


Proposal Evaluation Form

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	<p>EUROPEAN COMMISSION</p> <p>Horizon 2020 - Research and Innovation Framework Programme</p>	<p>Evaluation Summary Report - Research and innovation actions/Innovation actions</p>
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Call: H2020-ICT-2018-2
Funding scheme: IA
Proposal number: 825532
Proposal acronym: LEXIS
Duration (months): 30
Proposal title: Large-scale EXecution for Industry & Society
Activity: ICT-11-2018-IA

N.	Proposer name	Country	Total Cost	%	Grant Requested	%
1	VYSOKA SKOLA BANSKA - TECHNICKA UNIVERZITA OSTRAVA	CZ	1,265,625	9.02%	1,265,625	10.36%
2	BULL SAS	FR	1,582,265	11.27%	1,107,585.5	9.06%
3	NALLATECH LIMITED	UK	266,250	1.90%	186,375	1.53%
4	ISTITUTO SUPERIORE MARIO BOELLA SULLE TECNOLOGIE DELL'INFORMAZIONE E DELLE TELECOMUNICAZIONI ASSOCIAZIONE	IT	948,750	6.76%	948,750	7.76%
5	TESEO SPA TECNOLOGIE E SISTEMI ELETTRONICI ED OTTICI	IT	1,023,750	7.29%	716,625	5.87%
6	COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES	FR	1,021,970	7.28%	1,021,970	8.36%
7	BAYERISCHE AKADEMIE DER WISSENSCHAFTEN	DE	1,325,000	9.44%	1,325,000	10.84%
8	EUROPEAN CENTRE FOR MEDIUM-RANGE WEATHER FORECASTS	UK	1,151,925	8.21%	1,151,925	9.43%
9	ASSOCIAZIONE ITHACA-INFORMATION TECHNOLOGY FOR HUMANITARIAN ASSISTANCE COOPERATION AND ACTION	IT	558,750	3.98%	558,750	4.57%
10	Centro Internazionale in Monitoraggio Ambientale - Fondazione CIMA	IT	723,750	5.16%	723,750	5.92%
11	GE AVIO SRL	IT	986,200	7.03%	690,340	5.65%
12	HELMHOLTZ ZENTRUM POTSDAM	DE	583,750	4.16%	583,750	4.78%
13	DEUTSCHESGEOFORSCHUNGSZENTRUM GFZ	DE	397,662.5	2.83%	397,662.5	3.25%
14	ALFRED-WEGENER-INSTITUT HELMHOLTZ-ZENTRUM FUR POLAR- UND MEERESFORSCHUNG	DE	397,662.5	2.83%	397,662.5	3.25%
15	SecludIT	FR	798,750	5.69%	559,125	4.58%
16	Cyclops Labs GmbH	CH	388,750	2.77%	272,125	2.23%
17	BAYNCORE LABS Limited	IE	675,625	4.81%	472,937.5	3.87%
17	NUMTECH SARL	FR	337,500	2.40%	236,250	1.93%
Total:			14,036,272.5		12,218,545.5	

Abstract:

The increasing quantities of data generated by modern industrial and business processes pose enormous challenges for organizations seeking to glean knowledge and understanding from the data. Combinations of HPC, Cloud and Big Data technologies are key to meeting the increasingly diverse needs of large and small organizations alike. Critically, access to powerful compute platforms for SMEs - which has been difficult due to both technical and financial reasons - may now be possible. LEXIS (Large-scale EXecution for Industry & Society) project will build an advanced engineering platform at the confluence of HPC, Cloud and Big Data which will leverage large-scale geographically-distributed resources from existing HPC infrastructure, employ Big Data analytics solutions and augment them with Cloud services. Driven by the requirements of the pilots, the LEXIS platform will build on best of breed data management solutions (EUDAT) and advanced, distributed orchestration solutions (TOSCA), augmenting them with new, efficient hardware capabilities in the form of Data Nodes and federation, usage monitoring and accounting/billing supports to realize an innovative solution. The consortium will develop a demonstrator with a significant Open Source dimension including validation, test and documentation. It will be validated in the pilots - in the industrial and scientific sectors (Aeronautics, Earthquake and Tsunami, Weather and Climate) - where significant improvements in KPIs including job execution time and solution accuracy are anticipated. LEXIS will promote the solution to the HPC, Cloud and Big Data sectors maximizing impact through targeted and qualified communications. LEXIS brings together a consortium with the skills and experience to deliver a complex multi-faceted project, spanning a range of complex technologies across seven European countries, including large industry, flagship HPC centres, industrial and scientific compute pilot users, technology providers and SMEs.

Evaluation Summary Report

Evaluation Result

Total score: 14.50 (Threshold: 10)

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: 3/5.00 , Weight: -)

The following aspects will be taken into account, to the extent that the proposed work corresponds to the topic description in the work programme:

Clarity and pertinence of the objectives

Soundness of the concept, and credibility of the proposed methodology

Extent that proposed work is beyond the state of the art, and demonstrates innovation potential (e.g. ground-breaking objectives, novel concepts and approaches, new products, services or business and organisational models)

Appropriate consideration of interdisciplinary approaches and, where relevant, use of stakeholder knowledge and gender dimension in research and innovation content

The proposal LEXIS (Large-scale EXecution for Industry & Society) aims to build an advanced engineering platform at the confluence of HPC, Cloud and Big Data which shall leverage large-scale geographically-distributed resources from existing HPC infrastructure, employ Big Data analytics solutions and augment them with Cloud services to be tested in aeronautics, weather and tsunami predictions. It is therefore well in line with the ICT-11-2018 call.

The objectives are aptly subdivided into overall objectives (foundation, innovation, extension), test-bed-specific objectives and technology-specific objectives and are well structured, clearly presented, and provided with suitable KPIs.

LEXIS' concept is complex and ambitious, yet still sound and well thought out. The credibility of the approach is supported by integration of developments from ongoing or recent European projects.

The overall architecture of LEXIS has been very well designed as three integrated layers: infrastructure layer, data layer and Cloud services. Methodologies applied in each layer are described in sufficient detail and are suitable for achieving the proposed objectives.

The standards and data assets to be used are clearly identified. Infrastructure, data and cloud layers to be integrated are well described and the challenges are pertinently addressed by providing suitable solution to overcome the anticipated obstacles, such as reaching nearly real-time tsunami predictions.

Progress beyond state-of-the-art is well presented and substantiated for the three test-beds. The planned developments for the test-beds have clear innovation potential and clear potential for new products, services and business models. Novel developments for HPC service orchestration are also convincingly presented. However, as a minor shortcoming the innovation potential of developments regarding data nodes, cross-site synchronisation for distributed storage as well as access management and monitoring system is not discussed in sufficient detail.

The proposed approach is highly interdisciplinary and involves analytics for manufacturing optimisation, weather and climate information services provisioning and real-time prediction of natural disasters effects.

Criterion 2 - Impact

Score: **4.50** (Threshold: 3/5.00 , Weight: -)

The following aspects will be taken into account:

The extent to which the outputs of the project would contribute to each of the expected impacts mentioned in the work programme under the relevant topic

Any substantial impacts not mentioned in the work programme, that would enhance innovation capacity, create new market opportunities, strengthen competitiveness and growth of companies, address issues related to climate change or the environment, or bring other important benefits for society

Quality of the proposed measures to:

- exploit and disseminate the project results (including management of IPR), and to manage research data where relevant
- communicate the project activities to different target audiences

All expected impacts of the call topic are well addressed. The test-beds convincingly address specific improvements to increase efficiency and/or productivity; the integration of HPC, Big Data, Cloud, and IoT technologies is discussed in detail and the impact is credible with respect to improved work flows across systems; the access to advanced infrastructure for integrated HPC, Big Data and Cloud will be facilitated; the increase of the market share of Big Data technology is likely to be supported by direct involvement of industrial partners; impact on stimulation of interest and investment in HPC and Big Data from further sources beyond the consortium is potentially significant, although the approach to achieve it is not sufficiently elaborated.

Excellent measurable KPIs for assessing impact are suitably identified and well presented for all relevant domains, with exception of KPIs for the increase of market share of Big Data Technology, in particular with regard to the industry partners in the consortium.

LEXIS plans to be closely integrated in other European initiatives such as ETP4HPC, EuroHPC, PRACE and the Big Data Value Association (BDVA). By this, impacts of the LEXIS outcomes regarding HPC, HPDA and Cloud areas will increase since the communities from these initiatives will benefit from the LEXIS outcomes. Furthermore, collaboration relationships beyond Europe will be fostered (e.g. China, Japan), thus promoting European leadership in technology.

As a minor issue, the contribution of the project outcomes to standardisation is not discussed in sufficient detail, albeit of some relevance, particularly because of the international collaboration plans.

Initial exploitation activities and business plans are well elaborated and constitute a solid basis for future exploitation developments. Exploitation stakeholders are suitably addressed. Management of knowledge and intellectual property rights are described in sufficient detail, including software licensing.

Measures to disseminate and communicate the results are of high quality and excellently presented. Partners' specific dissemination assets and intentions are listed in detail. It is planned that the External Advisory Board shall be leveraged both as a feedback mechanism to determine whether the messages being generated by the project resonate, but also as a channel for qualified communication with other industries relevant to LEXIS. This is an excellent additional measure.

Criterion 3 - Quality and efficiency of the implementation

Score: **5.00** (Threshold: 3/5.00 , Weight: -)

The following aspects will be taken into account:

Quality and effectiveness of the work plan, including extent to which the resources assigned to work packages are in line with their objectives and deliverables

Appropriateness of the management structures and procedures, including risk and innovation management

Complementarity of the participants and extent to which the consortium as a whole brings together the necessary expertise

Appropriateness of the allocation of tasks, ensuring that all participants have a valid role and adequate resources in the project to fulfil that role

The design of the work plan is excellent, with a high degree of relevant detail, reflects the objectives well and is clearly effective. The assigned resources are appropriate. A suitable set of deliverables and milestones is provided.

Management structure and procedures, including conflict resolution, are extensively discussed and very suitable. Risk, quality and innovation management are appropriately considered.

The LEXIS consortium is a balanced combination of complementary companies, supercomputing centers, research institutes, and universities to cover the spectrum of scientific and technological innovation. The relevant expertise in the consortium is excellent and complementarity is clearly demonstrated. The rationale for the subcontractor is well explained and justified since it owns important software for the aeronautics test-bed.

The allocation of tasks is appropriate; all participants have a valid role and sufficient resources to fulfill it.

Scope of the proposal

Status: **Yes**

Comments (in case the proposal is out of scope)

Not provided

Operational Capacity

Status: **Operational Capacity: Yes**

If No, please list the concerned partner(s), the reasons for the rejection, and the requested amount.

Not provided

Exceptional funding of third country participants/international organisations

A third country participant/international organisation not listed in [General Annex A to the Main Work Programme](#) may exceptionally receive funding if their participation is essential for carrying out the project (for instance due to outstanding expertise, access to unique know-how, access to research infrastructure, access to particular geographical environments, possibility to involve key partners in emerging markets, access to data, etc.). (For more information, see the [Online Manual](#))

Based on the information provided in the proposal, we consider that the following participant(s)/international organisation(s) that requested funding should exceptionally be funded:

(Please list the Name and acronym of the applicant, Reasons for exceptional funding and the Requested grant amount.)

Not provided

Based on the information provided in the proposal, we consider that the following participant(s)/international organisation(s) that requested funding should NOT be funded:

(Please list the Name and acronym of the applicant, Reasons for exceptional funding and the Requested grant amount.)

Not provided

Use of human embryonic stem cells (hESC)

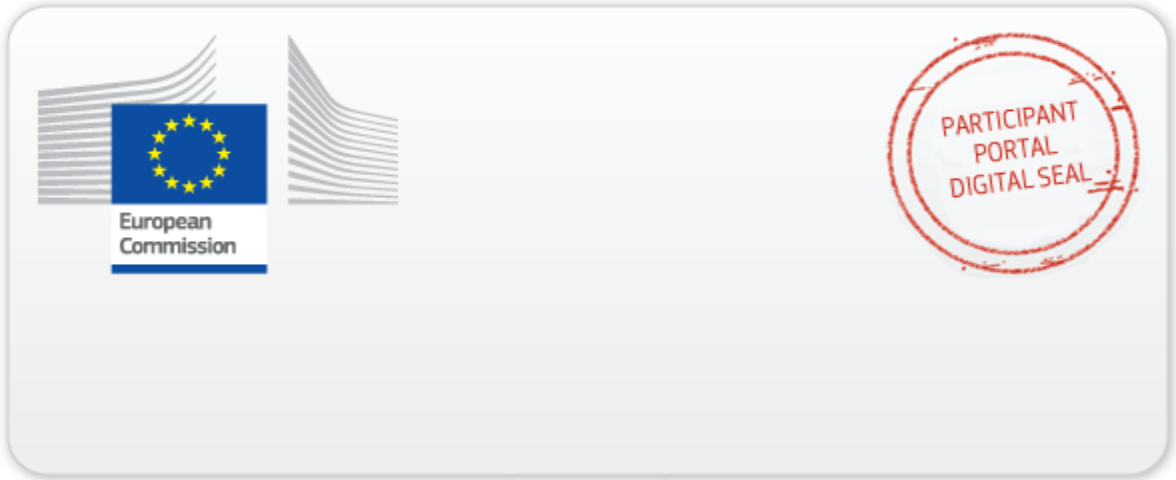
Status: **No**

If yes, please state whether the use of hESC is, or is not, in your opinion, necessary to achieve the scientific objectives of the proposal and the reasons why. Alternatively, please state if it cannot be assessed whether the use of hESC is necessary or not because of a lack of information.

Not provided

Overall comments

Not provided



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