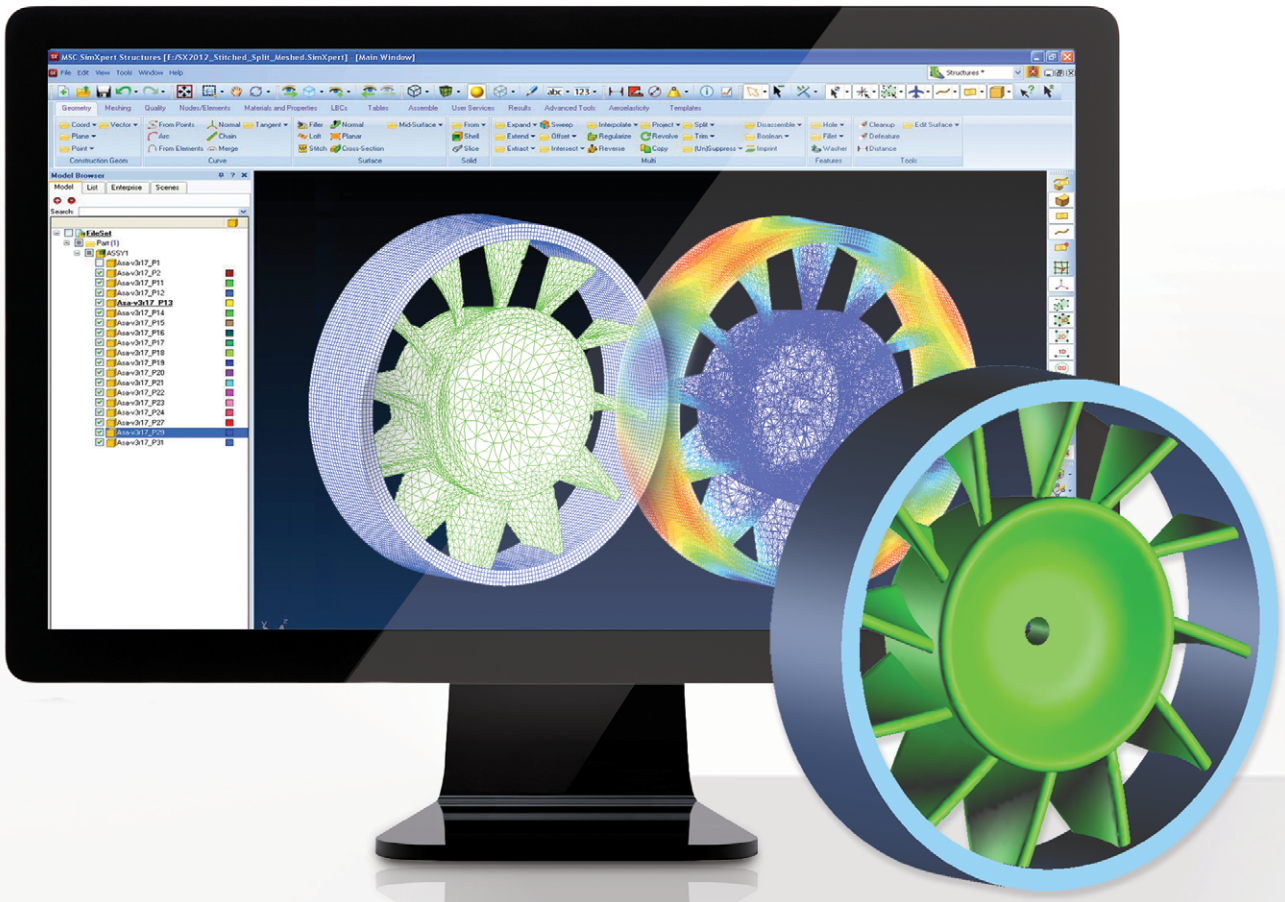
MSC Nastran Desktop™

Multidiscipline Simulation for the Desktop



MSC Software®

MSC Nastran Desktop

The Future is Multidiscipline. Affordable for your Business.

High Performance

MSC Nastran Desktop makes MSC Nastran, the leading structural FEA solution, accessible to worldwide innovative industries and engineers with diverse high-end simulation technology needs and increasing cost pressure challenges.

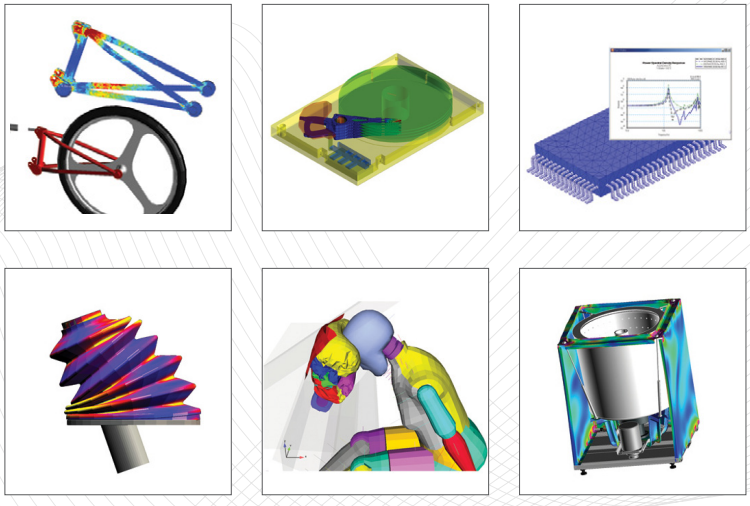
Designed specifically for suppliers and medium-sized manufacturers, MSC Nastran Desktop provides flexible, low-cost access to MSC Nastran's extensive and powerful solution capabilities through SimXpert's scalable and integrated easy to use interface.

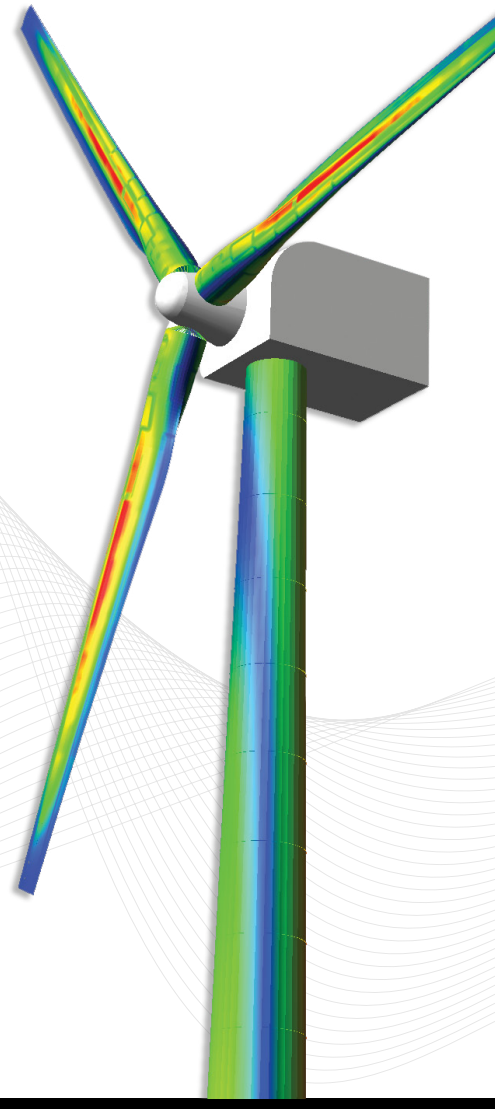
Any industry or company, independent of its size, can benefit from modular access to the most powerful multidiscipline simulation technology in the world through tailored solutions.

Engineers can start with the MSC Nastran capabilities that fit their current FEA needs and easily move up to more advanced functionality while remaining in the same user environment, leading to accelerated productivity and shorter learning curve.

Each MSC Nastran Desktop solution is available at affordable prices, and backed by MSC Software's best-in-class technical support and engineering partnership – aimed at advancing customers' product technology innovation: a promise that comes from being the "original" developer of the gold standard in structural analysis – Nastran.

- Tailored to Your Needs
- Affordable
- Easy to Use
- Scalable
- Powerful





Reasons To Buy

Designed specifically for suppliers and mid-sized manufacturing companies, MSC Nastran Desktop solutions have been custom built based on the requirements of leading innovative industries and mechanical engineers like you, with diverse high-end simulation technology needs and increasing cost pressure challenges.

Affordable

The MSC Nastran Desktop solutions are configured to the diverse but sophisticated simulation requirements of engineers who face robust engineering challenges and increased cost pressures. With MSC Nastran desktop, companies receive low-cost, high value simulation solutions that provide access to the industry standard MSC Nastran to address all their simulation needs ranging from linear statics and dynamics structural problem to advanced coupled physics and multidisciplinary problems.

Ease of Use

Many medium sized manufacturing businesses often have overlapping designer and analyst roles; and therefore need easier to use simulation tools. MSC Nastran Desktop overcomes this hurdle with an easy to use and flexible interface of SimXpert.

Most Trusted Results in the World

Leading manufacturers around the world rely on MSC Nastran. As a world leader in CAE technologies for near 50 years, MSC's contributions to simulation include:

- Development of technologies for multiple disciplines with pioneer commercial products like Nastran, Marc and Adams for analysis of linear, nonlinear and multibody dynamics problems.
- Providing robust software solutions as a partner for top automotive and aerospace companies
- Providing simulation solutions to all major industries with worldwide presence

Powerful

With MSC Nastran Desktop, engineers get access to the full strength of the most technologically developed CAE solver in the world. Multidisciplinary capabilities ranging from linear to nonlinear static and dynamic analysis, thermal and acoustic studies and also rigid body dynamics are available within a common user environment.

Flexible

MSC Nastran Desktop packages have been tailored for the specific analysis needs of suppliers and mid-sized manufacturing companies with diverse analysis needs. Depending on design requirements, engineers can start with linear static analysis and move up to advanced nonlinear and multidisciplinary simulations that couple motion and structures into single model.

Assured

OEMs around the world trust Nastran results. As a result, it has become recognized as the standard for FEA analysis providing the certainty needed in today's competitive market where being first to market with a quality product is key to succeeding. In 2003, NASA put a value to society on the NASTRAN structural analysis simulation software that MSC had delivered to it at $10B+.

Compliance

MSC Nastran, the core solver behind MSC Nastran Desktop, is certified and accepted as the benchmark and gold standard for accurate computational results. Suppliers working with large OEMs can be confident that they are complying with the same standards adopted by their large customers, and therefore potentially win more business as a design partner. The ability to exchange models between OEM and suppliers also prevents expensive duplicate model building or error prone translation, thereby leading to faster turnaround of results with greater confidence in results.

Scalable

Each package has been tailored for the specific analysis needs of suppliers and mid-sized manufacturing companies with diverse analysis needs and skill sets. Depending on design requirements, engineers can start small with linear static analysis and move up to advanced nonlinear and multidisciplinary simulations.

Best-in-Class Support

MSC Nastran Desktop is backed by MSC Software's unsurpassed engineering and technical expertise. With nearly 50 years of engineering simulation and industry experience, there is no engineering problem MSC can't help our clients solve. We provide process consulting, simulation project assistance, hands-on technical support, and training. MSC has one of the best technical teams in the CAE industry with known leadership in their respective areas of expertise. With offices in nearly 20 countries, MSC staff can work round the clock to deliver a rapid turnaround of results.

Quickly Deployable

MSC Nastran Desktop is delivered with learning aids including tutorials, documentation and training backed by support teams so customers can make productive use of software quickly and see faster return on investment.

MSC Nastran Desktop

Packaged to Suit Your Needs Today and Scalable for Tomorrow.

MSC Nastran Desktop delivers the power of MSC Nastran through a modularized approach. Listed below are the various modules:

"All of the MSC Nastran models have proven valuable for addressing the various modifications and design changes inherent in a proof of concept/prototype effort."

D. J. Taylor, Principal Engineer, AeroVironment



MSC Nastran Desktop Structures

This base desktop solution is tailored to stress engineers working on components, assemblies and structures subjected to static and dynamic loads. Engineers can analyze any structural component with ease, determine if the structure is going to buckle or yield, and ensure the design performs within tolerance limits.

MSC Nastran Desktop Structures & Motion

This solution helps structures and motion engineers study the true functional performance of systems using the multibody dynamics (MBD) and kinematics apabilities engine of Adams, the most widely used MBD solution in the world together with the power of MSC Nastran.

MSC Nastran Desktop Advanced Dynamics

This solution helps structural dynamics and acoustics engineers virtually simulate designs that are subjected to advanced dynamic loading conditions.

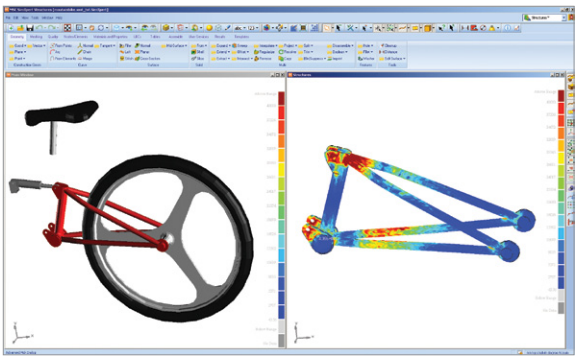
MSC Nastran Desktop Advanced Structures

Tailored to structural engineers simulating nonlinear and multiphysics problems including nonlinear materials, contact, large strain and displacement behaviors, and thermo-mechanical coupling.

MSC Nastran Desktop Advanced Structures & Motion

This solution helps structural and systems engineers study the true functional performance of systems using the multibody dymamics (MBD) and kinematics capabilities engine of Adams, the most widely used MBD solution in the world together with the advanced structural and nonlinear capabilities of MSC Nastran.

MSC Nastran Desktop Structures



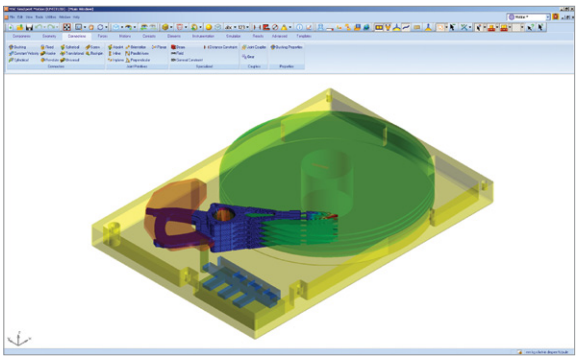
MSC Nastran Desktop Structures is the base desktop solution tailored to stress engineers working on components, assemblies and structures subjected to static and dynamic loads. Engineers can analyze any structural component with ease, determine if the structure is going to buckle or yield, and ensure the design performs within tolerance limits.

Through the use of robust joints and connectors, interaction and load transfer between components of an assembly is made easy. The linear contact capability of MSC Nastran expands the possibilities of simulation studies that can be performed, while the intuitive and easy set up saves users significant set up time and improves productivity.

This package includes:

- Linear Statics
- Dynamics
- Modal
- Buckling
- Connectors
- Linear Contact
- Pre/post processing
- Automation and scripting

MSC Nastran Desktop Structures & Motion



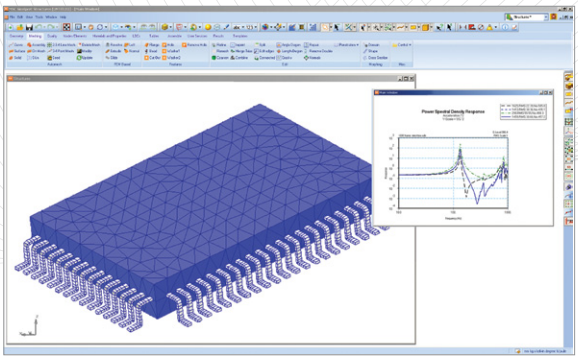
MSC Nastran Desktop Structures & Motion helps structures and motion engineers study the true functional performance of systems using the multibody dynamics (MBD) and kinematics capabilities engine of Adams, the most widely used MBD solution in the world together with the power of MSC Nastran.

Engineers can use this solution to get accurate loads for subsequent FE analyses, and perform flex body integration (coupling of motion/structures) to make more accurate design decisions earlier in the development cycle and reduce physical test costs.

This package includes:

- Linear Statics
- Dynamics
- Modal
- Buckling
- Connectors
- Linear Contact
- Multbody Dynamics
- Motion-Structures Flex Body Integration
- Pre/post processing
- Automation and scripting

MSC Nastran Desktop Advanced Dynamics

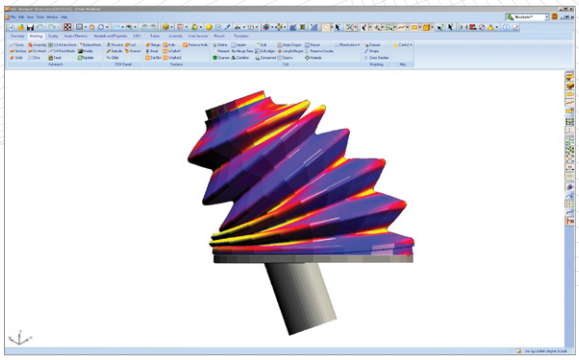


MSC Nastran Desktop Advanced Dynamics helps structural dynamics and acoustics engineers virtually simulate designs that are subjected to advanced dynamic loading conditions. With this solution, engineers can analyze both static and dynamic loads, study interior acoustic behaviors such as noise and vibration and receive a productivity boost with MSC Nastran's superelement assembly features that deliver immediate efficiencies when modeling and analyzing large assemblies.

This package includes:

- Linear Statics
- Modal
- Buckling
- Connectors
- Advanced Dynamics
- Acoustics
- Random Vibration
- Superelements
- Pre/post processing
- Automation and scripting

MSC Nastran Desktop Advanced Structures



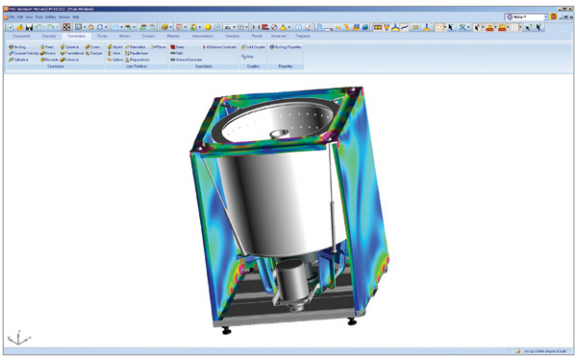
MSC Nastran Desktop Advanced Structures Is tailored to structural engineers simulating nonlinear and multiphysics problems including nonlinear materials, contact, large strain and displacement behaviors, and thermo-mechanical coupling.

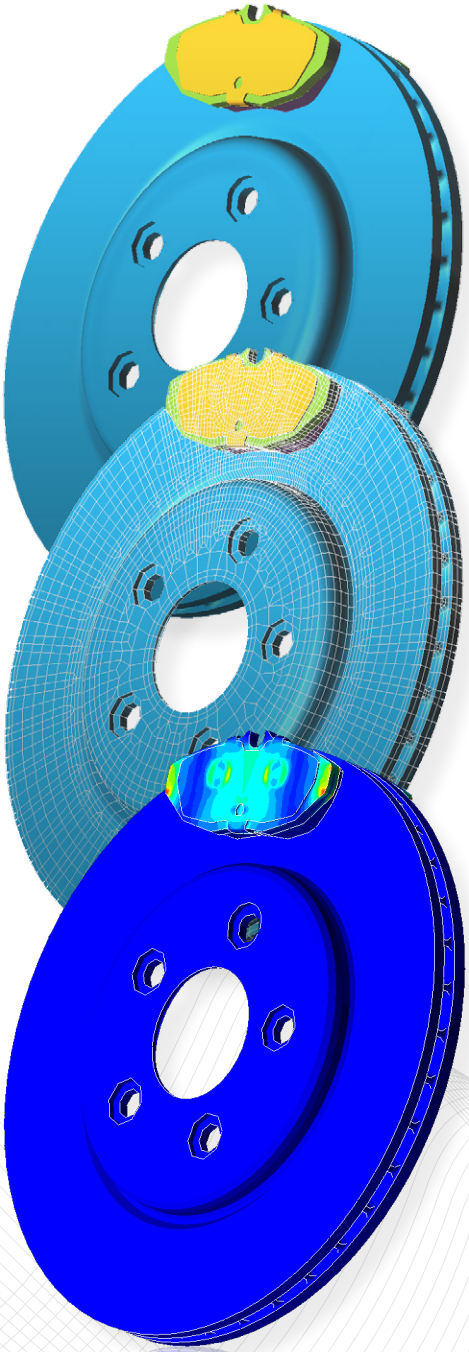
With capabilities to simulate complex nonlinear materials along with large strain and displacement behaviors, the Advanced Structures Package provides engineers with a complete nonlinear solution. The same easy to use contact analysis capability available in Structures Package is also available here with ability to address large displacements and rotations.

This package includes:

- Linear Statics
- Dynamics
- Modal
- Buckling
- Connectors
- Linear Contact
- Advanced Nonlinear
- Thermal
- Thermal-mechanical coupling
- Pre/post processing
- Automation and scripting

MSC Nastran Desktop
Advanced Structures & Motion





MSC Nastran Desktop Advanced Structures & Motion helps structural and systems engineers study the true functional performance of systems using the multibody dymamics (MBD) and kinematics capabilities engine of Adams, the most widely used MBD solution in the world together with the advanced structural and nonlinear capabilities of MSC Nastran.

Engineers can use this solution to get accurate loads for subsequent FE analyses, and perform flex body integration (coupling of motion/structures) to make more accurate design decisions earlier in the development cycle and reduce physical test costs.

This package includes:

- Linear Statics
- Dynamics
- Modal
- Buckling
- Connectors
- Linear Contact
- Advanced Nonlinear
- Thermal
- Thermal-mechanical coupling
- Multibody Dynamics
- Motion-structures Flex Body Integration
- Pre/post processing
- Template automation

MSC Nastran Desktop Solution Guide

Selecting a Solution that Fits Your Needs today has never been easier.

	Structures	Structures & Motion	Advanced Dynamics	Advanced Structures	Advanced Structures & Motion
Analysis Capablilities					
Linear Statics	■	■	■	■	■
Normal Modes	■	■	■	■	■
Linear Buckling	■	■	■	■	■
Connectors	■	■	■	■	■
Linear Contact	■	■	■	■	■
Adams Integration	■	■	■	■	■
Dynamics	■	■	■	■	■
SMP (parallel processing)	❖	❖	■	❖	❖
Superelements	❖	❖	■	❖	❖
Acoustics (interior)	❖	❖	■	❖	❖
Implicit Nonlinear	❖	❖	❖	■	■
Nonlinear Heat Transfer	❖	❖	❖	■	■
Advanced Thermal	❖	❖	❖	■	■
Coupled Thermal-Mechanical	❖	❖	❖	■	■
Multibody Dynamics	❖	■	❖	❖	■
Kinematics	❖	■	❖	❖	■
Modeling and Post Processing					
SimXpert Geometry Modeling	■	■	■	■	■
SimXpert Geometry Translators	■	■	■	■	■
SimXpert Structures Workspace	■	■	■	■	■
SimXpert Motion Workspace	❖	■	❖	❖	■
SimXpert Motion Solver	❖	■	❖	❖	■
SimXpert Process Automation	with SimXpert	with SimXpert	with SimXpert	with SimXpert	with SimXpert
Patran GUI	❖	n/a	❖	❖	n/a

■ *- standard as part of package*

❖ *- optional add-on products*

Other MSC Software Products

Patran®

Complete FEA Modeling Solution

Patran provides a user environment for modeling the most complex FEA problems.

SimXpert®

Fully Integrated Multidiscipline Simulation Solution

SimXpert integrates CAE Disciplines into a single environment so engineers can simulate reality.

MSC Nastran™

Structural & Multidiscipline Simulation

The premiere finite element analysis solver that continues to be the selected choice by engineers for over 40 years.

Actran™

Powerful Acoustic Simulation Software

The Actran product suite is the the most powerful engineering solution for acoustic, vibro-acoustic, and aero-acoustic modeling and simulation.

Adams™

The Multibody Dynamics Simulation Solution

Adams helps engineers understand real dynamics of mechanical systems.

Marc®

Advanced Nonlinear & Multiphysics

Marc is the dedicated nonlinear finite element analysis solver designed to simulate complex nonlinear behavior of engineering materials.

SimManager™

Simulation Data and Process Management

SimManager helps companies establish repeatable processes for simulation.

SimDesigner™

CAD-embedded Multidiscipline Simulation

SimDesigner helps design engineers bring analysis early in the design process to accelerate time to market.



Our products, services & people are used by 900 of the top 1000 manufacturers in the world, including:

- Aerospace & Defense
- Automotive & Transportation
- Agricultural Equipment
- Heavy Machinery
- Medical Devices
- Oil and Gas
- Nuclear
- Renewable Energy
- Consumer Products
- Packaging
- Electronics

About MSC Software

Simulating Reality, Delivering Certainty

MSC Software is one of the ten original software companies and the worldwide leader in multidiscipline simulation. As a trusted partner, MSC Software helps companies improve quality, save time and reduce costs associated with design and test of manufactured products. Academic institutions, researchers, and students employ MSC technology to expand individual knowledge as well as expand the horizon of simulation.

MSC Software's engineering simulation technology is used by leading manufacturers for linear and nonlinear finite element analysis (FEA), acoustics, CFD, multi-physics, optimization, fatigue and durability, multi-body dynamics, and control systems simulation. The company's products accurately and reliably predict how products will behave in the real world to help engineers design more innovative products - quickly and cost effectively.

Company Profile

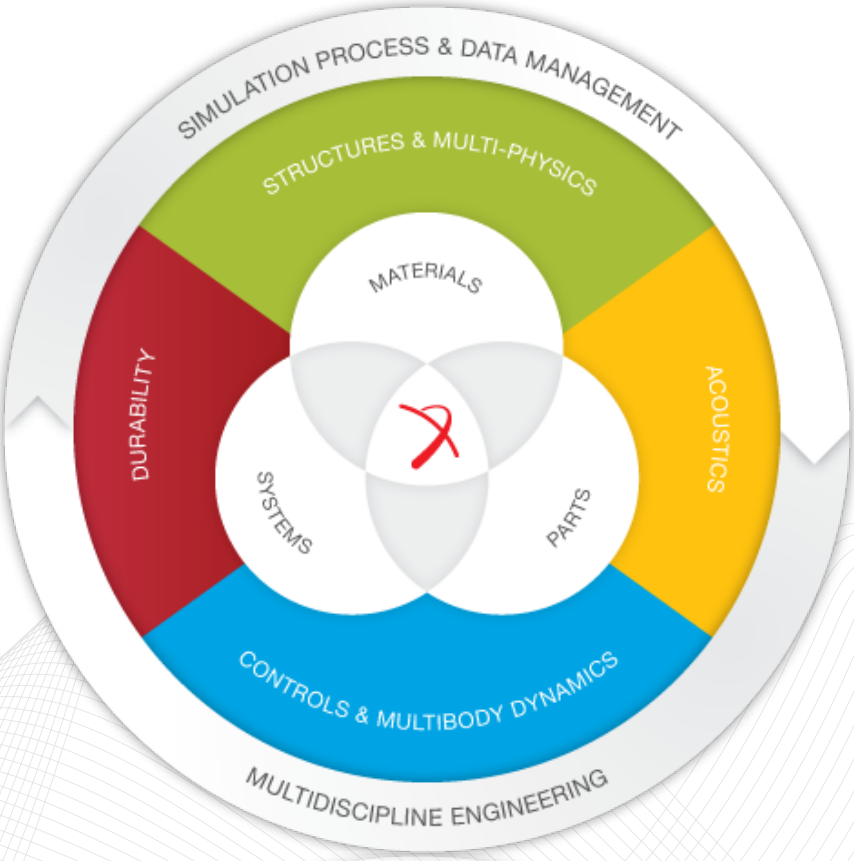
MSC Software Corporation was formed 48 years ago and was awarded the original contract from NASA to commercialize the finite element analysis (FEA) software known as Nastran (NASA Structural Analysis). MSC pioneered many of the technologies that are now relied upon by industry to analyze and predict stress and strain, vibration & dynamics, acoustics, and thermal analysis in our flagship product, MSC Nastran.

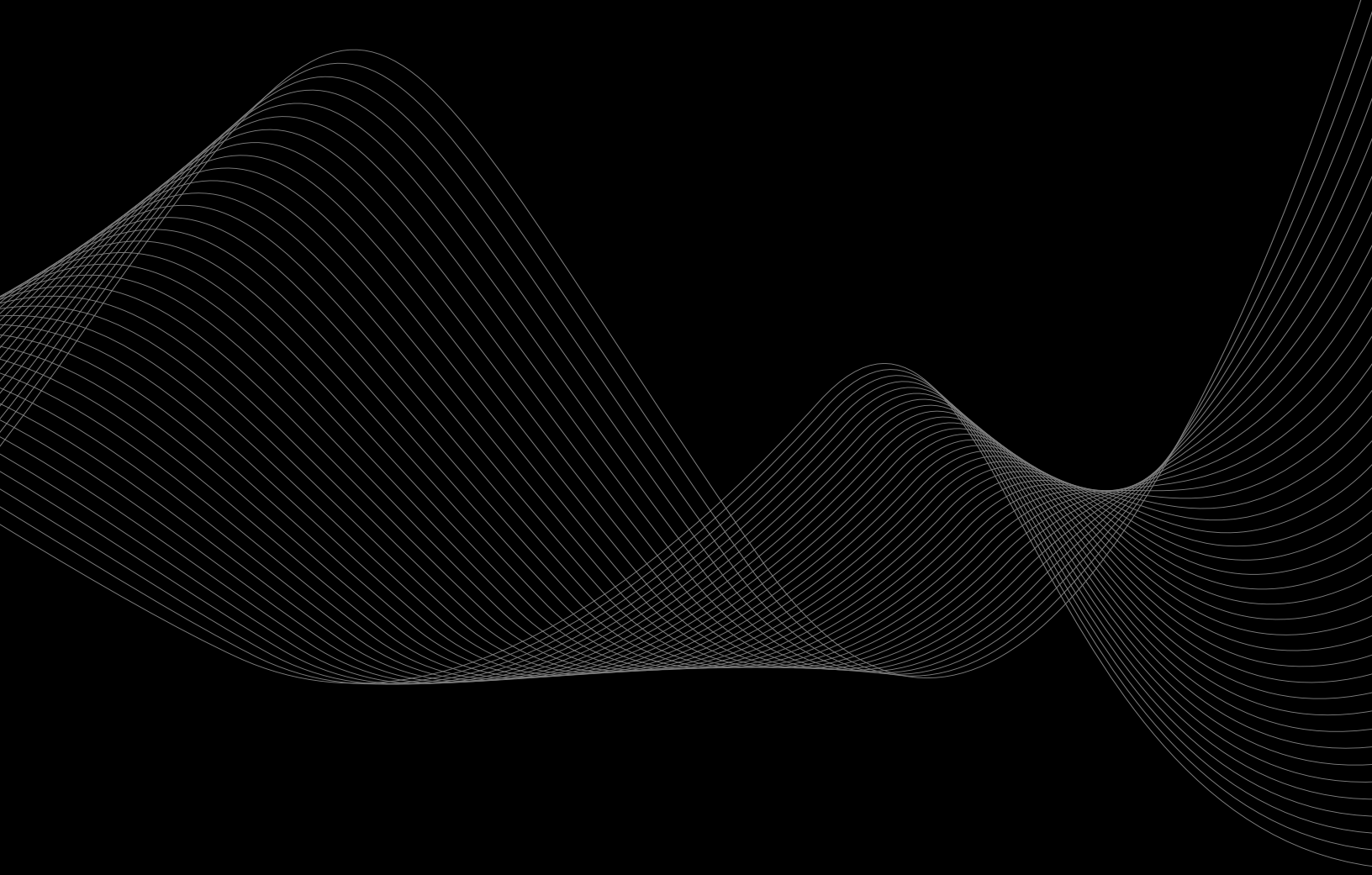
Over our rich history, MSC has developed or acquired many other well known CAE applications including Patran, Adams, Marc, Dytran, Fatigue, SimXpert, SimDesigner, SimManager, Easy5, Sinda, and Actran. We are committed to the continued development of new CAE technology that integrates disciplines and technologies from standalone CAE tools into unified multi-discipline solvers and user environments. These "next generation" products enable engineers to improve the reliability and accuracy of their virtual prototypes by including multi-physics and multi-discipline interactions.

MSC is also the CAE industry's leader in extending simulation to the engineering enterprise. Our customers recognize the need to scale the benefits of virtual prototyping and testing from pockets of experts to mainstream engineering and product development, and MSC offers the only Simulation Data and Process Management platform in the world that has been successfully deployed in industries including automotive, aerospace, shipbuilding, electronics, and more MSC Software employs 1,000 professionals in 20 countries.

MSC Software Products

MSC Software makes products that enable engineers to validate and optimize their designs using virtual prototypes. Customers in almost every part of manufacturing use our software to complement, and in some cases even replace the physical prototype “build and test” process that has traditionally been used in product design.





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For additional information about MSC Software's products and services, please visit: **www.mscsoftware.com.**

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MSC Software

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