

## **ABSTRACT**

The UN report estimates that 3.2 billion people in the world are threatened with a shortage of water supply in 2050. The current problem for society in Indonesia is insufficient water resources and inefficient water management. So to minimize excessive water consumption, a Smart Drip Irrigation system was created to save water supply. The system develops research from before, by developing a system that can predict daytime temperatures to anticipate evaporation and can supply power from renewable energy systems. This latest system will later be realized in areas with a minimum supply of electrical energy from the center or places that have not been touched by electrical energy. The AIoT system can estimate the optimal drip irrigation pattern based on historical data and environmental conditions. This allows the system to make predictions about future crop water requirements, allowing for better planning of drip irrigation.

In designing the Smart Drip Irrigation system, the third alternative solution was chosen, namely providing an automatic watering system because it is equipped with a temperature sensor, soil moisture sensor, and scheduling. This system also combines two methods, namely AI and IoT which will later become AIoT.

From the several specifications that have been determined the system has met the needs properly. The system is able to calculate the water discharge for watering the plants in the pipes and is able to detect soil moisture in Greenhouses. This system is able to calculate the temperature in Greenhouse. The system is able to get a source of electricity from the sun and then stored in the battery to reserve electrical energy. The system can communicate between the system and the database and push information automatically to the system that detects soil moisture and water discharge.

Keywords: Smart Drip Irrigation, AIoT, Power supply, Predict temperature, Automatic