



ASPARi

Paving the way forward

Bachelor Project in the ASPARi research unit

Company and Location	University of Twente, Enschede
Type of project	Localization Technology
Title of topic	Investigation of a low-cost localization technology to track moving objects in the construction environment
Project background / context	<p>Currently, localization technologies are widely used in the construction industry. Example of these usages is the utilization of the localization technologies in safety systems. The localization of equipment is an integral part of the PQi measurement system in ASPARi projects (see www.aspari.nl for more information). Currently, high-end RTK GPS is employed for PQi measurements. However, the cost of this technology is a strong deterrent to the widespread application of these technologies on actual construction sites. Small-scale contractors cannot afford a high-end and accurate localization technology. On the other hand, the existing low-cost solutions have a low accuracy. Therefore, we are interested in continuously exploring alternative tracking systems for PQi measurements.</p> <p>Recently, a low-cost localization technology has been developed by Kadester. This technology is claimed to have sub-meter accuracy. Also, this technology has not been fully tested on construction sites and especially in the context of equipment tracking. In this project, we would like to investigate the performance of the technology and its suitability for PQi measurements.</p>
Research method	<p>The student has to test the tracking system developed by Kadester under various conditions to investigate its suitability for the use in PQi measurements. Of particular interest in this research is exhaustive field tests on the impact of distance to NETPOS reference stations on the accuracy of the system. The hypothesis is that as the distance between the rover and the closest reference station increases, the accuracy decreases. We would also like to test the functionality of the system for tracking actual equipment on construction sites.</p> <p>The actual scope of the project will be defined in discussion with the supervisor.</p>
Contact(s) at the company / UT	Farid Vahdatikhaki f.vahdatikhaki@utwente.nl
Start date	April 2018