Umeå University
Department of Computing Science

Object-Oriented Programming Methodology 7.5 p
5DV133

OU3 Sensor Network

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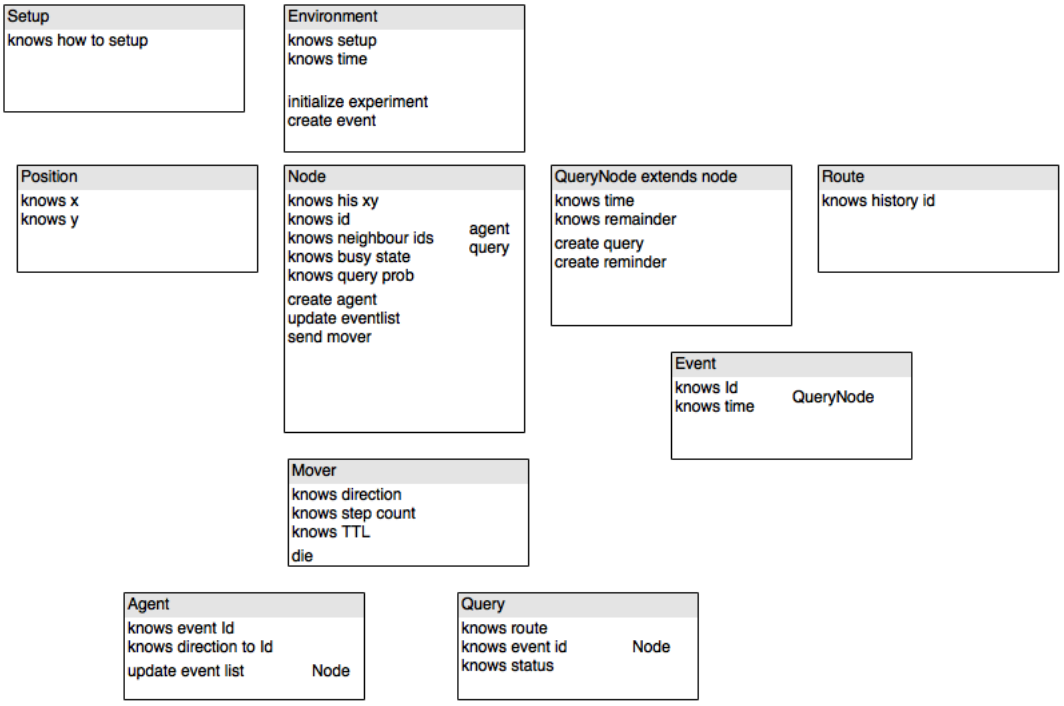

Figure 1: This is the crc diagram

1 Introduction

The assignment was described on the course homepage [**?**].

1.1 General Design Considerations

It seems a reasonable approach to design the application as a model of a real sensor network as described in Braginsky and Estrin [**?**]. In particular should responsibilites and collaborations somehow coincide with those of a real sensor network. The realworld entities modelled in this assignment can be classified in two groups: Physical components such as the sensor nodes and information packages travelling the network, such as the queries and the agents or specifically for the model. Further, is also a third type, the environment entity which simulates the real surrounding.

Unified Modelling Language (*UML*) and *Class Responsibility Collaborator* (*CRC*) diagrams were composed according to Börstler [**?**]. The theory of rumour routing is described by Braginsky [**?**]. Horstman was used as Java language reference [**?**].

2 Classes Responsibilities and Collaborations

3 Unified Modelling Language Class Diagram

4 Initialization and State Stepping

Parameters that are needed to create nodes have to be determined. That includes the position, and the probability to create agents after an event happens. Nodes have to be created and positioned. Nodes have to be initialized to know their neighbours Experimental parameters for the environment have to be determined. These include, which nodes will create

queries.

The nodes need to know their neighbours to become operational. To know the neighbours, all nodes need to have a position. Either the neighbours are just defined as a list, or a process that determines the neighbours based on coordinates and sender/receiver range

5 Testing Framework