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	Author(s)		
	Subsystem	Systems Integration	
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1 Change History Log

Revision	Effective Date	Description of Changes
A	25 October 2011	Presented at CD-1 Review. Subsequent minor re-formatting to release under LCN-1015.
B	29 June 2015	Converted to latest Camera document template. In Section 11, described the integrated change control process, clarifying the interrelationship between the technical change workflow and the cost/schedule/PMCS change workflow. Released per LCN-1369.

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5 Introduction

5.1 Purpose and Scope

This Configuration Management Plan (CMP) describes the configuration management (CM) responsibilities and processes that support the design and implementation of the Large Synoptic Survey Telescope (LSST) Camera. The purpose of this CMP is to identify the organization providing configuration control, define what a configuration-controlled item is, describe the change control process, and identify the plan for configuration status accounting and verification.

This CMP is designed to ensure that:

- Baselines are defined and documented
- Documentation defining the baseline is identified, released and controlled
- The Configuration Control Board (CCB) is established and functions according to CMP guidelines
- Changes to the baseline are evaluated and controlled
- Approved configuration changes are implemented and tracked
- Configuration status accounting is accomplished

5.2 Background

This CMP is applicable to documents and records generated and controlled by the LSST Camera project in support of work performed as part of the project, including the design and development, fabrication, integration, test, operations, and servicing of the Camera and its constituent subsystems. It provides direction for all personnel regarding configuration management activities in support of the Camera project, including subsystem teams and collaborating institutions. Configuration management is applied to documents and records selected by the Camera Project Office and subsystem managers. These include design documents, specifications, drawings, procedures and other support documents, as well as procurement records, inspection data, filled in travelers, and other records. The scope of this CMP encompasses the entire lifecycle of the Camera project.

This CMP addresses configuration management of performance and engineering characteristics, scope, schedule, and cost at the Camera system level. Configuration management processes at higher levels are described in [2] and [3].

6 Applicable Documents and Reference Documents (Required)

The following documents are cited for reference only, and do NOT form a part of this specification:

Ref #	Document Number and Title
[1]	LCA-38, "LSST Camera System Engineering Management Plan"
[2]	LPM-19, "Large Synoptic Survey Telescope (LSST) Change Control and Configuration Management Plan"
[3]	LCA-225, "Project Execution Plan for the Large Synoptic Survey Telescope Camera (LSSTCAM)"
[4]	SLAC-I-051-201-001-00, Project Management System Change Control Procedure
[5]	LCA-342, "LSST Camera Change Notice (LCN) Form"

7 Definitions

7.1 Acronyms

Acronym	Definition
BCR	Baseline Change Request
CCB	Configuration Control Board
CI	Controlled Item
CIDL	Controlled Items Data List
CM	Configuration Management
CMP	Configuration Management Plan
CN	Change Notice
DOE	Department of Energy
DR-CN	Document Release Change Notice
LSST	Large Synoptic Survey Telescope
LSSTC	Large Synoptic Survey Telescope Corporation

Acronym	Definition
PM	Project Manager
PCM	Project Controls Manager
PMCS	(SLAC) Project Management Control System
RL-CN	Redline Change Notice
SIM	Systems Integration Manager

7.2 Definitions

Term	Definition
Allocated Baseline	The Camera-approved documentation detailing the subsystem-level design operational requirements. This is derived from the Functional Baseline, and is sometimes referred to as the “Design-To” baseline.
Baseline	An arbitrary point at which a project design or requirements are considered to be “frozen” and after which all changes must be tracked and approved.
Change Classification	All proposed changes to LSST Camera documentation submitted for consideration are classified as Level 1, 2, 3 or 4 changes. Configuration changes may affect hardware, software, verification requirements and the documents, drawings and procedures which define them.
Change Control Board	A board composed of technical and management representatives who recommend approval or disapproval of proposed changes or deviations and waivers to a CI’s current approved configuration documentation.
Configuration Item	A document that defines the baseline performance parameters and physical characteristics of a Camera system, subsystem, or component such that the system, subsystem, or component can be designed, fabricated, and tested. Configuration Items are a subset of Controlled Items.
Controlled Items Data List	A database that identifies all Controlled Items.
Configuration Management	The systematic control and evaluation of all changes to documentation that has reached a baseline point.
Controlled Item	A document that satisfies an end use function and is designated for separate CM. Configuration Items and Records are subsets of Controlled Items.
Functional Baseline	The LSST Camera-approved documentation detailing the performance and functional requirements of the Camera as a whole, and of the constituent subsystems.
Product Baseline	The LSST Camera-approved documentation that completely defines the design at the time of production. This is derived from the Allocated Baseline, and is sometimes referred to as the “Build-To” baseline.
Record	A document that captures a snapshot of the status of a Camera system, subsystem, or component and is not intended to be revised once generated and used. Records are Controlled Items, but are not considered Configuration Items. Examples include review presentations, technical metrics, test reports, inspection records, and completed travelers.

8 Overview

Configuration management is the process by which the Camera project documents the functional and physical characteristics of the Camera, controls changes to those characteristics, and provides

information on the state of change action. The configuration management process involves all levels of management responsibility, and consists of four ongoing stages: Configuration Identification, Configuration Change Control, Configuration Status Accounting, and Configuration Verification.

Responsibility for controlling the configuration of the Camera involves all *Levels of Management* in the camera project. *Configuration Identification* is the process by which the Camera and its subsystems are defined through drawings and documents that specify the system components in terms of functional and physical characteristics, as well as how they are manufactured and tested. This process also includes identification of the key planning, schedule, and budgetary documents needed by the Camera Project for effective management and coordination of Project activities. The set of key engineering and project documents forms the Project's list of Controlled Items (CIs). The subset of documents defining the Camera technical baseline is the list of Configuration Items. The *Change Control* process is the process by which proposed changes are reviewed and approved. It ensures that the performance, functional, cost, schedule, and risk impacts of a change are considered before approval is granted. *Configuration Status Accounting* is the means by which configuration information is tracked and relayed to key personnel in order to support management decisions and ensure that all work is performed according to the current design. The *Configuration Verification* process ensures that the current hardware and software configurations match the intended design by verifying the implementation of each approved change through periodic configuration audits.

9 Configuration Management Roles and Responsibilities

Configuration management is the responsibility of the Camera project management team, but is supported by all Camera and subsystem personnel. The Camera Project Manager (PM) has overall responsibility for CM and for ensuring that all Camera Controlled Items are identified and controlled. The Camera Systems Integration Manager (SIM) is responsible for the execution, technical oversight and coordination of configuration control activities, while the Project Controls Manager (PCM) is responsible for Configuration Control Board (CCB) administration and implementing approved changes to the project cost and schedule baselines.

9.1 Control Responsibility

Responsibility for the management of Controlled Items is delegated to the level of management that is consistent with the scope of the item. For the LSST Observatory project, there are four levels of change control responsibility that correspond to four levels of scope (see [2]). For the DOE LSSTCAM Project, there are 3 levels of change control responsibility over Camera performance parameters, cost, and schedule (see [3]).

LSST and DOE parameters of configuration management responsibility can be integrated into 4 levels; Levels 3 and 4 are within the scope of this plan:

Level 1 management: Per [2] and [3], performed by the LSST Board of Directors and/or the DOE Deputy Director for Science or Acquisition Executive. Covers the highest level of project characteristics, cost and schedule performance. Level 1 configuration management is not within the scope of this document.

Level 2 management: Per [2] and [3], performed by LSST Project Office and/or by the Federal Project Director. Covers Observatory-level characteristics, where changes impact more than one part of the Observatory, or impact Camera Project scope, cost or schedule above thresholds set in [3]. Level 2 configuration management is not within the scope of this document.

Level 3 management: Performed by the Camera Project Manager; falls completely within the purview of the Camera Project and affects more than one subsystem of the Camera. Level 3 configuration management is fully within the scope of this document.

Level 4 management: Performed by Camera subsystem managers; falls completely within the scope of a Camera subsystem. Subsystem managers control approval and revision of Items at this level, but must use the procedures and processes defined in this and supporting documents.

9.2 Control Authority

The SIM and subsystem managers, in consultation with the Camera Project Manager, determine what level of control authority is required to change configuration. A change request exceeds the Level 3 threshold if it: (a) impacts LSST Observatory performance parameters, cost, or schedule, or impacts interfaces with other LSST Observatory elements (see [2]); or, (b) impacts Camera performance parameters, cost, or schedule baselines defined by the DOE LSSTCAM Project (see [3]).

Beyond the PM, SIM and subsystem managers, other key technical and managerial personnel are involved in controlling the configuration of the Camera. Table 1 on page 8 shows a list of all such key positions, and the roles they play in the review and approval of the different types of documents that define the configuration of the Camera.

10 Configuration Identification

10.1 General

Configuration identification is the ongoing process of identifying and documenting the Camera's functional and performance characteristics that define the technical baseline. These characteristics include functional and performance requirements, interface requirements, standards, drawings, and verification requirements. Configuration identification is also used to define those key project management documents that establish scope, cost and schedule baselines, and standards and processes that make for efficient coordination within the Camera Project.

The identification process yields the list of Camera Controlled Items, including the special subset of Configuration Items that define the technical baseline.

10.2 Numbering and Documentation

Controlled Items are, by definition, documents controlled by the Camera Project. All Controlled Items must be identified by a Camera document number to ensure that they are tracked and maintained through the life of the project. Controlled Items are managed with the same centralized document management system used by the LSST Project. Changes to Controlled Items are managed, according to 11.

10.3 Controlled Items Data List

A Controlled Items Data List (CIDL) is maintained by the CM group to track all documents that define the Camera Project baseline and Camera technical baseline. The LSST Project document management system is used to manage the CIDL.

10.4 Configuration Items

In order to manage the configuration of the Camera *technical baseline*, the Camera is divided into manageable units, called Configuration Items. Configuration Items are selected through a top-down system decomposition process that divides the total system into a hierarchical set of logically related documents that describe the system. These documents separately define the performance parameters and physical characteristics of Camera systems, subsystems, and components such that they can be separately designed, fabricated, and tested. Configuration Items may include, but are not limited to, specifications, drawings, interface control documents (ICDs), software description documents, and procedures.

Position \ Level	Req's Docs Spec's		Interface Doc's/Dwg's		Plans		Process Procedures		Design, Fab Dwg's/Proc's	
	L-3 Camera	L-4 Subsystem	L-3 Camera	L-4 Subsystem	L-3 Camera	L-4 Subsystem	L-3 Camera	L-4 Subsystem	L-3 Camera	L-4 Subsystem
Camera Subsystem										
Originator/Engineer	R	R	R	R	R	R	R	R	R	R
Originating Subsystem Manager	R	R	R	R	R	R	R	R	R	R
Other Subsystem Manager(s)	A	N	A	N	A	N	A	N	A	N
Camera Project Office										
Perf and Safety Assurance Manager	A	N	N	N	R	N	R	N	R	N
Systems Integration Manager	R	C	R	N	R	N	R	N	R	N
Ctl, Data Flow Systems Engineer	A	N	N	N	A	N	A	N	A	N
Electronics System Engineer	A	N	N	N	A	N	A	N	A	N
Struc, Therm Systems Engineer	A	N	N	N	A	N	A	N	A	N
I&T Manager	R	N	N	N	A	N	A	N	R	N
Camera Scientist	R	N	R	N	A	N	A	N	C	N
Camera Project Manager	R	N	R	N	R	N	R	N	C	N
Camera Project Director	C	N	C	N	R	N	C	N	C	N

R	Approval required	C	Copied for review only
A	As-needed, if impacted	N	No involvement req'd

Table 1: Document Approval Authority by Office

10.5 Technical Baseline Definitions

The Camera technical baseline evolves and matures over the life of the project, as the technical maturity of the system increases.

The Functional Baseline is the initially-approved documentation describing the Camera's top-level performance and functional characteristics and the verification required to demonstrate the achievement of those characteristics. This includes derived Camera requirements, and Camera-level performance and operational requirements.

The Allocated Baseline specifies the requirements that are used to design Camera systems and subsystems. Configuration Items that define this baseline include subsystem requirements documents, interface control documents, and plans defining standards and protocols to be used in the design and fabrication of subsystem components. This baseline is also referred to as the "Design-to" baseline, since Items at this maturity level define the design and operational requirements that the Observatory's subsystems must meet.

The Product Baseline defines the completed Camera design. Configuration Items that define this baseline include manufacturing drawings, procedures, and specifications that are used to build hardware and software components. This baseline is also referred to as the "Build-to" baseline, since items at this maturity level are used in fabrication, assembly, integration, and test.

11 Change Control

11.1 Initial Release

Change control is the process by which the Camera Project manages and approves the release and revision of configuration-controlled items. The process ensures that the performance, functional, cost, schedule, and risk impacts of each change are considered before approval is granted.

Drawings and technical documents are placed under configuration control upon their initial release. The process by which a document is initially released is identical to that for any subsequent revisions, except that for the initial release, the document is added to the CIDL. Initial release and any future revision are documented through the use of a Change Notice (CN) form (Camera document LCA-342, see Ref [5]). This is used to document the reason for the release/revision, and to capture the approvals of all reviewers of the document. The CN form is discussed in Section 10.3, below. The release cycle begins by submission of a CN and the document to the CM group under direction of the SIM. The CM group and document originator then determine the level of management authority required for approval of the document—either level 3 or 4, which are in the scope of this CMP, as described in Section 8.1. Setting the approval level establishes the approvers required for the document, and allows the CM group to distribute the CN and document for formal review and approval. The review, revision, and approval process is managed by the CM group until the CN has been approved by all signatories. At final approval, the document is considered to be released and under configuration control.

11.2 Change Control Process

In order to satisfy the need for robust technical change management as well as the need to comply with SLAC Project Management Control System (PMCS) standards and procedures, the project employs a single change control process, divided into two interconnected change control workflows, one for technical changes and one for cost and schedule changes. These are not parallel workflows; they are

interconnected, sequential workflows. Decision points and high-level change control sequences are shown in Figure 1 below.

	If Technical Impact ONLY	If Technical + Cost/Schedule Impact	If Cost/Schedule Impact ONLY	Rate Changes
1. Identify Affected Technical Documents	✓	✓	N/A	N/A
2. Decide if a Document Release/Revise Change Notice (DR-CN) or a Redline Change Notice (RL-CN) is Appropriate	✓	✓	N/A	N/A
3. Have LCN Change Notice Form(s) Approved	✓	✓	N/A	N/A
4. Have Cost/Schedule Information Entered into P6	N/A	✓	✓	✓
5. Have BCR Approved	N/A	✓	✓	✓

Figure 1: Change Sequence for Technical and Cost/Schedule Information, Showing the Relationship Between Document Release/Redline Change Notices and PMCS Baseline Change Requests (see Section 11.2.1 and Section 11.2.2)

In summary, technical changes, with corresponding estimates of cost and schedule impact, are evaluated first. If technical changes and estimated cost and schedule impacts are approved, then cost and schedule data is updated in the PMCS database, and a Baseline Change Request is evaluated and either approved or rejected in accordance with SLAC-I-051-201-001-00, Project Management System Change Control Procedure (see Ref [4]).

11.2.1 Change Control Workflow for Technical Documents

Revisions to released technical documents are accomplished through the change control process, which is shown in Figure 2 below. Two types of changes are accommodated in the LSST Camera change control process: revising and releasing a document, and marking up or redlining a current revision. Both changes use a CN and many of the same processes that are described in the following paragraphs. This process is begun when a need for a change is identified by the author or responsible engineer. Changes that are very tightly-scoped, require immediate attention, or are otherwise discrete in nature can be accommodated by a “redline CN” (RL-CN). Such a change can be thought of as an approved redline or field modification to a document or drawing, and are limited to level 4 changes, only. All other changes are handled by a document-release CN (DR-CN) and a revision of the document in question.

Changes that are broader in scope, impact cost or schedules, or involve multiple subsystems must be handled by revision of the document and a DR-CN.

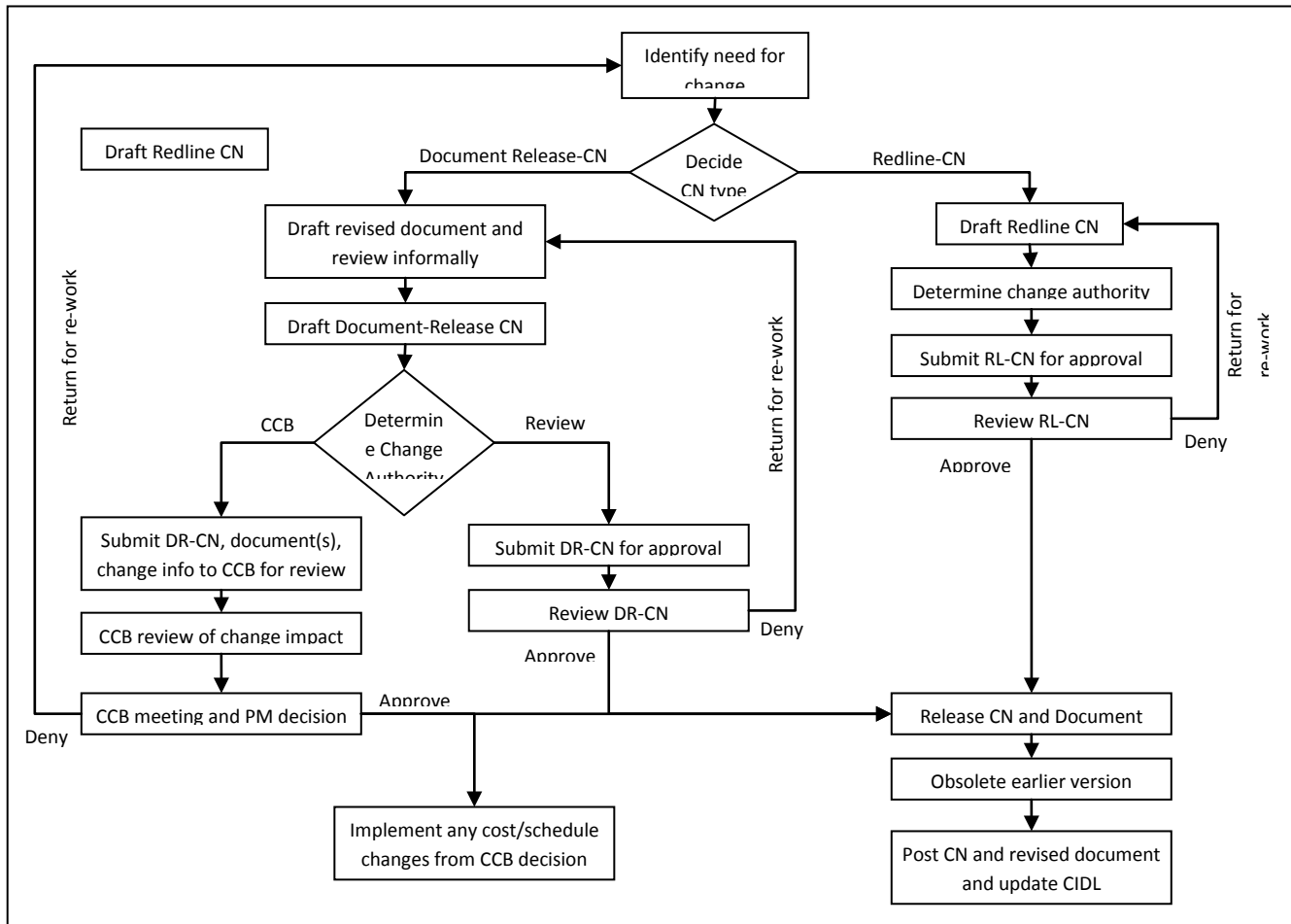


Figure 2: Change Control Process Flow for Level 3

11.2.1.1 Redline (RL) Change Process

The redline change process is begun by drafting a CN, which describes the proposed changes to the document revision in question. The author and subsystem manager confirm with the CM group that this is a level 4 change, and the RL-CN is distributed for review and approval. Once the RL-CN is approved, it is appended to the currently-released revision of the document. The document now is comprised of both the current revision and the appended RL-CN. Multiple RL-CN's can be appended to a document before the document is revised, but any revision of the document must include the incorporation of all RL-CN's that are appended to the previous revision.

11.2.1.2 Document Release (DR) Change Process

The document release change process is also begun by drafting a CN after the revised document has been drafted. As noted above, a subsequent revision of a document that includes appended RL-CN's must incorporate all such CN's into the revision. These are explicitly listed in the DR-CN to ensure that all RL-CN's are incorporated in a controlled way. If an RL-CN needs to be modified or reversed in the document revision process, this must be treated as a separate change, and called out explicitly in the DR-CN.

Once the DR-CN has been drafted, the author, subsystem manager, and SIM – in consultation with the Camera Project Manager as needed - determine the change level of the document, to establish the change authority required for approving the revision, and if CCB action is required. Ref [3] defines the change thresholds that establish the change authority level for a Camera document revision. The CCB process is described in Section 10.4, below. For document changes not requiring a CCB, the DR-CN is routed to all reviewers by the CM group, along with the draft document revision. After all approvals are made, the CM group releases the new revision and obsoletes the earlier revision. Only one released revision of a document can be current at any given time, so all past revisions—whether in draft form or previously approved—are obsoleted when a newer revision is approved and released.

The change control process may be accelerated, if required, to accommodate urgent change requests. If CCB approval is required, in urgent situations, an emergency CCB meeting is convened, consisting of the CCB chairperson and his designated participants. An informal change request is presented and evaluated. Action items may be identified and verbal approval granted contingent on the action items. A formal CN must be submitted later to receive formal approval and to be entered in the CIDL for tracking.

11.2.2 Change Control Workflow for Baseline Change Requests

Baseline Change Requests are prepared per Ref [4]. BCRs are assigned document numbers and added to the CIDL as described in Section 10, and are processed, routed and signed using the same LSST Project document management system used for managing these functions for technical documents.

11.3 Change Notice

11.3.1 Change Notice for Technical Documents

The Change Notice, Camera document LCA-342, is used to document the reason for the release/revision, and to capture the approvals of all reviewers for the document. This is used in the process of evaluating the merits and impacts of a proposed change, and provides a lasting record of the change, approvals, and rationale. As discussed above, either an RL-CN or DR-CN can be used, depending on the nature of the change. However, both types of change notice use the same form, and need to capture the same information regarding a change. In particular, change notices must capture four types of information regarding any change.

First, the CN delineates which documents are impacted by the change. For a DR-CN, these are the documents being revised. More than one document can be revised by the same DR-CN, but they must be related by the change rationale. RL-CN's should only be used for redline revisions of individual documents.

Second, the CN describes the changes explicitly. For most changes, this should include a list of what the changes to the document are, including “before/after” or “was/is” lists of the changes.

Third, the CN discusses the reason for the change. In particular, it explains why the change is needed and what the benefits are regarding savings in cost, schedule, or reduced risk/increased margins. This provides justification for why the change should be approved, and is used by the approvers or CCB to evaluate the benefit of the change.

Fourth, the CN describes the impacts of the change. This includes an estimate of the cost, schedule, and technical impact of the change on the configuration of the LSST system. If the change impacts hardware, then a complete list of serial numbers and a re-work plan needs to be included, as well.

11.3.2 Baseline Change Request for Cost and Schedule Data

For PMCS Baseline Change Requests, the change notice is the Baseline Change Request itself, prepared per Ref [4].

11.4 CCB Operations

If the author, subsystem manager, and SIM determine that the proposed change is within the Level 3 threshold and requires CCB approval, then the SIM will request that the Project Manager convene a CCB. The CCB is primarily responsible for reviewing all Level 3 CN's and corresponding BCRs based on the impact to cost, schedule and technical performance. The CCB may also be called on to evaluate and approve or reject externally-initiated change requests and requests for deviation or waiver.

Typically, more detailed rationale for the change is required to allow for a thorough review by the CCB. Thus, the CN and/or BCR may need further detail, or it may refer to separate documents that provide supporting analyses of the proposed change. Note that any supporting documents should be released as part of the revision process, since they document changes to configuration controlled documents and thus need to be configuration controlled themselves.

The CCB evaluates the CN or BCR, revised document(s) and any supporting material, and recommends that the CN or BCR be approved or rejected. The Project Manager then approves or rejects the change once concurrence is obtained from the CCB members. Once baseline configuration items are established, the CCB manages requests for changes to camera-level designs and interfaces, as well as proposed draw-downs on cost, schedule and technical reserves.

The CCB consists of the following managers:

Camera Project Manager—CCB chair. Exercises control of engineering changes, cost and schedule

Camera Project Director—evaluates impact of the proposed change on the Camera Project as an integrated technical and managerial program.

Project Control Manager—CCB secretary. Responsible for assessing impacts to cost, schedule or contracts. Responsible for assuring the completeness of the CCB record, and implementing any contractual or business changes made by the CCB.

Camera Scientist—evaluates the impact of the proposed change on the overall performance of the Camera.

Camera Systems Integration Manager—responsible for assuring the technical completeness of all change notice evaluations. Evaluates the impact of the proposed change on the technical performance of the system, and includes disciplines required to perform a complete evaluation of all CN's submitted to the CCB. This responsibility includes interfacing with all team members.

I&T Manager—advises the other members in the areas of integration and test, calibration, science verification, facilities, observatory integration, and servicing.

Performance and Safety Assurance Manager—evaluates proposed changes with respect to the impact to product performance/safety and ensures compliance with Quality and Safety Assurance requirements, especially when the proposed change impacts hardware or production processes already in use.

Subsystem Managers—exercises control of engineering changes to his/her subsystem and controls the subsystem configuration.

The SIM and PCM coordinate all activities pertaining to a proposed change, to ensure that the material is complete for making a decision. Changes approved by the CCB result in modifications to the Camera technical, cost and/or schedule baseline, drawing against contingency available in the total project baseline. Cost and schedule changes are implemented by the PCM, with all subsequent performance measured against the new subsystem baseline.

The initiator of the CN or BCR supports the CCB by assessing the change request for cost, schedule, and technical performance, scientific objectives, and risk impact. The initiator defends the CN or BCR during CCB evaluation. Subcontractors may submit out-of-scope changes for approval by the CCB. The subsystem manager responsible for the subcontractor reviews the change request and represents the subcontractor at the CCB.

11.4.1 Baseline Change Control Board

A Baseline Change Control Board (BCCB) will be convened for BCRs that are above Level 3 thresholds as defined in the Camera PEP (see Ref [3]). The BCCB members are the CCB members, the Federal Project Director, and appropriate DOE SC Program Managers. DOE approves BCRs above Level 3.

11.5 Flowdown of Changes from LSST Project (Level 2)

11.5.1 Initiating a change

For changes at the LSST Project level, the camera representative delegated by the PM enters a change request in the LSST project system available at <https://project.lsst.org/groups/ccb/>.

If a change is requested against the camera, the Camera Project representative delegated by the PM notes the proposed change and tracks impacts to camera sub-system using the Project issue tracking database.

11.5.2 Synchronizing a change

When an LSST Project-level change affecting the camera is in the process of being approved at the LSST Project level, the camera initiates a camera change concurrently per the process defined in the present document and secures pre-approval by the Camera PM, CCB or BCCB ahead of the LSST Project change control board meeting, where votes are tallied and unanimous approval is required. The Camera PM and Project Director communicate the results from the pre-approval process obtained during the CCB, or BCCB, as applicable.

11.6 Deviations and Waivers

Deviation and waiver requests are processed, categorized, approved and tracked in the same manner as other change requests. A deviation is project approval to deviate from the approved design and occurs before the unit is built. The deviation differs from the normal change notice in that it applies only for a limited quantity or limited time period, and does not affect the current design documents. A waiver is project approval to waive a specific requirement because of a nonconformance that violates an approved requirement.

The CN form is used to request a deviation or a waiver. Note that deviations and waivers are associated with a specific revision level of document, which must be noted on the CN.

12 Configuration Status Accounting

Configuration status accounting is the process of maintaining, releasing, storing, and reporting configuration item data and documents. Configuration accounting ensures that baseline data is retained, available, and distributed for project use. It also performs the important function of tracking the status of each change from inception through implementation.

To a large extent, configuration accounting is a database management function that tracks meta-data associated with Controlled Items in the CIDL. The document control database tracks the release and revision status of all Controlled Items, as well as archiving all documents and meta-data associated with obsoleted revisions, drafts, and proposed revisions. Thus, it provides the means for reporting changes to the CIDL both in general and over time, as well as to allow for auditing of specific revisions and tracing change history for each Controlled Item throughout its life.

To facilitate archiving and accurate configuration accounting, documents are never deleted or expunged from the document database. Obsolete versions are marked as such, and drafts that are never approved are maintained and flagged accordingly. Typically, only the most recent released version is accessed, but all obsolete and draft versions of documents—and their revision-specific meta-data—are available for review if needed.

13 Configuration Verification

Configuration verification is the process of verifying that documents and end-use hardware conform to the intentions of the designers and to the standards established by preceding approved baselines, and that baseline documentation is current and accurate. This is accomplished by three controls.

First, subsystem managers are responsible for identifying, implementing and closing changes to Controlled Items that are under their control that result from a CN requiring their approval. The CN serves as notice that a document change has been requested, and their approval of the CN signifies their understanding of the impact of the change to subsystem elements within their control. Using the CN review and approval process, all changes can be tracked to completion and subsequently audited.

Second, technical reviews serve as a means to assess the flow-down of baseline requirements and the ensuing design implementation. Such reviews ensure that the requirements baselines have been adequately decomposed and that the design and fabrication processes match the requirements.

Third, hardware configuration audits provide key verification that the baseline configuration described by the CIDL documents was, in fact, implemented in the fabrication, assembly, and delivery of the hardware.

Each of these processes is used to verify that the LSST baseline configuration is managed throughout the development cycle, and that it is carried through to the construction and integration of the observatory.