Requirements Specification Report

Project [KodoboK] Confidential

Revision History

Name	Date	Remarks	Version
[Sandesh VAKALE] [Tanmoy DAS]	[22/06/2017]	Initial Requirements Specification	1
[Suji John Paul]	[26/06/2017]	OBASHI	1
[Sandesh VAKALE] [Tanmoy DAS]	[7/24/2017]	Updated Screenshots of Application	1

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Background information

There is a Nano electronic hearing device SleepWoo which will be connected to an android phone via Bluetooth. There will be an application which is named as "KODOBOK". which we are designing in the project. This application will control the Nano hearing device and its features in the application. The device will help the user in many ways:

- Will help the user to sleep properly by noise cancellation
- to listen music and enjoy
- to locate a nearby friend
- receive phone call by voice
- Virtual voice assistance

Product overview

It’s a hearing device which will be connected to the android phone through an application called "KODOBOK" which we are developing. There will be a server for making and authenticating user profile.
The application will contain many features and facilities for the users benefit.
The main scope of the project for us to develop the android application which will connect with hardware device and then implementing features

Target market and users

Target market

The initial target market is North America and China.

Target User

People of different age groups can use it, starting from college students to retired employees.

Detailed product description

The application KODOBOK which we are developing on Android Studio.
The main feature of the application is

- Google Sign In (One login for all features)
- Google Maps
- Music Player (for in built-in SD card)
- Sound Cloud (to go online to listen music)
- Find a friend
- Chat
- Alexa Voice assistance

There is a server side of the application. The application will be connected to a server.
There is a server security part which will secure user's data.

Software

User Function:

- Listen to music. User could choose play streaming music from his smartphones, computer or any other external Bluetooth device or using the internal music player to enjoy complete audio freedom.
- Deal with a phone call. Answer, reject and end an incoming call. After ending a call, the earbuds will automatically resume what you were doing before the call.
- Vocal notification. Read the messages, notifications, alarms and so on.
- Noise cancellation. Supply a quiet environment with an active noise cancellation technique. But the user can define and select what he wants to hear.
- Audio Transparency. Audio Transparency lets you get the sounds of your ambient environment even if you are hearing your music or phone call. It enables you to hear what is going on around you as well as engaging in a conversation without having to remove the earbuds from your ears.
- Translation. The earbuds can translate a broadcast or a conversation regardless of internet. If there is internet, it can translate with third-party services.
- The heat from the electronic is ...XXXX
- Flexible control. The user can control his earbuds with gesture and voice in addition to a mobile app. So, he can be convenient to control it without eyes. Reduce the injury caused by bow. Release your hands to better support, release your eyes to continue to observe the surrounding situation.
- Learning and games. The earbuds have enough resources to support you learning languages, science, etc. At first, we will support Chinese and French. We also try a simple vocal control game like Knowledge Q&A game.
- Track Your Activities. With built-in sensors, the earbuds can measure your body vitals, gestures and activities. It tracks them throughout your workout. The earbuds can give you detailed feedback on your performance when Running, Swimming, Cycling, etc. The earbuds can recognize the activity you perform without any input from user side.
- Start and stop to work automatically. The earbuds automatically turn on and connects with your phone when removed from the Transport Case and separated. In the contrary, they are stopped when put in the Transport Case or joined with their magnet.

- Scenario mode: the user may control the ANC power according to the different contexts like a snoring partner, a noisy workspace or concert. Here the context is called scenario mode. To facilitate this usage, some standard scenario modes will be predefined; the user may also define his own profiles from scratch or from the delivered standard profiles.

Predefined scenario modes include:
Highest: Blocking the noises of higher intensity than a threshold fixed either at construction, or by the user; useful for the soldiers, hunters, …
Street: Attenuation of the ambient noise but hear the autos etc. Allows to manage the smartphone (hear music, take/place phone calls, etc.).
Concert: Attenuation of the concert music but hear people around etc. Allows to manage the smartphone (hear music, take/place phone calls, etc.).

- Internal alarm clock. The timer can alarm in some situations. For example, it can wake up the user when he sleeps with the earbuds.

Non-functional requirements

- Global Design: Depending on the UX study, the earbuds will be place in-ear or out-ear. If in-ear, the earbuds will
- Real wireless. The earbuds connect with smartphones and other devices through Bluetooth. And the two earbuds have a synchronization through a wireless connection based on NFMI RF. The right one can work alone. By default, the main control earbud is the right earbud.
- Moulding design: The earbuds are moulded to the user's ears to fit perfectly and stand whatever the situation and the user's ear construction; it is also a fight against the acoustic escapes between auricle and auricular channel
- Waterproof. You can use the earbuds in a rainy day or under your shower or in your swimming pool without worrying to damage your earbuds.
- Uninterrupted use with additional battery. We provide a battery box to charge the earbuds when they are in idle state. In addition, we have two spare batteries, clever industrial design to allow you to easily replace. So, you can achieve uninterrupted use.

Back-office (editing and administration) tools

- Android studio
- Raspberry Pi
- Server

Payment system and user authentication

Till date we don't have any plan of introducing payment system. This will be taken care by company. There is a Sign In method which is universal for all features of the application. User will need only one id and password to login in the application. Next time onward the application will show user picture with its email id. Which the user can click and log in authentication.

Adverts

We don’t have any adverts.

Graphic design guidelines

We are using Drawer Navigation UI of Android.
Distribution of app will be done via Google Play store

Accessibility

Accessible for all age groups.

Target platforms and configurations

- Ear Phones
- Android app KodoboK

Testing and acceptance

Testing and acceptance of application will be done by project owner Michel COLLECT.

Delivery medium and installation

Distribution channel for app is Google play store.
Software requirement is Android OS for running this app with Bluetooth enabled hardware.
We are using all non-commercial licenses initially for Google Map Key, Alexa Key, SoundCloud Key.
During launch of product in market, these keys will have replaced with commercial Keys.

Documentation and source code

https://github.com/SandeshVakale/Kodobok.git

Risks, dependencies and other issues

***The connectivity of the application with the hearing device is a Risk factor in the project because the device prototype is not yet ready it is still in its research phase.
As a suggestion from Mr. Oliver as well as from our project owner Mr Michel, we will try to simulate the hardware in Raspberry Pi.

Tasks Ownerships

Sandesh VAKALE

- *Major- Google Sign In*
- Major- Alexa Voice assistance
- Major- Integration of code for other team members
- Minor- Google Map
- Minor- SoundCloud Integration

Tanmoy DAS

- Major- Chat application
- Major- Integration of code

Raghvendra PRASAD

- Major- Complete Server design for user authentication
- Major- User profile creation on server

Sujijegaprasanthini JOHN PAUL

OBASHI DIAGRAM:

R=A*T*V/CM

OWNER	USER	KODOBOK	SOUNDCLOUD
BUSINESS	PRODUCING DATA	DELIVERING DATA	STORING DATA
APPLICATION	KODOBOK	CORE DATA SQL	ORACLE APPLICATION
SYSTEM	BLUETOOTH	ANDROID	SERVER
HARDWARE	EAR PHONES	SAMARTPHONE (IPHONE, SAMSUNG,ETC)	PC
INFRASTRUCTURE	BLUETOOTH / RASPBERRY PI	INTERNET	INTERNET

ASSETS:

Personnel Information:

- Email ID
- Name and Sex
- User Picture

Location details (GPS connection):

- Daily activity details Vocal notification.
- Read the messages, notifications, alarms, etc

Alerts call, SMS and calendar:

Check your call, SMS and calendar alerts on your ear phones.

Threads:

- Access control.
- Allowing users to create weak passwords (poor Authentication).
- Insecure data storage and Improper session handling.
- Malicious code injection.
- Broken cryptography.
- Legal trouble.
- Cause some health issues.
- The high cost of hiring.

HACKERS STORIES:

- As a hacker, I want to hack “KODOBOK” company database I can easily get confidential details of customers.
- As a hacker, I want to hack “KODOBOK” company database so I can see all the contact details of customers.
- As a hacker, I want to steal customer mobile to get personnel details and daily routine of customers.
- As a hacker, I want to hack “KODOBOK” company database I can get contact details, messages, calendar details of customers.
- As a hacker, I want to steal customer headphone then I come to know about customer all details, where they are living, when and where they will go for exercise and day to day details of customer.
- As a competitor, I want to spread virus on “KODOBOK” application and website, make bad assumption about the company to the customers.

- As a competitor, I want to hire hackers they hack “KODOBOK” company application and steal customer details.
- As a hacker, I want to crack “KODOBOK” systems to access vital user statistical data in turn display bad data to the same customers I want to make them confuse and hate this company.
- As a hacker, I want to spread some viruses to the “KODOBOK” application to slow down the whole application system then customer get irritation over that.
- As a competitor, I want to spread the issues of ear problem while using headphones so customer may get panic to buy this product.

Control measures:

Secure app’s code:

- Protect app code with encryption.
- Test code for vulnerabilities or run source code scanning.

Secure network connections:

- Containerization is a method of creating encrypted containers for securely storing data and documents.
- Conduct penetration testing and vulnerability.
- Database encryption and encrypted connections with a VPN, SSL, OR TLS.

Customer data security:

- End-To-End encryption - Only the people communicating can read the messages and no other person. Not even Internet service providers, the app maker, the government or anyone else.
- Key management – even a strong algorithm can be negated if keys and certificates are vulnerable to hackers. If a key is shipped within an app’s byte code.

API security:

- Three are three main security measures – Identification, Authentication, and Authorization.

Protect your devices (Users):

- Application maker can’t do a lot to ensure, users have secured their device when they are downloading applications.
- Only download applications from trusted sources, like authorized app stores.

SCREENSHOTS: