

Product Planning

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1 Introduction

This Product Planning document gives an overview of the current user stories and release plans as of week 3 of the Contextproject. For the purposes of this document, all user stories will be written from the perspective of GOAL agents (i.e. the group making the Virtual Human), who will ultimately use the EIS to control a Tygron entity. The purpose of the EIS is to translate simple actions from GOAL agents to the more complex environment of Tygron and fill in the blanks.

2 Product

2.1 High-level product backlog

The Tygron entity can take on a role in the building project, such as municipality, housing corporation, inhabitants, company etc. These rolls have different privileges and actions they can perform. The GOAL agent should have all the basic actions of a Tygron entity, which include transferring money, buying and selling land, and demolition. Depending on the specific role of the agent in the game, there should be actions available for building parks, roads, housing, leisure buildings, and any other actions available to this role in-game. The agent should also be sent information from the game in the form of percepts. The level of abstraction should be adjusted so the agent is not burdened with unnecessary information or required to know the exact location and dimensions of a building project.

2.2 Roadmap

The Roadmap below shows which user stories will be implemented per week. The full description of the user stories is in the Product Backlog.

Week	User story
Week 4	S2
Week 5	S2 S4
Week 6	S2 S5
Week 7	S2 S7
Week 8	S6
Week 9	S1

User story 2 is of the highest priority, as it encompasses most features of the end product. It will be spread out over multiple weeks, because it requires the most work.

3 Product backlog

The MOSCOW model below illustrates what user stories will be considered for the final product.

Must have	Should have	Could have	Won't have
S2 S4 S7	S5 S6	S1	S3

S3 will most likely not be a feature of the final product, because roads require a very specific placement for them to be functional, which can only be determined by an actual human.

The user stories are described in the sections below.

3.1 User stories of features

1. An agent should be able to transfer money to any other stakeholder, so it can not only further its own interests, but also cooperate with the other stakeholders.
2. An agent should be able to build, demolish, and buy or sell land, by only providing the cost and the amount of floors (if applicable). The EIS will determine the location, the size, and how the building actions are divided over the land so the agent is not burdened with information irrelevant to the decision making process.
3. An agent should be able to build roads if it's within its privileges, so it can perform all actions of its role.

3.2 User stories of defects

This is, in the current situation, not yet applicable to the project.

3.3 User stories of technical improvements

This is, in the current situation, not yet applicable to the project.

3.4 User stories of know-how acquisition

4. An agent should know its role and permissible actions at the start of the game, so it knows which actions it can perform and which interests it should have.
5. An agent should be able to know its budget and the size of the land it has ownership of, so that it can make building decisions which maximize its profit.

6. An agent should be informed whether decisions are approved or not, so it does not base its decisions on false assumptions, e.g. being rejected for buying land and then trying to build on said land.
7. An agent should be informed on actions performed by other stakeholders, so it can accept or reject actions that concern its role or land. Actions that do not directly involve the agent may also be of use in the decision making process.

3.5 Initial release plan

The project plan starts in week 4 and ends in week 9. A first release must be finished in week 6 for the initial input for SIG. A final version must be ready for the final input for SIG in week 9. Giving roughly 3 weeks of work per release.

Release	User stories
Release 1	S4 S5 S2
Release 2	S4 S5 S2 S7 S6 S1

4 Definition of Done

User stories are done when the user's tests for the particular feature succeed. The GOAL agent must be able to receive percepts and perform actions successfully. Sprints are done when the relevant user stories have been implemented to a satisfactory level, i.e. approved of by the project group working in GOAL, or when the finished features work properly. Features that are not finished in the appointed week will be implemented in the week that follows. Releases are done when all relevant user stories have been implemented and pass all tests by the GOAL agent. Releases which do not contain all planned features will be released without those features. Said features will be implemented before the next release date.

Glossary

action Information sent from a GOAL agent to the Tygron Engine. 1–3

agent A GOAL agent that derives its choice of action from beliefs and goals. 1–3

EIS The Environment Interface Standard has been developed to facilitate connecting software agents to environments. 1–3

GOAL GOAL is an agent programming language for programming rational agents. 1, 3

percept Information sent from the Tygron environment to a GOAL agent. 1, 3

stakeholder A player in a project made in the Tygron Engine. 2, 3

Tygron Tygron Engine is online 3D project software for urban planners, architects and engineers. 1, 3