

Realize innovation.

What's New in NX 11

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NX 11 for Design What's New

User Experience

- Multi-Core extension
- Cloud Licensing Support
- Simple Part File Password
- Support for Multiple Managed NX Configurations
- STEP 242 Adapter Support
- Close Subassembly Performance
- Improve Units Handling
- High End Rendering Engine
- Multiple Displayed Parts Investigation
- Multi-Core Lightweight Drawing View Completion
- Support Remote Display
- Support for New Direct Model Version
- NX Open Selection Support
- Navigator Selection Performance
- Circle Selection Method
- Selection Tune Up
- Mixed Modeling PSM Display Support
- Point Cloud - Architecture Support
- Plot Support for Colored Drawing Symbols
- NX Open Toolkits Upgrades
- NX Open Usability
- Python UDO Support
- NX Open Partner Support
- NX Open Support for Spreadsheet Interaction
- Timeline Tool
- Information Window
- Navigator Drag and Drop
- Improved Window Management
- Automatic Application Change
- Upgrade QT

Modeling

- Feature replay performance improvements
- Part Modeling version up improvements
- Feature algorithm update controls
- Edge Blend improvements
- Face Blend improvements
- Part Modules - Usability & Performance
- Interrupt feature
- Sketch - Usability Improvements
- Sketch - Performance improvements
- Sketch - Scale constraint
- ST2D- Local Scale
- ST2D - Rigid Sets
- Sketch - Constraint to string of curves
- Sketch - Splines improvements
- Sketch - Notes within feature
- Sketch - Display dependencies to external geometry
- Sketch - Position and reattach improvements
- Sketch - Horizontal and Vertical constraints of points and endpoints of lines
- Synchronous Modeling - Delete Face supports multi body output
- Synchronous Modeling - Replace face at laminar sheet boundary
- Synchronous Modeling - Delete Notch/Cliff blends
- Synchronous Modeling - Optimize Face Selection improvement
- Selection - Select from navigator consistency
- Design Templates - Relinking a product interface
- Design Templates - Product interface expressions
- Design Templates - WAVE link out of date status improvements
- SDPD: Modular Interface Design
- Variational Sweep improvements
- Feature Modeling Swept Volume
- Wireframe - Spine Curve feature
- Wireframe - Scale Curve feature
- Wireframe - Isocline curve feature UI & Selection Intent
- Surfacing - Variable offset surface (Tailored blanks)
- Surfacing - Flattening and Forming
- Surfacing - Studio Surface improvements
- Surfacing - Section Surface accuracy
- Wireframe - Derived curves improvements
- Realize Shape - Connect
- Realize Shape - Polish
- Analysis - Multi-Face Continuity
- Mixed NURBS/Facet modeling
- Analysis - AO Performance improvements
- Analysis - AO Usability improvements
- Analysis - AOs in Assembly Context

Drafting

- Multi-thread support for Smart Lightweight views
- Working with arrangements on drawings
- View Break workflows
- Settings Enhancements
- Track Drawing Changes Enhancements
- Drawing Compare
- Dimension UI Enhancements
- Hole Callout enhancements
- Dimension Settings
- Limits and Fits
- Support for Angular Directed Dimensions
- 4GD-Parts List Support
- 4GD-Relations and Where-Used
- 4GD-View of Part Support
- NX Layout-enhanced workflows
- NX Layout-leveraging legacy data

PMI

- 2D Drawing to 3D PMI
- Part Navigator Performance Improvement
- PMI Inherit Enhancements
- Support for Angular Directed Dimensions
- PMI Lightweight Section View Enhancements
- PMI Region Enhancements
- PMI Resize Enhancements
- PMI display parallel to screen
- Dimension UI Enhancements
- Hole Callout enhancements
- Dimension Settings
- Limits and Fits
- Support for Angular Directed Dimensions
- Selection for Routing Anchor Points

Assemblies

- 4GD Weld Support (NX 10.0.2)
- 4GD Constraints (Phase 2)
- 4GD Support for Change Management
- 4GD Support for Parts List
- Direct Model Integration
- Large Assembly Performance
- Motion Consolidation Architecture
- Component Patterns with Pure Reference Patterns
- Support for Multiple Displayed Parts Investigation
- Associative References to Multi-CAD Override Geometry
- Support for Mixed/Facet Modeling Initiative

Routing

- Routing support of attributes
- Formboard Architecture
- Update Bolting Options
- Quick Path enhancements (NX 10.0.1)

NX11 CAD概述

NX 11 提供了一组强大的新工具，并显著增强了现有的功能。旨在帮助您快速设计、测试并制造产品，同时将错误数量降至史上最低。在NX 11 中，多项之前需要冗长手动返工的任务现已实现了自动化。借助收敛建模，您可以在单个模型中使用小平面几何体和实体/曲面几何体。

- 通过收敛建模，将扫描的 3D 数据作为小平面导入
- 利用改进后的 3D 打印支持轻松创建原型
- 设计特征的方式与通过扫描体积进行加工的方式相同
- 改进了草图绘制中的控制、更改和信息访问
- 通过 NX 创意塑型和 NX 布局简化了概念设计
- 自动将图纸对象转换为 3D PMI 对象
- 通过图纸比较减少了图纸检查时间
- 通过 Lightworks Iray+ 可以实现更逼真的可视化和渲染
- 通过直接访问而非重新创建轻松利用点云数据
- 通过在云端管理 NX 提高了灵活性

NX CAD

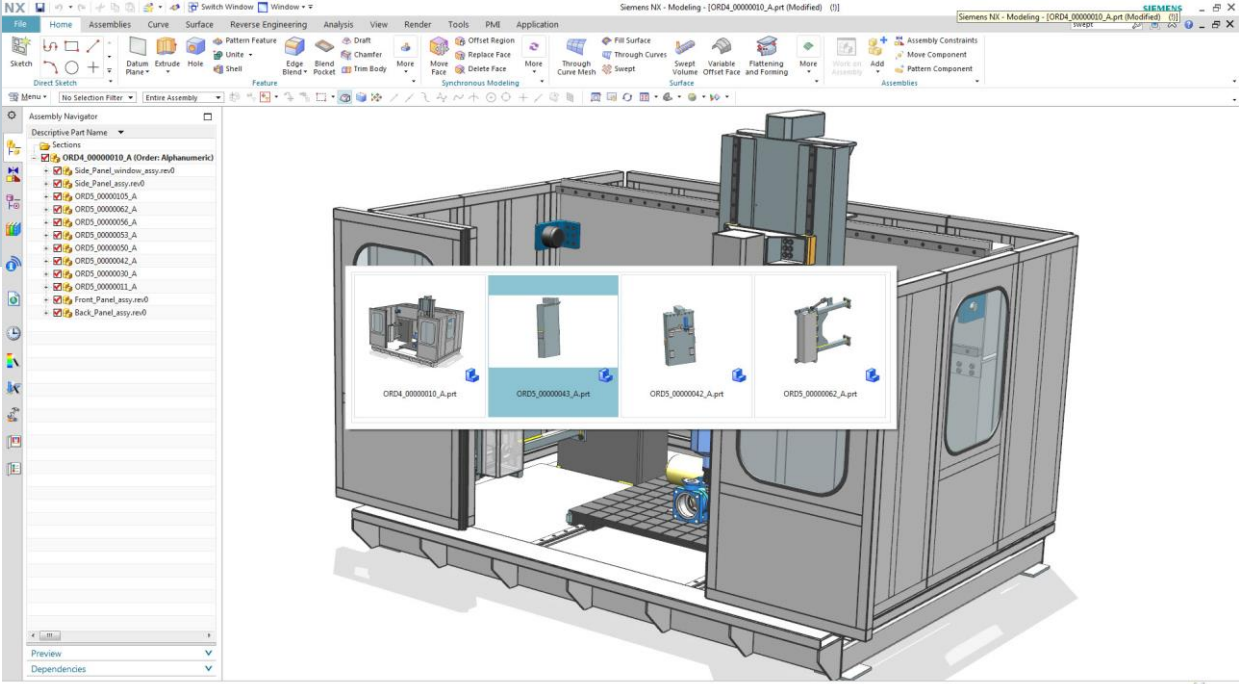


Usability 易用性

Easier to use so you can get the job done faster

每一版本的 NX 均在上一版本的基础上提高了速度、效率并简化了操作。

- 在 NX 11 中，只需按下 CTRL+Tab组合键即可快速直观地切换窗口，并且窗口中会始终显示所有活动零件的缩略图。
- 通过 HTML 信息窗口，现在可以更方便地读取和导航到所需的零件详细信息。
- 改进后的触屏功能和4K 监视器支持，使 NX 的操作更为简便，帮助您实现高效作业。
- 更简洁实用的新公式界面
- 交互和执行效率的提升



Information

Information listing created by	lam
Date	26-Aug-2015 10:56:12
Current work part	D:\Parts\Information_Window\NX3_pump\pump assembly.prt
Node name	cyi6w515

All Parts in Session Listing

Part File Name	Part Name	Loaded	Modified	Read-only	Level	Directory	Description	Units	Status	Format	Release	Created Time
Info Window Features.prt	Info Window Features	Fully Loaded	✗	✗	Piece Part	D:\Parts\Information_Window		Millimeters	0	NT x64	NX V10.0	29-Apr-2015 14:50
bolt.prt	bolt	Partially(1)	✓	✓	Component	D:\Parts\Information_Window\NX3_pump	cnm-hexagon flange head bolt m8x35 - item:53-09110	Inches	1	NT Intel	NX V2.0	16-Apr-2004 17:21
con_rod.prt	con_rod	Partially(1)	✓	✓	Component	D:\Parts\Information_Window\NX3_pump		Inches	0	NT Intel	NX V2.0	19-Sep-1994 08:30
con_rod_assy.prt	con_rod_assy	Partially(1)	✓	✓	Sub-Assy	D:\Parts\Information_Window\NX3_pump		Inches	0	NT Intel	NX V7.5	16-Apr-2004 15:14
con_rod_cap.prt	con_rod_cap	Partially(1)	✓	✓	Component	D:\Parts\Information_Window\NX3_pump		Inches	0	NT Intel	NX V2.0	16-Apr-2004 15:16
con_rod_pin.prt	con_rod_pin	Partially(1)	✓	✓	Component	D:\Parts\Information_Window\NX3_pump		Inches	0	NT Intel	NX V2.0	16-Apr-2004 15:20
crank_case_assy.prt	crank_case_assy	Partially(1)	✓	✓	Sub-Assy	D:\Parts\Information_Window\NX3_pump		Inches	0	NT Intel	NX V2.0	16-Apr-2004 15:53
crankcase.prt	crankcase	Partially(1)	✓	✓	Component	D:\Parts\Information_Window\NX3_pump		Inches	0	NT Intel	NX V2.0	20-Sep-1994 07:26
crankshaft.prt	crankshaft	Partially(1)	✓	✓	Component	D:\Parts\Information_Window\NX3_pump		Inches	0	NT Intel	NX V7.5	19-Sep-1994

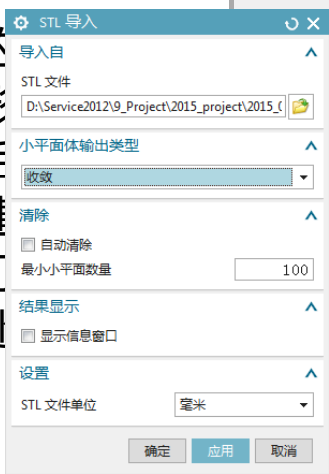
Ctrl-Tab 窗口切换功能可以节省时间和精力。

Convergent Modeling 收敛建模

Intelligent solid STL 导入

在同一个模型中的小面
易出错的逆向工程

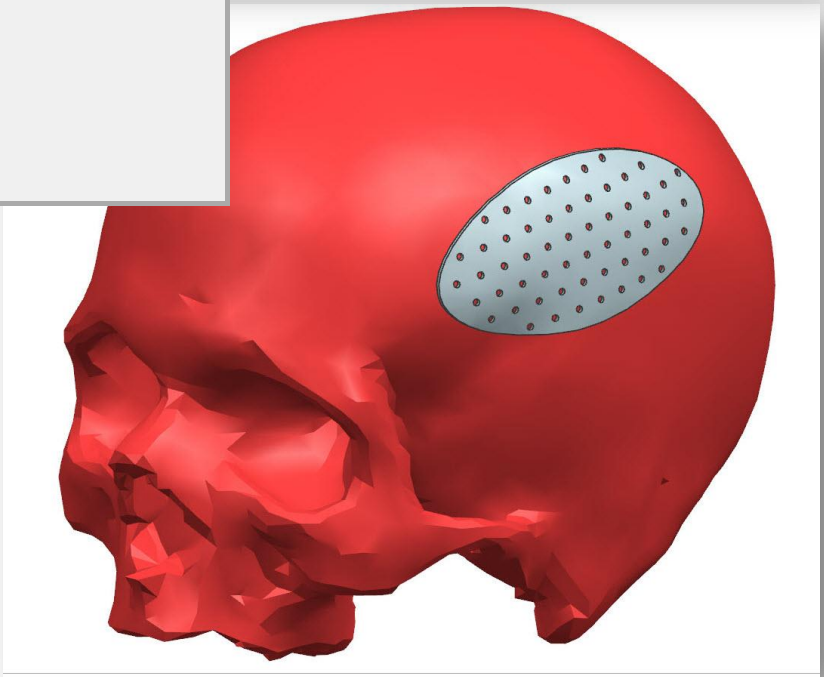
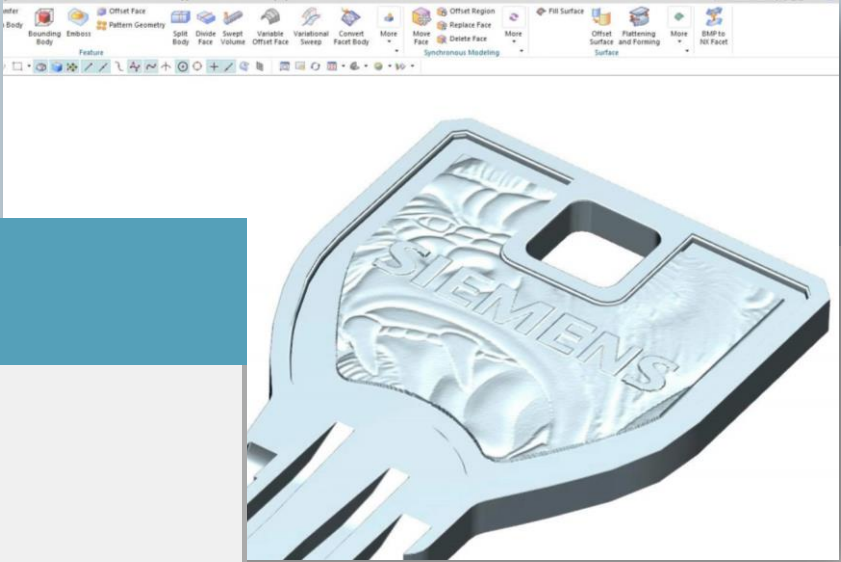
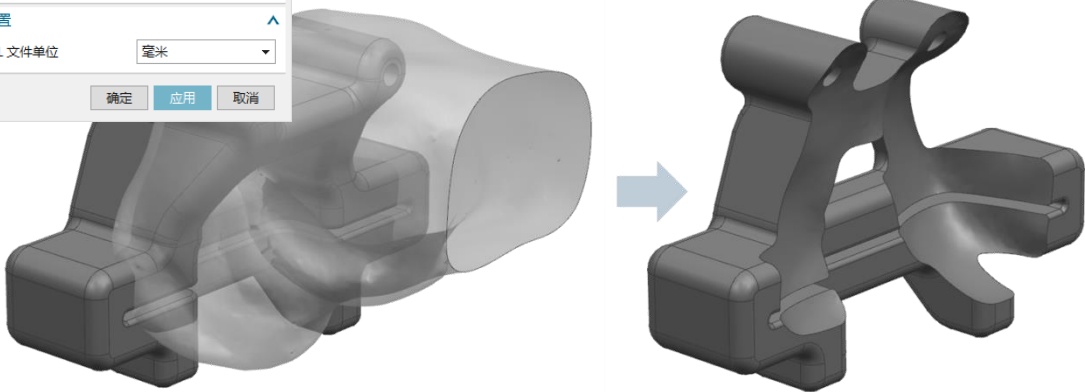
- 是将扫描的任何其他形
- 扫描数据后据形状创建
- 收敛建模可快的速度处



STL 文件包含无效的数据

确定(O)

和成本，并消除了容易出错的返工环节，可以更并且出错机率低于其他解决方案



可以在医疗行业中使用收敛建模，在本例中将其用于颅骨植入。

Convergent Modeling Technology

Revolutionize the way product shapes are developed

SIEMENS

...with the Next Generation Of Advanced CAD Modeling to Production Capabilities

Any design medium: Point Cloud, Polygons, NURBS, ...

...Streamlined workflows without conversion!

...Simulation driven design and optimization

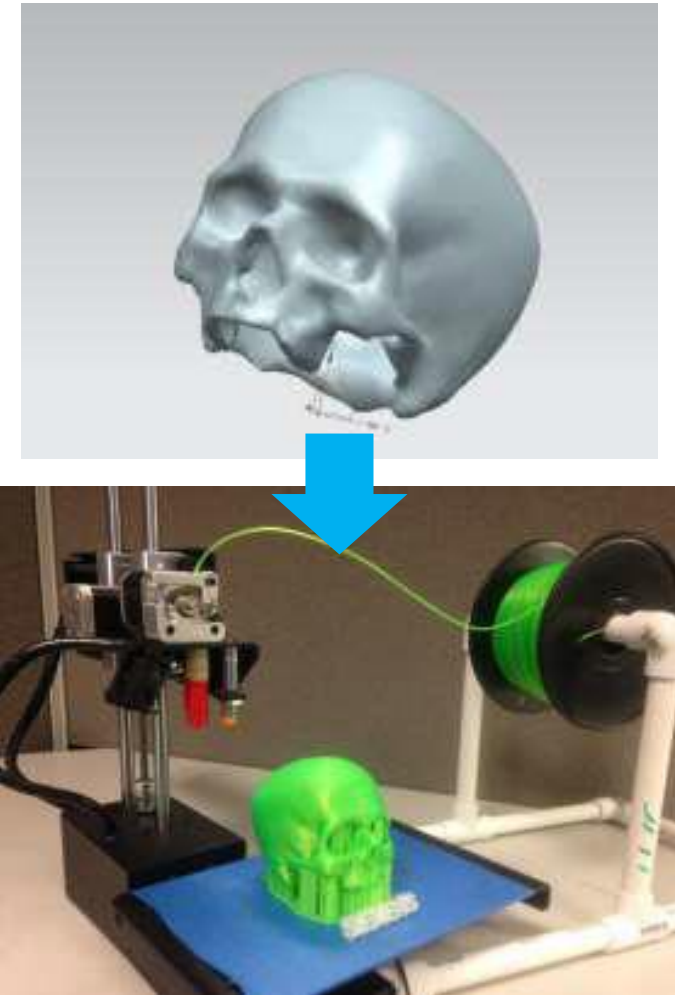
...3D printing of production parts and tooling

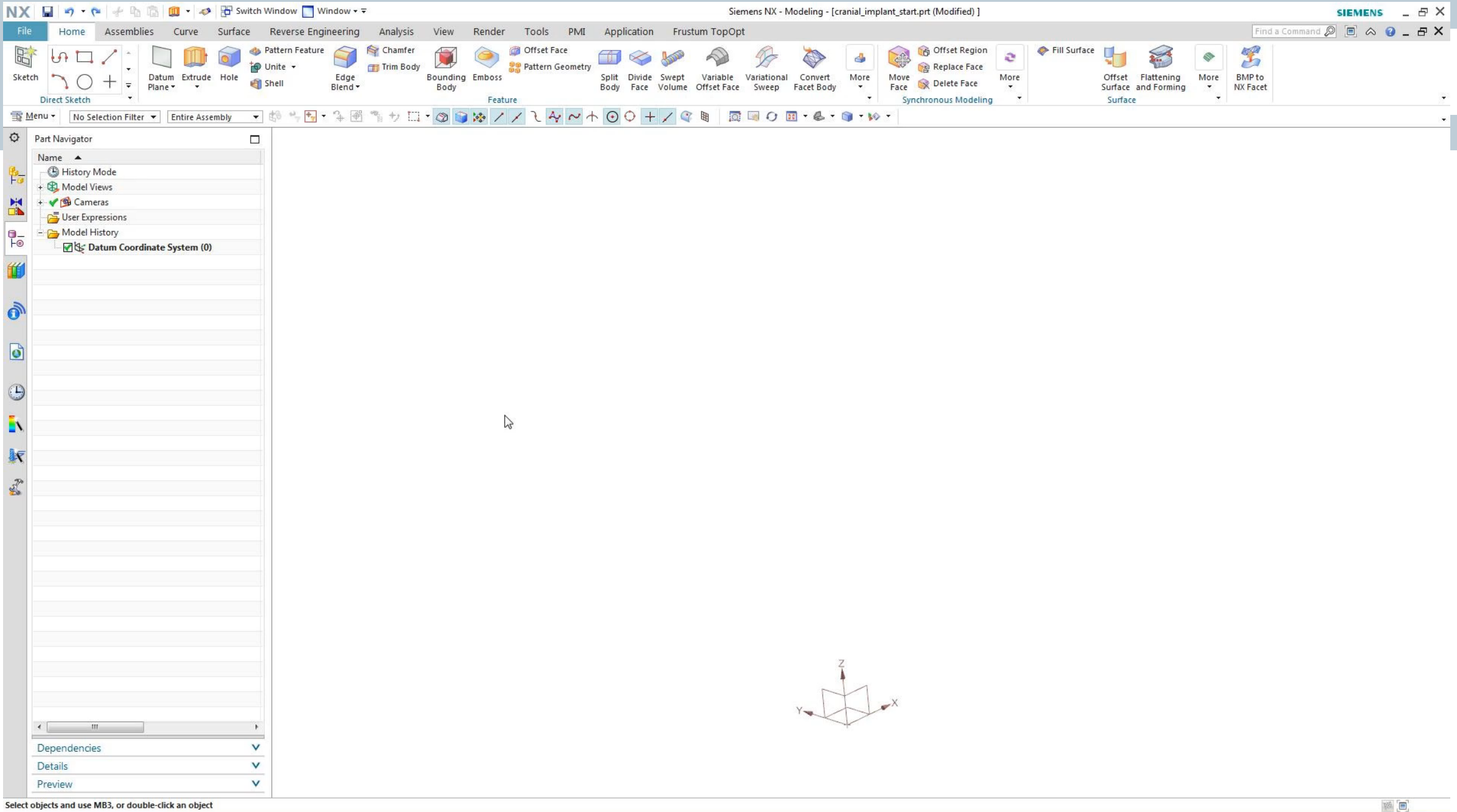
...Additive and subtractive manufacturing processes

Rapid manufacturing directly from NX

Easily create prototypes or final products

- 可以通过“文件” > “3D 打印” 直接从NX 对设计进行 3D 打印
- 此功能使用 Microsoft® Windows® 提供的 3D 打印工具包
- 并采用广受支持的 3D Manufacturing Format(3MF), 因此具有广泛的兼容性。



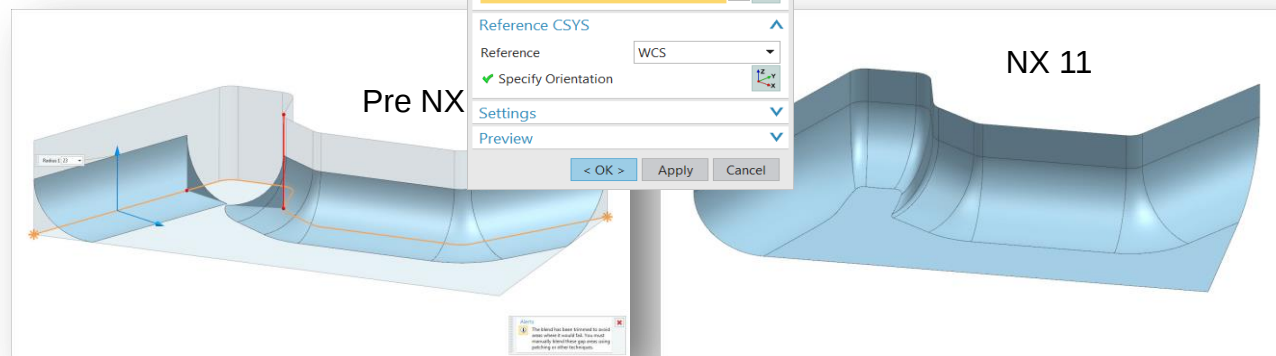
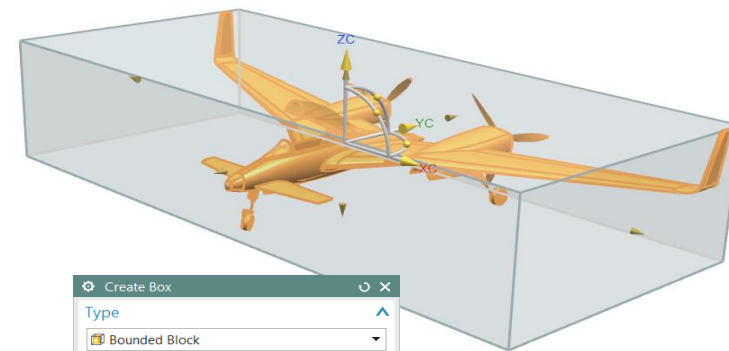
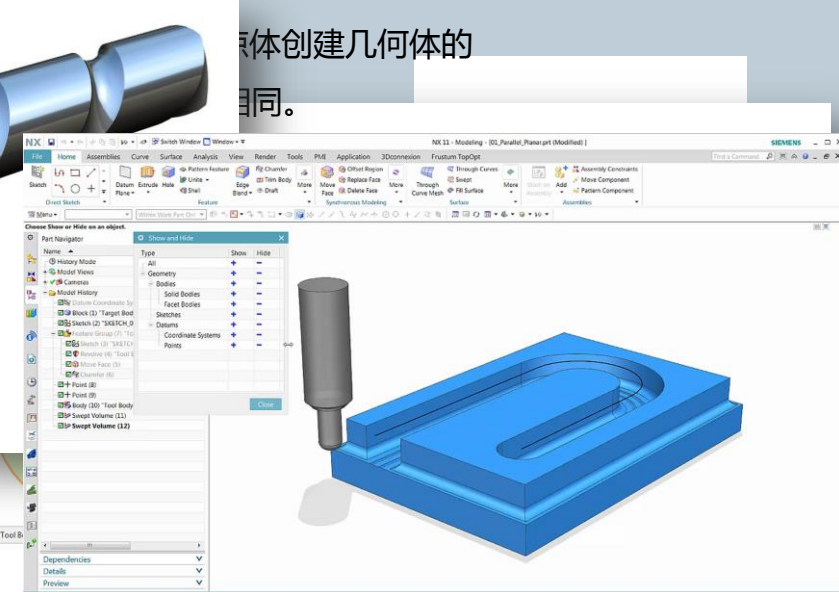
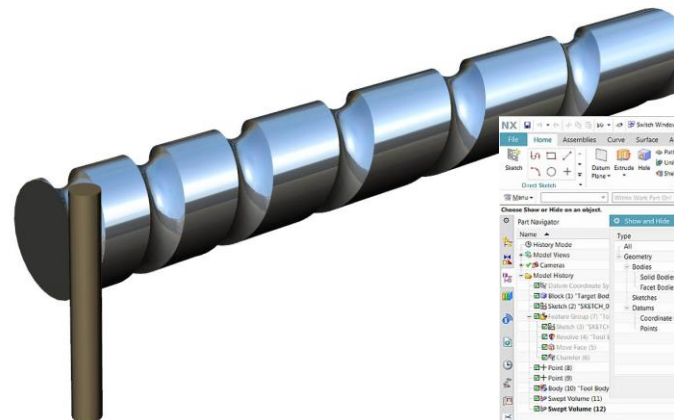


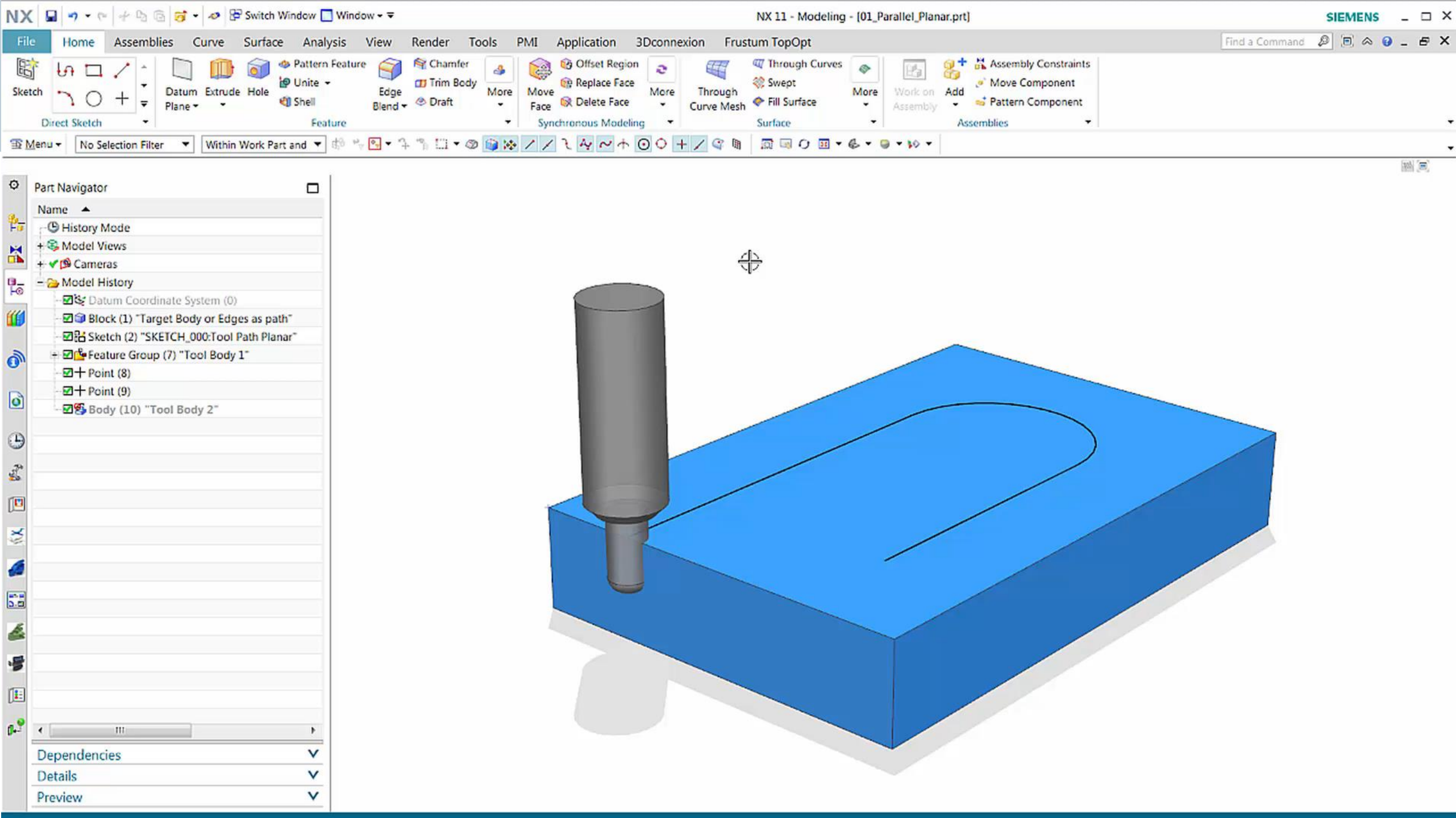
Feature Modeling 特征建模

The foundation of modern 3D

A state-of-the-art parametric solid modeling toolset gets better with new tools and improved usability

- 新增了扫掠体积等工具
 - 用于创建关联包容体的简单新工具尤其适用于工装和夹具设计
- 包络体建立 (Bounding Body)
- 倒圆
 - Edge and face blending works more robustly for complex cases
 - Improved blend shape and flow
 - Apply large radius blends over small
 - Handling steps in the part
 - Blend self intersection patch quality
 - Edit trim and attach options in Face blend

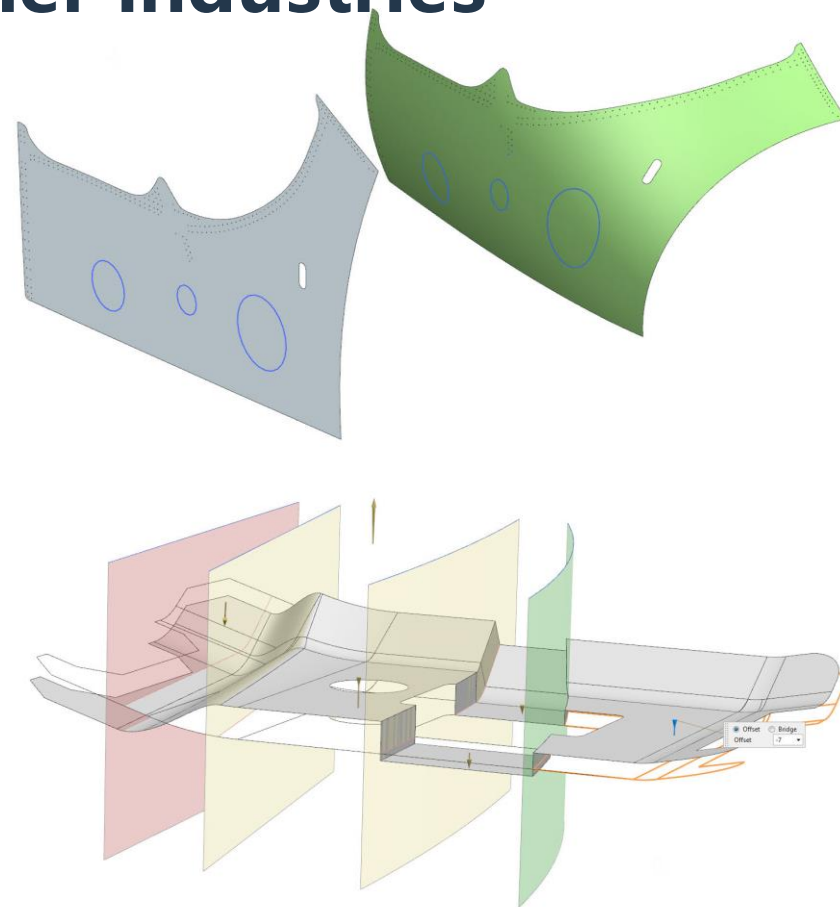




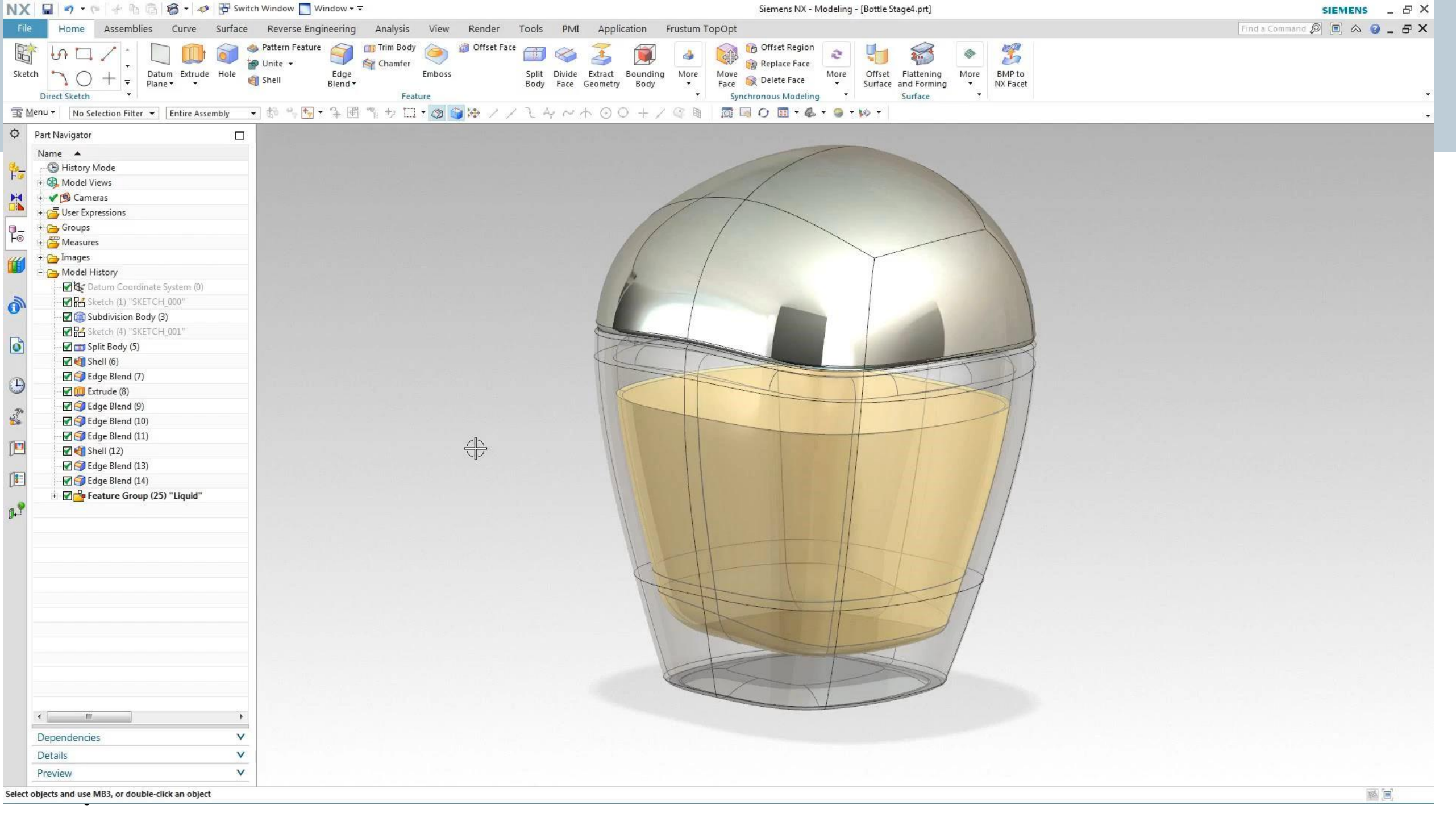
A vital tool in industrial design and other industries

曲面建模仍然是大多数行业中使用的重要工具，尤其适用于工业设计和造型。NX 11 进一步强化了功能强大的曲面设计工具集，可以提供新型和优化功能。

- 曲线缩放：利用曲线缩放功能，您可以将缩放后的曲线、零件边或点副本创建为新特征，并能使其与原始曲线关联。
- 曲面展平：现在您可以展平曲面，对曲面进行更改并将其重塑至原始形状，从而进一步控制所需的工作流。Forming and reuse
- 可偏置曲面：借助 NX 11 中的可变偏置面，您可以在单个操作中创建具有固定厚度和可变厚度的体，这对于轻量级操作尤其有用。
- 此外还改进了变化扫掠，只需几步即可轻松创建复杂形状。
- Variational Sweep improvements
- Trim Sheet improvements
- *New!* Variable Offset Face
- *New!* Swept Volume
- *New!* Flattening and Forming toolset



在 NX 11 中展平、修改和重塑曲面。



Part Navigator

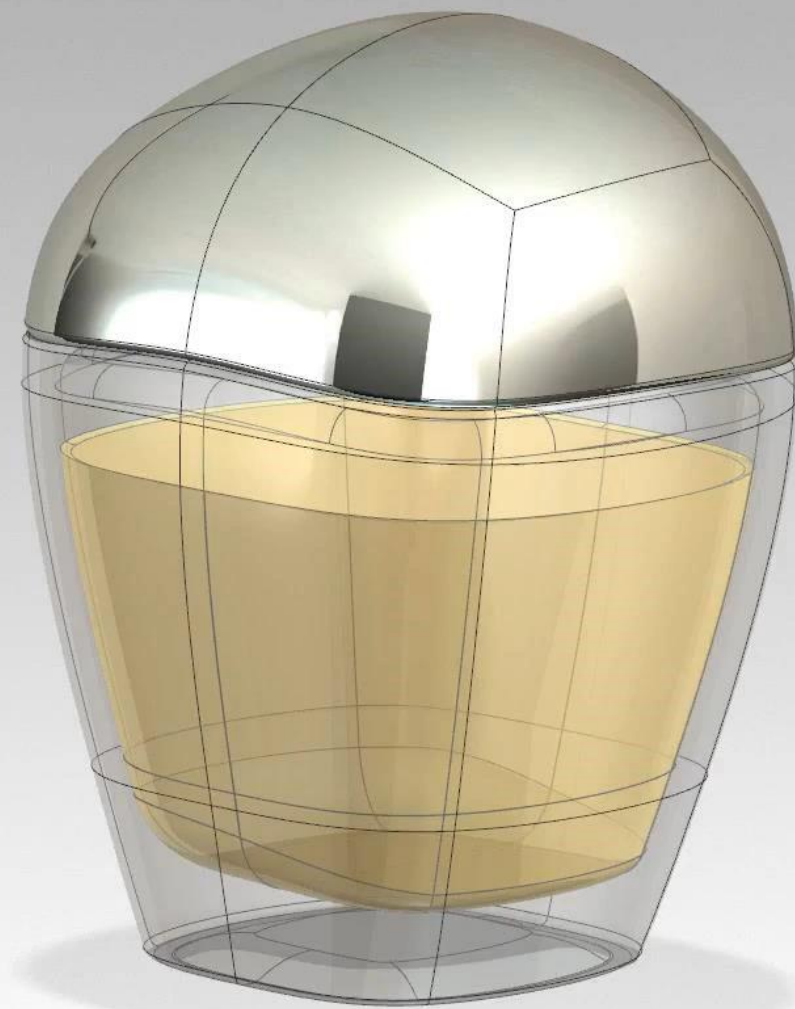
Name

- History Mode
- Model Views
- Cameras
- User Expressions
- Groups
- Measures
- Images
- Model History
 - Datum Coordinate System (0)
 - Sketch (1) "SKETCH_000"
 - Subdivision Body (3)
 - Sketch (4) "SKETCH_001"
 - Split Body (5)
 - Shell (6)
 - Edge Blend (7)
 - Extrude (8)
 - Edge Blend (9)
 - Edge Blend (10)
 - Edge Blend (11)
 - Shell (12)
 - Edge Blend (13)
 - Edge Blend (14)
 - Feature Group (25) "Liquid"

Dependencies

Details

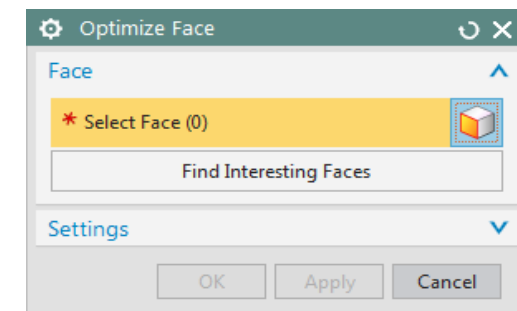
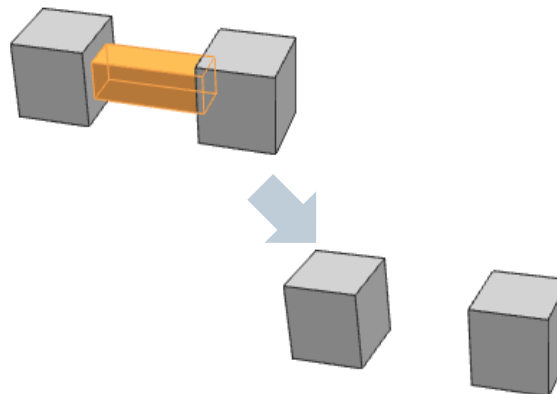
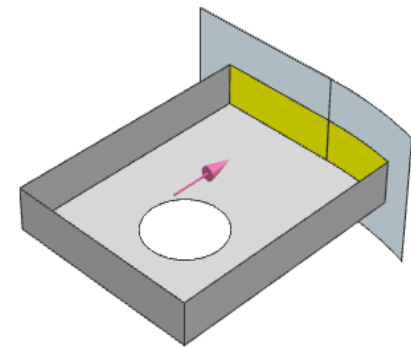
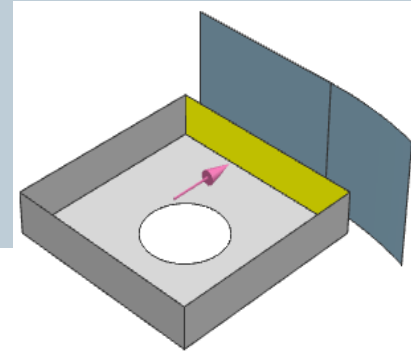
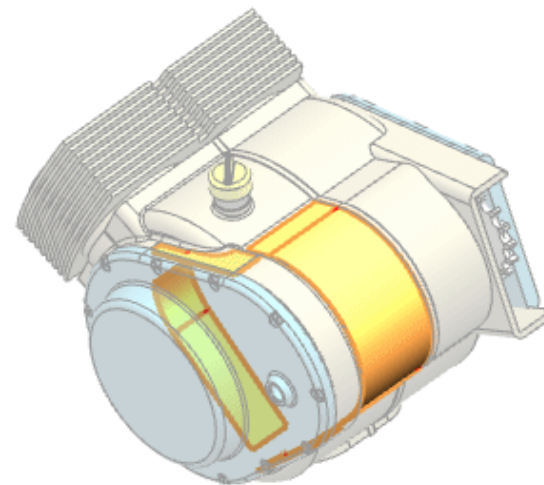
Preview



Industry-leading technology

Incremental improvements to the industry's best tools for modifying models regardless of where they came from, yielding groundbreaking speed and freedom of design

- 利用该项技术，您可以处理任何来源的模型，并能将智能融入生硬的数据，NX 中的同步建模技术处于行业领先水平。
- NX 11 中的增量改进功能可将面替换为包含开放边的其他面。
- 使用自动面选择功能轻松对面进行优化。
- 可以通过删除面将单个体分成多个体。

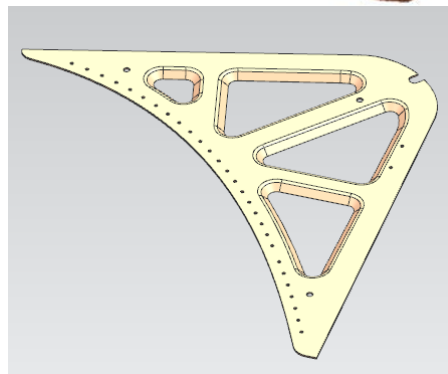
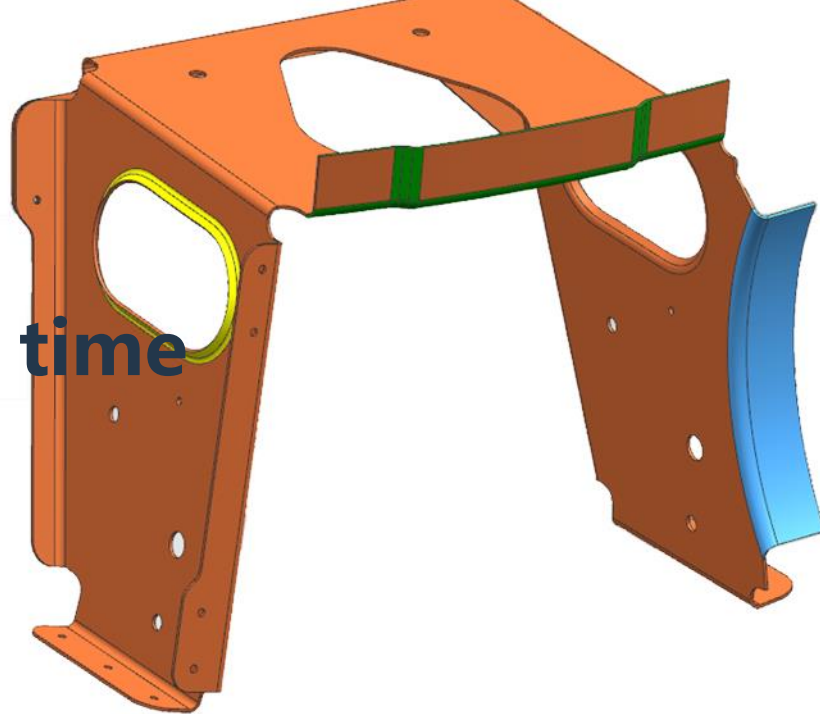


Sheet metal 钣金

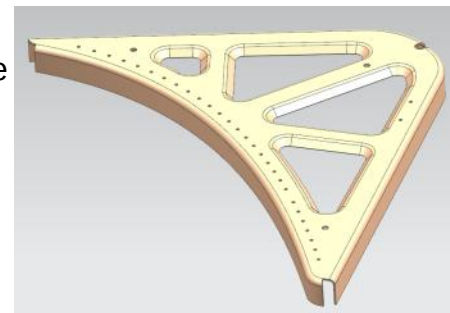
Simpler and more powerful at the same time

By combining functions and adding new options to existing ones, sheet metal is easier to use and more capable than ever, enabling you to create the sheet metal geometry you need in fewer steps

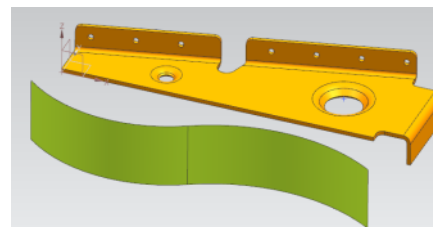
- 航空航天钣金已退休。在 NX11 中，命令已重新编写、改进并合并到 NX 高级钣金中。
- 基础钣金架构中现已包含高级法兰的创建，提高了可靠性并改善了与其他钣金命令的兼容性。
- 在 NX 11 中，桥接折弯适用于具有标准钣金许可证的所有用户。
- 可以利用新增的对中间腹板面和相邻腹板面的支持功能创建更加复杂的樁接。
- 借助减轻开孔、实体冲压、桥接折弯、凸起和凹坑、法向开孔以及轮廓弯边等的增强功能，您可以提高灵活性并增强控制，减少创建所需几何体的步骤。



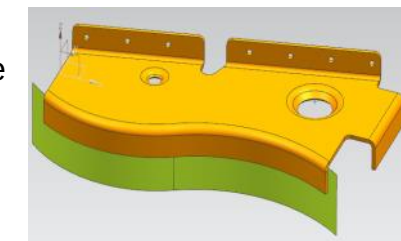
Advanced Flange
By Value



利用 NX 11 的钣金设计功能，可以减少创建所需几何体的步骤。



Advanced Flange
To Reference



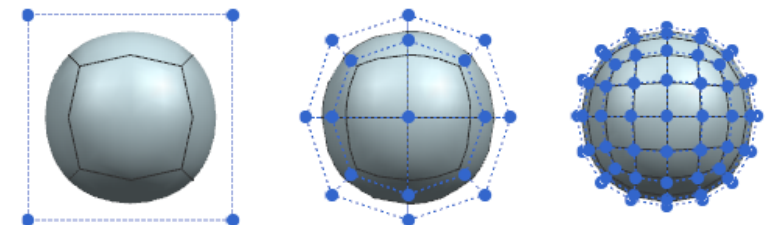
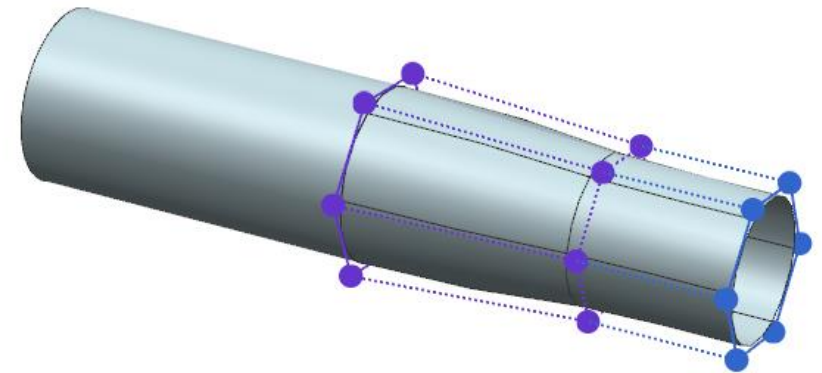
Easy 3D concept design

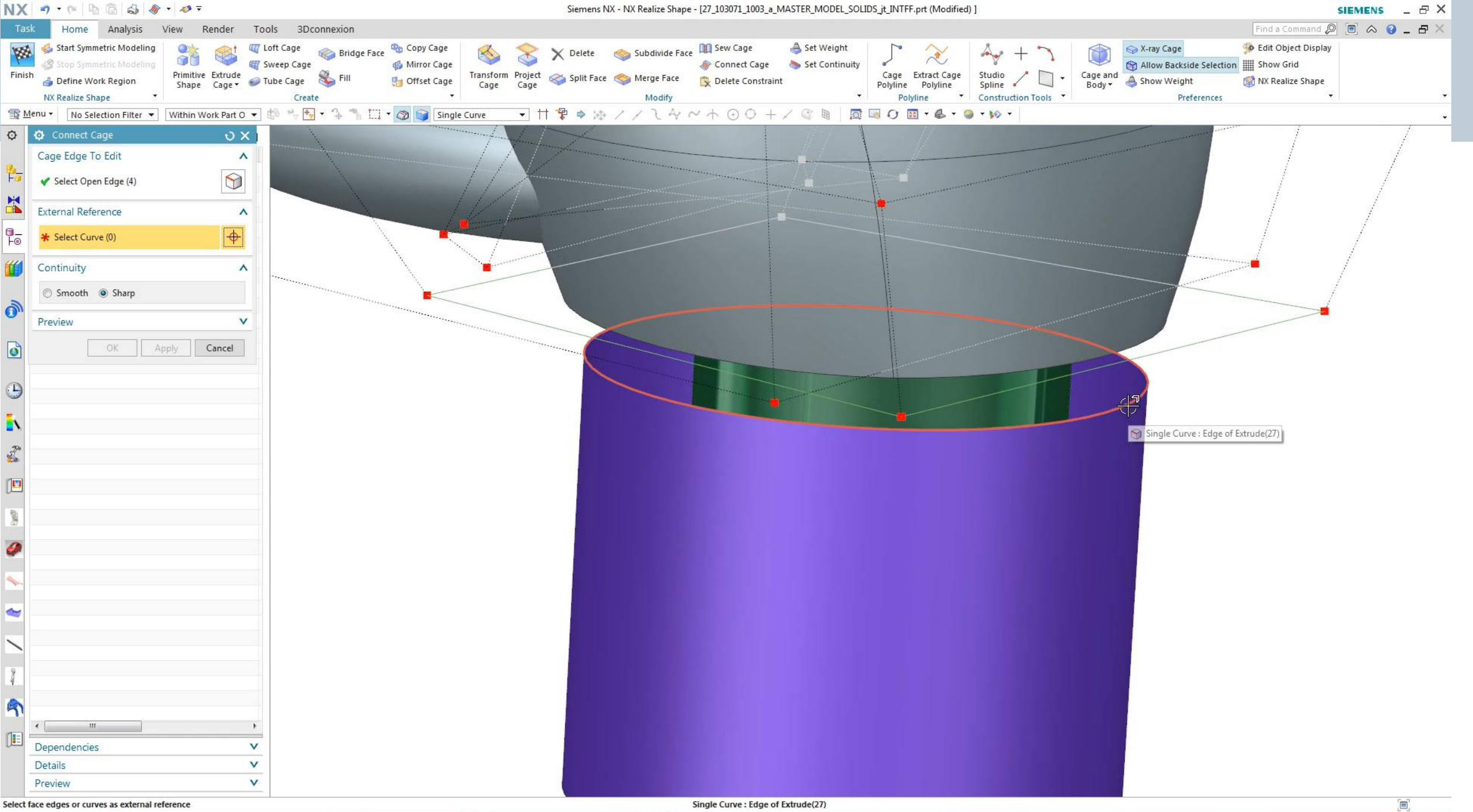
An intuitive subdivision design tool that uses simple shape manipulation to create high-quality B-surfaces with continuous improvements in functionality and ease-of-use

自从在 NX 9 中面世以来，NX 创意塑型™ 不断进行改进和优化。NX 创意塑型是一款易用且功能强大的直观型细分设计工具，可通过简单的形状操控创建高质量的 B 曲面。

进一步控制细分模型的元素，以便使用任何模型中的细分形状

- 在 NX 11 中，可以对框架进行拆分和合并体，
- 在创建体素形状时，您现在可以指定框架中的水平段和垂直段的密度与数量
- 凭借删除框架中的某一部分，移动或复制体中单个元素的功能
- 对框架的镜像，偏置
- 对框架的定义工作区域（局部控制）和冻结
- 您还可以利用新增的连接功能，填充体（非框架）之间的任何间隙



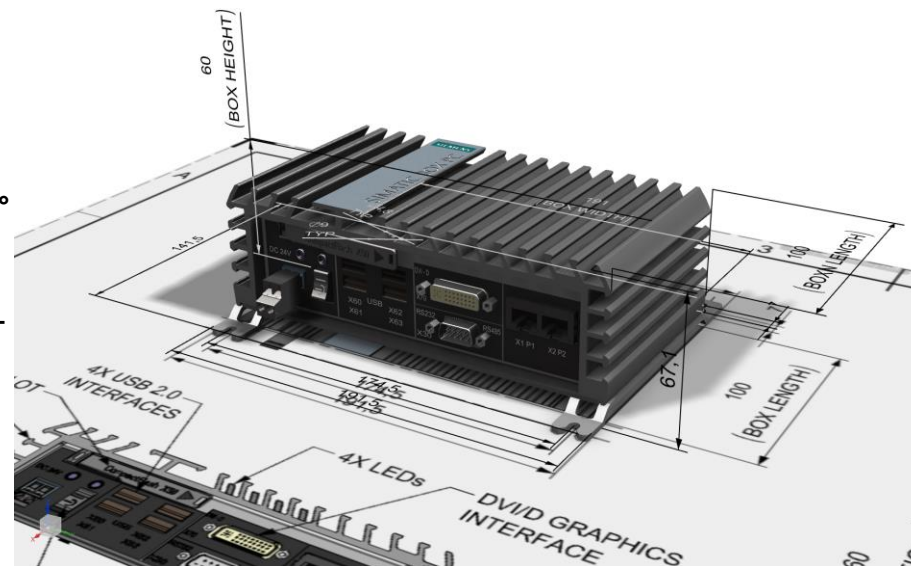


Create PMI from legacy 2D drawings

Automatically convert drawing views and objects to model views and PMI objects so you can utilize legacy data without rework by automatically adding intelligence to 3D models

现在，越来越多的公司利用产品和制造信息 (PMI) 来支持其基于模型的定义 (MBD) 战略。与基于图纸的传统流程相比较，PMI 在实现设计和制造下游使用、更好的质量控制和对重要产品信息的更快访问方面的优势明显。许多公司还往往保有大量原有 2D 图纸，为利用这些原有数据，他们必须花费精力将图纸中的信息重新创建为 3D 模型。此过程可能耗时巨大，并且需经过手动验证才能确保相关 3D 信息与图纸中的信息相互匹配。

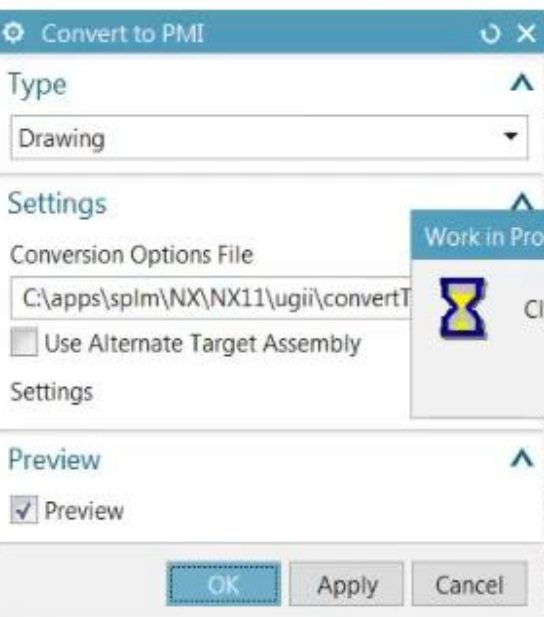
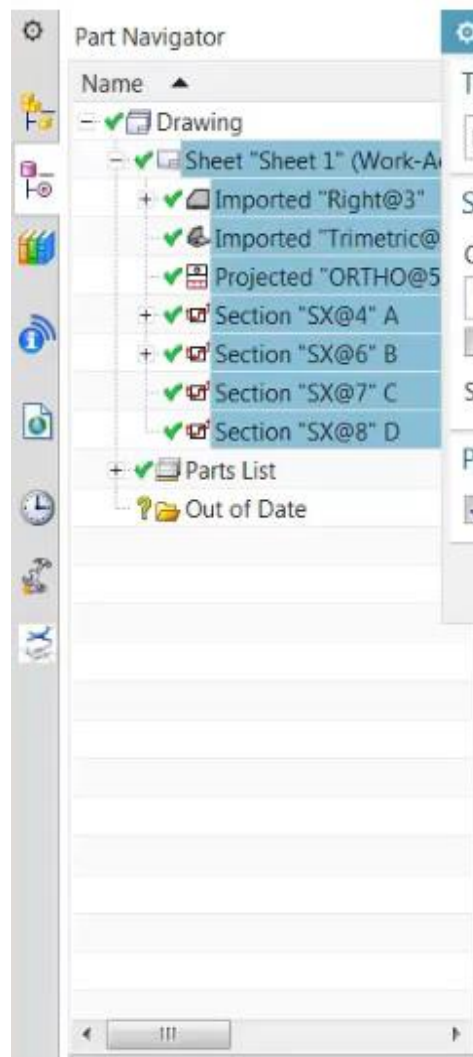
- 利用 NX 11，您可以将图纸视图和对象自动转换为模型视图和 PMI 对象。这些对象包括尺寸、形位公差 (GD&T) 和注释等。
- 可以通过图纸、工作表、视图和注释对象选项轻松进行自定义。可以交互方式或通过自动化批处理执行转换至 PMI 的操作。
- NX始终坚持在无需返工的情况下利用原有数据。
- **借助 PMI 转换，您可以使用原有 NX 图纸快速、轻松地向3D 模型中添加信息。**



将图纸视图和对象自动转换为模型视图和 PMI 对象。



of 100 %

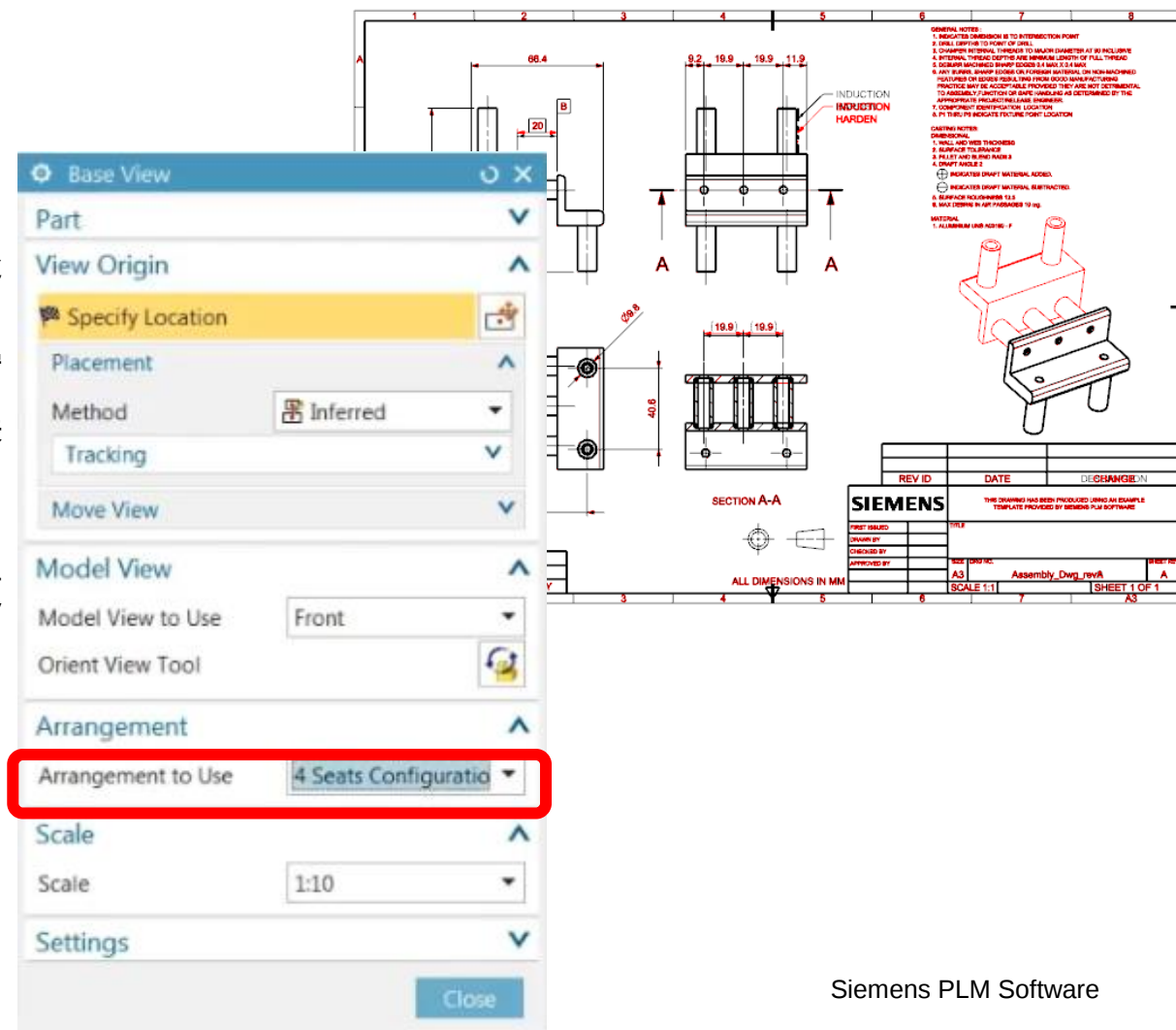


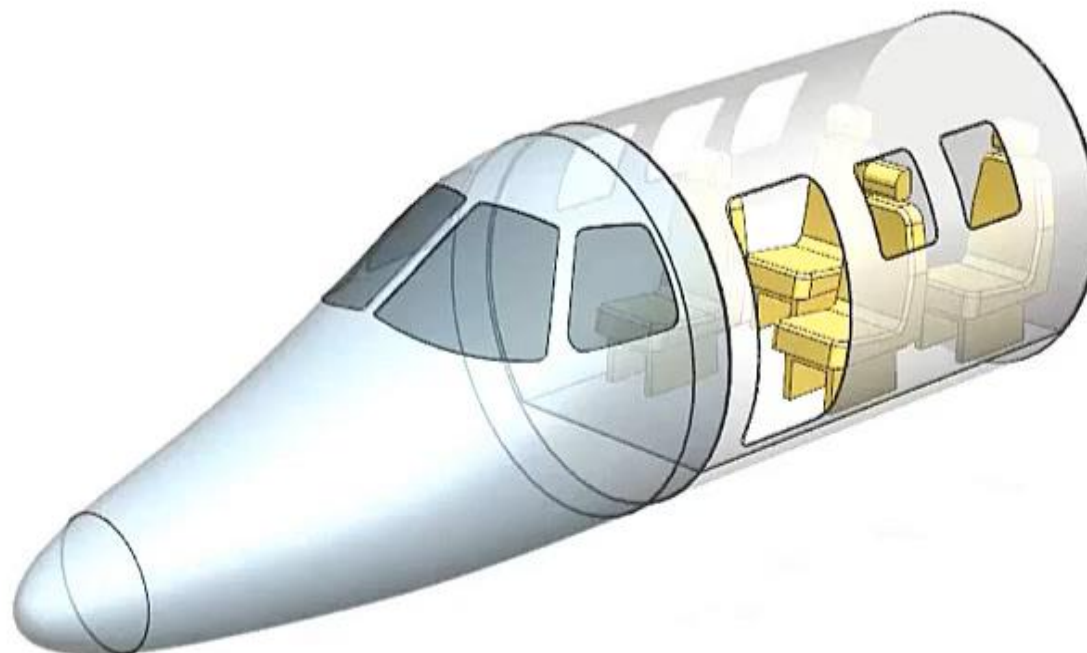
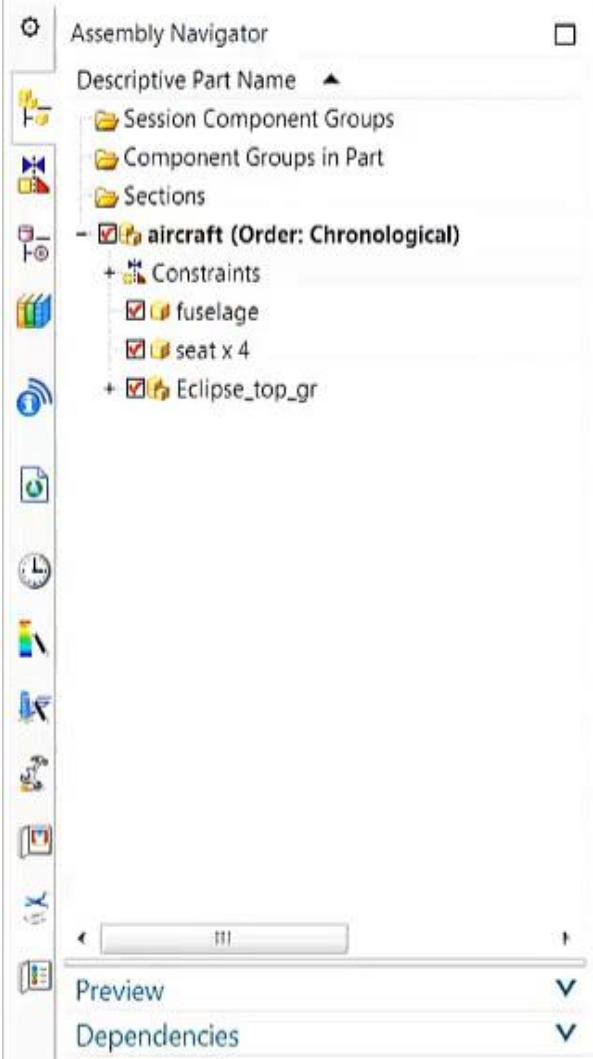
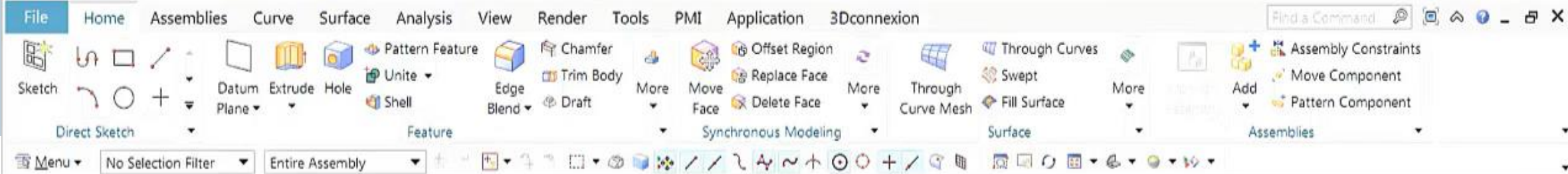
Sheet "Sheet 1" Work

A state-of-the-art tool for drawing creation and modification 通过图纸比较工具减少检查时间。

对于许多公司而言，设计流程中离不开图纸，NX 制图始终是创建和管理图纸的领先工具。在 NX 11 中：

- 智能轻量级视图可以在处理大型装配视图时，利用多线程处理节省时间。
- 新图纸比较工具集可以通过快速、方便地标识更改，大幅缩短图纸检查时间，同时还能消除图纸更改可能导致的制造误差。
- 使用 NX11，您还可以在图纸上显示多种装配布置，不仅能够深入了解产品的装配信息，还能查看内部细节或备选构建方案。





High-end rendering 高性能渲染

Photorealistic

在实际生产前了解
照片级渲染可以在
材料的相关决策。

- NX 11 采用新
 - 完全集成到 NX
 - 供多种材料和
 - 并能通过多线
 - 如果需要以更
 - 的渲染工作。
 - 此外其还具有
 - 地控制渲染完
- 借助 Lightworks
了操作，帮助您以

概述IRAYV-RAY

利用 NVIDIA® Quadro® 视觉计算设备 (VCA) 加速设计与视频特效制作工作流程。网络上的任何人都可以使用它，轻松地把它融入到设计工作流程当中，而且它在处理性能上可以实现线性扩展，从而可造就无噪而互动的全局光照效果。物理效果逼真度的可预测性与准确性现已实现完全互动，从而能够加快创作过程中的决策速度。



VCA规格参数

特性	细节
GPUs	8 颗 NVIDIA 高端 GPU
显存	每颗 GPU 12GB 显存
NVIDIA CUDA®核心数量	24,576

势。
能和

多。
提

繁重

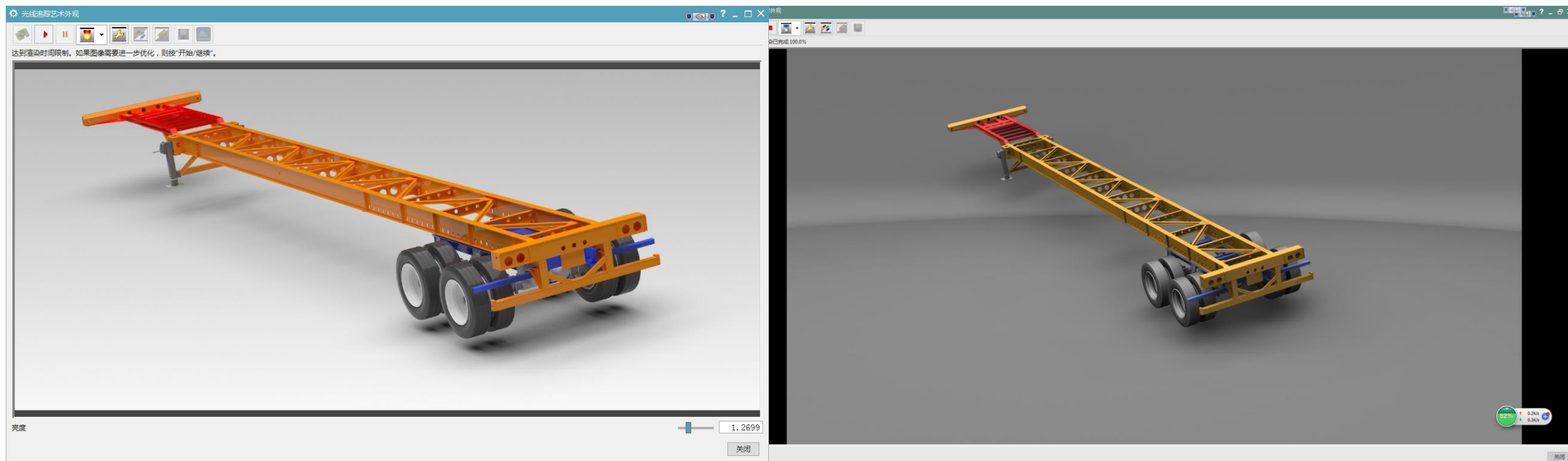
更好

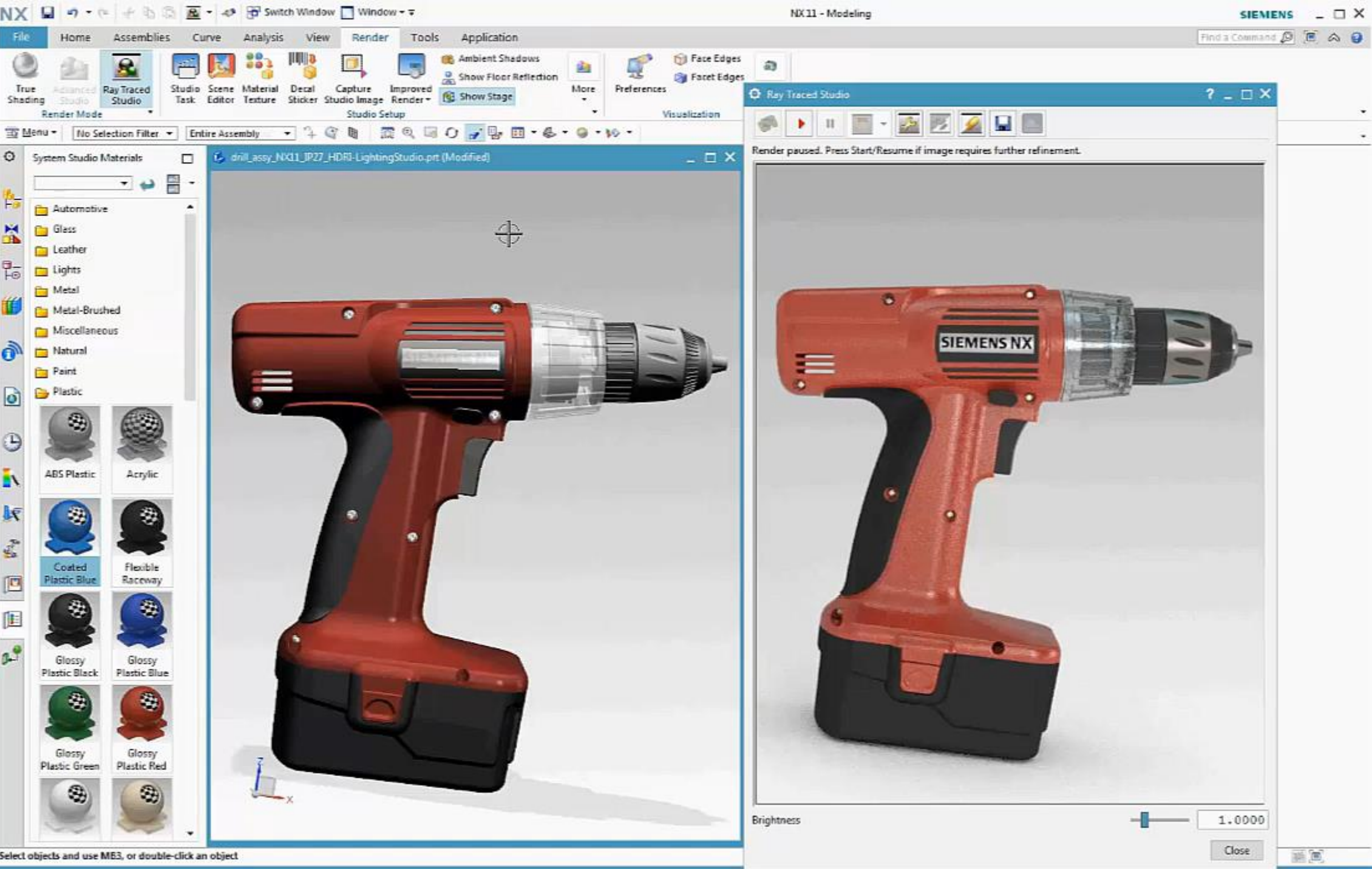
简化



照片级渲染可以在实际生产前显示产品的外观。
Siemens PLM Software

NX11和NX10光纤追踪艺术外观渲染对比（默认设置，材质光照未定义）

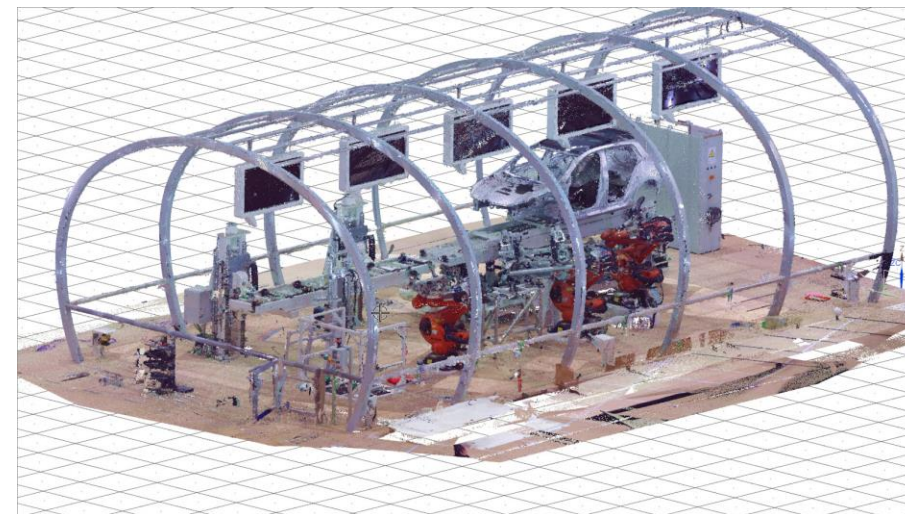




Point cloud processing with Bentley 奔特力 Pointools

许多行业使用点云数据来获取产品、车间、工厂、建筑和基础设施等的现有情况。为此，NX 11 引入了使用 Bentley® Pointools™ 的点云处理功能。

- 现在，您可以导入标准POD 文件格式的点云数据，进行简单测量并进行编辑，例如显示/隐藏、传输、删除以及编辑参数等。
- 由于无需创建 3D 数据，因此可以简化对参考数据的访问，尤其是对包括工厂和生产线设计的应用程序来说更是如此。



点云数据使生产线设计变得更轻松、更准确。

Take advantage of full NX functionality in a cloud-managed environment

NX on cloud gives you flexibility, scalability, and reliability that helps you matches business demands as they change

- 对于 NX 11 的某些配置，您可以选择在云托管环境中部署并运行 NX。
- 这样既可以利用新增的 NX 功能，又可以享受基于云的产品所带来的各种便利，例如降低在安装、维护和升级过程中的复杂性、时间、成本和风险。
- 同时意味着 NX 将会继续按照既定模式运行并响应。此外，IT 团队可以专注于核心业务功能，而非管理环境。云中的 NX 提供的灵活性、可扩展性和可靠性可以满足您的不同业务需求。



NX 11 for Design What's New

User Experience

Multi-Core extension
 Cloud Licensing Support
 Simple Part File Password
 Support for Multiple Managed NX Configurations
 STEP 242 Adapter Support
 Close Subassembly Performance
 Improve Units Handling
 High End Rendering Engine
 Multiple Displayed Parts Investigation
 Multi-Core Lightweight Drawing View Completion
 Support Remote Display
 Support for New Direct Model Version
 NX Open Selection Support
 Navigator Selection Performance
 Circle Selection Method
 Selection Tune Up
 Mixed Modeling PSM Display Support
 Point Cloud - Architecture Support
 Plot Support for Colored Drawing Symbols
 NX Open Toolkits Upgrades
 NX Open Usability
 Python UDO Support
 NX Open Partner Support
 NX Open Support for Spreadsheet Interaction
 Timeline Tool
 Information Window
 Navigator Drag and Drop
 Improved Window Management
 Automatic Application Change
 Upgrade QT

Modeling

Feature replay performance improvements
 Part Modeling version up improvements
 Feature algorithm update controls
 Edge Blend improvements
 Face Blend improvements
 Part Modules - Usability & Performance
 Interrupt feature
 Sketch - Usability Improvements
 Sketch - Performance improvements
 Sketch - Scale constraint
 ST2D- Local Scale
 ST2D - Rigid Sets
 Sketch - Constraint to string of curves
 Sketch - Splines improvements
 Sketch - Notes within feature
 Sketch - Display dependencies to external geometry
 Sketch - Position and reattach improvements
 Sketch - Horizontal and Vertical constraints of points and endpoints of lines
 Synchronous Modeling - Delete Face supports multi body output
 Synchronous Modeling - Replace face at laminar sheet boundary
 Synchronous Modeling - Delete Notch/Cliff blends
 Synchronous Modeling - Optimize Face Selection improvement
 Selection - Select from navigator consistency
 Design Templates - Relinking a product interface
 Design Templates - Product interface expressions
 Design Templates - WAVE link out of date status improvements
 SDPD: Modular Interface Design
 Variational Sweep improvements
 Feature Modeling Swept Volume
 Wireframe - Spine Curve feature
 Wireframe - Scale Curve feature
 Wireframe - Isocline curve feature UI & Selection Intent
 Surfacing - Variable offset surface (Tailored blanks)

Surfacing - Flattening and Forming
 Surfacing - Studio Surface improvements
 Surfacing - Section Surface accuracy
 Wireframe - Derived curves improvements
 Realize Shape - Connect
 Realize Shape - Polish
 Analysis - Multi-Face Continuity
 Mixed NURBS/Facet modeling
 Analysis - AO Performance improvements
 Analysis - AO Usability improvements
 Analysis - AOs in Assembly Context

Drafting

Multi-thread support for Smart Lightweight views
 Working with arrangements on drawings
 View Break workflows
 Settings Enhancements
 Track Drawing Changes Enhancements
 Drawing Compare
 Dimension UI Enhancements
 Hole Callout enhancements
 Dimension Settings
 Limits and Fits
 Support for Angular Directed Dimensions
 4GD-Parts List Support
 4GD-Relations and Where-Used
 4GD-View of Part Support
 NX Layout-enhanced workflows
 NX Layout-leveraging legacy data

PMI

2D Drawing to 3D PMI
 Part Navigator Performance Improvement
 PMI Inherit Enhancements
 Support for Angular Directed Dimensions
 PMI Lightweight Section View Enhancements
 PMI Region Enhancements
 PMI Resize Enhancements
 PMI display parallel to screen
 Dimension UI Enhancements
 Hole Callout enhancements
 Dimension Settings
 Limits and Fits
 Support for Angular Directed Dimensions
 Selection for Routing Anchor Points

Assemblies

4GD Weld Support (NX 10.0.2)
 4GD Constraints (Phase 2)
 4GD Support for Change Management
 4GD Support for Parts List
 Direct Model Integration
 Large Assembly Performance
 Motion Consolidation Architecture
 Component Patterns with Pure Reference Patterns
 Support for Multiple Displayed Parts Investigation
 Associative References to Multi-CAD Override Geometry
 Support for Mixed/Facet Modeling Initiative

Routing

Routing support of attributes
 Formboard Architecture
 Update Bolting Options
 Quick Path enhancements (NX 10.0.1)

Realize innovation.

Thank You

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