

## Base Notice: RFI: FFG(X) - US Navy Guided Missile Frigate Replacement Program - N0002418R2300

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### NOTICE DETAILS

**Solicitation #:**  
N0002418R2300

**Procurement Type:**  
**Sources Sought**

**Date Posted:**  
July 10, 2017

**Title:**  
RFI: FFG(X) - US Navy Guided Missile Frigate Replacement Program

**Classification Code:**  
19 -- Ships, small craft, pontoons & floating docks

**NAICS Code:**  
336611 -- Ship Building and Repairing

**Is this a Recovery and Reinvestment Act Action?:**  
No

**Response Date:**  
Aug 24, 2017 3:00 pm Eastern

**Primary Point of Contact.:**  
Lawrence J. Gordin,  
Contracting Officer

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Phone: 2027814905

**Description:**  
Added: Jul 10, 2017 8:29 am

**Synopsis:** THIS REQUEST FOR INFORMATION (RFI) IS FOR INFORMATIONAL AND PLANNING PURPOSES ONLY AND SHALL NOT BE CONSTRUED AS A REQUEST FOR PROPOSAL, REQUEST FOR QUOTE, OR AS AN OBLIGATION ON THE PART OF THE GOVERNMENT. THERE WILL NOT BE A SOLICITATION, SPECIFICATIONS, OR DRAWINGS AVAILABLE. THIS ANNOUNCEMENT MAY OR MAY NOT TRANSLATE INTO AN ACTUAL PROCUREMENT(S) IN FUTURE YEARS. THERE IS NO FUNDING ASSOCIATED WITH THIS ANNOUNCEMENT.

**Background:** The Navy desires to award a Detail Design and Construction contract in FY2020 for its next evolution of small surface combatant the future Guided Missile Frigate (FFG(X)). A competition for FFG(X) is

envisioned to consider existing parent designs for a Small Surface Combatant that can be modified to accommodate the specific capability requirements prescribed by the US Navy.

The Navy is interested in the FFG(X) to provide Combatant and Fleet Commanders a uniquely suitable asset to achieve select sea control objectives and perform maritime security operations while facilitating access in all domains in support of strike group and aggregated fleet operations. In terms of the Navy's Distributed Maritime Operations (DMO) Concept, this FFG(X) small surface combatant will expand blue force sensor and weapon influence to provide increased information to the overall fleet tactical picture while challenging adversary ISR&T efforts. The purpose of this type of ship is to (1) fully support Combatant and Fleet Commanders during conflict by supplementing the fleet's undersea and surface warfare capabilities, allow for independent operations in a contested environment, extend the fleet tactical grid, and host and control unmanned systems; and (2) relieve large surface combatants from stressing routine duties during operations other than war.

This platform will employ unmanned systems to penetrate and dwell in contested environments, operating at greater risk to gain sensor and weapons advantages over the adversary. The FFG(X) will be capable of establishing a local sensor network using passive onboard sensors, embarked aircraft and elevated/tethered systems and unmanned vehicles to gather information and then act as a gateway to the fleet tactical grid using resilient communications systems and networks.

During Phase 0 (Shape the Battlespace) operations, FFG(X) will operate independently to develop a Recognized Maritime Picture and Recognized Air Picture, perform presence missions, conduct security cooperation activities, support humanitarian assistance and disaster relief (HA/DR) efforts; and conduct security assistance and security force assistance (SFA). This ship will reduce demand on high end cruisers and destroyers that currently conduct ASW, SUW, and Theater Security Cooperation missions; allowing for an increase of more capable assets to maintain a stabilizing presence in regions where tensions with nations that have highly capable naval forces may exist.

During Phase 1 (Deter Aggression) and Phase 2 (Seize the Initiative) operations, the FFG(X) will normally aggregate into strike groups and Large Surface Combatant led surface action groups but also possess the ability to robustly defend itself during conduct of independent operations while connected and contributing to the fleet tactical grid. FFG(X) will perform its missions in complex electronic warfare and anti-ship missile threat environments, and, therefore, when available from other Navy efforts, will integrate hard-kill with advanced soft-kill systems at the combat systems level to enable the most effective offense and defense management of onboard weapons and decoy inventories. FFG(X) missions during these phases include:

- Complement the surface warfare (SuW) capabilities of a Carrier Strike Group and Expeditionary Strike Group with capacity in aggregated operations (e.g., as a pack) to deter or defeat aggression by adversary warships with over-the-horizon anti-ship missiles. Concepts of employment for this type of ship will include integrated operations with area air defense capable destroyers and cruisers as well as independent operations while connected and contributing to the fleet tactical grid. Additionally, this platform must defend against raids of small boats

- Perform anti-submarine warfare (ASW) scout and patrol missions that complement the capabilities of Strike Group and theater operations with enhanced active and passive undersea sensing capabilities.
- Support transoceanic logistics movements by serving as a force multiplier to area air defense capable destroyers. If equipped with weapons providing the required capability and capacity, the ship will independently escort logistics ships during transit through low and medium threat regions.
- Provide robust electromagnetic sensing and targeting capabilities and contribute to force level electromagnetic spectrum control
- Provide electromagnetic information exploitation capabilities and intelligence collection

The FFG(X) aviation capability will include secure and traverse systems for aircraft handling and incorporate the aircraft systems and sensors into an integrated combat system.

To achieve these missions, the Navy desires to use common Navy systems across the radar, combat system, C4ISR systems, and launcher elements. Hull, Mechanical, and Electrical systems commonality with other US Navy platforms is also encouraged.

The major objectives of this RFI are to:

- Understand industry's parent designs and their ability to integrate both the warfare system elements and the threshold requirements into the new FFG(X) design
- Understand the sensitivities to the parent design for integrating either the warfare systems or the threshold requirements
- Understand the drivers in non-recurring engineering, recurring engineering, production schedule, and operations and support costs

**Request for Information:** The Navy is interested in obtaining market information pertinent to a FFG(X) small surface combatant ship design. Material and information submitted in response to this RFI will be reviewed by PMS 515, the Frigate Program Office, with the goal of understanding potential FFG hull form parent design characteristics, the ability to accommodate the required warfare systems and requirements prescribed by the Navy, and cost and schedule estimates for the ship's design and construction.

Threshold values from the Navy's top level FFG(X) requirements are listed in Table 1 below. The Navy considers the Threshold values to be the minimum acceptable level of performance for the FFG(X). The Navy is not specifying Objective values at this time, but is interested in Industry concepts that affordably exceed the Threshold values for enhanced capability. If the values in Table 1 can be exceeded for minimal cost increases, please identify those specific areas. Additionally, if any specific threshold value drives a clear sensitivity break point in design such that lowering it would provide additional flexibility or significant cost savings to the Navy, provide a description of the issue and preferred mitigations. The Navy is interested in understanding the tradeoffs, if any,

between design changes to meet or exceed threshold requirements and impacts on recurring production costs for those designs. In order to better understand the Navy's priority of systems and desired capabilities, Tiers 1 - 3 are outlined against the Navy top level requirements in Table 1, with Tier 1 as the most desired. If tradeoffs are necessary in the threshold attributes to minimize cost while maximizing capability, vendors are encouraged to trade off the lower tier elements prior to considering higher Tier elements (Tier 1 highest, Tier 3 lowest).

**Table 1: Key FFG(X) Threshold Attributes**

<b>TIER</b>	<b>Attributes</b>	<b>Threshold</b>
1	Materiel Availability	<b>&gt;0.64</b> (as defined by number of operational end items/total end items)
	Operational Availability	<b>&gt;0.72</b> (as defined by uptime/(uptime+down time))
	Service Life	<b>25 years</b>
	Vulnerability (as defined by the capability to withstand initial damage effects and to continue to perform primary missions)	<b>Grade A Shock Hardening for Propulsion, Critical Systems, and Combat System Elements to retain full Air Defense and Propulsion Capabilities</b>
2	Manning Accommodations	<b>200 personnel crew max</b> (including all detachments)
	Range (minimum distance the ship can sail without replenishment when using all of its burnable fuel)	<b>3000 NM @ 16 kts</b>
	SWaP-C reservation for future Directed Energy and Active EA	<b>26MT, 600kW, 300GPM</b>
3	Space, weight, power, cooling service life allowance	<b>5%</b>
	Sustained Speed (as defined by the achievable speed at full load displacement, normal trim, and clean bottom)	<b>28 kts at 80% MCR</b>

Table 2 lists the notional FFG(X) Major Weapons Systems that will be provided as government furnished equipment. In Table 2, Tiers 1 and 2 are outlined against the Navy warfare systems, with Tier 1 again being the most desired. Values for these systems in terms of Space, Weight, Power and Cooling required can be made available upon request. In the event the integration of the Major Weapon System elements in Table 2 drives a significant design change to accommodate, the vendor is requested to highlight this area and address what could be accomplished without significant design change, how much NRE would be avoided, and what the resultant design would include. In addition to identifying cost drivers, vendors are also encouraged to provide design costs,

average follow costs, and specifics on designs that will accommodate all the GFE systems and threshold performance requirements.

**Table 2: Notional Major Weapons Systems**

TIER	Warfare Systems (alphabetical)
1	C4I suite (with accompanying HF/UHF/EHF/SATCOM antennas/CANES)
	COMBATSS-21 Mod Combat Management System (CMS) (Aegis derivative leveraging the common source library )
	Enterprise Air Surveillance Radar (EASR) 3 face fixed array (3x3x3 Radar Modular Assembly)
	MH-60R x 1
	Self Defense Launcher Capability
	Mk53 Decoy Launching System (Nulka)
	OTH Weapon with FCS (2x4) - canister launched
	SeaRAM Mk15 Mod 31
	SLQ-32(V)6 (SEWIP BIK II) - Note requirement in Table 1 for SWAP-C reservation for EA
	Tactical Cryptological System (TCS)
UAV (1 x MQ-8C) or future similarly sized UAS	
2	7M RHIBs x 2
	AN/SLQ-61 Light Weight Tow (LWT)
	AN/SQS-62 Variable Depth Sonar (VDS)
	AN/SQQ-89F Undersea Warfare / Anti-Submarine Warfare Combat System
	Cooperative Engagement Capability (CEC)
	Integrated 360 degree EO/IR
	Mission Control System (MCS) (MD-4A)
	MK 110 57mm Gun (with ALaMO)
	Mk160 Gun Fire Control System (GFCS)
	Mk20 Mod 1 Electro-Optical Sighting System (EOSS)
	Next Generation Surface Search Radar (NGSSR)
	Surface-to-Surface Missile Module (SSMM Longbow Hellfire)
	TB-37 Multi-Function Towed Array (MFTA)
UPX-29 Identification Friend/Foe (IFF)	

Self Defense Launcher Capability - To increase the FFG(X) self-defense, the Navy is particularly interested in understanding the trade space surrounding the addition of Launcher Capability (to support Evolved Sea Sparrow Missile Block 2 and/or Standard Missile-2 Active missiles). Solutions should describe the launcher type, cell quantities the proposed design could accommodate, and if able to be cost effectively integrated include considerations for strike length variants to maximize weapons flexibility. The Navy is also interested in the

potential space, weight, and volume the launcher represents that can be included in the FFG(X) design as well as how many cells could be accommodated if design changes were pursued along with understanding the capability trades and cost impacts of those changes. Any innovative approach vendors may have in providing a Launch System or increasing capacity by making design trades across FFG(X) requirements will also be considered.

The information is requested to be organized in the following manner:

**I. Ship Design Description and Characteristics.** For your parent design, provide the usual and customary naval architecture and marine engineering design information to include design standards.

**II. Cost drivers.** Identify and detail any significant cost drivers from the Threshold requirements and/or Warfare systems identified in Tables 1 and 2. Provide recommended mitigations or innovative approaches to provide the required capability and provide rationale for proposed tradeoffs to maximize capability while minimizing cost.

**III. Cost and Schedule Estimates.** Cost and Schedule information is requested for designing, building, testing and delivering the lead ship and a notional class of 20 FFG(X) small surface combatants with a Detail Design and Construction Award in FY 2020. All costs should be calculated in base year 2020 dollars. Specifically, the Navy is interested in the estimated cost of the non-recurring and recurring design, lead ship costs, and average cost for follow on ships. Procurement profile to be assumed beginning in FY20 is 1/1/2/2/2/2/2/2/2/2. The Navy is interested in the shipbuilder's assessment of the most affordable procurement profile to achieve efficient shipyard loading and insight into the scale of savings such a profile would achieve as compared to baseline profile. Additionally, the Navy is interested in Operations and Support cost drivers, including manning numbers, maintenance costs, fuel assumptions and costs, and service life assumptions.

Interested shipbuilders, design agents and integrators are encouraged to respond to this announcement. In the responses, companies should also include:

1. Organization Name
2. Address
3. Point of Contact:
  - a. Name
  - b. Position/Title
  - c. Email address
  - d. Telephone number

Responses shall be no more than 25 pages in length (not including design artifacts such as general arrangements) and be preferably in plain text, Microsoft Office, or Adobe PDF electronic formats.

Responses should be sent by electronic mail to the NAVSEA point of contact, Mr. Lawrence Gordin, Contracting Officer, lawrence.gordin@navy.mil, Phone: 202-781-4905.

WHEN TO SUBMIT: This information is requested to be provided by email by 3:00PM, 24 August 2017.

NOTICES REGARDING SOLICITATION: This RFI does NOT constitute a Request for Proposal and is not to be construed as a commitment, implied or otherwise, by the Government that a procurement action will be issued.

No telephone inquiries will be accepted and requests for solicitation packages will not be honored, as no solicitation is intended at this time.

Response to this notice is not a request to be added to a bidders list or to receive a copy of a solicitation.

THE GOVERNMENT DOES NOT INTEND TO AWARD A CONTRACT SOLELY ON THE BASIS OF THIS RFI.

No entitlement to payment of direct or indirect costs or charges by the Government will arise as a result of the submission of the requested information.

No reimbursement will be made for any costs associated with providing information in response to this announcement and any follow up information requests. Responses to this RFI may be considered in the future determination of an appropriate acquisition strategy for the program. The Government may not respond to any specific questions or comments submitted in response to this RFI or information provided as a result of this request. Any information submitted by respondents as a result of this notice is strictly voluntary.

NOTICE REGARDING PROPRIETARY INFORMATION: All submitted materials will be designated for Government Use Only. Third party support contractors providing support to the Frigate Program Office will have access to the submitted material. These contractors have executed non-disclosure agreements. Submission of material requested in this RFI shall constitute consent to allow access to the material/information by any relevant third party support contractor supporting PMS 515. Submitted material/information will be safeguarded in accordance with the applicable Government regulations.

IMPORTANT - Any email containing export controlled information must be marked FOUO and use encryption.

**Archiving Policy:**  
Manual Archive

**Allow Vendors To Add/Remove From Interested Vendors:**

Yes

**Allow Vendors To View Interested Vendors List:**

Yes