EVOLUTIONARY TASK FORCE

SUMMARY OF WEEK 8 & 9 & 10 (19 DEC 2011 – 8 JAN 2012)

The three weeks since the last weekly report (Week 7, sent around on 19 December 2011) were mainly holidays. However, work did not stop completely. Sub-task forces have had skype meetings and continued development, mostly code porting to Robo3D and some comparative experiments.

Subtask-force 1 (morphogenesis)
Wenguo and Christopher ported everything to Robo3D, including a mutation operator. Similarly, Michel and Marc ported Cellular Automaton morphogenesis system to robot3D and Yaoyao finalized two versions of the GRN contollers. He also made a function that can transfer the organism shape into the representation of Wenguo. Ronny & Markus Dauschan are still working on the transition to Robo3D.

Subtask-force 2 (organism control)
The team decided on the scenario for testing the different approaches. It will be similar to the scenario of the evolution cluster in general, but skipping stuff done in sub-task 1. Simply said this means that an experiment starts with a bunch of eggs and organisms with fixed shapes. The organisms possses all the different types of controllers and a "super-controller" (or big switch) that chooses one of them to be THE active controller governing the organism.

Subtask-force 3 (internal rewards)
Evert has been running tests over the holiday period with a preference-based fitness model that was derived by Riad from logs of earlier tests. The good news is that performance was only slightly -and not significantly- worse than using QI. The bad news is that the system with randomly assigned fitness performs at the same level. This may be due to the sparseness of the sensori-motor space. If that is true, adding sensors, e.g., cameras, may help. We'll investigate this option. Meanwhile, distance as a fitness measure is our best bet.

Subtask-force 4 (simulator)
The remaining priority is to help task-force members with Robo3D problems. Perhaps we should shift the focus (and change the name) of this sub-task force to Integration and Joint Experimentation. To be discussed …

Recall the Summary of Week 6 (sent around on 12 December) where Berend volunteered to coordinate a joint effort of the subtask forces to produce a common document that specifies the experimental details (in the simulator). This should elevate the agreements made per subtask-force to a higher level and lead to a well-structured and clearly written document that is easy to locate and consult for all of us. This is still pending. We will make an effort to make version 1 by the end of this week. The physical meeting on Wednesday will be used to boost this.

And a preview for the coming week: we will have a physical meeting in Stuttgart on Wednesday January 11, 2012. The most important goals of this meeting are:
1. To review and document the progress we have made since the forming of this Symbrion Evolutionary Computing task force.
2. To make specific plans towards the demo and the joint publicaton(s).

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