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Title: Swarm optimised energy hubness clustering to detect and respond to intrusive attack variants in MANET

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Abstract: MANET is a continuously self configuring network, where the mobile nodes move arbitrarily. Due to node mobility, variants attacks arise that reduces network lifetime. Conventional security method preserves wired network, but found to be ineffective for detecting variants intrusive attack in MANET. In order to detect and respond to intrusion attack variants, SOEHC technique is introduced. Swarm optimisation is used for providing energy efficient routing. Based on the nodes position and velocity, movement of nodes occurs. The fitness of each node is measured based on energy and trust for detecting intrusion variants. Next, hubness clustering is applied to identify attack variants using cluster centroid range value. Finally, intrusion responsive mechanism is performed to make a reaction for attacks through isolation message distribution. Simulation is performed to analyse performance of SOEHC technique with parameters, energy consumption, intrusion detection rate and network lifetime that prolong network lifetime with minimum energy consumption.

Keywords: mobile ad hoc network; MANET; swarm optimisation; hubness clustering; fitness function; energy; trust value; intrusion detection; responsive mechanism.

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