

OUFTI-2: status report on the design and construction of the second educational nanosatellite featuring D-STAR amateur-radio communications

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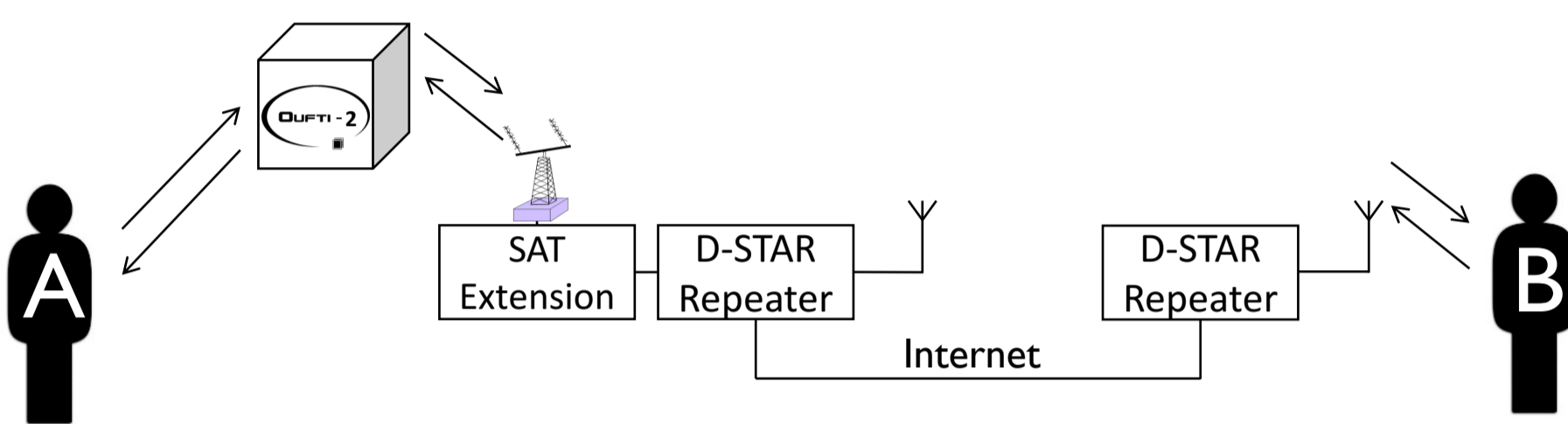
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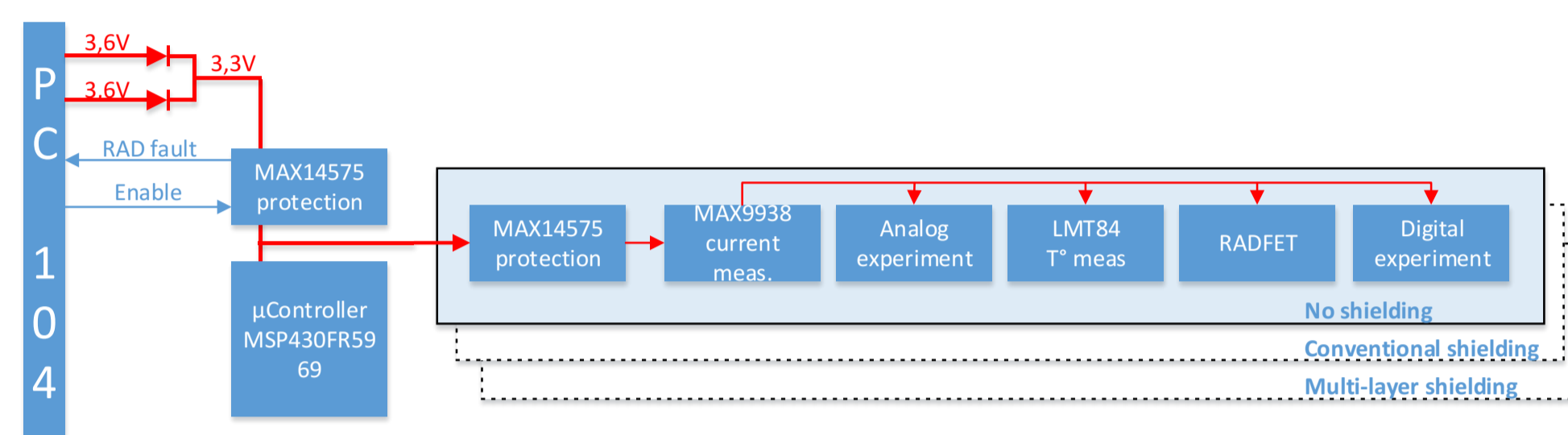
Main payload: D-STAR space repeater

- D-STAR stands for Digital Smart Technologies for Amateur Radio
- Digital communication protocol (radio and internet) allowing voice & data
- Radio frequencies are 145MHz and 435MHz



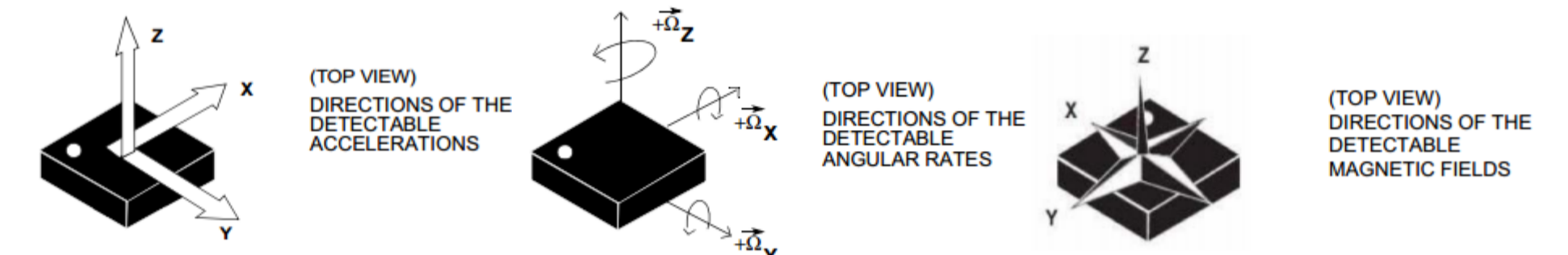
Secondary payload: RAD

- Measure the degradation of electronical component by radiations
- Does measurements for the same experience with 3 different shielding
- Dose measured by RADFET

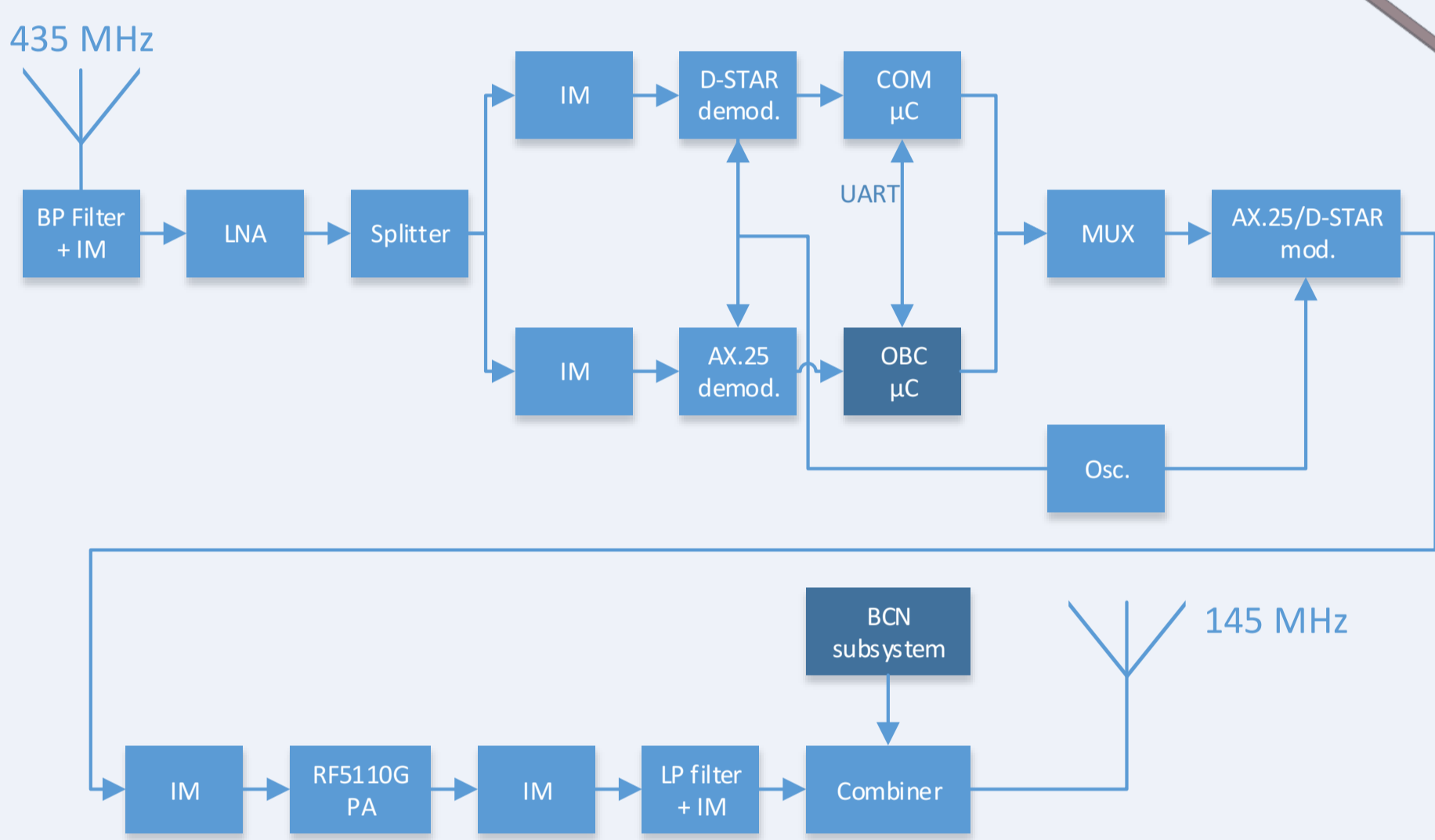


Secondary payload: IMU

- Determines attitude via inertial & magnetic measurements
- Developed by college students from Sint-Pieterscollege from Jette, Belgium

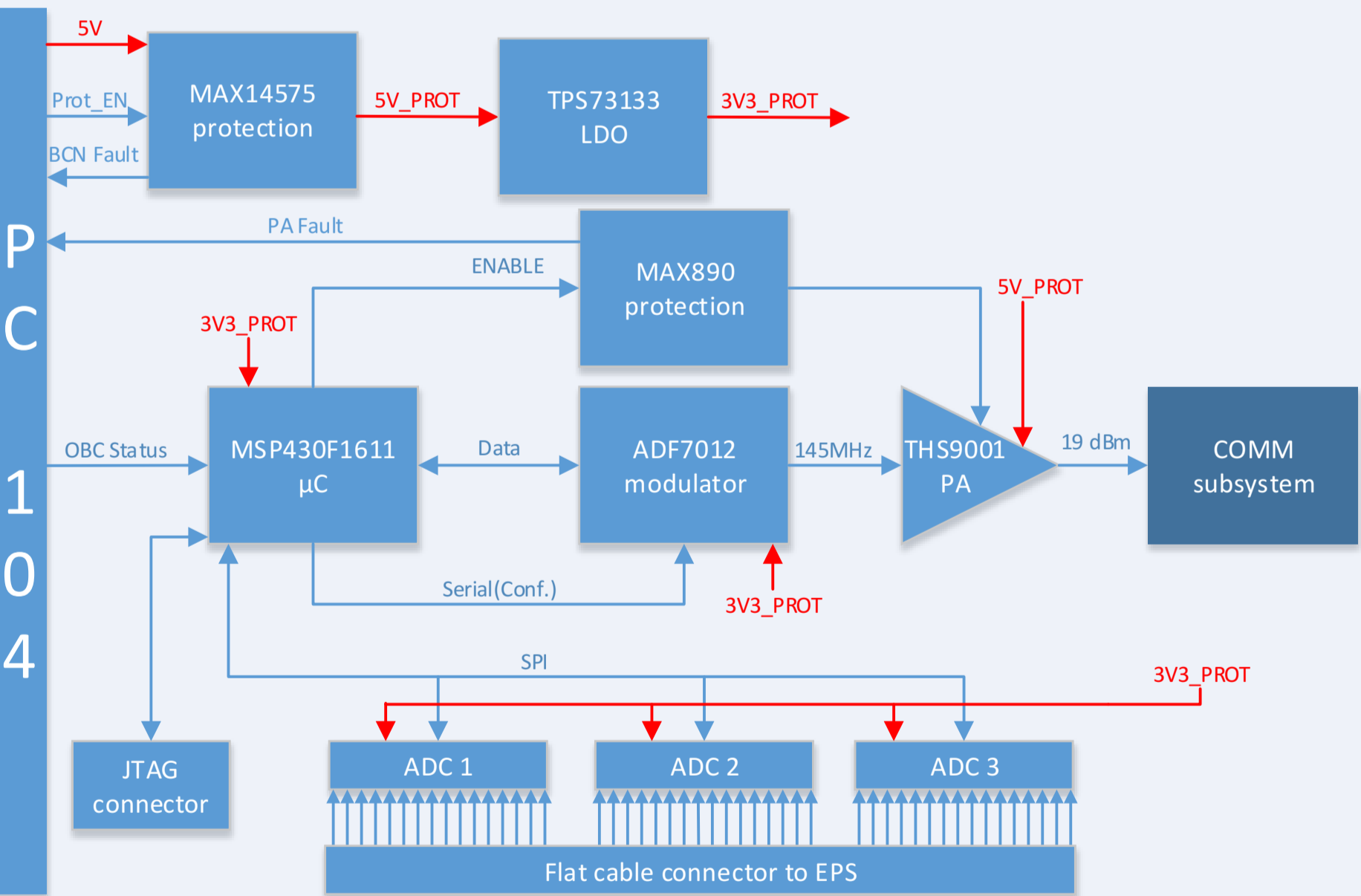


Communication



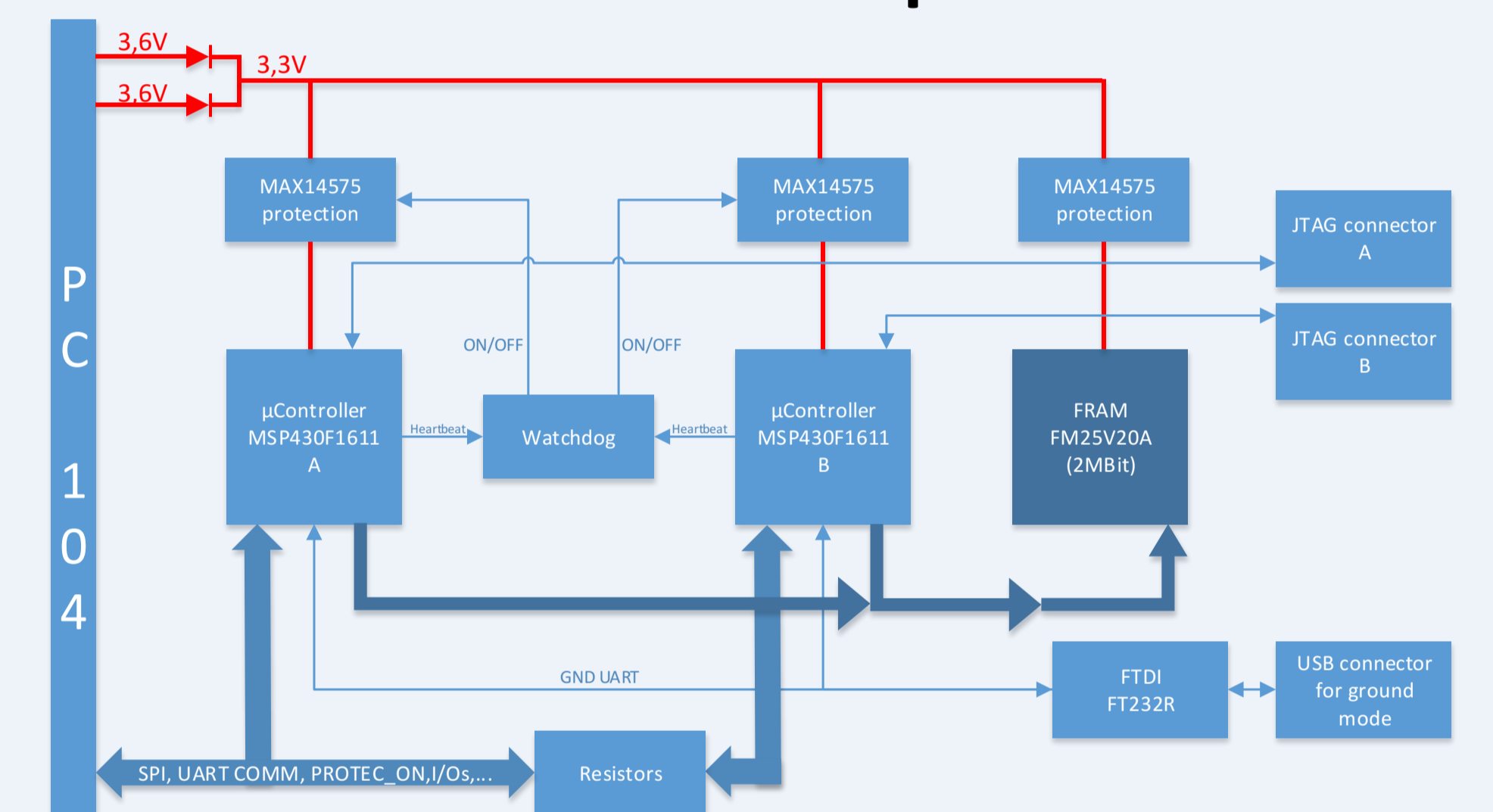
- RF shielding to avoid electromagnetic interference
- Addition of beacon mode in D-STAR Tx

Beacon



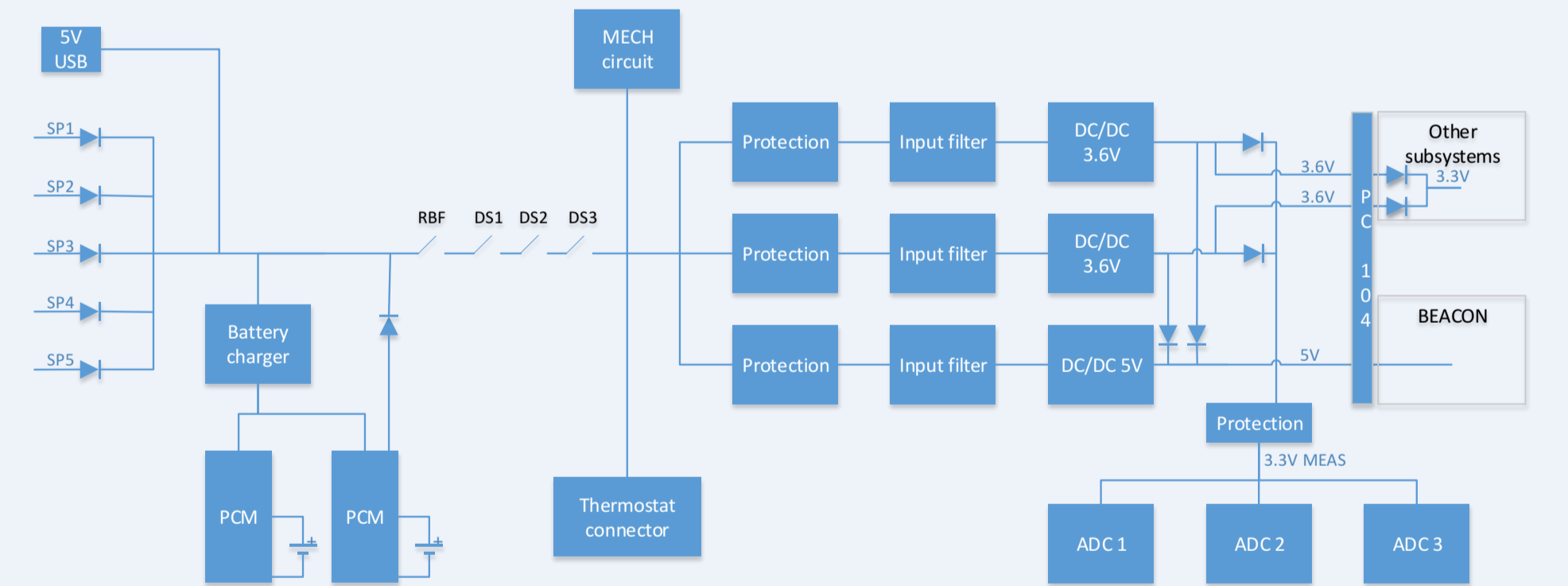
- Increased power efficiency
- Continuous transmission
- Alternating high/low speed transmissions

On-Board-Computer



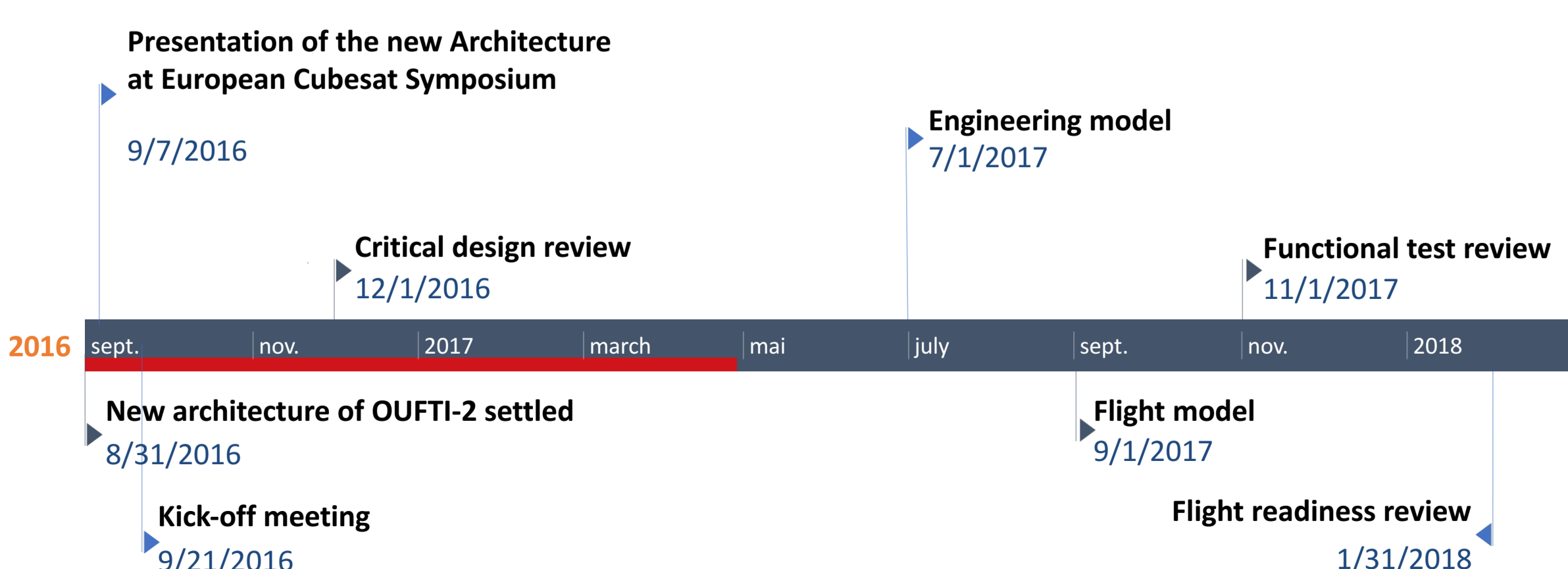
- External watchdog
- Two homemade on-board-computer's
- In orbit programming from ground

Electrical Power System

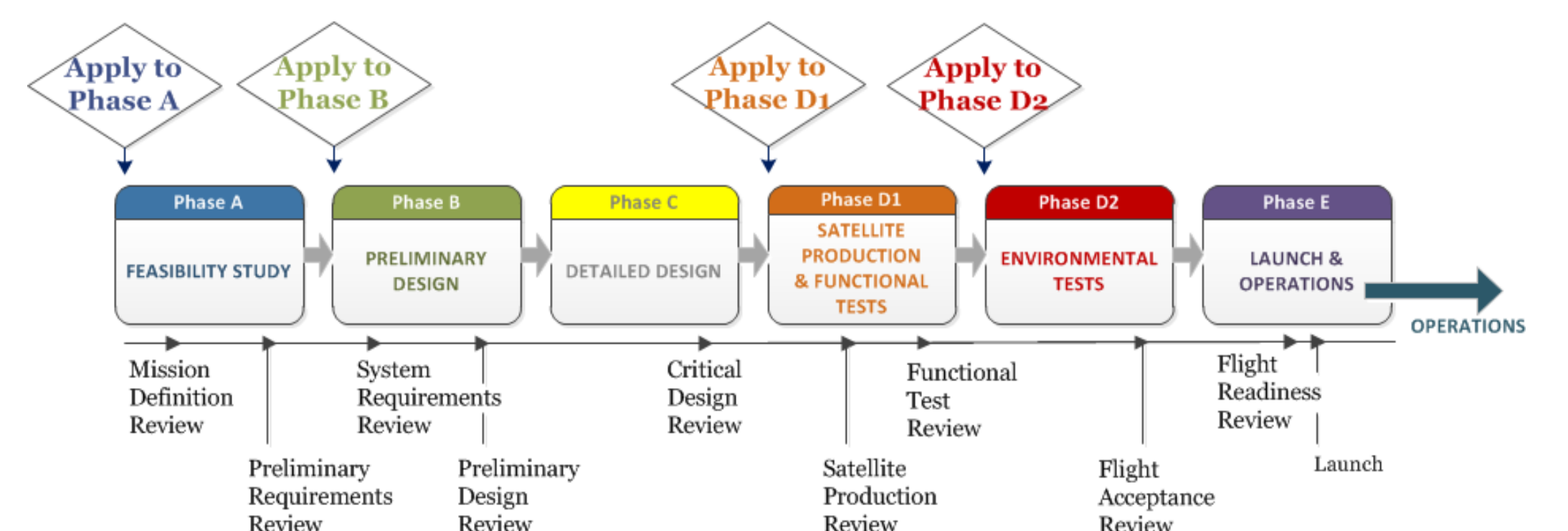


- Semi-regulated power bus
- Batteries meeting requirements of ISS
- New power dissipation electronics

Timeline and milestones



FYS! 2017 programme



OUFTI-2 is pre-selected to take part in the ESA "Fly Your Satellite! 2017" programme.