High Performance Maintenance Management

VectorControl℠ is Hexagon US Federal’s process for centralized, high performance aircraft (fixed wing and rotorcraft) maintenance management. The solution offers a centralized and standardized maintenance execution system that provides real-time project status, critical path flow sequencing, and task value monitoring.

Drawing upon best commercial aviation maintenance practices and custom tailoring them for a military environment, VectorControl℠ speeds high-quality aircraft heavy maintenance inspection and repair. For over a decade, the U.S. Air Force has relied on Hexagon solutions for aircraft maintenance and sustainability, resulting in improved safety and reliability, quicker maintenance cycles, and significant cost savings.

Centralized Execution Control

Virtually every major airline and Maintenance Repair Operation (MRO) worldwide uses environment-optimized heavy maintenance management processes to control technical compliance and boost aircraft maintenance production speed and quality. VectorControl’s dynamic process-driven tenets encompass the best of these proven commercial practices, modified for military missions and operational theater requirements.

Hexagon’s solution links all aspects of maintenance for centralized execution control. It carefully manages and provides real-time status of all heavy maintenance activities to include: open/close tasks, inspections, discrepancy identifications, corrective actions, parts, materials, power requirements, hydraulic requirements, and more.

Work Flow Synchronization

Synchronization of the maintenance work flow and supporting processes is critical to ensure maintenance is performed accurately and efficiently and to make certain all supporting equipment is in place to support the workload. VectorControl synchronizes information across maintenance planning, inventory and execution, and enables repeatable workflow processes. The solutions works seamlessly with Hexagon’s VectorCard℠ process to ensure all parts, materials and tools are identified and positioned for the mechanic. Visual displays are used to quickly identify and resolve issues before they become production issues.

Accurate critical path scheduling and tracking is essential to ensure the right tasks are being performed at the right time. Our solution sequences all tasks in execution order by skill and aircraft zone and continually updates the schedule. The work flow follows these sets of rules:

1. Routine tasks are assigned man-hour requirement values, and can be tabulated and grouped by specialty, zone, or other groupings to determine daily requirements.
2. All non-routine discrepancy tasks, identified and developed as a result of maintenance inspection findings, are assigned man-hour estimates at the time of discovery.
3. Man-hour values are tracked for each area and skill type.
4. Daily work plans are developed for available man-hour levels and then tracked for performance to plan.

In addition, managers have a full range of tools and data to monitor and manage key production performance indicators: total routine and non-routine tasks created; closed and remaining tasks; man-hour totals and remaining man-hours by shop/skill and zone; man-hours available per shift/day; and man-hours closed per shift/day.
Standardized Maintenance

VectorControl offers a standardized approach to heavy maintenance inspections. It is a uniform, process-driven, task-execution solution that ensures regulatory compliance and completion of all required tasks. The process continuously refines, optimizes, and uniformly deploys maintenance flow plans. Real-time lessons learned and “After Action Review” recommendations are applied to successive flow plans and milestones resulting in an optimal and standardized maintenance execution. Using a rigorous data validation process, compliance with all requirements and regulations is maximized. Intuitive visual displays illustrating “in-work” tasks improves safety and contributes to the regimented nature of the work flow.

Supply Chain Management

A significant amount of non-routine findings can have a detrimental effect on the maintenance schedule. VectorControl enables rapid schedule adjustment to accommodate such challenges. Supply Chain Managers are quickly alerted to new part requirements needed to keep the schedule on track. Managers also have the ability to schedule maintenance tasks based on supply challenges, greatly reducing negative impact on the schedule. The solution also offers historical analysis and trending to better prepare for future workload.

Benefits

- Significantly speeds up high performance aircraft heavy maintenance inspection and repair, saving time and money
- Standardizes process and management of heavy maintenance inspections
- Enables rapid adjustments to accommodate significant non-routine findings and supply interruptions
- Accelerates high-quality heavy maintenance inspections
- Eliminates rework caused by premature panel closing and shift change issues
- Facilitates performing the right maintenance at the right time
- Seamlessly integrates with Hexagon's other FleetVector\textsuperscript{SM} and FleetInsight\textsuperscript{SM} processes and tools

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