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Committee Secretary  
Joint Standing Committee on Foreign Affairs, Defence and Trade  
PO Box 6021  
Parliament House  
Canberra ACT 2600

Dear Members,

## **Submission into Parliamentary Inquiry into Government Support for Australian Defence Industry Exports**

EM Solutions Pty Ltd is pleased to submit its comments and observations on opportunities that it believes could expand Australia's multi-million dollar defence industry exports. These are based on its own experience, and in the belief that such experiences are shared by numerous other Australian companies in similar positions.

EM Solutions is a designer and manufacturer of broadband telecommunications equipment used by defence and commercial customers in ground-based equipment for both high speed satellite and terrestrial microwave communications. The company is a successor to Mitec, which emerged from the University of Queensland's Microwave Technology Development Centre in 1984, and was sold to Codan in 1997. EM Solutions was subsequently established by Mitec's original founders in 1998, and today employs 40 staff in its Brisbane-based facilities. The company has reinvested an average of 26% of its revenues in R&D for the past five years, and today exports its broadband transmitters and receivers to defence systems integrators in Europe and the US. It has also developed a state-of-the-art satellite terminal for use on-the-move, which it has so far sold for civil defence applications in Japan.

We appreciate the opportunity as a manufacturer of innovative high-technology equipment for the Defence industry to provide this input to the Parliamentary Sub-Committee, and to suggest how Government might better facilitate exports of Australian defence products and services.

Yours sincerely,

Dr. Rowan Gilmore  
Managing Director

## Executive Summary

The best single accelerator for Australian defence exports, and in particular those from innovative high technology SMEs such as EM Solutions, would be for the Australian Department of Defence to demonstrate its own belief in Australian products by genuinely opening its own procurement channels to such products itself.

EM Solutions applauds the apparent commitment of the Commonwealth of Australia and the Department of Defence to the success of a local industry. In our dealings with individual Defence personnel, we have typically found strong enthusiasm and support for an innovative local manufacturer such as ourselves to succeed. However, we lament that the institutional support during the procurement process does not match this enthusiasm. We have found the tender process to be bureaucratic, stifling of innovation, and working against the success of a successful export industry, especially one based on technological innovation and value creation through intellectual property. Purchasing from a high technology local company seems to entail more risk than the ADF procurement system can tolerate. How then, can it be expected that other international defence forces will take the first step instead?

There are however several positive programs we commend. The Department is unique among all Commonwealth Departments in that it offers (to our knowledge) the only program comparable to the US SBIR Program, the Capability Technology Demonstrator (CTD) Program. The merits of the US SBIR program are so strong that we are sure the Committee will already be considering them. EM Solutions has been a notable beneficiary of the CTD program and it has unquestionably resulted in a new product line for us. Perversely, the abrupt cancellation of the program in 2012 stalled our project and severely impacted our ability to progress with a unique export opportunity at a critical juncture in the market, since it effectively crippled our ability to achieve 'WGS certification' and thus sell and export the product we had developed during an earlier phase of the program.

We also acknowledge that the Global Supply Chain (GSC) program has provided access to key systems integrators overseas, and unique opportunities to learn from them. EM Solutions is able to export products to several European systems integrators as a result of the efforts of our sales channels there, and the added support provided by the GSC program. We have also been assisted by the apparent reluctance of European integrators to source components solely from the US.

As policy improvements, we suggest stronger support for these two programs.

We also suggest new initiatives based on the premise that the easiest way to export is to demonstrate sales to home Forces first. Such initiatives should support simpler engagement between SMEs and DMO, particularly innovative SMEs such as EM Solutions that will always struggle to overcome the DMO threshold of "risk". This can be achieved by

- quarantining portion of the DMO budget for procurement from innovative Australian SMEs;
- introducing special procedures that account for and mitigate the risk introduced when the ADF procures from local SMEs and/or innovative products;
- supporting field trials of innovative products by local SMEs before and during the tender process to overcome the perception of risk;
- allowing for presentation of innovative ideas and submissions as part of the tender process, to help build confidence in potential local suppliers
- formally scoring AIC content as part of the ASDEFCON tender evaluation process

- enforcing AIC criteria more rigorously and in a more targeted way, to give greater preference to local content that demonstrates export potential and innovation, and ensuring it accounts for value generation where new intellectual property is created
- breaking down into smaller parts large tenders that are typically only accessible by large international prime contractors, so that SMEs can tender sub-components on their own, and be teamed with the successful prime after the prime is chosen (rather than teaming beforehand with a prime that loses, so all worthy subcontractors are automatically eliminated from contention through no fault of their own).

## Submission

### Identification of barriers and impediments to the growth of Australia's Defence exports

It is a truism that to be a successful exporter, one has to be successful at home first.

In this respect, the bureaucratic procurement practices of DMO have proven an obstacle to success. Tenders can be written in such a way that all but a single pre-selected vendor are compliant, and probity constraints once the tender is written provide no means for recourse or to test against fairness. Faced with such a tilted playing field, EM Solutions has protested after the event, to Ministerial level, to no avail.

Secondly, although Australian industry content plans are required by ASDEFCON tenders, to our knowledge these are not scored by any publicised criterion, as for instance occurs with tenders issued by the Canadian Defence Force.

Thirdly, and most critically, "avoidance of risk" is used as a trump card to rule out tenders that may well be functionally compliant and best value for money. EM Solutions has several rejection letters where "risk" is cited as the reason for ruling us out of consideration.

Fourthly, an SME cannot participate in many tenders because the tender scope is so broad that only a multinational systems integrator has the resources to respond and deliver. In those cases where an SME such as EM Solutions could potentially scale to deliver, risk is used as an assessment criterion to trump all others. This is often implicit and manifests itself in mandatory tender requirements such as "Is this equipment deployed with US Forces? Y/N". It is too easy for a desk officer in the project office to dismiss a tender from an SME by hiding behind their perception of risk, and to refuse any discussion of risk mitigation measures during evaluation because of their concerns around probity. While risk may not be an issue with SMEs that provide (for instance) cleaning or construction services, it seems particularly the case for export-oriented innovative SMEs such as ourselves where the cost of failure is harder to remedy. Innovation is the flip side of risk, and if the Commonwealth wishes to enhance the export (for instance) of elaborately transformed manufactures, it should not blindly reject local manufacturers from local tender processes purely on the perceived basis that their risk is too high because they have not yet been trialled in the field by foreign forces, or are too small to be trusted to deliver.

It might be argued that barriers to defence procurement in Australia are no worse than those faced overseas. This misses the point. High technology innovative SMEs are attractive in that they presumably offer a unique product; but that allure is insufficient to overcome the worry that such products may fail, or may never be delivered (as if that risk were somehow overlooked with the many giant multinationals now on the projects of concern list and who have failed on a similar score!). It is in the interests of the Commonwealth to help mitigate that risk for home grown companies. Such companies then seeking to export defence products will have proven themselves in home markets and ideally will have moved closer to the head of the value chain or become prime contractors in their own right where they can reap more of the value so the perception of the risk they present is reduced.

### How Government can better engage and assist Australian Defence industry to export its products

EM Solutions designs and manufactures leading edge microwave components and subsystems used by the defence forces and commercial operators primarily in satellite communications. During the 1990's and 2000's, EM Solutions worked under prime contractors to design and manufacture critical satellite terminal components of the ASTIS and

Parakeet communications networks for the ADF. At one time, our company was considered a strategic national asset in the support of equipment deployed in this network. During this time, we also developed export markets for our microwave components, and continue to export to large systems integrators such as Airbus and Thales in Europe.

Beginning in 2007, under a CTD grant, the company developed the world's first on-the-move off-road satellite terminal, which was successfully field tested on a Bushmaster vehicle with the Optus C1 satellite by the Army. The terminal achieved world-class performance and was applauded by all involved in the program. Unfortunately, development of this new terminal was completed two months late, and with the cancellation of the CTD program in 2012, the terminal never progressed to certification phase in the US on the WGS satellite system. Procurement for this type of terminal has also not proceeded.

The requirement for WGS certification of such a terminal is essential for deployment (and of course exports). However, testing for certification by the US authorities cannot be achieved without government sponsorship, which although requested, was not provided due to other priorities of the ADF project office. It has proven to be a de-facto trade barrier the company cannot overcome without support from government.

It is our opinion that the requirement for such certification has been used during subsequent DMO tender processes as a way of eliminating all but a preferred (international) tenderer, with the project office insisting that any tendered equipment be certified at the time of tender submission, even though the two-year period between tender submission and deployment would be more than sufficient time to achieve certification for better value local solutions that would be fully compliant in all other respects. Although EM Solutions fully appreciates the support it received during the development phase of a product for which export markets are numerous, the roadblocks it has subsequently faced have allowed other US competitors to essentially seize the market and severely limit EM Solutions exports.

As a specific example, the company received a rejection letter on 28 May 2014 from the NZDF in response to a tender opportunity for the supply of on-the-move terminals that stated in relation to EM Solutions product "the lack of any full certification means the terminals cannot be used until such a time as they are certified". Although the company is able to demonstrate full compliance because it can run identical tests with the support of DSTO on the Optus C1 satellite, it cannot undertake those tests on the WGS satellite constellation (which must be done in the US) without government sponsorship.

## Conclusion

The best single accelerator for Australian defence exports, particularly from innovative high technology SMEs such as ourselves, would be for DMO to demonstrate its faith in Australian products by genuinely opening its own procurement channels to them.

As policy improvements, we suggest stronger support for the CTD and GSC programs. The introduction of small quantity competitive procurement as a follow-on program to the CTD program would also solve many of the issues raised above.

We suggest new initiatives based on the premise that the easiest way to export is to demonstrate use by Australian Forces first. Such initiatives should support simpler engagement between SMEs and DMO, particularly innovative high technology SMEs that will always struggle to overcome the DMO threshold of “risk”. This can be achieved by

- quarantining portion of the DMO budget for procurement from innovative Australian SMEs;
- introducing special procedures that account for the risk introduced when procuring from local SMEs and/or innovative products;
- supporting field trials of innovative products by local SMEs during the tender process to overcome the perception of risk;
- allowing for presentation of innovative ideas and submissions and field demonstrations during the tender process, to help build confidence in potential local suppliers;
- scoring AIC content as part of the tender evaluation;
- enforcing AIC criteria more rigorously and in a more targeted way, to give preference to local content based on its export potential and innovation;
- breaking down into smaller parts large tenders that are typically only accessible by large international prime contractors, so that SMEs can tender sub-components on their own, and be teamed with the successful prime after the prime is chosen (rather than teaming beforehand with a prime that loses, so all worthy subcontractors are automatically eliminated from contention through no fault of their own).

We believe these initiatives will help overcome the numerous explicit and implicit barriers that prevent a company such as EM Solutions moving up the value chain and responding to DMO tenders in our own right. In turn, deployment of products with the Australian Defence Forces immeasurably strengthens the argument for export to foreign Forces.



**Figure 1.** These figures show an example of the satellite communications on-the-move terminals designed and manufactured in Australia by EM Solutions. Similar terminals are in use in Japan, and in early July successfully passed qualification testing in Ottawa, Canada for a CDF tender demonstration. EM Solutions was unable to tender these to the ADF because the relevant procurement tender (JP2072) was bulked up to such an extent that only multinational bidders had the capability to respond. EM Solutions was a subcontractor to one prime contractor that chose, in the end, to propose a US-based solution that was viewed as more field-ready and less risky.