SimManager™
Simulation Process and Data Management

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Market demands and competitive pressures continue to drive product design and development teams in organizations, big and small, to rapidly innovate, while keeping the costs low. Performance, safety, and reliability are some of the challenges faced by all organizations, while some industry segments have the additional burden of meeting regulatory requirements, which can consume significant resources if the design process is not efficiently implemented.

During the past few decades, simulation has taken the center stage in helping companies design and develop innovative products. In addition to reducing physical prototyping costs, simulation enables engineers to explore a bigger design space and thus more design possibilities, which is very cost effective especially when physical testing is cost-prohibitive. Simulation also provides much greater insight than physical testing earlier in design process.

With its rapid rise in awareness and popularity of simulation methods like Finite Element Analysis, and Computational Fluid Dynamics, there has been exponential rise in the amount of data created and available to engineers. Data volumes have increased nearly 1000 times for a typical automotive OEM over the past decade. This raises new challenges for design and development community to efficiently manage the massive amount of data generated by simulation, and to quickly obtain relevant answers for the design questions.

Simulation Process and Data Management addresses this need for companies of all size, helping the companies manage the simulation data, while saving significant time and resources. MSC Software is a leader in providing this technology to engineering community through its robust, configurable, and easy to use platform of SimManager.

SimManager

SimManager is a web-based simulation and test data management system for all simulation data and processes. With support for all the steps from project initiation to final report generation, SimManager addresses some of the most important issues encountered by analysis groups, which results in higher simulation throughput and efficiency at a lower cost. With SimManager, users gain the benefits of:

- Efficient management of data in a central, searchable environment
- Reduced time spent in repeatable tasks
- Improved simulation efficiency enabling you to assemble and run thousands of simulations
- Increased productivity with support for High Performance Computing (HPC) environment
- Faster answers to design questions with quick sorting of terabytes of data
- Customized, faster report generation to meet your documentation needs
- Traceability of entire simulation pedigree for quicker responses
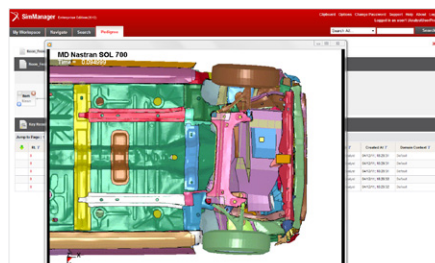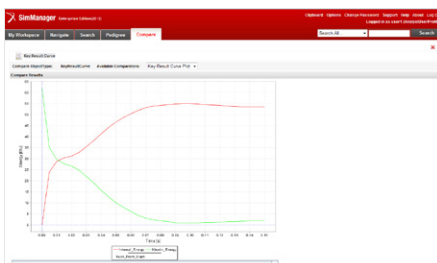
Process Management and Automation

- Automation reduces manual execution of intensive, repetitive simulation tasks and processes
- Work request and workflow notification keep projects on track and enable management oversight
- Dashboards enable quick evaluation of studies and scenarios relative to design targets
- Built-in job queue interface optimizes execution of simulation processes and solver runs
- Simulation processes, input and output are documented via Audit Trail
- Open support of tools and applications, including MSC, 3rd party, and in-house applications
- Leverages existing hardware and software infrastructure
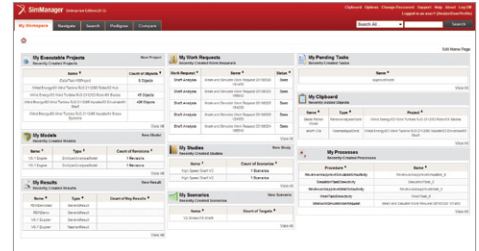- Web-based configuration enables fast deployment

Enterprise Integration

- Integrated access to SimManager from MSC applications
- Web-browser access to 3rd party simulation applications and other popular engineering tools
- PDM integration using PROSTEP OpenPDM technology
- Integration with Requirements Management systems
- Fully compatible with job queuing and submission systems including PBS Pro, LSF, Sun Grid Engine, and Oracle Grid Engine
- Test Data integration and comparison

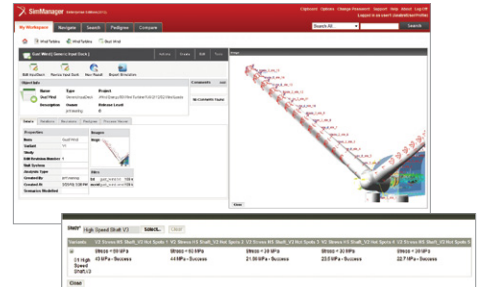## Proven Scalability and Business Results

- Adopted by industry leaders in automotive, aerospace, consumer goods, electronics, shipbuilding and other industries
- Proven performance scalability supporting thousands of users globally
- Configurable to support multiple global locations
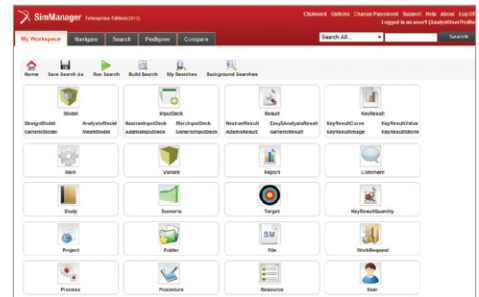- Unites discipline and simulation teams to support complex systems development

Capabilities

Simulation Content Management

- Store, protect, distribute simulation files and methods (MSC, 3rd party, in-house)
- Configurable data presentation
- Object lifecycle management (revisions and release levels)
- Automated pedigree/audit trail capture
- Intelligent search and retrieval
- Data comparison (curves, values, reports, etc.)
- Role based access control
- Object-level security

Simulation Process Management

- Process capture and re-use
- Automated model variant rerun
- Process version control
- Automatic job queuing and submission
- Process chaining
- Automatic process and data output capture

Systems Engineering

- Multi-disciplinary analysis
- Configurable dashboards
- Results comparison to other results and targets

Enterprise Scalability

- Proven Scalability capable of simultaneously running 1000's simulations by 100's of users and managing Petabytes of data
- Enterprise performance (load balancing, failover, multi-site deployment)
- Integration with non-MSC applications (any 3rd party CAE commercial, HPC, PDM, RMS, TDM)

Platforms Specifications

- Web application server integration
- Relational database integration (Oracle, SQL Server, PostgreSQL Server)
- Distributed Vaults to ensure efficient file transfer
- Configurable Enterprise Authentication (Database, LDAP, Active Directory, SSO Systems)
- Out-of-the-box quick-start configuration

User Interface Key Features

- User-friendly interface to support engineering CAE processes
- Workspace-driven access to data, processes, search, and navigation
- Customizable workspace to maintain the context of work-in-progress simulations and data
- Home Page personalization
- User interface configuration of user access, projects, objects, monitoring, and processes
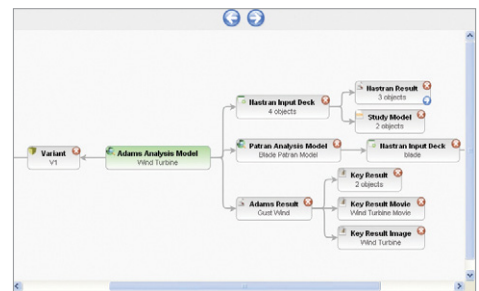
Home page content personalized for optimal efficiency per user.

Study framework tracks product performance against targets.

Dedicated Search Workspace provides intuitive filtering for fast down-selection.

Automated pedigree tracking captures complete data and process trail.

MSC Software