2018-00308 - Customizing A Universal Social Network Bus for MOOCs

**Contract type:** Public service fixed-term contract  
**Level of qualifications required:** Graduate degree or equivalent  
**Function:** Temporary scientific engineer  
**Level of experience:** Up to 3 years

**About Inria**

Inria, the French National Institute for computer science and applied mathematics, promotes “scientific excellence for technology transfer and society”. Graduates from the world's top universities, Inria's 2,700 employees rise to the challenges of digital sciences. With its open, agile model, Inria is able to explore original approaches with its partners in industry and academia and provide an efficient response to the multidisciplinary and application challenges of the digital transformation. Inria is the source of many innovations that add value and create jobs.

**Context**

The SocialBus Research & Innovation Project

Computer-mediated communication can be defined as any form of human communication achieved through computer technology. From its beginnings, it has been shaping the way humans interact with each other, and it has influenced many areas of society. There exist a plethora of social interaction services enabling computer-mediated social communication (e.g., Skype, Facebook Messenger, Telegram, WhatsApp, Slack, etc.). Based on personal preferences, users may prefer a social interaction services rather than another. As a result, users sharing same interests may not be able to interact since they are using incompatible technologies.

To tackle the above interoperability barrier, we propose SocialBus, a middleware solution targeted to enable the interaction via heterogeneous social interaction services.

A first version of the SocialBus software is available under the AGPL open source license at https://gitlab.inria.fr/usnb/universal-social-network-bus.

**References:**

- Rafael Angarita, Nikolaos Georgantas, Valérie Issarny. **USNB: Enabling Universal Online Social Interactions.** IEEE International Conference on Collaboration and Internet Computing, 2017. Best paper award https://hal.inria.fr/hal-01591757.

**Assignment**

**Contribution**

As part of the further development of the USNB solution, the research engineer will specifically contribute to its customization for use in the context of MOOCs – Massive Open Online Courses, so as to support collaborative exercise among students at a massive scale.

The work will go along with the adoption of adequate software engineering practices, and the production of documentation.

**Main activities**

The R&D engineer will undertake the following activities:

- Design of mechanisms supporting collaborative exercises via social networks as part of
MOOC.

- Design and implementation of the integration of the above mechanisms within SocialBus.
- Evaluation using an experiment as part of a reduced scale SPOC on "Implementing Successful Processes for Citizen Participation: Supporting Methods and Civic Tech".
- Recommendation for further evolution based on the evaluation.

**Skills**

Expertise, including experience in the implementation of related software prototypes, in one and possibly several of the following topics:

- Service oriented architectures,
- Middleware architectures and systems,
- Implementation on Java EE and/or Node.js,
- Implementation of Web APIs,
- Code generation,
- Use of database management systems,
- Use of social networks.

**Benefits package**

- Subsidised catering service
- Partially-reimbursed public transport