# DEVELOPMENT OF DATA ACQUISITION ROBOT FOR TOXIC ENVIROMENTAL MONITORING USING WSN – KROTO FINDER

## INTRODUCTION:

This project is mainly implemented for industrial applications. Mainly for detecting the damages inside the oil pipe that cannot be detected by human beings. Kroto is the Greek word meaning to crack. Inside the pipe, there is very heavy temperature, pressure and toxic gases. So we are implementing a robot that have a camera, temperature sensor, pressure sensor etc which is used to detect the crack and conditions inside the pipe. This data from all the high precision sensors will be transmitted using ZIGBEE protocol from the robot to the control station. The robot incorporates a wireless camera and the data from the cam is transmitted to the frontend of Hyper Terminal.

## ABOUT ZIGBEE:

There are a multitude of standards like Bluetooth and WiFi that address mid to high data rates for voice, PC LANs, video, etc. However, up till now there hasn't been a wireless network standard that meets the unique needs of sensors and control devices. Sensors and controls don't need high bandwidth but they do need low latency and very low energy consumption for long battery lives and for large device arrays. The ZigBee Alliance is not pushing a technology; rather it is providing a standardized base set of solutions for sensor and control systems...Wireless connectivity of a vast number of industrial and home applications has modest transmission data requirements, but demands reliable and secure communication using simple low-cost and low-power radio systems. In the quest for high-bandwidth, multimedia-capable wireless networks, the need for cost and power-effective radio solutions for this vast number of fairly simple applications was only recently addressed by a standardized technology. The IEEE 802.15.4 standard and Zigbee wireless technology are designed to satisfy the market's need for a low-cost, standard-based and flexible wireless network technology, which offers low power consumption, reliability, interoperability and security for control and monitoring applications with low to moderate data rates.