Spirit vs Opportunity: Deciding between S-band and UHF communication strategies

Decision Points:

* Cost
  + Licenses/application
  + Equipment
  + Long-term plans for future cubesat missions
* Downlink Capabilities (1 image per F.N. (UHF) vs. ~1.8images per F.N. (Spirit))
* Risk/Reliability
  + S-band license bandwidth
  + ADCS S-band requirements
    - Pointing accuracy during “comms” mode
    - Multiple att. mnvrs. Needed between “comms” mode and “sun-facing” mode for Spirit
  + Capabilities for distributed ground station network (UHF) vs. singular ground station (S-band)
  + Encryption (S-band can more easily encrypt data; is part of transmitting process)
* Power Requirements
* Anything else?

Tasks:

* Collect the necessary data for each decision point

Notes:

* From my understanding, pointing accuracy needed during comms mode for Spirit should not be impossible, but the frequent mnvrs needed between “comms” and “sun-facing” may not be realistic for our system.