

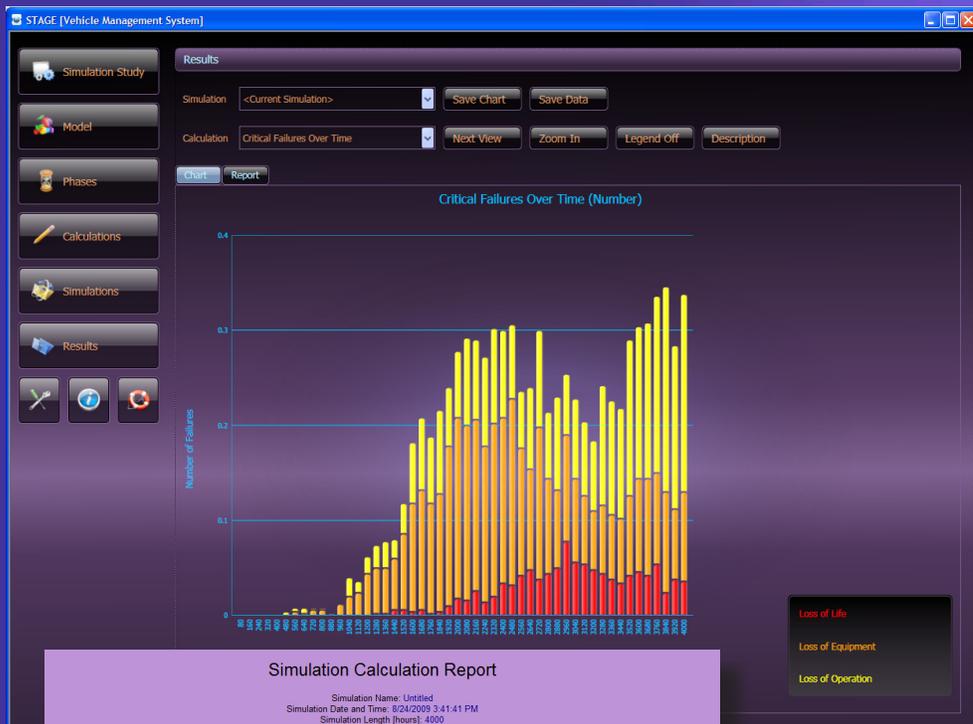
STAGE Systems Health Management and Operational Support Simulation Tool

Pedigree – STAGE is a new simulation-based diagnostic analysis tool from DSI International, a company known as pioneers in the field of Diagnostic Engineering and producers of the most widely used diagnostic modeling tools for the last 40 years.

Power – STAGE simulates aspects of Diagnostic, PHM and ISHM Engineering, showing the support capabilities of a System during its useful lifetime. Many types of analysis can be performed on STAGE, including Testability, System Reliability & Mission Success, Sustainability, and Logistics Resource Allocations.



Innovation – Ushering in a new era of Diagnostic and PHM analysis, STAGE provides information that is simply not available from other tools, processes or service providers.



Flexibility – With STAGE, the analyst can easily simulate diagnostic performance over time, creating graphs & reports that depict various aspects of diagnostic, prognostic, maintenance and support effectiveness at any point in a system's lifetime.

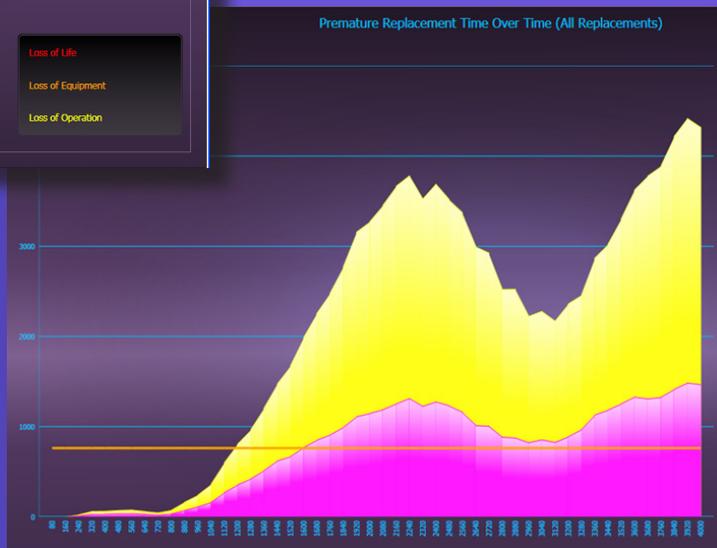
A New Perspective – Many of the calculations in STAGE are traditional metrics that have been mapped “over time” to provide a richer understanding of the effects of various design decisions upon product ownership.

Simulation Calculation Report

Simulation Name: Untitled
Simulation Date and Time: 8/24/2009 3:41:41 PM
Simulation Length (hours): 4000
Iterations Completed: 500 of 500
Simulation Seed: 28587

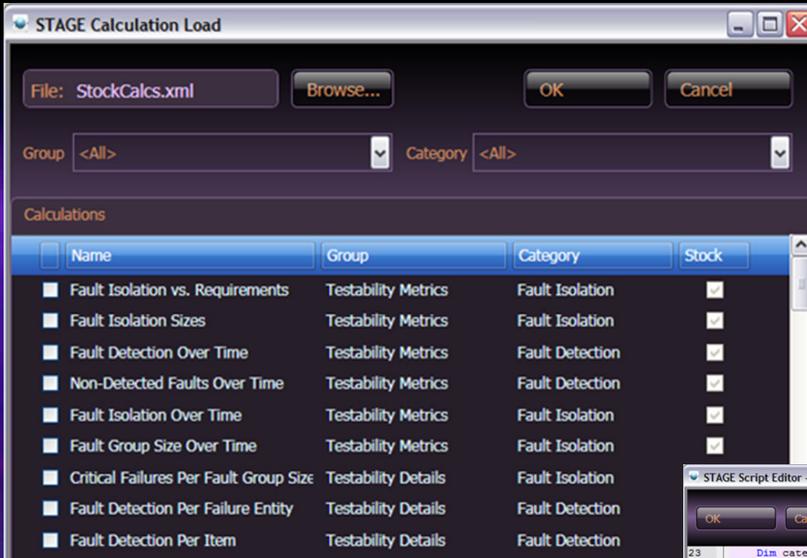
Likelihood of Critical Failure Over Time (Incremental)

#	Simulation Time (in Hours)	Likelihood of Critical Failure (Loss of Operation)	Likelihood of Critical Failure (Loss of Equipment)	Likelihood of Critical Failure (Loss of Life)
1	80	.000	.000	.000
2	160	.000	.000	.000
3	240	.000	.000	.000
4	320	.080	.000	.000
5	400	.240	.080	.000
6	480	.400	.120	.000
7	560	.560	.240	.000
8	640	.720	.360	.000
9	720	.680	.400	.000
10	800	.760	.560	.000
11	880	1.400	.920	.000
12	960	1.960	1.280	.000
13	1040	3.040	2.040	.000
14	1120	4.480	3.000	.040
15	1200	5.760	3.720	.080
16	1280	6.480	4.480	.200
17	1360	8.120	5.720	.320



Economical Sophistication – With over 120 pre-defined graphs (plus the ability to extend the stock library with user-scripted calculations), STAGE can perform comprehensive Systems Health Management and Operational Support simulations with surprisingly little effort.

STAGE Systems Health Management and Operational Support Simulation Tool



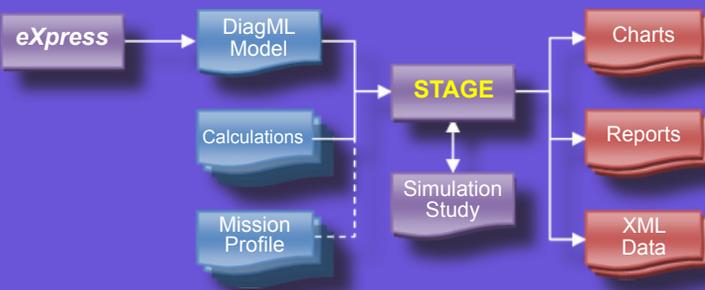
Flexibility & Rigor – STAGE offers an extensive library of pre-defined calculations that are parameterized for easy customization. Because all STAGE calculations are scripted, analysts can easily modify calculations to better address the objectives of a specific project, or create their own calculations for truly custom analyses.

STAGE simulates discrete events based on a Monte Carlo process. Because results are typically based on data from a number of random, yet representative simulation runs, STAGE provides the perfect balance of randomness, rigor and repeatability.



Simplicity – STAGE is not only easy to learn, but easy to incorporate into your existing workflow. The “intuitiveness” of the STAGE interface gives the software a game-like feel. All of the “smarts” are hidden behind the scenes—in the calculations library and in the diagnostic model.

All of the system data required for STAGE simulations can be easily derived from diagnostic analyses in *eXpress*—DSI’s Diagnostic Engineering tool. In fact, STAGE can import model data from any tool that supports the DiagML format for the interchange of diagnostic design data.



Process Fit – STAGE is an important element in DSI’s Integrated Systems Diagnostics Design (ISDD) Process, which promotes collaborative, proactive diagnostic design principles to ensure that the maximum benefits are derived from an organization’s collective analysis efforts.

STAGE, by performing diagnostic and prognostic health management processes in a simulated, yet “realistic” theater, bridges gaps between contract requirements (which reduce complex system behavior to a few simplified metrics) and actual system performance.

Value, Benefits & Features

- Leverages, maps and interconnects investments into diagnostics, PHM, ISHM and systems engineering
- Provides a method to validate diagnostic and design data at a glance using vivid, presentation-ready graphs
- Facilitates trade studies through iterative analysis based on diagnostic design data imported via DiagML
- Provides turn-around-time assessments at any point in the operational timeline
- Supports cost benefit analysis between different mixes of RCM (diagnostics and planned maintenance) and CBM (prognostics) approaches to system health management
- Determines diagnostic contribution to False Alarms and MTBFA
- Provides accurate estimates of spares consumption based on the simulated maintenance action timeline
- Evaluates system safety and success based on failure criticality and corrective action capabilities