The project has also been required to display and functioned correctly on multiple mobile devices. According to the project description, a field scientist needs to be able to create, retrieve, update or delete data properties. Our development team has identified four different platforms we believed will be used. The products we have identified are Apple, Android, Blackberry, and Windows Mobile.

All platforms have different Operating Systems (OS) and their associated programming languages. For example Android application can be program in Java while Apple applications are programmed in Objective C. Writing code for each platform can be difficult especially since they have their own set of APIs. In order for us to approach this in a practical way we need to find a solution that can be done once but works will all platforms without dealing with all different programming languages. Another approach to this is by looking at the web as common platform since all Smartphones have web capabilities. The client will have the final determination in whether to develop a native application or mobile web application.

**Mobile Web Application**

WebKit is an open source web browser engine that works on all platforms except Windows Phone. WebKit was created by Apple for their Safari web browsers on their devices. However, it’s quickly becoming a standard for all mobile web browsing. WebKit utilizes HTML5 features and local database support. Our team needs to be knowledgeable in HTML and JavaScript to be able to use WebKit.

**Sencha Touch**

Sencha Touch is a framework that builds web application that currently functions on Android, Apple, and Blackberry using HTML5. A feature that Sencha Touch has that meets one of our requirements is graphing data. Sencha Touch comes with an API that displays data sets graphically, for example a line chart. Unfortunately, Sencha Touch doesn’t work with Windows Mobile as of yet. Using Sencha Touch will require a purchase ranging from $995 to $18,000. This include IT support and free tutorials on their website.

**JQuery**

The JQuery mobile framework allows the developer to use HTML 5 to create a mobile app that displays on all the Smartphones we listed. JQuery comes with UI builder which is a drag and drop software. This can also be extended to create application for tablets. They are also third-party plug-ins can be used to enhance some of the requirements such as google maps and multiview (viewing different datasets).

**Mobile Native Application**

Creating a native application has its advantage over web mobile application. Native applications can access the mobile internal features such as GPS location or camera. Native applications run faster than a web browser. The software tools listed below to create a native application are actually Hybrid apps. This means they are cross-platform compatible using a web layout however they can access the mobile devices features. The hybrid applications are created using HTML, JavaScript and CSS.

**PhoneGap**

PhoneGap is a free and open source framework to create mobile applications that can run on six different platforms including Windows Phone. PhoneGap has an extensive API collection that can meet the requirements set by the client. For instance, a feature of the application is that it can capture geolocations of the device and get notifications such as alerts. Our development team will also need training in order to use PhoneGap. There is a price for training and tutorials using PhoneGap depending on the size of the development team. For instance, if the development team has 5 members, the price start at $495a month.

**Appcelerator**

Appcelerator is open source framework to develop native apps that run on Android, Apple, and Blackberry. Currently there is no support for Windows Phone. It uses XML as web a language and JavaScript. Just like PhoneGap, Appcelerator has a large API library (5000).

**Summary**

Keep in mind there are other useful tools out there like RhoMobile (Motorola) and Particlecode which uses Java. Our team felt the ones listed are strong contenders to build an application that meets the requirements. It’s imperative our development team become familiar with HTLM, JavaScript and CSS since most of these tools utilize these languages.