Hands-on Structural Health Monitoring development using Internet of Things technologies

Arts & Métiers, Campus de Paris, 151 boulevard de l'Hôpital, 75013 Paris

Jeudi 30 Mars 2017 de 9h à 17h30

Structural Health Monitoring is an emerging field that aims at bringing smart-structures abilities to monitor autonomously their health state. SHM finds industrial applications typically within the aeronautic and civil engineering fields. **Dr. Clement Barthes from UC Berkeley would kindly offer a hands-on workshop where participants would learn how to use the latest Internet of Things (IoT) technologies for SHM projects.**

Schedule:

Morning [9h – 12h 30]:

- Introduction to Linux for embedded systems. Basic Linux commands and presentation of the sysfs folder system. Participants will read acceleration data using only bash commands.

- C++ programming on the participant's laptops. Each participant will be handed a Linux virtual machine with all the tools required to compile and deploy their code on the IoT kit.

- Introduction to assembly coding on a real-time CPU embedded in the IoT platform.

Afternoon [14h – 17h30]:

- Introduction to HTML5 coding, using state-of-the-art dynamic display features.

- Participants will develop a web interface for their IoT platform using Node.js. We will cover live data display, events handling etc...

- Combine everything: Students will connect together their bribes of code to obtain a fully functional connected sensor with a web interface.

Practical information:

- This workshop is funded by the "France-Berkeley Fund" grant #2016-0047 and if free of charges for attendees. Nevertheless, as the number of participants is limited, interested people must register by **sending a mail to marc.rebillat@ensam.eu before Friday 24/03/17**.
- This workshop will be given in French or English depending on attendees. Note that lunch is not included in the workshop and is at the charge of participants.
- Each participant must come with a laptop and will be handled an IoT kit.