# **Product Planning**

Michiel van den Berg 4391039 michielvandenb Stefan Breetveld 4374657 sbreetveld Timo van Leest 4423798 timovanleest Daan van den Werf 4369556 djvanderwerf Job Zoon 4393899 jzoon

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## 1 Introduction

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#### 2 Product

#### 2.1 High-level product backlog

In this section, the features are described in more detail.

#### 2.1.1 Must have's

The following features are critical to the deliverable, if these features are not included, the project deliverable should be considered as failure.

- The agent must make decisions based on his goals.
- The agent is able to build stuff.
- The agent is able to destroy stuff.
- The agent is able to buy land.
- The agent must negotiate with other agents about the things the agent needs.
- The agent goals are to build new faculties, renovate old faculties, keep a healthy financial state and have enough parking space and trees on the campus.

#### 2.1.2 Should have's

The following features can be as much important as the must haves but are not necessary for the deliverable.

- An agent should be able to transfer money to another stakeholder.
- The user should be able to easily start a simulation.
- The user should be able to understand why an agent makes certain decisions if the user know the goals of the agent.
- The user should be able to understand what the goals of the TU delft are.
- The agent will not get stuck when a request is denied and will make a new request or start another plan to achieve my goals.
- The agent will drop all his goals when he is stuck and try to work on something else.
- The agent should not go bankrupt.

#### 2.1.3 Could have's

The following features are desirable but not necessary, and could improve user experience or customer satisfaction.

- Build enough parking space for each faculty.
- Build enough green and water at the campus area.

#### 2.2 Roadmap

The planning for the project is shown in this table.

#### Design phase

In this phase we will mostly be playing the Tygron game and discussing with other groups in order to construct a game which is interesting enough for the agents to function in.

#### Sprint 1

- · Practice with the Tygron engine
- Think about possible roles for agents
- Discuss roles with the other groups
- Visit Tygron

#### Sprint 2

- · Make project vision and planning
- · Select an area for the game
- Edit the area to make it fit for the project
- · Distribute the roles among the groups

#### **Sprint 3**

- Prepare the demo for the game together with the other groups
- · Start implementing basic functionalities for role
- · Test the added functionalities
- · Write tests for the connector changes
- If needed, make changes and additions to the connector

#### **Sprint 4**

• Add or change functionalities for the agent

- · Test the added functionalities
- If needed, make changes and additions to the connector
- Write tests for the connector changes

#### **Sprint 5**

- · Prepare the demo for the agent
- Add or change functionalities for the agent
- Test the added functionalities
- · If needed, make changes and/or additions to the connector
- Write tests for the connector changes

#### **Sprint 6**

- Add or change functionalities for the agent
- · Test the added functionalities
- If needed, make changes and additions to the connector
- · Write tests for the connector changes

#### Sprint 7

- · Prepare the demo for the agent
- · Add or change functionalities for the agent
- · Test the added functionalities
- If needed, make changes and additions to the connector
- · Write tests for the connector changes

#### **Sprint 8**

- · Add or change functionalities for the agent
- · Test the added functionalities

- If needed, make changes and additions to the connector
- Write tests for the connector changes

### Sprint 9

- Make final changes to the project
- Make final changes to the agent
- Prepare the final demo and assessment

### 3 Product Backlog

#### 3.1 User stories of features

As a user

When I start the environment

I want to be able to easily start a simulation.

As a user

When running a simulation

I see an agent trying to achieve its goals and eventually come as close to its goals as possible in the environment.

As a user

When running a simulation

I can understand why an agent would make a certain decision if I know the goals of this agent.

As a user

When running a simulation

It becomes clear to me what the TU Delft wants to happen to the TU-wijk and how the TU Delft makes this happen.

As an agent

When in a simulation

I am able to make decisions based on my goals and based on the possible outcomes of this decision.

As an agent

When in a simulation

I am able to buy ground if I think this is benificial for me.

As an agent

When in a simulation

I am able to destroy stuff if I think this is benificial for me.

As an agent

When in a simulation

I am able to give other agents money if I think this is benificial for me.

As an agent

When in a simulation

I am able to build stuff if I think this is benificial for me.

As an agent

When in a simulation

I am able to send requests to other agents to negotiate about things I need.

As an agent

When in a simulation

My goals are to build new faculties, renovate old faculties, keep a healthy financial state and have enough parking space and trees on the campus.

As an agent

When in a simulation

I will not get stuck when a request is denied and I will make a new request or start another plan to achieve my goals.

As an agent

When I get stuck in a simulation

I will drop all my goals at that moment and try to work on something else

#### 3.2 User stories of defects

As a developer

When I find a defect in goal or in the connector I will try to fix it myself or ask someone to fix this.

As a developer

When a defect can't be fixed

I will work around it in goal to get the functionality needed.

- 3.3 User stories of technical improvements
- 3.4 User stories of know-how acquisition
- 3.5 Initial release plan

# 4 Glosary