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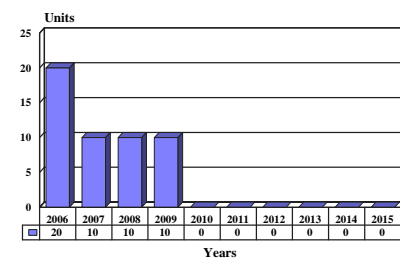
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Standard Terminal Automation Replacement System (STARS) - Archived 1/2007

Outlook

- Forecast International expects the U.S. FAA and the U.S. DoD to purchase some 50 Standard Terminal Automation Replacement Systems from 2006 to 2009
- Look for Phase One of U.S. FAA STARS deployment to be completed by the end of fiscal year 2007

10 Year Unit Production Forecast
2006 - 2015



Orientation

Description. The Standard Terminal Automation Replacement System (STARS) is a state-of-the-art air traffic control system for managing terminal area airspace. The STARS is replacing aging computers and air traffic controller displays with modern, reliable equipment. Raytheon Company manufactures STARS.

Sponsor

U.S. Department of Transportation – FAA
Washington, DC
USA

U.S. Department of Defense – DoD
Washington, DC
USA

Status. In production.

Total Produced. Forecast International estimates that 118 Standard Terminal Automation Replacement Systems had been produced through 2005.

Application. The management of terminal area airspace.

Price Range. In April 2005, the U.S. Federal Aviation Administration (FAA) awarded Raytheon Company a \$57 million contract option for continued deployment of the Standard Terminal Automation Replacement System (STARS). The contract option includes production and deployment of 14 STARS for the U.S. FAA and nine STARS for the U.S. Department of Defense (DoD). Given this data, Forecast International estimates that a single Standard Terminal Automation Replacement System costs approximately \$2.48 million (\$57 million divided by 23 systems).

Contractors

Raytheon Company, <http://www.raytheon.com>, 870 Winter St, Waltham, MA 02451-1449 United States, Tel: + 1 (781) 522-3000, Fax: + 1 (781) 860-2520, Prime

Technical Data

Design Features. The Standard Terminal Automation Replacement System receives radar data and flight plan information. The STARS then presents the information

to air traffic controllers on high-resolution, 20" x 20" color displays, allowing the controller to monitor, control, and accept hand-off of air traffic. The new

color displays have been specially developed for air traffic control. These new displays are exceptionally readable when viewed at close range by the controller. The STARS is also capable of displaying six distinct levels of weather data (identified by different colors) simultaneously with air traffic, allowing controllers to direct aircraft around bad weather.

The STARS' open architecture and built-in expansion capability allow for easy incorporation of new, sophisticated software-based tools aimed at improving safety and efficiency in the terminal area. The STARS will accommodate projected air traffic growth and the introduction of new systems that will contribute to the overall safety and efficiency of the National Airspace System (NAS).

The STARS is capable of tracking up to 1,350 airborne aircraft simultaneously within a terminal area. The system is capable of interfacing with multiple radars (up to 16 radars, both short range and long range), 128 controller positions, and 20 remote towers, and provides a 400 x 400-mile area of coverage.

The STARS Terminal Controller Workstations (TCWs) have been designed to provide position-by-position in-place replacement of failing system displays. They provide up to 14 adaptable data block types and 16 adaptable list types to accommodate current and future display requirements. The TCW provides controllers with preference sets that allow for easy re-sectorization.

Variants/Upgrades

Raytheon manufactures a military version of the Standard Terminal Automation Replacement System. The military version is known as the DoD Advanced Automation System (DAAS).

Program Review

Background. In September 1996, the U.S. FAA selected Raytheon Company as the prime contractor to manufacture and deploy the Standard Terminal Automation Replacement System. The FAA has broken STARS deployment into phases. Under Phase One, the STARS is being deployed to 47 air traffic control facilities.

In June 2003, the FAA commissioned the first "final" complete version of the STARS at the Philadelphia International Airport's terminal radar approach control (TRACON) facility. The official name of this version of STARS is the Standard Terminal Automation Replacement System, Full Service version 2+ (STARS FS-2+). As of August 2003, the FAA had installed the STARS FS-2+ at airports in El Paso, Texas; Portland, Oregon; and Miami, Florida.

In May 2004, Raytheon announced that the FAA had commissioned the STARS for Logan International

Airport in Boston and Manchester Airport in New Hampshire.

Recent Activity. April 2005, the U.S. FAA awarded Raytheon Company a contract option for continued deployment of the Standard Terminal Automation Replacement System. The option includes production and deployment of 14 STARS for the FAA and nine for the U.S. Department of Defense. In June 2005, the Department of Defense committed to full production of STARS at all of its remaining air traffic control facilities worldwide.

As of July 2005, 37 FAA and 22 Department of Defense sites were fully operational with new Standard Terminal Automation Replacement Systems. By the end of the first phase, expected in fiscal year 2007, the STARS will be operational at 18 of the FAA's 35 most critical, high-volume airports that together handle approximately 50 percent of air traffic.

Funding

Neither the U.S. Federal Aviation Administration nor the U.S. Department of Defense has created a program element that exclusively funds the Standard Terminal Automation Replacement System.

Recent Contracts

<u>Contractor</u>	<u>Award (\$ millions)</u>	<u>Date/Description</u>
Raytheon Company	57.0	Apr 2005 – The U.S. Federal Aviation Administration awarded Raytheon Company a contract option for continued deployment of STARS. Option includes production and deployment of 14 systems for the U.S. FAA and nine for the U.S. Department of Defense.

Timetable

<u>Month</u>	<u>Year</u>	<u>Major Development</u>
	1996	STARS contract awarded to Raytheon
	1997	U.S. FAA tests an early version of STARS, and raises concerns about the way aircraft data are displayed on radar screens
	1999	FAA recalculates the cost to employ STARS at \$1.4 billion
Mar	2002	FAA lowers its STARS cost estimate to \$1.33 billion and reduces the number of facilities receiving STARS to 74
Jun	2003	FAA commissions the first “final” complete version of STARS at Philadelphia International Airport
May	2004	FAA commissions STARS for Logan International Airport in Boston and Manchester Airport in New Hampshire
April	2005	FAA awards Raytheon a contract option for continued deployment of STARS
July	2005	37 FAA and 22 Department of Defense sites fully operational with new STARS
	FY 2007	First phase of FAA STARS deployment to be completed

Worldwide Distribution

At present, the **U.S. Federal Aviation Administration** and the **U.S. Department of Defense** are the only entities using the Standard Terminal Automation Replacement System.

Forecast Rationale

The Standard Terminal Automation Replacement System (STARS) is a state-of-the-art air traffic control system used for managing aircraft in airspace from 0 to 60 miles surrounding an airport. Air traffic controllers use the system to separate and sequence arriving and departing aircraft and to display weather advisories. STARS is a joint procurement for the U.S. Federal Aviation Administration and the U.S. Department of Defense.

As indicated in the **Ten-Year Outlook** chart, Forecast International projects that the FAA and the DoD will

purchase some 50 Standard Terminal Automation Replacement Systems from 2006 to 2009. The need to replace older-generation computers and displays used by air traffic controllers is driving STARS procurement.

STARS (manufactured by Raytheon Company) includes new computers, about 1.4 million lines of new software tailored to individual sites, and new controller workstations and displays. STARS is also designed with backup capabilities so that the failure of a single component will not cause a system failure.

Ten-Year Outlook

ESTIMATED CALENDAR YEAR PRODUCTION

Designation	Application	Thru 05	High Confidence Level				Good Confidence Level				Speculative				Total 06-15
			06	07	08	09	10	11	12	13	14	15			
STARS	ATC (U.S. FAA /U.S. DOD)	118	20	10	10	10	0	0	0	0	0	0	0	50	