



PTC PRODUCT UPDATE & ROADMAP FOR PTC CREO ELEMENTS/DIRECT USERS

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Product Manager

06/06/2016

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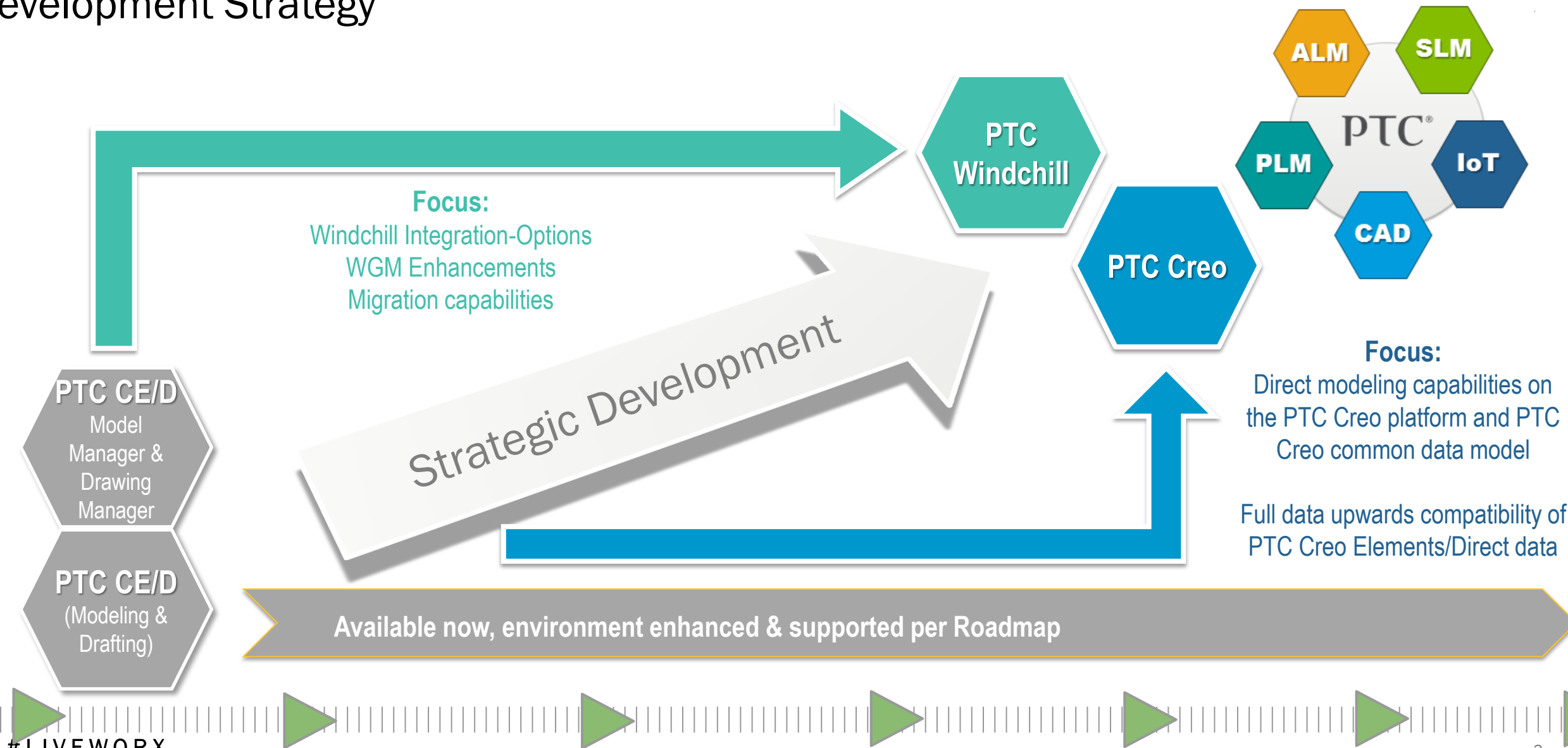
AGENDA

- CAD and PLM Strategy for PTC Creo Elements/Direct Development Strategy
- Direct Modeling Roadmap
- PTC Creo Elements/Direct – PTC Creo Data Upwards Compatibility Roadmap
- Creo Elements/Direct 20.0 Modeling/Drafting Outlook
- Long Term Direct Modeling Product Roadmap
- Product Adoption Strategy

CAD AND PLM STRATEGY FOR PTC CREO ELEMENTS/DIRECT



Development Strategy

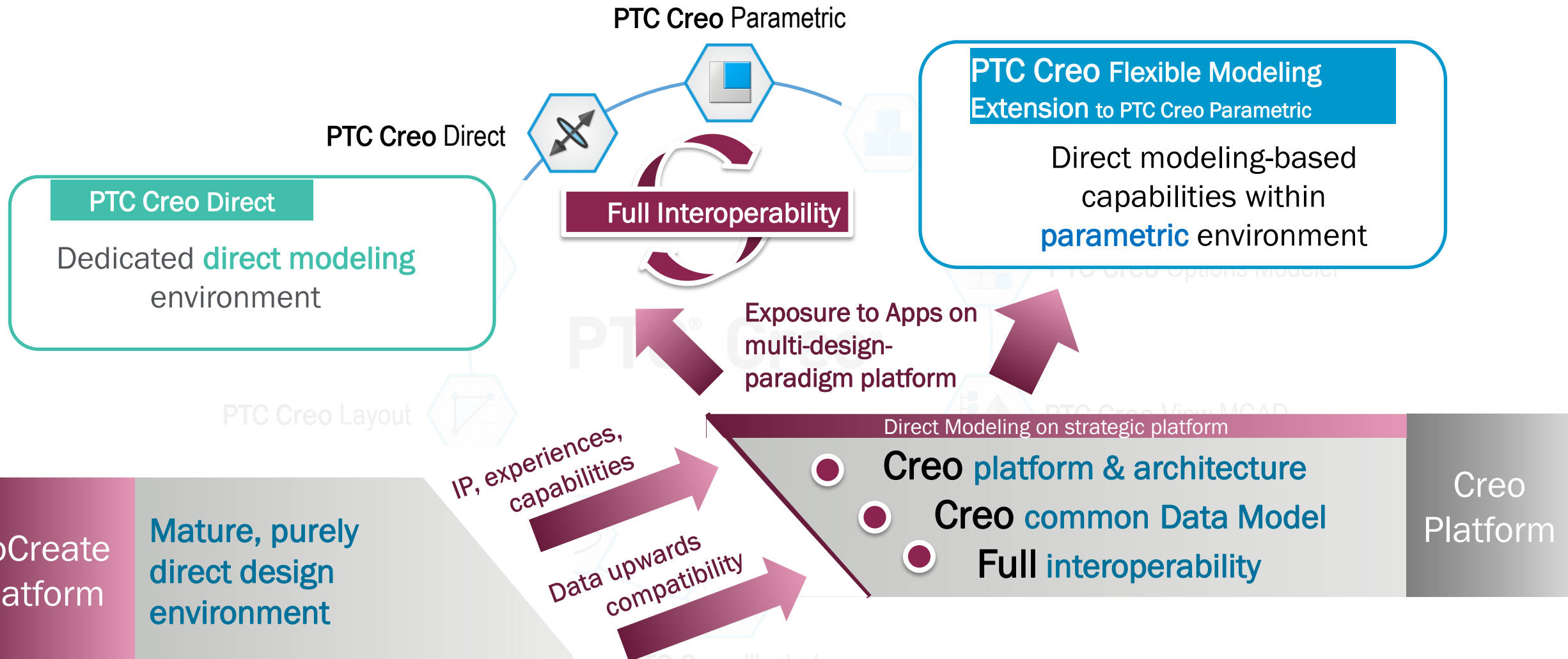


DIRECT MODELING IN PTC CREO

DIRECT MODELING IN PTC CREO



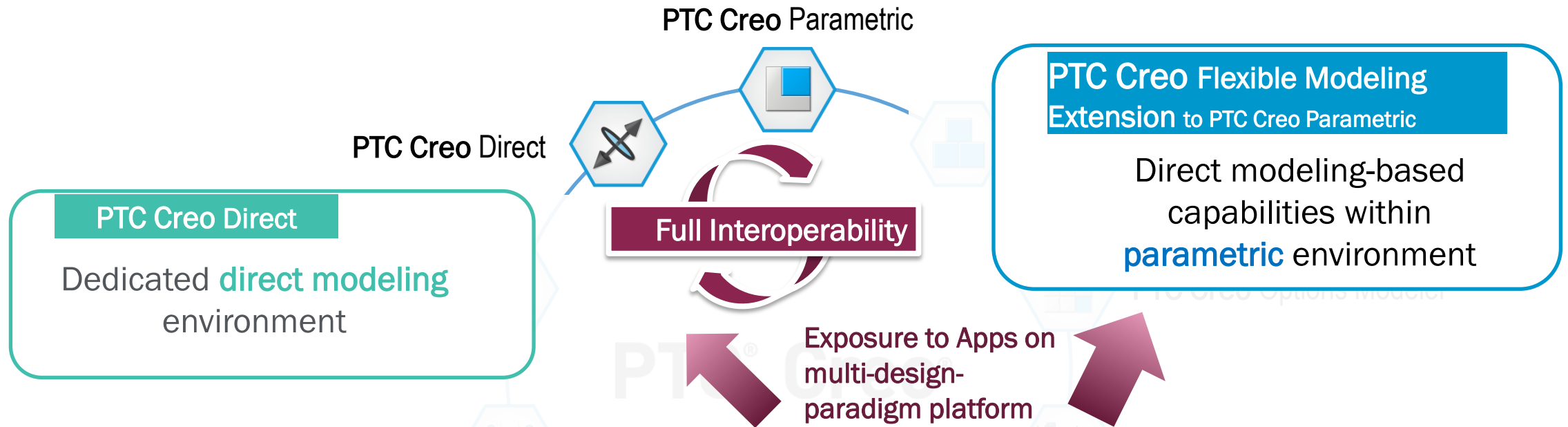
Strategy: Expansion of direct modeling capabilities on the Creo platform



DIRECT MODELING IN PTC CREO 3.0



Strategy: Expansion of direct modeling capabilities on the Creo platform



Direct Modeling technology/capabilities available with Creo 3.0

Rounds & Chamfers with Direct Modeling

Design Intent

- Shapes Selection
- Create advanced R/C (*)
- Edit/Remove
- Recognize / Un-recognize
- Rounds & Chamfer Handling/Treatment

Tangency Handling

- Geometry Solver
- Tangency detection & control in Move, Modify Analytic, Offset
- Flexible geometric conditions for tangency control

Geometric Solutions

- Enhanced geometric solutions for move
- Pattern**
- Flex Pattern w R/C handling
- Multi-Color Preview Substitute (*)**

(*) Exposed in PTC Creo Direct 3.0

Creo
Platform

PTC CREO - LONGER TERM DIRECT MODELING ROADMAP PTC FLEXIBLE MODELING EXTENSION (FMX) & PTC CREO DIRECT



Plans & Directional Thoughts

Available with PTC Creo 3.0

- Fast, flexible 3D geometry creation and editing designed for cross-functional users
- Create and move components in an assembly context
- Quickly position components with on-the-fly constraints
- Change Tracking with PTC Creo Parametric
- Import non PTC Creo data

- Geometry tools with Round/Chamfer and tangency handling

- Pattern Recognition

Currently under development or research

- Enhanced Sketching
- Full Windchill integration similar to Creo Parametric
- Creo View & 3D PDF Export
- Enhanced Assembly Design

- Booleans
- Geometry tool enhancements
- Usability / User Experience:: "Working-on-the-model"
Power Selection and context sensitive command access

- Geometry modifications on Sheet Metal parts honoring Sheet Metal Design Intent

ENHANCED SKETCHER

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ENHANCED WINDCHILL INTEGRATION & COMPONENT PARAMETER SUPPORT

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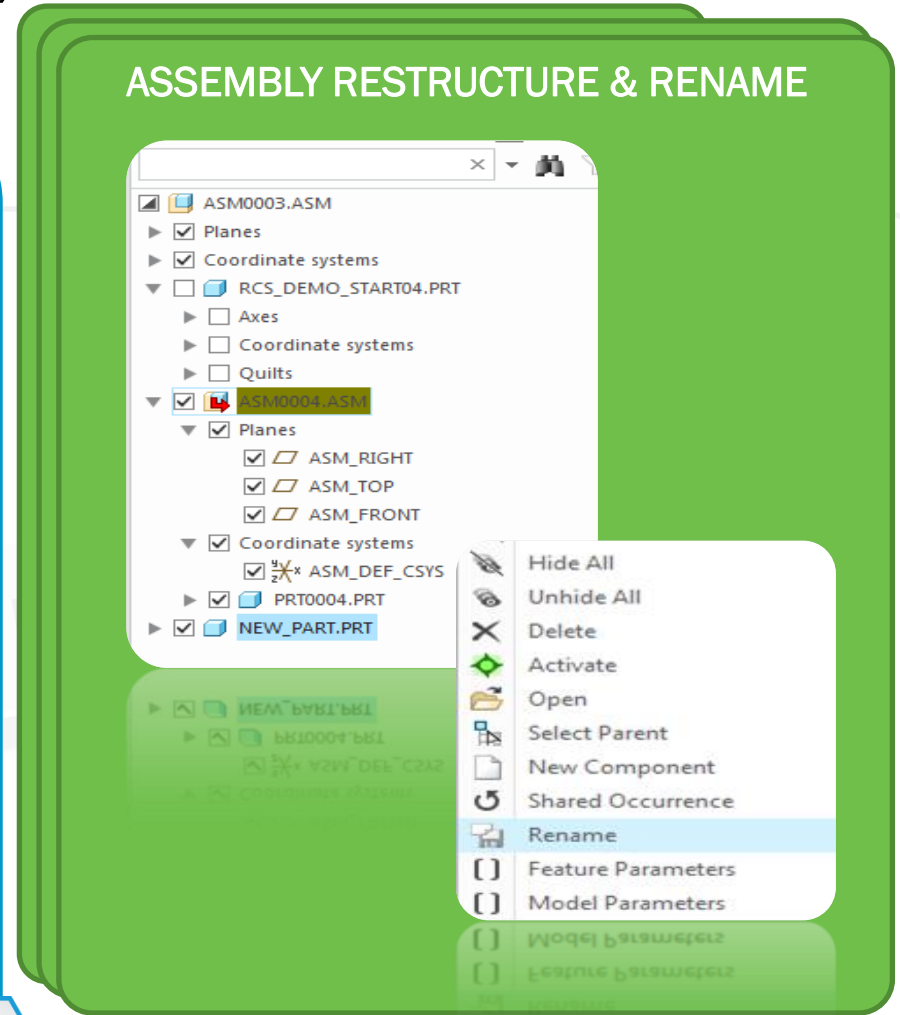


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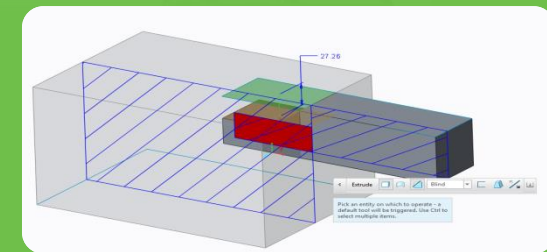
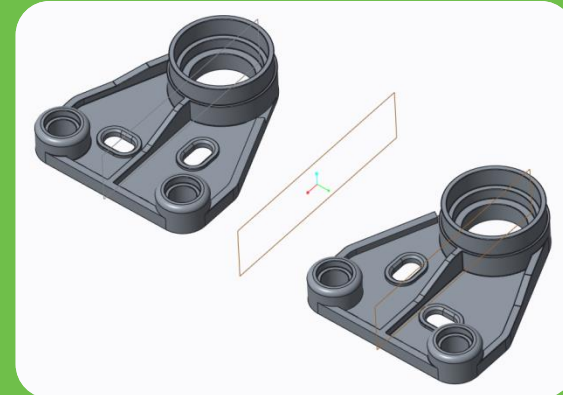
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NEW ASSEMBLY DATUM TOOLS ENHANCED X-SECTION TOOL



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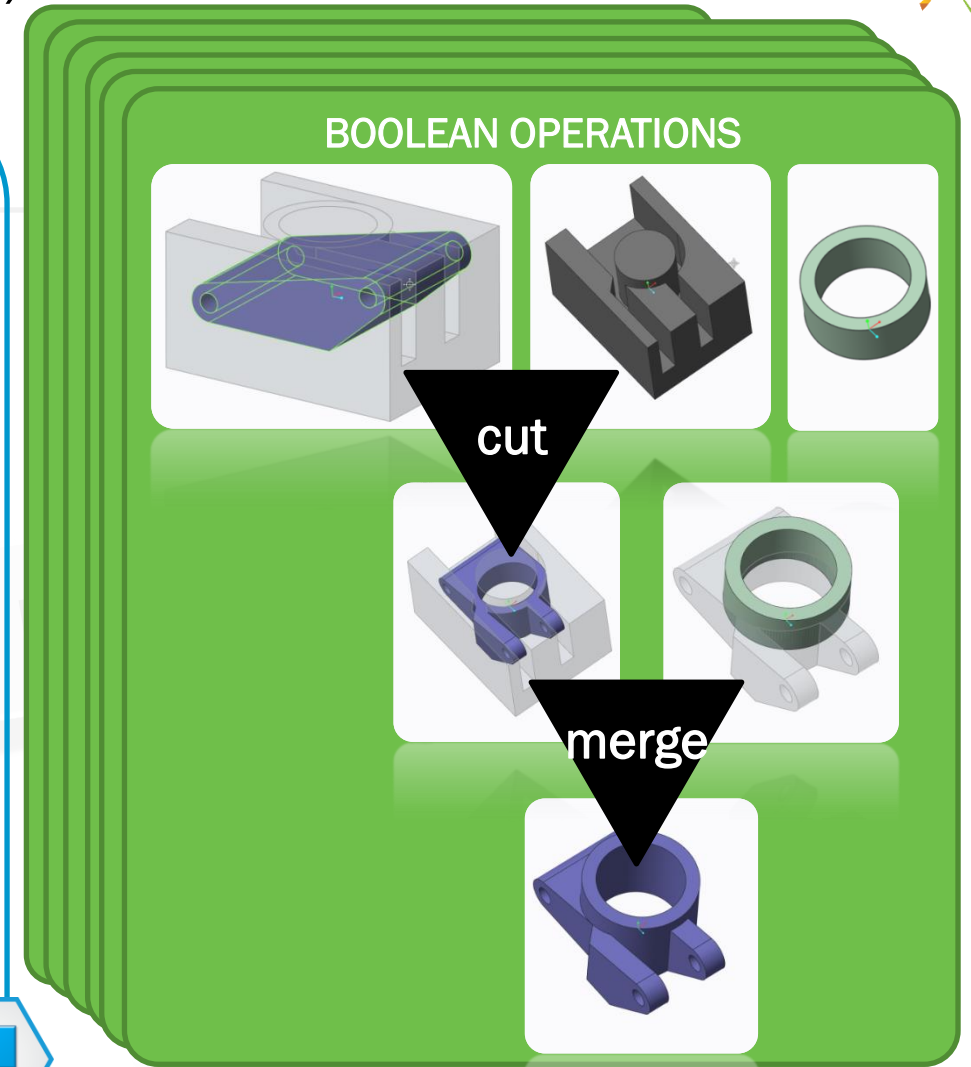
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GEOMETRY MIRROR AND NEW & ENHANCED GEOMETRIC TOOLS AND OPTIONS



MIRROR **REMOVE**

SUBSTITUTE

REVOLVE **MOVE** **EXTEND**

EXTRUDE **ATTACH**

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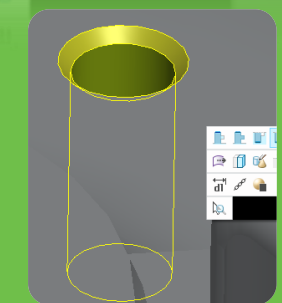
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USABILITY & USER INTERFACE

Minitoolbars



Geometry Selection




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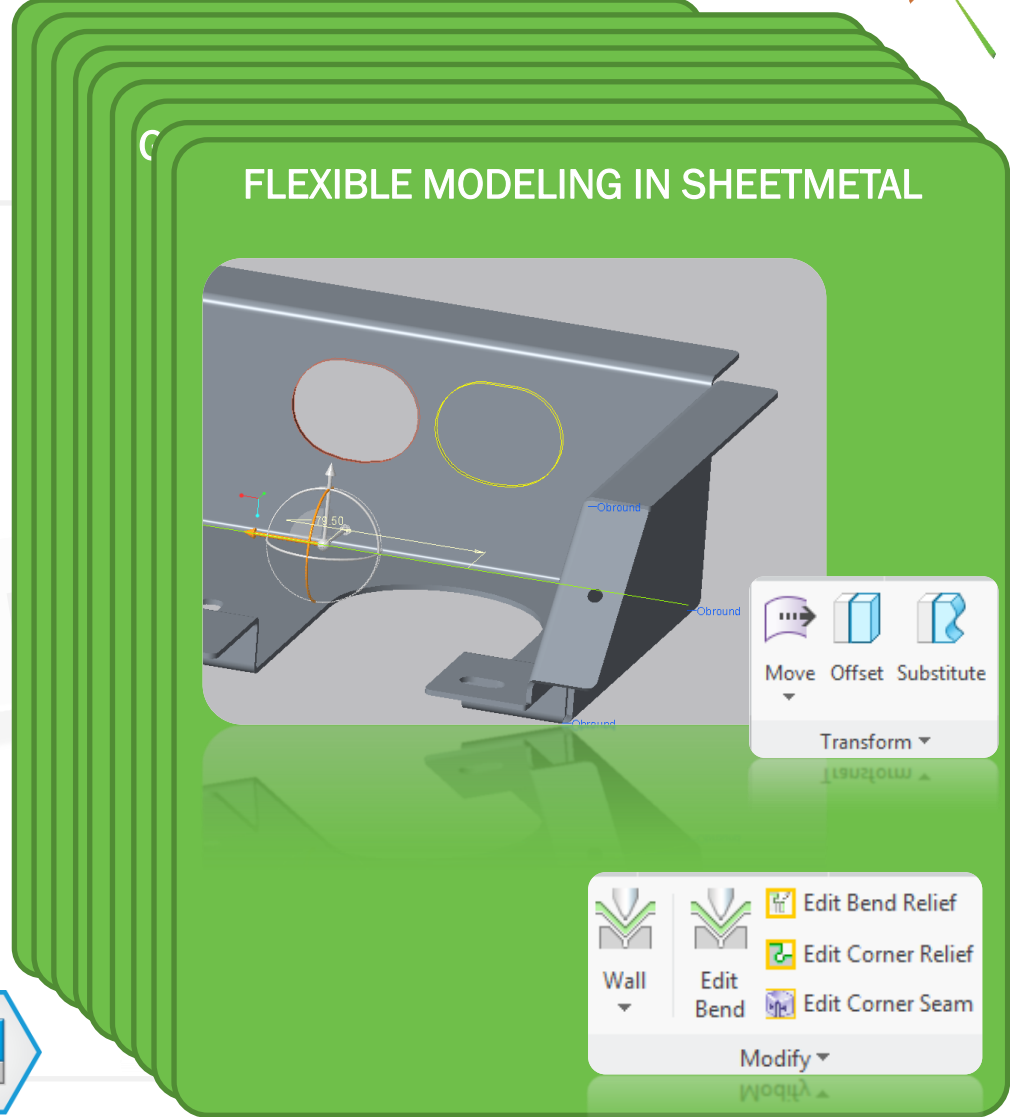



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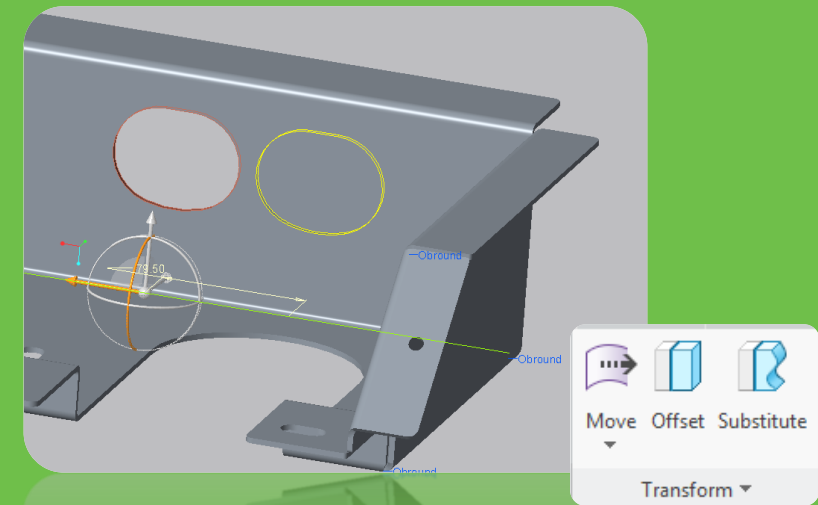
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FLEXIBLE MODELING IN SHEETMETAL

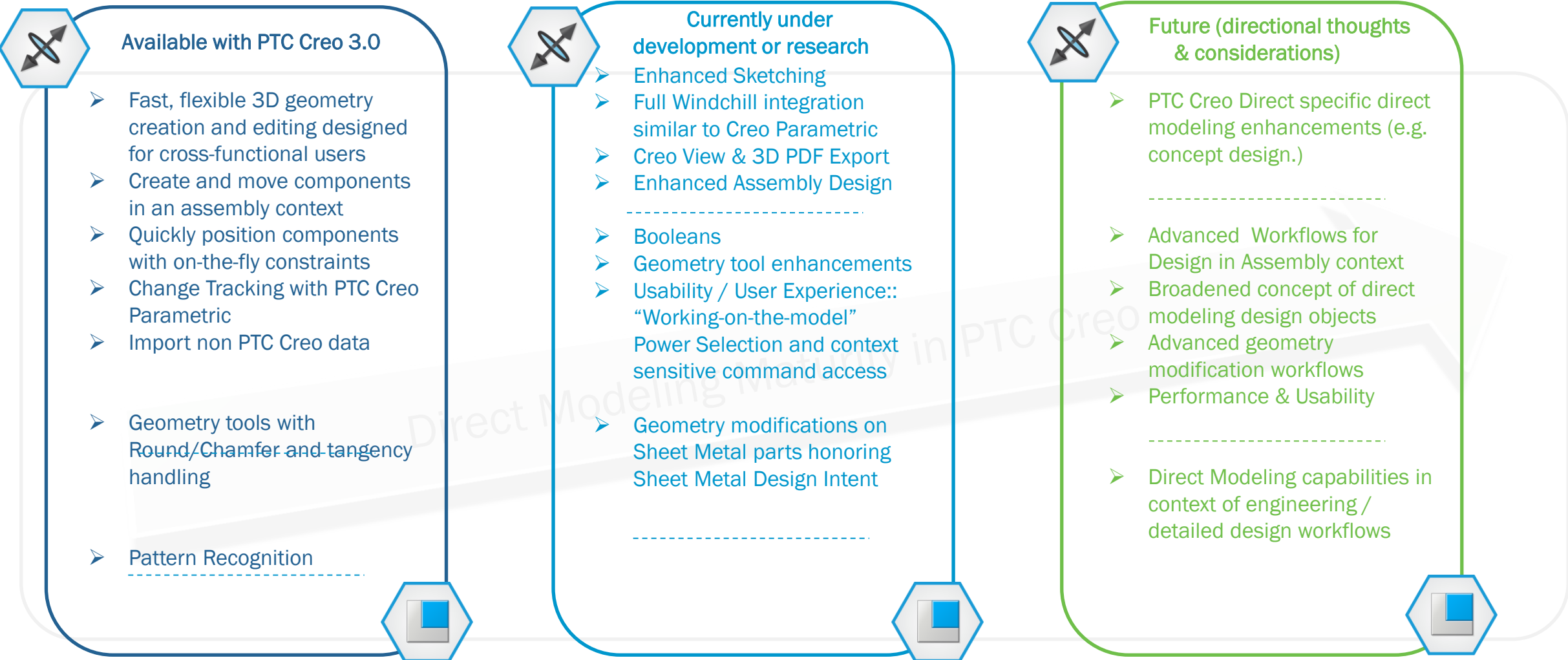


PTC CREO - LONGER TERM DIRECT MODELING ROADMAP

PTC FLEXIBLE MODELING EXTENSION (FMX) & PTC CREO DIRECT



Plans & Directional Thoughts



Decorative geometric shapes in the background: a large pink triangle pointing down from the top left, a blue triangle pointing down from the top center, a yellow triangle pointing down from the top right, and a green triangle pointing up from the bottom left.

PTC CREO ELEMENTS/DIRECT – PTC CREO DATA UPWARDS COMPATIBILITY OUTLOOK

PTC CREO ELEMENTS/DIRECT – PTC CREO DATA UPWARDS COMPATIBILITY ROADMAP



Current Capabilities, Plans & Directional Thoughts

2D Data

3.0
2D Drawings
(Drafting, .mi)

4.0
Detail. Drawings
3D/2D Associativity
(Annotation, .bdl)

Investigated in context of dev projects

3D Data

1207-0-001
A-T_Rotiere
Druckh
Mutter
Nadelh
Scheibe

1.0 Structure
1.0 Geometry

1.0 Part & Inst. color
3.0 Mass, density, volume, etc
4.0 Add. name attributes
f User-defined attributes

Attributes

R75

2.0 graphical
3.0 semantic

3.0 Cross sections

PMI & 3D Doc

4.0 Round / Chamfer

future Sheet Metal

future Mach.info (holes)

future Combined States

Meta data (embedded model intelligence)

Direct „File/Import“ (w. ATB)

Direct „File/Open“ (w. Unite)



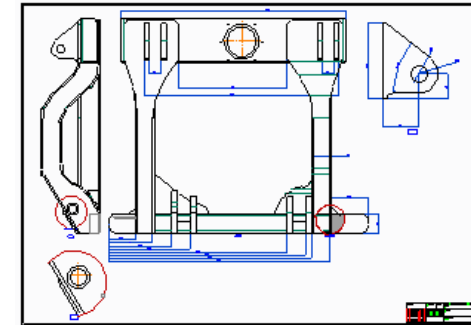
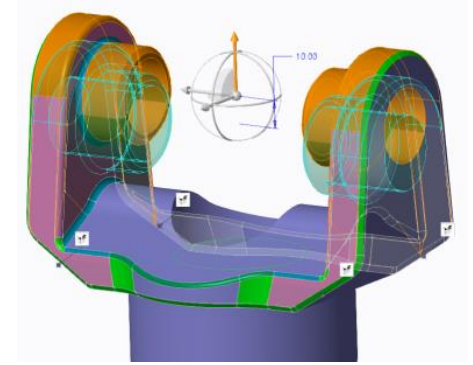
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Forward looking information subject to change without notice

ENHANCED UPWARD COMPATIBILITY TO PTC CREO 4.0 - OUTLOOK



- Round / Chamfer design intent transfer
- Additional transfer of Creo Elements/Direct Modeling attributes like:
 - instance-name, model-name
- Associative drawing import (2D/3D)
 - Leverage of Creo Elements/Direct Modeling drawings as they have been created in Creo
- Unite-Technology of Creo 4.0 supporting Creo Elements/Direct
 - Creo Elements/Direct data are supported as well as we already handle data from SolidWorks, NX and CATIA

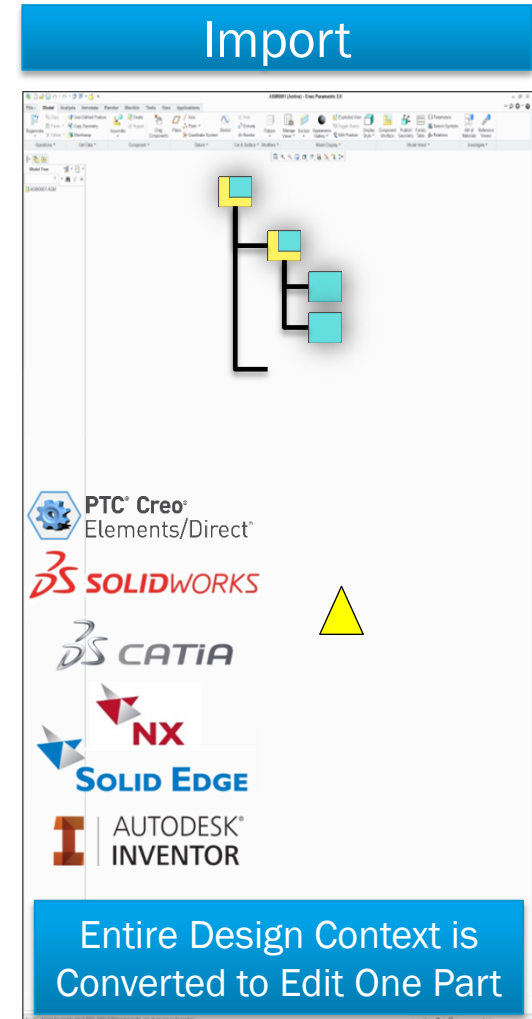
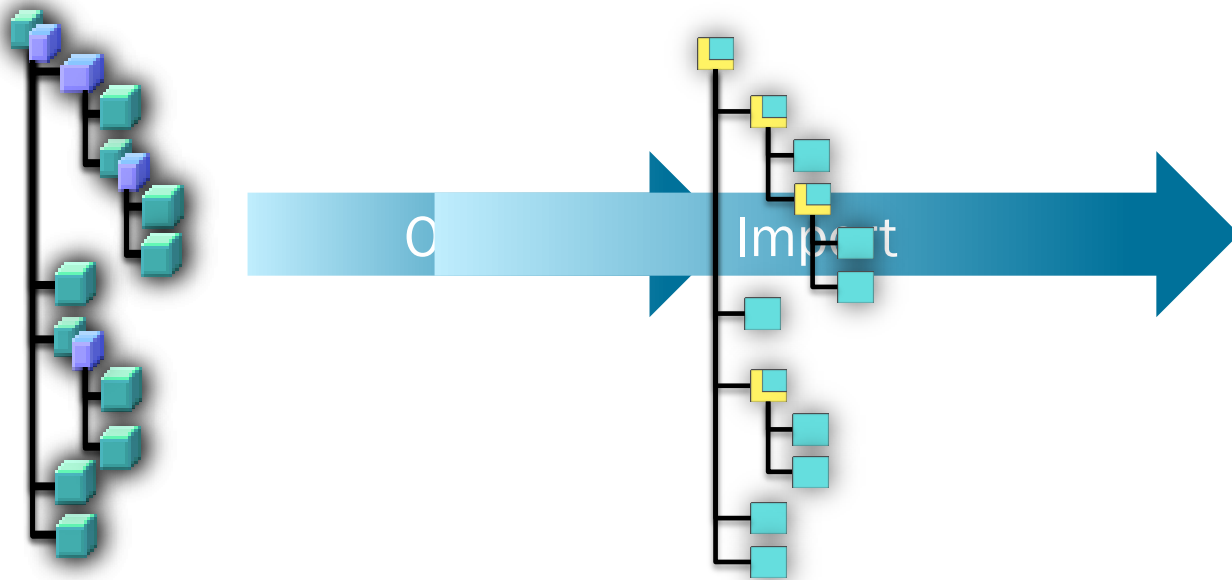


Benefits:

- Automatic recognition of rounds and chamfers with correspondent handling/treatment in Creo
- Additional Modeling attributes for improved navigation in assembly structures in Creo
- No recreation of drawings, leverage existing Creo Elements/Direct Modeling associative drawings in Creo 4.0

CAD CONSOLIDATION WITH PTC CREO

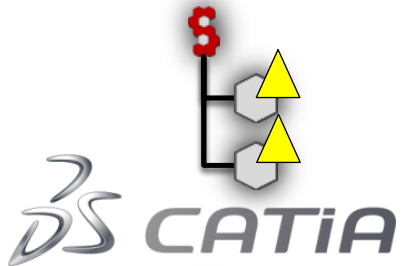
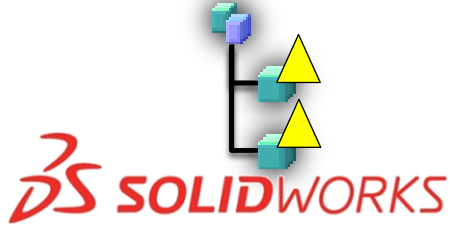
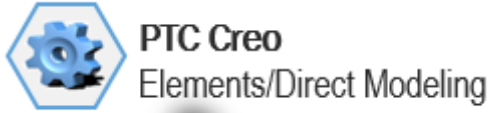
Unite support for PTC Creo Elements/Direct Modeling 3D Data in PTC Creo 4.0



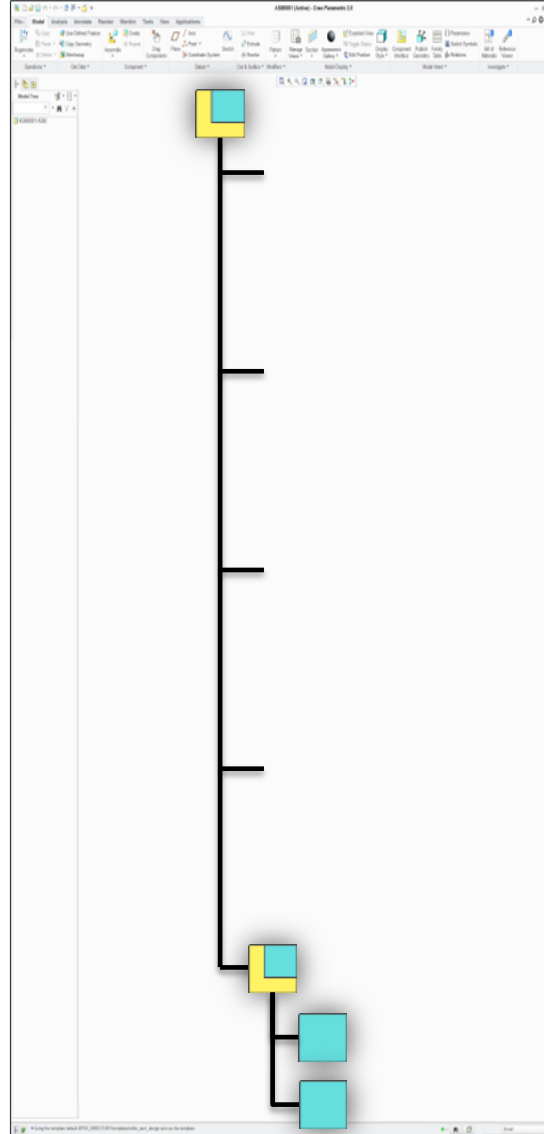
COLLABORATION WITH UNITE TECHNOLOGY



PTC Creo® 4.0

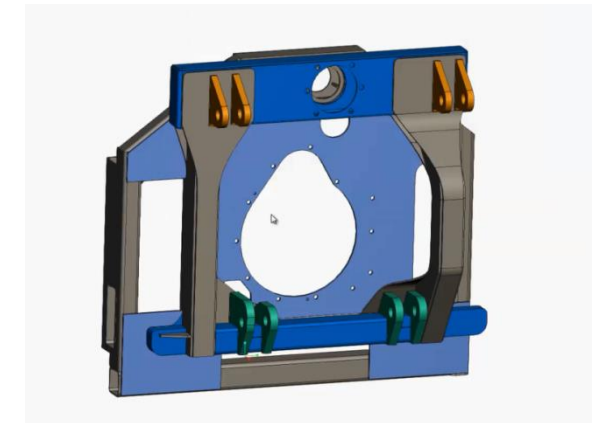


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Support for PTC Creo Elements/Direct Modeling 3D Data

- None PTC Creo Data:
 - Updated natively
 - Managed natively



The slide features several large, colorful, triangular geometric shapes that appear to be cut from a larger sheet of paper. A large pink triangle is on the left side, pointing towards the bottom right. A blue triangle is at the top left, pointing towards the center. A yellow triangle is in the upper middle, pointing towards the center. A green triangle is at the bottom left, pointing towards the center. These shapes are set against a light gray background with vertical lines.

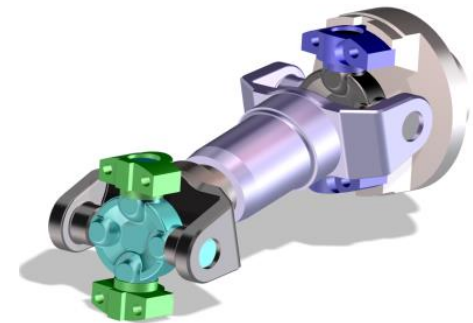
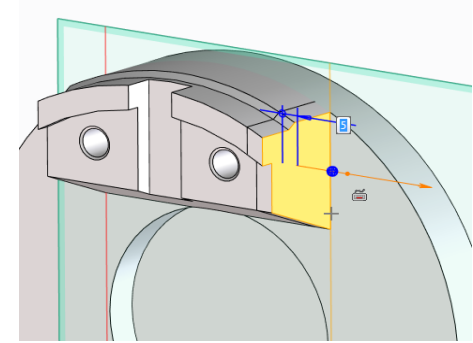
CREO ELEMENTS/DIRECT 20.0 MODELING/DRAFTING OUTLOOK

CUSTOMER DRIVEN ENHANCEMENTS



Modeling

- Improved user guidance
 - visual feedback when snapping to 2D intersections
 - 3D CoPilot extension to snap to 2D construction lines
- Improved copy/unshare of selected multiple parts with recognizing and keeping share relationship of new components
- Support of “spaces” and “+” in component names
- User control to hide successful feature validation messages

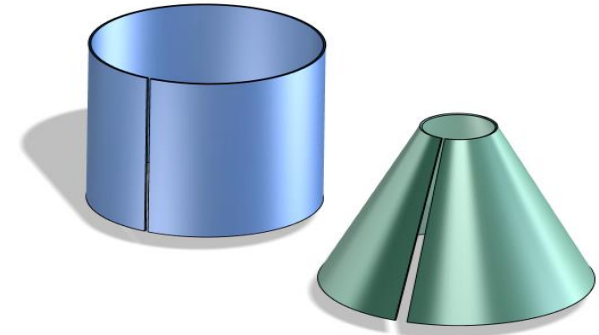


Benefits:

- Improved user guidance to achieve faster precise 2D intersections
- More flexibility in assembly handling

Modeling - Sheet Metal

- Extension to “Cut Slot” to support “cone” and “cylindrical” sheet metal parts



Benefits:

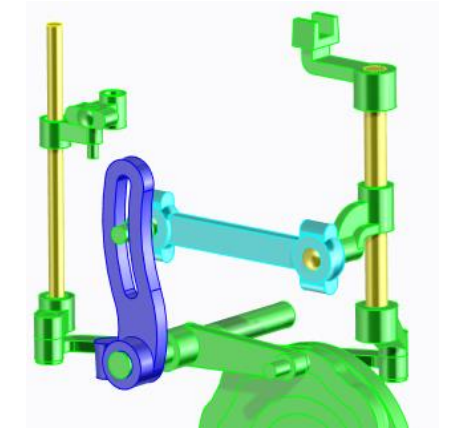
- Easy and intuitive way to design cylindrical and conical sheet metal parts

MULTI-CAD COLLABORATION



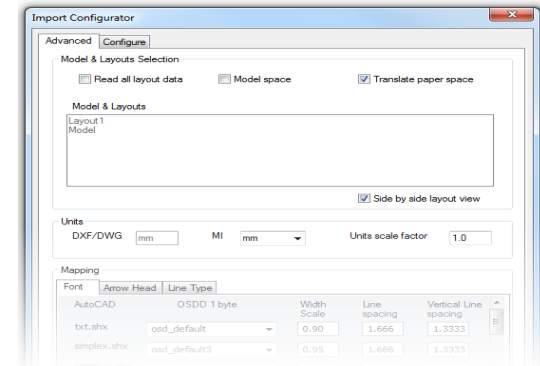
Modeling

- Direct import of native non-PTC files into PTC Creo Elements/Direct Modeling
 - NX(*.prt,)
 - Solid Edge (*.par, *.asm)



Drafting

- Improved DWG/DWG import by UI driven configuration including analyzing import data



Benefits:

- Expanded interoperability, enabling more effective collaboration with suppliers and partners who work with different CAD software
- More intuitive import configuration to achieve optimal import quality

PLATFORM SUPPORT UPDATE



Platform Support Creo Elements/Direct 20.0

- Added new Operating system support
 - Windows 10 (64bit only)
- Dropped Operating system support
 - Windows 8



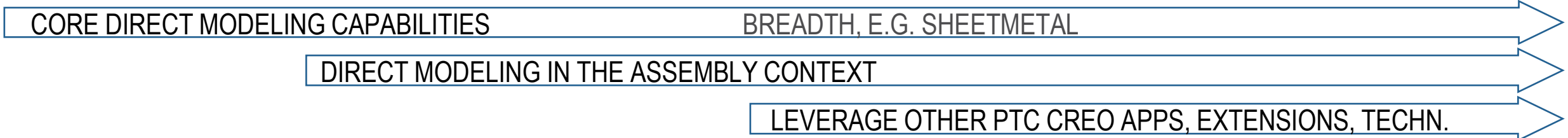
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LONG TERM DIRECT MODELING PRODUCT ROADMAP & ADOPTION STRATEGY

LONG TERM DIRECT MODELING PRODUCT ROADMAP



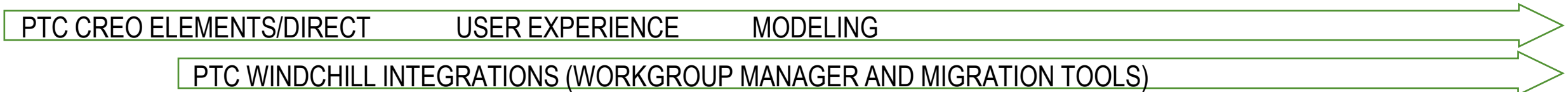
PTC Creo



Increasing richness of data import

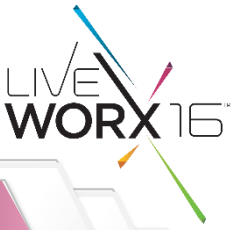


PTC Creo Elements/Direct



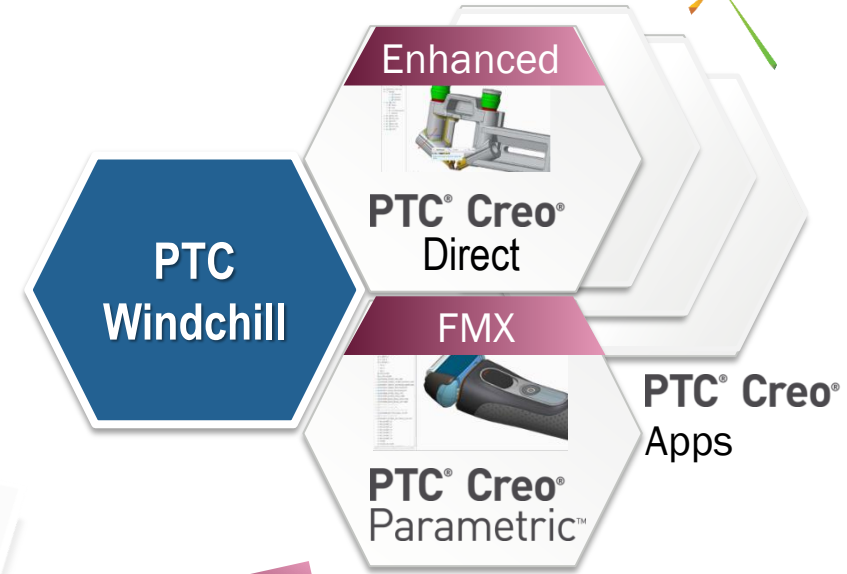
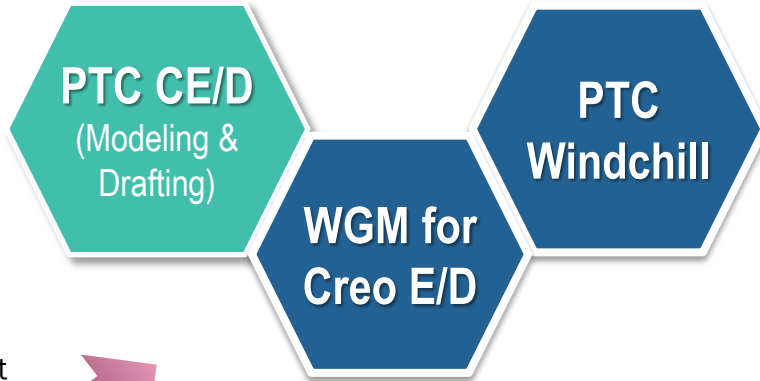
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PRODUCT ADOPTION STRATEGY



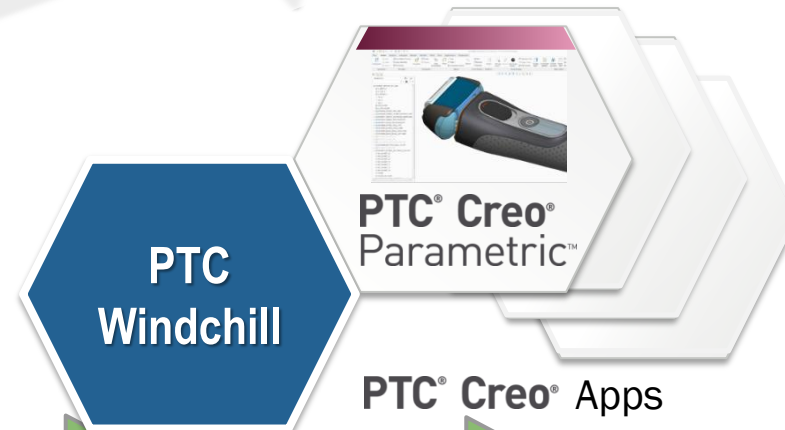
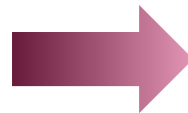
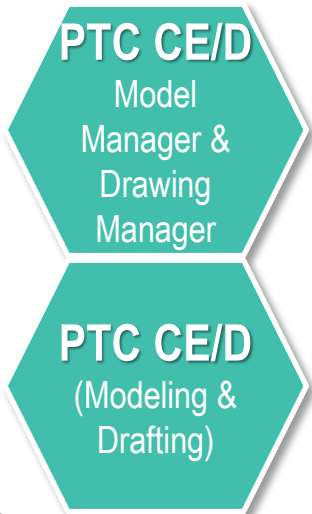
Options

Option A)
Core PDM/PLM
process support



Growth Path

Option B)
Broad PLM needs



KEY TAKEAWAYS

- Direct modeling remains an important element of PTC's CAD strategy
 - PTC is committed to continued investment in direct modeling in PTC Creo
 - PTC will provide upward data compatibility from PTC Creo Elements/Direct to the PTC Creo platform
- PTC is committed to continuing to support and enhance PTC Creo Elements/Direct for many years
 - PTC Creo Elements/Direct 19.0 delivers high customer value through improved productivity & interoperability
 - Release 20.0 development is underway now
- PTC Windchill provides best-in-class Data Management capabilities
 - PTC is committed to providing Migration tools from PTC Creo Elements/Direct Model Manager to PTC Windchill



The image features several colorful geometric shapes, primarily triangles and lines, scattered across the white background. A large, multi-colored triangular shape is prominent on the right side, composed of various shades of blue, green, yellow, orange, pink, and purple. Several thin, colored lines (blue, pink, green, orange) radiate from the center towards the edges. The text 'LIVE WORX 16' is centered in the upper half, with 'LIVE' in a thin, outlined font and 'WORX 16' in a bold, solid black font. A small 'TM' trademark symbol is positioned to the right of the '16'.

LIVE
WORX 16™

TAKE A FRESH LOOK AT THINGS

liveworx.com