



# **Red Alert Design Review**

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# Problem Statement Introduction

- **Our sponsor operates within the realm of insurance**
  - World wide insurance industry is multi trillion dollar market
  - Almost anything you can imagine can be covered by insurance
  - US laws impose that some forms of insurance coverage are mandatory, i.e Auto
  
- **State Farm is one of the largest insurance providers in the United States**
  - Millions of clients across the nation with varying policies and needs
  - Tens of thousands of employees (Agents)
  - State Farm strives help more people, in more ways
  - Communicating with clients needs to be efficient and effective



# Problem Statement

- Why were we hired?
  - State Farm agents are able to communicate and notify customers, but only on very broad scale
  - Agents have a lot of clients, sometimes thousands
  - There is not currently a way to send specific notifications to relative subsets of clients
  - No system to visualize and send their client(s) notifications based on their exact geographic location
    - During times of crisis/potential danger(ie. forest fire), agents should be able to notify their clients quickly and easily
  - Send simple and/or helpful notifications not related to dangerous situations



# Solution Overview

- **Alert system for communication between agents and customers**
  - Uses text notifications and email
- **Primary use case is for emergency communication**
  - Can be used for more intuitive general communication via notification
- **Emphasis on a location-based customer search**
  - Draw to select feature to select clients on map
  - Designed to provide useful information at a glance.
- **Searches can be done using other attributes**
  - Insurance policy, city, etc..



# Key Requirements

- Ability to search and select clients based on location
- Ability to re-execute and save previous searches
- Ability to create subsets of clients
- Notifications should have a priority level (emergency, social)
- Ability for agent to choose notification types (email/sms/both)
- Ability to create “automations” for notifications



# Architecture and Implementation Overview

- **Dashboard View** - One webpage, every feature.
- **Agent Accounts** - Individual access for each State Farm agent.
- **Search Clients** - Search for clients easily and accurately.
- **Visually Select Clients** - Search for clients based on their location.
  - Draw-to-Select - Use mouse pointer to select clients.
- **Sending Client Alerts**- Create automations or one-off notifications



# Prototype Review



# Challenges and Resolutions

	Challenges	Resolutions
Address Plotting	<ul style="list-style-type: none"><li>• How to send client address from the backend to the frontend.</li></ul>	<ol style="list-style-type: none"><li>1. Divide address into separate components</li><li>2. Send client information as JSON</li><li>3. Store in html element</li><li>4. Use javascript to grab client JSON</li><li>5. Process data as needed</li></ol>
Sending SMS online	<ul style="list-style-type: none"><li>• Most services are paid</li><li>• Cater to larger organizations</li></ul>	<ul style="list-style-type: none"><li>• Twilio - \$0.0075 per message</li></ul>
Mapping Interface	<ul style="list-style-type: none"><li>• High costs for most services</li></ul>	<ul style="list-style-type: none"><li>• Leaflet - Open Source Javascript Map</li></ul>
Drag to Select	<ul style="list-style-type: none"><li>• How to detect clients within a shape.</li></ul>	<ul style="list-style-type: none"><li>• Use javascript libraries to detect points within polygons.</li><li>• Restrict drawn areas to n sided polygons.</li><li>• Tool: Browserify</li></ul>





# Testing Plan - Unit Test

- **Separate Our Unit Tests by Key Modules.**
  - **Dashboard Module**
    - **Examples of Unit Test:**
      - `show_dashboard`, `send_message`, `Save_automation`
  - **User Accounts Module**
    - **Examples of Unit Test:**
      - `Show_profile_page`, `User_login`
  - **Map Module**
    - **Examples of Unit Test:**
      - `Plot_client_search_results`, `clearMap`, `draw_Polygon`.



# Testing Plan - Integration Test

- **Separate Our Integration Test into Four Modules**
  - Interactive Mapping Functionality - Test displaying and selection of clients
  - Notification System(SMS/Email) - Test Sending of Notification
  - Page Navigation - Test for Correct routing between pages.
  - Automtations - Test for correct automation at set time.



# Testing Plan - Usability Testing

- **Ensure Red Alert is efficient and effective**
  - **Envisioned Usage of State Farm Agents**
    - **Created test with descriptions on how to run the modules.**
  - **Modules Included**
    - **User Login**
    - **Dashboard Usage**
    - **Saved Searches**
    - **Saved SubSets**
    - **Automations**
    - **Profile Page**





# Conclusion

- **Red Alert**
  - Our Web Based Application
  - Goal: Assist With Bringing Clients Closer to their Agent
    - Efficient and Functional Communication
  
- **Future Focus**
  - Improvements and Revisions
  - UGRADS Conference

