Evaluation of Product

My project on the ATR (All Terrain Robot) began on the 16th of July after completing a portfolio and plan for the production of a wireless system to control the vehicle. This incorporated both mechanical and electrical components throughout the construction. As my project was to modify my already built ATR I did not encounter the problem of having to wait for parts and so construction was underway almost immediately. By using the wireless system previously built for the tank project it was easy to alter its programming and design to fit the ATR. The production of the ATR was quite progressive in the early stages but problems such as; faulty soldering and missing wires quickly ensued and so construction was set back. The overall production was finished on time and was quite accurate in comparison to the proposed timeline.

One of the major problems I encountered was the correctly wiring up the power supply to the motors and the picaxe boards individually. Often I ran the power solely through the positive wires across the whole system and so the two power sources were competing and as they were different voltages it resulted in poor output from the motors. This problem was rectified by using a multimeter test where the power was and how much. Another of the main problems was he programming of the system. The original program that I had designed was ineffective for the ATR as the ATR required several different functions to be activated individually and sometimes at the same time. This often resulted in syntax errors and so had to re-design an alternate program for a different system slightly to fit the ATR. This solved the problem of why the system was often functioning incorrectly. Although the program worked when placed into the ATR picaxe it was faulty for a few of the functions and so extensive testing was the result. To perform the testing I used a previously built light board that could be connected to individual output feeds to analyse if a signal was being transmitted and received. After using this method the system was able to perform correctly.

The end result was quite a good project although the power supply and weight limited the speed, it still performed as expected and I am happy with the result. The system was tested to see the capabilities of the final result. These tests were done by using a ramp to analyse how much of an incline it could travel up, how far the signal from the remote would reach by using a tape measure and how fast it could travel over a 1m distance. These tests displayed that the ATR system was quite effective at travelling up an incline and the remote could reach over 2m in distance which is a very pleasing result. Overall both I and the client are pleased with both the production and end result that was achieved.