CHAPTER 3

RESEARCH AND METHODOLOGY

3.1 INTRODUCTION

This chapter will discuss on the method used in order to produce an orientation algorithm of the digital compass. In this chapter, there are flow charts which show the flow of the project. There is also a block diagram for an orientation algorithm of digital compass using quaternion method included in this chapter with a corresponding process. The project flow chart is shown in figure 3.1 while block diagram is shown in figure 3.2 on the next page. The methods and algorithms to be tested come from the research mentioned above with some improvements made to make them fit into the embedded system or to enhance performance.
3.2 FLOW CHART

Figure 3.1: Project Flow Chart
3.3 SIMULATION OF THE CORRECTION ALGORITHM

In order to get information of system behaviour as in reality, the simulation will be used as it could be defined as a manipulation of a system in such a way that operates on time or space. At some particular point in time or space, a model is defined as a simplified representation of a system intended to promote understanding of the real system.

Generally simulation has three purposes:

- Describe the behaviour of systems
- Construct theories or hypotheses that account for the observed behaviour
- Use these theories to predict future behaviour, that is, the effects that will be produced by changes in the system or in its method of operation.

In this project, the simulation of the algorithm plays an important role over the other tasks. Some of the purposes are, to prove the functionality of the algorithm.