

AMSAT *Fox-1*
IHU Software Architecture Specification

5.1 Camera Subsystem (1.0)

This subsystem runs the camera. The Camera is only used in DATA mode.

```
// Camera Processing
// Satellite in DATA mode

Turn ON power to Camera Card;
Initialize Camera parameters;

while (Satellite is in DATA mode) {
    Tell Camera to take a snapshot;

    while( Camera has data to send) {
        Get data from Camera;
        Store in Camera Data Buffer
    }
    Send Camera Data to Communications Subsystem;
}

// If Satellite switched to TRANSPONDER mode
Turn Camera card OFF;
Clear Camera Data Buffer;
Do nothing until satellite switches to DATA mode;
```

5.2 Radiation Experiment Subsystem (2.0)

This subsystem is responsible for running the experiment, collecting the experiment data , putting the experiment data into the Experiment Data Buffer and sending it to the Communications Subsystem. The experiment must be turned off and processing stopped if the Low Battery indication is received from the Telemetry subsystem.

5.3 Software Debug Subsystem (3.0)

There are no flight requirements for this subsystem. It is available for software development purposes and will be disabled for flight. There is a serial debug port that may be used for simple messages (printf.) There is also a debug data store available that will allow data to be transmitted along with the telemetry data on the downlink. This will allow non-flight parameters to be provided during software development.