



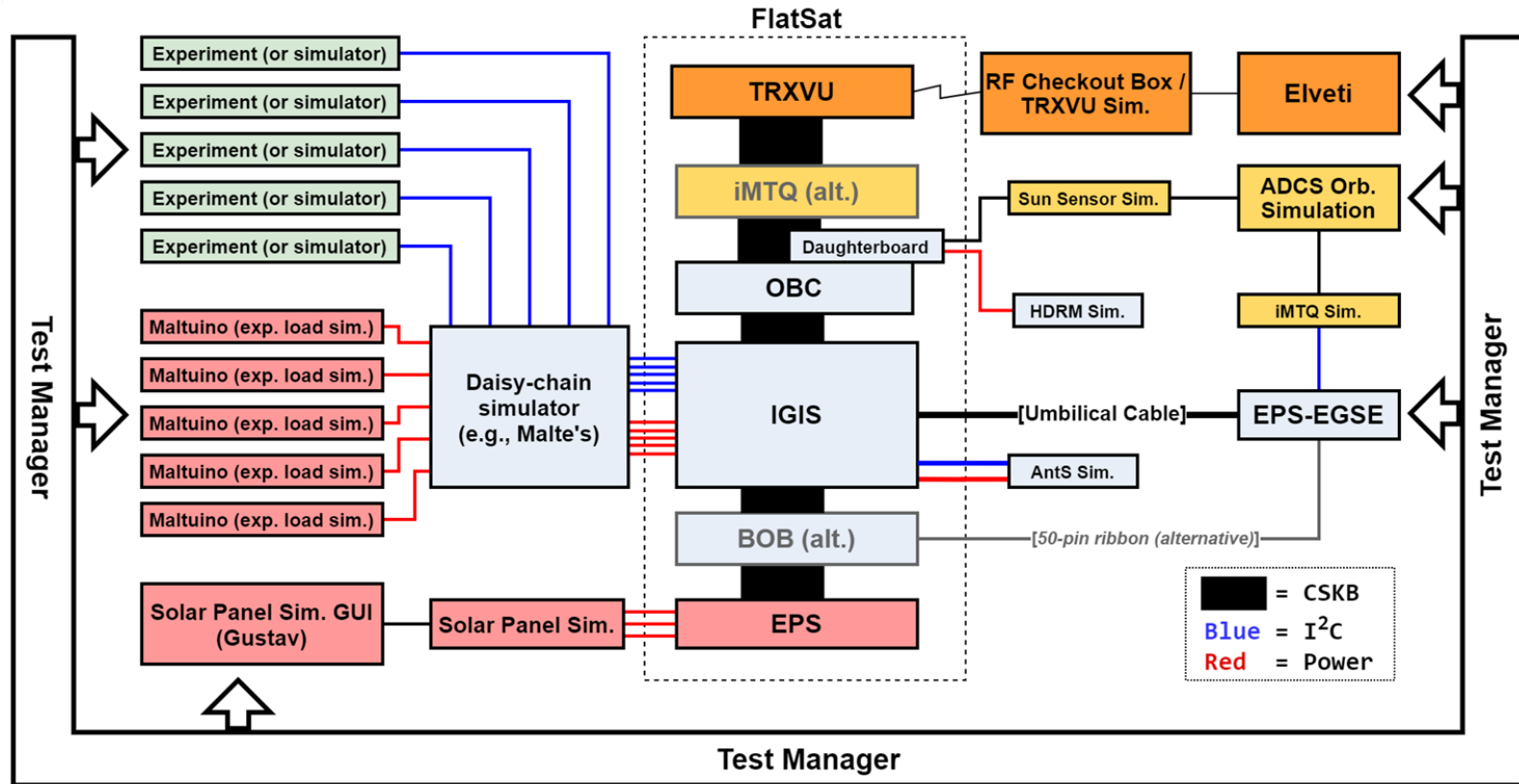
6. Functional Testing and Electrical Design

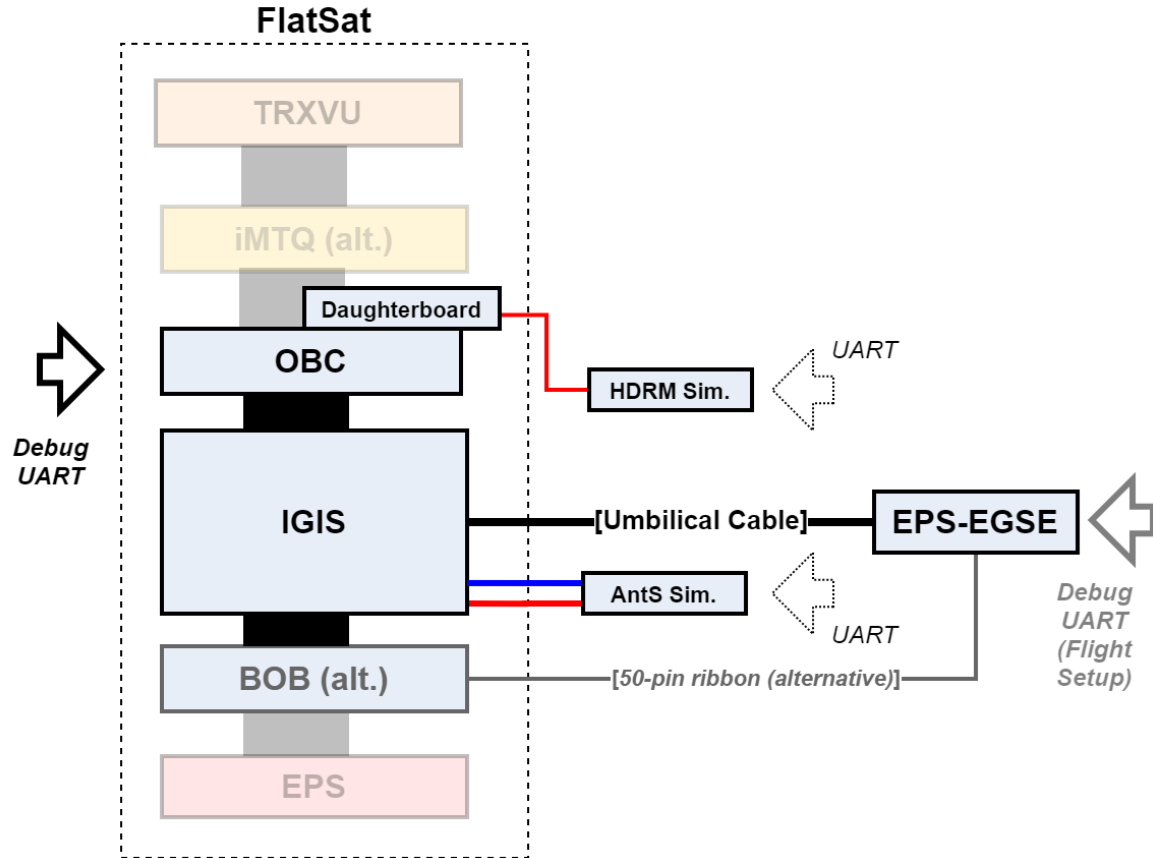
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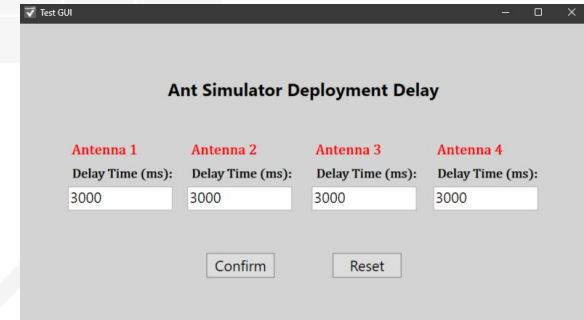
Functional Testing System



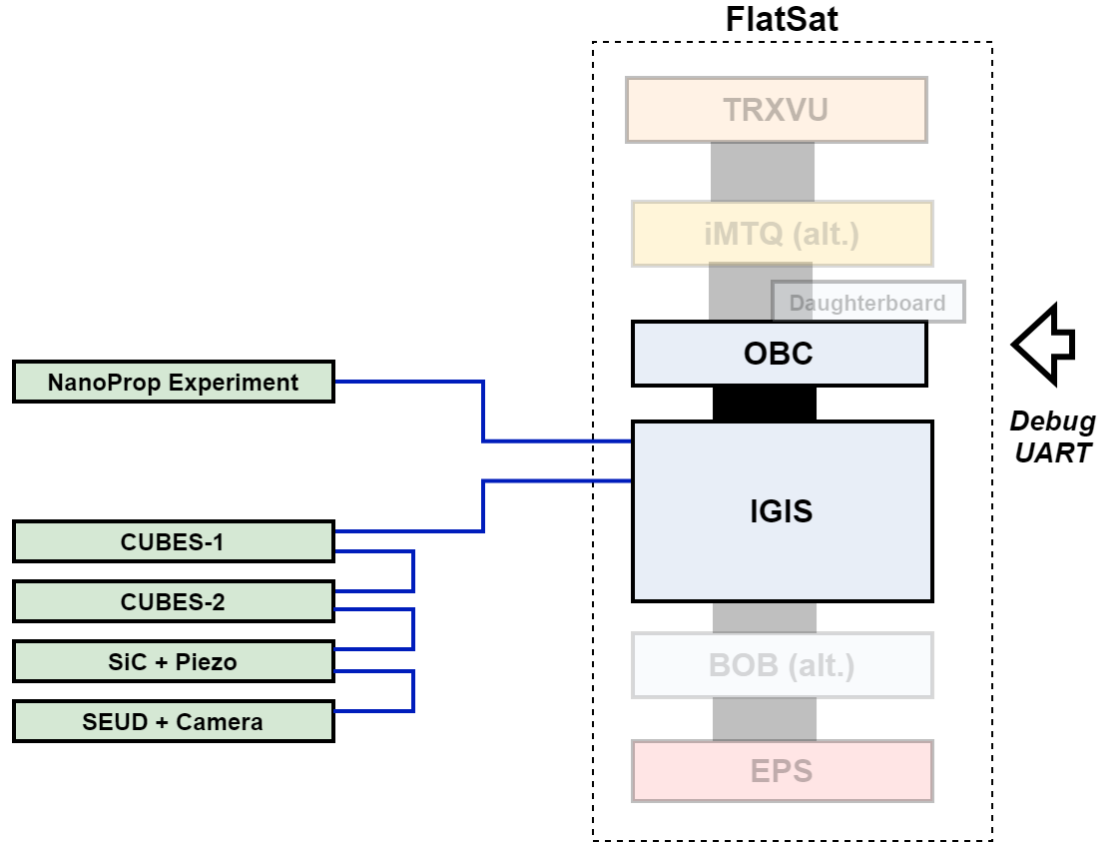




- Work done since beginning of the semester:
 - Connected HDRM Simulator with power draw to FlatSat and perform basic test
 - Acquired temperature sensors to connect to the OBC-DB
 - Tested software to read out temperature sensors connected to OBC daughter board
 - Designed a GUI for selecting AntS Sim. deployment delays
- Plans for the next semester:
 - Test temperature sensor interface with OBC software
 - Run init. phase with AntS and HDRM Simulators

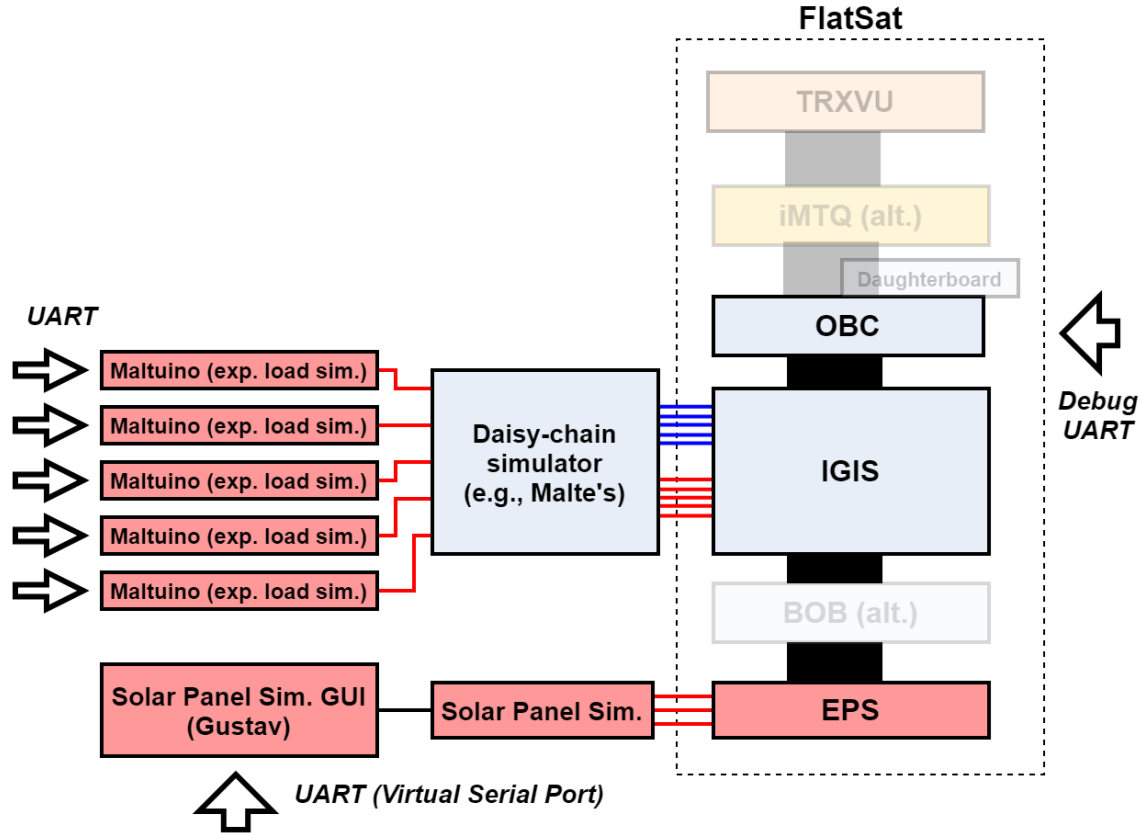


GUI for setting deployment delays for AntS Sim.

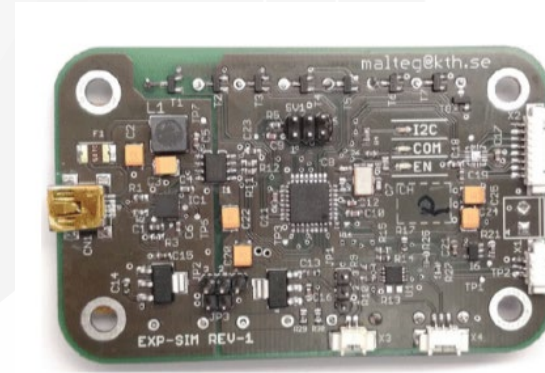
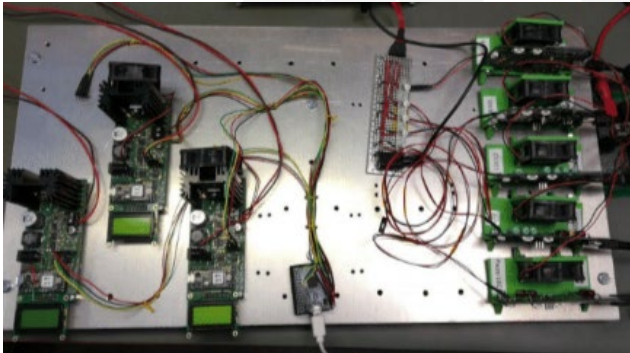




- Work since the start of the semester:
 - Two CUBES connected to FlatSat and read TM from them
 - SiC and LEGS connected to FlatSat and read TM from them
 - NanoProp (incl. Helper Board) connected to FlatSat
 - Accurate HK from thrusters (temperature and pressure)
 - “0” readout from tank temperature
 - SiC + LEGS basic testing performed
 - SiC + LEGS operating voltage range and power consumption tested
 - SiC VBAT protection circuit tested
 - ABF testing performed
- Work remaining:
 - (Optional) Run DAQ on CUBES, see if data can be obtained from it
 - Test battery protection circuit for CUBES
 - Test NanoProp operating voltage range
- When they become available:
 - Test SEUD



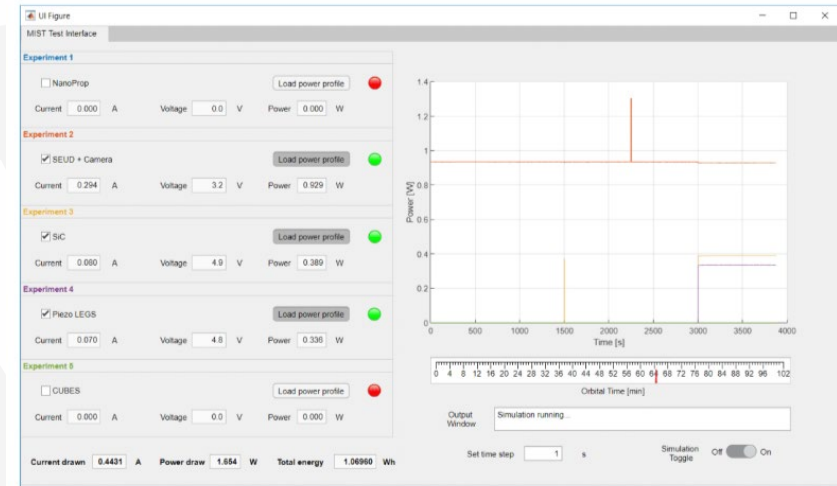
- Work planned for the semester:
 - Re-run the orbital simulation for electrical power analysis
 - Run the SPS for power input scenarios
 - Run the Exp.sims for power draw scenarios
 - Combine both for a complete orbital simulation
 - Battery testings with the new battery





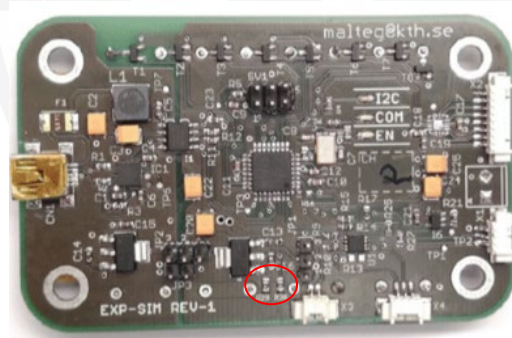
- Work done since the start of the semester:
 - SPS ran without issues
 - Exp.sims ran without issues after the connectors had been redone
 - Power profile for CUBES changed from 3.3 V to 5V and SEUD from 5V to 3.3V
 - Maltuino could be run in 16V

- Issues encountered:
 - Exp.sims drew incorrect amount of power [SOLVED]
 - One power output channel 5V(2) is not functional
 - Load cases input file for three exp.sims were incorrect [SOLVED]
 - Maltuino cannot read beyond 10 V

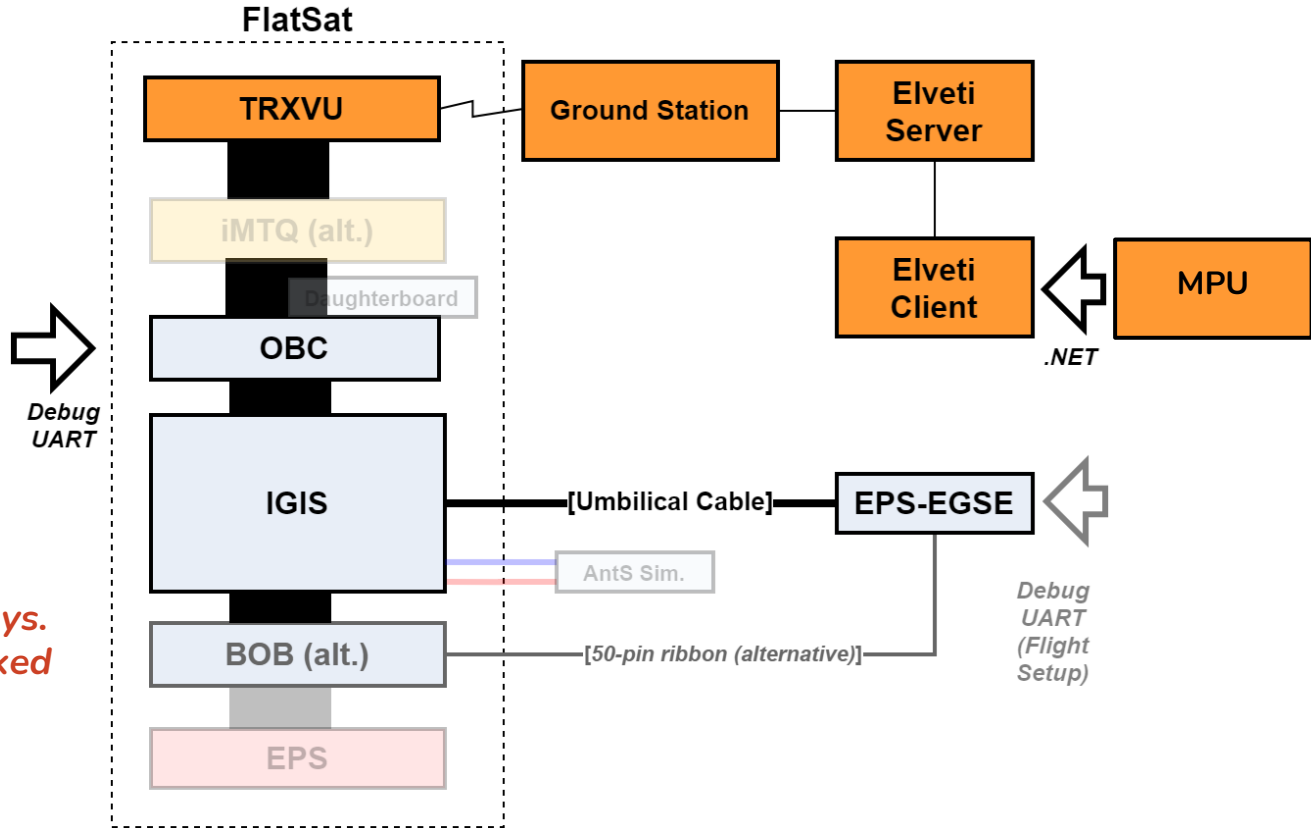




- Tasks for the next semester
 - Unified ground connection for all exp.sims
 - Change the PiezoLEG simulator to run on 16 V instead of 5 V for simulating power drawing from battery by the experiments (change of R29 and R31 required).
 - Run the different power scenarios with both SPS & exp.sims once the P31u has been repaired.
 - Battery testing with the new battery once the P31u has been repaired.



Satellite Communication Subsystem



*Sat. Comms. Subsys.
has not been worked
on this semester*