

Proposals for Breakouts Related to Systems Engineering

LSST 2014

Critical topics

Title (possibly plenary): *Current Commissioning Plans and further development directions*

Description: How does the shortened Commissioning time affect the plans for the three phases of Commissioning? What additional work is needed for properly defining Commissioning, who could do it, and on what schedule? Our Commissioning plans have implications for operational readiness, as well as the integration and test plans of the subsystems.

Organizer: Chuck Claver & George Angeli

Number of hours needed: 2

Who: Subsystem I&T representatives, systems engineering, project science

How many: 15-20

Constraints on schedule: None

Title (possibly plenary): *System Performance Metrics and the current performance status*

Description: Current status of performance simulations, subsystem representations in the simulations; system image size and ellipticity estimates. Throughput specification updates and current performance estimates.

Organizer: George Angeli & Chuck Claver

Number of hours needed: 1

Who: Subsystem and project systems engineering, project science

How many: 15-20

Constraints on schedule: None

Title: *Systems Engineering Integrated System Database*

Description: This is a meeting to talk about how to build a database that can contain and version all the information needed to describe the LSST system. There will be interfaces so that all subsystems of the project can use the same parameterization of the overall LSST system.

Organizer: Andy Connolly

Number of hours needed: 3

Who: Representative from simulations (opsim/phosim/catsim), systems engineering, camera, data management, telescope

How many: 15

Constraints on schedule: None

Title: *Technical Operations Concepts – status and development plans*

Description: The Technical Operations Concepts document is going to summarize all the operational activities and use cases necessary for running the observatory, from calibrations to maintenance. A

cross-subsystem working group has been formed to develop the document; this will be the first report of the working group.

Organizer: Chuck Claver & Brian Selvy

Number of hours needed: 1.5

Who: Working Group members, subsystem and project systems engineering, project science, engineering teams

How many: 20 - 25

Constraints on schedule: None

Title: *Visualization tools – project wide standards and exceptions*

Description: A wide range of data visualization needs exist across the project. This breakout is a follow-up on earlier discussions aimed to standardize the tools meeting these needs.

Organizer: Gregory Dubois-Felsmann

Number of hours needed: 1.5

Who: subsystem and project systems engineering, subsystem software teams

How many: 15

Constraints on schedule: None

Title: *Interface TBDs and TBRs*

Description: In-person discussions with objective of eliminating uncertainties in the current interface definitions. The longer session is instead of dedicated shorter sessions addressing subsystem pairs. This organization provides more flexibility for focusing on the important and/or resolvable problems.

Organizer: Brian Selvy

Number of hours needed: 4.5

Who: subsystem and project systems engineering, subsystem engineering teams

How many: 15

Constraints on schedule: None

Other topics

Title: *Middleware Software demonstration*

Description: Given the activity on planning early integration steps between Camera, DM, TCS and OCS, it would be necessary to review the state of the Middleware software that gets utilized for communications and synchronization between all LSST subsystems. Also, the advent of outside contracts like mount, dome, hexapod, etc. makes it necessary to provide the vendors with the communications package to integrate those systems into the LSST observatory.

Organizer: Dave Mills, German Schumacher

Number of hours: 2

Who: Subsystem engineers and integrators.

How many: 12

Constraints: none

Title: *Verification and Compliance Matrix for the Telescope and Site subsystem*

Description: Review of the integration and test (verification) plans; current expectations for meeting the subsystem requirements.

Organizer: Brian Selvy & George Angeli

Number of hours needed: 1.5

Who: telescope and project systems engineering, project science, telescope engineering team

How many: 15

Constraints on schedule: None

Title: *Verification and Compliance Matrix for the Camera subsystem*

Description: Review of the integration and test (verification) plans; current expectations for meeting the subsystem requirements.

Organizer: Brian Selvy & George Angeli

Number of hours needed: 1.5

Who: Camera and project systems engineering, project science, camera engineering team

How many: 15

Constraints on schedule: None

Title: *Verification and Compliance Matrix for the DM subsystem*

Description: Review of the integration and test (verification) plans; current expectations for meeting the subsystem requirements.

Organizer: Brian Selvy & Chuck Claver

Number of hours needed: 1.5

Who: DM and project systems engineering, project science, DM engineering team

How many: 15

Constraints on schedule: None

Title: *Verification and Compliance Matrix for the OCS subsystem*

Description: Review of the integration and test (verification) plans; current expectations for meeting the subsystem requirements.

Organizer: Chuck Claver & George Angeli

Number of hours needed: 1.5

Who: OCS and project systems engineering, project science, OCS engineering team

How many: 10

Constraints on schedule: None

Title: *Verification and Compliance Matrix for the EPO subsystem*

Description: Review of the integration and test (verification) plans; current expectations for meeting the subsystem requirements.

Organizer: Brian Selvy & George Angeli

Number of hours needed: 1.5

Who: EPO and project systems engineering, project science, EPO team

How many: 10

Constraints on schedule: None

Title: *Applications of PhoSim for Wavefront Sensing & Optical Performance Simulation*

Description:

Organizer: John Peterson

Number of hours needed: 2

Who: phosim, wave front sensing team, camera, T&S, DM

How many: 15

Constraints on schedule: None

Title: *Applications of PhoSim for Sensor Simulation*

Description:

Organizer: John Peterson

Number of hours needed: 2

Who: PhoSim, Sensor, Camera, DM

How many: 15

Constraints on schedule: None

Title: *PhoSim Science Applications & Tutorial*

Description: There was a question about whether the time allotted is enough. From Debbie's experience 2 hrs is just enough time to get up and running. Anything more will require more time.

Organizer: John Peterson

Number of hours needed: 2

Who: PhoSim, DM, Science collaboration members

How many: 25

Constraints on schedule: None

Title: *Bridging the gap between algorithm development simulations and DM*

Description: There is a lot of work going on simulating simulator effects and on the algorithms to correct

for them. Much of this work is outside of DM, but the algorithms will inform DM and results from DM processing will feed back into algorithm development and simulation fidelity. What is the process for directing the feedback between these three systems?

Organizer: Chris Walter? To be confirmed

Number of hours needed: 3

Who: Camera, PhoSim, DM, Others working on algorithm development

How many: 10

Constraints on schedule: None

Title: *Integration of DM CameraGeom into other work*

Description: Many subsystems need to know about they layout of the camera relative to other coordinate systems (pixels, focal plane, pupil). DM has worked on solving the problem of mapping from one system to another and others may be interested in making use of this work.

Organizer: Simon Krughoff

Number of hours needed: 2

Who: CatSim, PhoSim, Camera, DM

How many: 10

Constraints on schedule: None

Title: *Development requirements on project wide models (Sky, sensor properties, cloud, etc.)*

Description: There are many models in use in different simulation efforts (cloud, sky, sensor), but currently none of them have project wide implementations. This breakout will discuss the models that need to be project controlled and what the interfaces are for those models. We do not intend to discuss the implementation of the models.

Organizer: Simon Krughoff or Lynne Jones

Number of hours needed: 3

Who: PhoSim, CalSim, CatSim, DM, Camera

How many: 15

Constraints on schedule: None

Title: *PhoSim Users Group*

Description: Complimentary to the other PhoSim users meeting, this breakout will be an introduction to the PhoSim users group as well as provide a venue for sharing results acquired by using the PhoSim

Organizer: Kirk Gilmore, Debbie Bard

Number of hours needed: 3

Who: PhoSim, CatSim, Science Collaboration

How many: 20

Constraints on schedule: Broadcast at wide scientific audience.

Title: *Dealing with data from test instruments at Cerro Pachon and Cerro Tololo*

Description: Functionally, how do we handle taking the data? What interfaces need to be in place to be able to use the data that come from instruments installed on the summit?

Organizer: Chuck Claver and Lynne Jones

Number of hours needed: 2

Who: PhoSim, DM, Simulations, T&S

How many: 10

Constraints on schedule: Before the breakout discussing the All Sky Camera

Title: *Incorporating the All Sky (and cloud?) Camera into Simulations Models*

Description: This is may be included in the previous breakout. Not only does the data need to make it into the hands of the people how can use it, but it also needs to be incorporated into models. How do we use these data to simulate calibrations and do the end to end tests validated by data from the test instruments?

Organizer: Michael Wood-Vasey, T&S, Lynne Jones

Number of hours needed: 3

Who: System Engineering, T&S, PhoSim, CalSim, DM,

How many: 10-15

Constraints: After the breakout that discusses the functional aspects of taking the test instrument data.