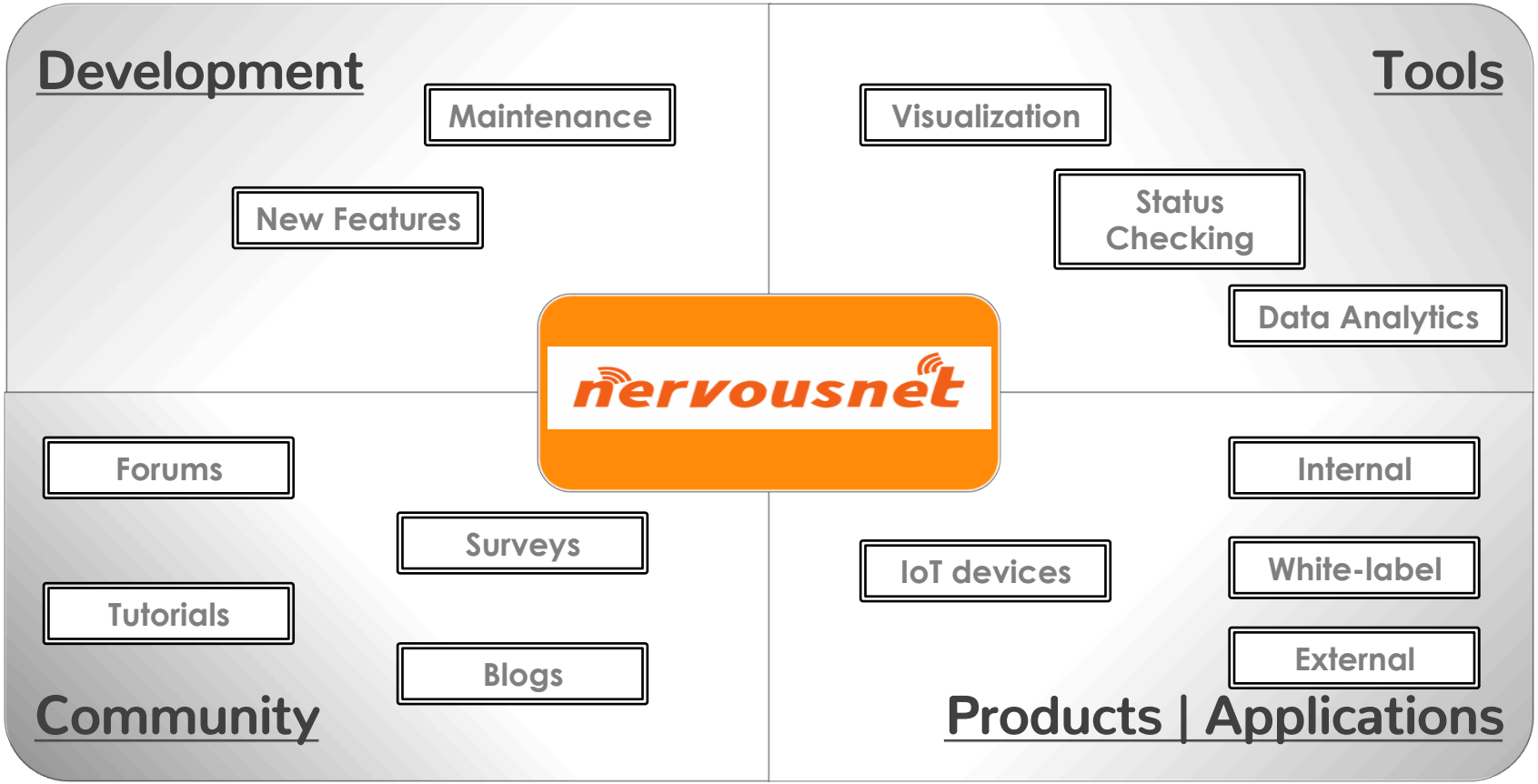
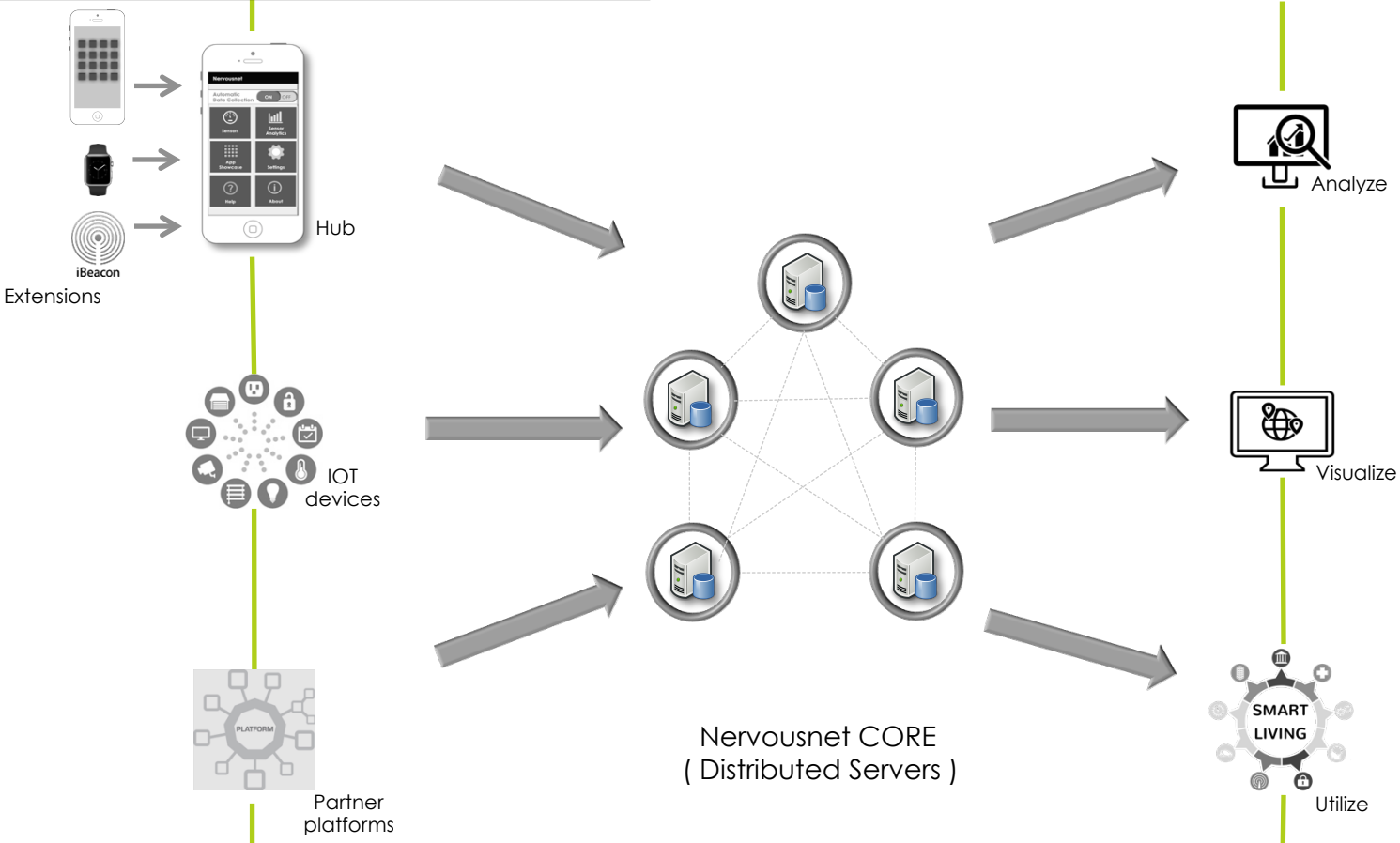
nervousnet

Re-engineering

The Ecosystem

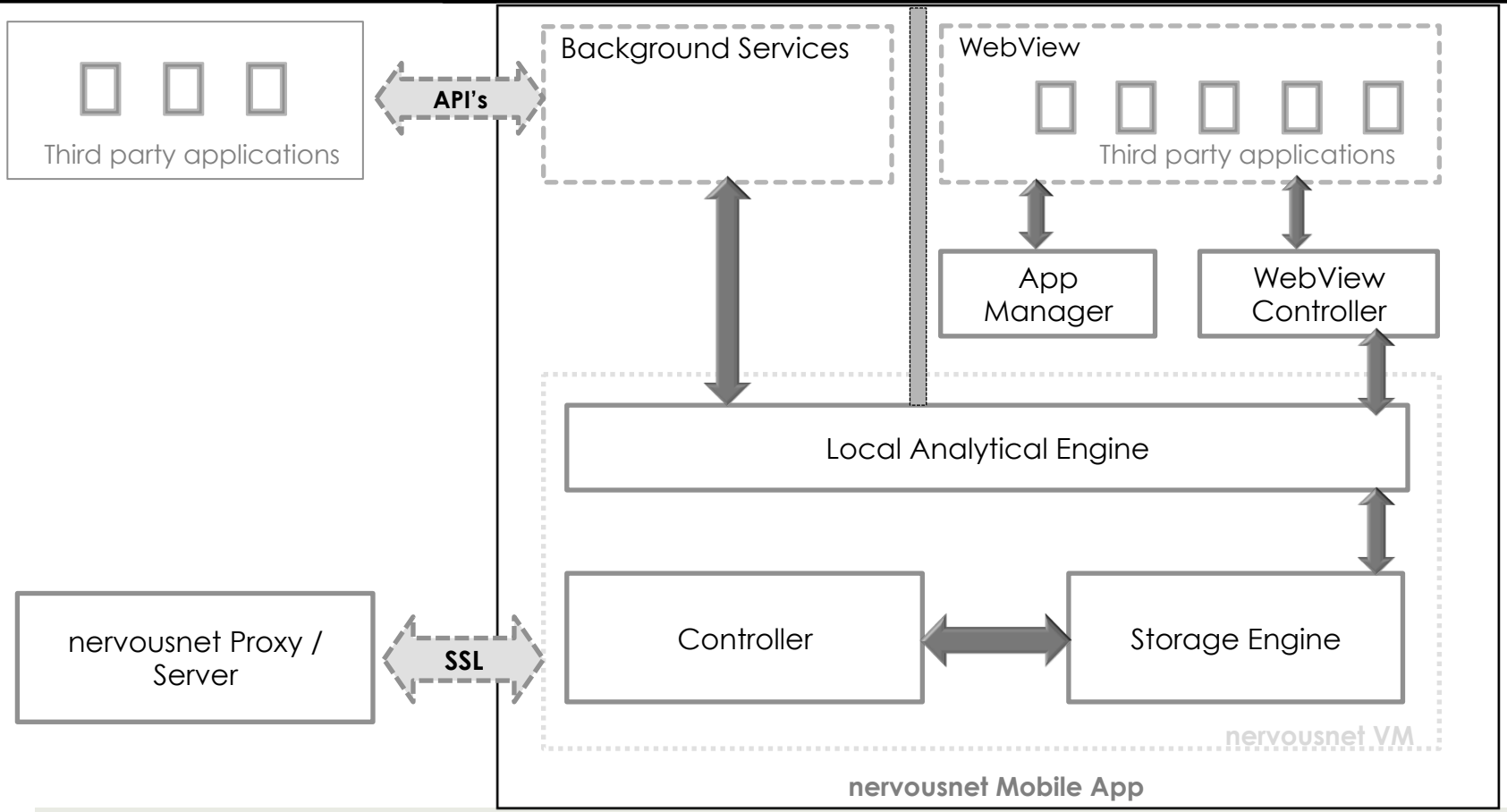


The Platform



nervousnet HUB

Proposed architecture for re-engineering



nervousnet Applications

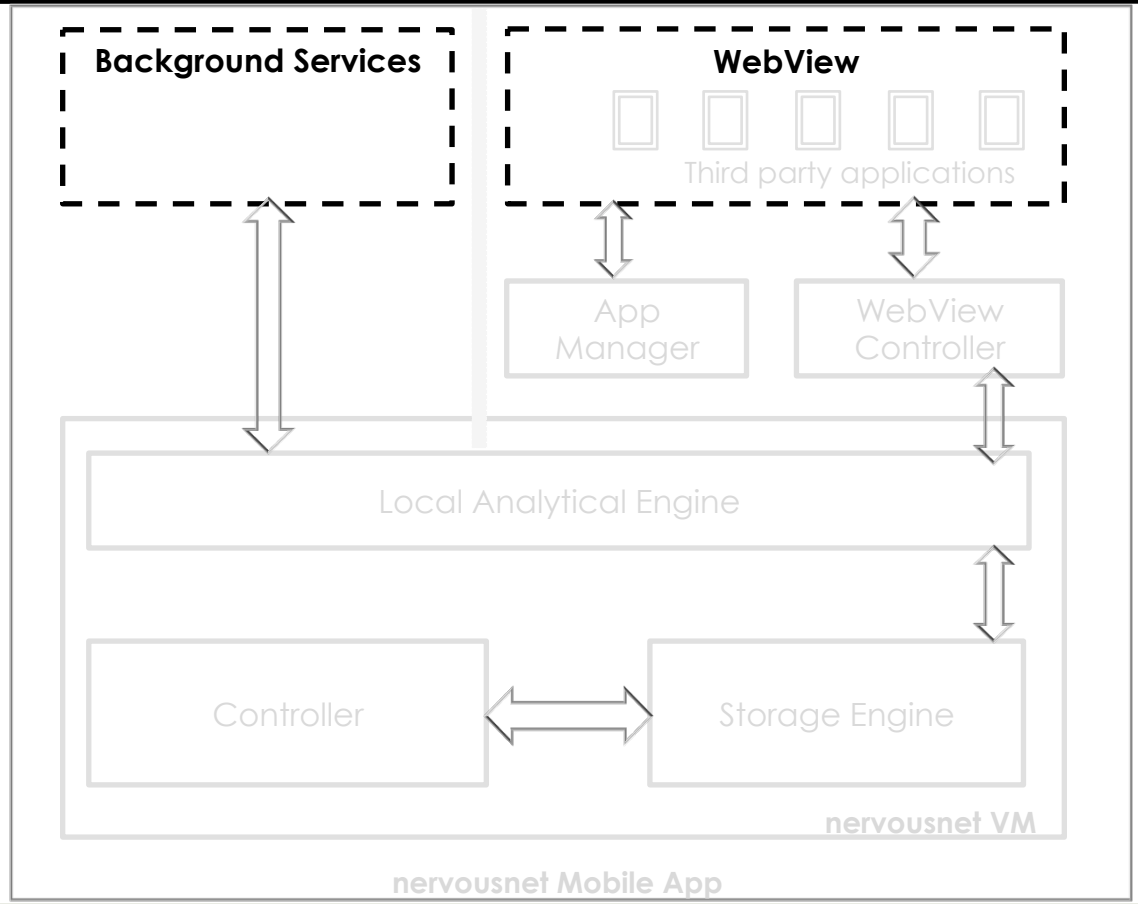
- Allowing Third party developers to extend and use nervousnet API's to use within their own Applications.
- Such applications are dependent and requires the installation of nervousnet Core Application.

Ways to achieve this:

1) **WebViews:** Applications using WebViews run within webview component. Application modules are created using Html and JavaScript and not as independent applications rather run inside the webview component of the nervousnet core application. This approach also requires the creation of an external App Store which allows the developers to submit, update, theirs apps. Implementation will be complex and restricts the type of apps developers can create.

2) **Background Services (Android):** Native and supports all required functionality. Only possible in Android. Will not work with iOS as it does not allow to keep apps running in the background.

3) **App groups (iOS):** iOS 8 allows for Communicating and persisting data between apps with App Groups. We need to investigate this further to see if we can work with this. (this works only for iOS apps released from the same developer)



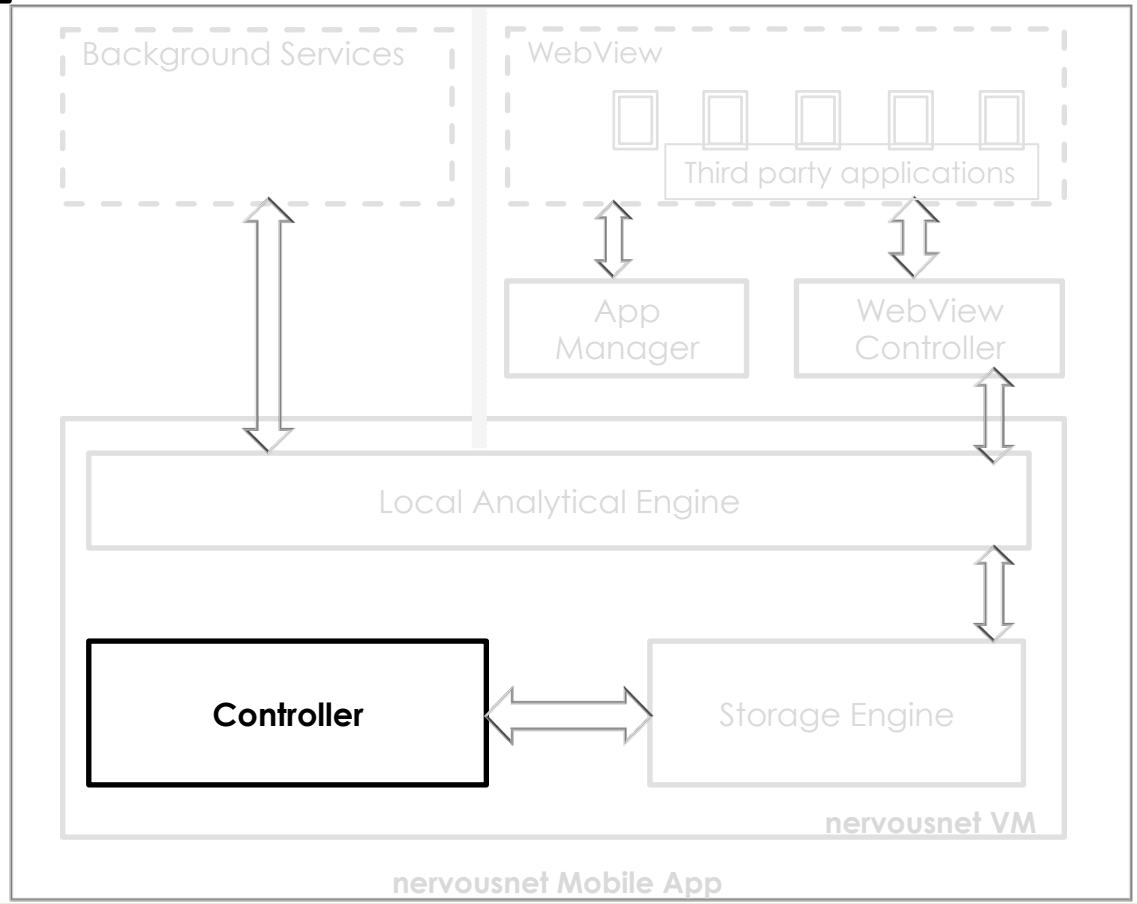
nervousnet HUB Controller

What it does?

- Controls the flow of the application.
- Manages various components and other features of the application

Android & iOS

- First option is to Replace Protobuf with a JSON implementation wherever required
- Protobuf replacement will effect the Server and Storage Engine.
- Second Option is to keep the Protobuf implementation, but document the implementation and required files, so any new changes can be easily implemented.



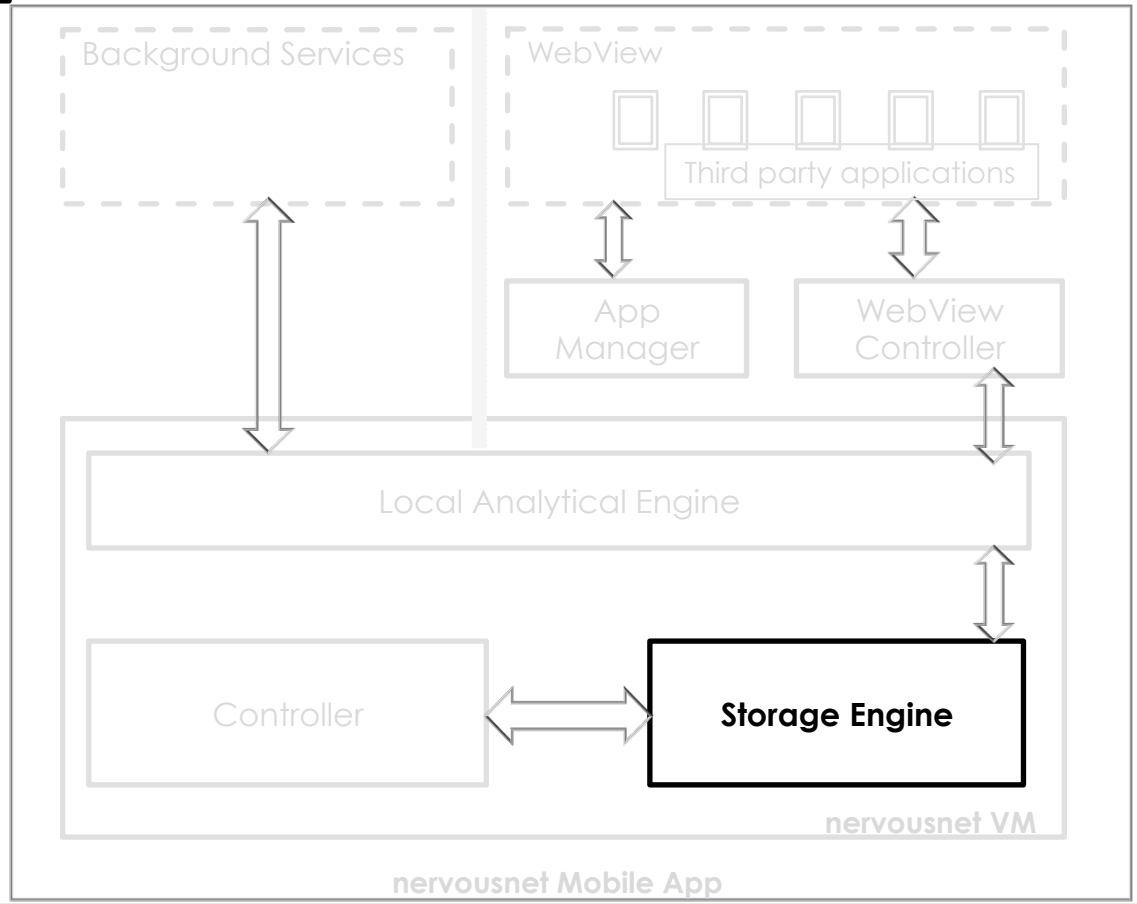
HUB Storage Engine

Android

- Replace local file storage with Sql Lite.

iOS

- No changes required



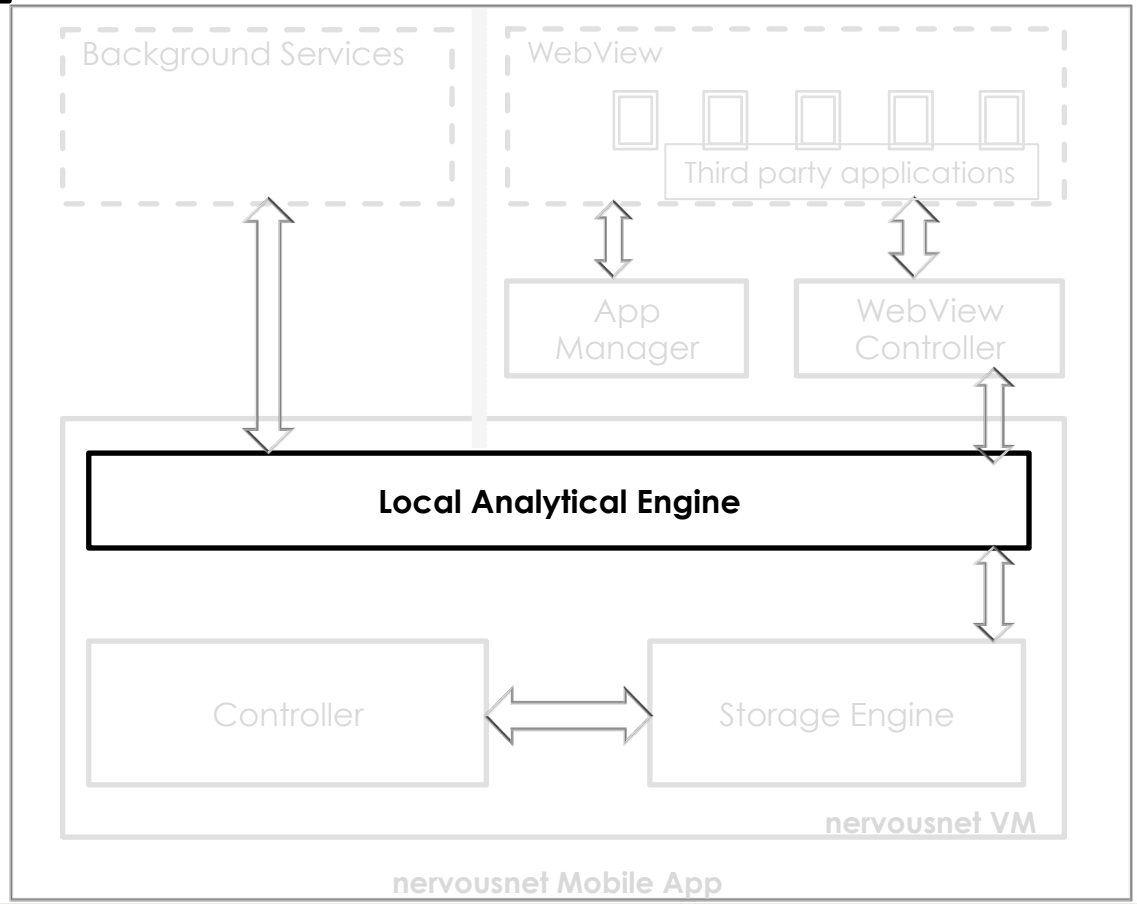
HUB Local Analytical Engine

What it does?

- Implements functions that allows for analyzing the sensor data collectively stored on the local device.
- These analytical functions or API's will be used by the WebView's and Background Services to request information.

Android & iOS

- No changes to be done.
- Further features and functionalities to be implemented



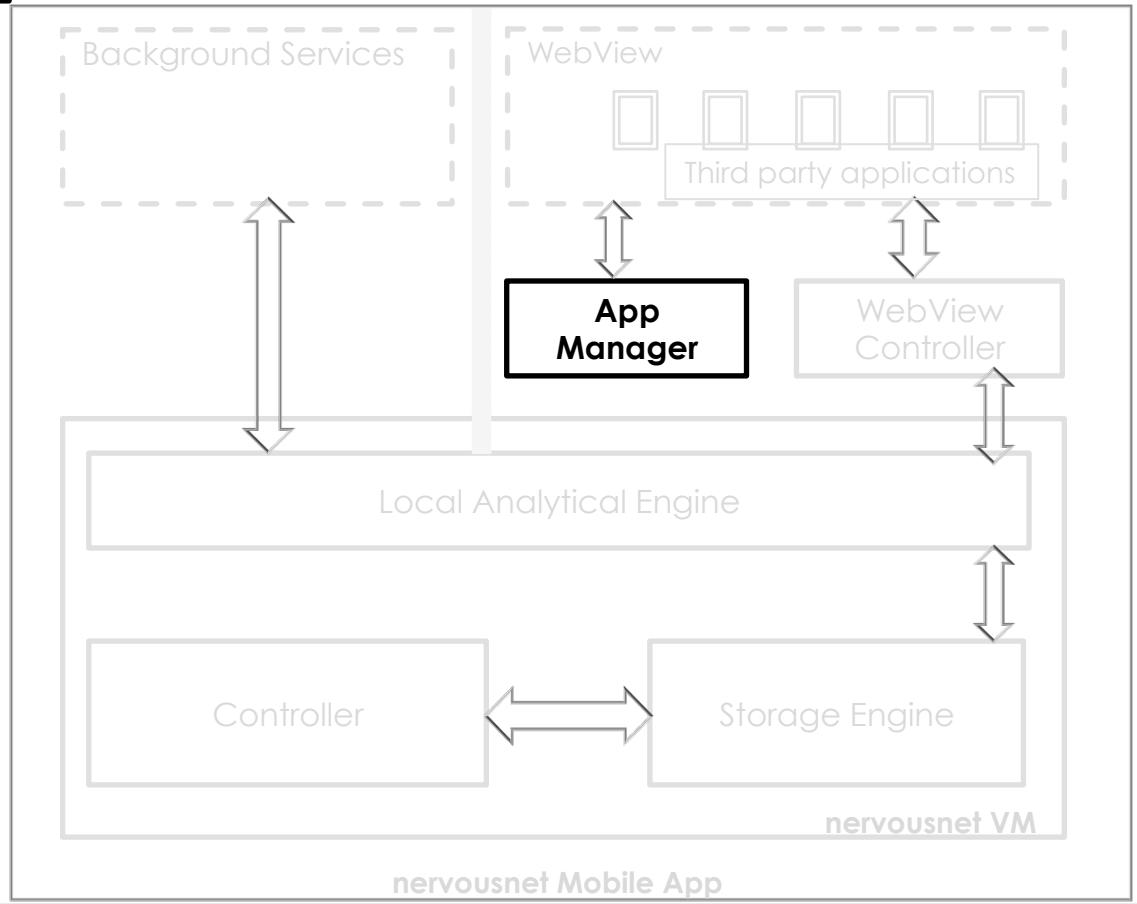
HUB App Manager & Store

What it does?

- Manages list of nervousnet Apps that are installed within the local installation instance.
- Allows the user to browse through the list of available apps and install whatever is required.
- High complexity, similar to a scaled down version of app store, but running within the nervousnet app.
- Keeps track of which module is installed on a device.

Android & iOS

- New feature to be built.
- Use Webview to allows users to browse and install apps.



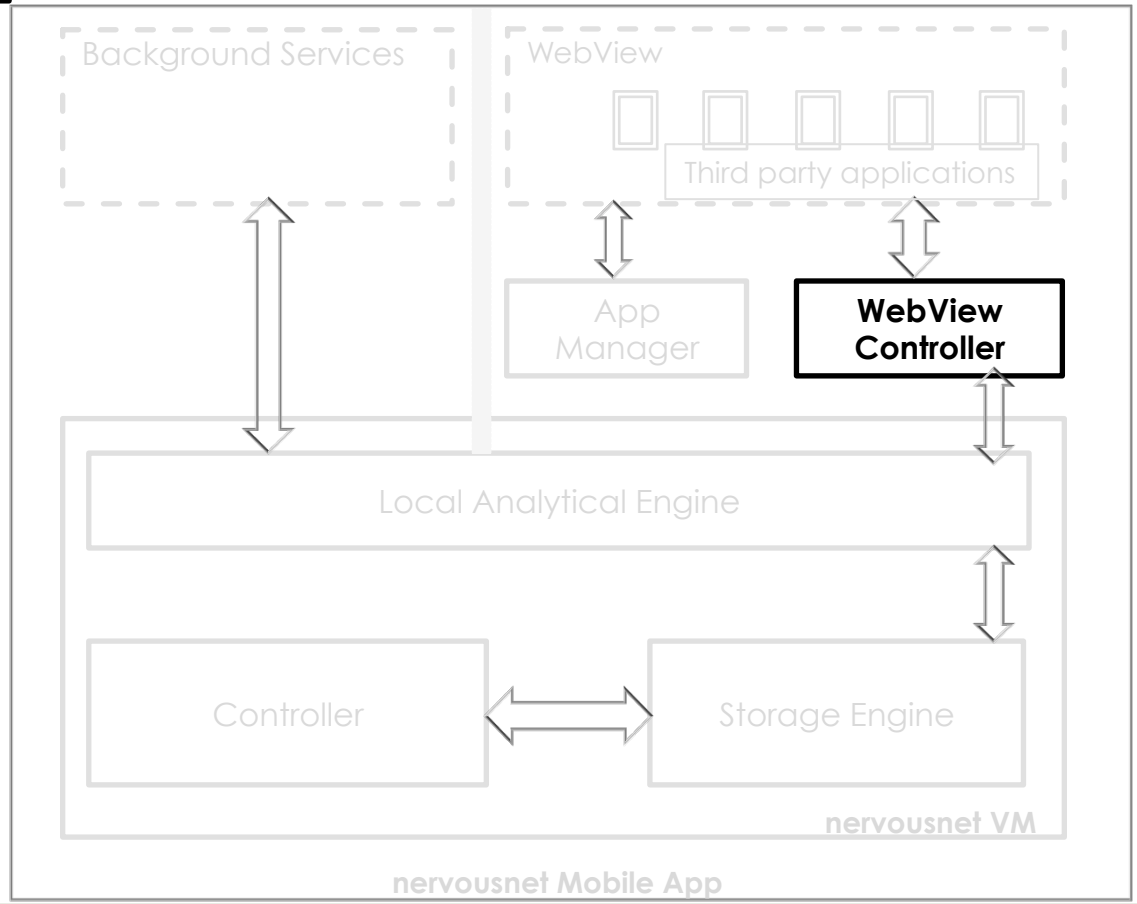
HUB WebView Controller

What it does?

- Allows for external applications running within a WebView to communicate with the LAE and request for content and data.

Android & iOS

- Completely new feature.
- Define the protocol required for communication between the WebView apps and the LAE

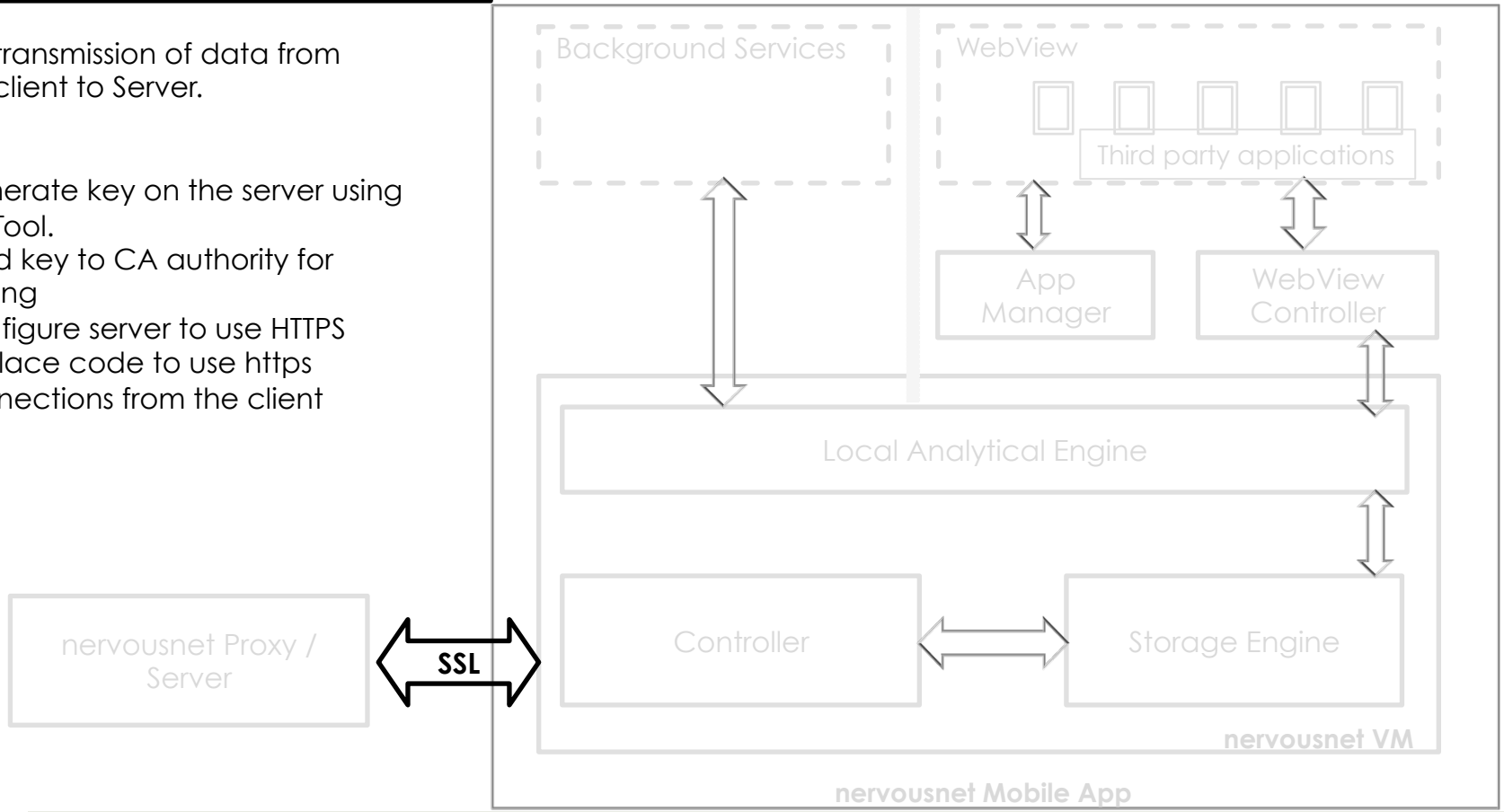


TLS / SSL

Secure transmission of data from mobile client to Server.

Steps:

- Generate key on the server using KeyTool.
- Send key to CA authority for signing
- Configure server to use HTTPS
- Replace code to use https connections from the client



Mobile App – Why would users download it?

Utility

- Visualize Sensor Readings
- View Sensor Analytics
- View nervousnet Extension Apps
- *******

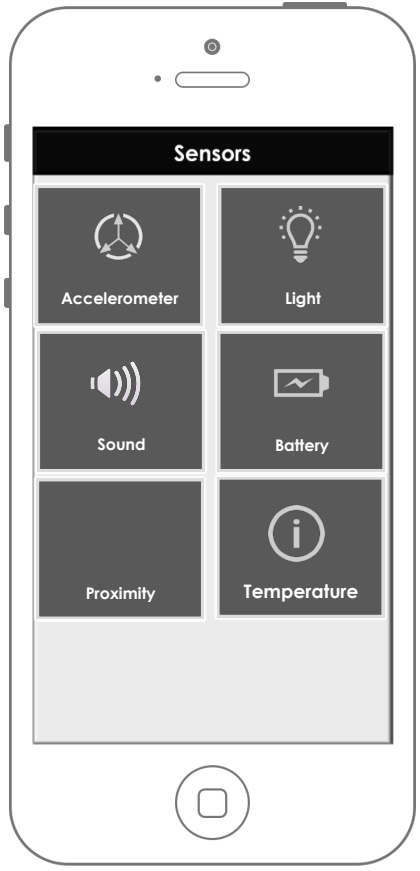
Extensions

- Applications depending upon the nervousnet App
- Every time an extension app is started it checks if the "HUB" app is installed and running. If not, prompts to download it.
- e.g. SwarmPulse, nervousnet Competition app, Falling walls treasure hunt app and more external developer apps.

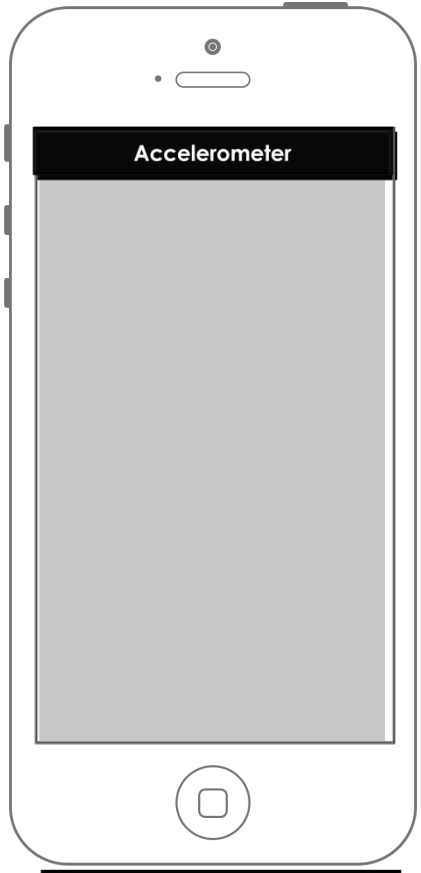
nervousnet HUB

Mobile App UI Wireframes

Home Screen

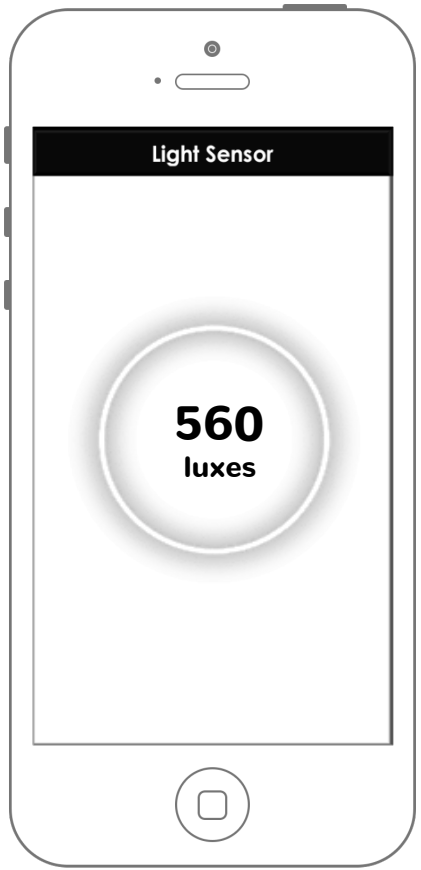


Sensors Main Screen

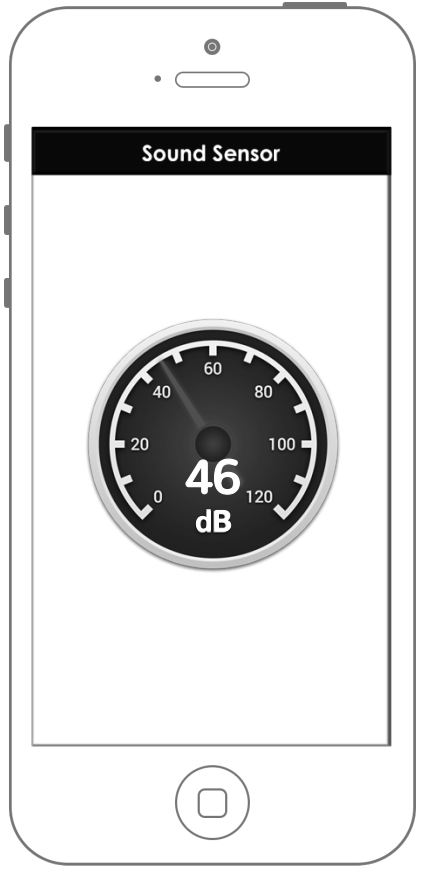


Accelerometer Reading

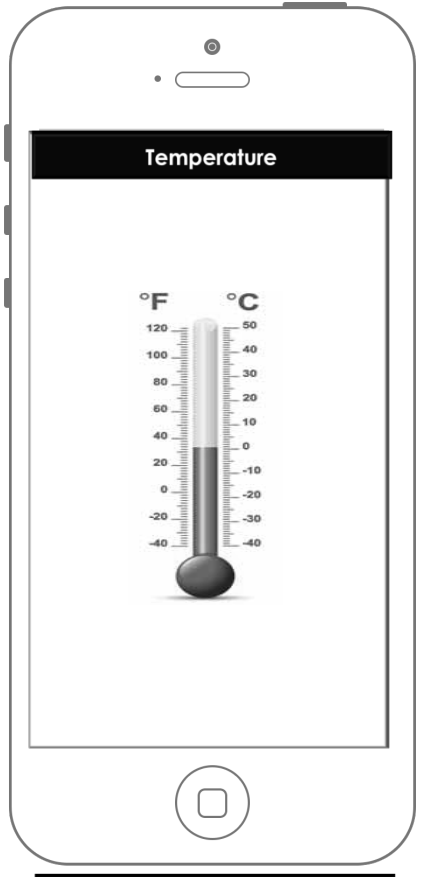
Mobile App UI Wireframes



Light Reading Screen



Sound Reading Screen

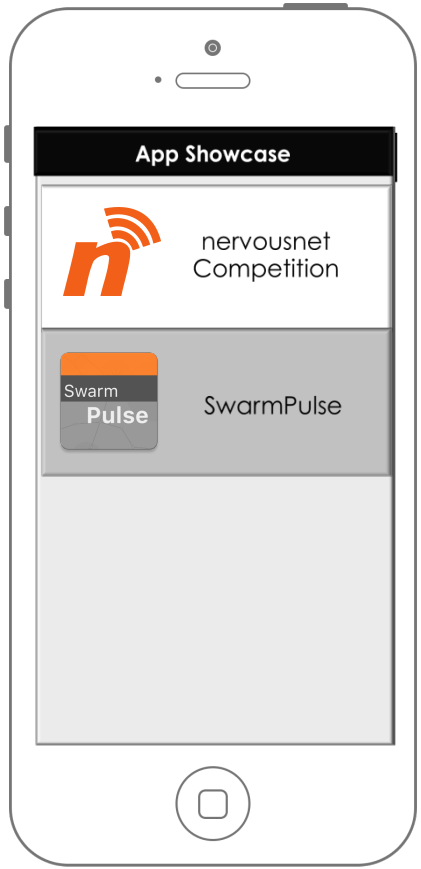


Temperature Reading Screen

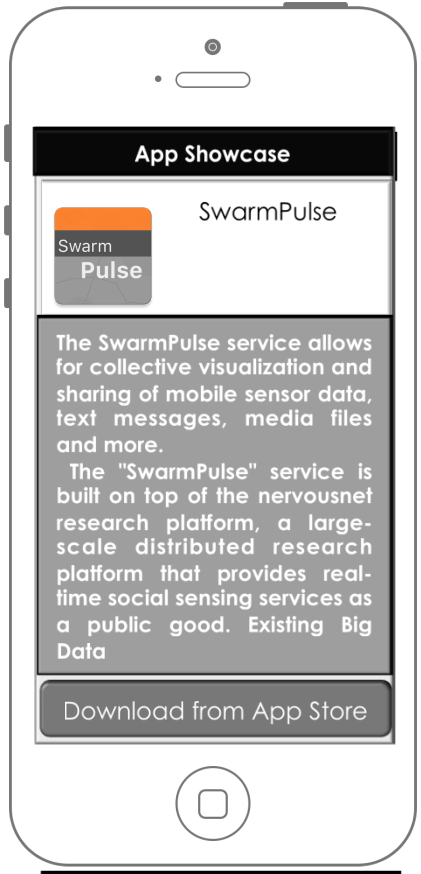
nervousnet HUB

Mobile App UI Wireframes

Sensor Analytics Screen



App Showcase List Screen



App Showcase Details Screen

Targeting Users