

ABSTRACT

Soil is an important medium for the plant, so plant can grow optimally. Water is needed by plants to be able to grow optimally. Excess or shortage of water affects the quality of the crop. Therefore, soil moisture is one of the determining factors in plant growth factors other than minerals Human Sense is limited in terms of accurately to measure the soil moisture. According to the World Wildlife Foundation, the use of clean water around the world spent 2.500 trillion liters of water annually for watering the plants. Unfortunately, 60% from total water spent is wasted because of inefficient irrigation systems [15]. Therefore, it needs a system that can monitor the moisture content automatically.

This system uses a Wireless Sensor Network for the communication data exchange because it is wireless, where a lot of losses incurred when we use cable connection such as expensive installation costs, maintenance costs, as well as the strategic location of the cable. While using the 802.15.4 protocol, that disadvantages can be overcome because of the characteristics of this protocol is a low power, low cost and low data rate. Expected Results by building this prototype system is able to monitor the moisture content in the soil as a reference for determining the appropriate time to carry out watering the plants so that waste of water can be reduced.

Keywords: Wireless Sensor Network, irrigation, time, water, wireless.