CASE STUDY

Telematics Product Testing for Fleet Management Industry

Company's Profile

Our client builds telematics products like onboard computers for companies with both large and small fleets of vehicles. One of the leading providers in the North East, they have a loyal customer base across industries like Food / Grocery Distribution, Petroleum / Chemical, Healthcare, Retail, Manufacturing, Construction; Public Transportation and more.

Project Objective

Their on-board telematics product manages several processes and functions to provide accurate and real-time information about their fleets. Some of the functions include tracking fleet vehicles, controlling unauthorized access to company's fleet assets, mapping real-time vehicle location, providing rosters for the drivers for deliveries/pickups and reducing fuel expenses. Further, the software had sophisticated architecture and features that track, monitor, and locate fleet related assets. Since the system dealt with mission critical business processes, providing accurate and real-time information was key to their success.

To meet this critical need, the company wanted a 360 degree test environment set up for testing all the various versions of onboard devices, quickly and efficiently. Trigent's mandate was to set up the systems, processes, test infrastructure and skilled resources to test the onboard computers on an ongoing basis at its ISO 9001:2010 Tick IT certified development center in Bangalore and provided reliable QA and test services to the client.

Challenges

The on board computers on the vehicles record and send real-time information such as speed, RPMs and idle time, distance traveled, etc., to a central server using cellular data network. The data stored in the central server is accessed using the associated web application via the internet. The web application also provides a driver portal for the drivers to know/edit their hours of service logs.

The first challenge was to set-up test environment for the onboard device to accurately simulate the environment in the truck and simulate transmission of data to the central server. Establishing appropriate harnesses to test the hardware and software interface was equally challenging. The other challenges were simulation and real time data generation of the vehicle movement using a simulator, GPS

Client's Benefit

- ✓ Shortened product release cycle
- ✓ Increased test coverage
- ✓ Improved GPS Validation
- ✓ Reduced preventive cost by identification of holistic test cases
- ✓ Reduced detection cost by performing pre-emptive tests like integrations testing etc.
- ✓ Increased confidence of Client's in the quality of the on-board devices

Validation and customization of features for different clients. Further there were at least 4 major versions of the onboard devices in the market with different customers and each version had to be tested for functionality and validated to run newer versions of the software.

Trigent's Solution

Trigent QA and testing consultants met with Cadec's team for knowledge transfer. In parallel an offshore test lab was set up with various versions of the hardware and software and the integration points with simulators. Using use case methodology and user interviews, test scenarios were chalked out to test the rich functionality and usage patterns of the device. Trigent provided functional testing and regression testing of new releases for both the onboard device and web application.

For each of the client's onboard products, Trigent provided end-to-end testing solutions ranging from Installation Testing, Functional Testing, Regression Testing, Disaster Recovery, and Database Testing on an ongoing basis.

Tools Used

- ✓ Test- Link for Test management
- ✓ Jira- For Defect Tracking
- ✓ Simulator- For replicating Vehicle behavior (speed, rpm, steering direction etc.