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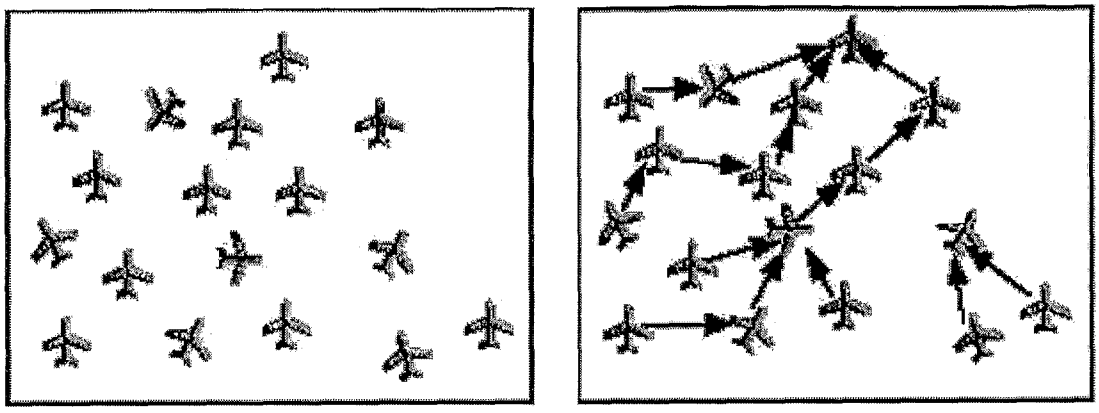
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(54) **Title:** UAV DECISION AND CONTROL SYSTEM



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(57) **Abstract:** The present invention relates to a hierarchical system and method for task assignment (TA), coordination and communication of multiple Unmanned Aerial Vehicles (UAV's) engaging multiple attack targets and conceives an ad-hoc routing algorithm for synchronization of target lists utilizing a distributed computing topology. Assuming limited communication bandwidth and range, coordination of UAV motion is achieved by implementing a simple behavioral flocking algorithm utilizing a tree topology for target list routing. The TA algorithm is based on a graph-theoretic approach, in which a node locates all the detectable targets, identifies them and computes its distance to each target. The node then produces an attack plan that minimizes the sum of distances of the UAV's in the subtree of a given node to the targets.

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