Contribution ID: **15**   Type: **talk**

OreSat Firmware and Software Architecture

Thursday, 9 December 2021 15:40 (20 minutes)

This talk will give an overview of the software and firmware running the OreSat CubeSat system's microcontrollers and microprocessors, and their development environment. We'll discuss the three levels of computing onboard (ARM Cortex M0, M4F, and A8), our use of the ChibiOS real time operating system on the M0 and M4F systems, and our use of Linux on the A8 systems. We'll talk about the CANopen communication we use between the nodes, and a bit about the various forms of over-the-air firmware updates we have, over a debug channel and over the CAN bus. Finally we'll discuss the "FlatSat" integration workbench we use to do remote software development and integration testing.

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Session Classification: Talks