NX 9 Overview
Siemens PLM – September 2013
NX 9 Highlights

Over 335 enhancements across all disciplines
Many of the customer requirements satisfied
Focus on usability and user interface
Improved performance and quality
New innovative technologies
Improved customer workflows

It’s our best NX release ever
Topics

Intelligently Integrated Information

Multi-disciplinary

Integrated solutions for complete product engineering

Future-proof Architecture

Open, Scalable

High performance standards-based environment

HD User Experience

Usability

Smart interface with in-context access to PLM data
Ribbons are the modern way to help users find, understand, and use commands efficiently

- Familiar presentation and interaction
- Easier to discover and learn for new users
- Provides a more logical grouping and simpler navigation for existing users
- Full customization
High Quality Visualization

Real Time Ray Traced Rendering

Improves decision making based on the rendered display realism
Much faster rendering speed through utilization of all the computer’s CPUs
Real-time display of inter-object reflections, refractions, as well as final gather and ambient occlusion techniques
Usability Improvements

- Raster Image helps improve early design workflows
- Redesigned UI with new scaling methods, and integrated display grid functionality
- Supports raster image in all render styles
- Much faster display of facets when editing features
- Multiple CPUs
- Concurrent Processing
- Smarter Processing of Facet Data
- View Layout improvements help streamline design reviews utilizing a multi-view layout
- Locks view orientations per view with synchronized transformations for proportional pan, zoom, and rotate between views

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Realize Shape enables new levels of advanced surface creation, integration and speed

Create fully associative and reusable high-quality B-surfaces

Core workflow operations with manipulation & editing
Synchronous Technology 2D

New, innovative editing of curves using Synchronous Technology

Relational editing regardless of constraints; fully constrained, partially constrained, or no constraints at all

Local changes to geometry means Synchronous Technology 2D can be used on very large layouts with large number of curves without performance impact
Modular Design

Modular design within a single part is simplified using enhanced Part Modules

Significantly faster history replay

Provides ability to organize, isolate, and delay updates

Isolation ensures no inter-dependency between design “features”

Body modifying part modules eliminate the need to physically break up the part into separate bodies
Airframe Specific Workflows

New workflows for pocket design tools

Automated creation of blends for improved process of blending pockets based on specified pocket and cutter parameters (type, size and radii)

Simplified process of designing the pockets for aerospace skins (multiple thickness values)

Creation and flattening of developable surfaces
Synchronous Technology

Synchronous editing of edges for more efficient form manipulation (push/pull interaction) in engineering and early design
Provides a more natural and intuitive way to edit 3D geometry for certain cases

Improves synchronous editing on a broader set of real world customer use cases, in particular on airframe machined parts
Re-blend notch blends with “compound notch” conditions

Easier and faster clean-up, and simplification of geometry
Improved methods for bulk deletion of selected blends by radii
Modeling Improvements

Reduces time and simplifies the process of creating rib features
Rib features will leverage the open profile capabilities introduced in NX 8.5 to detect the target and extend the ribs to the side walls

Consistent patterning tools
Pattern Geometry and Pattern Face are enhanced with standard pattern UI
Supported pattern types: Linear, Circular, Polygon, Spiral, Along, General, Reference

Simulates manufacturing process
Sweeps revolved tool along a smooth path
Supports fixed axis and tool relative to path
Support Subtract & None Boolean options
Improved assemblies workflows and capabilities

Component Patterns based on NX pattern service
Simpler and faster access to commonly used components within the Assembly Navigator
Simplified assembly constraint workflow through the Align/Lock constraint
Freeform Modeling Improvements

New Corner Blend improves manufacturability of geometry and design aesthetics
Dedicated function for creating and editing smooth blended corners, including editing of imported geometry

Higher quality results with improved curve fitting (Offset in Face) and surface (Swept and Through Curves) algorithms

Improved Section Surface usability and easier design change
Logical breakdown of Section Surfaces by types
Edit between types and defining inputs
Design

Drafting and PMI
Dimensions

Improved productivity by simplifying the task of adding and editing dimensions

Enhanced user experience through dynamic interaction

Improved productivity through fewer, smarter, consistent commands

Object handles that provide improved interaction model and easy access to common settings
Significant improvement in the ease of management, finding and editing settings

Modern presentation and access provides a common, consistent, and logical grouping of settings

Search to easily locate the desired settings

Contextual settings dialogs for easier access to settings you are interested in
2D Layout

Provides tools to study, share, print and explore concepts in 2D

Product layout through the use of leveraging 2D reusable objects
Design/Create and Edit in-context
Automatic creation of an assembly structure based on a layout
Drafting Improvements

Improved productivity with automatic placement
Provides the ability to place and align dimensions and annotation along predefined margin lines

Saves time with faster, more efficient updates
Improved performance for drawing creation and update with support for Exact View capabilities
Support for JT Multi-CAD assembly drawings

Additional support for documenting standards-compliant drawings and models
Viewing direction reference arrows for Projected Views
Additional Section Line settings
Limits and Fits enhancements
PMI Improvements

Extends the Enterprise digital thread for PMI

PMI filtering based on Effectivity

If an associated component is suppressed due to a variant condition then the corresponding PMI is suppressed

Improves presentation and interpretation of the geometry

PMI Cutting Plane Symbol

- Crosshatching support
- Crosshatch based on material type
- Associative planes

Simplifies the task of adding and editing dimensions

Intuitive access to dimension settings

Enhances user experience through dynamic interaction
Process Specific Applications
Sheet Metal, Routing, Tooling
Sheet Metal Improvements

Provides Mirror and Unite body capabilities within the sheet metal application for an improved design workflow

Enables the use of additional modeling techniques

Reduces time and errors in generating flat pattern views

Enables custom configuration for each customer, and improves the flow to manufacturing

Provides additional control over the flat pattern views including content

Provides improved and more reliable results through enhancements to the internal labeling mechanism

Reduces and in most cases eliminates downstream feature failure
Routing Improvements

Easily determine what the minimum bend radius is on a given wire, bundle, or segment

Enables override of default minimum bend radius check on specific segments

Add information to the Routing Objects Information

Easier part placement without scrolling through numerous possible placement solutions to find the correct one

Upgraded intelligence for part placement options

Better ability to place routing parts on B-surface geometry

Reduced learning curve and improved usability due to consistent, expected behavior

Removes the requirement for 3rd point when defining locked-length path

Spline shape remains consistent when points on spline are added or removed
Tooling Improvements

Improved mold design workflow through continuous automation

Easier access to mold base through reuse library

Support multiple database location enables users to configure their own mold base libraries

Improved definition and management of attributes results in a more efficient manufacturing planning process

Display of information in the dialog corresponds to the manufacturing information defined in an external spreadsheet

Improved automation and usability of the progressive die design workflow

Support for large casting die base design

Support for multiple strips in tooling motion simulation
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- Usability

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Smart interface with in-context access to PLM data
PLM Integration
Teamcenter Inside NX

Extended Configuration Constructs Support

Extends the capability range of NX design authoring against Tc configuration constructs: Dynamic Options; Selected Option Sets (SOS); Tc Variant Rationalization

Multi-unit effectivity launched to NX

Support for Manufacturing: NX Tool Design

Enables an OEM to export a Bill of Process Station to a supplier running NX Native

Enables an OEM to import from the supplier the resulting tool design

Enhanced Support for Move/Restructure Operations

Enables referencing objects that point to an occurrence to continue to find the occurrence following move / restructure actions in NX

Downstream applications are not impacted by upstream move / restructure changes
**Issue Management improvements**

Direct access to TCUA Issues Manager from NX

Enables creation, collation and storage of issue data

Automated workflow management for review and correction

**HD3D Visual Reporting for sub-part objects**

Expands HD3D Visual Reporting to include sub-part level objects (faces, bodies, edges)

Improved part quality and integrity

Reduced rework and downstream errors
Siemens PLM approach to the development and management of massive products and programs scaling >1M objects

Optimized performance, scalability and search with multiple organizational views of data

Enhancements to user & team design productivity

More efficient lifecycle management while minimizing impact of change
Automation

Product Template Studio (PTS), Measurements, and Expressions
Knowledge Driven Automation

Product Template Studio, PTS
More interactive flexibility for templates with Part Family content
Interpart expressions across Part Family Updates driven by PTS
Direct display of Part Family parameter options and parameters

Point Measurement
Associatively measures the coordinates of a selected point from any selected frame of reference
Particularly useful in the construction of assemblies that will articulate kinematically

Expressions Modularity Services
New capability resulting in faster update time performance and increased model usability
Grouping (interactive and programmatic usage)
Visibility (programmatic usage)
Freezing (programmatic usage)
Summary

Hundreds of enhancements across all disciplines
Many of the customer requirements satisfied
Focus on usability and user interface
Improved performance and quality
New innovative technologies
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Thank You

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