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# Operational Service Tool Planning: The Floating-Tool Policy

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Repair operations in high-tech industries rely on specialized, capital-intensive service tools, whose timely availability is crucial to avoiding costly downtime. Because providing these tools to every location is uneconomical, operational positioning decisions directly affect service performance. Unlike spare parts, these tools remain available after use and can be repositioned. Demand at a location without an available tool must be fulfilled through an expensive reactive dispatch from another location. Motivated by this setting, we study operational repositioning in a low-demand context, where analytical results remain scarce. We introduce the floating-tool policy class, which keeps a subset of tools at fixed stationary locations while dynamically positioning the remaining floating tools in response to realized demand. This policy structure requires tracking only the floating-tool locations. We then prove that a single-floating-tool threshold specialization is optimal in homogeneous-cost systems under an explicit threshold condition. For heterogeneous-cost systems, we derive a closed-form worst-case optimality gap bound for the optimal floating-tool policy and establish its asymptotic optimality in two cost regimes. Numerical experiments show that the floating-tool policy is near-optimal and consistently outperforms three practical benchmark policies by adapting proactive repositioning to instance-specific demand and cost characteristics.