



GadgEon
Engineering Smartness



Wearable Camera

Company needed to build complete software stack from embedded Linux to mobile app to cloud to support a highly-functional wearable camera product.

Challenge

- Limited video and image functionality was available on the chipset.
- Custom solution was required

Outcome

- Implemented HLS for iOS app in a very compressed schedule
- End to end stack development
- World's smallest live-streaming wearable camera. (1.5" X 1.5")

Wearable Camera with cloud connectivity

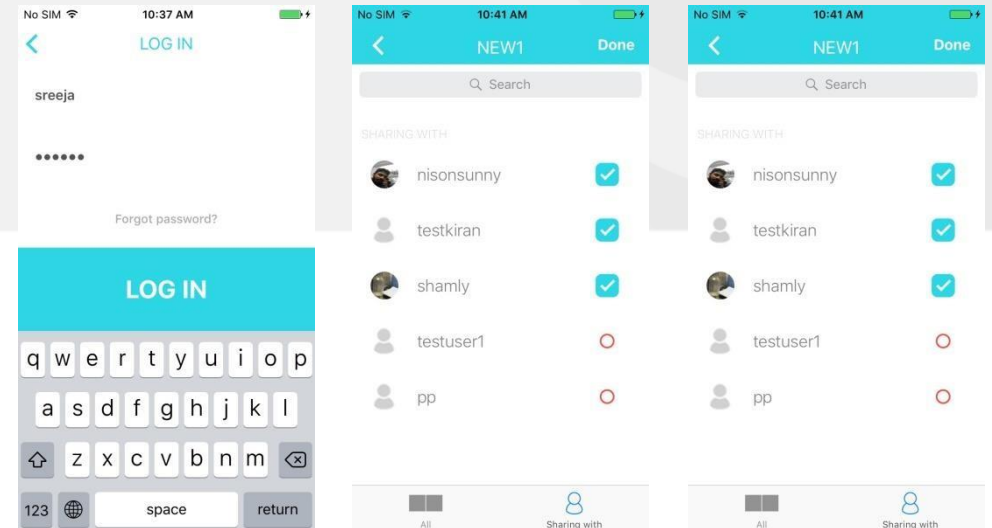
Company needed to build complete software stack from embedded Linux to mobile app to cloud to support a highly-functional wearable camera product.

CHALLENGE

- Custom solution to enhance the Limited video and image functionality in chipset.
- Scalability of USERS/Storage of video streams
- Geographically distributed development team (Regression testing)

OUTCOME

- Google cloud services - managed VM, Google storage and video streaming service
- Implemented HLS for iOS app in a very compressed schedule
- End to end stack development
- World's smallest live-streaming wearable camera. (1.5" X 1.5")



WHAT DID GADGEON DO?

PLATFORMS/ TECHNOLOGIES USED

1) Architecture for complete system including WiFi/BLE based wearable camera, Video Streaming Cloud platform, Social API platform and Mobile App

Requirements Gathering & Analysis, Uses cases, Architecture development, identification of functional components.

2) Firmware for wearable camera. Camera REST API implementation to control the camera and retrieve captured media over WiFi and BLE

libmicrohttpd, C , Buildroot, shell scripting

3) Mobile App design and development for interacting with camera (both wearable and phone's inbuilt) and Social interaction via cloud- both iOS & Android - native

MVC architecture, notification handling using GCM(Google Cloud Messaging) for Android and APN(Apple Push Notification) for iOS, BLE/WiFi interactions with wearable camera, API interface with node.js Server, Google Cloud Storage and Wowza stream server. IOS app developed in Swift using Xcode and native android app using Android studio. Followed the recommended design patterns from Apple and Google.

4) Cloud based server implementation to enable social interaction, media sharing and live streaming

Express framework based node.js REST API server, Clustered Postgresql backend database, Google Cloud Storage for Media storage and sharing, Wowza stream server for live streaming and wowza java plugin for authentication and access control, sms notifications using Twilio server, push notifications via Google Cloud Messaging and Apple Push Notification Service, eMail using SMTP server.
Google cloud platform for hosting the cloud server: Google Container Engine for auto scalable deployment, Google Compute Engine and Google Cloud storage.

Integration of all sub-systems to create the social camera system



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