Management plan for Keck NGAO WBS 3.2 AO System Design

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Purpose

The purpose of this memo is to outline the approach to managing the Keck NGAO AO system design effort, work breakdown element 3.2.

Effort definition

The Systems Engineering Mangement Plan (KAON #414) contains the WBS definitions for tasks down to WBS level 4. These cover optical designs, mechanical design of the support structure and optical layout, wavefront sensors design, acquisition and calibration system design, and electronic control systems including supervisory, motor, and AO real-time controllers. The effort starts after the completion of the architecture definition phase, roughly mid August, 2007 and extends through mid December, 2007 according to version 26 of the NGAO system design tracked schedule.

People

People involved in this effort come from across the three participating institutions. The lead optical designer is Brian Bauman, the lead mechanical designer is Viswa Velur, and the lead software engineer is Erik Johansson. Assisting in the work are Chris Lockwood (mechanical), Mark Reinig (real-time control), Rich Dekany (optical), Jim Meguro (mechanical), Anna Moore (opto-mechanical), David LeMignant (calibration), Matthew Britton (calibration), and Chris Neyman (various system issues).

Plan outline

We will initiate the process with everyone reading, at least a draft version of, the system architecture definition and any versions of functional requirements documents that have been released. We will start with a kick-off meeting (mixed face-to-face and telecom, with preference for face-to-face) to get everyone familiar with the plan and the people and their roles.

The team will then break into two major groups: opto/mechanical and electronic/software. Both the optical and real-time software architecture and requirements have now been fairly well defined as a result of the system architecture process, however the layout and the overall computer architecture are less well defined at this time. There should be at least one set meeting per week of each of these groups, with more frequent “informal” communications as needed.

The opto-mechanical effort is further divided into the relay (including splitters and switchyard), and the wavefront sensor design groups.

The three groups will reconvene together for a mid-term update (~end of September), and begin meeting as a single group again starting in November to finish the final design and documentation.

Meeting schedule

Week of

Aug 20: kickoff
Aug 27: separate team meetings (3)
Sept 3: separate team meetings (3)
Sept 10: separate team meetings (3)
Sept 17: separate team meetings (3)
Sept 24: separate team meetings (3)
Oct 1: mid-term meeting (all groups)
Oct 8: separate team meetings (3)
Oct 15: separate team meetings (3)
Oct 22; separate team meetings (3)
Oct 29: separate team meetings (3)
Nov 5: separate team meetings (3)
Nov 12: all hands group meeting
Nov 19: all hands
Nov 26: all hands
Dec 3: all hands
Dec 10: all hands
Dec 17: all hands

References

1. Keck Next Generation Adaptive Optics: System Design Phase Systems Engineering Management Plan, KAON 414, Version 2, Sept. 29, 2006. NGAO_SD_System_Eng_Mgmt_Plan_v20.doc.
2. NGAO System Design Schedule, May, 2007. NGAO_SD_schedule_v26.mpp.