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Forecasting Personnel Readiness for the Center for Army Analysis

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Abstract: In support of the planning efforts of the United States Army and the Pentagon, The Center for Army Analysis (CAA) has been using a discrete-event simulation called MARATHON (Modeling the Army at Home or Not) since 2005 to model the readiness and distribution of Army units during potential future conflicts. This simulation was originally created using dwell time to forecast when units would be ready to deploy, based on the ARFORGEN (Army Force Generation) policy. Now that the army is moving on to the SRM (Sustainable Readiness Model) policy, the CAA requires a revamping of their personnel readiness forecasting method. In order to attack this problem, our team applied the Systems Decision Process (SDP). After going through steps of the SDP, we arrived at a few candidate solutions; using Markov Chains, Systems Dynamics, and discrete event simulation using ProModel. Ultimately, due to its coding compatibility with MARATHON, effectiveness at modeling steady-state systems, and flexibility, we decided to recommend the Markov Chain approach.

Keywords: Sustainable Readiness Model, Personnel Readiness, Markov Chain