



# NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

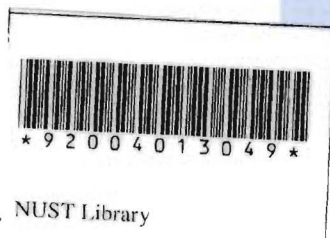
P.O. Box AC 939 Ascot, Bulawayo, Zimbabwe  
Cnr. Gwanda Road / Cecil Avenue

Telephone: 289557, 288413/39/58  
Fax: 263-9-286803

## ELECTRONIC ENGINEERING DEPARTMENT

LIBRARY NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY P.O. BOX 946 BULAWAYO ZIMBABWE		
DATE	ACCESSION	CLASS No
19/03/10	SC 09138	TK5103 • 2 MZA

### HONOURS PROJECT: **WIRELESS CONVEYOR BELT SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA) SYSTEM.**



*think in other terms*

*Xolani Mzaca*

(n004 1123j)

101 Athlone Mansions, Cnr Main Str & Masotsha Ave, Bulawayo, Zimbabwe  
Phone: +263 912 889 365, Email: [xolanizmaca@yahoo.com](mailto:xolanizmaca@yahoo.com)

*Supervised by  
Mr R. Gonye*



# Introduction

The concept of the wireless Supervisory Control and Data Acquisition (SCADA) has not been effectively made use of in the world, particularly in Zimbabwe. This project seeks to demonstrate its vast advantages which are relatively untapped.

During internship I was exposed to a variety of control systems. I worked with one at Mimosa Mining Company, Zvishavane Zimbabwe quite extensively. Ten programmable controllers (PLC's) were used to run and monitor the ore processing plant there. These were linked to the SCADA by Ethernet cables running from each of the PLC's in the Motor Control Centres (MCC's) to the control room. The average distance from each of the MCC's to the Control Room was approximately fifty (50) metres.

The idea of a wireless SCADA was born by observing the many disadvantages of such a system some of which are:

- The cables are susceptible to breakages.
- Running the cables is quite expensive
- The plant can only be run and monitored from one central point in that case the Control Room, if an unfortunate incident occurs, for example, a fire there is a need to vacate the room, then there is **NO** means of controlling and monitoring the plant.

The advantages being :

- It is cheaper and easier to set up and have multiple control points monitoring one plant as there are no cables that are supposed to be laid for each control point
- Control and monitoring of the plant can be done from anywhere within a certain radius allowable by the pair of receivers and transmitters.