
Cellular automata-based approach to wireless sensor network information security

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The need for automated collection of large amounts of information on the environment requires new and better technology. Wireless sensor networks can be one of the ways to control physical parameters over large areas. Such decentralized self-organizing networks of miniaturized autonomous sensor nodes can collect, store and transfer information to collection node by retransmitting information node-to-node, without need of backbone network infra-structure. However, the low performance of wireless sensor networks, due to the energy constraints, weight and size limitations and the decentralized nature of the network makes the traditional methods of information security inapplicable. One of the ways to overcome the constraints is cryptographic algorithm parallelization. This paper considers cellular automata-based approach for cryptographic transformations. There were proposed various methods of using the cellular automata paradigm for cryptographic data protection.

Keywords: *wireless sensor networks, information security, cryptographical data protection, homogeneous structures, cellular automata.*

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