



Minutes of 2nd SKADS Board meeting 29-30 June, 2006

Golden Tulip Inntel Hotel in Zaandam (Netherlands)

Distribution list:

Participants :	For information:
<p>Present:</p> <p>H. Butcher (HRB) (ASTRON) P. Wilkinson (PNW) (UMAN) - Chair M. Garrett (MG) (JIVE) W. van Driel (WvD) (OPAR) F. Mantovani (FM) (INPE-IRA) – Vice Chair R. Bachiller (RB) (FG-IGN) S. Rawlings (SR) (OXF-DB) R. Dagkesamanskiy (RD) (PRAO LPI) J. Jonas (JJ) (NRF) P.E. Dewdney (PED) (NRC) A. Kus (AK) (UMK) H. Olofsson (HO) (Chalmers) P. Alexander (PA) (UCAM DPHYS) T. van der Hulst (TvdH) (RUG) S. Tingay (ST) (Swinburne) J.C. Guirado (JCG) (U.Valencia) A. van Ardenne (Project Coordinator, PC) A. van Es (Project Manager, PM) A. Faulkner (Project Engineer, PE) S. Torchinsky (Project Scientist, PS) T. van den Brink-Havinga (TB) (minutes) (SKADS Secretary) International SKA PO - R. Schilizzi (RTS) (observer) International SKA PO – P. Hall (PH) (in attendance) RadioNet - P. Diamond (PD) (in attendance)</p> <p>Represented:</p> <p>University of Glasgow (By Oxford) Université d'Orléans (By OPAR) CNRS (By OPAR) UKZN (By NRF) University of Leeds (By Oxford)</p>	<p>Apologies:</p> <p>A. Zensus (MPIfR) B. Boyle (CSIRO) S. Eales (CU) G. Woan (U. Glasgow) G. Miley (Leiden University) R. Protheroe (U.Adelaide) R. Webster (U.Melbourne) A. Green (U.Sydney) R. Weber (UORL) B. Jarry (CNRS) C. Cress (UKZN) M.G. Hoare (UNIVLEEDS)</p>

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 Minutes 2nd SKADS
 Board meeting

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1 Opening

Chair welcomes all present and comments on the “Chair’s pre meeting notes”, distributed prior to the meeting. PC emphasizes we are heading toward Mid Term Review, which is an extremely important milestone, also with regard to FP7.

Apologies and representations:

- A. Zensus (MPIfR)
- B. Boyle (CSIRO)
- S. Eales (CU)
- G. Woan (U. Glasgow) – Represented by Oxford
- G. Miley (Leiden University)
- R. Protheroe (U.Adelaide)
- R. Webster (UMel)
- A. Green (U.Sydney)
- R. Weber (UORL) – Represented by OPAR
- B. Jarry (CNRS) – Represented by OPAR
- C. Cress (Natal University) – Represented by NRF
- M.G. Hoare (UNIVLEEDS) – Represented by Oxford

2 Minutes 1st Board meeting January 26, 2006

Comments minutes:

PD: pag. 5 item 8 is incorrect. We are invited to have discussions with ESO. Sentence AZ and become related to ESO to be left out.

There is a discussion if minutes should be public or not public. It is decided that there will be a public version of meeting minutes made available at a public domain of the SKADS website. This public version will have to be without personal or sensitive information and it needs to be sent to Board members for approval prior to publication.

Action items:

- The SKADS payment schedule was sent around in the information from the Controller’s meeting.
- List of Board members, DS and DS-T leaders to be sent to the Board remains to be done.
- Chair invited the US (Yervant Terzian) approx. 7 weeks ago. Unfortunately no one was able to come. Chair forgot to invite the Chinese, for which he apologised profusely.
- PC suggests to send the approved minutes to Yervant Terzian, as well as to the Chinese representative. This motion is adopted.
- Everybody had been invited to send a list of intellectual property. This information was entered in the list PEKH as an attachment to the Consortium Agreement.
- Chair advises everybody to order more SKA Science and Engineering books as there is still a large number left in stock.
- The minutes are accepted with the above mentioned changes.

3 PC’s report

- PC gives a brief SKADS history and overview of the governing structure emphasizing the important role of the CC and giving an overview of the last half year.
- PC noted flags raised so far:
 - kickoff was late
 - spending profile is slow to ramp-up (70% rule)
 - there is an operational/administrative load associated with 29 partners. Perhaps we should consider clustering smaller partners together?
- PC and PE visited the ATA and SETI institute. There are some interesting new developments. If Aperture Plane Array technology can be pushed to higher frequencies, the overall cost of SKA



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- can be reduced by using smaller dishes for the high frequency. There is good synergy with SKADS and ATA. US are enthusiastic about this connection with Europe.
- PC shows DS1 level 1 milestones, most of which are approx.. 3 months delayed due to the fact that the project started 1 July, 2005, however, kickoff meeting was only in November 2005.
 - Chair makes the remark that the relation between SKADS and ISPO is not on the agenda and suggests to fit this into it.
 - Everyone is requested to mail all additional SKADS outreach activities to the PC for the annual report.
 - WvD would like to discuss DS7 on the second day of the meeting. The DoW stipulates a three month internal reporting schedule which has not yet started as the Management Team was not fully in place until recently.

4 Management report

- Most Tasks started and official kickoffs took place. Level 1 milestones should be met at the time of the annual report. As we will not have spent 70% after a year an additional financial report is required as soon as the 70% threshold is reached. On receipt of the C forms for the annual report from all participants we will have a better idea of where we stand. We expect to reach 70% spending by October. The UK is the most important partner which must catch up with spending.
- Chair emphasizes that this project is different from EC projects we had before, so we might get some understanding from the EC as far as this aspect is concerned. He also notes that SKADS is not dominated by EC.
- PM states that only ASTRON must submit an audit certificate this year. Every institute has to submit C-forms and Justification of Resources. Next year **all** partners must submit an audit certificate.
- PA suggests we distribute a scanned version of the C forms so that there is no confusion about where it must be signed.
- In the case that there is a change of signatory, the partner must submit a signed letter ("signatory change"), an example of which can be found on the website.
- VAT is not an eligible cost.
- Everything that has been reported will be sent to Brussels on 10th August.
- PM requests a status report from each DS leader prior to each CC telecon, so that progress can be monitored and issues can be dealt with during the telecon.
- PM is investigating the possibility to have small participants reimbursed directly by ASTRON. These are partners that do not have matching funds. This will reduce paperwork.
- PD and ST requested clarifications for accounting.
- Chair notes that Board is very pleased to have AvE as PM for SKADS.

5 Consortium Agreement

All comments received were incorporated in the latest version of the CA which was distributed among all participants. We just received comments from CSIRO, who were worried about liability in the SKADS contract with the EU. This cannot be changed as that contract has been signed. The fact is that if one participant is not performing other participants would be liable for that. PC discussed this with Stephen Kahn (legal advisor). A partner cannot be liable for more than twice the contribution they get from the EC. This opinion is supported by the EC.

CSIRO received a letter with this explanation and at their request it will also be sent to NRC. The situation depends just on the fact that participants are public or non public bodies. Every participant gets one page of the CA to be signed which should be returned to the SKADS office. As soon as all signatures are received every participant will get a copy of the CA including all signed pages.



5a. Cooperation SKADS/ISPO

- PC gives overview of the present level of cooperation between SKADS and ISPO and notes that there is attendance by the SKADS PC in ISSC, and by the ISPO Director in the SKADS Board meetings.
- There is a difference between SKADS being a project and ISPO being an organisation.
 - ISPO sees SKADS as the major international effort in SKA, however, it is not the only one. The finishing date of SKADS poses a problem with the timing of FP7, and how SKADS fits into the SKA timeline.
 - It is suggested to include the SKADS project scientist in the SWG.
 - Regarding a costing model for SKA, the DS8 deliverable is a report on the total cost of the SKA. Costing in SKADS is being derived from the work from all DS's. Within DS8 only 4 man months are available. Cambridge has some additional resources available for this purpose.
 - The ISPO effort is considered insufficient, so additional efforts would be better. SKA has 0,25 man months paid by ISSC available for this purpose.
 - This is all related to the FP7 timeline. If we can present some figures we could comfort the EU. Results from the Mid Term Review may convince the EC to make money available for the next step.

End of day 1.

6 Technical progress

- PE presents the first year commenting that some countries started up at full speed and others are having slow starts due to different facts.
- Nevertheless the target is still to finish the project in time.
- PE presents the SKADS Benchmark Design.
- RS requested that the SKADS Benchmark should be written up as a SKA Memo before the September meeting.

7 Scientific progress

- PS presents science activities in SKADS. DS2, DS3, and DS5 have direct input from astronomers.
- Coordination is required between sky simulations (DS2) and network simulations (DS3).
- Astronomers involved in observational evaluation of EMBRACE (DS5)
- a number of postdocs have been hired, and other positions advertised.
- A key position is a postdoc at Cardiff who will link together the efforts of DS2 and DS3
- Cradle of Life key project is not covered in SKADS. MG commented that SETI was an important part of SKA and should be emphasised. Others worried about "mission creep". We don't have sufficient funds to cover all science areas, and SKADS has emphasised the low and mid band frequencies. RS pointed out that there is a task force in the SWG for science simulations and this could feed back into SKADS to help cover the Cradle of Life key project.
- PS summarised a proposal from Carnegie Mellon University to build a cheap radiotelescope optimised for the HI redshift experiment. They are soliciting support, and astro-particle physicists in France are interested to participate, and they have money. The proposal cost estimate appears unrealistic, but the project is creating interest.
- PS reported that SKADS report appeared in the international SKA newsletter.
- PS expects to issue the first SKADS newsletter before the September workshop.
- PS pointed out difficulties in managing the SKADS website. ASTRON has one webmaster responsible for 5 sites, and he is only working part time.



8 Design studies

8.1 DS 2, T1 – Steve Rawlings (Simulations)

- This presentation re-emphasised what we want to see with the SKA. There are two main challenges: computational resources, and getting the physics right. For example, the Millenium Simulation doesn't correctly predict the HI mass function, and this is the most sophisticated sky simulation done to date.

DS2, T2 – Mike Garrett

- Both tasks had project managers appointed and there is a coordination role from PS.
- Though there is a reference design for SKA now we want to emphasize on aperture arrays as no one else is working on that.
- ST would like to have some people exchange between Swinburne and Europe.
- ST asked about the configuration report, and RS reported that it would be published in September.
- PC asked for a list of people who are involved in DS2.

8.2 DS 3 Paul Alexander

- T1 is a very important task and at its kickoff meeting a lot of progress was reported, as well as a number of issues identified, such as the need for a Benchmark Design.
- T2 had a slower start and T3 was delayed by lateness of UK funding.
- T4 had a change in task status and in leader (now WvD). Site testing and selection was done by the ISPO.
- T5 just has to organize workshops, however, has no funding. RS noted that “SKA for the User” is extremely important.
- T6 is a small task, that needs to be looked into.
- Proposed outline of role of costing WP.
- Mid term review have part rehearsal October/November. This aspect is included in the MCC proposal.
- SKA operations working group made a white paper to be discussed in Paris. One of the questions is what level of resources is available? “SKA for the user” has no resources. A brainstorming session with a lot of astronomers is suggested.
- All plans should be posted at the wiki pages.
- PC suggests to have a new (IST) proposal for FP6, as there still is money in FP6.

8.3 DS 4 Andrew Faulkner

- The start was delayed due to funding issues.
- Cost is an important aspect to be defined.
- The SKADS Benchmark Design helps to focus the effort.
- International SKA participants need to be informed on aperture arrays. This will be done in Paris.
- An important aspect is power consumption as this appears to be a big problem in LOFAR.
- In the future, processing speed will be less of an issue. The problem is getting the data off the chip (data transfer and buffering).
- AF requested having the RFI data from the proposed sites. RS mentioned that this remains confidential until the end of this year.
- PH notes that a general preference for 6m dishes means that we are all keen to see Aperture Plane Phased Array work well.



8.4 DS 5 Parbhu Patel

- The beamformer chip developed by OPAR is expected to be used. The OPAR development is ahead of ASTRON in this area.
- It would be good to spread the test results. This would be a nice item for the SKADS newsletter. Bottom up approach such as how large a tile, etc. to be described in the SKADS newsletter.
- Simulation software for measurements was developed in UMass. With regard to temperature we aim at 35K, however, 50 would be good. If we can achieve 50K with EMBRACE, we will certainly achieve 35K with the SKA.
- The application of foam blocks is being tested in a low cost project. PED advises to be careful. PC points out that environmental tests have been done, and the foam blocks are okay.
- PH requests a written EMBRACE progress report before the September meeting.

8.5 DS 6 Stelio Montebugnoli presented by Andrew Faulkner

Is about 5-6 months behind the schedule in the DoW.

Overall conclusions:

- Technical conclusions. DS 4 and 5 are a bit separated, these will need correlation. The two are complementary.
- There are interesting simulations that are relevant for KAT. This link could be established by a visit from PE to South Africa. It would also be useful for PE to visit Australia.
- Scientific conclusions: Most science is concentrated in DS 2, little bits in DS3 and 5. Concern that there is too much reliance on people volunteering their time without being relieved of other duties. People are now getting hired in DS 2.
- PED adds that there is commercial reliability analyzing software available in Canada. It should be investigated how this can be used.

9 Terms of reference Scientific Advisory Group

- PC introduces the draft of a Terms of Reference for a SKADS SAG, the purpose of which is to identify significant developments and also to advise the PS.
- There should be a relation with the SKA Scientific Working Group, however, there is currently no formal one. SKADS Project Scientist should become a member of the SWG.
- Some people are identified as possible members of the SAG. PS would like to have people with a history in SKA, as well as experts from all the key scientific areas.
- The Terms of Reference will be developed further. All Board members are requested to send suggestions to PC, PNW and PS.

10 SKADS workshop 2006 - 4 September Paris

- Suggested agenda was drafted by the SKADS MT. 60-80 people are expected for this day. The Board is asked for suggestions.
- Emphasis will be on achievements after one year of SKADS.
- Issues that are still open should be clarified, as well as connections between the tasks.
- The outcome could be discussed in the rest of the week in the EWG.
- It is suggested to remove the DS and Task nomenclature.
- The preliminary agenda for the rest of the week is available. There will be a definite agenda in a few weeks time.



11 SKADS Outreach Program plan (was discussed after agenda item 13)

PD suggests to coordinate the activities between Radionet, Express and SKADS. In a few weeks Express will hire someone for PR. She could contribute. This suggestion is adopted.

12a. Reference Design

- RTS presents the current status of the Reference Design.
- this is seen as a strong candidate for actual implementation. However, it is not necessarily the final design.
- Innovation and risk should also been seen in the perspective of the timescale.
- RTS shows a picture of the central 5 km array of dishes and aperture arrays.
- The design is a basis for cost analysis.
- The design provides a recognizable image for the SKA project.

12b. SKADS and Reference Design

- Should SKADS work on FPA's or leave this to Australia/Canada. The present definition of high risk is based on high cost. Aperture arrays is considered high cost, however, it is proven technology. PE notes that Aperture Arrays have not been proven within an astronomical context.
- The performance of phased FPA's has not been demonstrated in astronomy. An easy fallback for FPA would be a traditional horn cluster. The fallback could be implemented and thus recover the cost of FPA failure. With Aperture Plane Arrays, there is no easy fallback, so it is a higher risk development.
- SKADS benchmark can be seen as a specific implementation of the RD. Simulation work in SKADS will help determine at which frequency the technology changeover takes place from Aperture Arrays to dishes.
- It is decided that SKADS will not be demonstrating focal plane arrays within the project. xNTD, APERTIF and South Africa, as well as Canada will do this and these actions should be coordinated by the ISPO. The results can be folded into SKADS.
- SKADS will be doing simulations and costing. It is part of DS 3 to compare the Benchmark vs. the RD.
- Chair notes that there is no need to change the SKADS DoW. There is no "Mission Creep". (see Chairman's notes, attached).

12 SKADS and FP7

- Phil Diamond supplies the latest information from Brussels. In FP7 there will be a budget of approx. 50 B €, from which there is 2B€ for Infrastructures. SKADS fits into the definition for infrastructures. UK and France are not sure that EC should be funding infrastructures. This may begin in January 2007.
- Proposals due in June/July doesn't match with SKADS mid term review. An early SKADS MTR would therefore be beneficial.
- It is essential to be on the ESFRI list, which is a 'living' list.

13 CC proposal

- This is an improved version of last year's proposal, which was criticized for the training aspect. There are schools as well as astronomical, technical and mixed workshops in the proposal. Total amount 1.1 M€ 7% of MCC is for management and there is money for outreach too.
- MG comments on the lack of information sent to participants before submission of the proposal. WvD agrees. MG noted that the possible failure of the proposal reflects badly on all participants.
- PC apologies. MG accepts apology. Outcome of the proposal is expected for September/October.



14 New participants

- PC received a letter from Portugal expressing their interest in SKADS. Some Portuguese scientists attended the DS-T1 kickoff and expressed an interest to take part in T1, without EC money. PD had a similar letter from Portugal in RadioNet. A new member means a new contract member, an associate connection for the scientific aspect could also be considered.
- It is decided that PE and PS will visit the Portuguese. From EC point of view it is good to have as many 'friends' as possible.
- PD noted that a new member implies contract amendments which is a lot of work, so in RadioNet they haven't accepted new members. Suggests new members are "observers" ie. No money and no voting at the Board, so contract amendment is not required.
- Chair noted that he doesn't approve the idea of "associate membership".
- PC should write a letter to Portuguese stating his delight that they attended the DS2 meeting.

15 AOB

- WvD asks if it is correct that the CA says on page 1 Design Study. PC answers DS is Design Studies not Design Study. This should be corrected.
- PA noted that the meeting "SKA for the User" is planned for late November.

16 End of meeting

Date of next Board meeting will be January 18-19, 2007, start early in the afternoon.

- Chair is reminded to invite US and China representatives.

Chair closes the meeting and thanks all attendees for their contribution.



Action Items

Action item	Decision	Action	By	Term
1		Corrections minutes 1st SKADS Board	TB	Asap
2	Public version minutes	Have this version approved by Board	TB	Asap
3		Make this version available at the website	TB	Asap
4		List of Board members, DS and DS-T leaders to be sent around	AvA	Asap
5		Chinese to be invited to 3 rd SKADS Board meeting	PNW	Asap
6		Approved Board minutes to be sent to USA and China	PNW	Asap
7		Outreach activities to be mailed to the PC for Annual Report	All	Asap
8		Scanned version form C available at website as an example	AvE	Asap
9		DS status report to be sent to SKADS prior to each CC telecon	DS leaders	each telecon
10		Send letter regarding liability to NRC	AvA	Asap
11		Provide PC with list of people that are involved in DS2	DS2 leader	Asap
12		Testresults DS5 in SKADS newsletter	PS	
13		Work out SAG and come with suggestion to Board	AvA/P NW/PS	Asap
14		Specify goal and achievements of SKADS workshop	MT	Asap
15		Finalize timescale SKADS symposium 2007 as rehearsal for midterm review	PA	
16		Coordinate PR activities between RadioNet/Express/SKADS	AvA	
17	Portugal observer status	Write a letter to Portuguese and announce visit PE/PS	AvA	Asap
18		Design Study in CA to be changed into Design Studies	AvA	Asap
19		Investigate possibility financial aspects 'small' participants to be done by ASTRON	AvE	Asap
20		Propose date for SKADS workshop Focus at the Benchmark end of November	PA	Asap



17 Acronyms

CA	Consortium Agreement
CC	Coordinating Committee
DoW	Description of Work
DS	Design Study
EC	European Commission
EWG	International SKA Engineering Working Group
ISPO	International SKA Project Office
PC	Project PC
PE	Project Engineer
PM	Project Manager
PS	Project Scientist
RD	SKA Reference Design
SBD	SKADS Benchmark Design
SWG	International SKA Science Working Group
T	Task
WG	Working Group

