



European Organisation  
for Astronomical  
Research in the  
Southern Hemisphere

Organisation Européenne  
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Astronomiques  
dans l'Hémisphère Austral

Europäische Organisation  
für astronomische  
Forschung in der  
südlichen Hemisphäre

Director General

Garching, 16 June 2006  
ODG099-06/isk

Dr. Tom Shanks  
Department of Physics  
University of Durham  
Science Laboratories  
South Road  
Durham DH1 3LE  
UNITED KINGDOM

Dear Dr. Shanks,

Accompanying this letter you will find the review report by the ESO Surveys Team (EST) of the survey management plan for your ATLAS project. As you will see, the review indicates a number of areas where the management plan is not compliant with the requirements and policies for ESO public surveys. The normal procedure to review these management plans (which are a strong pre-requisite for my approval of public surveys) is that the review items (Rixes) are sent to the PI's for comments and corrections after which the revised plans are evaluated by a high level review board that reports to me. I decided to step-in at this intermediate step because I am worried about the nature of the problems identified in the first (EST) review.

In order to ensure that the products of ESO public surveys serve the community at large, we have developed policies establishing how and when the data products should be delivered to the ESO archive for public release. This, of course, requires that you have the resources required for processing the data and making it available as described. The EST estimates that your team is seriously understaffed, and this is the reason for my worries.

ESO public surveys are intended to provide powerful legacies to many generations of future astronomers, and it is our collective responsibility to take every possible step to achieve this goal. Therefore, I invite you to re-submit the survey management plan for ATLAS giving due consideration to comments from the EST review.

With kind regards,

Catherine Cesarsky

Cc: Jorge Melnick

**- VST ATLAS SMP review -**

RID=Review Item Discrepancy, RIC=Review Item Comment, RIQ=Review Item Question  
Please use a separate page per RIx.

Reviewer: ESO Survey Team	
Document No	VST ATLAS SMP
RID, RIC or RIQ ?	RIQ
Section	Survey Observing Strategy
Page(s)	
<p>RIx text</p> <ol style="list-style-type: none"> <li>1. Synergies between VST ATLAS and KIDS for scheduling and telescope time are possible. KIDS wishes to perform a calibration pass in photometric conditions, in 4 bands (u,g,r,i) , with exposures of 4 x 1min each, prior to the deeper pass. ATLAS wishes to have 60 sec exposures in each of the same 4 bands. The calibration frames for KIDS and scientific frames for ATLAS require the same exposure times. The KIDS photometric calibrations do not require seeing constraint, while ATLAS requires seeing &lt; 1".4. The overlap between ATLAS and KIDS is for the KIDS southern field.</li> <li>2. The VST-ISW survey is NOT an ESO public survey. ESO has not issued calls for new surveys in addition to those selected by the PSP and recommended by the OPC .</li> <li>3. if 2x2 binning (a better match of pixel size to requested seeing and improved efficiency with respect to instrument overheads) is used in the readout mode, then it will require its <b>own unique calibration set</b> (biases, domes, twilights, darks, fringe frames, etc.) beyond those already described for OmegaCAM.</li> </ol>	
<p>Reply from Survey Team</p> <p>Name:</p>	

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RID, RIC or RIQ ?	RIQ
Section	Survey Data Calibration Needs
Page(s)	
RIx text	
<p>The review has identified the following weaknesses in the VST ATLAS calibration plan:</p> <ol style="list-style-type: none"> <li>1. This section is almost identical to the one in the VPHAS SMP. This leads to the conclusion that the information provided by the team was taken on-to-one from a common source, without much science related considerations. This is a matter of concern.</li> <li>2. The claim that fringing frames (for i' and z') can be obtained by using the deeper exposures from KIDS can be subject to problems: a) Fringing patterns are variable and there is no reason to suppose that the KIDS and ATLAS images are co-temporal; b) on-chip re-binning can change the fringe pattern; c) KIDS may not have ANY VST-made z' images, since it expects to obtain its Z-band frames from VISTA. The team is asked to provide an independent calibration strategy for fringing corrections.</li> </ol>	
<p>Reply from Survey Team</p> <p>Name:</p>	

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Reviewer: ESO Survey Team	
Document No	VST ATLAS SMP
RID, RIC or RIQ ?	RID
Section	Survey Reduction Process
Page(s)	
<p>RIx text</p> <p>The review has identified the following problems in the VPHAS data reduction process:</p> <ol style="list-style-type: none"> <li>1. The introduction of Sect. 4 and Subsection 4.1 is almost identical to VPHAS SMP: the lack of science-case evaluations is a matter of concern.</li> <li>2. The data reduction of the VST ATLAS survey is not carried out by the team itself, but by the Vista Data Flow System (VDFS) in Cambridge. The VST ATLAS Public Survey project relies almost fully on the Cambridge Survey Unit, which is also supposed to do all the processing for the VISTA telescope. This represents a bottleneck for the timely analysis and distribution of the survey products. The overall impression is of some distance between the PI and the data reduction process.</li> <li>3. The Survey team states that the survey data products will be archived at WFAU in Edinburgh and will not be delivered to the ESO archive in the current plan. This is not compliant with the ESO policies for VST public surveys.</li> <li>4. This section shows a very strong dependence on the Cambridge Survey Unit to provide also the quality control (QC) checks, which are confined to individual pointings. The team must also describe the QC checks that are performed by the team itself to ensure homogeneity of photometry and astrometry across the whole survey.</li> </ol>	

Reply from Survey Team

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Document No	VST ATLAS SMP
RID, RIC or RIQ ?	RID
Section	Manpower and hardware capabilities devoted to data reduction and quality assessment
Page(s)	

### RIx text

The review has identified the following problems in the VST ATLAS plan for manpower and hardware capabilities

1. There is a real lack of resources committed to VST ATLAS. To show this, a figure of merit was defined that relates the approximate total amount of data for a given survey (~ area x all filters) to the number of FTE's. In essence, this is the approximate amount of data that will be processed by EACH FTE over the duration of the survey.

Survey	Area sq.deg	Filters	AreaxFilters	Total	FTEs	(Area x filters)/ FTE
VATLAS	4500	u,g,r,i,z	22500	22500	3.3	6818

a single FTE dealing with more than (effectively) 2000 sq. deg. of data EACH year, for the VST ATLAS surveys, is probably a gross underestimate and this represent a point of concern.

2. Several parts of this section are almost identical to the corresponding ones in the VPHAS SMP, which makes the previous evaluation even more worrisome.
3. On which hardware is the VDFS running for the VST ATLAS data? The hardware infrastructure is described as a "modest" extension of existing VDFS pipeline processing set up. Some spare disk capacity is described as made available to the Cambridge unit for data storage.
4. The team wishes to retain both pixel data and catalogue data at the WFAU.
5. What is the funding situation for the manpower involved in the ATLAS data reduction? The funding for the Cambridge Astronomy Survey Unit (CASU) is limited in time, and will have to process data from the VISTA consortium too. What happen if the PPARC grant is not renewed?

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Section	Data quality assessment process
Page(s)	

**Rix text**

The description of the data quality assessment process is identical to the one included in the VPHAS SMP. This leads to the consideration that this section was taken one-to-one from a common source, without much science-case related evaluation. A specific and detailed description must be provided of a) what the VDFS will provide as quality control parameters and b) what the team will be providing by itself to ensure QC checks through the whole survey.

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Section	Data products and VO compliance
Page(s)	

**RIX text**

1. Where will the data products be archived? The SMP states that the catalogues will be hosted eventually at the ESO SAF.
2. VST ATLAS SMP refers often to data products on a "pointing by pointing basis": does this mean that they will provide only the reduced frame per single pointing, and the single band catalogues per pointing?
3. What kind of meta-data will be provided to ensure that catalogues from different pointings can be merged and used for scientific purposes?

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RID, RIC or RIQ ?	RIQ
Section	Timeline delivery of data product
Page(s)	

**RIX text**

1. The team must provide a description of the proposed catalogue contents.
2. ESO policies state that PS teams should start to deliver data product after 6 months of the 1<sup>st</sup> delivery of data. Further interactions with PS team are required to identify a more quantized strategy, so that catalogue for meaningful sub-area of the survey can delivered to ESO archive and be accessible to the community

Reply from Survey Team  
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