



Code 85
Weapons Analysis Facility (WAF) Technical
Engineering Services

Pre-Solicitation Conference

NUWC Division Newport
Undersea Collaboration & Technology
Outreach Center (UCTOC)

June 12, 2014



Agenda

- **Introduction/Ground Rules**
- **Disclaimer Statement**
- **Anticipated Procurement Strategy**
- **Technical Requirements**
- **Conclusion/Wrap-up**
- **Facility Tour**



Introduction/Ground rules

- **Introduction of Participants**
- **Intent of this Pre-Solicitation Conference**
 - **Encourage competition by:**
 - **Providing technical information to provide potential offerors a better understanding of the technical requirements**
 - **For Prime and Subcontracting opportunities**
 - **Ensure all potential offerors receive, and have access to, the same information**
- **Technical “Q&A” is encouraged**
 - **Q&A will be answered, either today or via SeaPort-e Portal**
 - **No questions about incumbent contractor**



Introduction/Ground rules (cont.)

- **All attendees recommended to sign-in (this is voluntary)**
- **Please silence cell phones and pagers**
- **No personal recording**
- **Q&A will be recorded, typed, and posted to the SeaPort-e Portal**
- **This briefing and the attendees list will be posted to the SeaPort-e Portal, and via SENEDIA, NCMA and AFCEA distribution**
- **DO NOT directly contact NUWC technical code after today - all further dialogue will be accomplished via the Q&A feature on the SeaPort-e Portal**
- **Technical requirements contained in this briefing are presented as a summary**
 - **Full/Updated Technical Requirements will be provided in the Request for Proposal (RFP)**



Disclaimer Statement

- Remarks today by Government officials involved in the Code 85 WAF Technical Engineering services requirement should not be considered a guarantee of the Government's course of action in proceeding with the acquisition
- The informational briefing shared today reflects current Government intentions and is subject to change based on a variety of circumstances
- *The formal solicitation, when issued, is the only document that should be relied upon in determining the Government's requirements*



Anticipated Procurement Strategy

- **This is a follow-on of NUWCDIVNPT requirement N00178-04-D-4012/N437**
 - 2 Offers received
 - GDIT (Incumbent)
- **SeaPort-e Task Order, Zone 1, Northeast**
 - Prime
 - Sub
- **Five (5) year Period of Performance**
 - Base year plus 4 option years
- **Full and Open Competition (Unrestricted)**
- **Contract LOE: 131,000 hrs. - CPFF**
- **Organizational Conflict of Interest (OCOI) Clause Applies**
- **Clearance Level: Secret**
- **CMMI Level III, or equivalent**
- **Software Development Plan (SDP) and Rationale required**



Anticipated Procurement Strategy (cont.)

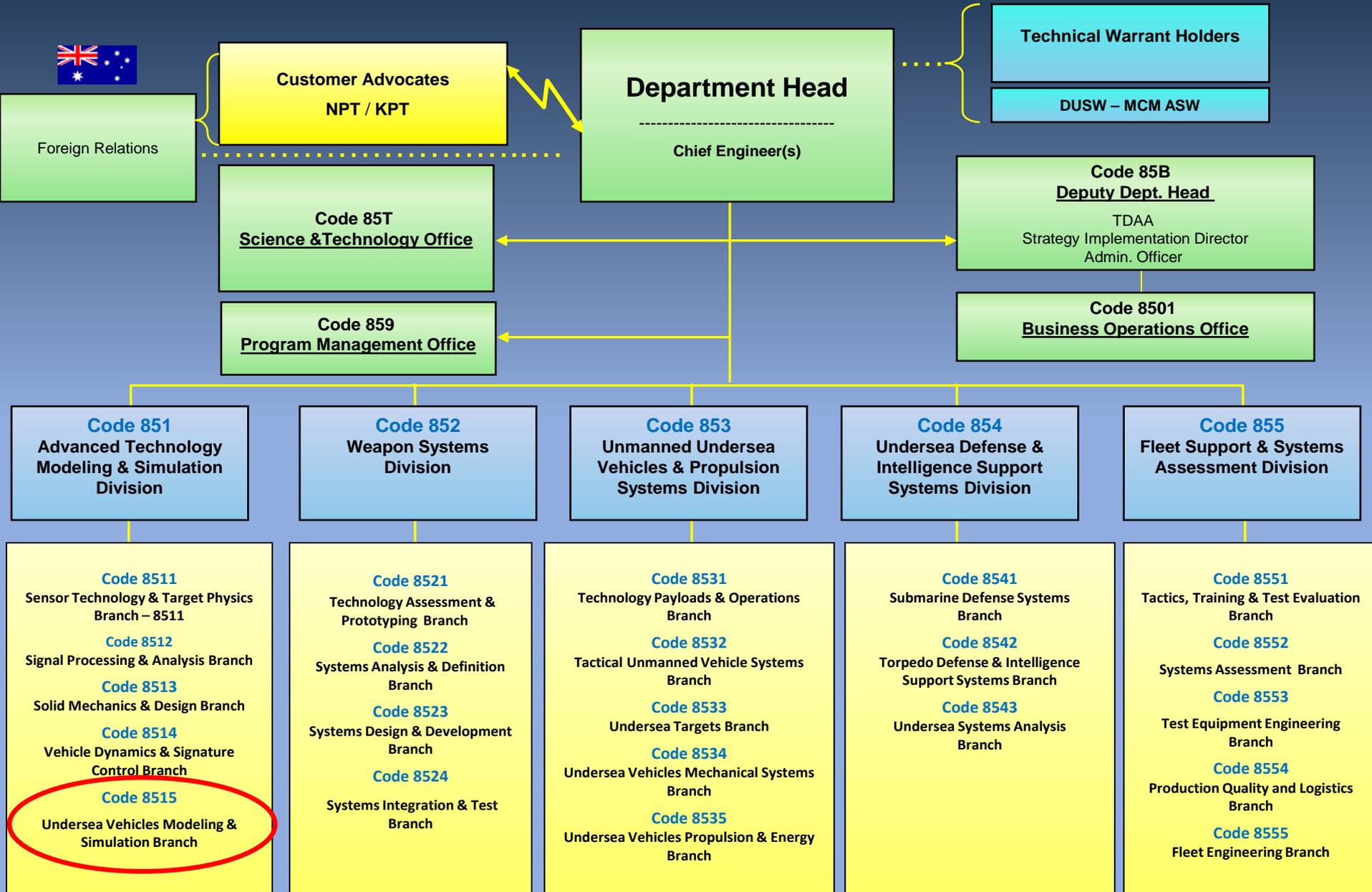
- **Other Direct Costs (ODC's) will be less than 10% of total cost**
- **Estimated Schedule:**
 - **RFP Release: Aug 2014**
 - **Proposals Due: 40 days after RFP release**
 - **Award Date: Feb 2015**
- **Work Locations**
 - **99% Government-site**
 - **1% Offsite**
- **Facilities**
 - **Government will provide facilities for on-site personnel**
 - **Facility Security Clearance Required: Secret**
 - **Government Furnished Materials/Equipment/Information (GFM/E/I)**
 - **Provided in Solicitation and upon award of contract**



Weapons Analysis Facility (WAF)

Technical Requirements & Overview

USW Weapons, Vehicles, and Defensive Systems Dept. ~ Code 85





Weapons Analysis Facility (WAF)

- Customers & Sponsors
 - PMS 397 (Ohio Replacement)
 - PMS 404 (US Undersea Weapons and Targets)
 - PMS 415 (US Defensive Systems)
 - PMS 450 (Virginia Class)
 - ONR (Office of Naval Research)
 - ONI (Office of Naval Intelligence)
 - COMOPTEVFOR (System Assessment Agency)
 - DEVRON 12 (Developmental Squadron)
 - DOT&E (DOD Test & Evaluation)
 - Royal Australian Navy (RAN – Armaments Cooperative Agreement)
 - OSD Test Resource Management Center (TRMC)
 - OSD High Performance Computing Counsel (HPCC)

Weapons Analysis Facility (WAF)

- Located at the Naval Station Newport, RI
- NUWCDIVNPT Undersea Weapons, Vehicles, and Defensive Systems Department, Code 85
- The Lab is the US Navy's only Hardware-in-the-loop simulator for Torpedoes and Defensive Systems



WAF LAB OVERVIEW

WAF: A Synthetic Environment for Sea Control and Undersea Superiority

WAF Assets and Simulators

- Lightweight Torpedoes
- Heavyweight Torpedoes
- Defensive Undersea Weapons
- Unmanned Undersea Vehicles
- Acoustic Countermeasures



Offensive Scenario



Defensive Scenario



Scenario-Specific



Unit Under Test

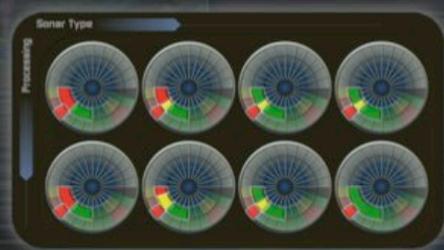


Hardware in-the-Loop



The Navy's Most Advanced Real-Time Hardware-in-the-Loop Underwater Simulator...

- Early Assessment of Technology and Developmental Systems
- Cost Savings Through Reduction of In-Water Testing and Use of Fleet Services
- Evaluate Performance in Operationally Significant Environments and Scenarios
- Controlled Repeatable Test Conditions for System Development



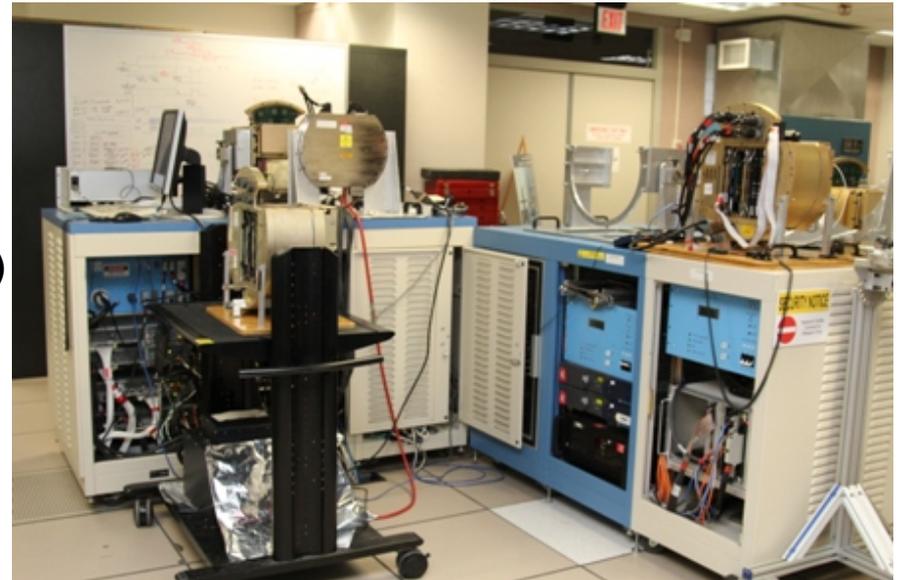
Unique WAF Simulation Capabilities

- **Nine Hardware-in-the-Loop Torpedo Simulation weapon racks**
 - **Heavyweight (5 weapon racks):**
 - Mk 48 Mod 4
 - Mod 6 GCB, Mod 6 ACOT
 - Mod 6AT
 - Mod 7 CBASS, Mod 7AT
 - **Lightweight (4 weapon racks):**
 - Mk 46
 - Mk 54 Mod 0, Mod 1
 - **Other Torpedoes (6 racks)**
 - Foreign systems
 - Experimental systems
 - **Defensive Systems**
 - US Countermeasures
 - Experimental Systems



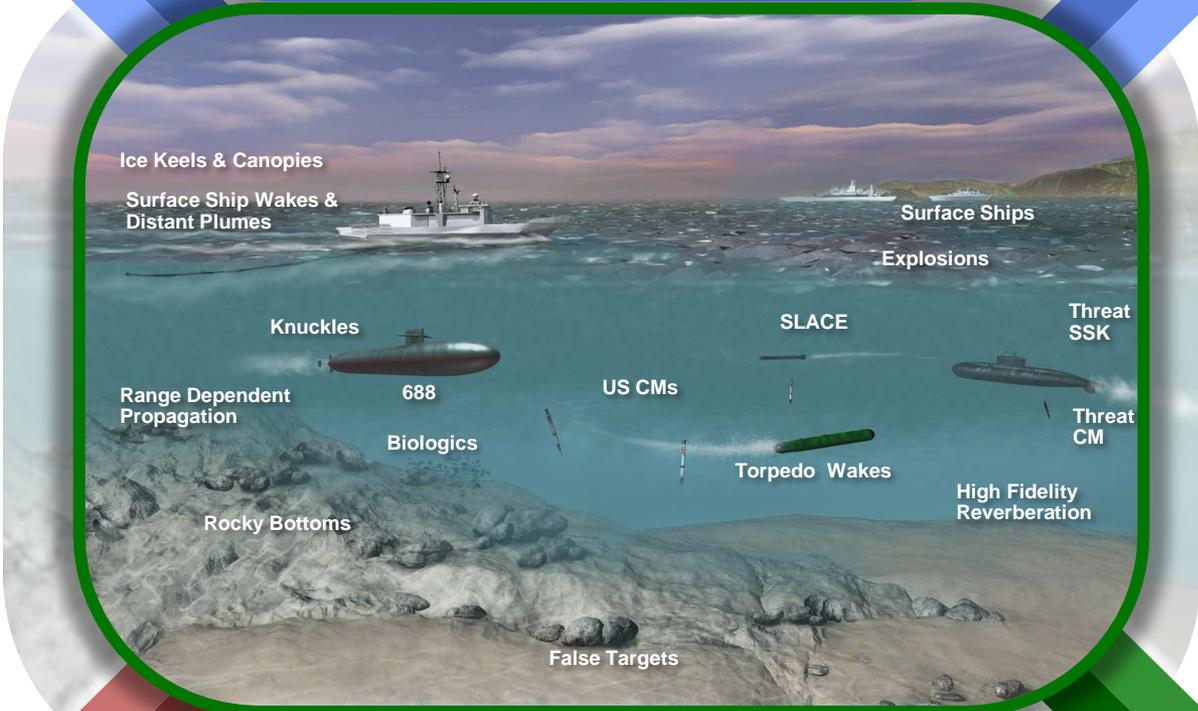
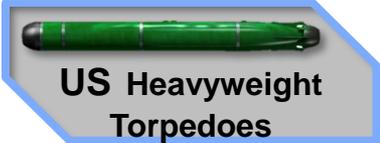
Unique WAF Integration Capabilities

- **Eight Hardware-in-the-Loop torpedo integration / test racks**
 - 5 HWIL integration racks
 - CSCI test racks (3)
 - **Supporting:**
 - **Production**
 - Lockheed Martin CBASS
 - Progeny Mk 54 TI-1
 - **Future Naval Capabilities (FNC)**
 - Fuzing
 - Alt Homing
 - **RDTE**
 - HWT and LWT APB 5
 - HWT Safety Testing
 - **FMS**
 - 7AT, BUG-T//A
 - **In-Service Engineering (ISE)**
 - Various studies



The WAF - Going Forward

- **WAF REARCHITECTURE BENEFITS:**
 - Cost Sharing
 - Commonality Across Models
 - Timely Capability Realization
 - VVA applicability







Weapons Analysis Facility (WAF)

Technical Requirements

➤ Support Tasks

› Simulator Upgrades

- Upgrade WAF software simulator components and/or models.
 - Software used: Java, C, C++, Fortran, MatLab, Simulink
 - Hardware used: Concurrent Computing (Red Hawk OS), Dell (Red Hat OS, Windows)
 - CM tools: Bugzilla and GIT

› Model Implementation

- Support the integration of new models into the WAF simulation engine and evaluate the resulting WAF simulation/stimulation system performance.

› Undersea Vehicle Hardware/Software Interfaces Implementation

- Design, develop, integrate, test, and upgrade multi device undersea vehicle or weapon system hardware and software interfaces between the undersea vehicle and weapon.
- Customized and COTS solutions



Weapons Analysis Facility (WAF)

Technical Requirements (cont)

➤ Support Tasks (cont)

› WAF System and Feasibility Analysis

- Conduct feasibility studies of proposed or new technologies, perform a risk analysis, resource requirements, scope of effort, and impacts on reliability, maintainability.
 - Example: Trade off between CPUs vs. GPUs / Java vs. C++

› Engineering Services Applied to Systems

- Create, purchase, or modify components, such as cables, test jigs, electronics boards, cooling hardware, torpedo functional items, to adapt systems to Hardware-in-the-Loop (HWIL) simulation

› Software Tools

- Develop, customize, and apply software tools for functional or operational improvements.
 - Example: Data management tools, debuggers



Weapons Analysis Facility (WAF) Technical Requirements (cont)

- Support Tasks (cont)
 - › Foreign Collaboration
 - Design, fabricate and deliver WAF hardware-in-the-loop simulators
 - Develop customized Modeling & Simulation capabilities in support of foreign government requirements
 - › Planning and Reporting
 - Provide project metrics, prepare and edit technical documents, provide data maintenance, prepare and respond to department level action items, and prepare presentation material.



Conclusion/Wrap-up

- **Thank you for your interest in the Code 85 Weapons Analysis Facility (WAF) Technical Engineering Services Contract**
- **Ensure that you are on the attendees list, or that your name is removed if you do not want to be on the list**
- **This briefing and the attendees list will be posted to the SeaPort-e Portal, and via SENEDIA, NCMA and AFCEA distribution**
- **“Q&A” (today’s and any subsequent), will be posted to the SeaPort-e Portal**
- **DO NOT contact today’s presenters**
 - **All further dialogue will be accomplished via the Q&A feature on the SeaPort-e Portal**



Facility Tour

- A Tour at the **SECRET** level will be provide to groups of up 15-20 people at a time
- Your company **MUST** have submitted a JPAS visitor request in order to attend the tour
- Tour will be scripted, no questions allowed during tour
- Follow-up Questions can be submitted to the SeaPort-e Portal