

## Snapshot Week 12 of Group COMPLEX 8

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



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*of* ADELAIDE

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# 1. Product Backlog and Task Board

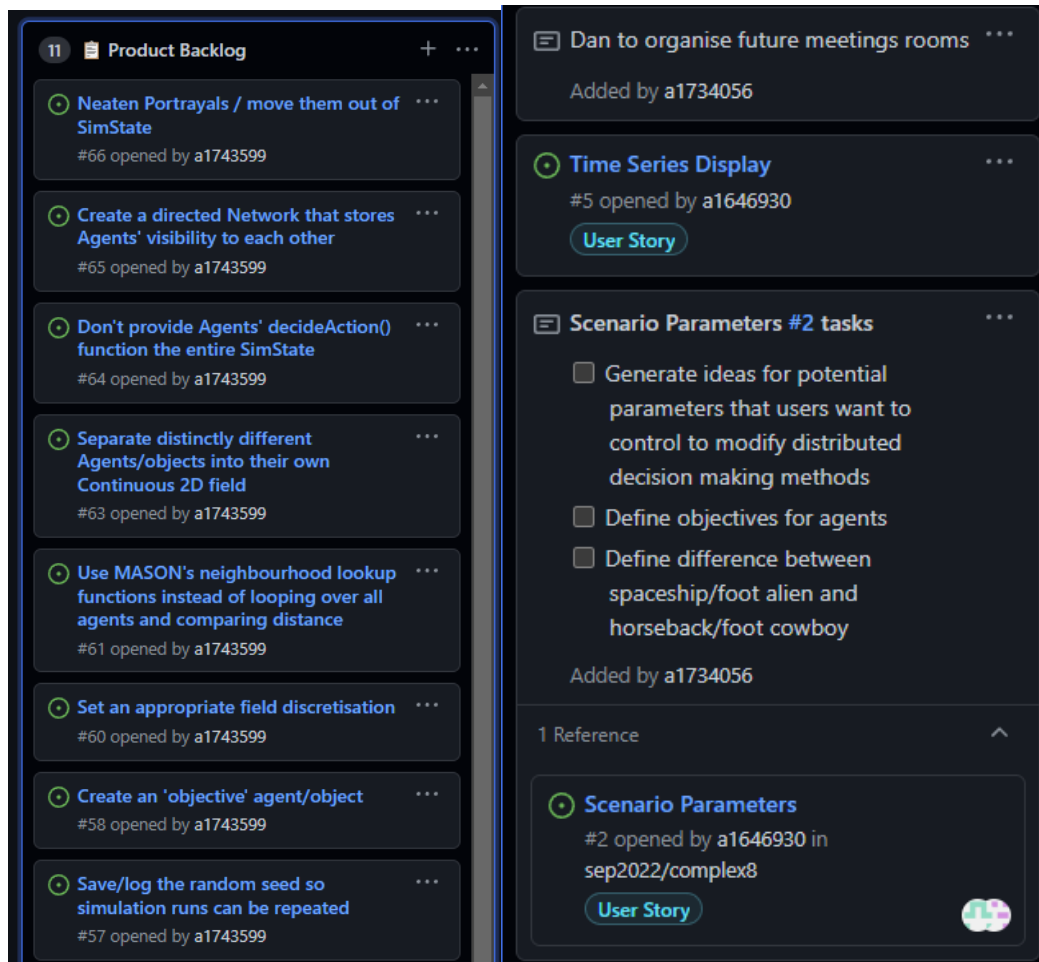


Figure 1: Product Backlog Screenshot

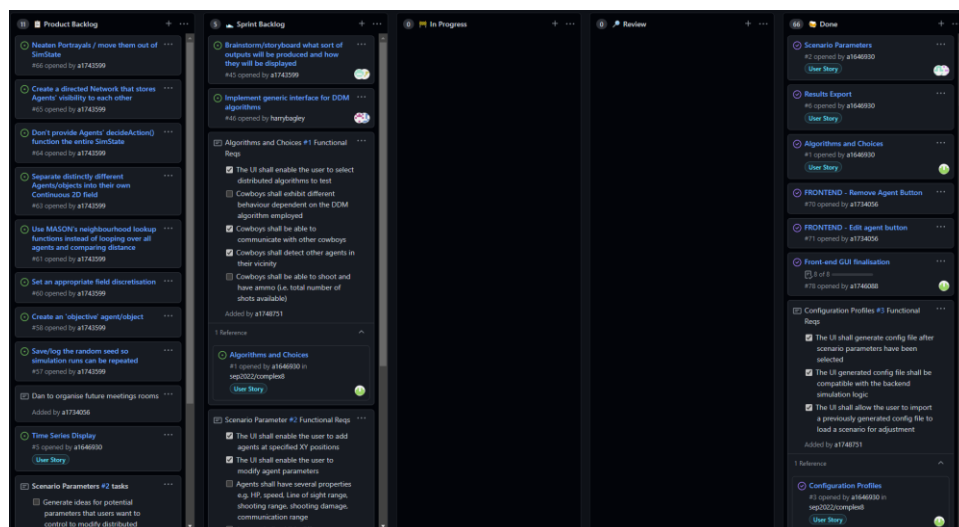


Figure 2: Task Board Screenshot

## 2. Sprint Backlog and User Stories:

The screenshot displays a Jira Sprint Backlog with two columns. The left column contains three items: a user story about brainstorming outputs, a user story about implementing a generic interface, and a functional requirement for algorithms and choices. The right column contains a functional requirement for scenario parameters. Each item includes a list of tasks with checkboxes, a reference section, and a 'User Story' button.

**Sprint Backlog**

- 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
- 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

**Scenario Parameter #2 Functional Reqs**

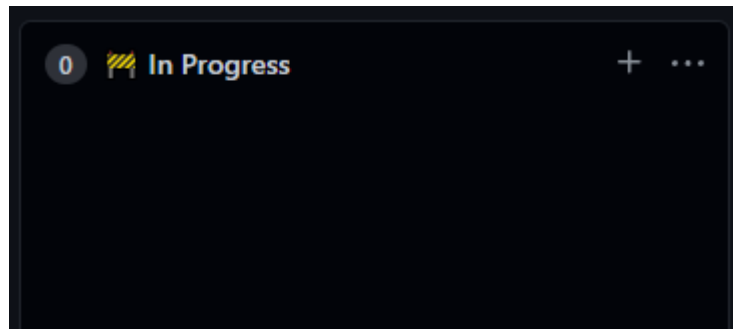
- ☒ The UI shall enable the user to add agents at specified XY positions
- ☒ The UI shall enable the user to modify agent parameters
- ☐ Agents shall have several properties e.g. HP, speed, Line of sight range, shooting range, shooting damage, communication range
- ☐ Agents shall exhibit different behaviour 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

**Scenario Parameters**  
#2 opened by a1646930 in sep2022/complex8  
[User Story](#)

**Extensible Algorithm Choices**  
#4 opened by a1646930  
[User Story](#)

## In-progress items:



*Figure 3: End of Sprint 5 in-progress items*

No new user stories have been included into this sprint so far. Therefore, 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"

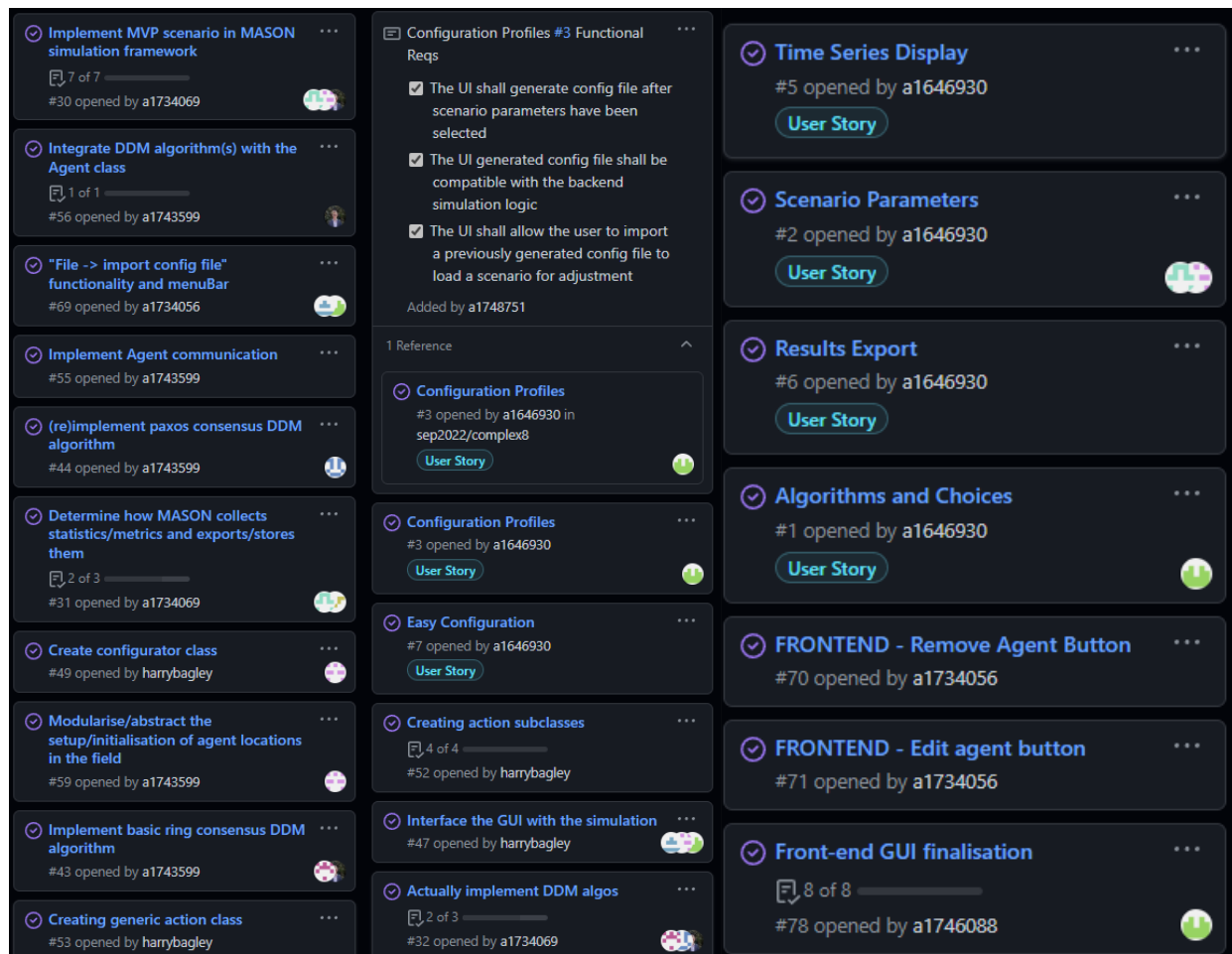
The first four of these user stories have been completed and moved to 'Done' in the task board. The 'Extensible Algorithm Choices' was not achieved as time ran out before the ring algorithm could be generalised and made extendable to new algorithms

### 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, these items on the sprint/product backlog were completed:



Over the last sprint, the team was able to complete a lot of tasks and finally mark most major user stories as ‘Done’. Much of the individual subteams’ work was integrated and merged into the main branch.

The frontend team were able to complete tasks #69, #70, #71, #78, #47 – which were the final touches on the GUI and finally integrating it with the backend (assisted by Harry).

The backend team completed the integration of the ring algorithm and agent communication, completing tasks #53, #43, #55, #56, #30, #32, #52. Hayley implemented the PaxOS algorithm, completing #44, but sadly there was not time to integrate this with the rest of the backend. Harry completed the Configurator class, checking off #49. Vinh ticked off #31, acknowledging he’d actually completed it a while ago. Sam and Sarah developed time history and simulation result outputs, respectively – checking off user stories #5 and #6.

With the frontend and backend combined and the final sprint complete, a 'design freeze' was decided. With the work done in this sprint, user stories #1, #2, #3, #5, #6, #7 were all marked 'Done'. Meaning at the conclusion of the project, only a single user story was not complete - 'Extensible Algorithm Choices', this would be the next priority task and would have been done in tandem with integrating Hayley's PaxOS implementation.