

D&D KM-IT

Knowledge Management Information Tool

KM-IT Fixative Mobile Application

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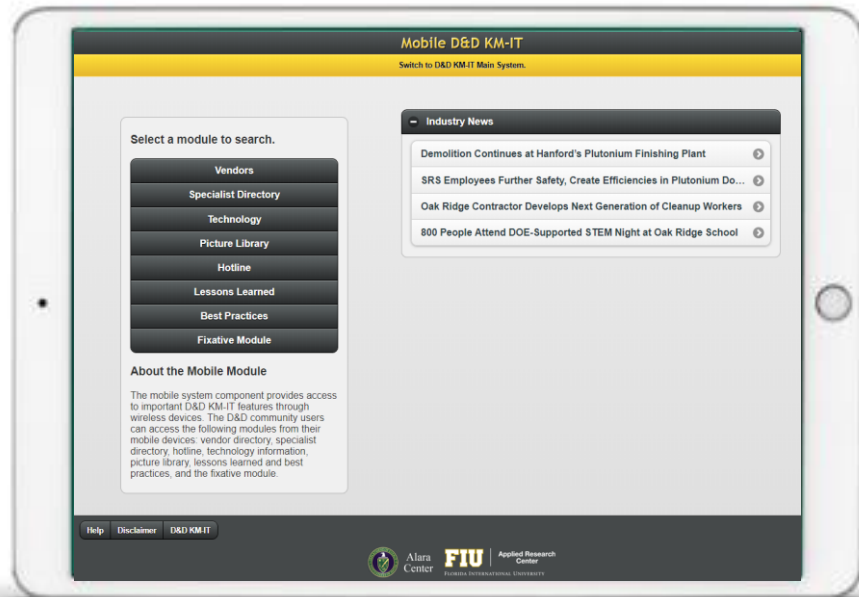
D&D KNOWLEDGE MANAGEMENT INFORMATION TOOL

The screenshot displays the homepage of the D&D KM-IT (Deactivation & Decommissioning Knowledge Management Information Tool). The header includes the site title, a search bar, and navigation links for Home, Contribute, About, and Contact. A central banner features a world map and the text "Powered by the Global D&D Community". Below this, a grid of yellow buttons lists various modules: Hotline, Technology, Web Crawler, Mobile System, Lessons Learned, Best Practices, Picture Video Library, Document Library, Specialist Directory, Vendors, D&D Research, and Training. A registration prompt is visible, along with buttons for U.S. and International Registration. The "Additional Features" section highlights several tools: D&D RESEARCH (for DOE EM), Fixative Module, ITSr Module (Innovative Technology Summary Report), Search SRS ISSC Reports (Begin Searching), and Prioritization Tool (Prioritize Maintenance Expenditures, Download). A footer section provides quick links to DOE EM D&D, SRS ISSC, ALARA Center, EFCOG, and COGENTUS.

A web-based knowledge management information tool custom-built for the D&D user community by FIU-ARC in collaboration with DOE, EFCOG, and the former DOE ALARA Centers.

[HTTPS://WWW.DNDKM.ORG](https://www.dndkm.org)

D&D KM-IT Mobile Modules

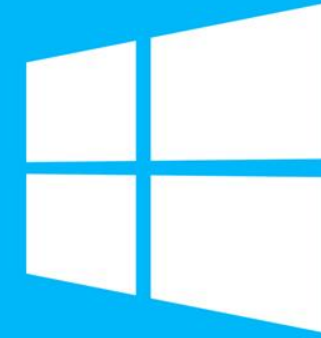


<https://m.dndkm.org>

- **Vendor**
- **Specialist Directory**
- **Technology**
- **Picture/Video Library**
- **Hotline**
- **Lessons Learned**
- **Best Practices**
- **Fixatives**

Outline

- Mobile App Architecture
- Cross-Platform Mobile App Development
- Potential Application for Mobile Apps
- Fixative App - Features and Compatibility
- Installation
 - Google Play (Android)
 - App Store (iOS)
- Usage
 - App launch
 - Keyword Search
 - Search Results Summary
 - Fixative Details
 - Fixative Data
 - Fixative Vendor
 - Criteria Search



Architecture of Mobile Application

Presentation Layer – What the user sees

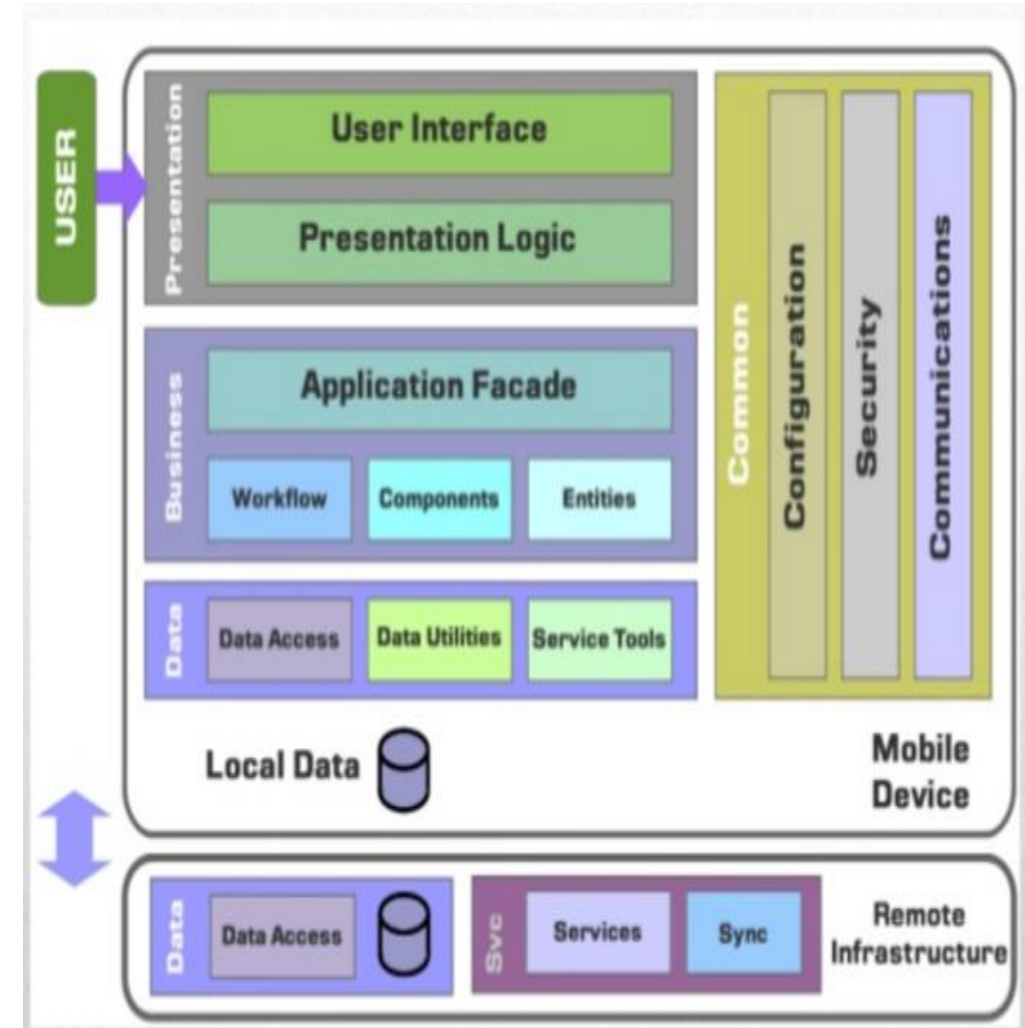
- This layer comprises UI components and UI process components (Views and Controllers).
- This layer is primarily focused on deciding the features and their location, theme, font size, etc.

Business Layer – How the app works

- The layer focuses on the business front. This includes workflows, business components.
- Business logic is defined as any application logic that is concerned with the retrieval, processing, transformation, and management of application.

Data Layer – Information the app uses

- This includes data access components, data helpers/utilities, and service agents.



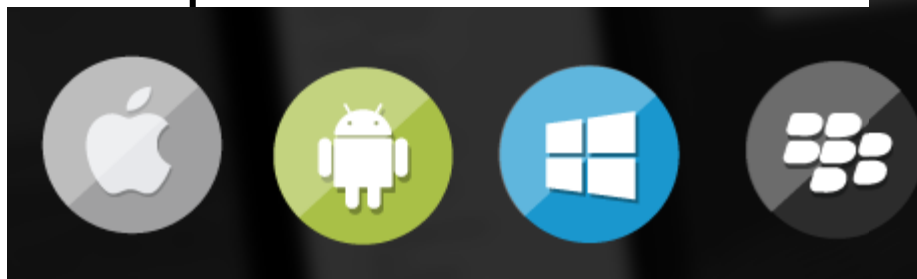
Mobile Native Application

- A native application (native app) is an application program that has been developed for use on a particular platform or device.
- Native apps are written for a specific platform; they can interact with and take advantage of operating system features and other software that is typically installed on that platform.
- It has the ability to use device-specific hardware and software, meaning that native apps can take advantage of the latest technology available on mobile devices such as a Global Positioning System (GPS), Maps and Camera.



Cross-platform Mobile Application

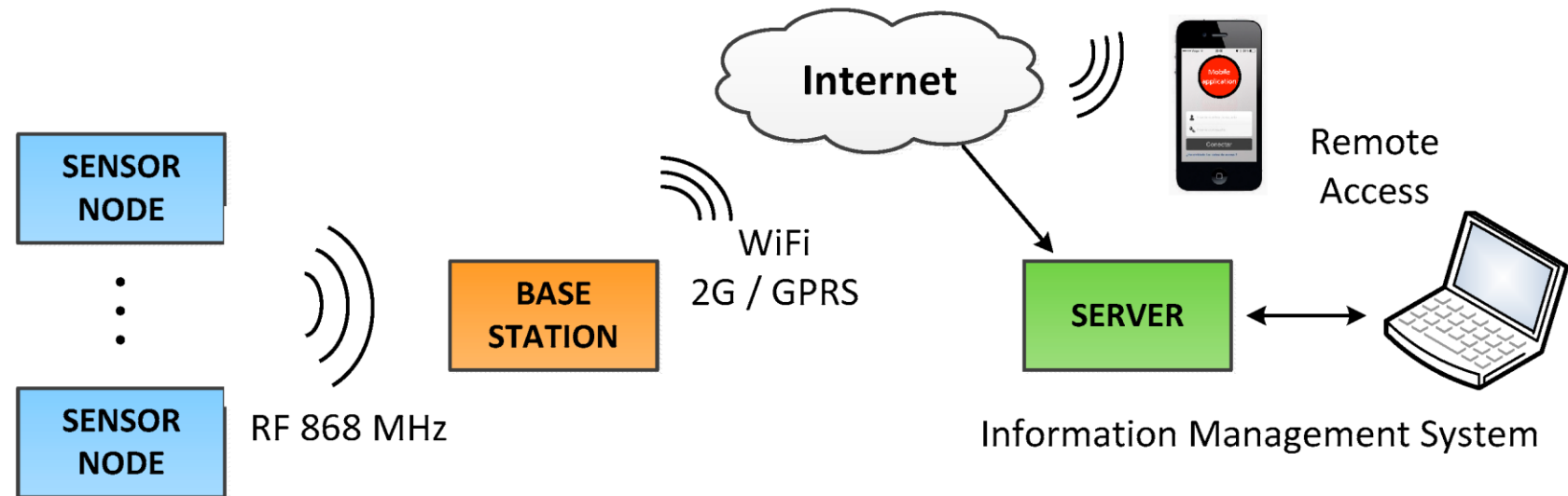
- Cross-platform mobile application development refers to the development of mobile apps that can be used on multiple mobile platforms.
- Cross-platform mobile development tools are generally simple to use as they are based off of the common languages for scripting, including CSS, HTML, and JavaScript.



Mobile Applications

Monitoring commonly used sensors, such as:

- Temperature Sensors
- Pressure Sensors
- Accelerometers



A mobile application can continuously receive updates from the sensors as their values change.

The pressure and temperature measurements from waste storage tanks, for example, can provide an early warning of fault conditions in real time.

Mobile Applications

- A live feed from a site facility can be viewed on the mobile application.
- Mobile app can send automatic notifications to alert engineers and workers of potential hazard.
- A predictive analytics/error preventing module can also be integrated with the mobile application that identifies and sends out early anomalies.
- Monitor and track location of equipment or other assets (engine temperature, battery life, GPS map, tampering alert, etc.).



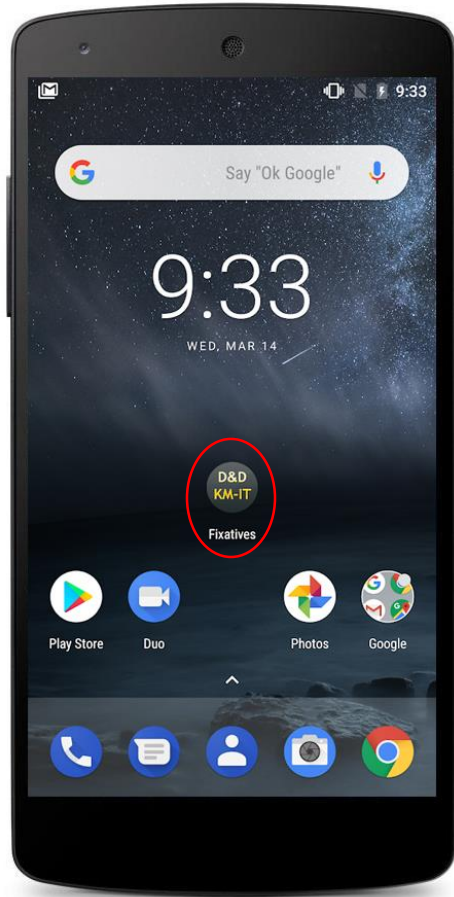
D&D KM-IT Fixative Application

- The D&D Fixatives module can assist in the selection of fixatives, strippable coatings, and decontamination gels for application during D&D activities.
- The module includes a comprehensive database of commercially available fixatives and other contamination control products.
- The app is used for filtering and sorting the fixative products according to the search criteria.

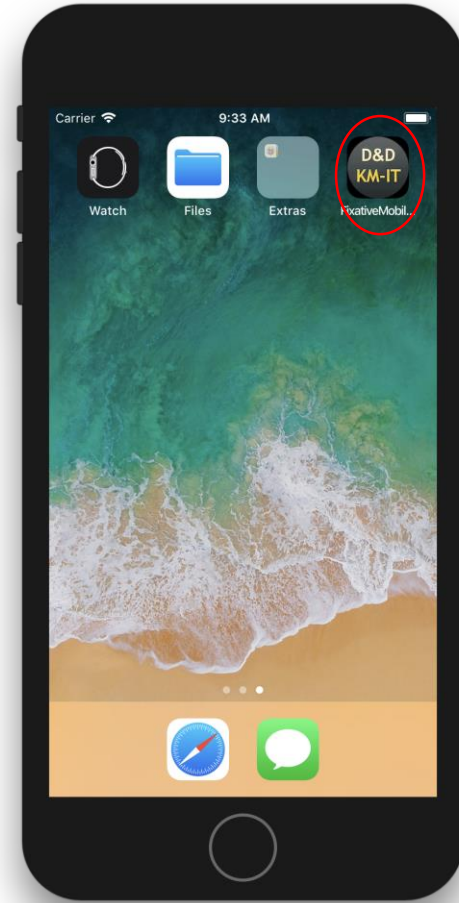


Fixatives App

Fixatives App - Compatibility



Runs on Android 7.1 (Nougat)
(minimum target Android 4.4 (Kit Kat))

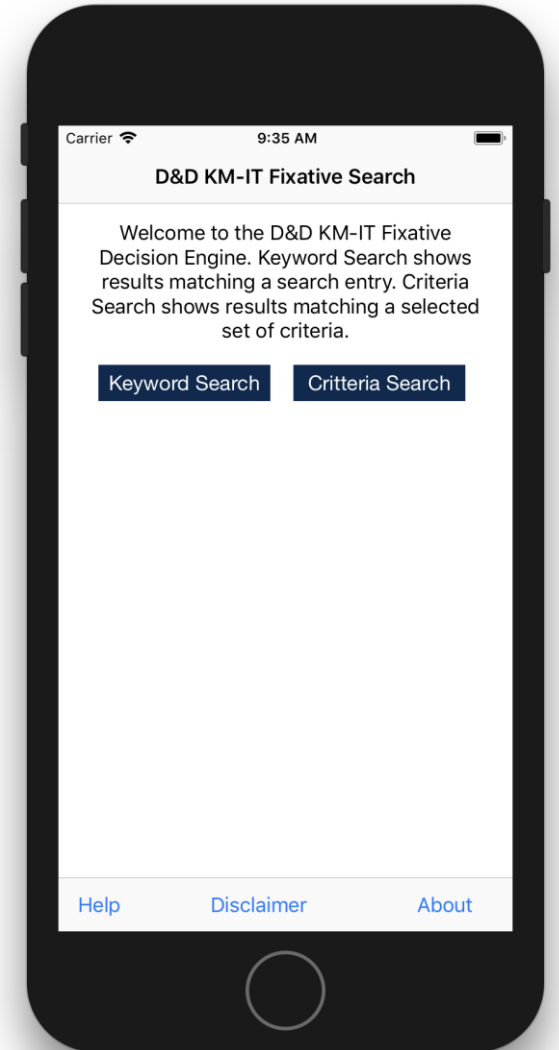
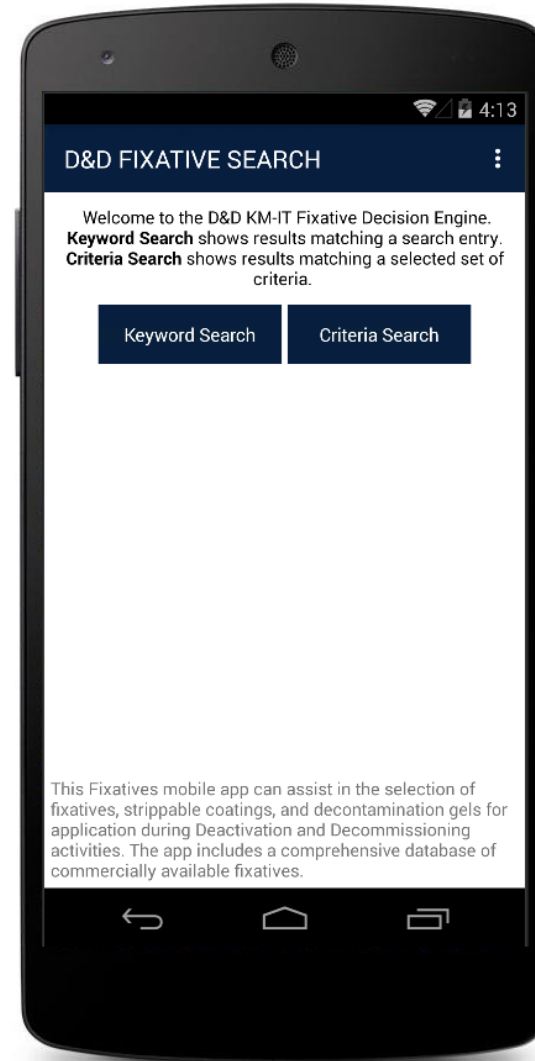


Runs on iOS7 and newer
(minimum target iPhone7)

Home Screen



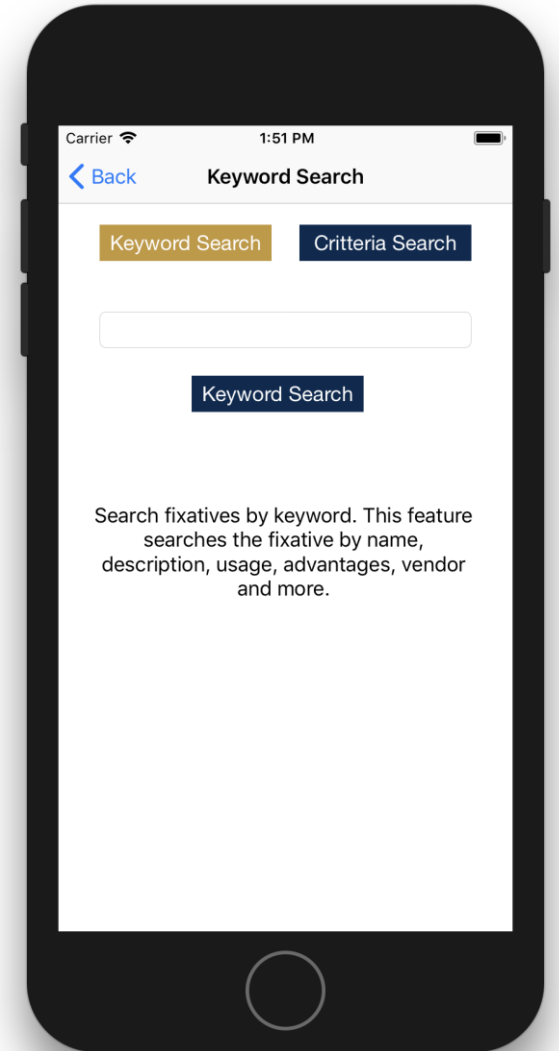
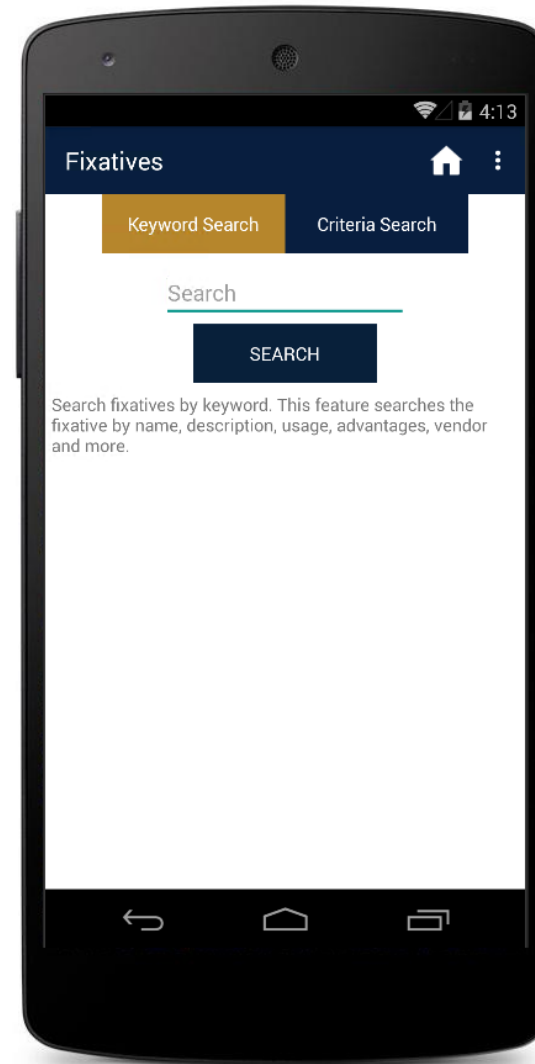
- Welcome screen for app.
- Users can choose to proceed by performing a Keyword search or Criteria search.
- Mobile toolbar menu at the bottom of the screen shows additional information for the user.



Keyword Search



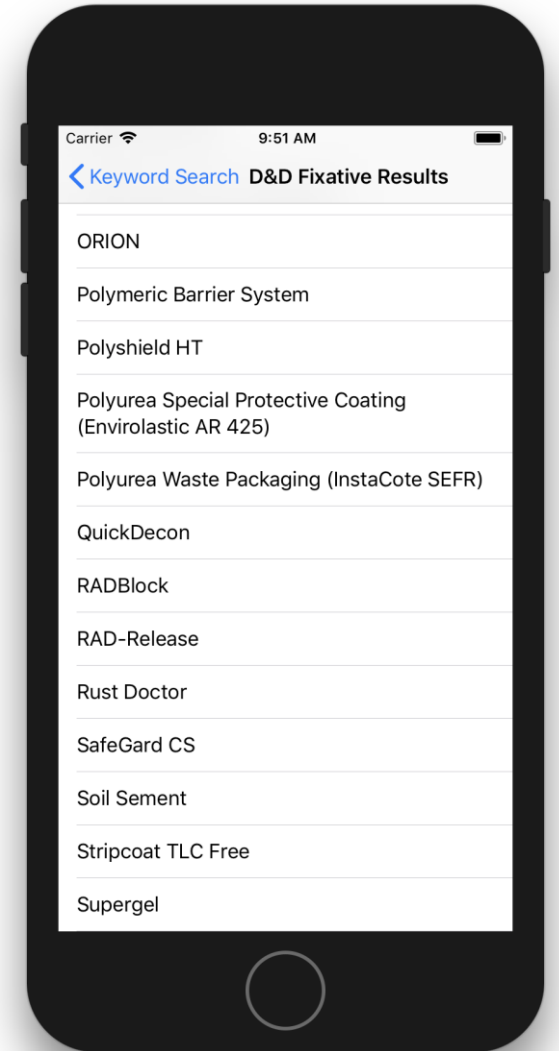
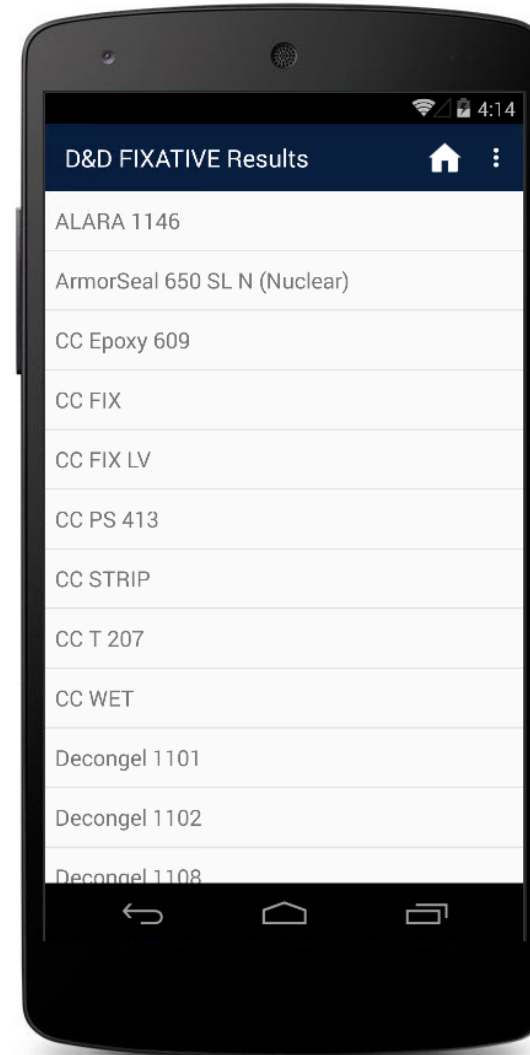
- Keyword search will search for fixative products according to the search word.
- If no search keyword is entered and the search button is clicked it will return all fixative products.



Search Results



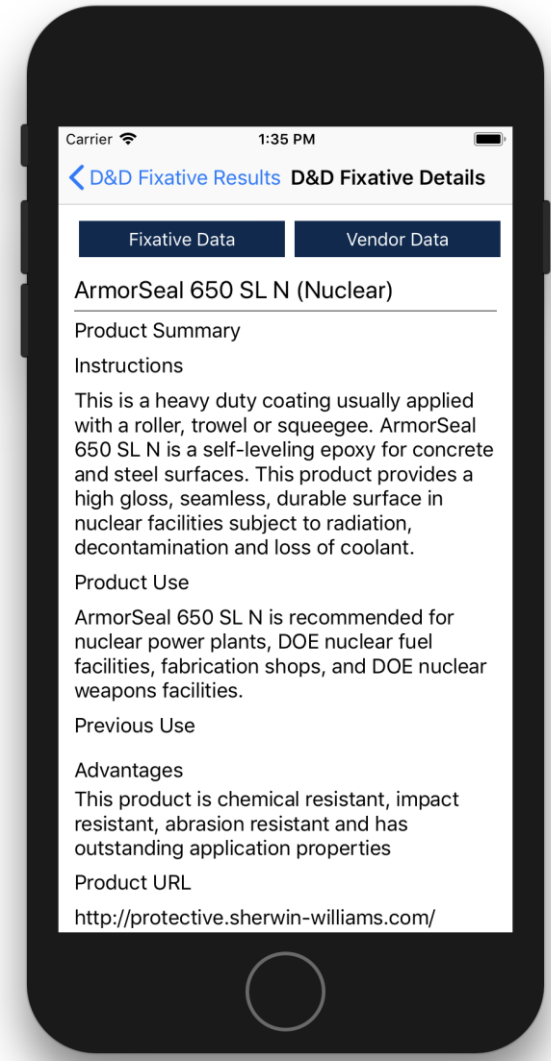
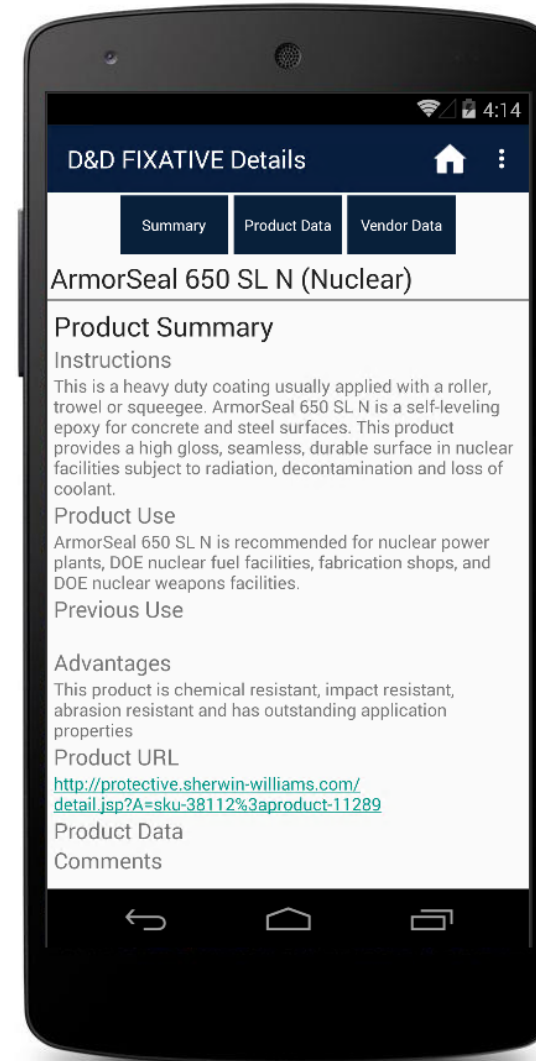
- This view displays the summary of the search results by the name of the fixative products
- Clicking on any of the result options will send the user to the details of the fixative product



Fixative Product Detail



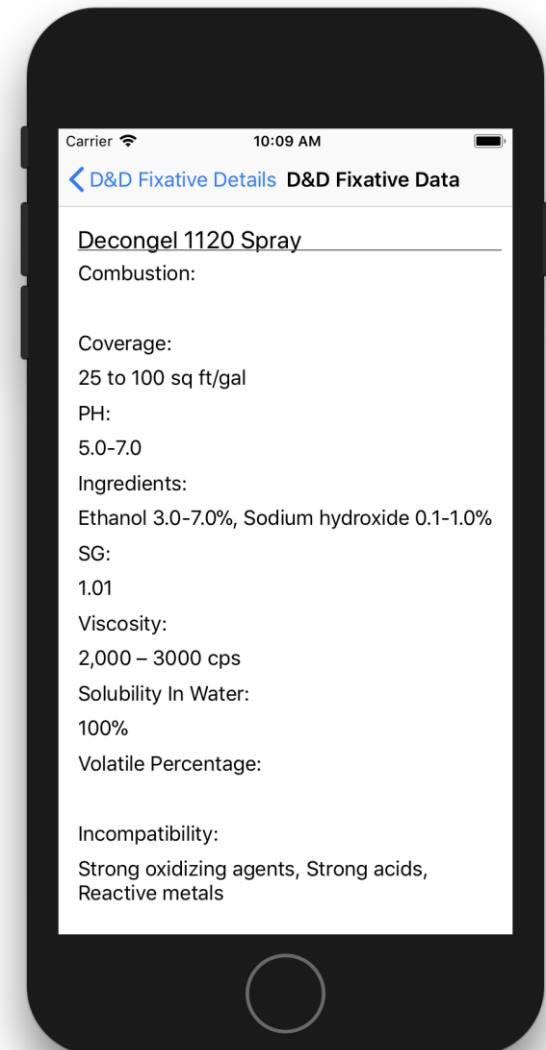
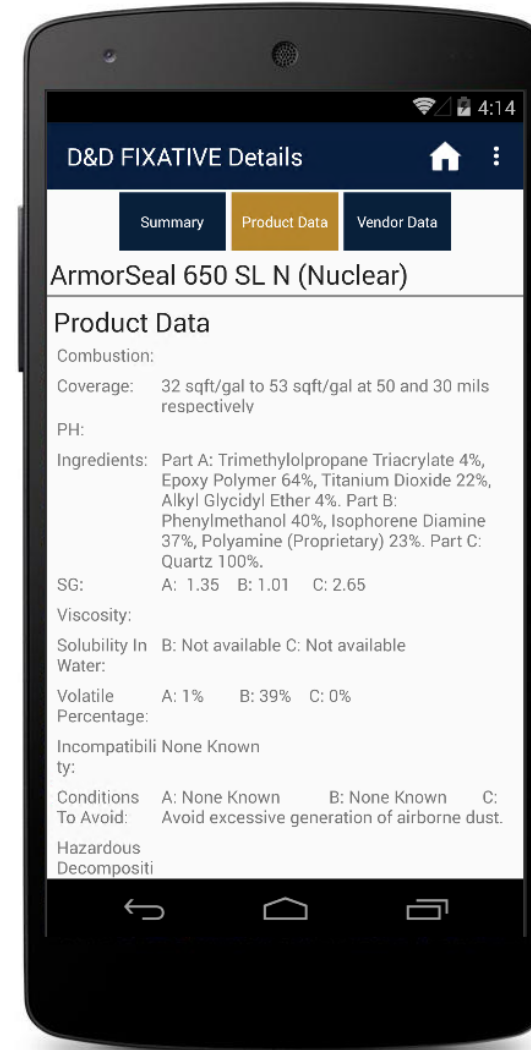
- After clicking on a product from the search results, the user can view the details of the fixative product.
- This view provides the general details of the product with an option to view the product and vendor data by clicking on the corresponding buttons.



Fixative Product Data



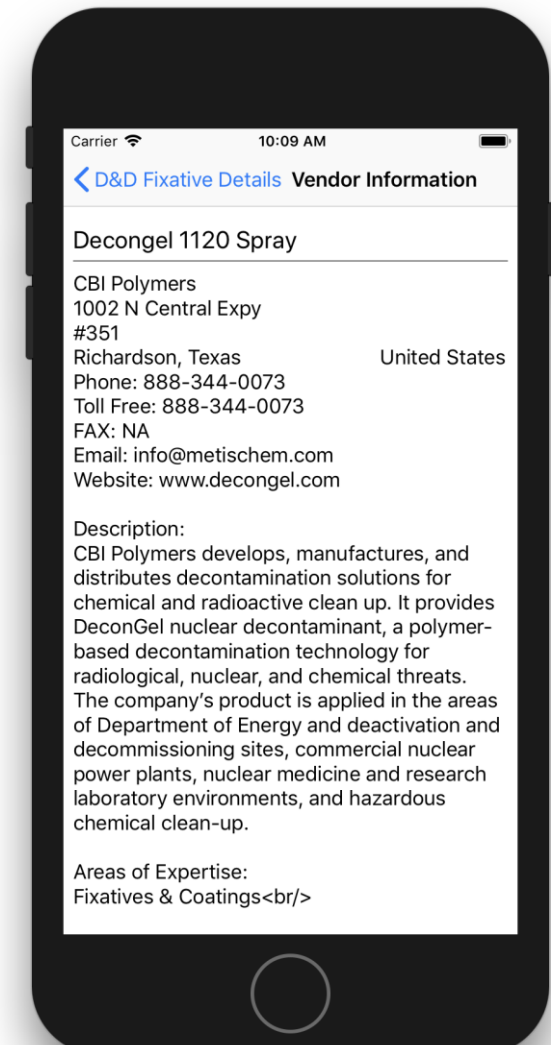
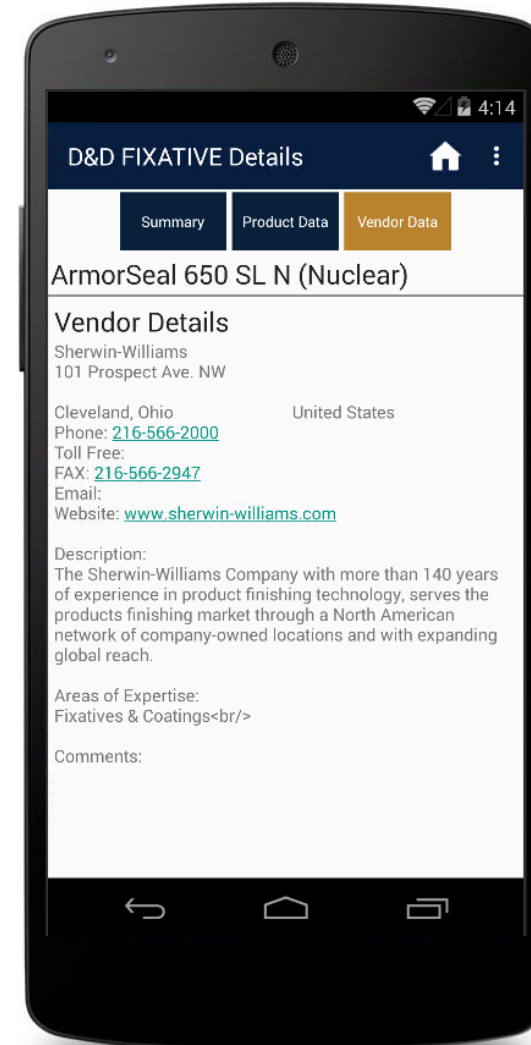
- After pressing the product data button, the user is taken to the product data available for this particular fixative product.



Vendor Data



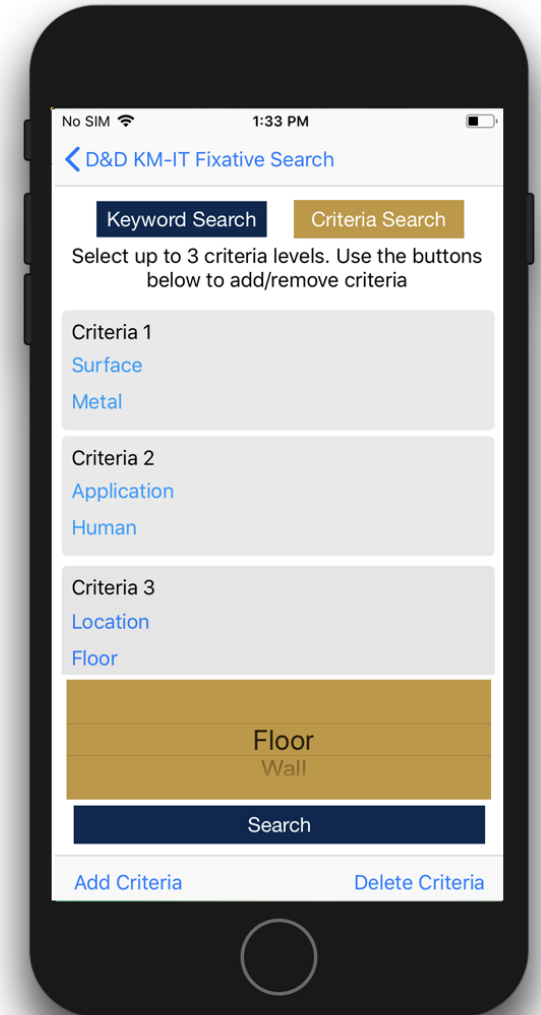
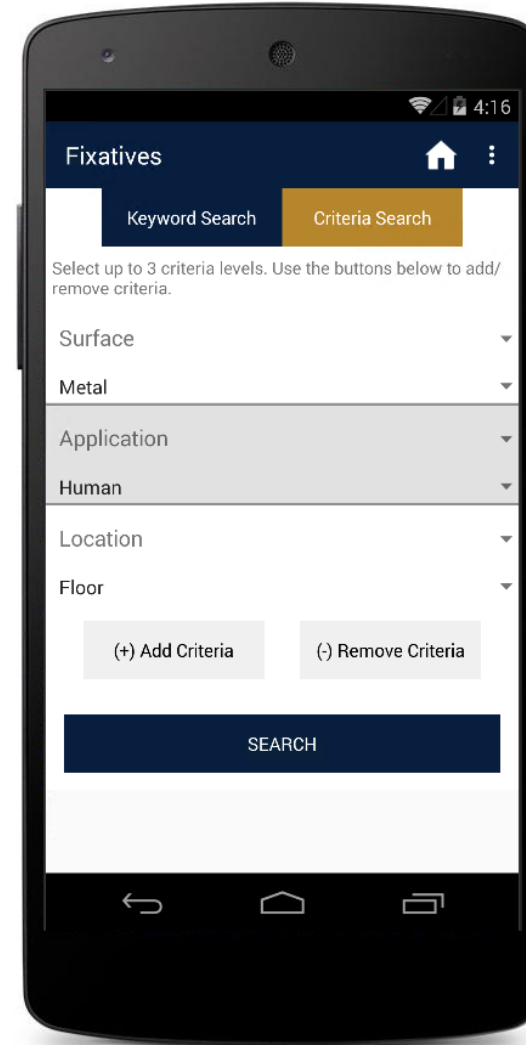
- After pressing the vendor data button, the user is taken to the vendor data available for this particular fixative product.
- Again, the mobile app allows for communication by phone when a phone number is clicked and by phone browser when an URL is clicked.



Criteria Search



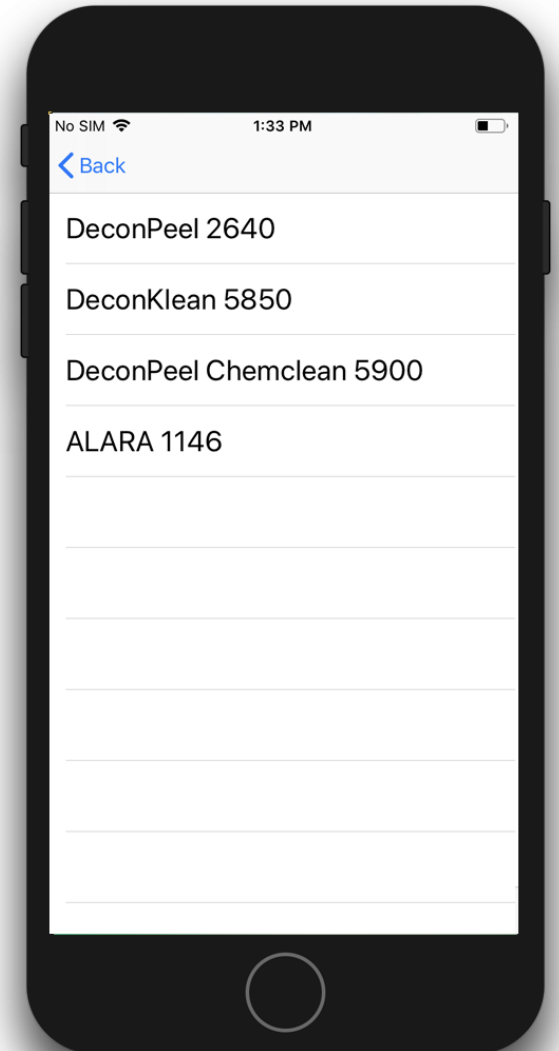
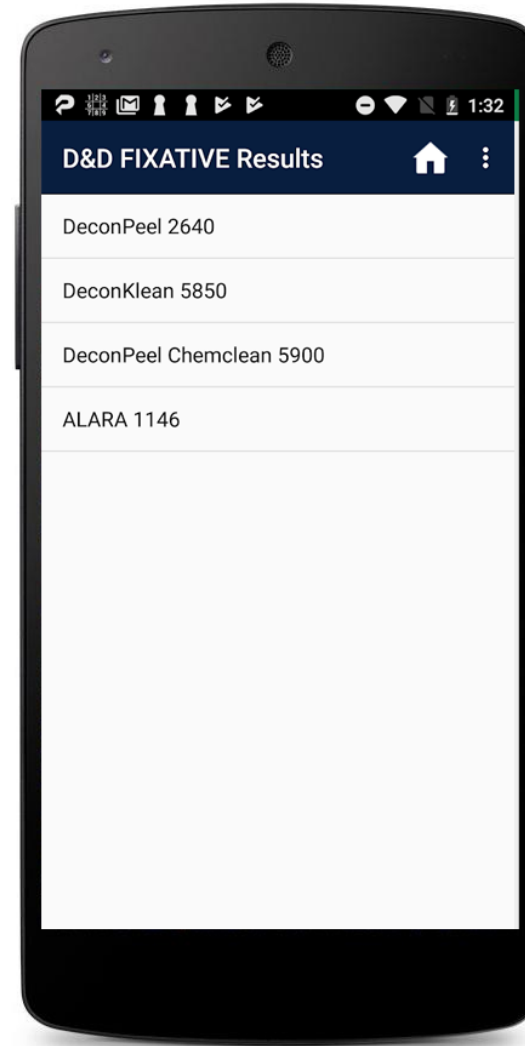
- Criteria search allows the users to build multi-tier criteria searches for fixative products by adding criteria and sub-criteria.
- Each time a new criteria is added it will be filtered according to the previous selection, allowing for targeted results.
- The buttons “Add Criteria” and “Delete Criteria” are used to build the criteria requirements and it uses a single selection for all criteria.



Criteria Search Results



- This view displays the summary of the search results by the name of the fixative products.
- Clicking on any of the result options will send the user to the details of the fixative product.



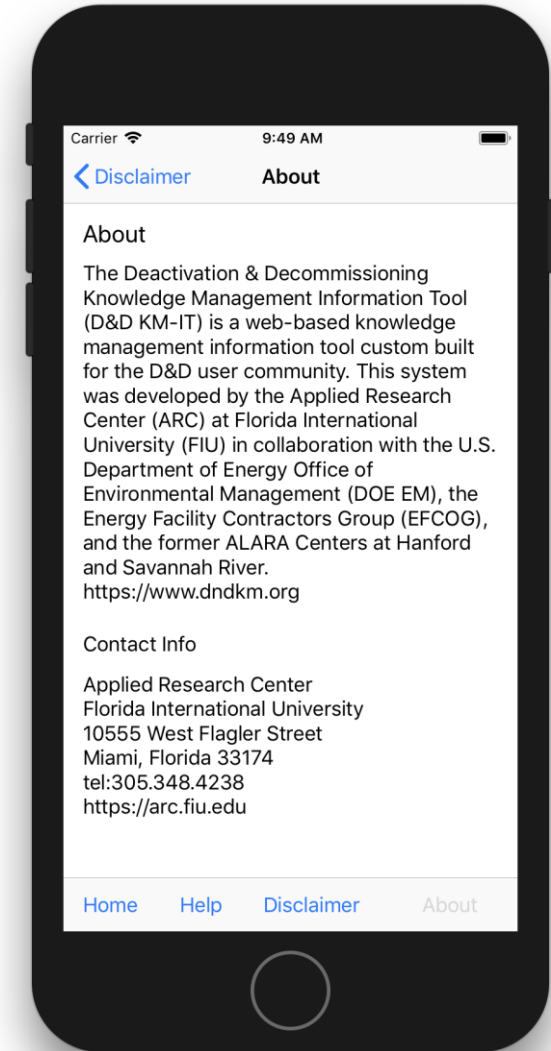
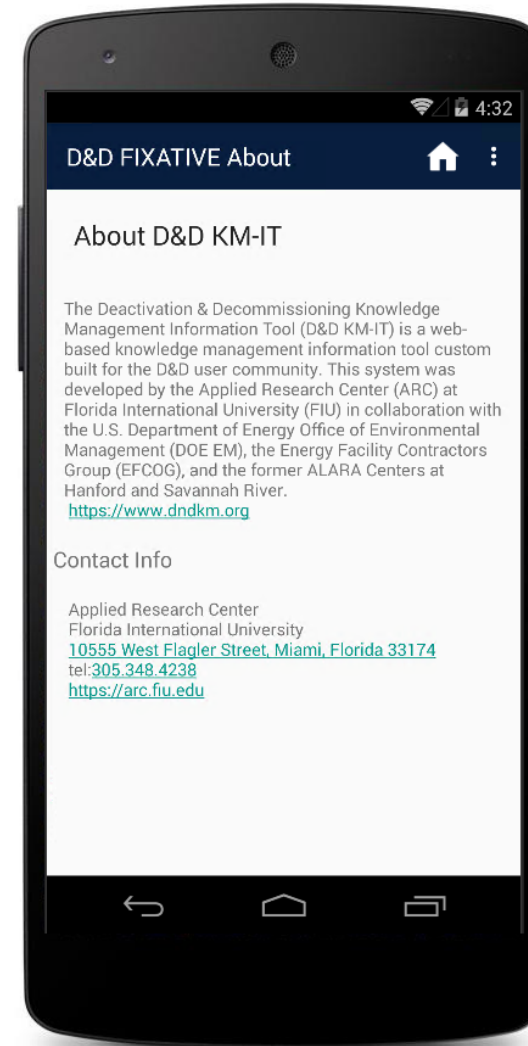


About



This feature provides:

- Description of D&D KM-IT
- Contact information for FIU-ARC

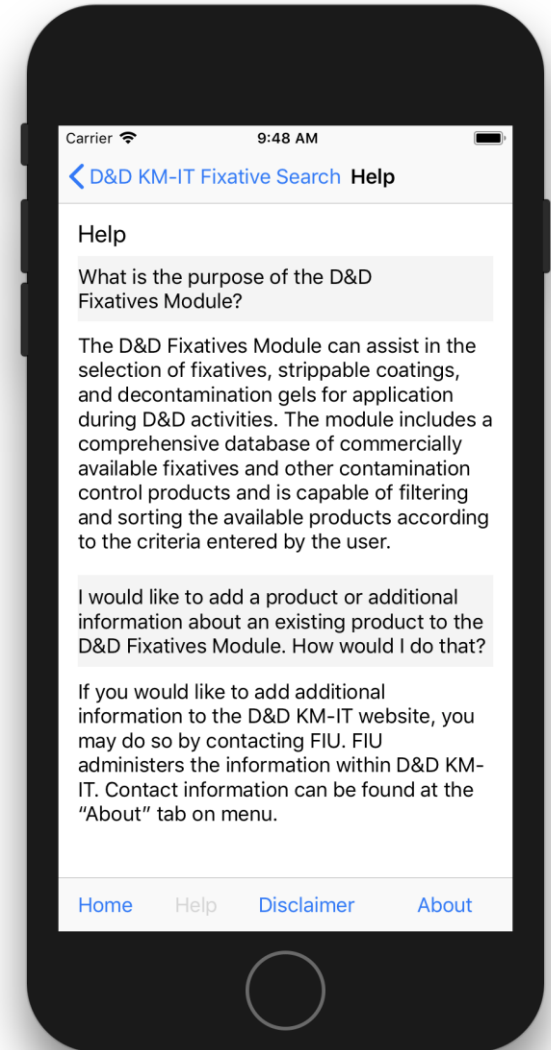
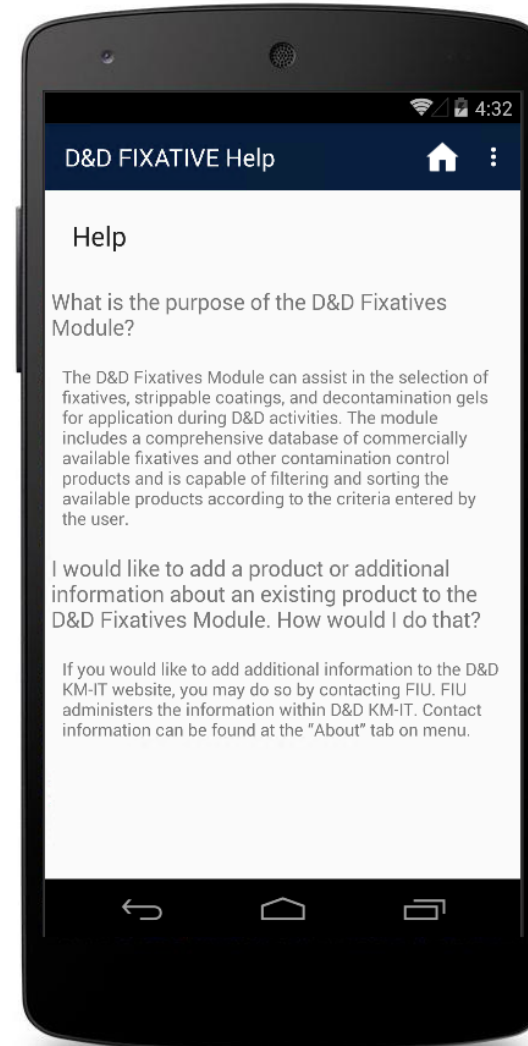




Help



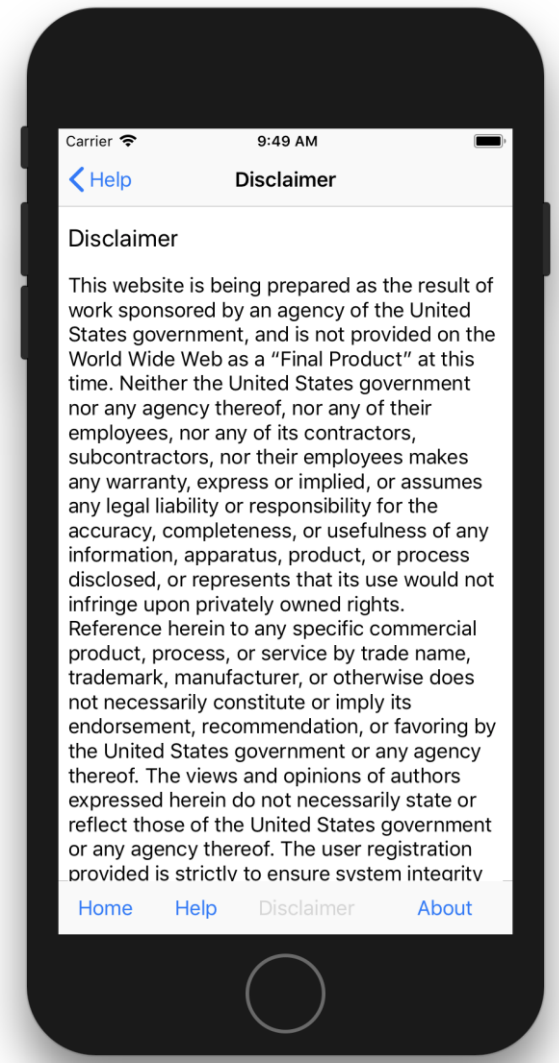
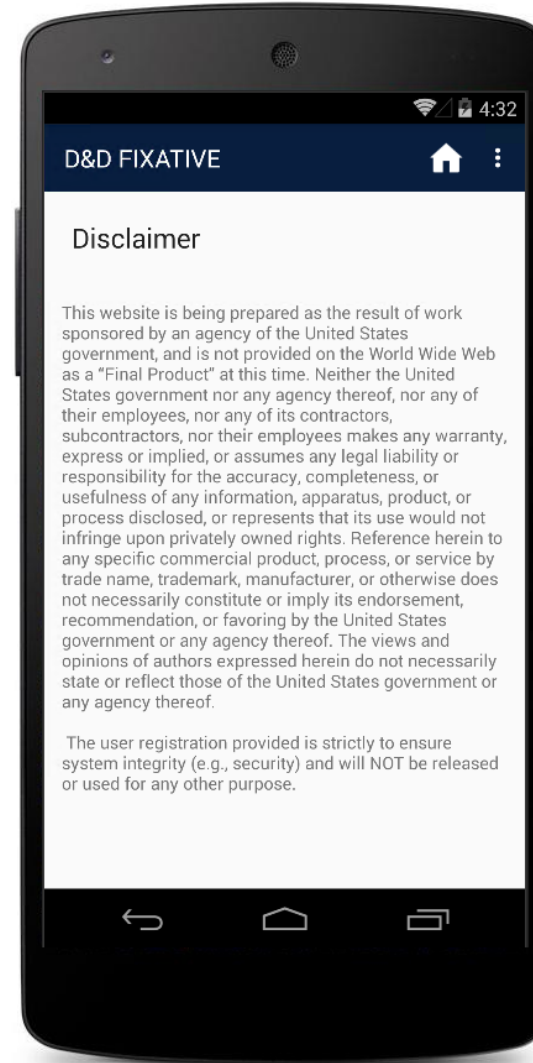
- Displays fixative help questions and answers.



Disclaimer



- The disclaimer view allows the user to read the general disclaimer message displayed on the D&D KM-IT website.



Web Service Support for Mobile App

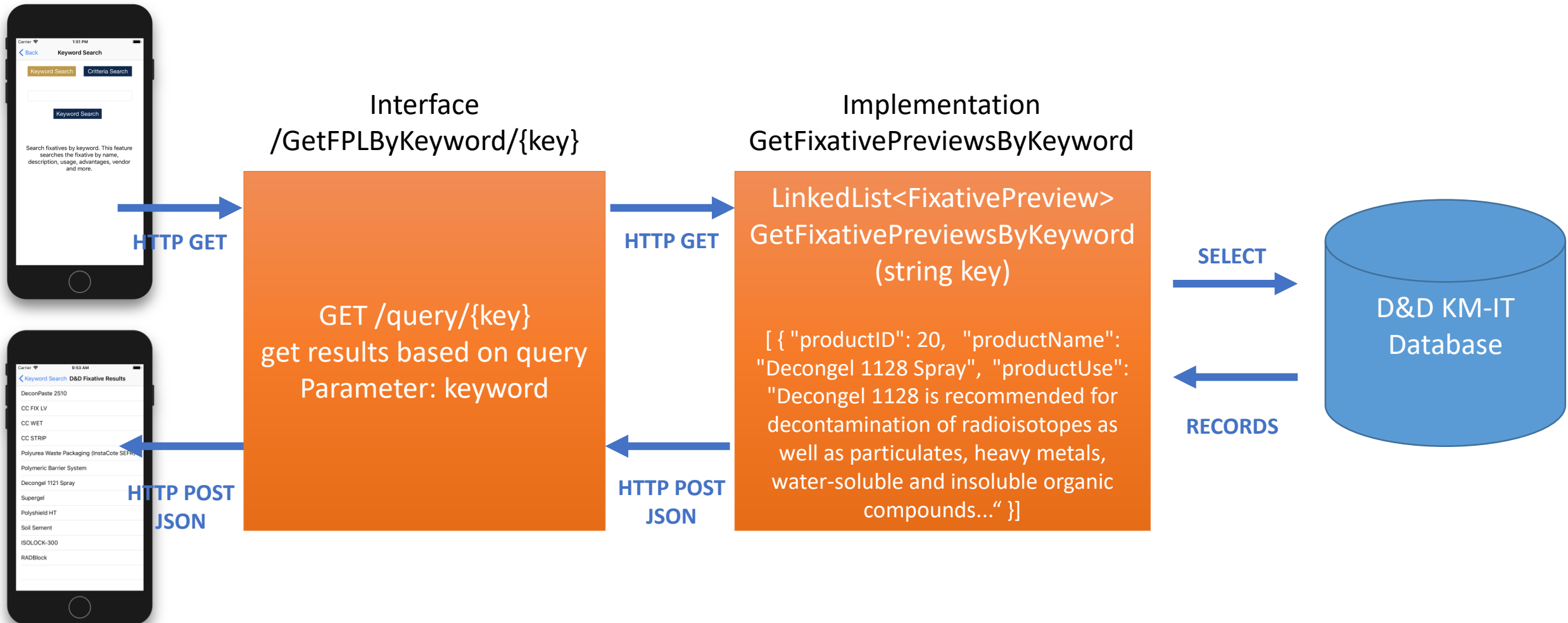
- A Representational State Transfer (REST) Web Service was built to support the iOS mobile app.
- REST is an architectural style that specifies constraints, such as the uniform interface, that is applied to a **web service**. It provides desirable properties, such as performance, scalability, and modifiability.
- REST relies heavily on JSON (JavaScript **Object** Notation), a minimal, readable format for structuring data. It is used primarily to transmit data between a server and web application, as an alternative to XML.
- This REST Web Service will handle all future mobile apps as well.





Web Service Sample Architecture Diagram

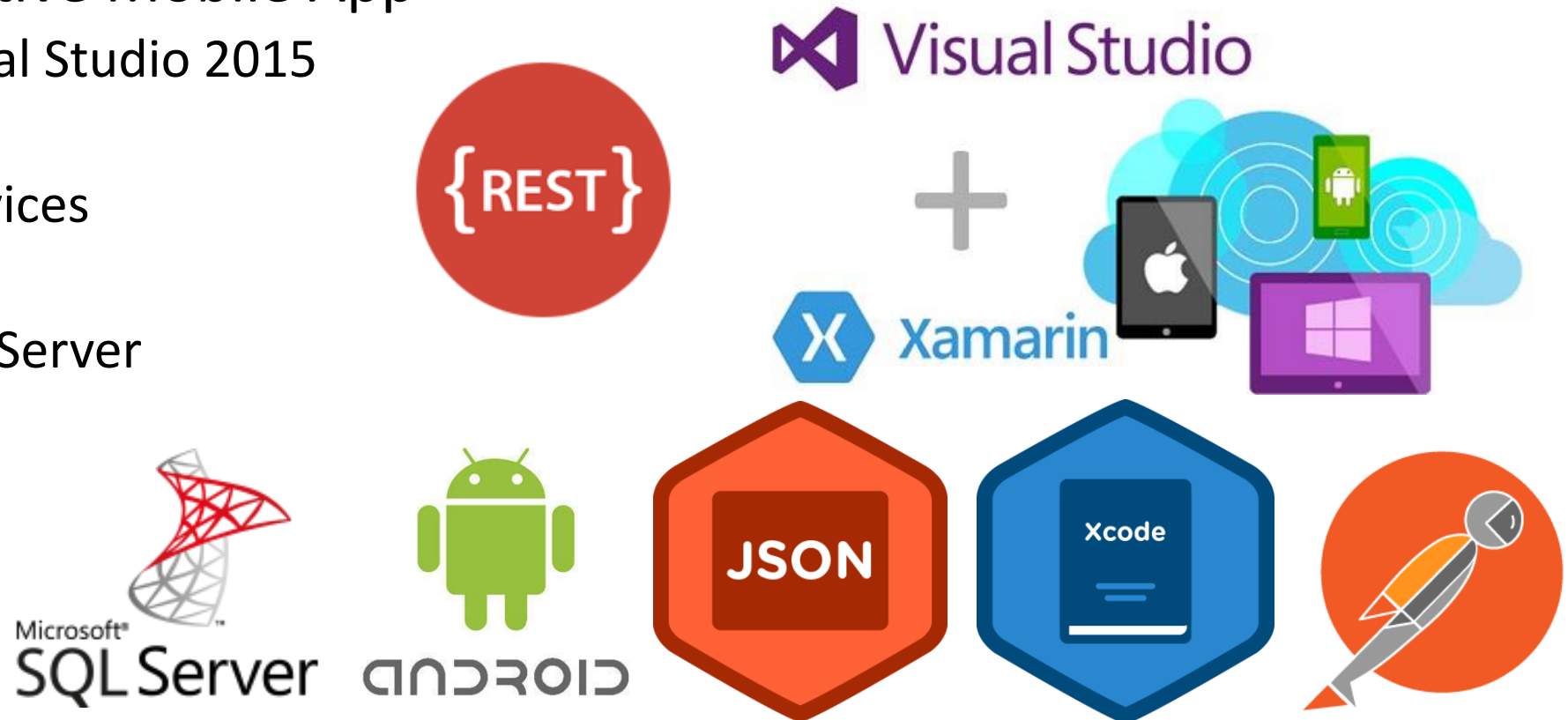
- Below is a sample of the structure work flow for the REST service (keyword search)



Tools and Technologies used for Mobile App Development

The following technologies were used in the development of the D&D KM-IT Fixative iOS Native Mobile App

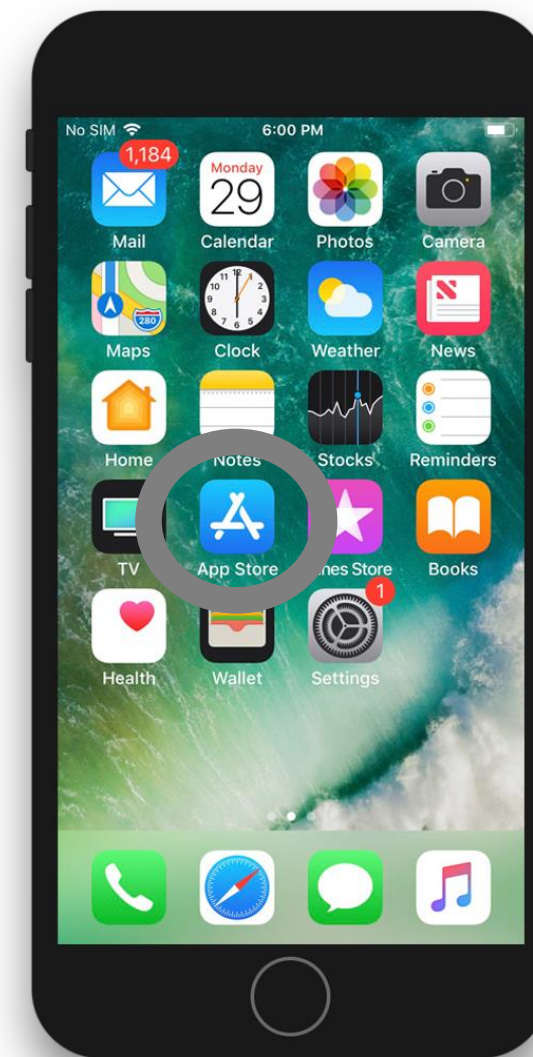
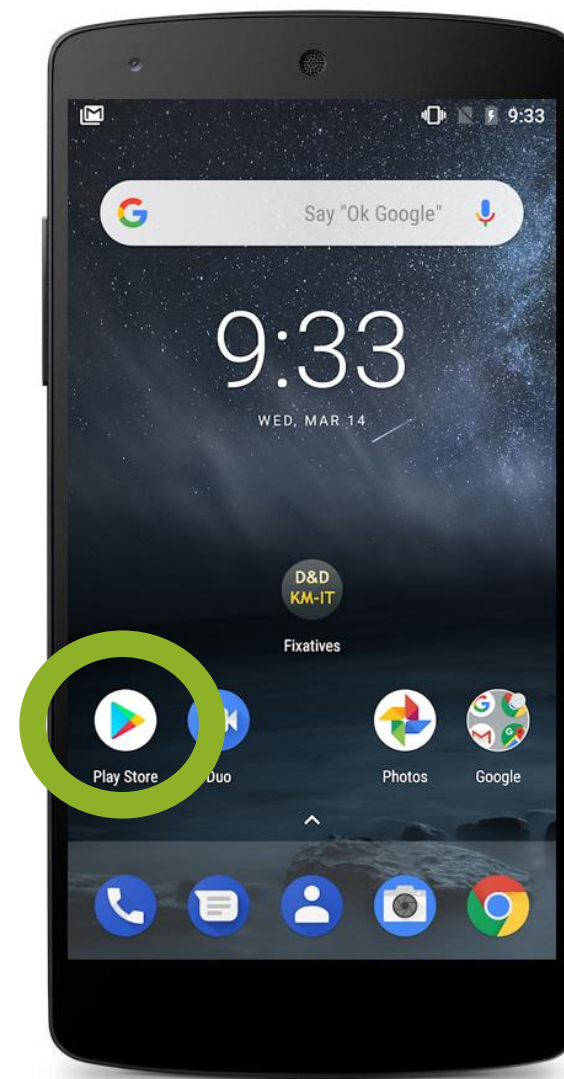
- Microsoft Visual Studio 2015
- Xamarin
- REST Web Services
- JSON
- Microsoft SQL Server
- Android SDK
- XCode
- Postman
- iOS



Fixative App - Installation



- Click on Google Play icon (Android)
- Click on App Store icon (iOS)

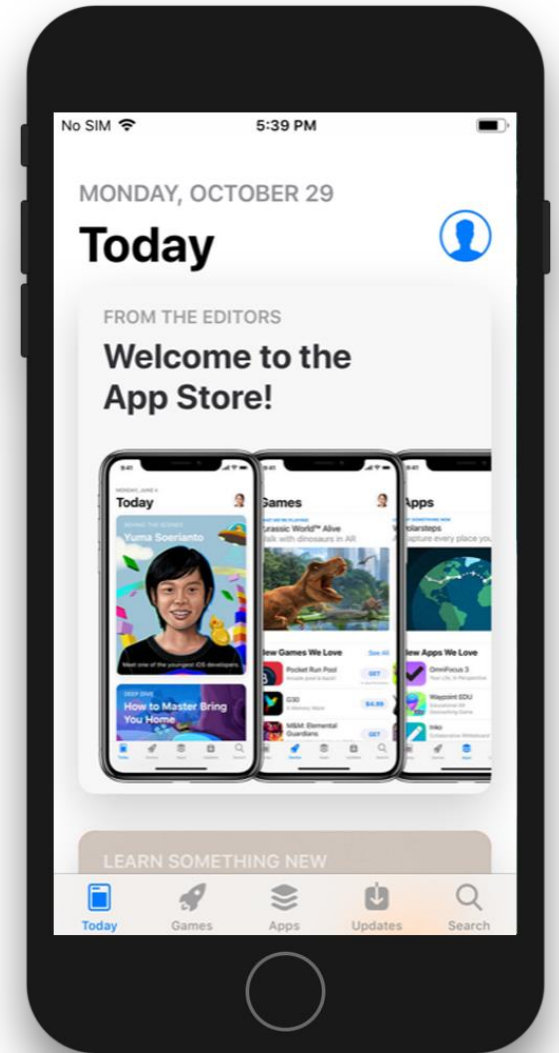
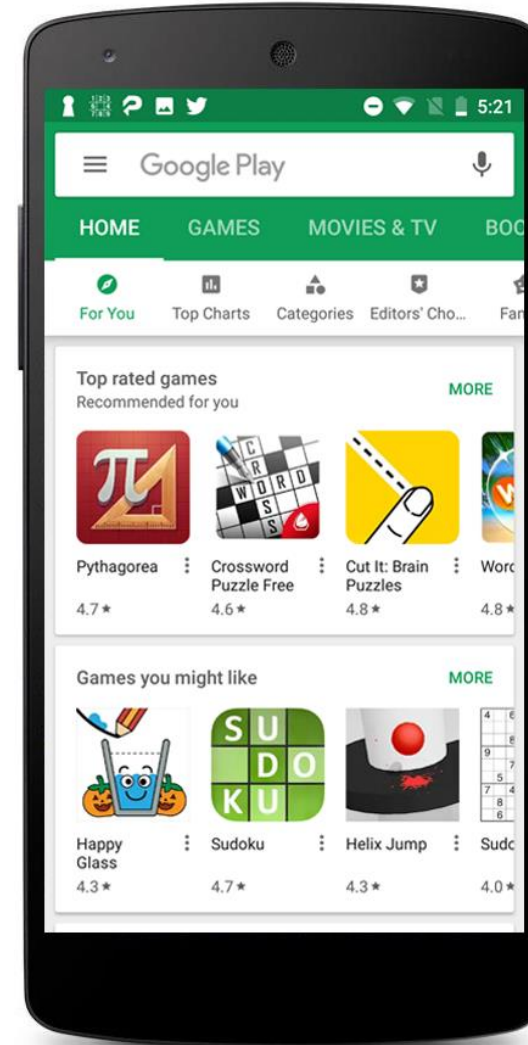




Google Play / App Store



- Home screen



D&D
KM-IT

Google Play / App Store

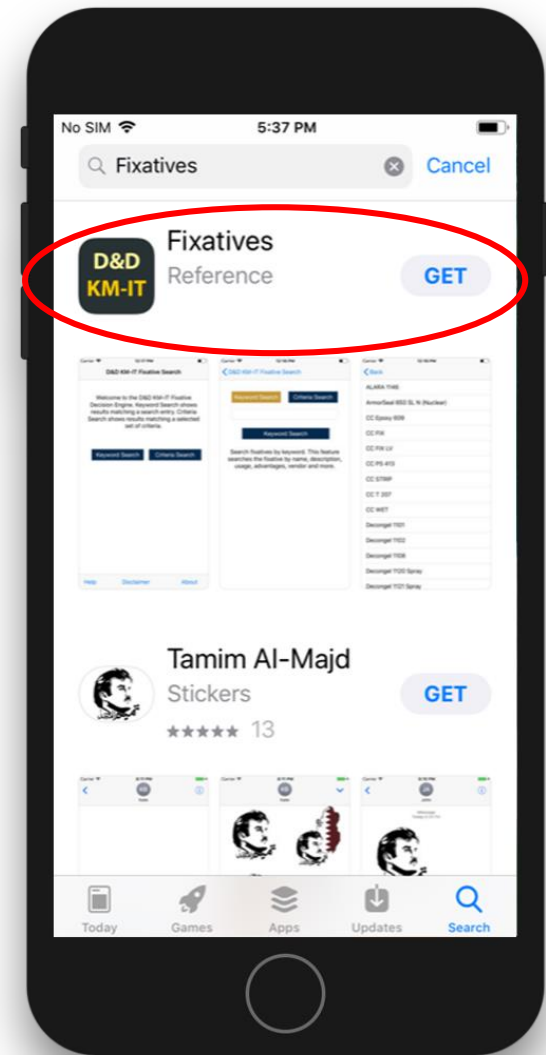
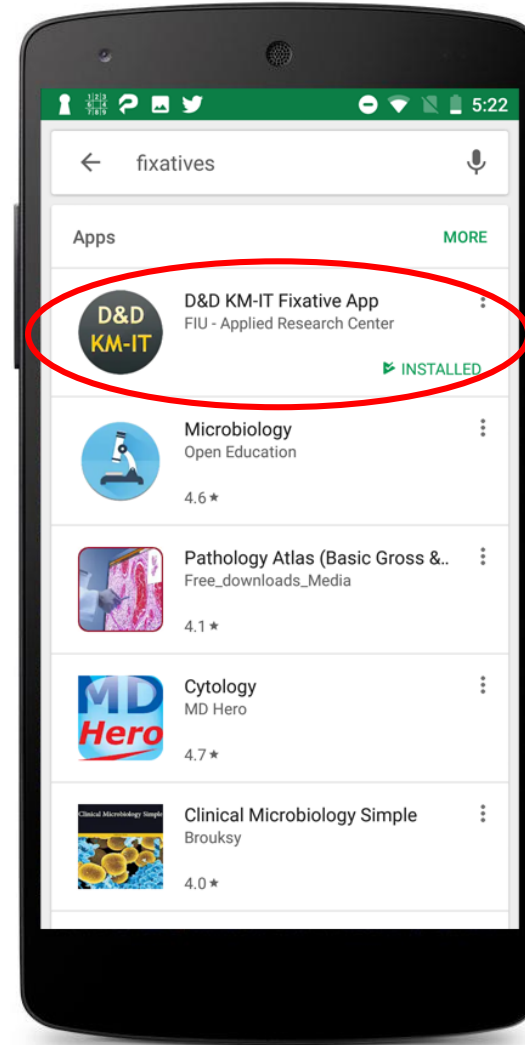


- Search for “fixatives”
- If not results on iOS, use TestFlight (instructions on next slide)



<https://testflight.apple.com/join/LTpfJDBH>

(case sensitive)



D&D
KM-IT

TestFlight - iOS



<https://testflight.apple.com/join/LTpfJDBH> (case sensitive)

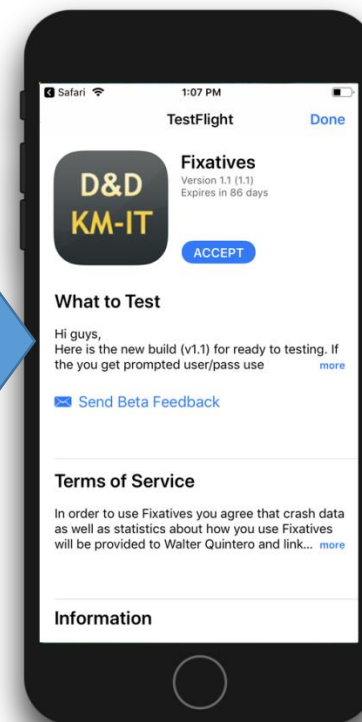
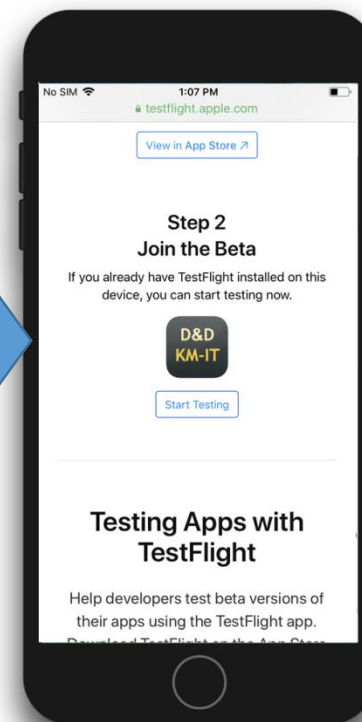
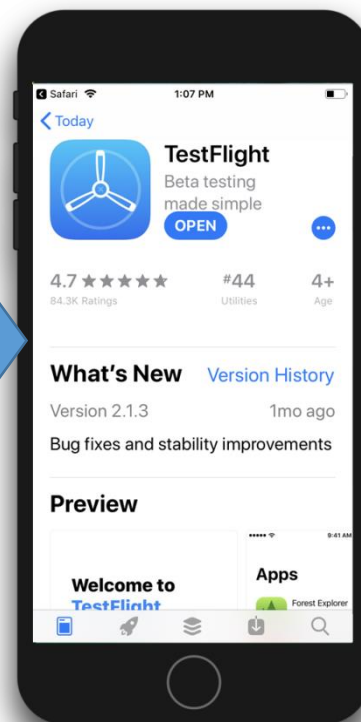
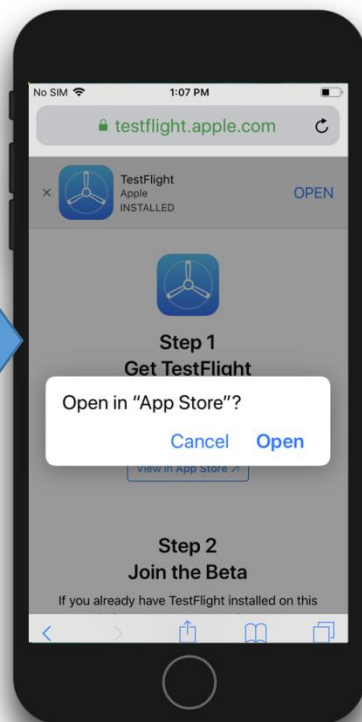
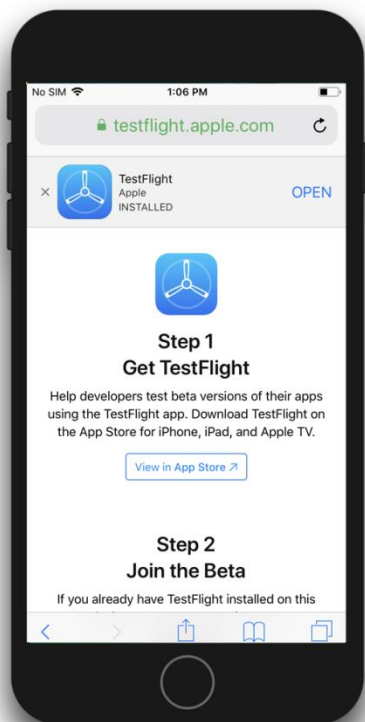
Go to above URL
and click on "View
in App Store"

Click "Open", if
there is a
warning

Install and Open
TestFlight App

Go back to URL
above and click on
"Start Testing"

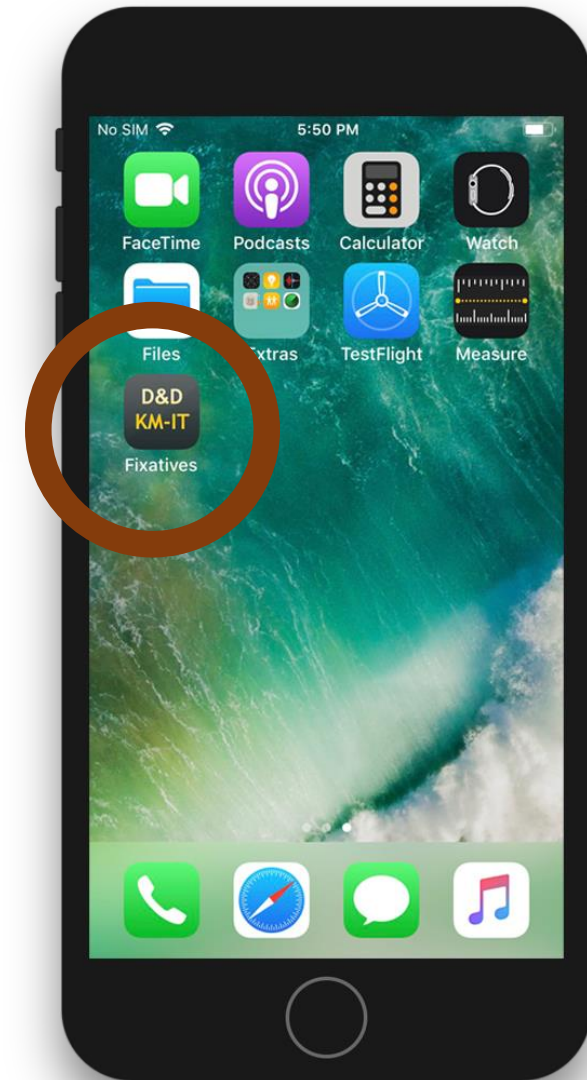
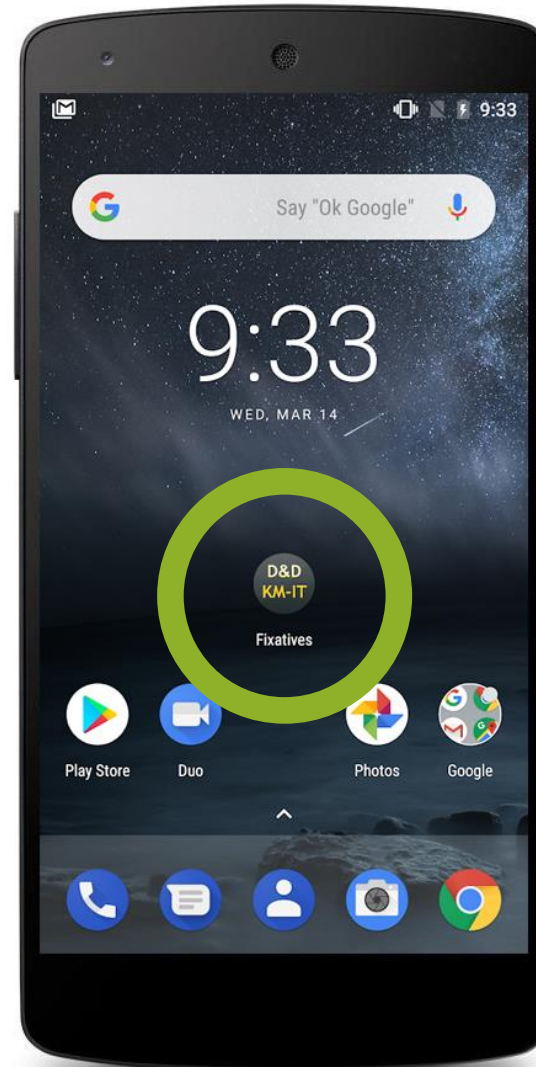
Open Fixative App



Fixative App - Launch



- Click Fixative app icon to launch.



Questions?

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