

NYSP2I Conducts Third-Party Performance Evaluation for Duro UAS



Challenge

Duro UAS requested NYSP2I's assistance to conduct a third-party performance evaluation of their Duro Sonde versus a benchmark environmental monitoring sonde for water quality measurements.

Solution

NYSP2I partnered with Rensselaer Polytechnic Institute (RPI) to conduct the third-party performance evaluation.

Results

- The third-party performance evaluation revealed both higher- and lower-performing aspects of the Duro Sonde and probes. Lower-performing aspects could likely be resolved with a second round of testing.
- Compared to current industry standards, the Duro Sondes and probes' lower price points could appeal to a **variety of user** groups interested in automated water quality monitoring.

Duro UAS

Duro UAS (Duro) has developed a cost-competitive and user-friendly platform for monitoring aquatic environmental conditions based on water quality measurement. The Duro UAS Duro Sonde is an internet of things (IoT) water quality monitoring platform that can work with any BNC-type connection probe. Typical application areas include:

- Water and soil sampling.
- Environmental monitoring.
- Waste treatment plants.
- Mariculture and aquaculture.
- Hyper-local water quality monitoring.

Challenge

Duro UAS sought a third-party performance evaluation of their Duro Sonde.

Solution

Duro UAS requested assistance from the New York State Pollution Prevention Institute (NYSP2i) to complete a third-party performance evaluation of the Duro Sonde. NYSP2i partnered with Rensselaer Polytechnic Institute (RPI) to conduct the performance evaluation of the Duro Sonde versus a benchmark environmental monitoring sonde for water quality measurements including accuracy, drift, and repeatability.

Results

- In terms of accuracy, the temperature and pH probes were within 1-10% of the correct value, demonstrating good to excellent performance.
- In measurement drift over one hour, the temperature, pH, oxygen reducing potential (ORP), and conductivity probes quickly stabilized within 5-15 minutes and exhibited low drift with a coefficient of variation over time of <0.03.
- The temperature, pH, ORP, and both measures of dissolved oxygen demonstrated excellent repeatability with variances of <30.
- While the probes did not consistently perform well across all performance parameters, it is likely that any issues are resolvable and could benefit from a second round of testing.

The third-party performance evaluation revealed both higher- and lower-performing aspects of the Duro Sonde and probes. Lower-performing aspects could likely be resolved with a second round of testing. Compared to current industry standards, the lower price point of the Duro Sondes and probes could be very appealing to a variety of user groups interested in the automated monitoring of water quality.



Image: Duro UAS Sonde Field Unit with probes

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