

# 2014 DEFENCE FIRST PRINCIPLES REVIEW

## A Proposed Model for a 21<sup>st</sup> Century DSTO

### *Executive Summary*

Despite several restructures over the past 2 decades, DSTO's operational model remains very much locked in the past; with inadequate focus on ADO/ADF capability outcomes, and even less on leveraging third party capabilities to ensure the most efficient and effective use of resources, and the best possible S&T outcomes.

A process was run in 2007/2008 to select and establish a new "CRC like entity" the Defence Future Capability Technology Centre (DFCTC); this process demonstrated what can be achieved by fostering an environment where DSTO, industry, universities and other PFRDs work together to maximise synergies and thereby capability outcomes. The successful bid, the Defence Materials Technology Centre (DMTC), has been a resounding success and provides a model for a DSTO truly suited to the 21<sup>st</sup> Century; where collaboration and leveraging of synergies is the norm, not something that is resisted to the detriment of Defence and the broader Australian community.

### *Background*

DSTO remains an organisation that is highly internally focussed; whilst great strides towards collaboration and open innovation were made in the mid 1990s – mid 2000s, much of these gains were lost in the later 2000s when risk averse senior management all but "shut the doors" to third party engagement and collaboration in DSTO programs.

Today's DSTO has little in the way of meaningful collaboration with Australian Industry, Universities and PFRDs; instead preferring to focus on international engagement through multilaterals such as TTCP and through several bilaterals. Further, the organisation fails to recognise that embarking on a program of signing "Alliance Agreements" does not of itself achieve collaboration, it is the relationships that need to be fostered under these agreements and the ensuing trust and genuine sharing of ideas that leads to collaboration, and through this enhanced S&T outcomes, including Defence capability outcomes.

In contrast, DSTO continues to implement new R&D programs with little or no research into viable alternative solutions to an internally focussed R&D activity, be they through collaboration, licensing, COTS/MOTS or funding a third party with world leading expertise in the field. This, some would argue arrogant, belief that no one could possibly know more or do it better has led to countless examples of wasted resources, and research programs that had no realistic likelihood of delivering a benefit to ADO capability, or the broader community through National wealth creation.

## **Way Forward**

In 2007 a competitive process was run to select a DFCTC; with the promise of ~\$30m in Defence funding over 7 years, which was to be leveraged with contributions, both cash and in-kind, from consortium members.

The DFCTC was awarded to the DMTC, with the Defence \$30m leveraged with a further ~\$52m in contributions from the industry, university and PFRD consortium members. The DMTC has been a resounding success, has had additional organisations join; stood up an additional research program in Human Protection, and had its Defence funding extended. All of this because it is a model that requires and benefits from true collaboration, as opposed to simply paying lip service to collaboration whilst remaining inwardly focussed.

Given the success of the DFCTC model, and acknowledging the current funding constraints on Defence/DSTO, which has led to DSTO's non-salary resources being dramatically reduced and therefore its ability to fund external R&D similarly being diminished, it is proposed that consideration be given to restructuring DSTO into a series of DFCTC like entities. Thereby leveraging capability in the broader industry and S&T communities to support Defence. Further, by involving industry in the early stages of an R&D program, such as through a DFCTC collaboration model, the likelihood of the research outcomes actually being realisable in the form of a product or service is greatly increased due to the commercialisation "valley of death" being, at least in part, mitigated.

A restructure as is proposed would likely require a significant, perhaps 30-35%, reduction in DSTO staff numbers, with the salary funds from this reduction redirected to funding the respective DFCTC and research programs within it.

Obvious candidates for DFCTCs would include Aerospace, Maritime and Land, thereby aligning the DFCTCs to the Services, and with Service representation on the respective Boards. Other candidate areas might include generic or cross-Service disciplines such as Autonomy, EW/Sensors, Weapons, and ICT. However, care needs to be taken not to fragment resources across too many disciplines and in doing so make all non-viable.

Further, if in calling for interested parties to form consortiums in a particular DFCTC discipline, that discipline fails to achieve adequate levels of participant support from industry, universities and PFRDs, then the questions needs to be asked of the ADO/ADF sponsor as to whether it is really an area that warrants continued investment. If the answer from the sponsor is yes; most probably due to it being highly niche or highly classified in nature, then it should be funded by that sponsor and remain within a substantially smaller core of DSTO; that would not be transitioned through the DFCTC model. However, if the answer is no then the area should be abandoned so that limited resources can be applied to those areas likely to generate the greatest leverage and capability outcomes.

It is proposed that each of the DFCTCs would have a Board that would include, but not be limited to:

- an independent Chair with a strong background in successful innovation management;
- an ADO Service /Customer representative with a Capability Development background;
- a DMO representative;
- an independent “peer” researcher of world standing in the particular domain;
- an industry leader; and
- a university or PFRD senior representative.

Such a Board make-up would help to ensure that new research tasks were focussed on capability requirements, were worthy of investment as opposed to “re-inventing the wheel”, were achievable from both a technical delivery and acquisition perspective, and maximised leverage and collaboration.

The original DFCTC process showed that if managed by an appropriately skilled and motivated team it can be implemented relatively quickly. In the case of the DMTC the entire process to selection of the winning bid, including initial call for expression of interest, first round down-select, second round detailed bid assessment and interviews, and final decision took under 6 months. In fact, from the beginning of the process to the DMTC opening its doors for business, including contract negotiation with consortium members and Defence was less than 12 months; which led to the CRC Committee adopting much of the process developed for the DFCTC to streamline future CRC rounds.

Therefore, I would argue that the restructuring of DSTO into a number of DFCTC like entities and a remaining core for highly classified and/or niche work could realistically be accomplished within 2 to 3 years.

### ***Conclusion***

This paper puts forward a model that addresses Issue 3 f. of the Defence First Principles Review Terms of Reference.

The model proposes DSTO be restructured into a number, perhaps 4 – 6, DFCTC like entities focussed on high priority capability areas; with a leave-behind organisation of as little as 200 FTE to undertake those research and analysis tasks that are deemed too niche or too sensitive to be undertaken in a more open innovation environment.

The model builds on the success of the CRC and DFCTC programs and entrenches collaboration, leverage of synergies, capability outcome focus, and importantly an upfront consideration of the issues of acquisition and industrial capability in transitioning outputs to a fielded ADO capability.

The inertia in the current DSTO is such that simply arguing for yet another Strategic Plan or a further reorganisation within the current operating model will fail to deliver an organisation that is suited to the more demanding environment of the 21<sup>st</sup> century; in terms of budget realities, an international move to open innovation, and the increasing need to leverage both financial and intellectual synergies to maximise Defence Capability Outcomes.

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