

# Product Planning

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# **1 Product**

## **1.1 High-level product backlog**

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

### **1.1.1 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.

### **1.1.2 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.

### 1.1.3 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.

## 1.2 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

## 2 Product Backlog

### 2.1 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 beneficial for me.

As an agent  
When in a simulation  
I am able to destroy stuff if I think this is beneficial for me.

As an agent  
When in a simulation  
I am able to give other agents money if I think this is beneficial for me.

As an agent  
When in a simulation  
I am able to build stuff if I think this is beneficial 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

## **2.2 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.

## **2.3 User stories of technical improvements**

As a developer  
When i make a technical improvent  
It will not break something else.

As a developer  
When i make a technical improvement  
It will not reduce performance.

## **2.4 User stories of know-how acquisition**

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## **2.5 Initial release plan**

### **Stage #1**

- Make a very simple agent.
- ability to build

### **Stage #2**

- ability to send messages
- ability to receive messages

### **Stage #3**

- ability to respond to messages
- ability to negotiate

### **3 Definition of done**

This section will describe when we will consider a backlog item, sprint or release as done.

#### **3.1 Backlog items**

Backlog items will be done when the item is finished according to the responsible team member and at least one other member reviewed the work done and merged the code with the branch of the current sprint. In case of documents, at least one other member should have read the document.

#### **3.2 Sprints**

We'll consider a sprint as done when all items in the backlog are finished. When an item for some reason isn't finished it should be discussed with all group members, if necessary the item can move on to the next sprint. At the end of the sprint there should be at least a running version, with properly documented code that passes all tests.

#### **3.3 Releases**

A release is considered done when we handed in all deliverables and have done the demo for that release. At least the must-haves should be implemented and all tests should pass.

## **4 Glossary**