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Eric M. Murphy* (Eric.M.Murphy@comcast.net), 804 Hydric Court, Apt 304, Odenton, MD 21113. *Applications of Circle Packing to Civil/Military Force Structures*. Preliminary report.

In this presentation, we develop a new approach for the description and evaluation of military and civil force structures in the context of an uncertain future. This method exploits techniques of random walks, pheromone-driven control theory, and discrete analytic function theory (circle packing) to define a robust sufficiency as the primary measure of merit. This approach has broad application to questions of homeland security and defense, counterinsurgency and other forms of low-intensity conflict, general problems of indications and warning, and conventional major combat operations. While the schema may be generally applied to any force structure element, we present a brief discussion of Intelligence, Surveillance, and Reconnaissance (ISR) force structures as an illustrative example. (Received August 25, 2009)