To be released

sptc forum europe

Don't Miss the Launch of Creo 4.0 🤌

Attend In-Person or Online November 15, 2016

Register now >

Creo 4.0 Groductivity Improvements



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Design for Additive Mfg

Design for IoT

Model Based Enterprise



	Consolidation and	Concept Design	2D Design	3D Design	Tooling Design	Manufacturing	Simulation
PTC Creo Solutions	Collaboration						
Creo Parametric Core Capabilities							
User Experience							
Graphics							
Core Modeling							
Sheet Metal Design							
Freestyle Design							
Warp							
Assembly Design							
Weld Design							
2D Detailing and Documentation							
Model Based Definition (MBD)							
Additive Manufacturing							
Unite Technology							
ModelCHECK							
Performance Advisor for Creo							
Elements/Direct Interoperability							
Creo Parametric Extensions and Products							
Creo FMX							
Creo ISDX							
Creo IFX							
Creo AFX							
Creo Schematics							
Creo PCX							
Creo HMX							
Creo Simulate							
Creo TDO							
Creo CMA							
Creo Manufacturing							
Creo Direct							

							CAE
PTC Creo Solutions	Consolidation and Collaboration	Concept Design	2D Design	3D Design	Tooling Design	Manufacturing	Simulation
PTC Creo – New Sellable Items							
Creo in the Cloud (SaaS)							
Creo Render Studio							
Creo GD&T Advisor Extension							
Creo Additive Manufacturing Extension							
Creo Product Insight Extension (Coming)							

pdates please contact jraether@ptc.com







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CREO PARAMETRIC – USER EXPERIENCE

Creo Commands

Drag and drop commands into the Shortcut Menus Category: Sheetmetal Part | Model Tab

Auto Check Status on Activate Auto Check Status on Retrieve

Auto Check Status on Update

Blend Tangent to Surfaces.

OK

Cancel

earch Commands

ATB

/ Axis... Bend Bend Back. Bend Order

Bend.

Reset Open in Options

You have gone full scree

Exit full screen (F11)

<Separator> <Cascade Menu>

Creo 4.0 Enhancement Summary

Enhanced selection and Mini Toolbar access

- Geometry based selection and optimized pre-highlighting (surfaces and edges)
- Customizable mini toolbars for command access
- Box selection for object/action workflows

New interface color themes

Choose from 3 interface themes (skin & graphics

Improved UI customization

- Ribbon customization and propagatic
- RMB and mini toolbar customization
- Keyboard shortcut customization

User experience enhancements

- Full screen mode with no interface
- F11 to exit and on-demand access

CREO PARAMETRIC – GRAPHICS

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Creo 4.0 Enhancement Summary

Updated in-graphics Toolbar (IGT) Options

- New commands have been added to the IGT •
- Easy access to ambient occlusion, scene background

Removal of the Render Tab

Core commands (Scene, Appearances, Perspective) moved to the View and Model Tab

New Model View dialog

Single dialog to define model orientation and view perspective

New Appearance State in View Manager

- Easily define appearance states for models
- Define and review color combinations for models

Improved line style display

- Collaboration with NVIDIA to support GPU libraries
- Improves line quality throughout Creo
- Removes disconnects in thick line display
- New GPU line styles enabled by default
- New config options to control line style display for parts, assemblies and release drawings



PTC Creo 3.0

PTC Creo 4.0

CREO PARAMETRIC – CORE MODELING

Creo 4.0 Enhancement Summary

Intuitive sketching environment

- Mini toolbars and RMB menu access
- Model snapping and box selection

Enhanced sketcher appearance

- · Clipped model view at sketching plane
- Improved visibility of sketch entities and guides
- Customizable line thickness option

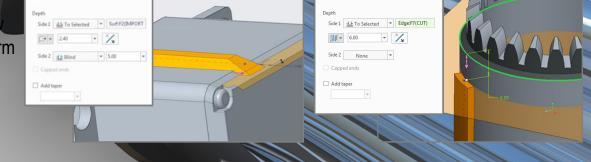
More control over sketched text and spacing

Improved B-spline projection handling

B-spline curve is preserved when projected

Sketch based feature improvements

- Access to "Side 2" depth option in graphics window
- Option to "Extrude to Selected" with offset/ transform
- Support for negative extrude and revolve
- Improved control of thin feature end conditions



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CREO PARAMETRIC – CORE MODELING

Creo 4.0 Enhancement Summary

New 3D Sweep functionality

Cutting Tool Definition

- Revolved sweep section
- Section Y axis -> axis of revolution
- 3D sweep section requirements:
 - It defines a convex cutting tool
 - It contains only lines and circular arcs
 - It must contain a line along the y axis (vertical cross-hair) representing the axis or revolution of the tool

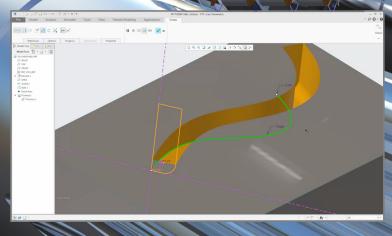
Milling Scenario

- 3D sweep along a 3D curve
- Rotation axis of cutting tool stays constant with respect to any fixed plane

Grinding Wheel Scenario

- 3D sweep along a helix (helical sweep or curve from equation)
- Constant or variable helix pitch
- · Rotation axis of cutting tool parallel to axis of helix

	Adjustments	Properti	es	
	Start Rx -10.00	Rz 0.	00	
	Reference			
	End			
	Rx -10.00	Rz 0.	00	
	Reference			
1				



CREO PARAMETRIC – CORE MODELING

Datum Plan

Midplane

Risector2

OK Cancel

On Point

-

PNT1:F18(DATUM PC Flip

A_1(AXIS):F5(REVO Perpend

Placement Display Properties

Surf-E43(EXTRUDE 2.1)

Surf:F45(EXTRUDE_2_3)

References

volude loops

Exclude areas with draft

20.00 -

Draft tangent surfaces
 Extend intersect surfaces

Creo 4.0 Enhancement Summary

Enhanced geometry and datum Tools

- Mirror geometry Preview and the ability to add/remove features
- New Mid-plane tool option for datum creation
- New options to define hole placement, drilling direction and removal of overhang geometry
- New options to control the geometric result

Better feature handling with improved groups

- Simplified reorder using drag and drop or dialog
- Insert Mode with groups using RMB or drag
- Auto grouping of Creo Direct changes (round-trip)

New accuracy options when scaling or changing units

- Option to specify scaling of accuracy (Default-NO).
- Option to control accuracy during unit conversion

CREO PARAMETRIC – SHEET METAL DESIGN

Analysis

▼ ■ ▼ 0.31

Bend Allowance

Image: 10.13

Placement

-[Open]

Annotate

Tools

▼ □ 0.63

Properties

View

- I.00

Type Obround

Flexible Modeling

× 1 35.00

Up to bendl

Applications

TWIST

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Creo 4.0 Enhancement Summary

Enhancements to Sheet Metal Design creation

- New UI to Twist Wall
- Support dependency options for forms
- Added relief types to "Edge Bend"
- Close Corner option in narrow treatment type

Flexible Modeling in Sheet Metal design

- eo Flexible Modeling environment now available for Sheet Metal parts
- "Sheet Metal-Awareness" of Flexible Modeling tools
- New Flexible modification tools for Sheet Metal

Improved User Experience

- Mini Toolbar for Sheet Metal specific commands
- More powerful selection in Sheet Metal

CREO PARAMETRIC – ASSEMBLY MODELING

Creo 4.0 Enhancement Summary

New Appearance state

- Assign multiple appearances to a component
- Use Appearance states inside Combination States

Regeneration Status

- Regeneration icon replaces traffic light
- Only active when regeneration is required

Expansion of Notification Center

- Out of date notification for Mass Properties and Simplified Rep
- New notification types and type filtering
- Automatic "Locate in Tree" functionality
- Notification pop-ups and customizable "Seven

Automatic Representations

- · System decides how to open min. level of detail
- Upgrade to Geometry rep on-demand or manually via Mini Toolbar
- Pre Creo 4.0 simplified rep types are obsolete controlled via config.pro option



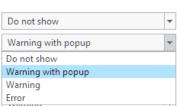
Reference not in Session Outdated Component/Feature

Miscellaneous notifications

old Surface id 69-002 WHEEL

Outdated PDM

Outdated Mathcad



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🖰 Retrieve

Retrieve the geometry

CREO PARAMETRIC - 2D DETAILING AND DOCUMENTATION

Creo 4.0 Enhancement Summary

Datum Feature Symbol creation and editing

- Enhanced placement workflows, auto naming, text and support for standalone drawing annotation
- Datum target creation and editing
 - Enhanced placement workflows, preview, standards compliance and target areas
- GTOL creation and editing
 - Enhanced placement workflow, preview, syntax checking, text and standards support
- Dimension creation and editing
 - Enhanced placement workflows, preview, GD&T standards, text and orientation

Embed images in drawings

- Import, place and define optional transparency
- Replace model of a drawing view with related model
 - Ability to select and replace all matching views.
 - Automatic rerouting of annotations, retained view setting and properties

Support for non-linear cross-hatching styles

- Industry standard file format (*.pat), included ANSI and ISO standard patterns and property editing
- Standards compliant text and symbol fonts
 - ASME and ISO compliant True-type fonts, Symbol gallery and detail options

CREO PARAMETRIC - MODEL BASED DEFINITION (MBD)

Model

Label

Model

LA A

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Reference

References

A

References

References

Analysis

A 4x

Analysis

A A1, 2, 3

Rotate text position

Additional Text

Rotate text positio

Additional Text

Annotate

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Tools

Straight

Display -

Ø6 A3 Datum Feature

A A1, 2, 3

Creo 4.0 Enhancement Summary

Datum Feature Symbol creation and editing

Enhanced placement workflows, auto naming, text and support for standalone drawing annotation

Datum target creation and editing

Enhanced placement workflows, preview, standards compliance and target areas

GTOL creation and editing

Enhanced placement workflow, preview, syntax checking, text and standards support

Dimension creation and editing

Enhanced placement workflows, preview, GD&T standards, text and orientation

General annotation enhancements

- Enhanced behavior of Standalone annotations
- Notification Center support for 3D annotations
- Backup of missing annotation references, dynamic movement, box selection, no clipping by cross section

Enhanced Combination View State

- Associate appearance (color, texture) with combination state
- Manage annotation and supplemental geometry visibility using combination state
- Set Default combination state for Creo View, and choose combination states for Creo View publishing
- Combination State Printing and format options

CREO PARAMETRIC – ADDITIVE MANUFACTURING

Creo 4.0 Enhancement Summary

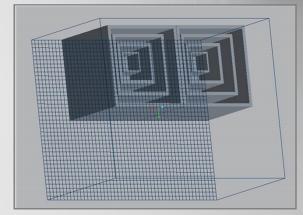
Increased support for 3D printer connectivity

Extended printer support providing Bi-directional exchange between PTC Cree and 3D Printers

Tray assembly and positioning

 Easily assemble components to be printed and assign material and stored attributes/parameters

Tray nesting and space optimization



CREO PARAMETRIC - UNITE TECHNOLOGY

Creo 4.0 Enhancement Summary

New Conversion Validation Tool

- Quickly understand conversion success and validate converted geometry
- Compare key characteristics of native and converted data during open/import
- · Investigate and compare calculated values, validate converted geometry (i.e., failures)
- Report on conversion results, change setting and rerun conversion to evaluate settings

Improve administration of conversion profiles

- Create, edit and save profiles select on the fly during "Save a Copy"
- Map conversion profiles to CAD formats and open, import, export actions

Support for Additional CAD formats

- Directly "Open" Creo Elements/Direct models
 - Convert to Creo models On-the-fly when editing
- Enable "Update" if native source file changes Collaboration Extension is NOT Required
- New Creo Parametric "export" to Elements/Direct

Manage non-Creo Models in Windchill

- Data management via Creo-Windchill integration
 - No need for 3rd party software and respective Workgroup manager, Visualization support via viewable generation

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Surface Area	0.10	%	Error	-
Center of Gravity	0.10	in	Error	-
Model Errors			In case of fa	
Failure to Solidify			Error	-
Failure to Import			Error	-
Save Load]			

ľ	16 Notifications	×
1	16 Import Validation Failures	
	Open Notifications Center	

CREO PARAMETRIC - UNITE TECHNOLOGY

Creo 4.0 Enhancement Summary

Support STEP AP242

- High-definition representations via import/export of 3D precise (B-Rep) geometry (part & assembly)
- Included import/export of graphical product manufacturing information (PMI)
 - · PMI listed as parameters with graphical annotations and readable via CMM
- · Option to define cross sections (import/export)
- Support long-term archiving (LTA) and downstream consumption

Visualization Representation via import/export of tessellated geometry (part & assembly)

- Included import/export of graphical product manufacturing information (PMI)
- Define graphical PMI as Polyline or Tessellated PMI
 - Core Sematic PMI is NOT included when defined as tessellated geometry
- Option to define cross sections (import/export

Improved JT Standard support (import/export JT version 10.0)

- New JT configuration option to specify assembly data, part data or both written to the JT file
- Improve visualization via export of Creo cross sections and exploded views to JT model views
- Additional annotation types to support JT standard and Model Based Definition



CREO INTERACTIVE SURFACE DESIGN EXTENSION (ISDX)

Creo 4.0 Enhancement Summary

New G3 acceleration connection for curves and surfaces

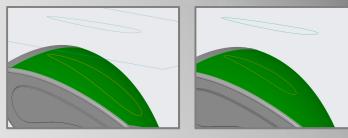
Define acceleration curve-to-curve, curve-to-surface, curve-to-edge and surface-to-surface

Create closed curves as periodic or nonperiodic curves

- Option to toggle periodic/nonperiodic state
- No tangency control at end points
- Legacy curves will not change
- · Curves defined as periodic by default

Drop curve improvements

- Define drop curve Normal to Surface
- Define drop curve onto a Datum plane
- Flip direction when dropping Curve on Surface





G2

G3

G1



CREO SIMULATE

Creo 4.0 Enhancement Summary

Overhaul the analysis and design study experience

- Filtered diagnostic option to display relevant info
- Dynamic analysis status displays elapsed time and activity

1 Notifications

1 Outdated Component/Feature

Open Notifications Center

· Expanded panel for run status and convergence.

Fewer menu picks to create, run and review analysis

- Expanded RMB commands
- · Create new analysis via RMB on analysis node
- Updated status icons for analysis

Notification support for Creo Simulat

- Notification and identification of changes/issues
- Support for Simulate objects and features

Access to standard materials in PTC Creo

- Over 50 standard materials installed
- New material node and material assignment
- · Material dialog to show dynamic properties panel
- GRANTA MI:

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CREO IN THE CLOUD (SAAS)

Creo 4.0 - New Offering

New SeaS deployment of PTC Creo

- Creo Engineer II and IV packages
- Does not include PLM (available separately)
- · Full processing in the cloud, including graphics

Same Creo you have today, accessible anywhere

- · Access from any device with a supported browser
- Same capabilities as on premise Creo
- · Platform Agnostic: PC, Apple, Android
- Fully customizable configuration
- Full control of deployment

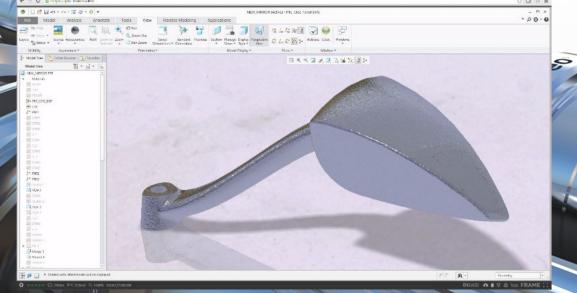
Lower IT Cost

Does not require expensive CAD hardware

Lower IT burden

- Faster, seamless user deployment No individual CAD installation or downloads
- · Centrally manged and configured across all users
- · Instant access to the latest software

This all adds up to greater business agility



CREO RENDER STUDIO

Crec 4.0 – New Offering → Replaces Advanced Rendering Ext. (ARX)

Real-Time Raytracing powered by Luxion Keyshot

Direct access from the Application Tab

· Easily switch between render and modeling mode

Leverage existing scenes and appearances

Lights, HDRI Environment, textures

Create Screenshot of output fully rendered image

Export data to standalone Keyshot for extended Keyshot capabilities







CREO GD&T ADVISOR EXTENSION

Creo 4.0 - New Offering

New sellable Extensions developed by Sigmetrix

Supports guided creation of semantically valid GD&T

- Extensive help content with interactive GD&T quick reference (ease of learning and use)
- Fully constrains model geometry

ASME and ISO standard compliant (updated rulesets).

- ASME Y14.5-2009 and associated standards
- ISO 1101-2012 and associated standards

Seamless integration with Creo Parametric

- No installation or configuration required
- Improved GD&T feature handling (model tree)
- Legacy annotation support reuse of existing Creo Annotations



CREO ADDITIVE MANUFACTURING EXTENSION (AMX)

Creo 4.0 - Additive Manufacturing (Lattice Creation and Optimization)

Automatic creation of lattice structure

- 2 1/2D, 3D and conformal lattice creation
- Single feature providing Parametric control over all aspects of the lattice structure
- Full b-rep geometry (not facets)

Lattices optimization using Creo Simulate

· B-rep geometry is easily optimized for strength and weight optimization