**TARGET RADAR AUGMENTED PROJECTILE (TRAP) REPLACEMENT– INDUSTRY APPRAISAL**

**Introduction**

On behalf of Surface Forces Command, Navy (see attachment A), DEWC Services invites equipment and materiel providers to register their interest to replace Navy’s legacy Target Radar Augmented Projectile (TRAP) device. DEWC Services is seeking key information specified in attachment B from interested organisations to gauge industry’s capability and interest. Following receipt of DEWC’s report, Navy is expected to undertake further procurement actions.

As part of the DEWC group of companies, DEWC Services Pty Ltd is a specialist consulting firm providing subject matter expertise and advising Defence and Industry on electronic warfare and associated matters.

**Background - The Target Radar Augmented Projectile (TRAP) Replacement**

Navy have previously used a 5-inch inert shell with a specialised nose-cone called “Target Radar Augmented Projectile” (TRAP) to conduct Anti-Ship Missile Defence (ASMD) training. The Original Equipment Manufacturer (OEM) of TRAP has ceased making this device, and Navy are looking for eligible Australian or foreign manufacturers to provide a replacement with the potential to export the replacement to other nations that have 5-inch/127mm medium calibre guns fitted to their warships.

The standard 5-inch round has a small Radar Cross Section (RCS) that is unrepresentative of contemporary Anti-Ship Missiles’ (ASM) typical RCS. There is a requirement to augment the 5-inch round’s RCS to stimulate warships’ ASMD systems during training by emulating ASMs. The legacy TRAP device achieved this by fitting a nose cone to an inert ballistic projectile containing a Luneburg lens that sufficiently increased the 5-inch round’s RCS. The TRAP device was fitted exactly, and had the same dimensions, weight and weight distribution as the fuze nose-cone on a live 5-inch round so as not to affect the inert round’s ballistic performance. It is likely that any TRAP replacement solutions will require certification in this regard.

Navy will possibly require an initial supply of up to 2000 TRAP devices, with up to 200 replacements required annually. This number may increase as a result of foreign sales. To achieve this, Navy first requires an appraisal of Australian industry to determine the levels of technical ability, capacity and commitment to provide a replacement device. DEWC has been engaged by the Navy to coordinate the industry appraisal (per Attachment A).

**TRAP Replacement – Device Technical Requirements – UNCLASSIFIED**

**Dimensions** – The TRAP Replacement needs to replicate the weight, weight distribution and dimensions of the “Fuze PD Mk 407-1” Point Detonation Fuze. It’s weight is to be 0.95kg, Length – 15.13cm, thread size – 2.0-12UNS-2A and intrusion depth 5.61cm.

**TRAP Replacement – Performance Requirements - UNCLASSIFIED**

**RCS** – The TRAP Replacement needs to generate a minimum RCS that is detectable by Australian Warships’ S-Band (IEEE) ASMD systems, within 60 degrees forward of the shell trajectory path as illustrated in Figure 1. Open-source information shows that a typical modern ASM’s RCS is approximately 0.1 m2. Further clarification can be provided to interested respondents during possible future procurement actions.

60 Deg

Figure 1: Trap replacement RCS Response

The TRAP replacement will need to adhere to environmental and mechanical certification requirements of a 5-inch inert shell. For example, it must withstand a setback acceleration of 15,000 – 20,000g when fired, aerodynamic heating of 400 degrees C and 45 to 500 revolutions per second.

Navy does not mandate any particular method of achieving required RCS performance levels, including the use of Luneburg lenses.

**Quantities** – Navy may require an initial supply of approximately 2000 TRAP Replacement devices, with a possible annual requirement of up to 200. Foreign sales may increase these amounts.

**Testing** – Navy can assist prospective suppliers with RCS validation. Additionally, the TRAP replacement manufacturer will need to demonstrate environmental and mechanical certification.

**Security** – Respondents must be eligible for Defence Industry Security Panel membership, and have been accepted and accredited by the time future procurement activities eventuate.

**Deliverables or Phases**

Interested respondents are required to complete the questionnaire in attachment B and return via email to David Edmonds at david.edmonds@dewc.com by COB 29May20.

Clarifying questions are to be forwarded to David Edmonds at david.edmonds@dewc.com. Unclassified answers will be returned via email.

Following a reported analysis of Industry’s stated ability, interest and preparedness to provide a viable TRAP Replacement resulting, Navy may initiate further procurement actions.

**Attachment A – Letter of Authority –Surface Forces Command, Navy**



**Attachment B – Industry Respondent Questionnaire**

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| --- |
| Company Name and Address |
| ABN |
| Describe your Proposed Solution: |
| Product Specialisation (please circle one, both or describe specialisation):RCS Augmentation / Explosive Ordnance Manufacturing |
| Are you currently a DISP member, or will you be eligible for DISP in future? Y / N |
| Have you identified a possible collaboration partner (please circle)? Y / N |
| If so, are they an Australian Organisation eligible for DISP? Y/NIf not, are they eligible for Australian DISP Membership? Y/N |
| Approximate OOM Unit Cost by volume (please circle):  $0 – 1000 per unit $1000 – $2000 per unit $2000 – 3000 per unit > $3000 per unit |
| Describe your RCS augmentation concept (Hardware or Electronic): |
| Are you in a position to produce a prototype? |
| Are you willing to have your prototype assessed by Defence technical specialists? Y / N |
| Do you have any comments or suggestions regarding the TRAP replacement? |

**Please return completed forms to** **david.edmonds@dewc.com** **by COB 29May20:**