Ground Communication Facility and Network Operations Control Center Reconfiguration

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This report addresses the progress in hardware and software changes required for the Network Operations Control Center (NOCC) and the Ground Communications Facility's (GCF's) Central Communications Terminal (CCT) at JPL.

I. Summary

The reconfiguration of the computer facilities in the Central Communications Terminal (CCT) is progressing on schedule. The development configuration was completed in April and the planned summer installations and moves are underway. The new computer programs are being tested in the operational environment. Changeover to the new system is planned for April 1981.

As previously reported (Ref. 1), the Ground Communication Facility and Network Operations Control Center (GCF-NOCC) reconfiguration consists of a set of interrelated hardware and software changes in the Central Communications Terminal (CCT). When completed, this reconfiguration will require fewer computers, fewer programs and will provide an improved operational capability. It will also reduce operator workload and provide the base for a two-operator CCT.

New software programs are required for the Error Correction and Switching (ECS) Assembly and the Data Records Generation (DRG) Assembly. Revised programs are needed for the Central Communications Monitor (CCM) and the Network Communications Equipment (NCE). The computers themselves require additional memory and peripherals. Several switches are being implemented to permit flexible use of the magnetic tape units and full interconnection to the external high speed and wideband data communications circuits.

II. Hardware Status

Two additional MODCOMP minicomputers have been temporarily installed in the CCT and connected to the GCF and Mission Control and Computing Center (MCCC). These computers are being used for the development and test of the ECS and DRG programs and will be used for MCCC interface testing. These new computers are also connected to the backup CCM and NCE computers, permitting subsystem testing to be done in a realistic environment.

The rearrangement of the CCT floor plan commenced in early June and will continue through early August. During this summer period the equipment layout will be substantially changed to accommodate efficient operations and centralized control. The new CCT monitor and control console will then be installed with the switching capability needed to monitor either the old or new arrangements. A new 3-channel wideband capability will be installed and used during the fall for

MCCC and other interface testing. Additional computer peripherals will be installed at this time also.

III. Software Status

As of mid-June, all computer programs were nearing completion and were starting subsystem-level testing. During these tests the programs process operational data (from tape or in parallel with the regular computers) and intercommunicate in their normal fashion. All major functions have been validated, including gap detection, automatic recall and data merging to form IDR's.

Combined subsystems testing will continue through mid-September, followed by acceptance test completion in early October and transfer to DSN Operations on 1 November 1980. November and December are allocated to operations for operator training purposes. Final MCCC tests occur in January, followed by Project testing in February and March. The cut-over to the new system is planned for April 1981.

Reference

1. McClure, J. P., "GCF-NOCC Reconfiguration," in *The Deep Space Network Progress Report 42-55*, pp. 86-89, Jet Propulsion Laboratory, Pasadena, California, Feb. 1980.