

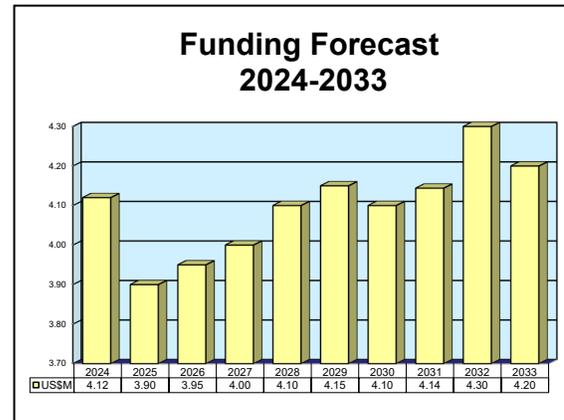
# ARCHIVED REPORT

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## Mobile Inshore Undersea Warfare (MIUW)

### Outlook

- Enhancements and upgrades continue
- Funding low but stable and consistent with slight increases over the forecast period
- Coastal and port surveillance will remain vital, especially in supporting Pacific Rim allies



### Orientation

**Description.** The U.S. Navy's Mobile Inshore Undersea Warfare (MIUW) system is a rapidly deployable mobile unit that conducts surface and undersea surveillance in coastal and littoral waters.

#### Sponsor

U.S. Navy  
 MIUW-SU Program Office  
 Space and Naval Warfare Systems Command  
 (PMW-182)  
 San Diego, CA 92110-3127 USA

**Status.** Main system upgrade completed in 2010, enhancement R&D ongoing. Identity Dominance

System (IDS) Full Operational Capability achieved in 2018.

**Total Produced.** One estimate puts the number of MIUW systems in operation at 28. MIUW units are scheduled to be upgraded at a rate of approximately five systems per year.

**Application.** Primarily coastal and littoral water surveillance, with a secondary mission of force protection in ports and along important shorelines.

**Price Range.** Not applicable. All units are planned for upgrade throughout the U.S. Navy.

### Contractors

#### Prime

**Science Applications International Corp (SAIC)**

<http://www.saic.com>, 4015 Hancock St, San Diego, CA 92110 United States,  
 Tel: + 1 (858) 826-6000, Fax: + 1 (858) 826-6634, Prime

Contractors are invited to submit updated information to Editor, International Contractors, Forecast International, 75 Glen Road, Suite 302, Sandy Hook, CT 06482, USA; [rich.pettibone@forecast1.com](mailto:rich.pettibone@forecast1.com)

## Mobile Inshore Undersea Warfare (MIUW)

### Technical Data

**Design Features.** The MIUW system consists of a TSQ-108A Radar Sonar Surveillance Center (RSSC) vehicle that is used as a mobile command center. Sensors within the unit include an SPS-64 radar and an SQR-17A acoustic surveillance system – a COTS-based acoustic signal processing system. The SQR-17A provides acoustic threat data and monitors for surface ships, small boats, submarines, minisubs, and swimmer delivery vehicles.

Upgrades are being made to the communications suite, including installation of Joint Maritime Command Information System (JMCIS) network access and the U.S. Navy Fleet broadcast network, as well as incorporation of a PC-based message management system. The current WSC-3 communications set is

being replaced with the USC-54 VME Integrated Communications System (VICS, a UHF satellite communications transceiver), and a Naval Modular Automated Communications System II (NAVMACS II) messaging system is replacing the current laptop-based Insider Anomaly Measurement Processing System (IAMPS).

Additionally, the system comes equipped with a small boat that can be used to deploy a portable, passive underwater sensor-array string for close-in swimmer detection, this ties in with the continued use of sonobuoys.

Much of the MIUW system upgrade was accomplished through extensive use of commercial off-the-shelf (COTS) equipment.

### Variants/Upgrades

**TSQ-108A(V)3 Radar Sonar Surveillance Center.** The (V)3 is the current configuration of the RSSC. It is a van (vehicle)-based system.

**TSQ-108A(V)4 Radar Sonar Surveillance Center.** Once the (V)3 has been upgraded, it will be called the (V)4. This configuration is a HMMWV-based system.



The Outside of an MIUW TSQ-108A RSSC Van

Source: U.S. Navy

## Mobile Inshore Undersea Warfare (MIUW)



The Inside of an MIUW TSQ-108A RSSC Van

Source: U.S. Navy

## Program Review

**Background.** The U.S. Navy's Mobile Inshore Undersea Warfare system provides mobile coastal and littoral area surveillance. An upgrade apparently undertaken from 2000 through 2003 was followed by another system-wide upgrade in FY04. Early program efforts consisted of analysis, architectural design, and a review. A traceability analysis to ensure that operational requirements were captured in performance was also begun.

Work during FY05 focused on the design, development, and implementation of sensors and C4I system hardware and software upgrades. An operational test was conducted near the end of FY06.

### *Shore Facilities Categorized as Easy Terrorist Targets*

Plans for FY07 called for performing systems engineering analysis, integration activities, and R&D on the next-generation naval coastal warfare (NCW) surveillance and C4I systems.

From FY08 through FY09, work focused on enhancing networking capabilities, and providing acoustic sensors with the ability to detect and classify maritime vessels and communicate with land-based sensors via a clandestine maritime device.

U.S. Navy plans called for upgrading about five systems a year over a minimum three-year period. By the end of 2010, all the required MIUW units were believed to have been successfully upgraded with enhanced surveillance and C4I capabilities.

Plans for FY11 onward have called for R&D to increase the system's C4ISR capabilities, with a focus on design and development of the Identity Dominance System. In FY13, IDS testing was completed and efforts toward Initial Operational Capability (IOC) were begun. These efforts were to be followed by a full-rate production decision.

Efforts in FY14 and FY15 focused on correcting any problems incurred during the field run prior to full production.

The IDS achieved IOC in the fourth quarter of FY15. In October 2015, the U.S. Marine Corps issued a Request for Information (RFI) to develop an IDS 2 advanced technology that could be applied in the development of a tactical biometric collection and matching system.

The migration of IDS to Windows 7 was completed in FY16. Since then, the IDS team has completed retrofit of currently fielded Windows XP systems with Windows 7 systems. The IDS team has also initiated a technology review in support of the FY19 technology refresh. More specifically, in collaboration with the USMC, IDS released an RFI, reviewed and ranked vendor submissions, scheduled and executed technology demonstrations and evaluations, and continued development of the IDS technology refresh roadmap. Additionally, the IDS team initiated a performance engineering change proposal (ECP) to improve the operator experience, maintain IA (information assurance) compliance, and provide additional enhancements that will increase system performance.

## Mobile Inshore Undersea Warfare (MIUW)

Documentation was then updated based on the system changes incorporated as of result of the ECPs.

In FY18, the IDS team released the RFP for IDS technology refresh and conducted source selection. The team continued to perform IA updates every quarter along with related testing.

Additionally, in FY18 IDS entered the operations and life-cycle maintenance phase. At the same time, RDT&E efforts continued toward the development and assessment of upgrades and modifications to keep IDS relevant and effective through follow-on ECPs.

In other efforts, the IDS team matured and developed new technologies to meet emerging requirements in support of counter-IED and force protection.

The U.S. Central Command currently has an urgent need for biometrics collection capabilities. Biometrics has been ranked as the number one priority by combatant commands, due to the changing threat environment. Biometrics enables the rapid identification of persons of interest.

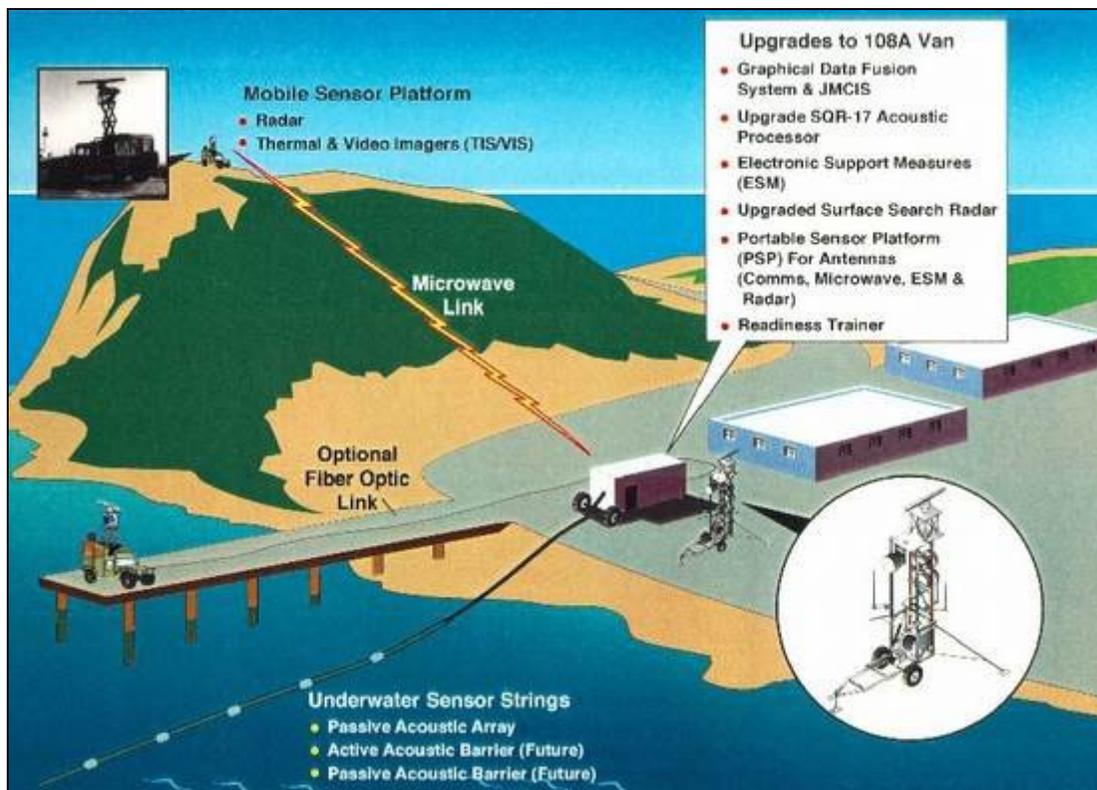
The project agenda for FY19 called for the IDS to integrate the government-developed software into a hardware prototype for technology refresh. Tests and evaluations were conducted to ensure compatibility with

the software and hardware. Also conducted were environmental tests and operational tests. Software development continued to incorporate different hardware devices and future enhanced modules, peripherals, and newer/cheaper hardware devices. At the same time, the Windows 7 baseline continued to be updated via ECPs. And finally, efforts were made to build a database of suspected enemies of the United States that will allow potential threats to be identified at foreign access control points and in international waters.

In FY20, the NECC C4ISR Modernization project was realigned to PE#0604280N Joint Tactical Radio System (JTRS), Project 4011 Naval Coastal Warfare Surveillance and C4ISR Systems. Under this new program, work proceeded on the further investigation of cloud technologies to include software-defined networking, micro segmentation, and episodic enclaves to pace the threat and support "speed to capability." This work continued through FY22.

Additional work through FY22 included refreshing the entire system with enhancements to ensure systems are not vulnerable to cyber attacks.

The IDS technical refresh system hardware was delivered by the end of FY23 with fielding to be completed before the end of FY24.



MIUW Mobile Sensor Platform

Source: U.S. Navy

## Mobile Inshore Undersea Warfare (MIUW)

### Funding

	U.S. FUNDING							
	FY22 <u>QTY</u>	FY22 <u>AMT</u>	FY23 <u>QTY</u>	FY23 <u>AMT</u>	FY24 <u>QTY</u>	FY24 <u>AMT</u>	FY25 <u>QTY</u>	FY25 <u>AMT</u>
<b>RDT&amp;E (U.S. Navy)</b>								
PE#0604230N								
Warfare Support Sys:								
Project 4011								
Naval Coastal Warfare Surveillance and C4I Systems								
	-	0.781	-	0.803	-	0.849	-	0.856
PE#0604280N								
JNT Tactical Radio System:								
Project 4011								
Naval Coastal Warfare Surveillance and C4I Systems								
	-	2.059	-	3.314	-	3.274	-	3.062
	FY26 <u>QTY</u>	FY26 <u>AMT</u>	FY27 <u>QTY</u>	FY27 <u>AMT</u>	FY28 <u>QTY</u>	FY28 <u>AMT</u>	FY29 <u>QTY</u>	FY29 <u>AMT</u>
<b>RDT&amp;E (U.S. Navy)</b>								
PE#0604230N								
Warfare Support Sys:								
Project 4011								
Naval Coastal Warfare Surveillance and C4I Systems								
	-	0.871	-	0.890	-	0.907	-	N/A
PE#0604280N								
JNT Tactical Radio System:								
Project 4011								
Naval Coastal Warfare Surveillance and C4I Systems								
	-	3.111	-	3.163	-	3.227	-	N/A

All \$ are in millions.

N/A = Not Available

Source: U.S. Department of the Navy FY24 RDT&E Budget Item Justification

### Contracts/Orders & Options

No recent contracts valued over \$5 million have been specifically identified for this program.

### Worldwide Distribution/Inventories

This is a U.S. Navy program.

## Mobile Inshore Undersea Warfare (MIUW)

### Forecast Rationale

Maritime ports and shorelines are much more vulnerable to terrorist attack than airports and train stations. The U.S. Navy has been tasked with addressing this security concern and, in response, has deployed Mobile Inshore Undersea Warfare (MIUW) units in littoral areas throughout the world to provide surface and subsurface surveillance. The U.S. Navy's naval coastal warfare inventory consists of approximately 28 MIUW units and eight Harbor Defense Command units operating Mobile Ashore Support Terminal IIIs (MAST IIIs). The naval coastal warfare inventory also includes 14 Inshore Boat Units

(IBUs) comprising six small craft, each equipped with C5ISR systems.

A major upgrade of the U.S. MIUW units' C5I and surveillance capabilities was completed in 2010.

Work continues to focus on enhancing the operational Identity Dominance System and developing IDS 2, which will incorporate a tactical biometric collection and matching system to achieve higher levels of security regarding persons of interest. This effort now adds cloud technology to the mix.

### Ten-Year Outlook

ESTIMATED CALENDAR YEAR RDT&E FUNDING (in millions US\$)												
Designation or Program	High Confidence					Good Confidence			Speculative			Total
	Thru 2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	
<b>Science Applications International Corp (SAIC) (Prime)</b>												
<b>MIUW &lt;&gt; United States &lt;&gt; Navy</b>												
	79.85	4.12	3.90	3.95	4.00	4.10	4.15	4.10	4.14	4.30	4.20	40.96
<b>Total</b>	79.85	4.12	3.90	3.95	4.00	4.10	4.15	4.10	4.14	4.30	4.20	40.96