Windchill® MSG-3 (Maintenance Steering Group Version 3)

IDENTIFY AND SCHEDULE RELIABILITY-CENTERED MAINTENANCE TASKS IN ACCORDANCE WITH ATA STANDARDS

Windchill MSG-3 provides a structured methodology to help identify and schedule maintenance tasks, helping ensure system reliability for aircraft in accordance with ATA standards.

Windchill MSG-3 provides step-by-step guidance for identifying and scheduling maintenance tasks for aircraft in accordance with the ATA standard MSG-3 (Maintenance Steering Group Version 3). Context-sensitive questions derived from the standard are structured within logic-enforced diagrams to guide the analyst through MSI (Maintenance Significant Item) identification, failure effect categorization, and maintenance task selection for every system in the aircraft.
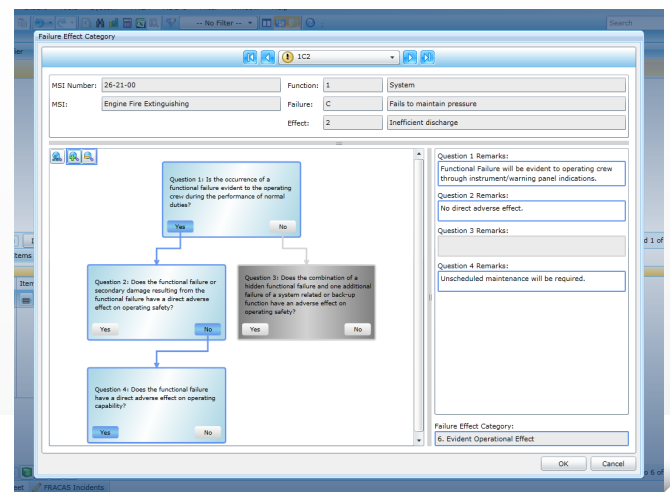
Key Benefits

OOTB support for ATA standard MSG-3

- Identify candidates for reliability-centered maintenance through MSI (Maintenance Significant Item) selection

- Categorize MSI by failure effect, including detectability, economic impact, safety impact, and operational impact

- Define and schedule maintenance tasks for each effect

- Optimize maintenance activities by grouping related tasks

Leverage technology-enforced logic

- Functional decomposition of every system on the aircraft

- Analyze every item for MSI and failure effect category

- Select maintenance tasks using context-sensitive questions

- Logic-enforced diagrams assist in decision-making and help ensure compliance

- Assign highest manageable level to group related tasks

Windchill MSG-3 supports MSI selection, failure effect categorization, and maintenance task selection in accordance with the ATA standard.

Additional technology benefits

- Dynamic software links to reliability metrics, maintenance intervals, historical failure data, etc.

- Fully functional FMEA module enables end-to-end failure mode and effects analysis or FMECA

- Fully customizable reports communicate maintenance tasks and schedules to service teams or governing bodies

MSG-3 benefits

- Improve aircraft safety, reliability, and availability by ensuring every part of the aircraft is submitted to scrutiny

- Reduce maintenance costs by optimizing maintenance intervals and increasing efficiency of maintenance tasks

- Protect designed-in safety and reliability by addressing critical failures that cannot be detected until the item fails

Features and Specifications

Features enabling MSG-3

- Hierarchical system tree enables functional decomposition of every part of the aircraft

  - Also supports import of existing BOM information

  - Supports dynamic integration with PDMLink BOM

- Context-sensitive questions presented in logic-enforced diagrams lead to MSI identification, failure effect categorization, maintenance task selection

  - Vivid, convenient graphical display "grays out" unrelated options/questions

  - Space to add remarks related to each question

- User- and role-based login permissions, workflows, and alerts enforce existing business processes

- Indicate highest manageable level for any MSI

  - Logic-enforced: parent assembly becomes MSI if component part is MSI

- Library functionality ensures past in-service and/or failure data is reused in both current and future analyses

  - Store/reuse hierarchical data, related subtable data

  - Easily store and retrieve library information

- Dynamically link items to their predicted failure rate information, optimal maintenance intervals, field failure rates, etc., from other fully integrated Windchill Quality Solutions modules

- Create a functional FMEA from MSIs

- Supports one-to-many, many-to-one, and many-to-many relationships between effects and maintenance tasks

- Web-style search tool makes it easy to find any item in a system

- Automatic revision tracking with redlining reports

- Available integration with Windchill change management to track CAPAs, change requests, revisions, approvals

- RTF support in memo fields enables hyperlinking to maintenance procedures, other documents

- Word® document attachment displayed in reports

- Display diagrams in reports

- Include quantitative risk level calculations, like RPNs, to complete a FMECA on system

- Automatically roll up local effects to the failure mode of the next, higher-level item; and automatically cascade down the next effect, end effect, and severity to lower level items to ensure traceability

FMEA Features & Specifications

Supported FMEA types

- Process
- Design
- Functional
- Component
- Piece-Part
- FMES (Failure Mode and Effects Summary)

Supported Standards

- MIL-STD-1629A
- FMD-97
- BS5760
- HAZOP
- SAE ARP5580
- AIAG
- SAE J1739
- IEC 61508
- IEC 60812

Supported calculations

- Item/mode failure rates
- Item/mode criticality
- Risk priority number (RPN)
- RPN improvement percentage
- Risk level
- Percent isolation
- Percent detection
- User-definable

Supplied failure mode libraries

- FMD-97
- FMD-91
- MIL-HDBK-338
- NPRD3
- RADC-TR-84-244

- RADC-TR-844-244 4-A

Data hierarchy

- Multiple causes per effect

Sample analysis outputs

- Standard report format per specifications
- Criticality matrices
- Risk levels
- Failure likelihood rank
- Top (n) failure modes by RPN
- Failure modes and effects summary
- Top (n) failure modes by mode criticality
- Action item list
- Failure mode cause Pareto
- LSAR 1388 2B

Automated interface tools for managing data

- Customizable lists and auto-populate features mean even large, complex FMEAs may be constructed quickly and efficiently
- Powerful data filtering to query and search large systems
- Color-code columns, indicate symbols to flag data, auto-merge cells, and freeze columns while scrolling for easier data entry
- Create assembly library files for easy reuse of data, or fault equivalencies for consistency in like failure modes and effects

Input and output data in a variety of formats

- Easily import from or export to commonly used formats like Microsoft Excel, Microsoft Access, XML, and plain text files
- User-definable, wizard-driven custom graphs and reports; output reports to Microsoft Word or Excel, Adobe PDF, or Rich Text Format (RTF)
- Link to other Windchill Quality Solutions modules such as Windchill OpSim, Windchill Prediction, and Windchill FRACAS; generate a fault tree from FMEA data

Web interface powered by Microsoft Silverlight

- Available zero-client, web-based interface provides for data entry and analysis anywhere, anytime
- Fully-featured Windows functionality and familiar Windows interface look-and-feel for easy usability
- Access data and system metrics from a web-based dashboard interface for management-level overview

Enterprise-class features

- Multi-user environment with login permissions, security features, administrator control, and audit trail functionality
- Database integration at enterprise level supports Microsoft SQL Server 2000, SQL Server 2005, SQL Server 2005 Express, SQL Server 2008, SQL Server 2008 Express, Oracle 9i, Oracle 10g, or Oracle 11g
- Feature-rich FlexNet license management tool
- Integration with Windchill PDMLink ensures a single, up-to-date version of the product BOM
- API support enables improved integration with existing business systems, including data entry or lookup without opening Windchill Quality Solutions

Supported languages

- English, French, German, Japanese, Korean, Russian, Simplified Chinese

For More Information

For more information on Windchill MSG-3, please visit:
PTC.com/products/windchill/msg3