

SO-antnet for improving load sharing in MANET

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Abstract

SO-Antnet introduces new idea of load balancing over mobile ad-hoc networks based on intelligent agents inspired by organic metaphor of ants' food foraging behavior. With inspiration from Antnet approach, this study improves theoretical derivation of objective function by consider contribution of all four characteristics of ants' foraging behavior to achieve Self-Organization of a system. The study uses this objective function to optimize operation of intelligent agents, which collect information in mobile ad-hoc networks, to help the node to optimize route-cache contents and means of finding optimal path to particular destination. The study implements operational behavior of SO-Antnet by customizes DSR routing protocol modules in network simulator NS2. One major difference with other related work is that SO-Antnet simulation considers really cache implementation. Simulation results are compared with DSR performance, which show improvement in load balancing.