T IoT
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Case Study
Precise Positioning

> "With Precise Positioning, KNOT scooters can provide fixed and virtual parking infrastructure for the eScooters and ensure user safety, which will revolutionize Scootersharing."
>
> Polina Mikhaylova, Co-founder KNOT

Safe and Secure eScooter Platform

KNOT is a French company that provides city dwellers with eScooters while maintaining a tidy city landscape. They do this by offering and maintaining docking and charging stations for the eScooters, providing environmentally friendly micromobility options, and protecting pedestrians and motorists alike by ensuring that their eScooters —when not in use— are safely parked away.

The Challenge

KNOT is using an IoT device for GPS navigation, user tracking, and dock station localization. In their former setup, KNOT faced a two-fold challenge: providing physical and virtual parking stations for the eScooters and ensuring safety for users. To achieve this goal, KNOT used GPS navigation, which turned out not to provide the desired accuracy.

The Solution

In order to compare the accuracy of their existing GPS solution with the GNSS Precise Positioning solution, KNOT decided to mount the PGM Evaluation Kit onto one of their eScooters to monitor riding behavior and assist the rider in locating virtual parking zones and charging stations. KNOT installed the PGM kit onto the eScooter and used it together with the Precise Positioning setup – PGM evaluation platform and Skylark cloud-based correction service.

The Result and Next Steps

The test drives showed that accuracy attained using Precise Positioning is superior to the route mapped out with the existing IoT GPS data. The magenta outline shows the route as mapped out by Precise Positioning and the white outline shows the results with GPS, where at times the eScooter appears to be offroad and lost as opposed to the accurate and safe transportation route defined with PGM and Skylark cloud-based correction service.

Products used

Starling®

Skylark™

PGM

Figure 1: PGM Receiver, 50.95 x 30 mm Mini PCIe

Figure 2: PGM Evaluation Hardware 115 x 82 x 34 mm

KNOT's eScooter Setup with PGM Evaluation Platform

Output comparison of GPS and Precise Positioning setups

swift NAVIGATION

Watch KNOT's view on Precise Positioning here