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Introduction

New GPS-enabled BlackBerrys open up many possibilities to make people more productive. Since the technology is only recently affordable to roll out to a workforce, existing products do not fully take advantage of it.

Novel solutions are needed to integrate mobile and geographical data into project management systems.

Aim

ConvergeTracking aims to make GPS-enabled BlackBerry users more productive. This centers on a web portal to host data exported from BlackBerry applications, process it, allow the user to visually edit it, and generate reports.

It uses **MyMileageGenie** to record GPS locations to:

- create travel expense reports
- show routes taken
- show the current locations of all users in a group

It uses **MyFormsGenie** to:

- create monthly expense reports
- track survey information

This just “scratches the surface” of the possibilities we wish to implement.

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Mileage Tracking

After the user punches in at the start of a trip and punches out at the end of the trip, the mileage tracking page takes this information, displays it visually, allows you to edit it, and creates travel expense reports.

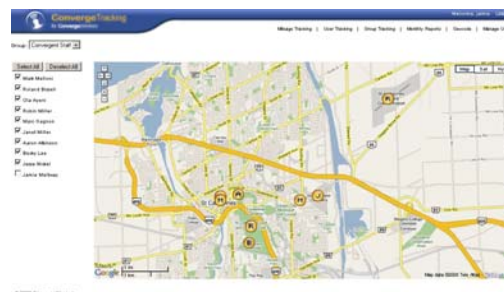


Distance Methods

Distances are calculated using a running total using car speed, taking straight lines between points, and by find the Google Maps expected travel distance. The user can choose which method to use.

Group Tracking

The group tracking page shows the last known location of the people in that group.



User Tracking

A user's location can be recorded every few minutes, the user tracking page takes that information and shows the route taken.

The page also lets the user construct a trip from that data as if they punched in and out, so it can be listed on the mileage tracking page.



Data Reduction

Recording the location of each user every few minutes quickly generates a lot of data that needs to be condensed. If a user is at the same location for some time, that information is reduced to one data point. If the user is moving in a straight line, the data is also reduced.

Geocode

This page allows locations to be geocoded. That is, a circular zone is created such that any time a user is in that zone, his/her location is labelled accordingly. If the location is in multiple zones, the closest smallest zone is used.

