Feasibility Study on Using NB-IoT For Animal Health Monitoring

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Abstract. There are more than 161,000 dairy farms all over the country. Technological involvement in the dairy industry is not yet enough compare to other countries. Using technology, we can increase the production volume of farms. The dairy cow's health is one of the significant considerations for the daily milk production of a cow. Manually checking the health condition of each dairy cow is very time consuming and when the number of dairy cows increase it require more human resources to check manually. Also lack of knowledge about diseases breeders were not able to provide medical treatments for dairy cow on time. Diseases are the main reason of reducing dairy cow productivity. In this study, we have discussed some problems in cattle health monitoring. Further, we have mainly focused on current health monitoring systems and their related works to find the most effective and valuable solution to overcome these problems. Furthermore, we aim to develop a Narrowband Internet of Things (NB-IoT) Based Cattle Health Monitoring System. NB-IoT provides low power consumed, better scalability and quality of service when compared to other unlicensed Low Power Wide Area (LPWA) networks such as Lora/ Sigfox. In this technology a Base-station is capable of handling higher number of nodes and can be implement the system for small scale or large-scale cattle farms. The system will continuously monitor heartrate and the body temperature of the cattle. All the recorded data will be uploaded to Cloud database for easy access, individual cattle health profile management and abnormal health condition detections. Primary goal is to develop more reliable, accurate, and low-cost system that every breeder can afford.

Keywords: *Narrow Band - Internet of Things (NB-IoT), Cattle Health Monitoring, Dairy Cow.*