Project: QB50

Satellite Control Software

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QB50 proposed Satellite Control Software

- The QB50 project proposes to the interested CubeSat teams a Satellite Control Software, which functions are to:

  - Provide a control system that sends telecommands, receives and process/monitors telemetry and stores the mission data and configuration;

  - Decode the AX.25 frames in the UI version of the AX.25 protocol and provide telemetry archiving and replay functionalities (at frame level);

  - Provide an interface with the ground station software;

  - Provide interfaces to control and monitor the CubeSat in real time;

  - Provide QB50 science data to QB50 data repository server.
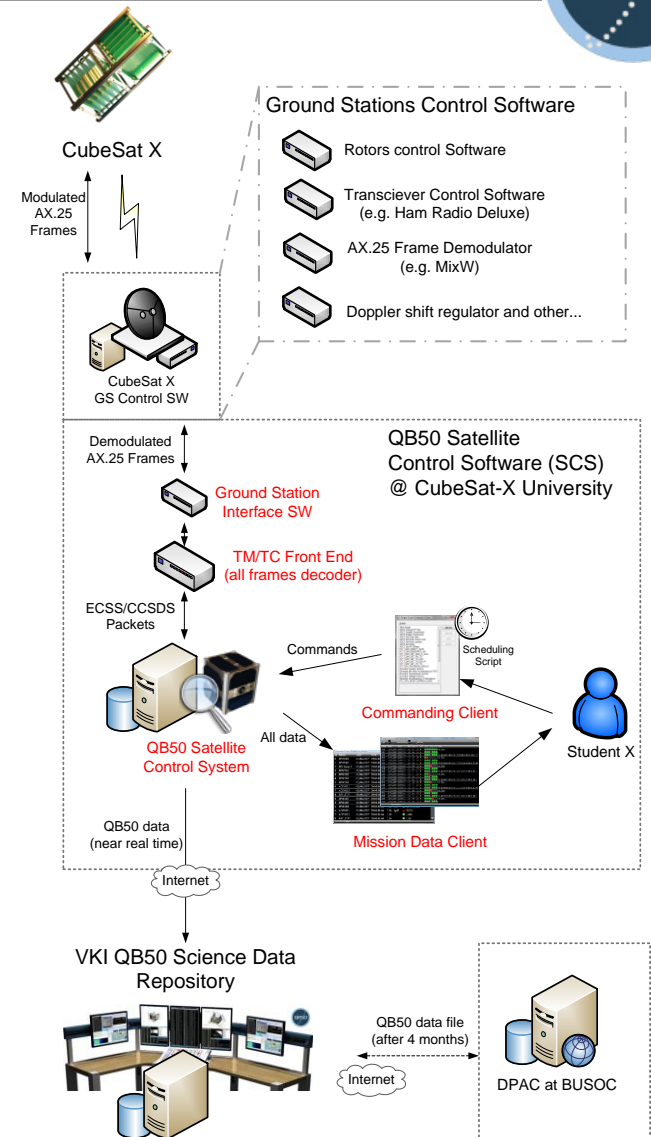
Implications for using the QB50 SCS

- Technical
  - Use of the AX.25 UI frame protocol
  - Data packets follow the ECSS/PUS standard (tailored, simplified)
  - Flight software needs to be compliant with that packet standard
  - Need a server at your uiversity

- Programmatic
  - Tentative delivery to university teams: 1 year before CubeSats delivery to launch services
  - License will be established between EPFL and your university

- Advantages
  - Makes CubeSat team's ground software development lighter
  - Can be used during subsystem or system level tests

Questions for you

- Select 1 person representing your team

- Who feels they need support from QB50 with the ground segment in general?

- Who plans on using the QB50 SCS?

- Who plans on using the AX.25 protocol?

- Who plans on using RF bands other than VHF/UHF?