SEA POWER 2012

ADM 2012 CONGRESS & AWARDS COVERAGE INSIDE

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CEA Technologies CEO Rob Forbes speaks to ADM

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Good people doing good work

It can be all too easy to think about the failures and problems in Defence procurement. But there are thousands of people both in Government and Industry working hard to deliver capability and support to the ADF on time and on budget. Our awards aim to recognise such people and projects.

THE DMO and a host of industry companies have been recognised for outstanding teamwork and excellence in project management at the annual Australian Defence Magazine (ADM) Awards Dinner in February 2012.

Major companies and Small to Medium Enterprises (SMEs) along with their DMO counterparts were nominated in four different categories:
- Major Acquisition;
- Minor Acquisition;
- Sustainment/Logistics Support Activity; and
- Rapid Acquisition.

These teams were then considered for two additional awards – the most outstanding Major Company/DMO team and SME/DMO team of the year and were named winner of the Essington Lewis trophies.

The Major Acquisition category was taken out by BAE Systems, Saab Technology and CEA Technologies for their work on the ASMD program during 2011. The reworking of the contract under the 1+7 model also ensured that risk was managed effectively for all parties. While the Anzac Class Anti-Ship Missile Defence (ASMD) project made the Projects of Concern (POC) list, the work done by all parties in 2011 to get the project back on course under the 1+7 regime and deliver the capability was exemplary.
"This solution was delivered on time and to budget, managed risk appropriately and utilised Australian intellectual property."

The extra rigour the Projects of Concern framework provided showed all parties that the relationship between them was key in handing over a highly capable HMAS Perth to the Royal Australian Navy. This award also highlights the fact that being on the POC list is not the end of the world for a program or the companies involved. See the From the Source interview this month with CEA Technologies CEO Rob Forbes for more information on the ASMD program. The team then went onto to win the Essington Lewis trophy for a Prime company. This is the first time a combined industry team has taken out the award. No doubt the trophy will be shipped all over the country during the next 12 months!

The Minor Acquisition award was won by the Tactical Aircraft Systems Program Office and Cirrus Real Time Processing - Under Air Force Minor 1002. This team provided an interim upgrade to the Airborne Navigation Trainer and Synthetic Navigation Trainer. This solution was delivered on time and to budget, managed risk appropriately and utilised Australian intellectual property.

The Sustainment/Logistics Support Activity was won by Daronmont Technologies and the GTESPo. They were recognised for their work on the Mobile Control

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and Reporting Centre Reconstitution and Sustainment Support Activity carried out in 2011. The work done clearly showed a strong collaborative relationship from first principles, allowing the project to be delivered on time and on budget. This team also went onto win the Essington Lewis trophy for an SME, a huge boost for the company that has always performed well at the awards in previous years.

The Rapid Acquisition category was taken out by Micreco and Land Self Protection SPO as they were able to deliver a complex, high technology counter-IED solution to a serious frontline problem the ADF was facing using Australian technology in a tightly compressed timeline. The team were commended on their innovative use of risk management measures to deliver on time and on budget.

Also honoured on the evening were the companies that headed ADMs Top 40 Defence Contractors BAE Systems Australia, ADMs Top 20 Defence SME Sikorsky Helitech and ADMs Top 20 ANZ Defence SME Adagold Aviation. These awards are based on the survey results that we released in the December/January edition of ADM. These lists along with past lists from previous years are also available to download from the ADM website, www.australiandefence.com.au.

The Australian Industry and Defence Network (AIDN) also used the event to announce the winner of its AIDN National Young Achiever Award. The finalists were Dugald Harland from CEA Technologies (ACT), Luke Moirat from Australian Aerospace (Queensland), David Powling from Drake Australia (NT), Paolo Santos from C4I Pty Ltd (Victoria) and David Savage of Raytheon Australia (South Australia). In 2011, Dugald Harland from CEA Technologies won the award for his contribution to the Phased Array Radar project on ASMD.
CEA Technologies might be best known for its Phased Array Radar (PAR) work as part of the Anti-Ship Missile Defence (ASMD) program on the ANZACs but the company does so much more. CEA Technologies CEO Rob Forbes spoke to ADM Editor Katherine Ziesing about the future of the company and how he sees the defence industry landscape from a smart SME perspective.

ADM: Can you give us an overview of the CEA Technologies’ business model?
Forbes: Essentially the business model is to try and exploit the competitive advantage that CEA has developed in certain niches and capabilities and abilities to produce high technology equipment and systems, deliver them into the marketplace and provide the requisite support for these systems.
ADM: Obviously the company is best known for its work on phased array radar, the ASMD program. What else does the company do?
Forbes: Part of our basic business model is to develop innovative systems that can evolve into new products. Over the 28-year history of the company, we have continually developed systems that have then been used as the building blocks for developing new systems.

There have been a number of systems that we have developed along the way that have contributed to the phased array radar and many of these systems are still being developed and marketed in their own rights.

For example, our communications system, which was originally developed for the MineHunter and is now being installed on board patrol boats in Australia and overseas, contributes a number of components to the ASMD radar. Furthermore, the continuous wave illuminator, which is also a product in its own right, has contributed to the phased array radar.

Each of these programs were innovative developments that provided solutions to problems presented to us by the customer. We innovated, we provided the system, we developed our capability and provided value for money systems and those systems are still current and being used.

ADM: ASMD was on the Projects of Concern list (POC). What did that mean for the company in a practical sense?
Forbes: There were three distinct phases around that issue.

Phase one was when we were told about it and that gave us a lot of stress and a lot of uncertainty because as far as we were concerned, in our part of the program, the development was progressing well and we couldn’t understand why the project had become a POC. There was a lot of stress.

The second phase was having identified what was causing the problem within the project, working with DMO and the other contractors in order to provide a solution to DMO and to the government. From our point of view, Ian Croser (CEA Technologies’ founder and Technical Director) identified that the issue was risk and he set about developing a solution to de-risk the program. The result was to conduct a number of demonstrations to show the capability of the radar in various operating environments. These demonstrations helped to reassure the DMO and the government at critical stages of the program that the phased array radar, a key part of the program, was going to work.

Then the third phase was our role in ensuring the ultimate success of HMAS Perth. At this point being a POC was useful, because it gave the program a higher profile and higher understanding within Defence and government. When it did succeed and achieve the required level of capability – it demonstrated to the DMO, right up to the Minister, CEA’s commitment to finishing programs. It’s given us a lot of credibility and recognition within DMO and the government.

ADM: Northrop Grumman owns a 49 per cent of CEA. What does that mean for the Australian SME?
Forbes: In our case as the SME on a day to day basis, not a lot because they have taken a relatively hands off approach to the operations of the company. In a strategic sense and exploiting CEA’s technology, it’s more about potential, which is still to be realised between the two companies as we’ve needed to develop the relationship and work out how we should be working together. That said we’re jointly pursuing a number of significant international opportunities – so the relationship is opening up new doors for us as a business.

ADM: Have you considered the development of portable PAR systems for operation in the field, i.e. for mortar location

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or even counter RAM applications?
Forbes: We have not only considered it, we’re working towards it. First of all we’re developing a ground based radar and secondly, a portable radar which would be available for air defence mounted on the back of a truck, but which could also be carried around for mortar detection or location. We’ve worked on the development of the concept and we’re looking to garner support to carry us into the actual testing of the concept.

ADM: When you say testing of the concept, do you have a prototype under development or is it still very much at concept stage?
Forbes: We have the same testing system that was used to demonstrate the phased array radar on the ASMD which our engineers have given the name Pokémon – because of its physical characteristics. We have used it to demonstrate the radar in a land based environment.
We’ve taken it down to Port Wakefield and tracked motor and cannon shells, that sort of thing. So that’s the initial concept; we want to mount more radar faces on the back of a truck so that we can test the system operating with four faces rather than two. So the initial concept of it being ground based, we’ve tested. It’s taking it to the stage of a full operating system, which is the key. And also testing a larger radar for airport defence.

ADM: How important are export sales of CEAMOUNT and CEAFAK in CEA’s future business planning, and what activities are underway to pursue such sales?
Forbes: As you would expect, they’re very important, and one wouldn’t go as far as to say crucial, but they are very important. We’re getting a lot of interest from shipbuilding companies, governments and navies on potential sales. It’s important for two reasons: firstly, we want to lift our sales, but secondly, it’s difficult to see that we can increase sales substantially with CEAMOUNT and CEAFAK just in the Australian maritime environment based on what we see now as the current shipbuilding program.

In terms of activities there are a couple of things. First of all, we are working with the Defence Export Unit from DMO and they have given us enormous support in terms of provision of people to support export efforts. The availability of HMAS Perth to visit places and be available for people to come on board to look at and talk to the sailors about the operation is fantastic and they’re prepared to support initiatives into export opportunities.

Secondly, we have our relationship with Northrop Grumman, which we’re looking to use to export, especially into the US market and find opportunities to adapt the ASMD system to the US potential opportunities.

Thirdly, there are other companies in the world which see the potential of our radar in their particular operations to meet future needs. We talked about ground based radar before and one of those opportunities is for this variant of the radar for an overseas company.

Fourthly, I guess is the opportunity to work with shipbuilding companies to introduce our radar into their next generation ships and we’re getting a lot of support for that idea as well. Examples are HII’s Patrol Frigate from the US and BAE’s Global Combat Ship.

ADM: Given the massive amount of shipbuilding on the horizon, particularly in Australia, where can CEA add value in that context?
Forbes: The problem is the horizon is a long way away. I think there are two areas where we can add value. First of all we have a uniquely scalable technology that can be adapted to meet the sensor requirements of ships of nearly any size. But the other area is capability. We have, during the ASMD program and based on the way the CEA is structured, developed a lot of capability that can be applied to those programs.

This can support both customer consideration of what is feasible with regard to future warship radar design, but also the shipbuilder in developing novel sensor solutions.

One of the key things of our business model is we have a structure where we basically build almost everything that goes into the radar. We import some bare boards, we get people to put components on those boards but we do all the design, including mechanical design and building of the mechanical framework, and we do the integration. And I think that decision is quite unusual, not only in Australia but overseas as well. Most companies prefer to do large portions of work by subcontracting it out to people.

We believe that if you’re committed to the quality of the system then you need to be able to control every step and you can really only do this by doing it yourself. That has helped us, especially in the design phase, build up a very broad capability in most aspects of radar and processing and a whole range of other related areas. We’ve got a unique capability which we think can be brought to bear in supporting those shipbuilding programs.

ADM: Does the Priority Industry Capabilities (PIC) framework have any practical effect on your business?
Forbes: Not as yet, no. It does to some extent where the issue is visibility. First of all, let’s talk about the PIC program. It’s a program which has probably been on the horizon for 8-10 years but it seems to have been originally developed by trying to name a number of industries and the reason why those industries have been named as PICs wasn’t altogether clear. In the last few years the government and DMO have sought to impose some sort of intellectual rigour to the process.

Let’s discuss what areas should be included and excluded and to what extent we should be looking to support or how should we be working to ensure that we’ve got that capability within Australia. That’s an ongoing process. I think that to a large extent the process is developing and maturing. There’s probably still more work to be done in further developing that intellectual framework around the PIC program.

So where do we fit in that? Probably one of the things is that we are one of the most obvious contributors to a PIC area. When people think of PAR in Australia they think of us. Although as we’ve talked about a number of times, PICs are meant to be capabilities, they’re not meant to be reflected in companies.

“Although as we’ve talked about a number of times, PICs are meant to be capabilities, they’re not mean to be reflected in the companies.”

The first outward indication of government supporting us was in a speech by Greg Combet when he outlined the fact that CEA had a PIC and that was a contributing factor to the ASMD program continuing, it then appeared in the industry development program as a case study. That was probably the first indication that the government was prepared to take concrete steps to support a PIC.
They still have an issue, I think, in making overt and public steps to support a capability area and it’s probably because they would have a concern about being seen just to pick winners. Once they’ve sorted out the intellectual framework, the
next question will be ‘Will they do things which will be obvious areas of support?’

So practical effect to date – perhaps not a lot. It is something that we’re aware of in terms of the way we think about the world. We also think of it as a responsibility. We believe that it’s important to Australia that it develops the capability in PAR and that’s not just at the CEA company level; it’s across the board.

It’s something that we would like the government to be thinking more about, that is, how do they develop a capability? Not only within single companies but within the broader arena. How do they link that to the educational institutions? How do they then link in the capability within Defence itself? Because we think there’s a responsibility to do that, those are some of the areas that we think about and it does affect how we try and work in a business sense.

ADM: What role do you think the DMO plays in developing Australian products and the wider Australian defence industry?

Forbes: I’m not too sure about their role in developing Australian products. I guess when we discuss the DMO role in the Defence industry we come across the issue about military off the shelf and commercial off the shelf and how that debate has been distorted over the years.

The concept was mentioned in the Morinier Review as being a benchmark that should be applied to future projects, that it should always be something to be considered as one of the options. But that seemed to have been interpreted by project officers within the DMO to mean that it was the preferred course and that it had to be the default position they should take.

But there seems to be a changing of the debate. I was interested to see the Senate Procurement Review start to pick this up as an issue that they wanted to look at further. I think that’s something that is now a little more open for debate and discussion than it has been previously. But I’m not sure that I see the DMO has a role of developing Australian products because I don’t think that’s their area of expertise or responsibility.

In terms of Australian industry and the defence industry I think that DMO is now taking a more constructive, more considered role and they’re trying to develop a strategic position as to where Australian industry should fit into supplying equipment to the DMO. I think they’re spending a fair bit of time in looking at things like the PICs – that’s probably a recent example of something where they’re really trying to focus on developing a policy and a strategic position.

“I think that DMO is now taking a more constructive, more considered role”

I think that there are areas in capability that are now thinking more strategically about how DMO can develop Australian strategic position and use Australian industry in the future. I also think that the engagement with industry has increased a lot and I hope that it’s contributing positively to the debate about Australian industry. Whether or not that carries through into action, I don’t know. But I’m positive about the way that it’s going. DMO seems to be more supportive and acting more strategically.

ADM: Do you think that’s a trend in the Capability Development Group (CDG) as well in terms of that reform and that change in industry engagement?

Forbes: I think so. A good example of that is that they’re being pushed into the idea of having a capability development forum more regularly and then the environmental working groups.

They have embraced those and now seem to be trying to get industry engagement earlier, but my question would be how will industry respond in a positive, non-selfish approach? CDG seems to want to communicate with people, more than engage I might say. I think it’s a big change. I don’t know where it’s come from or what the reforms are but I do think that it is going that way.

ADM: CEA engineers have won two AIDN National Young Achiever of the Year Awards in the last three years. What is so wonderful about CEA for young engineers?

Forbes: It’s the type of work that we do which is being led by Ian Crosier, who in my mind has to be one of the great innovative minds and great engineering minds within Australia in the last any number of years. He’s an inspiration to people, to engineers and one of the things that inspires people is his approach.

I talked earlier about our building blocks where we have systems that can be built on over a period of time. He has that strategic, broad thinking mind that enables you to see, to develop things now which will only be used in 10-15 years in some other system. And so the engineers can see that they’re involved in the technology across that time. They can see they’re involved in development that is right at the edge of their particular specialties and it really doesn’t matter what it is, we’re doing work that tests what’s been known previously and they know that, they understand that. They can see that there are areas where they can develop their own skills but also where they can create things and be a part of that bigger picture themselves.

The company is of a size where they can say “Oh what I’m doing here, I can see this going into the ASMD radar”. We have people come straight out of university and they love that opportunity to give the practical application to what they’ve learnt. But also we’re getting people now who have come from the bigger companies and they can see the work that they’re doing is actually going into a product that they can see in front of them which they tell us they didn’t have available to them in the bigger companies. I think we attract bright people and they can get a lot out of CEA.