Executive Summary

Modern combat environments have a high demand for the development and employment of unmanned systems. Numerous recent technological developments make it feasible to build military systems that can perform without human intervention. These unmanned systems are being used more frequently for missions such as mine countermeasures; antisubmarine and antisurface warfare; coastal security; exclusive economic zone protection; and intelligence, surveillance, and reconnaissance (ISR). More than a decade ago, operations using unmanned aerial vehicles (UAVs) in Kosovo demonstrated the potential to carry out military missions more efficiently, with less human risk, and at a lower cost than had historically been possible with manned vehicles. Today, UAVs fly above Iraq and Afghanistan, providing American military forces with a significant advantage over enemy forces. While there are many pilot programs that provide for unmanned vehicle (UV) deployment from existing ships, all serve as supplementary, secondary roles to current primary ships' missions, and require integration into and disruption of current operational routines. The Navy lacks a dedicated platform that would take full advantage of the rapidly expanding world of opportunities provided by unmanned systems, which have been clearly demonstrated to be the way of the future.

In order to fill this capability gap, the use of an unmanned vehicle carrier (UVC) to deploy, recover, maintain, and store unmanned systems is proposed. The UVC is equipped with modern mission bays that have sufficient internal arrangeable space to contain a wide variety of UVs. The UVC is capable of launching and recovering air, surface, and undersea UVs in every geostrategic environment. Conventional and innovative developmental technologies are incorporated to effectively meet the technological challenges of current and future UV systems. Unmanned surface vehicles (USV) and unmanned undersea vehicles (UUV) can be launched individually by crane or in large sorties via well deck launch. UAV launch operations are enabled by combining electromagnetic aircraft launch system (EMALS) technology with a ski jump to shorten flight deck length requirements. The usage of a second flight deck,

located beneath the main flight deck, adds another method for launching UAVs and provides a significant advantage over CVNs by increasing the air sortie rate and allowing either an increased launch rate or simultaneous launch and recovery operation. Equipped with a high level of vehicle-handling automation, UVC maximizes available flight deck space by eliminating the need for a large control tower/island. Using an integrated mast and a consolidated pilothouse for navigation, UVC has more topside space available, with all command and control facilities located in the internal decks. To allow the UVC more autonomy and nearly unlimited range, a nuclear plant is used to power an advanced integrated power system (IPS). Advanced vehicle control options allow for control handoff to off-site locations or for maintaining organic mission control. In this way, the UVC can operate as a mobile headquarters platform, acting as a force multiplier in a rapidly changing and demanding array of operations.

The UVC has the ability to perform many of the existing aircraft carrier missions with reductions in procurement and life cycle costs and in manning requirements; thus, the UVC is a forward-moving and affordable solution to address the issues raised by new generations of UVs. With a projected life cycle of 50 years beginning in 2030, the UVC will enhance the application of U.S. military force and global power projection through the use of unmanned systems.

Ship Characteristics	
Parameter	Value
LBP	750 ft
Beam	124 ft
Draft	29.11 ft
Depth (Station 10)	90 ft
Prismatic Coefficient	0.62
Lightship Displacement	37,072 LT
Full Load Displacement	48,489 LT
GM_t/B	0.155
Maximum Speed	25.3 kts
Sustained Speed	24.1 kts
Lead Ship Cost	$6.5 billion
Follow Ship Cost	$4.6 billion
Life Cycle Cost	$132 billion