Annex No. 5
To Regulation of Selection of Research Applications

International Evaluation Guidelines and Criteria for the Scientific Part of Research Applications

1. Introduction

1.1. Ageing of human resources presents a major problem in the science system of Latvia. In order to solve this problem, within the framework of the European Regional Development Fund it is envisaged to provide aid for post-doctoral research (hereinafter – SAM Cabinet Regulations)[1], by encouraging post-doctoral experts holding the Doctor's degree to stay in the field, by developing their skills and improving research capacity, by providing the possibilities for commencing the post-doctoral career in research institutions or in businesses, as well as by encouraging enhancement of research competences of post-doctoral researchers and their involvement in international research cooperation. Research applications providing contribution to achieving the goals of the Smart Specialisation Strategy of the Republic of Latvia [2] (hereinafter– SSS), implementation of the growth priorities or development of the specialisation areas will be eligible for funding:

Directions of transformation of the national economy	Growth priorities	Smart specialisation areas
1. Change of the production and export structure in traditional economy areas	***1st priority:*** More efficient use of raw materials for production of goods with greater added value, creation of new materials and technologies, and diversification of their application Wider use of non-technological innovations and Latvian creative industry potential to produce goods and services with greater added value of national economy sectors.	**1. Knowledge-intensive bio-economy** **2. Biomedicine, medical technologies, bio-pharmacy and biotechnologies** **3. Smart materials,**
2. Future growth sectors, in which products and services with high added value exist or may appear	***2nd priority:*** The creation of such innovation system that provides support for the creation of new products and technologies within the framework of existing sectors and cross-sectors,	

[1] Cabinet Regulations No. 50 of January 19, 2016, "On Implementation of Activity 1.1.1.2 "Post-doctoral Research Aid" of the Specific Aid Objective 1.1.1 "To increase the research and innovative capacity of scientific institutions of Latvia and the ability to attract external financing, investing in human resources and infrastructure" of the Operational Programme "Growth and Employment" (http://www.likumi.lv/xxx) (in Latvian).

[2] Research, Technology Development and Innovation Guidelines 2014 - 2020 Website: http://polsis.mk.gov.lv/documents/4608

	as well as for new sectors with high growth potential based on key sectors defining the development and providing an effective new products/services identification system, and that is able to find and provide support for the creation of new products both in the existing sectoral and cross-sectoral frameworks, and creating of new sections with high growth potential.	**technology and engineering systems** **4. Smart energy** **Information and communications technologies**
3. Sectors with significant horizontal impact and contribution in national economy transformation.	***3rd priority:*** Improvement of energy efficiency, which include the creation of new materials, production process optimisation, introduction of technological innovations, use of alternative energy resources and other solutions.	
	4th priority: Development of a modern and contemporary standard-compliant ICT system in the private and public sectors.	
	5th priority: A modern, and corresponding to the future labour market demands, education system that facilitates the transformation of national economy and development of competences required for the implementation of SSS priorities, enterprising spirit and creativity at all levels of education.	
	6th priority: Advanced knowledge base (basic science and scientific infrastructure) and human capital in areas of knowledge, in which Latvia has a comparative advantage and which are important in the process of transformation of the national economy: in areas of knowledge related to the smart specialisation areas (1) knowledge-intensive bio-economy, (2) biomedicine, medical technologies, bio-pharmacy and biotechnologies, (3) smart materials, technologies and engineering systems, (4) smart energetics, and (5) ICT, as well as key technologies identified by the EC (nanotechnologies, micro-and nano-electronics, photonics, advanced materials and manufacturing systems, biotechnologies).	
	7th priority: Studying of the existing resources of territories and specialisation, proposing the prospective economic development opportunities and directions int. al. leading and prospective business directions in the municipal territories.	

1.2. It is envisaged that funding will be granted to a research institution registered in the Register of Research Institutions of the Republic of Latvia or an enterprise for implementation of an individual research application including training and networking measures. The research application shall be implemented by a post-doctoral researcher who is a Latvian or a foreign researcher, who has obtained the

Doctor's degree maximum five years prior to the deadline for submission of the research application in a research institution or a university of the Republic of Latvia or in an enterprise accepting and providing access to the infrastructure or human resources for implementation of the research needed within the research applications. The research application may be implemented in a partnership with a foreign or Latvian research institution, university or an enterprise. Funding shall be granted for performing fundamental or industrial research. Within the framework of a research application it is also possible to implement the transfer of know-how and technologies, protection of the technology rights to the industrial property object created during the research, enhancing the competences of the post-doctoral researcher, participation in the international mobility and networking activities.
1.3. Evaluation of the scientific quality of research applications shall be organised by the State Education Development Agency (hereinafter - the Agency).

2. Evaluation goal
2.1. The goal of the evaluation is to evaluate the scientific quality of research applications in order to select the best research applications within the tender for funding. Excellence, impact and capacity are the 3 criteria for evaluation of research applications. The evaluation should also encourage development of the post-doctoral researchers' skills of preparation of applications, therefore argumentation of the evaluation of research applications and received recommendations regarding possibilities of improvement of applications and recommendations for implementation of research applications are essential.

2.2. Evaluation of research applications uses the evaluation principles and approach of the European Union Framework Program for Research and Innovation "Horizon 2020" Marie Sklodowska-Curie Actions Individual Fellowships.

3. Experts
3.1. The remote anonymous evaluation of the scientific quality of research applications shall be performed by foreign experts included in the European Commission Experts Data Base (https://ec.europa.eu/programmes/horizon2020/en/experts). Experts summoned for evaluation of each research application shall be selected in compliance with the research direction by considering also their preceding experience in the examination of research projects. The selection of experts shall be performed by using the search option based on the field and/ or sub-field of science specified by the applicant of research application and the key words and the summary of the research application. The fields and sub-fields of science shall be classified in compliance with the OECD classification (http://www.oecd.org/science/inno/38235147.pdf).

3.2. For evaluation of the scientific quality of each research application 2 experts of the relevant research direction each representing a different foreign research institution shall be invited. One of them shall be designated as the leading expert or "rapporteur" and shall be responsible for definition and approval of the consolidated opinion of invited experts. If a research application represents a multi- or inter-disciplinary research, experts who either have experience in such multi- or inter-disciplinary research or each of whom represent a particular field of science comprised by the relevant multi- or inter-disciplinary research shall be selected. A single expert may perform evaluation of the scientific quality of several research applications in compliance with his/ her direction of research.

3.3. An expert may not have a conflict of interest regarding the applicant of the research application and the research application subject to evaluation. A conflict of interest is admitted if:

1) the expert, his/ her relatives, represented institution or institutions can gain material or other benefit in relation with approval or rejection of the particular research application for receiving the funding;
2) the expert is the relative of the post-doctoral researcher or has been the supervisor of the post-doctoral researcher's research work;
3) the expert has had joint publications with the post-doctoral researcher during the last 3 years (a publication developed as the result of cooperation of more than 5 research institutions and where the expert or the post-doctoral researcher does not represent the research institution of the leading author of the publication shall be not be deemed a joint publication);
4) the expert has participated in implementation of joint research projects with the post-doctoral researcher during the last 3 years (a project implemented as the result of cooperation of more than 5 research institutions and where the expert or the post-doctoral researcher does not represent the research institution in charge of the project coordination shall be not be deemed a joint project);
5) the expert admits any other personal attitude to the post-doctoral researcher which may cause doubt regarding the impartiality of his evaluation.

The expert shall attest non-existence of the conflict of interest and shall also attest that the information related with the content of the research application and its evaluation shall be confidential and may not be disclosed to any third parties or used for the benefit of the expert's own interest. Examination of research applications shall be anonymous as regards the applicant of the research application and any third parties. The expert's name, scientific degree and represented organisation shall be known to the other experts who evaluate the relevant research application following completion of the initial individual evaluation of the scientific quality of the research application and before performance of the consolidated evaluation.

4. Procedure

4.1. Prior to delivering the scientific description of the research application to foreign experts for evaluation of the scientific quality, the evaluation of the compliance of the research application with administrative and eligibility criteria shall be performed: the application shall comply with the provisions of the call for research applications, the envisaged measures shall comply with regulatory enactments in force in the Republic of Latvia, there are no foreseen obstacles for its implementation in the Latvian institutions and cooperation with proposed cooperation partners in Latvia or abroad.

4.2. Evaluation of the scientific quality of research applications shall be performed in compliance with the present guidelines. The expert is entitled to consult the organisers of the evaluation regarding any matters related with the research application subject to evaluation or the evaluation procedure.

4.3. Evaluation of the scientific quality of research applications may be performed remotely by using the information system of the Agency. The information system contains the present Regulation of Evaluation, submitted research applications subject to evaluation, ensures performance of the evaluation procedure and saving of evaluations, as well as the mutual communications between experts and communications with the evaluation organisers.

4.4. The Agency shall invite the selected experts to perform the examination of the scientific description of particular research applications. When an expert is invited to perform the examination of the scientific description of a particular research application the following information in English shall be sent to him/ her:

1) the post-doctoral researcher's name, surname;
2) the institution where the research will be carried out;

3) the title and the summary of the research;
4) the invitation to act as the rapporteur if applicable;
5) the present evaluation guidelines;
6) the amount of the fee;
7) the envisaged time schedule of the examination.

When the rapporteur is invited to perform the consolidated evaluation of the scientific description of the particular research application, the Agency shall consider the expert's scientific qualification and topicality.

Upon the receipt of the expert's (rapporteur's) agreement and attestation regarding the non-existence of the conflict of interest and non-disclosure of confidential information, the Agency shall sign a contract with the expert (rapporteur) and provide access to the information system to him/ her. The following information accessible to experts is included in the information system:

1) the present evaluation guidelines;
2) the post-doctoral researcher's CV (in English);
3) the scientific description of the research application (in English);
4) the statement by the enterprise or the joint institution of enterprises justifying the relevance of the research to be performed within the framework of the particular research application for the development of the relevant field of science or the national economy or the enterprise (if applicable) (in English);
5) the letter by the cooperation partner regarding the preparedness to participate in implementation of the research application (if applicable).

4.5. Evaluation of the scientific quality of research applications shall consist of two stages:

1) the initial individual evaluation by each expert in compliance with all the scientific quality evaluation criteria;
2) the definition and approval of the consolidated opinion by the experts' group.

4.6. In the course of performing the initial individual evaluation, the expert shall assign a score, clearly and understandably argument his/ her evaluation regarding each of the evaluation criteria. A score is a number from 1 to 5 (decimals shall not be used). Following the entry of both initial individual evaluations of a research application in the information system, they and the information about the expert shall be accessible to both experts of the relevant application.

4.7. Following the entry of both initial individual evaluations of the scientific quality of a research application in the information system, the rapporteur shall draft the consolidated opinion. The other expert shall either agree to this draft or present his/ her objections and proposals for the score and argumentation. Following the receipt of objections, the expert shall draft a new consolidated opinion. The agreement on the opinion may consist of several stages. The consolidated opinion of the experts' group shall be deemed approved after the other expert's agreement to the draft consolidated opinion prepared by the rapporteur has been received.

The consolidated opinion by the experts' group shall contain a number score and justified argumentation on each of the evaluation criteria. A score is a number from 1 to 5 (decimals shall not be used). The score shall not be calculated as the mean or median value of the scores assigned by experts, however, it shall follow from the coordinated argumentation of the experts' opinions. In the argumentation part, regarding each of the evaluation criteria, also the strengths and weaknesses of the research application shall be

specified which may serve as recommendation for improvement of the research application for submitting it in other tenders or contribute to its eventual implementation.

In preparing the consolidated evaluation of the scientific description, the rapporteur may describe compliance with evaluation criteria by using a step of 0.2 by justifying his/ her evaluation. The quantitative score of the consolidated opinion of the experts' group serves for ranking the research applications for granting funding within the tender of the research applications.

The post-doctoral researcher and the applicant of the project application is entitled to familiarise himself/ herself with the anonymised (not containing the experts' names) consolidated opinion of the experts' group after adoption of the resolution.

4.8. If the rapporteur and the other expert admits that there are major disagreements between them and the agreement of the consolidated opinion by the experts' group cannot be attained, they shall notify the evaluation organiser thereof and terminate further evaluation of this research application.

In this case the Agency shall invite the third expert for solving the dispute. The initial individual evaluations prepared by the two preceding experts, the draft consolidated opinion developed by the rapporteur and the objections by the other rapporteur shall be introduced to him/ her. The third expert shall prepare a new consolidated opinion by the experts' group and submit it to the evaluation organisers. Scores on each of the criteria in this opinion may not exceed the highest score assigned in individual evaluations or be below the lowest score therein. The argumentation on each criterion shall summarise the opinion of all the three experts.

4.9. If the consolidated opinion by the experts' group has assigned a score below three to a research application on any of the criteria, or if the sum of all the scores is below 10, the relevant research application shall be evaluated as a research application of insufficient scientific quality and shall not be forwarded for further review for granting funding.

5. Evaluation criteria, their explanation

5.1. The provided explanation of the three criteria shall not be deemed exhaustive or excluding, experts are entitled to interpret and to apply it in compliance with the practice and principles of evaluation of research projects adopted in the international research society and to adapt them to the practice adopted in the relevant field of science.

5.2. The expert shall describe the compliance of the scientific description of the research application with the relevant evaluation criterion by assigning the following scores (decimals shall not be used):

1 - a poor application, does not comply with the requirements contained by the criterion or provided information is insufficient for evaluating the relevant criterion, there are essential deficiencies causing doubt regarding the implementation of the research application and attainment of goals;

2 - a fair application, complies with the requirements contained by the criterion partially or just generally, there are deficiencies making the overall implementation of the research application and attainment of goals difficult;

3 - a good application, generally complies with the requirements contained by the criterion, there are deficiencies which may make the successful implementation of the research application and attainment of high goals difficult;

4 - a very good application, complies with the requirements contained by the criterion, still there are few deficiencies;

5 - an excellent application, complies with the top requirements or even exceeds the requirements contained by the criterion, any deficiencies of the application are minor.

In the course of performing evaluation of the scientific description of the research application, experts should take into account the specifics of the relevant direction of research in interpreting criteria and, in particular, whether this is an application of fundamental or industrial research.

5.3. Excellence

The expert shall evaluate the following:

1) the scientific quality of the fundamental or industrial research proposed by the research application. Is the proposed research issue topical for the field of science at the present stage, does it respond to current challenges faced by the field of science and the development of the Latvian national economy and society? Is the proposed research and/ or development innovative? Does the research include multi- and inter-disciplinary aspects? Is the envisaged research credible from the science point of view? Is the envisaged research relevant for the development of the national economy and society? (*relevance*);
2) the post-doctoral researcher's in charge of performance of the research scientific capacity to perform the present research according to the scientific quality compliant with the relevant direction of research and ability to attain the proposed scientific capacity and enhancement of skills;
3) the scientific quality of the research environment where the research should be performed, including the scientific supervisor's scientific competence in the relevant direction of research. Involvement in the international and inter-sectoral mobility and their expected contribution to the enhancement of the post-doctoral researcher's skills. Contribution by partner institutions (if applicable), their scientific quality and/ or ability to provide a possibility of acquiring new skills and know-how;
4) Should the research be evaluated as the one developing the post-doctoral researcher's in charge of performance of the research skills and enhancing his/ her research capacity".

5.4. Impact

The expert shall evaluate the following:

1) expected transfer of the know-how and skills acquired within the research and training during the post-doctoral researcher's further work and improvement of the research capacity by providing new career perspective to him/ her;
2) Will research opportunities be developed, including inter-sectoral and international cooperation opportunities, which strengthen the applicant's cooperation with other research institutions, enterprises, universities or enterprises within the relevant field of research?
3) Will essential know-how relevant for development of the relevant industry, national economy and society be developed during the research and/ or development? Does the envisaged outputs and outcomes carry the potential of social economic impact? In case of industrial research, is the transfer of newly acquired know-how and technologies envisaged, including foundation of new spin-off undertakings? Is this transfer clearly defined and credible?
4) Is there a plan for dissemination (publications, other deliverables for dissemination of know-how (data, software), participation in conferences, protection of technology rights....)? Quality and credibility of the above plan. Are popular-science publications and provision of

information to the public envisaged? In case of industrial research, if the research is performed by a research institution, also communication with the introducers of eventual innovations".

5.5. ***Capacity of Implementation***

The expert shall evaluate the following:

1) the quality of the research and training plan, coherence with the set goals and the possibility to efficiently achieve them. Are envisaged resources adequate and sufficient for achieving these goals? Are the envisaged work packages, tasks, deliverables and milestones clearly defined, compliant and reliable? Are the research, training and networking activities balanced?
2) Is adequate research management, including the quality management, envisaged? Does the management organisation allow following the progress of the implementation of the research application? Have eventual risks been assessed and has the plan for their prevention or minimisation of their negative impact been developed?
3) Is there required infrastructure for implementing the research? If it is not fully available at the institution implementing the research, will it be available from partners and/ or is there a plan for providing access to this infrastructure in any other manner (lease, an outsourced service, etc.)?
4) Does the institution and cooperation partners, if applicable, have required know-how and competences for providing support to post-doctoral researchers in implementation of the research, for providing training?

The form of the initial individual evaluation by each expert

Initial individual evaluation of the scientific quality of research applications by the remote evaluation expert

Research Application No.	
Title of the Research Application	

Expert	*Name, surname, degree, institution*

Criterion	Arguments, comments	Score
Scientific excellence		
Impact		
Capacity		
Date		

Form of the consolidated opinion by the experts' group

Consolidated opinion of the scientific quality of research applications by the remote evaluation experts' group

Research Application No.	
Title of the Research Application	

Experts	*Name, surname, degree, institution* *The rapporteur is stated*

Criterion	Arguments, comments	Score
Scientific excellence		
Impact		
Capacity		
Total score		

Date	