

## **Abstract**

This thesis explores and reviews both the conceptual and technological issues associated with mobile computing and field data management. Within the context of the study, water quality monitoring is addressed and taken to be the subject of the problem.

The spatial and geographical nature of field campaigns is used as a base to take full advantage of developments in mobile information and communication technologies through integrating these with current monitoring scenarios to ultimately revolutionise the field work and data collection process. The development of integrated data collection systems designed for acquiring, storing, displaying and transmitting the geo positional data during field work campaigns is reviewed and integrated in an attempt to address the problems facing field data management during water monitoring programs.

To conclude a case study is carried out with the water board of Zuiderzeeland in The Netherlands. The case study addresses issues associated with monitoring of a policy for protection of surface waters in agricultural areas.