

Laboratory for Space Sciences,
Vito Engineering Co.

Office of the Assistant Director for Administration and Management: Experimental Fabrication and Engineering Division, Melpar, Inc.

Office of the Assistant Director for Tracking and Data Systems:
Advanced Development Division,
Lockheed Aircraft Corp.

Information Processing Division,
Lockheed Aircraft Corp.

Network Engineering and Operations
Division, Lockheed Aircraft Corp.

Conducts a comprehensive program of basic research in the many physical space sciences. The major areas of research encompass studies of the structure, gross dynamics and transient phenomena of the sun, micrometeorites, the sources, natures, and effects of planetary ionospheres; the sources, natures and effects of magnetic fields and energetic charged particles; and the investigation of extraterrestrial astrophysical phenomena by electromagnetic radiation measurements. Analyzes and interprets the data obtained and publishes the final scientific results of the project. Develops detectors and payload instrumentation systems.

Plans and directs fabrication engineering and supporting developmental fabrication functions for the construction of aerospace experimental, prototype, flight, and laboratory equipment with the following general responsibilities: (1) Plans and conducts fabrication engineering and materials studies aimed at developing new and improved methods for aerospace applications. Provides engineering services to translate research and design performance requirements into realistic fabrication assemblies. (2) Provides and directs an experimental fabrication capability for fabrication services in the fields of machining and instrument assembly, metal forming and welding, electronic packaging, electrochemical processing, and plastics. (3) Evaluates outside source fabrication requests and monitors services by contractors.

Performs planning, analysis, supporting research, technical development and associated engineering for tracking and data acquisition systems and components with primary emphasis on the development and application of advanced technology for improving tracking and data acquisition. Provides technical support to the space flight projects in the form of planning, analysis, design and development. Plans, systems engineering and special subsystem design for tracking and data acquisition systems. Maintains prime responsibility for the integration of the tracking and data systems into the SRI effort into a coherent program. Supports the STADAN and manned flight networks engineering and operations with design, engineering, trouble shooting, and technical consultation in areas of technical specialties. Performs development and engineering in antennas, RF receivers and transmitters, real-time data handling and processing systems, command and control systems, tracking, timing systems, station and network automation, optical calibration systems, optical tracking, optical communications, and precision tracking.

Analyzes, develops, and implements information processing systems for both ground and as assigned spacecraft portions of the systems. On a permanent basis, works with all elements of the information systems staff with the experimental and spacecraft business and data outputs and including all steps up to and including the design to experiment and spacecraft subsystem engineers of data in the proper form for their final interpretation. Utilizes the latest concepts of information theory to analyze, recommend to experimenters and project managers, and implement the most efficient, meaningful, and reliable methods of information processing considering both spacecraft and ground information processing portions of the system. Operates the ground processing facility in response to project and experimenter requirements. Participates in the preparation of standards to guide the development of future systems. Provides financial, procurement, logistic, and manpower management support for the division.

Establishes, maintains, operates, and manages the space tracking and data acquisition network for the tracking, command acquisition of data and control of scientific and applications spacecraft. Manages network operations and provides logistic support. Assures readiness of personnel, facilities, equipment and systems to meet network requirements. Performs engineering and implementation including control facilities in support of network requirements. Utilizes results from development groups and other sources in advancing network capability. Provides engineering support to other Goddard and NASA networks as required. Obtains, installs and insures readiness of all network equipment. Participates in planning of future missions and advises on, and sets requirements for, development items to meet mission and network needs. Assures network and station readiness during launch and control operations, and provides specific individual project capability for unique requirements. Participates in the establishment of and performance of network tests to insure readiness in all major functional areas. Designs, constructs, and improves network facilities for all Goddard networks and other NASA networks as required.

1. See 1 above.
2. Services shall include electrical and electronic design, testing, drafting, and supporting fabrication services for flight hardware, ground support equipment and R. & D. hardware: mechanical design and drafting services: miscellaneous scientific analysis and laboratory equipment design.

1. See 1 above.
2. Services shall include fabrication process laboratory services; design analysis and supporting engineering services; electronic processing services; quality control services.

1. See 1 above.
2. Services shall include electrical and electronic consulting, design, testing, drafting, operation, assembly and supporting fabrication services for ground- and space-borne developmental equipment associated with communication, tracking, and other data handling systems; mechanical design, drafting, and technician services associated with development of telescopes, antennas, and servo systems; analytical services in the fields of physics, chemistry and mathematics, and associated documentation.

1. See 1 above.
2. See 2 above.

1. See 1 above.
2. Services shall include electrical, electronics, and mechanical design, testing and support fabrication services for the tracking and data acquisition network: computer programming services for real-time satellite orbital telemetry and attitude information; organize and interpret data; establish standardized procedures: provide technical writing and drafting support: design, fabricate and test specialized equipment and hardware.