D2.0 PAXSAT COMPUTER REQUIREMENTS

The Paxsat computer may be a centralized, general purpose computer which interfaces with the GFSC Multimission Modular Spacecraft (MMS) Communications and Data Handling (C&DH) Subsystem.

The computer will communicate with other spacecraft subsystems through the MMS Multiplex Data Bus.

The physical interface with the C&DH subsystem will be provided by the DMA interface of the computer, which replaces the STACC Interface Unit (STINT) of the C&DH subsystem.

The computer will accomodate the following tasks through this interface:

(a) Delayed command storage,

(b) Loading and dumping of programs and data,

(c) Telemetry input and command output,

(d) Telemetry format control,

(e) Data output to real-time telemetry.

Other functions to be carried out by the computer include:

(a) Attitude determination and control,

(b) Housekeeping functions such as monitoring and controlling thermal and power subsystems,

(c) Limit checks to monitor and control spacecraft health and safety,

(d) Generation of summary status and messages,

(e) Mission-unique functions.

The Paxsat computer will receive prime and redundant secondary power rails (+5 V, +10 V, +12 V) from the spacecraft.