PACSAT RTOS Software Architecture By: Chris Thompson G0KLA, Burns Fisher WB1FJ Reliance Edge <u>Key</u> Version: 1.02 - 14 Jun 2023 File System AX5043 "FIFO not **Uplink Task** Uplink **RX PKT RX Task RX Event** ▶ Data empty"-Event Oueue Oueue **BBS** Queue 4x FTL0 State Read FIFO data RTOS Event AX5043 "FIFO not callsign Machines and write PKT empty' to queue **RTOS Priority** AX5043 "FIFO not -- ---- ---I-Frame empty" FTL0 Queue[4] **RTOS Timer** Status AX5043 "FIFO not empty" AX25 Task PB PKT **PB Task Oueue** Experiment & 4x Data Link PB State Broadcast State Machine Machine Telemetry Data callsign T1 x4 (WOD) T4 x4 РΒ Status **Experiments** I2C TX Task TX PKT Telem & SPI AX5043 "Ready to Queue **Control Task** CAN send" For each PKT Periodically in queue send collect preamble and telemetry and Telemetry packet -- ---assemble Sensors packets 3 Command **Console Task MET Telem Timer** Decode User interaction software and for testing hardware commands S AMSAT