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WP5 Integrated User Access

Prototype of web-based review process

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Following the report on "Requirements for web-based review process" (Deliverable 5.5, Task 5.4) a general framework has been developed to demonstrate and allow peer reviewing of submitted proposals within a structured web application. The application can be used either by small facilities, which do not operate an individual Digital User Office software (DUO), or combined with existing DUO platforms.

The framework is embedded into the software prototype developed for harmonized proposal form submission, review and cross facility beam time handling (Deliverable 5.4, Task 5.3) and intends to fulfill the requirements outlined in report D5.5 of the WP, Task 5.4. According to this report the following requirements have been implemented:

- 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.
- Proposals must be uploaded to the database using a harmonized proposal form as developed within this same WP5 of the NMI3-II project.
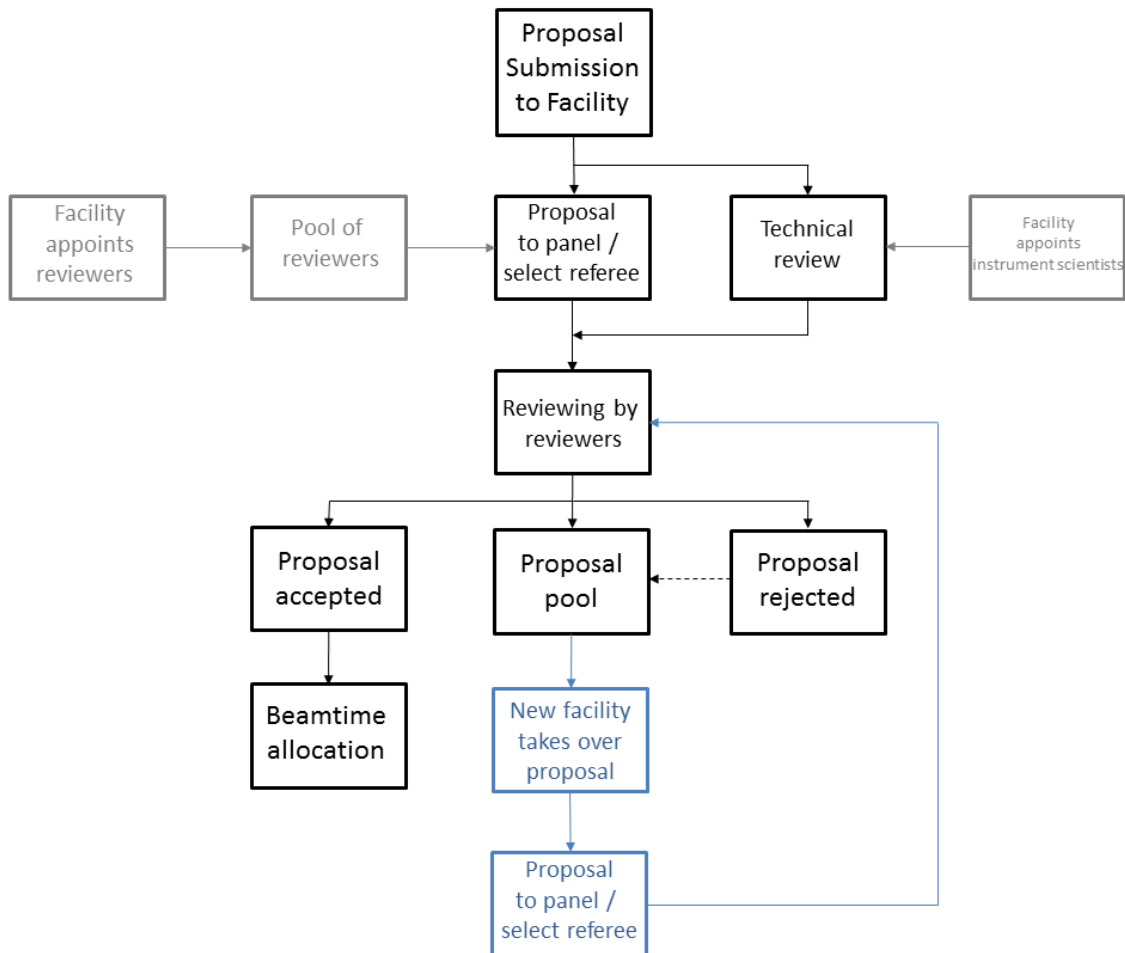
It should be pointed out that most of the functionality regarding proposal review processes described below is already available at almost all facilities within the consortium. **What is really new is the "inter-facility" functionality, i.e. the option to interact with other facilities during the review process.**

Software prototype on web based review process

The current prototype of the web-based review process follows the review process as described below. The basic functionalities implemented allow to

- Submit and administer proposals
- Manage a pool of reviewers
- Distribute proposals to reviewers
- Collect comments and grades about proposals by reviewers
- Assign a certain status to proposals (accepted, rejected etc)

Flowchart Web-based Proposal reviewing

Proposal Submission to Facility

Facility appoints reviewers → Pool of reviewers → Proposal to panel / select referee

Technical review ← Facility appoints instrument scientists

Reviewing by reviewers

Proposal accepted | Proposal pool | Proposal rejected

Beamtime allocation

New facility takes over proposal

Proposal to panel / select referee

Administration of user types

The software defines five basic types of users: top-level administrator, facility-level administrator for each facility, reviewers, instrument scientists for technical reviewing and proposers (Fig. 1). Each of these roles has certain tasks and rights within the software functionalities.

	Logout	Superadmin Access rights	Facility manager SPF	Instruments	Panel	Facility proposals	Used beamtime	Add/Edit user	Inst. scientist Proposal	Referee Review	Proposer Proposal submission	Own proposals	Change user data	Messages
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Fig. 1: Navigation menu with each role depicted.

The top-level administrator appoints the facility-level administrators. The facility-level administrators (invite and) appoint the reviewers and instrument scientists. Proposers register themselves. A single person could be top-level administrator, facility-level administrator, reviewer, instrument scientist and proposer at the same time. Self-reviewing or self-governing is prevented.

Facility-level administrators can access proposals and reviewers linked to their own facility, as well as access ("read-only") the lists of instruments linked to other facilities.

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
- Does the facility offer transnational access through NMI3 or not?
- Does the facility offer other proposal-based access or not?
- To what degree does the facility choose to take full control of its own proposal review process?
- Does the facility share its pool of reviewers with other facilities or not?

For each reviewer, the scientific fields and the instrument types of expertise are registered. Also the personal information required by the NMI3 network is saved in the database. All participating facility-level administrators can enter reviewers and accept or reject for reviewing proposals. The software allows for the generation of statistics about the reviewers, as well as for retrieval of the proposals they reviewed and their recommendations. Reviewers can inspect the lists of instruments at all facilities.

Based on these requirements the software framework enables a web-based review process as outlined below.

Administration of review process

The review process starts using proposals that have previously been uploaded to the database based on the harmonized proposal form as developed within this same WP5 of the NMI3-II project (D5.2, Task 5.2). Each proposal requests the instrument(s) needed at specific facilities and fills in the scientific application field and various other details. During the review process, communications and reviewers recommendations are linked to the proposals and vice versa.

Fig. 2: Facility administrator proposal view.

When uploading a proposal, the facility-level administrator of the facility specified in the proposal receives a message that a proposal has been received. Depending on the procedures and policies of

the facility, the facility-level administrator may wait for the deadline of the proposal round of the facility before administering the proposal to the review process (Fig. 2).

The proposals received are then processed by the facility-level administrator of the facility to check any other non-scientific restriction regarding proposal acceptance by the policy of the facility. The technical feasibility is checked by the responsible instrument scientist (Fig. 3).

Fig. 3: Technical review (instrument scientist).

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 (Fig. 2). The facility-level administrator can group the reviewers in different panels. One or more reviewers can be chosen out of one scientific panel to review the proposal. 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. A user cannot be invited to review a proposal that he/she (co)proposed. The reviewer is able to see the proposer, scientific topic and the experimental technique. By clicking on the proposal ID, the full proposal dataset is provided. Furthermore, the reviewer may inspect the result of the technical review and has insight into attached publications to the proposal. After the reviewer accepts the invitation, the software will remind him or her of the deadline, by email. In the process of assessing the proposal, the reviewer may have to get in touch with the proposer. The framework makes this possible in such a way that the reviewer remains anonymous.

Fig. 4: Reviewer overview page. By clicking on the proposal a pdf file with the whole dataset of the proposal opens.

The reviewer may recommend various things and finally ranks the proposal (Fig. 4). 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, in order to come to an agreement on the recommendation. Finally, In all cases, the facility-level administrator decides and lets the proposer and the reviewers know his decision about the proposal.

In all communications transparency is required and it must be clear for everybody what will be communicated: some communication will be a private one 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 (see Flowchart).

The basic functionalities and procedures as implemented and presented in the current prototype can be subject to modifications and adaptations according to individual requirements at the local facility. Within the general framework of the software, such modifications and adaptations could be also adopted by other facilities and allow harmonization of the review process between facilities.

The software can be viewed and tested within the NMI3 portal at http://nmi3.eu/proposal/