Multi-UAV Simulation Presentation

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Improvement from previous simulation

- A 2-D model has been developed, this is based on the assumption that the height is constant for all UAVs
- All UAVs keep monitoring all fires upto a time the ‘false alarm’ is detected
- This false alarm is selected randomly and the UAVs adjust their course accordingly
- Also self collisions among UAVs have been neglected
- Obstale avoiding has been implented in some cases as fires have been set randomly, thus setting a random obstacle in most cases causes overlap

Continued..

- The path-planning algorithm discussed last time has been modified a little
- The priority of the fires/cells are based on the “age” /time it has been unattended for
- This makes sure no fire is neglected for a long time
- Also the parameter of distance in the original algorithm has been replaced by moving to the next unattended fire
- This does not create a problem when path of 2 UAVs cross

Simulation

- The UAVs return to their base station after fire monitoring

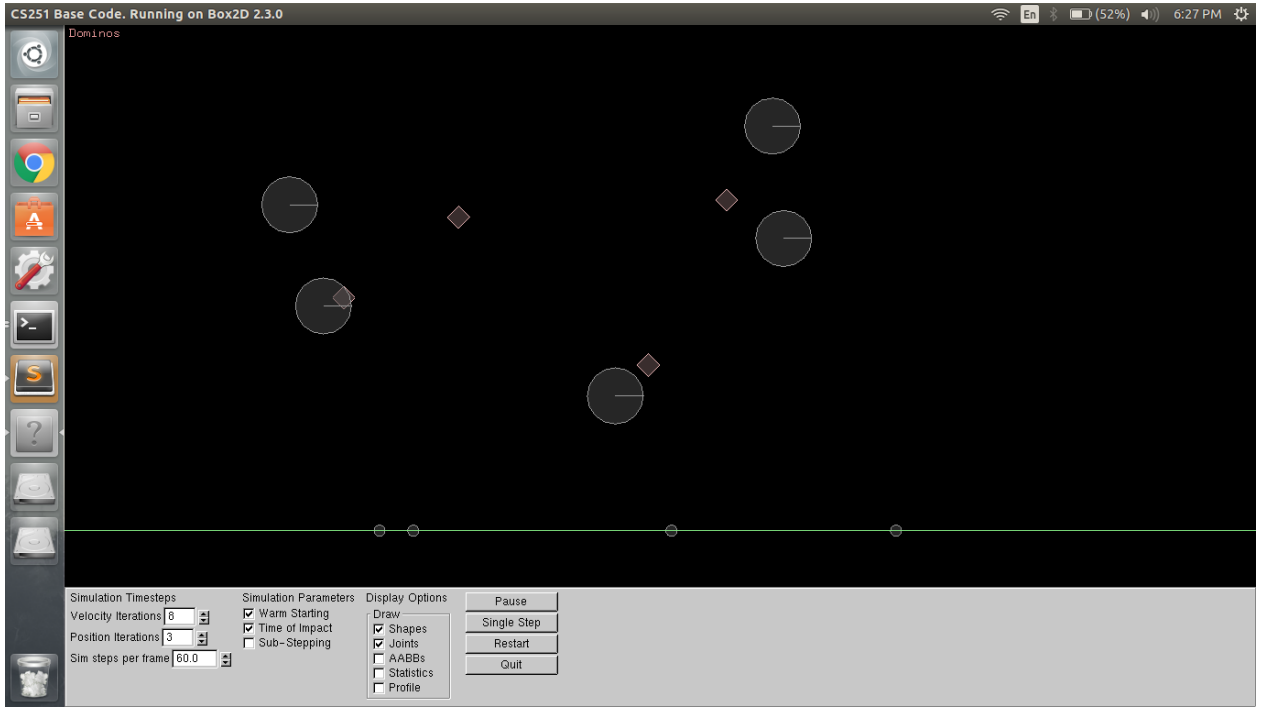

Figure : Monitoring

Simulation

- Path planning is adjusted once false fire is detected

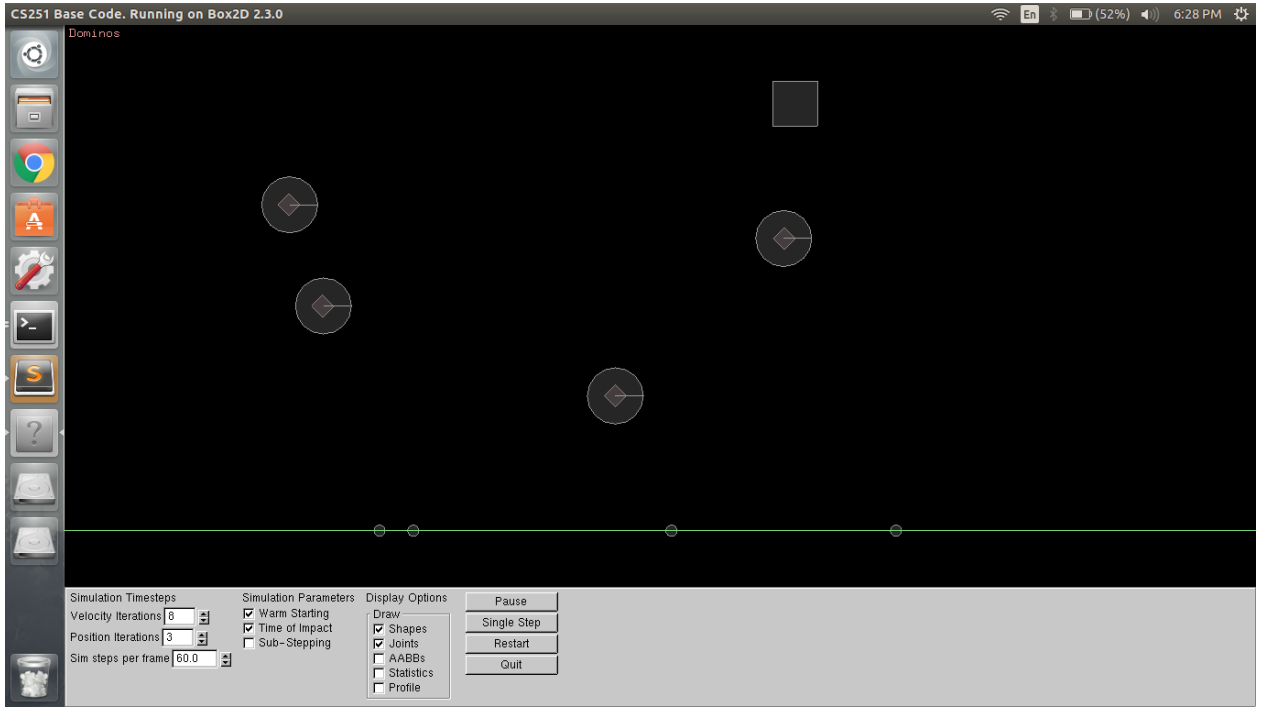

Figure : New Arrangement

Further Developments

- Develop a more efficient algorithm while avoiding obstacles
- Develop a 3D model taking height into account
- Develop a simulation using multiple obstacles and multiple false fires