

**Q1)** "Data sheets and technical documentation for the Nexus smart phone, Parallax Inc, Propeller P8X32A serial router board, and other EtherSat bus technical data are available upon request. "

I was wondering if you might be able to forward the above documentation package to me via e-mail

**A1)** Nexus S smart phone datasheet is found at:

<http://www.samsung.com/us/mobile/cell-phones/GT-I9020FSTTMB-specs>

Android OS specs are found at:

[http://en.wikipedia.org/wiki/Android\\_\(operating\\_system\)](http://en.wikipedia.org/wiki/Android_(operating_system))

The Parallax Propeller router board datasheet can be requested directly from the Contracting Office – [marla.p.lefevre@nasa.gov](mailto:marla.p.lefevre@nasa.gov) .

**Q2)**--What would be the spacecraft orbit, or the best estimate of it?

**A2)** the orbit will likely be 500km circular at 40.5 deg inclination. Please note this could change and would be updated.

**Q3)**--What power (watts, volts) would the EtherSat bus provide to the instrumentation package?

**A3)** the answer to this question can be found in the draft RFP. Current best estimates are:

Average continuous electrical power provided on orbit limited to 78.5 mW at 3.3 VDC.

Maximum peak electrical power provided limited to 1000 mW at 3.3 VDC for 113 minutes per day.

**Q4)**--What data buffering would the EtherSat bus provide?

**A4)** Each EtherSat satellite has a large "data buffer" on the phone, most of 16GBytes. The downlink data rate will be a bottle neck. Current best estimate is about 1.5 GBytes per day, each work day (no ground operations after work hours or on weekends). In certain operating scenarios, if 4 spacecraft in a cluster are transmitting via the same ground station, the payload data buffer could be (in effect) 282 Mbytes per spacecraft per day ( current best estimate.)

There are no margins in these numbers.

**Q5)** Technical: will it be possible to have the instrument face be (roughly) ram-looking?

**A5)** SOW states: " External spacecraft surface area required for payload antennas, windows, sensor ports, deployment mechanisms, etc. shall be negotiated before award." There are no pre-determined limits to the shape of the payload surface area.

**Q6)** What are the orbit parameters for the EtherSat satellites (inclination, apogee, perigee)?

**A6)** The orbits we have modeled in detail have been between 40 and 70 degree inclinations and 450km to 500km altitude. Currently, the nominal orbit is circular with a 450km altitude and 40.5 degree inclination.