

IoT Innovator Achieves World-Leading Automation for Drone App

When this drone mapping IoT pioneer needed advanced capabilities and test efficiency, they approached Qualitest to deliver an ultra-reliable solution.



Challenge

A pioneering Client and IoT innovator needed an equally advanced test regime.

Their drone software needed to be capable of status reporting and testing mid airborne ops.



Solution

Qualitest defined a world-class test strategy to enable in-flight testing.

Advanced regression testing was also implemented to enhance platform stability and futureproofing.



Results

Client achieved world-leading drone automation capabilities.

Automation scripts and automated flying grid zones, remote gimbal recalibrations and solid platform stability.



Client overview

The Client is a pioneer in the drone industry, marrying quality design with accessibility and constantly improving efficiency, safety and scalability in commercial drone operations.

With end-to-end program management, user-friendly flight control and in-platform data analysis, the Client's comprehensive software solution helps businesses save thousands of hazardous man-hours and create millions of dollars in operational benefits.

Advanced drone mapper seeks managed test strategy

The Client's application is an innovative drone-automation solution that can collect data and transform ground or aerial images into digital maps and 3D models.

This Client sought a worthy testing partner who could conduct thorough ongoing testing of the drone application, including the capacity to test drones literally 'on the fly' meaning real-time testing of drones in flight.

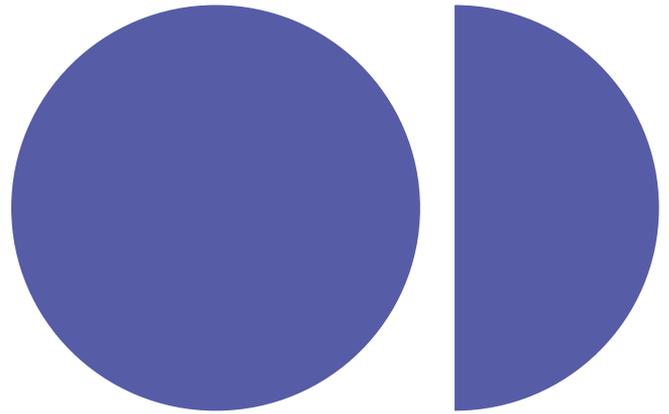
On the fly testing automates drone workflows

Test strategies were developed to include customer-specific requirements. Qualitest also partnered with a Hyderabad-based technology institute to fly drones in a free zone to test the application.

Some of the key features of the solution that Qualitest provided to the client included:

- Automation set up using WebDriver IO - Chai Mocha framework.
- Uploading ground control points (GCPs) with maps for increased accuracy.
- Fly with GPS-aided manual control or automated grid and waypoint patterns.
- Develop push web-based flight plans for the mobile flight app.
- Create flight missions (agriculture, solar, mobile tower, etc.) using the web/mobile application.
- Create flight plans with or without mission associations using KML/CSV/Grid/Waypoint.
- Fly a drone using a simulator through the grid area created as per the flight plan.
- Process the captured images (by marking GCP for more accuracy) through mapping and photogrammetry handled by Pix4D, which generated different output files like Orthomosaic, DSM, DTM, contours, etc.
- View the output in various color palettes and creating annotations to test the outputs generated.
- Gimbal and camera calibrations and test support for SDK helped the client create detailed tests.

“**This Client sought a worthy testing partner who could conduct thorough ongoing testing of the drone application.**”



Key benefits

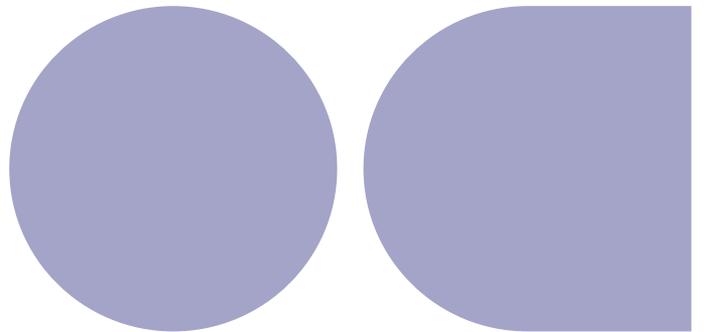
Qualitest IoT experts defined a test strategy for the client that enabled product testing and subsequent successful launch to end users. As a result of Qualitest's proven Quality Assurance expertise, the Client achieved:

- 80% improvement in test coverage and ability to fly drones in permitted zone.
- 65% of end-to-end tests automation across drone, mobile and web.
- 80% web-application test automation.

“**Qualitest partnered with a Hyderabad-based technology institute to fly drones in a free zone to test the application.**”

The Client gained the capabilities to:

- Test drone applications by flying them manually and setting up automatic grids.
- Perform gimbal and camera calibrations along with testing support for new SDK.
- Develop WDIO / Chai-Mocha framework that runs on AWS pipeline. The automation scripts were also used by the developer team for unit testing.
- Perform holistic regression test support before any major mobile or web releases.



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