

# PERFORMANCE-BASED LOGISTICS BY SIMULATION OPTIMIZATION METHOD

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## ABSTRACT

We consider an inventory control problem of aircraft spare parts during the end-of-life (EOL) phase of fleet operations. For these spare parts, demand rates vary with the diminishing number of operational aircraft, as the aircraft retire out of service. Before entering the EOL period, the aircraft manufacturer typically requires its customers to place final purchase orders for spare parts for the remaining life. We present an algorithm that computes the optimal final order size of components by simulation optimization. The algorithm finds the spares requirement with aircraft availability which serve as a useful performance metric in managing the spare part supply chain under a performance-based logistics (PBL) environment.

**Keywords:** Inventory, Availability, End-of-life, Performance-based Logistics, Simulation