

Internship proposal / Proposition de stage

« Deployment of a Middleware for Low Power Wireless Sensor Networks »

Advisors :

François Verdier, Benoît Miramond

1. Subject of the internship

The LEAT laboratory is exploring several IoT architectures in terms of Wireless protocols, network organisation and micro-architectures since a few years. The objectives of deployment of another IoT network consists in trying to get new services for users, based on really wearable devices. In this context, the LEAT laboratory has proposed a project to the RISE academia of the IDEX JEDI that aims at the deployment of a LoRa network in Sophia Antipolis. This network will make it possible to conduct research for the deployment of software stacks onto the sensor architectures for the localization of devices for example. The internship focuses thus on the middleware aspects of a LoRaWAN (Long Range Wide Area Network) network of sensors and gateways. It will be oriented towards all the middlewares that are available these days in the literature [1, 2], on which architectures are supposed in the sensors, and on the deployment onto sensor architectures. This internship will be organised in the Intelligent IoT Network project. The candidate is expected to hold or to be a student in a MSc degree in Telecommunication or Electronic Engineering. A specialization in embedded devices is an asset. Good command of both written and spoken English is required. French is optional. Depending on the internship results and the candidate records, the work could continue in the framework of a PhD position.

2. Salary

The internship will be paid approximately 500 euros per month.

3. Contacts

The internship will be done in the laboratory LEAT, UCA-CNRS UMR 7248, 930 Route des Colles, 06903 Sophia Antipolis. It will be supervised by François Verdier.

4. References

[1] M. A. Razzaque, M. Milojevic-Jevric, A. Palade and S. Clarke, "Middleware for Internet of Things: A Survey," in *IEEE Internet of Things Journal*, vol. 3, no. 1, pp. 70-95, Feb. 2016.
doi: 10.1109/JIOT.2015.2498900

[2] [Mahmoud Elkhodr](#), [Seyed Shahrestani](#), [Hon Cheung](#), « A Middleware for the Internet of Things », in *International Journal of Computer Networks & Communications (IJCNC)*, Vol.8, No.2, March 2016