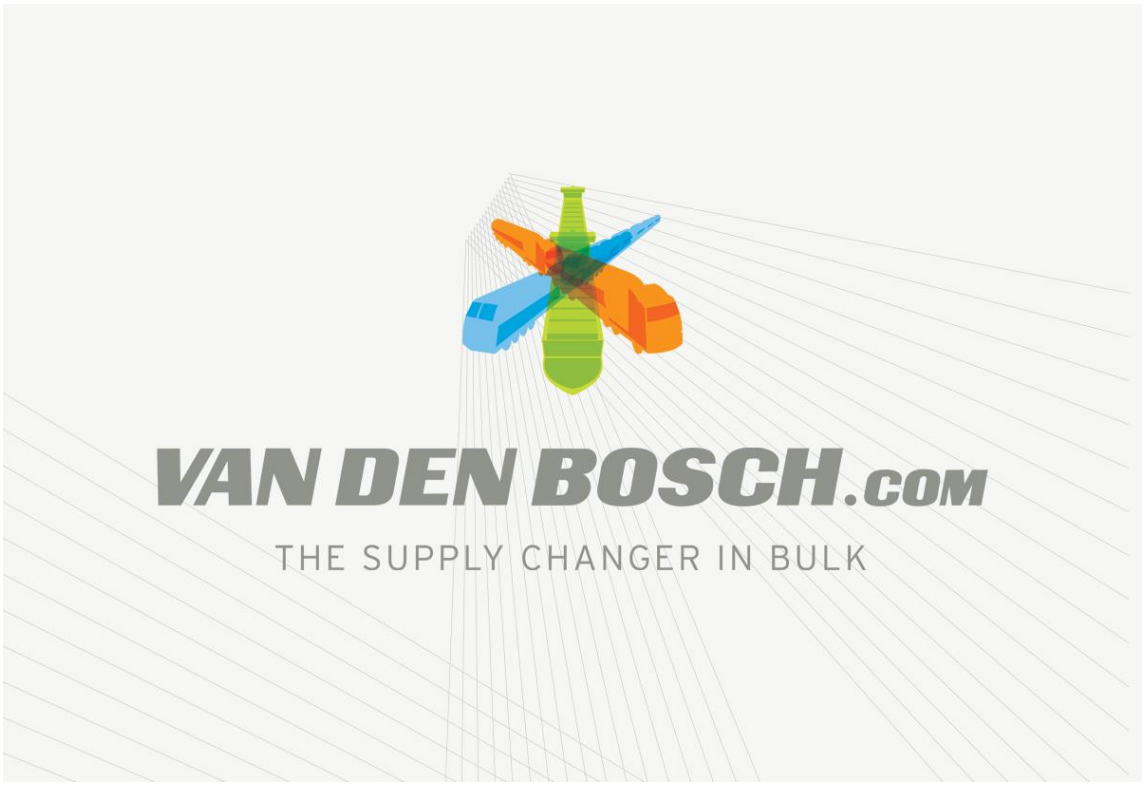
FEBRUARY 8, 2023



REQUIREMENTS DOCUMENT

PROJECT DOCUMENT

ROBIN VAN HOOF
VAN DEN BOSCH
Hoogven 10 Erp, 5469 EM

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Version

Version	Date	Author(s)	Changes	Status
1.0	07-02-2023	Robin van Hoof	- Functional Requirements - Non-functional Requirements	In progress
|	08-02-2023	Robin van Hoof	- Minimum Viable Product	Finalized version 1.0
2.0	08-02-2023	Robin van Hoof	- User Stories	Finalized version 2.0
2.1	09-02-2023	Robin van Hoof	- Added FR-09 - Added US-FR-09 - Translated document to English	Finalized version 2.1

Distribution

Version	Date	To	Goal
1.0	08-02-2023	Internshipcoach – Luke van der Doelen	Feedback
2.1	15-02-2023	Internship teacher – Marcus Krielen	Assessment

Functional Requirements

[M] FR-01 A user has to be able to log in with a Van den Bosch account.

[S] FR-02 The system can use geo-fence-data from existing sources and use these in the platform.

[M] FR-03 The system has to be able to automatically generate geo-fences around locations on the users request.

> [S] L-FR-03.1 Automatically generated geo-fences have to accurately surround a location

[M] FR-04 A user has to be able to manually adjust a generated geo-fence to fine-tune it to a locations perimeter.

[M] FR-05 The system has to notify a third party application when a unit arrives or leaves a geo-fenced location.

> [C] L-FR-05 Additional third party applications can be subscribed to receive these notifications

[S] FR-06 The system has to keep a log of arrivals and departures of units from geo-locations.

[M] FR-07 The system has to be able to support a large amount of tracking-units without losing any data

> [M] L-FR-07.1 Based on a full fleet utilization, a minimum of 500 calls per minute have to be reliably supported[1].

[C] FR-08 The system has to be able to handle other data besides GPS-date like temperature of the freight-unit.

[M] FR-09 The system has to be able to accurately determine whether a given GPS point is within any geo-fenced area.

Non-functional Requirements

[M] NFR-01 All front-end interfaces will be written in sensible English.

[M] NFR-02 All front-end web interfaces will be tested to work fluently on Edge[2].

[S] NFR-03 All back-end logic code will be unit-tested to ensure functionality

[1] This number is based on full fleet utilization at 5.000 tracking-units each sending GPS-data once every 10 minutes

[2] Edge is chosen due to being the primary browser used by all internal users

Minimum Viable Product

The Minimum Viable Product (MVP) will consist of all requirements labeled with a “Must” priority. In short this will be the following product:

The MVP will be a two-part system consisting of a front- and back-end that uses mock GPS-data for GPS-tracking-units to notify a third party application of shipping units arriving at or departing from geo-fenced locations. Users have to sign in using their Van den Bosch account and can do two primary things on the webpage, mainly generate and fine tune geo-fences around locations and review a log of arrivals and departures of units at geolocations.

User Stories

[US-FR-01] As a user I want to be able to log in with my Van den Bosch account using Single Sign-On

[US-FR-02] As a user I want to have already existing geo-fences available so I don't have to set up each geolocation manually.

[US-FR-03] As a user I want to be able to automatically generate geo-fences around transport-locations. I want these geo-fences to be as close to the perimeter of the location as possible.

[US-FR-04] As a user I want to be able to manually fine tune geo-fences to compensate for possible inaccuracies

[US-FR-05.1] As a user I want to get notification on a third-party application when a shipping-unit arrives at or leaves a geolocation.

[US-FR-05.1] As a user I want to be able to subscribe more third-party application to receive notifications on arrivals or departures.

[US-FR-06.1] As a user I want to be able to see a log of where a shipping-unit has been in the past, with GPS information, timestamps and other possibly relevant data.

[US-FR-06.2] As a user I want to be able to see a log of when shipping-units arrived at or departed from a certain geolocation, with timestamps and other possibly relevant data.

[US-FR-07] As a user I want to be ensured that the system has enough capacity to service all my shipping-units without a loss of data. I want my entire fleet of 5.000 units to be covered at maximum utilization leading to a minimum capacity of 500 calls per minute.

[US-FR-08.1] As a user I want the system to be able to process and show other possibly relevant data about my shipping-units.

[US-FR-08.2] As a user I want to be able to easily add new data-field of relevant information the tracking-units can provide together with GPS-transmissions.

[US-FR-09] As a user I want the system to be able to accurately determine whether a GPS point is inside any geolocations.

[US-NFR-01] As a user I want to be able to easily understand the application using proper English.

[US-NFR-02] As a user I want to be assured of functionality of the platform in the company-wide standardized Edge browser.