Large Synoptic Survey Telescope (LSST)

Leadership Roles, Responsibilities, Authorities and Accountabilities (R2A2s)

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Change Record

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1   Project Management Office

1.1   Project Scientist

Roles

- Provides leadership for the overall science goals and deliverables of the LSST Project:
    - Serves as the custodian of the Science Requirements Document (SRD).
    - Acts as the principal leader of science studies for the LSST Project.
- Serves as a science representative on the LSST Change Control Board.
- Identifies, champions, and develops new scientific opportunities for the LSST in collaboration with the Project Science Team and the System Scientist.
- Interfaces with the science community in order to ensure it that the LSST program is scientifically and technologically well founded.
- Represents LSST at scientific meetings and in technical publications.

Responsibilities

- Undertakes science risk reduction efforts, algorithm development, and technical validation and optimization studies, together with the Systems Scientist and LSST team.
- Analyzes the scientific impacts of technical descope options in coordination with Systems Engineering.
- Leads the scientific analyses of performance that require expertise from the community that is not available within the project team.
- Works with the LSST Management Team to prepare for LSST Project reviews.
- Ensures the validation and verification of the SRD requirements, together with the Systems Engineering and Subsystem teams.
- Chairs the Project Science Team (PST), defines its agenda in consultation with the Project leadership, runs PST telecons and face-to-face meetings, and maintains PST minutes and other documentation.
- Analyzes and monitors the overall LSST system performance margin relative to the SRD, with inputs coming from Systems Engineering.
- Supports the Systems Scientist in commissioning efforts and participates in acceptance testing.
- Organizes word-wide LSST science collaborations and interactions, as appropriate.
- As with all LSST Team members, the Project Scientist fosters a culture of safety and respect.

Authorities

- The Project Scientist role extends over the entire Project to ensure consistency of the scientific capability of the LSST.
- Defines the science acceptance criteria for LSST deliverables and verifies that they have been

met.

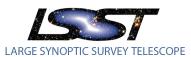- Delegates authority and responsibility as appropriate to Subsystem Project Scientists.

- Coordinates the work of Project Scientists (Subsystem Project Scientists and System Scientist) required to ensure the validation and verification of the SRD requirements (Project Scientists are functionally accountable to the Project Scientist and administratively to the Project Director).

- Monitors the day-to-day scientific activities of the Project, and works in close coordination with the Project Science Team and Systems Engineering, to ensure that LSST meets the science requirements and delivers the best possible data to achieve the scientific objectives.

- Interacts freely with the entire Project personnel, including all the major subsystems (telescope, camera, data management and EPO), over the whole life cycle of the project from D&D to commissioning and hand-over to operations.

- Initiates and participates in reviews of any aspect of the LSST design, construction, or operation.

- Proposes tactical and technical decisions with science implication to the Project Manager and Project Director.

- Hires/appoints and supervises the LSST Performance Scientist and other assigned personnel to the Project Science group.

- Collaborates with the T&S Project Scientist and the Survey Scientist on optimization of the LSST observing strategy.

- Collaborates with the DM Project Scientist and the Calibration Scientist on optimization of the LSST calibration efforts.

- Collaborates with the Systems Scientist and the Simulations Scientist on optimization of the LSST simulation efforts.

Accountabilities

- Reports to the LSST Director.

- Maintains an accurate and complete Science Requirements Document.

- Understands and documents the scientific function of LSST system, both as designed and as built, in collaboration with the Systems Engineering and subsystem Project Scientists.

- Recommends to the Project Manager and Project Director any changes necessary to meet the science or data quality requirements.

2   Data Management

2.1   Data Management Project Scientist

Roles

- Leads the definition and understanding of the science goals and deliverables of the LSST Data Management System.

- Interfaces the science community to ensure that LSST's DM deliverables are well understood and remain scientifically and technologically well motivated.

- Identifies, develops, and champions new scientific opportunities (as well as risks) for the LSST DM system.

- Serves as the DM Project Science representative on the Change Control Board.

- Serves as the DM Project Science representative on the Project Science Team.

- Oversees and directs the work of the DM Project Science Group.

Responsibilities

- Communicates with DM science stakeholders (LSST Project Scientist and Team, advisory bodies, the science community) to understand their needs and identifies aspects to be satisfied by the DM Subsystem.

- Develops, maintains, and articulates the vision of DM products and services responsive to stakeholder needs.

- Works with the LSST Project Scientist to communicate the DM System vision to DM stakeholders. Works with the DM Project Manager to communicate and articulate the DM System vision and requirements to the DM construction team.

- Regularly monitors DM construction team progress and provides feedback to the DM Project Manager to ensure the continual understanding of and adherence to the DM vision, requirements, and priorities.

- Develops and/or evaluates proposed changes to DM deliverables driven by schedule, budget, or other constraints.

- Provides advice to the DM Project Manager on science-driven prioritization of construction activities.

- Verifies the science quality of DM deliverables and the capability of all elements of the DM System to achieve LSST science goals (Science Verification).

Authorities

- Defines the vision and high-level requirements of the DM products and services required to deliver on LSST science goals.

- Defines the science acceptance criteria for DM deliverables (both final and intermediate) and verifies that they have been met (Science Verification).

- Sets requirements for and assess/validates results of data challenges and other precursor experiments.
- Hires or appoints Institutional Project Scientists ("Product Owners"), DM Project Science Group staff, and other direct reports and defines their responsibilities.
- Delegates authority and responsibility as appropriate to Institutional Project Scientists and other members of the DM Project Science Group.
- Convenes and/or participates in all DM reviews.
- Represents and speaks for the LSST Data Management.

Accountabilities

- Reports to the LSST Project Scientist.
- Directs the work of DM Institutional Project Scientists and other DM Project Science Group staff.
- Holds DM staff accountable for scientific performance in accordance with DM goals and policies, both directly and through the Institutional Project Scientists.
- Provides safe, effective, efficient operations in a respectful work environment.