

technology **today**

HIGHLIGHTING RAYTHEON'S TECHNOLOGY

2006 Issue 2



RAYTHEON MISSION SUPPORT
Delivering superior technology
and solutions our customers can count on

Raytheon

Customer Success Is Our Mission

Raytheon Mission Support ReadiLog™ Integrated Solution Sets

Condition Based Maintenance and Remote Equipment Monitoring Assessment Systems (REMAS™)

Raytheon's ReadLog Integrated Solution Sets were created as tools to use in providing total Mission Support to Raytheon's customers, whether they're using Raytheon systems and products or those manufactured by a third party. Condition-Based Maintenance (CBM), one of the eight Integrated Solution Sets, is where REMAS.gov, LLC comes into play, providing the data integration functions described below.

REMAS (Remote Equipment Monitoring Assessment Systems) is a privately held Colorado company that evolved in the 1990s from energy applications to present government applications in defense, homeland security, communications and energy market sectors. REMAS has developed and owns a wide variety of commercial-off-the-shelf (COTS) hardware/firmware/software products that provide Raytheon users with highly adaptable and inexpensive data integration/multiplexer (i.e., data "mux") toolsets for data acquisition, delivery and display.

REMAS products are accredited and deployed by the U.S. Departments of Defense, Energy, Interior, Homeland Security and others, including various Raytheon product lines. Deployed applications of REMAS products include a wide variety of applications: air-sea-land defense systems, energy assets, mobile assets, and satellite and radio communication links. REMAS provides only data integration services and thereby has no bias in best supporting Raytheon product line and customer data integration needs.

Why use Raytheon's CBM solution set and REMAS products?

Products are often mission-critical components of platforms that are required to maintain elevated levels of readiness and performance/reliability. Readiness and performance/reliability requirements, whether stipulated by the customer or offered by the product line manufacturer, typically determine and underscore the need for the services available from the CBM program. Many of these readiness and performance/reliability objectives can carry significant financial incentives for either maximizing readiness-performance-reliability or minimizing down-

time. Raytheon's CBM program provides proven and configurable tools to support customers' readiness and performance/reliability objectives.

Raytheon's CBM program depends on the timely delivery of various system data. System data can be used by predictive analytic software along with subject matter experts to diagnose, prevent and predict maintenance issues. REMAS functions within Raytheon's CBM program include:

- Acquire specified data from products
- Deliver specified data to designated expert systems and/or system experts
- Display data per customer business rules

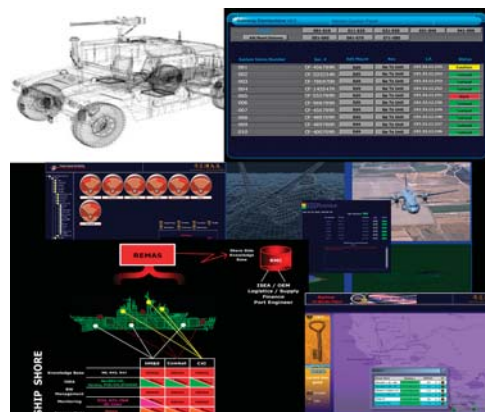
How does Raytheon's CBM program use REMAS services?

Raytheon's CBM program uses the following REMAS data integration services:

- Non-invasive data acquisition
- Data/bandwidth communication management
- Configurable human-machine-interface (HMI) data displays within customer security specifications

REMAS provides these data integration services by use of its COTS hardware, firmware and software products. These products provide a high degree of flexibility for acquiring and delivering system data to the predictive analytic software and subject matter experts of Raytheon's CBM program.

REMAS hardware consists of defense-accredited single board computers (i.e., blackboxes). The REMAS blackboxes are available with a variety of form factors, operating systems, memory and ruggedization options and provide non-invasive data acquisition. REMAS firmware is embedded on the blackboxes and affects all necessary machine-communication-business rule protocols. REMAS software is mirrored on blackboxes and support servers, and consists of HMI sets (data aggregation, segregation, drill-up/down), as defined by customer business rules. REMAS software also



includes a variety of bandwidth management, data format and database options.

REMAS manages security of its data integration solutions in accordance with physical security doctrines, whereby no single portion of REMAS data services contain the entire application. This physical security doctrine when combined with existing REMAS defense accreditations provides Raytheon customers with several data security options.

What is the REMAS value proposition to Raytheon's customers?

REMAS solutions offer the following value:

- 1) Minimal product accreditation impact via non-invasive data acquisition
- 2) Minimal operations impact via bandwidth management (typically under 1kbps)
- 3) Minimal deployment and training impact via configurable HMI graphics
- 4) Minimal manpower and false data via autonomic data porting to expert systems
- 5) Minimal time and cost to delivery via COTS solutions with defense accreditations

REMAS data integration solutions cause minimal time and expense impacts and afford the ability to rapidly acquire, deliver and display data enabling Raytheon's CBM solutions to meet customers' total mission support objectives in a timely and cost-effective manner. ●

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Future Events

16th Annual INCOSE (International Council of Systems Engineering) International Symposium *Systems Engineering: Shining Light on the Tough Issues* **CALL FOR REGISTRATION**

July 9–13, 2006
Orlando, Florida

Come to Florida and learn how the theme "Systems Engineering: Shining Light on the Tough Issues" applies to the broad scope of systems engineering and how systems engineering activities in commercial, academic, and government environments are converging on new best practices and novel technologies and methodologies. Many fine papers, panels and tutorials covering case studies, developmental work and technical analysis have been received, reviewed and scored; and the technical program is being set. Arrangements are being made for keynote speakers and special events that will be both entertaining and fascinating.

For information or to register, please visit: <http://www.incose.org/symp2006/index.php>

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2006 MMTN Symposium **CALL FOR REGISTRATION**

Sept. 12–14, 2006
Boston Marriott Quincy Hotel
Quincy, Massachusetts

The 6th annual Mechanical and Materials Engineering Technology Symposium will be hosted in Massachusetts by Integrated Defense Systems and the Mechanical Engineering Directorate. Co-sponsored by the Mechanical and Materials Technology

Network (MMTN) and the Mechanical Engineering and Technology Council, the MMTN symposium will be held in Quincy, Mass., not far from the revitalized Boston Harbor waterfront. The symposium provides an excellent opportunity to gain insight into the technology innovation at Raytheon and the people that contribute to it.

For information or to register, please visit: <http://home.ray.com/rayeng/technetworks/tab6/mmtn2006>

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10th Annual Raytheon Processing Technology Expo *Innovation in a Competitive Marketplace* **CALL FOR REGISTRATION**

Oct. 3–5, 2006
Richardson Hotel
Richardson, Texas

The 10th Annual Raytheon Processing Technology Expo will feature three days of presentations, exhibits and workshops in all areas related to signal and data processing technology.

The Processing Technology Expo is an excellent opportunity for Raytheon technologists and engineers to exchange ideas with others working on processing-related projects and interact with leading customer representatives. This year's event will focus on Raytheon innovation in an increasingly competitive marketplace. Customer desires for use of commercial-off-the-shelf (COTS) technology brings new challenges — technology refresh and obsolescence, software portability and efficiency, and hardware ruggedization. For many applications, COTS technology at the system, board or even component levels is not the best solution.

The expo provides a forum to increase awareness of Raytheon's experience in these and other areas of processing technology.

For information or to register, please visit: <http://home.ray.com/rayeng/technetworks/tab6/pstn2006>

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6th Annual CMMI Technology Conference and User Group **CALL FOR REGISTRATION**

Nov. 13–16, 2006
Hyatt Regency Tech Center
Denver, Colorado

The Systems Engineering Division of the National Defense Industrial Association, in conjunction with the Software Engineering Institute, Carnegie Mellon University, is pleased to announce the 6th Annual CMMI® (Capability Maturity Model® Integration) Technology Conference and User Group.

The purpose of the conference is to exchange ideas, concepts and lessons learned concerning the continuing evolution, adoption and use of CMMI and its associated appraisal (assessment and evaluation) methods. This conference brings together CMMI adopters, users, developers and appraisers, as well as those with general interest in process improvement. It provides a forum for the free exchange of ideas and affords a unique opportunity to meet with the sponsors, developers and stewards of CMMI, as well as those offering training and implementation assistance.

For information or to register, please visit: <http://www.ndia.org/Template.cfm?Section=7110&Template=/ContentManagement/ContentDisplay.cfm&ContentID=10838#papers>

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We are always looking for ways to connect with you — our engineering, technology and Mission Assurance professionals. If you have an article or an idea for an article regarding technical achievements, customer solutions, relationships, Mission Assurance, etc., send it along. If your topic aligns with a future issue of *technology today* or is appropriate for an online article, we will be happy to consider it and will contact you for more information. Send your article ideas or suggestions to techtodayeditor@raytheon.com. We're waiting to hear from you!