

FleetCycle® Software and Consulting Services Solutions Enabling Lean MRO

Driven by changing business models, global competition, high fuel costs and other cost factors, airline operators are applying Lean Six Sigma techniques to maintenance, repair and overhaul (MRO) operations to achieve dramatic and sustainable performance improvements.

EmpowerMX provides a unique combination of software and service solutions built to implement and sustain Lean MRO.

Maintenance, repair and overhaul (MRO), operations typically constitute 15-18% of airline operating costs. Aircraft scheduled for maintenance events or delayed in return to service also create the need for capital expenditures for spare aircraft to meet flight dispatch schedules. The significance of these costs highlights MRO as a key business area for transformation. While operators have realized some value and cost gains by implementing in-house MRO profit centers and/or outsourcing, many are turning to Lean Six Sigma production techniques practiced in the manufacturing industry. Lean, a manufacturing concept pioneered in the 1950s, refers to practices designed to continuously reduce or eliminate waste in production processes while adding customer-perceived value. Six Sigma principles reduce the reduction and elimination of the root causes of defects and unwanted variability from processes. When employed in unison, Lean/Six Sigma operations can yield significant improvements in production performance.

EmpowerMX consulting solutions are supported by the power of our FleetCycle® information technology for aviation and maintenance and engineering operations.

Lean Six Sigma Principles

	Define value from the customer's perspective		Continuously reduce or eliminate waste
	Clearly identify value streams in business processes		Reduce process variability; focus on data and measurements
	Execute work assignments to optimize value		Develop a culture that's intolerant of waste and defects
	Assure that every process adds value		Involve every employee in continuous improvement
	Remove obstacles to value creation		

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EmpowerMX aviation maintenance experts provide valuable, enterprise-wide insights into maintenance programs and schedules. They have the background and experience to:



Evaluate and redesign fleet maintenance programs/schedules to eliminate wasted efforts arising from poorly sequenced, too frequent or unnecessary tasks



Optimizing check packages to reduce process complexity



Recommend/implement a dynamic system responsive to FAA Continuing Analysis & Surveillance System (CASS) regulation and designed to serve as the framework for continuous improvement of the maintenance program

The FleetCycle® Suite provides maintenance and engineering organizations with the planning, execution, analysis and reporting solutions required to drive Lean Six Sigma initiatives.

These enterprise-level software solutions support:

- Detailed event planning and execution for heavy, light and line maintenance
- Robust data capture, analysis and reporting for metrics-driven continuous improvements
- Optimal task assignments and material tool allocations
- Real-time status internal/external communications
- Maximization of mechanics' time on assigned tasks at work stations
- Integrated analysis of reliability information from aircraft, legacy and execution information

Waste Types	MRO Examples of Waste	EmpowerMX Provided Lean Solutions
Waiting	Assignments not given timely or unclear; tools and materials not available; tasks improperly sequenced; information not available to mechanics at work stations	✓
Unnecessary Processing	Tasks improperly planned and/or sequenced; maintenance program requirements not critically reviewed	✓
Overproduction	Tasks added without reason; task analysis not completed; critical evaluation of maintenance program not undertaken	✓
Logistics	Mechanic spends too much time off task in order to acquire parts, tools, information, assignments; tasks improperly planned and/or sequenced	✓
Defects	Task improperly performed due to human factors; process defective materials	✓
Materials Management	Parts and components not available at planned time or location; incorrect material provided; excess materials utilized	✓
Unused Employee Expertise	Mechanics not involved in process improvement and problem solving activities; information not available at point of maintenance	✓
Complexity	Tasks, process steps, time allocated, parts provisioning, etc., are more involved than needed to achieve customer requirements	✓
Resource Management	Personnel with appropriate training, correct tools, correct equipment, and other resources required for task performance are not available where/when required	✓