EU-Brazil 2016 Coordinated Calls in ICT – EU-Brazil 2016 Working Group Findings

EU-BRAZIL 2016 WORKING GROUP MEMBERS[1]:

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1. OBJECTIVE OF THE DOCUMENT

Europe and Brazil have a strong and successful track of joint collaboration in the field of ICT. Since 2010, they have been running joint calls for project proposals known as "Co-ordinated Calls". The 3rd Call has been published in October 2014[2] with the submission deadline coming in April 2015. In parallel, this working group has been reflecting on the previous experiences, discussing future challenges and opportunities, and preparing this findings document on the model and topics for the 4th (2016) and other future calls.

This document has been prepared for the European Commission and for the Brazilian Ministry of Science, Technology, and Innovation (MCTI). The findings included here are the outcome of several discussions among the group members and of the analysis of the views and opinions of different stakeholders, collected via an online survey. The results of the survey are presented in a white paper that accompanies this document. This way, the findings reflect, not only the ideas of the authors of this document, but also the ideas and wishes of a large number of stakeholders.

This document is divided in two main parts. Reflecting on the previous experience, in Section 2 we present a proposal to tune the collaboration model by addressing aspects such as funding, technical and bureaucratic support, and procedures. In Section 3 we list a number of ICT related topics that could be considered in future calls. These topics have been selected taking into account their expected societal importance and the capabilities and expertise of both European and Brazilian scientific communities.

2. COLLABORATION MODEL

The EU-Brazil collaboration model, first established in 2010, has been fine tuned in subsequent calls, fixing some key issues, improving the quality of the proposed projects, and boosting the impact of the collaboration. Still, there are aspects that could be improved in order to assure the future sustainability of the research results and potentially support an industrial & market uptake. The following list presents ideas to further improvement of the EU-Brazil collaboration on ICT:

- **Funding** - The amount of funding available is very small, restricting the extent, the quality and potential impact of the collaboration. Among other aspects, the reduced funding leads to: (i) a very small number of proposals being funded, leaving out very strong and high impact

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[1] In alphabetic order
[2] http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/calls/h2020-eub-2015.html

proposals; and (ii) a shorter number of proposals being submitted with clear impact on the quality of the proposals (many proposals are not even submitted because the probability of acceptance is very small, regardless of the quality of the proposals). Another issue is that some key ICT areas are not covered in the collaboration because of the lack of funding.[3]

- **Rules** - Participation rules, evaluation rules, and calendars must be aligned between the EC and MCTI/CNPq. It has been observed that participation rules on both sides are not consistent (e.g. there is a different perception regarding industrial participation and also about short-medium-long term of the research to be funded) and that the calls are not launched in a synchronized manner (frequently, the call in Europe is issued long before the call in Brazil). This makes the elaboration of high quality proposals difficult, and affects the perception of the community about the organization and quality of the EU-Brazil collaboration.

- **Consortia** - A participation/funding rule that needs to be addressed is related to the participation of industrial partners and SMEs. On the European side, industrial partners can be funded in the context of the project. However, this is not well defined in the Brazilian side: first, it is not clear whether the participation of Brazilian companies is valued, and second, rules prevent companies from being funded in the context of the project. This makes difficult to put together a consortium with the right balance between industry and academia, affecting the exploitation of the project results.

- **Management and Reporting** - Good management approaches need to be implemented and awarded to ensure an effective cross-regional interaction. Project reporting activities are unbalanced and should be re-thought: a single and well-defined reporting process should be implemented to avoid duplication of effort. With no synchronized reports being requested by the EC and CNPq, Brazilian partners do not need to report on the performed activities the same way European partners do. That leads to situations where the results achieved may not be fairly represented and the effort unbalanced against the European partners.

- **Support** - A support service should be provided specifically for these calls, especially within Brazil. This is particularly relevant taking into account the fact that there are differences between the rules in Europe and the rules in Brazil. Building a project proposal and a consortium is a difficult and time consuming task, during which questions related to the rules frequently raise and should be responded by the competent authorities in due time via an efficient support office.

3. PROPOSED TOPICS

Since 2006, the SBC (Brazilian Computer Society) has discussed the main challenges in Computer Science (the last meeting for this purpose was in September 2014, in Rio de Janeiro). These periodic meetings have collected the interest and vision evolution of the research community within a group of topics that reflect the major potentialities of ICT research capabilities in Brazil. On the other hand, since the first Co-ordinated Call between Brazil and EU, several discussions have been made between members of the SBC and EU research community (e.g., ISTAG Meeting 2009 in Brussels, EUBR 2009 in São Paulo and EUBR 2014 in Brasilia). In Brazil, these activities have been supported by the Brazilian Ministry of Science and Technology and by the Ministry of Foreign Affairs. These

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3 A key observation from the community is that, funding issues are particularly relevant on the Brazilian side, as there is a lack of funding for international research in Brazil. **Funding is of major relevance and has to be carefully considered**.

interactions showed that the main challenges in Computer Science listed by the SBC include most of the research capabilities and interests for both sides.

Taking into account the main challenges from the SBC, the analysis of the views and opinions of different stakeholders, which were collected via an online survey (see white paper that accompanies this document), and the capabilities and expertise of both European and Brazilian scientific communities, the working group considers that the topics to be included in the future calls should be organized around three main groups:

- **Management of information over massive volumes of open distributed data**, with special attention to the openness of data, data sharing and scaling, and data quality assurance. Mobilization of data and data access are key factors, as Brazil is an interesting source of potential new data for Europe (and vice-versa) in strategic fields. For example, one of these is biological biodiversity and agriculture: Brazil is a powerful aggregator of biodiversity data, with national libraries and institutional and university repositories as unique sources of data, and could even act as a catalyst for the whole Latin American Region. This will also strengthen collaboration opportunities between the research groups in Europe and Brazil in the general "green" movement, encompassing agriculture.

- **Computational modelling of complex systems**, including artificial, natural, socio-cultural, and human-nature interactions. ICT should be seen as a support for understanding complex societal and natural systems, allowing fostering research on multidisciplinary domains. Considering the characteristics of Europe and Brazil, of particular interest is the support for modelling and analyzing bio systems, smart cities and transports.

- **Technological development of systems focusing on key quality attributes, namely dependability, security, scalability and ubiquity**. In particular**,** cloud computing and all the aspects related to cloud services are at the core of the interest for future trends in ICT, including key aspects such as security, privacy, interoperability (across regions), federation aspects and trust. Key recommendations are to push forward the topic of cyber security and the creation of unified cloud infrastructures, better coordinated and designed, that can provide increased support to accelerate the process of integration of a new economy with more traditional ones, across the Atlantic.

With reference to the scientific fields of application, **biodiversity and biology** should be considered as domains of great importance for future calls, in particular due to the relevance of biodiversity in Brazil and agriculture in Europe and Brazil. **Smart cities and transports** are also a key field, where Brazil could provide excellent case studies for applying and testing models developed for European cities, as the characteristics of South American's cities differ. This includes **intelligent and green transportation**, which is also one of the possible applications for mutual ICT research.

The working group recommends **broadening the scope of the collaboration**, targeting *multidisciplinary research supported by ICT in general*. This would lead to a greater impact of the collaboration and thus to the improvement of the scientific capabilities of research groups in Europe and Brazil. Finally, an aspect that should be strongly emphasized is the need for the **establishment and maintenance of good ICT networks**, with the goal of eliminating infrastructural weaknesses both in Brazil and Europe.