



# Life Cycle Management Services

## Integrated Logistics Support for Mission Critical Systems

Fleet management today is increasingly challenging. Aging fleets, budget constraints, and rising operation and maintenance (O&M) costs may represent your organization's only constants. Fleet managers can benefit significantly from accurate performance data, O&M scenario simulation, trending, and other specialized life cycle management tools and services.

CAE is a world leader in life cycle management and in-service Integrated Logistics Support (ILS). Over the last 20 years, CAE has built an international reputation for ILS engineering excellence through its support programs for the Canadian Forces' CF-18 fleet and managing stringent ILS programs for numerous military customers around the world.

Using field data and cutting-edge technology, we monitor aircraft and support network performance. Our team excels at identifying, validating, and analyzing the impacts of performance metric variations on fleet operations, logistics networks, and resources before adverse effects are experienced.

CAE extends your analysis and modelling capabilities by providing an innovative, flexible, competent, and dedicated workforce. Fleet managers are empowered with up-to-date information and can be confident in the decisions they make to ensure long-term cost-effective support solutions.

## Achievements

### Identification of significant cost savings resulting from:

- Full fleet/item sparing support program
- Equipment maintenance program changes
- Preventive maintenance (PM) supplementary card deck rationalization
- Identification of potential flight safety concerns
- Rapid operational, maintenance and logistics scenario simulation and analysis
- Development and implementation of cutting edge in-service trigger-based trend monitoring support program covering both corrective and preventive maintenance
- Successful implementation of in-service iterative PM rationalization program
- Unparalleled field data analysis process

## Benefits

- Superior lifecycle management
- Enabling performance-based management
- Increased fleet availability
- Reduced total cost of ownership
- Rapid access to key logistics information
- Analyses based on in-service failure rates and other key performance indicators (KPIs)
- Improved asset distribution (right spare, right place, right time)
- Optimized and evolving preventive maintenance program
- Early detection of potential support problems
- Accurate modelling of fleet usage scenarios
- Net-centric logistics management enabler



## Services

CAE offers life cycle management and ILS services adapted to your needs, including:

**Fleet KPIs.** CAE has extensive experience defining and establishing effective KPI programs. We ensure customer objectives are met by aligning KPI program requirements, available source data, KPI selection, and definition, through validation and verification of results.

**Trend monitoring.** Our trend monitoring program provides a trigger-based notification system of logistics infrastructure KPI variations. Our analysis process uses unique data correction techniques to ensure results are not tainted by source data errors, missing records, or other anomalies. Analysis is conducted on the interaction of several KPIs, detailing expected operational, flight safety, maintenance and other logistics impacts, along with cost-effective recommendations.

**Iterative and trigger-based in-service preventive maintenance (PM) program.** Our process provides your organization with the required competency to analyze, document, and recommend changes to ensure an efficient and effective evolution of your fleet's PM program. Our process is supplemented by a trigger-based approach to make sure adverse trends are rapidly identified and validated for potential PM program change.

**Investigations and analysis.** CAE offers a wide range of failure and other reliability, maintainability and supportability investigation services.

**Logistics support analysis (LSA).** CAE has extensive experience in applying ILS and LSA principles, at any phase of equipment's lifecycle. Whether you are acquiring new capabilities, evaluating options or sustaining legacy systems, CAE is a world leader in applied LSA. Our processes employ both predicted and in-service data, as applicable.

**Field data analysis.** CAE's life cycle management process makes extensive use of in-service operational, maintenance, supply, and other engineering and logistics data. We also work to understand processes and behaviours associated with data capture and management. Combined with our technical and engineering knowledge of the system under analysis, our field data analysis process extends beyond the data.

**Sparing analysis.** Our tools and processes support various levels of sparing analysis. Ranging from single item sparing, lifetime, system, and multi-configurations, we provide sparing solutions to optimize availability and cost.

**Simulation and analysis.** CAE offers rapid O&M scenario simulation and analysis providing your team with powerful "what-if" modelling capabilities. Our team can quickly model various deployment options, maintenance program alternatives, or any other logistics support queries.

## Solutions

### In-service support program

- Establishment of equipment and system reliability, availability, and maintainability baselines
- Trend analysis of in-service system and equipment KPIs (identification of supportability, reliability, and resource drivers)
- Iterative and trigger-based preventive maintenance rationalization
- Customizable trigger-based analysis tool-set
- Identification of cost, resource, and downtime drivers
- Component/equipment analysis provided on easy-to-interpret fact sheets
- Identification of least cost option for equipment maintenance

### Logistic support analysis

- Reliability-centred maintenance (RCM) / MSG-3 analysis
- Failure modes effects (criticality) analysis (FME(C)A)
- Reliability and maintainability (R&M) studies
- Safety analysis
- Life cycle cost (LCC) analysis and level of repair analysis (LORA)
- Maintenance task analysis (MTA)
- Impact analysis
- Risk assessment evaluations
- LSAR data loads
- Independent subject matter expertise

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