Users' Committee

40th Meeting

Garching, April 18 and 19, 2016

Draft Minutes

UC

Chairperson:	Dr. Stefano Covino	Italy
Vice-chairperson:	Prof. Maria-Rosa Cioni	Germany
UC members:	Prof. Bodo Ziegler	Austria
	Dr. Olivier Absil	Belgium
	Dr. Michaela Kraus	Czech Republic
	Prof. Lise Bech Christensen	Denmark
	Dr. Talvikki Hovatta	Finland
	Dr. Philippe Delorme	France
	Dr. Matthew A. Kenworthy	The Netherlands
	Dr. Łukasz Wyrzykowski	Poland
	Dr. David Sobral	Portugal
	Dr. Maria Rosa Zapatero Osorio	Spain
	Dr. Sofia Ramstedt	Sweden
	Dr. Damien Ségransan*	Switzerland
	Prof. Stephen Smartt	United Kingdom
	Prof. Thomas Puzia	Chile

*Excused

Invited to Special Session	Dr. Claudia Cicone	Switzerland
	Dr. Helmut Dannerbauer	Austria/Spain

On behalf of ESO	Prof. Tim de Zeeuw	ESO Director General
	Andreas Kaufer	Directorate of Operations/La Silla Paranal Observatory (DOO/LPO)
	Rob Ivison	Directorate for Science (DSC)
	Steffen Mieske	Paranal Science Operations (PSO)
	Michael Sterzik	Data Management and Operations Division (DMO)
	Marina Rejkuba	User Support Department (USD)
	Martino Romaniello	Back-end Operations Department (BOD)
	Paola Andreani	ALMA Regional Centre Department (ARC)
	Felix Stoehr	ALMA Regional Centre Department (ARC)
	Martin Zwaan	ALMA Regional Centre Department (ARC)
	Wolfgang Wild	ESO ALMA Support Centre (EASC)
	Ferdinando Patat	Observing Programme Office (OPO)
	Sandra Castro	Science Operation Software Department (SCS)
	Pascal Ballester	Science Operation Software Department (SCS)
	Bruno Leibundgut	Directorate for Science (DSC)
	Leonardo Testi	Directorate for Science (DSC)

Invited to Special Session	Carlos De Breuck	APEX Operations Group

Minutes taken by	Katharina Immer	ESO Fellow (DSC)

1. CLOSED SESSION

No meeting minutes are taken for the closed session.

2. OPENING OF THE UC MEETING

The Chair, **Dr. Covino (IT),** opens the 40th Users' Committee meeting.

2.1. Adoption of the Agenda and approval of the minutes

The draft minutes from the 39th UC meeting have been approved prior to the mid-term telecon in November 2015. The draft agenda is adopted.

3. UPDATE ON ESO'S PROGRAMME

Prof. Tim de Zeeuw, Director General of ESO, presents the highlights and updates on the ESO's programme.

Discussion following the presentation:

Dr. Covino (IT) asks first about the CTA project and then about the possibility to go back to the full plan for the E-ELT if Brazil joins in the future (later than 2017). The **Director General** reminds that he reported about the potential to bring the CTA South to the Paranal property a year ago. Official discussions are ongoing but there is no clear decision yet. Depending on their progress, an update could be given next year. Regarding the E-ELT, ESO can currently go ahead with Phase 1 and will try to stay on track for the first light in 2024. Contracts are being placed, but delays cannot be excluded. If Brazil joins after 2017, this would bring additional funding which could be a way of reinstating Phase 2 with a minimal delay. There are ongoing discussions with a number of other countries about joining ESO.

Dr. Kenworthy (NL) inquires if the Phase 1 of E-ELT contains a complete M1 or a phased M1 deployment. The **Director General** explains that the inner five rings of segments are not part of Phase 1. In November 2016 and in a year from now, ESO will ask for the award of contracts for the polishing and the blanks, respectively. Both contracts will have options to include the remaining segments – those parts would be exercised only around 2020.

Prof. Ziegler (AT) asks about the timeline for a new contract for APEX. The **Director Genera**l explains that the new contract would start in 2018 and therefore a decision is needed by the end of 2016. The STC will be informed about this next week and then the decision for extension goes to Council in December. It is also necessary that the other two partners decide for a new contract. However, the Onsala Space Observatory is looking into reducing their share and they might need more time, until early 2017.

4. REPORT FROM LA SILLA PARANAL OBSERVATORY

Andreas Kaufer (Director of La Silla Paranal Observatory, LPO) presents an update on the La Silla Paranal Observatory (attachment 1).

Questions and discussion were postponed to after the next presentation.

5. REPORT FROM PARANAL SCIENCE OPERATIONS

Steffen Mieske (Head of Paranal Science Operations, PSO) presents an update on Paranal Science Operations (attachment 2).

Discussion:

Prof. Smartt (UK) asks about the difference between the eavesdropping and designated Visitor Mode, while **Dr. Absil (BE)** wishes to know if the eavesdropping could also be offered for the regular Visitor Mode. Mieske (PSO) explains that eavesdropping would be a way to improve the user experience of designated Visitor Mode. In designated Visitor Mode observations are scheduled on specific night(s), and the visiting astronomer is not present on the mountain, but rather in contact via Skype. With the eavesdropping mode additionally the observer will be

able see the operation screens in Paranal in real time. Technically there is no obstacle to offer this also for regular Visitor Mode.

Dr. Covino (IT) asks for clarification if the use of remote observations facility would require that the astronomer comes to Garching. Mieske (PSO) states that the plan for eavesdropping is to mirror the displays from Paranal to the outside world, but that there would not be any possibility for direct interaction, e.g. typing or using a mouse remotely, due to firewall restrictions. At the moment there are no specific plans to implement remote observing from the Garching Remote Access Facility (G-RAF).

Prof. Cioni (DE) enquires when and for how long UT4 will be off-line. Mieske (PSO) explains that it will be three months from October to December but there will be also a lot of AOF related commissioning activities later.

Prof. Cioni (DE) would like to know when CRIRES+ will come back to operations, and **Prof. Puzia (CL)** wonders which instrument it is going to replace. Mieske (PSO) answers that the expected arrival of the instrument to Paranal is in Q1 2018, while Leibundgut (DSC) says that a proposal for installation of CRIRES+ on one of the Nasmyth foci, including an evaluation of scientific and operational impact, will be submitted to the STC next week. The decision will become available after the STC meeting as it is needed also for the Final Design Review of the instrument in two weeks.

6. REPORT FROM USER SUPPORT

Marina Rejkuba (Head of User Support Department, USD) presents a report on Paranal front-end operations (attachment 3).

Discussion:

Prof. Smartt (UK) asks about the plan to involve the UC and the users' community in the new Phase 2 system development. Rejkuba (USD) clarifies that ESO plans to roll out the new version of Phase 2 tools gradually, starting already in the second part of this year. Feedback from the first users will be gathered to improve the system. Some of the requirements include input gathered via the service mode questionnaires. There is no plan to additionally poll the users about a prototype of the new Phase 2 system.

Dr. Covino (IT) comments on a remark that there are roughly half of the programs that do not produce any paper, while those that publish on average produce two papers per programme, and wants to know if there is a metric for scientific productivity normalized by observing time. Rejkuba (USD) points out to the figure in her presentation which shows that the very short and the Large Programmes are most productive according to this metric.

Prof. Cioni (DE) wonders if it is true that there is no service mode in La Silla. Rejkuba (USD) confirms that, adding that only exceptions may be Target of Opportunity observations. Patat (OPO) clarifies that there is currently one programme exceptionally scheduled in designated Visitor Mode programme, because it needed one observation every few nights over a large part of the semester. It was impossible to schedule it in Visitor Mode, but the programme was top ranked in its panel. This is exceptional, and so far only scheduled in two semesters.

7. REPORT FROM BACK-END OPERATIONS

Martino Romaniello (Head of Back-end Operations Department, BOD) reports on back-end operations (attachment 4).

Discussion:

Prof. Ziegler (AT) recalls a statement from the last year about a plan for FORS data products, and suggests that given the successful MUSE pipeline priority should be given to FORS data reduction for which there are still calibration issues. Romaniello (BOD) explains that the priority was given to MUSE, because processing this data requires computing resources that are not available to everyone. He adds that the plan for FORS spectroscopic data products still exists, but has to be tensioned against, e.g., making data products available for KMOS. **Prof. Ziegler (AT)** asks if ESO could provide a machine for MUSE data reduction so that users can come to ESO in Garching and reduce their own data on this machine. Romaniello (BOD) is convinced that the delivered data products are almost as good as possible and of a size that is tractable with average equipment. Such a machine is thus, likely not necessary.

Prof. Christensen (DK) refers to sky subtraction issues in the MUSE pipeline and asks if the consortium workflow is part of the MUSE pipeline release. Romaniello (BOD) explains that consortium developed a post-processing tool to improve on the sky emission subtraction. Everything that is reasonably automatable is in the data products, but this tool is highly interactive and should be run as part of post-processing by users. To this end, ESO has developed a Reflex workflow that embeds the tool.

Dr. Covino (IT) asks about statistics on users' requests for help related to pipelines. Rejkuba (USD) has shown that ESO receives (via usd-help) a slowly increasing number of tickets related to post observation support: pipelines installation and data reduction. The last year this reached ~280 tickets. Of these about one quarter are for pipelines installation support and the rest is about more general data reduction and running the pipelines.

8. REPORT FROM THE ALMA REGIONAL CENTRE

Felix Stoehr (ALMA Regional Centre Department, ARC) reports on ALMA operations (attachment 5).

Discussion:

Prof. Cioni (DE) remarks that the users are very happy with the work in the ARC nodes, especially when they go over the data together with the support.

9. REPORT FROM THE OBSERVING PROGRAMME OFFICE

Ferdinando Patat (Head of Observing Programme Office, OPO), reports on telescope proposal submission and OPC matters (attachment 6).

Discussion:

Prof. Smartt (UK) asks for clarification regarding the implementation time-line of the new Phase 1 submission system. Patat (OPO) confirms that the software team estimated that the development and implementation will take 3 years and emphasizes that the proposal submission is only a small part of the new system. The most complicated parts are related to workflows dealing with the conflicts and the proposal distribution for which a new concept of matching expertise will be introduced. Additionally, the interface will provide much more flexibility. All this requires a redesign of the databases. ESO wants to get the system right also for the E-ELT. **Prof. Smartt (UK)** is keen to have potential future users, who could provide useful feedback, testing the new system.

Prof. Cioni (DE) asks if there is an introductory talk about biases (gender, etc.) at the OPC and remarks that a large percentage of the panels is composed of more junior astronomers. Patat (OPO) confirms that there is a short presentation about biases to make referees aware of them. Also unconscious biases need to be considered. He gives an example that male referees may be biased, but also female referees tend to disfavour female PIs. The numbers are small but statistically significant. He is aware of a seniority problem regarding biases and therefore ESO makes sure that there is a mix of senior and junior members in each panel. **Prof. Cioni (DE)** suggests to ask the user community in the next poll whether proposals should be anonymous. The **Director General** comments that it is important to understand the statistics based on current database of proposals that is being analysed, before drawing conclusions and asking the user community about what should be done. The OPC is strongly against anonymous proposals. **Dr. Covino (IT)** comments that proposals are unconsciously graded worse if referees are overwhelmed by their number and that one needs time to consciously fight against his/her own biases. Patat (OPO) confirms this – with the increase of the number of proposals per referee the distribution of grades moves to lower grades which calls for a decrease of number of proposals per referee. However, adding more referees per panel is not a sustainable solution, because the OPC would become too big.

Dr. Delorme (FR) remarks that there are three categories of proposals: really good and really bad proposals which are the minority, and the majority of proposals which are in the grey area in between. Given the low correlation of the OPC grades he suggests a two-tier evaluation with most time spent on the proposals in the very good or bad bins and then some kind of a more automatic ranking for the majority of the proposals in the grey area. Patat (OPO) points out that all the proposals still need to be read to identify the top/bottom ones; typical dispersion on the good proposals is very small and the corresponding discussion short. The only solution is to decrease the number of proposals: for example, only accept a certain number of proposals requesting less than one night. The **Director General** adds that another solution could be to only accept proposals if previous data were published. Mieske

(PSO) notes that this has been introduced for Chilean ALMA proposals. The **Director General** considers that it is perfectly fine to politely ask the users why their data has not been published yet since the users were awarded observing time which costs 70,000 Eur/night of taxpayers' money. ALMA conducted such a poll. However, Stoehr (ARC) comments on very low reaction/feedback from the community. Patat (OPO) reminds about the plan to poll the users who did not publish their data (PNPP survey) adding that after a one-month deadline, users who did not reply will be called. The message in the poll needs to be aggressive to provoke replies.

Dr. Osorio (ES) would like to know when the PNPP survey will be launched. Patat (OPO) answers that the plan is to do it by the end of April, pending the approval of the **Director General** and the blessing of the UC. There is still some time to modify the survey but technically, it is ready. **Dr. Osorio (ES)** remarks that, when she participated in the OPC, the panel took the box about previous publications or use of ESO telescopes into account. She also wonders how the publications rate compares with other observatories. Patat (OPO) explains that the OPC asked to have information about publications in the proposal form, but its usage is not enforced. In the new system, the publications of the proposing team will be picked up automatically. He states that HST and ALMA publication rates are much higher but most ground based observatories are in a similar situation. He stresses that the ultimate purpose of the survey is to understand whether there is something that ESO can do to improve the service.

Prof. Smartt (UK) suggests to group the list of questions of the PNPP survey such that users can specify if this is due to ESO problem or user related problem.

10. OBSERVING EFFICIENCY ON PARANAL

Steffen Mieske (Head of the Paranal Science Operations, PSO) reports on the observing efficiency on Paranal (attachment 7).

Discussion:

Prof. Smartt (UK) comments on a report from La Silla regarding reluctance from a night assistant to open the telescope when the humidity was low but there were high clouds without any perceived danger to the telescope. The night assistant decided that the telescope should remain closed, but the astronomer disagreed. Mieske (PSO) notes that the telescope should open unless there are safety concerns, the assessment of which is in the hands of the weather officer (the night assistant in charge of evaluating the climatic conditions and deciding on telescope opening). He emphasizes that such feedback on strong disagreements with the weather officer decision can be put in the end of mission reports. All reports are read as they come in and such feedback is followed-up.

11. REPORT FROM THE DATA MANAGEMENT WORKING GROUP

Martino Romaniello (Head of Back-end Operations Department, BOD) reports activities of the Data Management Working group (attachment 8).

Discussion:

Dr. Delorme (FR) picks-up on the question what makes data trustworthy and states that one big issue of ESO pipelines is that they are written in C++ which is difficult to read for scientists specialized in their instrument and not necessarily in programming. There is a disconnect between the instrument or science expert and the people who write the pipeline, who are software engineers. Enforcing C or Reflex which only enables C is a big issue. Romaniello (BOD) remarks that any executable callable from the command line can be embedded in a Reflex workflow. This includes python and IDL scripts.

Prof. Smartt (UK) comments that with the current archive user interface it is hard to find information about the big public datasets and how to access them easily. The existing standard form is probably not the right interface for public surveys. When users get the data they are impressed, but it is difficult to find out what is available.

12. REPORT FROM THE UC CHAIR

Dr. Covino (IT) reports that, on average, the users are very satisfied with ESO facilities and the interaction with ESO staff. The Users' Committee appreciates their involvement in ESO activities. There are no big issues to report. However, every time ESO or the UC organizes a poll, there are always complaints about the pipelines and he wonders if there is a different/better way to improve the link between the users and the pipeline developers.

Based on the UC poll **Prof. Cioni (DE)** reports that users are difficult to please with the speed of communication from ESO Chile (network or phone). The **Director General** considers the wireless in the guesthouse good enough as it is regularly used for skype conversations to everywhere in the world. It is unclear if this is a real problem.

Prof. Smartt (UK) adds that UK users are generally very happy and most of the feedback and issues are about pipelines, data products and documentation. Users have difficulties to find and access the documentation and information about the pipelines. For example, for a specific instrument the questions are: where one finds all the information on the data products that have been pipeline processed, how they were reduced, which pipeline was used, and how to get raw data and re-reduce them. It would be good to organize this information centrally per instrument. Castro (SCS) explains that pipelines for all instruments are available for download from one page. As this example asks for re-organization of information per instrument and goes beyond just pipelines, this requires some refactoring of the webpages.

General discussion about pipelines follows:

Ballester (SCS) asks **Dr. Covino (IT)** if he has suggestions on how to improve the links between users and developers (e.g. workshops, more direct contact between users and developers). **Dr. Covino (IT)** thinks that users should improve how they communicate about this problem, specifying clearly what real issues are. His comment was more general about pipelines coming up as a recurrent issue. Mieske (PSO) remarks that more and more Paranal users do not use the online pipeline.

Sterzik (DMO) wishes to give a broader scope to the discussion: the fraction of science-ready data products in the archive, based on certified pipelines or contributed by external trustworthy groups, is increasing and thus the need for individuals to run pipelines may not increase. While the pipelines written in C may not be as user-friendly for the astronomers, there are frameworks (like Reflex) where users can plug in their codes. ESO is investing in general user interface to proliferate data products and the hope is to see the positive trend on a long run.

Kaufer (DOO/LPO) points out that the discussion about pipelines is important since pipelines and data reduction are at the focus of the astronomers – he would be worried if there were no such discussion. The flavour of the discussion has however changed. While first the non-availability of pipelines, and later the quality of their output were issues, now people rely on the pipelines and data products and want to understand what is behind, i.e. the documentation is in focus. He recalls that there is a single page for all the pipelines. Ballester (SCS) agrees that the discussion nowadays is more about the quality and the accessibility of the information and the documentation.

Dr. Delorme (FR) remarks that pipelines are still the area where there are the most complains and he suggests that ESO is going too slowly in this area. Kaufer (DOO/LPO) questions how to include the knowledge from the community into the process to help to develop and improve recipes. **Dr. Delorme (FR)** explains the problems of the SPHERE pipeline and states that the priority of ESO should be to get a very good science pipeline and only after that to make it Reflex-compliant. Romaniello (BOD) emphasizes that the complaints have to be specific to be of use for ESO to act upon. He explains that a Reflex workflow is a convenient way to run a data reduction chain. He states that the problem with the SPHERE pipeline was that the code that was delivered could not be run top to bottom, to which **Dr. Delorme (FR)** objects stating that the scientists at the SPHERE data center have no problems running SPHERE pipeline. Romaniello (BOD) remarks that the purpose of the requirements for the pipelines is to make sure that the pipelines and the resulting data products are useful for all ESO users, not just the experts from the Consortium. He emphasizes that there are good C-code based pipelines for KMOS, MUSE, ESPRESSO, GRAVITY, etc., so the issue cannot be with the coding language itself. **Dr. Delorme (FR)** points out that there are several pipelines for which there are serious issues. The priority should be the science quality of the product and then a smoothly running pipeline, to which Romaniello remarks that it is difficult to get any kind of results, good or bad, from a pipeline that cannot be run. **Dr. Delorme (FR)** outlines an X-Shooter pipeline problem: while he was happy to use Reflex, he was not satisfied with the result.

Dr. Osorio (ES) states that the installation of the pipelines is a nightmare for most of the Spanish community and the X-Shooter pipeline has issues in the K band: the counts, the level of photons, the spectral shape of the K band is completely wrong. Sterzik (DMO) asks **Dr. Osorio (ES)** if the users were in contact with user support or pipeline developers to which she answers that they contacted someone in Chile. Castro (SCS) emphasizes that a ticket has to be created by contacting usd-help so that it can be followed-up properly. **Dr. Covino (IT)** points out that one should find a better way to help users and ESO communicate, for example to have test teams (PIs of some instrument) reduce their data in a stricter connection with ESO.

Prof. Ziegler (AT) suggests to inform the users in the next newsletter or other media about what they can do or ask for. He points out that most users are happy with the basic reduction steps but that they may want more

demanding or complicated things (e.g. sky subtraction of tilted slits) implemented in pipelines. He wonders if there is a plan to further develop the instrument modelling approach to reduce data with little additional calibration files, especially when there are issues with calibrations. Upon being asked by Romaniello (BOD) about the issue with calibrations, he mentions the photometric calibration of FORS: it is often problematic to combine FORS imaging observations with those from other optical or near-IR filters when doing SED fitting and there are also issues with the flux calibration of the spectra. Kaufer (DOO/LPO) wonders why there is no report describing this problem since there is a group at ESO that works on similar high-level issues with the instrument pipelines.

Dr. Kenworthy (NL) suggests to run a Twitter account "Ask ESO" for a year where people can ask questions about the instruments and pipelines. Romaniello (BOD) answers that running a Twitter account takes away resources from other projects, but if this Committee believes that is the best way to communicate the information, then ESO will look into doing it. He points out that usd-help@eso.org is an easy way to communicate problems to ESO. ESO staff can also go to the member countries and have direct contact with the users if desired. Ballester (SCS) points out past data reduction workshops where users presented their problems and suggested improvements – this could be considered again for the future, but with 16 instruments in operations it is not trivial – we are open to suggestions. **Prof. Ziegler (AT)** remembers a request for such instrument-related workshop including data reduction.

Kaufer (DOO/LPO) states that the interface between instrument developers and the observatory operations is critical and he explains that the expectation is that the pipeline is ready when the instrument goes online since this is part of the agreement for which consortia get compensated with GTO time. This is one area for which there are clear contracts. Scientific products should be delivered from the day 1 of the operations, or in principle penalties could be applied. However, we also need to recognize that scientific data are needed to finalize the science pipeline. **Dr. Delorme (FR)** states that instrument scientists using IDL can provide science-ready results within weeks or months. The team coding the pipeline in C with ESO has not reached this level in more than a year. ESO should put first the science quality reduction and then the format. He also highlights that SPHERE data center is open to everybody. Kaufer (DOO/LPO) points out that this path would lead to ESO having to do a lot of extra work, emphasizing that pipelines for 16 different instruments is possible only if they are written in the same language. We are building instruments and pipelines for the community and the GTO allocation is how we pay for it. Castro (SCS) states that sometimes the consortia underestimate the efforts they need to develop the pipeline. The consortia should hire a proper software engineer to write the pipeline. **Dr. Delorme (FR)** answers that long delays are caused by the interface between a computer specialist who writes the ESO-compliant pipeline and an instrument specialist who writes the science pipeline. **Prof. Puzia (CL)** suggests to offer the working pipeline to the community and let the user decide if they want a downloadable product from ESO or from the consortia. Romaniello (BOD) states that an alternate approach is not to include the pipeline among the instrument deliverables, but just the data products. This approach was taken up for example for VISTA, and, under the right circumstances, can be successful. However, the SPHERE consortium signed a different contract, and the delivered pipeline was not up to the agreed standard of quality. **Dr. Delorme (FR)** suggests instead to release the consortium pipeline that uses IDL hacks that fix the problems in the ESO pipeline.

13. OLD RECOMMENDATIONS

UC39.R.01: to continue providing video tutorials and cookbooks for all pipelines explaining the essential steps in the reductions so that beginners can easily accomplish the basic data reduction of any ESO instrument.

The approach to the documentation of the data processing tools is two-tiered: we aim to provide detailed step-by-step reduction tutorials for all instruments, and reference manuals that are meant to serve as a reference to look up detailed technical information. At the time of the last UC meeting, we had released data reduction tutorials for FORS-MOS, SINFONI, UVES, FLAMES-UVES, VIMOS-IFU, KMOS, MUSE, and X-Shooter. All of them are based on Reflex and demo data to follow the tutorials are provided.

Our substantial efforts to further develop these tutorials go into two directions. First, we are working on expanding the number of instruments covered. Since the last UC meeting, three new tutorials were released, namely FORS imaging, FORS spectropolarimetry, and VIMOS-MOS. We expect to release the following new tutorials by the end of the year: HAWK-I, VIMOS imaging, and several for the different modes of SPHERE.

Secondly, we are working on improving the quality of the tutorials and expanding their scope beyond the basic data reduction. Since the last UC meeting, we have released substantial updates for the KMOS, MUSE and X-Shooter tutorials. We are currently working on expanding the scope of the KMOS tutorial. It will include a thorough investigation of prescriptions on background subtraction, including treatment of telluric absorptions,

which will be in part re-usable for other instruments (e.g. X-Shooter). We expect to release this expanded KMOS tutorial by the end of the year.

We have experimented with producing a video tutorial for the KMOS Reflex workflow and found that producing videos with a quality that can be released would require significant resources. At this stage, we have, therefore, concentrated our efforts to improving the existing paper tutorials.

UC39.R.02: to keep manuals for all the instruments/pipelines and for the different modes of operations up-to-date and as complete as possible especially at times approaching proposal submission deadlines.

With the exception of SINFONI (instrument changes after January intervention informed via supplementary notes on the instrument webpage), all user manuals are up-to-date and available on the instrument webpages for the current Call for Proposals for P98 with deadline March 31st.

All the pipeline manuals are up-to-date for the supported modes of operations. The KMOS pipeline manual is currently being updated with the latest changes in the pipeline. All the latest pipeline manuals will be available in April for the next public release.

UC39.R.03: to provide detailed descriptions of the most relevant algorithms used in the pipelines and indicating that further information can be requested via the Helpdesk system.

Processing algorithms are in general described in quite some details in the user manuals, which serve as reference documents for the corresponding data processing pipelines. Exposing relevant ones in the tutorials (see UC39.R.01) is evaluated on a case-by-case basis. The goal is to strike the appropriate balance between completeness and ease of use by only providing the information that is most relevant for the majority of science users.

UC39.R.04: to focus on making all user services available on Mac OS.

Development of new applications includes support for Linux and Mac OS platforms, and generally we strive for platform independence by preferring Web over desktop development like for the new web-based phase 1 proposal system or the phase 2 observation preparation that will replace P2PP. Since last year, Mac OS packages are distributed for all data reduction pipelines, and currently, all VLT data flow Desktop applications (P2PP, Unified GuideCamTool, REFLEX, SADT) are known to work on Mac OS, with the exception of a few legacy Tcl/Tk based observation preparation tools (FIMS, VMMPS and FPOSS).

UC39.R.05: that the Moon requirement specifications are consistent between the different tools used for proposal and observation preparation (ETC, Phase-1, and P2PP).

The current Phase 1 system is effectively frozen to avoid any further delays in developing the new system. A possible modification how the moon requirements are handled in Phase 1 vs Phase 2 (P2PP) need careful evaluation. For proposal preparation it could be rather cumbersome to require input of coordinates, moon distance and FLI for each target. Yet to allow more freedom for observations and enable short-term scheduling at the telescope, FLI and moon distance are specified for individual targets (OBs). The ETCs might be able to adapt to that, but it requires a very robust sky model. This can be considered within the new Phase 1 system and Phase 2 tools evolution.

UC39.R.06: that the following aspects concerning the Phase-1 are considered:

- **allow for upload of figures larger than 1 MB and in format other than pdf only, including .jpg and .png formats**
- **allow for an automatic notification of proposal submission for every co-I on a proposal**
- **allow for separating multiple observations by any amount of time, e.g. for HARPS, the time-critical macro does not allow to specify time intervals shorter than 3 nights**
- **allow for the re-submission of proposals until the deadline**

All these problems are addressed in the new Phase 1 system requirements. The current system is practically frozen and only very small modifications (mostly mission critical issues) can be fixed at this stage.

UC39.R.07: that the following aspects of visitor mode observations are considered:

- **inform the astronomers that sandwiches can be requested when working on a night shift at the residencia**
- **offer the possibility to meet an ESO astronomer in Santiago prior to observations at La Silla**

Information about the availability of sandwiches has been included in the introduction information for Visiting Astronomers.

The possibility to meet an ESO astronomer in Santiago prior to observations at La Silla is not offered on a systematic level, given the limited resources available for La Silla astronomer support. However, if in individual cases the Visiting Astronomer and the Instrument Scientist of a La Silla instrument agree on a meeting in Vitacura before the run, this is certainly possible and can be supported. It is also being studied whether this can be offered more structurally as off-site support in the framework of a more general operations hub in Vitacura.

UC39.R.08: to look into ways of increasing flexibility in La Silla observing runs to decrease amount of time spent not observing (e.g. private transportation).

We are currently testing a 5-day transportation scheme, which could be released at the end of April, after a 3-month trial. However, adding weekend shuttles would increase cost considerably, so this is not foreseen at the moment.

UC39.R.09: to set up the Time Allocating WG as soon as possible, define the terms of reference and select members that also include UC representatives.

The Time Allocation Working Group (TAWG) was set up in September 2015. The composition is as follows:

Neill Reid (HST – Associate Director for Science)
Rachel Mason (Gemini – Associate Astronomer)
Martin Kessler (ESA – Science Operations – Head)
Stefan Jansen (Paul Scherrer Institute – User Office – Head)
Antonio Chrysostomou (SKA – Scientific Operations Planning – Head)
Nando Patat (ESO – Observing Programmes Office – Head)
Almudena Alonso Herrero (IFCA – STC representative)
Damien Ségransan (Université de Genève – UC Representative)

The UC representative was nominated by the UC on September 26, 2015. The terms of reference were prepared and distributed on July 29, 2015. They were made available to the UC via its representative. F. Patat will report on the TAWG activities during the upcoming UC Meeting.

UC39.R.10: to continue involving the UC in the future work concerning ESO2020 and the anticipated bi-annual revision of the ESO scientific prioritisation report on the matters that directly affect the users (e.g. operations, archive services, and data products delivery) by inviting UC members to the respective working groups/scientific prioritisation panel.

Preparation for the next revision of the scientific prioritisation report is getting underway. The panel will include a member of the UC, as did the previous panel and three of its four working groups. Kirsten Kraiberg Knudsen was part of the Large Submillimetre Dish Working Group. On the Science Management Working Group, the UC is represented by Maria-Rosa Cioni, UC vice-chair. Damien Ségransan is part of the Time Allocation Working Group.

UC39.R.11: to pay more attention to European ALMA outreach to assure that the role of ESO is widely recognised.

ePOD has been made aware of the need to improve the quantity and quality of ALMA-related outreach. Leonardo Testi, ALMA Programme Scientist, and Paola Andreani, ARC Manager, have been active in this regard.

In addition, ALMA-related outreach has been introduced as a standing agenda topic of the bi-weekly EASC management meetings which are also attended by the ePOD outreach officer for ALMA. All relevant outreach opportunities are communicated and discussed between EASC and ePOD.

UC39.R.12: to ensure that the UC meetings reflect the broad range of ESO facilities and user community (e.g. ALMA).

The UC meeting agenda and the special topic is set in agreement with the UC chair. The special topic in particular offers opportunities to get a detailed overview of some particular area and ESO invites the UC to suggest the topics of wide interest. Diverse scientific interests and experience with the range of ESO facilities, including ALMA, is explicitly requested when soliciting new UC representatives from the ESO member states and Chile.

UC39.R.13: to encourage ESO to further investigate how remote observing may impact and benefit users in the future, e.g. for observations at La Silla.

On Paranal side, we are currently defining the requirements for an eavesdropping mode that is foreseen to benefit mostly designated Visitor Mode and ToO observations. Extending/testing this mode in La Silla is an option we are considering. First steps towards aligning the La Silla data flow infrastructure with the VLT infrastructure to allow this have been taken.

UC39.R.14: to continue and strengthen the effort on the science archive facilities (SAF), as archival research is becoming an increasingly important mode of astronomical research. Specifically UC recommends to focus on the following items:

- **the documentation on processing steps and information on data that are excluded from processing,**
- **the implementation of a visualization tool to allow users to check the availability of data and permit them to decide if and what to download for further analysis**
- **the content validation, e.g. appropriate calibrations even if they go beyond the calibration plan should be applied**
- **the simplification of the querying interface allowing for different levels of querying and more flexibility**
- **the post processing and the production of added value data products, e.g. stacking and catalogues. ESO may offer support to users who would work with archival data. In particular, recognising useful data and in evaluating the priority projects that would have a large scientific impact.**

In 2015/2016 the continuing effort of strengthening the ESO Science Archive Facility resulted in 15 new data releases from Public Surveys, 3 from Large Programmes, including the final dataset from the ATLASGAL at APEX that provides a view of unprecedented quality and extent of the distribution of the cold dense gas along the plane of the Milky Way galaxy, and the release of the complete reprocessing of the whole FLAMES-GIRAFFE archive (~1.5 million spectra).

All of the data releases are accompanied by thorough user documentation on the processing steps involved, the known limitation of the data and the criteria by which data were selected for processing. The release descriptions are available at http://www.eso.org/sci/observing/phase3/data_releases.html.

Selected upcoming releases of products generated in-house will include added value data products, such as single-band source lists for HAWK-I and VIMOS and OB-level mosaics/stacks for MUSE.

Support to archive users is available through the customary channel of usd-help@eso.org.

The web interfaces to query processed data were redesigned and simplified to provide easier access to the data itself. More advanced archive user features, such as previews or visualization capabilities, are being defined, with the goal of starting implementation in the second half of 2016. The available development resources in the past year were concentrated on a complete re-haul of the Phase 3 Infrastructure, i.e., the set of tools and processes to handle the inflow, verification, quality assurance and publication of contributed science processed data. The re-haul addresses the lessons learnt and user feedback from operating the current system during the previous five years in order to provide streamlined, swifter publication of high-quality processed data, and better support to the legacy value of the archive services.

UC39.R.15: to support student's engagement with ESO, both by promoting/organizing archival workshops, and also allowing students as well as researchers with a limited observing experience to observe on ESO facilities especially in cases where they, financially supported by their host institutes, are associated to projects that originate from large and survey programs executed in service mode.

ESO is organizing in May 2016 a NEON Data Reduction workshop for KMOS and X-SHOOTER that is aimed for students and young postdocs. This workshop will include training on the preparation of observations as well as science archive resources. Furthermore, in February 2016, a very well attended NEON observing school was held at La Silla and ESO Chile premises, providing training and hands-on experience with both observations and data reduction to students.
Approval for second observer, financed by their host institute, is regularly granted for visitor mode runs in the La Silla Paranal Observatory. La Silla is run exclusively in visitor mode, while on Paranal ~40% of the time is allocated in Visitor Mode on the VLT/VLTI, and public spectroscopic surveys are carried out exclusively in visitor mode. Students/second observer is not required to be associated with the proposal and therefore can join a scheduled visitor mode run if agreed with the PI of the programme. ESO does not have additional resources needed for supervision/training of young observers while operating in service mode.

14. CLOSED SESSION

No meeting minutes are taken for the closed session.

15. GENERAL DISCUSSION

This part is grouped according to broad themes that were discussed during this session.

GTO

Dr. Covino (IT) reports about several user complaints about too high fraction of GTO time. Ivison (DSC) points out new policies for GTO for the E-ELT and VLT. There is enormous pressure to increase the level of GTO time from consortia and ESO needs to manage that –members of the community should give a clear signal, but part of the community, who are members of consortia may push ESO in a different direction. The partnership between ESO and the instrument building institutes made ESO successful. VLT started with a limit of 10% for GTO, and reached now 20%. This should not be exceeded, and the new policy is to ensure that this fraction goes down. The challenge is to reach a good balance, while taking into account the need for compensation to consortia. **Prof. Cioni (DE)** remarks that the problem is the combination of GTO, Large programs and DDT which may block new instruments that are highly oversubscribed. **Prof. Ziegler (AT)** understands the need for payback to big instrument teams. However, he questions if it should be allowed that GTO teams block targets or entire fields, sometimes up to five years, and whether ESO checks if and how often these targets are observed. Ivison (DSC) answers that ESO is aware of these issues. Based on recent checks he confirms that GTO teams are very honest and careful about reserving targets and subsequently observing them to the extent this is possible. In the future cases, such as that of KMOS, where entire field was blocked, should be avoided. Patat (OPO) adds that according to ESO GTO rules targets can only be protected for six months, and OPC approved Large Programmes can block targets for up to two semesters. The GTO is scheduled in Visitor Mode and the number of nights is determined by their contract. In that sense there is no competition with Service Mode. He also points out that DDT allocations take only 1.5% of total time.

Pipelines and penalty for non-compliancy of deliverables

Dr. Covino (IT) enquires if it was ever discussed to penalize consortia that do not deliver pipelines on time. Ivison (DSC) declares that this was thought about. Kaufer (DOO/LPO) emphasizes that the problem is not only with the pipeline but there might also be modes or other parts of the package. ESO tries to have clear contracts. Often GTO is the main reason for consortia to build and deliver, and taking away GTO nights might lead to the collapse of the project. Ballester (SCS) comments that the GTO time is set very early on in the project and is fixed.

Dr. Covino (IT) clarifies that nobody is pushing for very strict rules, but there is a feeling in the community that pipelines are a secondary delivery. If a mirror is late, this is dangerous, but if a pipeline is late that is not so bad. **Prof. Cioni (DE)** asks if the VST GTO was redistributed because of the late delivery. Kaufer (DOO/LPO) states that VST was a gift and it has its own rules. There are different classes of instruments: those where without the pipeline one cannot commission the instrument (MUSE). Instead for SPHERE it is possible to have a work-around with scripts, but it is a completely new dimension to see a planet on a screen. Contracts were signed 10 years ago, and it is difficult to set upfront the value of the pipeline with respect to other deliveries.

Romaniello (BOD) wonders if all instruments need the same level of support. The paradigm is that any instrument should come with a pipeline for the general community. However, this might depend on the instrument, its science case, and the size of the community it serves. Also, there is a tacit assumption that data reduction software can be written by any astronomer, or a student who can put together bunch of scripts. This is not the case for code that needs to be maintained for an extended period of time and work as expected under many different circumstances without constant supervision. The focus should remain on data and extracting science from it, not on the pipeline per se, so that other solutions, like, e.g. the provision of processed data can be envisioned, where appropriate. **Dr. Sobral (PT)** suggests that ESO can reward teams that deliver on time and provide a good service to the community. He states that there should never be a monopoly in terms of science from a specific team because it is good to have some healthy competition.

Visitor Mode

Dr. Covino (IT) reports on results of the UC poll about possible compensation for time lost in Visitor Mode (VM) due to technical failures. Could there be some mechanism to compensate unlucky visitors? Mieske (PSO) explains that this is already done to some extent. If there is a major instrument failure before the visitor travels, the run is rescheduled. When the visitor is already on the mountain, this is usually not done. ESO could look into the occurrence of major cases where most of the allocation was lost for technical reasons. However, compensating all kinds of technical downtime would represent a major administrative effort, with unclear benefit – time would need to come from Service Mode allocations. Kaufer (DOO/LPO) confirms that ESO can look into this for major losses, but the number of such cases is probably small. Patat (OPO) adds that most of the VM is in La Silla where compensation is more difficult. Most of the VM at the VLT is either allocated to Public Surveys or the GTO that are compensated unless it is the instrument that fails. The percentage of "normal" users that are affected by technical problems is expected to be very small. **Dr. Covino (IT)** agrees that the reports are likely biased and Kaufer (DOO/LPO) points out that the community is split about this question.

Prof. Cioni (DE) remarks that some users do not ask for VM because they do not think that their programme is sufficiently difficult to justify VM. Patat (OPO) explains that the specific justification for VM in proposals has been removed several semesters ago by Ivison (DSC), and replaced by Observing Mode (visitor or service) Justification. He states that majority of the VLT programmes request less than 1.5 nights and most people are not willing to spend a whole week traveling for 1.5 nights observing. Sterzik (DMO) adds that the VM is the scientifically most productive, possibly because the week of traveling leaves an emotional connection to data. Maybe ESO should consider asking for a justification for Service Mode. **Dr. Delorme (FR)** enquires if ESO encourages VM even for moderate size programmes. Patat (OPO) answers that there is nothing in the selection process that distinguishes between Visitor and Service Mode. The VM is more difficult to schedule and only gets scheduled if the proposal is well-ranked. He clarifies that all VM runs below one night are considered for the designated Visitor Mode channel. The **Director General** suggests to provide a paragraph about ESO's viewpoint on this. **Prof. Smartt (UK)** asks if GTO teams can use the designated Visitor Mode. Patat (OPO) explains that the GTO is treated differently – those teams have real VM, but to minimize cost and travel, their nights are scheduled in blocks, grouping several GTO programmes together, as much as possible.

Service Mode

Prof. Cioni (DE) asks if the ranking of the runs in Service Mode (SM) is done according to the OPC criteria and how this is taken into account during execution. Patat (OPO) affirms this and explains how the schedule is built. For each telescope there is a ranked list of proposals that are scheduled following the OPC order until conditions are exhausted. After reaching the total exhaustion time (time left after the technical slots, the weather downtime, provision for the ongoing Large Programmes, etc.), the scheduled time is divided into two: the top 50% is the A and the bottom 50% is the B rank class. The C-rank (fillers) comes on top. Rejkuba (USD) explains that the Observing Tool, used to rank the SM observations in real time, takes into account the OPC rank classes as well as the scheduling order of the proposals within each rank class. **Prof. Cioni (DE)** says that there should be a transparent way of seeing how ESO follows the ranking for the execution scheduling. Mieske (PSO) suggests to add a paragraph detailing the scheduling in the Call for Proposals, while **Dr. Delorme (FR)** suggests it could be explained in the Phase 2 email. Rejkuba (USD) states that the observations execution scheduling is described in a SPIE paper by Bierwirth et al., as well as in the P2PP3 manual. The latter will be updated to reflect the current ranking algorithm used at the telescope.

Proposals: abstracts, targets, proposal length

Dr. Covino (IT) inquires if abstracts of approved proposals can be made available to the community. Patat (OPO) answers that abstracts become public at the same time as data (i.e. after one year). There are strong objections to make the whole proposal available, and some objections to make the abstracts public immediately as the proposals are scheduled.

Dr. Covino (IT) inquires about the procedure to hide the target lists – is there a procedure or just exceptional cases? The **Director General** points out that on one hand some members of the community want all the abstracts and even the proposals public before the data is taken while others want nothing public and even want to hide their data in the archive due to the competition. Patat (OPO) remarks that typically there is no way to hide targets. The official channel is to write a letter to the **Director General**, who clarifies that this is only approved for very exceptional and specific cases.

Prof. Ziegler (AT) asks if the OPC could decide while evaluating the proposal that a specific target list could be published right away during the ongoing semester while other targets should not be published. Patat (OPO) declares that this is a cumbersome decision. As soon as a target is observed, its coordinates are in the archive. **Prof. Cioni (DE)** states that ESO should have a way to allow users to check for target duplications with approved (ongoing) programmes. Patat (OPO) answers that in the new Phase 1 system it is foreseen to get information if the target for that instrument has already been approved. This information will be made available to the OPC. Right now, a list of potential conflicts with already approved proposals is produced systematically and given to the OPC.

Dr. Kraus (CZ) asks if ESO is planning to limit short programs given the statements in favour of larger programmes with big teams. Patat (OPO) clarifies that there is no plan for this but it is one possibility to decrease the number of submitted proposals. **Dr. Kraus (CZ)** declares that at least in the Czech community short proposals are preferred. Patat (OPO) answers that there is no limitation to ask for very short observing proposals.

Prof. Ziegler (AT) asks if there is a statistic on the rank distribution depending on the length of the proposal. Patat (OPO) answers that the distribution of scheduled time is identical to the demand; it has the same shape. Shorter proposals (1-10 nights) tend to get higher grades but the difference is very small.

UT4 schedule

Prof. Cioni (DE) asks if it was announced that there will be work on MUSE in the months October-December since the call for proposals only mentioned second half of Period 98, and if not this should be announced in the Science Newsletter. Mieske (PSO) specifies that work will be done on UT4, not only MUSE. The first slot of three months is the installation of the deformable secondary mirror and then installation of MUSE/GALACSI starts in January-March. Kaufer (DOO/LPO) explains that the exact schedule is still under discussion, but once it is fixed, he agrees that it should be published in the Science Newsletter.

OPC nominations

Dr. Absil (BE) inquires when people could be nominated for the OPC; there are already several candidates. Patat (OPO) clarifies that the nomination portal is closed and will be reopened between June and September for the next Period to avoid confusion. At the moment nominations should be sent directly to OPO by e-mail.
Prof. Smartt (UK) asks if the names that were sent last time are still on the list of possible nominations. Patat (OPO) confirms that they stay in the system and the number of candidates is more than fine for the UK.

Publications statistics

Dr. Covino (IT) asks if the number of citations for the publications has been investigated and how Large Programmes fare with respect to shorter ones when normalized by time request. Sterzik (DMO) explains that the impact of the LPs (normalized by their time request) is still larger than the impact of the small programs. This includes also self-citations.

16. CLOSED SESSION

No meeting minutes are taken for the closed session.

17. SPECIAL TOPIC: "Apex Operations"

17.1. ESO Introduction

Carlos De Breuck (APEX) introduces the Special Topic with a presentation on the current status and future plans for APEX (attachment 9).

Discussion:

Prof. Ziegler (AT) asks about the pressure factor and the oversubscription of APEX, types of proposals that are submitted, and if there is a special panel for APEX proposals at the OPC. De Breuck (APEX) answers that APEX uses the same proposal forms as VLT and the same A, B, C, D panels. There are a small number of combined APEX+VLT proposals. Most proposals are in class C (at least 50%). The pressure factor varies a lot on the instrument and the LST range: for a source around RA=18h it is ~3-4 for certain instruments, globally it is ~2.5. For bad weather conditions and certain LST ranges, it is ~1 or almost undersubscribed. Patat (OPO) comments that ESO tries to recruit APEX or submillimeter experts for the OPC to have at least one per panel, especially for the C panel and to put all APEX proposals in the subpanel with the expert(s). From the statistics, it seems that the panels are slightly disfavoring (order of 5%) the APEX proposals which might be because they do not fully understand them. **Prof. Ziegler (AT)** would like to know if only the full program of a combined proposal of APEX+VLT is approved or if also just one, either the APEX or the VLT, part can be approved. Patat (OPO) answers that this depends on the OPC and De Breuck (APEX) emphasizes that this can happen both ways.

Prof. Puzia (CL) inquires about the problem with the data transfer bandwidth: would it be possible to use ALMA bandwidth? Kaufer (DOO/LPO) explains that there has not been a clear indication so far that this is a real problem. ALMA has very complicated interfaces and it is not defined yet how to access their infrastructure. Collaboration agreement would need to be made first. Once the bandwidth pressure gets higher, this can be considered. **Prof. Ziegler (AT)** suggests that it might be faster to send USB disks to San Pedro or Santiago, rather than to Europe. Kaufer (DOO/LPO) states that ESO is still sending disks from other telescopes if needed. It only takes few days from the observatory to ESO/Garching. Sending disks to Santiago does not help, due to limited bandwidth between Santiago and Europe.

Prof. Puzia (CL) would like to know about the policies regarding PI instruments access to Chilean community. De Breuck (APEX) comments that the Chilean time allocation is separate from ESO since they have their own time allocation committee and clarifies that the ESO PI instruments (SEPIA, Artemis) are offered to the Chilean community. There is no restriction for the SEPIA instrument, only the condition that the users have to follow the ESO proprietary rules. For the MPI instruments, this is between Chile and MPIfR. Normally, this should be possible in collaboration with the PI teams – this is the same situation for both ESO and OSO.

Prof. Puzia (CL) states that a lot of people prefer reduced continuum bolometer images over spectra or cubes as reduced data products. De Breuck (APEX) explains that the continuum bolometer images are produced by the observers at the telescope to check the data quality while the final reduction requires a lot of computing power which is not feasible at the site. The software is available and maybe more support for its use could be considered. There will be support for Phase 3 ingestion.

17.2. Feedback from Expert Users

Dr. Cicone reports about the ALLSMOG survey and her experience with APEX (attachment 10).

Discussion:

Patat (OPO) comments that having a separate proposal form only for APEX is not feasible now. The new Phase 1 system will be self-configuring on the fly, thus when APEX is selected only the relevant parameters will be displayed. The OPC is strongly instructed not to judge the proposals based on technical aspects. If there are technical issues it is the ultimate responsibility of the observatory (i.e. the project scientist Carlos de Breuck) to decide if the program is feasible. **Dr. Cicone** inquires if it would be feasible to give instructions on APEX: for example if there is a strong need for bad weather projects. Patat (OPO) states that once De Breuck (APEX) signals that there is a need for bad weather proposals, the submission of these projects is proactively encouraged. However, it may be difficult to cover all the parameter space.

Prof. Cioni (DE) remarks that users do not know enough about APEX to submit proposals and that they are not aware that there is APEX data in the archive. De Breuck (APEX) explains that there are dedicated APEX science workshops organized between all the partners which brings together the whole APEX community. Admittedly this may not be the best approach for new users. If there is an interest in the community, there could be a "How to get started with APEX" workshop, but this is more difficult to organize because it needs to attract sufficient number of attendees. He emphasizes that a lot of people are afraid of asking for a bit more time at APEX and thus ask for too good weather conditions – he emphasises that big projects are not a problem at APEX. He agrees that the overhead is too big to have a separate TAC. Patat (OPO) explains that there is a discussion to have one single TAC for joint proposals for VLT+ALMA that allocates time on both facilities (similar to what is done for XMM) to avoid cases where time is only awarded for one observatory due to different TACs. **Prof. Smartt (UK)** remarks that UK users would welcome to have a joint proposal process for ALMA+ESO facilities.

Dr. Dannerbauer reports about the LESS survey and his experience with APEX (attachment 11).

Discussion:
Dr. Hovatta (FIN) asks if external reviewers could be used in addition to the OPC since there are so few APEX proposals. The OPC would then read the comments from the expert reviewers which would help them to judge the proposals better. Patat (OPO) comments that APEX receives the smallest number of proposals at ESO, thus, organizing a specific channel for APEX is considered an overhead. Ivison (DSC) says that he is more concerned about how ALMA is handled both at ALMA and the OPC and states that it is very important to have people on the panels and in the OPC that understand the submillimeter world.

Prof. Ziegler (AT) inquires about who will be in charge of building the new bolometer camera and if there is expertise at ESO for it. De Breuck (APEX) explains that the AMKIDS camera is a long term investment from the Max-Planck side in collaboration with other external institutes and states that, while APEX has space problem to install new instruments, there is the opportunity to bring visitor instruments to APEX. Any instrument building group within the ESO community can use this opportunity, but there is no budget at ESO to support this (except for support in observing time). For example, Artemis will be installed and offered within the next months. For AMKIDS there are still some sensitivity issues. It is the top-priority of the MPIfR to get this camera working.

17.3. General Discussion on Special Topic

Prof. Smartt (UK) remarks that the APEX data access seems to be quick and reliable but that there is a significant delay in getting ALMA data: about 6 months from observations to user receiving data. Testi (DSC) explains that ALMA delivers the fully reduced data and thus time is needed for data quality assessment, data reduction and data delivery. The time delay has been brought down significantly over the last year and it is also a function of the ALMA modes since some are easier to calibrate than others. Andreani (ARC) points out that all the statistics and histograms are in the talk by F. Stoehr (ARC).

Dr. Cicone remarks that APEX works very well and it should be taken as a model for other facilities. APEX should be advertised to the community and she suggests to have preferred access to ALMA data once one has an APEX source to follow-up as a way of advertising. Kaufer (DOO/LPO) notes that people who used APEX are already more successful in getting ALMA proposals approved and vice versa. It will be difficult in the ALMA partnership to force any special deals because of the other two partners. Testi (DSC) confirms that there is interest in all communities to do joint projects for ALMA+other facilities (e.g. JWST) but that there are difficulties in bringing together three different communities (Europe, North America, East Asia) + Chile. De Breuck (APEX) remarks that about 25% of the ALMA European proposals in the first four cycles mention APEX, one of the APEX instruments, or one of its big surveys. A lot of the references are based on the two biggest APEX surveys that were done with LABOCA (LESS, ATLASGAL). He adds that APEX is also used for follow-up of ALMA observations.

Prof. Ziegler (AT) asks what ESO would require from the community to support extending APEX in the future (more users, more proposals?), and who is deciding this. Kaufer (DOO/LPO) explains that this is a decision process with the partners aiming to understand the scientific priorities: What does the community want to do? Where is the potential? What are the ALMA-APEX synergies? What is the APEX role in the bigger context? What is available elsewhere and what is happening around? ESO is past the step to demonstrate that APEX is needed by the community. Predictions for further extensions after 2022 are very hard to make since ESO will have to review where it will focus its efforts (top priorities: ALMA, VLT, E-ELT) and if there is room for smaller projects. **Prof.**

Ziegler (AT) would like to know if the report from the external review of APEX is available to committee members or to the community in general. Kaufer (DOO/LPO) states that the APEX board has agreed to make this document available to the review committees of the different partners (STC for ESO). He doubts that there is a plan to make the document available later but he points out that there is a nice white paper on the science available. Testi (DSC) remarks that the long term future of single dish telescopes was/is discussed in the ESO2020 process and also in a follow-up working group. Ivison (DSC) confirms that it is his intention to release all the documents from those working groups publicly after they have been looked at by STC.

De Breuck (APEX) and Testi (DSC) suggest to have a workshop for both the ALMA and APEX users (January or February 2017). The Band 5 + 9 receiver is now installed, and APEX users that have used this instrument will be able to provide feedback to the ALMA users. It would also be a good opportunity to bring together the APEX community to train them and explain how to use APEX more efficiently. **Prof. Cioni (DE)** supports this and suggests to add a half-day for new users of APEX or ALMA to learn how to use these facilities. De Breuck (APEX) emphasizes that ESO wants to make it as easy as possible to apply for APEX time.

18. CLOSED SESSION

No meeting minutes are taken for the closed session.

19. RECOMMENDATIONS

At the beginning of this session Covino informs ESO that the new UC Chair is **Prof. Cioni (DE)** and **Dr. Absil (BE)** is the Vice-Chair. **Prof. Cioni** (DE, new elected Chair) takes over and presents the UC40 recommendations. (The final set of recommendations was presented by **Dr. Covino (I)** as **Prof. Cioni (DE)** had to leave the meeting shortly before it was concluded.)

These recommendations are based on the poll that the UC runs every year. The goal of the poll is to collect users' opinions about several specific topics and in general about their experience interacting with ESO. The UC is glad to confirm that also for this year the level of satisfaction of our community is very high, reflecting a general high consensus that ESO is, and has to be for the future, a cornerstone facility for astronomy in Europe.

The UC recommends to ESO:

UC40.R.01: to extend APEX operations in view of the successful results and efficient organization.

UC40.R.02: to make the abstracts of accepted proposal publicly available after the proposals are accepted (only 25% of the users replying to the UC poll were against it); this procedure is already in place for ALMA.

UC40.R.03: to schedule GTO & LP times flexibly to avoid blocking right ascension ranges and targets for contiguous periods of time.

UC40.R.04: to consider penalizing teams with large allocations of time (LP, GTO) that do not deliver on the contract/ agreed terms.

UC40.R.05: to explore the statistics of how often a significant fraction of time is lost in visitor mode due to technical issues and if possible to compensate for it.

UC40.R.06: to maintain up-to-date documentation about observing priorities used for service mode observations executions at Paranal.

UC40.R.07: to encourage observations in visitor mode, that are not limited to technically challenging programs, or to increase use of Designated Visitor mode.

UC40.R.08: to check for and/ or enable users to find possible conflicts of targets between approved and/ or carried-over programs and newly proposed programs.

UC40.R.09: to explore the possibility of increasing the number of participants or occasions for workshops/schools that are highly successful and oversubscribed.

UC40.R.10: to improve transparency of the OPC selection process (sometimes grades do not correspond to comments) by feeding back to the users the individual comments of panel members, together with the consensus comment from the panel.

UC40.R.11: to allow the identification of moving targets (solar system) in the archive by taking into account their ephemerides.

UC40.R.12: to advise the users via the Call for Proposals to provide, in case of resubmissions, sufficient clarity to the comments received on previous evaluation(s).

UC40.R.13: to add to the Call for Proposals the statistics of the over/ under subscribed right ascension range(s) for all the instruments including APEX.

The UC recognizes the effort made by ESO on the following aspects and would like to recommend their continuation:

UC40.R.14:

- To provide cookbooks and/ or video tutorials for data reduction for all instruments;
- To reach the community % of females in ESO advisory bodies (where ESO has control over selection);
- To guarantee a quick reply to DDT proposals;
- To support all critical software (data pipelines, Phase 2 preparation software) on both Linux and MacOS, and to provide detailed installation guidelines for both;
- To engage the UC in the development and testing of the new Phase 1, and Phase 2 tools.

The UC has also identified the following minor issues:

UC40.R.15:

- The computers in the Paranal visiting astronomer rooms run under "old" versions of the operating systems;
- The choice of afternoon breakfast for night workers is limited;
- The bed sheets in La Silla are not changed weekly;
- There are no postcards of the observatory;
- It is difficult to find the transfer bus at the Antofagasta airport;
- The Skype video call from the guest house is slow;
- Some telephones in the La Silla dormitories do not work.

20. ANY OTHER BUSINESS

No items were raised.

21. CLOSING REMARKS

The **Director General** thanks everybody for their participation and discussions.

Dr. Covino (I) closes the meeting on behalf of **Prof. Cioni** (DE, new elected Chair) at 15:40h.