

# ARCHIVED REPORT

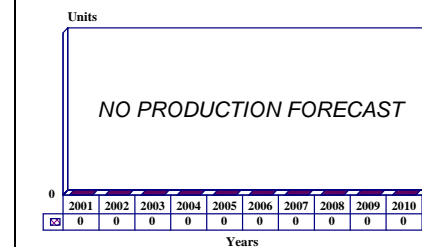
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## TAS-4(V)/UAS-12(V) - Archived 04/2002

### Outlook

- No new contracts have been identified since 1996
- The TAS-4(V) replacement, the ITAS, is steadily purchased by the US Army and Marines
- Barring any new activity, this report will be archived in the near future

10 Year Unit Production Forecast  
2001 - 2010



### Orientation

**Description.** Thermal night vision sight for the TOW equipment set.

**Sponsor**

US Army  
 Missile Command  
 Redstone Arsenal, Alabama (AL)  
 USA

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

**Contractors**

Ainslie Corporation  
 531 Pond Street  
 Braintree, Massachusetts (MA) 02184  
 USA  
 Tel: +1 617 848 0850  
 Fax: +1 617 843 2584

**Status.** In service but production believed complete.

**Total Produced.** An estimated 12,366 TAS-4(V)s had been produced through 2000.

**Application.** As part of the UAS-12 TOW night sight equipment set, the TAS-4 provides night viewing and tracking capability for the TOW missile system. The TAS-4B variant is also used with the TVQ-2 G/VLLD system (US Army) and the HELLFIRE Shore Defense Missile System (Sweden).

**Price Range.** The unit price of the UAS-12 is approximately US\$48,800, based on a 1996 export contract for both UAS-12A and UAS-12C systems.

### Technical Data

**Characteristics**

Weight: 22 lb (10 kg)  
 Field of view: Wide - 3.4° x 6.8°; Narrow - 1.1° x 2.2°  
 Magnification: Wide - 4X; Narrow - 12X

**Characteristics**

Resolution:	Wide - 0.5 mrad; Narrow - 0.167 mrad
Power requirements:	30 W max with closed-cycle cooler 7.5 W max with Joule-Thompson cooling
Cool-down time:	<6 minutes from off; <30 seconds from standby
Boresight stability:	0.1 mrad
Display type:	Monocular
Spectral sensitivity:	7.5 to 12 $\mu\text{m}$
MTBF:	600 hr

**Design Features.** The TAS-4A night vision sight is used with the TOW (Tube-launched, Optically tracked, Wire-guided) anti-tank missile system, mounted on top of the TOW optical sight unit. The unit is approximately 15 inches long, weighs about 22 pounds, and is roughly cylindrical in shape. This manportable unit, with a monocular eyepiece, is powered by flashlight-sized batteries and has a spectral range of 7.5-12 microns. A boresight collimator is used to align the night sight with the TOW optical day sight.

Originally configured with the Joule-Thompson cooling system, the TAS-4A currently relies on an integral

closed-cycle cooler for cooling of the detector. High-pressure coolant cartridges supply 6,000 psi air or nitrogen to a cryostat.

The TAS-4A is the primary component of the UAS-12A TOW equipment set. Other components of the set are self-contained ancillary equipment: a battery power conditioner to provide off-vehicle system power, a vehicle power conditioner (when the TAS-4(V) is mounted on a vehicle, to draw power from the vehicle's power supply), a boresight collimator, and a battery field handling case.

## Variants/Upgrades

**TAS-4B.** The post amp assembly has been removed to make the B capable of independent operation. This variant is employed with the US Army's TVQ-2 Ground/Vehicle Laser Locator Designator (G/VLLD) system and the M981 Fire Support Team-Vehicle (FIST-V). Sweden employs the TAS-4B with its HELLFIRE Shore Defense Missile System.

**TAS-4B Remote.** This remote version adds a digital scan converter (DSC) to convert the image to RS-170 TV format, and a TV monitor that permits remote-controlled surveillance. Remote controls for on/off, range focus, polarity, brightness, contrast, field of view (FOV), and point and tilt are provided at the remote TV monitor. This version has been sold to Finland and Thailand.

**TAS-4C/D.** Improved variants are designated TAS-4C and TAS-4D. Details concerning differences or changes have not been determined. These versions were thought to be unavailable for Foreign Military Sales (FMS), but the 1996 export sale that includes the

UAS-12C implies that the TAS-4C can now be delivered outside the US.

**TAS-4 Detector Upgrade.** The US Army implemented an optical performance enhancement for the TAS-4 that would take advantage of advances in thermal imaging and visible optics technology. Central to this upgrade was the replacement of the existing DT-591/UA detector/dewar assembly with the optically improved DT-635/UA 120-channel detector/dewar. The DT-591/UA was to be replaced as attrition demanded.

**Focal Plane Array Upgrade.** Kollsman marketed an economical forward-looking infrared (FLIR) upgrade for its family of MCTNSs (Manportable Common Thermal Night Sight), which included the TAS-4(V) TOW night sight. The upgrade featured a new focal plane array and cooler/dewar modules to improve performance by providing greater sensitivity, range and reliability. The upgrade also enhanced the image quality of the TAS-4's RS170 video output for remote viewing.

## Program Review

**Background.** The MCTNS (Manportable Common Thermal Night Sight) began as the pilot program for developing common components for manportable devices such as the TAS-6 Night Observation Device, Long Range (NODLR) and the TAS-4 TOW night

sight. Developmental testing began in FY73; operational testing was completed during FY77. Production began in FY78.

Several companies have been assigned production of the TAS-4/UAS-12 over the years: Texas Instruments (now Raytheon TI Systems), whose most recently identified contract for the TAS-4 was awarded in 1992; Hughes Electro-Optical (acquired by Raytheon in 1997), awarded a US\$17.9 million contract in 1990 for UAS-12A deliveries to Egypt and Turkey; and Kollsman (acquired in 1996 by El-Op Electro-Optics Industries of Israel), whose last publicized contract for the UAS-12 appeared in 1992. The current UAS-12 producer is Ainslie Corp.

The US Army had planned to fund the development and fielding of the TOW Sight Improvement program (TSIP) starting in FY92. TSIP's objectives were to increase target acquisition and engagement ranges, reduce target acquisition time, increase probability of hit, provide for multiple target engagements, and be capable of firing and tracking all versions of TOW. Principal improvements were a new FLIR sight and replacement of the current missile guidance set.

The improved FLIR sight would have combined the functions of the existing TOW day sight and the TAS-4 night sight, and added a laser rangefinding capability. Acquisition plans called for replacing the existing

sights on TOW units that equip the lightweight HMMWV five-quarter trucks, as well as incorporating TSIP upgrades into the Bradley Fighting Vehicle's Integrated Sight Unit. Following several postponements of an award announcement, the Army terminated the TSIP program in October 1991, citing budgetary constraints.

In September 1992, the Army issued notices in the *Commerce Business Daily* that it was planning a more modest replacement for the canceled TSIP called the Improved Target Acquisition System (ITAS) and that it would issue a formal Request for Proposals (RFP) in early FY93. Texas Instruments (now Raytheon TI Systems) won a contract in 1993 for engineering and manufacturing development of ITAS. This was followed by a low-rate initial production (LRIP) contract in September 1996, for 25 ITAS systems. Procurement funds for the ITAS have been substantial in recent years. In 1999 US\$63 million was allotted for the purchase of ITAS systems. For fiscal years 2000 and 2001, US\$67.7 and 64.6 million were allocated for procurement, respectively. (For further information about this program, see the "Improved Target Acquisition System (ITAS)" report in this binder.)

## Funding

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Procurement/RDT&E funding for the TAS-4 is not identified in current documents.

## Recent Contracts

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<u>Contractor</u>	<u>Award (\$ millions)</u>	<u>Date/Description</u>
Ainslie Corp	10.5	Jun 1996 – Firm fixed-price contract for 116 TOW UAS-12C and TOW UAS-12A night sights for Turkey, Taiwan, Saudi Arabia and Portugal. Completed July 1999. (DAAH01-96-C-0293)
Raytheon TI	N/A	Sep 1996 – Low-rate initial production contract (LRIP) for 25 ITAS systems, signaling US shift from TAS-4/UAS-12(V) procurement.

## Timetable

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<u>Month</u>	<u>Year</u>	<u>Major Development</u>
	FY73	Development begun
	FY78	Production begun
	1983-	Conversion of 162 Jagdpanzer Jaguar I SP ATGM vehicles to Jagdpanzer Jaguar
	1985	II Rakete SP ATGM vehicles for the West German Army
Jun	1999	Production for most recent contract completed

## Worldwide Distribution

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The TAS-4/UAS-12 is in service with the **US Army** and **US Marine Corps**. Other confirmed customer nations include **Egypt, Finland, Germany, Portugal, Saudi Arabia, Sweden, Taiwan, Thailand** and **Turkey**.

## Forecast Rationale

The TAS-4(V) night vision sight was designed to assist the UAS-12(V) TOW anti-tank missile system in targeting during darkness, smoke and haze. Having been produced by various companies, the TAS-4 thermal night vision sight won a number of large domestic and international contracts.

During the early 1990s, the TOW's maximum effective range was increased. With the TAS-4(V) unable to

meet the new range requirements, the US Army sought a replacement. In 1992 the Improved Target Acquisition System (ITAS) was selected to succeed the TAS-4(V). Since its low-rate initial production in 1996, the US Army and Marines have steadily purchased the ITAS. The last known contract for a TAS-4 variant (UAS-12) was awarded in 1996 and completed in 1999. Though minor international contracts may materialize, TAS-4 production is considered complete.

## 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		
TAS-4/UAS-12	Prior Prod'n:	12366	0	0	0	0	0	0	0	0	0	0	0	0