Where the users are and what the users do: A survey on NMI3 users

For many years it has become a routine for neutron users to prepare and submit proposals for beam time regularly to get access to neutron facilities all over the world. With the very first applications being still letters or even phone calls to colleagues working at the few neutron facilities procedures became more and more established to handle large amounts of beam time requests based on a qualified scientific review and standardized administrative procedures. Nowadays on-line proposal submission via web based portals to the various user offices has become a standard at most user facilities. Many hundreds of proposals for beam time per year are processed in this way at the large neutron facilities. Local support during the measurements by scientific and technical staff, sample environment equipment and lab services is routine and accommodation is arranged in on-site guest houses. Users receive financial support by national and international access programs to cover their travel costs.

This classical way of access and its administrative procedures has been very successful for quite a long time but in recent years the procedures regarding proposal submission and treatment became more and more a topic under discussion. On the one hand the request for a more direct and fast access to beam time like urgent proposals for "hot topic experiments" or requests for mail-in services of samples has been raised by the users on the other hand a more simplified access model for industry performing applied research is claimed, in particular by politicians and funding agencies. Within these various requests by the different user groups and bodies the facilities will have to move, make choices and develop new options. The current model of access will have to evolve and the administrative procedures then need to be adopted.

User survey

In order to prepare possible answers to future requirements by users of large scale facilities and how access might have to be re-organized at the neutron sources a user survey has been initiated by the NMI3-II/FP7 project in Europe (NMI3: Neutron and Muon Integrated Infrastructure Initiative). This survey has been a first attempt to get some insight on the satisfaction and the needs of our users in terms of access management. The survey was organized within the NMI3-II work package on "Integrated User Access" involving the users at all participating European neutron sources. Topics tackled by the survey were the frequency and activity of the users in asking for beam time, the usage of the facilities and its funding, the response to current proposal procedures and possible future developments or requirements. About 260 anonymous responses were received from the user community.

The result shows a highly active user community: about 50% of all users do submit between 5–20 proposals within a five year period (Figure 1). On average each user submits between 2–4 proposals each year.

The proposal activity also generates a high frequency of visits to the facilities. 37% of the users that participated in the survey made 1–4 visits within five years, 23% even 5–9 visits (Figure 2). On average each user performed 1–2 visits per year to the facilities, in many cases to more than one: the majority of users (51%) uses 2–3 facilities for their research in parallel. As expected, not all neutron scattering techniques are made use of with the same frequency:

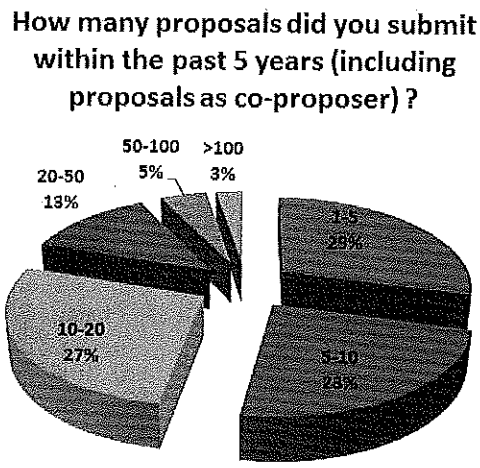

Figure 1. Number of proposals submitted by users within five years.

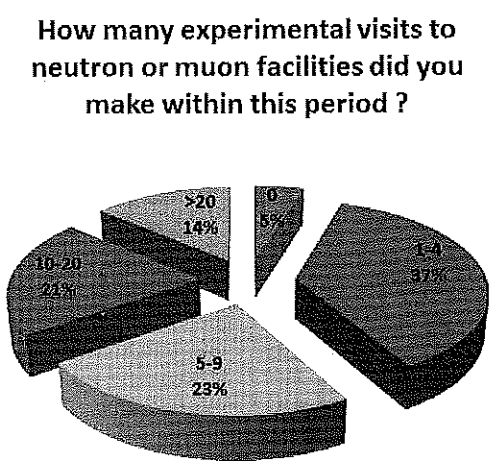

Figure 2. Number of visits by users within the five years.

powder diffraction (21%) and small angle scattering (19%) are used most frequently (Figure 3). Of course, these techniques coincide with those methods offering relatively short beam times and high throughput of experiments. Hence they create a large user community. It is interesting to mention that demanding spectroscopic techniques like triple-axis or time-of-flight experiments follow on rank 3 by a total of still 14%. The survey also demonstrated that the user community is not mainly restricted to a single method: the majority of users apply for more than one neutron scattering technique for their research. In addition 7% of users actively use muon spectroscopy.

Nearly all proposals are submitted by web based user portals (96%), which are considered as very useful (70% give a rating of 8–10 with 10 being the highest grade), easy to use (78%) and to be accessed (88%). The vast majority of the responding users also consider the current frequency of proposal deadlines to be sufficient (74%) with typically two submission deadlines per year. Only 30% of the current users would like to have between 3–4 proposal deadlines per year. It is interesting to note that the majority of users are not in favor of a continuous proposal submission scheme (52%). Only 27% would consider this as useful. Also, the majority is still in favor of a time delay between proposal submission and experiment of 2–4 months period (2 months: 21%, 3 months: 28%, 4 months: 14%) to prepare samples and equipment accordingly.

Harmonization?

Recently, discussions have been launched on the pros and cons of harmonized administrative procedures at the various user facilities. Keywords like "single entry points," "crossover proposals," "joint review panels" or "Umbrella" came on the agenda and certainly funding agencies like the EC are important stakeholders in that discussion—in particular within the various I3 access programs of the EC.

The general idea behind a harmonization of procedures is definitely a good one since administrative obstacles might be reduced. On the other hand, these first ideas still have to be filled with content and well-defined procedures and—for that purpose—there is a strong need to lead discussions on the facility managers level, which is missing almost completely so far: Do we really want our users to shift rejected proposals from one facility to the next one? Do we want to "shortcut" our review panels at the facilities by external panels which distribute the facilities' beamtime? Is that compatible with the politics

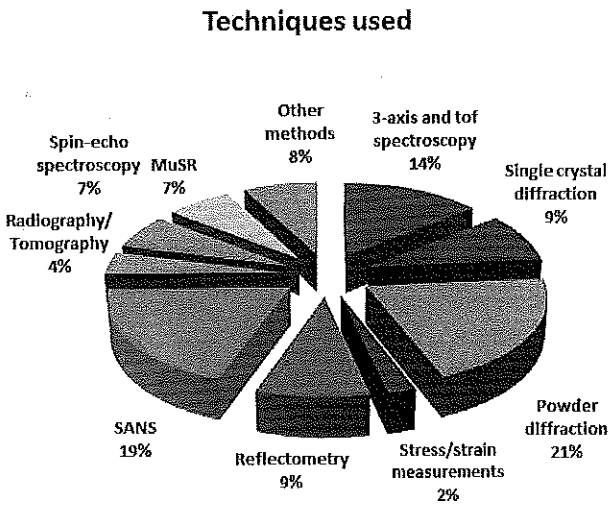

Figure 3. Scattering techniques used by users.

of national stakeholders who are the major funding agencies for our national facilities?

A single entry point with links to the various Digital User Offices is not far from being realized and the Umbrella initiative (https://umbrella.psi.ch) is a first step on that road. Nevertheless, the end of the road is still quite in the clouds and it is not yet clear, where we really want to go to. In the meantime each user facility should review its own access procedures and think of how to react to the moving needs of our customers.

Being asked about harmonized proposal forms—whatever that means—a clear majority of 78% of the participating users is in favor (Figure 4) and also would welcome a single entry point to get access to the current digital user office platforms (65%) (Figure 5).

Regarding harmonized proposal deadlines the user community, who participated in the survey has no clear opinion at all (43% pro and also 43% against). More in favor, expressed by individual comments, the users are to harmonize shut down periods of the neutron facilities to keep a continuous access for their experiments.

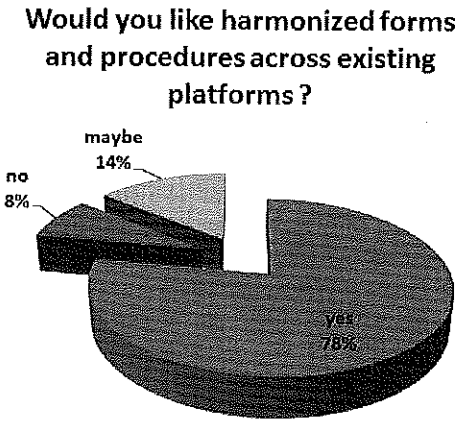

Figure 4. Response to the option of harmonized proposal forms.

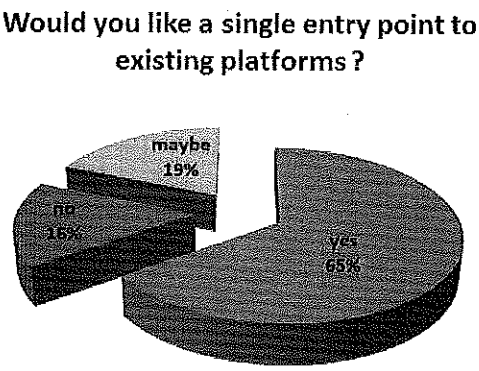

Figure 5. Response to single entry point for access to user office platforms.

Half of the users (52%) would also like to share submitted proposal to several facilities for review or move rejected proposals for review to another facility (58%). A majority of users even would favor an automatic move of rejected proposals due to overload to other facilities (60%). A joined facility review committee is less favored by the users (42% yes, 34% no). Again, the real procedures are not defined (and not even seriously discussed) yet.

Reviewer survey

In addition to the user survey a second survey was prepared to receive answers and comments by the reviewers acting within the current system of proposal evaluation. The survey on reviewers was conducted among neutron scientists acting in review panels of European neutron facilities rating proposals within the recent five years. The reviewers were asked about the frequency, the activity and the work load during the evaluation, their comment on the organization of the review and their point of view regarding harmonization of proposal structures and review process.

The survey shows that a single reviewer typically is active in one or two committees (69%) in parallel over a period between two and three years (41%). Nearly one third is active for more than five years (31%). Within a year most reviewers do evaluate between 30–50 proposals (31%) or even more (50–100 proposals, 28%) (Figure 6). On average they invest between a half hour (28%) and one hour (34%) time to review a single proposal.

The majority of the proposals is distributed to the reviewers as printed documents (24% and 34% with additional web based access), which is also the preferred option by the majority (56%). Most reviews then

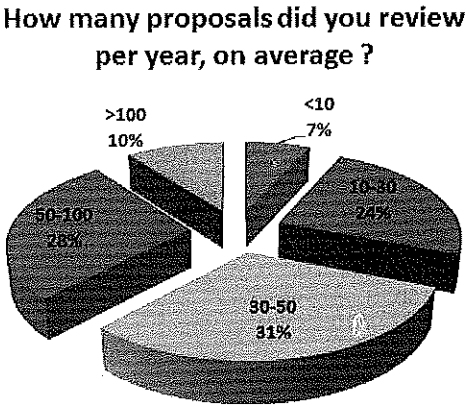

Figure 6. Number of proposals reviewed by referees per year.

are submitted electronically (83%). There is also a clear preference from the referees to meet in person and have panel meetings (83% rate this as important, rate 8–10), video conferences do not seem to be a full alternative yet (only preferred by 45%).

Most reviewers consider current existing web base user office systems as helpful (62%) (Figure 7). Only a minority rates them as "too complicated" (14%). Also here, a majority is in favor of harmonized forms or procedures to review proposals across individual facilities (48%). Also here no clear opinion exists about the idea of a harmonized proposal review process or review panel across the facilities as useful (48% uncertain).

Summary

The presented survey was done within the framework of the NMI3/FP7 project—hence it may not reflect the view of the total neutron community worldwide. Nevertheless the answers given obviously show that the system in place seems to work for these users as well as for the reviewers responding. The general way to get access to beam time is accepted according to the results of the surveys. A future benefit is seen in comparable ways of administrative access, harmonized proposal forms and handling. On the other hand uniform proposal reviews or centralized review processes are not considered as useful.

The users are active and flexible and they want to have smooth, easy and transparent and comparable procedures. Also the reviewers are highly active spending a lot of time and effort to advice the facilities on the scientifically best proposals for access.

A summary of the two surveys might be that the facilities have to think more seriously about unified access procedures within the local administrative and political boundary conditions. Effective, smooth and appropriate beam time access seems to be the challenge for the future that should be achieved in agreement with the needs of all stakeholders: users, facilities, reviewers and funding agencies.

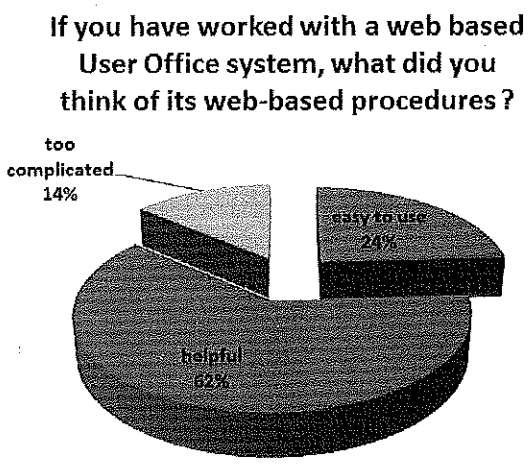

Figure 7. Response to the use of web based user office system by referees.

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