Obsolescence Definition

Obsolescence is defined as the loss or impending loss of original manufacturers of items or suppliers of items or raw materials. Obsolescence occurs because of a life cycle mismatch between systems and the components that they are composed of.

Objective

- Nearly 100% of the focus in electronic part obsolescence management is on reactive mitigation.
- Much larger savings are possible if methods of forecasting obsolescence and performing obsolescence driven life cycle planning of products were developed and applied.
- Our objective is to address this high-risk high-impact problem at a more fundamental and proactive level with the investigation of proactive obsolescence forecasting and management.

Research Tasks

1. Forecasting electronic part obsolescence to predict the date of discontinuance and confidence interval in light of uncertainty in objective data and subjective inputs such as social, political, economic, and environmental factors.
2. When obsolescence does occur, determine the best mitigation approach to employ, and
3. Proactively manage the redesign of systems based on forecasted obsolescence, production and support plans, and available mitigation strategies.

Proactive Planning

How can obsolescence forecasts be used to enable proactively planning the sustainment of systems?

- Design refreshes are performed on sustainment-dominated systems to update functionality/performance and to mitigate obsolescence.
- Design refreshes must balance the cost avoidance associated with system redesign and re-qualification.
- To perform design refresh planning, a timeline of obsolescence, mitigation, production, and design refreshes for hardware and software must be modeled.
- The MOCA (Mitigation of Obsolescence Cost Analysis) methodology determines the optimum design refresh date(s) based on:
  - Forecasted technology obsolescence (what and when)
  - How obsolescence events are mitigated
  - Production, retrofit and sparing requirements