

ALGORITMA ASOSIASI DATA MULTIDIMENSI BERBASIS OPTIMISASI KOLONI SEMUT UNTUK PENJEJAKAN SASARAN JAMAK

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Abstract: Target tracking is an important problem with wide applications in both military and civilian areas as ground target tracking, air traffic control, space surveillance, radar tracking, etc. The purpose of multiple target tracking system is to identify targets and then to estimate the states of targets. The target state comprises position, velocity, and acceleration. In multi-sensor radar system, some of sensor measurements may be false, and the numbers of target and which measurement emanates from which target are not known a priori. The problem then are to determine the number of targets, where in the measurements containing both measurements from target and false alarms. This is the data association problem or called the multidimensional assignment problem. Multidimensional assignment problem is NP-Hard, and required heuristic method to solve this problem. Furthermore to estimate the state of each target given a sequence of measurements that emanate from that target. In this paper proposed Ant Colony Optimization method to solve the multidimensional assignment problem. Three different target track used in simulation and observation three identical radar with false alarm rate equal 1. The results of Ant Colony Optimization algorithm for multiple target tracking able to separate among true target and false alarm.

Key words: multiple target tracking, multidimensional assignment problem, ant colony optimization