UAV Project and Future Work in Senior Design

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Current UAV Project

• Mission: Telemetry downlink with UAV for data in UHF band using SDR.
  – Telemetry:
    • GPS Position
    • Images from UAV camera
    • Battery Voltage
    • Temperature Sensor
    • Spectrum of uplink as seen from UAV
Current UAV Project

• Telemetry sent as commanded from ground station.
• Link parameters (frequency, mode and data rate) controllable from ground.
• Link uses packetized data in DPSK mode.
• Bandwidth limited to 50 kHz by FCC rules.
• Ground control through GUI.
Current UAV Project

• Ground control GUI
UAV Future Project Possibilities

- Add capability to steer onboard camera from ground.
- Add ground station display to show flight track on map.
- Incorporate target recognition.
- Add air speed sensor and telemetry.
- Instrument Landing System (ILS)
UAV Future Project Possibilities

• Electronically steerable antenna arrays for ground station.

• ACARS, Aircraft Communications Addressing and Reporting System
For next meeting:

• Research future work possibilities
• Choose one and meet with Dr. Katz and Prof. Flynn to discuss.
• Present outline of choice for future work at next Wednesday meeting.