

# ARCHIVED REPORT

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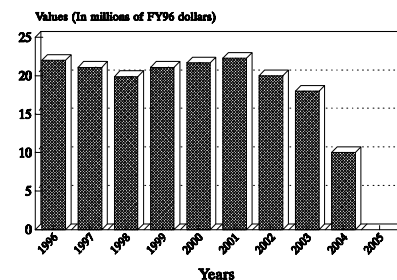
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## Tencap (Us Air Force) - Archived 1/97

### Outlook

- Technology development and support program
- Highly sensitive and classified program

**10 Year Value of Production Forecast  
1996 - 2005**



### Orientation

**Description.** This program is a Congressionally directed program to provide the Tactical Exploitation of National Capabilities (TENCAP). It develops procedures, tactics, and interface equipment and software to demonstrate the tactical use of intelligence information within an operational combat framework and to influence the design and operation of capabilities to improve tactical support.

#### Sponsor

US Air Force

Space and Missile Center

Los Angeles AFB, (CA)

USA

Electronic Systems Center

Boston, Massachusetts (MA)

USA

Wright Laboratory

Dayton, Ohio (OH)

USA

#### Contractors

Autometric Inc.

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Alexandria, Virginia (VA) 22312-2333

USA

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Geodynamic Corp

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Torance, California (CA) 90501

USA

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McDonnell Douglas Aerospace

5301 Bolsa Avenue

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USA

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Space Applications Corp  
200 East Sandpointe Avenue  
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USA  
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**Status.** Operational, with on-going research and development.

**Total Produced.** Not applicable as this a technology development and support program.

**Application.** The objective of this program is to improve national systems support for combat operations. This includes educating warfighters about national systems, advocating tactical missions for new national systems, influencing the design and operation of new national systems, and exploiting tactical use of existing systems.

**Price Range.** Indeterminate due to the developmental nature of this program.

## Technical Data

**Characteristics.** This program explores and develops new technology for utilizing intelligence information. Technological areas include participating in tactical

exercises, prototyping software and hardware for interfacing with existing C3I and combat support systems, and conducting conceptual studies.

## Variants/Upgrades

There are no identifiable "variants" within this program; however, the entire program is constantly being upgraded and enhanced.

## Program Review

**Background.** The origins of TENCAP go back to 1977 when Congress mandated the Air Force to create the program. At that time the primary objective was to develop procedures, tactics, and interface equipment and software to demonstrate the tactical use of intelligence information within an operational combat framework. While much of the program was censored (and remains so today), it is known that during the 1980s work was done on deploying a prototype single-channel CONSTANT SOURCE system which is a small ruggedized transportable UHF receiver and exploitation system to provide intelligence information. Work also continued on prototype development of an airborne qualified CONSTANT SOURCE system nomenclatured the Multi-Mission Advanced Tactical Terminal (MATT). Studies also continued on how to locate relocatable targets and the best methods to be employed, identifying requirements for use of multispectral imagery, and a special project only identified as QUIET SUNSET.

Beginning with FY90, program efforts started to focus on tactical exercises. Much was accomplished during this

time, including: refining software integration of multiple products for the BRIGHT STAR exercise; developing a prototype terminal for CONSTANT SOURCE; and participating in a joint US Army and Air Force exercise to evaluate the application of TENCAP principles in a combat operation.

During scheduled FY91 work, the TENCAP program successfully flew an integrated suite consisting of an imagery/ELINT processor system onboard a C-141 aircraft. While flying simulated Special Operations Forces (SOF) missions, National and Theater situational data was sent directly to the aircraft in near-real time. Onboard the aircraft the information was displayed in 3-D and integrated with GPS data. Both the aircrew and USA contingent personnel had access to the data.

In FY92, TENCAP was used to improve several national systems, including TALON JADE (supported the PACOM Korean exercise); TALON SWORD (explored the use of national information in-cockpit as well as supported the Advanced Defensive Avionics Response Strategy program and the Joint Chiefs of Staff (JCS)

Special Project 93); TALON SCENE/ STAMP (supported precision guided weapons programs); and ELLIPSE CHARLIE (supported a SOF exercise).

FY93 saw the completion of the JCS directed Special Project Eidolon Lance (SPEL) 93 which initiated analysis of future national systems. Also, the next Special Project was scheduled for FY95.

TENCAP was restructured in FY94 to meet warfighters needs to exploit national systems and impact future Out of the six programs, the four warfighting programs are:

<u>TALON COMMAND:</u>	Provides warfighters with national systems information integrated into command and control systems.
<u>TALON READY:</u>	Provides warfighters with national systems information to support Mission Planning and rehearsal systems.
<u>TALON SHOOTER:</u>	Increases combat capabilities with real-time national systems information in and out of the cockpit to weapons and C <sup>4</sup> I systems.
<u>TALON NIGHT:</u>	Exploits national systems for Special Operations forces and other low-visibility operational forces.

The remaining two supporting programs are:

<u>TALON TOUCH:</u>	Supports the four warfighting Talon programs by applying innovative communications technology to connect the warfighter with national systems.
<u>TALON VISION:</u>	Supports the four warfighting Talon programs by applying innovative hardware and software technology to connect the warfighter with national systems.

Efforts have been successfully completed in each of these project areas under this new structure.

TALON COMMAND established initial operational capability for Project Shield that involved completing the development and fielding of modified PRC-112 Search and Rescue radios which incorporated an embedded GPS chip to support Combat Survivor Evader Locator requirements.

TALON READY developed the capability to receive, process, and merge multispectral broad area imagery with different types of high resolution media used in national centralized facilities and in deployed combat automated systems.

TALON SHOOTER explored and developed demonstrations of national systems capabilities to improve tactical weapon systems and platforms in support of theater missile defense program activities.

TALON NIGHT developed and demonstrated advanced technology applications of national systems to multi-command special forces units.

TALON TOUCH developed and demonstrated potential dedicated combat information dissemination capabilities using existing national capabilities (i.e., DISNET) to support all Talon programs.

systems. The program restructuring was based on two drivers: first, USAF TENCAP lessons learned from Operation Desert Storm; and second, significant changes taking place in national systems. The original TALON projects were reorganized under six enduring areas of interest to meet warfighters needs. These six areas have been code named "Talon Programs" by the USAF Space Command and are being funded on a fiscal year basis.

TALON VISION developed and demonstrated national capabilities, through TENCAP equipment systems and techniques, to warfighters at Flag series and other demonstration exercises.

The FY95 agenda called for the following: TALON COMMAND was to exploit national systems to provide an interim theater ballistic missile defense warning capability until an advanced space-based system is acquired and would explore and demonstrate work from FY94. TALON READY was tasked to develop a centralized processing capability to build, maintain, and disseminate worldwide broad-area multispectral imagery to systems. TALON SHOOTER would develop and demonstrate advanced technologies involving national systems information flow into weapons and C<sup>4</sup>I systems to improve critical tactical strike capabilities. TALON NIGHT was to develop and demonstrate innovative applications of national capabilities in support of FY95 SOF needs. TALON TOUCH was identified to develop and demonstrate classified network communications architectures between Air Force Space Warfare Center and national systems organizations resulting in improved TENCAP support to tactical warfighters. Lastly, TALON VISION was to integrate Multi-source Tactical System (MSTS), Air Defense System Integrator (ADSI) systems with capabilities of the Information Warfare Center.

In terms of future plans, the FY95/96 DoD Program Element Description (PED) identifies funding for Project 020724F continuing through FY2001 and beyond. The description of planned activities for FY96 and FY97,

however, is limited to uninformative phrase "Exploit the tactical use of existing national systems for the warfighter".

## Funding

<u>US FUNDING</u>								
	<u>FY94</u>		<u>FY95</u>		<u>FY96</u>		<u>FY97 (Req)</u>	
	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>
<u>RDT&amp;E (US Air Force)</u>								
PE #0207247F								
Air Force TENCAP								
Project 0001								
TENCAP	-	14.4	-	20.5	-	22.0	-	21.1
	<u>FY98 (Req)</u>		<u>FY99 (Req)</u>		<u>FY00 (Req)</u>		<u>FY01 (Req)</u>	
	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>
Project 0001								
TENCAP	-	19.9	-	21.1	-	21.7	-	22.3

All US\$ are in millions.

## Recent Contracts

This is a highly sensitive and classified program. Specific contract information therefore has not been made available. It is believed that the TENCAP program is executed through a combination of existing classified contracts, and collateral contract vehicles managed by US Air Force laboratories and program offices.

## Timetable

1977	Congress mandates TENCAP program
1980	Prototypes systems initiated
1991	TENCAP imagery suited successfully demonstrated
1992	TENCAP integrated to improve several national systems
1993	Special Project Eidolon Lance 93 completed
1994	TENCAP program restructured to six TALON subprojects
1995	Interim theater ballistic missile defense capability scheduled to be established

## Worldwide Distribution

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This is strictly a **US Armed Forces** program.

## Forecast Rationale

As a result of its analysis of the 1991 Persian Gulf War, the US Air Force (among others) recognized the needed to make better use of its space assets. Some of the more important benefits that should be received from TENCAP are improved support to the warfighter, locating enemy positions, and getting information into the cockpit in real time. This information includes intelligence, navigation, and weather forecasts. The 1994 restructuring of the program, coupled with the approximate doubling and long term continuation of requested funding, has underscored

the recognition of the importance of advanced programs of this type. Barring a major change in the international and national political climates, the probability that the project will receive continued support, we believe, is high. In the absence of independent corroborating data, the forecast chart directly reflects funding requests identified in the DoD Project Element Description. Annual funding on the order of US\$20 to US\$25 million can be expected throughout the forecast period to cover the cost of various systems integration and other supporting activities.

## Ten-Year Outlook

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### FORECAST FUNDING LEVELS

(FY95 US \$ Millions)

Designation	Application	thru 95	96	High Confidence Level			Good Confidence Level			Speculative			Total 96-05
				97	98	99	00	01	02	03	04	05	
TENCAP	COMMUNICATIONS SYSTEMS (US AIR FORCE)	70.30	22.00	21.10	19.90	21.10	21.70	22.30	20.00	18.00	10.00	0.00	176.10