EGI Strategic and Innovation Fund

Terms of Reference and Playbook for Applicants

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Contents

1 Terms of Reference

1.1 Purpose

The EGI Federation has a mission to enable people to transform data, software and expertise into knowledge and innovation. The goal of this Fund is to stimulate targeted and agile projects aligned with the EGI's vision, mission and strategy. This means that the Fund differs greatly from normal EU- and nationally-funded projects, which can take 2 to 3 years to generate an exploitable outcome. Projects funded through this instrument must show results within 3 to 12 months. Results can be delivered directly to the production environment or can be used to validate concepts or to justify further investments.

1.2 Success Criteria

The main success criterion for the Fund is evidence that real needs have been addressed rapidly through projects enabled by the Fund. A secondary criterion would be the ability of such projects to secure national or EU-funding faster, and more often. The Fund will be evaluated using the following KPIs:

- % funded projects that reached the expected outcome in the allotted time frame
- % funding that brought additional funding (e.g. co-funding, in-kind contribution)
- % funding that triggered follow-up funding

The KPIs defined above apply to the Fund as a whole. Individual funded projects will define their own specific KPIs for success.

1.3 Areas of impact

The most relevant impact areas are listed below with examples of specific aspects to tackle. Other impact areas can be proposed and their relevance justified:

- Customer/User experience
  - Reduce time-to-use of services
  - Improve usability
- Offering
  - Stability of services (e.g. refactor code)
  - Scalability of services
  - Increase the range of use cases that a service can support
  - Improve interoperability across infrastructures
  - Moving services to cloud-native platforms
  - Improving the documentation of services

- Configuration
    - o Improve management/innovation processes
    - o Improve business models
    - o Reduction operational costs
        - ▪ Reduce time to install/operate services
        - ▪ Reduce reliance on commercial software or licenses

The Fund will accept four types of project proposals (see Figure 1) depending on the maturity level of the proposed solution. For technology-based projects, specific Technology Readiness Level (TRL) will be required (see the EC definition). The four types of projects are presented in the following figure and are described in more detail in the Section "Playbook for Applicants".
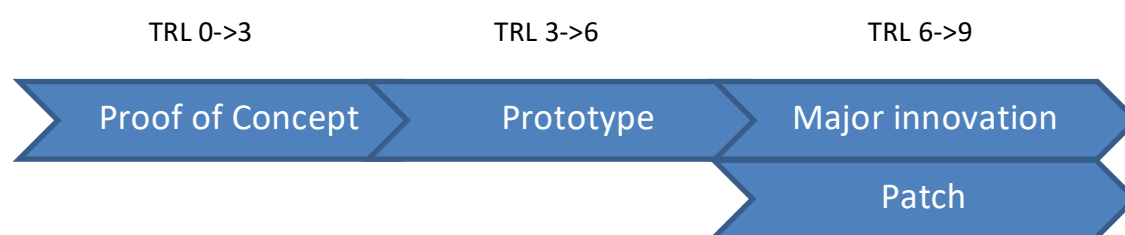

Figure 1 - The four kinds of projects (Proof of Concept, Prototype, Major Innovation or Patch) accepted by the Fund, and their associated Technology Readiness Levels

The EGI Council will define *priority topics* for investment annually, as well as the associated budget. Nevertheless, to stimulate open and bottom-up initiatives, the Fund will accept projects with *open topics* proposed by the applicants. Projects for the *priority topics* can be any of the four types, while projects on *open topics* can be of type proof of concept, prototype and patch.

The EGI Federation is committed to the delivering open solutions. The EGI Strategic & Innovation Fund will focus only on results with an OSI-approved license and will never invest in proprietary solutions, regardless of their merits.

1.4 Overall Process

The EGI Services and Solutions Board (SSB) selects and curates potential investments using the Application and Evaluation process described in the playbook and makes a decision. The SSB can invite external experts to support the evaluation as needed.

The EGI Executive Board acts as the investment board and makes the final decision on all proposals. The process and decisions are communicated to the EGI Council and published on the related dashboard as part of the transparency requirement.

1.5 Budget Allocation

Every year, the EGI Council will approve a total budget as well as the breakdown per project type.

1.6 Funding Eligibility

The Strategic and Innovation Fund is accessible to EGI Council Participants and Associate Participants. The Fund is also accessible to all organisations represented by EGI Council Participants and Associated Participants (e.g. service and resource providers) that contribute to the objectives of the EGI strategy. There are no restrictions on the participation of unfunded partners.

1.7 Timeline

Every year, the EGI Executive Board will approve the timeline for applications, evaluation and execution of the projects.

1.8 Application Procedure

The Application Procedure is described in the Playbook for Applicants.

1.9 Ownership of Results

The EGI Federation asks in return of its investment permanent free non-exclusive usage rights for the EGI Foundation and its participants and proper credit for the funding in the license distributed with the project. The EGI Strategic & Innovation Fund, through the EGI Foundation and its participants, also has the rights to extend, modify and evolve any software or any other IP generated as part of the projects. A licence compatible with the open source principles and with the unlimited reuse by EGI should be selected. Publications of results is scientific papers, conferences or other means is welcome.

1.10 Transparency

The EGI Strategic and Innovation Fund strives for transparency and, therefore commits to publish all successful proposals that will be awarded a grant including the title, short description, budget and participating organisations.

2 Playbook for Applicants

2.1 Types of project

Applications can be any of the four project types depicted in the figure below. The conditions of each type of project are defined by the expected outcome of a project in the previous stage. The Fund considers the EC definition of Technology Readiness Level, TRL.

TRL 0->3   TRL 3->6   TRL 6->9

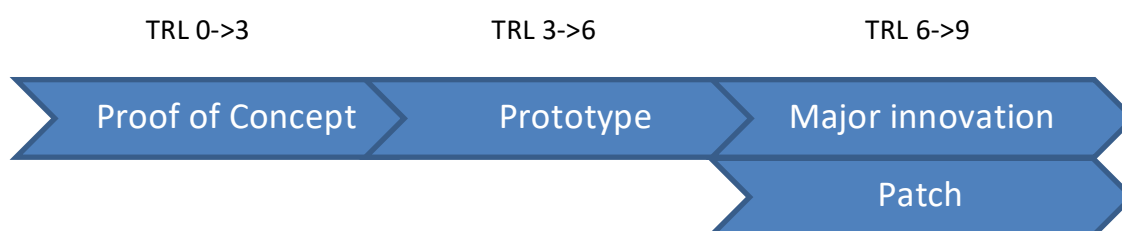Proof of Concept → Prototype → Major innovation / Patch

Figure 2 - The four kinds of projects (Proof of Concept, Prototype, Major Innovation or Patch) accepted by the Fund, and their associated Technology Readiness Levels

2.1.1 Proof of concept

The goal of the proof of concept is to get early evidence to support an idea, see if there is any potential interest in it, and study its feasibility as fast as possible, with as little resources as possible. Technology-oriented projects should produce a result at TRL 3. Co-funding or in-kind contribution are welcome and must be quantified in the application form. Projects should take a maximum of 3 months.

Financing

The whole amount is financed after the expected outcome has been delivered and accepted.

Expected outcomes

The expected outcomes include:

1. Evidence that there is a problem worth solving by interviewing people and show proof of learnings (it is recommended at least 3 interview rounds of a minimum of 15 people both users and customers)
2. Description of a proposed solution, related customer journey map and mock-up solution (e.g. wireframe for interfaces)
3. Evidence that the solution is approved by users (e.g. by doing more interviews)

2.1.2 Prototype

The goal of the prototype is to support the development of an early solution that starts with technology of at least TRL 3 and delivers a result with TRL 6. Co-funding or in-kind contribution are welcome and must be quantified in the application form. Projects should take a maximum of 6 months.

Conditions

Proof that both problem and solution have been validated (e.g. with user interviews) plus description of the proposed prototype e.g. with a wireframe interface and/or architecture diagram.

Financing

1. 50% is financed upfront
2. 25% is financed after successfully mid-term evaluation at month 3
3. The remaining 15% is financed after successful final evaluation verifying the delivery of the expected outcome

Expected outcome

The expected outcome is composed of the following parts:

- Updated description of a proposed solution and related customer journey map
- Demonstration under lab conditions / in a closed environment that the proposed solution works (results should reach TRL 6)
- Evidence that the solution is approved by users (e.g. by doing more interviews)

Mid-term evaluation

After 3 months from the start of the project, there will be an evaluation session with reviewers selected by the EGI Foundation. The project must demonstrate further evidence of problem/solution fit and that the expected result is achievable by the end of the project.

2.1.3 Major innovation

A long-term solution to deliver improvements to existing services or new services that can be embedded in the production environment to solve an existing problem. This type of project should

start with technology of at least TRL 6 and delivers a result of at least TRL 8. Co-funding or in-kind contribution are welcome and must be quantified in the application form. Projects should take a maximum of 12 months.

Conditions

Proof that both problem and solution have been validated (e.g. with user interviews) plus proof that a prototype solution has been validated.

Financing

1. 60% is financed upfront
2. 25% is financed after successful mid-term evaluation at month 3
3. The remaining 15% is financed after successful final evaluation verifying the delivery of the expected outcome

Expected outcome

The expected outcome is composed of the following parts:

- Updated description of a proposed solution and related customer journey map
- Fully functional implementation of the service / solution ready to deploy in the live environment (results should reach at least TRL level 8)
- Evidence that the solution is approved by users (e.g. by doing more interviews)

Mid-term evaluation

After 3 months from the start of the project, there will be an evaluation session with reviewers selected by the EGI Foundation. The project must demonstrate further evidence of problem/solution fit and that the expected result is achievable by the end of the project.

2.1.4 Patch

A patch project aims at providing a temporary or permanent solution to an existing problem and it usually requires limited work or software development. Co-funding or in-kind contribution are welcome and must be quantified in the application form. Projects for a Patch should take a maximum of 3 months.

Financing

The whole amount is financed after the expected outcome has been delivered and accepted.

Expected outcome

The expected outcome is composed of the following parts:

- The Patch has been successfully implemented and is ready to be deployed in the live environment
- Evidence that the patch is approved by users (e.g. by doing more interviews)

2.2 Guidelines for software

In order to ease the discoverability, preservation and reuse of the products, the EGI Foundation offers the following to the Product Teams:

- An infrastructure for continuous integration and testing
- To host their code under the EGI GitHub organization: https://github.com/EGI-Foundation
- To host their ansible roles under its Ansible Galaxy organization: https://galaxy.ansible.com/EGI-Foundation/
- To host their containers under its Docker Hub account: https://hub.docker.com/u/egifoundation/
- To host their artifacts (packages, tarballs, Virtual Appliances) in the AppDB: https://appdb.egi.eu

For projects producing software, the following requirements apply[1]:

- Licensing
    - Adopt an OSI-approved license (https://opensource.org/licenses); we recommend Apache 2.0
    - The license should provide unlimited access rights to the EGI Community (see Ownership of Results)
- Source code access
    - Maintain the source code in a publicly-accessible software repository like GitHub
    - you can request to use the EGI Foundation GitHub organisation

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[1] See also "A set of common software quality assurance baseline criteria for research projects" https://digital.csic.es/handle/10261/160086

- - ■ If using another repository, a copy must be kept synchronized under the EGI Foundation GitHub organisation
    - ○ All releases must be tagged appropriately
  - ● Code style
    - ○ Style guidelines must be defined and documented. A general style guide may be made available by EGI as a default.
    - ○ If you are extended an existing software component, then you must use the code style defined by the related product team
    - ○ If you are developing a new component, then you must use the code style practices for the programming language of your choice
    - ○ Code style compliance should be checked by automated means for every change
  - ● Best practices should be adopted
    - ○ As far as possible adopt 12 factor application pattern https://12factor.net/
    - ○ Configuration Management modules to deploy and configure the products should be provided and distributed through the corresponding distribution channels
      - ■ Ansible is recommended, roles can be hosted under the EGI Foundation organization in Ansible Galaxy
    - ○ Security best practices must be taken into account
      - ■ Security-related aspects must be considered from the beginning
      - ■ Security issues should be addressed in priority and following the EGI SVG recommendations https://wiki.egi.eu/wiki/SVG and procedures https://documents.egi.eu/public/ShowDocument?docid=3145
      - ■ Suggested references
        - ● https://learn.cisecurity.org/benchmarks
        - ● https://iase.disa.mil/stigs/Pages/index.aspx
    - ○ Tooling and telemetry:
      - ■ If the project is an application or an infrastructure component, it should follow as close as possible the monitoring guidelines set by the Site Reliability Engineer book
  - ● Testing
    - ○ Unit tests should be provided
    - ○ Unit testing should be automated
    - ○ Code coverage should be computed as part of the continuous integration
    - ○ When possible functional and integration tests should be automated
      - ■ If it's not possible for some components the product team should provide report about those tests for the new releases
  - ● Code Review
    - ○ A team of code reviewers shall be specified for each project
    - ○ Changes must be reviewed by the code review team prior to be merged using a Pull Request-like workflow

- Documentation
    - Documentation must be treated like code
        - Written in a plain text-based format
        - Management in a repository and versioning
        - Markdown and reStructuredText formats are recommended
        - https://readthedocs.org/ usage is recommended
    - A "Community First" approach should be followed
        - Contributing, onboarding and community guidelines should be available from the start of the project
    - Documentation should be available for
        - Developers
        - Administrators (Deployment and administration)
        - End users
- Artifacts Release and delivery
    - Artefacts should be tagged according to Semantic Versioning Guide v.2.0.0 or to https://calver.org that can be more appropriate for OS images
    - Artefacts should have a DOI and associated short writeup (see Documentation above)
    - Artifacts should be published in publicly available repositories
        - EGI Application Database should be used for this
    - It should be possible to automatically build production-grade distribution artifacts from the repository using provided build scripts and files
    - Where appropriate, native packages for EGI Federation-supported Operating System should be provided:
        - CentOS 7 (rpm)
        - Ubuntu 16 (deb)
    - Containers are accepted
        - Containers must be compatible with EGI Cloud services