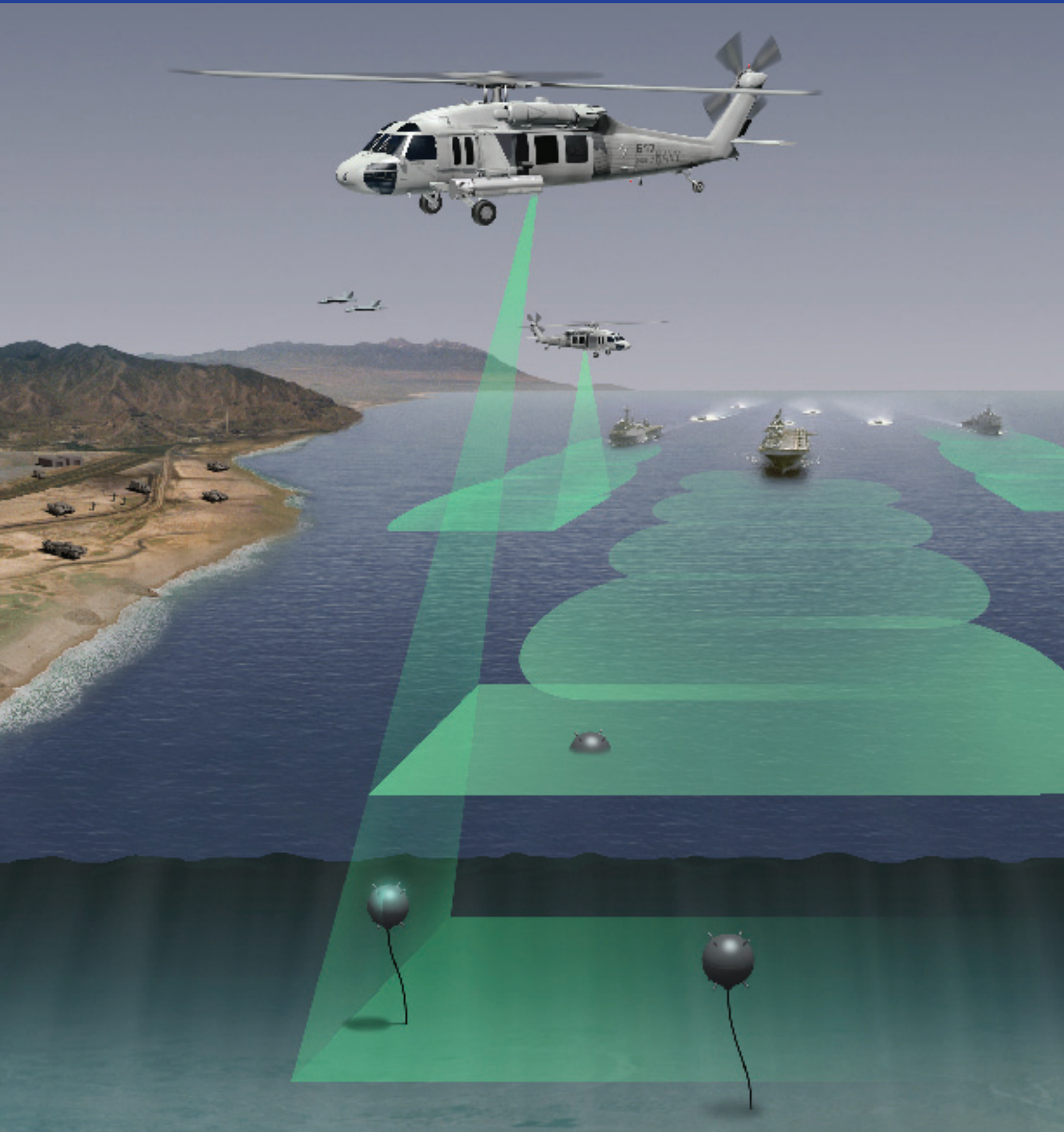


# ALMDS | AIRBORNE LASER MINE DETECTION SYSTEM



**NORTHROP GRUMMAN**

DEFINING THE FUTURE™

# ALMDS | AIRBORNE LASER MINE DETECTION SYSTEM

## Threat

In terms of availability, variety, cost-effectiveness, ease of deployment, and potential impact on joint expeditionary warfare; mines are perhaps the most attractive weapons available to prevent U.S. naval forces from achieving sea control and power projection ashore.

To meet future requirements for high-tempo operations as part of a joint warfighting campaign, the naval services are undertaking a transformation in mine warfare. It is based on the development of new organic airborne mine countermeasure (OAMCM) systems that will ensure naval forces are able to conduct in-stride operations in mined waters.

## Mission Description

The AN/AES-1 Airborne Laser Mine Detection System (ALMDS) will be among the initial airborne OAMCM systems fielded. The mission of ALMDS is to detect, classify, and localize floating and near-surface moored mines. The ALMDS will be integrated into the MH-60S helicopter to provide a rapid wide-area reconnaissance and assessment of mine threats in littoral zones, confined straits, choke points, and amphibious objective areas for Carrier and Expeditionary Strike Groups (CSG/ESG). ALMDS will be embarked as part of the mine countermeasures (MCM) mission package on the new Littoral Combat Ship (LCS).

## System Description

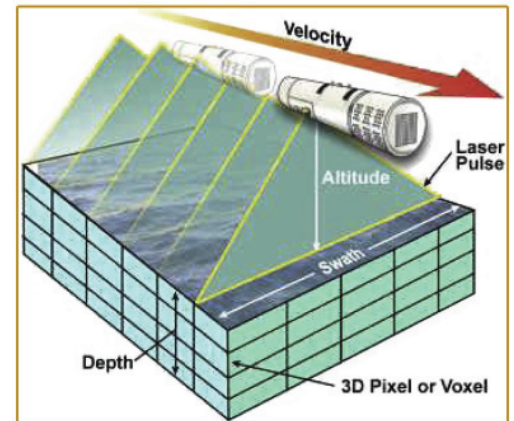
The ALMDS uses pulsed laser light and streak tube receivers housed in an external equipment pod to image in 3D, the entire near-surface volume area. The ALMDS is capable of day or night operations and will be mounted on the port siding of an MH-60 helicopter. With untethered operations, it can attain high area search rates. The ALMDS design utilizes the forward motion of the aircraft to generate image data negating the requirement for complex scanning mechanisms and ensuring high system reliability. ALMDS also provides accurate localization to support follow on neutralization of the detected mines.

All ALMDS components are housed within a pod that weighs approximately 820 pounds. It is approximately 107 inches in length with a diameter of 21 inches. The pod is mechanically attached to the MH-60S helicopter through a standard Bomb Rack Unit (BRU) 14 mount and electrically via a primary and auxiliary umbilical cable to the Common Console. All contact data generated by ALMDS is displayed on the Common Console and stored on a mass memory unit (MMU) for Post Mission Analysis (PMA) upon mission completion. The Common Console serves as the graphical unit interface (GUI) for all MH-60S AMCM systems.

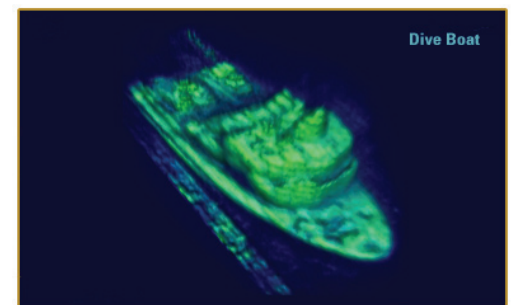
## Program Status – Low Rate Initial Production (LRIP)

The ALMDS program is managed by the Mine Warfare (MIW) Program Office (PMS 495) within the Program Executive Office for Littoral Mine Warfare (PEO(LMW)) with Naval Surface Warfare Center Panama City (NSWC PC) serving as the Technical Direction Agent (TDA) and Contracting Office (CO). The program entered the Production and Deployment acquisition phase following a successful Milestone C decision on May 12, 2005. Northrop Grumman has delivered the first two LRIP units ahead of schedule. These units are being tested on the MH-60S.

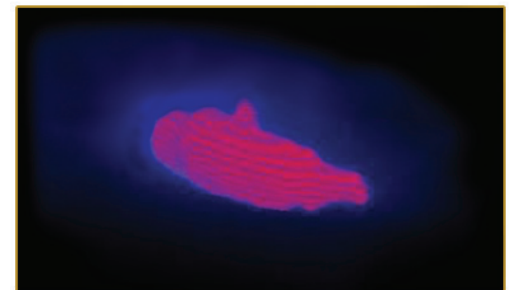
Pre-planned product improvements (P3I) are on schedule to expand the system capability into the very shallow water (VSW) region and will begin to investigate sensor fusion and miniaturization opportunities.



ALMDS operations.



Rapid, wide-area reconnaissance and assessment capabilities allow identification and tracking of vessel traffic.



Small or large objects are easily spotted using ALMDS as illustrated by this image of a porpoise. Divers and swimmers can also be tracked and found. GPS coordinates allow Coast Guard or law enforcement resources to proceed directly to a search and rescue or interdiction area.

For additional information, please contact:

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