EM Solutions is not really another one of those overnight success stories in the Defence SME space. From humble beginnings 20 years ago, to now hosting a number of technologies with the Australian services and international customers, the journey is full of ups and downs. ADM Managing Editor Katherine Ziesing caught up with Dr Rowan Gilmore to explore that journey.

Dr Rowan Gilmore
Managing Director
EM Solutions

ADM: Can you walk us through the history of the company; from being spun out of the university sector in 1998 through until now? GILMORE: The history of EM Solutions actually begins earlier than 1998; in 1984 a company called Mitec was formed. That was the University of Queensland’s first ever spinout company and Mitec was in microwave radios at the time and was bought by Codan in 1997. Then in 1998 the founders of Mitec started EM Solutions with a focus on radio links and terrestrial microwave components and radio.

Since then, we’ve come up the value chain in a big way. Terrestrial radios became commoditised and so our focus has shifted to higher value products where we can be competitive in customised products in particular for the defence sector.

ADM: What is the split between civil and military work within the company? GILMORE: It varies year to year. Last year it was actually about 55 per cent civil and 45 per cent defence. The civil work tends to be build-to-print, so for example we build radar units for a company in the mining sector. But we also build our own radios that are used for commercial in-flight connectivity, whereas the remainder of our military work of course is generally in the satellite communications space for Army and Navy.

ADM: What has your journey been like with Defence; from the early developmental phase of Cobra as a CTD (DST Group’s old Capability Technology Demonstrator program) through until now at sea and sustaining that capability? GILMORE: We’ve had several CTD projects over the years. They hit a low point in 2011 when we developed a land terminal and the CTD program was cancelled and so we were unable to certify that terminal on the Defence Wide Band Global Satellite (WGS) system. That was very hard for us to recover from.

But subsequent to that we steered ourselves more towards working with maritime terminals, where Navy sponsored not only an original CTD program but subsequently another program through the Defence Innovation Hub. Through that we’ve developed the Cobra terminal and now we supply the Cobra not only just with the terminal itself but also the design and supply of the racks below decks. We can install that now as a fully integrated communications system and we’ll continue to develop that terminal.

Our first customer was the Australian Border Force but Navy has been a terrific supporter and we work very closely with them too. So far we have installed our Cobra terminals on their own offshore patrol vessels, the Cape class ships. They’re about to go on the oikets (HMA Ships Supply and Stadwacht) built by Navantia in Spain and we’ve got several also on the Anzac frigates. It’s a good example of Australian industry working closely with Defence in order to develop something that’s clearly of value to them.

ADM: You mentioned before that hitting the company took in 2011 around the CTD program which was a major issue for you. How would you characterise the Defence innovation environment over your time in the Defence space? GILMORE: Without doubt the last three or four years have been very, very positive. There’s been a sea-change in procurement, in access to customers and in the support of Defence towards Australian industry. And so a company like ours that’s fairly high up the value chain with fairly sophisticated IP, in the past we were considered too risky and too small for Defence to work with and now Defence is more accepting of working with small business and local high-value IP.

It recognises that small business can innovate more quickly, they can respond and customise products more quickly to Defence’s
needs and it can do so from a local base and provide ongoing support. So the events of 2011/2012 were really a low point when we went through a near-death experience. But we are definitely on the up now both in Australia and with our overseas work.

ADM: So would you say that Defence is treating industry as a true fundamental input to capability (FIC)?
GILMORE: Yes, they are. For instance in maritime, our current Defence Innovation Hub (DIH) project is to develop a larger size maritime terminal and that gives us the opportunity to work closely with Defence to design something that truly meets their needs and requirements. We’re currently in the phase of developing the system specifications and about to begin engineering product to satisfy that.

What’s driving them is that they have needs and we, being local and small enough, are able to respond. So I think they do see those markets. It’s a win/win for both the prime and the SME.

ADM: Are you exporting through any other avenues, apart from the GSC efforts with Thales?
GILMORE: Yes, we work with partners including prime contractors and distributors as well as our own man in the US. Initially they were mainly for lead identification but, increasingly, as we position our product overseas, they become more involved in its support and systems integration. So, for example, our land terminal has ended up in India in land mobile applications and that’s supported by our partner in Singapore who have staff themselves in India. So it’s an efficient way that we can reach export markets. We export about 50 per cent of what we build here.

ADM: Given your success in this exporting drive, what advice would you give other SMEs who are looking to export in the defence market?
GILMORE: In our case it’s being able to understand what your differentiators are. In the context of EM Solutions they’re technical differentiators. Our terminals we know have the best acquisition and tracking on-the-move and we also know that they are multi-satellite capable. The second point then is to know the benefits that these bring to the customer, such as increased availability and increased resilience. And to then form partnerships or collaborations with partners that can help you access markets and reduce risk.

For example, we’ve worked quite closely with satellite operator Inmarsat because they recognise that if they sell our terminals to, for example, the US Navy, that gives the US Navy the ability not only to use the military system but also Inmarsat’s own civil system.

Knowing your unique selling proposition, forming partnerships and having strong IP is really what’s brought those benefits to us.

ADM: What about the satcom on the move work with Thales, what’s happening in that space?
GILMORE: EM Solutions is part of Thales’ global supply chain (GSC) program. We work closely with Thales to supply them with satellite radios into other markets internationally and that was a big production order for us. That’s a good example of our ability to scale up and to deliver in large volume. The GSC program has been very beneficial to us because the end customer for projects like that is not necessarily an Australian customer and we can leverage the links that companies like Thales have in support the SME community beyond the GSC program?
GILMORE: Yes. Selling manufactured products is really hard business when those products often have to be customised to an individual customer and so we frequently face “valleys of death” because product sales like satellite terminals are few and far between, and so we have these long gaps where we worry where the next product sale is going to come from.

For that sort of work, how do we cover our cashflow during those times when we’re not selling products? We’re able to do that by diversifying into civil work, but a huge income stream is, or could be, maintenance and support. In spaces parallel to us we see the defence primes who do maintenance and support, they’ll build up their own capability, they’ll reinvent the wheel rather than work with the SME community to help support them, depriving the SME sector of a constant revenue stream that could keep them viable during acquisition dry spells, managing the peaks and troughs that the industry is prone to.

For me, that’s the next area where primes could help – by using SMEs to undertake some of the ongoing maintenance, support, installation, testing work. I see that they prefer to build that capability internally themselves rather than farm it out to local SMEs.

ADM: Why do you think that is? Is there a value for money proposition in there?
GILMORE: I think it’s very profitable for the large primes, particularly if they import product from overseas. The products tend to get shipped back to the factory overseas and we see a lot of equipment that we could repair ourselves locally that would save money and save time for the ADF were it fully repaired locally. We’ve seen that happen in a few cases across various domains. At the end of the day I guess it all comes down to economic self-interest.

ADM: What are the levers for changing that behaviour then? Does that come at a Defence or government level?
GILMORE: Well the challenge, of course, is CASG likes to deal in big contracts with big companies for obvious reasons. The bidders to those big contracts are always primes and so the primes have control over which bits they keep and which bits they use to support or use to buy from SMEs. Maintenance and support is a big chunk of revenue that a prime might not want to subcontract.

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ADM: What are the biggest challenges and opportunities in your business at the moment and looking more into the future as well?

GILMORE: We’re a typical engineering product company and typical of many similar small companies is we probably have too many projects running at the same time. We have a lot of engineering resources devoted to customising products and so our challenge is how do we sell more standard products in larger quantities. Our goal is to grow as a product supplier away from being a niche boutique engineering house and to do that we need standard products that we can produce at scale.

And, of course, the Australian market is too small, so that requires reaching further into overseas markets.

So that’s a commercial problem as well as an engineering problem. The opportunity for us is to turn the trials and interest we see from North America and Europe into real business. The acquisition cycle is quite lengthy and we can wait years between submitting a bid to receiving an order and so that’s both a challenge but also an opportunity that we have so many bids currently out there.

ADM: What about workforce pressures, are you finding any troubles in getting the right people at the right time?

GILMORE: We’ve got a very stable and loyal workforce. Our staff turnover is probably less than five per cent. It’s partly because what we do is fairly specialised and we find also that when we give engineers interesting design work, they don’t want to leave. We’re able to attract talent because we’re very close to a number of universities (Note: EM Solutions is based in the greater Brisbane area). We have research and development projects on the go all the time. If we want a particular skill immediately, that’s going to be a challenge for anyone but given enough time we find we’re able to attract a really good level of talent.

On the technician side there’s probably more of a challenge for a business like ours that’s based around hardware. We need good electronics technicians and they are difficult to find because the VET (vocational educational training) sector probably aren’t training technicians as they used to. Perhaps people that were so inclined once upon a time are now going to universities and becoming engineers rather than technicians.

Note: As we go to press, EM Solutions will become the author for the new EOS Space Communications Division. ADM asked what difference this will make?

GILMORE: At a strategic level, the combination of the two companies makes perfect sense - EOS is strong in optical systems and EM Solutions in microwave systems, both necessary especially for communications in space; at a national level it aligns well with the increasing Australian interest in entering the space domain and creates a powerful new force; it creates a strong sovereign and Australian-domiciled entity; and it builds critical mass for a relatively large, home grown, hi-techology defence company.

For EM Solutions it removes much of the commercial risk customers face in dealing with a smaller SME, it provides access to a much larger customer base, it provides capital and simplifies the commercialisation pathway for new technology, and it enlarges the number of countries from which we can provide support and maintenance. We have many reasons to be very excited about the future.