Proposal Evaluation Form

EUROPEAN COMMISSION

Horizon 2020 - Research and Innovation Framework Programme

Evaluation Summary Report - Research and innovation actions/Innovation actions

Call: H2020-EINFRA-2015-1
Funding scheme: Research and Innovation action
Proposal number: 676541
Proposal acronym: OpenDreamKit
Duration (months): 48
Proposal title: Open Digital Research Environment Toolkit for the Advancement of Mathematics
Activity: EINFRA-9-2015

N.	Proposer name	Country	Total Cost	%	Grant Requested	%
1	UNIVERSITE PARIS-SUD	FR	1,315,874	17.24%	1,315,874	17.24%
2	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	FR	797,730	10.45%	797,730	10.45%
3	JACOBS UNIVERSITY BREMEN GGMBH	DE	567,050	7.43%	567,050	7.43%
4	UNIVERSITE JOSEPH FOURIER GRENOBLE 1	FR	548,000	7.18%	548,000	7.18%
5	TECHNISCHE UNIVERSITAET KAISERSLAUTERN	DE	568,375	7.45%	568,375	7.45%
6	THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF OXFORD	UK	303,511	3.98%	303,511	3.98%
7	UNIWERSYTET SLASKI	PL	161,235	2.11%	161,235	2.11%
8	THE UNIVERSITY OF SHEFFIELD	UK	568,250	7.44%	568,250	7.44%
9	UNIVERSITY OF SOUTHAMPTON	UK	455,364	5.97%	455,364	5.97%
10	THE UNIVERSITY COURT OF THE UNIVERSITY OF ST ANDREWS	UK	902,271	11.82%	902,271	11.82%
11	UNIVERSITE DE VERSAILLES SAINT-QUENTIN-EN-YVELINES.	FR	123,613	1.62%	123,613	1.62%
12	THE UNIVERSITY OF WARWICK	UK	217,148	2.84%	217,148	2.84%
13	UNIVERSITAET ZUERICH	CH	161,000	2.11%	161,000	2.11%
14	Logilab	FR	452,265	5.92%	452,265	5.92%
15	SIMULA RESEARCH LABORATORY AS	NO	492,161	6.45%	492,161	6.45%
	Total:		7,633,847		7,633,847	

Abstract:
OpenDreamKit will deliver a flexible toolkit enabling research groups to set up Virtual Research Environments, customised to meet the varied needs of research projects in pure mathematics and applications and supporting the full research life-cycle from exploration, through proof and publication, to archival and sharing of data and code. OpenDreamKit will be built out of a sustainable ecosystem of community-developed open software, databases, and services, including popular tools such as LinBox, MPIR, Sage(sagemath.org), GAP, PariGP, LMFDB, and Singular. We will extend the Jupyter Notebook environment to provide a flexible UI. By improving and unifying existing building blocks, OpenDreamKit will maximise both sustainability and impact, with beneficiaries extending to scientific computing, physics, chemistry, biology and more and including researchers, teachers, and industrial practitioners. We will define a novel component-based VRE architecture and the adapt existing mathematical software, databases, and UI components to work well within it on varied platforms. Interfaces to standard HPC and grid services will be built in. Our architecture will be informed by recent research into the sociology of mathematical collaboration, so as to properly support actual research practice. The ease of set up, adaptability and global impact will be demonstrated in a variety of demonstrator VREs. We will ourselves study the social challenges associated with large-scale open source code development and of publications based on executable documents, to ensure sustainability. OpenDreamKit will be conducted by a Europe-wide demand-steered collaboration, including leading mathematicians, computational researchers, and software developers long track record of delivering innovative open source software solutions for their respective communities. All produced code and tools will be open source.

Evaluation Summary Report

Evaluation Result

Total score: 14.50 (Threshold: 10.00)

Form information

SCORING

Scores must be in the range 0-5.

Interpretation of the score:

0– *The* ***proposal fails to address the criterion*** *or cannot be assessed due to missing or incomplete information.*

1– Poor. *The criterion is inadequately addressed, or there are serious inherent weaknesses.*

2– Fair. *The proposal broadly addresses the criterion, but there are significant weaknesses.*

3– Good. *The proposal addresses the criterion well, but a number of shortcomings are present.*

4– Very good. *The proposal addresses the criterion very well, but a small number of shortcomings are present.*

5– Excellent. *The proposal successfully addresses all relevant aspects of the criterion.Any shortcomings are minor.*

Criterion 1 - Excellence

Score: **5.00** (Threshold: 3.00/5.00 , Weight: 100.00%)

Note: The following aspects will be taken into account, to the extent that the proposed work corresponds to the topic description in the work programme. If a proposal is partly out of scope, this must be reflected in the scoring, and explained in the comments.
Clarity and pertinence of the objectives
Credibility of the proposed approach and methodology;
The extent to which the Networking Activities will foster a culture of co-operation between the participants and other relevant stakeholders
The extent to which the Service activities will offer access to state-of-the-art infrastructures, high quality services, and will enable users to conduct excellent research
The extent to which the Joint Research Activities will contribute to quantitative and qualitative improvements of the services provided by the infrastructures
Soundness of the concept, including trans-disciplinary considerations, where relevant
Extent that proposed work is ambitious, has innovation potential, and is beyond the state of the art (e.g. improved performance and capacity of the proposed e-Infrastructures)

The OpenDreamKit proposal targets a Virtual Research Environment for the advancement of mathematics and its applications.

The objectives are clear and relevant to the Call.

The approach is based on building upon existing open source software components and infrastructures, and this is credible.

The proposed networking activities, e.g. student exchange and use of social media, although not described in a unified way, will support cooperation well among stakeholder groups.

The Service Activities are clear and will offer access to state-of-the-art infrastructures, high quality services, and will enable users to conduct excellent research.

The Joint Research Activities proposed will contribute to greatly improving the quality, usability, flexibility of the current systems. OpenDreamKit will provide a solid and excellent framework based on open software. The linking of the software elements will allow to meet the requirements of individual projects.

The proposal is innovative and has the potential to lead to innovation in its particular fields: mathematics and collaborative software development.

The overall concept, embracing an ecosystem of mathematical tools and systems, is sound and trans-disciplinary and will enable related stakeholder communities in mathematics and its application domains to generate VREs tailored to their specific requirements.

The proposed work is very ambitious and will greatly extend the state-of-the-art.

Criterion 2 - Impact

Score: **5.00** (Threshold: 3.00/5.00 , Weight: 100.00%)

Note: The following aspects will be taken into account, to the extent to which the outputs of the project should contribute at the European and/or International level:
The expected impacts listed in the work programme under the relevant topic
Enhancing innovation capacity and integration of new knowledge
Strengthening the competitiveness and growth of companies by developing innovations meeting the needs of European and global markets, and where relevant, by delivering such innovations to the markets
Any other environmental and socially important impacts
Effectiveness of the proposed measures to exploit and disseminate the project results (including management of IPR), to communicate the project, and to manage research data where relevant

The proposal will contribute towards the achievement of the expected impacts listed in the work programme and the proposal contains credible arguments in support of its impacts. An appropriate range of comprehensive key performance indicators is presented.

The proposal has the potential to enhance innovation capacity and to integrate new knowledge in mathematics by providing innovative mathematical tools accessible through a novel eInfrastructure.

The proposal has strong potential to enhance industrial competitiveness by providing integrated open source mathematical tools which in the long term will benefit the European economy.

Effective measures are defined to exploit and disseminate the proposed results. The proposal addresses a wide community of stakeholders. The planned measures to support open data and open access to publications will contribute to the achievement of impacts. The financial sustainability plan is convincingly addressed.

IPR matters are appropriately addressed in the proposal with further refinement to be addressed at the Consortium Agreement stage.

Criterion 3 - Quality and efficiency of the implementation

Score: **4.50** (Threshold: 3.00/5.00 , Weight: 100.00%)

Note: The following aspects will be taken into account:
Coherence and effectiveness of the work plan, including appropriateness of the allocation of tasks and resources
Complementarity of the participants within the consortium (when relevant)
Appropriateness of the management structures and procedures, including risk and innovation management

The work plan is coherent and is well structured for achieving the objectives. Allocation of tasks and resources is appropriate. The work plan is well defined in terms of deliverables and milestones.

The partners are all of excellent quality with the necessary experience and collectively they form a complementary partnership.

The management structure and procedures are clear and appropriate.

Many critical risks for the implementation are identified with adequate mitigation measures considered. However the focus is mostly on management risk, with the technical risks not fully defined. For instance:
- the inherent risks associated with the reliance on Open Software developments delivered from a volunteer community are not fully considered.
- the state of maturity of one of the central components (Jupyter) is not thoroughly addressed, which could pose a risk to the early stages of the proposed project.

Operational Capacity

Status: **Operational Capacity: Yes**

Not provided

Proposal content corresponds, wholly or in part, to the topic description against which it is submitted, in the relevant work programme part

Status: **Yes**

Not provided

Overall comments

Not provided