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Communication Layer Security in Smart Farming: A Survey on Wireless Technologies

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Abstract : Human population growth has driven rising demand for food that has, in turn, imposed huge impacts on the environment. In an effort to reconcile our need to produce more sustenance while also protecting the world's ecosystems, farming is becoming more reliant on smart tools and communication technologies. Developing a smart farming framework allows farmers to make more efficient use of inputs, thus protecting water quality and biodiversity habitat. Internet of Things (IoT), which has revolutionized every sphere of the economy, is being applied to agriculture by connecting on-farm devices and providing real-time monitoring of everything from environmental conditions to market signals through to animal health data. However, utilizing IoT means farming networks are now vulnerable to malicious activities, mostly when wireless communications are highly employed. With that in mind, this research aims to review different utilized communication technologies in smart farming. Moreover, possible cyber-attacks are investigated to discover the vulnerabilities of communication technologies considering the most frequent cyber-attacks that have been happened.

Keywords : smart farming, Internet of Things, communication layer, cyber-attack
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