IP 2012 TRABHCI, project 3

### Title: Maze race in Second Life using Kinect gesture control



**Description:** *This project aims to set up a race between teams. Each team will construct a maze in Second Life for other teams to solve. Each team will also develop an application which is able to control Avatar behaviour in Second Life by applying Microsoft Kinect gestures.*

Race rules: Applying primes and Linden scripting of Second Life each team constructs a maze, size of 8 x 8 rooms, each room being of size 1 x 1 (virtual) meters. The height of the rooms is at least 5 meters. Maze outer walls and roof are non-transparent. Some inner walls of the maze are dynamic, for example doors, sliding doors, falling walls etc. There must also be one wall which may let the Avatar go through it if it operates some specific control. This could for example be a seat which, while seated, will rotate the wall around it’s center axis by 180 degrees. Some inner walls may also be of half height such that the Avatar is able to fly over it to the neighbouring room, still remaining under the roof. Inner walls may be transparent.

 At entrance of the maze there is a control which has to be operated by the Avatar to get itself inside the maze. This control will also start a stopwatch which will record the time the Avatar spends inside the maze. At the exit door there is another control which will stop the stopwatch. The stopwatch time is the result from solving the maze.

 On Friday, instead of presentations, each maze is being solved by all members of all the other teams and the time required for the solution is recorded. To solve a maze, the team member must move his/her Avatar inside the maze from enter to exit by applying gesture control of Kinect technology. For this, each team must develop their own application for controlling the Avatar actions. The teams should develop an efficient and robust combination of gestures for moving the Avatar in all three dimensions and also for the mouse control.

 The performance of a team on one maze is the sum of the three best finishing times of the team members. The team with the smallest sum is the winner of the maze.

 The positions on the race for each maze gives points to teams such that the winner team gets 3 points, second gets 2 points and the third team gets 1 point. Further, the average times used for solving the mazes are also compared and the team whose maze was hardest to solve gets 3 points, second hardest gets 2 points and third one gets 1 point. After all mazes have been solved by all teams, the points are summed up. The team with the highest total score is the winner of the competition.

**Technologies:** Linden scripting language in Second Life, C#, Kinect SDK for Windows