MIB

FUNCTIONALITY
INTERFACE TO ETHERNET

- Ethernet Protocol Drives the Probable Need For RTOS Kernel In MIB
- Ethernet Protocols to be Used – Probably TCP/IP, UDP, ICMP
- Multiple Commands or Monitors Can be Sent in a Single Ethernet Frame
RTOS

- Will Implement TCP/IP Stack
- May Also be Used to Prioritize Tasks and Handle Interrupts
- Should be as Compact as Possible
- We Want to Obtain the RTOS Source Code
COMMANDS

• Commands Can be Queued for Implementation at an Absolute Time
• Commands Can be Sent for Immediate Implementation
• Commands Are Addressed to an Individual MIB
• A Single Command Can Cause the MIB to Implement Multiple Actions
MONITOR DATA VALUES

- MIB Can Periodically Send Monitor Data Values
- Monitor Data Values Can be Requested by Control Computer
- All Monitor Data Values are Time Stamped
- Monitors Are Addressed to a Specific Destination Target
MIB TO MIB COMMUNICATION

• Some MIB to MIB Communication Would Be Beneficial, and is Planned
LOADING OF CODE

• MIB Loads Code From Flash Memory on MIB and Module at Power Up
• MIB Firmware Runs From On-Chip Memory
• Flash Memory on Module Can be Loaded by Ethernet
MODULE SERIAL NUMBER, SLOT ID

• MIB Will Obtain Module Serial Number and Slot ID From the Module
SAFETY OF MODULE

• The MIB will NOT Implement Tasks Necessary for Safety or Protection of Module
A/D AND D/A CAPABILITIES

• A/D And D/A Capabilities Will NOT be Directly Implemented by the MIB
• The MIB Will Communicate With A/D and D/A Converters on the Module Via SPI
TIMING PULSES AVAILABLE TO MIB

- 1 PPS
- 10 Second Pulse
- 19.2 Hz (Transition)
- 10 ms
TIME

- On Board Timer Will Keep Absolute Time to At Least 10 ms Resolution
- Time Will be Obtained From Control Computer Ahead of a Timing Pulse, and the Timer Will Start at the Arrival of the Pulse