

Strategic Approach Needed for Coast Guard to Exploit Unmanned Technology: NAS



Petty Officer 3rd Class John Cartwright, a Coast Guard Cutter Stratton crewmember, releases the unmanned aircraft Scan Eagle during a demonstration in 2012. The Coast Guard should move more aggressively to use such technology, a new National Academies report concludes. U.S. Coast Guard / Petty Officer 2nd Class Luke Clayton

WASHINGTON – As unmanned systems (UxS) continue to develop and be used by military services and federal agencies, the U.S. Coast Guard should proceed more aggressively and deliberately in taking advantage of UxS advancements, says a new congressionally mandated [report](#) from the National Academies of Sciences, Engineering, and Medicine.

The Coast Guard should also produce a high-level strategy with critical goals and actionable steps toward fully utilizing UxS technology, the report says. UxS technologies include aerial, surface, and underwater vehicles with no human occupants; vehicles that may have a crew but with some level of remote control; and systems that are not vehicles.

As one of the country's six military services, the Coast Guard also serves as a first responder, law enforcement agency, maritime regulator, and member of the intelligence community. Despite multiple initiatives to explore and assess the applicability of UxS to these areas, the Coast Guard lacks a formal means for identifying, investigating, and integrating systems. Meanwhile, UxS technological advancements continue to accelerate, driven by both commercial and military demands.

"A major realignment of the Coast Guard's UxS approach is needed," said Heidi C. Perry, assistant head of the Air,

Missile, and Maritime Defense Technology Division at the Massachusetts Institute of Technology Lincoln Laboratory and chair of the committee that wrote the report. "As other military services integrate UxS into their force structure, the Coast Guard will be impelled to do the same."

The new strategy must come from the top, the report says, and therefore, the commandant should issue a high-level strategy that lays out a compelling rationale for UxS, sets forth critical goals for the systems, and outlines the Coast Guard's approach for achieving them. The Coast Guard has issued high-level strategies in the past, which are intended to convey urgency to senior leadership and spur changes needed across the organization, from setting strategic goals and objectives for achieving the new vision to establishing appropriate organizational structures and lines of authority.

One of the reasons for not fully exploiting the advances in UxS technology is the Coast Guard's limited budget, including its modest research and development funding compared with other military services and U.S. Department of Homeland Security (DHS) agencies. Furthermore, it is unlikely the funding needs for UxS will be met by simply reallocating traditional Coast Guard appropriations, the report stresses. The support of Congress and DHS will be vital for the Coast Guard to fully realize the potential of UxS technology. To properly assess the Coast Guard's UxS funding needs, the commandant should commission an internal study of the multiyear spending that will be required for research, assets, integration, and personnel to fully implement the UxS strategy.

Organizational changes to the Coast Guard may be necessary to most effectively execute a new high-level UxS strategy. The commandant should designate a top Coast Guard official, at the flag officer or senior executive service level, to advocate for and advance the UxS strategy, the report recommends. This official would be responsible for identifying, promoting,

coordinating, and facilitating the changes that will be needed across the organization to further the commandant's strategic goals and objectives for UxS. Additionally, the commandant should establish an UxS program office that will work with the top official to plan out, coordinate, assess, and promote UxS activities across the Coast Guard. One of the first initiatives of this program office should be to develop an UxS "road map" that translates the strategic goals into an actionable plan.

"A dedicated program office could play a vital leadership and coordinating role in expanding the use of UxS across the Coast Guard," said retired Coast Guard Vice Admiral Fred M. Midgette, a committee member. "It would foster an organizational environment in which the Coast Guard is better able to leverage UxS technologies."

In order to accelerate the introduction of UxS into the force structure, the report recommends that the Coast Guard expand its efforts to carry out operations-related experimentation with low-cost UxS. This would include potentially designating field units specifically for experimentation and rapid transitioning of systems into operations. Encouraging experimentation with low-cost UxS technologies will lead to the identification of beneficial uses and would nurture a more technologically proficient workforce.

The study – undertaken by the [Coast Guard Maritime Domain Awareness Committee](#) – was sponsored by the U.S. Coast Guard. The National Academies are private, nonprofit institutions that provide independent, objective analysis and advice to the nation to solve complex problems and inform public policy decisions related to science, technology, and medicine. They operate under an 1863 congressional charter to the National Academy of Sciences, signed by President Lincoln.