# Upcoming DM Level 2 Milestones

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**DMLT Face-to-Face Meeting**
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# Upcoming Level 2 (LDM-503-*n*) Milestones

LDM-503-1 Science Platform with Wise Data in PDAC.
Due **2017-11-30**.

LDM-503-2 HSC Reprocessing.
Due **2017-11-30**.

LDM-503-3 Alert Generation Validation.
Due **2017-11-30**.

LDM-503-4 AuxTel DAQ Integration Functionality Test.
Due 2018-02-01.

LDM-503-4b AuxTel DAQ Interface Integration Verification and Spectrograph Operations Rehearsal.
Due 2018-02-11.

LDM-503-5 Alert Distribution Validation.
Due 2018-05-30.

# LDM-503-1: Science Platform w/ WISE data in PDAC

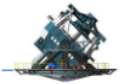
- SUIT continues PDAC development, adding the WISE data, further exercising the DAX dbserv and imgserv APIs, and taking advantage of metaserv once it becomes available From DAX: need to be clear about which WISE datasets are to be loaded the data wrangling effort required to download, inspect, convert, partition, and load each additional dataset is cumulatively non-trivial for DAX.

# LDM-503-1: Dependencies (L3 milestones)

| | |
|---|---|
| DM-DAX-1 | WISE data ingest to PDAC. |
| DM-DAX-2 | Query service suporting IVOA TAP protocol, with support for asynchronous queries. |
| DM-DAX-3 | Image cutout service supporting IVOA SODA protocol. |
| DM-DAX-4 | Metadata service suporting IVOA SIAv2 protocol. |
| DM-SUIT-1 | Search and display WISE sources (objects) in PDAC. |
| DM-SUIT-2 | Search WISE coaded data single exposure images in PDAC (the images are from IRSA at IPAC, not NCSA). |
| DM-SUIT-3 | Time series analysis tool for WISE data. |
| DM-SUIT-4 | Multiple data traces in chart space. |
| DM-SQRE-1 | Project internal Jupyter notebook service. |

# LDM-503-2: HSC Reprocessing

- Check that data products generated with the LSST stack match or improve upon the equivalent HSC products.
- Validate the ops platform in NCSA, including installing the stack, starting and stopping production.
- Generate a validation data set for weekly integration and other tests.
- *LDM-503 contains several pages of description of HSC data processing during F17 in this context.*



# LDM-503-2: Dependencies (L3 milestones)

| | |
|---|---|
| DM-AP-1 | Basic single frame measurement pipeline. |
| DM-DAX-5 | Database ingest in support of HSC reprocessing (automatable, large catalog ingest). |
| DM-DRP-1 | HSC merger complete: all functionality deployed for the most recent HSC data release processing is now available within the LSST stack. |
| DM-DRP-2 | Basic visualization and quality assessment tools operational on HSC-scale data volumes. |
| DM-NCSA-1 | Regular reprocessing service for HSC data available. |
| DM-NCSA-2 | Access to results of regular reprocessing available. |
| DM-NCSA-3 | Provide database for metadata, provenance, location and demonstrate ingest at small scale. |
| DM-SUIT-5 | Search and display of processed HSC data. |

# LDM-503-3: Alert Generation Validation

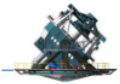
- Validate the alert generation stack performance on several DECam and HSC datasets. “Stack” is probably ill-defined here  is this simply testing science logic, or are we going after a wider integration exercise?

# LDM-503-3: Dependencies (L3 milestones)

| | |
|---|---|
| DM-AP-2 | Alard & Lupton-style image differencing. |
| DM-AP-3 | Point source & dipole measurement on difference images. |
| DM-AP-4 | DIASource association. |
| DM-AP-5 | DIAObject generation. |
| DM-DAX-6 | Prototype L1 / Alert Production database. |
| DM-DRP-3 | PSF-homogenized coadd construction. |

# Hitting **Level 3** Milestones

- To date, we have reported on the completion of L3 milestones without formal verification. That is, when responsible Product Owner or T/CAM regards the milestone as done, we have accepted that.
- On the timescale of the next $\sim$ month, I suggest we continue to adopt that approach.
- In the intermediate term, *this will no longer be adequate*: we will need to define milestones in terms of executing test specifications which are used to verify our hitting requirements.
- This suggests work we will need to address during the S18 cycle:
  - **T/CAMs** will need to flesh out the L3 milestones defined for the replan in terms of concrete, testable deliverables (i.e. not just the one-sentence descriptions we have currently captured);
  - **Product Owners** will need to take the lead on defining test specifictions for their products which will be executed to demonstrate that milestones are being hit.

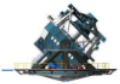


# Hitting **Level 2** Milestones

- The L2 milestones are the first public demonstration of the approach to testing & verification we outlined at the July & September 2017 reviews.
- For this reason, I suggest that we **must** follow the test protocols outlined in LDM-503: a sign off from a Product Owner is not sufficient.
- The LDM-503 procedure calls for a test specification, which consists of a number of test cases each of which tests one or more requirements, to be executed, together with actions to be taken in the event of a test failing. This results in test report which is used to populate a verification control matrix (effectively, a list of all the tests which cover each requirement and which of them have been successfully executed.

# Test Specifications

- Test specifications are baselined documents; see LDM-503 for a list.
- **LDM-503-1** (Science Platform / PDAC) is covered by LDM-540 (Science Platform Test Specification): that handle has been issued, but no text has been written.
- **LDM-503-2** (HSC Reprocessing) is clearly covered by LDM-534 (L2 Test Specification); a skeleton of that document was written for the review, but it is not currently usable to address this milestone.
- **LDM-503-3** (Alert Generation) is covered by the L1 Test Specification; an LDM handle for this document has not been issued, and I am not aware of any written words.



# Contents of Milestones

- In all cases, we have a clear idea of *roughly* what's necessary to hit an L2 milestone:
  - NeoWISE data is currently being ingested into the PDAC.
  - The Data Facility team is regularly reprocessing subsets of the most recent HSC data release, and the Data Release Production team is continuing to refine its QA procedures.
  - The Alert Production team has focused on developing the "end-to-end prototype system" over the last cycle, and that's now close to operational.
- Since the milestones are rather nebulously defined, we can ensure that the test specifications are a realistic test of the functionality we currently have available.
- For *future* milestones, this will be unacceptable: we need our test specifications fully baked so that we can use them to focus development, rather than vice versa.
  - Yes, this suggests further work for T/CAMs and Product Owners in S18.

# Priorities and Outstanding Work

- I suggest that there is little more important in the next ∼month than demonstrating a fully-fledged commitment to our declared test plans.
  - *Even if that means the effort comes at the expense of other work.*
- There is work outstanding to:
  - Define the test specifications for each L2 milestone;
  - Work with the development teams to ensure that code and services are available for testing;
  - Organize people and resources to execute the tests;
  - Collect the results as test reports and ensure the results are collated in the verification control document.

# Champions

- I propose that a named *Champion* be appointed for each milestone.
- The Champion will assume direct responsibility for coordinating all the outstanding work for each milestone.
- They will work with T/CAMs and Product Owners to draw on their person-power and expertise.
  - The Champion is not expected to do all even the bulk of the work for their milestone, but rather to coordinate the cross-team effort.
  - Product Owners and T/CAMs are requested to prioritise requests from the Champion, *even at the expense of other baselined work*.
- …volunteers?