

# ARCHIVED REPORT

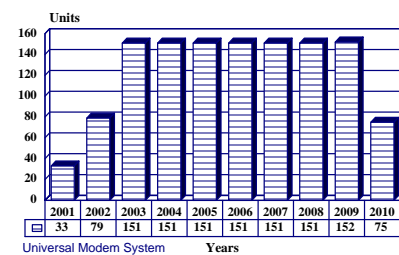
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## Universal Modem System - Archived 03/2002

### Outlook

- Anticipate UMS production to increase sharply from 2001 to 2003
- Look for the UMS to maintain a healthy and steady rate of production from 2004 through 2010
- Look for US to consider developing an Anti-Satellite Weapons System

10 Year Unit Production Forecast  
2001 - 2010



### Orientation

**Description.** The Universal Modem System (UMS) is a US Army endeavor. The UMS provides voice and data transmission through the DSCS III, NATO, or SKYNET 4 satellite systems. The distinguishing characteristic of the UMS is its ability to provide satellite communications connectivity when the earth's atmosphere is disturbed by nuclear flashes.

#### Sponsor

Defense Communications Agency  
Washington, DC  
USA

(Overall DSCS program management, system engineering and satellite operational direction)

#### US Army

Army Communications-Electronics Command  
Fort Monmouth, New Jersey (NJ)  
USA

#### Contractors

Rockwell Collins  
400 Collins Road NE  
Cedar Rapids, IA 52498  
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Web: <http://www.rockwellcollins.com>

**Status.** In production.

**Total Produced.** It is estimated that 222 Universal Modem Systems have been produced through FY00.

**Application.** The UMS enables US, UK, and NATO defense forces to communicate voice and digital data via satellite during sub-optimal atmospheric conditions.

**Price Range.** The price of a Universal Modem System is approximately US\$1.41 million (FY00 dollars).

## Technical Data

### Universal Modem System

#### Characteristics

Dimensions: 483 x 533 x 508 mm  
Weight: 78.75 kg

**UMS Design Features.** The Universal Modem System is designed for ground (fixed and transportable), airborne, and shipboard users. The system supports commercial satellite planning and exploits COTS hardware.

The UMS is packaged to function in a worst-case environment: it offers 12 full duplex channels in a 533 mm configuration. The Universal Modem System is also 100 percent interoperable with the OM-73 modem.

## Variants/Upgrades

The Universal Modem. There are two versions of the Universal Modem: an Airborne Terminal Variant (ATV) for the US Air Force and a Mobile Terminal

Variant (MTV) for the United Kingdom. No other versions are anticipated at this time.

## Program Review

Universal Modem System. In March 1991, the US Army awarded a contract for the development of the Universal Modem System. The contract went to the team of Magnavox Electronic Systems Company, BAE Systems-Alenia Marconi (formerly GEC-Marconi Secure Radio), and COMSAT. Under the US\$13.1 million agreement, the three companies would develop 66 universal modem units (12 of the units would be developmental) and five interim system planning computers. The agreement also covered two one-year options for support services.

From 1991 to 1994, engineering and manufacturing development of the UMS took place. Basic Universal Modem development was completed in 1995. Technical testing and low rate production of the system immediately followed.

In March of 1997, a team led by Rockwell's Communications Systems division was selected by the US Army Communications and Electronics Command to produce satellite communications equipment as part of the UMS terminal production program. The US\$20 million contract called for the testing, production, and delivery of 18 Universal Modem Systems. The 18

systems then underwent field operational testing and evaluation by the US Army.

The Rockwell contract contains options to provide for the production, delivery, and support of an additional 1,190 Universal Modem Systems. The options are valued at US\$180 million and could extend the program through the year 2009. Rockwell is excited about this latest agreement. When asked about the UMS deal, a Rockwell executive said, "The UMS program is a tangible sign that our team's vision is well focused towards providing best value solutions for our Army customer."

UMS Program Moving Forward. The rubber is meeting the road for the Universal Modem System. Throughout 1999, technical-interchange meetings were held to ensure the system's stability. The meetings focused on software and hardware issues. In the spring of 2000, follow-on testing and evaluation of the UMS took place. Fielding of the system began in June 2000. At this time, Forecast International anticipates Universal Modem System production to be on schedule for the next couple of years.

## Funding

| <b>US FUNDING</b>            |                   |            |                   |            |                   |            |                   |            |
|------------------------------|-------------------|------------|-------------------|------------|-------------------|------------|-------------------|------------|
|                              | <u>FY98</u>       |            | <u>FY99</u>       |            | <u>FY00 (Req)</u> |            | <u>FY01 (Req)</u> |            |
|                              | <u>QTY</u>        | <u>AMT</u> | <u>QTY</u>        | <u>AMT</u> | <u>QTY</u>        | <u>AMT</u> | <u>QTY</u>        | <u>AMT</u> |
| <b>Procurement (US Army)</b> |                   |            |                   |            |                   |            |                   |            |
| DSCS-Jam Resistant           |                   |            |                   |            |                   |            |                   |            |
| Secure Comm.                 |                   |            |                   |            |                   |            |                   |            |
| (BA8300)                     | -                 | 18.2       | -                 | 13.9       | -                 | 14.1       | -                 | 8.9        |
| Total                        |                   | 18.2       |                   | 13.9       |                   | 14.1       |                   | 8.9        |
|                              | <u>FY02 (Req)</u> |            | <u>FY03 (Req)</u> |            | <u>FY04 (Req)</u> |            | <u>FY05 (Req)</u> |            |
|                              | <u>QTY</u>        | <u>AMT</u> | <u>QTY</u>        | <u>AMT</u> | <u>QTY</u>        | <u>AMT</u> | <u>QTY</u>        | <u>AMT</u> |
| <b>Procurement (US Army)</b> |                   |            |                   |            |                   |            |                   |            |
| DSCS-Jam Resistant           |                   |            |                   |            |                   |            |                   |            |
| Secure Comm.                 |                   |            |                   |            |                   |            |                   |            |
| (BA8300)                     | -                 | 6.2        | -                 | 6.2        | -                 | 4.5        | -                 | 3.9        |
| Total                        |                   | 6.2        |                   | 6.2        |                   | 4.5        |                   | 3.9        |

All US\$ are in millions.

Source: US Army Procurement Backup Book, FY01 Budget Estimate: Other Procurement, Army Activity 2, Communications and Electronics.

## Recent Contracts

| <u>Contractor</u> | <u>Award (\$ millions)</u> | <u>Date/Description</u>   |
|-------------------|----------------------------|---|
| Rockwell          | 180.0*                     | Mar 1997 – A US\$20 million FFP contract for 18 Universal Modems. Future contract options, if exercised, will extend the program through 2009 for the production of an additional 1,190 Universal Modems totaling US\$180 million. Contract awarded by US Army CECOM. |
| Rockwell          | 10.3                       | Apr 1998 – Modification to FFP contract for the purchase of additional Universal Modem Systems (for tactical and strategic use). Scheduled for completion in March 2001. (DAAB07-97-C-A157)   |

\* If all options are exercised.

## Timetable

| <u>Month</u> | <u>Year</u> | <u>Major Development</u>  |
|--------------|-------------|---|
| FY           | 1991        | Universal Modem development begins                                      |
| FY           | 1994        | Universal Modem testing begins  |
| FY           | 1995        | Universal Modem limited rate initial production begins                  |
| FY           | 1996        | Universal Modem initial operational capability                          |
| FY           | 1997        | First Universal Modem delivered   |
| FY           | 1999-2009   | UMS production on schedule; procurement of 1190 Universal Modem Systems |

## Worldwide Distribution

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The Universal Modem System is a **US Department of Defense** program.

### Forecast Rationale

The UMS also overrides attempts to jam satellite signals.

Forecast International expects production of the Universal Modem System (UMS) to *increase sharply from 2001 to 2003* and then maintain a healthy and steady rate of production through 2010 (see **Ten-Year Outlook Chart**). A pragmatic factor accounts for this.

The United States defense forces are heavily dependent on satellites for communications and data gathering operations. Therefore, the US Department of Defense feels a need to take sound safeguards to protect these satellite systems. From a practical perspective, it makes sense to guard something the US military is extremely reliant upon.

However, the future of the Universal Modem program is a different story when taking US political considerations into account. A congressionally mandated panel studying threats to US satellites is calling for the United States to take more aggressive measures to protect its military satellite communications systems—more aggressive than the Universal Modem program.

The panel of experts wants the US DoD to field anti-satellite weapons (ground-based and space-based) that

seek and destroy targets upsetting US defense satellite communications. If the panel's recommendation becomes a reality, the Universal Modem System may become obsolete. The future of the UMS then depends on the likelihood of the US congress passing and the new President signing an Anti-Satellite Weapons System budget proposal.

Such a proposal would likely be supported by the new Bush Administration. The congressional panel recommending an Anti-Satellite Weapons System was chaired by Donald Rumsfeld, US Secretary of Defense.

The US congress would likely pass an Anti-Satellite Weapons System proposal as well. The Republican Party rules the House of Representatives. Democrats and Republicans share even numbers in the Senate. Vice President Dick Cheney would cast the deciding vote in the Upper branch of congress.

Obviously, all of this is speculation. Presently, the Universal Modem System is moving full steam ahead with production. However, the future of the UMS will be decided by politics "inside the Beltway."

## Ten-Year Outlook

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### ESTIMATED CALENDAR YEAR PRODUCTION

| Designation            | Application                         | Thru 00 | High Confidence Level |    |     |     | Good Confidence Level |     |     |     | Speculative |    | Total 01-10 |
|------------------------|-------------------------------------|---------|-----------------------|----|-----|-----|-----------------------|-----|-----|-----|-------------|----|-------------|
|                        |                                     |         | 01                    | 02 | 03  | 04  | 05                    | 06  | 07  | 08  | 09          | 10 |             |
| UNIVERSAL MODEM SYSTEM | COMMUNICATION CONNECTIVITY (US DoD) | 222     | 33                    | 79 | 151 | 151 | 151                   | 151 | 151 | 151 | 152         | 75 | 1245        |