

NX CAD

Buyer's Guide

SIEMENS



Introduction

Being competitive requires having a stellar product and solutions that get you from idea to full production quickly and with fewer redesigns. This is where Siemens comes in with the only end-to-end solutions and expertise across the entire product development process from design through simulation, testing and manufacturing. Voted among the top CAD products by G2, Siemens NX sets the standards for speed, performance, and ease of use. No matter what you're designing, NX accelerates your product development.

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Where Engineering Meets Tomorrow

NX CAD at a glance

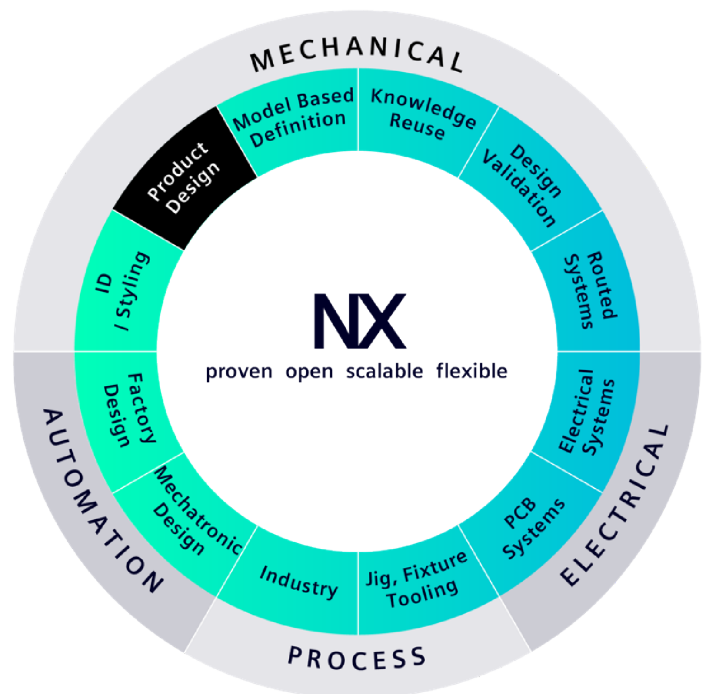
Siemens NX is a complete solution for product engineering with robust capabilities and seamless scalability to take you from simulation to manufacturing. Produce innovative products faster than ever before with our open, flexible, and fully integrated product engineering software suite. NX is a next generation design platform that remove barriers to innovation.

NX architecture – used for NX Design, Simcenter 3D, NX Additive, Zel X and NX Mold Connect – enables seamless part file usage across applications without the need for translation or learning different user interfaces.

NX is the world’s most productive and flexible modeling environment supporting various design workflows along with advanced techniques including generative engineering.

Make sketches 30% faster and frame designs 60% faster than any other competitive solution.

Siemens has created the NX suite to encompass everything you need for product design and manufacturing across Computer Aided-Design (CAD), Computer Aided-Manufacturing (CAM) and Computer Aided-Engineering (CAE) ensuring each works together, flawlessly. The core platform at the heart of the



Out of the box workflows reduce customization requirements, command prediction speeds onboarding, and the strong core powering NX mean users can make sketches 30% faster and frame design 60% faster than any other competitive solution.

Only Siemens can partner with you across software and hardware to provide a complete digital twin. And only a digital twin can instrument the product lifecycle to simulate, predict, and optimize the product and production system before investing in physical prototypes and assets. NX's innovation capabilities are available on-demand, to all users, through flexible licensing models. NX seamlessly integrates with other Siemens platforms, such as Teamcenter, allowing for all teams to efficiently collaborate and share data throughout the design process.

The difference between CAD and CAM

The CAD side of NX includes MCAD, ECAD, workflow-specific solutions, automations and other capabilities tailored to the needs of product designers. It's best suited for creating illustrations and 3D models, the first part of any digital twin, and analyzing the feasibility of a product's design for errors before moving to manufacturing. Unlike CAD, CAM is mainly for automating the manufacturing process. Most CAM software translates the designs created by CAD into instructions that drive machine tools to turn designs into physical parts.

NX CAD's easy-to-use interface makes adoption time fast for both beginner and experienced product designers alike. Regardless of the size of your company or your skill level, the software's robust tools are perfect for creating complex and detailed 3D models, assemblies, and drawings of products or components. With NX CAD as your computer aided design (CAD) solution there are no limits to what you can make.





What NX CAD can do for you

With NX CAD, your company is able to deliver products to market right the first time. Decrease development costs, data anomalies, and design limitations. Not only is your business more sustainable with less waste, NX helps you increase product quality through more virtual product models, easier 'what if' scenarios, and fewer costly physical prototypes.



Boost product design efficiency and innovation

Accelerate mechanical design processes and improve design quality

Streamline collaboration with teams, customers and suppliers



Reduce design process waste and costs

Better protect project data and enable future reuse and modification

Single environment facilitates process from model to printed parts

No matter what you're designing, NX accelerates your product development.

Siemens is the only company with the end-to-end solutions and expertise across the entire product development process from design through to simulation, testing and manufacturing.

Whether your business is a startup or a multinational corporation, Siemens NX CAD helps you deliver innovative products faster now and scale anywhere. Your next innovation begins with an open, flexible and fully integrated engineering software solution that works with the tools you have today.

PART CREATION

From concept through build, NX enables more complex and detailed design for industries like aerospace, defense, and automotive.

MODEL-BASED DESIGN

NX supports the transition to a single data source model-based engineering platform. Design and maintain 3D models and also modify legacy drawings and models.

COMPOSITE MATERIAL INTEGRATION

Design and analyze products incorporating composite materials, even in massive assemblies like the aerospace and automotive industries.

EFFICIENCY & ACCURACY IMPROVEMENT

By providing features including parametric featured-based modeling, surface modeling, and iteration, NX streamlines workflows and improves accuracy.

INTEGRATION WITH OTHER SOFTWARE & TOOLS

NX integrates with other tools, such as Simcenter3D for analysis and Teamcenter for data management, enabling a more seamless and efficient design process.

UNIFIED SOLUTION

With one seamless integration, you can rapidly propagate changes to product and associated process information—all with fewer disjoints in your workflow.

Siemens NX CAD Leads the Pack

Siemens NX sets the standards for speed, performance, and ease of use. Voted among the top CAD products by G2, Siemens NX CAD has secured awards as a top CAD Leader and CAD Leader in the Enterprise, Mid-Market, and Small Business categories, among other awards. And it leads the pack with robust 3D capabilities for realistic concept design and modeling.

“

NX is one of the best software packages you can use for solid modeling, surfacing, or any of your CAD needs.” -Jason B.

[Read the full review](#)

“

Faster results for product models compared to the other software.”
-Mohammed S.

[Read the full review](#)

“

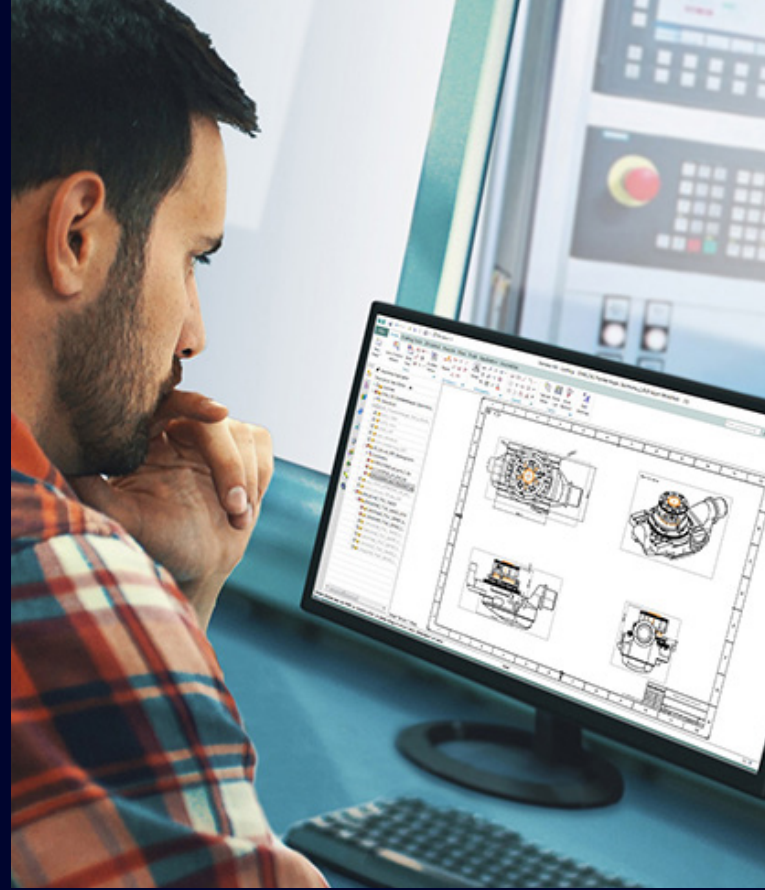
The workflow and user interface are more capable than other competitors' CAD suites. I was able to make complex assemblies with arrangements and such with ease.”

[Read the full review](#)



Designed for you

Your market is as unique as your products. Siemens NX CAD not only seamlessly integrates with other Siemens platforms but also has capabilities designed for the needs of your industry.



NX CAD is widely used in industries such as automotive, aerospace, consumer goods, and more for designing and visualizing complex mechanical and electrical systems.



Aerospace

NX CAD handles large assemblies better than other products on the market, and with powerful design tools and simulation capabilities it makes designing aerospace components and structures easy.



Automotive

NX CAD offers advanced surfacing capabilities and handles complex geometry in the blink of an eye – highly beneficial for automotive components and vehicles.



Consumer Products

NX CAD's advanced surfacing capabilities, flexible design options, and realistic 3D modeling creation make it ideal for designing consumer products with complex shapes and aesthetics.



Manufacturing

NX CAD integrates with your manufacturing processes, supports complex assemblies and provides comprehensive tools for manufacturing design, including features for mold tooling, sheet metal design, and assembly modeling.

Unlimited Tomorrow

How Unlimited Tomorrow reduced the cost of children's prosthetics by 90%

Traditional prosthetics often lack personalization, comfort, and affordability. Unlimited Tomorrow recognized that each amputee has unique needs and preferences. After some initial trial and error, Unlimited Tomorrow's founder embraced 3D printing and NX CAD as a means to create customized prosthetic limbs that fit seamlessly into individual amputees' lives.

NX CAD empowers clinicians and patients to capture the precise dimensions and contours of the residual limb. That data is used to design and 3D print tailor-made prosthetic sockets that adhere comfortably to the amputees' bodies, ensuring an optimal fit for comfort, mobility, and functionality. With this process Unlimited

Tomorrow has managed to reduce production costs by 90% and accelerate delivery cycles by 5x, making high-quality, personalized prosthetics both more affordable, and attainable.

“

With our old software, you could see the facets in the 3D print; not with NX. Its precise geometry delivers a much more realistic finish.

– Matt Landolfi, Lead Mechanical Design Engineer, Unlimited Tomorrow

[Read the case study](#)

Scuderia AlphaTauri

Scuderia AlphaTauri optimized F1 driver seat design and reduced chassis development time by 66% with NX CAD

In Formula One (F1) racing, the driver and the car become one—and every millimeter of the car must be engineered for success on the track. Scuderia AlphaTauri needed to design a new F1 car with a focus on safety, performance, and compliance regulations. They also had to ensure that the car's chassis and driver's seat provided optimal driver comfort.

Balancing form and function is always a challenge for engineering teams, but using the same underlying Siemens NX platform and a complete digital twin for design, analysis, and part production, helped Scuderia AlphaTauri make optimal decisions fast.

The team used Siemens' digitalization tools and NX CAD to accelerate the design and chassis simulation—efficiently simulating and optimizing driver visibility, fit,

and overall car performance. NX CAD helped them create customized driver seats. They designed larger seats initially, used heated resin molds, and scanned the driver's body to then design a perfect custom fit.

“

If you use the same suite that calculates everything from the CAD part to the production line, then you end up with a quality part that will deliver performance on the track.

– Raffaele Boschetti, *Head of IT and Innovation Scuderia AlphaTauri*

[Read the case study](#)



Bye Aerospace

How a 66% leaner team brought a groundbreaking, all-electric aircraft to market fast.

Former U.S. Air Force pilot George Bye, Founder & CEO of Bye Aerospace, believed that the future of aviation lay in electric propulsion, a bridge from the past to the future. The evolution of electric motors and batteries over the past decade had opened up previously unimaginable possibilities for aircraft design, but the company faced formidable engineering challenges in producing an all-electric aircraft

Bye Aerospace took a leap forward with Siemens software, particularly the Fibersim portfolio and NX .platform, which seamlessly integrated their design and analysis processes. The remarkable efficiency gains they achieved enabled them to be successful with a significantly smaller engineering team. NX CAD software facilitated a seamless transition from design to analysis,

allowing for more rapid design iterations, which was paramount in meeting evolving requirements.

Siemens software became their trusted co-pilot—helping them accomplish innovative design and engineering feats with fewer specialists, much greater efficiency,

“

The reason we use NX instead of another CAD system is because it has a more seamless transition from design to analysis, which gives us more time to do more iterations on our design.

– Parijaat Malik, *Senior Mechanical Systems Engineer*

[Read the case study](#)

Step One: Choose the NX CAD package the fits you

Choose the NX CAD package the fits you

NX CAD's high-performance, high-scale capabilities are available in three pre-configured solutions – NX CAD Mach 1, 2 or 3 – so you can get the right fit for your design needs. Each offers tailored functionality for specific product development roles, practices and processes. For businesses of any size, each NX Mach package delivers complete capabilities for all stages of the product development process – from basic design through production.

Each solution includes everything needed to integrate with Teamcenter® software, allowing you to extend engineering process management tools through to scalable collaboration and advanced management.

Compared to other CAD systems, Siemens NX CAD Mach:

- Allows your design to have more complex geometry
- Scales your performance to massive assemblies
- Maintains data across complex simulations
- Integrates fully with all your design ecosystem
- Provides a key component of the only complete digital twin
- Collaborates seamlessly across different teams and departments through Teamcenter

Siemens NX CAD Mach 1, 2 and 3 meet your needs across the business, from design to engineering, with both hardware and software.

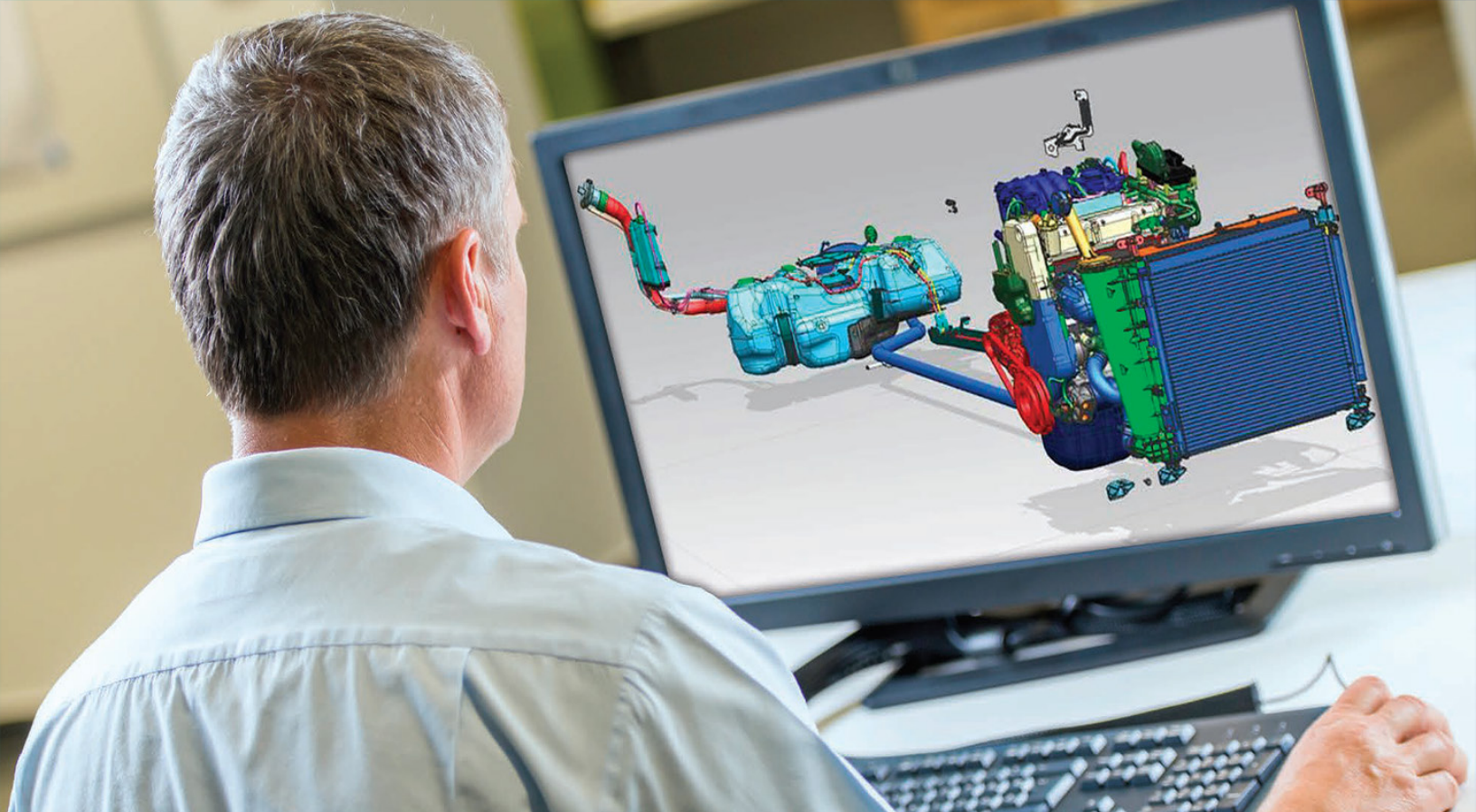


NX Mach 1

NX CAD Mach 1 offers tools for creating and editing designs of typical mechanical components and assemblies, with solid modeling and drafting, basic freeform modeling and sheet metal design. It includes tools for design review, rapid prototyping, web publishing, validation checking re-use library and custom program execution. It also offers design-oriented stress and vibration analysis wizards. This solution includes the necessary tools to integrate to Teamcenter to provide powerful data management and visualization capabilities for product and process management.

NX CAD Mach 1 is an ideal solution for simple prismic parts and the creation of typical mechanical designs.

Starting at \$8,203 USD

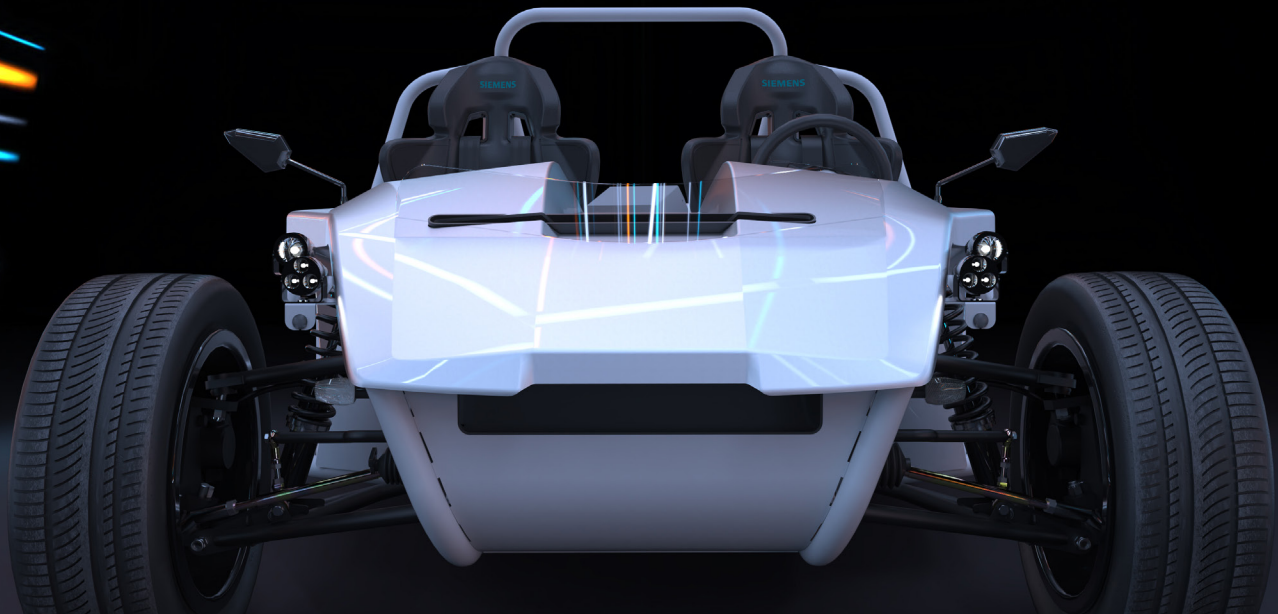


NX Mach 2

NX Mach 2 adds enhanced product design capabilities from what is included in NX Mach 1. NX Mach 2 includes features for flexible printed circuit board design, validation checking, user-defined features, rendering, 3D annotation for product and manufacturing information (PMI) and basic routing.

NX CAD Mach 2 is best for those moving beyond product design into a product engineering workflow.

Starting at [\\$10,324 USD](#)



NX Mach 3

NX Mach 3 is the most robust bundle optimized for everything you need for concept design, industrial design and high-end styling. With it, you can customize your CAD solution to focus on industry specific challenges, with specific disciplines for example, Industrial Design and Mold Design. It also includes access to Advance Assemblies, Freeform, and Advanced Surface Analysis capabilities, which you can only get with NX CAD Mach 3.

NX CAD Mach 3 is best for high-end rendering and industry specific end-to-end workflows.

Starting at [\\$13,879 USD](#)

Compare all 3 Solutions

	NX CAD Mach 1	NX CAD Mach 2	NX CAD Mach 3
Teamcenter			
Teamcenter integration for NX	•	•	•
Design modeling			
Feature-based solid modeling	•	•	•
Synchronous technology	•	•	•
Core Convergent Modeling	•	•	•
Drafting	•	•	•
Assemblies	•	•	•
Advanced assembly modeling			•
Basic freeform modeling	•	•	•
Advanced freeform modeling			•
User-defined features		•	•
Process-specific modeling tools			
Sheet metal design	•	•	•
PMI		•	•
Flexible PCB		•	•
Basic routing		•	•
Industrial design			
Photorealistic rendering		•	•
Visualize shape		•	•
Freeform shape			•
Advanced surface analysis			•
Product validation			
Product validation		•	•
HD3D Visual Reporting OOTB reports	•	•	•
HD3D Visual Reporting custom report editing			•
Optimization and sensitivity study tools		•	•
Molded part validation			•
Runtime licenses			
Runtime for custom program execution	•	•	•
Data exchange			
DXF/DWG, IGES, STEP 203/214, JT, Solid Edge open, SolidWorks open	•	•	•

Step Two: Get your add-on modules

Innovate Without Compromise

No matter which NX CAD Mach you choose, with NX CAD Mach add-on modules you easily can extend its functionality and features. With more than 80 add-on modules to choose from, add-ons let you configure NX CAD Mach to the specific requirements of your project—with specialized design tools, standard parts applications, design-integrated simulation solutions, programming and customization toolkits and direct translators. Add-on modules can be used once for special project needs, or continuously - the choice is yours.

NX CAD Mach add-on modules cover on-demand needs for:

- Industrial design and styling
- Product design
- Model-based definition capabilities
- Knowledge reuse
- Design validation
- Complete development of electrical systems
- PCB design tools
- Jigs, fixtures and tooling
- Industry-specific applications
- Mechatronic and factory design

More than 100+ add-on features so you can innovate with more for less

NX Automotive Bundle	Voice Assist			
	Geolus Integration	PTS		Sustainability
	IFC Translator	Coatings	Diagramming	Performance Predictor
	Pro/E Translator	Adv Join	Appearance Mgt	Motion Simulation
	Steps Translator	Structure Designer	Render	Design Simulation
	Catia Translator	Adv Sheet Metal	Topology Optimizer	Animation Designer
	ACIS Translator	Structure Welding	DFAM	Posture Predict
	Product Template Studio Consumer	Weld Assistant	Algorithmic Modeler	Human Modeling
	Extended Reality	Wave Control	Implicit Modeler	Visual Reporting
	Multi User Notification	Adv Assemblies	Adv Convergent Modeler	Space Explorer
	DMU Markup	DWG Automation	Staged Models	Formability Analysis
	Viewer	MBD	Piping & Tubing	Molded Part Validation
	Similar Faces	PMI	Routing HVAC	Path Planning
	Smart Select	Draw Shape	Routing Cabling	VDA Checker
Command Predict	Realize Shape	Routing Base	Check Mate	
Bundle	Productivity	Mechanical	Validation	

NX Value Based Licensing Token Pool – NX35100

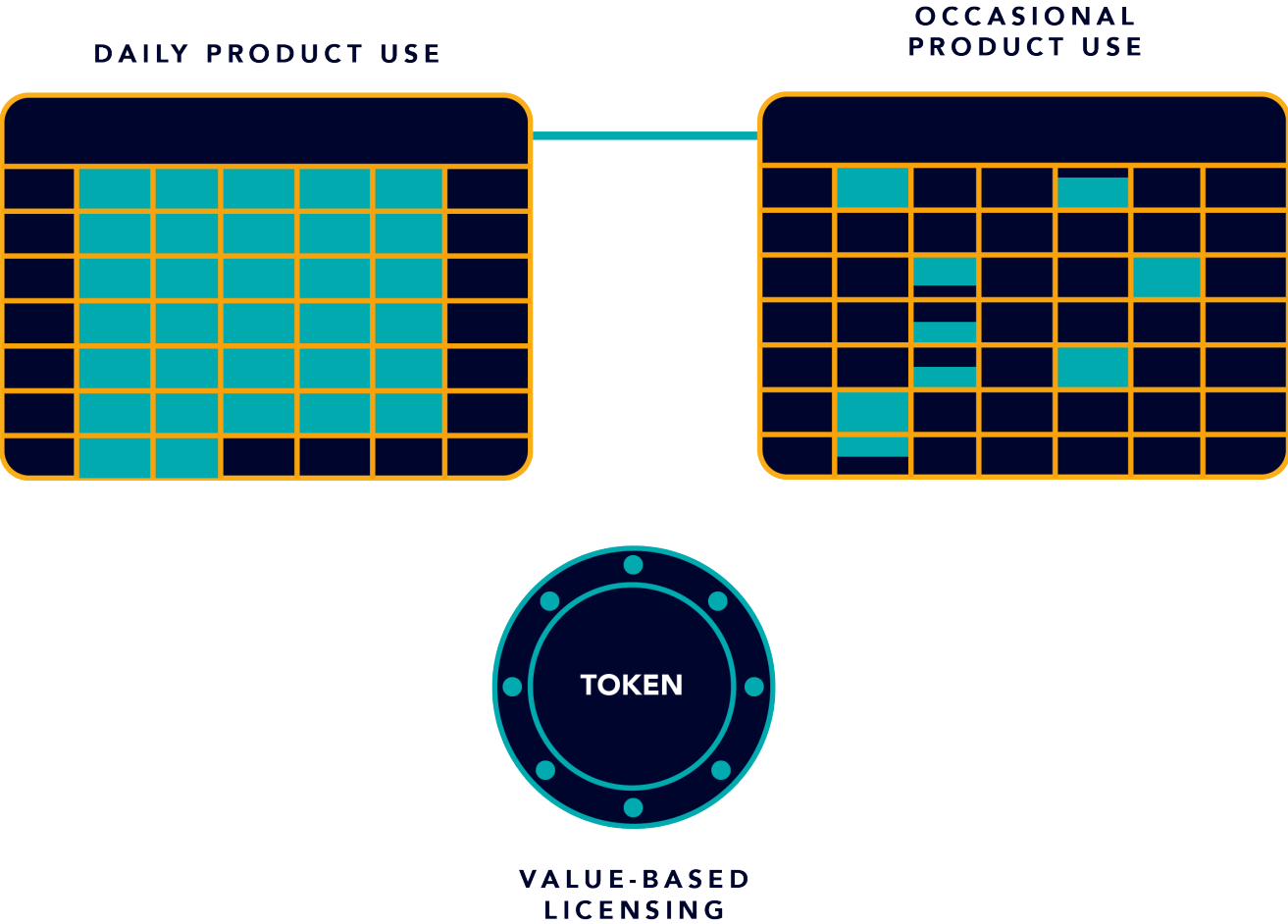
Bundle		AEC BIM			
		Vehicle Packaging			
		Composites			
		Fabric Flatteners	Molded Part Designer		
		China Toolkit	Tooling Locators		
		Ship Manufacturing	Conformal Cooling Channel Design		
		Ship Arrangement	Progressive Die Wizard		
	Routing Harness	Ship Drafting	Die Design		
	Cable Router	Ship Structure	Mold Wizard	MCD Player	
	Flexible PCD	Aerospace Design	Electrode Design	Mechatronics	
	Bundle	Electrical	Industry	Jig & Fixture	Automation

NX Value Based Licensing Token Pool – NX35100

How Add-ons Work

NX CAD Mach add-ons are sold using our innovative Value-based Licensing (or token licensing system), which provides cost-effective flexibility so your team can tap into the vast array of products and tools—on-demand—whether you need them daily or occasionally.

Simply purchase a pool of tokens for your team. Each add-on and tool in the library has a token value, and when that add-on is being used by your team the token value is subtracted from the pool. When that product is no longer in use, its token value is added back to the available pool. Your team can use as many products—even newly added products—from day 1.



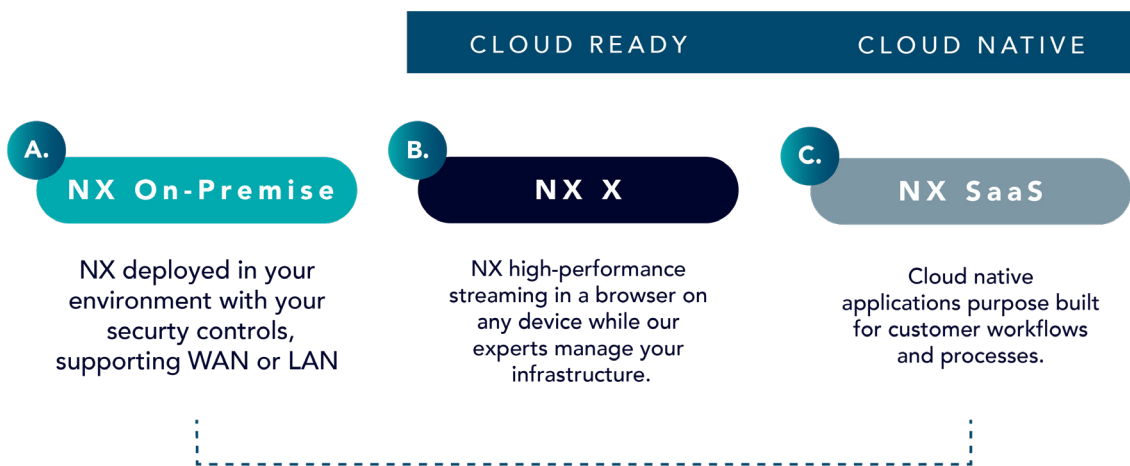
[View the Add-on Modules brochure](#)

[Watch the video to learn more](#)

Step Three: Decide Cloud, SaaS, or On-Prem

Whether you want to use NX from the cloud, hosted in your IT environment, or streamed online, Siemens NX CAD has licensing options for how you work. You'll have the exact same features no matter how you choose to run NX CAD. The choice is yours.

CHOOSE THE OPTION THAT SUITS YOU BEST



XaaS is a cloud-native, SaaS environment for the NX X delivery framework.

Step Four:

Now that you've selected which level of NX CAD Mach is right for your project and which add-ons are a good starting place, you can purchase directly from the e-store or call your Siemens account manager.

[Visit the e-store](#)



Technical support

Support Center

Start a Support Request to get help with your product, license, or installation.

Community

Connect with fellow Siemens customers

Call us

Americas: 1 800-498-5351

Europe: 00 800 70002222

Asia-Pacific: 00 800 03061910

For additional numbers, click [here](#).

Chat with us live

Have questions about Siemens software? Get answers in minutes from real people.

CHAT