchers and industry partners through engagement in national and international research cooperation
- expose students, researchers and research trainees to global perspectives and a diversity of approaches and models of collaboration and competition in research and innovation.

Drawing upon their international reach and profile, the GICs also offer a mechanism to provide an extended undergraduate learning experience for high performers through the development of unique undergraduate and post-graduate programs with an interdisciplinary approach.

UON has a longstanding track record in developing research solutions which can be translated regionally, nationally and internationally to build equitable prosperity, social cohesion and healthy communities. The GICs present an exciting framework and a significant moment in responding to our rapidly changing environment and ensuring this legacy continues in the future.

With the Hunter population set to grow in line with the increase in Defence personnel at Williamstown, the GIC's have a significant advantage as they can adapt and grow in response to the developing needs of the Defence and Defence Industry population including facilities to maintain and enhance new equipment initiatives and technologies, contributions to local and regional economics, and building new connections and collaboration across the Defence Industry space.

## **5. UON DEFENCE INDUSTRY ENGAGEMENT**

UON is committed to growing the regional economy of Newcastle, the Hunter and the Central Coast as part of our NeW Futures 2016 – 2025 strategic plan. Increased collaboration with local, national and international industry on identified areas of growth and national priority is a key part of UON's overall strategy. Defence has been identified as an area with significant potential given its national focus and existing regional capability. As such, UON is working to further its connections with Defence and Defence Industry and is actively consulting and engaging with stakeholders to develop new strategies to boost UON Defence participation. To date, key initiatives are:

### **5.1 UON I2N DEFENCE SECURITY AEROSPACE 18 HUB (DSA 18 HUB)**

In November 2017, UON will open the doors to a new collaborative space dedicated to Defence, Aerospace, and Cyber Security engagement between industry, government and academia. DSA 18 Hub, based at the Williamstown Aerospace Centre adjacent to the Williamstown RAAF base and several Defence Primes and small to medium enterprise (SME), is a result of extensive consultation with industry and UON's research base. Both groups expressed a strong desire to collaborate more closely through provision of a shared physical space, leveraging this to enhance current and future collaboration on research and development and education aligned to Defence and industry opportunities. The DSA 18 Hub is a response to meeting these needs.

The programs delivered through the DSA 18 Hub will focus on NSW Defence priorities, ensuring that the significant opportunities for building a strong Defence Industry in the Hunter region are realised. The *'New South Wales: Strong, Smart and Connected, the NSW Government Defence and Industry Strategy 2017'* highlights these opportunities, based on a number of key large Defence contracts with Primes (such as BAE Systems's Southern Pacific leadership role for F-35 sustainment), the large proportion of skilled Defence and Defence Industry workforce based in the region, and array of SME with experience in land, air and sea projects. Collaboration between government, industry and academia is essential, and DSA 18 Hub's collaborative program focus will include:

- strengthening relationships and leveraging capability
- regional development through Defence capability jobs and innovation
- fostering Innovation, commercialisation and partnerships.

The DSA 18 Hub comprises:

- co-working space for 18 desks, with meeting rooms, breakout spaces and small rooms for confidential communications
- an equal allocation of desks will be provided to Defence Industry Scholarship PhD students, UON researchers working on Defence projects and corporate clients, specifically SME and Prime Defence organisations.

The DSA 18 Hub will build on UON's acknowledged strengths in cyber space, control systems, autonomous vehicles, simulation modelling, propulsion and energy storage. As well as the physical space, a suite of networking events and seminars offering opportunities for engagement with local and national companies in the Defence sector are being developed collaboratively with Defence and Defence Industry partners.

Programs to grow the translation of UON's research and technology applications into the commercial Aerospace and Defence markets through collaborative R&D, as well as building a pipeline of talent for the growing sector, are also being developed.

The DSA 18 Hub and its residents will further benefit from membership of the I2N (as shown in Figure 1) which brings together a series of hubs across the Hunter region for the promotion of regional economic and social growth to both support UON researchers in translating their technology to industry and assist local communities and companies to develop businesses that drive employment and industrial transformation.

The I2N initiative acknowledges the substantial evidence that the best innovation ecosystems are those where new industries and opportunities are delivered through collaboration across sectors.



FIGURE 1: THE HUNTER I2N NETWORK

## 5.2 UON DEFENCE INNOVATION ADVISORY GROUP (DIAG)

In March 2017, UON established the UON DIAG which connects representatives from Defence and Defence Industry, business and government and provides the collaborative forum to:

- establish a joint strategic focus encompassing cooperative relationships and integrated planning with industry, business and government
- enhance understanding of Defence and Defence Industry needs and goals
- initiate the research and development discussion with regional and national Defence and Defence Industry
- increase collaboration with Defence and Defence Industry organisations.

The UON DIAG considers current trends, changing priorities and conducts needs analyses taking into consideration:

- importance of clustering as a means of collaboration, incorporating varying expertise and technology to develop synergistic outputs and not simply a traditional product
- developing investment approaches for education in the Defence sector
- potential for alignment of UON regional strengths to ongoing Defence capability needs
- need to develop a mutual focus with a commitment toward strategic planning integrated in the local and regional industry and business
- growing regional health considerations in the local Defence space and the potential for inclusion of relevant health services and HMRI
- UON's ability to act as a 'matchmaker' for industry and researchers with a longer vision toward the development of products and services.

Regular consultation from key stakeholders through DIAG will assist in developing and maintaining the relationships, strategic direction and specific actions required to grow the regional Defence Industry and increase UON contribution towards national security priorities.

UON Defence and Defence Industry engagement includes a successfully completed project for an industry collaboration on aircraft corrosion prevention and ongoing engagements with work in the field of training and simulation with smaller Defence Industry service providers.

## 5.3 NUW ALLIANCE

The recently formed, NUW Alliance<sup>3</sup> will see UON, University of New South Wales and University of Wollongong exploring and delivering ways to add value in health, education, technology and business development to improve the wellbeing of NSW communities, enhance equality of opportunity, create new jobs and generate economic growth.

The Alliance is the first grouping of its kind in Australia. Similar Alliances internationally have delivered significant value for their communities through independent, research-intensive universities that are co-located in a geographic region, leveraging complementary strengths for public benefit.

Several areas have been identified for initial collaboration that are relevant to the Defence sector including:

- Translational Cyber Security  
aligned to industry needs and state and federal government priorities. Identified actions include addressing the skills shortage in Australia, expanding translational research and teaching and aligning innovation activities with Cyber Security work

<sup>3</sup> <http://www.newcastle.edu.au/newsroom/featured-news/new-university-alliance-targets-smarter-solutions-for-nsw>



- Healthcare systems  
include bioinformatics, big data, health analytics and health policy evaluation
- Smart Cities  
coastal communities, connectivity, regional smart cities (including quality of life and equity / inclusion), city resilience and the internet of things.

The close alignment of the three universities will significantly improve the ability of UON to deliver projects and courses specifically designed for these key growth areas. For example, coursework tailored to the development of a strong Cyber Security skills base will supply Defence and Defence Industry with a talent pipeline in this priority area.

The details of this Alliance are in the process of being developed, and will undoubtedly provide even greater opportunities to grow Defence capability and industry in our region.

#### **5.4 NSW DEFENCE INNOVATION NETWORK**

The NSW Defence Innovation Network brings together Defence businesses, universities, government and the Commonwealth Defence Science and Technology Group (DSTG), with the primary aim of making NSW businesses more competitive and innovative and able to better respond to the national Defence Research and Development objectives as outlined in the *'Australian Department of Defence 2016 Defence Industry Policy Statement'* by harnessing the significant research capabilities available from NSW universities

The UON is one of six participating universities, with the Network's key strategic objectives being to:

- increase NSW capacity in Defence Research and Development (R&D) through addressing identified problems facing Defence and industry and identifying, coordinating and promoting the Defence R&D strength across NSW universities
- broker and foster collaboration between NSW researchers and industry to solve problems facing Defence, the Defence Industry and other end-users
- increase NSW R&D revenue by participating in Commonwealth and International Defence R&D activities and subsequent commercialisation successes.

## 6. UON RESEARCH CAPABILITY

UON has a broad range of research expertise that is applicable to Defence and the Defence Industry. It is vital that while this broad range is maintained to support small engagements with SMEs our current focus is to more effectively implement larger projects for maximum impact and industry participation. These focus areas will complement existing UON capability, align with Defence priorities and be of relevance to regional industry.

Identified focus areas for UON research include:

- **Simulation and Human Performance**
  - virtual and augmented reality training for Defence personnel, cognitive resilience training and decision optimization
  - aligns with Defence priorities in human performance and key enablers
  - complements existing and developing UON expertise and current projects.
- **Energy**
  - deployable energy generation and storage
  - aligns with Defence priorities in energy systems and key enablers
  - leverages extensive experience in civilian industry research in resources and energy
  - utilises world-class, purpose-built facilities.
- **Chemical countermeasures and environmental remediation**
  - remediation of Defence land and surrounding areas
  - Defence priority in countering traditional and improvised chemical threats
  - utilises UON's facilities and expertise with the Global Centre for Environmental Remediation and Cooperative Research Centre for Contamination Assessment and Remediation of the Environment<sup>4</sup>
- **Cyber Security and sensor networks**
  - Cyber Security and Cyber Physical Security research and education focus
  - Defence priority area
  - leverages UON expertise in Cyber Security and data analysis.
- **Robotics and automation**
  - automation, machine vision and high-accuracy articulation and nano-positioning
  - Defence priority in stand-off threat detection and neutralisation
  - leverages machine vision and anomaly detection expertise.

UON has a strong history of successful industry collaborations and has achieved strong outcomes in numerous areas including:

- mobile robotics in marine and aerospace applications
- guidance and motion control of marine platforms
- robust autonomous systems
- security and counter-terrorism risk assessment
- weaponeering and collateral damage estimation
- vibration analysis.

Work is progressing with Defence through participation in the Rapid Prototyping, Development and Evaluation program, ongoing simulation and testing with the Singleton Army base at our i3 laboratory<sup>5</sup>, and Defence-funded projects such as the ground-breaking work by the Bio-Analytics Resiliency Strategy Group<sup>6</sup> in cognitive resilience as an element of human performance.

<sup>4</sup> <http://www.newcastle.edu.au/research-and-innovation/centre/gcer/about-us/our-director>

<sup>5</sup> <http://i3lab.newcastle.edu.au/index.html>

<sup>6</sup> <http://www.newcastle.edu.au/research-and-innovation/innovation/clusters/defence/research-capabilities/bio-analytics-resiliency-strategy-group>

## **7. STUDENT DEFENCE INDUSTRY ENGAGEMENT**

UON is committed to supporting and developing researchers and students through dedicated Defence Industry opportunities that include work-integrated and experiential learning which provide UON with the opportunity to engage directly with the organisations that hire our graduates and ensure our degrees are meeting industry standards. Through the introduction of several strategies we are delivering innovative teaching and learning programs that guarantee our graduates are equipped with the skills and knowledge required to succeed in a competitive workforce. These include opportunities at the Higher Degree by Research (HDR) and undergraduate level as follows:

### **7.1 HDR DEFENCE INDUSTRY SCHOLARSHIPS**

Over the past few years UON has provided and continues to target specific HDR scholarship in Defence and Defence related areas. The scholarships facilitate student engagement and mobility between UON and industry with the purpose of developing and strengthening Defence related research. Recently awarded scholarships were in the areas of:

- simulation and decision making in regard to helicopter interfaces, working with airbus space and Defence Industry
- mental health - psychosocial needs of Defence families
- electrochemical energy storage - working with DSTG in relation to autonomous vehicles
- occupational health and safety - online therapy application in conjunction with Aspen Medical
- computer vision - in relation to Defence Cyber Security
- medical imaging of military relating to mild traumatic brain injury
- modelling and predicting corrosion in aggressive environments, including the naval environment.

### **7.2 UON INDUSTRY TRAINING AND ENGAGEMENT (UNITE) PROGRAM**

In 2016, UON launched the UNITE Program which is designed to link research and industry through effective engagement support involving HDR students, individually or as interdisciplinary teams, to engage in short-term projects with industry immediately following submission of their doctoral thesis for examination and prior to its award.

### **7.3 50:50 INDUSTRY PHD SCHOLARSHIPS**

In addition to UNITE, UON has a program of 50:50 Industry PhD Scholarships, under which UON will pay for 50 per cent of the PhD student's costs and stipend, with the other 50 per cent to be provided by the industry partner. This model allows for a greater degree of flexibility and speed of application and administration than Commonwealth-funded scholarship models.

## **8. INQUIRY DEFENCE TERMS OF REFERENCE**

With reference to the *'New South Wales: Strong, Smart and Connected, the NSW Government Defence and Industry Strategy 2017'* and the Inquiry's terms of reference, the following is offered to incentivise and continue to grow this sector to provide economic development opportunities in NSW.

### **a) maximise opportunities for NSW based companies from Defence's growing exports and investment in Defence capability – in both acquisition and sustainment**

The Williamstown Aerospace Centre (WAC) is a regional partnership that was established to facilitate commercial activities in the land adjoining RAAF Base Williamstown and Newcastle Airport. As a site, the Centre includes the Newcastle Airport Precinct and 120 hectares of industrial and business land.

Together with a growing number of Defence related business and industry who are co-locating to benefit from the proximity to strategic assets located both within the Local Government Area and surrounds, the WAC is a major national and international centre for the aerospace and aviation industry.

Further development opportunities and investment on land including and surrounding the WAC and Newcastle Airport is suggested to co-locate emerging high technology industry, academia, Defence and aerospace activities is a key consideration for government when identifying suitable areas to invest in the Defence sector.

Investment in leveraged research collaborations is likely to improve operational outcomes for Defence and Defence Industry in relation to sustainment and acquisition activities. Research partnerships between universities and Defence and Defence Industry improve the effectiveness of work and increase the likelihood of contract tender success for these organisations.

University expertise in key fields can help supplement the Defence Industry capability to develop innovative solutions to operational problems and improve the efficiency of projects. Further incentivising these partnerships would improve the likelihood of success in applications to the Defence Innovation Hub and Next Generation Technologies Fund, resulting in an improved investment profile for research activities and competitive advantage for NSW based contractors.

### **b) encourage Defence Industry innovation, research and education including developing the future workforce**

In NSW, there is a need to strengthen the formal collaboration networks between industry, government and academia. The UON is leading the way through the establishment of the UON DIAG to encourage:

- a joint strategic focus encompassing cooperative relationships and integrated planning with industry, business and government
- understanding of Defence and Defence Industry needs and goals
- the R&D discussion with regional and national Defence and Defence related industry
- increased collaboration with Defence and Defence related industry organisations.

Through the NUW Alliance, wider collaboration networks have been established which will explore and deliver ways to add value in health, education, technology and business development to improve the wellbeing of NSW communities, enhance equality of opportunity, create new jobs and generate economic growth.

Support from the NSW Government is critical to the successful establishment and outcomes for the NSW DIN which brings together Defence businesses, universities, government and the DSTG, with the primary aim of making NSW businesses more competitive and innovative and able to better respond to the national Defence Research and Development objectives by harnessing the significant research capabilities available from NSW universities.

Continued innovation in Defence will require targeted training in key areas. Many emerging fields are of particular importance to Defence capability, and specific training in these emerging fields is currently limited. Planning for a strong research base and workforce in Defence will require forward thinking strategies. Investment in analysing skill trends to understand the Defence and Defence related Industry skill requirements as they sit currently and as they are expected to change in the future, would assist in developing strategies for education and improve the talent pipeline. Key areas that are likely to need more trained personnel in the medium term include Simulation, Cyber Security and Systems Engineering and health (specifically human factors).

More areas are likely to be identified by an analysis of current skills shortages and Defence technology trends. Investment to analysing these skill trends would allow universities to create targeted degree programs and adequately supply the industry with the required personnel.

**c) identify targets, programs and projects for Defence spending in NSW**

Suggestions for Defence spending in NSW are:

Open the adjacent land to the RAFF (Defence and Airport Related Employment Zone lands) to attract further investment and co-location of Defence and Defence Industry, business and government and academia to provide employment opportunities and the attraction of new business into the local area so support manufacturing and sustainment in aerospace.

Through the introduction of the F35 at Williamstown, investment into educating and training the future industry base of professional, scientific and vocational (technical) qualified individuals is recommended. The presence of the regional maintenance hub is likely to present a range of unique challenges given the nature of the F-35 and its integration into ADF systems.

Continuous improvement programs will be required to ensure the F-35 maintains its technological dominance, and such programs will require input from skilled Defence Industry and researchers. Novel approaches to aircraft maintenance, systems engineering and logistics will be required in the region to support this program, and so opportunities for university research collaboration and targeted skills provision will present themselves to NSW industry.

Commit to actions that contribute to:

- STEM based education awareness, support at the school, undergraduate and post graduate level
- grow the STEM capabilities present in the Hunter and to develop a high value skilled workforce
- Increase work-integrated and experiential learning partnerships.

**d) maximise the economic benefits of locating Defence force bases and Defence Industry in the regions**

The Hunter is currently experiencing economic restructuring with a shift away from the traditional goods producing sector to a knowledge based economy. The largest employers in our region are education, health and defence. The changing nature of the workforce and industry, highlights the importance of maximising current opportunities. The recent investment in infrastructure at the RAAF Base Williamtown and the investment and opportunities presented at the WAC align to a strong Defence and Defence Industry presence within the Hunter. Combine this with UON's activities in Defence as informed within this submission, it is clearly evident that we are well positioned to contribute to the education, skills and training needs of the Defence Industry.

**e) how to establish and sustain Defence supportive communities**

An example of UON making a positive contribution toward sustaining a Defence supportive community is through the UON's Family Action Centre (FAC) which is a research, teaching and practice centre focused on families and their communities. The FAC has a 30 year track record of innovative, dynamic and enduring work that aims to strengthen family and community wellbeing and has had projects focused on working with ADF members and emergency staff in war zones to prepare them to deal with different community culture.

The FAC researches new ways to support families facing increasing complexities and challenges, providing positive, sustaining influences for individuals and communities. This is important in the context of social and mental health research and demonstrates UONs expertise in understanding and meeting the highly specialised needs for ADF families.

The FAC research also provides avenues for developing and enhancing support to ADF members and ground support staff with mental readiness to face conflict in unknown territories / or cultures, as well as being able to support long-term counter terrorism activities through policies that understand the importance of having a strong family structure with a focus on addressing vulnerability and resilience in the developmental pathways of children / young adult.

**f) further enhance collaboration between the NSW Government and Commonwealth agencies**

To further enhance collaboration between the NSW Government and Commonwealth agencies, invest in the development of the Williamtown Aerospace Centre to co locate education, research, industry and government activity associated with the Defence sector, whilst providing the precinct to collate commercial and entrepreneurial activity to support the Defence Industry.

UON recognises the importance of collaborating with the NSW Government to advance manufacturing, Cyber Security, aerospace, information and communication technology and other areas directly related to the needs of Defence and Defence Industry.

-END-