WP #	CASU WP name /sub task / 05Q2 deliverable	Staff	Prog (36 months)				Textual Summary
			05Q1	Apr	May	Jun	
1	**Management and definition of project responsibilities**						
1.1	report to VISTA, UKIDSS, JAC, ATC, GSC	STH, MJI, PSB, JRL, DWE, MR, EGS	17	19			meeting minutes, monthly reports, quarterly review/reports & planning, VDUC meetings, JAC telecons; prepare for and attend ESO VDFS FDR update meeting
1.2	interface control document between CASU and JAC	MJI	100	100			completed
1.3a	interface control document between CASU and WFAU (WFCAM)	MJI	100	100			completed
1.3b	interface control document between CASU and WFAU (VISTA)		0	0			
1.4a	define WFCAM data structures and FITS headers	MJI, JRL, PSB	100	100			completed
1.4b	update proposed VISTA FITS headers as necessary	PSB	10	10			produced draft DRS dictionary; waiting for new issues of inst/telescope dictionaries
1.5a	define WFCAM observing protocols	STH	55	60			much interaction at JAC, discussion of standard stars obs with Hirst, Leggett, Cross
1.5b	define VISTA observing protocols	PSB	15	15			liaise with development team
1.6a	liaise with UKIDSS&JAC on WFCAM obs strategy, surveys planning	STH	40	50			STH attended UKIDSS SV meeting, visited UKIRT/JAC, observed SV
1.6b	liaise with Proj. Sci. on VISTA observing strategy & survey planning	PSB	17	19			discussions include. data rates & handling radioactive chips, feasibility of external reproduction of pipeline operations
1.7a	liaise with VDUC on VDFS products for WFCAM	STH, MJI, JRL	50	55			liaise Dye, finalise comm-I reports, CSV & PI access to raw data
1.7b	liaise with VDUC on VDFS products for VISTA	MJI, STH	17	19			liaise, assess work for extra UK VDFS products, begin functional spec for UK review
1.8a	liaise with UKIDSS and JAC on survey progress DB (WFCAM)	JRL	50	50			maintain OMP database mirror
1.9	system documentation	DWE, EGS, MR	17	19			update and maintain WWW pages, trial Plone
1.10	VST processing preparation	EGS, MJI	0	0			monitor, assess and respond to VST proposal feedback
2	**ESO VISTA software interface deliverables and documentation**						
2.1	DFS impact document	PSB	70	70			produced feedback for RIX board dispositions, post-FDR draft sent to ESO
2.2	Calibration Plan document	PSB	70	70			produced feedback for RIX board dispositions, post-FDR draft sent to ESO
2.3	Data Reduction Library Design document	PSB	70	70			produced feedback for RIX board dispositions, post-FDR draft sent to ESO
2.4	Data Reduction Library	PSB	0	5			test procedures in CPL
2.5	ICD ESO/VPO	PSB	0	5			incorporated changes from DICD v3, QC & DRS dictionaries into DRLD
2.7	Delivery software modules for exposure time calculator	STH, PSB	20	20			update ETC doc, produce C versions of ETC software modules: no progress
2.8	liaise with VISTA IR camera development team	PSB	8	19			various issues; eagerly await proper IRACE and final FITS MEF-construction software
2.9	Development of DQC measures	PSB	0	5			QC now consistent across Dictionary, Cal Plan and DRLD
3	**Pipeline infrastructure and pipeline progress monitoring tools**						
3.1	interactive tools for running pipeline	JRL	60	70			develop tools in the light of comm-II and document
3.2	high level scripts to interrogate headers	STH	50	50			update header interrogation scripts and test
3.3	automatic progression of results to web pages	MR	50	50			prototype a web-based pipeline progress system
3.4	automatic checks to spot failure of pipeline	STH	0	0			develop scripts to pick out problem datasets
3.5a	Tools for fixing problem datasets (WFCAM)	JRL	20	25			develop tools to handle problems in comm-II data
3.6	group documentation on pipeline infrastructure	STH, JRL	60	60			stress test documentation and update as necessary
3.7a	Oversee reprocessing WFCAM data after bug fixes/improvements	MR	0	30			reprocess science data in comm-I, comm-II, SV as necessary
4	**Set up and manage raw science archive**						
4.1	extend UKIRT archive to cope with WFCAM data	JRL, MJR	50	55			finished V1 of WFCAM raw data archive, manage WFCAM->ESO raw data transfer
4.2a	Ingest and verify WFCAM data	MR	10	19			ingested and verify comm-II, ingested and now verifying SV data
5	**Set up and manage data processing system hardware**						
5.1	Investigate alternatives (benchmarking, reliability etc)	MJI, PSB, JMI	100	100			completed
5.2	buy hardware and install	PSB, JMI, MJI	50	100			completed
5.3	integrating and testing	PSB, JMI	50	100			completed
5.4	Manage day-to-day maintenance and upgrades	PSB, JMI	17	19			continue maintenance and upgrade programme
5.5	Hardware additions for further processing system		0	0			assess if necessary
6	**Run standard pipeline**						
6.1a	Update WFCAM master calibration frames	MJI, JRL	0	3			Use WFCAM on-sky test data for this
6.2a	Monitor detector performance WFCAM	JRL	0	3			monitor with comm-I and -II and SV data
6.3a	Oversee standard processing WFCAM	MR	0	3			oversee processing of SV data

6.4a	Astrometric calibration WFCAM	MJI	0	3		calibrate comm-I, II and SV data
6.5a	Photometric Calibration WFCAM	STH	0	3		calibrate using 2MASS, develop secondary standards system, ce's etc
6.6a	Verify Science products and monitor DQC measures WFCAM	EGS, MJI	0	3		assess comm-I and II and SV data
6.7	Monitor data product transfer to WFAU	MR, MJI	0	3		continue data transfer to WFAU and monitor
6.8a	Reprocess WFCAM data	MR	0	3		reprocess if major bug fixes
7	**Development work for summit pipeline**					
7.1a	Interface test pipelines in ORAC-DR	JRL	100	100		completed
7.2a	implement WFCAM pipeline at summit	JRL	75	75		demonstrate catalogue and non-catalogue DQCs; develop recipes for dealing with crosstalk, non-linearity, reset anomalies and persistencem, tackle speed issues
7.3a	documentation for ORAC-DR interface	JRL	60	60		update and deliver documentation as development proceeds
7.4a	upgrade and maintain summit pipeline WFCAM	JRL	17	19		update & maintain, include commissioning enhancements
8	**Development and testing of standard 2d processing**					
8.1a	further development of standard pipeline for WFCAM	JRL	80	80		finish implementing new version of imcore to include full param set
8.2a	liaison with WFCAM development team	JRL	8	19		continue discussion on reset anomaly, crosstalk and linearity; assess science array test data for above problems and report
8.2b	liaison with Project Scientist & VISTA development team	MJI	8	19		assess any new detector engineering test data
8.3a	partake in planning WFCAM commissioning observations	STH	80	100		WFCAM commissioning completed
8.4a	Participate directly in commissioning WFCAM	STH	50	100		took part in second stage of WFCAM on-sky commissioning - completed
8.5a	Tuning pipeline during commissioning and after WFCAM	MJI, JRL, EGS	20	30		use commissioning data to tune processing strategy; assess the quality and stability of the master calibration data; asses the quality of science output
8.6a	documentation for 2D processing software WFCAM	JRL	50	50		updates docs as necessary
8.7	Comparison between automated and manual data products	STH	50	50		assess CASU processed WFCAM commissioning data in conjunction with CSV
9	**Development and testing of standard catalogue products**					
9.1	add in new measures requested	MJI	60	60		finish testing and debugging new catalogue parameter measures
9.2a	refine astrometric calibration model	MJI	85	85		assess astrometric properties of WFCAM comm-II and SV data
9.3	generate model simulations of expected data	STH	100	100		completed
9.4	assess catalogue parameter reliability	MJI	70	70		refine parameter error estimates and check for systematics in new params, finish in
9.5	intercomparison of catalogue products with other packages	MJI	100	100		completed
9.6	Completeness	MJI, EGS	0	10		design and report on completeness model, check completeness [9.6] and error
9.7	documentation of catalogue software and products	MJI	55	55		update catalogue products documentation
10	**Setup trial and run further processing pipeline**					
10.2	development and assessment of PSF options 1,2	DWE	60	60		develop and test prototype version of code for PSF level 2
10.3	develop 1D/2D PSF-deconvolved Sersic profile fits	MJI	0	0		prototype methods for Sersic profile fitting
10.4	Develop LSBG/nebulosity detection/parameterisation	MJI	0	0		investigate feasibility of nebulosity detection
10.6	Develop and optimize Bayesian image classification	MJI	0	0		trial Bayesian classification schemes
11	**Photometric standards and calibration**					
11.1	agree on primary standards	STH	90	100		completed
11.2	choose secondary standard fields	STH	80	90		final updates to standard fields, update fields in UKIRT database
11.3a	take part in commissioning observations WFCAM	STH	10	100		phase II on-sky characterisation - completed
11.4a	Reduce data, compute zero points and colour equations WFCAM	STH	15	20		compute ZPs from commissioning data, update colour terms relative to 2mass
11.5	Update, maintain and extend secondary standards system	STH	0	0		begin building secondary standard fields system
11.6	Investigate photometric calibration field systematics WFCAM+VISTA	STH	0	0		investigate photometric calibration systematics
11.7	assess extinction monitoring methods and develop measures	STH	50	50		use 2MASS comparison to get first order estimate and assess expected accuracy
12	**Further development of DQC measures at summit and Cambr**					
12.1	develop extra systematic noise measures	MJI	50	75		trial with comm-II data, continue testing and monitoring systematic noise remover
12.2	Refine current measures for WFCAM/VISTA data	JRL, MJI	20	25		trial with comm-II data, monitor DQC assessment and random visual cehcks
12.3	implement 2mass for throughput measurement	JRL	75	100		implemented local access version at summit - cpmpleted
12.4	master calibration frames for detector monitoring	JRL	35	40		assess and report using commissioning data
13	**Co-located list driven photometry**					
13.1	test methods for master catalogue generation	MJI	100	100		completed

13.2	develop basic WCS-based list driven photometer	MJI	90	90			extend to full 80 parameter set
13.3	externally driven WCS photometry and define parameter set	MJI	75	75			extend to full 80 parameter set
14	**Stacking and mosaicing**						
14.1	develop benchmark simple stacking/mosaicing framework	MJI	100	100			completed
14.2	NN algorithm with simple rejection	MJI	100	100			completed
14.3	More sophisticated rejection dealing with pixellation	MJI	100	100			completed
14.4	Stacking with optimum wighting and defect rejection	MJI	25	25			refine and test current seeing weighting method on FIRES data
14.5	Advanced stacking/image restoration for variable PSF	MJI	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			completed
15.2	investigate and apply different interpolation methods	MJI	100	100			completed
15.3	develop adaptive kernel matching option	MJI	80	80			continue debugging and enhancements to adaptive kernel package
15.4	transit event detection	STH	20	20			continue with WASP, INT WFC and APT datasets
16	**Interpolation techniques and PSF modeling**						
16.1	investigate alternative interpolation/PSF schemes	DWE	100	100			completed
16.2	implications for different stacking methods		20	20			paused
16.3	implications for deriving catalogues and parameters	DWE	70	70			finish development and testing of astrometric refinement code
16.4	oversampled PSF generation per detector	DWE	100	100			completed
16.5	develop oversampled spatially varying PSF model	DWE	20	20			finish development of spatially varying PSF model, final tuning on WFCAM on-sky data