Questions and Answers 09/14/10

Question #1: Will Pan-STARRS consider a proposal that includes an alternate M1 support arrangement which will meet all optical performance requirements but will not be compatible with the PS1 M1?
Answer #1: We have stated in the RFP that we are willing to consider supports different from pneumatic supports. We also state in the RFP that vendors may make changes in the locations of the support points, but in doing so they must be careful to include the costs of making appropriate bonding jigs that will probably be required to implement such changes. We are not requiring PS2 to be compatible with PS1 in any way. (09/14/10)

Question #2: PSDC-350-004-01, Section 4.2.26, requires only the secondary spider supports be insulated or made from low CTE material. What is the underlying system issue solved by this requirement?
Answer #2: The underlying issue of requiring low CTE material or insulation on the secondary spider vanes is one of stable telescope pointing. Rapid and non-uniform temperature changes in these support vanes can cause changes in the telescope pointing by several arcseconds. (09/14/10)

Question #3: In the PS2/PS4 Vendor Specification document (PSDC-350-004-01) it states (section 3.1) that "The TCS software will be supplied by the telescope vendor". What is the precise scope of "the TCS" that is to be supplied?
Answer #3: Section 4.4 of the Vendor Specification states the requirements of the vendor-supplied software. However, we apologize for not making our requirements clearer with respect to the RFP and in general. Our interests are twofold. First, we want prospective offerors to propose what SW options/capabilities they can provide (and what the cost impact is). Second, regardless of the SW provided by the telescope vendor, the Pan-STARRS Project requires the capability to control the telescope should the Project decide to write its own TCS, modify parts of a vendor-supplied TCS, or add capabilities not included in a vendor-supplied TCS. We envision these capabilities as being provided by being able to work through a vendor-supplied interface to control of the telescope. (09/14/10)

Question #4: Document PSDC-250-002, Pan-STARRS System Concept Definition, is dated August 11 2004. This document contains extensive requirements and specifications for the Telescope Control System, for example Section 7.4.4 "TCS Tasks and Functions". Are there plans to update this document?
Answer #4: Yes, but probably not before the RFP period concludes, so consider the comments in Answer #3 as most current and definitive. In terms of the RFP, PSDC-250-002 is really intended only as an indication of how the Project intends to operate the Pan-STARRS telescopes. (09/14/10)

Question #5: Is the vendor-supplied Telescope Control System required to provide all the functions and meet all the requirements and specifications for the TCS as described in the

document PSDC-250-002 (Pan-STARRS System Concept Definition)?
Answer #5: Not necessarily, see Answer #3 above. (09/14/10)

Question #6: Should the TCS handle the transformation (including pointing model) from RA and Dec positions to Alt and Az, or should it only accept position demands in Altitude and Azimuth?
Answer #6: The TCS software should allow control of the telescope in at least three different modes:

       a. Specification of Alt,Az,Rot positions
       b. Specification of RA,DEC,PA positions
       c. Specification of raw encoder counts in each axis. (09/14/10)

Question #7:   Section 4.8.5: The intent of having a manual override on the brakes is unclear.   What is the purpose of the override?
Answer #7:   The intent of the manual over-ride of the brakes is to allow manual servicing of both the telescope itself and of instruments and components on the telescope. (09/14/10)

Question #8: Section 4.5.4.2: The pointing precision time interval (one week) is inconsistent with the calibration interval (one month). Please clarify is this is correct.
 Answer #8: This is a good point! We apologize for the inconsistency here. The inconsistency comes from our view of pointing tasks. We have no problem with applying pointing model corrections requiring the observations of only a few (~5) stars on a weekly basis, but we do not wish to acquire a full scale pointing model (requiring ~80 star measurements) very often. Single star offsets may even be applied on a nightly basis. The monthly requirement refers to the need to acquire full scale pointing models. (09/14/10)

Question #9: Can you confirm that the TCS should *not* accept mount control demands containing both position and timestamp? If no timestamp is supplied with a position, potential TCS command latency issues are exacerbated such that a real-time OS (not Linux) might have to be adopted.
Answer #9: This is also a good point. The prohibition of position timestamp commands is probably an error. The use of timestamps to avoid the need to have a real-time control platform is considered a positive thing by the project. The intent of this specification was to make available to the project software the ability to control the rates of the axes velocities for guiding purposes rather than guiding by specification of changes in the pointing position. It is believed that this type of control will allow smoother and better control of the guiding motions. (09/14/10)

Question #10: We do not understand the terminology and project desires for control relative to section 4.4.5 and 4.4.8. We understand that latency should be minimized, but 'velocity commanded control' and the project's vision need clarification. Velocity and position must be tied together so that the proper trajectory is followed.
Answer #10: See comments for Answer #9. These specifications are not intended to drive the costs of the software or impose awkward constraints on the vendor, but to make it clear that the Project may desire to control the telescope using rate tracking algorithms. (09/14/10)

Question #11: RFP131031, page 14: Who installs the Project-supplied cables?
Answer #11: We will install or help to install the project supplied cables. If these cables are needed at the factory for FAT testing, the Project will supply them at a time negotiated with the vendor. (09/14/10)

Question #12: How long after the order for PS2 would RCUH order the second two units?
Answer #12: The subsequent telescopes probably would be ordered sequentially, but not necessarily. The starting time for the fabrication of subsequent telescopes is not completely certain at this time, but depending on the schedule for the PS2 telescope, and the availability of funds for the Project, the next telescope probably would be ordered in 2012 or 2013. (09/14/10)

Question #13: Will RCUH purchase the second two units together or sequentially?
Answer #13: Most likely sequentially, but it depends on the schedules of both the Project and the selected vendor as well as the availability of funds. (09/14/10)

Question #14: Will the Project provide the cranes for the installation of the second two units?
Answer #14: Yes. (09/14/10)

Question #15: Could the low-level functions of the TCS, such as motor current monitoring, be provided by the motion controller?
Answer #15: Yes, but the data from this must be readily available to the observatory software. In other words, the motion controller must have a communications interface that allows the observatory software to have immediate access to these data without re-configuration of any hardware. It must provide the appropriate protocols and schema to allow the project to program acquisition of these data without stopping the primary functions of the normal telescope software. (09/14/10)

Question #16: We would like to kindly ask if there is any chance to extend the due date for submission of the documents. We have been informed just recently about the issue of this tender and the time left is by far not enough to compile the documentation needed. We need about 2 months more for this kind of project.
Answer #16: Please refer to Amendment #1 Request For Proposals RFP131031 dated 09/09/10 for revisions to the schedule of key dates. (09/14/10)