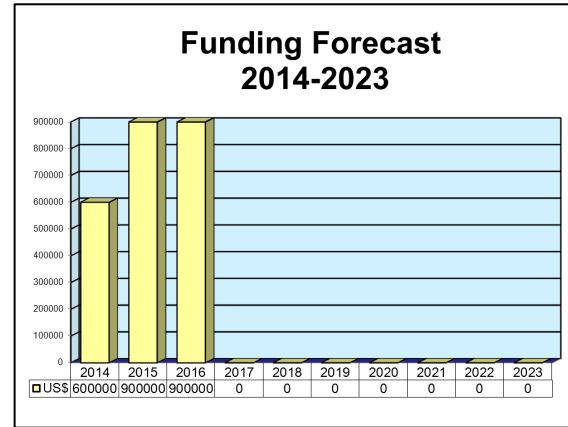


TPQ-36(V)

Outlook

- Forecast International projects that the U.S. Army will invest some \$2.4 million in the decade to come to operate and maintain existing TPQ-36 radars
- According to an FY15 U.S. Army budget document, the Army plans to spend just over \$1.5 million upgrading the electronics of the TPQ-36 radar from FY14 through FY15
- The market potential of the TPQ-36 is limited, as the TPQ-53 is replacing it



Orientation

Description. The TPQ-36 is a transportable radar that locates medium-range enemy mortars, artillery, and rocket launchers – i.e., enemy weapons. The TPQ-36 is manufactured by ThalesRaytheonSystems.

Status. In service, ongoing support and upgrades, and available for sale.

Sponsor

U.S. Army
 Communications-Electronics Command (CECOM)
 PEO - IEW-FIREFINDER
 Ft. Monmouth, NJ 07703-5000
 USA
 Tel: + 1 (201) 532-2534
 Website: <http://www.cecom.army.mil>
 (Project manager)

Application. To locate enemy weapons.

Price Range. USMC documents put the replacement cost at \$1,548,500.

Contractors

Prime

ThalesRaytheonSystems	http://www.thalesraytheon.com , 1801 Hughes Dr, PO Box 34055, Fullerton, CA 92834-9455 United States, Tel: + 1 (714) 446-3118, Fax: + 1 (714) 446-3260, Prime
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Comprehensive information on Contractors can be found in Forecast International's "International Contractors" series. For a detailed description, go to www.forecastinternational.com (see Products & Services/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

TPQ-36(V)**Technical Data**

	<u>Metric</u>	<u>U.S.</u>
Dimensions		
Weight		
Antenna trailer (excluding generator)	1,361 kg	3,000 lb
Operating shelter	1,134 kg	2,500 lb
Antenna height	3.7 m	12 ft
Characteristics		
Frequency	8 to 12 GHz	
	32 frequencies	
Power	10 kW avg	
	23 kW peak (min)	
Range		
Artillery/mortars	18 km	11.2 mi
Rockets	24.1 km	15 mi
Maximum range	50.7 km	31.5 mi
Accuracy		
Mortars	0.4% range	
Artillery/rockets	0.65% range	
Antenna	Phase scanning	
	2° x 1.7° pencil beam	
Coverage angle		
Elevation	90° (standard operation)	
Azimuth	360° (90° sectors)	
Emplace time	15 min	
Displace time	5 min	
Distance from FLOT	3 to 6 km	1.9 to 3.7 mi
Operators	5	
Operational readiness		
Active Army	92%	
Army Reserve	87%	
Capacity	99 targets (storage)	
	10 locate (simultaneous)	
	First-round target detection	
MTBF	125 hr	
MTTR	15 to 30 min	

Variants/Upgrades

Variants of the TPQ-36 include the TPQ-36(V)5, TPQ-36(V)7, TPQ-36(V)8, TPQ-36(V)9, TPQ-36(V)10, and TPQ-36(V)11.

Program Review

In 2008, the U.S. Army awarded ThalesRaytheonSystems a couple of operations and maintenance (O&M) contracts for the TPQ-36 radar (see **Contracts/Orders & Options**). These O&M contracts are the most recent awarded for the TPQ-36.

In March 2011, the Defense Security Cooperation Agency (DSCA) notified the U.S. Congress of a possible Foreign Military Sale to the government of Iraq of six TPQ-36 radars.

In September 2011, the DSCA notified Congress of a possible FMS to the government of Saudi Arabia of six TPQ-36 radars.

Finally, in July 2012, the DSCA notified Congress of a possible FMS to the government of Iraq of six TPQ-36 radars.

TPQ-36(V)**Funding****U.S. FUNDING, ARMY**

	FY13	FY13	FY14	FY14	FY15	FY15
	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>
Procurement (U.S. Army) Mod of In-Svc Equip (BZ7325), TPQ-36(V)8 Electronics Upgrade	-	3.44	-	0.60	-	0.93
	FY16	FY16	FY17	FY17	FY18	FY18
	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>
Procurement (U.S. Army) Mod of In-Svc Equip (BZ7325), TPQ-36(V)8 Electronics Upgrade	-	0.00	-	0.00	-	0.00

All \$ are in millions.

Source: U.S. Army FY15 procurement budget document

Contracts/Orders & Options

(Contracts over \$5 million.)

Contractor	Award (\$ millions)	Date/Description
ThalesRaytheonSystems	48.6	Dec 2008 – FFP contract for spare parts to support TPQ-36 and TPQ-37 radar systems. Work was scheduled to be completed by May 2012. (W15P7T-06-D-T001)
ThalesRaytheonSystems	19.1	Dec 2008 – Three-year contract for production of spare parts to support TPQ-36 and TPQ-37 radars. Work was scheduled to be completed by Jun 2012. (W15P7T-06-D-T001)
ThalesRaytheonSystems	Unknown	Mar 2011 – The Defense Security Cooperation Agency notified the U.S. Congress of a possible Foreign Military Sale to the government of Iraq of six TPQ-36 radars.
ThalesRaytheonSystems	Unknown	Sep 2011 – The DSCA notified Congress of a possible Foreign Military Sale to the government of Saudi Arabia of six TPQ-36 radars.
ThalesRaytheonSystems	Unknown	Jul 2012 – The DSCA notified Congress of a possible Foreign Military Sale to the government of Iraq of six TPQ-36 radars.

Timetable

Month	Year	Major Development
Nov	1971	Mission Needs Statement
Oct	1973	Contract for five engineering development models
Late	1975	Preliminary qualification and live-fire tests
Mar	1976	Competitive testing between Hughes and Raytheon begins at Yuma
May	1976	Contract for further development and limited production
Jun	1977	DT/OT
Dec	1977	Full-scale production approved
Aug	1978	Production contract for 106 systems for the U.S. Army and Marine Corps

TPQ-36(V)

<u>Month</u>	<u>Year</u>	<u>Major Development</u>
Jul	1979	First two operational units delivered
	1979	High-density firing evaluation
Feb	1983	TPQ-36(V) first fielded by U.S. Army; Army IOC
	1984	U.S. Army initial deployment completed; U.S. Marine Corps deliveries begin
Feb	1985	USMC IOC
Jul	1986	U.S. production completed
	1988	First prototype TPQ-36 Block II live-fire tests
Oct	1990	Fielding by U.S. Army completed
Jan	1991	TPQ-36(V)8 configuration approved
Mar	1991	Fielding to Army Reserve completed
	FY92	Block II FSED; funding for Block III production begins
Dec	1992	Electronics upgrade contract awarded for eight LRIP systems
1Q	FY93	TPQ-36(V)8 LRIP production starts
Jun	FY96	TPQ-36(V)8 Milestone III
Aug	FY96	TPQ-36(V)8 production contract award
4Q	FY97	First Unit Equipped
1Q	FY98	TPQ-36(V)8 fielding starts
May	1998	Contract for next-generation FIREFINDER awarded
3Q	FY98	TPQ-36(V)8 production ends
3Q	FY98	TPQ-36(V)8 IOC
Mar	1999	Contract for six TPQ-36(V)9s for Egypt
Jun	2003	Deliveries to Egypt completed
Oct	2005	Army deploys partial C-RAM system to Iraq that includes TPQ-36
Mar	2006	ThalesRaytheonSystems receives a contract for the replacement of the TPQ-36(V) radar processors and the provision of spare parts and technical, logistical, and engineering support services
Dec	2008	ThalesRaytheonSystems receives a contract for production of spare parts to support TPQ-36 and TPQ-37 radars
Mar	2011	The DSCA notifies Congress of a possible FMS to the government of Iraq of six TPQ-36 radars
Sep	2011	The DSCA notifies Congress of a possible FMS to the Kingdom of Saudi Arabia of six TPQ-36 radars
Jul	2012	The DSCA notifies Congress of a possible FMS to the government of Iraq of six TPQ-36 radars

Worldwide Distribution/Inventories

In addition to deployment with the U.S. Army and U.S. Marine Corps, systems are known to be operational in the following nations: **Australia, Canada, China, Egypt, Greece, Jordan, the Netherlands, Norway, Saudi Arabia, Singapore, South Korea, Spain, Portugal, Thailand, and Turkey.**

Forecast Rationale

The TPQ-36 funding forecast is being driven by the U.S. Army's need to operate and maintain existing TPQ-36 radars. According to an FY15 U.S. Army budget document, the Army plans to spend just over \$1.5 million upgrading the electronics of the TPQ-36

radar from FY14 through FY15 (no Army funding is requested after FY15; it appears that Army upgrade work will end in FY15). The market potential of the TPQ-36 is limited, as the TPQ-53 is replacing it.

TPQ-36(V)**Ten-Year Outlook**

ESTIMATED CALENDAR YEAR O&M FUNDING (in US\$)												
Designation or Program		High Confidence				Good Confidence			Speculative			
	Thru 2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
ThalesRaytheonSystems (Prime)												
TPQ-36 Military <> United States <> Army												
	391,740,000	600000	900000	900000	0	0	0	0	0	0	0	2,400,000
Total	391,740,000	600000	900000	900000	0	0	0	0	0	0	0	2,400,000