



# End-to-End Test Automation with **80%** Test Coverage for Hardware Sensors, Connected Devices and Application Software for an Asset Tracking Solution Provider

## **Client Overview**

The client is a major asset visibility and tracking platform with complete real-time data streams throughout the supply chain. They specialize in asset management for pharmaceuticals, manufacturing pharmaceutical and manufacturing industries.

By offering a mesh of IoT sensors, end points, gateways and cloud technologies, they are emerging as the major player in supply chain logistics management and analytics sector.

## **Client Need**

The client wanted to ensure that the application stood the test of quality before it reached the customer with application testing for cloud, mobile, API and device.

It was imperative that the products being transported were sustainable against damages through the lengthy supply processes and the wide range of services that they offer. The device sensors and data communication gateways should be reliable and practical for the purpose and time of usage.

## **What we did**

The complex testing automation tasks that were performed on the client's platform required an extensive array of tools and specifications.

As assets were moved across long distances, it was necessary for the platform to offer location services at all times, even in remote locations and also provide real time telemetric information through the IoT devices and sensors that were attached to them. Hence, various rigorous tests were run on the hardware sensory devices and the software such as, functional, regression and performance tests. These tests were automated to provide the maximum benefit and save the time and effort.

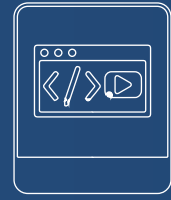
## In implementing test automations, we were able to achieve:



Automation of **90%** of the Regression suite, saving **50%** of manual effort for each software release



Automation of **80%** of mobile Regression suite, saving up to **70%** of manual effort for each application



Automation for critical use cases using **Selenium scripts** pipelined with Jenkins testing

For a smooth application performance and loading, automation scripts were implemented for load testing with load-time measurement validations against the baseline references for every web page.

Real-time simulations of sensor movements gave the client a clear picture of the

application and sensor performances for entire delivery cycles. Using JMeter code, we were able to capture the performance of the application in real time.

Validations were also performed for data correctness, especially for the critical application features. This was done through the execution of DB queries compared with the UI.

## What the client gained

As the client dealt with sensitive assets such as pharmaceuticals, our tests gave them confidence in their service deliveries. Checking for any slight variations in the condition and climate of transportation saved them from incurring huge losses.

### The client achieved the following benefits:



Ensured that there were no major glitches or critical errors in product delivery



Reduced the manual testing efforts by 80% for each software and hardware release



Increased test automation coverage by 82%



Established an automation test lab that executed test cycles 24x7

## About Innominds

Innominds is an AI-first, platform-led digital transformation and full cycle product engineering services company headquartered in San Jose, CA. Innominds powers the Digital Next initiatives of global enterprises, software product companies, OEMs and ODMs with integrated expertise in devices and embedded engineering, software apps and product engineering, analytics and data engineering, quality engineering, and cloud and devops, security. It works with ISVs to build next-generation products, SaaSify, transform total experience, and add cognitive analytics to applications.