

Apps Status Report for February 15, 2010

Guide on Reporting Percentage Completed:

For software development tasks,

- use 0% if the solution is still being designed;
- use 25% if the solution's design is completed;
- use 50% if the solution is implemented and tested within the Ticket branch;
- use 75% if the implementation review is complete, the Ticket branch has been merged onto the Trunk branch, and the Ticket is closed.
- use 100% if the affected Trunk packages are tagged and released.

For other tasks, still use these increments, but apply their meaning as best as possible.

Note: Please place an asterisk (*) after the percent if you updated this value in this report.

Allsman Robyn

Reported xx/xx/xx

ID	Percent	Task	Comments
APP204	0%	identify scientists to analyze stage output	<i>not started</i>
APP200	0%	validate initial integration run successfully completed	<i>not started</i>

*Percent updated in this report

Comments:

Other Activities

- EA
 - ◆ Updating the EA Use Case and Activity model to correspond to the reverse engineered source with the help of the relevant developer;
 - ◆ Reverse Engineering the source, on-request, for the design reviews;
 - ◆ Providing detailed specification for EA plug-in to declutter logical diagram of superfluous utility classes;
- Standards
 - ◆ Delivered C++ and Python Standards Checker script and procedure for integration into Buildbot-like automatic service.
 - ◆ Revision of C++ Coding Standards document;
 - ◆ Searching for suitable (i.e. public domain) new C++ coverage analysis tool since originally selected tool does not compile/link on the Ubuntu system used for DM Standards Checking (and I still don't like the output debris generated by gcov).
- Miscellany
 - ◆ Commencing the inventory of the MACHO precursor dataset residing on NCSA mass store;

Axelrod Tim

Reported xx/xx/xx

ID	Percent	Task	Comments
APP155	0%	photometric self calibration	<i>not started</i>
APP159	0%	evaluate tools and make selection	<i>not started</i>
APP158	0%	configure and test for HEALpix projection	<i>not started</i>
APP161	0%	configure and test for display of full focal plane LSST image	<i>not started</i>
APP56	0%	defining units	<i>not started</i>
APP91	80%	define DC3b goals for SDQA	
APP191	50%	Provide special case simulation needs (Axelrod)	

*Percent updated in this report

Comments:

Other Activities

Becker Andy

Reported 02/16/10

ID	Percent	Task	Comments
APP145	100%	move applications code out of stage code*	
APP80	100%	adapt PSF spatial cell model for ip_diffim*	
APP79	100%	implement sum-of-gaussians (Alard-Lupton) kernel basis*	
APP78	100%	investigate regularizing delta function kernels*	
APP95	40%	code to measure quality of difference imaging coadds	
APP100	0%	test difference imaging coadds	<i>not started</i>
APP123	0%	find CFHT fringe frames and move to NCSA	<i>not started</i>

*Percent updated in this report

Comments:

Other Activities

Becla Jacek

Reported 02/18/10

ID	Percent	Task	Comments
APP53	90%*	schema updates for all source related tables and object table	
APP54	0%	schema updates for all exposure related tables	<i>not started</i>
APP55	0%	synthetic sources of data	<i>decided to do that after DC3b</i>
APP56	50%*	defining units	

APP57	100%*	standardizing names
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*Percent updated in this report

Comments:

Other Activities

see the middleware page

Bickerton Steve

Reported xx/xx/xx

ID	Percent	Task	Comments
APP112	25%	stellar photometry	

*Percent updated in this report

Comments:

Other Activities

Bosch Jim

Reported xx/xx/xx

ID	Percent	Task	Comments
APP108	75%	implement convolved Sersic models	
APP117	0%	implement constrained models for forced photometry	<i>not started</i>
APP116	0%	create LSST stages for photometry	<i>not started</i>

*Percent updated in this report

Comments:

Other Activities

Cleveland Matt

Reported xx/xx/xx

ID	Percent	Task	Comments
APP154	0%	develop distributed linkTracklets implementation	<i>not started</i>

*Percent updated in this report

Comments:

Other Activities

Dodd Suzy

Comments:

Other Activities

- Met with Jeff during his visit to IPAC. Agreed to redirect short term IPAC effort to DC3b data validation and data user access. IPAC also given responsibility for user tools. SDQA system development and prototyping is being put on the back burner. Also discussed possible future reorg of DM.
- Attended several DM design reviews. Provided Gregory with minor logistics support for these.
- A group of LSST and IPAC folks viewed a demo of the DES Science Portal tool via Videocon.
- Attended all of the standard meetings: AppsWG, DM PMC, LSST Mgmt, DC3b, etc.

Dubcovsky Martin

Reported xx/xx/xx

ID	Percent	Task	Comments
APP108	75%	implement convolved Sersic models	
APP118	25%	implement multifit pipeline which leverages multifit API and image access framework	
APP119	0%	implement pipeline stage for extracting ellipse parameters, flux, and bounding box from detections	<i>not started</i>
APP117	0%	implement constrained models for forced photometry	<i>not started</i>
APP116	0%	create LSST stages for photometry	<i>not started</i>

*Percent updated in this report

Comments:

Other Activities

Grav Tommy

Reported xx/xx/xx

ID	Percent	Task	Comments
APP134	0%	generate PS-SSM catalog for LSST	<i>not started</i>

*Percent updated in this report

Comments:

Other Activities

Jarvis Mike

Reported 02/15/2010

ID	Percent	Task	Comments
APP105	50%	PSF for deep detection	Finished converting code to LSST system. Compiles with makefile. Still need to write unit tests and get it to work with scon.

*Percent updated in this report

Comments:

Other Activities

Jones Lynne

Reported xx/xx/xx

ID	Percent	Task	Comments
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*Percent updated in this report

Comments:

Other Activities

Krughoff Simon

Reported xx/xx/xx

ID	Percent	Task	Comments
APP146	100%*	move applications code out of stage code	
APP84	0%	apply fringe frame correction	<i>not started</i>
APP83	75%*	develop camera state classes (CCDinfo and Ampinfo)	Implemented by Robert Lupton
APP82	25%	develop calibration products database classes	

*Percent updated in this report

Comments:

Other Activities

Laher Russ

Reported 2/18/10

ID	Percent	Task	Comments
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Other Activities

APP90	0%	implement functionality to support DC3b pipeline validation goals	<i>not started</i>
APP89	0%	query metadata and package in C++ container	<i>not started</i>
APP88	0%	implement threshold comparison	<i>not started</i>
APP211	50%	WCS verification code	
APP210	75%	ATpy evaluation	

*Percent updated in this report

Comments:

Asked Serge Monkewitz to add the following new method to the SourceMatch? class in afw.detection:

```
double computeRmsRadialDistance(std::vector<SourceMatch?> const &matches);
```

This will be called by the WCS-verification stage.

Other Activities

Attended Science Portal demo and gave written feedback to Suzy Dodd.

Dialed into a few design reviews (pipeline skeleton, difference imaging, persistence).

Levine Deborah

Reported 02/18/10

ID	Percent	Task	Comments
APP90	0%	implement functionality to support DC3b pipeline validation goals	<i>not started</i>

*Percent updated in this report

Comments: I just reworded the goal here, FWIW. Substantial traction on the list of work items requires resolution of "SDQA rating" vs. "normal metadata" and a better understanding of format and access to the Simulator input information.

Created Trac pages with the dependency action items and another for our list of work items.

Other Activities

Attending many of the Design Reviews. Attended Science Portal Demo.

Lim KT

Reported xx/xx/xx

ID	Percent	Task	Comments
APP6	0%	interslice communications	<i>not started</i>
APP7	0%	post spatial matching (stretch goal)	<i>not started</i>
APP192	0%	translate overall production into pipeline , stages, and policies	<i>not started</i>

*Percent updated in this report

Comments:

Other Activities

Lupton Robert

Reported xx/xx/xx

ID	Percent	Task	Comments
APP139	0%	integrate HEALPix into software stack	<i>not started</i>
APP95	40%	code to measure quality of difference imaging coadds	
APP100	0%	test difference imaging coadds	<i>not started</i>
APP149	80%	move applications code out of stage code	
APP167	0%	modify stage code to conform with new MW API	<i>not started</i>
APP101	75%	simplified background estimation	
APP121	50%	adapt astrometry code for DC3b use	

*Percent updated in this report

Comments:

Other Activities

Monet Dave

Reported xx/xx/xx

ID	Percent	Task	Comments
APP121	50%	adapt astrometry code for DC3b use	

*Percent updated in this report

Comments:

Other Activities

Monkewitz Serge

Reported xx/xx/xx

ID	Percent	Task	Comments
APP144	0%	move applications code out of stage code	<i>not started</i>
APP162	0%	modify stage code to conform with new MW API	<i>not started</i>
APP6	0%	interslice communications	<i>not started</i>
APP7	0%	post spatial matching (stretch goal)	<i>not started</i>
APP74	0%		<i>not started</i>

	characterization of and improvements to association cosmic ray rejection performance	
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*Percent updated in this report

Comments:

Other Activities

Mullally Fergal

Reported xx/xx/xx

ID	Percent	Task	Comments
APP86	60%	implement improvements for WCS	
APP151	25%	implement stage structure for support astrometry code	

*Percent updated in this report

Comments:

Other Activities

Myers Jon

Reported xx/xx/xx

ID	Percent	Task	Comments
APP140	25%	integrate MOPS stages with new C++ KD-Tree tools	
APP129	35%	run DayMOPS with solar system model	
APP141	75%	write linkTracklets and unit tests	

*Percent updated in this report

Comments:

Other Activities

- Identified acceleration and time as relevant factors causing large numbers of tracks
- Study of SSM to identify reasonable acceleration limits
- Major discovery: acceleration is greatly lower in latitude if use celestial coordinates rather than RA,Dec.
- Found that realistic acceleration limits alone do not constrain number of tracks sufficiently for our purposes.
- Conducted study of DC3b cadence to determine usefulness of 15 and 20 day windows compared to the planned 30-day window. Either appears to be fairly good for our purposes!
- Scheduled design review for DayMOPS
- Wrote initial draft of dayMOPS design review, sent it to Lynne
- Some discussion of possible use of GPUs for orbit determination, careful reading on one relevant paper

- Continuing study with Matt Cleveland and Prof. Dave Lowenthal (UA) on studying methods of distributing linkTracklets. Attempted to use one model for computation time for a set of leaf known compatible leaf nodes but rejected it. Proposed new model.
- Wrote a Python script which takes a set of detections and finds (nearly) the tracklets and tracks which would be found by findTracklets/linkTracklets as an evaluation/SDQA tool.
- Contacted Jeremy Kubica about crashes in findTracklets, sent him some isolated data sets which cause this crash.
- Registered for and arranged travel to UCLA for extension courses in Target Tracking

Owen Russ

Reported xx/xx/xx

ID	Percent	Task	Comments
APP77	0%	fix ticket #873	<i>not started</i>
APP94	0%	code to warp images to/from sky pixel representation	<i>not started</i>
APP209	0%	implement outlier rejection	<i>not started</i>
APP98	50%	code to create PSF-matched difference imaging coadds (no outlier rejection)	
APP95	40%	code to measure quality of difference imaging coadds	
APP104	50%	code to detect chi-squared deep detection coadds (no outlier rejection)	

*Percent updated in this report

Comments:

Other Activities

Pierfederici Francesco

Reported xx/xx/xx

ID	Percent	Task	Comments
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*Percent updated in this report

Comments:

Other Activities

Shaw, Dick

Reported 02/16/10

ID	Percent	Task	Comments
XXX	*5%	Edit new DC3b User Guide	<i>Constructed outline, some writing assignments made, created inventory of extant documents</i>
XXX	*0%	Create User training program for analysis of DC3b data products	<i>not started</i>

Other Activities

XXX	*0%	Assemble calibration reference files for DC3b processing	<i>not started</i>
XXX	*0%	Compute metric to capture variation of image background	<i>implementation proposal posted to Trac</i>
XXX	*0%	Automate comparison to ground truth for cosmic ray removal	<i>not started</i>
XXX	*0%	Collate and present failure rate statistics for WCS, PSF on selected image types	<i>not started</i>
XXX	*0%	Generate statistics to characterize the quality of source subtraction in template-subtracted images	<i>not started</i>

*Percent updated in this report

Comments:

Other Activities

- External User Support
 - ◆ Contributed to discussion in Infrastructure WG in planning for user access to DC3b data products
- Planned work
 - ◆ Inventory extant calibration reference files, and proposed CFHT-LS datasets for DC3b processing
 - ◆ Create a Trac page with plan for assembling calibration reference files
 - ◆ Begin accumulating calibration reference files
 - ◆ Test scheme for evaluation of background in processed DC3b images

Van Dyk Schuyler

Comments:

Other Activities

- reviewed and commented on the Data Product Requirements Document (DPRD)
- reviewed and comments still pending on the updated DC3b Data Quality Requirements document
- working on a draft of Section 5.1 of the DC3b User Guide
- organized and attended demo at IPAC of the ON Brasil DES web portal
- will attend Seattle meeting next month

TBD

Reported xx/xx/xx

ID	Percent	Task	Comments
APP103	0%	create a set of chi-squared deep detection coadds	<i>not started</i>
APP102	0%	code to measure quality of deep detection coadds	<i>not started</i>
APP208	0%	define CFHT to be used	<i>not started</i>
APP201	0%	identify tools to analyze science data quality of stage output	<i>not started</i>

APP199	0%	validate science quality of initial integration run	<i>not started</i>
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*Percent updated in this report

Comments:

Other Activities

Major Accomplishments

Significant breakthroughs, issues resolved.

Objectives for the Next Period

What you expect to accomplish.

Problems Encountered and Solutions Being Pursued

Budget or schedule variance, technical issues, management issues.