WP #	CASU WP name /sub task / 05Q4m1 deliverables	Staff	Prog 05Q2	Prog 05Q3	Prog 05Q4	Textual Summary
1	**Management and definition of project responsibilities**					
1.1	report to VISTA, UKIDSS, JAC, ATC, GSC	all	25	34	37	
	provide fortnightly meeting minutes, monthly reports on progress + quarterly review reports and planning. Attend, prepare for and give talks at UKIDSS consortium meeting and SV meetings. Prepare for, attend and give talks at ROE IR workshop, produce draft functionality document for VDMT & VDUC. Hold regular telecons with JAC					held minuted CASU meetings and a telecon with JAC. Eduardo, Jim and Pete attended ADASS. Jim presented a talk on VDFS/WFCAM processing. Mike prepared talk on VDFS pipeline results for ROE IR workshop
1.2	interface control document between CASU and JAC	MJI	100	100	100	completed
1.3a	interface control document between CASU and WFAU (WFCAM)	MJI	100	100	100	completed
1.3b	interface control document between CASU and WFAU (VISTA)	PSB	0	0	0	
	liaise with WFAU, camera and telescope team for design of VISTA FITS headers for input to ICD					no progress
1.4a	define WFCAM data structures and FITS headers	MJI, JRL, PSB	100	100	100	completed
1.4b	update proposed VISTA FITS headers as necessary	PSB	20	30	35	
	monitor and update proposed VISTA FITS headers. give feedback on test FITS files. test conformance of output FITS files with ICD.					checked new items, including: full, static, WCS - fed back minor probs
1.5a	define WFCAM observing protocols	STH, DWE	60	70	75	
	monitor and update MSB guidelines. monitor observing efficiency and report.					reported on observing efficiency for 05B. Metric now calculated per group rather than per observation.
1.5b	define VISTA observing protocols	PSB	20	25	30	
	liaise with development team					reviewed latest state of HOWFS simulation, commented on SADT
1.6a	liaise with UKIDSS&JAC on WFCAM obs strategy, surveys planning	STH	50	60	65	
	liaise and monitor progress					Mike took part in UKIDSS survey heads telecon
1.6b	liaise with Proj. Sci. on VISTA observing strategy & survey planning	PSB	25	34	37	
	liaise and monitor progress					Installed SADT
1.7a	liaise with VDUC on VDFS products for WFCAM	STH, MJI, JRL	55	60	65	
	liaise and monitor progress. finalise reports on results from WFCAM 05A SV data. update Simon Dye on SV analysis progress					updated 05a SV report
1.7b	liaise with VDUC on VDFS products for VISTA	MJI, STH	25	34	37	
	liaise and monitor progress. assess and prioritise work required for extra UK VDFS products. revisit WPs for V1-5 in lieu of above					nothing to report
1.8a	liaise with UKIDSS and JAC on survey progress DB (WFCAM)	JRL	50	55	60	
	maintain OMP database mirror to be used with survey progress database, incl. simplified user interface					CASU copy of OMP database enhanced - in particular to include MSB rejection info. Produced experimental prototype VDFS survey progress dtabase usinf UKIDSS WFCAM surveys. See http://apm15.ast.cam.ac.uk/docs/wfcam/science-verification/ukidss_progress.png/view
1.8b	liaise with VDUC and ESO on survey progress DB (VISTA)		0	0	0	on hold
1.9	system documentation	DWE,EGS,MR	25	34	37	
	update and maintain web pages of system docs					update www pages as needed. EGS and DWE started rationalisation of www pages - Plone vs. simple html
1.10	VST processing preparation	EGS, MJI	10	15	20	
	monitor, assess and respond to VST proposal feedback and re-submission					helped to write data processing and management plans section for submitted UK-led VST public surveys proposals

2	**ESO VISTA software interface deliverables and documentation**					
2.1	DFS impact document	PSB	80	95	95	
	update documents					no progress
2.2	Calibration Plan document	PSB	80	95	95	
	update documents					no progress
2.3	Data Reduction Library Design document	PSB	80	95	95	
	update documents					no progress
2.4	Data Reduction Library					subsumed into 8.1b
	produce v0.1 of DRL and test in CPL environment					
2.5	ICD ESO/VPO	PSB	5	10	10	
	update FITS header doc and DID/DIC and data dictionary files					no progress
2.6	Instrument specification and interface documents	PSB	6	6	6	
	develop integration tests in CPL & QFITS environment					no progress
2.7	Delivery software modules for exposure time calculator	STH, PSB	60	90	90	
	update ETC with better characteristic curves					no progress
2.8	liaise with VISTA IR camera development team	PSB	25	35	38	
	continue liaising with VISTA IR camera development team					various liaison with ATC and RAL
2.9	Development of DQC measures	PSB	5	10	10	
	update QC measures as needed in light of test data					no progress
2.10	Documents for software modules	PSB	0	0	0	no progress
3	**Pipeline infrastructure and pipeline progress monitoring tools**					
3.1	interactive tools for running pipeline	JRL	75	75	75	
	update tools in the light of 05A experience and document					no further progress
3.2	high level scripts to interrogate headers	MR, EGS	60	80	80	
	update header interrogation scripts and test					no further progress
3.3	automatic progression of results to web pages	MR	55	65	70	
	maintain and update web-based pipeline progress web page					processing status now generated on the fly from the DQC database.
3.4	automatic checks to spot failure of pipeline	JRL	20	35	45	
	continue developing automated checks for pipeline failures					written new preprocessing routine with improved header documentation, enables more trapping of incomplete dither/mesostep seuqences. Still needs a further upgrade to assign the rest of the calibration frames properly rather than waiting to do this in the processing routine. Extra functionality added to post-pipeline diagnostic tests
3.5a	Tools for fixing problem datasets (WFCAM)	JRL	25	25	25	
	continue developing tools to handle problems in WFCAM data					no further progress
3.5b	Tools for fixing problem datasets (VISTA)		0	0	0	on hold
3.6	group documentation on pipeline infrastructure	STH, JRL	60	65	65	
	stress test documentation and update as necessary					no progress
3.7a	Oversee reprocessing WFCAM data after bug fixes/improvements	MR	30	45	50	
	reprocess science data from 05A as necessary					all 05A data reprocessed
3.7b	Oversee reprocessing VISTA data after bug fixes/improvements		0	0	0	on hold
4	**Set up and manage raw science archive**					
4.1	extend UKIRT archive to cope with WFCAM data	JRL, MR	65	70	70	

	improve front page entry point of WFCAM raw data archive. initiate, manage and monitor WFCAM-ESO raw data transfers					no progress
4.2a	Ingest and verify WFCAM data	MR, MJI	25	30	35	
	ingest and verify 05B WFCAM data					data ingest complete up to Oct 14th
4.2b	Ingest and verify VISTA data		0	0	0	on hold
5	**Set up and manage data processing system hardware**					
5.1	Investigate alternatives (benchmarking, reliability etc)	MJI, PSB, JMI	100	100	100	completed
5.2	buy hardware and install	PSB, JMI, MJI	100	100	100	completed
5.3	integrating and testing	PSB, JMI	100	100	100	completed
5.4	Manage day-to-day maintenance and upgrades	PSB, JMI	25	34	37	
	continue maintenance and upgrade programme. Investigate external bulk storage devices					investigating bugs in new disk servers. Investigating external bulk disk storage devices
5.5	Hardware additions for further processing system		0	0	5	
	monitor need for extra hardware for further processing	MJI				no further requirement currently needed
6	**Run standard pipeline**					
6.1a	Update WFCAM master calibration frames	MJI, JRL	9	18	21	
	continue updating and testing calibration frames					New master flats and confidence maps created
6.1b	Update VISTA master calibration frames		0	0	0	on hold
6.2a	Monitor detector performance WFCAM	JRL, MR	9	18	21	
	monitor with 05A and 05B data					monitoring ongoing
6.2b	Monitor detector performance VISTA		0	0	0	on hold
6.3a	oversee standard processing WFCAM	MR	9	18	21	
	process 05B data					processed data up to Oct 4th.
6.3b	Oversee standard processing VISTA		0	0	0	on hold
6.4a	Astrometric calibration WFCAM	MJI	9	18	21	
	(re)calibrate 05A and 05B data					calibration up to date
6.4b	Astrometric calibration VISTA		0	0	0	on hold
6.5a	Photometric Calibration WFCAM	STH	9	18	21	
	calibrate using 2mass and continue developing secondary standards system, Ces etc					continues
6.5b	Photometric Calibration VISTA		0	0	0	on hold
6.6a	Verify Science products and monitor DQC measures WFCAM	EGS, MJI	9	18	21	
	assess 05A and 05B data					SV of products ongoing see http://apm15.ast.cam.ac.uk/casudocs/wfcam/science-verification. Awaiting processing of new data with better image quality.
6.6b	Verify Science products and monitor DQC measures VISTA		0	0	0	on hold
6.7	Monitor data product transfer to WFAU	MR, MJI	9	18	21	
	continue data transfer to WFAU and monitor					transferred 05A data
6.8a	Reprocess WFCAM data	MR	9	18	21	
	reprocess if major bug fixes					reprocessing of 05A data completed.
6.8b	Reprocess VISTA data		0	0	0	on hold
7	**Development work for summit pipeline**					

7.1a	Interface test pipelines in ORAC-DR	JRL	100	100	100	completed
7.1b	Interface test pipelines to VISTA summit DR	JRL	0	0	0	on hold
7.2a	implement WFCAM pipeline at summit	JRL	80	90	100	complete
7.2b	Implement VISTA pipeline at summit	JRL	0	0	0	on hold
7.3a	documentation for ORAC-DR interface	JRL	60	60	60	
	update and deliver documentation as development proceeds					no further progress
7.3b	documentation for interface VISTA	JRL	0	0	0	on hold
7.4a	upgrade and maintain summit pipeline WFCAM	JRL	25	40	45	
	update and maintain as required					latest version with some bug fixes installed
7.4b	upgrade and maintain summit pipeline VISTA	JRL	0	0	0	on hold
8	**Development and testing of standard 2d processing**					
8.1a	further development of standard pipeline for WFCAM	JRL,DWE	80	85	85	
	update and maintain as required. Assess persistence characteristics and develop trial version					crosstalk removal implemented in pipeline
8.1b	development of VISTA specific packages	JRL	0	30	40	
	write version 0.1 CPL recipes and modules					Version 0.1 is almost complete and includes 4 recipes from the DRLD and a few additional test recipes. All modules and recipes are being fully documented. Plan to release in ~ 1 week
8.2a	liaison with WFCAM development team	JRL	25	34	40	
	continue telecons and discussions.					telecons and email discussions continue
8.2b	liaison with Project Scientist & VISTA development team	PSB	25	34	37	nothing to report
	assess any new detector engineering test data					
8.3a	partake in planning WFCAM commissioning observations	STH	100	100	100	WFCAM commissioning completed
8.3b	partake in planning VISTA commissioning observations	STH	0	0	0	
	liaise and discuss with camera PS and VISTA PS					no progress
8.4a	Participate directly in commissioning WFCAM	STH	100	100	100	completed
8.4b	Participate directly in commissioning VISTA	STH	0	0	0	on hold
8.5a	Tuning pipeline during commissioning and after WFCAM	MJI, STH, EGS	40	40	50	
	keep on tuning as newer data comes in. further assessment of the quality and stability of master calibration data. assess quality of science output					Added crosstalk removal. Experimenting with alternative sky subtraction routines. Carried out tests on flatfield -v- dark sky -v- photometric systematics
8.5b	Tuning pipeline during commissioning and after VISTA	MJI, JRL, EGS	0	0	0	on hold
8.6a	documentation for 2D processing software WFCAM	JRL, MJI	50	50	55	
	update docs as necessary					started work on updating overall image processing description for WFCAM and VISTA
8.6b	documentation for additional 2D processing software VISTA	JRL	0	30	35	
	document within recipe and module C code in doxygen compatible format					documentation added as code is written
8.7	Comparison between automated and manual data products	STH	50	55	60	
	assess CASU processed WFCAM SV data in conjunction with CSV and Survey Heads					lots of liaison with SVers

9	**Development and testing of standard catalogue products**					
9.1	add in new measures requested	MJI	60	100	100	completed
	monitor and tune if needed					
9.2a	refine astrometric calibration model	MJI	85	85	90	further tests and refinement of astrometric model on 05B data
	refine astrometric model					
9.2b	refine astrometric calibration model - VISTA specific	MJI	0	0	0	on hold
9.3	generate model simulations of expected data	STH	100	100	100	completed
9.4	assess catalogue parameter reliability	MJI	70	80	80	
	refine parameter error estimates and check for systematics in new params, finish in conjunction with 9.1					no further progress
9.5	intercomparison of catalogue products with other packages	MJI	100	100	100	completed
9.6	Completeness	MJI, EGS	10	40	40	
	design and report on completeness model, check completeness [9.6] and error estimates and parameter reliability [9.4]					no further progress
9.7	documentation of catalogue software and products	MJI	55	60	70	
	update catalogue products documentation					rewrote catalogue description document and drafted doc describing image classification
10	**Setup trial and run further processing pipeline**					
10.1	Manage and run further processing stages		0	0	0	placeholder (start in Q3)
10.2	development and assessment of PSF options 1,2	DWE	65	75	75	
	run prototype code for PSF levels 1,2 on 05A data					begun trialling on complete nights of data
10.3	develop 1D/2D PSF-deconvolved Sersic profile fits	MJI	0	0	0	
	prototype methods for Sersic profile fitting					no progress
10.4	Develop LSBG/nebulosity detection/parameterisation	MJI	0	0	0	
	investigate feasibility of nebulosity detection					on hold til "crud" problems re-assessed
10.5	Full iterative profile fitting for stellar images		0	0	0	paused
10.6	Develop and optimize Bayesian image classification	MJI	10	30	35	
	trial Bayesian classification schemes					investigating as part of general classifier development
10.7	Modeling and simulations of further processing steps		0	0	0	
	simulate WFCAM data and cf with code developed in 10.2					no progress
11	**Photometric standards and calibration**					
11.1	Agree on primary standards (WFCAM + VISTA)	STH	100	100	100	completed
11.2	Choose secondary standards (WFCAM + VISTA)	STH	80	80	80	
	add in last few proposed standards and update doc					no progress
11.3a	take part in commissioning observations WFCAM	STH	100	100	100	phase II on-sky characterisation - completed
11.3b	take part in commissioning observations VISTA	STH	0	0	0	on hold
11.4a	Reduce data, compute zero points and colour equations WFCAM	STH	25	60	65	
	compute WFCAM photometric zeropoints from commissioning data. update colour terms relative to 2MASS and UKIRT FS					new version released at: http://www.ast.cam.ac.uk/~wfcam/docs/reports/wfcam_photcal_report/index.html
11.4b	Reduce data, compute zero points and colour equations VISTA	STH	0	0	0	on hold

11.5	Update, maintain and extend secondary standards system	STH	0	0	0	
	begin building secondary standard fields system					no progress
11.6	Investigate photometric calibration field systematics WFCAM+VISTA	STH	0	30	50	
	investigate photometric calibration systematics					new analysis shows detection of the expected phtometric systematic caused by the varying effective plate scale of the detector - at the 1% level: see report (c.f. 11.4a)
11.7	assess extinction monitoring methods and develop measures	STH	50	60	60	
	use 2MASS comparison to get first order estimate and assess expected accuracy in light of results from UKIRT FS					no further progress
12	**Further development of DQC measures at summit and Cambr**					
12.1	develop extra systematic noise measures	MJI	75	80	80	
	finished for WFCAM; awaiting VISTA test files					
12.2	Refine current measures for WFCAM/VISTA data	JRL, MJI	25	40	45	
	continue monitoring the DQC assessment by visually checking random sub-sample					DQC monitoring continues
12.3	implement 2mass for throughput measurement	JRL	100	100	100	implemented local access version at summit - completed
12.4	master calibration frames for detector monitoring	JRL, MR	40	60	65	
	continue monitoring using 05A and 05B WFCAM data					flatfield/sky frame report completed
13	**Co-located list driven photometry**					
13.1	test methods for master catalogue generation	MJI	100	100	100	completed
13.2	develop basic WCS-based list driven photometer	MJI	90	95	95	no further progress
	extend to full 80 parameter set					
13.3	externally driven WCS photometry and define parameter set	MJI	75	95	95	no further progress
	extend to full 80 parameter set					
14	**Stacking and mosaicing**					
14.1	develop benchmark simple stacking/mosaicing framework	MJI	100	100	100	completed
14.2	NN algorithm with simple rejection	MJI	100	100	100	completed
14.3	More sophisticated rejection dealing with pixilation	MJI	100	100	100	completed
14.4	Stacking with optimum weighting and defect rejection	MJI	25	25	30	
	refine using WFCAM deep survey data					trialled various seeing weighting schemes. Improved sky correction strategy in stacking
14.5	Advanced stacking/image restoration for variable PSF	MJI	0	0	0	
	TBD as part of UK design review					
15	**Continuum subtraction and basic difference imaging**					
15.1	Simple WCS-based subtraction techniques	MJI	100	100	100	completed
15.2	investigate and apply different interpolation methods	MJI	100	100	100	completed
15.3	develop adaptive kernel matching option	MJI	80	80	80	
	continue debugging and enhancements to adaptive kernel package					investigated spatially varying PSF correction
15.4	time series photometry	STH	20	50	50	
	continue with WASP, INT WFC and APT datasets					analysis completed using 1500 DXS K-band frames, results being written up
16	**Interpolation techniques and PSF modeling**					
16.1	investigate alternative interpolation/PSF schemes	DWE	100	100	100	completed
16.2	implications for different stacking methods	DWE	25	30	30	no further progress
	trial different stacking options for WFCAM deep surveys					
16.3	implications for deriving catalogues and parameters	DWE	75	80	85	
	finish testing of astrometric refinement code					more tests on 05A data in ordor to make PSF measurement more robust. Scripts written to process complete nights of data
16.4	oversampled PSF generation per detector	DWE	100	100	100	completed
16.5	develop oversampled spatially varying PSF model	DWE	25	30	30	
	asess if spatially varying PSF model required, test on 05B data					no progress