c. Electronically Reconfigurable Payload Work Station

The Aerospace portion of the study is about 40 percent complete. The Science Applications Inc. effort will begin 15 April 1980 if present plans hold. The delay in getting started will slip the completion date to mid-July 1980.

d. Surveillance System Concept Design and Development

The potential of national surveillance systems may not be fully realized by operational commanders due to constraints imposed by system availability and commitment, as well as the high cost of development and demonstration of new space systems. This study will investigate the Space Shuttle as a relatively low cost, responsive test bed to demonstrate the operational utility of BYEMAN systems and technologies to operational military commanders. Once utility is demonstrated, programs for full scale exploitation of BYEMAN capabilities by operational commanders could be developed in accordance with PD-37. This effort will develop concepts for using the Shuttle to develop and demonstrate advanced BYEMAN systems in support of operational military commanders.

e. Shuttle Remote Manipulation System (RMS)

During December 1979 and January 1980, simulated spacecraft deployment and retrieval operations were conducted at SPAR Aerospace, Toronto, Canada. This work supplemented other NASA and SPAR RMS development simulations by exploring the feasibility of using RMS contingency modes for payload handling. An additional task, still in process, is an evaluation of RMS end effector's operational reliability. The simulation results (preliminary) showed that the RMS contingency modes are feasible alternatives for payload deployment and retrieval. However, the procedures for their use are often tedious and time consuming. Also, the "track and capture" phase of a retrieval encountered occasional misses and the need for abort, reinitialization

and retry. Further work is needed to better define the limits of contingency operations, and to study the guide/trunnion/scuff plate contact dynamics during deployment and berthing.

f. Looking Forward

Unsolicited proposals have been received for the following:

(1) STS-SRB (Solid Rocket Booster) Derivative Launch Systems

(2) STS Missions of Opportunity Study

These proposals will be reviewed and funding recommended as appropriate.