Machine Learning to the rescue

Indoor localization for evacuation guidance

1. Context

Together with several industrial partners, Sirris is investigating how to improve the evacuation of large facilities in case of an emergency, and how to provide dedicated evacuation guidance to both the persons to be evacuated and the emergency workers involved.

During this thesis you will investigate how to provide indoor localization support to the aforementioned stakeholders in a context where any possibly existing infrastructure for indoor localization might be severely damaged, where it might not be feasible to deploy an ad-hoc infrastructure during the emergency itself, and where the only available piece of information may be the existing indoor maps of the affected facilities.

2. Objective

The goal of this thesis is to develop a machine learning algorithm that provides the persons to be evacuated or rescue workers with real-time and dynamic evacuation guidance based both on the indoor maps of a facility and on the current location of these persons. This might require suggesting possible enrichments to indoor maps with appropriate information about the facility. Based on your findings you will develop a software tool prototype (e.g., in the form of a mobile app) that people involved in an evacuation could use.

3. Information

Sirris is a non-profit and industry-driven knowledge center founded by Agoria, the federation of the Belgian technology industry. Sirris helps Belgian companies in the implementation of technological innovations, by providing companies with technological advice, by supporting companies in the definition and realization of innovation projects, and by setting up and participating in European R&D projects. Sirris is active in several domains, among which Software Engineering and ICT.