FY 1973 RDT&E DESCRIPTIVE SUMMARY

Date: January 1972

Program Element # 35158F Title Satellite Data System (formerly Aerospace Support Program)

Category Activities - Other Budget Activity 4-Military Astronautics and Related Equipment

BACKGROUND: The Satellite Data System was originally planned for synchronous equatorial orbit using a multi-purpose satellite system. Since the synchronous equatorial orbit cannot provide communications coverage over the polar regions above 75 degrees North Latitude, a highly elliptical polar orbit, multi-purpose satellite system, was selected to provide Such a system reduces the need for expensive overseas ground station facilities and enhances security control.

DESCRIPTION: The objective of the Satellite Data System (SDS), is the development, acquisition, test and launch of a multi-purpose satellite system. The system will be designed to support the Ultra High Frequency (UHF) two-way polar communications requirements for command and control of Strategic Air Command (SAC) Single Integrated Operational Plan (SIOP) forces which will complement the synchronous equatorial FLTSATCOM system. The SDS will also support the Air Force Satellite Control Facility (AFSCF) requirement for reliable S-Band communications from its remote tracking station at Thule, Greenland to CONUS ground stations

The benefits derived from SDS will be the reduction in the requirement for maintaining overseas facilities, enhancement of data security and two-way real-time command and control of the SIOP forces over the polar regions.

RELATED ACTIVITIES: FLTSATCOM, P.E. 33109N, The Space segment of the FLTSATCOM will be developed, procured and launched under this program element. Since FLTSATCOM is designed to operate at UHF and will be in synchronous equatorial orbit, it will complete the portion of UHF global communications coverage not provided by the Satellite Data System polar orbit. MILSATCOM, P.E. 33601F: The Air Force UHF airborne and ground terminals required for operation with the FLTSATCOM satellites will be procured within this program element.

WORK PERFORMED BY: AFSC (Headquarters Space and Missile Systems Organization (SAMSO), Los Angeles, California) is responsible for the Satellite Data System. The primary contractors, Hughes Aircraft Company, El Segundo, Calif. and TRW Systems Group, Redondo Beach, Calif., have both submitted proposals for evaluation. Contract award is presently planned for March 1972.

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PROGRAM ACCOMPLISHMENTS AND FUTURE PLANS:

1. FY 71 and Prior Accomplishments. The technology development phase was completed during FY 71 with finalization of technical reports and packaging techniques extending into FY 72.

Test results confirmed the technical feasibility of the design with specifications being met or exceeded, which minimized the overall program technical risk. This data was used during the contract definition phase.

2. FY 72 Program. Technical reports and packaging techniques were completed. The satellite multi-purpose configuration was established and the contract definition phase completed. Evaluation of contractor system acquisition proposals started in Nov 1971 with contractor selection planned for March 1972. FY 72 RDT&E funding was originally established at $5.0M; however, this was increased to $17.8M to permit the contractor to immediately proceed into the detailed satellite systems design and engineering leading to a full operational capability

3. FY 73 Planned Program. The FY 73 effort will continue the detailed systems and spacecraft design and engineering to support a communications and satellite systems Preliminary Design Review (PDR), a communications Critical Design Review (CDR), preliminary component fabrication, and the start of initial assembly and testing of the engineering model.

4. Program to Completion. The overall schedule is planned to support the system full operational capability by

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MILESTONES

EVENT	DATE	ESTIMATED ACCUMULATIVE RDT&E COST TO REACH MILESTONES
Spacecraft and Systems CDR	Jul 1974	54.7
First Article Config. Insp.		
Launch First Spacecraft		
Launch Second Spacecraft		
Full Operational Capability		

RESOURCES: ($ in Millions)

	FY 71 & Prior	FY 72	FY 73	To Complete	Total Est Cost
RDT&E	13.9	17.8	23.0		
Procurement:					
Funds	0	0	0		
Quantities	0	0	0		
Mil/Civ Man-Yrs in Spt of R&D (SPO and SPO Spt)	21	21	20		