***iRobot-Create* Remote Navigation Project**

This project is to create a new semi-automatic remote navigation system *for iRobot Create*. The robot will be able to navigate while making simple navigation decisions that can be overridden remotely by a user.

**Project Approach**

Since the objectives of the project are well known ahead of time and project size is small, I will use Waterfall approach. The project will consist of weekly milestones. The project team will be made up of only Francis Sowani who will be able to dedicate an estimated amount of 15 hours per week for 6 between March 29th and May 14th 2014.

The project sponsor is Professor Michail Maniatakos and the project supervisor will be Nektarios Tsoutsos.

**Project Objectives**

- Create a minimal protocol for communicating commands to the *iRobot Create*.
- Remote connection to the *iRobot Create* and be able to remotely send commands to the robot and receive the robot's real-time status.
- Robot help the user during navigation e.g. warn the user when a cliff edge or obstacle is encountered.
- Robot communicate to the user when making an autonomous decision e.g. stop when encountering a cliff edge and the user has not issued a command that would prevent the robot from falling.

**Major Deliverables**

- Project milestones and the completion time estimates.
- Project design documents: a Statechart design for the robot's navigation and communication commands protocol design.
- Project documentation including a demo video.
- Final working prototype of the navigation system.

**Constraints**

There is only a single project member, hence the project implementation works cannot go on in parallel.

**Risk and Feasibility**

The main risk is that there is only a single project member hence the project has no backup members for skills. Also it is the first time for the project member to undertake a project of this nature, hence there is a risk of hugely underestimating/overestimating the time taken to accomplish the desired tasks. However, since the project has been split into smaller manageable milestones, it is feasible that the project work can be completed in the six weeks' time available.