Alliance4Life

Life Science Alliance: Closing Research and Innovation Divide in the EU

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D2.2 Inventory of Best Practice

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1 Introduction

The *D2.2 Inventory of best practice* is the deliverable of the Alliance4Life project work package, **WP2 Assessment & Benchmarking**. According to the Work Plan, the D2.2 Inventory of best practice falls under *Task 2.3 Identifying health R&I best practice and peculiarities* for each participating institution.

The objectives of WP2 Assessment & Benchmarking are as follows:

- To elaborate the criteria that will be used for identification and evaluation of typical constraints, challenges, needs, interests, and opportunities in partnering institutions with respect to the agenda of Focus Groups (FGs);
- To identify the main challenges and peculiarities of the health R&I faced by involved institutions and their researchers; and
- To sort out determinants of success in health R&I, especially "soft" underlying measures needed for (synergic) funding to result in excellent R&I performance.

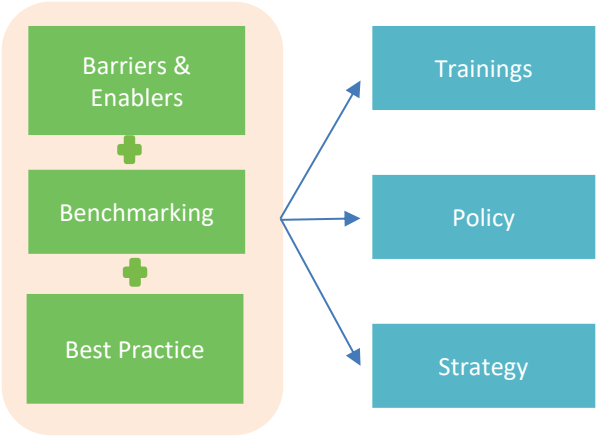
The *D2.2 Inventory of best practice* is an essential part of the project Work Plan. It is one of the Alliance4life milestones (MS4). Alliance4Life institutional practices were discussed during the FGs meetings moderated by the FG Chairs:

1) **Smolenice** (Slovakia), June 18-20, 2018;
2) **Zagreb** (Croatia), December 3-5, 2018.

The criteria for the selection of cases for further promotion includes influencing research excellence and good managerial practice. The task leader LIOS compiled the identified best practices to promote their dissemination to national and international R&I communities and policymakers. Findings of the D2.2 will be taken into account for the *WP3 Strategy & Policy*, and further elaborated in the Deliverable *D3.1 White paper containing recommendations from Inventory of best practices* (due in M19 – July 2019).

Identified best practices will be used for *Alliance4Life* recommendations at institutional, national and EU levels and for future development of Alliance4Life trainings and strategies, as shown in the scheme below.

Fig. 1: **Dependencies of Best Practices within the Work Plan**



2 Inventory of Best Practice

2.1 Best Practice in Science Evaluation (FG1)

2.1.1 Best practice for evaluation of science at the institutional level

- **The process of evaluation** – no matter if it is peer review, bibliometric analysis or benchmarking - must always be i) transparent, ii) reproducible, iii) regular, and iv) expectable. Every party involved in the process of evaluation must be aware of the terms, rules, and possible consequences of the evaluation results in advance. Indicators, mechanisms of data collection and processing, must be well defined and described, and only values collected under the same conditions may be compared. Regular and long-term data collection can provide a realistic picture of the development of the performance;
- Bibliometry is a beneficial evaluation mechanism used on an institutional level, which can **support the quality of publication performance** (i.e., positive experience of BRC SAS, CEITEC, and ICRC). The quality of publications should be assessed by a position of the journal in Tier (T) or Quartile (Q), rather than Impact Factor (IF), as Ts and Qs are specified for the research area. Also, the type of the authorship (i.e., first, corresponding, or co-authorship) should be examined and taken into account within the evaluation. The overproduction of publications is not proof of the quality; and
- **Benchmarking** among the institutions requires precise and regular data that is collected long-term, and **harmonized between various institutions**, usually from different countries. Development of a **set of "universal" indicators**, which will be widely accepted and collected by many different institutions in a harmonized way, may improve the implementation of benchmarking studies.

2.1.2 Best practice for evaluation of science at the national level

- The best system for assessment on a national level is an **informed peer review**. **The periodicity** of evaluation should be **four years**, and the mission of the institution must also be considered. The process of evaluation must also be transparent, reproducible, regular and expectable. In the **national context**, the evaluation must **support the stability** of the national research environment, and the **national priorities for R&I** must be defined.
- The worst practice is to enable the **conflict of interest** (CoI) that may influence the results of the evaluation. To avoid the effect of CoI, the evaluation panel should include the appointment of the most prominent **external (mainly international) experts** with high research integrity. The identity of evaluators should be hidden until the evaluation, and any potential CoIs must be announced in advance.

2.2 Ethics (FG2)

The European Code of Conduct for Research Integrity:
http://ec.europa.eu/research/participants/data/ref/h2020/other/hi/h2020-ethics_code-of-conduct_en.pdf

2.2.1 Best practice for research integrity and ethics

- **Courses** on research ethics/research integrity at the institutional level.
- Strengthen **Research Ethic Committee** (REC) capacity to provide consultancy for ethical issues for grant writing;
- Develop **training materials** (i.e., EU guidelines/manual/e-books for REC members);
- Define standard operating procedures that include a **clear set of rules** for financing, and avoiding institutional and personal conflict of interest;
- **Broaden the scope of ethics review** that would also include social science research methods;
- Establish **special committees**, or introduction of **research integrity officers/consultants** for review of research integrity cases; and
- Implement **transparent and clear procedures** for handling research integrity cases.

2.2.2 Best practice example for preclinical research at LIOS

At the Latvian Institute of Organic Synthesis (LIOS), the **Animal Welfare Body** was established. Members include Dr. Med. Līga Zvejniece, Dr. Pharm. Reinis Vilskersts, M.Sci. Biol Anita Gulbe, and certified veterian M.Sci.Vet. Gundega Stelfa. All preclinical experimental procedures are performed in accordance with the guidelines of the European Community (2010/63/EU), as well as local laws and policies. They have been approved by the **Latvian Animal Protection Ethical Committee of the Food and Veterinary Service** in Riga, Latvia. Additionally, studies involving animals are reported in accordance with the **ARRIVE guidelines** (Kilkenny et al., 2010; McGrath et al., 2010[1]).

2.3 Human Resources and Mobility (FG3)

2.3.1 Strategy to increase international staff at CEITEC

During its establishment in 2011, CEITEC formulated a goal to attract international researchers and support the diversity of its research teams, as well as other departments.

The establishment of the **"English speaking" work environment** for foreign employees was essential to initiate at the beginning. English was defined as the primary working language, and the following concrete principles were implemented (selected actions):

- Internal communication is in English (e.g., internal newsletter, instructions for all employees, website, and university systems);
- Important documents are prepared or translated into English (e.g., internal rules, meeting minutes, guidelines, reports, and analyses);
- Meetings with at least one foreign employee are held in English;

[1] *Kilkenny C, Browne W, Cuthill IC, Emerson M, Altman DG, & Group NCRRGW (2010). Animal research: reporting in vivo experiments: the ARRIVE guidelines. Br. J Pharmacol. 160:1577-1579.*
McGrath JC, Drummond GB, McLachlan EM, Kilkenny C, & Wainwright CL (2010). Guidelines for reporting experiments involving animals: the ARRIVE guidelines. British journal of pharmacology 160: 1573-1576.

- Recruitment of all positions, including administrative and technical positions, was amended (i.e., the requirement of a certain level of oral and written English) to ensure that researchers are able to communicate in English with anyone in the administration; and
- Scientific Board of CEITEC has international members.

In 2012, a **Welcome Office** was established (first in the Czech Republic). Starting in 2014, there has been 1.0 FTE (one person) dedicated to the agenda of welcome services at the institution. As a part of HR Department, the Welcome Office Manager assists new and current foreign employees with minimizing bureaucratic burden, thus enabling researchers to focus on their research projects. The first contact is initiated before arrival, including assistance with residency permits, and the service continues after arrival throughout the employee's stay at the institution. This service also covers family members.

To attract researchers from abroad, a **Human Resources strategy** was formulated, which obligated managers to use open international recruitment procedures (i.e., international promotion of the positions).

2.3.2 Guidelines for new employees

"On boarding" for new employees includes guidelines on how to navigate the organization, information about employee rights and duties and scientific career development, and trainings for researchers (i.e., e-learning trainings).

2.4 Experience of Grant Offices and Promoting Proposal Preparation (FG4)

2.4.1 Experience of ICRC

- **System of the Grant office**

The system of grant support at ICRC is divided into two departments: 1) **Pre-Award** – **Grant Support Centre** (GSC – participating in A4L, 4 FTEs), and 2) **Post-Award** – **Project Management Office** (PMO, 4FTEs). The transition point is the **end of negotiations** (i.e., signature of grant agreement). This approach requires close cooperation of both departments during negotiation and implementation, to provide feedback from the PMO to the GSC on how to prevent issues or avoid certain types of calls for the next time.

GSC (pre-award) is organised in two ways:

- Each person at GSC is assigned to specific research teams (about 8 teams/person) and is familiar with certain research fields (first touch person, individual grant plans); and
- Each person is specialised in different calls (i.e., national, international, and technological). During grant preparation, the most experienced support person is involved.

GSC (post-award) services include:

- Mapping of grant resources and grant calls survey (general and regular (1/month), focused);
- Project idea consultations, grant scheme matching, and consortium search support;
- Support and management of research grant proposal preparation;
- Preparation of supportive grant proposals (i.e., mobility, institutional, etc.);
- Negotiations of approved grants until the grant agreement signature;
- Networking and grant trainings (i.e., internal seminars and workshops); and
- Individual Grant Plans (IGP).
    - Individual plans set by assigned grant support person for each group
    - Updated yearly with measurement of progress

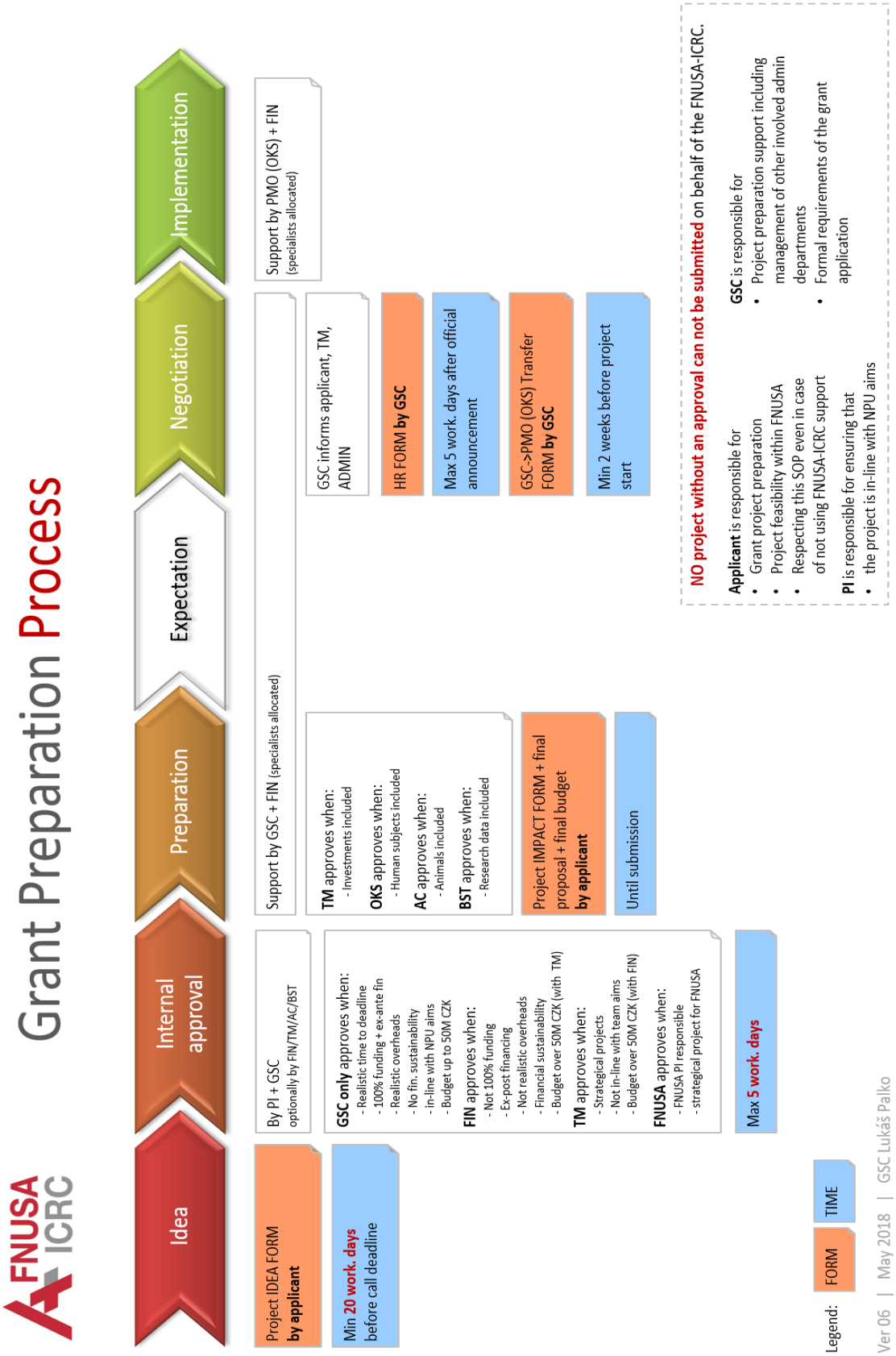
- **Standard Operational Procedure (SOP) for pre-award grants**

The Standard Operational Procedure (SOP) for pre-award grants describes the process of all activities and steps, from the project idea, to the beginning of implementation (which is covered by another department and another SOP). The aims of SOP were contradictory: 1) to make the process **acceptable** for the institution (many approvals in order to avoid problems) and 2) to make the process **smooth and quick** (to minimise approvals). After 12 months of preparation (and internal negotiations), there have been great results (see below, Fig. 2). The success was the result of the Head of the Grant Support Center's (GSC) approval of clearly defined types of proposals (see in Fig. 2) by himself, which sped up the process. After more than 1 year of using the SOP, there have been over 80% of proposals approved in this manner.

Impact of the SOP:

- Applicant is aware of the duration of the process (fewer "last minute" inquires; the Head of the GSC can reject proposals because of late inquiries);
- Elimination of problems with "BAD" projects realised 1 day before the signature of grant agreement;
- Source of valid statistical data; and
- Great planning of support effort (including effort of partners, other researchers, and legal statutory).

Fig. 2: Pre-award Grant SOP Process

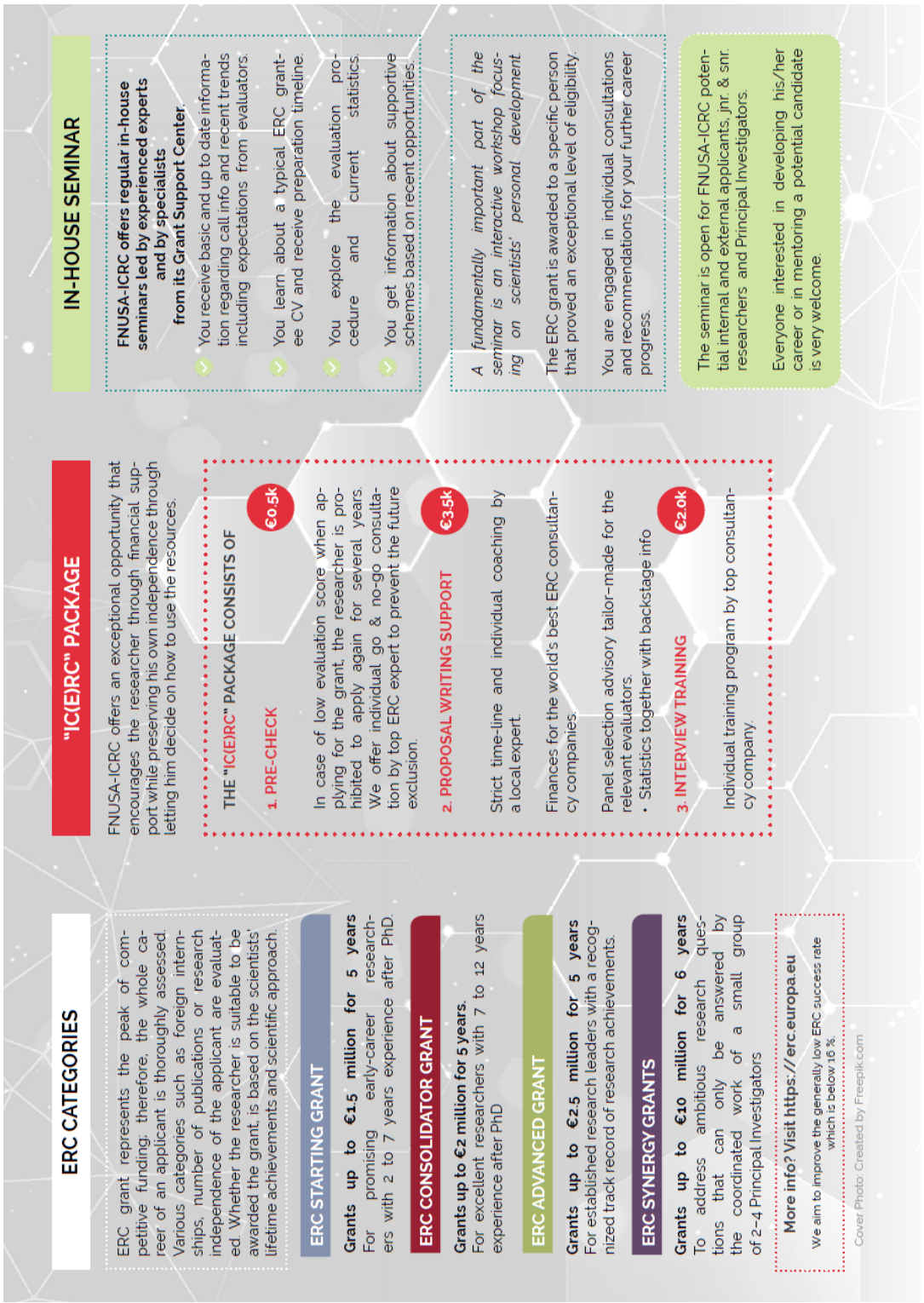


ICRC support scheme for ERC grants

Due to the fact that the ERC is a measure of quality, and before 2018, there was only 1 proposal, there was a strong will to motivate potential applicants (internally and/or externally) to submit ERC proposals on behalf of ICRC. **The package called "IC(E)RC"** is focused on:

- Support for preparation (i.e., step-by–step, up to 6 000 EUR for a consultancy company based on applicant selection);
- Motivation for successful grantees (i.e., a share of overheads as a personal bonus); and
- Motivation for transferring an obtained grant to ICRC (based on individual negotiations).

Fig. 3: Leaflet of IC(E)RC support package for ERC



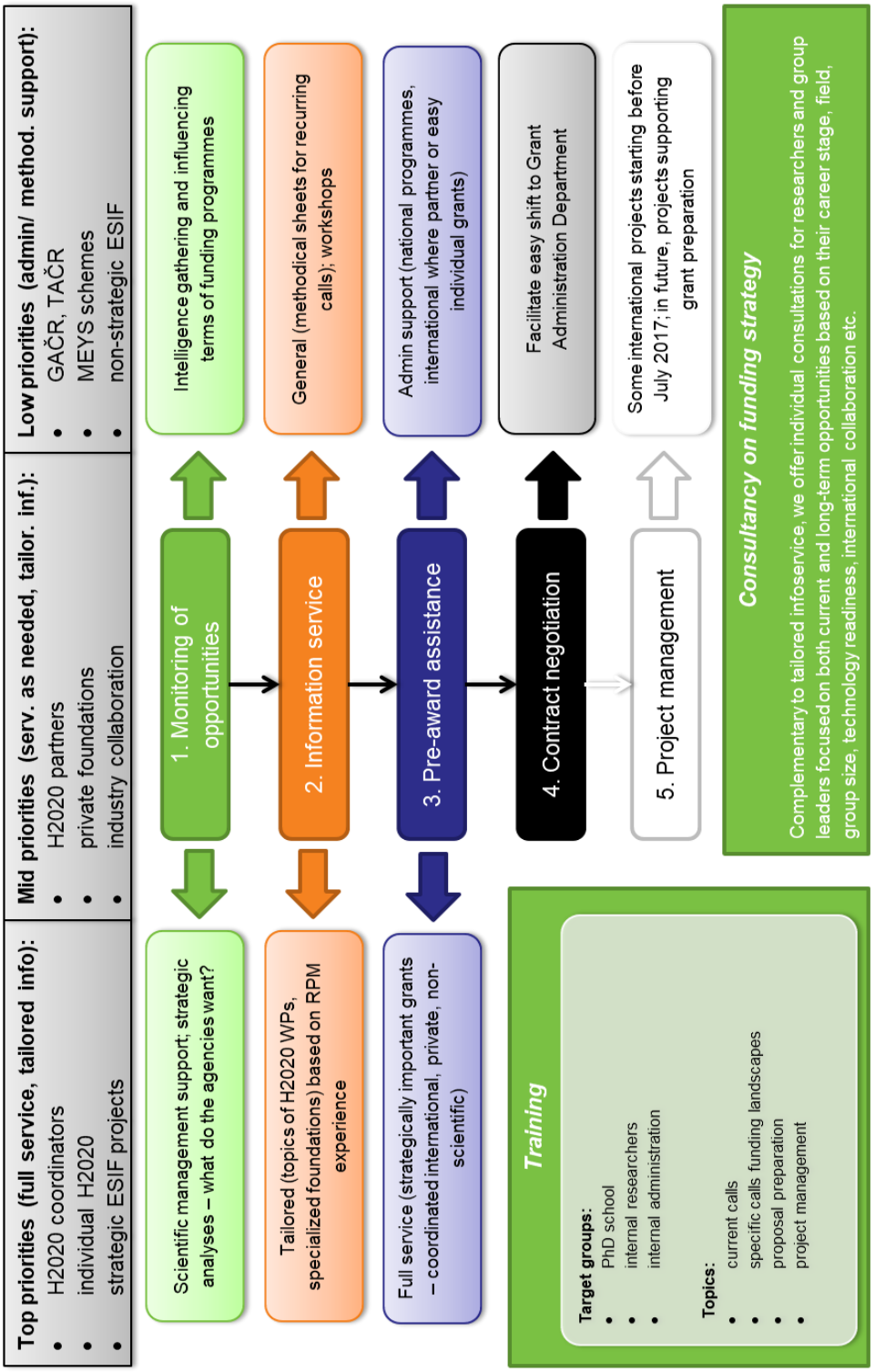
2.4.2 Experience of CEITEC MU

- **Dedicated pre-award support office**

In 2016, the Grant Office at CEITEC MU split into two separate pre- and post-award departments. The **pre-award** section, **the Grant Office**, covers funding intelligence, information service, proposal writing and administration, and contract negotiations.

Additionally, it provides training and consultancy on funding strategies for researchers. The structure and segmentation of Grant Office services is shown in Figure 4 below.

Fig.4: The structure and segmentation of Grant Office services at CEITEC



- **ERC Support Scheme and MASH**

Since 2012, CEITEC has provided access to **international consultants for all ERC applicants**, with the following goals:

- Assessing the potential of the principle investigator (PI) for ERC (e.g., review of CV);
- Guiding the process of research project development (i.e., ambition and feasibility of the idea);
- Aiding the PI with proposal writing (i.e., several reviews of B1 and B2); and
- Assisting with preparation for interviews (e.g., mock interview training) if the applicant is successful in the first step of evaluation.

In 2015, this **ERC Support Scheme** was adopted by the Research Office of the Masaryk University Rectorate, and has been available to the whole university, not only CEITEC. Costs of the external consultancy and trainings are fully covered by the central administration of the university. To be able to use the support, the PI needs to be supported by the Dean/Director of the respective faculty/institute. Three PIs who benefited from the ERC support scheme were awarded ERC grants (two of them at CEITEC) between 2013 and 2018.

To increase the reserve of promising ERC candidates, Masaryk University also developed a new internal grant scheme (implemented as a funding programme of the Grant Agency of Masaryk University): **MUNI Award in Science and Humanities** (MASH). MASH is exclusively dedicated to attracting new PIs from abroad and providing them with guaranteed 5-year funding equivalent to an ERC (approx. 200 k€/year). The main selection criterion is success in a prestigious international grant competition (with preference to ERC). While only one round was concluded so far, it proved extremely successful in attracting an ERC holder (Czech national) from the UK to Masaryk University.

2.4.3 Experience of Vilnius University in promoting proposal preparation

- **Matching funding schemes and research teams**

Vilnius University science project division helps scientists to match their ideas with specific calls.

- Researchers can submit their requests to the **Science Project Coordinator**;
- The Coordinator will provide a **list of relevant calls** or programs for the request;
- Also, the Coordinator regularly sends updated information about calls for specific research teams, according to the topics with which they work; and
- Every month, the **Science Project Division** sends **a grant newsletter** to faculties' project managers with information about new and ongoing calls, as well as other information related to the projects.

This scheme was developed in order to help the scientists to implement their ideas and increase the number of application submissions.

- **Motivational scheme for re-submission of promising proposals**

Vilnius University developed **a motivational scheme for re-submission** of promising proposals, which consists of services from **professional consultants** (financed by the university) in order to make application corrections. Conditions of the scheme are:

- The proposal must be submitted for the Horizon 2020 programme;
- Vilnius University is a coordinator; and
- The proposal is in reserve list (underscored just by one or two scores) in order to get financing or it has a strong idea and team.

The motivational scheme for re-submission of promising proposals was developed to:

- Motivate scientists to not give up on the application after the first failure;
- Take away pressure from the scientist; and
- Increase the chance to have a successfully financed proposal.

The success of this scheme depends on the competence of consultants (i.e., they have a solid track record of successfully prepared and financed proposals).

2.5 Best Practice for Core Facilities (CF) and Big Data (FG5)

2.5.1 Research infrastructure management established at CEITEC

CEITEC has long-term experience in the management of Core Facilities at the administrative level. The principles of budgeting, pricing and invoicing, regular reporting, and evaluations and internal reviews have already been established. Several documents have already been implemented to ensure the transparent operation of all Core Facilities:

- **Common Rules for Management and Use of Core Facilities:** this document contains basic definitions, categorisation of users, the overview of CF management committees and working groups (including the overview of meetings such as CF Heads meetings, user committee meetings, CF admin meetings, etc.), criteria to establish or close a CF, and an assessment and monitoring system.
- **CEITEC review and evaluation model for Core Facilities:** this document outlines the process of CF review and evaluation, and includes the composition of review boards. Key Performance Indicators and their importance are described in this document, which serves as the basis for annual reporting and internal reviews.
- The Measure of the Director of the Central European Institute of Technology of Masaryk University No. 2/2017 - **Determination of Responsibility for the Operation, Maintenance and Repairs of Instrumentation and Equipment of CEITEC MU:** this measure clearly states who is responsible for covering costs of the operation, maintenance and repairs of instruments and devices. Each instrument that is not part of the CF has to be maintained and repaired from the budget of the Research Group to which the instrument belongs.
- The Measure of the Director of the Central European Institute of Technology of Masaryk University No. 3/2017 - **Rules of Setting Fees for Use of Devices and Equipment Owned by CEITEC MU:** the subject matter of this measure includes rules for the economic management and fee setting for the usage of

devices and equipment of the CFs. This document also regulates the types of costs included in the price for each user category.

- **Manual for instrument logbooks:** this document serves as a handbook for the administrator who is processing instrument usage records. The logbooks are necessary for the CF instrument usage report and tracking usage in accordance with relevant project indicators.

2.5.2 Research infrastructure funding schemes for sustainability done by MEYS

Research Infrastructure (RI) funding was established by the Czech Ministry of Education, Youth, and Sports, Czech Republic (MEYS) to ensure **sustainability in the long-term** period. MEYS launched the first call in June 2014 to grant support **to Large Research Infrastructures** for Research, Experimental Development, and Innovations, and to update the **Roadmap of the Czech Republic for the years 2016-2022**.

The evaluation of RIs was performed in two steps:

1) to evaluate whether all criteria of RI (i.e., stable government, user strategy, access strategy, and development strategy) are fulfilled; and
2) to evaluate scientific quality.

As the evaluation was conducted by external expert panel, the outcomes were positively accepted. At the end of 2016, the second evaluation of Research Infrastructures was launched. The first part of the data for evaluation was supposed to be filled in by Research Infrastructure itself, and the second part of the data was supposed to be filled in by **the Scientific Advisory Board** that was **established by each Research Infrastructure**. All relevant information (i.e., Strategy of the Czech government described, Roadmap accessible, connection to ESFRI, etc.) regarding the Czech Roadmap of Research Infrastructures and funding schemes is available here: https://www.vyzkumne-infrastruktury.cz/en/strategy/.

2.5.3 Participation in ESFRI

The topic of data management is underestimated at the level of individual institutions, and knowledge in this area is very low. As the **University of Ljubljana and CEITEC MU** takes part at ESFRI infrastructure **ELIXIR** (https://www.elixir-europe.org/), it was agreed that the training will be requested under the umbrella of ELIXIR experts. So far, data management has been solved individually by laboratories or researchers dealing with huge data that has to be computed. IT conception at the level of individual institutions will be necessary in the future, because high-end technologies are producing much more data within one measurement than previously.

LIOS is a partner in the ESFRI European Research Infrastructure Consortium called **EU-OPENSCREEN** (https://www.eu-openscreen.eu/), which is the European infrastructure for Chemical Biology, that supports Life Science research and its translation to medicine and agriculture. LIOS was evaluated by an EU-OPENSCREEN team of experts, and on 12 April, 2018 LIOS was approved as an official medicinal chemistry partner site of the consortium. The selection was based on the scientific excellence of LIOS, as well as the assessment of its technological capabilities and resources. The decision made by the EU-OPENSCREEN Assembly of Members allowed LIOS to become a part of the European Research Infrastructure Consortium for Chemical Biology, which is currently supported by nine EU countries.

2.6 Technology Transfer (FG6)

2.6.1 Best institutional practices for technology transfer and Intellectual Property (IP) management

- Institutional **Committee on IP** evaluation;
- **PhD trainings** on IP management issues **and courses** on Patent Law;
- Institutional **Commercialization Board**;
- Institutional **Patenting Board**;
- Foundation of **Technology Transfer Offices** in Poland and uniting Technology Transfer Offices to lobby the decision-makers and exchange experiences and best practices;
- **Cartoon mode** (presentations and informative materials containing graphics and cartoons) for communicating IP issues, combined with the campaign of meeting patent search experts at university campuses on a certain day; and
- **Matchmaking sessions** for different faculties to find interdisciplinary ideas with the potential for innovation.

2.6.2 Experience of Vilnius University

The overall strategy of tech transfer encompasses dual possibilities at Vilnius University:

1) The **Technology Transfer Strategy** focuses on enhancing the research commercialization potential. A range of **knowledge and technology transfer services** are offered to the academic community (e.g., selecting the appropriate IP protection strategy, evaluating market opportunities, ensuring help in contract and/or collaborative research, and offering training sessions on IP management issues); and
2) The technology transfer strategy includes the **development of entrepreneurship and fostering science and business collaborations**. This allows for researchers and/or students at Vilnius University to open up market intake possibilities. Consultations and help on licensing IP, as well as establishing innovative enterprises to commercialize the R&D results that were developed at Vilnius University are also provided as part of the knowledge and technology transfer strategy. This knowledge and technology transfer strategy is also framed by the national context. National laws permit that at least **1/3 of income from commercialization should go to the author of certain know-how, technology or other invention**. The internal rules of Vilnius University are accordingly set, but they also encourage a science-business collaboration, since income received by business can be used for supplementing the salary of a certain inventor. The national funding schemes also allow certain possibilities **of refinancing expenses on patenting processes and establishing spin-offs**, building or updating technology transfer skills at the universities and research centres for researchers. **Additional financial or technical support** was an incentive for researchers to take a step towards commercialization, besides solely performing their research.

2.6.3 Experience of University of Tartu

University of Tartu addressed the need for spin-off support and active commercialization of research results through licensing in 1996, and brought up the subject in the institution's internal legislation for the first time (**royalty sharing with inventors**). The first spin-off **support program** offering several services to **university staff starting spin-off companies** was initiated in 1999. These activities have been in constant development. Spin-off support activities have been extended to students through different initiatives. **External consultants** have been consulting the technology transfer team of the university (the longest project was for 2 years) by providing support in professional development. One of the main pillars in the institution's IP policy is that **inventors are favoured over potential external licensees, to develop the invention into a commercial product** at a spin-off company.

The University of Tartu's **IP protection policy** is very focused– priority filings are made in the IP territory where a good quality examination and a search report will be provided (depending on the scientific field, usually abroad) in good time before the Patent Cooperation Treaty deadline. Inventions are taken forward to the PCT only where indications for commercial and patentability potential are present. **Central funds for IP protection** are present, and inventions with an actual income and/or are used in industrial cooperation are **prioritized** over inventions with no clear industrial interest. Additionally, new inventions are prioritized over matured ones, to make the best usage of the IP budget.

2.6.4 Experience of School of Medicine – University of Zagreb

At the School of Medicine – University of Zagreb, **Committee on IP** evaluation and by-law on IPR management, **guidelines for IP protection** are established (The documents are available and can be used as best practice). Upon receiving the disclosure form, the **Technology Transfer Office (TTO)** checks if the School of Medicine has Intellectual Property rights. If the TTO concludes that the best strategy for intellectual property protection is patenting, it will do an initial evaluation of patentability, taking into account the criteria of novelty, inventive step, and applicability. The TTO also makes an initial evaluation of commercial potential, and based on this information, it decides whether it makes sense to proceed with intellectual property protection and commercialization. The TTO sends its recommendation to the Intellectual Property Committee, who brings their Opinion on proceeding with the intellectual creation, based on which the Dean Collegium makes the decision regarding intellectual property exploitation. The School of Medicine decides whether to proceed with the intellectual property exploitation within 2.5 months, and in the exceptionally complicated cases, the deadline can be postponed for 2.5 more months. PhD courses on Intellectual Property Rights management and Technology Transfer are also organized to promote Knowledge translation competences.

2.6.5 Experience of ICRC

The **Commercialization Board** at FNUSA-ICRC consists of 7 members (i.e., 3 internal members, 3 members from industry and 1 member from the financial sphere). Members are highly experienced in the fields of R&D, commercialisation, start-ups and marketing that is related to Medicine or Life Sciences. Members may be granted a financial reward if it is suggested and approved by the Director of FNUSA-ICRC. The board expresses its opinion on projects of commercialisation and transfer of R&D outputs. Within the

evaluation, members express their opinion on different aspects of the respective project (e.g., novelty, accordance with strategies and national targets, probability of commercialisation, etc.). The board issues a statement of recommendation for either project continuation or termination. The board may also provide a recommendation about which IP protection instrument to choose. The board should gather quarterly, but may also decide "per rollam."

2.6.6 Experience of Medical University of Lodz

The strategy of tech transfer at the Medical University of Lodz focuses on six areas:

- **PACTT (Polish Association of Centres for Technology Transfer): The Medical University of Lodz is a member of a** foundation of Technology Transfer Offices (TTOs) in Poland that unites TTOs in order to lobby decision makers and change their best practice experiences. Joint lobbying has led to a change in the method of evaluation of the University Units, in which a greater value has been placed on the commercialization of several aspects of scientific publications;
- **Creating its own path for the protection and commercialisation of intellectual property through the Intellectual Property Commission:** After receiving a recommendation from the Commission, the Rector makes a decision on allocating funding for the legal protection of intellectual property. The search for a possible commercialisation path begins the moment the application for an invention is received and the Rector decides on financing;
- **Identifying 14 research centres at the university that may provide services for business:** The services were valued and the offers of the centres were prepared. Additionally, in order to make it easier for other units to sell their services, a procedure has been introduced, in which each Head of the Unit has a service account where profits from commercialization are transferred and can be spent according to needs (e.g., delegations, equipment, and remuneration supplements);
- **Partner in the EIT Health consortium and MNiSW projects**: This provides an opportunity to carry out acceleration projects and to cooperate with other European countries. Thanks to this, the Medical University of Lodz has constant access to innovative ideas and potential start-ups. One example of implementation of the MNiSW project is Innovation Incubator, which provides financial support to 7 teams of scientists for pre-implementation research;
- **Permanent patent attorney on a contract:** For over 5 years, the Medical University of Lodz has employed one patent attorney, who prepares applications, and monitors payment and administrative issues;
- **Dividing the Technology Transfer Centre team into sections**: Specialists have been divided into the Technology Transfer section, Acceleration Projects, and Clinical Trials sections of the Technology Transfer Centre in order to implement common goals of the Technology Transfer Centre.

2.6.7 Experience of Latvian Institute of Organic Synthesis

The institutional **Patenting Board** at the Latvian Institute of Organic Synthesis has a **Valorisation Committee,** which evaluates the inventions created by employees, decides

on the type of Intellectual Property (IP) and the takeover of intellectual property, and determines the territorial coverage for the maintenance of intellectual property and possible further commercialisation. The Board prepares **notification forms** related to a procedure in which inventors should inform the Institute regarding the new potential invention and define the **IP policy** (i.e., inventors guide from the start of the invention until commercialisation). The IP Department is responsible for patenting procedures under substantive and procedural law.

2.7 Science Communication (FG7)

2.7.1 Best practice for science communication

- Structure the **communication plan** as an integral part of the institutional framework for PR and Communication ;
- **Engaging scientists** to be socially active, and share their scientific achievements and news;
- Trainings for trainers - Alliance4Life;
- Best practice sharing - scientific media internationally;
- EU guidelines and recommendations in regards to **EU dissemination channels**;
- **List of priority scientific media** and build the network of contacts abroad - investigate the online media and science news aggregator or press release distribution services using the European Research Area channels;
- **Roundtables, public discussions, and press trips** for journalists on how to talk to the public about science and scientific results;
- **Joint trainings** for (scientific) journalists and researchers.

2.7.2 Description of useful tools and practices for communication process

- **Communication Plan:** The aim is to share the best practice in creating a structured communication plan that will be in line with the general strategy of the institution. The communication plan consists of several elements that need to interact with each other, and must provide information to all impacted users. It describes a comprehensive set of goals, messages, tools, and channels for effective communication, according to a particular audience (i.e., target groups). The communication plan shall comprise objectives and tools for both external and internal communication. The communication plan must be outlined in a step-by-step process. There is a specific challenge in scientific communication of finding the balance between the level of scientific expertise and the comprehensibility of the lay public in science presentations. Science communication needs to gear the presentation towards the appropriate target audience to leverage the impact & not to harm the reputation of the institution and its research achievements;
- **Internal Communication Tools:** Internal Communication is an integral part of the communication plan of the organization. Traditionally, the aim is to secure the delivery of messages on behalf of the management. Nowadays, through a set of modern tools, the internal communication shall also serve as a facilitator of a two-way dialogue. Employees are the heart and soul of an organization, so it's critical to pay attention to their needs. Their engagement encourages higher institutional performance. Any organization, especially a scientific one, needs to inspire and retain high performers. Additionally, greater engagement of staff can result in

their willingness to contribute to the content and loyalty building of the institution. Scientific employees then act as ambassadors of the organization, are more socially active, share their scientific achievements, and thus impact the external communication;

- **Toolbox for effective communication:** While the **communication plan** is a strategic document that outlines the timeline for the implementation of communication tools in order to reach objectives towards the particular target audience, the **toolbox for effective communication** provides a comprehensive description of the most frequently used communication tools by partner organizations. It will be easier then preparing selected communication kits and implementing the communication plan.
- **Media Communication with a focus on scientific media:** The partner institution will share a list of priority scientific media, aiming to build the network of contacts internationally. This best practice will also introduce the EU guidelines and recommendations towards the EU dissemination channels in a solid way. Moreover, the aim is to investigate the online media and science news aggregator that serves for press release distribution by using of European Research Area channels, (i.e., sciencedaily.com, phys.org, EurekAlert!, medicalxpress.com, EuroScience, AlphaGalileo, etc.).

3 Summary of Best Practices Identified by Alliance4Life

The Procedure of Science Evaluation and Benchmarking: transparent, reproducible, regular, and expectable; regular and long-term information collection to provide data about development of the institutional performance; bonus system for high impact publications and attracted competitive funding; bibliometric indicators that are preferable at the institutional level, and a peer-review process at the national level; and procedures in place to avoid conflicts of interest.
Ethics and Integrity in Health and Life Sciences: institutional guidelines in order to secure compliance with the EU regulations and respective national legislations; courses and trainings on research ethics/research integrity; clear set of rules for financing; avoiding institutional and personal conflict of interest; provide consultancy for ethical issues for grant writing; and dedicated research integrity officers/consultants.
Funding Opportunities Dissemination: dissemination via mailing list; travel grants for participation in brokerage events and information days; pre-award services to increase grant capture capabilities; clear split of pre-award and post-award support; dedicated support for European Research Council (ERC) grant applications, including acquisition of ERC grant awardees; and motivational scheme for resubmission of promising proposals.
Progressive Career and Human Resources (HR) Policies: open vacancies published internationally; guidelines for new employees on how to navigate the organization; information about employee rights and duties, possibilities for career development; courses and trainings; English-speaking working environment; and social events for international staff.
Defined Principles for Core Facilities: budgeting, pricing and invoicing, regular reporting, and evaluations and internal reviews**;** dedicated funding (both institutional and national) for research infrastructures to ensure long-term sustainability; and participation in European Strategy Forum on Research Infrastructures (ESFRI) , with ELIXIR expertise that is applied for data management enhancement.
Dedicated Funds for Intellectual Property (IP) Protection and IP Protection Policy: institutional committee on IP evaluation and commercialization; nationwide support to tech-transfer offices through networking and lobbying; courses on IP rights and management; support program for institutional staff starting spin-off companies; development of entrepreneurship skills; fostering science and business collaborations; and royalties to inventors.
Strategy for Effective Dissemination and Exploitation of Research Results: structure the communication plan as an integral part of the institutional framework of Public Relations and Communication; internal communication tools; toolbox (collection) for effective communication – experience of each Alliance4Life partner institution; and media communication with focus on scientific media on the EU level.

4 Annex I – Abbreviations

BRC SAS – Biomedical Research Centre of the Slovak Academy of Sciences
CEITEC – The Central European Institute of Technology at Masaryk University
CF – Core Facilities
CoI – Conflict of Interest
D – Deliverable,
ERA – European Research Area
ERC – European Research Council
ESFRI – European Strategy Forum on Research Infrastructures
FG – Focus Group
ICRC – The International Clinical Research centre of St. Anne's University Hospital in Brno
FTE – Full-Time Equivalent
GSC – Grant Support Centre
HR – Human Resources
IGP – Individual Grant Plan
IF – Impact Factor
IP – Intellectual Property
KT – Knowledge Transfer
LIOS – Latvian Institute of Organic Synthesis
M – Month
MS – Milestone
MU – Masaryk University
PI – Principal Investigator
PMO – Project Management Office
REC – Research Ethic Committee
R&D – Research and Development
R&I – Research and Innovation
SOP – Standard Operational Procedure
Q – Quartile
T – Tier
TTO – Technology Transfer Office
WP – Work Package