

# **Iteration 3 Report: CTFastTrak Live Map and Routes**

Software Engineering CTFastTrak API Project  
Bryan Davis, Robert Rotaru, Matthew Shafran, Brian Tardiff

## Functionality

After this iteration, the functionality of the project includes all of the features described our product backlog. The system is able to retrieve and display accurate bus data, including which stop it will arrive at next and at what time it will arrive. The system is able to retrieve and display accurate bus terminal data, including which bus will arrive next at this stop and at what time. The routing feature can now support complex routing situations, including arriving at a destination by transferring buses. In addition to all of the functionality developed in this iteration, the system has all of the features and functionality of the previous iterations, such as showing buses, bus terminals, routes, live updates, etc.

## Implemented User Stories

4b. As a traveler, I want to access the application's 'pick route' feature and select from a list of calculated routes from point A to point B across multiple bus lines that the application has generated so that I can pick my preferred route to facilitate my travel needs.

Pre-condition: BRT System is accessible; Traveler is logged into the system; Routes have been calculated based on traveler's input

Post-condition: Traveler is able to pick a route

7. As a traveler, I want to be able to receive any updated information about the bus arrival times, ensuring that the data shown is as accurate as possible. The notifications will update any important changes (i.e. a delayed bus). This will help be alerted as soon as changes occur and be able to plan a better route.

Pre-condition: System is online and reachable. User is connected to the system. The user is either allowing automatic notifications or requests an update of JSON data.

Post-condition: The user will receive all up to date information from the JSON data, including any changes to route information.

10. As the JSON interface, I want to get live event data relayed from the CTFAstrak API. I want to have this data as soon as it exists so that the user interface can be updated to alert a traveler via notifications of any route conditions or events

Pre-condition: JSON API is available. Interface is able to access JSON data.

Post-condition: BRT System listens and receives live event and delay information. This information is displayed in the user interface.

## User Story Changes

There were no user story changes for this iteration. Everything went smoothly as planned.

## Lessons Learned

We learned that the Google Javascript API's implementation of routing is far more complex and superior to any custom-made routing algorithm by us. The

CTFastrak developers use the Google API's routing on their version of the CTFastrak site's map, and recommend not re-implementing a client-side routing algorithm without significant backend computing power.

### **Remaining User Stories**

There are no remaining user stories to implement. In terms of additional features to add to the backlog, a few potential stretch features could be adding a way for users to choose from multiple routing options, such as least transfers, or least total walking distance, or express buses only.