Customer: US Army Training Support (Raytheon WarFighter Focus)

What's the problem: *Field enterprise integrated maintenance of down-range equipment.*

The Army requires that maintenance on down-range equipment include specific tracking of all work orders (WOs), service requests (SRs), and related documentation. However, when maintainers are in the field, they are out of communication range to any type of high-speed network connectivity back to the enterprise WO and SR control system (IBM MAXIMO), if they have any connectivity at all. Several cost factors were increased due to maintaining WO/SR entries in MAXIMO through paper flow instead of bringing digital technology into the field. The paper-based system required dedicated personnel in the back-office to input paperwork from field technicians. Processes that should have taken minutes to complete were often taking days to complete, increasing operating costs and reducing timeliness.

Other problems:

1. Access to complete inventory database (millions of pieces of gear) was only available when located on base and was not available down range.
2. PDA-style devices were tried, but lacked sufficient processing power to handle number of WOs, SRs, and inventory entries in a usable manner.

The Solution: *SWMA tablets with CAC authentication, wireless enterprise database synching and tablet user interface (MAXIMO with modified Datasplice application), and barcode reader.*

John Downing (Warrior Training Alliance, Manager Western Region) saw the SWMA tablet platform at I/ITSEC 2009 and wanted to evaluate a test case using the SWMA to resolve the WO/SR management problem for down range technicians. Cybernet performed this enterprise tablet integration effort through Raytheon's WarFighter Focus (WFF) contract to the Army. The enterprise integration effort consisted of:

1. Initiating a complete review of existing processes and inventory management.
2. Working with WFF vendors (specifically Datasplice and IBM) to provide the complete integration into the SWMA Platform.
3. Field testing of the systems.
4. Deployment and Support.

Datasplice provides a set of software that interfaces portable devices to MAXIMO servers and provides the user interfaces to effectively use MAXIMO. They worked with Cybernet engineers to create an application that is tailored to SWMA tablet that accesses data from/to MAXIMO at remote locations. The remote location user can access and update MAXIMO in near real time. Prior to delivery of the integrated enterprise solution to Raytheon (and therefore to the Army through Raytheon) it took 40-45 minutes to do a workorder, but with the Datasplice/SWMA integration this time is reduced to 20 seconds.

Because of the computing and storage capability of the SWMA Tablet, technicians have an operational environment that provides them with access to all their work orders while in the field. In addition, personnel previously dedicated to entering follow up WOs and SRs are freed up for other tasks because technicians can enter when down range and synchronize entries upon return to head quarters.

The SWMA Tablet also provides replacement for desktop systems when not in use down range.

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 an portable for it maximizes field personnel efficiency and effectiveness in data capture, tracking, processing and analysis for the logistical and maintenance community.

Cybernet's Shipboard Wireless Maintenance Assistant (SWMA) Platform is one of few selected commercial technologies directed by the Navy to participate in Trident Warrior. Trident Warrior is the Navy's major annual operational FORCEnet Sea Trial event. SWMA is also in the process of trials for integration into the War Fighter Focus (WFF) program to support logistics and maintenance at various Army depots throughout the US. These trials have proven significant cost and time savings for maintenance personnel. The results of these experiments are proving the value of SWMA as a key technology for interfacing with legacy systems in a generic manner and providing tremendous manpower savings and with high efficiency and effectiveness.

Active Program Efforts and Developments

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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Capabilities

Multiple Source Data and Information Capture:	**Supported Applications:**
Imagery/video	Any Windows-based application
Barcode, RFID, UID	Legacy log/maint applications like SKED, ICAS, and Maximo
Multimeter	Functions under COMPOSE load
Direct equipment interfaces	
Rapid High-Performance Data Processing:	**Flexibility via Form Factor and Hardware Design:**
Hosting of user manuals and procedures documents	High-performance computer in Tablet PC form, designed to be uniquely qualified for field maintenance operation environments
Image annotation	
Collaboration and access to alternative source information	Meets all military and industry standard ruggedized specifications
Schedule and task management	Incorporates water proof specifications (IP65)
Electronic Checklists	Wireless and wired operations

Specifications

Dimensions: 11.75”x 9”x3.375” 5.5 lbs. MIL-STD 810F Enclosure: Method 512.4 Procedure 1 (Sand/Dust/Salt Fog) Solar Radiation, UVB, IP65 (Equiv.) 10.4” XGA (1024x768) Display: Pen & Finger Touch Dual Mode	Temperature Ratings: MIL-STD 810G Methods 501.4/502.4 -4° to 140° (operational) -60° to 160° (storage) Shock & Vibration Ratings: • MIL-STD 810F • Method 516.5 • Up to 4ft drop (to concrete) • 75g, 11ms Crash Shock	Processor Options: • Intel i7 620UE 1.06 GHz 2.13 GHz Turbo Memory: • 2GB (standard) • 8GB (max) Hard Drive Options: • 320GB Hard Drive (standard) • 80GB Solid State (option)	Wireless: • Bluetooth 2.1 + EDR • 802.11a/b/g/n • FIPS 140-2 •Other wireless methods (optional, available) Battery: • 10 cell (65Whr) battery • Up to 6.5 hour lifetime • Warm swap	Ports and I/O Connections: • 3 USB 2.0 ports • 2 SWMA Module Connectors • RJ-45 Gigabit LAN Ethernet • Serial Port (RS232/422/485) • VGA (option, in place of serial port) • Smartcard Reader (optional) • Headset Jack • Microphone Jack • DC-in Jack • CAC Reader

Products and Selected Accessories

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