

US Navy is developing future multimission guided Missile Frigate (FFG(X)), with large power-projection capabilities

The US Navy's "Littoral Combat Ship" program developed a new generation of affordable surface combatants that could operate in dangerous shallow and near-shore environments, while remaining affordable and capable throughout their lifetimes. LCS was designed for countering Asymmetric and A2/AD threats.

However according to experts expressed doubt about its power projection capability. "To put things in perspective, the two variants of the U.S. Littoral Combat Ship, Freedom and Independence, are substantially larger at roughly 2,900 tons and 3,100 tons respectively—but they do not possess any cruise missile or similar power projection capability," wrote Garrett I. Campbell Federal Executive Fellow, Brookings Institution. Therefore LCS do not currently possess the power-projection capabilities recently demonstrated by Russia's Caspian Sea fleet.

The U.S. Navy is looking for inputs from industry on a new multimission guided-missile frigate adapted from existing ship designs, a major departure from its modular littoral combat ship, according to a request for information released Monday. US Navy's future Guided Missile Frigate (FFG(X)) shall 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.

Unlike the LCS, the frigates should be able to integrate into carrier strike groups and large surface combatant led surface

action groups supplementing the fleet's undersea and surface warfare capabilities. It should also be able to defend itself during independent operations in a contested environment extend the fleet tactical grid, and host and control unmanned systems.

The navy is also expecting the frigate to assume some of the duties of large surface combatants like the over-tasked Arleigh Burke-class destroyers during "operations other than war". These operations include presence missions, security cooperation activities and humanitarian assistance and disaster relief (HA/DR) efforts among other.

The U.S. Navy would like for the ship to be able to Kill surface ships over the horizon, Detect enemy submarines, defend convoy ships, Employ active and passive electronic warfare systems and Defend against swarming small boat attacks.

Major warfare systems that the U.S. Navy would like to have on the frigate include an Aegis-derivative COMBATSS-21 combat management system that uses a common source library, a C4I suite, an Enterprise Air Surveillance Radar (EASR), Mk53 Decoy Launching System (Nulka), Four canister launched over-the-horizon weapons, SeaRAM Mk15 Mod 31 in addition to a UAV and an MH-60R helicopter.

What the navy is particularly interested in is the ship's vertical launch cell potential to support Evolved Sea Sparrow Missile Block 2 and/or Standard Missile-2 Active missiles. The navy wants a description of launcher type and cell quantities the proposed design could accommodate.

Other capabilities in "tier two" include various sonar equipment such as variable-depth and towed-array sonar, Cooperative Engagement Capability to be able to share target data with other ships and aircraft in the fleet, rigid-hull inflatable boats, Next Generation Surface Search Radar, and

a MK 110 57mm gun and related systems.

The U.S. Navy wants the frigate to have a 25 year service life and a grade A shock hardening for propulsion, critical systems, and combat system elements to retain full air defense and propulsion capabilities.

Navy surface fleet leaders in early 2015 announced a new organizing concept for the Navy's surface fleet called distributed lethality. Under distributed lethality, offensive weapons such as Anti Ship Cruise Missiles (ASCMs) are to be distributed more widely across all types of Navy surface ships, and new operational concepts for Navy surface ship formations are to be implemented. The aim of distributed lethality is to boost the surface fleet's capability for attacking enemy ships and make it less possible for an enemy to cripple the U.S. fleet by concentrating its attacks on a few very high-value Navy surface ships (particularly the Navy's aircraft carriers), according to Congressional Research Service Report.

A Detail Design and Construction contract is expected to be awarded in FY2020. The navy wants to buy one ship in 2020 and 2021 followed by two ships per year from 2022

The U.S. Navy New Warship for A2/AD environment

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.

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.

References and Resources also include:

<http://navaltoday.com/2017/07/12/the-us-navy-wants-the-new-frigate-to-be-a-much-more-capable-ship-than-current-lcs/>

<http://www.defensenews.com/articles/us-navy-releases-specs-for-a-proposed-guided-missile-frigate-a-break-from-the-littoral-combat-ship>