INVOLI
Chemin du Chêne 7D
1020 Renens

Internship on SDR (Software Defined Radio) development

About INVOLI
In a global setting where drone incidents have increased exponentially, there is an urgent need to provide a solution that ensures safe integration of drones into the airspace.
INVOLI develops state-of-the-art technologies to avoid collisions between drones and aircrafts, by providing a comprehensive view of the air traffic to drone pilots around their area of operation (including planes, helicopters, parachutes, etc.). The INVOLI solution is based on the deployment of hardware over telecommunication infrastructure, the distribution of reliable air traffic data via internet and the usage of GPS drone trackers.
Since its foundation in July 2017, INVOLI has received multiple awards and wide support (notably including Swisscom startup challenge, ESA BIC, Venture kick, Venture Leaders, Venture, W.A. De Vigier) and has deployed its solution in partnership with Swisscom and other big players in the industry.
Contribute to the exponential growth of INVOLI and join our team!

Project
The INVOLI K-1090 is one of core components of our air traffic surveillance solution. It is capable of receiving transponder signals such as ADS-B at 1090 MHz from aircrafts and measuring the accurate time of reception by synchronization with a GNSS receiver. The recorded signals and their respective timestamps are then processed by our MLAT (multilateration) algorithm to estimate the aircraft position. The objective of this project is to identify, prototype and compare different possible hardware architectures implementing a custom radio receiver to further improve the performance of our air traffic surveillance.

What you will do: In close collaboration with our R&D team
- Analyse and understand the technical requirements of the radio receiver
- Identify different technical solutions such as FPGA's and other radio components that answer the requirements and implement an SDR
- Prototype and test of the most promising solution

Who you are (your background):
- You are currently pursuing a Bachelor or Masters degree in electronics, embedded software development or similar subjects
- You have a basic understanding of SDR (Software Define Radios) and its stages: RF, ADC, Base Band Processing, Demodulation etc.
- You have some experience in programming FPGA's
- Ideally you have some experience in programming embedded Linux processors

Duration: minimum 3 months, can be done partly remotely and partly at the INVOLI office in Renens.

Are you interested in working for INVOLI? Please attach your CV and letter mentioning the preferred start date. Become part of our team. We look forward to your application.