Dynamic Secure Multipath Routing in Wireless Sensor Networks using Modified Simulated Annealing based Particle Swarm Optimization

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Abstract

Routing in wireless sensor network has entirely different requirements compared to the routing requirements of a normal network. The complexity arises from the requirements of security, load balancing, resource constraints and failure handling. This paper presents a fast, secure and dynamic route generation technique for wireless sensor networks using metaheuristics for route generation. A modified form of Particle Swarm Optimization technique is used for route generation. In order to overcome the problem of local optima, PSO is hybridized by incorporating Simulated Annealing in its local selection process. Hybridization also speeds up the route selection mechanism, thereby reducing the time overhead to a maximum extent.

References


Index Terms

Computer Science Wireless

Keywords

WSN Routing; Secure routing; PSO; Simulated Annealing; Multipath Routing