DEIP Newsletter Round 5

Defence Engineering Internship Program

In this round ...

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Defence Engineering Internship Program - an initiative of the Strategic Policy and Intelligence Group in Defence

The Defence Engineering Internship Program (DEIP) was designed to improve defence industry's skills base, create pathways into the defence industry sector and address capability skills gaps. It provided high performing engineering students with an incentivised opportunity to gain experience in one of the most technologically innovative and dynamic industries available in Australia.

Australian defence industry's capabilities are involved in the design, manufacture, build, maintenance and integration of a number of the most complex engineering systems and technological innovations in the world.

Australian companies in the defence industry sector provide integral support to the Australian Defence Force (ADF). Our pioneering Small to Medium Enterprises offer a diversity of opportunities for new and experienced engineers in fulfilling careers that are second-to-none.

Working through AITEC, Defence has funded five rounds of the DEIP. Each round has seen 30 third or fourth-year engineering students matched with appropriate Small to Medium defence enterprises within Australia to undertake 12-week internship placements.

Through DEIP, 150 enthusiastic engineering undergraduates experienced the dynamic world of defence industry, with many preparing to become the next generation of engineers delivering essential equipment to the Australian Defence Force.

The past five years have seen great success for the Defence Engineering Internship Program, with Round 5 concluded. AITEC is pleased and proud to have successfully realised the key Program objectives for each and every round. Through DEIP, a wide spread of Defence SMEs across Australia have been attracting high calibre engineering students from a range of Australian universities with internships intentionally balanced across engineering disciplines. Each of the internships required a defined and approved work plan to ensure that the internship delivers tangible outcomes. Interns have commented favourably about the interesting projects undertaken and the contribution to their development as engineers.

Many interns shared that they were unaware of the scope of the defence industry especially the SME sector but are now considering a career in the industry. A significant number of the interns have been employed in either the SME sector or the wider Defence industry.

The feedback has been extremely favourable with both formal and informal feedback indicating that SMEs consider the Program one of the best Industry Skilling Programs delivered by the Department of Defence. The 30 placements offered annually are highly contested and a further pleasing trend has been the increase of high achieving female engineering students applying for the Program. In addition, past interns are proving to be some of the strongest advocates for DEIP as they are sharing the perspective with other students, so the word is spreading beyond the 30 interns for a given year, with the 4th round seeing a record number of student applications.

These pages celebrate and feature the exceptional experiences that the host SMEs have made available to the interns. Some of the SMEs have hosted interns for previous rounds, with others hosting a DEIP intern for the first time. Most SMEs have returned each year to host an intern. Please note that the information included in this newsletter about the internships is provided by interns and host SMEs through site visits and general feedback and has not been amended.

The professionalism, interest and excitement of all parties involved has created a strong Program attracting high achieving engineering students being placed with high calibre companies. The success of DEIP is best summarised by the following SME participant comment:

"I consider DEIP to be a highly polished program and should be maintained as is. Thanks for hosting such a well-run program".

AITEC thanks all SMEs contributing to this success and wishes all hosts and prior interns the very best for their future. We hope that our paths will cross again some time into the future.

DEIP Facts 2012-2017

Key metrics

- 1696 engineering students applied and 150 internships were conducted with defence SMEs for 12 weeks
- 93% of interns indicated that DEIP expanded their awareness of Defence Industry
- 99% of interns would recommend DEIP to other students
- 98% of SMEs would recommend DEIP to others.

Australian Government
Department of Defence

AITEC

The Defence Engineering Internship Program is an initiative of the Australian Government represented by the Department of Defence

International Seal Company Australia - Queenie Hi

ISCA is an engineering and manufacturing company with extensive experience in industrial design, toolmaking and custom building injection moulds, fabricating precision machined components, naval engineering, industrial chemistry and polymer analysis, marine mechanical and electrical engineering.

Queenie with Damien Miller, General Manager of ISCA.

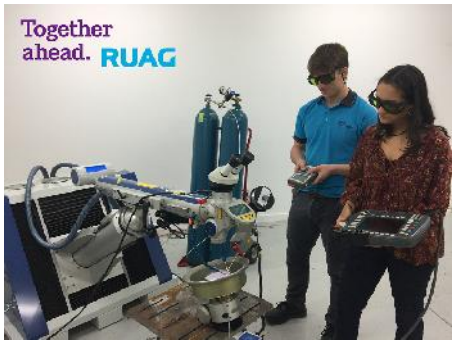
Queenie increased her knowledge of Finite Element Analysis and became familiar with Inventor 3D CAD software while doing her internship at ISCA. She enjoyed applying her knowledge in a real-world environment; gaining an understanding of putting designs into production and working with the production team.

One of the tasks of her work plan included to review ISCA's current research and development program on the combined heat and power generator project and the relevant technology associated with it. This project is for a defence remote power generator utilising additive manufacturing.

Prior to her internship, Queenie was unaware of ISCA and the defence SME sector. Now she hopes to join the Department of Defence.

RUAG Australia - Rohan Gigacz and Stevie Nuss-Soeharto

RUAG Australia's primary lines of business – precision manufacturing, maintenance, repair and overhaul (MRO), metal treatment and finishing and engineering – support and service the Defence and Aerospace markets.



Rohan (L) and Stevie (R) operating the RUAG Laser Cladding machine which is part of their Additive Manufacturing capability.

Rohan Gigacz hosted by RUAG

Rohan worked on the Capability Technology Demonstrator (CTD) research project. He generated the test procedures and documentation to conduct certification tasks.

He also worked in the MRO area disassembling a set of landing gears to determine whether some parts be retained or replaced due to wear and tear. In addition, he provided a report regarding cold spray clogging. He recommended some new ways to cool the nozzle to avoid clogging.

He had not heard of Supersonic Particle Deposition (SPD) and laser cladding before he started at RUAG and he appreciated being able to contribute to real work and decide which robot RUAG would purchase for the CTD laser cladding facility.

Stevie Nuss-Soeharto hosted by RUAG

At RUAG's Airport West facility, Stevie did some work on engine components, whereas at Bayswater she worked on the under carriages components.

Stevie undertook the design and certification of capacitors, trunnions, tags for wheel cylinder repairs and hydraulic press machines. She also worked on some paint specifications for approval or change. In the MRO area Stevie carried out assemblies and sub-assemblies, including touch up painting and pressure testing.

Stevie's main interest is in bioengineering and she may delay her final year at university if she is successful in obtaining an internship in Germany.

"Rohan and Stevie would be very suitable for the defence industry." Nick Orchowski, Rohan's supervisor and Rob Green, Senior Manager

AITEC

AITEC is a highly experienced educational program management organisation with extensive experience in the defence sector.

It is also one of Australia's leading managers of national internships, graduate and work placements, with programs spanning defence, health and education.

AITEC has supported advanced defence science, technology and engineering programs for DSTG as well as ASC's Marine Engineering programs in naval and submarine.

By developing the Body of Knowledge then using this to undertake mapping of the national workforce and international provider programs, AITEC identified key workforce development gaps for Energetic Materials, Explosive Ordnance, Weapons Engineering and Effects. AITEC then proceeded to develop cost-effective Weapons Engineering & Effects workforce development programs for Defence.

With major challenges emerging for defence workforce development in coming decades—across shipbuilding for naval and submarine as well as air warfare, cyber security and electronic warfare — AITEC's 20+ years of experience and expertise working with multiple universities, industry and governments is both unique and highly relevant to supporting the development of the workforce of the next 10, 20, 30 or 40 years.

AITEC uses a "one-stop-shop" model to enable its clients to define their needs and facilitate education providers to adapt to demand-driven service and programs. AITEC has maintained continuous international accreditation to ISO9001 for over 20 years. Please contact us on 08 8232 9688 or visit www.aitec.edu.au for further information.

What DEIP interns say

"(DEIP's application) was a very streamlined process and that made it really straight forward. I applied during a really busy time of uni and it was **so well organised** it was no stress for me!"
Helen Lawrence

"(Any suggestions for improvement?) None really, I think the **DEIP is great as it is**."
Aaron Panella

"The program is ideal for any engineering student and I am lucky to have been accepted. I think **the program is perfect** and suggest only that more positions are made available if possible."
Cassandra Bodsworth

"I strongly hope that the DEIP Program will continue to provide Australian students with the **opportunity to engage within industry** as it is a great way for students to kick-start their careers and boosts their professional and technical skill set."
Stevie Nuss-Soeharto

"The fact that we do **get paid is another large benefit** to this program, especially for students who live out of home and have to work to support themselves"
Rohan Gigacz

Aquila Engineering - Ruby Wright

Aquila Engineering is a well established specialist engineering design organisation currently providing services to a range of Australian and international military and civil aviation operators and maintainers.

Ben Terrell, Engineering Manager at Aquila Engineering, with Ruby.

The workplace atmosphere of Aquila Engineering offered social benefits to Ruby in addition to work skills. The internship enabled her to integrate knowledge acquired in university with the day-to-day realities of a commercial workplace.

As part of the deliverables Ruby carried out the engineering design for the repair of two aircraft fixture brackets and forwarded them for manufacture.

Ruby is open to a career in defence industry or other industries that will utilise her qualifications. She is aware that most companies servicing Defence also carry out work for other industries. By obtaining the DEIP internship, she is now more aware of the breadth of her employment prospects.

Jenkins Engineering Defence Systems - Bill Morgan Wang

Jenkins Engineering Defence Systems (JEDS) is a wholly owned Australian Marketing, Engineering Support, Custom R & D and Manufacturer of Electronic Warfare (SIGINT), Radar and Communication products for Government, Defence and Security applications.

JEDS Managing Director, Peter Jenkins, handing out the certificate of recognition to Bill for his participation in DEIP.

A great benefit to Bill was attending a Solidworks 3D CAD design training course sponsored by JEDS. This is an opportunity rarely afforded to an intern and it allowed Bill to undertake additional in-depth analysis, thus permitting a far stronger focus on the designing key output than initially expected.

Bill developed a far deeper understanding of Finite Element Analysis than achieved at university and this has enabled him to feel confident in this engineering discipline.

The DEIP internship surpassed Bill's expectations and he was delighted to be invited to remain employed by JEDS until university resumed.

Advanced Composite Structures Australia - Adrian Chiem

ACS Australia provides composites research and innovation through to industrial implementation. The defence-related work that ACS Australia currently undertakes concerns the through-life support of composite aircraft structure, particularly bonded repair and related issues.

Adrian progressed a defence-related project with ACS guidance by working on the method of solving the parametric for bonding composites to metals.
In addition, Adrian worked on composite design, learned programming with an analytical tool, and had the opportunity to work on the assembly of an aircraft which gave him a good exposure to manufacturing.

Adrian liked the independence given by ACS to work on the projects. They gave him a task which was explained well and then he was left to work on it.

Adrian is undertaking a double degree in Aerospace Engineering and Business Management . He is interested in high speed aerodynamics through modelling to prove theories on supersonic travel using aerospike engines. His final year project will be in this area.

Adrian (C) with Andrew Litchfield, Senior Engineer (L) and Paul Falzon, General Manager (R). Adrian is holding a car's drive shaft, which is partly made out of carbon fibre reinforced composite.

Chemring Australia - Jack Carabott

Chemring Australia is a developer, manufacturer and supplier of energetic materials and products for the defence and safety markets; e.g. a range of air and sea launched countermeasures, ammunition natures, military and commercial pyrotechnics.

At Chemring, Jack used his problem-solving skills to automate the winding of a very thin wire around a small piece of plastic which has been done by hand. With the successful outcome of this project, the productivity of the relevant section of the production line was doubled.

For the automation, Jack learned how to use Chemring's pneumatic software package and considered workplace health and safety issues along with testing to ensure the safety of the workers and the final assembly of flares. Once the prototype was developed, Jack had to test 50 units, without any failures, in order for it to be used in the full production line.

Jack in the flare laboratory where energetic materials are measured and mixed to make the flare compounds prior to assembly.

Ultra Electronics - Helen Lawrence

Ultra Electronics creates systems for the collection of Electronic / Communications Intelligence and direction finding.

Helen's key outputs during her internship at Ultra included the integration of relevant tool sets into a mapping tool. She also worked on the user interface for a software defined radio training system.

Helen already had an interest in a career in defence but she has found that the DEIP experience has encouraged her to look for opportunities at SMEs rather than prime defence companies as she has really enjoyed working at Ultra Engineering.

Helen will be undertaking her honours year project at ASC this year. She thinks that the skills she has learned during this internship will be beneficial in her future work.

" Ultra has a good culture and the work is interesting and challenging. All the staff are supportive and encourage learning."
Helen Lawrence

Helen with her supervisor, Michael Sharpe, Head of Systems Engineering at Ultra Electronics

Strategic Engineering - Christopher Cameron

Strategic Engineering develops state-of-the-art robotic solutions, and partners with manufacturers to integrate those technologies to provide innovative products and services. Strategic Engineering specialises in Automation and Robotics; Industrial Robotics, unmanned/autonomous ground, air and sea vehicles; and Engineering consulting for Defence.

Due to the smaller size of Strategic Engineering it was possible for Chris to view the entire production process, which was an area of interest for him. Chris settled well in the company and felt comfortable in the environment. He enjoyed working in a team, learned about the technology and its deployment in a defence setting.

The DEIP internship was his first placement and it built on his study, especially in vision applications.

"Chris is a very enthusiastic and motivated young man. He possesses a great attitude and aptitude."
Strategic Engineering staff member

Supervisor Mike Christie and Chris Cameron

What participant SMEs say

"...keep running this internship exactly how it is, I encourage more placement opportunities. Having participated in a number of internships with our local universities and from SEQLD, the **DEIP Internship is the best coordinated and run internship in the country**. A credit to all involved."

Tibor Fekete
XTEK Limited, ACT

"ACS have always had high expectations for the DEIP and the **calibre of students** has always been very strong. The DEIP operates very seamlessly with the companies. It provides huge benefit to the company and the intern."

Andrew Litchfield
ACS, VIC

"Pre-selection of candidates by AITEC has resulted in **high quality interns**, which helps in our employment of graduates. Also the AITEC staff have been great!

Paul Morris
TAE Gas Turbines, QLD

"The DEIP internship consistently provides **access to very high quality undergraduate students** as interns...
Continue the program!"

Alfred Schulte
Sonartech Atlas, NSW

" (the best aspect of the DEIP internship...) **The students are paid.** This means that they are not working at other part-time jobs and they are focused on the task at hand. Our experience has been that when the students are not paid, their on-the-job performance is reduced."

Ben Terrell
Aquila Engineering, WA

"Keep **providing great interns**!!"

Steve Hickman
Daronmont Technologies, SA

elmTEK - Samuel Gerhardy and Aaron Panella

elmTEK specialises in technology-rich software engineering and IT service management.

At elmTEK, Samuel and Aaron worked together; however, their internships each had a different focus.

Samuel Gerhardy hosted by elmTEK

Samuel's work at elmTEK was focused on the development of a camera by making use of modern FPGA (Field Programmable Gate Array) technology.

In order to provide mentoring in FPGA, an external consultant was brought in by elmTEK.

Meetings with the specialist mentor were held most afternoons to review progress, goals, provide guidance and this helped to provide focus.

Supervisor Ganen Ganeswaran (far left) and Principal Engineer Alex Kolodin (far right) with elmTEK's interns Sam Gerhardy (L) and Aaron Panella (R) at the presentation of their certificates of recognition for the successful completion of the DEIP internships.

Samuel appreciated that there are very few people in Australia with the specialist knowledge of his mentor. He had no idea such interesting R&D work was being done by SMEs.

Aaron Panella hosted by elmTEK

Aaron's work was focused on the GPS systems' integration for the project. He found the internship provided an excellent opportunity to work with relatively new technology in image processing with an expert in the field.

Aaron and Samuel achieved the goal of having the FPGA programmed and performing image processing.

elmTEK is considering how it can expand its capability in image processing and this could lead to an opportunity for both interns as the company considers them to be excellent candidates.

Currently, elmTEK is working with Samuel, Aaron and their respective universities so that they can further develop the project through their Honours year projects.

Dexata - Klane Mcilwain

Dexata is a proven supplier of breakthrough analytic capabilities within the Intelligence, Surveillance and Reconnaissance (ISR) domain. Currently it is engaged in an ongoing exploration of Big Data Analytics in conjunction with the RAAF.

During his internship, Klane researched product options for a lightning protection system for apparatus on Bathurst Island. He completed this activity and provided critical insight into the product selection, writing test plan and procedures that were accepted by the Department of Defence.

The ability to undertake a project from start to finish has proven to be invaluable for Klane, adding both depth and breadth to his knowledge.

According to Klane, Simon Whorrod was a wonderful supervisor offering the right balance of mentorship, supervision and autonomy.

As Klane progressed through the work plan more quickly than anticipated and proved to be capable of a high level of work, more tasks were incorporated into his work plan. He exceeded Dexata's expectations and was offered a full-time position upon completion of his studies.

Simon Whorrod and Klane Mcilwain at the radome, a weatherproof enclosure that protects the sensitive radar components inside.

Marand Precision Engineering - Matthew Haldon

Marand is a global supplier of precision engineered solutions to a range of industries including aerospace, defence, rail, automotive and mining.

Matt, who is undertaking a double degree in engineering and science, noted that the DEIP internship certainly met his expectations. He wanted to get an idea of how manufacturing machines operated and their capabilities and he did get that exposure at Marand. He enjoyed learning the project management side of the business because he has not done any study at university on this aspect of manufacturing.

Paul Brick and Matthew receiving the certificate for the conclusion of his DEIP internship.

"AITEC obviously have a very strong vetting process for selecting the students which is demonstrated in the quality and appropriateness of the students for Marand."

Paul Brick, Operations Manager

Sea Box International - Joel Davy

Sea Box International (SBI) is an Australian Systems Engineering company that designs and fabricates purpose-built deployable capabilities using shipping containers and derivatives.

During his internship Joel defined the complete production design documents for a prototype winch system and produced a 'flat pack' used by the Australian Army. In addition, he developed the design documents for a small ramp and conducted Finite Element Analysis (FEA) on another Sea Box prototype, writing and delivering the FEA report. Joel enjoyed working on projects with a 'real world' application.

Richard Blakeley, Joel Davy and Mike Brown

TAE - Adrian Watts

TAE delivers products and services in aerospace engineering, manufacturing, turbine engine and component MRO and enabling technologies.

At TAE, Adrian worked on a performance reliability tool to compare and test inflight and to manage and compare data.

Adrian also worked on the system that sends inflight error codes and designed a trending process to prioritise and automate error messages.

He fitted in TAE very well and was quickly able to work as one of the engineering team. His internship provided a resource for TAE to complete work that would otherwise be delayed.

Supervised by Russell Ives (R), Adrian worked on design tasks required by both the Australian Defence Force (Air Force and Army) and internal TAE customers.

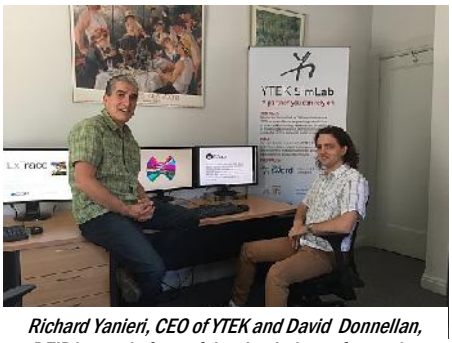
Ytek - David Donnellan

YTEK is a professional services and software engineering company focused on new concepts and products' development for individual and command team training in the aerospace battle management environment.

At YTEK, David developed his skills in software design and programming by working on the D3 modelling software, which is a visualisation tool for analytics. As David came into the project at the design stage of the software, there was a lot of research work required, which he enjoyed undertaking. He also worked on solving the architectural, design and engineering issues of the new software.

The best aspects of the DEIP internship for David were the ability to expand his skill set in other areas, experiencing the 'behind the scene' and working with an experienced developer.

"The study at university shows how to build small sections of code without really appreciating the complete software program required for a customer and how important the interaction with the client is."
Intern David Donnellan



Richard Yanieri, CEO of YTEK and David Donnellan, DEIP intern, in front of the simulation software that David has been working on.

L3 Oceania - Viktor Fidanovski

L3 Oceania is a supplier of acoustic systems and maritime systems and solutions in the surface, undersea, geospatial and network centric spheres of operation for both defence and commercial applications.

The overall objective of Viktor's internship was to develop a software program to control a camera designed to detect and track ships at sea in relation to the horizon - data which is then used to inform other systems. Viktor completed this and documentation for inclusion in the company's manuals.

Viktor was delighted to be surrounded by long-term experienced personnel and found the immediate, hands-on style of learning to be a big improvement on text-book learning with no immediate practical application. He was also exposed for the first time to the realities of commercial work - the importance of meeting client needs and doing so within a budget and price.

The internship also allowed the company to keep up to date with what is being taught at university in software engineering.

(LtR) Project Manager Dr Stuart Shaw, Viktor and his supervisor Justin Munro.

DEIP Facts 2012-2017

Key objectives

- 85% of interns indicated that they were now more likely to pursue a career in Defence Industry
- 93% of interns were considered suitable for a career in Defence Industry by their host SME
- 49 interns have been offered ongoing work at their host SME and 23 have still been working with their host SME one year after their internship
- 4 SMEs have employed DEIP interns that they did not host
- 21 interns have been employed by the Department of Defence or by another Australian based defence company.

XTEK Limited - Andrew Duck

XTEK provides protective security, tactical and forensics solutions to the government, law enforcement, military and commercial sectors.

Andrew has been part of the XTEK team working on the digitisation of a range of key chemical, biological, radiological, nuclear and explosive (CBRNE) sensors. XTEK also got Andrew involved in the CBRNE demonstration to Defence.

Andrew exceeded XTEK's expectations and worked very well within the team environment. He stated that the internship had been a fantastic experience and a 'great fit' for his area of study, which is a Bachelor of Software and Networks.

The DEIP internship has encouraged Andrew to consider a career in defence industry.

"XTEK is interested in continuing to have me on as a part of their team in some capacity that will fit into my final year of university."
Intern Andrew Duck

Ted Reakes, Unmanned Aerial Vehicles (UAV) Development Manager and internship supervisor, with Andrew.

EM Solutions - Philip Henderson

EM Solutions is a designer and manufacturer of microwave and RF products and systems for satellite and broadband communications.

As part of the internship key outputs, Philip had hands on assembly work for an urgent defence delivery and helped out with some urgent tasks before getting started on projects specifically for him. He also completed a number of specification documents for the company repository that have been very beneficial. This has provided further experience in software that Philip learned at university.

Philip was impressed with the technology utilised and developed in defence industry and the challenge it can offer engineers.

According to John Ness, Philip's supervisor, DEIP has been very useful for EM Solutions as it has provided excellent interns. He advised that the 12-week period allows the interns to fully immerse in the company allowing the SME to judge suitability for employment. It also provides them with a resource to complete tasks that can otherwise be put to one side due to the fast pace of the business.

Philip next to a satellite tracking terminal

Georgios Makris, EM Solutions Operations Manager, also advised that the skill level of the DEIP interns has been very good and commended AITEC on the matching process.

Philip will continue working at EM Solutions one day per week while he finishes his study.

Philip now feels that he has learned important industry standards and revision control. He also commented that the DEIP experience has enabled him to improve on the skills learned at university.

Daronmont Technologies - Raffaele Ceravolo

Daronmont Technologies is a wholly Australian owned Defence Industry Small to Medium Enterprise (SME) specialising in design, engineering, integration and support of complex high technology electronics and software-intensive systems.

"All the DEIP interns that the company has hosted have been very good and this fact shows that the Program has excellent selection processes."

Naomi Swan and Steve Hickman (Daronmont Technologies' staff members)

During Raffaele's internship, he created internal mountings for batteries, brackets for equipment and implemented new technology for the shelters that the company was working on. He also completed design documentation, for which he had a particular flair.

Raffaele enjoyed the variety of work he was exposed to in the internship; it helped him to realise that this is something that he would like in a job.

At Daronmont, the quality and speed of Raffaele's work impressed everyone that worked with him. They considered him to be an excellent graduate and will keep him in mind if any job openings arise within the company.

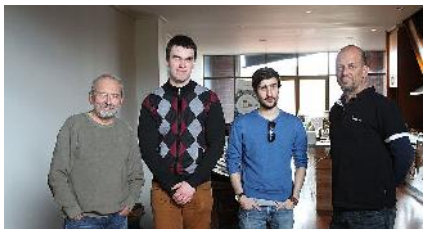
Jevon Hughes and intern Raffaele Ceravolo

PHM Technology - Jack Heydon

PHM Technology develops 'model-based' engineering tools for the design, safety, reliability and health management of complex systems.

According to Jack, his expectations about the DEIP internship were surpassed, particularly when compared to the experience of his classmates.

Tasks of his work plan included creating a taxonomic library for electrical, electronic and software engineering analysis and modelling a tank and a missile. Jack found satisfying to see his work utilised by PHM and was impressed that he had the opportunity to be supervised by its CEO. Jack was very pleased that the internship built on his study. His understanding of risk analysis, particularly with regard to electronic componentry, was considerably enhanced.



(LtR) CTO Jack Stecki; intern Jack Heydon; MADe Product Manager, Andrew Thorn; and CEO Chris Stecki.

MacTaggart Scott Australia - John McGuire

MacTaggart Scott provides complete solutions to difficult engineering problems in the Naval Defence and Marine industries.

John surpassed MacTaggart Scott's expectations; the company was pleasantly surprised at how well he fitted into the team and the quality of the work he produced. Most significantly for the company, John worked on a problem that the company had not had the resources to progress. John really enjoyed having a main project that integrated many different aspects of engineering. He is now very interested in a career in defence as it seems a challenging environment for engineers. He enjoyed working at a small company and being made to feel part of a dynamic team.

At MacTaggart Scott, John McGuire developed a variety of skills to design and make up test jumper boxes (e.g. skills in data logging systems, systems design, metalworking and documenting).

PMB Defence Engineering - Stephen La Vista

PMB Defence is a supplier of high quality energy and specialised engineering solutions for submarine platforms. PMB Defence Engineering has capabilities in Mechanical and Electrical/Electronic design,

At PMB, Stephen was able to progress an idea to a possible tool for the Navy after completing the test and analysis of a number of designs.

Whilst not impacting on his study choices, Stephen expects that the work performed in systems engineering, documentation and preparing designs will assist with his honours year. After his internship, he has developed more of an interest in electrical and software engineering.

"PBM would not have been able to progress this project without the internship."
John Keijko
Project Engineer

John Keijko (L), supervised Stephen's work.

Smart Fabrication - Dane Plummer

Smart Fabrication's core business is in the planning, design, construction and installation of a wide range of metal fabrication products.

Dane enjoyed working on actual Smart Fabrication's projects.

As Dane is mechanically minded, he was pleased with a placement that was very practically oriented rather than focused on research and theory.

This pipework as well as a stainless manifold were designed by Dane during his internship

Dane surpassed Smart Fabrication's expectations; he has excellent communication skills and liaised effectively with clients and suppliers. He assisted across the company and progressed to managing his own projects.

Smart Fabrication o□ered Dane a job but he had a placement with DST Group and further study to finish in 2018. Nevertheless, his supervisors plan to stay in contact with him and help him to establish a professional network. They expect that his career will progress quickly and that he will be managing complex projects in five to seven years.

Albins Performance Transmissions - Thomas Gell

Albins Performance Transmissions specialises in the design and manufacture of drivetrain components. Their capabilities include the ability to produce: individual gears, axles, drive flanges and ring and pinions right through to complete unit, sequential shift transmissions.

At Albins Performance, Tom worked on a steering and driveline product for the Thales Hawkei program. He familiarised himself with drawings, assemblies and processes for all components produced for the Hawkei.
Tom also reviewed the maturity level of the Production Part Approval Process (PPAP) of all parts manufactured for the program. He assisted in monitoring and assuring PPAP compliance and documented any instances of non-conformance.
In addition, Tom observed production processes on shop floor and identified potential opportunities for process improvement appropriate for low volume vehicle production.

Supervisor Ethan Stewart and Thomas Gell

Rockwell Collins Australia - Shane Reynolds

Rockwell Collins is a pioneer in the design, production and support of solutions for customers in the aerospace and defence areas. Their expertise spans across flight-deck avionics, cabin electronics, mission communications, information management and simulation and training.

Shane and his supervisor Rob Riede (R). Shane found that the supervision offered at Rockwell Collins greatly fostered his development technically, professionally and personally.

The DEIP internship gave Shane the opportunity to join Rockwell Collins' team in a detailed design review with the Department of Defence. This attests to the esteem in which he was held by the host company as it is rare for an intern to be involved in a higher-level activity.

Shane was embraced as a colleague and they were delighted with his performance, well above that of a third year student.

Rockwell Collins' internship supervisor, Rob Riede, highlighted Shane's ability to independently research as he was studying each evening and on weekends to ensure he was familiar with the engineering topics in projects, jargon and the breadth of the company activities. Rob also commented that Shane was an outstanding match for the organisation, very capable, self-directed and with great communication and team skills.

"It is hard to remember that Shane is an intern and not an employee that has been with the company for a year."
Rockwell Collins' Chief Engineer

As a result of the internship, Shane will shape his thesis di□erently with more emphasis towards a defence application. He is considering a thesis including stereoscopic cameras on an embedded system to provide triangulation.

Shane has a final year of study in Darwin and Rockwell Collins will stay in contact with him in the hope of employing him in the not too distant future.

Sonartech Atlas - Jeremy Eastham

Sonartech Atlas is a systems engineering company specialising in the design and development of sonar systems for naval and civilian applications. Current projects require engineering activities involving Intercept Detection and Ranging Sonars, Passive and Active Sonars, Data Recording Systems, Sonobuoy Processing Systems and Acoustic Analysis Systems.

At times, project definitions given by defence clients can be loose and as a result, research is required to refine the deliverables. Jeremy did very well in this area while working in Macquarie Park, NSW as an intern at Sonartech Atlas.

Deliverables required to be produced by Jeremy included research leading to the analysis of data and then translation to procedures.

Jeremy has another two years to complete his study; however, one anecdote exemplifies his performance level: a Sonartech colleague based on Perth, WA complimented Jeremy and his supervisor on the work he was doing. The colleague did not know that he was an intern and had assumed that Jeremy was a graduate engineer.

Sonartech o□ered Jeremy work as a contractor, extending on the work he did as an intern. He accepted the o□er as he is keen to pursue a career in defence industry. Jeremy commented that the DEIP internship has reinforced that this is the career for him.

Jeremy did not expect to be engaged in cutting-edge work and was delighted to be engaged at that level. He enjoyed undertaking research to assist with the overall project deliverables.

Harris Corporation - Lillian Lin

Harris provides mission critical solutions to connect, inform and protect; e.g. tactical communications, geospatial systems and services, air traffic management, environmental solutions, avionics, et al.

Lillian worked on interconnection diagrams which were very technical; she grasped how to use the computer tool at Harris and she applied this knowledge to complete the connections. She also provided some integration of components for preparation of equipment for testing and undertook a soldering course. In addition, she assisted in documenting the design dimensions for a particular part of the system – a conceptual idea.

Lillian hopes to pursue a career in Defence at the completion of her studies at ANU in Canberra. She has six months to go and she is already part way through her final year project.

A.W. Bell - Cassandra Bodsworth

AW Bell is a premiere supplier of complex metal parts using rapid prototyping, investment casting, sand casting and production machining technologies. These components are supplied to the land, naval and air defence programmes within Australia and to export markets.

Cass has agreed to continue working part time at AW Bell while she finishes her final year of university.

Cassandra's placement opened her eyes to the opportunities that are available in an SME manufacturing facility.

At AW Bell, Cassandra designed a wet cut o□ saw machine, including the electrical schematics and the electrical cabinet of the machine.

Despite not having exposure to electrical schematics prior to joining AW Bell, the output of her work was of a high quality.

Cassandra met AW Bell's expectations and fitted well into the team. She contributed to the productivity of the business and appreciated the opportunity to work with leading edge technology while doing hands-on engineering (as opposed to design engineering only).

According to Stephen, her supervisor, Cassandra would be very suitable for the defence industry. Her attention to detail is quite good, she is punctual, adheres to the workplace health and safety regime and works to a high standard.

Thanks to her experience with the DEIP internship, Cassandra started considering a career in the defence industry.

ABOUT AIDN

The Australian Industry & Defence Network Incorporated (AIDN) is the peak industry association for Small-to-Medium Enterprises (SMEs) wishing to do business in the Defence and Security sectors.

Established in 1995, AIDN represents the interests of Australian SMEs in the defence and security industry sectors by advocacy, representation and member services.
AIDN is comprised by State and Territory chapters with a combined membership in excess of 800 principal SME companies.

Through the National Secretariat, AIDN facilitates e□ective and e□cient communication between SMEs and the Defence agencies. Additionally, by partnering a stronger relationship between Industry and Defence, AIDN seeks to promote a capable and sustainable Australian defence industry. Essentially, the focus is on assisting Australian SMEs to gain greater access to defence and security industry information, resources and key decision makers, so as to optimise business success in this highly competitive arena.