The 2007 Users Feedback Campaign

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In a service organisation like ESO, user feedback is a vital component of its success, but receiving feedback on a regular basis is a rather challenging task. This article focuses on the main findings of the Feedback Campaign launched in early 2007, which targeted all Principal Investigators of Service Mode programmes approved over the last five years. Feedback collected from visiting astronomers about operational issues is also presented.

Very robust and efficient data flow operations, on one side, and a high degree of satisfaction among users, on the other, constitute two of the main ingredients for the success of ESO facilities. There are two major ways in which ESO operates its telescopes: Service Mode and Visitor Mode. The underlying operational model is roughly the same, i.e. both modes rely on established operational procedures and policies, sharing the same tools. These rules and their implementation are under constant evaluation and scrutiny by ESO staff, with the aim of improving the quality of the services offered. Feedback from those who make direct use of the ESO facilities and services, the user community, remains a key ingredient in this optimisation process. This feedback is triggered via the Users Committee and via questionnaires that include different sets of questions, on different topics and phases of the operational cycle. Service Mode users are asked to fill out the Service Mode Questionnaire (always available on the ESO Web), and visiting astronomers are always reminded to fill out the End of Mission report at the end of their observing run. This article aims at presenting and discussing the feedback ESO receives from its users. The main outcome of the 2007 Feedback Campaign, as well as of the End of Mission reports, is that users of ESO facilities are largely satisfied with our services.

How to trigger and receive feedback

ESO operates and maintains observing facilities and instruments on behalf of and for its user community and is always keen to receive feedback. However, implementing a constant feedback flow is a very challenging task, especially in an era where everybody's life is full and busy, and we are all bombarded with User Feedback requests, both from professional and private service providers. Answering a User Survey is probably one of the most likely requests that a person is tempted and willing to drop in order to save time and accomplish other goals. However, for ESO, feedback is vital because one of the main reason for ESO's existence is to serve the astronomical community, and to serve it as well as possible.

For the users, there are different channels to provide feedback: i) the Users Committee, the members of which are selected by the ESO Director General based on recommendations received from the ESO Member States, meets with ESO representatives of various operational groups and departments once per year; ii) individual questionnaires that are available for both Visitor Mode (VM) and Service Mode (SM) users[1]; iii) interaction with ESO staff during programme preparation and execution, both in Service and Visitor Mode. The latter is a constant, unsolicited source of feedback, which can take place via direct (personal) interactions (e.g. during a VM run) or via established communication channels like the User Support helpdesk *usd-help@eso.org* and the observatory entry points (*paranal@eso.org* and *lasilla@eso.org*).

Feedback from observers in Visitor Mode should in principle be easier to receive since the observatory staff interacts personally with the visiting astronomers, reminding them about the importance to fill out the End of Mission (EoM) report, at the end of their observing run. The questions are formulated in order to evaluate the level of support received at the telescope, the availability of computer facilities and communication channels, the informative material necessary to prepare for the run and the trip to the site, but also probe the observer's satisfaction about logistics, like transportation to the telescope site, food and lodging.

Service Mode users, instead, are reminded to fill out the Service Mode Questionnaire when they receive their SM data package (unless a targeted feedback campaign is launched), and they are asked to provide feedback on a broader range of topics, from the submission of a Phase 1 proposal to the quality of the data. The longer the time since the submission of the Phase 1 proposal and the receipt of the Phase 2 package, the fuzzier are the memories about a given run with respect to these particular phases of the operational cycle.

The questionnaire asks for feedback on different areas related to SM observing, but with specific reference to a given observing run, i.e. it aims at collecting as many details as possible on the experience of any given PI with respect to a specific run. In order to facilitate this flow of information, questions are grouped under the following different areas:

a) a general section (at the very beginning and at the very end of the questionnaire), where the PIs first identify themselves, as well as the run(s) for which they are going to provide feedback and then assess the completion of the run and usefulness of the data set they have received with respect to the scientific goals of their proposal;
b) a section on Phase 1, including the Call for Proposals and its related supporting tools and documentation;
c) a section on Phase 2, probing all aspects related to the preparation and execution of SM observations, i.e. informative material, procedures and software tools available for the preparation and submission of the Phase 2 package, and its verification and acknowledgement, as well as follow-up support during the semester of observations;
d) a section on data quality, processing and delivery, which covers all operational aspects after an observation has been executed, i.e. the assessment of the data quality, its processing and final delivery to the PI.

[1] Feedback questionnaires for Visitor and Service Mode users are available respectively from *http://www.eso.org/paranal/sciops/EoM/* and *http://www.eso.org/org/dmd/usg/survey/sm_questionnaire.php*.

Both types of questionnaires (VM and SM) include questions with multi-choice answers and free-format text boxes where further comments may be provided.

The 2007 Service Mode Feedback Campaign

Following up an official request made by the Users Committee enquiring about user feedback, in early 2007 it was decided to revamp and launch a new Feedback Campaign. Considering the sporadic feedback we had received since the last such targeted action (Comerón et al. 2003), it was recognised that this campaign was indeed timely.

We decided to target all SM Principal Investigators of the last five years (only four years for PIs of Large Programmes, because, running over multiple semesters, they usually need more time to assess and evaluate the data quality), thus covering ESO observing semesters corresponding to Periods 69–77 (69–75 for Large Programmes). In total, 941 PIs were contacted and asked to fill out the SM questionnaire. One should note that the number of runs that we asked for feedback is much larger than this, as many PIs had several SM programmes scheduled during the targeted periods. The response has been positive, though not overwhelming: 334 questionnaire reports were received by the deadline (that was set to the end of March 2007), from 170 individual PIs. Since then, only 17 new questionnaire forms have been submitted (for a total of 187 individual PIs), showing once again how difficult it is to reach a steady flow of feedback. The responses cover all VLT/I instruments, plus FEROS and the Wide Field Imager at La Silla. In percentage and per instrument, the responses we have received represent on average 10–15 % of all SM runs that were approved during the P69–P77 period on a specific instrument, except for the Wide Field Imager for which the response rate is around 7 %.

Table 1 summarises the number statistics of the 2007 campaign (including the extra 17 reports received after the deadline), listing the number of responses received per period (one response per run). In order to better evaluate the significance of the response rate we have obtained, the number of received responses should be compared to the total number of SM runs approved per semester. For completeness, also the number of individual PIs corresponding to the number of received questionnaires is provided.

The comparison between 'Received Responses' and 'Targeted Runs' indicates a success rate in the range 11–14 % for the most recent periods (P76 and P77) and slightly below 10 % (7–8 %) for older semesters (e.g. P74 and P75). Clearly, one may question the importance of this feedback and the significance of any conclusion ESO may draw about its user's satisfaction. On the other hand, feedback (a lot or a little) is vital to a service organisation such as ESO, and we think that these results, though based on rather small number statistics, are important enough to be publicly presented as such. The distribution of responses per period shows that the results reported in this article better reflect the most recent observing periods, for which the response has been stronger (as expected).

Overall, the feedback we have received is very positive. Figure 1 gathers the user's responses about their general satisfaction with the various phases of the operational cycle. Users appear to be satisfied about the support they receive and the quality of the data they obtain. With respect to the last (2002–2003) Feedback Campaign (Comerón et al. 2003), it is rewarding to see a higher degree of overall satisfaction (also shown in the figure). As far as the overall rating of the SM process is concerned (topmost entry on the y-axis in Figure 1), there is a remarkable inversion between the 'Good' and 'Excellent' votes: 63 % 'Excellent' and 32 % 'Good' in 2007, 33 % 'Excellent' and 60% 'Good' in 2002–2003. The overall rating on the Phase 2 SM process, i.e. the support provided by the User Support Department during the preparation of the Phase 2 SM package, has recorded a 20 % increase in the 'Excellent' choices, counterbalanced by a decrease in the 'Good' votes (by 12–15 %) and in the 'Fair' and 'Poor' choices. The responses of users about the quality of the data have also slightly changed: the percentage of 'Fair' and 'Poor' grades has decreased (from 20 % in 2002–2003 to 15 % in 2007), and these votes have now turned into 'Good'. With respect to the SM Data Package, the percentage of 'Excellent' choices has doubled, going from 11 % in 2002–2003 to 22 % in 2007.

Furthermore, 60 % of the users said that their programme was 100 % completed, and another 21 % reached a 75 % completion rate. Those with only 50 % and 25 % of their programme executed, represent respectively 6 % each. These numbers reproduce rather closely what is derived from our constant monitoring of the completion rate of all SM runs. Over the same period covered by the 2007 Feedback Campaign, our monitoring shows average percentages of 60 % and 35 % for completed and incomplete runs respectively (the remaining 5 % corresponds to runs that were not started).

As far as the scientific goals are concerned, 57 % and 14 % respectively said they were fully or mostly reached, whereas those whose scientific goals were achieved only partially or not at all amount respectively to 10 % and 8 % (see Figure 2).

In the following, we will present and comment on the results obtained with respect to different aspects of ESO operations and services to the community, covering different phases of the Service Mode operation cycle, namely, Phase 1, Phase 2, programme execution, data processing and delivery.

Number of	P69	P70	P71	P72	P73	P74	P75	P76	P77	P78	P79
Received Responses	17	26	36	20	28	34	46	55	79	7	3
Individual PIs	16	16	27	14	21	25	29	36	54	7	3
Targeted Runs	389	394	490	403	416	423	510	504	568	0[2]	0[2]

Table 1: Number statistics of the 2007 Feedback Campaign. See text for more details.

[2] The number is set to zero since this feedback was not solicited via the Feedback Campaign.

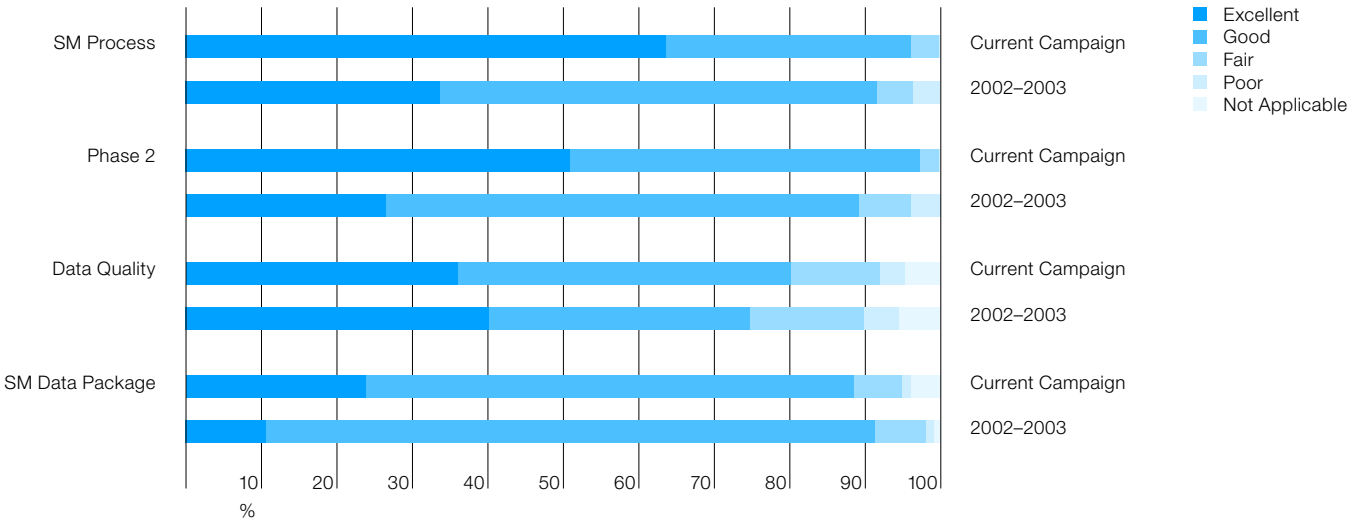

Figure 1 (above): Overall user feedback, i.e. how users have globally rated (from top to bottom on the y-axis): their interaction with ESO in relation to service observing; SM Phase 2 process; the quality of the data obtained; and the quality of the SM data package received. For comparison purposes, each topic has two entries, the current distribution of user's choices (upper) and the one from the last (2002–2003) campaign (lower).

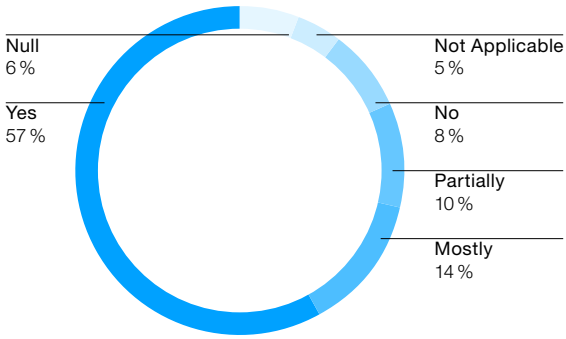

Figure 2 (right): User feedback to the question: "Did the data obtained allow the fulfilment of the scientific goals of your programme?"

Phase 1

Phase 1 is the process that runs between the announcement of availability of observing time (released in the form of the Call for Proposals[3]) and the deadline for submission of an observing proposal. On average, this process takes place over one month, twice per year (March and September).

The Call for Proposals is the main reference document for this phase, as it includes all information relevant to the preparation of a proposal: available instruments, observing modes, a brief description of the main characteristics and observing modes of the instruments on offer, a detailed summary of policies and procedures. In order to complete the preparation of an observing proposal, ancillary tools and documentation are made available to the user community.

[3] The Call for Proposals is released twice per year via the following link: *http://www.eso.org/sci/observing/proposals/index.html.*

In this section of the Service Mode Questionnaire, the users are asked to provide feedback on all these features, from the Call for Proposals and its web-based documentation, to the available support tools (e.g. Exposure Time Calculators, Object Observability and Airmass, Site Sky Ephemerides, Astro Climatology and Meteo Data) and the ESOFORM package. The latter includes the templates for writing the proposal and the user manuals to properly fill out the template. Instrument-specific User Manuals are also part of the Phase 1 material, as they contain all the details about characteristics, performance, observing modes and operational efficiency.

The responses show a clear majority of 'Good' and 'Excellent' choices for basically all Phase 1 related items. A higher number of 'Null' and 'Not Applicable' choices for the support tools is found, which is however rather difficult to interpret, as it could mean that people use other tools to check the same type of information, or that these tools are probably used more intensively at Phase 2, when for instance the air-mass constraint has to be specified in the constraint set of each Observation Block.

Another topic that is tackled in this section of the questionnaire is the computation of the overheads. This is a very critical point for both SM and VM observations, because the total requested time must correspond to the sum of 'time on target plus telescope and instrument overheads'. As such, it is very important that the method to compute overheads is properly described and understood by the users. Out of 345 replies we have received, 295 were 'Yes, it is clear how to account for overheads', i.e. approximately 85 % of the users who replied found that the computation of the overheads is clearly explained. Unfortunately, not many extra comments were received that could help us to better understand the remaining 15 % of the users who did not find easy/clear the computation of the overheads. On the other hand, it is important to note that in practice the wrong com-

putation of the overheads affects a very small percentage of all OPC approved programmes. The technical feasibility performed by the observatory staff shows that over the last four semesters covered by the 2007 Feedback Campaign (P74–P77), the number of proposals with overheads that were wrongly accounted for amounts to merely 2–3 %. Furthermore, this number seems to have become even lower (less than 1 %) in the most recent semesters (P78 and P79).

Phase 2

The release of the telescope time allocations to the community marks the official start of the Phase 2 process, i.e. the preparation and submission of a complete (Phase 2) package to ESO. This basically includes the Observation Blocks (the single executable units) and a README file, summarising the main goal and requirements of that given programme (Finding Charts and Ephemerides files are now part of the Observation Block). One of the main functional tasks of the User Support Department is to support SM users in the preparation of their Phase 2 package, and review the material once it has been submitted. The support astronomers interact with the PI as needed in order to converge to a fully verified and optimised (in terms of scientific return and observing strategy) package to be sent to the observatory. For the Phase 2 preparation, dedicated tools have been developed (by ESO or by external consortia), as well as several documents, User Manuals, and informative web pages which are available and updated every semester. Therefore, the Phase 2 part of the SM questionnaire asks the users not only to express their degree of satisfaction about the level of support provided by USD at different phases of the process (preparation support, verification, acceptance and acknowledgement), but also to review the quality of the documentation and the four main characteristics of the available software tools: installation, manual, usability and functionality. Figure 3 describes the survey outcome for some of these items, whereas Table 2 reports the user feedback on specific Phase 2 tools (such as P2PP, SkyCat, observing support software tools).

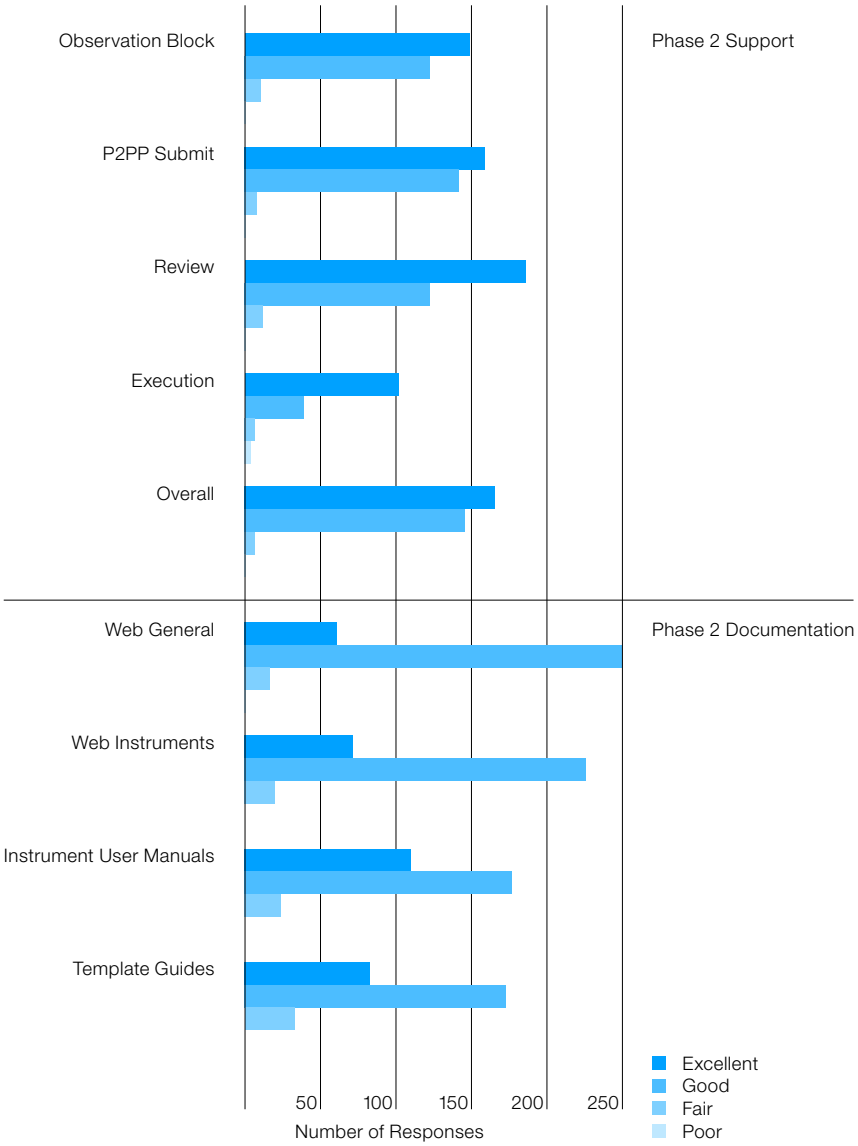

Figure 3: **Upper**: Users impressions of different aspects of the Phase 2 Support provided by USD. **Lower**: User feedback on the quality of the information available from the USD public web pages (general and instrument-specific), as well as the quality of Instrument Manuals and Template Guides.

Overall, the degree of satisfaction is quite high, with a clear majority of 'Good' and 'Excellent' choices on almost all of the items. We are clearly very satisfied about this, but the small percentages of 'Fair' and 'Poor' votes are particularly interesting as they usually highlight underlying problems that may affect only a minority of users. Some of the numbers reported in Table 2 hint at some dissatisfaction about some features of some support tools. Although these are very small number statistics, ESO will evaluate them carefully to see if there is room for im-

Tool	Installation	Manual	Usability	Functionality
P2PP	4/20/153/129	4/19/219/58	9/43/210/63	6/37/205/75
FIMS (FORS)	4/9/27/11	0/7/36/6	0/6/37/7	0/2/43/4
FPOSS (FLAMES)	0/1/5/7	0/1/7/3	0/4/4/5	0/2/7/4
VMMPS (VIMOS)	0/2/13/4	1/2/13/3	3/5/9/3	3/6/8/3
NAOS-PS (NACO)	4/3/9/9	0/4/14/7	1/2/15/7	2/2/13/8
SkyCat	8/21/89/68	5/21/100/26	1/22/115/51	5/34/18/38

Table 2: The user's feedback on specific functions of Phase 2 related tools. Numbers refer to responses received respectively for Poor/Fair/Good/Excellent choices.

provement; this evaluation takes into account a study of feasibility, the investment required to implement a given improvement and the final gain.

Programme execution, data quality, processing and delivery

This part of the questionnaire collects feedback about post-Phase 2 activities, i.e. the execution of a programme, its quality assessment and the final data processing, packaging and delivery. At the start of a new observing Period, all SM runs that have been verified and accepted will become available in the daily observing queues as soon as the targets are observable. In the majority of the cases, the execution is a smooth phase, because all the material has already been checked and verified by the User Support Department. However, there are instances, especially for the most demanding programmes and the most complex and sensitive instruments, in which the observatory staff asks for extra feedback and possibly further checks. Thus, some interactions between USD and the users also continue after Phase 2, when problems are detected or doubts arise at time of execution.

Principal Investigators can follow the progress of their observations from the Run Progress Report web-pages[4] (one per run). These pages list the status of the run (Open/Completed/Terminated/Not Started), which OB has been executed and how good was the execution (i.e. Completed *versus* Executed, the latter implying that the OB will be repeated), and the atmospheric conditions during the night of observation. Figure 4 summarises what users think about the Run Progress Report pages of their runs.

Once the run is declared completed, the Quality Control (QC) group at the Data Flow Operations Department is informed that a final SM data package can be prepared for that run. This phase includes not only the processing of the entire data set, but also the collection and/or preparation of several pieces of ancillary information on various quality control checks and plots, master calibration files, ReadMe and help files to guide the PI through the data package. When the data package is ready, it is released to the Science Archive Operations group, in charge of cutting the package on DVDs and delivering it to the PI. SM PIs can now follow these phases of their data package from the same SM Run Progress Report pages mentioned above.

[4] Available from *http://www.eso.org/observing/usg/infopage.html.*

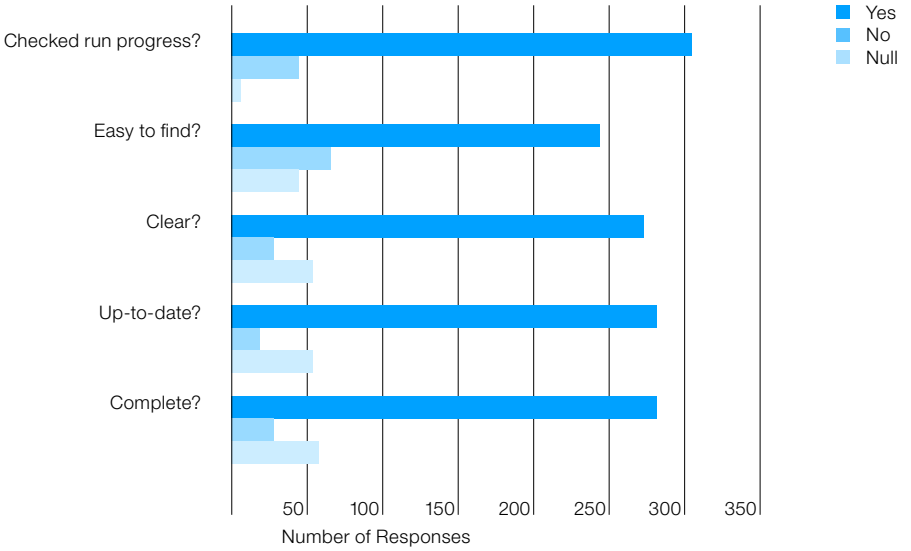

Figure 4: The main question of this section (first item on the y-axis) was: "Have you ever checked the progress of your programme during the Period?", and is followed by more specific questions about how good was the information provided. Only 5 (out of 355) replies (to the main question) were null, i.e. the user did not answer.

Figure 5 below shows the user feedback on issues specific to SM data packages, their content, organisation and delivery times. Once again, it shows a high degree of user satisfaction. One interesting feature that does not emerge clearly from the graph in Figure 5 concerns the data volume and its manageability. All instruments, except the Wide Field Imager at the 2.2-m telescope, are characterised by a striking majority of positive replies. For WFI, instead, there is a perfect (50/50) balance in the answers. This, together with the low response received from PIs of WFI runs, may hint at problems in dealing with and analysing the large amount

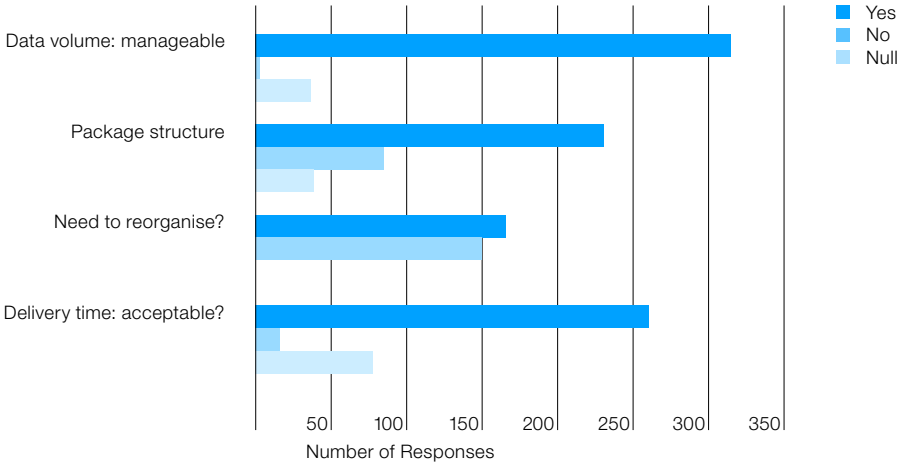

Figure 5: Features of the SM Data Package: this section covered issues like data volume (How manageable is it?), structure of the data package (i.e. How raw, calibration and processed data are stored and organised) and if the delivery time was acceptable. The latter was related to a question about what the delivery time has been: less than four (42 % of the replies), between four and six (33 %), and longer than six weeks (25 %).

of data that a WFI run usually produces. Also, we note that the very well-balanced feedback on the need to reorganise the received SM data package is a good example of a very subjective problem that depends on how every single PI/Co-I is used to working with data. ESO has already once revised the structure of the data directories in the package, but clearly the community sampled by this feedback campaign is split into groups of similar weight. Some extra comments have been received about possible solutions; ESO is considering these and will reassess them in the near future.

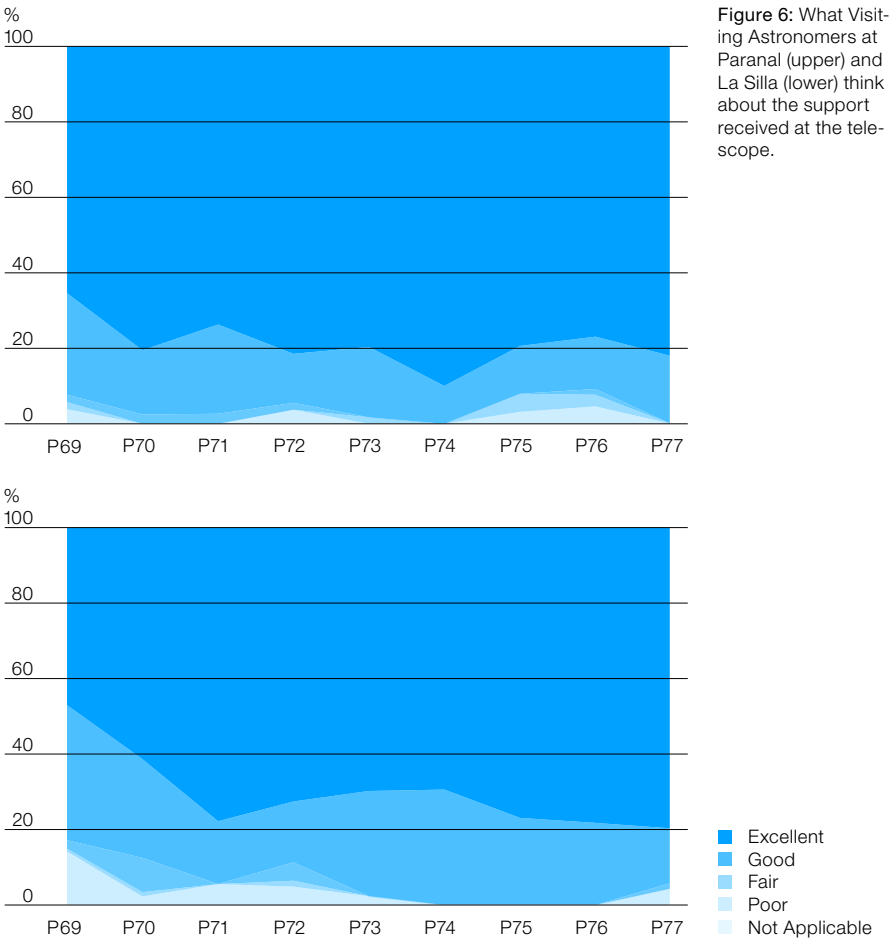

Figure 6: What Visiting Astronomers at Paranal (upper) and La Silla (lower) think about the support received at the telescope.

Visiting Astronomers and the End of Mission Reports

The main difference between Service and Visitor Mode observers is the fact that the run is carried out on specific dates, with the presence of the PI (or Co-I) at the telescope, and that the main support is provided by the observatory staff (at La Silla and Paranal). The involvement of the User Support Department and Quality Control group is marginal (e.g. no data package is prepared by QC for VM runs).

As mentioned at the beginning of this article, the End of Mission (EoM) Report is tailored to immediate feedback on those features that are the most relevant to the observatory and its staff. Thus, the feedback that is collected is rather different compared to the SM Questionnaire. In order to be consistent with the main theme and purpose of this article, here we comment only on a very restricted number of features covered by the EoM Report, namely the user satisfaction about the support received by the observatory staff and the completion rate of the run. On average, approximately 50 reports per semester are received both at Paranal and La Silla.

Concerning user satisfaction, visiting astronomers give a rating to their Support Astronomers (including day support for the preparation of the observations and night support at the telescope), to the Telescope/Instrument Operators (TIOs), and to the general technical support they receive. Figure 6 shows a steady, very high satisfaction index for the VLT Support Astronomers on Paranal and La Silla, with a clear trend of improved satisfaction for the latter. A similar graph is also obtained for the TIOs (not shown).

The run completion information is the assessment by the observer at the end of his/her run, i.e. usually before s/he has had an in-depth look at the data. Here, the figures show a tight anti-correlation with weather downtime, but typically over 75 % of the observers consider their programme at least 75 % or more completed.

Concluding remarks

User feedback is very important but also very challenging to stimulate, as the 2007 Feedback Campaign has clearly shown. However, user surveys in general are very challenging and the experts in the field say that a 15–20 % level of response is to be considered an important achievement. We are not quite at this level yet (11 % for P76 and 14 % for P77), but with a better strategy, tailored to receive feedback closer in time to the existence of a given run (the best results are indeed obtained for the most recent period that was targeted), we believe things will improve.

Despite the caveat of the low number statistics, the main conclusion of this article is that the ESO user's community is highly satisfied with ESO services and support. This clearly emerges from all different sections of the SM Questionnaire, as well as from the operations-related sections of the VM EoM reports. Our users are satisfied with the efficiency at which ESO operates its facilities and the level of support the ESO operations groups provide to them. Their scientific projects get completed and their scientific goals are achieved, at least for the majority. When compared to the 2002–2003 Feedback Campaign, the overall user satisfaction has improved.