FireTracker: Indoor Positioning for Firefighter Training

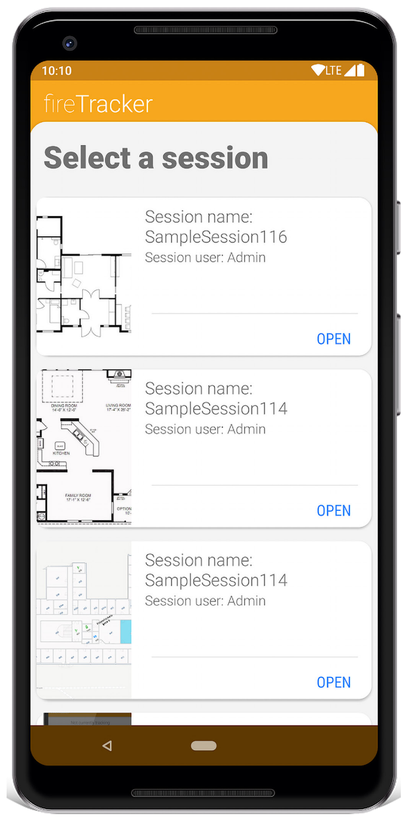
FireTracker uses bluetooth low energy to detect and create visualizations of a smoke diver's movement pattern during indoor, cold smoke diving exercises. Based on a study of how firefighters train for smoke diving, the application is aimed at improving the training, by providing the firefighters and their instructors visualizations of the movement which can then serve to mediate the evaluation post training exercise.

Overview

This poster describes the development of data driven ICT-support for firefighter training. As a study within the iComPAss project, the goal is to combine different sensor data to create visualisations of the indoor training activity of smoke diving. As a first step we have developed a system for providing a track of the firefighters movement in a house during smoke diving training exercises.

The iComPAss project

The iComPAss project – Inquire Competence for better Practice and Assessment – studies data based decision making in workplace learning settings by looking at how digital tools that use competence modeling, learning analysis, and visualizations, can support decision making about training needs, strategic management, opportunities for identifying and assessing competencies, identification of training needs, and competency development, at the right time.

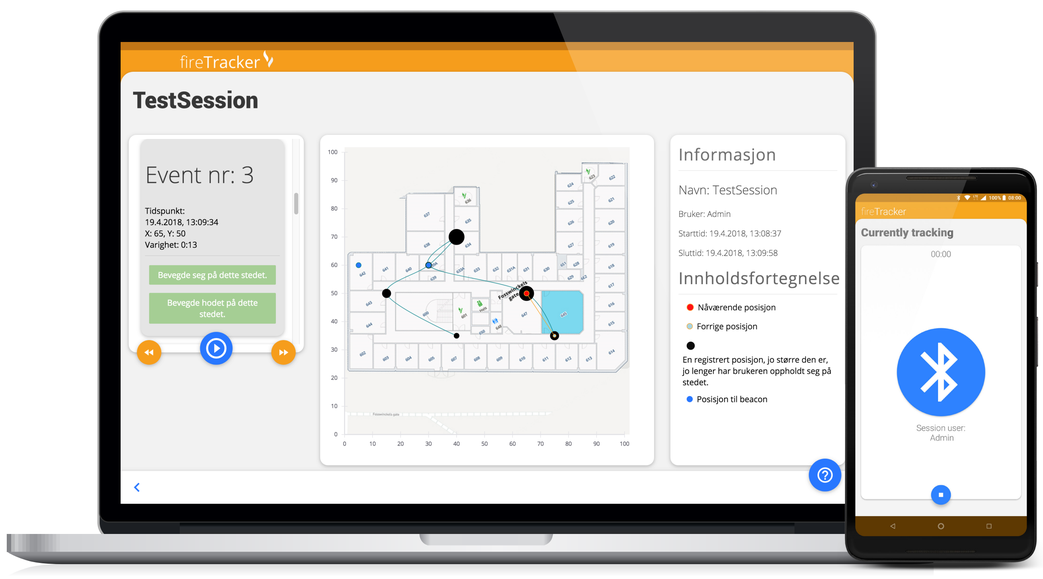


FireTracker

FireTracker visualises sensor-based data from smoke diving training activities. Currently, the sensors include Bluetooth Low Energy (BLE), gyroscope, and clock. BLE determines location, and gyroscope indicates physical activity level. In use, several Bluetooth Beacons are placed around the smoke diving exercise site, and a mobile phone is placed on the helmet or oxygen tank of the smoke diver. When the firefighters search the building, the phone collects data from the beacons and the gyroscope to produce a track of the exercise, including stops and activity levels. The information presented on an iPad is used in retrosopective evaluation of the exercise.

The development process

Iterative development is based on a close study of firefighter training excercises, to understand practical user needs. FireTracker is the current working prototype, developed during the first iteration. The next step is to present the prototype to the training leader of Sotra Brannvern, our collaboration partner. The feedback will be used to further develop and optimise the system before we test it during an actual smoke diving exercise.



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