

# HII HopsWorks (EIT 17186) RISE SICS

## Call for Sub-granting on task A1704: Hops IoT Streaming Analytics product for low latency large-scale processing

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## 1. Introduction and General Context

This document describes a sub-granting proposal offered to eligible contractors by RISE SICS in the context of the High Impact Initiative named “HopsWorks”, supported by EIT Digital in its Digital Infrastructure (former Future Cloud) action line.

The goal of RISE SICS inside the HII HopsWorks project is that of developing and applying Hops to help build a multi-tenant platform for Big Data that has best-in-class support for streaming analytics.

**Contractors are requested to provide evidence of expertise with the activities that are subject of this sub-grant, in particular the development of the open source Hops ecosystem, including distributed Yarn, HopsFS, NDB, spark and Kafka.**

The remaining of this document will describe in more details the different aspects of the sub-grant, including the amounts, the evaluation criteria, the expected timeline and IPR issues.

## 2. Details

### 2.1. Sub-granted Activities and Budget

Hadoop Open Platform-as-a-Service (Hops) is a new distribution of Apache Hadoop that is based on a next-generation, scale-out architecture for HDFS and YARN metadata. Hops HDFS implementation scales to >13X the throughput of Apache HDFS and our YARN implementation scales to much larger clusters. Hops provides a self-service, UI for user access to Hadoop called HopsWorks. HopsWorks provides a new project-based multi-tenant model for Hadoop that enables different companies/individuals to share the same platform securely.

The goal of RISE SICS activity in the HopsWorks project is to develop a user friendly, secure, multi-tenant streaming platform for Hops. The streaming platform must be able to scale to support a large number of datasets and streams; it must provide a user friendly way to create near real time applications and to visualize both real time and historic data sent from IoT devices.

In details, the offered sub-grant is part of the task 17186-A1704 “Hops IoT Streaming Analytics product for low latency large-scale processing” of the HII HopsWorks. It consists of the development of a system based on Hops and HopsWorks to handle and analyze data coming from IoT devices. This system should fulfill the following requirements:

- Be able to create near real time applications where the latency for the data processing is below 100 ms;
- The software must be designed to be scalable to support large numbers of data sets (i.e. of the order of 10,000s) each published from a minimum of 500 data providers;
- Allows easy / quick development of mash-ups of IoT data and other processed IoT data by allowing ad-hoc data queries and processing modules to be constructed and deployed as new APIs without interrupting operation of existing services;
- Be able visualize both real time and historic data sent from registered devices.

The sub-granted activity will consist in the development of this system.

### 2.2. Evaluation Criteria

The grant will be awarded to a company with expertise in the development of the Hops Hadoop distribution, its different components (HopsFS, Hops Yarn, NDB, etc.) and the stack taking advantage of Hops Hadoop properties (HopsWorks, Zeppelin, Kafka, etc.).

The organization receiving the grant will be selected, according to the selection rules of grantor, on the basis of its proven experience and portfolio of previous works.

A preferential criterion is the availability to meet the sub-granter (RISE SICS) frequenting the EIT Digital Stockholm Satellite, for alignments. The EIT Digital KIC Partner (RISE SICS) shall give financial support for the KIC added value Activity carried out by the Sub-grantee, within the limits specified by the Annual Grant Agreement.

The maximum amount of sub-grant under this Agreement is € 60,000.00.

Candidate contractors are welcome to apply for the maximum granted amounts. In case of equitable portfolio and proven expertise, the preference will be given to the candidates guaranteeing more features and meeting the preferential criteria above exposed (including delivery time).

### **2.3. Timeline**

The sub-granting procedure and activities will take place on the basis of the following timeline:

- June 26st, 2017: publication of the present sub-grant call;
- July 3rd , 2017: deadline for candidate contractors to apply;
- July 10th, 2017: contractor selection and engagement;
- July 17th , 2017: start of the activities;
- November 30th, 2017: end of the main development activities;
- December 22nd, 2017: end of documenting and reporting activities.

### **2.4. Budget and Cost Reporting**

The funding is 100% on a cost basis, and the budget of the sub-grant is:

- Up to maximum € 60,000.00 (EUR forty thousand);

The contractor will be allowed to claim this funding up to the maximum of € 60,000, on basis of cost claim. Within one week from the conclusion of the development activities (i.e. within December 15th, 2016). The report will be verified and approved by RISE SICS; eventual iterations between the contractor and RISE SICS may occur to refine the report within the above established end of reporting activities (December 122nd).

### **2.5. Traveling and logistics**

Most of the sub-granted activities are expected to be performed by contractors in their offices, while most of the interactions with the sub-granter will occur by audio/video conference or electronic means (e.g. e-mail, shared folders, etc.). Nevertheless, face to face meetings are expected to take place in Stockholm (Sweden), at the co-location center of EIT Digital, for the kick-off of the activities and the following discussion of the requirements details. The contractor will be also required to travel to Stockholm for the activity alignments at least once every 2 weeks of activity. All travel expenses are considered already included into the budget and extra travelling costs will not give right to additional funding/reimbursements.

### **2.6. Interactions with the KIC partners and Management of the Service**

The contractor is requested to ensure the continuous interaction with the involved partners of the activities in order to discuss the requirements, contribute in the service design and approve/check the choices. Some features and technical aspects of the system will be discussed in the first phase of the activities.

### **2.7. IPR issues**

Intellectual Property Rights will be discussed directly with the selected sub-grantee, following EIT Digital Guidelines.

## 2.8. How to Apply?

Responses to this call shall be sent to [gautier.berthou@ri.se](mailto:gautier.berthou@ri.se)

Response shall include the following information:

- Description of the company, relevant competences and experiences
- Contact person
- Requested budget and motivation
- Agreement to move to the appointed EIT Digital satellite, to have meetings with the sub-granter, as stated in 2.5
- Agreement to respect the proposed project timeline (see 2.3)

Candidates will be evaluated with respect to their competences/experiences and their ability to complete the task according to the tight timeline of the project.

## 2.9. Information and Contacts

For more information on this call, please contact Gautier Berthou, RISE SICS ([gautier.berthou@ri.se](mailto:gautier.berthou@ri.se)).