R&D projects for Polytechnic Institutions

Call N.º 02/SAICT/2016

Guide for Peer Reviewers

November 2016
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1. Introduction

About FCT

Fundação para a Ciência e a Tecnologia, I.P. (FCT), the Portuguese foundation for science and technology, is the public agency responsible for implementing the Portuguese government’s Science and Technology policy.

FCT started its operations in August 1997, succeeding the previous equivalent agency, JNICT, created in the 1980s.

FCT’s mission is to continuously promote the advancement of scientific and technological knowledge in Portugal, exploring opportunities to attain the highest international standards in the creation of knowledge, in any scientific or technological domain, and to stimulate the diffusion of that knowledge and its contribution to improve education, health, the environment, and the quality of life and well-being of citizens.

This mission is mainly accomplished through the funding, subsequent to peer review, of applications submitted by institutions, research teams or individuals, in public calls. Funding is also awarded through cooperation agreements and other forms of support, in partnership with universities and other public or private institutions, in Portugal and abroad.

FCT’s main roles are:

- To promote, finance, monitor and evaluate science and technology institutions, programmes, projects and training of human resources;
- To promote and support infrastructure for scientific research and technological development;
- To promote the diffusion of scientific and technological culture and knowledge, especially when relevant for educational purposes in close collaboration with the Ciência Viva agency;
- To stimulate the updating, interconnectivity, strengthening and availability of science and technology information sources.

FCT funds all areas of knowledge, including exact, natural and health sciences, engineering, social sciences and humanities.

Call for R&D projects for Polytechnic Institutions

The call for R&D projects to be carried out by Polytechnic Institutes was launched by Portugal 2020 (www.portugal2020.pt) through a public call (Notice of the Call – Aviso Nº 02/SAIT/2016) outlining the required features of the applications and the evaluation criteria to be applied.
Funding of projects headed by Polytechnic institutions is based on peer review of applications that have been submitted online, in the referred call. FCT is responsible for the evaluation of the scientific merit of the submitted project proposals.

This call covers all the regions in mainland Portugal: North, Centre, Lisbon, Alentejo and Algarve. The funding authorities (COMPETE2020 or relevant regional authority) are responsible for the final decision.

Evaluation of the applications will be performed by a multidisciplinary panel.

2. Framework and Goals of this call for Polytechnic projects

This call is targeted to Polytechnic institutes for the execution of practice based research and developments activities with impact in the regional stakeholders.

It aims to contribute to the accumulation of competences of polytechnics institutions and to foster the impact of these institutions in society and in the Portuguese society and economy, encouraging scientific research and technological development activities based on experience (experience or practice based research) and oriented towards innovation in the productive, social and cultural sectors, at regional and national levels.

This is the first call for funding of R&D activities of practice based projects launched in Portugal, specifically aimed at polytechnic institutions, in close coordination with the productive, social and cultural players at the territorial and regional levels, in problems relevant to these stakeholders and their regions, and aiming at strong involvement of students in the activities of the R&D teams.

Practice based research activities are research and development activities that seek to create new professional knowledge through practice, action or experience, learning by doing and using discovery and innovation activities for learning and credits. Practice based R&D projects include methodologies also commonly known as action research, reflective practice, problem-based learning and other related to practice-based learning experience, interventions and participation.

The aim of this call is to promote practice based R&D projects in these institutions in close coordination and cooperation with the economic and social sectors, including both for profit and nonprofit sectors, and focusing on relevant issues of the territories and targeting the following objectives:

- To encourage the creation and / or mobilization of multidisciplinary groups of researchers, teachers and students of polytechnics to identify and to solve concrete and emerging
problems, particularly of regional scope and relevance, emerging from the interaction with the relevant regional stakeholders;

- To foster the cooperation between polytechnic institutions and the economic, social and cultural sectors, facilitating professional knowledge transfer routines and skilled human resources, as well as the cooperation between different polytechnic institutions;

- To integrate skills and to enhance synergies in terms of opportunities and regional and national needs, bringing together teachers and researchers from different scientific areas around a precise challenge and issue that enables R&D activities to be solved and create opportunities for training and creation of professional knowledge together with the students;

- To support the attraction and continuous renewal of new teachers and progressional experts to the polytechnic institutions, together with measures to promote high qualified jobs in different areas of science, technology and culture, enhancing regional and national networks of polytechnic institutions to share human and material resources;

- Encourage the inclusion of the participant entities in European networks of polytechnics to facilitate the internationalization of the polytechnic institutions and the regions in which they operate.

In the call it was specified that the R&D projects submitted should focus primarily on the following thematic areas of research/application, but not excluding other areas that might be presented:

- Health, quality of life / life sciences, sport sciences and biotechnology in its various applications;
- Solutions with sustainable technologies;
- Valorization of natural and local resources, including forest resources, territories and food security applicable to the agrifood sector;
- Innovative solutions in the areas of hospitality, catering and tourism;
- Artistic and cultural solutions for the valorization of territories;
- Heritage, archives, conservation and restoration;
- Prevention of natural risks;
- Information and communication technologies at the service of organizational innovation in institutions and interventions in the territories, especially in the promotion of cities and smart territories;
- Energy and environmental valorization of waste with preferred focus, but not exclusively, in agricultural activity;
– Manufacturing technologies and production, including prototyping and rapid product development;
– Technologies, science and / or economy of the sea;
– High Performance Computing.

Moreover, applications identified the primary and secondary scientific areas where they classify their proposal, from the provided list (OECD’s revised Field of Science and Technology - FOS, adapted to Portugal). They also indicated four keywords that most accurately reflect the content of the proposed activities.

In evaluating the various criteria defined in the call documents (see Sections 4 and 5), the panel members are strongly asked to take into account this specific paradigm of R&D activities based on practice. This is not fundamental neither applied research, as usually considered for the evaluation of research units, but a different (not better, not worst) type of R&D activities aimed to address specific problems of territories and professional world in order to learn through the actions of the process, as well as to be close to regional stakeholders and to foster R&D activities among students of the polytechnic institutions.

3. Type of Projects and of Application

All projects were presented as a consortium headed by one of the following entities:

a) Polytechnic Institutes;

b) Polytechnic Schools not integrated in Polytechnic Institutes or universities;

c) Organic Units of Higher Education Polytechnic Institutes integrated in Universities.

It is mandatory the participation in the consortium of at least one of the following institutions:

• Private non-profit institutions that carry out or participate in R&D activities that are part of the R&D projects headed by one of the three types of Polytechnic institutions above referred, within an effective collaboration;

• Companies (except for projects supported by funds from POR Alentejo e POR Algarve), within an effective collaboration.
The projects to be funded in this call should meet the following specific admittance conditions:

a. Involve an eligible investment less than or equal to 150 thousand euros;

b. Have a maximum duration of 18 months.

4. Selection Criteria

Scoring of the project proposals, towards their selection and ranking, is based on the indicator Merit of the Project (MP), which is determined by the following criteria:

- A. Quality of the Project
- B. Impact of the Project (only B2 and B4 criteria in this group will be evaluated by the evaluation panel)

The Merit of the Project is calculated as \( MP = 0.7A + 0.3B \)

Criteria A and B are scored using a 5-point scale system (1 – minimum; 5 – maximum). The final score of MP is rounded to two-decimal places.

For a proposal to be eligible for funding, the following minimum scores are required:

- Criterion A – 3.00 points;
- Criterion B – 3.00 points;
- Final MP – 3.00 points.

5. Evaluation Criteria

As indicated in Section 4, scoring of the proposals towards their selection and ranking is based on the calculation of the Merit of the Project (MP = 0.7 A + 0.3 B), where A is the Quality of the Project and B is the Impact of the Project.

The members of the evaluation panel are required to evaluate and comment on the following criteria:

- A1; A2; A3; A4
- B2; B4
A. Quality of the Project

This criterion aims to assess the scientific and technological merit of the proposal and of the team, the reasonableness of the budget and the management and implementation capacity, through the following sub-criteria:

- A1 – Scientific and technological merit of the proposal
- A2 – Merit of the team
- A3 – Quality of the work plan
- A4 – Reasonableness of the budget

The Quality of the Project is calculated as:

\[ A = 0.30 \times A1 + 0.25 \times A2 + 0.30 \times A3 + 0.15 \times A4 \]

Each sub-criteria is scored in a 1 to 5 point scale (using 0,5 interval) and the result will be rounded off to the second decimal place.

However, due to the design of the online platform where score and comments will be introduced, a 50-point scale is available for scoring the four sub-criteria (A1, A2, A3 and A4). Therefore, values between 10 (minimum) and 50 (maximum), with 5-point increments, should be used in the respective scoring boxes.

The application of above sub-criteria (A1 to A4) shall take into account, among other considerations, the following:

A1. Scientific and technological merit of the proposal

i.) Relevance and originality of the proposed project, based on the state-of-the art of the thematic area where the project fits project and on the practice based R&D methodologies proposed;

ii.) Methodology adopted for carrying out the proposed project;

iii.) Expected results and their contribution to scientific, technological and professional knowledge, as well as the level of innovation and the potential of innovative applications to societal challenges;
iv.) Extent to which the proposed the project program combines different expertise from the various members of the team and of the consortium into a coherent approach;

v.) Effective cooperation among (if existing) different Polytechnic Institutions of the type a) to c) in Section 3;

vi.) Contribution towards promoting and disseminating the results and achievements of the project (there is a special section in the application form designated as “Plano de divulgação de resultados e de disseminação de conhecimentos” where this information is available);

vii.) Production of knowledge that can contribute to benefits to society or to the business sector.

A2. Merit of the team

i.) Previous productivity of the team, evaluated from the documentation in the proposal; "Previous Publications" section of the application asked for up to 5 related publications by the team, including books, published or submitted monographs or other documents authored or co-authored by the team members and considered to be relevant to evaluate the quality and the territorial importance of the proposed project objectives;

ii.) Abilities and skills to adequately execute the proposed project (team configuration);

iii.) Ability to involve students in the activities of the project, and the extent to which their know-how will contribute to the project within their curricular activities and ability to integrate new young researchers in the team;

iv.) Degree of success of the team members in previous projects, if described in the proposal.

Please note that curricula vitae of the key elements of each proposal are available at the annexes of the application form.

A3. Quality of the work plan

i.) Organization of the project in terms of the proposed objectives and resources (duration, equipment, size of the team, institutional and management resources);

ii.) Ideas and important actions that the Principal Investigator and his/her team will use to achieve the project goals and extent to which they value synergies in terms of territorial needs, nationally and regionally;
iii.) Organization and work environment, with special focus on the adequacy of the research team’s critical mass to perform the proposed objectives;

iv.) Quality and reasonability of the proposed management scheme.

A detailed description of the management structure of the project consortium is available at the application form in section “Descrição da Estrutura de Gestão”.

A4. Reasonableness of the budget

i.) Adequacy of the proposed budget to accomplish the proposed objectives in the time framework of the project;

ii.) Institutional resources (technical-scientific, organizational and managerial) of the participating entities.

The requested budget of the application is available at the online evaluation platform.

B - Impact of the Project

The Impact of the Project considers the following sub criteria:

- B1 – Strategic impact of the project
- B2 – Potential for knowledge valorization (to be evaluated by Evaluation Panel)
- B3 – Project additionality effect
- B4 – Project contributions in terms of innovative applications (to be evaluated by Evaluation Panel)

Calculation formula for the Impact of the Project:

\[ B = 0,30 \times B1 + 0,20 \times B2 + 0,30 \times B3 + 0,20 \times B4 \]

Please NOTE that the Evaluation Panel will only consider sub criteria B2 and B4. The application of sub-criteria B2 and B4 shall take into account, among other considerations, the following:

B2. Potential for knowledge valorization

This sub-criterion regards the impact of the knowledge/technology developed by the project on the regional and/or national social-economic valorization, using the following table:
It should be noted that, besides the technical description of the proposal, in Section “Plano de divulgação de resultados e de disseminação de conhecimentos”, the candidates, based on the forecasted results, presented a detailed plan of the dissemination activities of the proposal, predicted technical/scientific and professional publications, conferences seminars or events and other actions with target sectors.

**B4. Project contributions in terms of innovative applications**

Regarding the project contribution for the achievement of the results, it is considered:

<table>
<thead>
<tr>
<th>Project contribution for the achievement of results</th>
<th>Scoring by the Panel</th>
</tr>
</thead>
<tbody>
<tr>
<td>There are no innovative applications successfully tested in response to societal challenges</td>
<td>1</td>
</tr>
<tr>
<td>There is at least one innovative application successfully tested in response to societal challenges</td>
<td>3</td>
</tr>
<tr>
<td>There are several innovative applications successfully tested in response to societal challenges</td>
<td>5</td>
</tr>
</tbody>
</table>

Please note that the predicted innovative applications for each proposal are available in section “Dados do Projeto – Indicador de Resultado Previsto para o Projeto” at the application form.

### 6. Application Highlights for the evaluation

The components of the entire pdf file with the proposal that are relevant for the evaluation of criteria A and criteria B2 and B4 are the following:

- Caracterização da Instituição Proponente - Identification of the Lead Institution
7. Evaluation Process and Procedures

**General Information**

- The **Quality of the Project (criterion A)** and **two sub-criteria of the Impact of the Project (criterion B)** will be assessed by a multidisciplinary evaluation panel appointed by the FCT Board of Directors.

- Each application will be remotely and individually evaluated by two panel members. One of the panel members will be appointed as the first reader of the application.

- The panel is headed by the Panel Chair and its composition will be published on the FCT website after the panel meeting.
• Distribution of the applications to panel members will take into consideration any Conflict of Interest, as well as the matching of professional and scientific competences.

• The first time a reviewer logs into the evaluation web page located at FCT site, he/she has to sign a Confidentiality Statement.

• Prior to accessing each application, the reviewer has to declare whether or not a conflict of interest is identified for that particular application.

• During the panel meeting, all applications shall be discussed. A ranked list taking into account criterion A and a panel evaluation report (for each application) will be produced.

• The panel will issue a panel meeting report on its activities.

• There is an allocated FCT team for the evaluation panel, which will act as the contact point for the reviewers.

**Evaluation Stages**

Evaluation of the research applications involves the following stages:

1. Application
2. Individual Evaluation Report (1st Reader)
3. Individual Evaluation Report (2nd Reader)
4. Public Session for Poster Presentation
5. Pre-Consensus Report
6. Final Panel Evaluation
7. Panel Evaluation Report
Constitution of the Evaluation Panel

- The constitution of the evaluation panel will take into consideration the number of applications for each thematic area.

- A chair will be invited to head the evaluation panel. The panel chair will be in charge of the quality control of the individual and panel evaluation reports, steering of the panel meeting and communication of the results of the discussions to the Board of Directors of FCT. The chair is asked to keep the evaluation process within the defined timeframe and contact panel members in case of any delays. Should a Conflict of Interest be identified during the evaluation process, the panel chair is expected to support the FCT team in its resolution.

- The Chair of the evaluation panel might have the support of Co-Chairs mainly for the allocation of the projects to panel members.

- The panel members might be asked to give support to FCT during the period spanning the evaluation meeting and the final decision (e.g., analysis of potential appeals of scientific nature presented by applicants).

Public Session for Poster Presentation

- A public session will be prepared for poster presentation;

- Panel members will attend the public session, in particular to visit the posters for which they are evaluators to know the project team and to discuss with them;

- Each poster will be presented by representatives of the research team. Two Panel members will analyze the poster and will have the opportunity to discuss it with the team members.

- However, considering it is a public session, any Panel member is encouraged to question any research team of any project.

Individual Reviews

- Each application will be remotely and individually evaluated by two panel members.

- Each of the two panel members must submit and lock an individual evaluation for each assigned application in the Individual Evaluation Form.

- Reviewers must submit their assessment for each proposal in the Individual Evaluation Form, including:
- The rating and comments for each of the evaluation sub-criteria (A1, A2, A3, A4 and B2, B4);

- A summary of the evaluation;

- A comment on the total and Human Resources requested budgets, if considered necessary;

- Confidential comments to other panel members, if necessary.

- The assessment should take into account the following guidelines:
  - The strengths and weaknesses for each sub-criterion must be identified;
  - The explanatory comment for each sub-criterion should be succinct but substantial; this comment should address the relative importance of the criterion and the extent to which the application actually meets the criterion. Suggestions that might help the project team to carry the project activities might be provided;
  - Comments should also be impeccably polite; if so decided by the panel, the comments may be reproduced totally or partially in the feedback to applicants;
  - The overall comment on the proposal should be a global judgement of the reviewer on the application, stating conclusions regarding the research work and the organisation of the project;
  - Confidential comments to the evaluation panel may be provided.

- Both ratings and comments are critically important. The individual review ratings and comments are the starting point for the panel discussions and for the panel final rating.

Pre-Consensus Report (online)

- Following the poster presentation and based on the two individual reviews for each application, the panel members designated as first readers will prepare the Compilation (Pre-Consensus) Report for each proposal.

- First Readers must submit and lock their Compilation Reports before the final panel meeting.

Final Panel Evaluation Meeting

- At the panel meeting, all applications and respective evaluation reports will be available to all panel members.
• During the panel meeting all applications shall be discussed.

• It is the duty of the evaluation panel to:

  - Prepare a Panel Evaluation Report for each application (to be conveyed to the applicants) based on the Compilation (Pre-Consensus) and Individual reports and panel discussions;
  - Produce a Ranked List of all evaluated applications, in what concerns criteria A;
  - Prepare a Panel Meeting Report with a summary of the meeting activities and comments regarding the evaluation process.

• The applications’ final ratings in criteria A and comments to be made available to the applicants are discussed and decided by the evaluation panel during the meeting, and included in the Panel Evaluation Report by the first reader.

The first reader should submit the panel assessment (comments to be conveyed to the applicants) in the Panel Evaluation Form, including:

  - The rating and comments for each of the criteria (A1, A2, A3, A4 and B2, B4);
  - Strengths and weaknesses of the application, and, if applicable, suggestions towards the implementation of the workplan;
  - Recommended amount for funding to be conveyed to the applicant;
  - Confidential comments to FCT, if necessary.

• The final panel assessment should take into account the following guidelines:

  - All comments should take the form of a statement with respect to the criterion under evaluation; the overall comment should provide a global point of view on the quality of the project;
  - Panel members shall:
    o Avoid comments that give a description or a summary of the application;
    o Avoid the use of the first person or equivalent: "I think..." or "This reviewer finds...";
    o Always use dispassionate and analytical language: avoid dismissive statements about the team, the proposed science or technology or knowledge, or the field concerned;
o Evaluate the work that is being proposed, and not the work that the reviewers consider should have been proposed;

• The Panel Meeting Report, with a summary of the meeting activities, should address (but not be limited to) the following issues:
  - Working methodology adopted by the panel;
  - Identification of Conflicts of Interest and their resolution at any time along the process.

This report should be signed by all panel members.

• The Panel may prepare an additional document with Recommendations to FCT on the various aspects of the evaluation process that may help FCT to improve procedures in future calls. This document may include, among other issues considered to be important:
  - Comments and critiques on the application form, with suggestions for possible improvements;
  - Comments on the material available to panel members, in particular the Guide for Peer Reviewers;
  - Strong and weak aspects of the FCT team;
  - Strong and weak logistic aspects (travel, hotel, meeting).

FCT Evaluation Webpage

Individual credentials will be sent to each reviewer, which give access (through https://sig.fct.pt/evaluation/) to the list of applications, as well as to the evaluation form for each application assigned to the reviewer. After logging in, instructions are available at the top of the menu.

For each application, the following is available:

• A statement on Conflict of Interest;
• A PDF file containing all information submitted in the application form;
• Curricula Vitae of the key elements of the proposal;
• Timeline of the proposal;
• The Individual and Compilation (Pre-Consensus) Report Forms;
• The possibility to SAVE the submitted evaluation report - the uploaded information will be kept for future revision;
• The LOCK button to submit the evaluation report - the reviewer will no longer be able to modify the uploaded information.

8. Confidentiality and Conflict of Interest

Confidentiality
The confidentiality of written applications must be protected. All reviewers involved in the evaluation are asked not to copy, quote, disclose or otherwise use material contained in the applications. All reviewers are requested to sign a statement of confidentiality relative to the contents of the applications and to the results of the evaluation.

The statement that needs to be accepted, which appears the first time the reviewer uses the individual credentials to access the evaluation area, is the following:

**STATEMENT OF CONFIDENTIALITY**

Thank you for accepting to participate in the scientific evaluation of Research Projects submitted to the Portuguese Foundation of Science and Technology (Fundação para a Ciência e a Tecnologia, I.P.) – FCT.

The reader of this message pledges, on his/her honour, not to quote or using in any way, the contents of the project applications, nor to make available, other than to FCT or the evaluation panel, the results of the evaluation of project applications.

Conflicts of Interest (CoI)
Reviewers that have submitted any application to the present Call, either as PI or team member, have to decline participating in the evaluation process. Reviewers with first-degree relationships, married to or cohabiting with the PI or any team member are also impeded from being a panel member or remote evaluator.

In the case of a disqualifying conflict of interest, panel members and remote reviewers cannot remotely evaluate the respective applications. Panel members are also not allowed to participate in the panel meeting discussion of these applications. Circumstances that could be interpreted as a disqualifying conflict of interest are laid down in the following criteria:

1. Life partnership, domestic partnership;
2. Personal interest in the application's success or financial interest by persons listed under no.1;
3. Current or planned close scientific cooperation;
4. Research cooperation within the last three years, e.g. joint publications;

5. Dependent employment relationship or supervisory relationship (e.g. teacher-student relationship up to and including the postdoctoral phase) within the last five years of the date of the call;

6. The affiliation or pending transfer to any of the Institutions involved in the consortium;

7. Researchers who are active in a council or similar supervisory or advisory board of the applying institution are excluded from participating in the review and decision-making process for applications originating from this institution;

In the case of a potential conflict of interest, panel members should notify FCT and clarify if he/she is able to perform an unbiased evaluation or if the conflict should rather be considered as disqualifying. A potential conflict of interest exists in the following circumstances:

8. Relationships that do not fall under no. 1; other personal ties or conflicts;

9. Financial interests of persons listed under no. 8;

10. Participation in university bodies other than those listed under no. 7, e.g. in scientific advisory committees in the research environment;

11. Preparation of an application or implementation of a project with a closely related research topic (competition);

12. Participating in an on-going scientific or inter-personal conflict with the applicant(s).

Before the start of evaluation of each application, and in order to be able to access the evaluation form, each reviewer needs to complete a CoI Declaration, as follows:

Conflict of Interest Declaration

Please state:

- No, I have no conflict
- Yes, I have a strong conflict (see Disqualifying CoI)
- It is possible that I have a conflict (see Potential CoI)

Add any comments below.

The individual reviewer will not be able to proceed in case of a strong conflict of interest. In this case, the individual reviewer is required to inform the FCT team of this situation, so that the application may be reassigned. The final panel meeting report must mention all declared CoI.
9. Other information:

The National Qualifications Framework (QNF) refers to the Portuguese framework for education and includes the following levels:

<table>
<thead>
<tr>
<th>Level</th>
<th>Qualifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Years 5 and 6</td>
</tr>
<tr>
<td>2</td>
<td>Years 7 to 9</td>
</tr>
<tr>
<td>3</td>
<td>Secondary Education (Years 10 to 12)</td>
</tr>
<tr>
<td>4</td>
<td>Secondary Education with work experience</td>
</tr>
<tr>
<td>5</td>
<td>Secondary Education with credits to access Higher Education</td>
</tr>
<tr>
<td>6</td>
<td>Higher Education Degree</td>
</tr>
<tr>
<td>7</td>
<td>Masters</td>
</tr>
<tr>
<td>8</td>
<td>PhD</td>
</tr>
</tbody>
</table>

Please note that this information is relevant for the understanding of the column “Nível de Qualificação” presented in the list of the research team members, available in section “Lista de Participantes / Lista de membros da Equipa de Investigação” at the application form.