

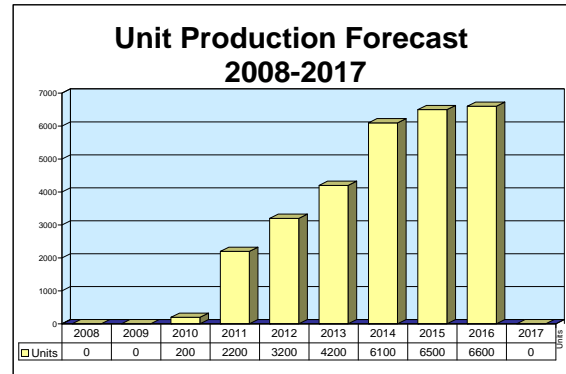
# ARCHIVED REPORT

For data and forecasts on current programs please visit  
[www.forecastinternational.com](http://www.forecastinternational.com) or call +1 203.426.0800

## FIST - Archived 6/2009

### Outlook

- Forecast International projects that the U.K. Ministry of Defence will buy approximately 29,000 FIST systems in the coming years
- Look for the U.K. MoD to award a contract for the Demonstration and Manufacture phase of the FIST program in early 2009
- Expect the first FIST system to enter service by year-end 2010



### Orientation

**Description.** The U.K.'s Future Integrated Soldier Technology (FIST) program aims to provide equipment to combat personnel that have to fight on foot at close quarters with the enemy.

The FIST system consists of multiple systems (a "system of systems"). The focus of this report is on the FIST system as a whole rather than the individual systems that comprise it.

**Sponsor**

U.K. Ministry of Defence (MoD)  
 Whitehall, London  
 United Kingdom

**Status.** The FIST program is currently in research and development.

**Application.** Dismounted combat.

**Price Range.** The cost to develop and produce 29,000 FIST systems is approximately \$1,600,734,835 in 2007 dollars (GBP800 million). Consequently, the cost to develop and produce one FIST system is approximately \$55,198 in 2007 dollars.

### Contractors

#### Prime

<b>Thales UK Ltd</b>	<a href="http://www.thaleson-line.com/uk/">http://www.thaleson-line.com/uk/</a> , 2 Dashwood Lang Rd, The Bourne Business Park, Addlestone, KT15 2NX Surrey, United Kingdom, Tel: + 44 1932 824800, Fax: + 44 1932 824948, Email: <a href="mailto:uk.enquiries@thalesgroup.com">uk.enquiries@thalesgroup.com</a> , Prime
----------------------	--

#### Subcontractor

<b>AEA Battery Systems</b>	<a href="http://www.aeat.co.uk">http://www.aeat.co.uk</a> , Denchi House, Thurso Business Park, Thurso, KW14 7XW Caithness, United Kingdom, Tel: + 44 0 1847 808060, Fax: + 44 0 1847 808080 (Power
----------------------------	---

## FIST - Archived 6/2009

	Solutions)
<b>Cobham Defence Communications Ltd</b>	<a href="http://www.cobhamdcweb.com">http://www.cobhamdcweb.com</a> , Haslingden Rd, Blackburn, BB1 2EE United Kingdom, Tel: + 44 1254 292 020, Fax: + 44 1254 292 035 (Long-Range Radios)
<b>NP Aerospace Ltd</b>	473 Foleshill Rd, Coventry, CV6 5AQ United Kingdom, Tel: + 44 1203 638464, Fax: + 44 1203 687313, Email: <a href="mailto:info@np-aerospace.co.uk">info@np-aerospace.co.uk</a> (Body Armor; Helmets)
<b>Police Resources International Ltd</b>	<a href="http://www.karrimor-sf.com">http://www.karrimor-sf.com</a> , 1 Fair Oak Ct, Clyst Honiton, Exeter, EX5 2BB United Kingdom, Tel: + 44 1392 444 700, Fax: + 44 1392 444 825 (Equipment integration; Hydration System)
<b>Raytheon Network Centric Systems, Integrated Communications Systems</b>	<a href="http://www.raytheon.com/businesses/rncs/index.html">http://www.raytheon.com/businesses/rncs/index.html</a> , 1801 Hughes Dr, Fullerton, CA 92834 United States, Tel: + 1 (714) 446-4305, Fax: + 1 (714) 446-4314 (Communications)
<b>Tyco Electronics UK Ltd</b>	<a href="http://www.raychem.com">http://www.raychem.com</a> , Faraday Rd, Dorcan, Swindon, SN3 5HH United Kingdom, Tel: + 44 1793 528171, Fax: + 44 1793 5725 16, Email: <a href="mailto:rgraves@tycoelectronics.com">rgraves@tycoelectronics.com</a> (Cable Harness Design)

Comprehensive information on Contractors can be found in Forecast International's "International Contractors" series. For a detailed description, go to [www.forecastinternational.com](http://www.forecastinternational.com) (see Products & Samples/Governments & Industries) or call + 1 (203) 426-0800.

Contractors are invited to submit updated information to Editor, International Contractors, Forecast International, 22 Commerce Road, Newtown, CT 06470, USA; [rich.pettibone@forecast1.com](mailto:rich.pettibone@forecast1.com)

## Technical Data

Equipment examined in the FIST Technology Demonstrator Program covered five key areas of dismounted combat: lethality, survivability, C<sup>4</sup>I, mobility, and sustainability.

**Lethality.** The primary weapon system examined in the FIST Technology Demonstrator Program was the SA-80 rifle. At the conclusion of the program, changes were made to the rifle.

The SA-80 now carries an underslung grenade launcher equipped with a day/night weapon sight. A device that warns the operator when he has only a few rounds left in his magazine has been incorporated into the rifle, along with a newly introduced thermal weapon sight. The weapon sight greatly improves the surveillance and target-acquisition capabilities of the rifle.

**Survivability.** During the demonstrator program, each soldier was equipped with a weapon sight and a helmet camera linked by video to a display mounted on the helmet. This system enables the user to observe and fire his weapon around corners and from positions that may afford better protection.

**C<sup>4</sup>I.** Each soldier participating in the demonstrator program was equipped with a Personal Role Radio (PRR). The radio was linked to a boom microphone, and earpieces were built into the helmet. The PRR enables verbal orders to be given without the need for hand signals or shouting.

**Mobility.** Day and night vision capability, radio communications between soldiers, and navigation map displays provided each soldier with the ability to move quickly and safely during the demonstrator program.

**Sustainability.** Keeping the soldier on the move with a full and working complement of equipment is paramount to combat effectiveness. To accomplish this, food, water, ammunition, and power must be provided to the soldier. The equipment used in the FIST Technology Demonstrator Program provided a minimum load carriage weight while providing a maximum replenishment stock for the individual. Current battery technology kept power consumption to a minimum and power supply to a maximum.

## Program Review

Initial work on the FIST project began in 1994, when the U.K. Ministry of Defence established a dismounted soldier program for the Royal Marines, Royal Infantry, and Royal Air Force Regiment. The U.K. MoD initially

called the program the Future Fighting Soldier System (FFSS), and it was eventually renamed the Future Integrated Soldier Technology (FIST) program.

The program envisions soldiers as a system unto themselves. Each soldier is part of a four-man fire team. Two fire teams compose a section, or squad. Each soldier's equipment is meant to integrate him or her with the fire team as well as any larger unit of which the soldier may be a part.

In 1997, an industrial consortium conducted research on the requirements of dismounted close combat on behalf of the U.K. Defence Evaluation and Research Agency (DERA). This effort, the FIST Technology Demonstrator Program, ran from April 1997 to March 2000. A section of eight troops from the Argyll and Sutherland Highlanders assessed the feasibility of candidate FIST technologies.

### *Assessment Phase Begins*

In November 2001, the U.K. MoD Dismounted Close Combat (DCC) project team received the go-ahead to fund the next phase of the FIST program, the assessment phase. The assessment phase comprised a series of trials that assessed the requirements of the FIST system and developed the system design. In March 2003, the U.K. MoD awarded Thales a contract to conduct the assessment phase, which then began in April 2003. The assessment phase ended in September 2006.

### *Assessment Phase Extension (APX)*

In November 2006, the U.K. Ministry of Defence awarded Thales a contract for an Assessment Phase Extension (APX) of the FIST program. This contract extension is

examining in detail those dismounted close combat technologies that have been identified in the previous assessment phase as being of sufficient maturity for early procurement and deployment. Explicitly, work under the contract extension is assessing surveillance and target acquisition (STA) systems as well as command, control, computer, communications and information (C<sup>4</sup>I) systems.

Among the surveillance and target acquisition equipment being assessed are sights for infantry section weapons, and rangefinding and target acquisition equipment for use both day and night. Among the C<sup>4</sup>I equipment being assessed are radios, computing and navigation equipment, displays, and command and control software.

In May 2007, Raytheon announced that the Thales Prime Contracting Management Office (acting on behalf of the U.K. MoD) had selected Raytheon's MicroLight radio as the core communications system for the operational effectiveness trials in the assessment phase of the FIST program. Raytheon is partnering on the FIST assessment phase with Cobham Defence Communications (Cobham is providing the battle management system).

Forecast International expects work under the FIST program Assessment Phase Extension contract to be completed by year-end 2008. Look for the U.K. Ministry of Defence to award a contract for the Demonstration and Manufacture phase of the FIST program in early 2009, with work under the contract beginning the same year. Initial Operational Capability is expected in 2010.

## Funding

---

The U.K. Ministry of Defence is funding the Future Integrated Soldier Technology program.

## Contracts/Orders & Options

---

<b>Contractors</b>	<b>Award (\$ millions)</b>	<b>Date/Description</b>
Thales	32.0	Mar 2003 – Contract from the U.K. Ministry of Defence to conduct the assessment phase of the FIST program. Work completed in Sep 2006.
Thales	8.0	Nov 2006 – Contract from the U.K. Ministry of Defence for an Assessment Phase Extension (APX) of the FIST program. The contract extension examines those dismounted close combat technologies (specifically, surveillance & target acquisition and C <sup>4</sup> I technologies) that have been identified in the previous assessment phase as being of sufficient maturity for early procurement and deployment.

## Timetable

---

<b>Month</b>	<b>Year</b>	<b>Major Development</b>
	1994	U.K. MoD establishes a dismounted soldier program, initially called Future Fighting Soldier

## FIST - Archived 6/2009

<u>Month</u>	<u>Year</u>	<u>Major Development</u>
		System, renamed Future Integrated Soldier Technology (FIST)
Apr	1997	FIST Technology Demonstrator Program initiated
Mar	2000	FIST Technology Demonstrator Program ends
Jan-Feb	2001	Lessons learned from FIST Technology Demonstrator Program disseminated to industry
Mar	2001	U.K. MoD DCC project team issues pre-qualification questionnaire to companies interested in acting as prime contractors for FIST program
Nov	2001	DCC project team receives approval to fund assessment phase of FIST program
Mar	2003	U.K. MoD awards Thales a contract to conduct assessment phase of the FIST program
Apr	2003	Thales begins assessment phase of the FIST program
Sept	2006	FIST program assessment phase contract ends
Nov	2006	U.K. MoD awards Thales a contract for an Assessment Phase Extension (APX) of the FIST program
	2010	FIST expected to enter service

## Worldwide Distribution/Inventories

---

The Future Integrated Soldier Technology program is an undertaking of the U.K. **Ministry of Defence**.

## Forecast Rationale

The U.K.'s Future Integrated Soldier Technology (FIST) program aims to provide equipment to combat personnel that have to fight on foot at close quarters with the enemy.

Each individual FIST system will consist of multiple systems (a "system of systems"). As indicated by the **Ten-Year Outlook** chart, Forecast International projects that the U.K. Ministry of Defence will buy approximately 29,000 FIST systems over the next ten years. As in previous years, the U.K. MoD's desire to increase the lethality and survivability of its soldiers is driving FIST system procurements.

According to Thales UK Ltd, the selective use of high-technology equipment for the FIST program will enhance the ability of U.K. foot soldiers to locate and engage the enemy, as well as conduct effective peace support operations. Once fully developed, the FIST system will likely enhance U.K. military mission effectiveness in dismounted close combat.

Not much new information on the U.K. FIST program has been released (the latest piece of information disclosed is a May 2007 Raytheon press release – see above in "Program Review"). Forecast International will add new data once it becomes available.

## Ten-Year Outlook

---

ESTIMATED CALENDAR YEAR UNIT PRODUCTION												
Designation or Program	High Confidence					Good Confidence			Speculative			Total
	Thru 2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
<b>Thales UK Ltd (Prime)</b>												
<b>FIST Military &lt;=&gt; United Kingdom &lt;=&gt; Army</b>												
	0	0	0	200	2200	3200	4200	6100	6500	6600	0	29,000
<b>Total</b>	0	0	0	200	2200	3200	4200	6100	6500	6600	0	29,000