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In cooperation with:
LEVEL FIVE SUPPLIES

Case Study
Precise Positioning

Precise Positioning technology is a compelling addition to our robotic development work and could transform our approach to autonomous delivery robots."

Alex Lawrence-Berkeley, CEO Level Five Supplies

Autonomous Delivery Robots

Level Five Supplies is a UK-based technology distributor in the autonomous vehicle technology ecosystem, providing transparency and open customer support through a network of great relationships with technology suppliers and their customer community, along with the European market.

The Challenge

Level Five Supplies is currently working on a delivery robot capable of navigating pavements, particularly pavements in the UK that present several challenges for mobile robot navigation. Sources of mapping data for pavements are insufficient, therefore planning a route with propped curves and obstacles is complicated, and an extremely high level of accuracy is required to effectively position and protect the robot.

The Solution Tested with PGM and Skylark Precise Positioning Services

Level Five Supplies installed PGM Evaluation Platform using the Skylark cloud-based correction service onto a Clearpath Robotics Jackal UGV. They then designed several experiments to test the robot's accuracy while following reference waypoints. After mapping a path, they tested the robot's path, measured the difference between the known points and GPS readings, and printed the results for further inspection.

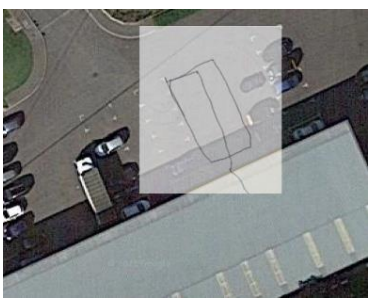
The Result and Next Steps

The results showed that the level of accuracy achieved with the Precise Positioning GNSS correction service is very satisfactory. Another impressive result was that using GNSS correction services based on RTK makes the sensor payload simpler, lighter, and consumes less power than LiDAR. Precise Positioning is easier to scale and release as a mass-market product making it highly valuable in terms of ROI than traditional RTKs with GPS, LiDARs, or other sensor equipment.

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

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

Mapped route



Path following with Precise Positioning

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Watch Level Five Supplies' view on Precise Positioning here

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