# ESO United Kingdom Factsheet 2016 based on UC Poll

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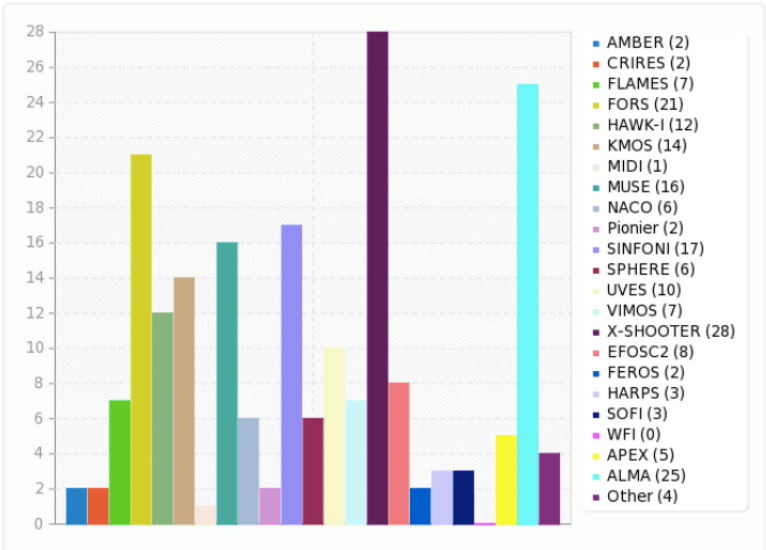
If I had to pick up on one single thing that was articulated by UK users, and the one major area that ESO should invest time and resources in to improve science productivity and user experience - it would be data products and data reduction pipelines. This has been a topic of lengthy discussion at UC meetings, but it appears to be THE highest priority now to address. I highlight this below.

## Summary stats on responses

- The request for input from the UK was distributed to the 184 (205 in 2015) PIs of UK ESO/ALMA/APEX proposals during Periods 94-96 (93-95), as supplied by ESO to the UC.
- There were 60 (42 in 2015) responses: 56 users of La Silla Paranal, 5 of Apex, 25 of ALMA. Instrument break down illustrated below. Top 5 are XSHOOTER, ALMA, FORS, MUSE and NACO.




## Phase 1

- The majority of users happy with latex as a format *in principle*. But there are a few small changes that would make a very big impact, these are :
  - Inclusion of figures an ongoing problem – the MakePicture macro for figures and tables is not optimal. Inserts random vertical spaces, pushes text over page limit when it is not. Allow more flexible figure insertion e.g. graphics package. Also allow all of PDF, JPEG and PNG files to be used. And there should be a much larger limit on file size for the figures.
  - Having to copy and paste into new Period form is not optimal – should be a way to automatically turn a previous Period proposal into new one.
  - Often latex failures when one submits which are not flagged when compiling locally - difficult to work out why. A line number for the error should be given.
  - Should be able to resubmit a new version before the deadline – this would alleviate (but not solve) the problem above.
  - All the above should be taken into account for the new Phase I tool

- ETCs – should allow user spectrum to be uploaded
- Strong support for abstracts of accepted proposals being public at the beginning of the corresponding observing period (73%)
- The CfP should provide statistics on recent number of proposals, pressure on each telescope, success rates, RA range statistics. Something along the lines of what was provided until a few periods ago.
- Difficult to get time for both ALMA and VLT (or ALMA + APEX) – the usual two panel problem. But for some proposals it may make sense for them to be rated together.
- ALMA AOT raised a few complaints – not clear, crashes on submission, no bulk upload of coords for mosaic observations, overheads not clear. It also requires a very specific version of Java which was flagged as not very convenient.

**OPC and proposal feedback :**

- As usual there were many answers (46) and a diverse range of opinions. However it was noticeable that they were more positive in general than before. Roughly 60-70% found OPC/Panel feedback useful, and the rest were split with neutral (or sometimes useful) and very negative (about 15-20% in each). This compares with last UK Poll result of about 50% finding the feedback valuable. The continuing issue with negative feelings are the same as last time : feedback is written before the outcome of time is known and is often too generic. Secondly, inconsistent feedback reports on the same resubmitted proposal, or lack of understanding of the proposal. But overall the negative comments decreased, and a major change is the number of scientists who have now served on the OPC/Panels and note that they now see it from both sides, recognise the challenges and see there is a genuine effort to improve. The feedback issue will always be there, but it is my own interpretation of the Poll replies that it has got better (perhaps due to broader experience now of the ESO OPC/Panel process from UK scientists).
- ALMA specifics : very strong feelings that the feedback from the ALMA TAC for unsuccessful proposals was very poor. General feeling the feedback was too short, not informative, did not seem to address the real reasons for failure. These poll suggest the ALMA TAC feedback is significantly worse than ESO Panels, probably reflecting a younger process.
- While “positive” conflicts of interest are dealt with by ESO (e.g. avoiding possible favouritism), “negative” conflicts are harder to guard against e.g. when a competing team with a panel member can negatively grade a competing proposal. Panel members could make a declaration that they have no competing interests *in the current period (as obviously one can not make statements over long periods of time)* on the proposals they rank. Also, all proposals on the same object/topic should go to the same panel.

**ALMA Phase 2 and data products**

- 5 replies on Phase 2 – all fairly negative. I’m not sure if we interpret the others as having not used Phase 2 (i.e. not awarded time!) or no comments. Wide diversity in minor problems with Phase 2. Common themes are : ARC/Alma staff helpful, but timescales were compressed ; Phase 2 information required seems to be a lot, and it’s hard to work out (without help) what the important parameters to set. Phase 2 process and GUI are cumbersome and too many options. Staff are helpful but the contact process (through ticket process) is not time efficient.
- Only one face to face trip to a regional centre – positive feedback.

- Data products : common theme of long delay between observation and data delivery. 50% of users accepted the ALMA reduced data as acceptable, and the other 50% re-reduced it.

**ESO La Silla/Paranal/APEX observing, Phase 2 and data products**

- 90% satisfactory or better for SM Phase 2 (30% very satisfied)
- Overall, P2PP works and does the job, but a long list of minor complaints about its user interface and finding information. Common theme of labeling P2PP "clunky". Not easy to summarise them all minor issues succinctly. I will pass a list to ESO for consideration if they can they allocate resources to P2PP upgrades and enhancements.
- In small number of cases there is great unhappiness about the information loop between PI, USD and night support astronomer. I judge that these may be solved by Designated Visitor Mode at Paranal, and this is a good reason to advance this observing mode (although at present it is only for runs with <1N duration).
- Requirements of latest version of Java causes problems for some Mac platforms – machines older than 4 years can not install.
- Quite a few grumbles about the VIMOS mask making software – PILMOS and VMMPS
- APEX phase 2 is a bit difficult to use for non-expert users. Service mode is very popular. Small number of requests to keep Visitor mode
- **Outstanding issue:** still having to produce finder charts from a very restricted process. Cumbersome, but not a show stopper, for everyone. ESO should ensure there is an easy and uniform way to produce them from software that is maintained on latest Mac and linux OS.
- High level links to all the information required for instrumentation Phase I and II would be useful. Information is in many different places – so a landing page, for each instrument with links off it would be useful. Many dead links on the "ESO Science" pages.
- Quick look reductions for MUSE in particular would be very helpful to assess data quality quickly, as the data is complex. ESO should recognise that the standard KMOS telluric correction procedure is not optimal – specific standards must be observed in each IFU.
- Visitor mode (18 responses, 1 dissatisfied) : positive responses about Designated Visitor Mode. Logistics generally good, support generally good but in a few instances some staff now as engaged as others. Would be useful to feed this back to Paranal and try and keep a constant, high quality service. Upgrade the very poor computers in the visiting astronomer offices at Paranal. Visitor mode is popular, both for the PI and taking students, therefore give some thought to expansion and reduce constraints.
- TOO mode at La Silla (NTT) would be very useful.
- Should have some formal process for student observing or student visits for training and understanding ESO and data flow processes right from telescope to archive.

**Data archive, retrieval and data reduction**

- The archive is seen as extremely important. Obviously for data retrieval, but also for archival research. Having the correct calibration files available to do standard detrending (e.g. bias, dark, flat fielding) was seen as improvement, although still some glitches when critical calibrations not found.
- Should ALWAYS give detector detrended data – e.g. bias, dark, flat-fielded. Therefore will reduce steps.

- Experiences on data retrieval range from excellent to poor – mostly an issue of which interface to use and what instruments/programmes provide the Advanced Data Products. When users see the ADPs, they are impressed. But more clearly labeled search pages would be useful.
- Some specifics :
    - Impossible of difficult to search for moving objects – should have some effort dedicated to providing tools.
    - Need an efficient way to search archive for targets observed with MOS instruments
    - Allow archive searches on more information in FITS headers
    - More automated data products from more instruments (e.g. as for UVES, XSHOOTER)
- Data access for APEX is rated as very good – with little problems.
- Data reduction experience with the pipelines can be described as poor. Not surprisingly, REFLEX is not seen as user friendly – pipelines not easy to install (particularly on Mac OS), but this is ongoing problem in UC recommendations. Worrying number of complaints regarding getting science quality reduced data out of the pipelines. Documentation and installation is as much a problem as running the reduction pipelines.
- **Overall it's somewhat disappointing that we are still finding so many problems with installing, and running the pipelines. This is the one big area ESO could target for major investment for improvement – but it requires a close working process between interested scientist/user and the software developers.**

**ESO workshops**

- Desire to see focused instrumentation workshops -
    - IFU data reduction
    - VLTI (e.g. GRAVITY)
    - Future instrumentation – e.g. ESPRESSO
    - Data reduction/pipeline workshops
    - Python in astronomy

**General comments**

In general, very positive comments about ESO. A feeling that there is a lack of flexibility within ESO in terms of being open to new and competitive ideas (outside the "big" projects). There is a positive feeling about interaction with ESO, but perhaps that the organisation is somewhat opaque in decision making, particularly with new instrumentation decisions and choices of instruments at the VLT foci.