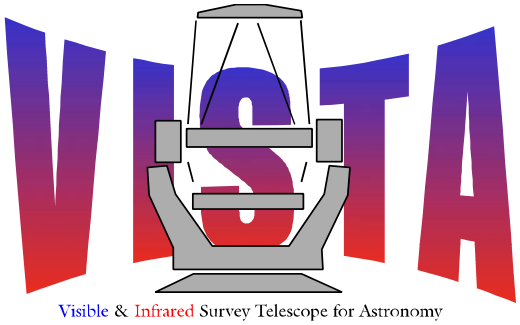

Data Flow System

Document Title: VISTA Infrared Camera Data Flow System PDR RID Responses

Document Number: VIS-TRE-IOA-20000-0006

Issue: 0.5

Date: 2004-05-07

Document Prepared by:	**Peter Bunclark** (CASU)	**Signature and Date:**	*Peter Bunclark* 2004.05.07 15:57:39 +01'00'
Document Approved by:	**Mike Irwin** (CASU Manager)	**Signature and Date:**	*Mike Irwin* 2004.05.07 15:58:36 +01'00'
Document Released by:	**Jim Emerson** (VISTA Project Leader)	**Signature and Date:**	

Change Record

Issue	Date	Sections Affected	Remarks
0.5	2004-05-07	All	New Document

Notification List

ATC:	Alistair McPherson Simon Craig Andy Born Malcolm Stewart Mel Strachan Andy Longmore Steven Beard
RAL:	Kim Ward Martin Caldwell Gavin Dalton
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Contents

1 Introduction

1.1 Scope

This document presents the responses by the VISTA Infrared Camera Data-Flow System team to the RIDs, RICs and RIOs generated by the VISTA IR Camera Data-Flow System Review Panel following their review of the Preliminary Design Review (PDR) pack, comprising the VISTA DFS User-Requirements [RD1], Calibration Plan [RD2] Data-Reduction Specification [RD3] and Schedule [RD4].

1.2 Acronyms and Abbreviations

ADxx	Applicable Document No xx
CASU	Cambridge Astronomical Survey Unit
IOA	Institute of Astronomy (Cambridge)
PDR	Preliminary Design Review
RDxx	Reference Document No xx
RIC	Review Item Clarification required
RID	Review Item Discrepancy
RIO	Review Item Observation
TBD	To Be Decided
TRE	Technical Report
VIRCAM	VISTA Infrared Camera
VISTA	Visible and Infrared Survey Telescope for Astronomy

1.3 Applicable Documents

[AD1] *Data Flow for the VLT instruments requirements specification,* VLT-SPE-ESO-19000-1618, issue 1.0, 1999-04-21.

1.4 Reference Documents

[RD1] *VISTA Infra Red Camera DFS User Requirements,* VIS-SPE-IOA-20000-00001, issue 0.5, 2004-04-08.

[RD2] *VISTA Infra Red Camera DFS Calibration Plan,* VIS-SPE-IOA-20000-00002, issue 0.5, 2004-04-08.

[RD3] *VISTA Infra Red Camera DFS Data-Reduction Specifications, VIS-SPE-IOA-20000-0003, issue 0.5, 2004-04-08*

[RD4] *VISTA IR Camera DFS Schedule,* VIS-PLA-QMU-20000-0005, issue 0.5, 2004-04-22

2 Review Items

2.1 Review Items referring to the User Requirements [RD1].

1	Discrepancy
2	Clarifications
6	Observations
9	Total

Table 2-1 RIx Count for User Requirements

2.1.1 MPE-001 ETC

Review Title:

PDR VISTA DFS

Review Item [X] **Discrepancy** [ ] **Clarification** [ ] **Observation**

RI No:	MPE-001
Review Item	
Document Title:	ALL (case of User Requirements)
Document No:	
Document Originator:	

Discrepancy/Clarification Required/Observation:

I am missing in the documentation the v0.5 of the Exposure Time Calculator specifications

Action Recommended by Initiator:

Add requested information

Date/Signature of Initiator:

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**

Date/Signature Chairperson:

Actionee Corrective Action:
Specification will be added to User Requirements.

Date/Signature Actionee: Jim Emerson 28/04/04

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.1.2 MPE-002 P2PP, Data Rate

Review Title:	**Review Item**	[ ] **Discrepancy**
PDR VISTA DFS		[ ] **Clarification**
		[X] **Observation**

RI No:	MPE-002
Review Item	
Document Title:	VISTA DFS User requirements
Document No:	VIS-SPE-IOA-20000-0001
Document Originator:	

Discrepancy/Clarification Required/Observation:

The document "DFS User requirements" should also contain the following items:
- possible impact on P2PP and preparation tools
- information about data rate

Action Recommended by Initiator:

Please add this information by FDR

Date/Signature of Initiator:

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**

Date/Signature Chairperson:

Actionee Corrective Action:
The information will be added by FDR as requested. The possible impact on P2PP and preparation tools is the subject of a study currently underway and scheduled for completion before FDR. A tool/utility for selecting sets of guide and LOWFS stars, given the position constraints imposed by the instrument, will be needed, however it is related to P2PP. The design (maximum) data rate for VIRCAM is one exposure every 10s over a night of 14 hours equivalent to 1.4 TBytes/night, but the typical volume resulting from scientific observations will be less than this i.e. ~0.4TB/night

Date/Signature Actionee: Jim Emerson 28/04/04

2.1.3 PBA-002 Other Required Tools

Review Title:

PDR VISTA DFS

Review Item

[ ] **Discrepancy**
[X] **Clarification**
[ ] **Observation**

RI No:	PBA-002
Review Item	All
Document Title:	VISTA IR Camera DFS User Requirements
Document No:	VIS-SPE-IOA-20000-0001
Document Originator:	Peter Bunclark

Discrepancy/Clarification Required/Observation:
Will there be any specific tool other than the Exposure Time Calculator needed, e.g. a tool for selecting standard fields?
Action Recommended by Initiator:

Date/Signature of Initiator: 29.04.2004, Pascal Ballester

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**

Date/Signature Chairperson:

Actionee Corrective Action: Yes. As mentioned in 2.1.2, MPE-002, we will need tools for selecting guide and LOWFS stars, and for selecting standard fields. These will be specified at FDR.

Date/Signature Actionee: J. Emerson 06/05/2004

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.1.4 WHU-001 Microsteps

Review Title:

PDR VISTA DFS

Review Item

[ ] **Discrepancy**
[ ] **Clarification**
[X] **Observation**

RI No:	WHU-01
Review Item	Page 8 of 21
Document Title:	VISTA DFS User Requirements
Document No:	VIS-SPE-IOA-20000-0001
Document Originator:	Peter Bunclark

Discrepancy/Clarification Required/Observation:
Table 2-1 mentions 0.34'' pixel size, so three pixels is one arcsec.
The micro step pattern is fixed to 0.5 pixels, as mentioned on page 7.
Isn't the microstep then < 0.3 arcsec instead of the mentioned 3 arcsec?
IT seems to be there are microsteps in N+0.5 pixel units allowed.

Action Recommended by Initiator:
If this is a typo, please correct, otherwise please add a sentence to clarify this.

Date/Signature of Initiator: 2004-04-29, W. Hummel, DFO

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**

Date/Signature Chairperson:

Actionee Corrective Action: To clarify, the glossary entry for Microstep is modified by insertion after "the non-integral part of the shifts are specified as 0.5 of a pixel'' the words "(i.e. shift is N+0.5 pixel)".

Date/Signature Actionee: M. Irwin 04/05/2004

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.1.5 WHU-010 Microsteps and Seeing Operationally

Review Title:

PDR VISTA DFS

Review Item

[ ] **Discrepancy**
[ ] **Clarification**
[X] **Observation**

RI No:	WHU-10
Review Item	Page 16 (was 8) of 21
Document Title:	VISTA DFS User Requirements
Document No:	VIS-SPE-IOA-20000-0001
Document Originator:	Peter Bunclark

Discrepancy/Clarification Required/Observation:
The document mentions the micro-step mode (DITHER) in a manner, as it could be decided on the fly, according to the current seeing conditions, if micro steps are applied or not. This is misleading. Operationally, there must be two OBs one prepared with and one prepared without microsteps being involved. The seeing will very certainly in an unpredicted manner much faster than the typical OB execution duration.

Action Recommended by Initiator:
The interplay between micro steps, seeing variations and operations should be clarified.

Date/Signature of Initiator: 2004-04-29, W. Hummel, DFO

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**
Date/Signature Chairperson:

Actionee Corrective Action: The page reference appears to be wrong; p 16 has the relevant text bulleted as "Under-sampling". However, this refers to action the pipeline must take; the initial observations will indeed have been chosen by the operator from alternative sets of OBs defined for various sets of seeing restrictions.

Date/signature Actionee: P. Bunclark 04/05/2004

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.1.6 MPE-003 Photometric Calibration output

Review Title:		
PDR VISTA DFS	**Review Item**	[ ] **Discrepancy** [X] **Clarification** [ ] **Observation**

RI No:	MPE-003
Review Item	Page 16
Document Title:	VISTA DFS User requirements
Document No:	VIS-SPE-IOA-20000-0001
Document Originator:	

Discrepancy/Clarification Required/Observation:

Page 16: You write that the manifestation of the photometric calibration in output data frames must be recorded in the FITS header record. I am not sure I understand. Could you please expand? (Which pipeline products are we talking about?)

Action Recommended by Initiator:

Date/Signature of Initiator:

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**

Date/Signature Chairperson:

Actionee Corrective Action: Rephrased to: "The photometric calibrations, including extinction measures, that describe the transformation between internal (instrumental) fluxes to magnitudes on the VISTA photometric system must be recorded for later use.''

Comment: The specific photometric calibration derived depends on the detail of the processing and therefore does not necessarily have a one-to-one link with the raw data; hence the original requirement to attach the calibration information to the pipeline products (images and catalogues).

Date/Signature Actionee: M. Irwin 27/04/2004

2.1.7 MPE-004 Data Quality Trends

PDR VISTA DFS

Review Item [ ] **Discrepancy** [ ] **Clarification** [X] **Observation**

RI No:	MPE-004
Review Item	Page 17
Document Title:	VISTA DFS User requirements
Document No:	VIS-SPE-IOA-20000-0001
Document Originator:	

Discrepancy/Clarification Required/Observation:

You write that data quality measures must be made and recorded at all stages of the reduction. “This includes comparing calibration frames with master frames and looking for spatial and temporal variations”.
Note that the pipeline recipes only generate quality control parameters. They do not compare (i.e. with older data), do not do any trend analysis.

Action Recommended by Initiator:

rephrase

Date/Signature of Initiator:

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**

Date/Signature Chairperson:

Actionee Corrective Action: Will reword to “Post-pipeline trend analysis should include comparing calibration frames with master frames to look for spatial and temporal variations”.

Date/Signature Actionee: M. Irwin 28/04/2004

2.1.8 WHU-011 Scope of Quality Control

Review Title:		
PDR VISTA DFS	**Review Item**	[ ] **Discrepancy** [X] **Clarification** [X] **Observation**

RI No:	WHU-11
Review Item	P17 4.2.5
Document Title:	VISTA DFS User Requirements
Document No:	VIS-SPE-IOA-20000-0001
Document Originator:	Peter Bunclark

Discrepancy/Clarification Required/Observation:
'Data Quality' is misleading. Generally the QC covers the instrument performance, the instrument quality. Data quality is dependent on the ambient conditions, the instrument quality and the way the OB is optimized.

Action Recommended by Initiator:
Please make sure that quality control is on the performance of the instrument and not on the quality of the science data.

Date/Signature of Initiator: 2004-04-29, W. Hummel, DFO

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**
Date/Signature Chairperson:

Actionee Corrective Action: Rephrased to "iv. Those that generate Quality Control Measures.''

See Also MPE-010 0.

Date/Signature Actionee: M. Irwin 04/05/2004

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.1.9 PBA-003 Calibration Scope

Review Title:

PDR VISTA DFS

Review Item

- [ ] **Discrepancy**
- [ ] **Clarification**
- [X] **Observation**

RI No:	PBA-003
Review Item	Pages 18 and 21
Document Title:	VISTA IR Camera DFS User Requirements
Document No:	VIS-SPE-IOA-20000-0001
Document Originator:	Peter Bunclark

Discrepancy/Clarification Required/Observation:

The pipeline does not calibrate the data from each night, but from each template

Action Recommended by Initiator:

Date/Signature of Initiator: 29.04.2004, Pascal Ballester

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**

Date/Signature Chairperson:

Actionee Corrective Action: p18 line 1-2 will be changed to "but to allow calibration of the templates used during a night".
P21 line 1 will be changed to "calibrating templates for a night's data"
Comment:
The pipeline uses all the information from a night to produce calibration.

Date/Signature Actionee: M. Irwin 04/05/2004

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.2 Review Items referring to the Calibration Plan [RD2].

6	Discrepancies
13	Clarifications
13	Observations
33	Total

Table 2-2 RIx Count for User Requirements

2.2.1 MPE-001 ETC

Review Title:

PDR VISTA DFS

Review Item

[X] **Discrepancy**
[ ] **Clarification**
[ ] **Observation**

RI No:	MPE-001
Review Item	
Document Title:	ALL (case of Calibration Plan)
Document No:	
Document Originator:	

Discrepancy/Clarification Required/Observation:

I am missing in the documentation the v0.5 of the Exposure Time Calculator specifications

Action Recommended by Initiator:

Add requested information

Date/Signature of Initiator:

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**

Date/Signature Chairperson:

Actionee Corrective Action:
Specification will be added to Calibration Plan.

Comment: We wish to discuss where in the Calibration Plan ETC should be covered.

Date/Signature Actionee: Jim Emerson 28/04/04

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.2.2 WHU-013 Calibration Cascade Diagram

Review Title:

PDR VISTA DFS

Review Item

- [ ] **Discrepancy**
- [X] **Clarification**
- [ ] **Observation**

RI No:	WHU-13
Review Item	Calibration cascade
Document Title:	VISTA DFS Calibration Plan
Document No:	VIS-SPE-IOA-20000-0002
Document Originator:	Peter Bunclark

Discrepancy/Clarification Required/Observation:
A calibration cascade, a kind of diagram should be given to show how the recipes are called and how the calibrations are associated among each other and on with respect to the science frames. See E.g.
www.eso.org/qc/UVES/pipeline/cal_scheme.html
www.eso.org/qc/GIRAFFE/pipeline/cal_scheme.html
www.eso.org/qc/ISAAC/cal_scheme.html

Action Recommended by Initiator:

Date/Signature of Initiator: 2004-04-29, W. Hummel, DFO

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**
Date/Signature Chairperson:

Actionee Corrective Action: We will construct something along these lines for FDR.

See Also 2.3.3 (PBA-015)

Date/Signature Actionee: M. Irwin 04/05/2004

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.2.3 MPE-009 Ensembles of FITS Files

PDR VISTA DFS

Review Item [ ] **Discrepancy** [ ] **Clarification** [X] **Observation**

RI No:	MPE-009
Review Item	Page 10
Document Title:	VISTA Calibration Plan
Document No:	VIS-SPE-IOA-20000-0002
Document Originator:	

Discrepancy/Clarification Required/Observation:

Last paragraph: the DFS pipeline handles set of files coming from one template (and not from an Observation Block) as an ensemble. The template information (TPL and DPR) keywords are used for that purpose and for choosing the appropriate pipeline recipe.

Action Recommended by Initiator:

rephrase

Date/Signature of Initiator:

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**

Date/Signature Chairperson:

Actionee Corrective Action: Reworded last sentence to "The content of the FITS headers allow the DFS pipeline to handle the set of observed files as an ensemble, and…"

Date/Signature Actionee: M. Irwin 27/04/2004

2.2.4 FCT-001 Ensembles of FITS files

Review Title:

VISTA Data Flow System

Review Item

[ ] **Discrepancy**
[ ] **Clarification**
[X] **Observation**

RI No:	FCT-001
Review Item	P10 section 2 last paragraph
Document Title:	VISTA Infra Red Camera Calibration Plan
Document No:	VIS-SPE-IOA-20000-0002
Document Originator:	Peter Bunclark

Discrepancy/Clarification Required/Observation:
Section 2, last paragraph: DFS pipeline handling the set of observed files from the OB as an ensemble: this is a departure from current DFS pipeline procedures that act on templates, not OBs.

Action Recommended by Initiator:
Confirm the need for pipeline processing done at the level of OBs

Date/Signature of Initiator: 28 April 2003, F. Comerón

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**

Date/Signature Chairperson:

Actionee Corrective Action: Please see response to 2.2.3 (MPE-009).

Date/Signature Actionee: P. Bunclark 29/04/2004

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.2.5 MPE-010 Quality Control Measures

PDR VISTA DFS

Review Item

[ ] **Discrepancy**
[ ] **Clarification**
[X] **Observation**

RI No:	MPE-010
Review Item	Page 12
Document Title:	VISTA Calibration Plan
Document No:	VIS-SPE-IOA-20000-0002
Document Originator:	

Discrepancy/Clarification Required/Observation:

Section 3.1.2
We call those parameters "quality control" (and not data quality measures) as they are used to measure not only the quality of the observations but also the observational performance of the instruments

Action Recommended by Initiator:

rephrase

Date/Signature of Initiator:

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**

Date/Signature Chairperson:

Actionee Corrective Action: Rephrased to "iv. Those that generate Quality Control Measures.''

Date/Signature Actionee: P. Bunclark 27/04/2004

2.2.6 PBA-004 Clarify Overheads on Duration

Review Title:	**Review Item**		
		[ ]	**Discrepancy**
PDR VISTA DFS		[X]	**Clarification**
		[ ]	**Observation**

RI No:	PBA-004
Review Item	Page 13
Document Title:	VISTA IR Camera Calibration Plan
Document No:	VIS-SPE-IOA-20000-0002
Document Originator:	Peter Bunclark

Discrepancy/Clarification Required/Observation:
It is not clear whether the duration takes into account the total time of the procedure for all detectors including overheads (see also comment PBA-006)

Action Recommended by Initiator:

Date/Signature of Initiator: 29.04.2004, Pascal Ballester

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**
Date/Signature Chairperson:

Actionee Corrective Action:
Added the words ‘including overheads’ after the word ‘procedure’.

[PBA-006 in Discrepancy should be [PBA-005].

Date/Signature Actionee: J. Lewis 04/05/2004

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.2.7 PBA-005 Duration Clarification

Review Title:		
PDR VISTA DFS	**Review Item**	[ ] **Discrepancy** [X] **Clarification** [ ] **Observation**

RI No:	PBA-005
Review Item	Page 14 and 19
Document Title:	VISTA IR Camera Calibration Plan
Document No:	VIS-SPE-IOA-20000-0002
Document Originator:	Peter Bunclark

Discrepancy/Clarification Required/Observation:
The duration 1s in Section 4.2 obviously does not include overheads. Is the time of 10 min. in Section 4.9 meant for all detectors?

Action Recommended by Initiator:

Date/Signature of Initiator: 29.04.2004, Pascal Ballester

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**

Date/Signature Chairperson:

Actionee Corrective Action: 4.2: 1s is indeed the exposure time without overhead. This will be corrected for FDR.
Comment: 10 seconds would be a more realistic estimate for the duration for a single exposure including overheads. Although the detectors take 1 second to read out, the IRACE system is specified to read out and process an exposure within 5 seconds and to allow the next exposure to start within 10 seconds.

4.9: The duration of 10 minutes is meant for all detectors, although if the decay time constant turns out to be significantly more than about a half a minute, then this may be something of an underestimate.
Date/Signature Actionee: J. Lewis 04/05/2004, J. Emerson 06/05/2004

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.2.8 WHU-007 Functionality versus Completeness of Frames

Review Title:	**Review Item**		
		[ ]	**Discrepancy**
PDR VISTA DFS		[X]	**Clarification**
		[ ]	**Observation**

RI No:	WHU-07
Review Item	Page 15-15 of 50
Document Title:	VISTA DFS Calibration Plan
Document No:	VIS-SPE-IOA-20000-0002
Document Originator:	Peter Bunclark

Discrepancy/Clarification Required/Observation:
The recipes (4.2) Reset Frames, (4.3) Dark Frames (4.4) Dome flats and others work per array, the (4.7) twflats and (4.10) cross-talk require the complete pawprint of frames.

Action Recommended by Initiator:
It should made clear which recipe requires all 16 arrays functional and which recipes are independent on that.

Date/Signature of Initiator: 2004-04-29, W. Hummel, DFO

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**

Date/Signature Chairperson:

Actionee Corrective Action: It is a requirement ([RD1] section 3.4) that no recipes require all 16 arrays functional. Non-working arrays are flagged by a FITS header keyword (DET_LIVE, [RD2] section 10.2).

Comment on Observing strategy: In the event of a detector failure we can change our observing strategy and observe more than one tile at each field centre - for example cover each field centre with two tiles observed with the rotator rotated by 180 degrees. This strategy doesn't change the procedures and recipes for observing and processing the individual pawprints (nor even changes the procedure for combining the pawprints into tiles).

Date/Signature Actionee: M. Irwin, P. Bunclark 04/05/2004, S. Beard, J. Emerson 06/05

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.2.9 WHU-002 Lamp efficiency and saturation

Review Title:

PDR VISTA DFS

Review Item

[ ] **Discrepancy**
[ ] **Clarification**
[X] **Observation**

RI No:	WHU-02
Review Item	Page 15 of 50
Document Title:	VISTA DFS Calibration Plan
Document No:	VIS-SPE-IOA-20000-0002
Document Originator:	Peter Bunclark

Discrepancy/Clarification Required/Observation:
Quality control parameters do not only monitor the instrumental effects to be removed by the pipeline, but also characteristics of instrumental components.

Action Recommended by Initiator:
To monitor the aging of the lamp the efficiency of the lamp should be returned by the recipe. In addition, justified by operational experience, the number of saturated pixels should be returned (generally for all calibration frames, where a lamp is the illumination source).

Date/Signature of Initiator: 2004-04-29, W. Hummel, DFO

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**
Date/Signature Chairperson:

Actionee Corrective Action: Seems like a good idea and straightforward to implement. We will add some text to this effect.

Date/Signature Actionee: M. Irwin 05/05/2004

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.2.10 WHU-004 Cancel Detector Noise Recipe

Review Title:

PDR VISTA DFS

Review Item

[ ] **Discrepancy**
[ ] **Clarification**
[X] **Observation**

RI No:	WHU-04
Review Item	Page 16 of 50
Document Title:	VISTA DFS Calibration Plan
Document No:	VIS-SPE-IOA-20000-0002
Document Originator:	Peter Bunclark

Discrepancy/Clarification Required/Observation:
4.5 Detector Noise.
This section is on calibrations for instrumental signature removal, but the detector noise and the gain are just qc parameters. The dark frames to be used for data reduction are given in subsection 4.3 already.

Action Recommended by Initiator:
I recommend to calculate the gain by the dome flat recipe (4.4) and to calculate the detector noise by the dark recipe (4.3) and cancel the detector noise recipe 4.5

Date/Signature of Initiator: 2004-04-29, W. Hummel, DFO

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**
Date/Signature Chairperson:

Actionee Corrective Action: Clarification: section 4.5 is specific to measuring the detector gain and readout noise, whereas sections 4.3 & 4.4 are measuring different aspects of the detector performance. Detector noise is also *not* just a QC parameter but is a vital piece of information when doing image combinations with rejection.

Date/Signature Actionee: M. Irwin 04/04/2004

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.2.11 FCT-004 Dark/Dome Exposures

Review Title:	**Review Item**		
VISTA Data Flow System		[ ]	**Discrepancy**
		[ ]	**Clarification**
		[X]	**Observation**

RI No:	FCT-004
Review Item	p16
Document Title:	VISTA Infra Red Camera Calibration Plan
Document No:	VIS-SPE-IOA-20000-0002
Document Originator:	Peter Bunclark

Discrepancy/Clarification Required/Observation:
Section 4.5: why should a dark exposure be taken with the same dome illumination as the dome flats?

Action Recommended by Initiator:
Confirm that this is really what is meant

Date/Signature of Initiator: 28 April 2003, F. Comerón

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**

Date/Signature Chairperson:

Actionee Corrective Action: This is a typographical error. Changed “and should be observed with the same dome illumination.” to “and both dome flat frames should be observed with the same dome illumination.”

Date/Signature Actionee: P. Bunclark 30/04/2004

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.2.12 PBA-006 Confidence Map

Review Title:

PDR VISTA DFS

Review Item

[ ] **Discrepancy**
[X] **Clarification**
[ ] **Observation**

RI No:	PBA-006
Review Item	Page 17
Document Title:	VISTA IR Camera Calibration Plan
Document No:	VIS-SPE-IOA-20000-0002
Document Originator:	Peter Bunclark

Discrepancy/Clarification Required/Observation:
What is the maximum possible value in a confidence map? If one wants to use variance Propagation does it not make more sense to use directly a variance map?

Action Recommended by Initiator:

Date/Signature of Initiator: 29.04.2004, Pascal Ballester

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**
Date/Signature Chairperson:

Actionee Corrective Action: A confidence map is closely related to, but more general than, a conventional variance map in that is encodes a normalised inverse variance map, an exposure map and a bad pixel map.

Maximum possible value is 32767. Negative values are reserved for future upgrades.

Date/Signature Actionee:

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.2.13 PBA-007 Standards Template

Review Title:

PDR VISTA DFS

Review Item

[X] **Discrepancy**
[ ] **Clarification**
[ ] **Observation**

RI No:	PBA-007
Review Item	Page 21
Document Title:	VISTA IR Camera Calibration Plan
Document No:	VIS-SPE-IOA-20000-0002
Document Originator:	Peter Bunclark

Discrepancy/Clarification Required/Observation:
For other instruments e.g. ISAAC the observation of photometry standards is performed by a different template than the science observations. This way the pipeline can invoke the appropriate processing, selection of stars in a catalogue and generation of zeropoints.

Action Recommended by Initiator:

Date/Signature of Initiator: 29.04.2004, Pascal Ballester

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**

Date/Signature Chairperson:

Actionee Corrective Action: 2MASS can be used as a first-order calibration for every field, but we will also want to make specific observations of photometric standard fields for a more accurate determination. We do not see the need for a separate template for this since the FITS header keywords (e.g. OBJECT, IMAGETYP, and TARGNAME) contain the information to let the pipeline know which observations are of photometric standard fields.

Date/Signature Actionee: M. Irwin 05/05/2004

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.2.14 PBA-008 Processing Context

Review Title:

PDR VISTA DFS

Review Item [X] **Discrepancy** [ ] **Clarification** [ ] **Observation**

RI No:	PBA-008
Review Item	Page 22
Document Title:	VISTA IR Camera Calibration Plan
Document No:	VIS-SPE-IOA-20000-0002
Document Originator:	Peter Bunclark

Discrepancy/Clarification Required/Observation:
Section 5.3 does not describe a template but a lower-level processing step of the science reduction recipe (see also PBA-011 and PBA-012)

Action Recommended by Initiator:
This item should be moved to document VIS-SPE-IOA-20000-0003

Date/Signature of Initiator: 29.04.2004, Pascal Ballester

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**

Date/Signature Chairperson:

Actionee Corrective Action: We will put this in Data reduction Spec as requested. However, being part of the required overall calibration procedures we propose to retain it in the Calibration Plan.

Date/Signature Actionee: M. Irwin, P. Bunclark 04/05/2004

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.2.15 PBA-010 Flat Combine Context

Review Title:		
PDR VISTA DFS	**Review Item**	[X] **Discrepancy**
		[ ] **Clarification**
		[ ] **Observation**

RI No:	PBA-010
Review Item	Page 23
Document Title:	VISTA IR Camera Calibration Plan
Document No:	VIS-SPE-IOA-20000-0002
Document Originator:	Peter Bunclark

Discrepancy/Clarification Required/Observation:
Sections 6.1.1 and 6.1.2 describe the processing steps vircam_sky_flat_combine and vircam_offset_sky_combine which are called by the science reduction recipe (is it vircam_jitter_calibrate). They do not correspond to independent calibration templates. (see also PBA-009 and PBA-012)

Action Recommended by Initiator:
This item should be moved to document VIS-SPE-IOA-20000-0003

Date/Signature of Initiator: 29.04.2004, Pascal Ballester

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**

Date/Signature Chairperson:

Actionee Corrective Action: We will put this in Data reduction Spec as requested. However being part of the required overall calibration procedures we propose to retain them in the Calibration Plan.

Comment: Although they don't correspond to unique observing templates, they are associated with whatever observing template is being used for the given science observations. Our interpretation of the 'calibration plan' was that it should cover all areas of calibration and not just those that require special observations.

Date/Signature Actionee: J. Lewis 04/05/2005

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.2.16 SCA-001 Creation of Night-Sky Flats

Review Title:

PDR VISTA DFS

Review Item

[ ] **Discrepancy**
[X] **Clarification**
[ ] **Observation**

RI No:	SCA-001
Review Item	Page 23
document Title:	VISTA DFS Calibration Plan
Document No:	VIS-SPE-IOA-20000-0002
Document Originator:	Peter Bunclark

Discrepancy/Clarification Required/Observation:
Can you please explain if the Night-Sly Flats will be created from any special science frames (which will have been jittered as required to remove fringing)? If yes, then will these special science frames be taken in a different template? In page 23, 6.1.1, it reads "Duration: Occurs in parallel with all night observing".

Action Recommended by Initiator:
Add requested clarification on text.

Date/Signature of Initiator: 29.04.2004, Sandra Castro

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**

Date/Signature Chairperson:

Actionee Corrective Action: Night sky flats are created either (1) from the science data themselves or (2) from offset sky exposures. Jittering is not for removal of fringing, but rather allows for the removal of astronomical objects during the combination stage so that one ends up with a good map of the sky. As such, no special template is required.

Date/Signature Actionee: J. Lewis 04/05/2005

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.2.17 PBA-009 Offset Sky Frames into Template

Review Title:	**Review Item**		
		[ ]	**Discrepancy**
PDR VISTA DFS		[ ]	**Clarification**
		[X]	**Observation**

RI No:	PBA-009
Review Item	Page 23
document Title:	VISTA IR Camera Calibration Plan
Document No:	VIS-SPE-IOA-20000-0002
Document Originator:	Peter Bunclark

Discrepancy/Clarification Required/Observation:
If the night-sky flats are acquired on a different field (e.g. when there is an extended source) the offsets have to be part of the same template for the pipeline to process them with the science data.

Action Recommended by Initiator:

Date/Signature of Initiator: 29.04.2004, Pascal Ballester

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**
Date/Signature Chairperson:

Actionee Corrective Action: This would make the templates unnecessarily complicated, and the observing efficiency would be reduced because every field would require its own second field. See Also 2.2.16, the response to SCA-001. However, we will further consider this point, and the science implications, by FDR.

Date/Signature Actionee: M. Stewart 05/05/2004

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.2.18 WHU-012 Calibration Cascade Operational Limitations

Review Title:		
PDR VISTA DFS	**Review Item**	[ ] **Discrepancy** [X] **Clarification** [ ] **Observation**

RI No:	WHU-12
Review Item	6.1.1 Night Sky Flats
Document Title:	VISTA DFS Calibration Plan
Document No:	VIS-SPE-IOA-20000-0002
Document Originator:	Peter Bunclark

Discrepancy/Clarification Required/Observation:
The first sentence: 'In the situation where the detector flat-field is not stable over the course of the night, we will use night-sky flats'. This is operationally misleading. The calibration cascade is executed via association rules that are fixed after they have been configured. There is a possibility to say: run the recipe with master_calib_A or without master_calib_A. But this is not possible: if there is no night_flat, take a twflat.
Action Recommended by Initiator:
Take these operational constraints into account.

Date/Signature of Initiator: 2004-04-29, W. Hummel, DFO

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**
Date/Signature Chairperson:

Actionee Corrective Action: The point here is that if the flat field of the detectors is not stable with time, as determined by commissioning and general experience with the detectors, then twilight flats are the next best option. This does not imply that we are making decisions on the fly about how we take calibration data. But rather that, if it seems that twilight flats are not an option, we will use the observations themselves to do the gain corrections. Perhaps we can solve this by rewording the first sentence as: "If experience shows that the detector flat fields are not reliably stable over the timescale of a night, then we will have to use night-sky flats instead".
Date/Signature Actionee: J. Lewis 04/05/2005

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.2.19 SCA-002 When to use Offset-Sky Exposures

Review Title:	**Review Item**	[ ] **Discrepancy**
		[X] **Clarification**
PDR VISTA DFS		[ ] **Observation**

RI No:	SCA-002
Review Item	Page 24
Document Title:	VISTA DFS Calibration Plan
Document No:	VIS-SPE-IOA-20000-0002
Document Originator:	Peter Bunclark

Discrepancy/Clarification Required/Observation:
How will the DFS pipeline decide whether there is an extended object in the field or not, in order to apply the 'offset sky' exposures, as mentioned in 6.1.2?

Action Recommended by Initiator:
Add requested clarification on text.

Date/Signature of Initiator: 29.04.2004 Sandra Castro

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**

Date/Signature Chairperson:

Actionee Corrective Action: If offset skies are required they have to be included at the planning stage and included in the OBs. The pipeline does not decide if offset skies are needed.

See Also: answer to 2.2.17 (PBA-009)

Date/Signature Actionee: M. Irwin 05/05/2004

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.2.20 PBA-011 Reductions Context

Review Title:		
PDR VISTA DFS	**Review Item**	[X] **Discrepancy**
		[ ] **Clarification**
		[ ] **Observation**

RI No:	PBA-011
Review Item	Pages 26 and 27
Document Title:	VISTA IR Camera Calibration Plan
Document No:	VIS-SPE-IOA-20000-0002
Document Originator:	Peter Bunclark

Discrepancy/Clarification Required/Observation:
As in previous comments PBA-009 and PBA-011, the Sections 6.2.1 and 6.2.2 and 7.1.1 describe lower-level processing steps invoked by the science reduction recipe.

Action Recommended by Initiator:
These items should be moved to document VIS-SPE-IOA-20000-0003

Date/Signature of Initiator: 29.04.2004, Pascal Ballester

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**
Date/Signature Chairperson:

Actionee Corrective Action: We will put these in Data reduction Spec as requested.
However being part of the required overall calibration procedures we propose to retain them in the Calibration Plan.

Date/Signature Actionee: M. Irwin 04/05/2004

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.2.21 MPE-011 QC-0 Operation

PDR VISTA DFS

Review Item [ ] **Discrepancy** [ ] **Clarification** [X] **Observation**

RI No:	MPE-011
Review Item	Page 27
Document Title:	VISTA DFS Calibration Plan
Document No:	VIS-SPE-IOA-20000-0002
Document Originator:	

Discrepancy/Clarification Required/Observation:

Paragraph 7.2

QC0 (as defined for the VLT) is not done by the Control Software but at a later stage (i.e. in Paranal and in Garching by the data Flow Operations Group). All frames, even the ones which do not go through QC0, go through the on-line pipeline. QC0 verifies that the Observations have been done under the conditions specified by the user (e.g. airmass, seeing, etc)

Action Recommended by Initiator:

rephrase

Date/Signature of Initiator:

RI Classification: (to be completed by Board Chairperson)

Major Minor Withdrawn

Date/Signature Chairperson:

Actionee Corrective Action: Rephrased to: "QC-0 is generic for all VLT-compliant instruments and is provided by the Data-Flow Operations Group.''
Comment: The data pipeline will only receive data that has been checked by the camera software for internal self-consistency (i.e. the quantity of data is as stated in the FITS header and all the templates specified in an OB have been completed without any fatal errors). We had initially thought this initial verification process was QC0, but will in future refer to it internally as QC"-"1 (QC minus one).

Date/Signature Actionee: P. Bunclark 27/04/2004

2.2.22 WHU-009 Clarify Reference Frame

Review Title:		
PDR VISTA DFS	**Review Item**	[ ] **Discrepancy** [X] **Clarification** [ ] **Observation**

RI No:	WHU-09
Review Item	Page 28 of 50
Document Title:	VISTA DFS Calibration Plan
Document No:	VIS-SPE-IOA-20000-0002
Document Originator:	Peter Bunclark

Discrepancy/Clarification Required/Observation:
The purpose of the reference frames is not well described and is maybe misleading.

Action Recommended by Initiator:
The reference frames make sense e.g. as fixed pattern noise templates in twflat/dome recipes to isolate structures beyond the fixed pattern noise of the current flat. There can be well QC parameters describing the isolated structures taken from these reference frame corrected frames. It makes no sense to use reference frames as an offset value e.g. in the reset frame recipe. This implies that the recipe itself evaluates the QC parameter. Trending and evaluation still requires the expertise of the instrument scientists.

Date/Signature of Initiator: 2004-04-29, W. Hummel, DFO

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**
Date/Signature Chairperson:

Actionee Corrective Action: We will need to discuss this at PDR because we do not understand what the issue is about. 'Reference frames' are not mentioned anywhere in the Calibration Plan (including p28) except in the context of astrometric calibration. Perhaps Reset Frames were meant?

Date/Signature Actionee: P. Bunclark 04/05/2004

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.2.23 WHU-008 Quality Control not Trending

Review Title:		
PDR VISTA DFS	**Review Item**	[ ] **Discrepancy** [X] **Clarification** [ ] **Observation**

RI No:	WHU-08
Review Item	Page 28 of 50
Document Title:	VISTA DFS Calibration Plan
Document No:	VIS-SPE-IOA-20000-0002
Document Originator:	Peter Bunclark

Discrepancy/Clarification Required/Observation:
7.3 Trending analysis.

Action Recommended by Initiator:
I propose to rename this section simply to quality control parameters. Trending is something that happens outside the pipeline.

Date/Signature of Initiator: 2004-04-29, W. Hummel, DFO

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**
Date/Signature Chairperson:

Actionee Corrective Action: Please see response to 2.2.24 MPE-012.

Date/Signature Actionee:

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.2.24 MPE-012 Trend Analysis

PDR VISTA DFS

Review Item

[ ] **Discrepancy**
[ ] **Clarification**
[X] **Observation**

RI No:	MPE-012
Review Item	Page 28, section 7.3
Document Title:	VISTA Calibration Plan
Document No:	VIS-SPE-IOA-20000-0002
Document Originator:	

Discrepancy/Clarification Required/Observation:

Trend analysis is not part of the pipeline processing. Pipeline recipes do generate Quality Control parameters but do not compare them with older ones.

Action Recommended by Initiator:

rephrase

Date/Signature of Initiator:

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**

Date/Signature Chairperson:

Actionee Corrective Action: Rephrased heading and added sentence:
"7.3 Quality Control Parameters and Trend Analysis
Quality Control Parameters are generated during pipeline processing. These may be used at a later time for trend analysis.''

Date/Signature Actionee: P. Bunclark 27/04/2004

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.2.25 WHU-003 Table typo

Review Title:	**Review Item**	[X] **Discrepancy**
PDR VISTA DFS		[ ] **Clarification**
		[ ] **Observation**

RI No:	WHU-03
Review Item	Page 29 of 50
Document Title:	VISTA DFS Calibration Plan
Document No:	VIS-SPE-IOA-20000-0002
Document Originator:	Peter Bunclark

Discrepancy/Clarification Required/Observation:
Item 4.2, the first row in this table appears a second time. This is a typo.

Action Recommended by Initiator:
Please remove it.

Date/Signature of Initiator: 2004-04-29, W. Hummel, DFO

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**
Date/Signature Chairperson:

Actionee Corrective Action: Corrected as requested.

Date/Signature Actionee: P. Bunclark 04/04/2004

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.2.26 WHU-005 Acquire HOWFS Dome Screen

Review Title:

PDR VISTA DFS

Review Item

- [ ] **Discrepancy**
- [X] **Clarification**
- [ ] **Observation**

RI No:	WHU-05
Review Item	Page 32 of 50
Document Title:	VISTA DFS Calibration Plan
Document No:	VIS-SPE-IOA-20000-0002
Document Originator:	Peter Bunclark

Discrepancy/Clarification Required/Observation:
Section 8.1.2.1 certainly means 'Acquire HOWFS Dome Screen'

Action Recommended by Initiator:
Please correct

Date/Signature of Initiator: 2004-04-29, W. Hummel, DFO

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**

Date/Signature Chairperson:

Actionee Corrective Action: Section header will be changed to:
"8.1.2.1 HOWFS Acquire Dome Screen"

Date/Signature Actionee: P. Bunclark 06/05/2004

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.2.27 FCT-005 Location of Offset Pattern Definitions

Review Title:	**Review Item**	☐ **Discrepancy**
VISTA Data Flow System		☐ **Clarification**
		☒ **Observation**

RI No:	FCT-005
Review Item	p32
Document Title:	VISTA Infra Red Camera Calibration Plan
Document No:	VIS-SPE-IOA-20000-0002
Document Originator:	Peter Bunclark

Discrepancy/Clarification Required/Observation:
Section 8.2.1.2.1 (and elsewhere in the same document): the definition of offset patterns in the acquisition template is possible but unusual; such definition is normally done within the _obs_ templates in other VLT instruments. It might reduce flexibility in OBs containing observations in two different filters for which different offset patterns may be desired.

Action Recommended by Initiator:
Reconsider whether such definition should rather be moved to the _obs_ templates.

Date/Signature of Initiator: 28 April 2003, F. Comerón

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**

Date/Signature Chairperson:

Actionee Corrective Action:
The offset pattern is specified in the acquisition template rather than the observation template because, for an example case of a "tile" observation (acquired with VIRCAM_img_acq_tile and observed with one of the VIRCAM_img_obs_tile templates), the acquisition template needs to specify the 6 sets of [1 guide star + 2 LOWFS stars] required for each of the offsets. The offset pattern describes the telescope movements needed to acquire these guide stars, and it seemed natural to keep this information together within the acquisition template.

However, we are currently uncertain as to where the information about the telescope offset pattern and the guide and LOWFS stars is best specified, and this is a matter that Steven Beard was planning to discuss with Peter Bierechel after the PDR. We would therefore be grateful for any advice in this matter from those more familiar with ESO-VLT templates than ourselves.

The templates allow mixing and matching filters in any specified patterns, if this is required.
Date/Signature Actionee: J. Emerson 30/04/2004

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.2.28 MPE-013 LOWFS/P2PP

PDR VISTA DFS

Review Item [ ] **Discrepancy** [ ] **Clarification** [X] **Observation**

RI No:	MPE-013
Review Item	Page 33, section 8.2.1.1.1
Document Title:	VISTA DFS Calibration Plan
Document No:	VIS-SPE-IOA-20000-0002
Document Originator:	

Discrepancy/Clarification Required/Observation:

What do you mean by "LOWFS stars found by P2PP"? P2PP does not search for e.g. guide stars, it gets them as parameters

Action Recommended by Initiator:

clarify

Date/Signature of Initiator:

RI Classification: (to be completed by Board Chairperson)

Major	**Minor**	**Withdrawn**

Date/Signature Chairperson:

Actionee Corrective Action:
The procedure for wavefront sensing stars will be as for guide stars. The wording "found by P2PP"will be corrected to "from P2PP"

Comments:
The VISTA IR Camera is capable of sustaining an exposure every 10 seconds for 14 hours. When it constructs a tile from a series of "pawprint" exposures at different telescope offsets it could require a new guide star to be acquired every 20 seconds. The usual method on the ESO-VLT of the autoguider system choosing a guide star "on the fly" with confirmation from the telescope operator would require too much intervention from the VISTA telescope operator (who also has to look after the VST). For this reason we chose to specify all guide and LOWFS stars in advance and define them in the Observation Block.

A tool/utility for selecting sets of guide and LOWFS stars, given the position constraints imposed by the instrument, will be needed, however it is related to P2PP. This will be included in 'possible impact on P2PP and preparation tools' section of the DFS User requirements for FDR (see answer to RIO MPE-002). We would also like to learn how other ESO instruments may have dealt with similar requirements.

Date/Signature Actionees: S. Beard 30/04/04

See Also:

FCT-002 LOWFS/P2PP, FCT 003 LOWFS/P2PP

2.2.29 FCT-002 LOWFS/P2PP

Review Title:

VISTA Data Flow System

Review Item

[ ] **Discrepancy**
[ ] **Clarification**
[X] **Observation**

RI No:	FCT-002
Review Item	p33
Document Title:	VISTA Infra Red Camera Calibration Plan
Document No:	VIS-SPE-IOA-20000-0002
Document Originator:	Peter Bunclark

Discrepancy/Clarification Required/Observation:
Section 8.2.1.1.1, LOWFS stars found by P2PP

Action Recommended by Initiator:
Clarify what is meant by P2PP identifying LOWFS stars. This is well outside current functionality of P2PP and seems closer to guide camera functions

Date/Signature of Initiator: 28 April 2003, F. Comerón

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**

Date/Signature Chairperson:

Actionee Corrective Action: Same reply as for 2.2.28 (MPE-013)

Date/Signature Actionee: S. Beard 30/04/2004

See Also: MPE-013 LOWFS/P2PP, FCT 003 LOWFS/P2PP

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.2.30 PBA-012 Section Header Typo

Review Title:

PDR VISTA DFS

Review Item

- [ ] **Discrepancy**
- [X] **Clarification**
- [ ] **Observation**

RI No:	PBA-012
Review Item	Pages 38
Document Title:	VISTA IR Camera Calibration Plan
Document No:	VIS-SPE-IOA-20000-0002
Document Originator:	Peter Bunclark

Discrepancy/Clarification Required/Observation:
A Section header is probably missing: 8.2.1.3 (Observe Offsets?). Accordingly the Sections 8.2.1.2.5 and 8.2.1.2.6 should be numbered 8.2.1.3.1 and 8.2.1.3.2

Action Recommended by Initiator:

Date/Signature of Initiator: 29.04.2004, Pascal Ballester

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**

Date/Signature Chairperson:

Actionee Corrective Action: Section 8.2.1.2 is intended to contain two different acquisition templates. We feel Acquire_Offsets & Observe_Offsets belong in this section as this is one way to 'Observe a set of Pawprints' (8.2.1.2). We believe that it is necessary to allow for other sets of offsets than those provided as the basic ones. WHU-006 (2.3.4) suggests this mode should not be supported. We should discuss this at PDR.

Date/Signature Actionee: J. Emerson 05/05/2004

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.2.31 FCT 003 LOWFS/P2PP

Review Title:	**Review Item**	[ ] **Discrepancy**
VISTA Data Flow System		[ ] **Clarification**
		[X] **Observation**

RI No:	FCT-003
Review Item	p39
Document Title:	VISTA Infra Red Camera Calibration Plan
Document No:	VIS-SPE-IOA-20000-0002
Document Originator:	Peter Bunclark

Discrepancy/Clarification Required/Observation:
Section 8.2.1.2.5: same as RI No. 2

Action Recommended by Initiator:
Same as for RI No. 2

Date/Signature of Initiator: 28 April 2003, F. Comerón

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**

Date/Signature Chairperson:

Actionee Corrective Action: Same reply as for 2.2.28 (MPE-013)

Date/Signature Actionee: S. Beard 30/04/2004

See Also: 2.2.28 MPE-013

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.2.32 PBA-013 Recipe Reference

Review Title:	**Review Item**	[ ] **Discrepancy**
PDR VISTA DFS		[X] **Clarification**
		[ ] **Observation**

RI No:	PBA-013
Review Item	Page 40
Document Title:	VISTA IR Camera Calibration Plan
Document No:	VIS-SPE-IOA-20000-0002
Document Originator:	Peter Bunclark

Discrepancy/Clarification Required/Observation:
In "Pipeline recipes: as for pawprints", introduce an explicit reference to Section 8.2.1.1.2

Action Recommended by Initiator:

Date/Signature of Initiator: 29.04.2004, Pascal Ballester

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**
Date/Signature Chairperson:

Actionee Corrective Action: "as for pawprints" will be replaced with vircam_microstep_interleave, vircam_jitter_combine

Date/Signature Actionee: P. Bunclark 04/05/2004

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

AKA-001 Standard Field Coverage

Review Title:

PDR VISTA DFS

Review Item

- [ ] **Discrepancy**
- [ ] **Clarification**
- [X] **Observation**

RI No:	AKA-001
Review Item	Secondary Standard Fields
Document Title:	VISTA IR Camera Calibration Plan
Document No:	VIS-SPE-IOA-20000-0002
Document Originator:	Peter Bunclark

Discrepancy/Clarification Required/Observation:
From the distribution of the standard star fields in Fig. 9-1, a sparse coverage of the RA space towards the South is observed. The dominant wind direction for high winds in Paranal is from the North. If the VISTA telescope (like the VLT) will not allow to observe into the direction of the high winds, the lack of suited standard star fields towards the south might prevent the proper calibration of the science data.

Action Recommended by Initiator:
Investigate if it is possible to have a better distribution in RA and a larger number of southern standard star fields.

Date/Signature of Initiator: 03.05.2004, Andreas Kaufer

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**

Date/Signature Chairperson:

Actionee Corrective Action: Additional fields have been identified to the South for the reasons suggested and to minimize azimuth slew overheads. More will be identified before FDR/commissioning.

Date/Signature Actionee: S. Hodgkin 05/05/2004

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.3 Review Items referring to the Data Reduction Specification [RD3].

4	Discrepancies
2	Clarifications
3	Observations
9	Total

Table 2-3 RIx Count for User Requirements

2.3.1 PBA-014 Missing Recipes

Review Title:		
PDR VISTA DFS	**Review Item**	[X] **Discrepancy**
		[ ] **Clarification**
		[ ] **Observation**

RI No:	PBA-014
Review Item	All
Document Title:	VISTA IR Camera Data Reduction Specifications
Document No:	VIS-SPE-IOA-20000-0003
Document Originator:	Peter Bunclark

Discrepancy/Clarification Required/Observation:
A description of the recipes vircam_jitter_calibrate and vircam_microstep_calibrate is missing.

Action Recommended by Initiator:

Date/Signature of Initiator: 29.04.2004, Pascal Ballester

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**
Date/Signature Chairperson:

Actionee Corrective Action: This is a typo in the Calibration Plan. The two references in pp 36-37 to vircam_jitter_calibrate and vircam_microstep_calibrate should have been removed as they were renamed ‘vircam_jitter_combine’ and ‘vircam_microstep_interleave’.

Date/Signature Actionee: J. Lewis 04/05/2004

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.3.2 MPE-001 ETC

Review Title:

PDR VISTA DFS

Review Item

[X] **Discrepancy**
[ ] **Clarification**
[ ] **Observation**

RI No:	MPE-001
Review Item	
Document Title:	ALL (case of Data Reduction Specifications)
Document No:	
Document Originator:	

Discrepancy/Clarification Required/Observation:

I am missing in the documentation the v0.5 of the Exposure Time Calculator specifications

Action Recommended by Initiator:

Add requested information

Date/Signature of Initiator:

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**

Date/Signature Chairperson:

Actionee Corrective Action:
Specification will be added to the Data Reduction Specification.

Comment: We wish to discuss where in the Reduction Specification ETC should be covered.

Date/Signature Actionee: Jim Emerson 28/04/04

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.3.3 PBA-015 Recipe Hierarchy and Diagram

Review Title:

PDR VISTA DFS

Review Item

[ ] **Discrepancy**
[X] **Clarification**
[ ] **Observation**

RI No:	PBA-015
Review Item	All
Document Title:	VISTA IR Camera Data Reduction Specifications
Document No:	VIS-SPE-IOA-20000-0003
Document Originator:	Peter Bunclark

Discrepancy/Clarification Required/Observation:
Main science reduction recipes should be identified for each mode (or a single main science reduction recipe if that is possible). This recipe(s) would call vircam_microstep_interleave and vircam_microstep_jitter and the corresponding calibration recipes as needed. Diagrams should be provided in the document to show how the lower-level recipes are called by the main reduction recipe(s).

Action Recommended by Initiator:

Date/Signature of Initiator: 29.04.2004, Pascal Ballester

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**

Date/Signature Chairperson:

Actionee Corrective Action:
We will identify recipes for FDR. We will add diagrams for FDR as envisaged in response to 2.2.2 (WHU-013) Calibration Cascade Diagram

Date/Signature Actionee: P. Bunclark 06/05/2004

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.3.4 WHU-006 Include Tile Recipe

Review Title:	**Review Item**	
PDR VISTA DFS		☐ **Discrepancy**
		☐ **Clarification**
		☒ **Observation**

RI No:	WHU-06
Review Item	Page 7 of 18
Document Title:	VISTA DFS Data Reduction Specifications
Document No:	VIS-SPE-IOA-20000-0003
Document Originator:	Peter Bunclark

Discrepancy/Clarification Required/Observation:
'The pipeline does not combine pawprints into tiles'

Action Recommended by Initiator:
I propose to include this numerical part in the pipeline, making complete tiles out of a pawprints. It would be enough to support only pawprints taken with the Observe Tile template, which provides a fixed pattern of offsets. The Observe_Offset template does not need to be supported. Apart from aesthetic advantages of having a single tile product per filter, there are also practical reasons. As far as I understand, the tile recipe would handle pawprints for which instrumental signatures are already removed; hence no VISTA specific algorithms would have to be developed. The core part of the tile recipe is a standard geometric conversion algorithm. (minor work, big advantages)

Date/Signature of Initiator: 2004-04-29, W. Hummel, DFO

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**
Date/Signature Chairperson:

Actionee Corrective Action: We decided to stop at pawprints because:

- **a.** They are the subunits from which mosaics or stacks are made, and final combination is best done from this stage;
- **b.** Individually they are relatively small (tiles ~ 16×6 times bigger than detectors) units to handle;
- **c.** Tiles can be created (to selective prescription) on-the-fly from archival pawprints;
- **d.** Tiles do not contribute directly to QC or calibration;
- **e.** It had been previously agreed with ESO that we would stop at this point.

Date/Signature Actionee: J. Emerson, M. Irwin 05/05/2004

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.3.5 MPE-014 References to Templates

PDR VISTA DFS

Review Item [ ] **Discrepancy** [ ] **Clarification** [X] **Observation**

RI No:	MPE-014
Review Item	Section 3
Document Title:	VISTA Data reduction Specification
Document No:	VIS-SPE-IOA-20000-0003
Document Originator:	

Discrepancy/Clarification Required/Observation:

It would be nice to have for each recipe a reference to the corresponding template (as in the calibration plan).

Action Recommended by Initiator:

Date/Signature of Initiator:

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**

Date/Signature Chairperson:

Actionee Corrective Action: Will cross-reference templates in issue 1.0

Date/Signature Actionee: P. Bunclark 27/04/2004

2.3.6 PBA-016 Twilight and Sky Flat Recipe Equivalence

Review Title:		
		☐ **Discrepancy**
PDR VISTA DFS	**Review Item**	☒ **Clarification**
		☐ **Observation**

RI No:	PBA-016
Review Item	Page 12
Document Title:	VISTA IR Camera Data Reduction Specifications
Document No:	VIS-SPE-IOA-20000-0003
Document Originator:	Peter Bunclark

Discrepancy/Clarification Required/Observation:
In Sections 4.1.1 and 4.1.2 does the same recipe apply to twilight flats and night-sky flats?

Action Recommended by Initiator:
Please clarify

Date/Signature of Initiator: 29.04.2004, Pascal Ballester

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**

Date/Signature Chairperson:

Actionee Corrective Action: Sky flats will probably have to be dealt with slightly differently from twilight flats. For example, tests will have to be inserted into the latter which will identify saturated and underexposed frames. This is why 4.1.1 (sky flats) is identified as a different recipe than 3.7 (twilight flats). 4.1.2 is a totally different thing. These are sky exposures that will be used to remove fringing and thermal emission, which is an additive correction.

Date/Signature Actionee: J. Lewis 04/05/2005

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.3.7 PBA-017 Recipe Name Discrepancy

Review Title:		
PDR VISTA DFS	**Review Item**	[X] **Discrepancy**
		[ ] **Clarification**
		[ ] **Observation**

RI No:	PBA-017
Review Item	Page 13
Document Title:	VISTA IR Camera Data Reduction Specifications
Document No:	VIS-SPE-IOA-20000-0003
Document Originator:	Peter Bunclark

Discrepancy/Clarification Required/Observation:
The recipe vircam_gen_catalogue (Section 7.1.1, page 27 of document VIS-SPE-IOA-20000-0002) is called here vircam_catalogue_gen.

Action Recommended by Initiator:

Date/Signature of Initiator: 29.04.2004, Pascal Ballester

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**

Date/Signature Chairperson:

Actionee Corrective Action: Noted; we will make the naming self-consistent.

Date/Signature Actionee: P. Bunclark 04/05/2004

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.3.8 PBA-018 WCS and Tile Compression

Review Title:	**Review Item**	☐ **Discrepancy**
		☐ **Clarification**
PDR VISTA DFS		☒ **Observation**

RI No:	PBA-018
Review Item	Page 17
Document Title:	VISTA IR Camera Data Reduction Specifications
Document No:	VIS-SPE-IOA-20000-0003
Document Originator:	Peter Bunclark

Discrepancy/Clarification Required/Observation:
WCS interface and tile-compression are not currently supported and a solution shall be identifed at PDR.

Action Recommended by Initiator:

Date/Signature of Initiator: 29.04.2004, Pascal Ballester

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**
Date/Signature Chairperson:

Actionee Corrective Action: We would like to discuss at PDR as suggested.

Date/Signature Actionee: P. Bunclark 04/05/2004

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.3.9 MPE-015 Scripting Language/Runtime Environment

PDR VISTA DFS

Review Item [X] **Discrepancy** [ ] **Clarification** [ ] **Observation**

RI No:	MPE-015
Review Item	Page 17
Document Title:	VISTA Data reduction Specification
Document No:	VIS-SPE-IOA-20000-0003
Document Originator:	

Discrepancy/Clarification Required/Observation:

ESO will not provide an interface to a common scripting language

Action Recommended by Initiator:

rephrase

Date/Signature of Initiator:

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**

Date/Signature Chairperson:

Actionee Corrective Action: Will rephrase to:

- File manipulation
  Functionality for manipulating and grouping data files using information from their FITS headers.

Comment: We would like to discuss the interface between the pipeline modules and the runtime environment.

Date/Signature Actionee: M. Irwin 28/04/2004

2.4 Review Items referring to the DFS Schedule [RD4].

2	Discrepancies
1	Clarification
2	Observations
5	Total

Table 2-4 RIx Count for User Requirements

2.4.1 MPE-005 ETC Delivery

PDR VISTA DFS

Review Item [X] **Discrepancy** [ ] **Clarification** [ ] **Observation**

RI No:	MPE-005
Review Item	
Document Title:	VISTA DFS Schedule
Document No:	VIS-PLA-QMU-00001-0001
Document Originator:	

Discrepancy/Clarification Required/Observation:
The DFS schedule should contain the delivery of the Exposure Time Calculator specifications

Action Recommended by Initiator:

Date/Signature of Initiator:

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**

Date/Signature Chairperson:

Actionee Corrective Action:
We propose
Nov 04 (for FDR) - ETC Specifications and Preliminary Design containing.

- Preliminary list of software server routines associated with each instrument template.
- Preliminary instrument models and equations for calculating exposure time for each instrument template (based on theoretical timings described in DFS User Requirements [RD1]).

Dec 05 (for EII) - Final ETC Design

- Final list of software server routines.
- Final equations (based now on instrument description and calibration database and instrument performance and throughput measurements made during the camera AIT).

Jul 06 (2m before CfP) - V1.0 of ETC

- V1.0 of software server routines
- Plus everything else mentioned in B.5 of VLT-SPE-ESO-19000-1618 [AD1].

Aug 06 (1m before CfP) - V1.1 of ETC

- including what has been learnt in further commissioning, but early enough to fix any big changes from v1.0 before CFP

Nov 06 (1m after VC2) - V1.2 of ETC

- Including all commissioning results and subsequent experience, but early enough for Phase II preparation.

Date/Signature Actionee: J. Emerson 05/05/2004

See Also: PBA-001 ETC Schedule

2.4.2 MPE-008 Test Data

PDR VISTA DFS

Review Item [ ] **Discrepancy** [X] **Clarification** [ ] **Observation**

RI No:	MPE-008
Review Item	
Document Title:	VISTA DFS schedule
Document No:	VIS-PLA-QMU-00001-0001
Document Originator:	

Discrepancy/Clarification Required/Observation:

The schedule foresees a delivery of the data reduction procedures before Preliminary Acceptance Europe. Will test data be part of the delivery?
Action Recommended by Initiator:

Date/Signature of Initiator:

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**

Date/Signature Chairperson:

Actionee Corrective Action:
Yes. From June 2005 onwards we should have a fully populated focal plane array installed in the cryostat so we should be able to provide quite a lot of multi-detector data by Sept 2005.
Comment: We would like to discuss what test data is expected, e.g. are simulated on sky frames wanted?

Date/Signature Actionee: Jim Emerson 28/04/04

2.4.3 PBA-001 ETC Schedule

Review Title:

PDR VISTA DFS

Review Item [X] **Discrepancy** [ ] **Clarification** [ ] **Observation**

RI No:	PBA-001
Review Item	Pages 4 and 5
Document Title:	VISTA IR Camera DFS Schedule
Document No:	VIS-PLA-QMU-00001-0001
Document Originator:	Jim Emerson

Discrepancy/Clarification Required/Observation:
As mentioned in Michele's comment (2.4.4 MPE-006) an instrument is not offered in a Call for Proposal before it has been tested on the sky. The deliveries related to Exposure Time Calculators should therefore be organised in view of a Call for Proposal in September 2006. The data and version 1.0 of the ETC must be prepared well in advance of the Call for Proposal; the version 1.1 is usually prepared for Phase II.

Action Recommended by Initiator:
Assuming that commissioning starts on July 7 and that VISTA is offered in the Call for Proposal in September 2006, I propose the following ETC related schedule:

Instrument Description Calibration Database v.0.5	in Dec. 2005
ETC v.1.0	in May 2006
Instrument Description Calibration Database v.1.0	in July 2006
ETC v.1.1	in Dec. 2006

Date/Signature of Initiator: 29.04.2004, Pascal Ballester

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**

Date/Signature Chairperson:

Actionee Corrective Action: We will change the CFP date to Sep 06. User Level Description of DFS correspondingly moves to Sep 06.

For ETC see answer to MPE-05 (2.4.1)

For Instrument Description Calibration Database we now propose
Dec 05 (for EII) v0.5
Jul 06 (2m before CFP) v0.9 (commissioning has only just started)
Sep 06 (2w after VC1) v1.0 (update after ~2 months commissioning)
Oct 06 (after VC2) v1.1 (update after commissioning ended)

Date/Signature Actionee: J. Emerson 05/05/2004

Board Disposition:

RI Closed:

RI Closed with Actions:

Date/Signature Chairperson:

2.4.4 MPE-006 Call for Proposals

PDR VISTA DFS

Review Item ☐ **Discrepancy** ☐ **Clarification** ☒ **Observation**

RI No:	MPE-006
Review Item	
Document Title:	VISTA DFS Schedule
Document No:	VIS-PLA-QMU-00001-0001
Document Originator:	

Discrepancy/Clarification Required/Observation:
The schedule foresees that the call for proposals for VISTA takes place before the camera is integrated. The current policy at ESO has been to offer an instrument in the CfP only when it has been on the sky. Furthermore v1.0 of the ETCs cannot be ready before the instrument goes to the telescope.

Action Recommended by Initiator:

Date/Signature of Initiator:

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**

Date/Signature Chairperson:

Actionee Corrective Action:
We will change the CFP date to Sep 06. Also see answers to MPE-05 (2.4.1) and PBA-001 (2.4.3).

Date/Signature Actionee: Jim Emerson 28/04/04

2.4.5 MPE-007 DR Modules Schedule

PDR VISTA DFS

Review Item

[ ] **Discrepancy**
[ ] **Clarification**
[X] **Observation**

RI No:	MPE-007
Review Item	
Document Title:	VISTA DFS Schedule
Document No:	VIS-PLA-QMU-00001-0001
Document Originator:	

Discrepancy/Clarification Required/Observation:

The schedule does not foresee any release of the Data reduction modules after Comm2.
I would expect to get v1.x few weeks after Comm2.

Action Recommended by Initiator:

Date/Signature of Initiator:

RI Classification: (to be completed by Board Chairperson)

Major **Minor** **Withdrawn**

Date/Signature Chairperson:

Actionee Corrective Action:
We will add to the schedule

Sep 06 (1m after VC2) Template Signatures v1.1
Sep 06 (1m after VC2) Data Reduction Procedures v1.1
Sep 06 (1m after VC2) Data Interface Dictionary v1.1

Date/Signature Actionee: Jim Emerson 05/5/2004

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