



# Intern Request Form

Unique ID# F0002

Company Name	Position Title	Internship Location
Inria	Visible Light Communication (VLC) in the context of IoT domain	<b>City:</b> Inria Lille - nord Europe <b>Country:</b> France
Internship Term (select one)	# of Positions Available	Language Requirements
<input checked="" type="checkbox"/> Summer 2018	1	English
<input type="checkbox"/> Fall 2018		
Company Contact Name	Contact Email/ Phone	Company Address
Loscri Valeria		40, Avenue du Halley, 59650 - Villeneuve d'Ascq
Internship Hours Select One:	Paid/Unpaid?	Compensation Amt. (Req'd for Full-Time)
<input type="checkbox"/> Part-time	Paid	Around 500 euros per month with assistance
<input checked="" type="checkbox"/> Full-time		for accommodation and participation for lunch

## 1. About Us (Brief Summary of Your Company/Unit)

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.

## 2. Internship Project Description - What goal would you like the intern to achieve? What challenge would you like him/her to solve? (summarize in 2–4 sentences)

The internship will be in charge to work on an already developed Visible Light Communication scheme based on one-to-one, one-to-multi, multi-to-multi schemes with a transmitter and a receiver. In particular, he/she will work on already implemented (in our laboratory) software filters in order to set the right parameters for different environments, namely in indoor and outdoor contexts and will deal with a set of experiments in order to derive measurement related to the throughput and the achievable distance between the transmitter(s) and the receiver(s). The results will be exploited by the intership student for a more complex communication scheme, involving multiple receivers.

### **3. Responsibilities (In 4-10 bullet-points)**

- 1) Getting started with the Visible Light Communication system components
- 2) Formal definition of the objectives to be realized and identification of the metrics to be considered in the communication system (with the supervisor)
- 3) Experimental phase and collection of measurements with formal representation of the results obtained
- 4) Based on the results obtained, modification and updates to do on the system (with the supervisor)

### **4. Qualifications (In 3-5 bullet-points)**

- 1) Strong programming skills (C, Python, Labview)
- 2) Background on Arduino and Raspberry
- 3) Signal Processing knowledge
- 4) Skills on USRP (Universal Software Radio Peripheral) is a plus

### **5. Benefits of Interning with Us (In 2-5 bullet-points)**

- 1) High quality of school programs and consequently high-level students
- 2) Cultural exchange opportunity and cross-cultural benefits
- 3) International, and in particular USA, interns are highly motivated and enthusiastic

### **6. Intern Supervisor (Name and Title of the person at your company who will be supervising the intern)**

Loscri Valeria, research scientist at Inria Lille - Nord Europe in the FUN Team.