List of the components and their functionality in the ETOILES PowerSat Mission.

Core SW	
Component Name	Component Use/Functionality
Health	Software watchdog to check for process stall and trigger a soft reset
Telemetry Database	Location where all telemetry from all applications is stored with unique IDs
Fatal Handler	Fatal events are reported to Fatal Handler
Parameter Database	Location where all parameters used are stored and can be modified via commands from ground
Buffer Manager	Component to protect memory allocations using Linux provided system calls
Rate Group Driver	Runs all active rate groups. Activates a rate group based on time passed.
Active Rate Group	A rate group to activate a component when an event must occur. Used in various applications and managers
Event Logger	Collects all the events and sends to ground and the Com Logger
Com Logger	Logs all events and telemetry in a file
Time	Uses linux gettimeofday(), may be replaced with custom component to get time using GPS
Clock Synch	Synchronize computer clock using a TBD method (GPS or ground)
Memory Scrubber	Performs checksum on extra flight image copies, overwrites erroneous images if needed
Thermal	Collects thermal data from all spacecraft bus temperature sensors and thermocouples
Power	Collects power data from all spacecraft bus power sensors, collects battery status information
Battery Driver	Gets status and fault information from battery management system microcontroller. Connected to the Power component.
Sensor Drivers	Collects TBD data from a TBD type of sensor. Used in various components.
ADCS SW	
Active Rate Group	A rate group to activate a component when an event must occur. Used in various applications and managers
Gyroscope	Collects data from all gyroscopes. Reports status.
Accelerometer	Collects data from all accelerometers. Reports status.
Magnetometer	Collects data from all accelerometers. Reports status.
GPS	Collects data from the GPS and reports as needed.
Comms SW	
Active Rate Group	A rate group to activate a component when an event must occur. Used in various applications and managers
File Uplink	Receives files and stores in memory
File Downlink	Manages file downlink queue using commands and sends files to ground
Command Sequencer	Executes commands at the correct time based on a binary file
Command Dispatcher	Decodes an incoming packet and sends to the correct component based on the opcode.
File Manager	Creates interface for operators to access file system
Packet Framer	Converts data to a CCSDS-like packet to be sent over radio
Packet Deframer	Converts CCSDS-like from radio to a data packet
UHF Radio	Uses radio chip's SPI interface to send/receive framed packets

Beacon	Gets data from telemetry database and constructs the predefined beacon. Sends to UHF radio.
Payload SW	
High Power Board Controller	Collects data from various sensors on the high powered board. Operates the LED for power dissipation. Reports status packet.
Solar Array Payload Controller	Collects data from various sensors. Reports status packet.
Camera	Takes a picture in TBD format using a camera. Compresses images.