Team 6 Project Description

Project Iris

Goal: The goal of this project is develop an application that could assist first responders. The overall design focuses on two main parts. First, providing a link between units with real time information of clients connected to the website. Note, future implantations should utilize a more stringent method of user verification but for initial design no level of user authentication will be required. Second, the app must provide this information in a clear manner that is easy to access and navigate. With limited to zero load time between user request and information display.

Planned Scope: The current planned scope calls for the implementation of a map, chat interface, weather display, and video streaming capability. At this time the plan is to be able to integrate all these functionalities into a single page, then swap the main focus view between the apps. In this manner all aspects can be accessed without needing to navigate back and forth between pages. The main fallback goal is the specified application without the weather functionality. Should it be necessary the chat or video stream may also be dropped in case of unforeseen difficulties. Stretch goals include map and chat integration, where items on the map can be selected and an automatic peer to peer chat started. Overlay of weather onto the main map display. Another feature is automatic calculation of each units estimated time until reaching the destination. Finally, creating a usable mobile mode is also being considered but due to time and resource constraints is unlikely to be fully developed by the end of the project.

Web services: The main services we plan to use are, google maps for the mapping functionality. Google geolocation, to enable mapping units on the page's map. For the chat functionality lightIRC, mibbit, and sendbird are all being considered. Currently, no single chat program has been selected in order to keep the overall project as open as possible as other functions may dictate the required implantation. For weather reporting, Weather underground's API will be utilized, this selection was due to the amount of available documentation for this specific API. DJIs developer SDK is going to be used to provide the video feed. DJI's SDK was selected due to team member familiarity with the application.

Background: A user is responding to a wild fire, and logs into the web page. On the page the map has the current destination for the call pinned, with a line mapping the quickest route there. Then as additional units go enroute to the call their location is shown in real time on the map. Additionally, they are connected to the page wide chat, which has dispatch information and communication among units. Thereby, reducing radio communication as new units go enroute they don't need to re request past information. Once approaching or on scene the units can quickly check the weather and wind reports to determine fire spread. Then if available the unit can launch a drone and live cast the video to all other incoming units. Finally, by looking at the current units in route and their location the need for additional resources can be determined.

As a post note, this application would be a vital addition for almost any emergency situation. All scenarios would benefit from knowledge of current unit locations and chat communication among units. Additionally, large scale incident would benefit from drone or camera video feed as dispatch and supervisory units not on scene could get a better picture of what was happening. Finally, scenarios such as car fires and hazardous waste spills require a weather report to understand wind direction and allow for increased personal safety.

Development challenges: The most significant challenges I foresee is our teams' limited knowledge of html. Out of our team members only one has had prior exposure to developing in HTML. An additional hurdle is losing a team member, starting out this project our team had four members but one dropped the course part way through phase 1 of the project. Another possible challenge is obtaining usage of all necessary APIs. As many only allow for free development but then charge to use the API in a consumer application, it is important we ensure our request stay within the non-commercial license.

Organization: Our current team plan is to have our three members work on integrating different parts of the application. In this manner, the overall integration can be done in parallel as possible and the final joined and refined product produced as a team effort. The current plan for duties are as follows, Travis – Map integration, and chat, Nabil – Video stream and head of HTML layout, Austin – Weather and chat, plus any documentation required for the project. For the first prototype a basic layout design is being developed. Along with a block functioning HTML page and visual aids. This is because our team decided the most important factor for our application is layout and usability. Because the page is planned to be used by first responders intuitiveness of the interface is important as not to distract them from other tasks. In this manner, we wanted our user study to focus on the user's interpretation of the layout, and not be distracted by data in the layout. Additionally, this reduces any chance of errors occurring during the study which could compromise the layout testing.