



## 14 -- Request for Information (RFI) from Industry for a Launcher Test Stand

- [Synopsis](#) - Posted on Nov 07, 2007

### General Information

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### Contracting Office Address

Department of the Navy, Strategic Systems Programs, SSP, ATTN CODE SPN Strategic Systems Programs, Arlington, VA, 22202-3930, UNITED STATES

### Description

#### 1. DESCRIPTION

##### 1.1 PURPOSE

SSP is assessing the feasibility of developing a launcher test stand to support missile integration and underwater launch (test shapes potentially leading to actual submerged launch of missiles and other payloads). SSP requires input from industry resources to refine their understanding of the technical feasibility, risk and cost implications associated with this effort. Specifically, this RFI documents a Government request from industry for the

plan/approach and rough order of magnitude (ROM) cost information associated with launcher test stand development and production in the three phase approach discussed below.

## 1.2 BACKGROUND

The test facilities used by SSP are no longer available. SSP has been developing underwater launch systems for over 50 years to support submarine launched missiles. SSP needs to conduct risk identification/reduction and integration testing of new payloads prior to onboard testing and final integration on a submarine. An adequate test stand will replicate the missile tube interface and submarine support system interfaces in order to conduct demonstration and integration testing. Although near term demonstrations will be based on the 87 inch diameter missile tube, smaller missiles than the D5 missile are likely to be demonstrated. Additionally, concepts for future submarines may have missile tubes larger than 87 inches in diameter. Therefore, in order to determine potential 'knees in the curve' from a cost and capability standpoint, missile tube diameters between 87 inches and 120 inches, and 87 inches and 32 inches are considered separately. These ranges are only provided for the purpose of identifying the determining factors associated with these two ranges and to bound configurations to be considered. To ensure that the test stand will be usable for all scenarios into the foreseeable future, the test stand should be flexible enough to accommodate a minimum missile tube diameter of 32 inches and maximum of 120 inches.

## 2. DISCUSSION

### 2.1 CAPABILITIES

SSP is seeking information for a launcher test capability for development testing of underwater missile launch systems. This capability consists of three separate phases. The first phase will support land based testing of missile launch systems. The second phase capability will support submerged static launch of missiles and other payloads within the twelve mile contiguous zone of U.S. territorial waters. The third phase capability will support submerged launch of missiles and other payloads in a relevant operational submarine environment within the twelve mile contiguous zone of U.S. territorial waters. This relevant operational submarine environment will consist of varying launch depths and dynamic water flow conditions during missile launch induced by submarine forward way and sea state (i.e. crossflow). The first phase capability shall:

1. Support land-based testing of launcher concepts as part of missile testing.
2. Replicate SSGN Missile Tube (nominal) internal interfaces (SSGN missile tube is right-cylindrical tube approximately 87 inches in diameter and 44 feet long)
  - a. Be reconfigurable to support larger diameter missile tubes up to 120 inches in diameter, 1 inch thick and approximately 44 feet long.
  - b. Be reconfigurable to support smaller diameter missile tubes as small as 32 inches in diameter, 1 inch thick and approximately 44 feet long)
  - c. Contain and replicate functions/shape of missile tube muzzle hatch.
  - d. Replicate the space envelope in the missile tube.
3. Be transportable while remaining non-mobile to operate in different test locations.
4. Comply with Government environmental and safety standards.
5. Accommodate ejection of missile and other payload weights up to 200,000 pounds.

The second phase shall add the capability to:

6. Support static, submerged test launches of missiles and other payloads within the twelve

mile contiguous zone of U.S. territorial waters.

The third phase shall add the capability to:

7. Support submerged launch of missiles and other payloads in a relevant operational submarine environment within the twelve mile contiguous zone of U.S. territorial waters.

## 2.2 INTERFACE DEFINITION

Below is a listing of interface and performance considerations. The following information is provided to support this concept development. Government Furnished Information (GFI) will be provided by SSP as requested.

1. Mechanical Interfaces (e.g. Physical interfaces, Pressurization & Venting system, Hydraulic system, Heating & Cooling system, Dehumidification & Drying system)
2. Electrical Interfaces (e.g. Umbilical for Data/Power)
3. Data Recording & Interface Data Connectivity
4. Environmental (test/handling shock, payload release shock (recoil), vibration, sea water immersion, sea water pressure, launch debris)
5. Wharfside operations & Initial Missile Onload (e.g. Cranes, Maintenance Platforms, Hoists)
6. Dry Stowage (e.g. mothballed)
7. Missile Launch (e.g. Eject velocity, Missile loads, Cavitation loads)
8. Wet Stowage
9. Missile off-load

## 2.3 INFORMATION REQUESTED

Provide conceptual technical information, comments and ROM cost assessments (where applicable) for the following items:

1. Test Stand Concept - Provide a Level 1(Overall System) physical architecture, approach and cost ROM for a test stand that meets the aforementioned capabilities (section 2.1-1 thru 5) and subsequent modifications to meet phase II capabilities (6) and phase III additional capabilities (7). Also provide architecture and ROM cost to allow the replacement of the nominal 87 inch diameter missile tube with up to 120 inch diameter missile tube or down to 32 inch diameter missile tube. Discuss any issues related to providing this flexibility.
2. Design Impacts-
  - a. Comment on design considerations to modify the concept(s) from phases I and II to provide the desired phase III capability?
  - b. Comment on how the incorporation of the desired phase III capability would impact the phase I and phase II design concept(s).
3. Concept of Operations (CONOPS) ? Provide a CONOPS which clearly defines the associated test and tactical demonstration scenarios to be employed for each phase. Include the anticipated test stand motion induced from payload release. Also, comment on how launch preparation, maintenance and downtime will be minimized, and how the design will minimize acquisition and operating costs.
4. Test Facility Integration - Identify and describe any facility support/foundation requirements and or equipment for each phase. Comment on any desired sea bed modifications (i.e. surface hardness) to support the test platform.
5. Multiple Locations - The test stand may be redeployed to other locations to meet test requirements. These test locations could be land based CONUS, such as Crane, Indiana or Aberdeen, MD, at one of the National Test Sites such as PMRF, Hawaii, or in the ocean near one of these sites. Comment on how the non-mobile launcher test stand will be broken down, transported, and stored at different test locations. Provide any known physical or environmental limitations/constraints that will prohibit the use of the test stand at multiple locations.

6. Maintainability - In the past, the submerged launcher capability slowly eroded due to the high cost of maintaining the facility or set of facilities. Provide comments on how this platform will accommodate both periods of testing and periods of storage, and will still be usable within a short time frame.
7. Crossflow ? Describe methods to reach desired dynamic water flow conditions induced by submarine forward way and sea state conditions (i.e. crossflow up to 10 knots) at the muzzle face of the test platform. The intent is to adequately replicate operational launch conditions. Describe ROM costs and design considerations for different methods.
8. Future modifications - Provide recommended future modifications (if any) that would make the test stand more robust for integration testing.
9. Risk - Discuss the risks associated with executing the proposed development plan to deliver the desired hardware to the government. Also, identify any risks of using the test stand as proposed.
10. Cost - Discuss cost drivers associated with executing the design, fabrication and use of the test platform when going from phase I to phase II and phase II to phase III.
11. Schedule - Discuss project schedule to accomplish each phase. Discuss constraints that would adversely impact fast tracking the project (i.e. initial operational capability within 18 months of contract go-ahead for phase I & II).

### 3. STRUCTURE FOR RESPONSES

Contractors should respond to this RFI in writing and should provide their responses both in electronic and hardcopy form. Limit response to a maximum of 100 pages. One electronic copy of the response shall be provided in PDF format and must be received by the specified due date. Contractors shall also submit five hardcopies to the Government. The hardcopies must be typewritten on single-sided 8.5" by 11" paper with one-inch margins on all sides and double-spaced text, and bound in standard binders. Use 12-point font with normal (uncondensed) spacing.

### 4. LEGAL DISCLAIMER

This RFI is issued solely for information and planning purposes. It does not constitute a solicitation and should not be viewed as a request for procurement. All information received in response to this RFI that is marked Proprietary will be handled accordingly. Responses to the RFI will not be returned. The responses will not be considered offers and will not be accepted by the Government to form a binding contract. Responders are solely responsible for their expenses associated with responding to this RFI.

### 5. CONTACT INFORMATION

RFI responses should be delivered to:

Ms. Virginia Hennings  
SPN10  
Strategic Systems Programs  
2521 South Clark Suite 1000  
Arlington, VA 22202-3930

Questions regarding the interpretation of the information requested should also be directed to Ms. Virginia Hennings/SPN10 at email: [Virginia.hennings@ssp.navy.mil](mailto:Virginia.hennings@ssp.navy.mil)

### Original Point of Contact

Virginia Hennings, Contracting Officer, Phone 703-601-9447, Fax 703-601-9473, Email