Project Charter

Trimble Cloud

CSCI 4308
University of Colorado Boulder

1. Introduction

Executive Summary

- Our goal is to create a geofencing application which defines virtual boundaries/zones and creates “events” as resources move between zones.

Business Problems/Opportunities

- Construction sites are very complex with many intertwining parts that are hard to keep track of without external management tools.
- Many of the moving parts in a construction site have a stream of location data we can tap into and develop meaningful information to be utilized by management.

2. Objectives and Scope

Business Objectives

- Successfully aids construction project managers in controlling and managing project sites:
    - Updates on where materials are
    - Outlines project physical boundaries

High Level Requirements

- Develop a functional Application that is capable of:
    - Defining a “Project Boundary” to encapsulate the site-specific project.
    - Defining an arbitrary number of “Sub Boundaries” strictly within the context of the “Project Boundary” - these Sub Boundaries (or Zones) will act as the identifiable geofence zones.
    - Defining arbitrary resources (independent of Boundaries) that can be used to represent Construction-related content. For example, you may have vehicles, bulk materials, building materials, workers, etc. that all exist within the context of the Project Boundary and subsequently within the context of a Zone (or Sub Boundary).
    - Generating events as a Resource moves between zones. These events can be as simple as, Resource-A moved to Zone-B. Or you can include logic to allow for state-change of a Resource as it moves between Zones. For example, if Resource-A is a Worker and they move from one Zone into another Zone that represents a break area, the resource state could change from “WORKING” to “ON_BREAK” or something along those lines. Or another example could be a Resource representing a vehicle that enters the Project Boundary in a state of “ENROUTE” and when it crosses into the Delivery Bay Zone, its state may change to “READY_TO_UNLOAD”.

Project Scope

In Scope:

- Boundaries
    - Minimum of two “types”
        - Project Boundary - encapsulates the entire project area.
        - Zones - exists within (can share an edge) the Project Boundary
    - A boundary should be associated with locations on the ground (latitude and longitude) and should always be valid polygons.

    - Consider the z-axis. It is not a requirement, but if you want to include “levels” you certainly could.
- Resources
    - One or more “types” required
        - List of materials specific to each site (construction: tools, trucks, concrete)
        - List of personnel specific to each site (Managers, List of workers)
        - Tracking system (gps, rfid)
        - Zones (miles, coordinates, square feet, acreage)
        - Deadlines
- Events
    - Alerts: The communication mechanism for delivering information about a change in Zones with regard to a Resource. Most likely email based notifications.

Out of Scope:

- Any other business areas beyond those mentioned above
- Modifications to any legacy systems
- Creation of location data necessary for project

3. Project Approach

General Approach

- We will follow an agile methodology through the development process.

Project Risks and Issues

- During this project, as issues arise that put the success of the project at risk, the issues and risks will be documented in the **Project Log** and tracked through resolution.

Project Changes

- Any proposed changes to project scope and requirements must be reviewed and approved by the team in order to modify the project's agreed upon requirements.

Change Description	Approved by	Date of Revision

4. Project Plan

Key Deliverables

1. Project Charter (this document)

2. Project Plan, containing:

- Detailed requirements list
- Revised milestones and target dates if needed
- Revised Changes to project goals

3. Requirements Definition, containing**:**

- Extensive list of requirements intended to be developed along with use cases

4. Solution Design, containing

- An accurate description of the high level design for our system including the interaction between any different parts of the system
- UML and other use case modeling templates to full express high level design

5. Solution Construction and Testing, containing

- Development of project that falls in line with the laid out solution design and fulfills the extensive list of requirements
- Full unit testing

Costs

All necessary cost for the project including but not limited to, hosting, development, or interaction with trimble products is to be covered by the sponsor.

5. Key Stakeholder Roles & Responsibilities

Stakeholder	Role/Responsibility
Benjamin Stanton	**Project Sponsor**
Andrew McQueary	**Engineer**
Ailish Skinner	**Engineer**
Henry Wang	**Engineer**
Liam Hollins	**Engineer**
Jake Hugenburg	**Engineer**
Alan Paradise	**Project Mentor**