Program Element: # 12431F
Category: Operational Systems

Title: Defense Support Program
Budget Activity: #4 Military Astronautics and Related Equipment

RESOURCES / PROJECT LISTING: ($ in Thousands)

Project Number	Title	FY 1975 Actual	FY 1976 Estimate	FY 1976 Estimate	FY 1977 Estimate	FY 1978 Estimate	Additional to Completion	Total Estimated Cost
	TOTAL FOR PROGRAM ELEMENT	$34,410	$16,431	$4,816	$25,100	$21,500	Continuing	N/A

BRIEF DESCRIPTION OF ELEMENT: The Defense Support Program (DSP) is the key element of the Worldwide Military Command and Control System (WWMCCS) The system's current deployment consists satellites in orbit and two dedicated ground readout stations

BASIS FOR FY 1977 RDT&E REQUEST: This request includes funds for evolutionary improvement development of the satellite system in support of DOD requirements. Primary emphasis is toward providing more accurate data Another major area is continued development of the simplified processing station hardware and software.

BASIS FOR INCREASE IN 1977 OVER 1976: The increase is attributable to the development effort on the improved satellite system

PERSONNEL IMPACT:

	RDT&E	Procurement	Total
The average number of employees supporting this program element is as follows:			
Federal Civ. Employees	28	28	56
Contractor Employees	165	170	335
Total	193	198	391

TERMINATION COST:

	FY 1976/TQ & Prior Funds	FY 1977	Total
Estimated government liability financed with:	517,100		517,100

Program Element: # 12431F
Category: Operational Systems

Budget Activity: #4 Military Astronautics and Intelligence

DETAILED BACKGROUND AND DESCRIPTION:

The Defense Support Program (DSP) was developed

to the National Command Authority (NCA) and other designated users.

The system's current deployment consists of

Two dedicated ground stations, one overseas and one within the CONUS, receive, process and transmit The Joint Chiefs of Staff (JCS) have designated the Aerospace Defense Command (ADCOM), Strategic Air Command (SAC), National Military Command System (NMCS), Atlantic Command (LANTCOM), Pacific Command (PACOM), European Command (EURCOM), as users of DSP data.

Evolutionary system improvements are intended to prolong the useful life of each satellite, make the satellite more survivable increase the viewing area of each satellite, and increase the accuracy of data

RELATED ACTIVITIES:

Defense Satellite Communications System - Phase II (33110F) provides data communications routing. Space Boosters (35119F) provides launch support. Space Vehicle Subsystem Advanced Development (63401F) is developing technology for improved reaction wheels. Advanced Airborne Command Post (64723F) is a potential user of DSP data. DSP is the key element of the Worldwide Military Command and Control System (WWMCCS)

Program Element: # 1e4:1F
Category: Operational Systems

Title: Defense Support Program (DSP)
Budget Activity: #4 Military Astronautics and Related Equipment

WORK PERFORMED BY: CINCAD maintains operational control of DSP for the Joint Chiefs of Staff. System operation and technical management responsibilities have been delegated to the USAF Aerospace Defense Command (ADCOM). The Air Force Logistics Command (AFLC) provides engineering and logistics support. Air Force Systems Command's Space and Missile Systems Organization (SAMSO), Los Angeles, CA, has overall development and procurement management responsibility. Air Force Weapons Laboratory Kirtland AFB, NM, will provide facility support. TRW, Redondo Beach, CA, is the prime contractor for the spacecraft and satellite integration. Aerojet Electrosystems Company (AESC), Azusa, CA, is the prime contractor for the sensor. Aeronutronic Ford Western Development Laboratories, Palo Alto, CA, is the prime contractor for the User Display and Data Acquisition and Communications segments. The Martin Company, Denver, CO, provides the TITAN IIIC booster. The Energy Research and Development Agency (Sandia Corporation) IBM, Thousand Oaks, CA, is the prime contractor for all software efforts. IBM, Thousand Oaks, CA, and TRW, Redondo Beach, CA, are teamed on the Simplified Processing Station, with IBM as prime. The Aerospace Corporation, Inglewood, CA, furnishes general systems engineering/technical direction to the DSP System Program Office.

PROGRAM ACCOMPLISHMENTS AND FUTURE PROGRAMS:

1. FY 1975 and Prior Accomplishments: Procurement of 13 satellites and 12 TITAN IIIC boosters, construction of two data processing facilities, and provision of user displays, software, communications and a training facility (also used for software development and mission data analysis), completion of Research and Development (R&D) for modifications to satellites 10-12 to improve survivability and to provide data survivability, completion of R&D for an improved focal plane for satellite 13 and initiation of development of hardware and software for the Simplified Processing Station(SPS).

Future launches will take place when required to replenish satellites currently deployed.

2. FY 1976 Program: Program includes initiation of sensor development studies on the requirements for payload compatibility with the space shuttle; hardware and software development for the prototype simplified processing station; provision of training equipment; modification to the ground stations initiation of modifications for satellites 5, 6, 7 and 9 to improve survivability and to increase data survivability; analysis of data gathered from orbital operations; satellite improvement studies; and completion of R&D support for DSP Augmentation.

3. FY 1976 Program: Continues the efforts of the FY 1976 Program. Funds are included for lease of a computer capability in support of Simplified Processing Station (SPS) software development.

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4. FY 1977 Planned Program: The significant funding increase in FY 1977 reflects the start of intensive development effort on the improved sensor which was initiated in FY 1976. The improved sensor will enable the system to provide more accurate data

Satellite and data survivability modifications are continued. Prototype Simplified Processing Station (SPS) hardware and software development continues. Effort will be completed on training equipment procurement and ground station modifications lease of a computer capability for S/W software development will continue. Satellite improvement studies and analysis of data gathered from orbital operations will continue.

5. FY 1978 Planned Program: Plans include continued development of the improved sensor; initiation of shuttle compatibility modification development; completion of prototype SPS development; continued lease of computer capability for software development associated with the checkout of the prototype SPS software modules; satellite improvement studies; and continued analysis of orbital operations data.

6. Program to Completion: This is a continuing program. RDT&E funding will support continued evolutionary satellite development in support of DOD requirements. Primary emphasis will be directed toward eliminating or minimizing deficiencies discovered during operational employment and development of the capability to use the space shuttle in lieu of the TITAN IIIC booster.

7. Milestones:

		Date	Estimated Cumulative RDT&E Cost to Reach Milestones ($ In Thousands)
A.			366,200
B.			375,800
C.			382,100
D.	Delivery of Satellite #5	Mar 73	392,000
E.			397,200
F.	Delivery of Satellite #6	Jul 73	405,800
G.			440,900
H.	Delivery of Satellite #8	May 74	455,000
I.	Delivery of Satellite #7	Oct 74	471,300
J.	Delivery of Satellite #9	Mar 75	485,800
K.			501.800
L.	Satellite 10-12 Retrofit Complete	Aug 76	513,000
M.	Delivery of Satellite #13	Jun 77	534,200
N.	Delivery of Prototype Simplified Processing Station	Jul 77	556,400

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8. RESOURCES: ($ in Thousands)

	FY 1975	FY 1976	FY 1977Q	FY 1977	FY 1978	Additional to Completion	Total Estimated Cost
RDT&E: Funds	34,410	16,431	4,816	25,100	21,500	Continuing	N/A
Quantities							
Prototype SPS	1						
Missile Procurement:							
Funds	79,500	39,100	3,800	19,200	77,700	Continuing	N/A
Quantities							
Satellite	1					Continuing	N/A
Other Procurement.							
Funds	4,600	12,100		10,722	53,689	Continuing	N/A
Quantities							
SPS					3	Continuing	N/A

Budget Activity: [illegible]

Program Element: [illegible] Defense Support Program (DSP)

Test and Evaluation Data

1. Development Test and Evaluation: The Defense Support Program is an operational system on which DT&E/IOT&E has been completed. OT&E is the responsibility of the operating command (Aerospace Defense Command). All discrepancies and deficiencies uncovered to date have been resolved or are planned to be resolved jointly by Aerospace Defense Command and Air Force Systems Command. Maintainability and reliability testing of the system were conducted by Air Force Systems Command during system development and continue to be conducted by the system operator.

2. Operational Test and Evaluation: Current testing activity of the DSP is limited to the combined DT&E/IOT&E of the Simplified Processing Station (SPS). The combined DT&E/IOT&E of a prototype SPS is scheduled to begin in January 1977 and be completed by June 1977. The combined DT&E/IOT&E will be conducted at IBM, the prime contractor; TRW, the integrating contractor; AF Weapons Laboratory at Kirtland AFB NM; and at a to-be-determined CONUS location. Testing of the prototype at the CONUS location will consist of 90 days of actual (not simulated) operations. An AFTEC test team composed of personnel from AFTEC, ADCOM, AFLC, ATC, SAC, MAC, AFCS, USAFSS, AWS, will conduct the IOT&E portion of the test. The purpose of the IOT&E is to provide data and associated analysis of the operational effectiveness, suitability, and military utility of the SPS prototype to assist in a production decision, scheduled for mid to late FY 1977, and to recommend changes in any follow-on production SPS models.

3. Systems Characteristics: The DSP Simplified Processing Station (SPS) operational prototype contract has been awarded to a contractor team comprised of IBM and TRW. The SPS will be a miniaturized, transportable, minimally manned, lower cost version of the current large, fixed, dedicated DSP ground stations. It is intended to act as a backup to current ground stations,

Technical

characteristics will be defined during the period of the contract. No demonstrated performance characteristics are yet available.

[redacted]