ROCKWELL COLLINS
ROCKWELL ADAPTIVE MANAGEMENT SYSTEM (RAMS)
Rockwell Collins’ Rockwell Adaptive Management System, or RAMS, is a modular, open architecture communications control system. RAMS ensures scalability and flexibility, ease of operation and designed in-system growth capabilities for superior communications systems asset management, from controlling one radio to managing a globally-deployed communications network.

RAMS capabilities are derived from Rockwell Collins’ 40 years of experience in developing communications control systems. We are the trusted source for communications systems management and overall information connectivity. Our heritage includes 70 years of performance and quality, leveraging our expertise across the commercial and military sides of our business to deliver reliable, industry-leading communication, navigation, display and integrated systems technologies.

Our world-class portfolio of communications products covers the operational military waveform spectrum from 14 kHz to 44 GHz. The portfolio includes data links, narrowband and wideband communications, networking, electronic warfare, integrated communications systems and communications asset management. In navigation, we developed and manufactured the first generation military Global Positioning System (GPS) user equipment in 1979 and continue to advance this technology, while delivering over 300,000 receivers for military aircraft, missiles and munitions, and ground vehicles. In displays, Rockwell Collins is a world leader, providing a range of sophisticated formatting capabilities and display products covering customer requirements from head-up, to head-down and helmet-mounted displays.

Combining our expertise in communications, navigation and displays with our expertise in platform and systems solutions, Rockwell Collins Government Systems provides integrated products, subsystems and systems solutions for military requirements across today’s joint forces battlespace.

This innovation continues with the Rockwell Adaptive Management System (RAMS), the next generation control foundation for integrated communications systems.
The Modular Open Architecture Solution

Operational Flexibility/Scalability: The Rockwell Adaptive Management System is a modular, stand-alone solution designed to provide single and multiple workstation remote control of a wide variety of devices such as radios, audio and antenna switches, antenna rotators, emergency power supplies, GPS and facilities monitors.

Ease of Operation: RAMS incorporates a user-friendly interface with key foundational elements that include the Windows® 2000 and Windows® XP operating systems.

Designed in Systems Growth: RAMS is an object oriented adaptive infrastructure designed to be configurable to multi-platform, multi-domain integrated communication systems and provides the flexibility to accommodate future system integrations.

Typical RAMS Systems Layout

RAMS Functionality and Features

Equipment Control and Monitor
- Transmitters and receivers
- Antennas
- Discrete controls
- Facilities management

Improved Operations
- Designed for communication to continue even if key components of the system have failed
- Multiple operator types
- Touch screen support

Multiple Access Controls
- RAMS layer that limits software capability based on user privileges
- Windows operating system layer with the ability to prevent data/application access without the appropriate user permission
Proven Components for Superior Command and Control

Rockwell Collins leverages the experience gained on previous programs with our demonstrated system expertise to develop the lowest risk, most adaptable universal communication controls solution.

Easily Expandable

RAMS utilizes several commercial off-the-shelf applications and closely conforms to DIICOE standards and strategies. The system utilizes the Windows® 2000 and Windows® XP operating systems to reduce cost in achieving DIICOE compliance and incorporates several standard computing languages and protocols, including SQL, ANSI C++, TCP/IP and SNMP. These applications enable RAMS to manage diverse assets at remote locations while allowing growth and adaptability to system requirements.

Highly Reliable Distributed Database

For a distributed relational database, RAMS utilizes the features of Sybase® Adaptive Server® to provide a redundant and replicated database infrastructure. This commercially available, standards based software, provides:

- Performance – All database access is performed locally, eliminating delays due to cross network data transfers.
- Independence – Remote locations can work independently if communications are severed.
- Scalability – Database framework is not limited and can expand or decrease in size based on the capabilities of the commercial database.

Easy-to-Use Operator Interface

Day-to-day operations demand a user interface that maximizes consistency of user inputs, flexibility of user control and optimization of window layouts. Because RAMS is hosted on the Windows® 2000 and Windows® XP operating systems, the system supports multiple types of users within a familiar operational environment.
EXTENSIBLE/ADAPTABLE--TO SUPPORT GROWING SYSTEM REQUIREMENTS

RAMS designed-in flexibility supports system growth, accommodating additional devices and users without major impact to the deployed system. RAMS does this by utilizing “logical” configurations allowing users to set up information in the systems software. This enables RAMS to establish a relationship between the software and hardware, allowing operators to configure the system without having all components physically connected. As components are added, the software automatically fills in a systems tree to assist the operators in quickly locating system components.

This approach ensures easy system expansion to meet the ever-changing requirements for today’s software controlled communications systems. The user can quickly and easily add new devices, increase network size and/or network nodes and add new software.

RAMS conforms to a wide variety of commercial and military standards while maintaining the most flexibility and adaptability. It provides core system components and functionality needed for an array of integrated communications systems.

Core Features

- **Distributed Control**
  Allows the capabilities of RAMS to be spread throughout the processors within the system.

- **Systems Redundancy**
  Capable to tolerate processor failures without producing a system failure.

- **Asset Management**
  Allocates and manages resources based on priority and operator groups.

- **Circuit Management**
  Creates, manages and releases communication paths, including RF assets, telephony assets and other devices.

- **CORE Graphical User Interface**
  By employing reusable core software in a layered architecture and building on the DIICOE base, RAMS can evolve to accommodate future operating systems and thus provide unlimited growth for your software investment.

- **System Logging**
  Creates, searches, archives and manages various logs including activity, traffic, fault and configuration logs.

- **System Configuration**
  Creates and maintains the configuration of the system. This includes device types, quantities and characteristics, and other presets, mission plans, and parameters needed for system operation.

- **File/Print Management**
  Capable of interfacing with operating system capabilities to provide file and print management for RAMS produced files.

- **Fault Management**
  Provides diagnostic and Built-In Test support to assist maintenance personnel in system support.

- **Preset**
  Provides a means to establish communications paths quickly and with minimal operator intervention.

### 2002 CAPABILITIES

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<th>ALE</th>
<th>TX/RX Matrix</th>
<th>RLP</th>
<th>Asset Management</th>
<th>Redundancy</th>
<th>Circuit Management</th>
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<td>O9600 Modern</td>
<td>Discrete</td>
<td>Frequency Management</td>
<td>Activity Log</td>
<td>Operator Management</td>
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<td>Voice Control</td>
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<td>Redxin Radio</td>
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### 2003-2005 PLANNED ENHANCEMENTS

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The network is expanded to include several system network nodes. These nodes may be placed on land, air or sea platforms and have the capability to provide global communication.
GLOBAL SUPPORT

Rockwell Collins recognizes the importance of service and support to mission reliability and reduced life-cycle costs. Our award-winning worldwide service network is positioned to support your mission needs.

RAMS supports numerous add-on applications without requiring modifications to the core system components.

Installable Applications

- **Radio Control**
  Supports features and capabilities of Rockwell Collins radios, including RT-2200.

- **MIL-STD-188-141A/B ALE**
  Supports split-site ALE operations with RT-2200 radios.

- **Facility Monitoring**
  Provides facility monitoring and control, including potential interfaces with fire control, physical security and similar external systems.

- **GPS**
  Uses Rockwell Collins’ PLGR to provide time and position data to the system.

- **Antenna Matrix**
  Provides automatic connection of radio and antenna equipment.

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