WP	CASU WP name /sub task / 05Q2m2 deliverable	Staff	Vers	Prog				Textual Summary
#				05Q1	Apr	May	Jun	
1	**Management and definition of project responsibilities**							
1.1	report to VISTA, UKIDSS, JAC, ATC, GSC	all	V2-V5	17	19	22		
	meeting minutes, monthly reports, quarterly review/reports & planning, VDUC meetings, JAC telecons; prepare for and attend ESO VDFS FDR update meeting							Organized and attended ESO FDR+ meeting, distributed notes and actioned specific items to project members. held two CASU meetings. attended UKIRT board meeting.
1.2	interface control document between CASU and JAC	MJI	V1					completed
1.3a	interface control document between CASU and WFAU (WFCAM)	MJI	V1					completed
1.3b	interface control document between CASU and WFAU (VISTA)		V4	0	0	0		
	liase with WFAU for design of VISTA ICD							no progress
1.4a	define WFCAM data structures and FITS headers	MJI, JRL, PSB	V1					completed
1.4b	update proposed VISTA FITS headers as necessary	PSB	V4	10	10	20		
	monitor and update proposed VISTA FITS headers							Presented current state of FITS to DICB chair at FDR+. Waiting for ESO feedback and new issues of instrument/TCS dictionaries
1.5a	define WFCAM observing protocols	STH	V2	55	60	60		
	monitor and update MSB guidelines							awaiting detailed analysis of first processing runs
1.5b	define VISTA observing protocols	PSB	V4	15	15	20		
	liaise with development team							distributed updates to data types (in particular HOWFS) following FDR+ and instigated discussion on type of calibration observations
1.6a	liaise with UKIDSS&JAC on WFCAM obs strategy, surveys planning	STH	V2	40	50	50		
	liaise and monitor progress							awaiting detailed analysis of first processing runs
1.6b	liaise with Proj. Sci. on VISTA observing strategy & survey planning	PSB	V2-V3	17	19	22		
	liaise and monitor progress							Informal discussions on status of detectors and project in general. Input to latest data-rate description
1.7a	liaise with VDUC on VDFS products for WFCAM	STH, MJI, JRL	V2	50	55	55		
	liaise and monitor progress. finalise reports on comm-I							no progress
1.7b	liaise with VDUC on VDFS products for VISTA	MJI, STH	V4	17	19	22		
	liaise and monitor progress. assess and prioritise work required for extra UK VDFS products. begin functional specification for UK review (see VDMT A0501-05)							no progress
1.8a	liaise with UKIDSS and JAC on survey progress DB (WFCAM)	JRL	V2	50	50	50		
	maintain OMP database mirror to be used with survey progress database, incl. user interface							OMP database mirror maintained
1.8b	liaise with VDUC and ESO on survey progress DB (VISTA)		V3-V5	0	0	0		on hold
1.9	system documentation	DWE, EGS,	V2-V5	17	19	22		
	update and maintain web pages of system docs							updated and maintained WWW pages, trialled Plone
1.10	VST processing preparation	EGS, MJI	V3	0	0	10		
	monitor, assess and respond to VST proposal feedback							held discussions with core and secondary programme Pis
2	**ESO VISTA software interface deliverables and documentation**							
2.1	DFS impact document	PSB	V2	70	70	80		
	respond to RIX, update document							incorporated current data-rate info from JPE with minor imporvements (inclusion of FITS header size). Presented to FDR+, waiting further ESO feedback.
2.2	Calibration Plan document	PSB	V2	70	70	80		
	respond to RIX, update document							presented to FDR+, incorp. some feedback, awaiting further ESO feedback
2.3	Data Reduction Library Design document	PSB	V2	70	70	80		
	respond to RIX, update document							presented to FDR+, incorp. some feedback, copy to chair of DICB, awaiting further ESO feedback
2.4	Data Reduction Library							subsumed into 2.3
2.5	ICD ESO/VPO	PSB	V2	0	5	5		

	update FITS header doc and DID/DIC and data dictionary files							waiting DSR proposal (ESO) full inst & TCS dics (ATC)
2.6	Instrument specification and interface documents	PSB	V3	0	0	6		
	develop integration tests in CPL & QFITSenvironment							short workshop on CPL at FDR+, new CPL issue and docs
2.7	Delivery software modules for exposure time calculator	STH, PSB	V3	20	20	30		
	update ETC doc. produce C versions of ETC software modules							commenced translation of perl code into C
2.8	liaise with VISTA IR camera development team	PSB	V2-V5	8	19	25		
	continue liaising with VISAT IR camera development team							FITS issues (see above). test state of current camera software being run at RAL, discussed outstanding issues include. generation of first-guess WCS
2.9	Development of DQC measures	PSB	V2,V4	0	5	5		
	respond to RIXs, update QC measures as required							no progress
2.10	Documents for software modules	PSB	V4-V5	0	0	0		
3	**Pipeline infrastructure and pipeline progress monitoring tools**							
3.1	interactive tools for running pipeline	JRL	V1-V2	60	70	75		
	develop tools in light of comm-II and document							improvements to pipeline scripts to enable better control: restart & preview ability
3.2	high level scripts to interrogate headers	STH	V1,V3	50	50	55		
	update header interrogation scripts and test							software running to enable DQC monitoring of processed data
3.3	automatic progression of results to web pages	MR	V2	50	50	50		
	prototype a web-based pipeline progress system							no progress
3.4	automatic checks to spot failure of pipeline	STH, MR	V2	0	0	20		
	develop scripts to pick out problem datasets							many more error traps now in place following testing and retesting. automatic checking for incomplete images enabled
3.5a	Tools for fixing problem datasets (WFCAM)	JRL	V2	20	25	25		
	develop tools to handle problems in comm-II data							no progress
3.5b	Tools for fixing problem datasets (VISTA)		V4-V5	0	0	0		on hold
3.6	group documentation on pipeline infrastructure	STH, JRL	V1-V2	60	60	60		
	stress test documentation and update as necessary							minor document updates implemented
3.7a	Oversee reprocessing WFCAM data after bug fixes/improvements	MR	V3-V5	0	30	30		
	reprocess science data in comm-I							all comm-I data reprocessed and transferred to WFAU
3.7b	Oversee reprocessing VISTA data after bug fixes/improvements		V5	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	V2	50	55	65		
	finish creating version 1 of WFCAM raw data archive. initiate manage and monitor WFCAM - ESO raw data transfers							SV data spanning 1-16th April transferred to ESO. UKIRT WFCAM raw data archive now running and supplying data
4.2a	Ingest and verify WFCAM data	MR, MJI	V3-V5	10	19	22		
	ingest and verify phase II commissioning and SV data							all WFCAM data ingested and verified up to May 12th. Missing files retrieved.
4.2b	Ingest and verify VISTA data		V4-V5	0	0			on hold
5	**Set up and manage data processing system hardware**							
5.1	Investigate alternatives (benchmarking, reliability etc)	MJI, PSB, JMI	V1	100	100			completed
5.2	buy hardware and install	PSB, JMI, MJI	V1	50	100			completed
5.3	integrating and testing	PSB, JMI	V1	50	100			completed
5.4	Manage day-to-day maintenance and upgrades	PSB, JMI	V2-V5	17	19	22		
	continue maintenance and upgrade programme							rebuild of one failed raid array and system disk
5.5	Hardware additions for further processing system		V2-V5	0	0	0		
	scope need for extra hardware for further processing	MJI						no need at present
6	**Run standard pipeline**							
6.1a	Update WFCAM master calibration frames	MJI, JRL	V2-V5	0	3	6		
	ingest and verify WFCAM on-sky test data							first pass SV calibrations generated
6.2a	Monitor detector performance WFCAM	JRL	V2-V5	0	3	6		
	monitor with comm-I, comm-II and SV data							initial study of flats and darks started

6.3a	Oversee standard processing WFCAM	MR	V2-V5	0	3	6		
	oversee SV data							processing of SV data continues
6.4a	Astrometric calibration WFCAM	MJI	V2-V5	0	3	6		
	calibrate comm-I, comm-II & SV data							all data calib rated to 2mass
6.5a	Photometric Calibration WFCAM	STH	V2-V5	0	3	6		
	calibrate using 2mass, then with WFCAM system							all data calibrated to 2mass
6.6a	Verify Science products and monitor DQC measures WFCAM	EGS, MJI	V2-V5	0	3	6		
	assess comm-I, comm-II and SV data							assessment of SV data ongoing
6.7	Monitor data product transfer to WFAU	MR, MJI	V2-V5	0	3	6		
	continue data transfer to WFAU and monitor							SV nights 1/4/05 and 7/4/05 transferred to WFAU
6.8a	Reprocess WFCAM data	MR	V3-V5	0	3	6		
	reprocess if major bug fixes							reprocessing as required
7	**Development work for summit pipeline**							
7.1a	Interface test pipelines in ORAC-DR	JRL	V1	100	100	100		completed
7.1b	Interface test pipelines to VISTA summit DR	JRL	V4	0	0	0		on hold
7.2a	implement WFCAM pipeline at summit	JRL	V1-V2	75	75	80		
	demonstrate catalogue and non-cat DQCs; develop recipes for dealing with crosstalk, non-linearity, reset anomalies and persistence, tackle speed issues							further work done on speeding up the summit pipeline. faster decurtaining routine is now available. Additions to the DQC logging made
7.2b	Implement VISTA pipeline at summit	JRL	V4	0	0	0		on hold
7.3a	documentation for ORAC-DR interface	JRL	V1-V2	60	60	60		
	update and deliver documentation as development proceeds							no further progress
7.3b	documentation for interface VISTA	JRL	V3-V4	0	0	0		on hold
7.4a	upgrade and maintain summit pipeline WFCAM	JRL	V2-V5	17	19	22		
	update & maintain, include commissioning enhancements							bug fixes implemented as found
7.4b	upgrade and maintain summit pipeline VISTA	JRL	V4-V5	0	0	0		on hold
8	**Development and testing of standard 2d processing**							
8.1a	further development of standard pipeline for WFCAM	JRL	V1-V2	80	80	80		
	finish implementing new version of imcore to include full param set							modifications made to accommodate comm-II data. New sky subtraction algorithm is in place
8.1b	development of VISTA specific packages	JRL	V3	0	0	0		on hold
8.2a	liaison with WFCAM development team	JRL	V1-V2	8	19	22		
	continue discussion on reset anomaly, crosstalk and linearity; assess science array test data for above problems and report							nothing to report
8.2b	liaison with Project Scientist & VISTA development team	MJI	V3	8	19	22		
	assess any new detector engineering test data							nothing to report
8.3a	partake in planning WFCAM commissioning observations	STH	V1-V2	80	100	100		WFCAM commissioning completed
	continue planning							
8.3b	partake in planning VISTA comissioning observations	STH	V3	0	0	0		
	liaise and discuss with camera PS and VISTA PS							no progress
8.4a	Participate directly in commissioning WFCAM	STH	V2	50	100	100		took part in second stage of WFCAM on-sky commissioning - completed
	complete observations							
8.4b	Participate directly in commissioing VISTA	STH	V4	0	0	0		on hold
8.5a	Tuning pipeline during commissioning and after WFCAM	MJI, JRL, EGS	V2	20	30	35		
	use commissioning data to tune processing strategy; assess the quality and stability of the master calibration data; asses the quality of science output							dark and flatfield assessment made and report started. sky subtraction strategy modified
8.5b	Tuning pipeline during commissioning and after VISTA	MJI, JRL, EGS	V4-V5	0	0	0		on hold
8.6a	documentation for 2D processing software WFCAM	JRL	V1-V2	50	50	50		
	update docs as necessary							no progress
8.6b	documentation for additional 2D processing software VISTA	JRL	V3-V4	0	0	0		on hold
8.7	Comparison between automated and manual data products	STH	V1-V2	50	50	50		

	assess CASU processed WFCAM commissioning data in conjunction with CSV							CSV given access to raw data via archive
9	**Development and testing of standard catalogue products**							
9.1	add in new measures requested	MJI	V1-V3	60	60	60		
	finish testing and debugging new catalogue parameter measures							all parameters in place, but require verification of error estimates (9.4)
9.2a	refine astrometric calibration model	MJI	V1-V2	85	85	85		
	assess astrometric properties of WFCAM comm-II and SV data							ongoing
9.2b	refine astrometric calibration model - VISTA specific	MJI	V4-V5	0	0	0		on hold
9.3	generate model simulations of expected data	STH	V1	100	100	100		completed
9.4	assess catalogue parameter reliability	MJI	V1-V2	70	70	70		
	refine parameter error estimates and check for systematics in new params, finish in conjunction with 9.1							error estimates being refined with WFCAM SV data
9.5	intercomparison of catalogue products with other packages	MJI	V1-V2	100	100	100		completed
9.6	Completeness	MJI, EGS	V1-V2	0	10	10		
	design and report on completeness model, check completeness [9.6] and error estimates and parameter reliability [9.4]							no progress - note the limitations implied by the sensitivity variation in the detector
9.7	documentation of catalogue software and products	MJI	V1-V2	55	55	55		
	update catalogue products documentation							no progress
10	**Setup trial and run further processing pipeline**							
10.1	Manage and run further processing stages		V3-V5	0	0	0		placeholder (start in Q3)
10.2	development and assessment of PSF options 1,2	DWE	V1-V2	60	60	60		PSF determination code and PSF fitting code altered to work with real WFCAM data and 80 column catalogues. Testing in progress
	develop and test prototype version of code for PSF level 2							
10.3	develop 1D/2D PSF-deconvolved Sersic profile fits	MJI	V2-V3	0	0	0		
	prototype methods for Sersic profile fitting							no progress
10.4	Develop LSBG/nebulosity detection/parameterisation	MJI	V2-V4	0	0	0		
	investigate feasibility of nebulosity detection							no progress
10.5	Full iterative profile fitting for stellar images		V3-V4	0	0	0		on hold
10.6	Develop and optimize Bayesian image classification	MJI	V3	0	0	0		
	trial Bayesian classification schemes							no progress
10.7	Modelling and simulations of further processing steps		V2-V3	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	V1-V2	90	100	100		completed
11.2	Choose secondary standards (WFCAM + VISTA)	STH	V1-V2	80	80	80		
	add in last few proposed standards and update doc							no progress
11.3a	take part in commissioning observations WFCAM	STH	V2	10	100	100		phase II on-sky characterisation - completed
11.3b	take part in commissioning observations VISTA	STH	V4	0	0	0		on hold
11.4a	Reduce data, compute zero points and colour equations WFCAM	STH	V2	15	20	20		
	compute ZPs from commissioning data, update colour terms relative to 2mass							data reduced but not analysed
11.4b	Reduce data, compute zero points and colour equations VISTA	STH	V4-V5	0	0	0		on hold
11.5	Update, maintain and extend secondary standards system	STH	V2-V4	0	0	0		
	begin building secondary standard fields system							no progress
11.6	Investigate photometric calibration field systematics WFCAM+VISTA	STH	V2-V5	0	0	0		
	investigate photometric calibration systematics							no progress
11.7	assess extinction monitoring methods and develop measures	STH	V2-V5	50	50	50		
	use 2MASS comparison to get first order estimate and assess expected accuracy							no progress
12	**Further development of DQC measures at summit and Cambr**							
12.1	develop extra systematic noise measures	MJI	V1-V2	50	75	75		
	trial with comm-II data, continue testing and monitoring systematic noise remover							no progress
12.2	Refine current measures for WFCAM/VISTA data	JRL, MJI	V3	20	25	25		

	trial with comm-II data, monitor DQC assessment and random visual cehcks							no progress
12.3	implement 2mass for throughput measurement	JRL	V1-V2	75	100	100		implemented local access version at summit - completed
12.4	master calibration frames for detector monitoring	JRL	V1-V2	35	40	40		report underway
	assess and report using commissioning data							
13	**Co-located list driven photometry**							
13.1	test methods for master catalogue generation	MJI	V1	100	100	100		completed
13.2	develop basic WCS-based list driven photometer	MJI	V1-V2	90	90	90		
	extend to full 80 parameter set							no progress
13.3	externally driven WCS photometry and define parameter set	MJI	V2	75	75	75		
	extend to full 80 parameter set							no progress
14	**Stacking and mosaicing**							
14.1	develop benchmark simple stacking/mosaicing framework	MJI	V1	100	100	100		completed
14.2	NN algorithm with simple rejection	MJI	V1	100	100	100		completed
14.3	More sophisticated rejection dealing with pixellation	MJI	V1-V2	100	100	100		completed
14.4	Stacking with optimum wighting and defect rejection	MJI	V2-V3	25	25	25		
	refine and test current seeing weighting method on FIRES data							no progress
14.5	Advanced stacking/image restoration for variable PSF	MJI	V3-V5	0	0	0		
	TBD as part of UK design review							no progress
15	**Continuum subtraction and basic difference imaging**							
15.1	Simple WCS-based subtraction techniques	MJI	V1-V2	100	100	100		completed
15.2	investigate and apply different interpolation methods	MJI	V1-V2	100	100	100		completed
15.3	develop adaptive kernel matching option	MJI	V1-V2	80	80	80		
	continue debugging and enhancements to adaptive kernel package							no progress
15.4	transit event detection	STH	V2-V3	20	20	20		
	continue with WASP, INT WFC and APT datasets							no progress
16	**Interpolation techniques and PSF modeling**							
16.1	investigate alternative interpolation/PSF schemes	DWE	V1	100	100	100		completed
16.2	implications for different stacking methods	DWE	V1-V2	20	20	20		on hold
16.3	implications for deriving catalogues and parameters	DWE	V1-V2	70	70	70		
	finish development and testing of astrometric refinement code							testing begun with real data
16.4	oversampled PSF generation per detector	DWE	V1-V5	100	100	100		completed
16.5	develop oversampled spatially varying PSF model	DWE	V2-V5	20	20	20		
	finish development of spatially varying PSF model, final tuning on WFCAM on-sky data							no progress