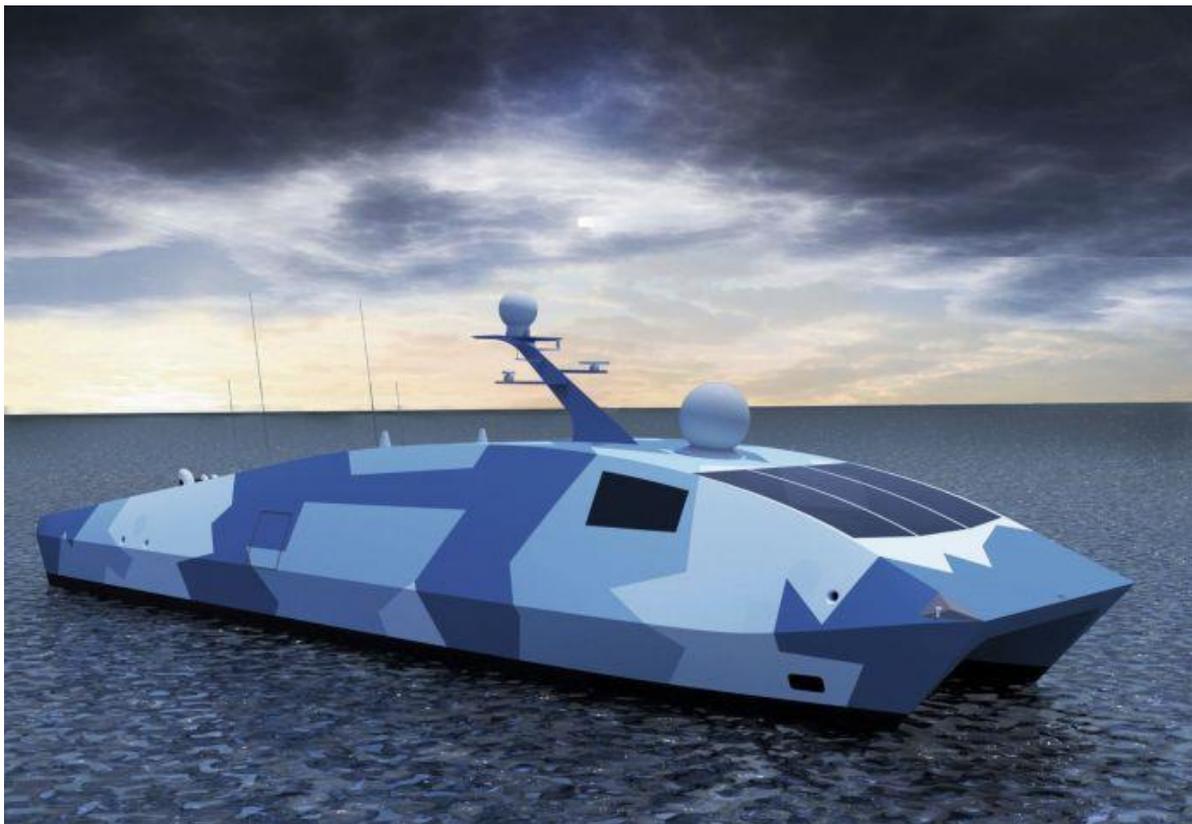


No hand at the helm: US Navy pushes ahead with unmanned surface vessel development

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The USN is accelerating its bid to field a new fleet of unmanned surface vessels that could interact with the rest of the force in tactical situations. *Christopher P Cavas reports*

A corvette-like vessel manoeuvres on a distant sea, periodically changing course and speeds to get into a firing position. Several dozen miles away two smaller vessels lay out rectangular courses in the ocean, maintaining station to capture electronic emissions and signals. Some distance in the opposite direction is a destroyer, monitoring information beamed from the other three ships. On board the destroyer the order is given to fire and the 'corvette' launches three Tomahawk cruise missiles from a vertical launch system aimed at targets on shore. Systems on the smaller vessels are alert to countermeasures from the enemy.



A catamaran concept from Austal USA features a payload compartment carried aft and includes a pilot house for temporary manned operation. This is a 33 m design that could be suitable for the MUSV. (Austal USA)

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No one is aboard the three smaller vessels; the only crew members involved are on board the destroyer.

That could be one of many possible scenarios as the US Navy (USN) surges forward under a rapidly expanding effort to field a new fleet of unmanned surface vessels (USVs) that could operate directly with the fleet in tactical situations. The result could be a significant new surface ship category to join with existing cruisers, destroyers, frigates, and Littoral Combat Ships (LCSs).

Unmanned systems certainly are not new, but several factors are driving a major growth in investments and activities intended to develop surface vessels able to integrate tactically with the combat systems of much larger warships and effectively extend presence and coverage. At the top of those factors are the rise in technical capability of autonomous platforms and increased interest in USVs as a way to extend the reach of larger ships.

“We’re seeing that the future architecture of the navy can leverage off unmanned and take some missions away from the manned combatants, putting more assets out there in larger numbers,” Rear Admiral Casey Moton, programme executive officer of unmanned and small combatants, told *Jane’s*. Unmanned vessels can “go do things like the adjunct magazine and spread the sensor net out further than we could with large surface combatants.

“It’s more of an outgrowth of where we see the future fight in great power competition, and our resources and our ability to get numbers out there to meet the warfighting requirement,” Moton added. “The urgency is truly driven by great power competition requirements.”

Howard Berkof, deputy programme manager for PMS 406, the Unmanned Maritime Systems office operating under Moton at Naval Sea Systems Command (NAVSEA), has spent 12 years working on unmanned systems for the USN and notes the dramatic differences in how the programmes are now being perceived and, perhaps more importantly, funded.

“There was a lot of advocacy, a lot of education; the navy leadership started saying the right things,” he said of the situation in the mid-2000s, “but the money was not backing it up.

“Then, about three or four years ago everything changed. Navy leadership started putting their money where their mouth was. From about 2016 to 2020 we’ve seen a ten-fold increase in PMS 406s [spending authority]. In fiscal year [FY] 2020 our budget request is just over a billion dollars and continuing to grow from there.”

The answer, Berkof said, is that USN leadership “finally understood the benefits and what unmanned maritime systems could bring to the table. And I think they finally believe the technology is mature enough to invest and actually deliver the systems.”

Three acquisition programmes are in development to produce operational USVs: the Large Unmanned Surface Vessel (LUSV), intended as an offensive weapons platform; the Medium

Unmanned Surface Vessel (MUSV), which aims to develop a surveillance and electronic warfare vessel; and the Mine Countermeasures (MCM) USV, which is looking to produce a craft compatible with the LCS. Supporting development of the LUSV and MUSV are several prototypes to inform technical and operational issues in fielding unmanned vessels.

The MCM USV effort has been under way for some years and is an outgrowth of the now-cancelled Remote Minehunting System (RMS) that had been under development for the LCS. As it now stands, the MCM USV is tailored specifically to operate from LCSs.

The push is on not just to develop new USVs but also to expand the undersea unmanned systems. PMS 406 also supports a variety of undersea unmanned vessels (UUVs), including the Orca Extra-Large Unmanned Undersea Vehicle (XLUUV) and Snakehead and Razorback platforms. Those programmes are intended to perform a wide range of missions, many in order to free up submarines for other tasks. The larger unmanned surface systems, however, are expected to operate directly with the fleet.

[Continued in full version...]

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