| WP # | WP Title | Responsibility | 2003 V1 | | | | 2004 V2 | | | | FTE V1 | FTE V2 | FTE V3 | dwe 2003 | dwe 2004 | jrl 2003 | jrl 2004 | mji 2003 | mji 2004 | rwa 2003 | rwa 2004 | sth 2003 | sth 2004 | mtb 2003 | mtb 2004 | psb 2003 | psb 2004 | mr new 2003 | mr new 2004 | VISTA index |
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| | | | JFM | AMJ | JAS | OND | JFM | AMJ | JAS | OND | | | | | | | | | | | | | | | | | | | | 0-4 |
| **1** | **ESO VISTA software deliverables and documentation** | **PSB** | | | | | | | | | **0.5** | **0.5** | | | | | | | | | | | | | | **0.5** | **0.5** | | | **4.0** |
| 1.1 | DFS user requirements document | PSB | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.2 | Data reduction specification | PSB | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.3 | Calibration plan document for ESO | PSB | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.4 | Specification of calibration procedures for ESO | PSB | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.5 | Interface control document ESO/VPO | PSB | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.6 | Instrument specification and interface documents | PSB | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.7 | Delivery software modules Exposure Time Calculator | PSB | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.8 | Liase with VISTA IR camera development team | PSB | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.9 | Development of DQC measures | PSB | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **2** | **Management and Definition of Responsibilities** | **MJI** | | | | | | | | | **0.4** | **0.2** | **0.2** | **0.1** | **0.1** | **0.1** | | **0.1** | **0.1** | | | **0.1** | | | | | | | | **3.0** |
| 2.1 | Report to VISTA Board, GSC | MJI | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.2 | Interface Control Document between CASU and JAC | MJI | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.3 | Interface Control Document between CASU and WFAU | MJI | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.4 | Define data structures and FITS headers | JRL | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.5 | Define observing protocols | STH | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.6 | Liaise with UKIDSS & JAC on observing strategy | DWE | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.7 | Liaise with UKIDSS & JAC on survey planning | DWE | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.8 | Liaise with UKIDSS & JAC on survey progress database | JRL | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.9 | System Documentation | STH | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **3** | **Pipeline Infrastructure and Progress Monitoring Tools** | **JRL** | | | | | | | | | **0.4** | **0.2** | **0.2** | | | **0.2** | **0.1** | | | | | **0.2** | **0.1** | | | | | **0.1** | **0.1** | **3.5** |
| 3.1 | Interactive tools for running pipeline | JRL | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.2 | High level scripts to interrogate headers | STH | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.3 | Develop automatic progression of results to WWW pages | STH | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.4 | Automate checks to spot failures of pipeline | STH | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.5 | Tools for fixing problem datasets | JRL | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.6 | Group Documentation for above | JRL | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.7 | Reprocessing after bug fixes or improvements to algorithms | RWA | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **4** | **Set up and Manage Raw Science Archive** | **RWA** | | | | | | | | | **0.1** | **0.2** | **0.1** | | | **0.1** | **0.1** | | | | **0.1** | | | | | | | | | 0.0 |
| 4.1 | Extend current UKIRT archive to cope with WFCAM | JRL | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.2 | Ingest and verify WFCAM data | RWA | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **5** | **Set up and Manage Data Processing System Hardware** | **MTB** | | | | | | | | | **0.2** | **0.2** | **0.2** | | | | | | | | | | | **0.2** | **0.2** | | | | | 2.0 |

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| 5.1 | Investigate alternatives (benchmarking, reliability etc) | MTB | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5.2 | Buy hardware and install software | MTB | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5.3 | Integration and testing | MTB | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5.4 | Manage day-to-day, maintenance and upgrades | MTB | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5.5 | Hardware additions for further data processing system | MTB | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **6** | **Run Standard Pipeline** | **RWA** | | | | | | | | | **0.0** | **0.9** | **1.0** | | **0.1** | | **0.1** | | | | **0.6** | | **0.1** | | | | | | **0.1** | 2.5 |
| 6.1 | Ingest and verify data | RWA | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6.2 | Update master calibration frames | JRL | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6.3 | Monitor detector performance | JRL | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6.4 | Oversee standard processing | RWA | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6.5 | Astrometric calibration | DWE | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6.6 | Photometric calibration | STH | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6.7 | Verify science products and monitor DQC measures | RWA | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6.8 | Monitor product data transfer to WFAU | JRL | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **7** | **Development Work for Summit Pipeline** | **JRL** | | | | | | | | | **0.2** | **0.1** | **0.1** | | | **0.2** | **0.1** | | | | | | | | | | | | | 1.0 |
| 7.1 | Interface test pipelines to ORAC-DR | JRL | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7.2 | Implement WFCAM pipeline at summit | JRL | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7.3 | Documentation of interface | JRL | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7.4 | Upgrade and maintain summit pipeline | JRL | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **8** | **Development and Testing of Standard 2D Processing** | **STH** | | | | | | | | | **0.4** | **0.2** | **0.0** | | | **0.2** | **0.1** | **0.1** | **0.1** | | | **0.1** | | | | | | **0.1** | | 4.0 |
| 8.1 | Further development of standard pipeline | JRL | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8.2 | Liaison with WFCAM development team | JRL | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8.3 | Partake in planning commissioning observations | STH | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8.4 | Participate directly in commissioning | STH | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8.5 | Tuning pipeline during commissioning and after | JRL | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8.6 | Documentation of 2D processing software | JRL | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8.7 | Comparison between automated and manual data products | STH | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **9** | **Development and Testing of Standard Catalogue Products** | **DWE** | | | | | | | | | **0.5** | **0.2** | **0.0** | **0.1** | | **0.1** | | **0.1** | **0.1** | | | **0.2** | **0.1** | | | | | | | 4.0 |
| 9.1 | Add in new measures requested | MJI | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9.2 | Refine astrometric calibration model | MJI | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9.3 | Generate model simulations of expected data | STH | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9.4 | Assess catalogue parameter reliability | DWE | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9.5 | Intercomparison of catalogue products with other packages | STH | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9.6 | Completeness and error estimates | MJI | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9.7 | Documentation of catalogue software and products | MJI | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **10** | **Set up, Trial, and Run Further Processing Software** | **MJI** | | | | | | | | | **0.1** | **0.3** | **1.5** | | | | **0.1** | **0.1** | **0.1** | | | | **0.1** | | | | | | **0.2** | 3.0 |
| 10.1 | Manage and run further processing stages | MJI | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| 10.2 | Development and assessment of PSF options 1,2 | MJI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10.3 | Develop 1D/2D PSF-deconvolved Sersic profile fits | MJI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10.4 | Develop LSBG/nebulosity detection/parameterisation | MJI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10.5 | Full iterative profile fitting for stellar images | TBD | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10.6 | Develop and optimise Bayesian image classification | TBD | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10.7 | Modelling and simulations of further processing steps | STH | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **11** | **Photometric Standards and Calibration** | **STH** | | | | | | | | | **0.2** | **0.3** | **0.1** | | **0.1** | | | | | | | **0.2** | **0.2** | | | | | | 3.0 | | |
| 11.1 | Agree on primary standards | STH | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11.2 | Choose secondary standard fields | STH | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11.3 | Take part in commissioning observations | STH | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11.4 | Reduce data, compute zero points and colour equations | STH | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11.5 | Update, maintain and extend secondary standards system | STH | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11.6 | Investigate photometric calibration field systematics | STH | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11.7 | Assess extinction monitoring methods and develop measures | DWE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **12** | **Further Development of DQC Measures at Summit and Cam** | **JRL** | | | | | | | | | **0.2** | **0.2** | **0.0** | | | **0.1** | **0.1** | **0.1** | **0.1** | | | | | | | | | | 2.0 | | |
| 12.1 | Develop extra systematic noise measures | MJI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12.2 | Refine current measures for WFCAM/VISTA data | JRL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12.3 | Implement 2MASS - cf. for throughput measures | MJI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12.4 | Master calibration frames for detector monitoring | JRL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **13** | **Co-Located List Driven Photometry** | **MJI** | | | | | | | | | **0.1** | **0.2** | **0.5** | | | | | **0.1** | **0.1** | | | | **0.1** | | | | **0.1** | | 3.0 | | |
| 13.1 | Test methods for master catalogue generation | MJI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13.2 | Develop basic WCS-based list driven photometer | MJI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13.3 | Externally driven WCS photometry and define parameter set | MJI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **14** | **Stacking and Mosaicing** | **MJI** | | | | | | | | | **0.1** | **0.2** | **0.5** | | | | **0.1** | **0.1** | **0.1** | | | | | | | | **0.1** | **0.1** | 4.0 | | |
| 14.1 | Develop benchmark simple stacking/mosaicing framework | MJI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14.2 | Nearest neighbour algorithm with simple rejection | MJI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14.3 | More sophisticated rejection dealing with pixellation | MJI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14.4 | Stacking with optimum weighting and defect rejection | MJI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14.5 | Advanced stacking/image restoration for variable PSF | TBD | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **15** | **Continuum Subtraction and Basic Difference Imaging** | **STH** | | | | | | | | | **0.1** | **0.1** | **0.5** | | **0.1** | | | **0.1** | | | | | | | | | | | 4.0 | | |
| 15.1 | Simple WCS-based subtraction techniques | MJI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15.2 | Investigate and apply different interpolation methods | DWE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15.3 | Develop adaptive kernel matching option | TBD | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15.4 | Transient event detection | STH | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **16** | **Interpolation Techniques and PSF Modelling** | **DWE** | | | | | | | | | **0.4** | **0.2** | **0.0** | **0.4** | **0.2** | | | | | | | | | | | | | | 4.0 | | |
| 16.1 | Investigate alternative interpolation/PSF schemes | DWE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16.2 | Implications for different stacking methods | DWE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| 16.3 | Implications for deriving catalogues and parameters | DWE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16.4 | Oversampled PSF generation per detector | DWE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16.5 | Develop oversampled spatially varying PSF model | DWE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | 3.9 | 4.2 | 4.9 | 0.6 | 0.6 | 1.0 | 0.8 | 0.8 | 0.7 | 0.0 | 0.7 | 0.8 | 0.7 | 0.2 | 0.2 | 0.5 | 0.5 | 0.4 | 0.5 | | | | |
| | | | | | | | | | | | | | | dwe 2003 | dwe 2004 | jrl 2003 | jrl 2004 | mji 2003 | mji 2004 | rwa 2003 | rwa 2004 | sth 2003 | sth 2004 | mtb 2003 | mtb 2004 | psb 2003 | psb 2004 | mr new 2003 | mr new 2004 | | | | |
| **YEAR** | | | **DWE** | **JRL** | **MJI** | **MTB** | **PSB** | **RWA** | **STH** | **NEW** | | | | | | | | | | | | | | | | | mean | | | 2.9 | | | |
| 2003 | VDFS funded | | 0.6 | 1 | 0.8 | 0.2 | 0.5 | | 0.8 | 0.4 | | | | | | | | | | | | | | | | | mode | | | 4.0 | | | |
| 2004 | VDFS funded | | 0.6 | 0.8 | 0.7 | 0.2 | 0.5 | 0.7 | 0.7 | 0.5 | | | | | | | | | | | | | | | | | median | | | 3.0 | | | |