#	Name/Description	Poss SDQA System Implementation	Resources for SDQA portion	Relevance to Survey Ops	Alternative Responsibility	Recommendation	
1.1	ISR	Stage Developer could generate subtracted image. Mean, median, std dev computed on subtracted image pixels. SDQA to persist stats, do comparison to expected behavior and assign a quality to image. Manual inspection of questionable images and spot check.		Becomes part of documentation. Input and output images could become part of regression test set.	Stage developer or tester as part of software unit/integration testing.	Assign to developer or sw tester	
2.1	ICP:WCS	Stage Developer to compute error as defined					
2.1.1	ICP: WCS: Failure Rate	SDQA to compare to threshold and mark as failure. SDQA to compute statistics on error including cumulative rate. Manual analysis needed to determine root cause of failure.		Exception rate is relevant; if "dummy" products for expected products are produced and assigned at the time of exception a quality equivalent to "nonexistent", the SDQA system could easily handle creating the global statistics. Error over threshold relevant, and would be handled by SDQA.	Stage developer or tester as part of software unit/integration testing.	Development/Middlewar to ensure exceptions leave appropriate trace in database, SDQA handles tolerance and global stats.	

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2.1.2	ICP: WCS: Median Error	SDQA to compute statistics on error including cumulative rate. SDQA would need to do conditional stats on "good" vs. "failed" images.		Relevant and SDQA would track stats on images which successfully processed.	Stage developer or tester as part of software unit/integration testing.	SDQA should implement stats	
2.2.1	ICP: Photometric 0pt	SDQA could do the comparison if the stage could persist both simulated and determined 0pt.		As written, strictly debugging. However, tracking stats on photometric 0pt is relevant	Stage developer or tester as part of software unit/integration testing.	Persist stats. Responsibility to Stage developer or tester for analysis. SDQA to aggregate and present global stats if resources allow.	
2.3.1	ICP: PSF: Failure Rate	As for WCS, if error status is persisted, SDQA can do stats.		Relevant	Middleware?	SDQA to compute statistics on flagged failed data.	
2.3.2	ICP: PSF: Consistency	As written this is a debugging task. SDQA could do comparison within image and across images for consistency check of data.		Consistency check is Highly relevant. Will need to aggregate comparison over focal plane and over time as well.	Stage developer or tester as part of software unit/integration testing.	SDQA should implement consistency check. However, comparison to simulated input PSFs is probably a tester/developer task.	

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2.3.3prop	ICP: PSF: PSF size/shape	as above. SDQA to compare to expected, from seeing and/or instrument. ? To persist expectation as seeing/focus influence will be persisted in ops.		Highly relevant. Will need to aggregate comparison over focal plane and over time as well.	Stage developer or tester as part of software unit/integration testing.	SDQA should implement.	
2.4.1	ICP: Background determination	Insufficient information. If comparison to simulated, debugging task. However, comparison to observational expectations is SDQA task.		Prob. Want to track background levels and compare to expectations based on observing conditions	TBD	TBD	
3.1	Registration of stack for coadd	Expect some debugging/validation done at code level. However, comparing quality of coadd (e.g. optical quality/PSF) to expectation based on input data is potentially a good SDQA system task.		TBD	TBD	TBD	
4.1	Coadd for Template Registration	TBD. Probably similar to coadd registration. Note that in Ops template adoption will likely need validation in addition to any SDQA performed at the time of processing.		TBD	TBD	TBD	
4.1, 4.2, 4.3	Template PSF	TBD		Relevant.	TBD	TBD	

#	Name/Description	Poss SDQA System Implementation	Resources for SDQA portion	Relevance to Survey Ops	Alternative Responsibility	Recommendation	
5.1	Image Subtraction: Failure Rate	As for similar items, SDQA can compute stats on failures by exception and can do threshold comparison		Relevant	Middleware	SDQA should implement.	
5.2	Image Subtraction: Residuals	Needs some clarification: assume Stage developer(s) to compute PSF of residual objects in footprints and persist PSF. SDQA to do threshold comparison. But need to understand who knows what and when a bit better		Relevant, but seems could be handled by throwing and exception and declaring stage failure	Stage developer throws exception, middleware handles	Handle failure of subtraction as exception when detected this way. However, other measures of Image subtraction quality should be part of SDQA.	
6.1	Detection on Subtracted Image: Completeness	SDQA can compute global statistics on defined and persisted metrics, BUT Semi-manual analysis will have to be performed for each catalog release. This is likely quite hands on for DC3b		Relevant, part of validation of catalog prior to catalog release. TBD if this is science or ops SDQA activity for ops.	Staff Scientists	Handle as analysis task. SDQA to support with statistics	
6.2	Detection on Subtracted Image: False detection Rate ("reliability")	SDQA can compute global statistics on defined and persisted metrics, BUT Semi-manual analysis will have to be performed for each catalog release. This is likely quite hands on for DC3b		Relevant, part of validation of catalog prior to catalog release. TBD if this is science or ops SDQA activity for ops.	Staff Scientists	Handle as analysis task. SDQA to support with statistics	

#	Name/Description	Poss SDQA System Implementation	Resources for SDQA portion	Relevance to Survey Ops	Alternative Responsibility	Recommendation	
7.1	Deep Detection: Completeness	SDQA can compute global statistics on defined and persisted metrics, BUT Semi-manual analysis will have to be performed for each catalog release. This is likely quite hands on for DC3b		Relevant, part of validation of catalog prior to catalog release. TBD if this is science or ops SDQA activity for ops.	Staff Scientists	Handle as analysis task. SDQA to support with statistics	
7.2	Deep Detection: Accuracy of shape measurements	Insufficient information. Probably combination of debugging and statistical analysis of measure of confidence. SDQA may also be able to check for nonphysical shapes.		TBD	TBD	TBD	
8.1	Day MOPS	Insufficient information -- need to look at PS-MOPS metrics		TBD	TBD	TBD	
9.1	AP: Accuracy	None as written. Analysis Task		Becomes part of documentation.	Staff Scientists	Handle as analysis task.	
9.2	AP: MOPS Completeness	None as written: Stage Validation task		Becomes part of documentation.	Stage developer or tester as part of software unit/integration testing.	Assign to stage developer or sw tester	
9.3	AP: Classification Correctness	None as written: Stage Validation task		Becomes part of documentation.	Stage developer or tester as part of software unit/integration testing.	Assign to stage developer or sw tester	

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9.4prop	AP: Quality of association	Stage developer to persist measure of confidence in the association. SDQA to maintain statistics					
10.1	Photometric Calibration: photometric accuracy	Insufficient information. Will request IPAC LSST scientists and SDQA team to provide inputs.		TBD	TBD	TBD, stats on SRD derived metrics computed during pipeline run should be handled by SDQA	
10.2	Photometric Calibration: compare to model	Insufficient information		TBD	TBD	Prob analysis task	
10.3	Photometric Calibration: systematics	Insufficient information		TBD	TBD	TBD	
11.1	Astrometric Calibration: Accuracy of models	Sounds like an analysis task. Need Monet input.		TBD	TBD	Prob analysis task	
11.2	Astrometric Calibration: Systematics	Sounds like an analysis task. Need Monet input.		TBD	TBD	Prob analysis task	
12.1	Integrated Database: Exposure Table completeness	System validation		regression testing	relevant developer or tester	Assign to developer or tester	

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12.2	Integrated Database: Consistency	Part of DM Obs, not SDQA		Relevant, would be handled by DM ops.	Middleware?	Assign to middleware.	