1) **E-ELT**

The STC unanimously reaffirms its extremely strong support for the E-ELT project as already stated in past recommendations (STC-76 and STC-77). The STC is very satisfied with the preparatory work, which has been conducted since its last meeting. However, the STC is well aware that further delay in the start of the E-ELT program carries a high risk of compromising ESO leadership in ground based astronomical observations in the next decade. Considering that further delays would also lead to increased costs and risks, the STC looks forward to an approval of the E-ELT supplementary program in the June 2012 Council meeting.

2) **ALMA**

The STC acknowledges the progress made in the construction of ALMA and is particularly excited by the spectacular first scientific results from Cycle 0. The STC was pleased to hear that ALMA data processing is now shared between the JAO and the ARCs. This makes good use of the expertise of personnel at the ARC nodes, and has the potential to deliver processed data to the PIs more rapidly. We encourage ESO to take all necessary steps to ensure the completion of ALMA commissioning and science verification.

a) **Recommendation on Band 5**

The STC recognizes the importance of the science allowed by the extension to Band 5, which fits well within the budget for the ALMA development plan. The STC concurs with the cost cap and technical review requested by the ALMA board. The STC then recommends that ESO conclude negotiations with the Band 5 consortium for the full production of ALMA band 5 Cold Cartridge Assemblies.

3) **La Silla-Paranal Observatory**

a) **White paper on the future of the La Silla–Paranal Observatory**

Following our past recommendations (STC-75) STC reiterates its support for maintaining the La Silla–Paranal Observatory (LPO) as a world leading facility even in the E-ELT era, with the support of a continuing budget line as planned in the “Long Term Perspectives” document. The STC was presented with general options for the future of the LPO, which will be the topic of a white paper for recommendation at the next meeting. We are glad to note that by taking the step of this white paper, ESO is preparing to operate LPO in the E-ELT era. We encourage ESO to continue this effort and to explore a broad range of possible strategies. After E-ELT approval, which we expect to be in June 2012, these alternative strategies should be presented to the community and early consultation started, because changes in LPO operations might require changes in the ways communities themselves work.

The STC believes that the white paper should consider strategies for LPO operations...
during three different phases, the “2015 - E-ELT first light” period, the period following first light, and the period when ELT has been operating for several years. Different strategies of operation could be adopted, even at the level of different UTs, so as to better adapt to future scientific opportunities. The white paper should include a clear description of the selection procedure for new instrument capabilities, according to the planned strategies.

b) VLT/I instrumentation planning.
The STC was presented with a VLT/I instrumentation planning which we consider a good start for a discussion and which will lead to a roadmap for a competitive LPO in the ELT era. We believe that, especially in the long term (e.g. post 2015), any instrumentation plan should be the natural outcome of the white paper and of the strategies which, after feedback from the community, will be chosen to operate LPO.

The STC encourages ESO to fully evaluate the impact of projects on the whole program, even the low cost ones, as has been done until now.

c) Recommendation on ERIS science case
The ERIS project is one which is dear to the STC, as it represents the possibility of keeping diffraction limited imaging capabilities in modes or domains that will not be covered by SPHERE after NACO is decommissioned; it will also allow SPIFFI to operate with AOF. The STC has been asked for a recommendation on the ERIS science case, and has been presented with a status report. The STC believes that the science case is extremely strong. Given the status report and the presentation, the STC is looking forward with optimism to the phase A review, planned for the end of May. After receiving the phase A report, the STC will meet by teleconference to hopefully issue a recommendation for construction.

d) VLTI and PRIMA commissioning
The STC is glad to see that ESO has taken important initiatives towards making PRIMA work and preparing the infrastructure for 2nd generation VLTI instruments. However the STC remains concerned about the many difficulties still to be overcome in this area.

4) Additional issues
a) We applaud the bilateral discussions between ESO and ESA to optimize the synergies between ground- and space-based facilities and processes in order to benefit a broader community. The STC looks forward to further discussions in this regard.

b) The STC was pleased by the implementation of the fast data transfer (EVALSO infrastructure), which we consider to be in line with maintaining LPO as a world-leading observatory. We trust that also APEX will be connected to this infrastructure.

5) STC and sub-committee membership
The STC met for the first time in its new composition. 18 out of 20 members of the STC, including the members at large from USA and Australia, were able to attend the meeting. Despite this large number, the discussions were carried out in excellent spirit and were very effective. All the items on the Agenda could be addressed. As stated in its Terms of References, the STC nominated its vice-chair during this first meeting. The committee unanimously accepted the nomination of S. Feltzing (S) as STC vice-chair. In order to finalize STC representation in the sub-committees and following requests for missing expertise from the chairs of the La Silla-Paranal and ESAC sub-committees, the STC proposes to the Director General the memberships of Didier Queloz, Hans Van Winckel, André Moitinho in LSP and Rachel Akeson in ESAC.
Appendices

1. STC 78th Meeting Agenda
2. Reports from the STC sub-committees
   a. LSP sub-committee meeting, April 16, 2012
   b. ESAC sub-committee meeting, April 16, 2012

Agenda of the 78th STC meeting

<table>
<thead>
<tr>
<th>17 April</th>
<th>Document</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:30</td>
<td>Closed session STC only</td>
</tr>
<tr>
<td>09:00</td>
<td>Closed session with DG</td>
</tr>
<tr>
<td>09:30</td>
<td>Welcome</td>
</tr>
<tr>
<td>09:35</td>
<td>1. Adoption of the Agenda</td>
</tr>
<tr>
<td></td>
<td>2. Approval of the Minutes of the 77th STC Meeting</td>
</tr>
<tr>
<td>09:45</td>
<td>3. Report of the Director General</td>
</tr>
<tr>
<td>10:15</td>
<td><em>Coffee Break</em></td>
</tr>
<tr>
<td></td>
<td>4. Directorate of Operations</td>
</tr>
<tr>
<td>10:30</td>
<td>4a. Overview (A. Kaufer)</td>
</tr>
<tr>
<td>11:00</td>
<td>4b. Discussion of Directorate of Operations Fact Sheets</td>
</tr>
<tr>
<td>11:15</td>
<td>4c. Report from the La Silla Paranal Subpanel (M. de Vos)</td>
</tr>
<tr>
<td>11:35</td>
<td>4d. Discussion</td>
</tr>
<tr>
<td>12:15</td>
<td><em>Lunch</em></td>
</tr>
<tr>
<td>13:15</td>
<td>5. Future of La Silla Paranal Armazones</td>
</tr>
<tr>
<td></td>
<td>5b. Discussion</td>
</tr>
<tr>
<td>14:30</td>
<td>6. Directorate of Programmes</td>
</tr>
<tr>
<td>14:45</td>
<td>6a. Directorate of Programmes Overview (A. Russell)</td>
</tr>
<tr>
<td></td>
<td>6b. Discussion of Directorate of Programmes Instrumentation Fact Sheets</td>
</tr>
<tr>
<td>15:00</td>
<td><em>Coffee Break</em></td>
</tr>
<tr>
<td>15:15</td>
<td>6c. VLT/I Instrumentation Planning (L. Pasquini)</td>
</tr>
<tr>
<td>15:30</td>
<td>6d. ERIS Proposal (M. Casali)</td>
</tr>
<tr>
<td>15:50</td>
<td>6e. Planning for the Telescope Selection of 4MOST Phase A Study (A. Russell)</td>
</tr>
<tr>
<td>16:05</td>
<td>6f. Current Status of VLTI/PRIMA Commissioning (A. Russell)</td>
</tr>
</tbody>
</table>
16:20  6h. Report from the La Silla Paranal Subpanel (M. de Vos)
16:35  6h. Discussion

17:00  Closed Session

<table>
<thead>
<tr>
<th>18 April</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7.</td>
<td>ALMA</td>
</tr>
<tr>
<td>08:30</td>
<td>7a.</td>
</tr>
<tr>
<td>08:50</td>
<td>7b.</td>
</tr>
<tr>
<td>09:10</td>
<td>7c.</td>
</tr>
<tr>
<td>09:20</td>
<td>7d.</td>
</tr>
<tr>
<td>09:40</td>
<td>7e.</td>
</tr>
<tr>
<td>10:00</td>
<td>7f.</td>
</tr>
<tr>
<td>10:10</td>
<td>7g.</td>
</tr>
<tr>
<td>10:30</td>
<td>7h.</td>
</tr>
</tbody>
</table>

11:00    Coffee Break

| 8.       | E-ELT    |
| 11:15    | 8a.      | Progress Report (A. McPherson) |
| 11:30    | 8b.      | Discussion |

11:45    Directorate for Science

12:05    9b. Discussion of Directorate for Science Fact Sheets

12:15    Lunch

13:30    Closed Session

17:00    Meeting with DG and Directors
Report of the LSP subcommittee of the STC

Meeting 2012/04/16

Present: Alberto Franceschini, Johan Fynbo (through vc) Anne-Marie Lagrange, John Monnier, Michael Prouza, Marco de Vos (chair).

Apologies: Roberto Ragazzoni

General observations

The LSP appreciated the factsheets and other documentation provided for the meeting, the clear presentations by ESO staff and the openness in which all topics were addressed. The LSP members would appreciate if the slides from presentations could be made available the day before the meeting.

A common thread felt by the LSP throughout the meeting was the very tight schedule under which the various instrumental developments are being made.

The LSP commends ESO staff for their efficiency and loyalty, but also signals that success-oriented planning is best accompanied by fall-back plans and prioritization. The need to free up resources should not be allowed to give rise to compromises.

Fact Sheets

The LSP noted that there is still significant technical downtime on the VST. The LSP would like to be updated on the performance of the VST at the next meeting.

The LSP would like to see the relative observation load on the various instruments (that is the fraction of the effective observing time spent on each instrument).

The LSP took note of the detailed attention being paid to keeping the instrument suite at a high performance level, not just through major upgrades but also through smaller improvements and careful maintenance.

VLT Instrument Plan

The LSP was presented an overview of the instrumentation program. We were impressed by the amount of new instrument development and upgrades that are executed in parallel. As noted above, this puts significant pressure on staff. We also note the risk that even a slight schedule shift might cause two instruments to arrive at the telescope at the same time. We encourage ESO to make a clear prioritization within the instrumentation program now to guide choices should such a situation become manifest. SPHERE forms a case where the priority is clear: in view of the competition with GPI the science impact of this instrument will be particularly affected by delays.

The LSP noted with approval that there seem to be no performance risk, all instruments described remain within the agreed specifications.
The LSP noted that the improvements made to VIMOS significantly increase the imaging quality. We commend ESO for keeping this “workhorse instrument” at the forefront of MOS instrumentation.

The LSP noted the damage to the last batch of MUSE FSO mirrors. We fully agree with the choice to proceed with these mirrors rather than accept a 12 months delay. However, we encourage ESO to quantify the impact of the expected increase in stray light.

The LSP is glad to see that MATISSE is now proceeding well and that communication between the consortium and ESO has been significantly improved.

The LSP noted that the evaluation of the MOS concepts (4MOST and MOONS) proceeds according to plan and looks forward to an update at the next LSP.

The LSP congratulates ESO and the GRAVITY consortium with the successful FDR. The LSP would have appreciated a brief summary of the review findings before the meeting.

**Recommendation:** The LSP recommends that ESO provides one-page summaries with the major review findings (participants, schedule, remaining issues/risks) for major reviews (in particular FDRs).

**VLTI progress and organisation**

The LSP noted that, following the recommendations of the STC and the VLTI overview committee, due priority has been given to resolving the many issues with the VLTI.

In particular we commend ESO for establishing the PRIMA Analysis Team, making available expertise within ESO and for consulting with experts from the GRAVITY team. This approach shows the importance of having a dedicated team with a system architecture view. We note that bringing in the GRAVITY people has advantages both ways: they bring their experience to the ESO team, but also learn important aspects of the facility that will benefit GRAVITY.

The LSP noted the changes in the organisation, bringing the VLTI “into the matrix”. We cannot comment on the effect of this yet, but note with approval that several new full time positions have been defined. We encourage ESO to continue to make sufficient key staff full time available to resolve the specific VLTI issues mentioned by the STC.

The LSP strongly approves of the proposal of the PRIMA Analysis Team to extend the metrology through the optical path up to M2.
AOF

As requested in the previous meeting, the LSP was presented a full overview of the AOF developments, which was much appreciated. We commend the team on the progress on the DSM thin shell, which removed this subsystem from the critical path. We noted the sub-electron readout noise achieved, but also realise that the detectors are still on the critical path.

We encourage ESO to maintain the momentum in the AOF project because it is so important for many instruments and for maintaining ESO at the astronomical frontier.

The upgrade of UT4 is a major achievement, but lots work still needs to be done. We are concerned that there seems to be no explicit plan to mitigate the risk of additional vibrations due to this upgrade.

The LSP strongly encourages the team to make a vibration plan for the UT4 upgrade, as the assumption in the VLTI plans is that existing stability will be maintained.

ERIS

ERIS has been developed to keep diffraction limited near-IR imaging capabilities available at the VLT after the decommissioning of NACO.

We appreciate the momentum that has been developed as a result of the need to free up the NACO focus. However, ERIS will be an intermediate scale instrument that will be a long-term “workhorse.” Therefore we strongly encourage ESO to take sufficient time to make the necessary trade-offs to take maximum advantage of new technologies, as would be done with any other mid-sized instrument. Such decisions should not just be based on development time, but also on expected performance. ESO wants to stay at the forefront of instrumentation and thus should consider every opportunity to bring in potential game-changers. A particular example is the consideration on the use of the Pyramid sensors (with potential 2.5mag improvement). The LSP looks forward to receiving the Phase A report.

We commend ESO for the decision to keep NACO available in the short run by moving it to a different station, recognising the risks involved.

The LSP reiterates its recommendation that ESO should do its utter best to keep L and M bands available. We also encourage ESO to make the complementarity with SPHERE more explicit in science case and design.
Public Surveys

The LSP noted with approval that there has been a lot of progress on most surveys, both on VISTA and starting Oct 2011 on VST. We are concerned that VIKING has still not complied with the DR policies. We took note that ESO has been communicating extensively with the VIKING PI and support ESO to continue the intensive communication about the reasons for this major delay and to take further steps if necessary.

As some of the large surveys take longer to complete than originally expected, the LSP encourages ESO to continue monitoring to assess if the expected scientific impact of the various surveys can still be upheld. We consider the upcoming PSP review an important milestone.

We commend ESO for their constructive role in bringing the various VST data centres together to improve collaboration and efficiency.

The LSP noted that the spectroscopic surveys seem to be proceeding well.

The LSP was glad to see that first scientific results of the large public surveys are now being presented and published. The amount of downloads of the data products indicates that there is interest from the community. We encourage ESO to continue to survey the community on the use of these data products, in order to optimize the system further (e.g. by hosting value-added second generation catalogues).
Appendix: Agenda of the LSP meeting

09:00  Instrument overview with details (L. Pasquini)
09:30  New VLTI organisation (L. Pasquini)
09:45  Details presentation on PRIMA/ VLTI (H. Bonnet)
10:30  Coffee break
10:45  Status of AOF (R. Arsenault)
11:15  ERIS proposal overview (M. Casali)
11:30  ERIS proposal details (P. Amico)
12:00  Survey status (M. Arnaboldi)
12:30  Lunch
13:30  Closed session
16:30  Feedback to ESO
17:30  End of meeting
Report of the April 2012 ESAC Meeting

ESO, Garching, 16 April, 2012

ESAC members: Lauri Haikala, Michiel Hogerheijde, Rob Ivison (chair), Jes Jorgensen, Jesus Martin-Pintado, Raphael Moreno, Elaine Sadler, Linda Tacconi

Absent: Frederic Gueth

ESO participants: Paola Andreani, Andy Biggs, Carlos de Breuck, Robert Laing, Christian Schmid, Leonardo Testi, Wolfgang Wild

General Remarks

The ESAC met for its regular spring meeting in Garching on 16 April 2012, the day before the 78th STC meeting (for the particularly full ESAC agenda, see Appendix 1).

This concluded a busy period, with an ESAC telecon held on 21 November 2011 to discuss the ALMA prototype antenna (for recommendation, see Appendix 2) and a formal proposal to create an ARC node in Portugal (for recommendation, see Appendix 3), and another on 13 February 2012 to discuss the upcoming meeting of the ALMA Science Advisory Committee Meeting (ASAC) in Garching on 22-23 February 2012.

There were also no fewer than nine ASAC or ASAC-JAO telecons during this period, including an extraordinary telecon to discuss the relationship between ASAC, JAO and the ALMA Board. Briefly, the ASAC Chair and vice-Chairs, with the unanimous support of the committee, had written to the ALMA Director and Deputy Director expressing frustration that the last three ASAC reports had received no formal answer and several recent recommendations had seemingly been ignored, without explanations being offered, e.g. regarding the formation of a Technical Steering Committee, technical reviews of telescope proposals, and the Cycle 0 and 1 timelines. The outcome of recent dialogue is covered in charge 5 of the ASAC Charges, summarised below.

ESAC thanked the retiring ALMA Project Scientist, Richard Hills, and his Deputy, Alison Peck, for the considerable roles they have played in bringing ALMA to this point. ESAC again commends the ESO staff and European ARC and ARC nodes for the help they have given the community and the ALMA project during CSV and Cycle 0.

Although a number of concerns have emerged or re-emerged during the six months since our last report, ESAC is delighted to see truly exceptional scientific data emerging during the first half of Cycle 0 and looks forward with confidence to transformational science during Cycle 1 and beyond.
This report continues with a summary of the ASAC Charges and responses, and finishes with some recent concerns particular to ESO and its community, and recommendations relating to APEX and the ALMA Development Plan.

**ASAC Charges and responses**

**Charge 1: (Cycle 0)**
The ALMA Project is in an exciting time with Early Science data becoming available, and (at the time of this writing) the first two papers on ALMA science released. This is also a critical time for establishing a positive relationship with the community while balancing the demands on the project during the transition to full science. The ASAC makes the following comments and recommendations:
- A Band 9 SV data set urgently needs to be obtained and released.
- Transparency and communication to PIs in data acquisition and handling needs to be improved.
- The speed at which data sets are released needs to be improved; steps might include revisiting “best efforts” and enlisting ARC staff and PIs.
- Cycle 0 should not go beyond its current 5-month extension.

**Charge 2: (CSV, Cycle 1 Capabilities, Proposal Review Process)**
The ASAC was pleased to see the progress from CSV in recent months, although we have a few key concerns. Both the call for proposals and the proposal review process for Cycle 0 have served as “learning experiences”, and Cycle 1 offers the opportunity to adjust policies and procedures. The ASAC makes the following comments and recommendations:
- Every effort should be made to increase the efficiencies (both hardware and software) that are currently major limitations in the observing process.
- The number of panelists per review committee needs to be greater than 6.
- The comments provided to proposers need to be improved; comments from secondary assessors should be mandatory.
- The project should be conservative regarding the offering of capabilities for Cycle 1 that are not fully tested.

**Charge 3: (Development Program)**
The ALMA Development Program is essential to the long-term scientific health of the observatory. The ASAC was pleased to hear of the progress made on this front by both the JAO and the Executives, including the formation of the ADSC with a draft ToR, and calls for proposals from all three executives. The ASAC offers the following comments and recommendations:
- The ASAC has created a “focus group” of three members (one from each region) to advise and assist the ASAC representative on the ADSC.
- In order to guide expectations of groups proposing projects to the ADSC, a Development Implementation Plan should be produced and disseminated.
- The ASAC endorses investment in the three Board-approved development initiatives (optical fiber link, Band 5, VLBI).
- A full and realistic impact study needs to be carried out for the proposed VLBI
Charge 4: (Previous ASAC Recommendations)
The ASAC remains committed to and unanimously supports an in-depth evaluation and costing of efforts to increase the efficiency of power generation at the ALMA site. The ASAC offers the following comments and recommendations:
• The constitution of a working group on this issue is a major positive step.
• The proposed timeline for a full report to the Board in April 2013 is appropriate.
• This group should begin activities as soon as possible so as not to delay this process any further.

Charge 5 – Ad Hoc: (Evolving Role of the ASAC)
The ASAC currently serves as the primary channel for external scientific input into the ALMA project. However, as the ALMA project has begun the transition from construction to operations, the role of the ASAC may be similarly evolving, and the ASAC would like to review and assess the role and effectiveness of this committee given the rapidly changing nature of the ALMA project. The ASAC makes the following comments and recommendations:
• The ASAC will need to become more proactive and engaged with the ALMA project to be up-to-date on developments and concerns.
• The ASAC needs to be ready and committed to responding on timescales that are not aligned with standard telecons and face-to-face meetings.
• The ASAC would like to have a more direct line of communication with the Board (to whom the ASAC reports), both to avoid delays in information transfer as well as possible miscommunications.

ALMA: European concerns, post-ASAC
Relating to ASAC Charge 1, ESAC was pleased to hear that a new communications plan is to be implemented and that ARC staff will be utilised to speed up data release.

Relating to ASAC Charge 3, Frederic Gueth will represent ESAC on the ALMA Development Steering Committee.

Relating to ASAC Charge 5, Neal Evans will liaise between the ALMA Board and ASAC.

ESAC heard that ALMA construction has continued apace, but there is real concern about the overall reliability and efficiency of the array, with specific concerns about the installation of new optical pointing telescopes, about continuing problems at the European Front End Integration Centre, specifically regarding verification of its products, about the European antenna delivery schedule, and the Joint ALMA Observatory’s attitude to fault reporting and tracking.
ESAC received a presentation from a relatively junior scientist involved in CSV. ESAC were deeply impressed by the commitment displayed by the CSV team, but are concerned at the lack of day-to-day planning, management, guidance and training received by those in the thick of CSV, where the fault reporting and tracking again seems sub-optimal. The lack of a coherent long-term CSV plan and delays to the recruitment of a CSV leader are of significant concern. CSV was planned to wind down at the end of 2012, yet long baselines, high frequencies, polarisation capabilities and full correlator modes have yet to be commissioned, meaning there will be a prolonged call on contingency.

Science emerging from Cycle 0 has been nothing short of superb. Early concerns about communication with PIs and the timescale for data release appear to have been addressed by JAO, though ESAC will monitor the situation carefully because community frustration reached unfortunate levels for a period of several months.

Cycle 1 will offer ~800hr over 10 months, down almost a factor two on our earlier expectations, which is disappointing.

ESAC were shown the updated OT in action and have reason to expect it will be as successful during Cycle 1 as during Cycle 0.

ESAC members are unanimous in their desire to see JAO use fewer, larger panels for the Cycle 1 ALMA Review Process.

ESAC were given several presentations relating to the ALMA Development Plan. The ALMA Development Steering Committee (ADSC) is a welcome development. ESAC was happy to see the go-ahead given to the optical fibre connection between OSF and SCO, and the encouragement given to the Band 1 and VLBI teams.

Specifically regarding the European ALMA Development Plan, ESAC were satisfied that the ESO ALMA team has a strong science-driven plan based on the correct principles, with interests in further developing Band 2 (or 2+3), Band 9, the so-called Band 11, and ‘facility-class’ VLBI, amongst other possibilities. It is foreseen that a Development Studies-related workshop will be required in early 2013.

ESAC was deeply impressed by the science case for the extension to Band 5, which fits well within the budget for the ALMA development plan, and concurs with the cost cap and technical review requested by the ALMA Board.
APEX

ESAC received an update on the status of APEX on which the ESO community receives almost 1000 hr, annually. The continuum camera, LABOCA, dominates the publication rate, with ~30 refereed papers/yr, similar to the rest of the instruments combined. The cancellation of LABOCA-2 is disappointing, and the further delays to Artemis, now scheduled to be installed during the altiplanic winter of 2013, are regrettable.

ESAC was delighted to see that Z-Spec is returning during late 2012 and that SHFI will be turned off during this period, and congratulated Carlos De Breuck on the success of delicate negotiations with the APEX partners.

It was felt likely that ZEUS-2 – a 350-450um `IFU’ – will be well received by the community, if and when its PI is ready to bring the instrument south from CSO.

It was noted that very few ESO proposals are received for the APEX-1 (low-frequency) receiver. At an upcoming meeting, ESAC may recommend that a Legacy call be issued for APEX-1.

APEX data transfer and archiving efforts need to be prioritised to allow PIs to feedback issues relating to data quality.
Appendix 1:

ESAC meeting agenda

Monday 16th April 2012

09:30  APEX news and discussion (C. De Breuck)

10:30  Break

10:45  ALMA project update (W. Wild)
11:15  ALMA science update (L. Testi)
11.30  ALMA CSV and science operations real life
12.00  EASC status and discussion (W. Wild)

12.30  Lunch

13.30  ALMA software update (E. Schmid)
13.45  Pipeline and offline software discussion (J. Kern)
14.15  ALMA OT (A. Biggs/A. Bridger)
14.45  Discussion

15.00  Break

15.15  ALMA development plan – ADSC – initial projects (W. Wild)
15.35  ALMA band 5 upgrade STC recommendation (R. Laing)
15.55  Status of the other studies in Europe (L. Testi)
16.15  Status of ALMA prototype discussions (W. Wild)

16.30  Closed session

17.00  End of meeting
Appendix 2:

**Recommendation regarding the European ALMA prototype antenna**

ESAC was informed by W. Wild about a proposal from Steward Observatory to take over the EU ALMA prototype antenna from ESO for use as a (sub)mm observatory by the Steward community. The proposal involves no exchange of funds, and the University of Arizona would purchase the antenna "in-kind" by fulfilling ESO's obligation to remove the antenna from the test site and by granting ESO guaranteed observing time with any of their antennas (the old NRAO 12-m, the SMT as well as the EU-ALMA prototype).

ESAC supports this proposal, since it will save ESO the costs associated with removing and shipping the antenna in addition to making a potentially interesting mm/submm facility available for sometime to the ESO community. ESAC looks forward to discussing the proposal and potential ways to implement the guaranteed observing time in the future.
Appendix 3:

**Recommendation on a new ARC node in Portugal**

The ESAC discussed via telecon on November 21, 2011 a proposal submitted to ESO from Portugal to set up new ARC node. This recommendation was drafted without input from Jose Afonso, who has a declared conflict of interest.

ESAC welcomes the increased interest in the Portuguese astronomical community to build up their sub-millimeter astronomical expertise through a proposal to host a regional ARC-node in Lisbon. The ESAC recognizes that the CAAUL is building the necessary expertise to run properly an ALMA ARC node, and commends their efforts to support the Portuguese community through the organization of an ALMA Community Day and a workshop on ALMA Early Science Preparation even prior to becoming an official ARC node. ESAC encourages the scientists involved in establishing the node to further develop expertise through exchange with the already established European nodes, perhaps even seconding a scientist to another center for an extended period.

There are a number of elements missing in the current proposal, however, and ESAC requests further clarification before making a definitive recommendation to ESO. These are:

- Information on the prospects for long(er) term funding for the node
- A personnel plan, with FTEs and tasks assigned to each. What is the level of technical expertise in the node? How ready would the node be for face-to-face support in using the OT, preparing scheduling blocks and reducing ALMA data sets?
- Further information on the unique contribution the proposed node would make in terms of expertise area(s) to the ARC node network

Once these clarifications are made, ESAC would gladly reevaluate the proposal for the new Portuguese node.