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Guillaume Touya

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A Practical Use Case of Large Scale Tactile Map Design

Guillaume Touya

Univ Gustave Eiffel, IGN, ENSG

Colleagues from the university are designing geolocation tools to precisely guide visually impaired people (VIP) (Zhu et al. 2019). In order to calibrate and experiment with their geolocation device, they inaugurated a route around the campus where they built realistic infrastructures for pedestrian navigation (sidewalks, zebra crossings, specific pedestrian lanes). They run experiments where VIP are supposed to navigate this route, with a guide first, and then using their memory and a white cane. To help them capture the route in their spatial memory, a tactile map of the route is necessary, and we decided to design one based on topographic data and GIS open tools (QGIS, Python libraries). One of the challenges is that this route is quite long (600 m long, 200 m between the most distant points as the crow flies), while the details to depict are small, which is not easy to balance on tactile map that should be easily handled by hand. To cope with these contradictory goals, we designed two scales, the largest one being composed of two maps that can be assembled to follow the complete route. Though the maps are not yet printed, the presentation will focus on our design choices.

References

Zhu, Ni, Miguel Ortiz, et Valérie Renaudin. « Seamless Indoor-Outdoor Infrastructure-free Navigation for Pedestrians and Vehicles with GNSS-aided Foot-mounted IMU ». In *2019 International Conference on Indoor Positioning and Indoor Navigation (IPIN)*, 1-8, 2019.

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