EVOLUTIONARY TASK FORCE

SUMMARY OF WEEK 5 (28 NOV – 4 DEC)

In week 5 work has been continued along the lines determined before. As for tangible results, we received a new report about simulator benchmarks. The first joint paper of task-force members has been initiated within subtask-force 2.

During last weeks skype meeting we agreed that subtask-forces will distribute their decisions about the experimental conditions and synchronize with each other. This is essential for consistency over the task force as a whole, comparability of the results, and joint publications.

We expect that more and more tech reports with results will be produced in the coming weeks. To make these easy to find we redesigned the Blog site. Each subtask-force has its own section now. Visitors don't need to read through a long linear sequence, but can go directly to Morphogenesis, Organism Control, Internal Reward, or Simulator.

Subtask-force 1 (morphogenesis)
Wenguo and Christopher are ready to roll: a GA has been implemented to evolve organism shapes. Yao-Yao is still working on the genome structure and trying to get the Robo3D simulator working. Michele extended CAs from deterministic to probabilistic and compared the number of distinct shapes and the sizes of the evolved organisms.

Subtask-force 2 (organism control)
People of the sub-task started to implement their approaches in Robot3D. Due to bugs the progress is quite slow. Furthermore, the two CGP approaches (Evert and Florian) are being merged to one.

The decisions of last week (parameter's of e.g., the arena, for the comparison of the organism controller approaches) are recorded and included in the method section of a pdf-file which is a draft of a paper. This document should be a living document. It is stored at the Symbrion repository (publications/Papers/paperOrganismControlComparison/).

Subtask-force 3 (internal rewards)
Ran tests with QI as internal reward (based on gps first, now enhanced with accelerometer and joint force-feedback - not separately tuned, though) and using distance as a reward. The results are very similar. This can be seen as good news for it indicates that QI can be enough.

Subtask-force 4 (simulator)
Created a Robot3D Tutorial and added this to the 4th section of our Blog. Vojta said to prefer helping people one on one, rather than though a group tutorial through skype.

The second part of the benchmarks has been finished - testing simulation performance with/without cameras. The camera simulation decreases the performance by factor ~5. However, this factor 5 does not change significantly if the number of cameras is increased.

The priority for the coming week is to help task-force members with Robo3D problems.

For further details please consult the SEC Blog: https://symbrion-ec.wikidot.com/