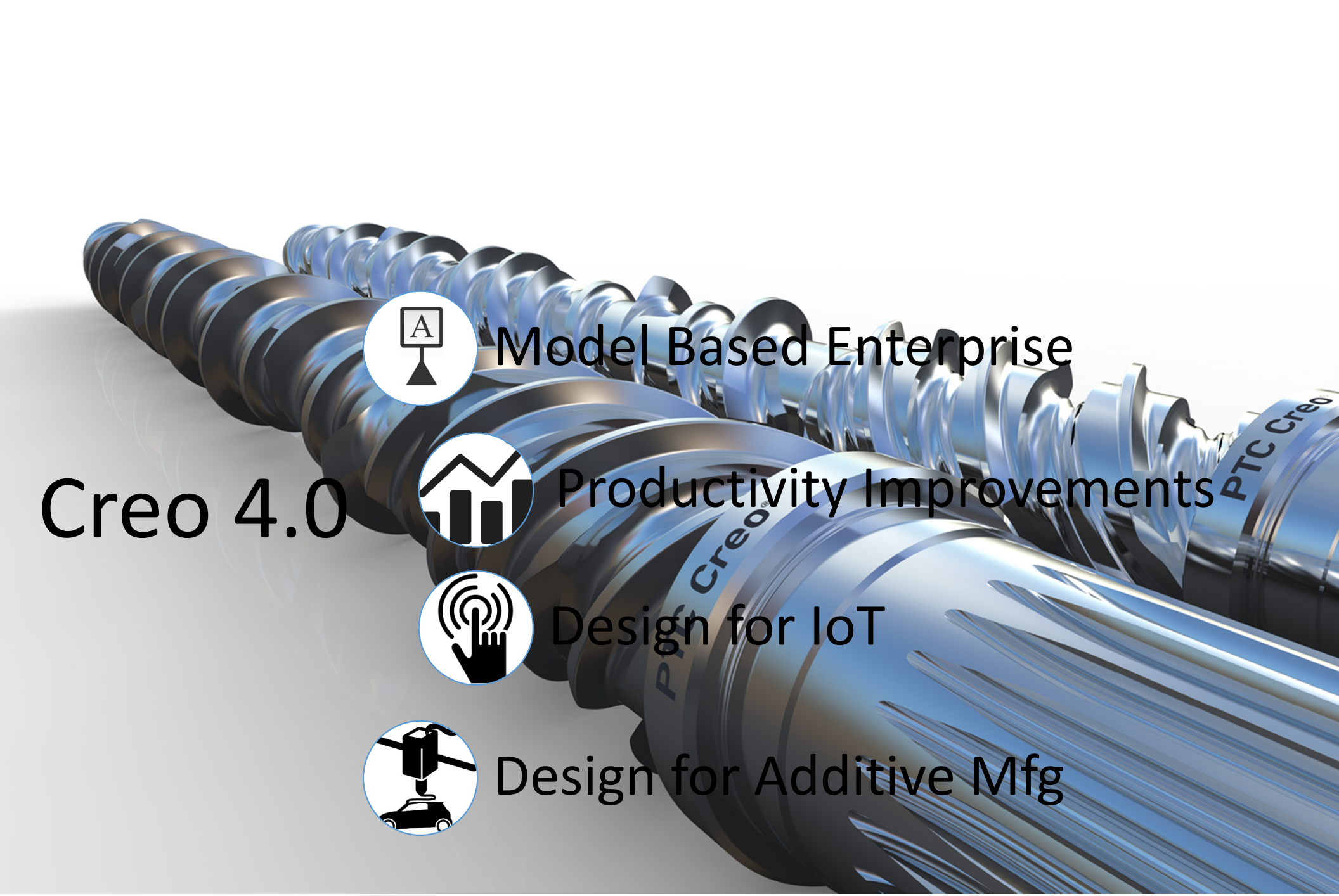
PTC Creo 4

To be released


Creo 4.0
Model Based Enterprise
Productivity Improvements
Design for IoT
Design for Additive Mfg

Creo 4.0

Användargränssnitt och användning

Part och Sheetmetal

Assembly

Lite annat

PTC Creo Solutions	Multi-CAD	CAID	CAD		CAM		CAE
	Consolidation and Collaboration	Concept Design	2D Design	3D Design	Tooling Design	Manufacturing	Simulation
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	■	■	■	■			

PTC Creo Solutions	Multi-CAD	CAID	CAD		CAM		CAE
	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)							
For changes and updates please contact jraether@ptc.com							

CREO PARAMETRIC – USER EXPERIENCE

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 propagation
- 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

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

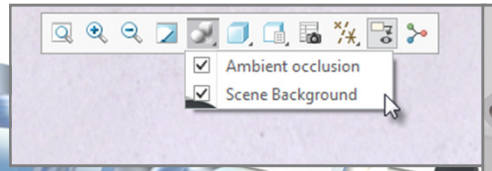
- Single dialog to define model orientation and view perspective

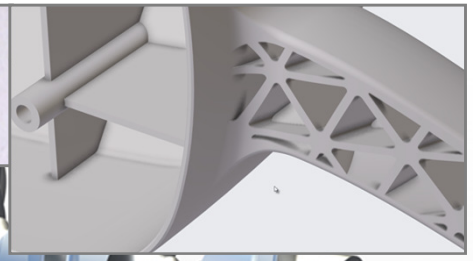
New Appearance State in View Manager

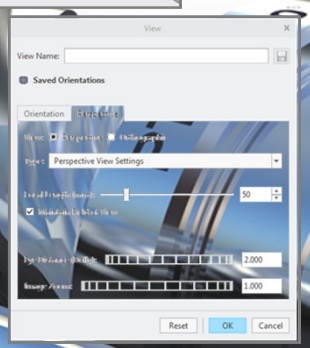
- Easily define appearance states for models
- Define and review color combinations for models

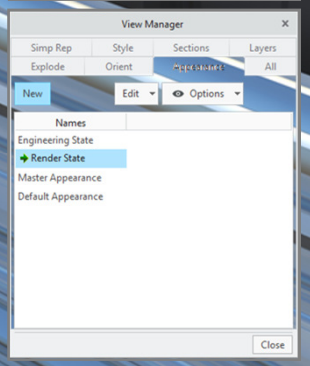
Improved line style display

- 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

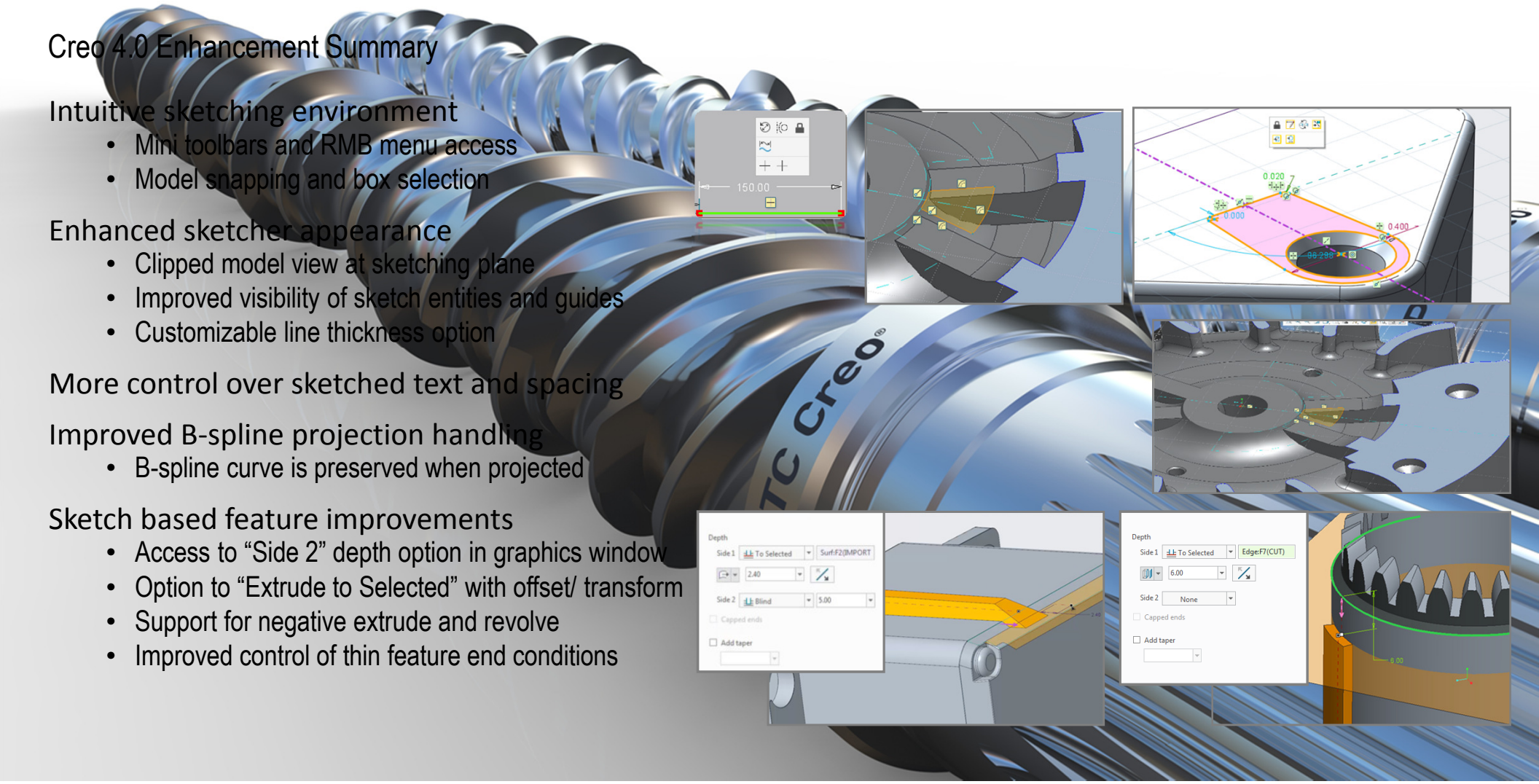
More control over sketched text and spacing

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



CREO PARAMETRIC – CORE MODELING

Creo 4.0 Enhancement Summary

New 3D Sweep functionality

Cutting Tool Definition

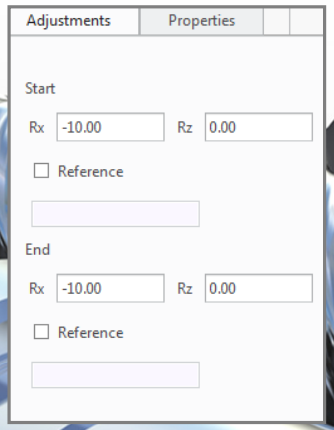
- Revolved sweep section
- Section Y axis -> axis of revolution
- 3D sweep section requirements:
  - It defines a convex cutting tool
  - It contains only lines and circular arcs
  - It must contain a line along the y axis (vertical cross-hair) representing the axis of revolution of the tool

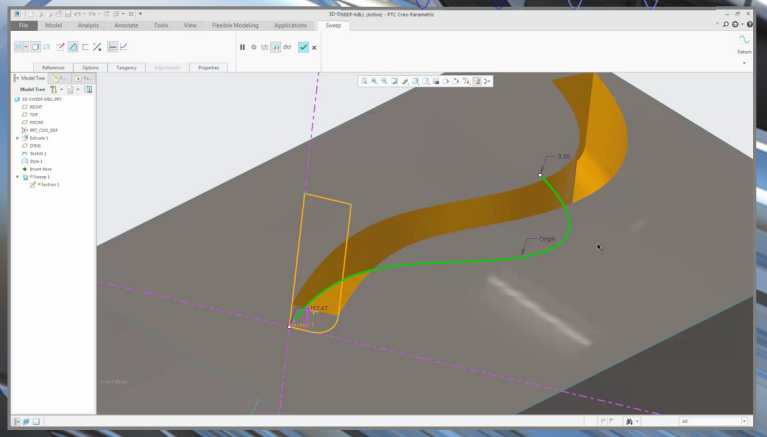
Milling Scenario

- 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





CREO PARAMETRIC – CORE MODELING

Creo 4.0 Enhancement Summary

Enhanced geometry and datum Tools

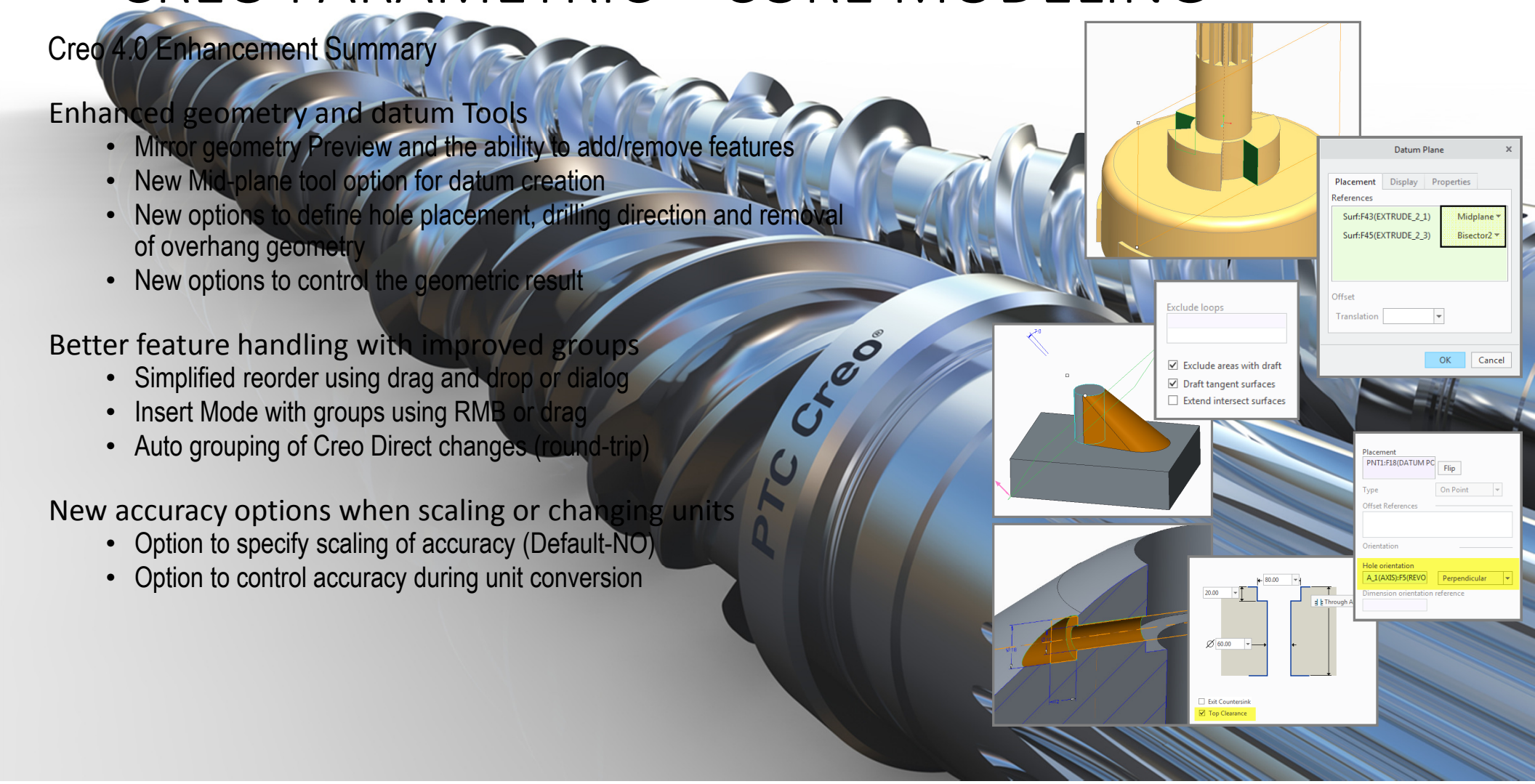
- Mirror geometry Preview and the ability to add/remove features
- New Mid-plane tool option for datum creation
- New options to define hole placement, drilling direction and removal of overhang geometry
- New options to control the geometric result

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

Creo 4.0 Enhancement Summary

Enhancements to Sheet Metal Design creation

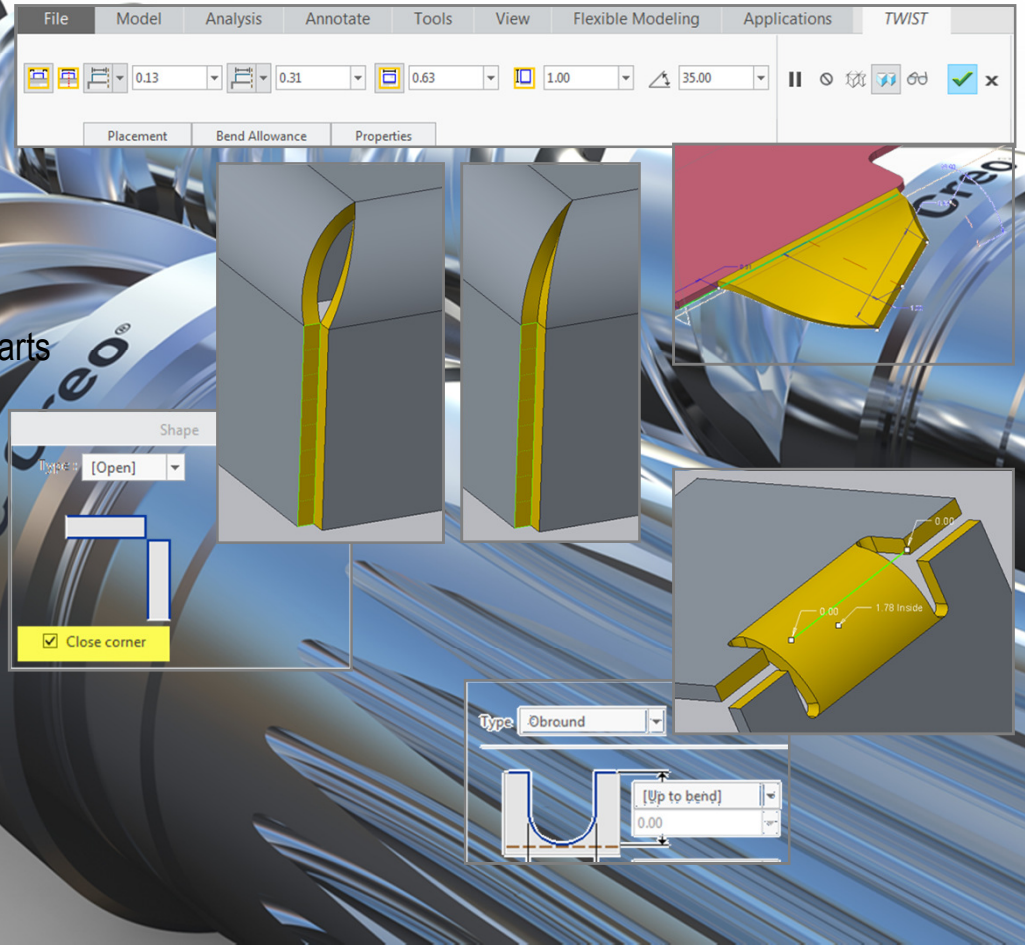
- New UI to Twist Wall
- Support dependency options for forms
- Added relief types to “Edge Bend”
- Close Corner option in narrow treatment type

Flexible Modeling in Sheet Metal design

- 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

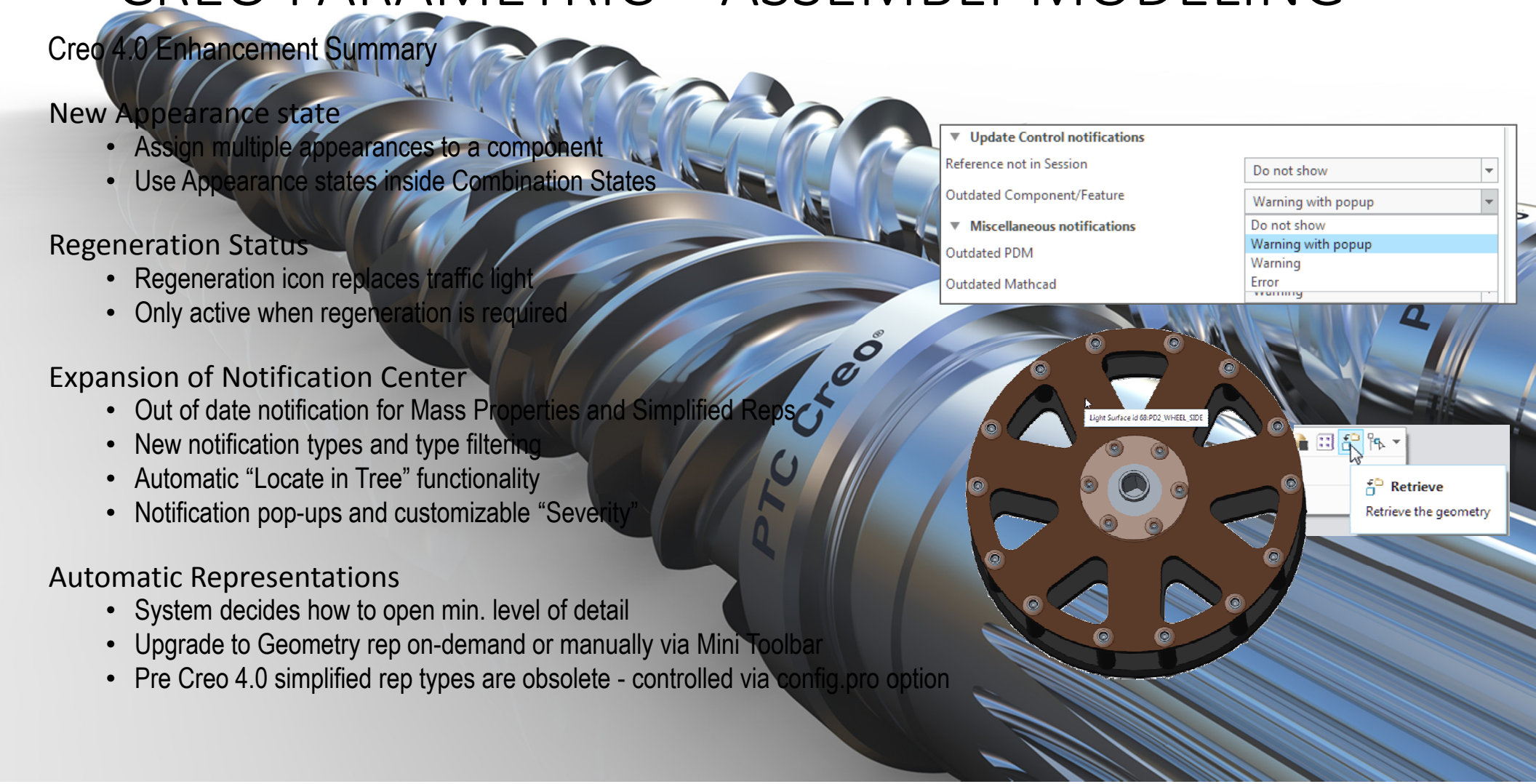
- Regeneration icon replaces traffic light
- Only active when regeneration is required

Expansion of Notification Center

- Out of date notification for Mass Properties and Simplified Reps
- New notification types and type filtering
- Automatic “Locate in Tree” functionality
- Notification pop-ups and customizable “Severity”

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



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

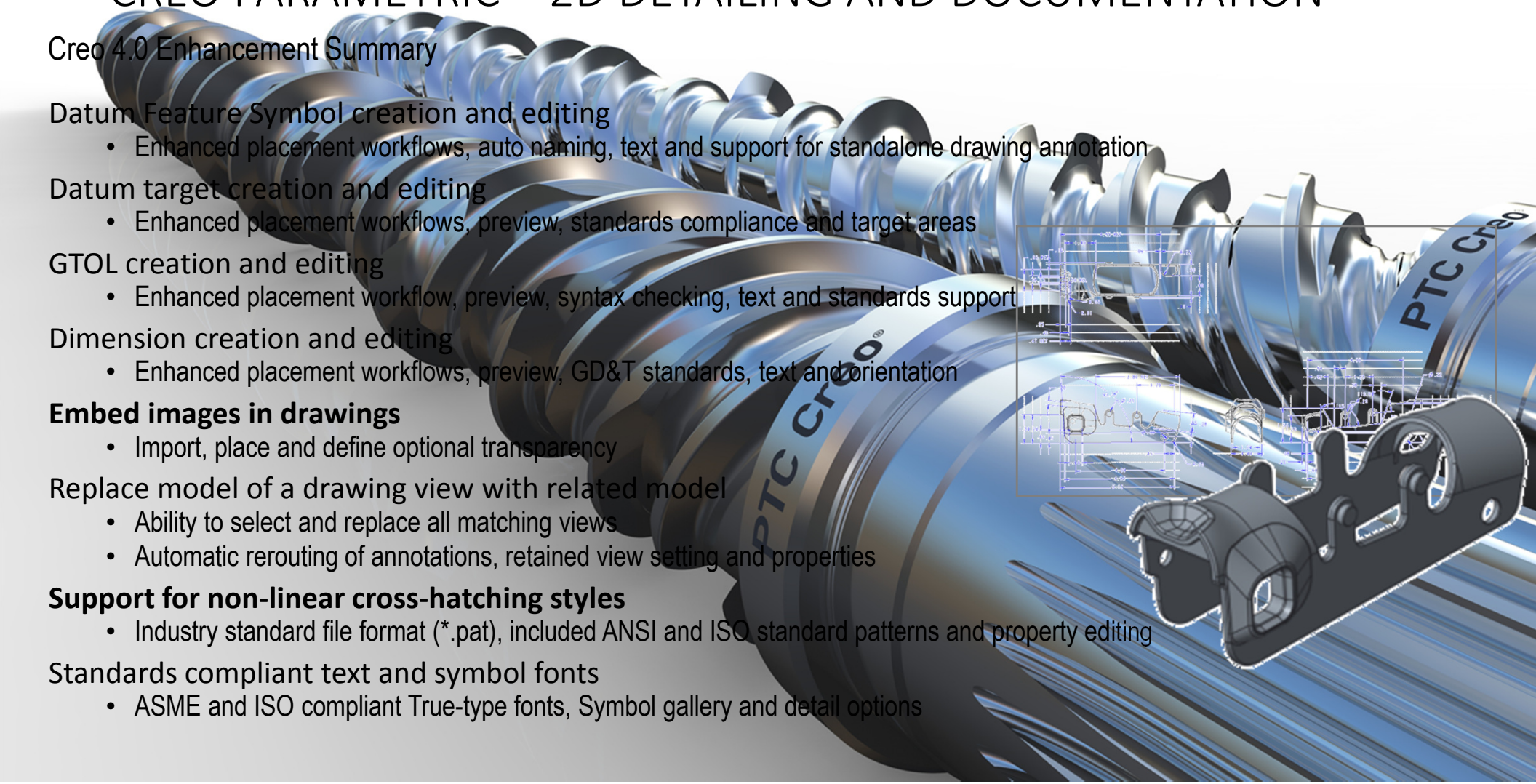
Dimension creation and editing
- Enhanced placement workflows, preview, GD&T standards, text and orientation

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)

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

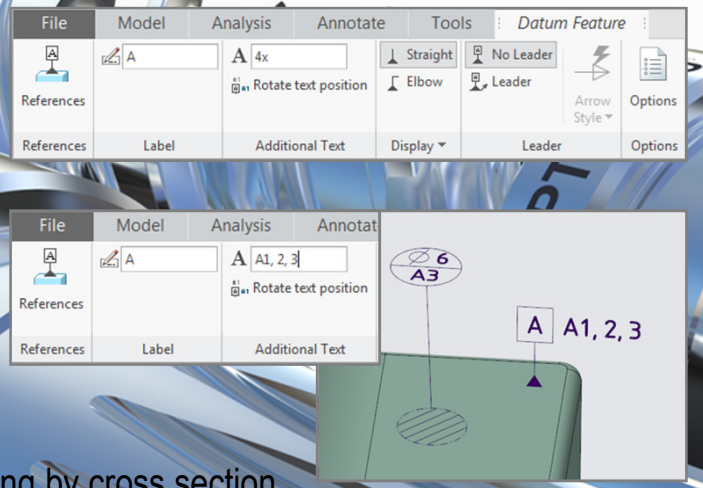
- Enhanced placement workflows, preview, GD&T standards, text and orientation

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

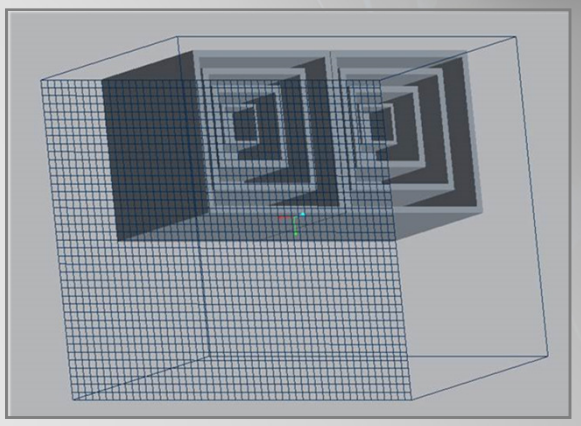
Increased support for 3D printer connectivity

- Extended printer support providing Bi-directional exchange between PTC Creo 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

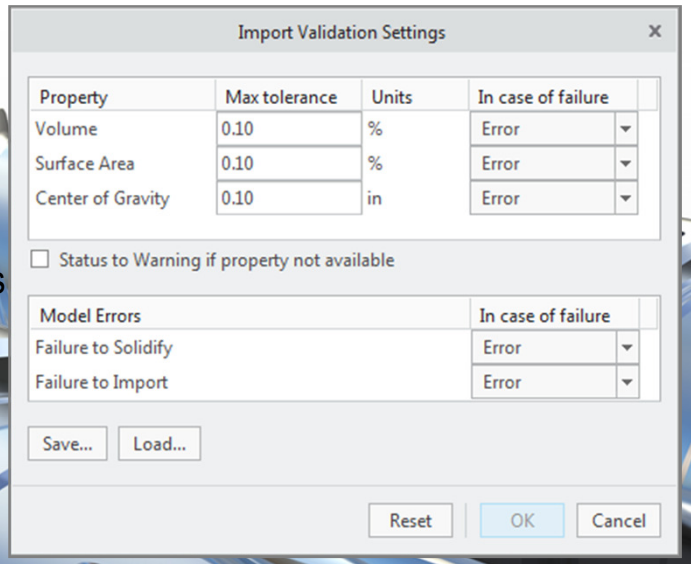
- Create, edit and save profiles – select on the fly during “Save a Copy”
- Map conversion profiles to CAD formats and open, import, export actions

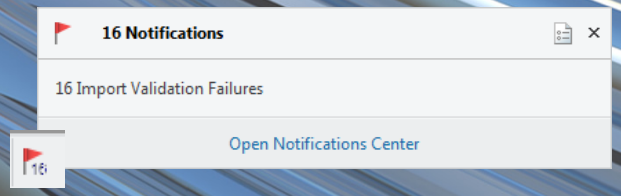
Support for Additional CAD formats

- 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





CREO PARAMETRIC - UNITE TECHNOLOGY

Creo 4.0 Enhancement Summary

Support STEP AP242

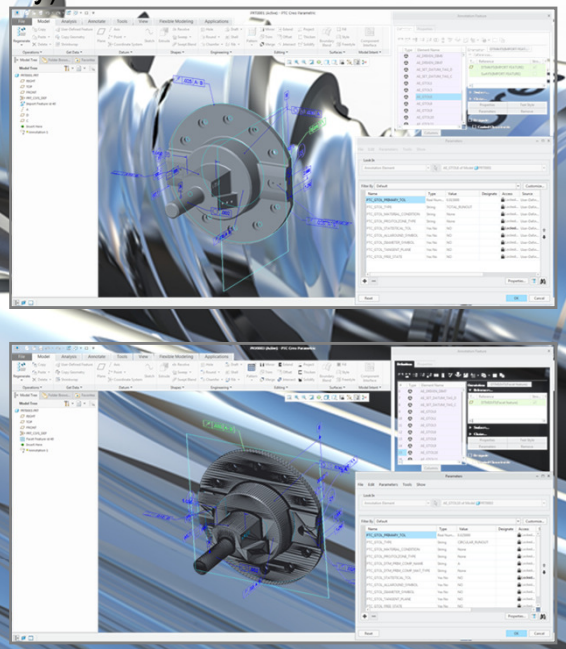
- High-definition representations via import/export of 3D precise (B-Rep) geometry (part & assembly)
- Included import/export of graphical product manufacturing information (PMI)
  - PMI listed as parameters with graphical annotations and readable via CMM
- Option to define cross sections (import/export)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

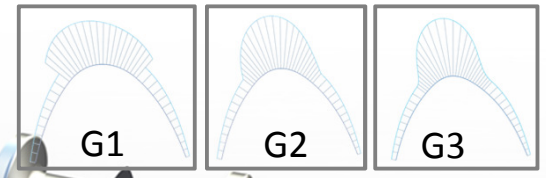


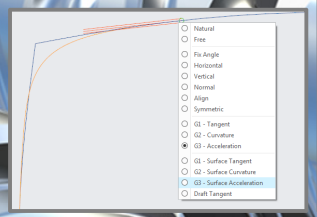
CREO INTERACTIVE SURFACE DESIGN EXTENSION (ISDX)

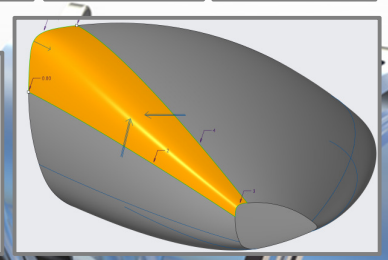
Creo 4.0 Enhancement Summary

New G3 acceleration connection for curves and surfaces

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





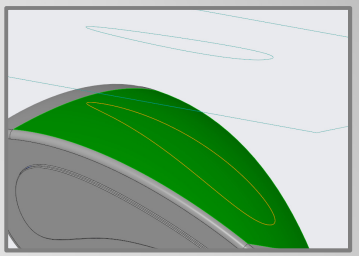


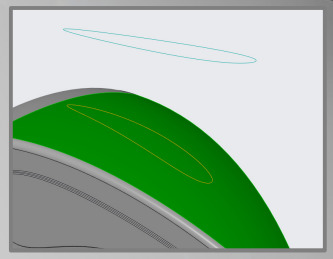
Create closed curves as periodic or nonperiodic curves

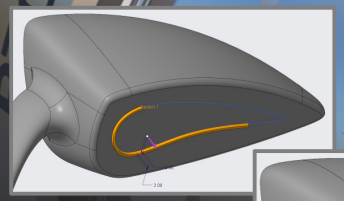
- Option to toggle periodic/nonperiodic state
- No tangency control at end points
- Legacy curves will not change
- Curves defined as periodic by default

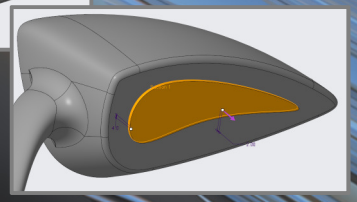
Drop curve improvements

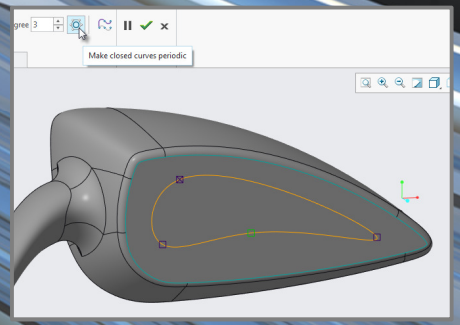
- Define drop curve Normal to Surface
- Define drop curve onto a Datum plane
- Flip direction when dropping Curve on Surface











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
- Expanded panel for run status and convergence

Fewer menu picks to create, run and review analysis

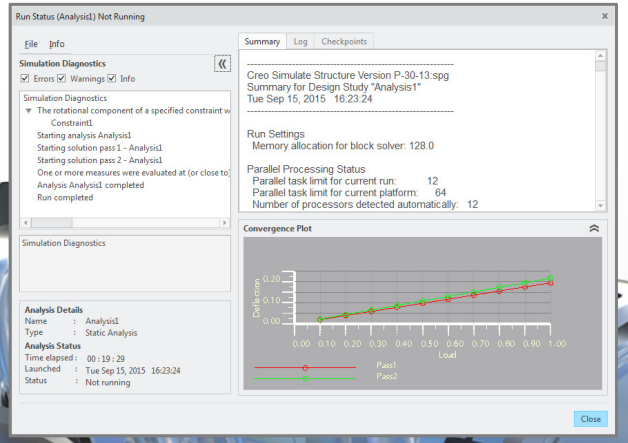
- Expanded RMB commands
- Create new analysis via RMB on analysis node
- Updated status icons for analysis

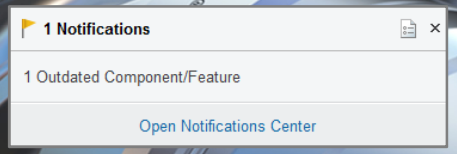
Notification support for Creo Simulate

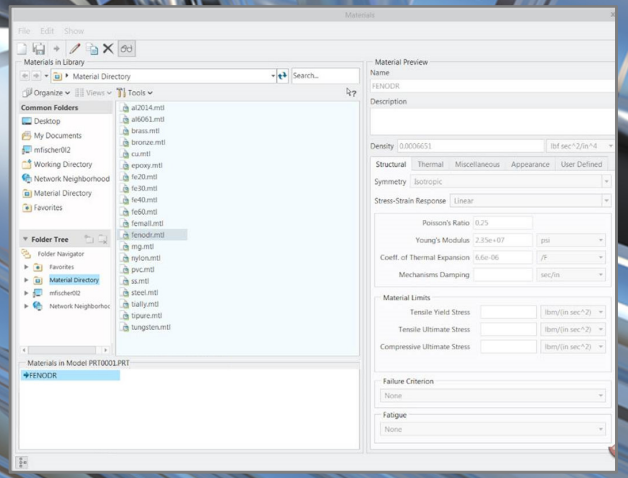
- Notification and identification of changes/issues
- Support for Simulate objects and features

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:







CREO IN THE CLOUD (SAAS)

Creo 4.0 – New Offering

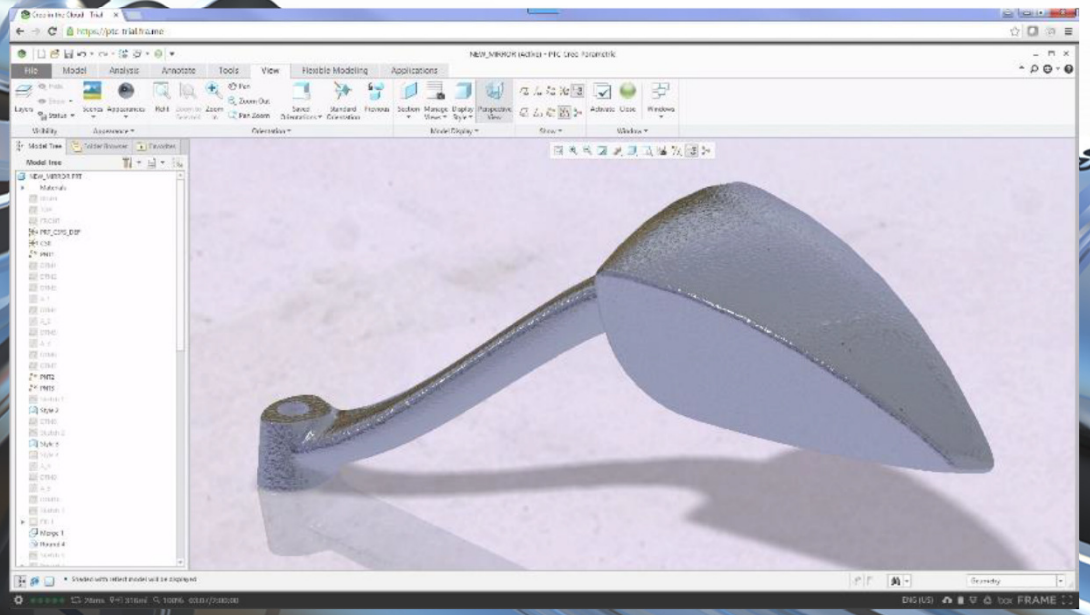
New SaaS deployment of PTC Creo
- Creo Engineer III and IV packages
- Does not include PLM (available separately)
- Full processing in the cloud, including graphics

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

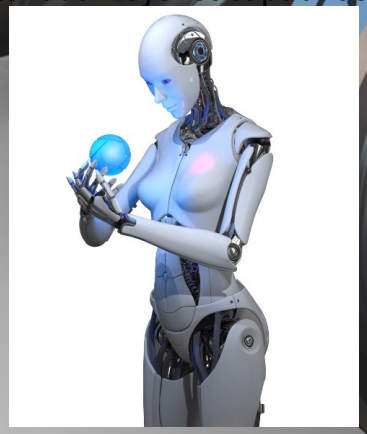
Creo 4.0 – New Offering → Replaces Advanced Rendering Ext. (ARX)

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

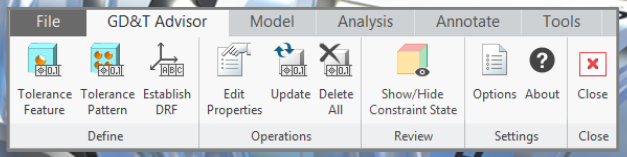
Supports guided creation of semantically valid GD&T
- Extensive help content with interactive GD&T quick reference (ease of learning and use)
- Fully constrains model geometry

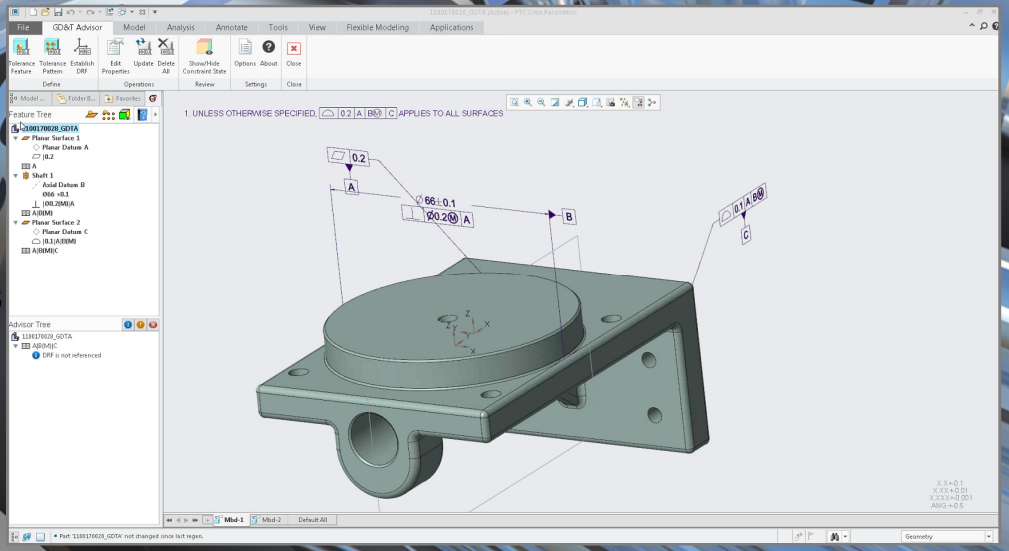
ASME and ISO standard compliant (updated rulesets)
- ASME Y14.5-2009 and associated standards
- ISO 1101-2012 and associated standards

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

GD&T ADVISOR

Sigmetrix



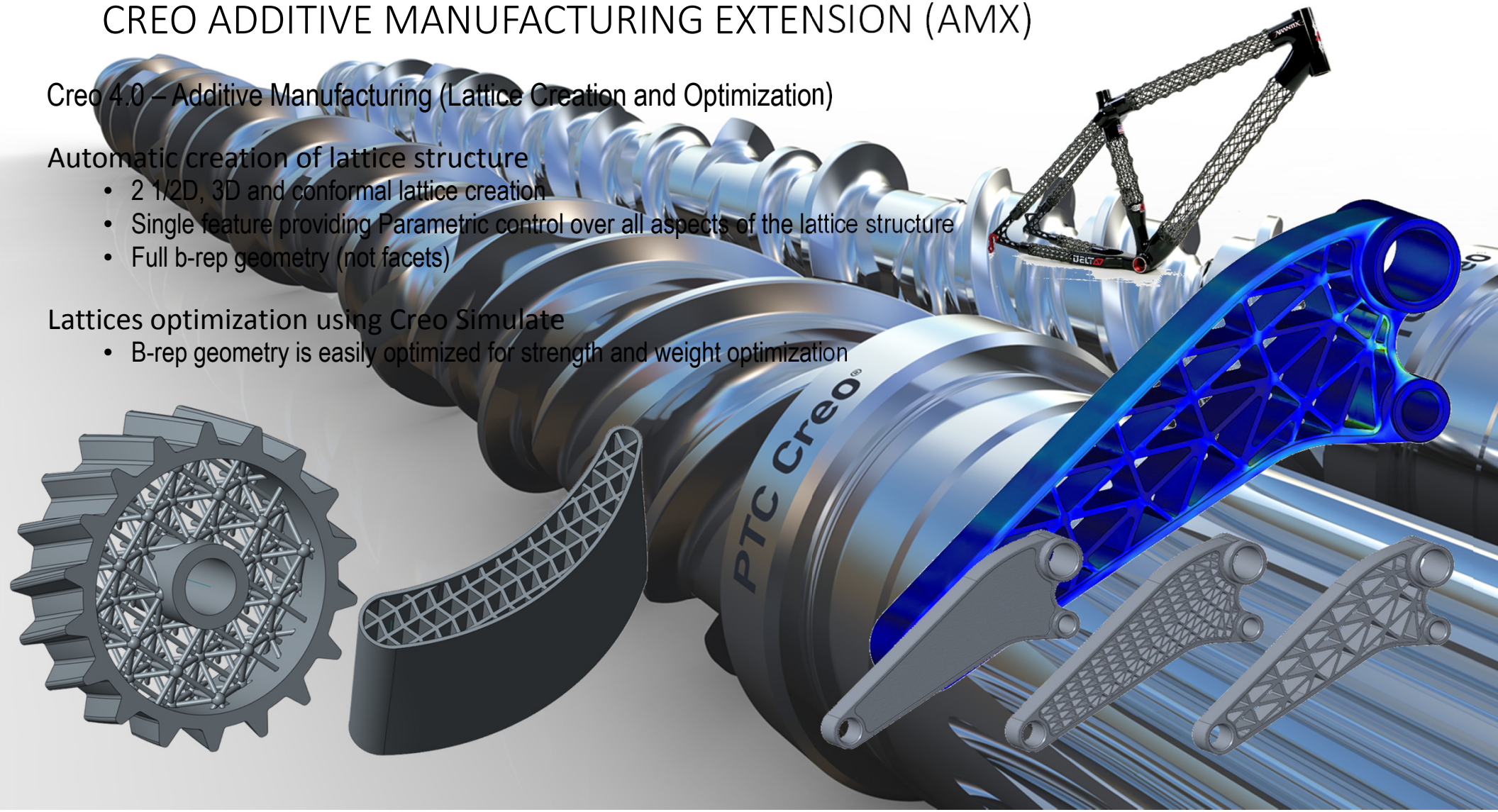


CREO ADDITIVE MANUFACTURING EXTENSION (AMX)

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