

5.1 Telescope and Facilities Upgrade, Integration and Installation of DECam, SISPI and CTIO Operations

Necessary to make sure the
camera works with the telescope.

Integration at FNAL

- Construction of the Blanco top-end model and telescope simulator at FNAL is essential to reducing the actual integration times once the camera is in Chile and mitigating the risk of catastrophic inconsistencies.
- It is important that CTIO staff remain integrated in the process of building and testing the model.
 - 1) This will provide expertise to the operation of the simulator.
 - 2) This will allow flow-back of information on the operation and possibly allow any additional Blanco top end modifications to be identified before the camera arrives at the telescope.

Integration Concerns

- There is concern about the potential lack of time to test the integration of the fully populated focal plane camera with the telescope simulator. In the schedule, 6 weeks are allotted, which might not be enough if problems are found at this stage. This is mostly driven by the timescale to populate the array with science-grade CCDs
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- *The readout requirements are not very challenging compared to other cameras that are being designed and constructed. There is concern that the integration will not place enough emphasis on minimization of effects like crosstalk that may become limiting to the survey if the telescope/optics work better than expected.*

Integration of the Camera on the telescope

- The schedule for integration is tight. There are two potential integration issues. The CTIO plan for installation, commissioning and integration is still not completely settled, but they seem both too aggressive, in that the last step (science validation) is very quick (2 weeks) (although the rest of the on-sky validation timescales are reasonably good). On the other hand, the schedule we were presented had DES not starting until the end of January 2011, which really sets the survey “real observations” start in September 2011. This has to be accounted for in placing DES in the context of other experiments, or, all efforts have to be made for commissioning to occur in September 2010.

Issues of Control at integration

The current plan has acceptance testing and handoff from DECAM of the camera occurring on the floor of the Coude feed rather than on the telescope. This has the potential to cause conflicts of responsibility if something goes wrong, if possible.

Problems with definition of the deliverables.

NOAO needs to specify its expectation for the deliverables, in particular for the community needs pipeline and documentation and fix those before the time of the next DOE review if at all possible.

Long Term Issues

- Clarification of the long term responsibilities (if any!) of the various parties should be explicit. Although the DES team will be the largest single user of DECam, transfer of at least some maintenance expertise to CTIO will be required.

Recommendations

- An explicit plan should be made to integrate the camera at FNAL with engineering-grade CCDs if necessary.
- The DES project has to plan either for a revised science case for a start of real science in 2011 or for a revised project schedule that has commissioning on the telescope starting before September 2010. A description of the science costs of missing the earlier date needs to be specified.
- A signed MOU is desperately needed. It has to contain explicit details about responsibilities and contingencies during the commissioning phase at CTIO (both on the floor and on the telescope), in particular plans need to be in place for ameliorating problems that arise.
- NOAO should implement its process for determining its expectations for deliverables (community pipeline, documentation, quick-look tools). Ideally, this should be done with community representation, and be completed well before the next DOE review.