MADe RCM (Reliability Centered Maintenance)

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Improve the effectiveness of your RCM process across the asset life-cycle.

Key benefits

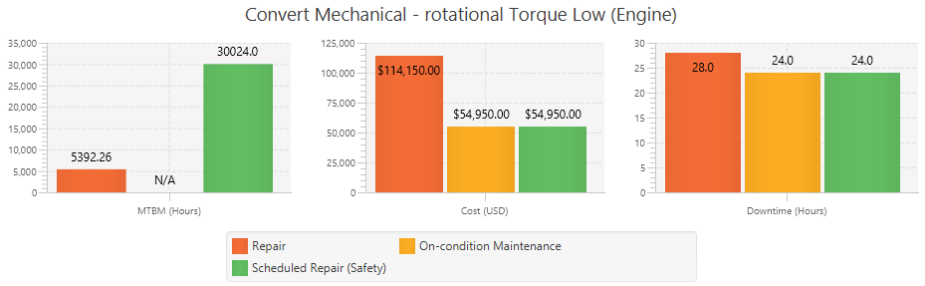
- Optimise Total Cost of Ownership for an asset
- Mitigate risk of divergence in the sustainment budget
- Use RCM to influence / support design
- Configuration Management

Key features

- Automated failure analysis / mapping
- Risk mitigation based on standardised workflow / automation
- Model / Analysis Quality indicators
- Consistent with industry standard

As an asset is designed or upgraded, an RCM analysis is performed to identify the optimal maintenance schedule based on its expected usage & anticipated reliability. Traditionally, the RCM process is resource intensive and lengthy (specifically the function / failure mapping for the system) so it is repeated only if significant cost or technical issues arise. Ideally, RCM analysis should be performed regularly across the asset life-cycle if the usage profile and operational reliability varies from the expected design assumptions.

How can you improve the efficiency of the RCM process to make it cost-effective during the design process and for in-service assets?



Maintenance Comparison Summary.

Why use MADe RCM?

MADe is a model based integrated toolset that enables RCM informed decisions about design and supportability to identify the most cost-effective maintenance approach tailored to the asset usage.

Accuracy of analysis:
MADe RCM uses data logging and configuration management of the process to generate dashboard indicators of both model and analysis quality.

Trade Studies / What-if' Analysis:
Alternate maintenance tasks for a component's critical failure modes can be assessed based on technical validity, availability and economic impact for the expected life of the asset.

What does MADe RCM provide?

A tool for conducting RCM analysis to generate technical feasibility assessment and cost comparison of alternate maintenance approaches that is:

- configurable to integrate with an organisation's engineering processes
- consistent with industry standards (e.g. MSG3, MIL 3034, SAE-JA1012)
- efficient and cost effective at each stage of the asset life-cycle.

How does MADe improve the RCM process?

MADe it is a model-based simulation tool, with technical features that include automated dependency mapping and a standardized taxonomy of function / failure concepts to maximize consistency for the process.

This makes MADe RCM more efficient to use – significantly reducing the resources required and the costs associated with the RCM process.

So what?

Iterative RCM using MADe for the maintenance program for an asset can:

- optimize sustainment costs and availability across the expected life
- reduce the technical and economic risk of a maintenance plan / approach
- ensure that knowledge captured / generated is retained and leveraged

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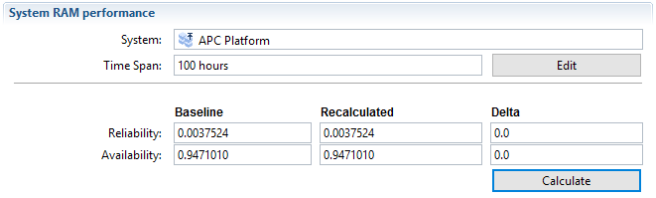
How does MADe improve the RCM process across the asset life-cycle?

Overview / Item Selection

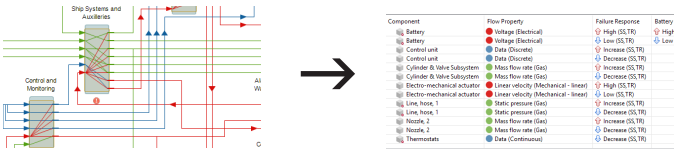
- Selects the most critical items to be maintained based on reliability and criticality data from RBD/FMECA.
- Develops alternate scenario for maintenance approaches and related costs.
- Generates RAM performance of an asset based on maintenance decisions for each item.



Uses functions defined in the MADe model

1 Functions & Functional Failures

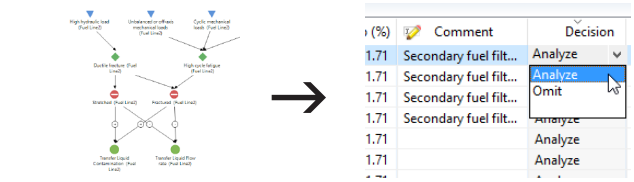
- Determine functions / functional failures for each maintainable item using a standardised taxonomy.
- Set acceptable limits for each function.



Uses functions defined in the MADe model

2 Failure Causes

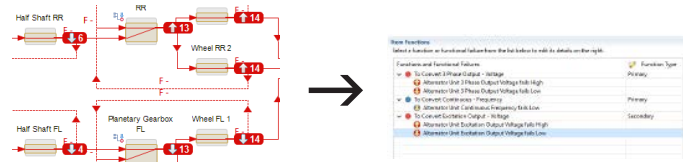
Assign a detection method for each failure cause generated by MADe Failure Diagram and decide which failure mode to consider in the analysis.



Automatically determine failure causes

Failure Effects

Automatically determine the consequences of each functional failure on the overall system response from MADe failure propagation and stepping.



Automatically determine failure effects

Failure Criticality

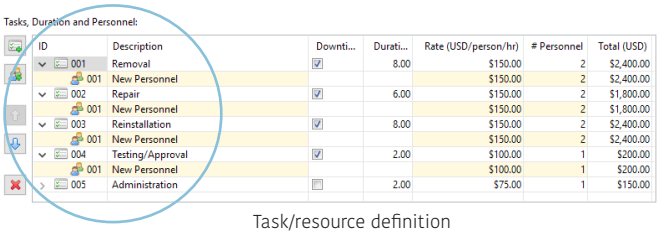
Edit Safety, Operational and Economic impact rankings for each functional failure to automatically generate Measure of Impact (MOI) indices.

Failure Classification

Uses the RCM decision logic to determine whether a failure is Hidden, has a Safety, Operational or Economic impact.

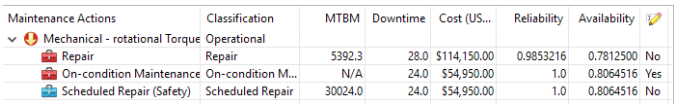
3 Proactive/Reaction Maintenance Action Assignment to each Functional Failure

- Set / edit Schedule Repair, Schedule Replace or On Condition maintenance action worksheets.
- Set / edit Failure-Finding, Redesign, Repair and Replace action worksheets.
- Define tasks/resources for each maintenance action.

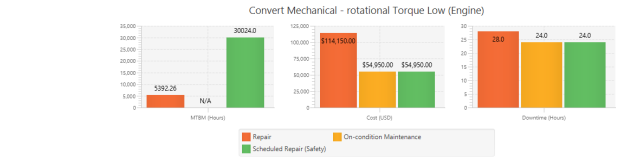


Task/resource definition

- Estimate operational impact and feasibility of redesign.
- Estimate MTTR and total cost for each maintenance action.

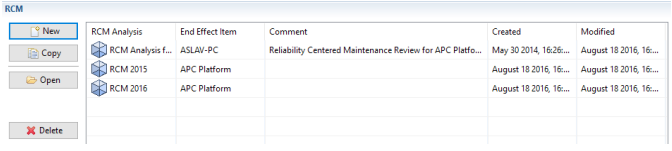


- Compare alternate maintenance approaches.



RCM Management

- Store/modify all RCM analysis performed.



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