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How Astegic Helped GER to Improve Their Emergency Response System By Providing a Patient Tracking App for Smartphones

Case Overview

Global Emergency Resources (GER) is a provider of web and Windows® based real-time status tracking and situational awareness information systems. GER offers software and technology solutions for use by healthcare, EMS and governmental organizations. GER also provides support services across the spectrums that complement its software products, including designing, conducting and evaluating training events from classroom sessions to tabletop drills and full-functional emergency preparedness exercises.

GER chose Astegic to provide an effective and efficient QA testing solution for web as well as for mobile application for iOS, Android and Windows Mobile devices. The app helps workers track real-time patient data during a response to emergencies such as earthquakes, fire or road accidents.

Astegic provided a robust, and time and cost effective solution to GER.

Business Challenge

GER wanted an easy to use, real-time, cost effective mobile solution covering all aspects of emergency patient management -- from capturing patient data to transferring the data to relevant hospital(s) without compromising on any aspect of emergency support.

The app would help a medical emergency worker to accurately track and transfer data about patients to a central GER server. As a result, key paramedical and administrative staff at the hospital receiving the patient information would have access to the data, ahead of the patient's arrival. Users of the app would be able to modify an existing patient's data if the patient is already registered with GER. GER also wanted to be able to track this kind of emergency data for patients on a group level as well as on an individual level.

GER could not afford to make any compromises on the application's user experience, performance, and quality. And so they needed a specialist QA services partner that would develop and thoroughly test the mobile app across all mobile OSs.

Our Approach

Since the application was built natively for Android, iOS and Windows 8, the QA team had to ensure that test scripts that are written for automation are able to run across different OSs. To save time and cost on testing, instead of developing multiple customized test scripts for Android and iOS, the QA team developed dynamic scripts using a customized framework to perform verification and validation across Android and iOS.

The application, being specifically developed for medical use cases, required robust and thorough testing for functionality, performance, usability and security. So we automated the entire functionality of the application. The QA team tested each and every feature following a continuous integration (CI) approach.

Security testing was performed on the app throughout, especially for data that is not transmitted to the server and remains on the device. We also created a decrypted utility to validate the data that's been captured for correctness.

39%

Quality improvement

27%

Speed to market

22%

Cost saving

Our Solution

Astegic's QA team was engaged in testing of the app with continious release cycles. Testing was performed using a combination of manual and test automation methods deploying Appium.

For testing the web-based app, especially the reporting solutions, we used Soap UI for testing and automating various web services and APIs.

For mobile devices, we used a hybrid approach of manual-first, followed by use of tools such as Appium and Device Anywhere, for performing regression testing.

We automated the flow in which data was passed from the devices to the web and vice -versa, as well as the creation and state migration of the data on the reports.

In addition to functional testing, we performed load testing using Jmeter for the web part of the application.

Since the solution was being developed for medical cases, application security was a critical concern. AES-256 encryption was used along with a secure SSL tunnel to protect this sensitive patient data. For security validation, we used ZAP, an open source security testing tool; it ensured that data remains secured and encrypted not only on the device, but while getting transmitted over the web.

About GER

Global Emergency Resources (GER) is a software solution developer and integrator for the emergency preparedness and response sector addressing the needs of emergency and mass casualty planners and managers, healthcare facilities, EMS and First Responders, NGOs, Non-NGOs, military and volunteers.

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About Astegic
Astegic is a US-based Quality Assurance (QA) company with an offshore global delivery center. At Astegic we have 15+ years of independent software QA experience, we have written more than 50,000 automation scripts and conducted over 800,000 test cases for clients in a vast number of industries, including: fortune 500 companies, federal government and non-profits. We have domain-specific knowledge in the consumer, enterprise, eLearning, healthcare, and telecom sectors. Astegic has a dedicated Testing Center of Excellence (TCoE), specializing in providing solutions across Mobile, Cloud and API testing.