

## Project Initialization Document

### Implement a Terminal Equipment Tracking System for X company

#### Problem definition<sup>1</sup>

To monitor the workflow on a busy container terminal, X company would like to have a web-based monitoring system. A pilot project is initiated that aims to create a web application that would display live equipment positions on top of custom made terminal maps.

TBA got an offer to provide this application. Although TBA is giving you this job, it provides senior project managers to supervise your activity during the project life cycle.

The task is to implement a web application, which allows the user to define a working area (GPS coordinates of terminal), configure equipments that may report their positions, and displays maps with last reported equipment positions. Add features which help the user filter equipments find and track specific equipments, etc.

#### Expected delivery

- project plan
- specification document
- design document
- source code
- test document
- final report

#### Detailed description

##### Project initialization (delivery: meeting minutes and project plan)

- Before start organize a *kick-off meeting* (max 1 hour) and discuss the details of the project. All uncertainties concerning the problem should be discuss and at the end should be included in a document (called *meeting minutes*). You will send this document to the TBA project managers; they will review it and will answer to your questions (no more than 1-2 pages).
- During the meeting you should also provide a *project plan* by means of *effort (time)* you will spend for each task. The tasks will include: project management, specification, design, development, test, and report. Furthermore, all these tasks can be expanded in subtasks. After you finish this document please send it to TBA. (no more than 2-3 pages)

##### Specification (delivery: specification document)

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<sup>1</sup> This is a fictitious task aimed to help students to carry out all processes of project life cycle.

- Write a specification (by means of requirement lists) with all tasks that needs to be done for this project. Typical requirements are:

*Client applications should be able to report GPS positions to the server.*

*The server should store equipment location/status data in a SQL database.*

*The application should display OpenStreetMap data.*

*The display should be refreshed whenever an equipment's position/status changes.*

*etc.*

This list will be evaluated by TBA project managers (no more than 2-3 pages).

### **Design (delivery: design document)**

- In order to carry out the design you are encouraged to use *UML diagrams*. Although you can use most of the UML diagrams we primarily suggest the *use case diagram* (consider the requirements during specification), *sequence diagram* and *class diagram*. Write a document with all these diagrams and send it to TBA (no more than 5-6 pages)

### **Development (delivery: source code)**

- Drawable objects should have a type and ID.
- Clients should report their ID, current GPS position and/or status (online/offline)
- Terminal maps will be created using existing OSM tools.
- The application must have a user friendly GUI.
- Keep in mind:
  - o the code should be well structured
  - o the code should be well documented
  - o use *Design Patterns* where it is possible
- The application will be reviewed (code) and evaluated by TBA.

### **Testing (delivery: test document)**

- In order to test your code please consider unit testing.
- Write a test document (use the specification document - requirement lists) that contains all the specific tasks that you need to test before deploying your product.

This list will be evaluated by TBA project managers (no more than 2-3 pages).

### **Final report**

- Review initial project plan
- User manual (no more than 2-3 pages).

### **Miscellaneous**

Feel free to request support from TBA staff in any development phase.

All deliveries will be evaluated by project managers from TBA.