

Simulation and Statistical Methodological Advances in Proactive and Strategic Obsolescence Management

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Abstract: In fields with sustainment dominated systems, where the sustainment costs are larger than the original system costs, managing the life-cycle costs is a non-trivial task. These fields include aviation, power plants, medical, military, telecommunications, and civilian safety. In recent years many of these fields have begun to rely on commercial off-the-shelf (COTS) parts whose lifetimes are driven by market forces outside of the control of the system managers serving to exacerbate obsolescence issues. While the procurement lifetimes of commercial electronics typically span 12-18 months, many of these fields have systems in excess of 30 years. In order to keep the systems operational, managers must manage their supply chains and obsolescence issues efficiently.

This talk will present three proposed methodologies to improve obsolescence management practices. The first deals with removing the bias when forecasting individual part lifetimes with censored data. The second provides a simulation framework to model the risk to a system's part unavailability when replacement parts may be available in the marketplace. The third compares two different methods applied to technology replacement strategies.

Bio: James K. Starling is a Ph.D. Candidate in the Department of Industrial and Systems Engineering, working with Professors Christina Mastrangelo and Youngjun Choe. Prior to attending UW, he worked at the Mission Command Center of Excellence, Fort Leavenworth, KS. He earned his Bachelor of Science in Mathematical Sciences at the United States Military Academy and his Master of Science in Applied Mathematics at the Naval Postgraduate School.