EVOLUTIONARY TASK FORCE

SUMMARY OF WEEK 16 (14 – 20 FEBRUARY 2012)

During the weekly Skype meeting we discussed the necessity and the possibility of a physical meeting for the Evolutionary Cluster, respectively Task Force. We all agreed that such a meeting would have an additional value, but in the meanwhile this value may not be large enough to justify the extra costs. We decided not to arrange a special meeting, but to use the opportunity provided by the General Assembly (Karlsruhe, 21-21 March). This would be also good timing for finalizing joint papers for the PPSN conference (expected deadline: end of March).

Today Juergen arrived to Amsterdam for a working visit of a week. He will closely collaborate with Berend and Evert: joint research into evolving effective locomotion of organisms.

S/T details:

Subtask-force 1 (Morphogenesis)
The discussion wrt establishing a basis for comparison (properties, experiments) has restarted and is being coordinated by Nicolas. Converging towards common experiments turns out to be more difficult than expected. However, it is essential that all partners involved here cooperate and adopt the joint setup. This is a necessary condition for doing solid comparisons and writing joint reports / papers.

On the algorithmic side, two of the current approaches (Inria's SCA and Graz' VE) are almost ready to be compared, once we converge on the experimental conditions. The GRN development slowed down lately because of Yao Yao's vacation. We hope he will catch up soon.

Subtask-force 2 (Organism control)
This week the progress concerning organism locomotion is hidden in details. Both implemented approaches (CPG and AHHS) are implemented completely, use a similar fitness function (distance between start and end of evaluation) and both can be used in two ways:
   • Heterogeneous: every module evolves/learns/adapts on its own.
   • Homogeneous: one single evolution is running for the whole organism. All modules except one are acting as slaves: they receive the genome, encode it to a controller and act.
Additionally, much effort is being spent on tuning parameter settings of the AHHS controllers and the evolutionary mechanisms.

Subtask-force 4 (Integration and Joint Experimentation)
Integration of all approaches into Robot3D is still the main priority. The foremost bottleneck is still the alignment and actual docking of two robots. This lies on the critical path to a successful demo: all scenarios need this feature. Berend is working almost full time on this.

Vojta has not received any response to last week's call about computing hardware in the weekly summary. Thus, he will repeat the call in a personal email.

More details and a full collection of our weekly reports on https://symbrion-ec.wikidot.com/