Users feedback: what is "good enough"?

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ABSTRACT

Users' feedback is a vital component of the success of any service organization, but response rates are usually not very comforting and receiving feedback on a regular basis is a rather challenging task. This article presents the main findings of the Feedback Campaign we launched in early 2007 and attempts to analyse its significance. The Campaign targeted all Principal Investigators of ESO Service Mode programmes approved over the period 2001 – 2006. Possible future evolutions of this type of campaigns are briefly discussed, based on the experience we have gained.

Keywords: Observatory operations, Service Mode, Queue observing, User support, User feedback, User satisfaction

1. INTRODUCTION

ESO operates its telescopes in two main ways: Service 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 scrutiny by ESO Staff, thanks to both internal evaluation and external feedback. The final goal is clear, i.e. improving the quality of the services we offer. Since our users are the main recipients of these services, their feedback is a key component of this review process. This feedback is usually received via multiple channels, like the Users Committee, dedicated questionnaires on different topics and phases of the operational cycle, daily and informal interactions between the users and ESO support staff. 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 very end of their observing run. In the following sections, we present and discuss what type of feedback ESO receives from its users. The main outcome of the 2007 Feedback Campaign is that users of the ESO facilities are largely satisfied with our services, but the response rate is certainly not overwhelming, which makes the following question arise very naturally: how meaningful is this user satisfaction?

2. HOW TO TRIGGER FEEDBACK

ESO operates and maintains observing facilities and instruments on behalf and for its users' community. Implementing a constant feedback flow is a very challenging task, especially in an era where everybody's life is 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 ESO main reasons of existence is to serve the astronomical community and serve it as well as possible.

For the users, there are different channels to provide feedback: i) via the Users Committee, the members of which are elected by the ESO Member States and meet with ESO representatives of various operational groups and departments once per year; ii) via individual questionnaires that are available for both Visitor Mode (VM) and Service Mode (SM) users[1], iii) via interaction with ESO Staff during program 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

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[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

Observatory entry points (paranal@eso.org and lasilla@eso.org). Both types of questionnaires (VM and SM) include questions with multi-choice answers and free-format text boxes where to provide further comments.

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. 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 Phase1 proposal (which may have occurred more than 1 year before) to the quality of the data.

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 Principal Investigator (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 Phase2 package, 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.

3. THE 2007 SERVICE MODE FEEDBACK CAMPAIGN

Considering the sporadic feedback we had received since the last targeted action (Comerón et al 2003), in early 2007 it was decided that revamping our feedback campaign was a rather timely action to undertake. A total of 941 PIs were contacted and asked to fill out our on-line SM questionnaire. The call covered all SM PIs of the last 5 years (4 for PIs of Large Programmes, because running over multiple semesters usually they 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). The response has been positive, though not overwhelming: 334 questionnaire reports were received within a month from the call, a mere 17 have been received since then, showing once again how difficult it is to reach a steady flow of feedback. The total number of responses (351) corresponds to 187 individual PIs, and covers all VLT/I instruments, plus FEROS and the Wide Field Imager (WFI) in La Silla (i.e. the instruments supported by the User Support Department – USD). In percentage and per instrument, this response rate represents on average 10-15% of all SM runs that were approved during the P69-P77 period on a specific instrument, except for the WFI for which the response rate is around 7%. Table 1 summarizes the number statistics of the 2007 campaign per period (including the extra, un-solicited 17 reports) and provides the number of received responses, of corresponding individual PIs, and total number of approved SM runs.

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

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	3	3
Targeted Runs	389	394	490	403	416	423	510	504	568	0	0

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). We will come back to the significance of this feedback at the end of the article, but the distribution of responses/period already shows that the results commented in this article better reflect the most recent observing periods, for which the response has been stronger (as it was expected).

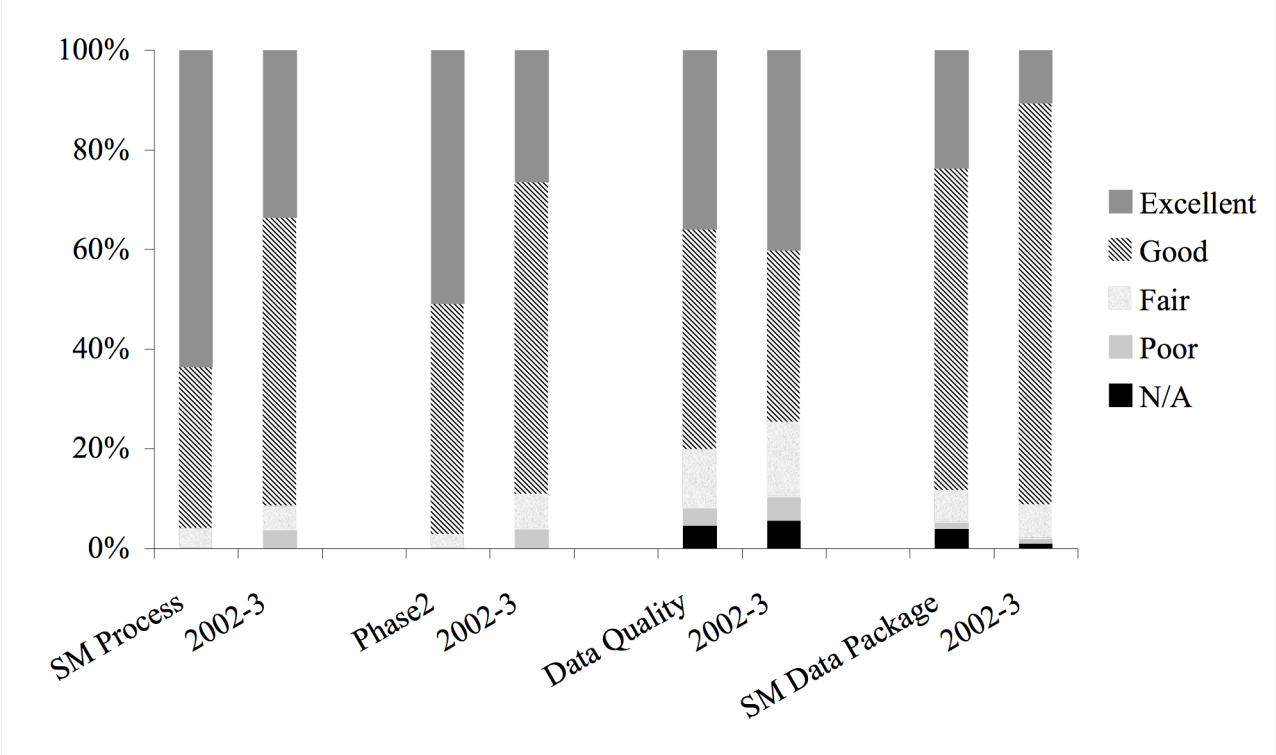

Figure 1 – Overall users' feedback, i.e. how users have globally rated (from left to right on the x-axis): their interaction with ESO in relation to service observing, SM Phase2 process, the quality of the data obtained, and the quality of the SM data package received. For comparison purposes, each topic has two entries, the current distribution of users' choices (left) and the one from the last (2002-3) campaign (right).

Overall, the feedback we have received is very positive. Figure 1 gathers the users' 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 (2002-3) 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 (leftmost entry on the x-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 2002-3. The overall rating on the Phase2 SM process, i.e. the support provided by the User Support Department during the preparation of the Phase2 SM package, has recorded a 20% increase in the 'Excellent' choices, counter balanced by a decrease in the 'Good' votes (by 12-15%) and in the 'Fair' and 'Poor' choices. The users' responses about the quality of the data have also slightly changed: the percentage of 'Fair' and 'Poor' grades has decreased (from 20% in 2002-3 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 2002-3 to 22% in 2007.

Furthermore, 60% of the users said that their program was 100% completed, and another 21% reached a 75% completion rate. Those with only 50% and 25% of their program executed represent respectively 6% each. 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).

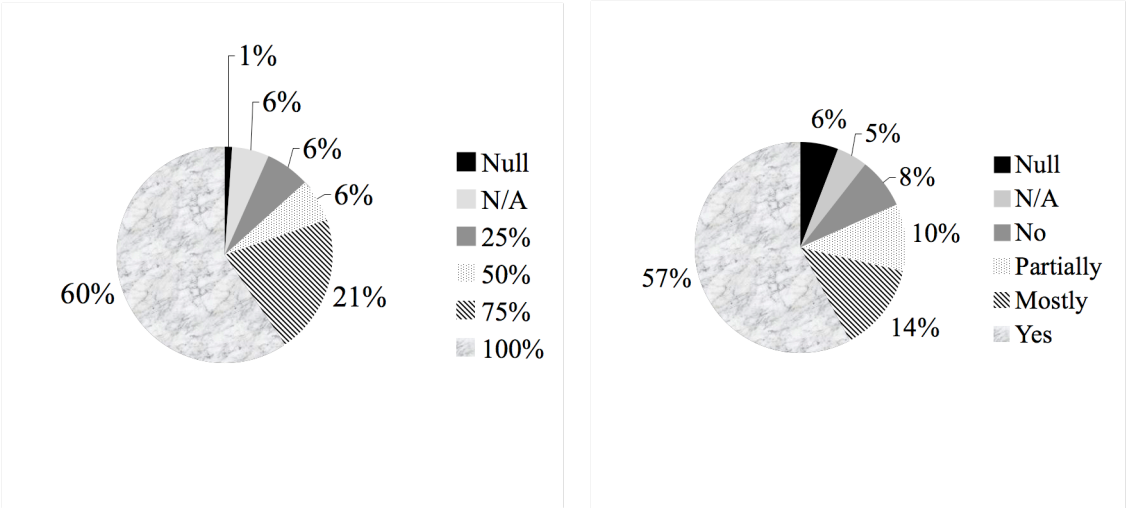

Figure 2 – *Left:* Users' feedback to the question: "What was the completion rate of your programme?" *Right:* Users' feedback to the question: "Did the data obtained allow the fulfillment of the scientific goals of your programme?"

In the following, we will present and comment on the results obtained on two specific phases of ESO operations, those that represent the core mission of the User Support Department, i.e. Phase 2 and post-Phase 2 activities.

3.1 Phase 2

The release of the telescope time allocations to the community marks the official start of the Phase 2 period, i.e. the preparation and submission of a complete (Phase 2) package to ESO. This basically includes the Observation Blocks (the single executable units, to which also Finding Charts and Ephemerides files are attached) and a README file, summarizing the main goals and requirements of that given programme. 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 optimized (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 are available and updated every semester. Therefore, the Phase 2 part of the SM questionnaire asks the users 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 four main characteristics of the available software tools: installation, user manual, usability and functionality. It is comforting to see that 'Excellent' and 'Good' preferences are the dominant feature here (cf Figures 3 and 4).

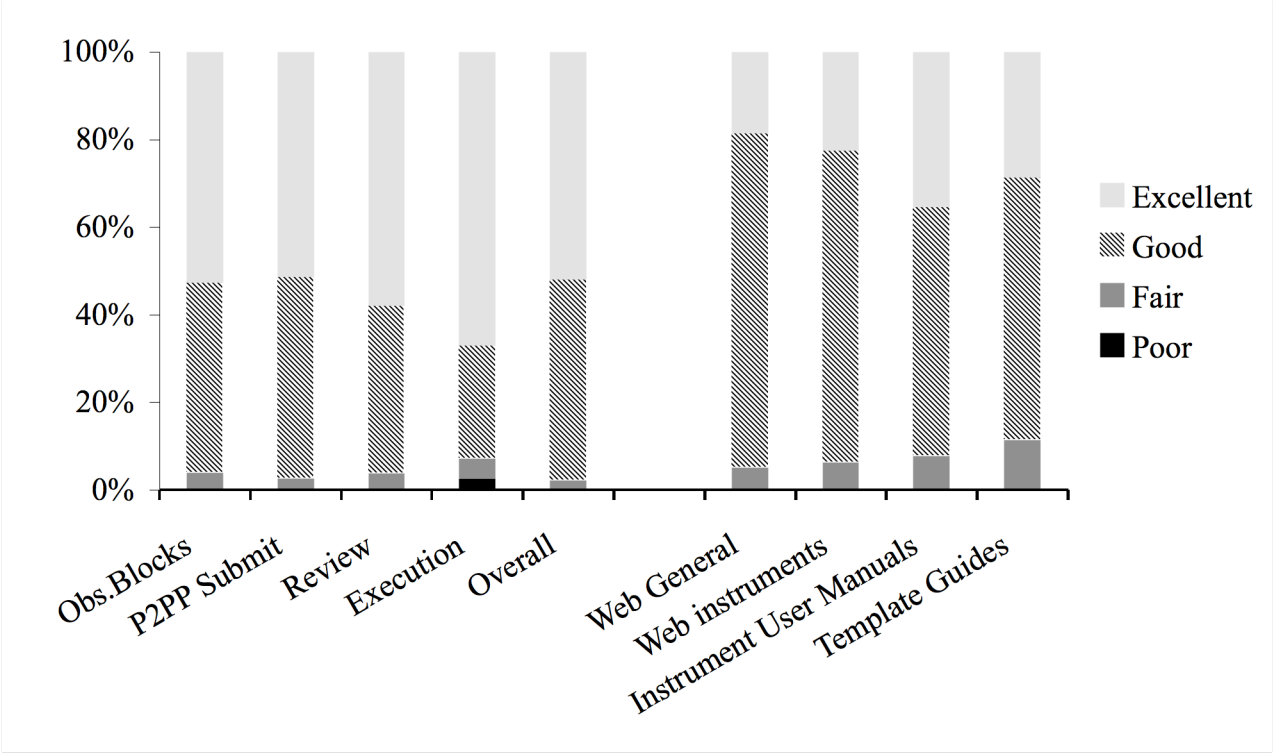

Figure 3 – *Left side*: users' impressions on different aspects of the Phase2 support provided by USD. *Right side*: users' feedback on the quality of the general information available from the USD public web-pages (general and instrument-specific), as well as the quality of Instrument User Manuals and Template Guides.

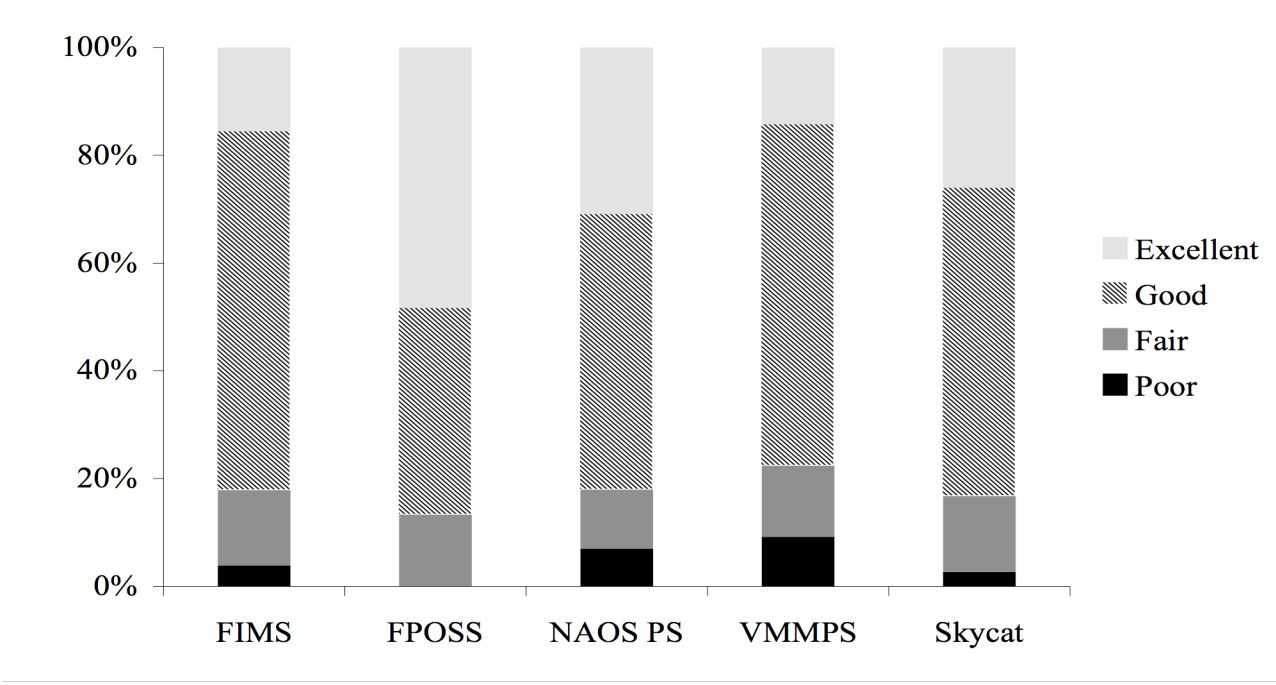

Figure 4. Users feedback on different observing support software tools currently available for VLT instruments (FIMS for FORS, FPOSS for FLAMES, NAOS PS for NACO, VMMPS for VIMOS, Skycat for preparation of finding charts).

3.2 Programme execution

After the full verification of a Phase 2 package and once a new observing semester has started, we enter the so-called post-Phase 2 phase, during which a given programme is executed, the data quality needs to be evaluated and the data need to be distributed to the PI. It is now *our* turn to provide feedback to the users! A key feature of this phase is to keep the PI constantly informed about the progress of his/her observations and to promptly interact with them, should any problem arise at time of execution at the telescope. In the majority of the cases, the execution is a smooth phase, because all the material has already been checked and verified by USD. However, some interactions between USD and the users continue also after Phase 2, especially for those programmes using the most complex and sensitive instruments.

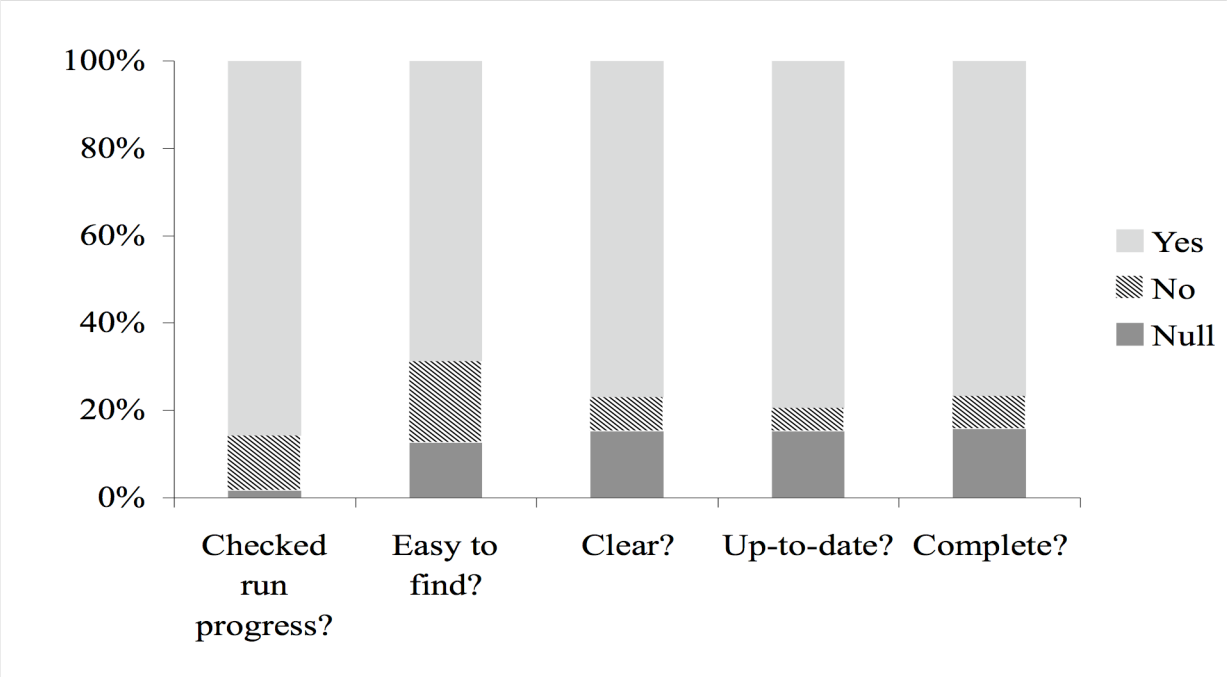

Figure 5 – The main question of this section (first item on the left of the x-axis) was: "Have you ever checked the progress of your program during the Period?", followed by more specific questions about how good the information there provided was. Only 5 (out of 355) replies (to the main question) were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

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 the execution was (Completed vs. Executed, the latter implying that the OB will be repeated), atmospheric conditions during the night of observation. Inspection of Figure 5 shows that this service is highly appreciated by our users.

RESPONSE RATES AND THEIR SIGNIFICANCE

As already stated above, the response received to our latest Feedback Campaign has been all but overwhelming. With a response rate of about 10 to 15%, one cannot help but thinking that a higher amount of feedback from the PIs would bring a higher confidence in the results which we present in this article. But first of all, is our response rate really as "sub-average" as we fear it to be?

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

Web surveys have grown increasingly popular over the past few years because of their evident cost-effectiveness, which means that the studies and literature on that topic are now quite numerous. Among all possible criteria used to evaluate the quality of such surveys, analysis of the response rate is probably the most frequent. However, it is widely agreed that there is no such thing as a minimal, or acceptable response rate. If higher response rates are valued because they make it more likely to get balanced results — thus legitimizing the results of the study — they are not so important when the main purpose is to gain insight, and not to generalize findings to a larger population (in our case, we are not probing a representative panel, but the entire set of PIs for the targeted period). Some meta-studies are available, which try to determine if there is such a thing as an average response rate to web surveys. A comparison of the response rates of about 200 on-line questionnaires of all sizes (Hamilton 2004) has found that for surveys with less than 1000 invitations (which is the case of our last Feedback Campaign) the average response rate is about 41%, but the distribution of these response rates is highly heterogeneous, with a standard deviation of about 30%. Surveys with larger lists of invitations tend to get lower response rates. The above average thus has a limited predictive power, even if the same study states that half of these 200 surveys received a 26% response or better (median). Before comparing these numbers to our own case, one must yet stress that the analyzed surveys targeted the industry, which is very different from our surveyed audience. To our knowledge, comparable numbers for our specific pool of users are not available yet in the literature.

Naturally, there is still a lot of room for improvement in the way that we advertise, publish and analyze our Service Mode questionnaire, if we want to achieve the goal of a more steady flow of feedback from (and towards) the ESO community, and make sure that the conclusions which we draw from the survey come from as representative a subset of users as possible.

Survey methodology now applies to online questionnaires as well, and the design of these questionnaires has a proven influence on the amount and on the quality of the received response (see Ganassali 2008 or Lozar Manfreda & Vehovar 2002). The length of the questionnaire is often cited as one of the most common reasons for non-response. Currently, our Service Mode questionnaire is presented to the community in the form of a long, single web page through which one has to scroll down from one section to the next. Admittedly, this presentation makes the prospect of filling-up the questionnaire quite daunting. Instead, one should probably choose a multi-page presentation for the survey, presenting the user with only a limited set of questions at a time, all related to the same topic. Adding a progress bar on each page, showing how much is left of the survey, is also part of the recommended best practices. Similarly, the fact of stating upfront the expected amount of time needed to fill-up the survey is likely to encourage the respondent to go through it. As we already mentioned, one additional difficulty is that the questionnaire tries to cover the whole chronology of an observing run, from the preparation of the initial proposal to the analysis of the collected data. Given that the time span between these two phases can often be expressed in years rather than a handful of months, it is somewhat difficult for users to remember the specifics of a preparation that occurred such a long time ago. Offering to the users the possibility to fill out the feedback questionnaire piecewise, after every major step of the observing run lifecycle, would make that part of the problem vanish. This may be feasible if we find a way to tie this feedback to the user's record itself, which may now prove easier with the emergence of the ESO User Portal (Tacconi-Garman 2007).

For targeted feedback campaigns like the ones we carried out in 2003 and 2007, other practices may improve the amount of response that we collect. It is a common advice that letting people know that a survey will be coming can significantly increase the number of responses. Likewise, ensuring some follow-up has a non-negligible importance: attempting contact with non-respondents at least once, e.g. within a few days after the initial request for feedback, can ensure a higher response rate. Last but not least, providing the results of the survey on a regular and timely basis to the ESO community is a way of building a confidence link which can only encourage people to let us know of their opinion on a more regular, channeled and continuous basis. Indeed, the most important value of any user satisfaction survey lies in the trends that one can derive from it, rather than in the absolute results of a one-time questionnaire.

CONCLUDING REMARKS

Users' feedback is very important but also very challenging to stimulate, as the 2007 Feedback Campaign has clearly shown. Because of the low number statistics involved, it has been natural to ask ourselves what its real confidence level is. Are we biased? Is our surveyed sample of users not representative enough of the community at large?

As far as the bias is concerned, this cannot clearly be excluded. However, it is worth noticing that human nature usually tends to make somebody speaking and/or complaining if there is a problem more than when everything is going well. In this respect, we might have a bias, which goes into the opposite direction, i.e. we got mostly satisfied users to respond to the questionnaire. Possible, but not easy to understand. As far as the second question is concerned, indeed, a response rate of 10-14% clearly under-represents the users' community we are serving. However, when asked what percentage of their programme was completed, the distribution we got from such a limited surveyed sample does match the same ratio as we get from our constant monitoring of run completion rates. And this is reassuring, also with respect to the above mentioned possible presence of biases. We do have a fair sampling of the community.

As discussed in the last section, user surveys in general are very challenging. There is no "good enough" benchmark to compare to because available values are very uncertain and mostly apply to industry and not academic environments. The fact remains that if we want to be able to gain insight on a specific observing period, or on the users of a given instrument for example, we are simply lacking material to work with because of the too small number of answers that we have at our disposal for such sub-cases. However, we are confident that 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 periods that was targeted) the response rate will improve. Furthermore, the combination of asking for feedback closer to a given phase of the operations cycle and optimizing the questionnaire might become a winning feature to widen the community involvement.

Despite the caveat of the low number statistics, the main conclusion of our Feedback Campaign is that the ESO users' community is highly satisfied with the services and support we provide. This is actually true not only for the services offered and supported by USD, but it clearly emerges from all different sections of the SM Questionnaire, as well as from the operations-related sections of the VM EoM reports of the La Silla Paranal Observatory. Our users are satisfied with the efficiency with 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 achieved, at least for the majority of them. When compared to the 2002-3 Feedback Campaign, the users' overall satisfaction has improved. Clearly, ESO is pleased to see that their constant efforts and dedication are well received and appreciated, but would like to do more, and especially to hear from a larger audience.

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