

Snapshot Week 10 of Group COMPLEX 8

Defence Science and Technology Group (DSTG) and Swordfish Computing Project Proposal: Distributed Decision-Making



THE UNIVERSITY
of ADELAIDE

a1734056	Hayden Lee
a1734069	Vinh Nguyen
a1743599	Nathan Van der Hoek
a1744852	Harry Bagley
a1746088	Daniel O'Connor
a1746146	Patrick Capaldo
a1748751	Sarah Damin
a1749935	Sam Davies
a1773841	Hayley Richardson

1. Product Backlog and Task Board

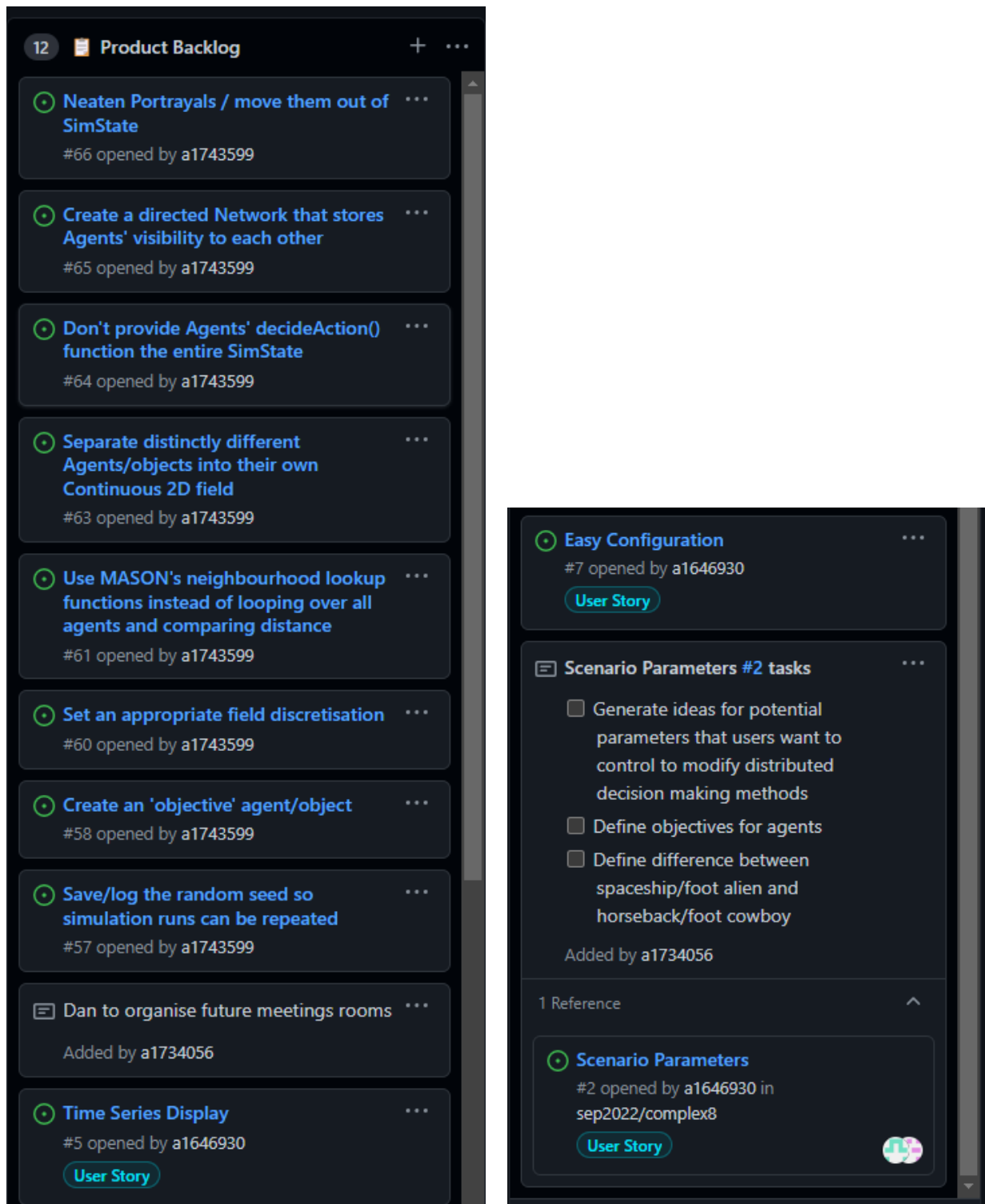


Figure 1: Product Backlog Screenshot

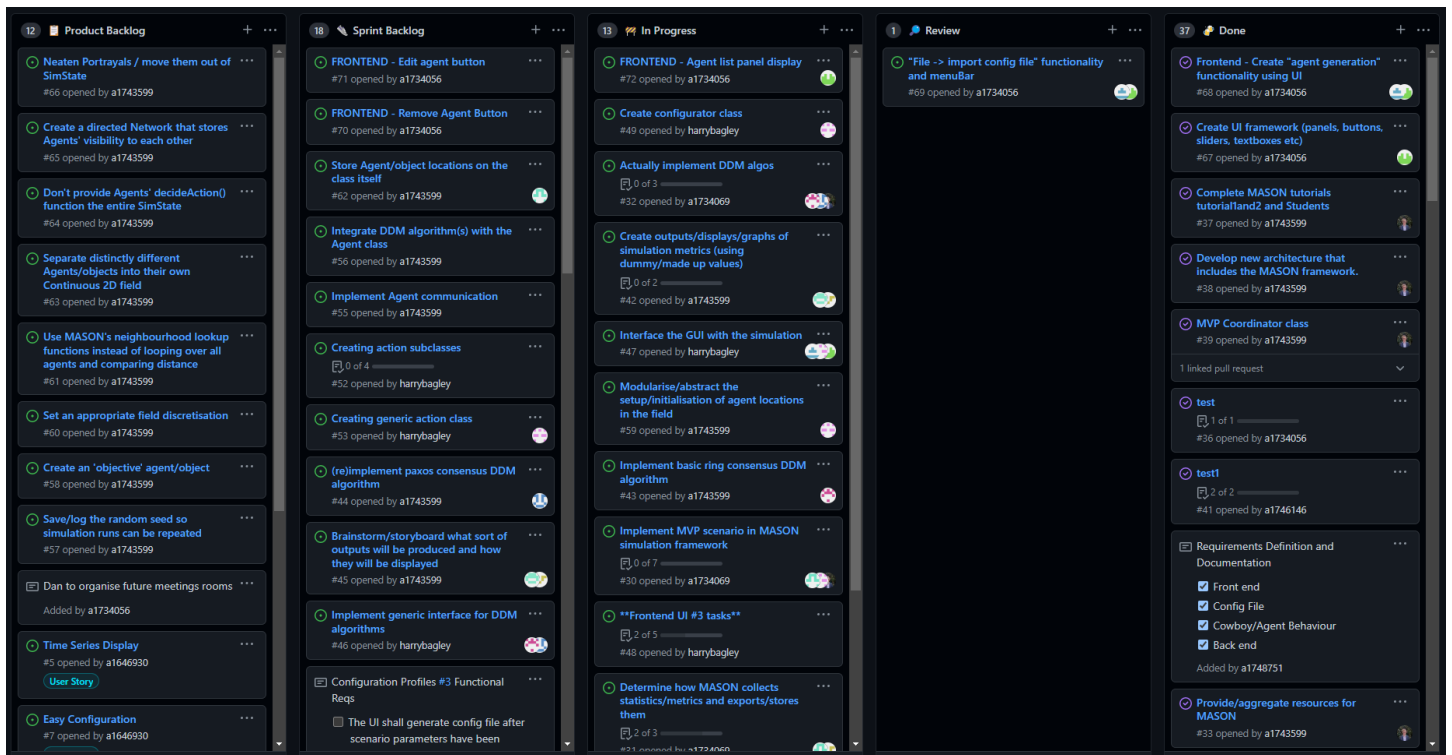


Figure 2: Task Board Screenshot

2. Sprint Backlog and User Stories:

18

Sprint Backlog

FRONTEND - Edit agent button

#71 opened by a1734056

...

FRONTEND - Remove Agent Button

#70 opened by a1734056

...

Store Agent/object locations on the class itself

#62 opened by a1743599

...

Integrate DDM algorithm(s) with the Agent class

#56 opened by a1743599

...

Implement Agent communication

#55 opened by a1743599

...

Creating action subclasses

#52 opened by harrybagley

...

Creating generic action class

#53 opened by harrybagley

...

(re)implement paxos consensus DDM algorithm

#44 opened by a1743599

...

Brainstorm/storyboard what sort of outputs will be produced and how they will be displayed

#45 opened by a1743599

...

Implement generic interface for DDM algorithms

#46 opened by harrybagley

...

Configuration Profiles #3 Functional Reqs

...

☐ The UI shall generate config file after scenario parameters have been selected

☐ The UI generated config file shall be compatible with the backend simulation logic

☐ The UI shall allow the user to import a previously generated config file to load a scenario for adjustment

Added by a1748751

1 Reference

Configuration Profiles

#3 opened by a1646930 in sep2022/complex8

User Story

...

Algorithms and Choices #1 Functional Reqs

...

☒ The UI shall enable the user to select distributed algorithms to test

☐ Cowboys shall exhibit different behaviour dependent on the DDM algorithm employed

☐ Cowboys shall be able to communicate with other cowboys

☐ Cowboys shall detect other agents in their vicinity

☐ Cowboys shall be able to shoot and have ammo (i.e. total number of shots available)

Added by a1748751

1 Reference

Algorithms and Choices

#1 opened by a1646930 in sep2022/complex8

User Story

...

Scenario Parameter #2 Functional Reqs

...

☒ The UI shall enable the user to add agents at specified XY positions

☒ The UI shall enable the user to modify agent parameters

☐ Agents shall have several properties e.g. HP, speed, Line of sight range, shooting range, shooting damage, communication range

☐ Agents shall exhibit different behaviour depending on the agent properties

☐ Agent properties shall be changed through the UI

☐ Agents shall not change behaviour depending on the information they should not know about

Added by a1748751

1 Reference

Scenario Parameters

#2 opened by a1646930 in sep2022/complex8

User Story

...

Scenario Parameters

#2 opened by a1646930

User Story

...

Configuration Profiles

#3 opened by a1646930

User Story

...

Algorithms and Choices

#1 opened by a1646930

User Story

...

Results Export

#6 opened by a1646930

User Story

...

Extensible Algorithm Choices

#4 opened by a1646930

User Story

...

In-progress items:

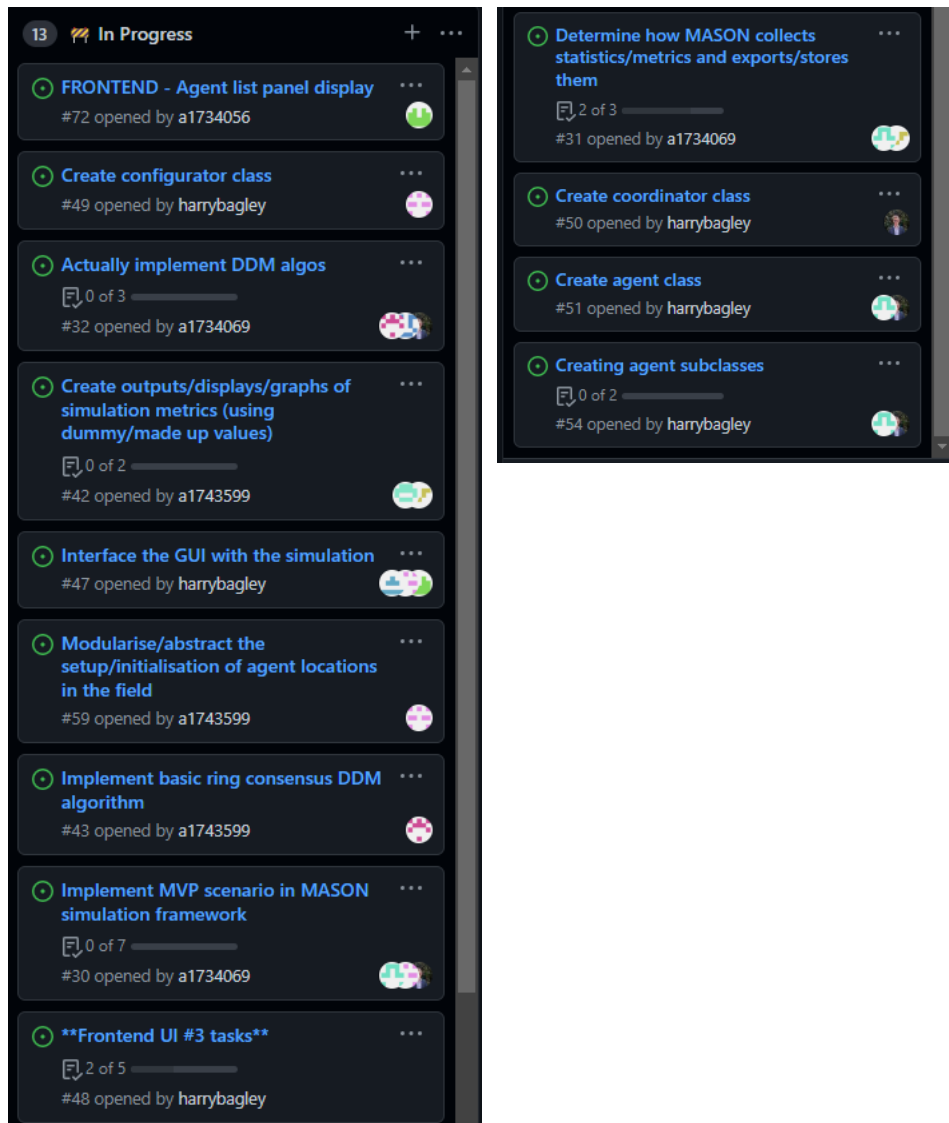


Figure 3: Sprint 4 in-progress items

The current user stories and their descriptions for this sprint are:

1. **Configuration Profiles:** saving configuration settings in some manner such that to re-run an experiment, all the parameters do not need to be manually input again.
2. **Scenario Parameters:** providing the user with control over the experimental parameters before the simulation begins.
3. **Algorithms and Choices:** allowing the user to select a type of distributed decision-making algorithm to experiment with.
4. **Results Export:** moving the logs of the simulation into a results format which are useful to the experimenter in comparing distributed decision-making algorithms.
5. **Extensible Algorithm Choices:** allowing the user to easily add new decision-making algorithms to the pre-defined list provided by "Algorithms and Choices"

There have been no additional user stories added mid-sprint.

3. Definition of Done:

- Code written and commented
- Documentation written and updated
- Code peer-reviewed
- Documentation peer-reviewed
- Code architecture conforms to specified design pattern.
- Tests written and passing
- Non-functional requirements met (UX, performance, availability)
- Acceptance criteria fulfilled

4. Summary of Changes:

Since the last team snapshot, no items have been moved from “In Progress” to “Review” or to “Done”. The last sprint saw extremely effective action planning of sub-teams and collaboration across them in developing code to realise the core functionality of the simulation platform. Unfortunately, not much progress has been made in the latter week of this sprint which is most likely due to the team’s competing commitments in other university subjects and work, and incompatibility of timetables which greatly hinders finding times to meet and discuss work.

The front-end team (Dan and Hayden) were able to integrate their previously separate and incompatible front-end designs which completed a major task within Issue #48. Patrick was able to create an implementation of the Ring algorithm in Java which was verified with Nathan regarding its integration into the backend. This saw significant progress towards completing Issue #43, yet integration was not completed and thus this issue remains in progress. Hayley has begun implementing the PAXOS algorithm but experienced some trouble with doing so in a single-threaded environment versus a multi-threaded environment where she has experience in previous implementations. Sam made progress towards a visual and extensible simulation output display board (for low-level, algorithm-based performance metrics) using Python and dummy-data and Sarah also made significant progress in her simulation-output task which focused on more high-level, scenario-based performance metrics. Nathan and Vinh have revised the use of the term “Agent” for the cowboys and aliens within the simulation and have instead decided to name them “Actors” – a term which better suits their roles. Harry has collaborated extensively with the front-end team in planning for the integration of the front-end with the backend which is a task that is now ready to begin seeing that the front-end has been consolidated and the backend is beginning to understand core parameter requirements from an algorithmic perspective.