Rancang bangun sistem pemantauan perkebunan berbasis LoRa dan antarmuka aplikasi website: ujicoba: belimbing = Design of plantation monitoring system based on LoRa and website application interface: trial: starfruit

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Abstrak

Pada era Information Communication Technology ICT, perkembangan dari software dan hardware sangat pesat. Berdasarkan data Dirjen Pos dan Telekomunikasi prospek dari Internet of Things untuk Indonesia mencapai 444 triliun dengan 400 juta sensor perangkat terhubung. Berbagai sektor mulai menerapkan IoT sebagai sistem automasinya seperti industry, kesehatan, logistic, dan pertanian. Fokus pada penelitian ini adalah penerapan IoT pada bidang pertanian. Berdasarkan pengujian menggunakan arduino dan LoRa 915 MHz bahwa perfomansi dari sistem dapat menjangkau hingga 700 meter dengan nilai Received Signal Strength RSSI dibawah -120 dBm dan nilai rata-rata Packet Delivery Ratio PDR 40-50. Sedangkan pengujian dari sisi end user menunjukkan bahwa sistem antarmuka web memiliki rata-rata penilaian 4 sampai 4.2 dari segi tampilan, fungsi, dan informasi. Untuk segi kinerja response time memperlihatkan bahwa web dapat diakses dalam waktu 0.2 detik hingga 0.6 detik.
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In the era of Information Communication Technology ICT the development of software and hardware is very rapid. Based on data from Director General of Pos and Telecommunication, the prospect of Internet of Things for Indonesia reached 444 trillion with 400 million sensors connected devices. Various sectors are beginning to implement IoT as their automation systems such as industry, health, logistics, and agriculture. The focus of this research is the application of IoT in agriculture. Based on testing using arduino and LoRa 915 MHz, the perfomance of the system can reach up to 700 meters with the value of Received Signal Strength RSSI below 120 dBm with an average of 40 50 Packet Delivery Ratio PDR . While testing from the end user side shows that the web interface system has an average rating of 4 to 4.2 in terms of appearance, function, and information. In terms of performance response time shows that the web can be accessed within 0.2 seconds to 0.6 seconds.