

IoT Drone SENSEors

Smart smoke detectors as a first line of defense

Are you ready for an internship where you can really make the difference?

And potentially save lives?

Perhaps we're looking for you at Citymesh IoT?

Context of the internship

Imagine; you develop a smart system (a control dashboard) where many IoT smoke detectors - spread over all of Belgium - are connected to a ThingsBoard dashboard to be monitored 24/7/365.

In an emergency, alerts are received and trigger the necessary alarms in the system, as well as in our Remote Operation Centres (ROCs). After verifying with the customer involved, specialists at the ROC can activate our drones (in a box) in the relevant region, conduct initial inspections, and provide a live feed of the current situation.

These drones are part of our national SENSE initiative (Drone Shield), where each fire and police zone is equipped with several local "drones in a box." Our drone (Shield) can be deployed immediately to inspect the location and, if necessary, notify emergency services, enabling them to arrive quickly with the appropriate resources to prevent further escalation.

During this internship, you will have the opportunity not only to work on innovative technologies but also to set up a practical system that can be used for real-world safety applications.

Does this sound like the perfect challenge for you?
Take this opportunity and help us build a digital future!

The goal

- 1. Software development:**
Develop a functional IoT monitoring system that integrates smart smoke detectors with a ThingsBoard dashboard.
- 2. Hardware and Software Evaluation and Monitoring:**
The system must continuously monitor data from smoke detectors across Belgium, trigger alarms in emergency situations, and communicate with Remote Operation Centers (ROC) to deploy drones in real-time for visual inspection and first response.

Expected results

- User friendly dashboard for IoT smoke detectors.
- Clear documentation about the platform, both front- and backend.

Our approach

We strive to provide comprehensive coaching and furnish students with supplementary resources and training as required. Our interns benefit from the constant support of a dedicated mentor who can readily offer assistance. Joining us means being part of a vibrant and youthful team, working in a cutting-edge technological environment.

Student profile

Background and Education:

- Undergraduate or graduate student pursuing a degree in Computer Science, Electronics, or a related field with a focus on IoT, embedded systems, or control systems.
- Strong academic record with coursework in electronics and development.

Technical Skills:

- Proficiency in programming languages such as Python, Java, or C/C++ or web frameworks (depending on the solution chosen).
- Familiarity with networking concepts and APIs.
- Experience with MQTT, ThingsBoard or similar IoT Platforms (preferred but not required)

Skills and Qualities:

- Strong problem-solving and analytical skills.
- Attention to detail and a systematic approach to tasks.
- Ability to work independently and as part of a team.
- Good communication skills to convey technical concepts effectively.
- Eagerness to learn and adapt to new technologies and challenges.
- A passion about building impactful solutions for public safety.

Interested?

Contact Jens Buysse (jens.buysse@citymesh.com and celine.vileyn@citymesh.com) with your CV. We have other internships available as well! Don't hesitate to contact us.