

3.3.3 Breadboard Terminal Landing System

The Breadboard Terminal Landing System (BTLS) uses an SDS 920 computer. The computer is installed in a mobile van and is part of the system being developed for experimentation and for development of techniques for the safe landing of spacecraft after reentry from orbit.

3.4 REAL-TIME DATA PROCESSING

3.4.1 Central Instrumentation Facility

In the Central Instrumentation Facility at KSC, the GE 635 computer system interfaces with the telemetry ground station (Data Core) and the CIF display system as is illustrated in figure 3-4. The real-time functions consist of data inputs, storage, computation, retrieval, and output. The system accepts data from the ground station at a transfer rate of 432,000 bits per second and is capable of servicing 12 simultaneous display requests within a period of 1 second. This computer, a multi-processor multi-programmed system, performs general-purpose scientific computing and data reduction concurrent with its real-time data reduction and display functions.

3.4.2 Launch Information Exchange Facility

The LIEF/HOSC is a multipurpose data display, monitoring, and control facility which links MSFC with KSC. The system was built by overlaying a programmable control system on an existing integrated data reduction system and providing the data reduction system with visual output devices in place of conventional output devices. The visual output devices are mounted in or terminate in modular display consoles and a variety of television monitors. The consoles are equipped with discrete lights, meters, stripcharts, television monitors and a teletype input/output (I/O) connected to the Collector Distributor. Located at Huntsville, the system has full access to the KSC data system and can address any 400 10-bit words from the KSC Data Core at will.

The system currently handles prelaunch activities, flight operations support, and postflight data analysis. System coordination is accomplished through a very flexible telephone/intercommunications system. The LIEF/HOSC is operated during launch and postflight evaluation. Much of the equipment is used between flights to facilitate routine data handling and experimental systems development. The supporting data communications are extensively used between firings for computer sharing and exchange.