

PRODUCT DESCRIPTION

Total Life Cycle Management Assessment Tool (TLCM-AT)

Introduction

TLCM-AT is a technology developed to assist Marine Corps weapon systems fleet asset managers with the task of evaluating, quantifying, and reducing life cycle supportability costs without adversely impacting fleet readiness and availability. It has been used for the LAV and AAV fleets to predict performance metrics within operations, maintenance and supply.

TLCM-AT's Features include:

- SPAR™-based, rule-centric Monte Carlo simulation technology
- Uses existing automated operations & logistics data repositories
- Indentured structure capability (up to 5 levels)/hierarchy integrity
- Operations variations by location (optempo, reliability, environs, etc.)
- Part interchangeability/substitutability rule manipulation
- Database structure provides for multiple systems and platforms
- Up to 3-level maintenance concept
- Pre-designed Operations and Maintenance model built into the system
- Captures repair/touch times/order lead time & variability by location
- Ability to initialize “State” of system and components prior to simulation and Life Cycle metric prediction



Major benefits of TLCM-AT technology:

- Maintenance modeling - phased inductions, scheduled or preventive, causal or opportunistic
- Forecast readiness, operations and maintenance performance at selected locations
- Life cycle impact assessments associated with aging - by assembly, location, and repair interval
- Forecasting by equipment groups, part numbers or serial numbers
- Verifying system performance during the life cycle
- Decision support for implementing revised sustainment initiatives
- Time-dependent forecasting
- Provides “what-if” simulation/logistical war-gaming scenario management
- Implicit life limit vs. causal removal event management
- Helps reduce life cycle risks
- Predict and accurately project life cycle costs and impacts in decision making:
 - Equipment configuration changes, remaining-life rules modifications
 - Alternate sparing strategies, adjusted operating hours programs
 - Modified repair concepts, and age/reliability factors
 - Discovering opportunities to reduce costs and improve overall asset performance

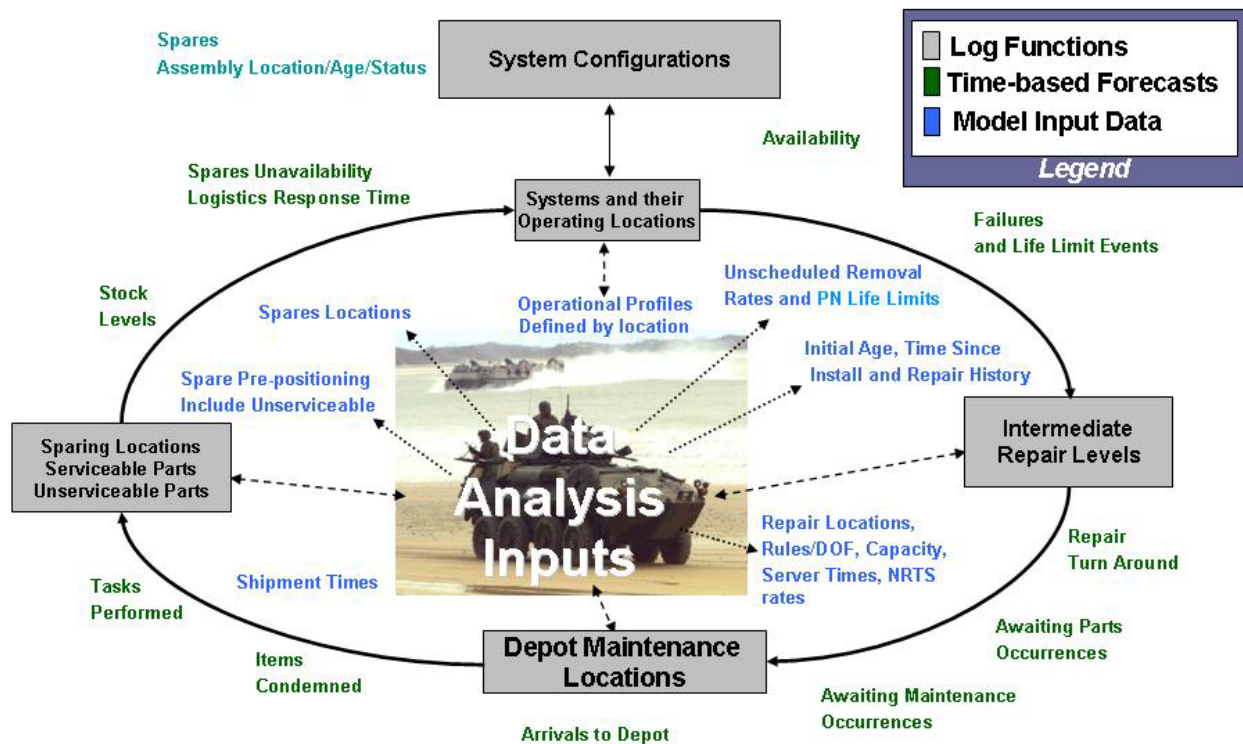


Applications for use include:

- Maintenance concept modifications (How we maintain)
- Reliability modification impacts (How we build/configure)
- Deployment strategy assessments (How we operate)
- Supply chain alternatives (How we supply/stock/pre-position)
- System degraders assessment (How we gage sensitivity)
- PEI rotations (How we manage the fleet)

Predicted output metrics include:

- Readiness
 - Time-dependent Mean Time Between Removals
 - Availability
 - Achieved operating hours
 - Cumulative age of part populations
- Supply
 - Percent of time awaiting parts
 - Average time awaiting parts
 - Spares levels
 - Spares unavailability/requirements
- Maintenance
 - Removals (Time, Location and Quantity)
 - Workload to depot
 - Condemnations at depot
 - Tasks performed
 - Percent of time awaiting maintenance
 - Average time awaiting maintenance
- Cost
 - Life Cycle Supportability Costs
 - Costs per operating hour



Cost model incorporates all aspects of the Life Cycle

SPAR / TLCM-AT

SPAR™ is Clockwork's modeling and simulation technology for predicting future system behavior in order to reduce asset ownership cost and increase performance. SPAR™ models are based on statistics and rules that define, at a detailed level, how elements of a system and its support infrastructure behave dynamically through time. By modeling the details of element behavior and the relationships between elements such as reliability, maintenance procedures, and the supply chain, the performance of large, complicated systems can be predicted accurately. TLCM-AT is a custom application built on top of the SPAR simulation engine. Users must only concern themselves with changing inputs under analysis, running life cycle simulations, and evaluating life cycle impacts.

TLCM-AT is quick to access, easy to use, and provides a powerful systems engineering approach to life cycle forecasting!

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