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WP5 Integrated User Access

Requirements for web-based review process

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Introduction

Within the “Integrated User Access” work package 5 of the NMI3-II project, web-based proposal reviewing is envisioned. In Task 5.4, “Web based peer review process”, a framework is to be developed to allow peer reviewing of submitted proposals within NMI3 web applications for small facilities, which do not operate an individual digital user office. Requirements for such a web-based peer review process are to be reported in by month 12, and a prototype is to be ready by month 36 of the project.

In order to put the requirements together, a survey was made on current peer review processes at the various NMI3 partner facilities. Also, peer review processes were discussed within the WP5 group, as well as with experienced reviewers.

Extensive web-based peer review processes are already going on at various partner facilities. The unique feature of the software proposed in this document is the facility-spanning aspect, where allowance is made for the various policies applied at the different facilities.

This report specifies the corresponding requirements for a web-based peer review process.

Description of proposal submission and review is currently performed within the various NMI3 Transnational Access work packages

All NMI3 partners already have proposal submission and review systems in place. Successful harmonization can only be achieved when the processes already in place are considered carefully. In the following paragraphs, a short description for each facility is provided.

ISIS neutrons

Two calls for proposals per year (April 16 and October 16 as deadlines). Online proposal system in place. Interaction with ISIS scientists even during proposal preparation. Seven international Facility Access Peer Panels (six neutrons, one muon) do the reviewing of all proposals, NMI3 included. UK research council peer review standards apply.

These are application field-based panels.

ISIS muons

Same as neutrons. Digital proposal submission in place, only one selection panel, that meets 6 weeks after the submission deadline. Panel members are muon specialists, some are application field specialists.

Note: for ISIS neutrons and muons, ‘Rapid Access’ proposals can be submitted at any time to the facility where there is a need for quick access to beam time. These are sent to members of the Facility Access Panels for rapid review. Express access, for very short measurements or to test samples, is also available.

ILL

Two calls for proposals per year (usually mid February and mid September). Interaction with scientists even during proposal preparation. Proposals evaluated by ten international peer panels, each panel

specialized in a particular discipline (soft matter, biology, crystallography, ...). More information at <http://www.ill.eu/users/applying-for-beamtime/electronic-proposal-system/>

FRMII

Two calls per year, electronic proposal submission over the web. Interaction with scientists during proposal preparation recommended. Proposals evaluated by six international peer panels, each panel specialized in a particular discipline (biology; imaging, analysis, nuclear and particle physics; magnetism and spectroscopy; material science; soft matter, structure). More information at <http://www.mlz-garching.de/englisch/user-office/getting-beam-time.html>.

PSI/SINQ

Two calls per year (emergency option available), electronic submission of proposals. External SINQ scientific committee with 13 international members for review.

PSI/S μ S

Same as SINQ except 10 committee members, and only one meeting per year: The second call proposals are dealt with entirely electronically.

HZB

Two calls per year, two international scientific committee meetings. The committee is composed of eight "colleges" for different fields of application. Synchrotron and neutron proposals are reviewed together. Proposals are submitted electronically and the user indicates the appropriate college.

LLB (CEA)

Two calls per year, international review committee divided in 5 sub-panels according to scientific field.

BRR (BNC-MTA EK)

Two calls per year. Submitted proposals are sent to the review committee electronically. The panel meets once per year, the other round is completely electronic. Panel members cover different scientific fields.

RID

No calls, continuous receipt and processing of proposals by email, sent to the panel member(s) who cover the scientific field at stake.

NPI

No calls, continuous receipt and processing. Electronic submission of proposals (web based system, <http://users.canam.ujf.cas.cz>). Technical feasibility is assessed by the instrument responsible. The most specialized (for the given topics) member of our international Scientific Selection Panel is asked to evaluate and write a short report on the proposal. According to the grade (A, B, C, D) and schedule of the particular facility, beam time is ascribed or the proposal is rejected.

Conclusion / summary

Only the smallest of the facilities (RID and NPI) have a continuous system for receipt and processing of proposals. All others organize review sessions twice a year. One of the two sessions tends to take place by electronic means, the other by face-to-face meetings.

Relevant results from the surveys performed within WP5

The NMI3-II WP5 Reviewer Survey Report presents results from a survey amongst active reviewers. From the data, it becomes clear that most reviewers prefer to receive the proposals on paper by mail, or at least to be able to print them from a .pdf file. They do like to submit their final recommendations electronically, preferably after having met face-to-face in specialized panel meetings.

Discussions with experienced reviewers made it clear that face-to-face meetings are liked for the adjustment of initial recommendations, in case of discrepancies. A very important aspect also named was that reviewers should always receive feedback about the decision taken in the end about the proposal.

A major complication is that (some of the) partner facilities wish to stay in complete control of the proposal review process pertaining to their own instruments. The proposed software specification caters to that: Each facility may or may not keep their “own” reviewers, proposals and/or decisions completely to itself, or it may wish to share and cooperate with others in all cases, or just in individual cases.

Resulting requirements for web-based peer review

The software will maintain a relational database of facilities, instruments, users, proposals and recommendations. It will enable electronic communication between the various users and create archives of the communications. Communications may be anonymous one way or both ways, depending on the sender and the recipient(s). The relational database will allow queries to be conducted depending on the user level.

Proposals

Proposals are to be uploaded to the database using a harmonized proposal form as developed within this same WP5 of the NMI3-II project. Each proposal states the instrument(s) needed at specific facilities, the scientific application field and various other details. During the review process, communications and reviewer’s recommendations are to be linked to the proposals and vice versa.

Users

The software will define four types of users: One top-level administrator, one facility-level administrator for each facility, and any number of reviewers and proposers.

In the software, the top-level administrator appoints the facility-level administrators, and the facility-level administrators (invite and) appoint the reviewers. Proposers register themselves. A single person could be top-level administrator, facility-level administrator, reviewer and proposer at the same time, as long as self-reviewing or self-governing is prevented.

For each user, no matter what type, personal information as required by the NMI3 network for proposers is to be registered (see Appendix A: Personal Data registration form).

For each reviewer, the scientific fields and the instrument types where the reviewer is competent are registered. If reviewer and facility-level administrator agree on it, the reviewer may be flagged as being available to other facility’s reviews as well. All participating facility-level administrators can enter reviewers, review them, and veto them for reviewing proposals pertaining to their “own” facility. The software should allow for generation of statistics on the reviewers, as well as for retrieval of the proposals they reviewed and their recommendations.

The top-level administrator has complete access to the whole database.

Facility-level administrators can access proposals and reviewers linked to their own facility, as well as read-only the lists of instruments and reviewers linked to the other facilities. They can only get in touch with reviewers linked to other facilities directly if flagged as “shared” reviewers.

Reviewers can inspect the lists of instruments at all facilities.

Facilities, instruments and instrument types

For each participating facility, the software will keep track of the following data:

- The facility-level administrator.

- A list of names and types of instruments offered for access. A name might be “PANDA”, a type might be “small-angle neutron scattering”. The vocabulary used for the facilities and instrument types must be controlled, the top-level administrator maintains the lists. All others can then only choose the facility and instrument type using a pull-down menu or some such method. With each instrument, a link is available to the specifications on the website (or whatever) of the facility that offers the instrument for access.
- If the facility offers transnational access through NMI3 or not.
- If the facility offers other proposal-based access or not.
- To what degree the facility chooses to be in complete control of its own proposal review process or not.
- If the facility chooses to share its pool of reviewers with other facilities or not. (If the facility would choose NOT to share its pool of reviewers, the facility may still offer to review proposals for other facilities or not. Also, individual reviewers may declare themselves “shared” or not.

Review procedure

The proposer registers if first-time, logs on to the website and uploads the proposal. Since the harmonized proposal form is used, the software can extract the facility and instrument specified.

After the uploading of a proposal, the facility-level administrator of the facility specified in the proposal receives a message that a proposal has been received, with a link to the proposal information.

Depending on the procedures and policies of the facility, the facility-level administrator may wait for the passing of the deadline of the proposal round of the facility before taking the next step.

Next, using the information in the proposal in conjunction with the list of available reviewers and their fields of competence, the facility-level administrator invites one or more reviewers to review the proposal. A user cannot be invited to review a proposal that he/she (co)proposed.

At this time, the reviewer should be able to see only to see the scientific topic and the experimental technique to be used, possibly an abstract. Only after accepting the invitation, the reviewer can download and print the complete proposal.

The invitation is sent through the software, includes the proposal information or a link to it, a deadline, and the facility-level administrator can add personal text to the message. The reviewer may accept the invitation or not, and may suggest another reviewer or not. This other reviewer may already have been registered or not. In the latter case, the administrator may invite the new reviewer and appoint him or her. If no reviewer can be found within the list of reviewers available to the specific facility, the facility-level administrator may look for a reviewer in the complete database and may invite another facility-level administrator to invite a reviewer located this way. If a reviewer was already flagged as being available to other facilities, the invitation does not need to involve the second facility-level administrator.

After the reviewer accepts the invitation, the software will remind him or her of the deadline one week before it passes, and will start nicely nagging after that.

In the process of assessing the proposal, the reviewer may have to get in touch with the proposer. The website should make this possible in such a way that the reviewer remains anonymous, and the exchange of information is shared with other reviewers assessing the same proposal.

The website should not allow the reviewers to retrieve earlier proposals of the current proposer and the related recommendations. Obviously, scientific track record is available with the name of the proposer, of even within the harmonized proposal form.

Next, the reviewer may recommend various things initially:

- Accept proposal as is.
- Accept proposal after some modification has been made.

- Resubmit proposal to a different facility. (From within the software, the reviewer can retrieve information about the relevant instrument type at any facility within NMI3.)
- Reject proposal.

After receiving the recommendation(s), the facility-level administrator may choose to invite more reviewers to look at the same proposal. Different reviewers of the same proposal may be brought into contact with each other, face-to-face or by any other means, to see if that results in agreement on the recommendation. In all cases, the facility-level administrator decides and lets the proposer and the reviewers know his decision about the proposal.

In all communications, it must be clear what will be visible to who: Some communications will be private between two users, some will be public to a group of reviewers and the facility-level administrator, and some will be visible to the proposer.

If the final recommendation is to resubmit the proposal to a different facility, it is offered to the proposer to do that for him/her.

The software should not impose a rhythm or a cycle.

Appendix A: User personal data

Family Name	
First Name	
Initials	
Gender (M/F)	
Birth date (dd/mm/yyyy)	
Nationality	
Email address	
Researcher Status ¹	
Group leader (y/n)	
Home Institute Type ²	
Name of Home Institution	
Town of Home institution	
Country of Home institution	

instructions (1-2):

¹ Please choose from: **UND** = Undergraduate
PGR = Postgraduate (Ph.D.)
PDOC = Post doctoral researcher
EXP = Experienced researcher
TEC = Technician

² Please choose from: **UNI** = University
RES = Public research organization (e.g. Max-Planck institutes)
SME = Small and medium enterprise
PRV = Other industrial profit or non-profit private organization
OTH = Other organization non fitting in the above categories