

ARCHIVED REPORT

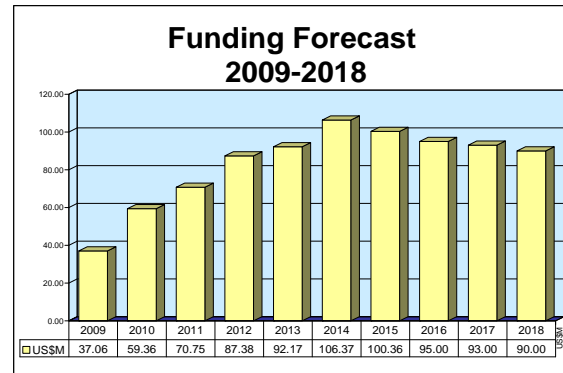
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RF Systems Advanced Technology (U.S. Navy)

Outlook

- In FY08, a study was initiated under the program to develop affordable electronically scanned array technology for next generation naval platforms
- In FY08, Next Generation Airborne Electronic Attack effort began with execution of a threat assessment study
- FY07 funding covered completion of the MFEW/ES Program Technology Development Phase



Orientation

Description. PE#0603271N, Radio Frequency (RF) Systems Advanced Technology, is a U.S. Navy program that funds development of technologies to improve surveillance, electronic warfare, and communications systems.

Sponsor

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Status. Technology-based development.

Application. RF Systems Advanced Technology addresses radio frequency technology used for radar, electronic warfare systems, and communications systems.

Technical Data

Work in PE#0603271N addresses technologies critical to the transformation to network-centric warfare, which utilizes multiple, simultaneous, and continuous communications/datalinks between platforms, while at the same time performing the functions of electronic warfare and radar surveillance. The Radio Frequency

Systems Advanced Technology Program addresses RF technology for Surface and Aerospace Surveillance sensors and systems, electronic warfare sensors and systems, RF communications systems, and multifunction sensor systems.

Program Review

The Advanced Multi-function Radio Frequency (AMRF) technology effort emphasizes the development, demonstration, and transition of wideband, high-performance multifunction radio frequency apertures capable of transmitting and receiving multiple, simultaneous, independent RF beams, while providing reduced signature and number of apertures. These efforts were funded at \$24.264 million in FY03, \$18.458 million in FY04, and \$43.609 million in FY05. The remaining PE funding in those years supported several radar and sensor efforts that were no longer included after FY05.

FY04 plans were to initiate development of a Multifunction Electronic Warfare System (MFEW)/Advanced Multi-function Radio Frequency Concept (AMRF-C) Version 2, complete the multifunction RF technology hardware, architecture, and component testing for the AMRF-C effort, and demonstrate the initial capability of the multifunction RF technology testbed. This effort was to include initial designs for wideband technology with power and linearity sufficient to support communications, EW, and limited radar functions.

FY05-FY07 plans called for MFEW/ES core software development, and initiating the development of a high-band-array antenna and a mid-band-array antenna capable of simultaneously supporting multiple

electronic support measures (ESM) surveillance functions for the MFEW/ES advanced development model (ADM). The program also initiated development of back-end analog receiver equipment supporting MFEW/ES ADM and started a systems integration, risk reduction, and Navy critical subsystem development effort leading to the demonstration of MFEW/ES ADM in a relevant operational environment and supporting MFEW/ES hardware/component testing within the AMRF-C testbed. All of these efforts were to be completed in FY07.

Rapid Technology Insertion

Under FY07 funding, the MFEW/ES Program Technology Development Phase and development of the S-band Digital Array Radar prototype were completed. Also supported by FY07 funding was the launch of the "Shipboard EW Improvement and Electronic Attack Transmitter" projects to develop an EW/EA capability for rapid technology insertion into DD(X) and other ship classes utilizing MFEW/ES ADM components and architecture and AMRF-C testbed technology.

In FY08, the program initiated the Next Generation Airborne Electronic Attack effort by performing a threat assessment study. The program also initiated a study to develop affordable electronically scanned array technology for next generation naval platforms.

Funding

U.S. FUNDING

	FY07 <u>QTY</u>	FY07 <u>AMT</u>	FY08 <u>QTY</u>	FY08 <u>AMT</u>	FY09 <u>QTY</u>	FY09 <u>AMT</u>	FY10 <u>QTY</u>	FY10 <u>AMT</u>
RDT&E (U.S. Navy)								
PE#0603271N								
Advanced Technology	-	94.65	-	41.20	-	37.06	-	59.36
	FY11 <u>QTY</u>	FY11 <u>AMT</u>	FY12 <u>QTY</u>	FY12 <u>AMT</u>	FY13 <u>QTY</u>	FY13 <u>AMT</u>	FY14 <u>QTY</u>	FY14 <u>AMT</u>
RDT&E (U.S. Navy)								
PE#0603271N								
Advanced Technology	-	70.75	-	87.38	-	92.17	-	-

All \$ are in millions.

Source: FY2009 U.S. Budget Documents

RF Systems Advanced Technology (U.S. Navy)

Worldwide Distribution/Inventories

This is a **United States**-only program.

Forecast Rationale

Radio Frequency Systems Advanced Technology develops a number of important programs for the U.S. Navy. These programs involve all equipment that utilize radio frequencies, including radar, communications equipment, and EW equipment. Some of the latest efforts funded by the program include the multi-function electronic warfare (MFEW) system and affordable active array technology.

Congressional interest in protecting the U.S. R&D base favors this type of program, which has resulted in plus-ups for particular efforts beginning in FY03. Due to

congressional approval, as well as the importance of the program's research, funding should remain strong throughout the forecast period. Forecast International expects Congress to boost spending for the RF Systems Advanced Technology program in 2008 and 2009.

Over the next 10 years, expect the U.S. to spend \$831 million on the RF Systems Advanced Technology program. Funding will cover a variety of projects. Forecast International expects funding to increase through 2014, and then slowly decline after.

Ten-Year Outlook

ESTIMATED CALENDAR YEAR RDT&E FUNDING (in millions \$)												
Designation or Program	High Confidence					Good Confidence			Speculative			Total
	Thru 2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
MFR Varies												
RF Systems Advanced Technology <-> United States <-> Navy												
	234.60	37.06	59.36	70.75	87.38	92.17	106.37	100.36	95.00	93.00	90.00	831.45
Total	234.60	37.06	59.36	70.75	87.38	92.17	106.37	100.36	95.00	93.00	90.00	831.45