

Customer: US Navy NSWC Corona

What's the problem: *Being two places at once in a rugged environment.*

Hull Mechanical & Electrical (HM&E) SmartShips have more electronic based (vs. mechanical dial type) sensor channels and transducers. Specifically, the LPD-17 has over 2000. Current transducer calibrations require at least two technicians because the sensor readout is not locally available; the two technicians must coordinate using tagout procedures and radios. With a roaming (wireless) readout, one technician could calibrate sensor channels.

The Solution: *Wireless radios and virtual presence. The W-ROCK.*

PMW-160 is actively rolling out shipboard wireless networks, and it is currently approved for the LPD-17 class. Ninety ships have Portable Wireless Reachback Systems (AN/SSQ-131). Three DDGs, LPD-17, LCC-20, LHD-4, and the CVN-77 all have installed wireless systems. All these PMW-160 approved wireless platforms are based on 3eTI wireless devices. The 3eTI device selected by Cybernet utilized in this W-ROCK is the same as that utilized in the Wireless Reachback AN/SSQ-21.

With the certified network in place, the next problem is virtual presence. NSWC Corona, Randy Rupnow, received a Cybernet SWMA Tablet from NSWC Carderock, Lance Flitter, to implement telepresence for the W-ROCK. The SWMA provides a ruggedized tablet with all of the features of a laptop plus improved tablet form factor and ease of use. SWMA provides camera and interfaces for the technician to capture and calibrate the sensors in-situ and wirelessly reaches back to the calibration computer through a remote IP-capable KVM (Keyboard, Mouse, Monitor interface module). *The technician can be simultaneously at both the sensor being calibrated and at the computer that does the calibration.*

What is the SWMA? *Available under GSA Contract GS-35F-0269U*

Cybernet's Shipboard Wireless Maintenance Assistant (SWMA) is a Phase III SBIR development that has produced a reconfigurable MIL810F tablet solution platform that is in full commercial production. SWMA is a rugged tablet computing platform that provides an intuitive interface to enterprise solutions software optimized for hardware reconfiguration, CAC authentication, and rugged field usage. In both the vehicle mount and portable for it maximizes field personnel efficiency and effectiveness in data capture, tracking, processing and analysis for the logistical and maintenance community.



**Long-Distance Support Capability (Navy, PEO Carrier)** – This development leverages the SWMA Platform to integrate Distance Support capability into the maintenance workflow. When a subject matter expert (SME) is required, the SWMA provides the SWMA with “eyes on” assessment of the situation by integrating the SWMA module capabilities and Defense Connect Online for on-site maintenance assistance.

**Remote Calibration (Navy, NSWC Corona)** – In order to make HM&E calibrations more efficient, the SWMA Platform is being integrated into a maintenance aid that includes a SWMA Tablet, wireless access points, and keyboard/video/mouse-over-IP to link the calibration workstations to a SWMA Tablet at the point of calibration, thus reducing the manning necessary to calibration on-ship systems.

**Work Order/Inventory Maintenance (Army/Raytheon)** – Retrieval, entry, and processing of work orders, service requests, and inventory controls have been made available in the field where network connectivity is not available. Using a combination of the SWMA Platform, MAXIMO, and Datasplice, field operators can access and input work order-related information when down range without a network connection and synchronize data updates upon return to base. Prior to SWMA integration, data processing was on the order of hours to days; the SWMA integration has reduced this to real-time input with a few minutes of synchronization time at the end of a shift.

**Instrumentation Equipment Issue and Tracking Support (IITS) System (Army/Raytheon)** – This effort is a technology drive to move from paper to fully-electronic forms for tracking vehicle instrumentation that occurs during each training rotation. Using the SWMA Tablet, installers can track the equipment associated with each vehicle from “issue” to “QA.” An offline database is also available to provide down-range tracking of instrumentation changes necessary due to failure during training.

### Partnerships and Collaboration:



Development supported by PEO SHIPS Science and Technology, providing access to ships, maintenance documents and maintenance personnel. NAVSEA Carderock – Applications and Database support NAVSEA Crane – Network connectivity to IT-21 (Ship-based networks), Distance Support (DS) SPAWAR San Diego – Certifications/Authorizations for secure network based data.

**Raytheon** Logistics and maintenance development and support for War Fighter Focus (WFF).

### Program Contacts:

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<http://www.cybernet.com/> and <http://swma.cybernet.com/>

## SWMA Capabilities (Other data collection modules available on demand)

### Multiple Source Data and Information Capture:

Imagery/video  
Barcode, RFID, UID  
Multimeter  
Direct equipment interfaces

### Rapid High-Performance Data Processing:

Hosting of user manuals and procedures documents  
Image annotation  
Collaboration and access to alternative source information  
Schedule and task management  
Electronic Checklists

### Supported Applications:

Any Windows-based application  
Legacy log/maint applications like SKED, ICAS, and Maximo, Telepresence two-way video  
Functions under COMPOSE load

### Flexibility via Form Factor and Hardware Design:

High-performance computer in Tablet PC form, designed to be uniquely qualified for field maintenance operation environments  
Meets all military and industry standard ruggedized specifications  
Incorporates water proof specifications (IP65)  
Wireless and wired operations

## Specifications

<p><b>Dimensions:</b> 11.75" x 9" x 3.375" 5.5 lbs.</p> <p><b>MIL-STD 810F Enclosure:</b> Method 512.4 Procedure 1 (Sand/Dust/Salt Fog) Solar Radiation, UVB, IP65 (Equiv.)</p> <p>10.4" XGA (1024x768) Display: Pen &amp; Finger Touch Dual Mode</p>	<p><b>Temperature Ratings:</b> MIL-STD 810G Methods 501.4/502.4 -4° to 140° (operational) -60° to 160° (storage)</p> <p><b>Shock &amp; Vibration Ratings:</b></p> <ul style="list-style-type: none"> <li>• MIL-STD 810F</li> <li>• Method 516.5</li> <li>• Up to 4ft drop (to concrete)</li> <li>• 75g, 11ms Crash Shock</li> </ul>	<p><b>Processor Options:</b></p> <ul style="list-style-type: none"> <li>• Intel i7 620UE 1.06 GHz 2.13 GHz Turbo</li> </ul> <p><b>Memory:</b></p> <ul style="list-style-type: none"> <li>• 2GB (standard)</li> <li>• 8GB (max)</li> </ul> <p><b>Hard Drive Options:</b></p> <ul style="list-style-type: none"> <li>• 320GB Hard Drive (standard)</li> <li>• 80GB Solid State (option)</li> </ul>	<p><b>Wireless:</b></p> <ul style="list-style-type: none"> <li>• Bluetooth 2.1 + EDR</li> <li>• 802.11a/b/g/n</li> <li>• FIPS 140-2</li> <li>• Other wireless methods (optional, available)</li> </ul> <p><b>Battery:</b></p> <ul style="list-style-type: none"> <li>• 10 cell (65Whr) battery</li> <li>• Up to 6.5 hour lifetime</li> <li>• Warm swap</li> </ul>	<p><b>Ports and I/O Connections:</b></p> <ul style="list-style-type: none"> <li>• 3 USB 2.0 ports</li> <li>• 2 SWMA Module Connectors</li> <li>• RJ-45 Gigabit LAN Ethernet</li> <li>• Serial Port (RS232/422/485)</li> <li>• VGA (option, in place of serial port)</li> <li>• Smartcard Reader (optional)</li> <li>• Headset Jack</li> <li>• Microphone Jack</li> <li>• DC-in Jack</li> <li>• CAC Reader</li> </ul>
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## Products and Selected Accessories

<p><b>SWMA Tablet (standard config)</b></p>  <p>\$3,631 (+\$400 for xtreme screen)</p>	<p><b>Docking Solutions</b></p>  <p>Varies by application</p>	<p><b>Modules (Camera, barcode, Fluke, CAC, Oscope, RFID)</b></p>  <p>\$160-\$790</p>	<p><b>Accessories</b></p> <p>Carrying cases (small &amp; large sizes)</p> <p>Shoulder strap Systems</p> <p>Varies</p>
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