

Health Monitoring Solution

Medical solution for real time monitoring – Respiration , ECG and Pulse Oximetry

Project Period : 4 years

Team Size : 4 members

Protocols Used: WiFi

Tools Used: Python , Robot framework , Bamboo, AWS

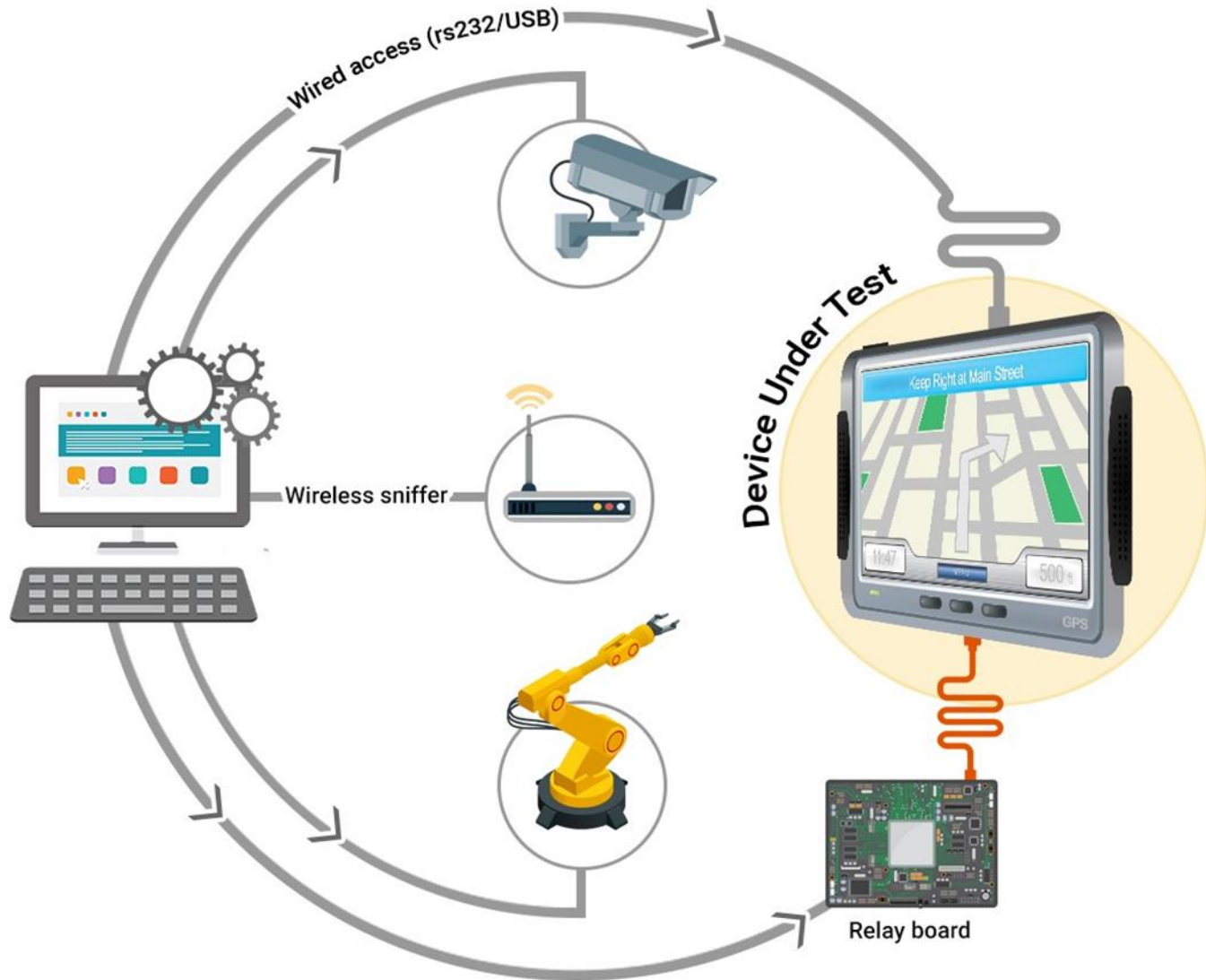
Challenges

- Implement CI/CD Framework for improving the development process.
- System validation for a medical solution having Multiple Interfaces and hardware devices
- Real time data validation and monitoring.

Solutions

- Designed test automation framework for end to end use case validation integrated with standard CI/CD framework .
- Designed custom solutions for automating test cases spanning different interfaces and hardware
- Automated test scripts for data verification.

Test System



Tools / Technology Used

Continuous Integration and Deployment

- Atlassian Bamboo
- Shell Script
- Git

Test Automation

- Python , Robot Framework, WiFi
- Image Processing – Tensor Flow
- Real time LCD Touch Simulation – Robotic Arm
- Mode Changes simulation for the hardware – 8 Port USB relay

Test Management and Reports

- TestRail
- Robot Framework

WHAT DID GADGEON DO?	PLATFORMS/ TECHNOLOGIES USED
1) Defined Test Strategy for the complete system .	Requirements Gathering & Analysis, defined functional test cases and use case based on end to end test scenarios
2) Implemented CI /CD Framework for improving the development process	<ul style="list-style-type: none"> a) Bamboo with Master slave configuration running in Cloud AWS EC2 Instance and in a local network servers. b) GCC in AWS EC2 c) Amazon S3 Bucket for Image Storage d) Git
3) Simulated large network operations for performance bench marking	Used custom python programs.
4) Designed Automation framework which can validate multiple interfaces on different hardware	<ul style="list-style-type: none"> a) USB Output validated using Custom Hardware consist of USB Mux and Relays. b) LCD Output validation using Image processing tools - TensorFlow , OpenCV c) Real-time KEY PAD Controls /Hardware Mode changes using Robotic Arm / USB Relay controls . d) Test scripts using python and shell scripts e) Data verification using ethereal
5) Automation framework supporting test evidence and detailed logs including screen shots for ease of debugging.	TestRail and Robot Framework





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