atelitle system

Communications test

Day in the life Mule:

Test power features

* EPS power radings
* EPS power up command
* EPS low power mode identification
* power off devices
* EPS compatibility
* Health beacon

Test compatibility of all components

* CDH to GPS
* CDH to Gyro
* CDH to Arduino
* Arduino to radio
* CDH to EPS
* CDH to ADC for Mag
* CDH to ADCS
* ADCS to sun sensor
* ADCS to torque coils
* EPS to ADC for mag
* EPS to mag
* EPS to GPS
* EPS to Gyro
* EPS to Arduino
* EPS to radio
* CDH to globalstar
* EPS to globalstar
* EPS to batteries
* Antennas?
* Solar panels to battery
* Battery to level converter

Deployment of sensor nodes test

* Communications with ADC board
* GPS lock
* GPS decode
* Verificaion of position at the equator
* Nicrome wire burn tests
* CDH command to deploy
* Nick - ADCS STUFF HERE

ADC tests

* Nick

Data collection and storage

* GPS lock
* GPS decoding
* Gyroscope initialization
* Gyroscope verification
* ADC for Mag setup
* Mag verification
* Interrupt setup
* Text file initialization
* Memory allocation for data?
* Text file writes
* Text file reads
* Hamming weight error checking calculation
* Hamming weight error checking verification

WSN

Test compatibility of all components with CDH board

* CDH to GPS
* CDH to Gyro
* CDH to ADC for mag
* CDH to EPS
* CDH to radio
* EPS to battery
* Battery to solar panels
* Battery to level converter
* EPS to radio
* EPS to ADC for mag
* EPS to mag
* EPS to GPS
* EPS to Gyro
* CDH to SD

Power features

* EPS power readings
* EPS power up command
* EPS low power mode identification
* power off devices
* EPS compatibility
* Health beacon

Data collection and storage

* GPS lock
* GPS decoding
* Gyroscope initialization
* Gyroscope verification
* ADC for Mag setup
* Mag verification
* Interrupt setup
* Text file initialization
* Hamming weight error checking calculation
* Hamming weight error checking verification
* SD initialization
* SD write
* SD read
* EE prom read/write

Command execution:

Mule:

Watchdog

* Timing
* Initialization
* resets
* Save and close text files

Simulated GPS (jspoc)

* Jspoc

Unfinished files reciving

* Ask for unfinished files from WSNs

WSN:

Watchdog timers

* Timing
* Initialization
* resets
* Save SD\_RESETS
* Save GPS\_RESETS
* Save GYRO\_RESETS

Unfinished files transmission

* Discover unfinished files
* Create array of files to monitor
* Transmit unfinished files in wait for orbit to finish
* send message with orbit number

Simulated GPS (Jspoc, deployment info)

* jspoc
* estimation from deployment information

Saving data to memory

* Memory allocation for data? How many orbits?
* Memory writes (if SD fails)
* Memory reads (if SD fails)
* Clear memory for new data orbit radio re-routing
* Hamming weight error checking calculation
* Hamming weight error checking verification