

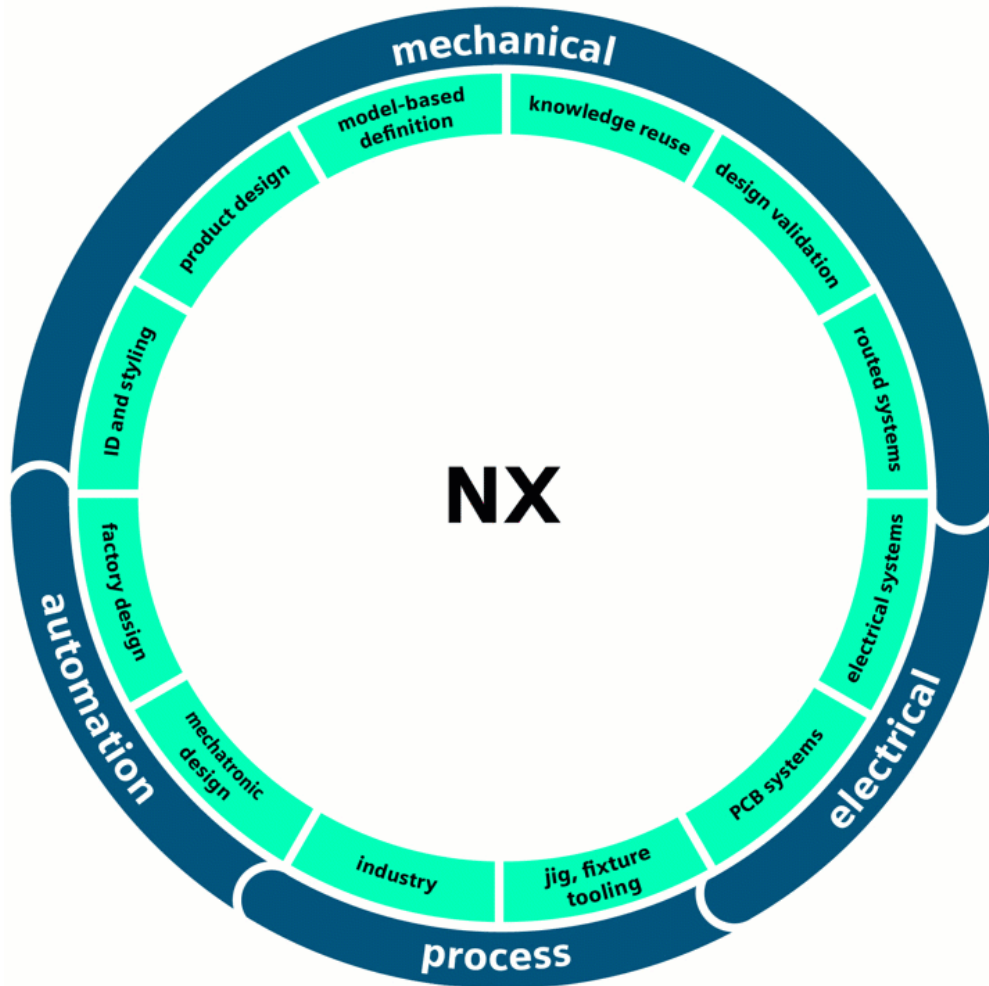


What's new in NX 2306

Fibersim

June 2023

Fibersim



Fibersim is the premier composite design tool targeted for industries with composite workflows of medium–high complexity

Full automation

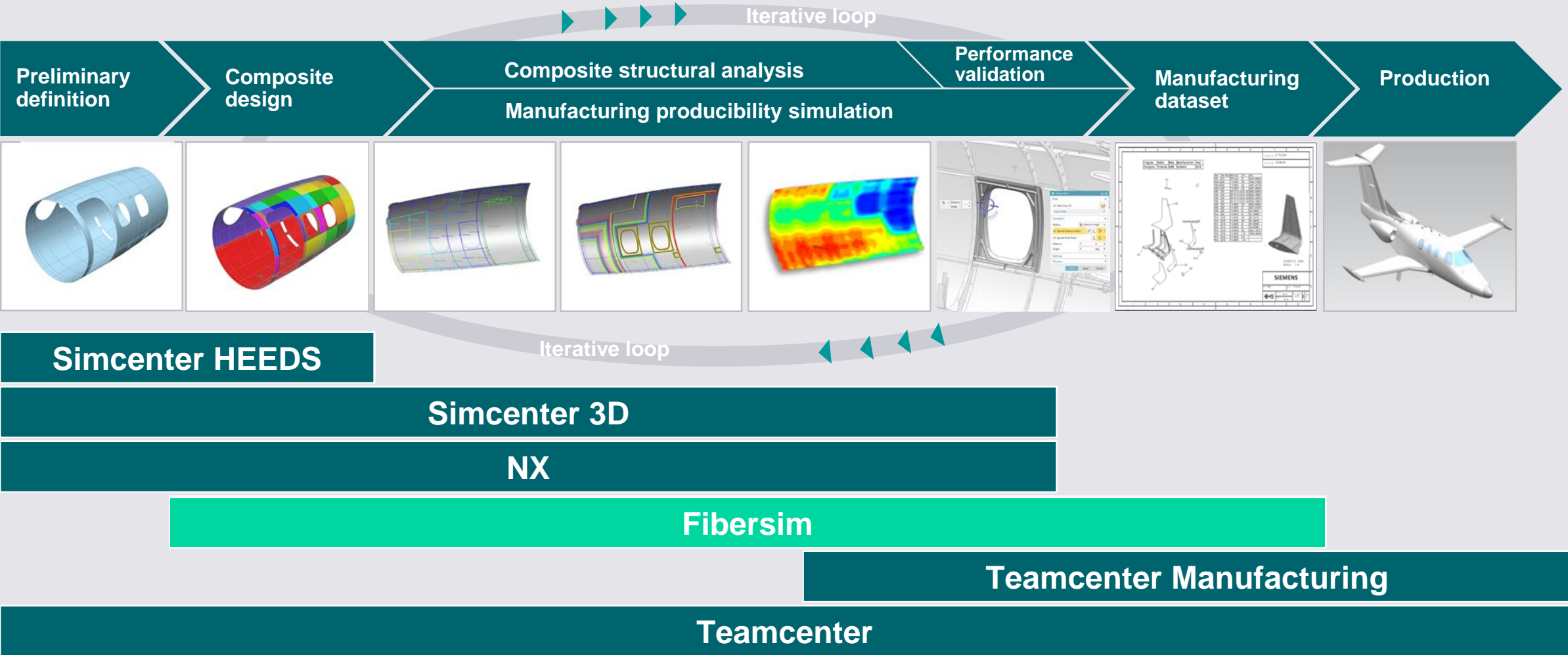
Multi-ply, zone-based workflows

Advanced simulations

Volume fill

Complete set of outputs, documentation, machine programming, etc.

Siemens product synergy overview

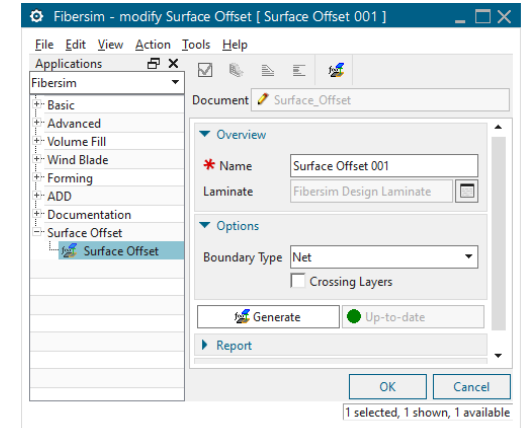
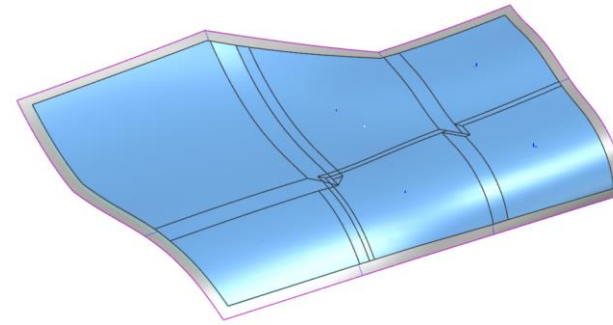


Key improvements of previous releases

Surface Offset utility

Create offset IML (inner mold line) surfaces, including ramps, for each constant thickness area of a composite definition

NX features will be replaced during regeneration after a design change, allowing parametric geometry to be built from the utility's results



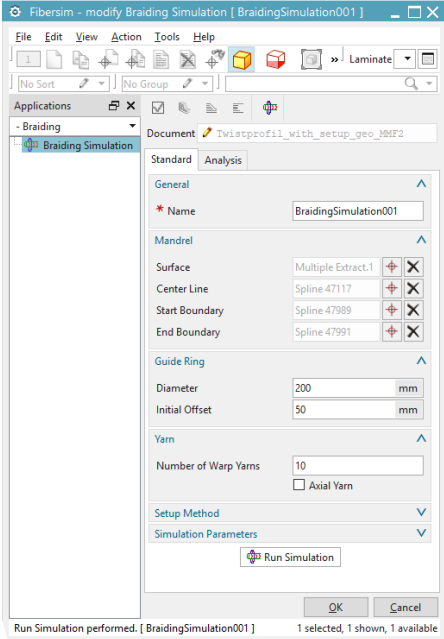
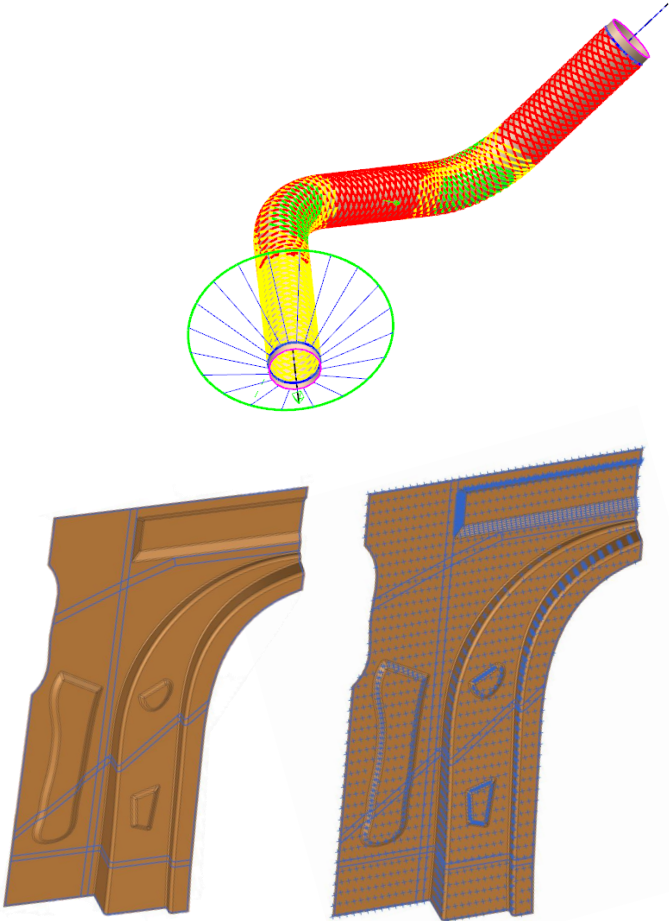
Feature Group (126) "Surface Offset 001"	✓
Feature Group (128) "IML"	✓
Feature Group (129) "Constant Areas"	✓
Body (127)	✓
Body (130)	✓
Body (131)	✓
Feature Group (132) "Ramp Areas"	✓
Body (133)	✓
Body (134)	✓
Body (135)	✓
Sew (136)	✓
Thicken (141)	✓

Key improvements of this release (17.3)

Design for braiding

OML Wireframe utility

Point Cloud offset surface generation



Key benefits of this release

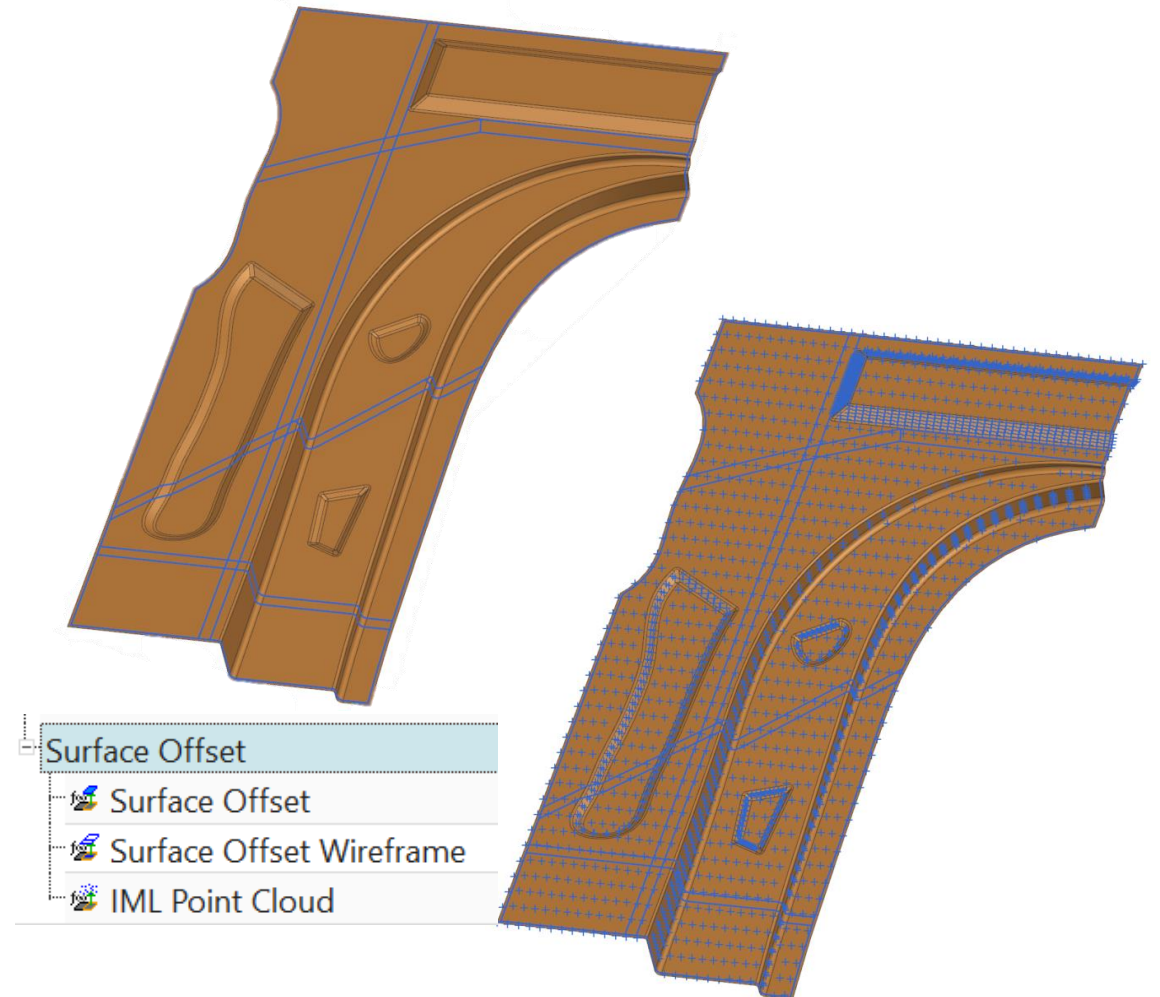
OML Wireframe and IML Point Cloud utilities

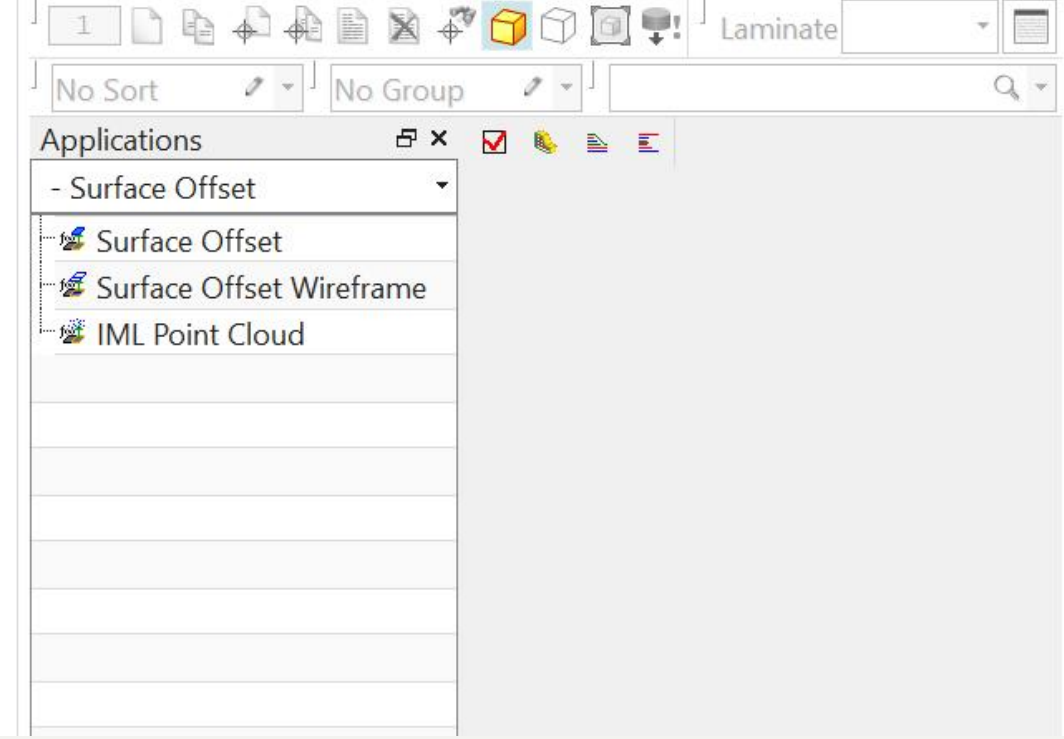
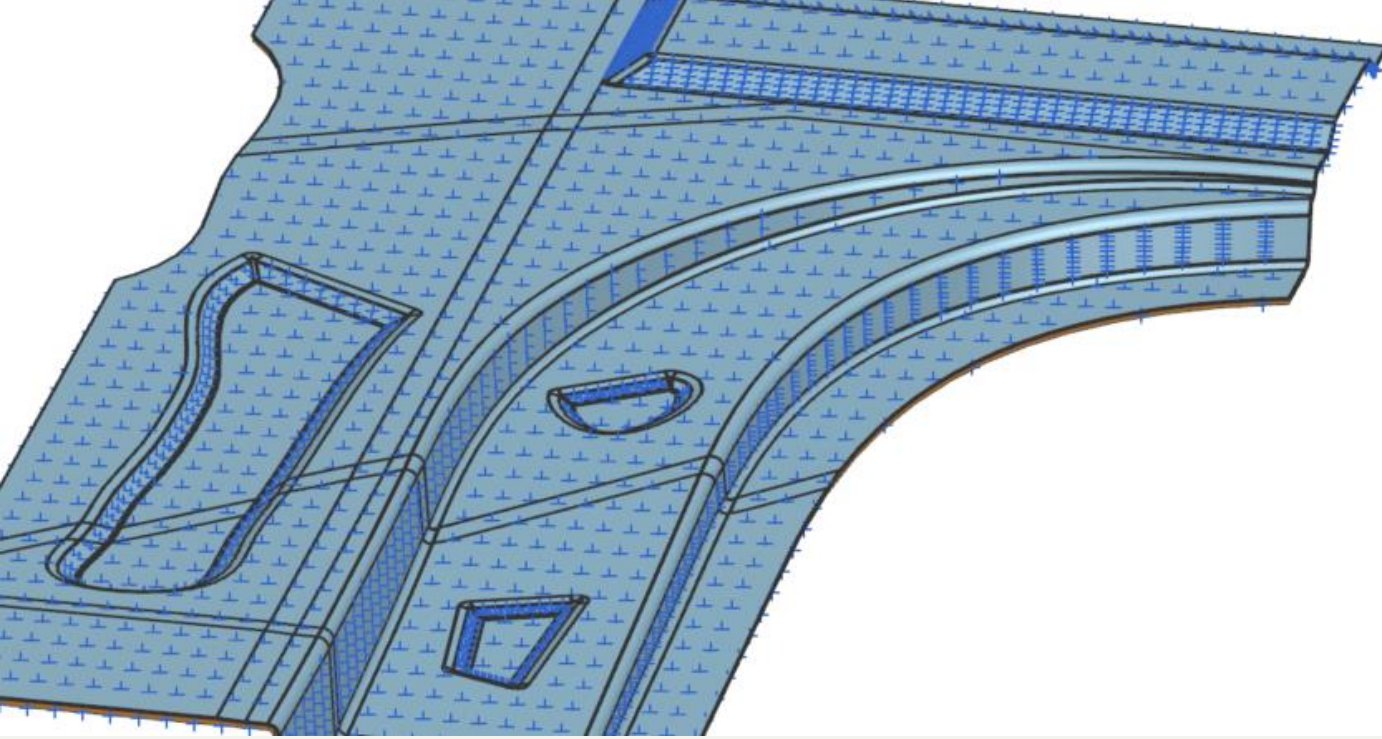
Save significant CAD modeling time by semi-automating the IML surface generation process

Alternate approaches to generating offset surfaces where fully automated tools fail due to surface/design challenges

Choose your own offset surface generation methodology leveraging NX technology

Allows for parametric workflows while performing the tedious calculations for you





Demonstration

OML Wireframe and IML Point Cloud utilities

File Home Curve Surface Assemblies Analysis View Selection Render Tools Application Mastertrim Fibersim

Menu No Selection Filter Entire Assembly

Part Navigator

- Name
- History Modeling Mode
- Model Views
- Cameras
- Drawing
- User Expressions
- Groups
- Non-timestamp Geometry
- Model History
- Feature Group (114) "FibersimData"

Search
Dependencies
Details
Preview



Fibersim - list Layer

File Edit View Action Tools Help

1 [Icons] Laminate

No Sort No Group

Applications

Fibersim

- Basic
- Advanced
- Design
 - Laminate
 - Rosette
 - Zone
 - Overlay Zone
 - Zone Transition
 - Transition Adjacency Vertex
 - Layer
 - Core Layer
- Manufacturing
- Specification
- Volume Fill
- Wind Blade
- Forming
- Braiding
- ADD
- Documentation
- Surface Offset
 - Surface Offset
 - Surface Offset Wireframe
 - IML Point Cloud

Name	Laminate	Step	Specified Orientatio
LYR006	Fibersim Design Laminate	10	45
LYR007	Fibersim Design Laminate	20	0
LYR008	Fibersim Design Laminate	40	45
LYR009	Fibersim Design Laminate	60	0
LYR010	Fibersim Design Laminate	80	45
LYR011	Fibersim Design Laminate	90	0
LYR012	Fibersim Design Laminate	100	0
LYR015	Fibersim Design Laminate	70	0
LYR017	Fibersim Design Laminate	110	45
LYR018	Fibersim Design Laminate	70	45
LYR019	Fibersim Design Laminate	20	0
LYR020	Fibersim Design Laminate	30	0
LYR021	Fibersim Design Laminate	50	45
LYR022	Fibersim Design Laminate	60	45
LYR023	Fibersim Design Laminate	100	0
LYR025	Fibersim Design Laminate	110	45
LYR027	Fibersim Design Laminate	100	0
LYR028	Fibersim Design Laminate	100	0
LYR036	Fibersim Design Laminate	110	45
LYR037	Fibersim Design Laminate	110	45
LYR045	Fibersim Design Laminate	100	0
LYR046	Fibersim Design Laminate	100	0
LYR047	Fibersim Design Laminate	110	45
LYR048	Fibersim Design Laminate	110	45

Documents

- Surface_Offset

0 selected, 24 shown, 24 available

Key benefits of this release

Design for braiding

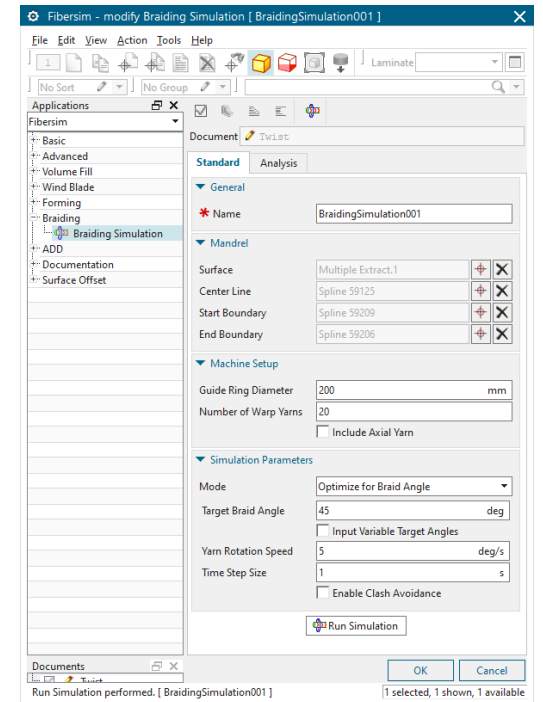
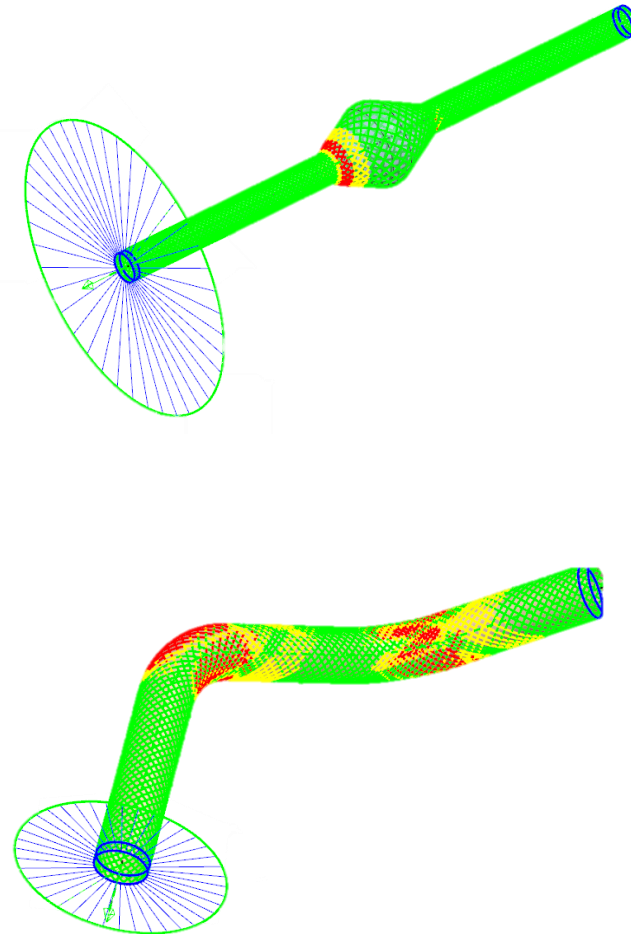
Understand braiding process and part challenges of before making physical prototypes

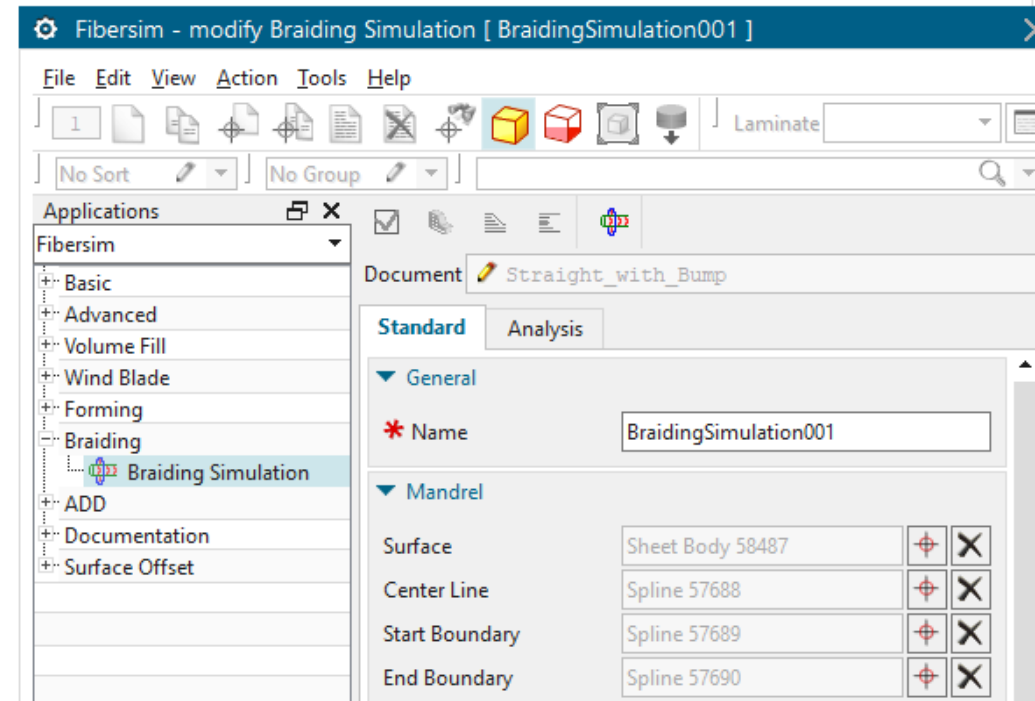
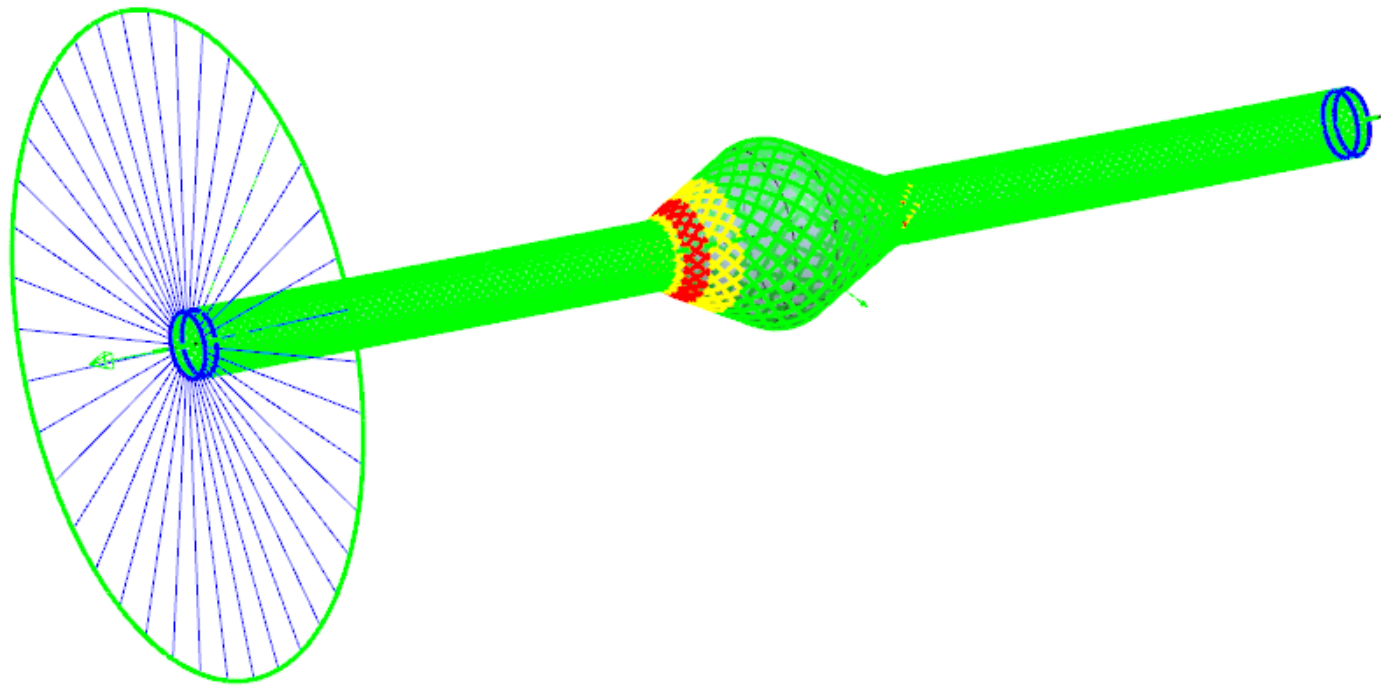
Design tool for overbraiding on a mandrel

Answer questions early in design phase such as

- Can I make this part with braiding?
- Will it meet the performance criteria?
- Do I have the tooling needed?

Compliments Fibersim's hand layup, AFP/ATL and forming solutions to help decide process and part shape early in design phase



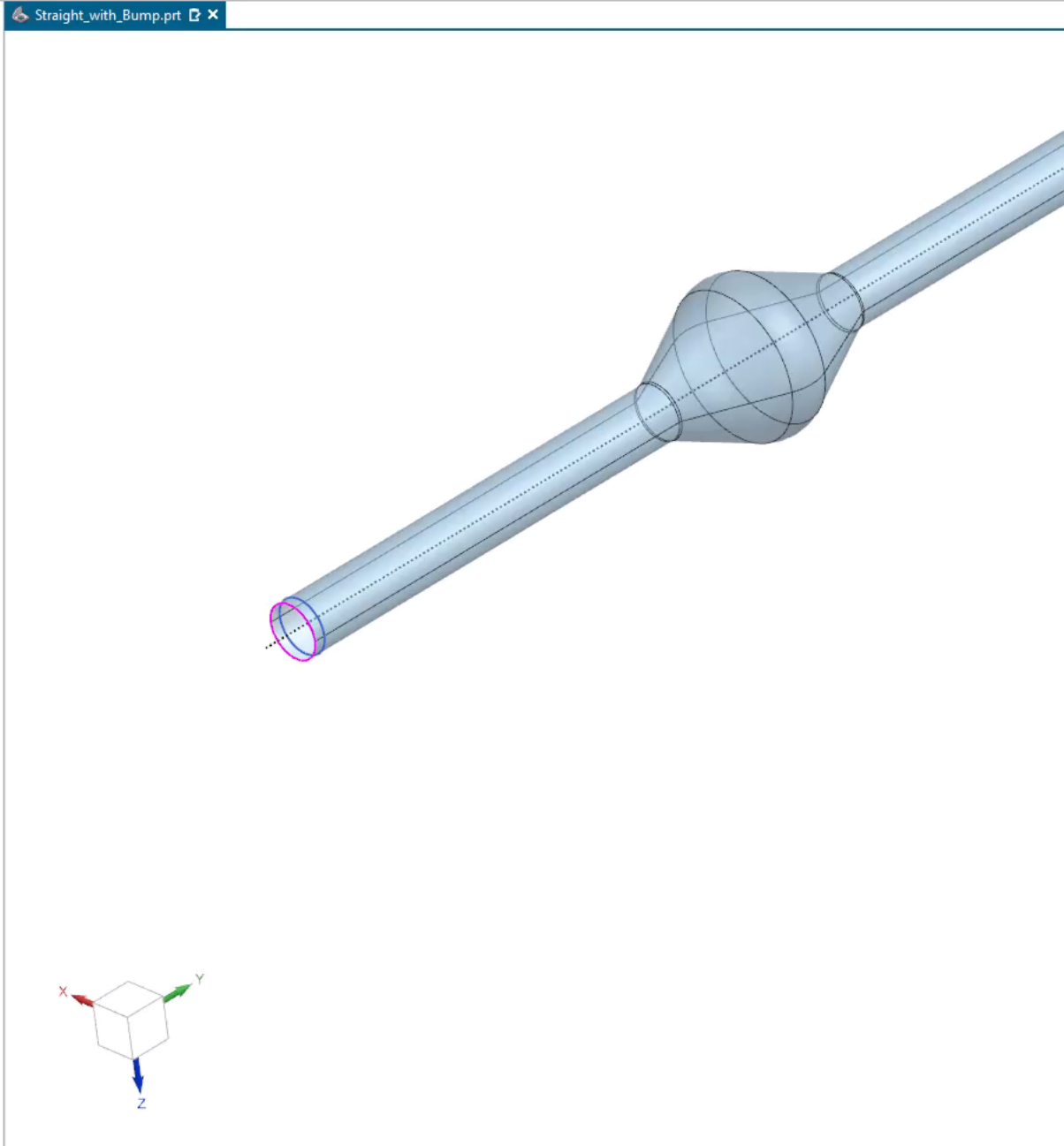


Demonstration Design for braiding

Part Navigator

Name	C.	U.	Comn
History Modeling Mode			
Model Views			
Cameras			
Model History			✓
Datum Coordinate Sy...			✓
Sketch (1) "SKETCH_0...			✓
Sketch (2) "SKETCH_0...			✓
Sketch (3) "SKETCH_0...			✓
Extrude (4)			✓
Sketch (5) "SKETCH_0...			✓
Extrude (6)			✓
Split Body (7)			✓
Projected Curve (8)			✓
Styled Sweep (9)			✓
Styled Sweep (10)			✓
Styled Sweep (11)			✓
Styled Sweep (12)			✓
Face Blend (13)			✓
Face Blend (14)			✓
Face Blend (15)			✓
Curve Length (16)			✓
Composite Curve (17)			✓
Composite Curve (18)			✓
Composite Curve (19)			✓
Offset in Face (20)			✓
Offset in Face (21)			✓

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Fibersim

File Edit View Action Tools Help

Laminate

No Sort No Group

Applications

- Fibersim
 - Basic
 - Advanced
 - Volume Fill
 - Wind Blade
 - Forming
 - Braiding
 - Braiding Simulation
 - ADD
 - Documentation
 - Surface Offset

Documents

- Straight_with_Bump

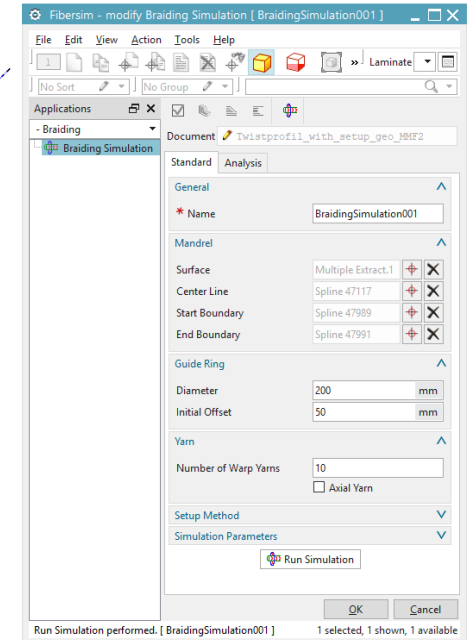
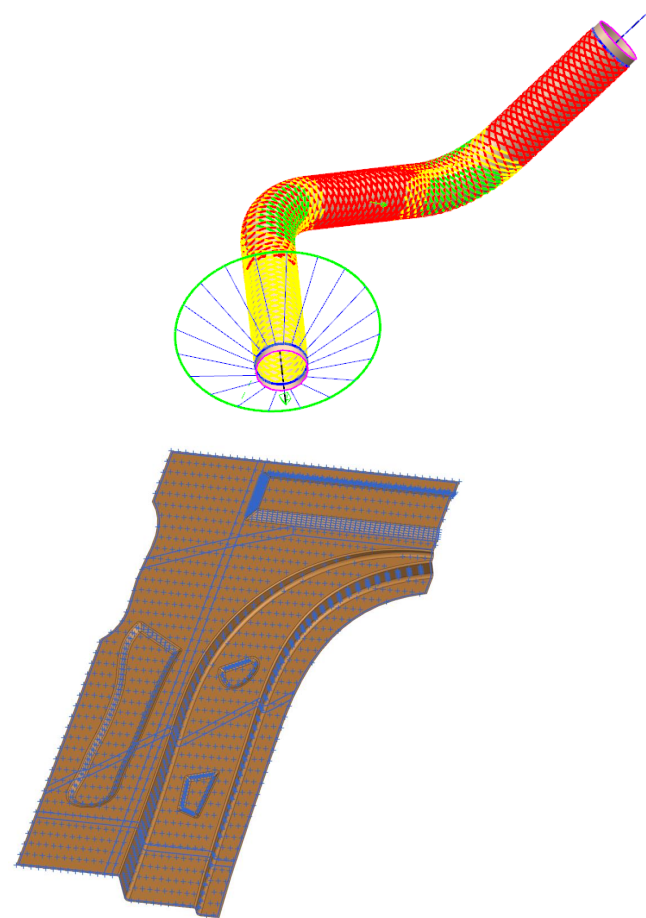
Technical information

OML Wireframe and IML Point Cloud utilities are included in Pro and Elite packages

Design for braiding is included in Elite and offered as an add-on to Pro

Compatibility of Fibersim 17.3

- 1980, 2007, 2206 and 2212
- Teamcenter 12.4, 13.x, and 14.x





Fibersim benefits

Integrate design and analysis –
Increase the number of design cycles

Reduce composite structure weight –
Meet performance requirements

Simulate real world performance –
Better understand design margins

Avoid overdesign – **Reduce uncertainty, increase confidence in your margin**

Accelerate the development process –
Connect design, simulation, and manufacturing



#NXMakesItReal

Disclaimer

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