2013 Evaluation of FCT Research and Development Units

Review process - Stage 2

Panel: 02

ESF internal Project Ref Number: 14-FCT-008
FCT Ref: 27

Title: Artificial Intelligence and Computer Science Laboratory (LIACC)

P.I.:   Dr. Eugenio Da Costa Oliveira

Final Panel Consensus Report

Total weighted Score (A+B+C+D+E)	**19** / 25	**Final classification**	**Very Good**

A. Productivity and contribution to the National Scientific and Technological System (NSTS):   **4** /5

i.) Research outputs; knowledge and technology transfer activities, when applicable, giving particular importance to the registration and value of patents, models or other relevant innovation indicators;
ii.) Contribution to the accumulation of knowledge and skills of the National Science and Technology System (expected effects and results); contribution to the advanced training of researchers; contribution to the promotion and dissemination of scientific and technological research; dissemination of results and actions to promote scientific culture, as well as participation in activities designed to promote public understanding of science, technology, art and culture; relationship between available past funding and output;
iii.) Degree of multidisciplinarity and of internationalization, when relevant.

Substantiating comment:

Regarding productivity, the final consensus after the site visit and the subsequent panel discussion is unchanged from the stage 1 evaluation. There was some clarification during the site visit.   The publication record is very good with the 24 integrated members. Patents were not discussed. The PhD. training level is very good with 29 finished and comprising a large pool of upcoming PhDs.

B.Scientific and technological merit of the research team: **4** /5

i.) Scientific productivity and merit of the results of the Unit's research, taking into account the relevance of both current and planned research, as well as the level of internationalization of scientific activities, including publications and citations of published works or other relevant aspects;
ii.) Skills and composition of the research team to adequately execute the proposed program;
iii.) Ability to successfully compete for national and international research grants and contracts, including contracts with companies.

Substantiating comment:

Regarding scientific merit, the site visit supported the findings in the consensus report from the state 1 evaluation. Scientific productivity is very good. Funding shares for 2008-2012 were examined during the site visit and comprise FCT 821K, EU 435K, plurannual 424K, other nat. 44K, indust. nat. 94K and indust. int. 90K. This confirms the unit's capability to gather research funds.

C. Scientific merit and innovative nature of the strategic programme: **4** /5

i.) Relevance, originality and impact of the proposed strategic programme;
ii.) Contribution of the scientific, technological, artistic or cultural activities of the proposed programme for a smart specialization strategy of the region in which the RD Unit is incorporated;
iii.) Degree of multidisciplinarity and of internationalization, when relevant.
*** The score must be based on C.i and C.iii only. However, comments on C.ii are welcome.***

Substantiating comment:

The unit believes strongly that having a large set of complementary objectives can be used as a benefit making possible multidisciplinary research. This sets however the question of reaching and having critical mass on each complementary objective. The degree of multidisciplinarity was obvious and further clarified during the site visit. LIACC is composed mainly of Portuguese researchers but has also many international members and collaborators. The directive board has a member from Brazil. Other international members of the unit are from Iran, Greece, Brazil and Georgia.

Grading Scale for individual criteria: 5 – Excellent; 4 - Very good; 3 – Good; 2 – Fair; 1 – Poor;
Weighting scale: A: 20% to 35%; B: 20%; C: 20%; D: 20%; E: 5% to 20%. Please refer to guidelines for weight distribution between A and E according to research profile

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FCT **Fundação para a Ciência e a Tecnologia**
MINISTÉRIO DA EDUCAÇÃO E CIÊNCIA

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D. Feasibility of the work plan and reasonability of the requested budget:	**4**	**/5**

i.) Organisation of the programme in terms of the proposed objectives and resources (budget, duration, infrastructures); organisation and work environment, with special focus on the adequacy of the research team's critical mass to perform the proposed objectives and on the management of resources directed to research activities, which includes supervision of postgraduate students and post-doctoral involvement in RD activities;
ii.) Adequacy of proposed budget to accomplish the proposed strategic programme;
iii.) Institutional resources (technical, scientific, organisational and managerial) of the participating entities. The commitment of the host institution in providing the manpower and material resources to implement the proposed programme is especially valued.

Substantiating comment:

The feasibility of the budget allocation was clarified during the site visit, especially for the concerns about PhDs and other personnel funding. The unit expects that PhDs will continue to be funded using FCT scholarships and doctoral programme scholarships. The unit has been able to get external funding for its PhD candidates in competitive scholarship contests from FCT, Gulbenkian and other institutions.

E. Impact of the scientific, technological and cultural output:	**3**	**/5**

i.) Production of knowledge likely to stimulate a knowledge-based economy and likely to be used by the productive structures, when applicable;
ii.) Contribution of the RD Unit to the national and regional economic growth and development;
iii.) Knowledge and technology transfer and its dissemination.
** The score must be based on E.i and E.iii only. However, comments on C.ii are welcome.**

Substantiating comment:

A majority of the unit's effort is devoted to applied research. Their strategy is to put the results regularly to the test in real world scenarios. Even if there is no concrete demand for the basic research, the unit always endeavours to turn ideas into working prototypes that may pave the way to applications. The panel sees that this may stimulate a knowledge-based economy if properly achieved.

ADDITIONAL QUESTIONS

1. Laboratory intensity level

Level validated:	*(High - Medium - Low/Null)*	**High**

Substantiating comment (non compulsory):

LIACC is an applied research laboratory that encompasses not only software but also hardware, complete systems, and experiments with users and patients. This justifies the high intensity level.

2. Basic and applied research/experimental development share

Basic/applied share validated:	**10 / 90**

(100%= fully basic - 0%=fully Applied and/or Experimental development; If shared, indicated as XX/xx, with basic research share always in first position)

Substantiating comment (non compulsory):

The site visit and subsequent panel discussion approved the original assessment of the state 1 consensus report as 10% basic and 90% applied research.

Overall Conclusions:

Substantiating comment, specifying key strengths and weaknesses (if any).

The overall conclusions in the state 1 evaluation are confirmed and clarified by the site visit and the subsequent panel discussion. The grading and comments follow the discussions during the consensus meeting. LIACC is a superstructure over two faculties (engineering and computing) that solicits interesting

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cooperation in the areas of Artificial Intelligence, Theoretical Computer Science, and Programming Languages. LIACC's strategic program analyzes well some actual trends in Computer Science and identifies the opportunities for LIACC with respect to these trends. The proposed strategic program is well organized in terms of budget and duration. LIACC intends to intensify its efforts to drive research up to the edge of commercial applications. The hitherto balance between conceptual research and application was adequate and deserves continuation. The research unit has been carrying out substantial research and the research results are relevant in an international context, as the unit's members are internationally visible and active. The site visit clarified several areas: formalization of human emotions, cooperation between group members, application of Horizon 2020 slogans, recent developments in declarative programming, and construction of prototypes. Overall, this is a very good unit.

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