Multi-tagging and sensor fusion for indoor localization and tracking

Company
Flanders’ MECHATRONICS Technology Centre vzw (FMTC), a fast growing research centre, is an initiative of Agoria, the Belgian multisector federation for the technology industry, and 14 leading mechatronic companies in Flanders. Its mission is to jointly develop new and improve existing generic mechatronic competences and technologies to improve the competitive edge of its member companies.

Summary of the internship
The goal of this internship is to be part of ongoing research at FMTC, which is developing an integrated indoor localization system that combines absolute positioning system using several mobile tags and a set of fixed base stations with relative positioning system using several inertial measurement units (IMU) in order to improve the overall accuracy and update rate.

More in particular, the task will be to:
- Evaluate computational complexity of combined multi-tagging and sensor fusion algorithms already developed in FMTC.
- Market survey of real-time processors and/or DSPs and select some candidates that fit into the requirements.
- Develop firmware and required interfaces for operating the selected platform with IMUs and mobile tags.
- Integrate positioning and tracking algorithm into the selected platform.
- Evaluate and demonstrate the functionalities of the platform to localize and track a real moving object.

Assignment data
The assignment is for 3 to 6 months in Belgium at FMTC in Leuven.

Profile student
You have finished at least 3 years of study in the field of Electronic or Embedded System.
Proactive and highly motivated to learn something new.
Have a good understanding with analog and digital electronics.
Have experience with embedded software development on a microcontroller, real-time processor or DSP using C/C++.
A good knowledge with MATLAB and Simulink is also important.
Knowledge in indoor positioning, sensor fusion and Kalman Filter is an advantage.
You are able to communicate in English.

Interested?
Please email your curriculum vitae and application letter to info@fmtc.be, or send to:

FMTC
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