

# Abstract

The cost of human labor in factories had increased in the past years, yet security issues aren't reduced efficiently. Also, due to the fact that carelessness of men may cause serious problems, automation is gradually becoming a trend nowadays. But the monitoring system remains the same old traditional video surveillance, such as the CCTVs set in fixed spots, not only is there a limitation on the location of the cameras, but also one sole method of screen showing, which results in having the system set around the whole area yet still leaving certain locations out of sight.

This research uses the iBeacon technology as a mean of wireless transmission. Using it to locate patrolling vehicles, establishing routes to fully monitor selected areas. This can be compatible with the environmental control system that already exists, using Arduino to control and drive machines; It can even carry other detection instruments ( such as smoke, humidity or toxin detectors ) . To send out warnings before harm has been done, in hope of reducing the loss caused by the problem. This research is suitable in a wide array of locations, not only factories, but also buildings, power plants, transmission stations or even watch stations.

**Keywords: BLE4.0, Environmental Sensing, Remote Surveillance**