



SIMCENTER 3D

Extensive geometry editing and simulation tools.

Siemens Simcenter 3D software is an advanced and powerful CAE environment. Simulation and analysis can be carried out quickly and easily with extensive geometry editing capabilities, associative simulation modeling and multi-discipline solutions. This solution guide will give you all you need to explore the platform.

EMIXA

Expert
Partner

Digital Industries Software

SIEMENS

SIMCENTER 3D

Simcenter 3D provides advanced tools that save you time and reduce the risk of error.

Simcenter 3D software encapsulates a range of simulation functionalities for various disciplines including; structural and acoustics, noise, vibration and harshness (NVH), flow, thermal, motion and composites analyses, as well as optimisation and multiphysics simulation. As part of Simcenter 3D, co-simulation for 1D and 3D designs alongside model simulation tools provide more simulation insight than ever before.

EMIXA

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Acoustics Simulation

Advanced modelling capabilities for efficiently predicting and simulating flow-induced noise. Providing simulation for two types of scenarios; preparing flow-induced pressure loads that apply to a structural model and turbulence in the flow that acts as a noise source that radiates acoustically in the same fluid environment it originated.

[Find out more](#)

Composites

Meet various industry standards and overcome challenges such as financial, regulatory and environment constraints through the use of composite materials. Replacing traditional materials has a range of advantages such as better performance, lighter weight, lower energy consumption and fewer greenhouse gas emissions.

[Find out more](#)

Fluid Dynamics Simulation

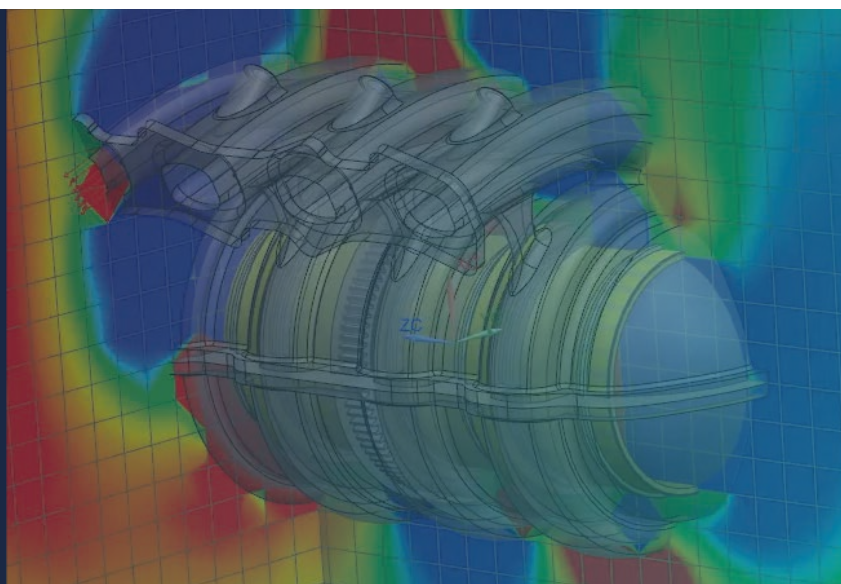
Ensure accurate results and save time on creating fluid domain geometry from complex assemblies. The fluid models can be used for either computational fluid dynamics (CFD) or acoustics simulation.

[Find out more](#)

Multiphysics Simulation

This feature combines all CAE solutions in one integrated platform. Capabilities include analysis of thermal flow, thermomechanical, fluid structure, vibro-acoustics, aero-vibro-acoustics, aero-acoustics, electromagnetic thermal and electromagnetic-vibro-acoustics.

[Find out more](#)



Key Features

A portfolio of solutions with 1D/3D co-simulation, data management and engineering services that offer composite simulation. As a result, you have the ability to predict, analyse and optimise structural behaviour of composite material. Alongside these capabilities Simcenter 3D 5 encompasses geometry editing, associative simulation modelling and multi-discipline solutions embedded with industry expertise.

[Learn more](#)

Cloud Capabilities

Did you know?

There is a cloud-based version of Simcenter that provides the exact same capabilities as the on-premise version.

[Find out more](#)

Motion Simulation

Understand, evaluate and optimise mechanical and mechatronic systems through utilising the complete and simple-to-use set of capabilities to study kinematics and rigid body dynamics during product development. This will ensure a reduction in costly physical prototypes and save time through quickly converting CAD geometry and assemblies into fully functional motion models.

[Find out more](#)

Structural Simulation

Providing you with best-in-class simulation modelling, with the power to perform basic structural analysis with an industry-standard solver. Combining Simcenter 3D Engineering Desktop, NX Nastran environment, and the NX Nastran desktop solver enables detailed analysis with the ability to add additional solutions for advanced analysis.

[Find out more](#)

Thermal Simulation

Simcenter 3D Advanced Thermal software offers a range of advanced analysis capabilities alongside radiative and electrical heating models, advanced material models and one-dimensional hydraulic network modelling. This advanced use of simulations offers a reduction on physical design risk.

[Find out more](#)

Meshing

The Meshing for Acoustics application contains all the necessary tools to create an acoustic fluid mesh in a user-friendly way from an existing structural mesh or CAD geometry. Use of these capabilities accelerates the interior and exterior acoustic meshing process.

[Find out more](#)

Advanced Durability

Simcenter 3D Durability provides a set of analytical tools to predict the life of products and evaluate their fatigue resistance when they are subjected to prescribed stress and/or strain histories residing in Simcenter 3D structural solutions.

[Find out more](#)

Nastran Topology Optimisation

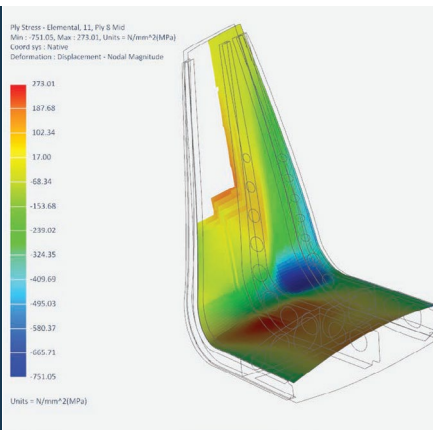
Reduce time-to-market with the Topology Optimisation software by generating innovative designs for new families of products. Optimise many different criteria based on linear statics, modal and buckling analysis, to genuinely support generative engineering.

[Find out more](#)

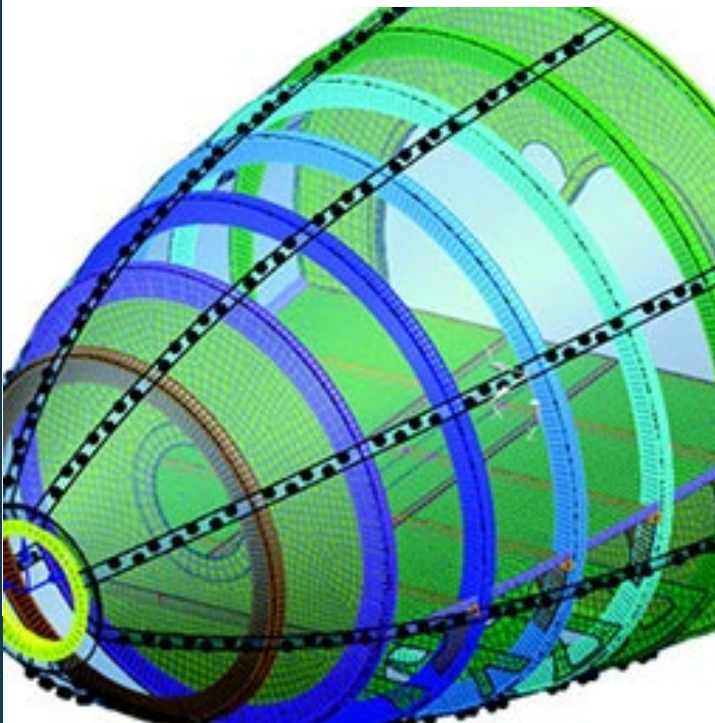
Noise and Vibration

Provides noise and vibration pre/post capabilities addressing the need to build, understand, evaluate and optimise the noise and vibration performance of system assembly models. The ability to study and bring an in depth understanding of the noise and vibration behaviour at the sub-system or system level.

[Find out more](#)



[Learn more](#)



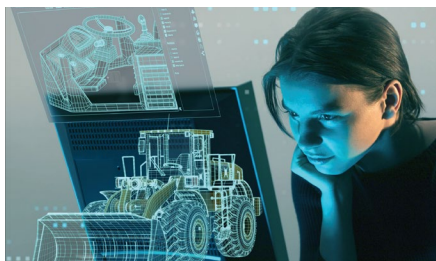
Visit our On Demand web page to view all webinars, articles, videos and case studies

[Explore On Demand](#)

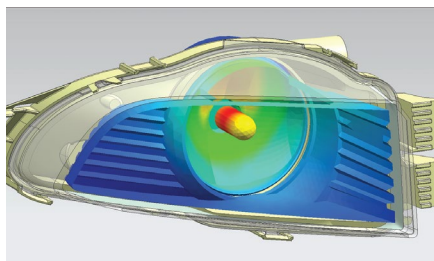
Further Learning

Take a look at some of our resources to learn more about Simcenter 3D and how the software can bring a range of benefits to your company.

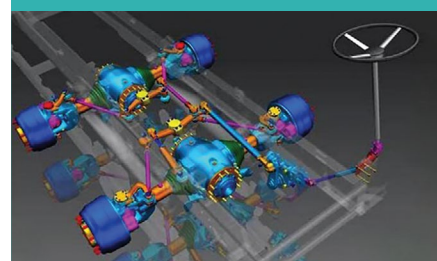
Downloadable resources



Download
Simcenter 3D
Brochure



Download
Advanced Thermal Analysis
Fact Sheet

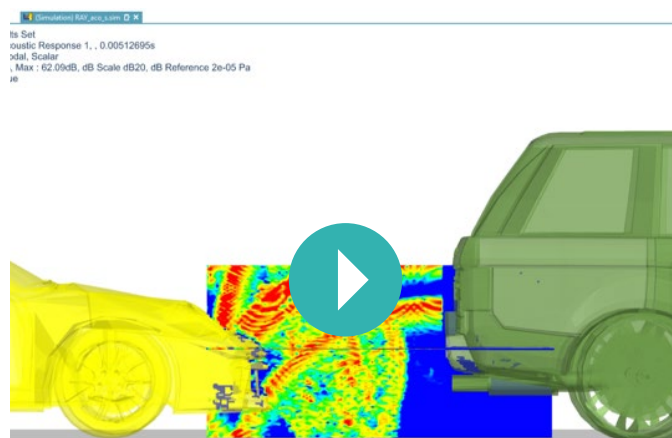


Request
Free Simcenter
30 Day Trial

Video Learning



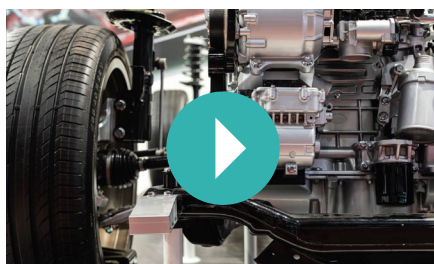
3D CAE for the Digital Twin



Acoustic Transfer Vector



Cooling Systems for
Electronics



Vehicle Performance
Engineering



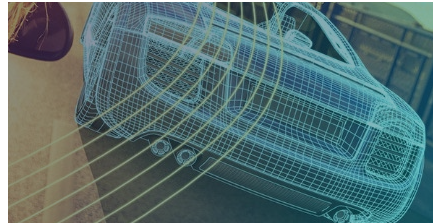
Industrial Machinery
Performance Engineering

Our Industries

Click on each industry to find out more information about how Simcenter 3D can over-come today's business challenges and transform your design process.



Aerospace & Defence



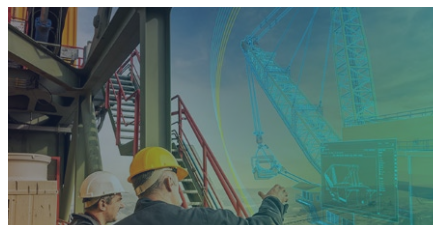
Automotive & Transportation



Electronics & Semiconductors



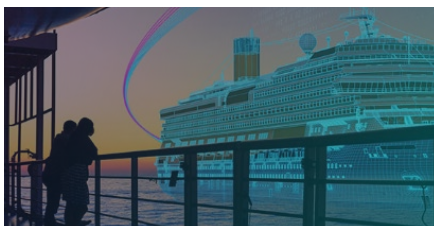
Energy & Utilities



Industrial Machinery



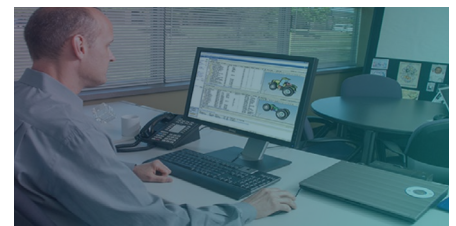
Pharmaceutical & Medical



Marine



Consumer Products & Retail



SMBs

Importance of Digitalization

Digitalization promises lower costs, improved production quality, flexibility and efficiency. Take a look at our video to find out more.



Who we work with

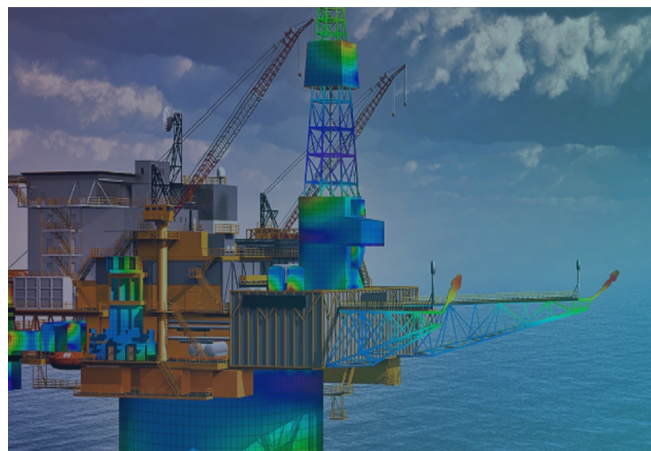


Choose Your Simcenter 3D Option

We have a range of licensing options available to suit your business needs. You will have access to a team of experts who will ensure you have all the information you need to get you up and running, fast.

Perpetual Licensing

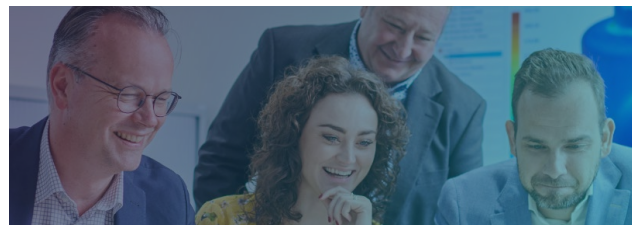
Our perpetual license for Simcenter provides you with the full software suite that you own permanently after one initial purchase. You have access to the entire suite of tools to ensure you have everything you need to achieve your business goals. The software will be available for you to use indefinitely, offering powerful and extensive design capabilities whenever you need them.



[Explore Simcenter 3D Value Based Licensing](#)

Subscription Licensing

Subscriptions offer flexibility, cost-effective licenses, and a way to easily increase or decrease the number of software licenses depending on your business needs. Subscription licensing is ideal for organisations that require software tools for short to medium term usage. For those requiring complete flexibility with their software licensing, this is the perfect solution.

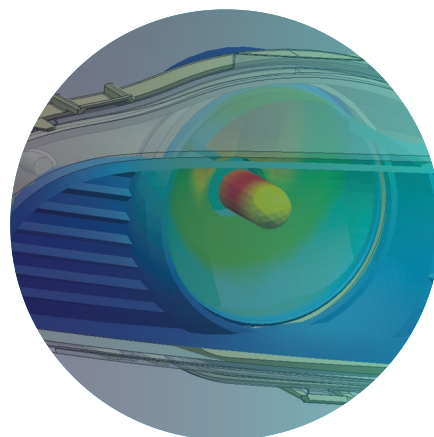


Simcenter 3D 60 Day Free Trial
- Access in 60 seconds



Value-Based Licensing

Value-based licensing is a new way for your business to adopt and use Simcenter tools in the most cost effective way, all whilst putting the license control and setup into your organisation's hands. Your licensing shouldn't restrict the way you work, that's why with value-based licensing you are able to constantly change your licensing options to fit your budget and business needs, alongside the ability to check in and out of a central pool that you manage. This licensing method is flexible and scalable. As your business grows and you require access to more tools, you are able to purchase more tokens to access these extra capabilities.



Training Options

We want to help you get up and running fast, that's why we offer a range of training options so you can achieve your business goals and transform how you work. Here at Emixa UK, our experienced team have decades of experience within the design and manufacturing industry and our training is delivered by our industry-experts, who are here to support you throughout the session and beyond.

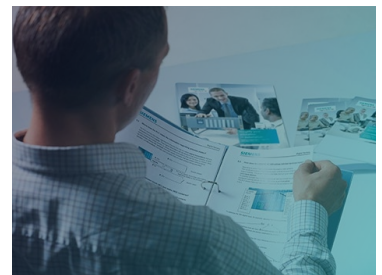
Remote Training

We offer remote training online in a secure environment that you can attend solo, or with your team. You will still receive the same expert-level of training from our experts to ensure you have everything you need to get the most out of your software solutions.



Classroom Training

We know that for some, nothing beats training in person and having someone in front of you sharing their knowledge and expertise. Join us at our office in Oxford where our experts can deliver industry-leading training and be on hand to ensure you have all the knowledge and skills you need to get the most out of your software. This training is available at our head office or at your site.



Bespoke Training

Every business we work with is completely different and some businesses need more specific training than others. We can deliver bespoke training packages specific to your business needs to ensure you get the most out of your software. Our experts have the industry knowledge necessary to provide high-quality and accurate training that will give you everything you need to tackle even the most complex tasks.



Sunseeker

"Emixa UK are always professional and exceptionally helpful. In particular we are very happy with the software training they provide, as we are able to learn using our own designs."



The Alloy

"Emixa UK are flexible and creative, working with us to ensure that we really benefit from their specialist knowledge of NX."



Monier

"With onsite consultancy and staff training from Emixa UK, we were able to optimise our CAM processes to significantly reduce programming times utilising the new application functionality."



Training options

Simcenter courses:

- [Simcenter 3D Essentials](#)
- [Simcenter 3D Advanced](#)
- [Simcenter Advanced Flow](#)
- [Simcenter 3D Composites](#)
- [Simcenter 3D Motion](#)
- [Simcenter Advanced Thermal](#)
- [Simcenter 3D Multi-Step Non-Linear](#)
- [Simcenter 3D Response Dynamics](#)
- [Simcenter Non-Linear \(Sol106\)](#)
- [Simcenter 3D Thermal & Flow](#)
- [Simcenter Nastran Dynamics](#)
- [Simcenter BESPOKE](#)

[Explore Simcenter Training](#)

Our People



Our mission at Emixa is to create an organization where people can grow and develop themselves to the fullest. We collaborate to help ourselves and our clients excel in the most positive and impactful way.

[Find out more](#)

Other CAE courses:

- [NX Motion](#)
- [NX FloEFD Essentials](#)
- [NX FloEFD Advanced](#)
- [Solid Edge Simulation Essentials](#)
- [Solid Edge Simulation Advanced](#)
- [Solid Edge Simulation Motion](#)
- [Solid Edge FloEFD Essentials](#)
- [Solid Edge FloEFD Advanced](#)

Enhancing Vehicle Dynamics: Simcenter Engineering Solutions

Explore Simcenter solutions redefining vehicle dynamics testing, merging perception and objective measurement.

[Watch the video](#)



Consultancy

- PLM Value Discovery Analysis
- PLM Process Mapping
- System Integration
- Data Migration
- Skills Validation
- PLM Administrator resources

[Learn more](#)

Case Studies

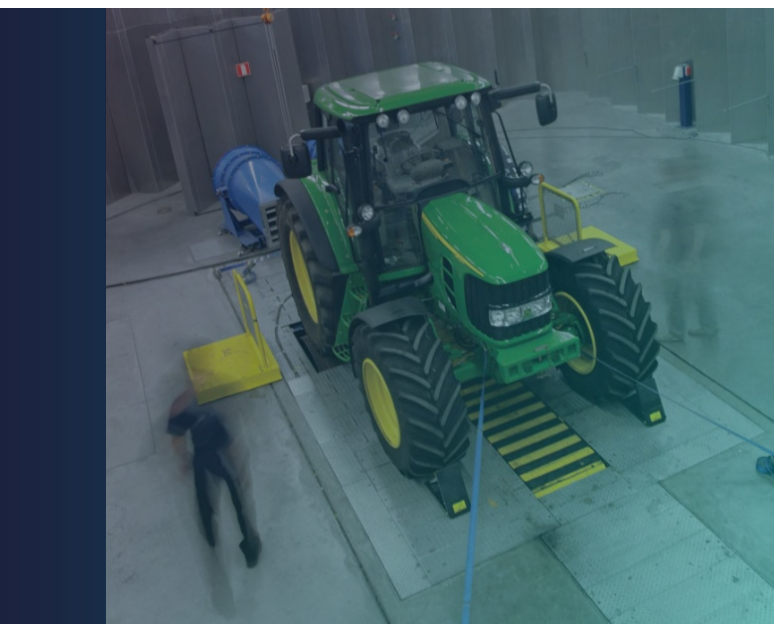
Cox Marine

Cox Marine used system simulation solution Simcenter™ Amesim™ software to fill the gap in the market and create the V8, a high-performance diesel outboard engine. Cox carried out a range of analysis including FEA and CFD, alongside a range of simulation from electrical to thermal and fluids.

From utilising Simcenter, Cox have subsequently:

- Reduced product development time from concept to production by up to 80%
- Developed optimal product version to meet exact requirements of the marketplace
- Completed digital twin of engine in a single Simcenter environment

[Learn more](#)



John Deere

Using acoustic simulation software, Simcenter™ Engineering services helped John Deere spot a resonance from an unexpected source. The software gave one of the world's leading agricultural equipment manufacturers the tools and insight to further improve the acoustic quality in their next generation of products.

Further results of using the software include:

- Developed approach for addressing acoustic issues early in the development process
- Quickly and efficiently identified effects that lead to loud cab noise
- Enabled better understanding of the complex acoustic system

[Learn more](#)

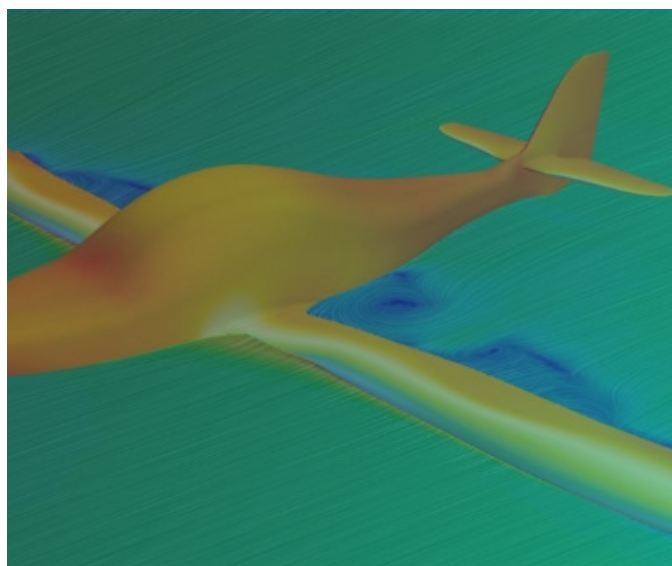
Bye Aerospace

Bye Aerospace use several solutions from Siemens Digital Industries Software to help them get off the ground.

Through utilising Simcenter software for computational fluid dynamics (CFD) and Simcenter 3D for analysis, testing and certification, Bye Aerospace have achieved:

- Reduced product development time
- Decreased potential size of engineering staff by 66%
- Developed all-composite airplane with low part count, yet a robust system

[Learn more](#)



About Emixa

We at Emixa are a Digital Transformation specialist that help make businesses more agile and efficient through the use of world leading core technologies; PLM, ERP and Low code. To drive maximum efficiency and seamless collaboration, we also provide services in management consulting, integration and data analytics which create business value and increase competitive advantages leading to optimal performance and results. With a focus on the manufacturing industry, coupled with our decades of experience and global footprint, we at Emixa can help your business innovate, accelerate and attain new heights.



Watch Video



Explore our full range of solutions
and discover what's right for you

Explore all our solutions