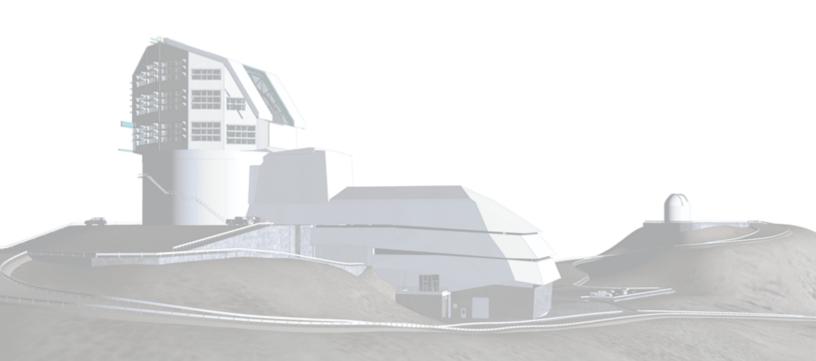## Vera C. Rubin Observatory
Data Management

LDM-503-11a: ComCam OPS Readiness Test Plan and Report

Robert Gruendl

DMTR-231

Latest Revision: 2020-09-04

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Abstract

This is the test plan and report for LDM-503-11a (ComCam OPS Readiness), an LSST milestone pertaining to the Data Management Subsystem.

Change Record

Version	Date	Description	Owner name
	2020-08-19	First draft	Robert Gruendl
1.0	2020-09-04	Test Plan LVV-P76 approved. DM-16196.	Robert Gruendl

Document curator: Robert Gruendl

Document source location: `https://github.com/lsst-dm/DMTR-231`

Version from source repository: 949db76

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Contents

Rubin Observatory

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LDM-503-11a: ComCam OPS Readiness Test Plan and Report

1 Introduction

1.1 Objectives

This test plan verifies that DM software is ready to obtain and process ComCam observations. Since this test campaign is needed prior to on-sky data acquisition the tests are necessarily focused on the ability to process test-stand data. Therefore, the elements focus on the generic ability to process ComCam data.

1.2 System Overview

The system requires an operating ComCam at the Summit or on a test stand (either at the Base or Tucson). LDM-503-06 will have already shown that data acquisition (DAQ), archiver, header service, transfer mechanism, and ingest to the DBB are functional. Those systems are re-verified by this test as: 1) changes will almost certainly have occurred and 2) for this test to succeed the data must be properly formed and ingested for processing to succeed.

1.3 Applicable Documents

LDM-503: Data Management Test Plan
LDM-639: Data Management Acceptance Test Specification

1.4 Document Overview

This document was generated from Jira, obtaining the relevant information from the LVV-P76 Jira Test Plan and related Test Cycles (LVV-C159).

Section 1 provides an overview of the test campaign, the system under test (Data Manage-

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ment), the applicable documentation, and explains how this document is organized. Section 2 provides additional information about the test plan, like for example the configuration used for this test or related documentation. Section 3 describes the necessary roles and lists the individuals assigned to them.

Section 4 provides a summary of the test results, including an overview in Table 2, an overall assessment statement and suggestions for possible improvements. Section 5 provides detailed results for each step in each test case.

The current status of test plan LVV-P76 in Jira is **Approved** .

1.5   References

[1] **[LDM-639]**, Guy, L., 2018, *DM Acceptance Test Specification*, LDM-639, URL `https://ls.st/LDM-639`

[2] **[LDM-503]**, O'Mullane, W., Swinbank, J., Jurić, M., Economou, F., 2018, *Data Management Test Plan*, LDM-503, URL `https://ls.st/LDM-503`

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2   Test Plan Details

2.1   Data Collection

Observing is not required for this test campaign.

2.2   Verification Environment

This test assumes a working DBB (Data BackBone) where raw ComCam data are available and ingested into a Butler repository (can be Gen2 or Gen3).   Alternatively, the Base OODS (Observatory Operations Data System) could be used for these tests.   In either case (DBB or OODS) compute hardware must be available that can see the DBB (USDF) or OODS (Base compute).   A current DM production stack should be used but the tests do not require more than a single node (and could run on a single-core).

2.3   Entry Criteria

ComCam produces data with proper headers and can be transferred to the USDF.

2.4   Exit Criteria

Successful ingest and processing of ComCam data with pipeline tasks in the DM stack and resultant data products made available through an LSP instance.

2.5   Related Documentation

The documentation related to this test campaign should be provided in the following Do-cuShare Collection (as per Verification Artifacts in Jira test plan LVV-P76).

- DocuShare Collection Not Specified

2.6   PMCS Activity

Primavera milestones related to the test campaign.

LDM-503-11a: ComCam Ops Readiness

Rubin Observatory

3   Personnel

The personnel involved in the test campaign is shown in the following table.

	T. Plan LVV-P76 owner:	**Robert Gruendl**	
	T. Cycle LVV-C159 owner:	**Robert Gruendl**	
Test Cases	**Assigned to**	**Executed by**	**Additional Test Personnel**
LVV-T1935	Robert Gruendl		
LVV-T1934	Robert Gruendl		

4 Test Campaign Overview

4.1 Summary

T. Plan LVV-P76:		**LDM-503-11a: ComCam OPS Readiness**		Approved
T. Cycle LVV-C159:		**LDM-503-11a: ComCam OPS Readiness**		Not Executed
Test Cases	**Ver.**	**Status**	**Comment**	**Issues**
LVV-T1935	1	Not Executed		
LVV-T1934	1	Not Executed		

Table 2: Test Campaign Summary

4.2 Overall Assessment

Not yet available.

4.3 Recommended Improvements

Not yet available.

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5   Detailed Test Results

5.1   Test Cycle LVV-C159

Open test cycle *LDM-503-11a: ComCam OPS Readiness* in Jira.

Test Cycle name: LDM-503-11a: ComCam OPS Readiness
Status: Not Executed

Test that ComCam data can be received in the DBB, be made available and processed with results also made available to DM staff.

5.1.1   Software Version/Baseline

Not provided.

5.1.2   Configuration

ComCam operating at Base/Summit in a test stand capable of delivering image to USDF. Data Backbone endpoint and OODS (Observatory Operations Data Service) ready to receive and ingest data.

5.1.3   Test Cases in LVV-C159 Test Cycle

5.1.3.1   LVV-T1935 - Demonstrate ComCam Data Processing Capability

Version **1**. Open *LVV-T1935*   test case in Jira.

To process raw ComCam data and demonstrate that the results are available either in the shared DM development environment/repository or in the LSP.

 Preconditions:
ComCam data acquisition and ingest are nominal. (LVV-T1934)

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Execution status: **Not Executed**

Final comment:

Detailed steps results:

Step	Step Details
1	**Description**
	Obtain BIAS and FLAT sequences (minimum of 3 exposures each)
	Test Data
	Acquired from ComCam Archiver.
	Expected Result
	Data acquired, ingested, and available in shared work space.
	Actual Result
	Status: **Not Executed**
2	**Description**
	Process BIAS frames
	Test Data
	From Step 1
	Example Code

```
setenv REPODIR=/projects/shared/comCam
setenv VER_DIR={verification_dir}

constructBias.py $REPODIR --rerun $VER_DIR \
    --id expId=2020070800001^2020070800002^2020070800003 --batch-type none -c isr.doCrosstalk=False -j 9

ingestCalibs.py $REPODIR $REPODIR/rerun/$VER_DIR/bias/*/*.fits --validity 9999 --mode=link --calib $REPODIR/CALIE
```

	Expected Result
	Successful execution of BIAS reduction software (currently

```
constructBias.py and ingestion)
```

	Actual Result

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	Status: **Not Executed**
3	Description
	Process FLAT frames
	Test Data
	From Step 1 (and step 2)
	Example Code

```
setenv REPODIR=/projects/shared/comCam
setenv VER_DIR={verification_dir}

constructFlat.py $REPODIR --rerun $VER_DIR \
    --id expId=2020070100152..2020070100154 filter=r --batch-type none -j 9 -c isr.doCrosstalk=False

ingestCalibs.py $REPODIR $REPODIR/rerun/$VER_DIR/flat/*/*.fits \
    --validity 9999 --mode=link --calib $REPODIR/CALIB
```

Expected Result
Successful execution of FLAT reduction software (currently constructFlat.py and ingestion)
Actual Result
Status: **Not Executed**

5.1.3.2   LVV-T1934 - ComCam Data Transfer and Ingestion

Version **1**. Open *LVV-T1934*   test case in Jira.

Verify that ComCam Archiver data taken are transferred to USDF Data BackBone endpoint and Ingested

Preconditions:
Operating ComCam and Base or Summit (test-stand or mounted on TMA)

Execution status: **Not Executed**

Final comment:

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Detailed steps results:

Step	Step Details
1	**Description**
	Trigger Exposure through OCS+Archiver
	Test Data
	generated by ComCam as part of test
	Example Code
	Expected Result
	Ingested ComCam exposure (9 files) at USDF in shared Butler Repo (raw).
	Actual Result
	Status: **Not Executed**
2	**Description**
	Check for presence of ingested raw data at USDF
	Example Code
	# note: currently assumes butler Gen2 (from USDF machine)
	cd /project/shared/comCam
	sqlite3 _parent/registry.sqlite3
	select expId,dayObs,raftName,detectorName from raw where expId={expo generated in step 1};
	Expected Result
	query of repo registry finds appropriate data entries showing a single raft and 9 detectors
	Actual Result
	Status: **Not Executed**

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A   Acronyms used in this document

Acronym	Description
ComCam	The commissioning camera is a single-raft, 9-CCD camera that will be installed in LSST during commissioning, before the final camera is ready.
DAQ	Data Acquisition System
DBB	Data Backbone
DM	Data Management
DMS	Data Management Subsystem
DMS-REQ	Data Management System Requirements prefix
DMTR	DM Test Report
LDM	LSST Data Management (Document Handle)
LSP	LSST Science Platform (now Rubin Science Platform)
LSST	Legacy Survey of Space and Time (formerly Large Synoptic Survey Telescope)
OCS	Observatory Control System
OODS	Observatory Operations Data Service
OPS	Operations
PMCS	Project Management Controls System
TMA	Telescope Mount Assembly
USDF	United States Data Facility
VE	vendor estimate

B Traceability

Test Case	VE Key	VE Summary
LVV-T1934	LVV-8	DMS-REQ-0018-V-01: Raw Science Image Data Acquisition
	LVV-11	DMS-REQ-0024-V-01: Raw Image Assembly
	LVV-177	DMS-REQ-0346-V-01: Data Availability
	LVV-130	DMS-REQ-0299-V-01: Data Product Ingest
LVV-T1935	LVV-130	DMS-REQ-0299-V-01: Data Product Ingest
	LVV-120	DMS-REQ-0289-V-01: Calibration Production Processing