

PLM FOR DIGITAL TRANSFORMATION STRATEGY & ROADMAP

Francois Lamy
VP PLM Solutions Management



ptc

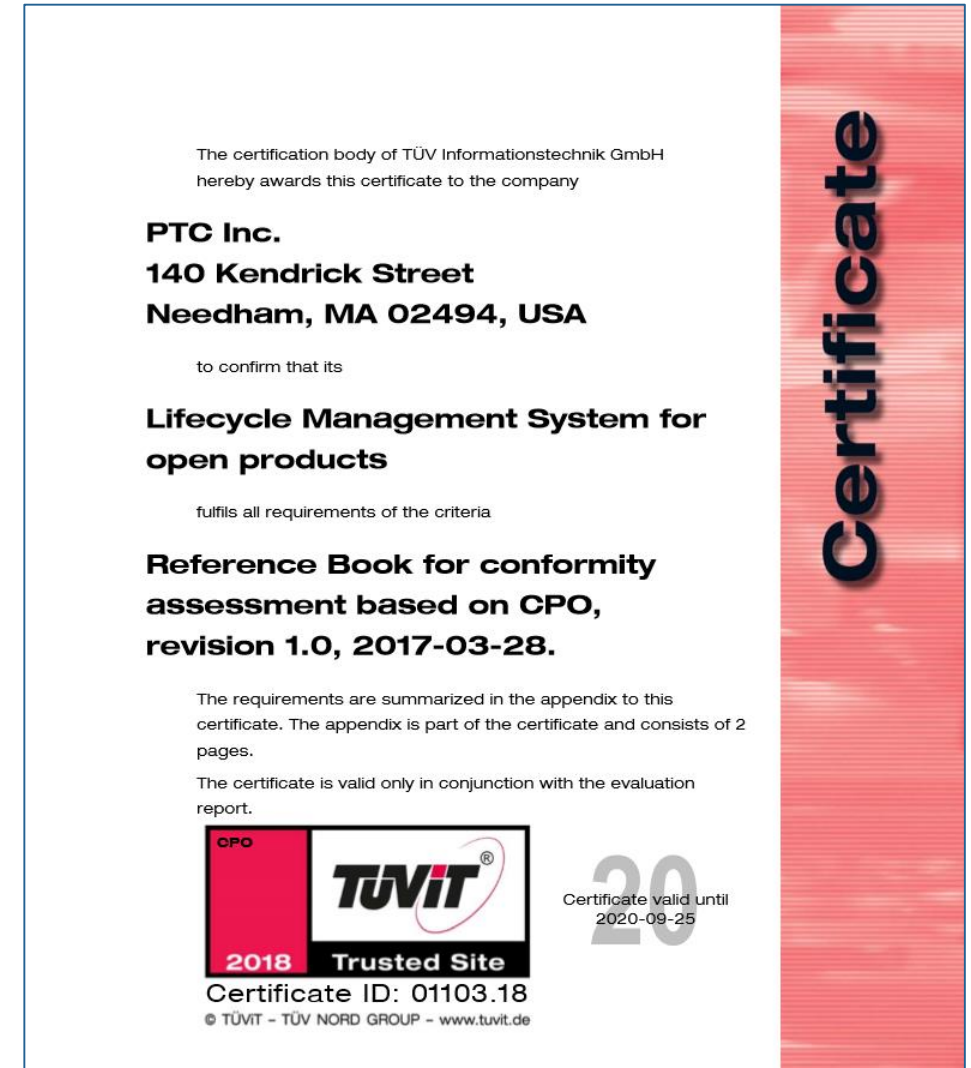
forum
europe

PTC AWARDED “CODE OF PLM OPENNESS” CERTIFICATE

- CPO Certification based on
 - Written response with supporting artifacts
 - 2 Days on site audit and interviews
- The Audit and certification criteria covered
 - Interoperability
 - Infrastructure
 - Extensibility
 - Interfaces
 - Standards
 - Architecture

“Openness is both in PTC strategy and people’s DNA”

The auditors from TÜV Informationstechnik GmbH





AGENDA

- Industry & PLM Trends
- PTC PLM Strategy
 - Windchill, Integrity & Navigate release schedule
- PLM Update
 - Windchill 11.1
 - Windchill Rest Services
 - Creo View 5.0
 - Windchill and the cloud
- Windchill – What's next in backlog
- PLM Projects

“Traditional product development processes will fail companies that seek to optimize product value and customer experiences through software enabled IoT products.”

– Nate Fleming,
Forrester



40%

of Top 100 discrete manufacturers plan to provide **Product as a Service** platforms

– IDC

51%

of research respondents who say IoT is critical to their **organization's future success**

– VDC Research

84%

of products (or more) from best-in-class manufacturers hit their revenue, cost, launch date, and quality targets using model based engineering

– Aberdeen

The Digital Thread

“Unleashing a seamless flow of data across the value chain that will link every phase of the product life cycle: from design, sourcing, testing, and production to distribution, point of sale, and use.”

– McKinsey

CONNECTED PLM BEATS PRODUCT COMPLEXITY



The Best-in-Class are extending and expanding their usage of PLM capabilities and moving to a single system at a faster pace than Laggards.

Best-in-Class organizations are outperforming their peers by a significant margin.

BEST-IN-CLASS companies enjoy:

4.2X

Greater 2-year product first-pass yield improvement rate, compared with the Industry Average.

2.4X

Greater YoY engineering productivity improvement rate, compared with the Industry Average.

58%

Higher rate than Industry Laggards of products hitting their product date targets.

22%

Higher rate than Laggards of products meeting their product development budgets.

21%

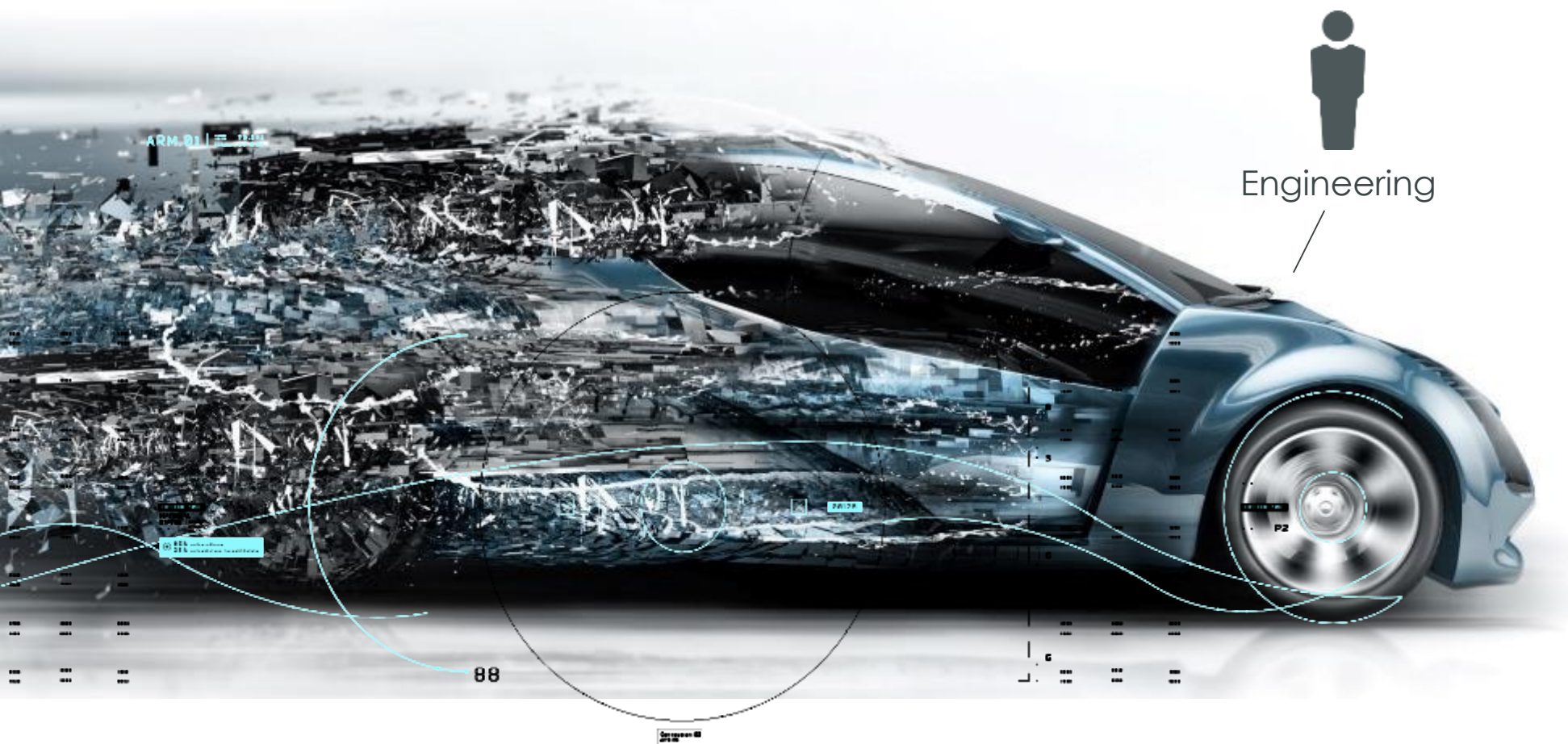
Higher rate than Laggards of products hitting quality targets at launch.

– Aberdeen Group, March 2018

PLM HAS BECOME STRATEGIC ENTERPRISE-WIDE SOFTWARE



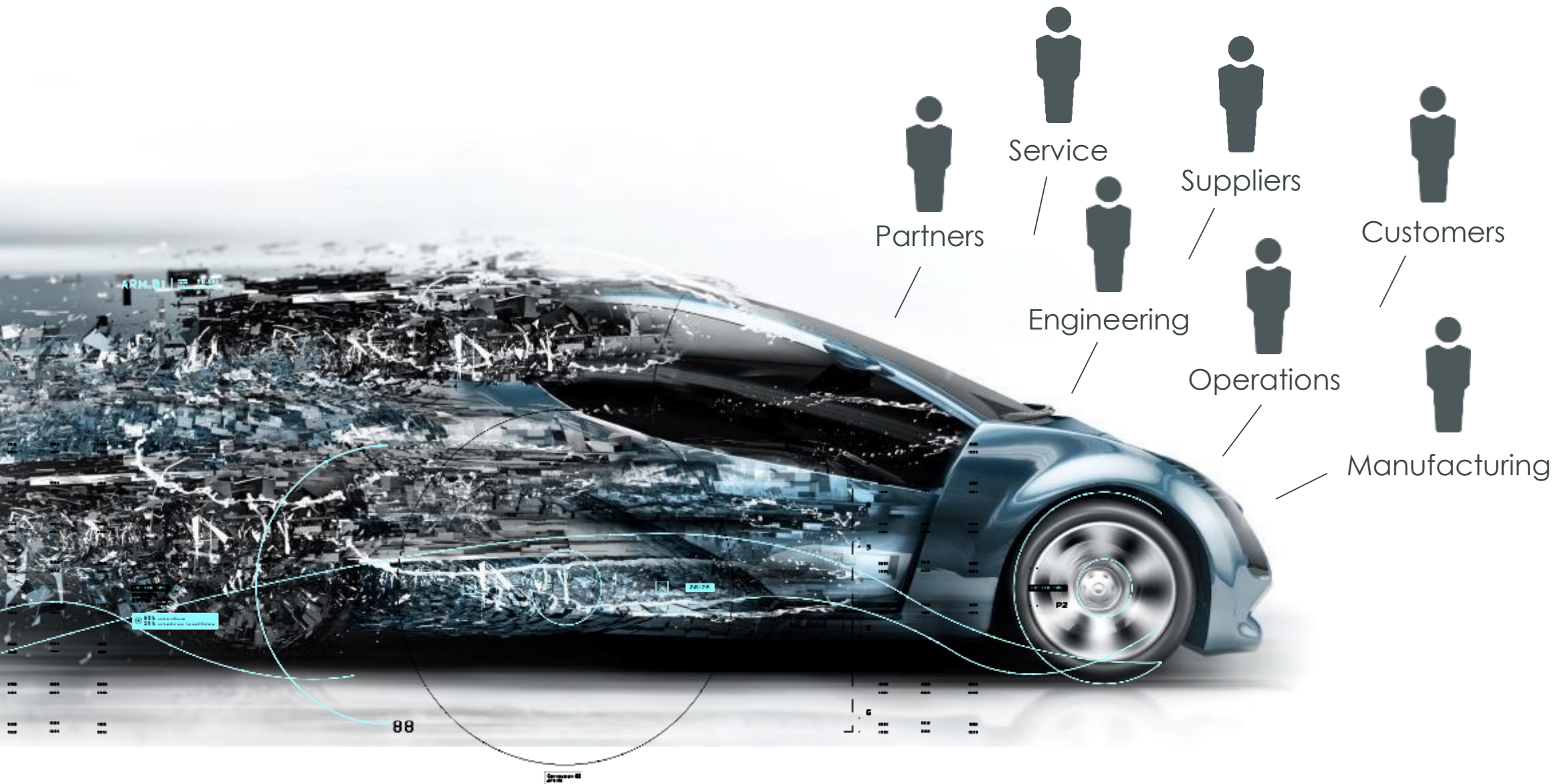
There is a growing need for the entire global enterprise to get involved with product development and in the context and domain they are accustomed.



PLM HAS BECOME STRATEGIC ENTERPRISE-WIDE SOFTWARE



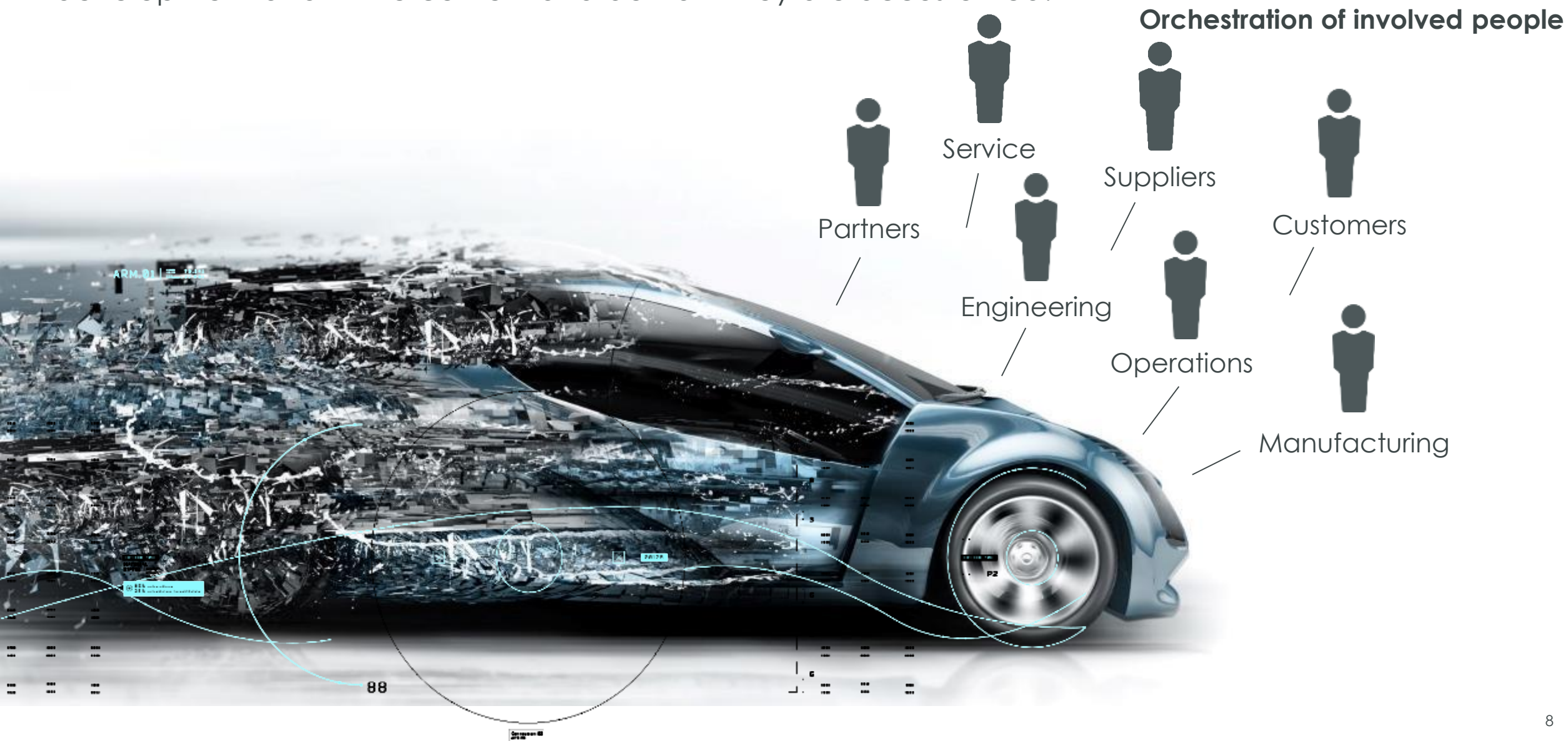
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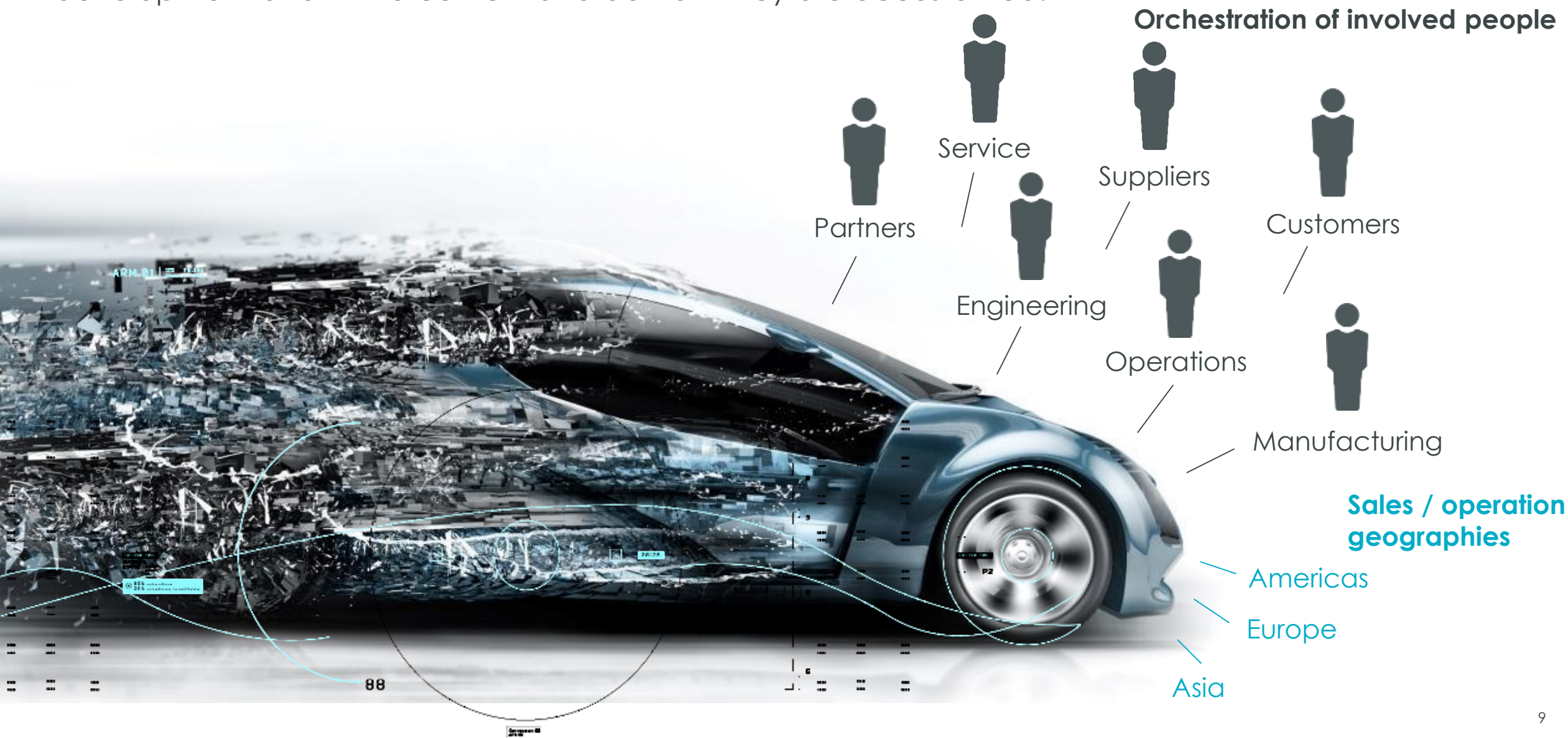
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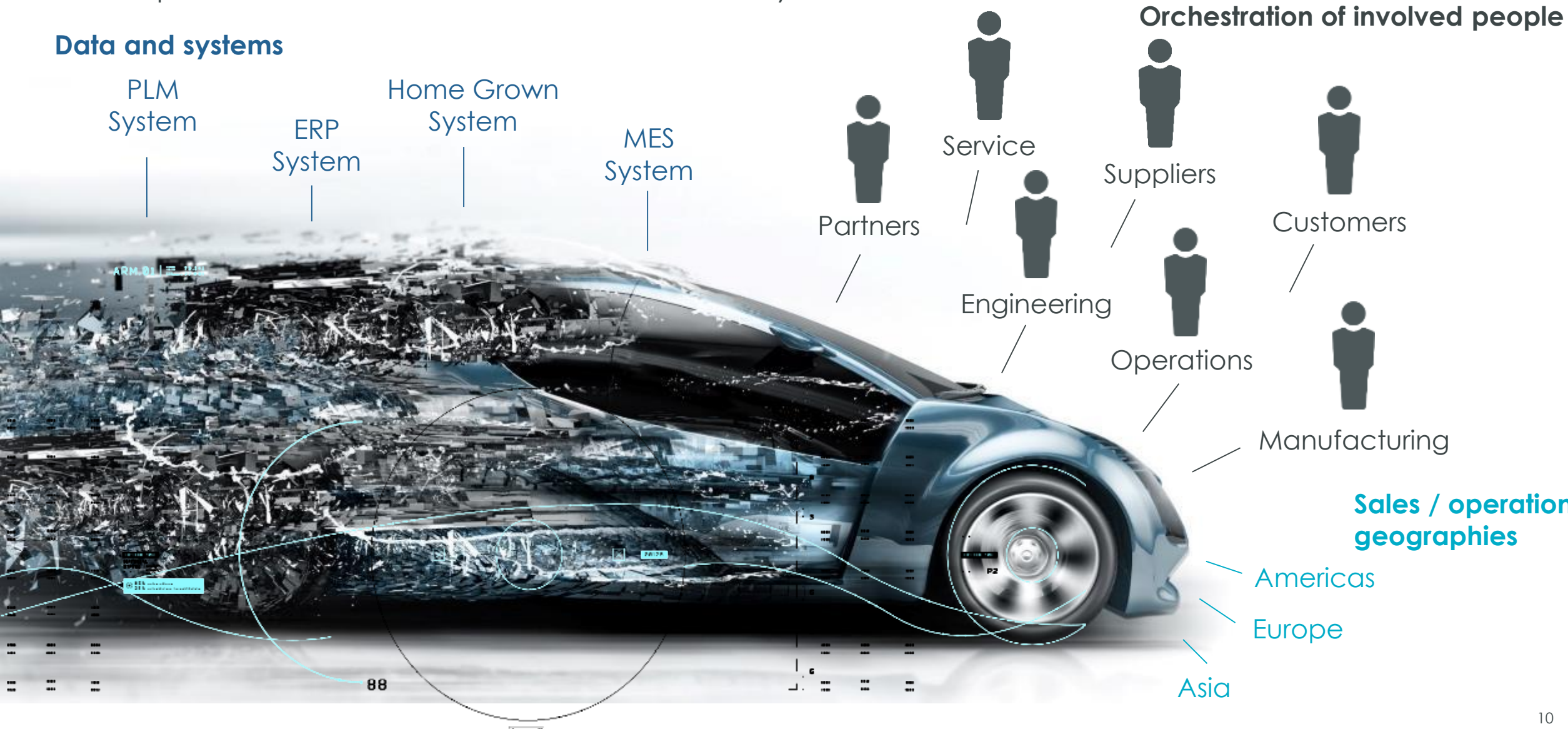


PLM HAS BECOME STRATEGIC ENTERPRISE-WIDE SOFTWARE



There is a growing need for the entire global enterprise to get involved with product development and in the context and domain they are accustomed.

Data and systems



PTC REDEFINES ENTERPRISE PLM



Modern Architecture:

Strong, REST-based extendable OOTB enterprise domain applications and role-based apps

Visual Engagement:

Augmented Reality and 3D visualization offers a new way of engaging with PLM

Digital Thread:

Multi-system orchestration ensures continuity upstream engineering and downstream to manufacturing and service

Flexible Deployments:

In the PTC Cloud or On-Premise

Proven Performance and Scale:

Flexible data model allows for management of large data sets



ROLE & TASK BASED APPLICATIONS

Windchill Connected
(Navigate, Digital Twin, AR Design Review, Requirements)

Marketplace
(Partner/OEM)

PLATFORM

Extend PLM: Contextualize/Synthesize/Orchestration/Engage

Powered by:



thingworx®



kepware®



vuforia™

ENTERPRISE DOMAIN APPLICATIONS

Windchill Core
(Lifecycle Management including CAD-Data, BOM, Change)



integrity™
(Systems & Software)

MES/SCM

ERP

MRO

CRM

DEVICE CLOUD

Source Data

CAD

BOM

SIMULATION

MBSE

REQ
& TEST

MFG

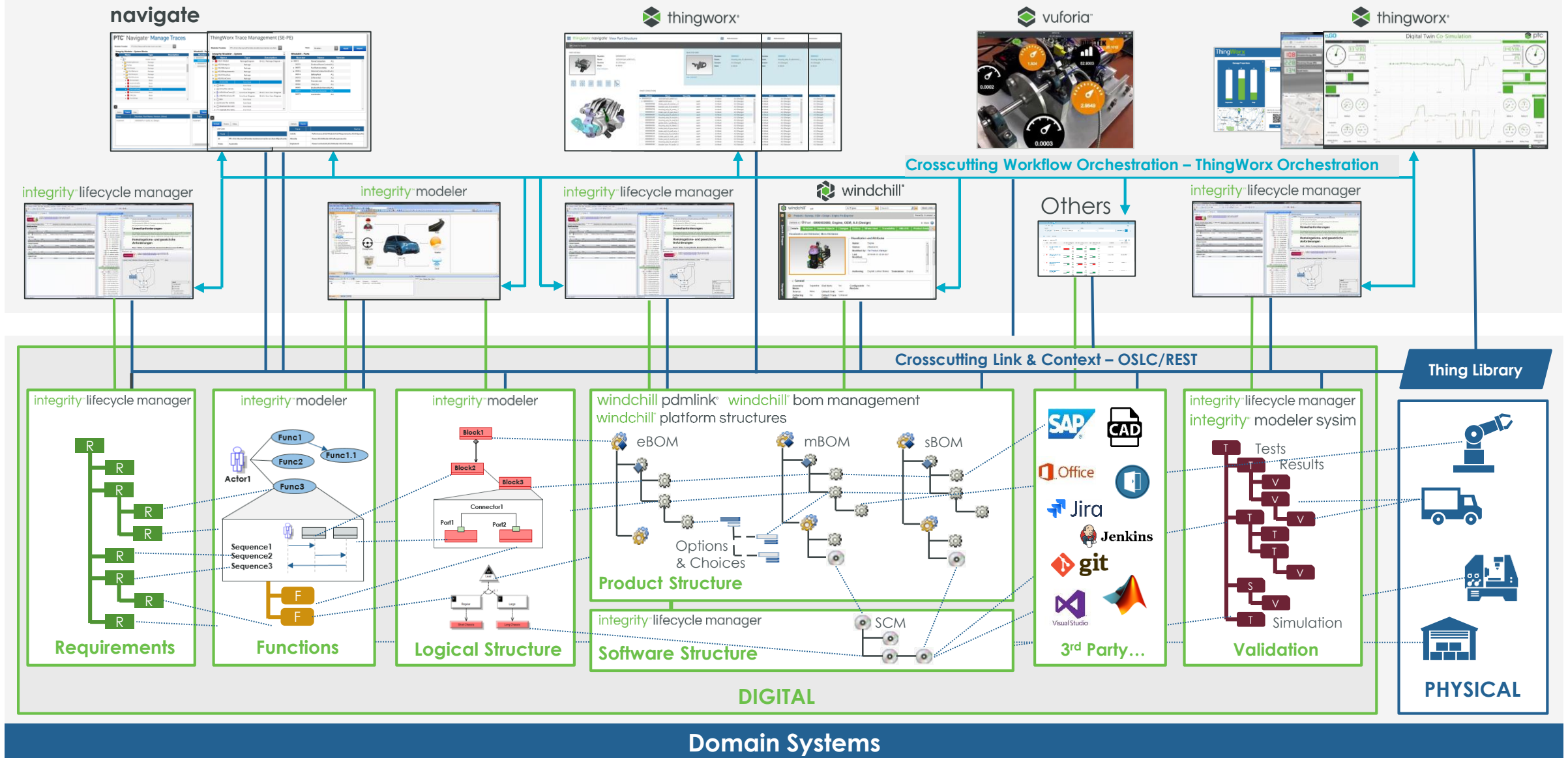
SUPPLIERS

CUSTOMERS

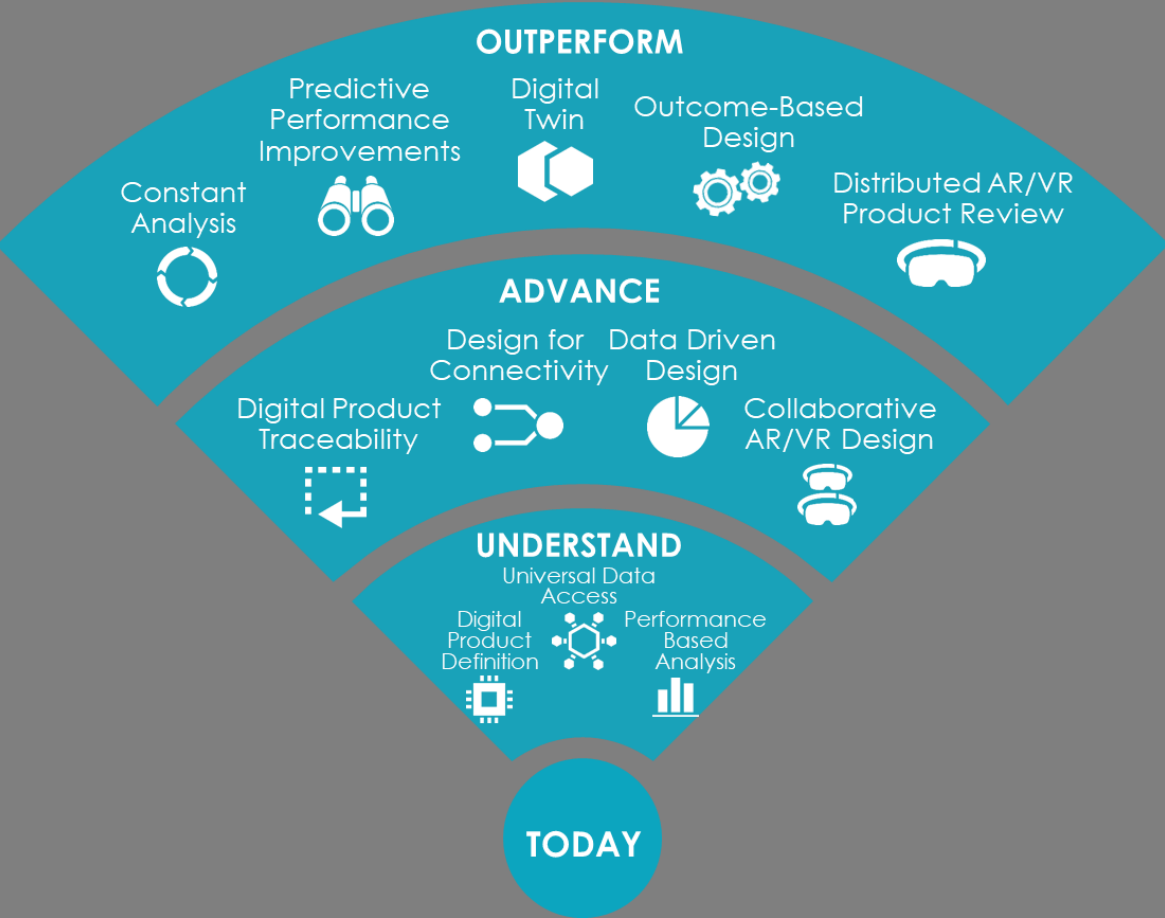
CONNECTED
PRODUCTS
& MACHINES

CLOUD | HYBRID | ON-PREM

Role Based Business & Engineering Apps Extending PLM

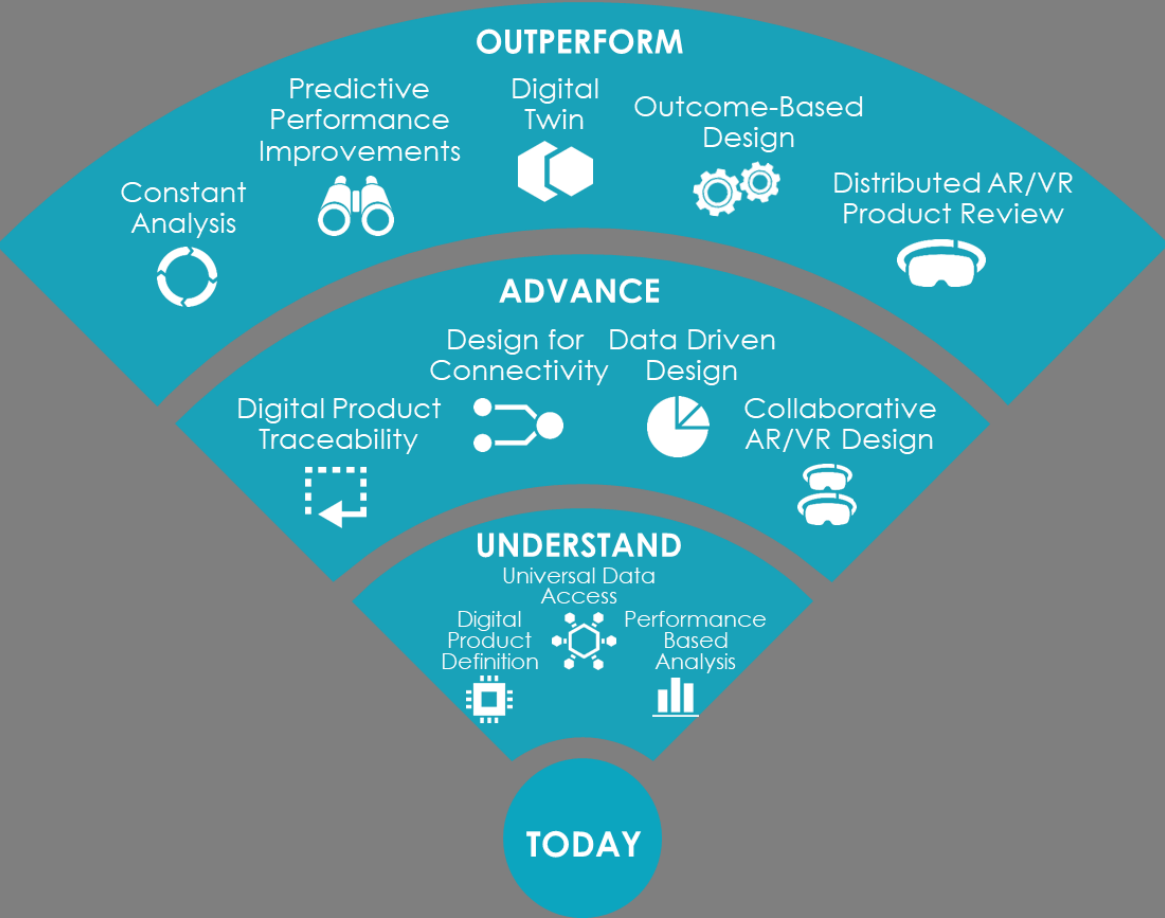


PTC'S PLM BEST PRACTICES TO GUIDE YOUR DIGITAL TRANSFORMATION



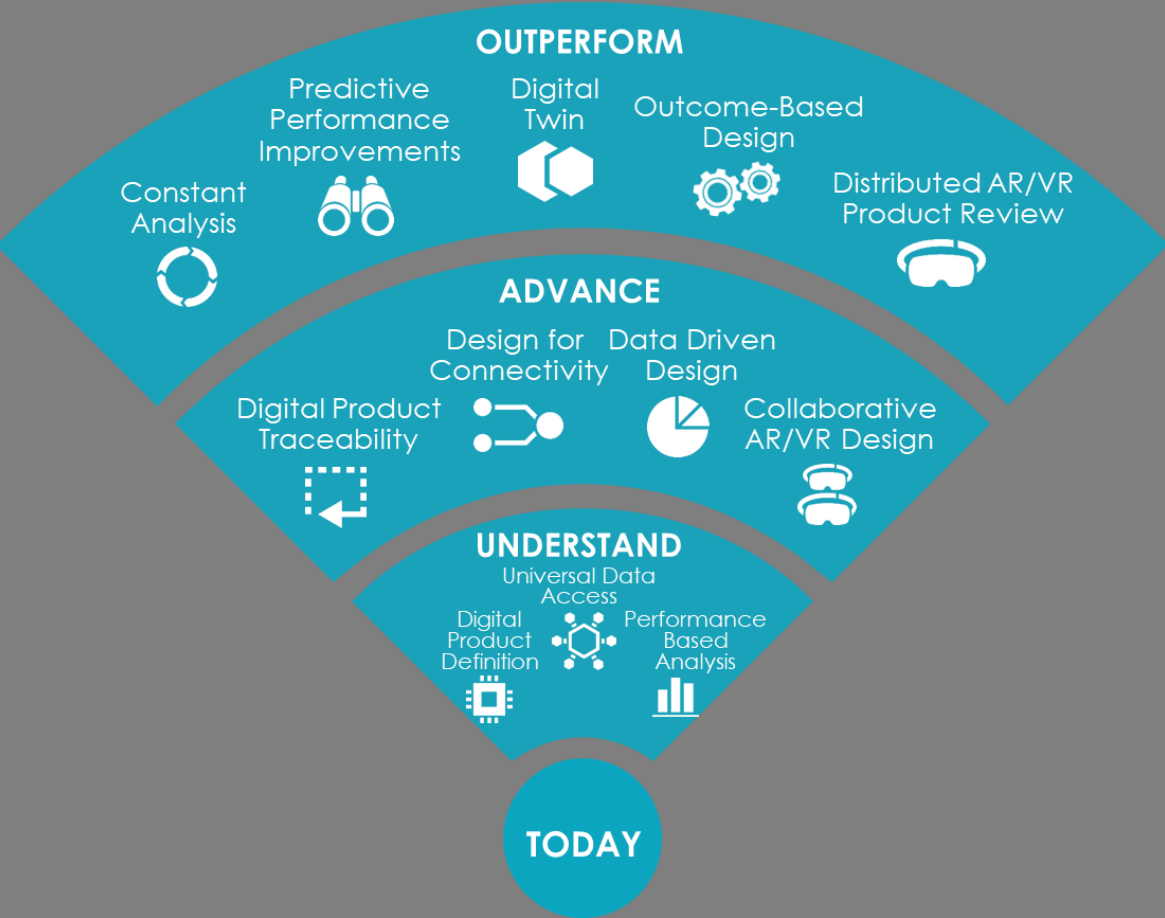
OUTCOMES TO CHALLENGES	KPI		
	NP	Cost	Quality
Digital Product Definition	●	●	●
Universal Data Access	●	●	●
Performance Based Analysis	●	●	●
Digital Product Traceability	●	●	●
Design for Connectivity	●	●	●
Data Driven Design	●	●	●
Collaborative AR Design	●	●	●
Constant Analysis			●
Predictive Perf Improvement	●	●	●
Digital Twin	●		●
Outcome Based Design	●	●	
Distributed AR VR Product Review	●		

PTC'S PLM BEST PRACTICES TO GUIDE YOUR DIGITAL TRANSFORMATION



OUTCOMES TO CHALLENGES			
	NPI	Cost	Quality
METRICS TO CHALLENGES			
	Efficiency 30-60 Days	Good to Sold 30-60 Days	Quality Area Cost
New Product Introduction Rates	<div></div>	<div></div>	<div></div>
Non-Value Added Activities (Rework, Multiple systems, Manual activities)	<div></div>	<div></div>	<div></div>
Reuse (BOM, Parts, Requirements, Test procedures, Software)	<div></div>	<div></div>	<div></div>
NPD/NPI Cycle Time	<div></div>	<div></div>	<div></div>
CM Cycle (ECN, ECO, SVC)	<div></div>	<div></div>	<div></div>
Part/Component Rationalization	<div></div>	<div></div>	<div></div>
Scrap	<div></div>	<div></div>	<div></div>
Direct Material Spend I. NPD/NPI cost targets	<div></div>	<div></div>	<div></div>
First Pass Yield	<div></div>	<div></div>	<div></div>
Compliance Risk	<div></div>	<div></div>	<div></div>
Rework	<div></div>	<div></div>	<div></div>
Warranty Costs	<div></div>	<div></div>	<div></div>

PTC'S PLM BEST PRACTICES TO GUIDE YOUR DIGITAL TRANSFORMATION

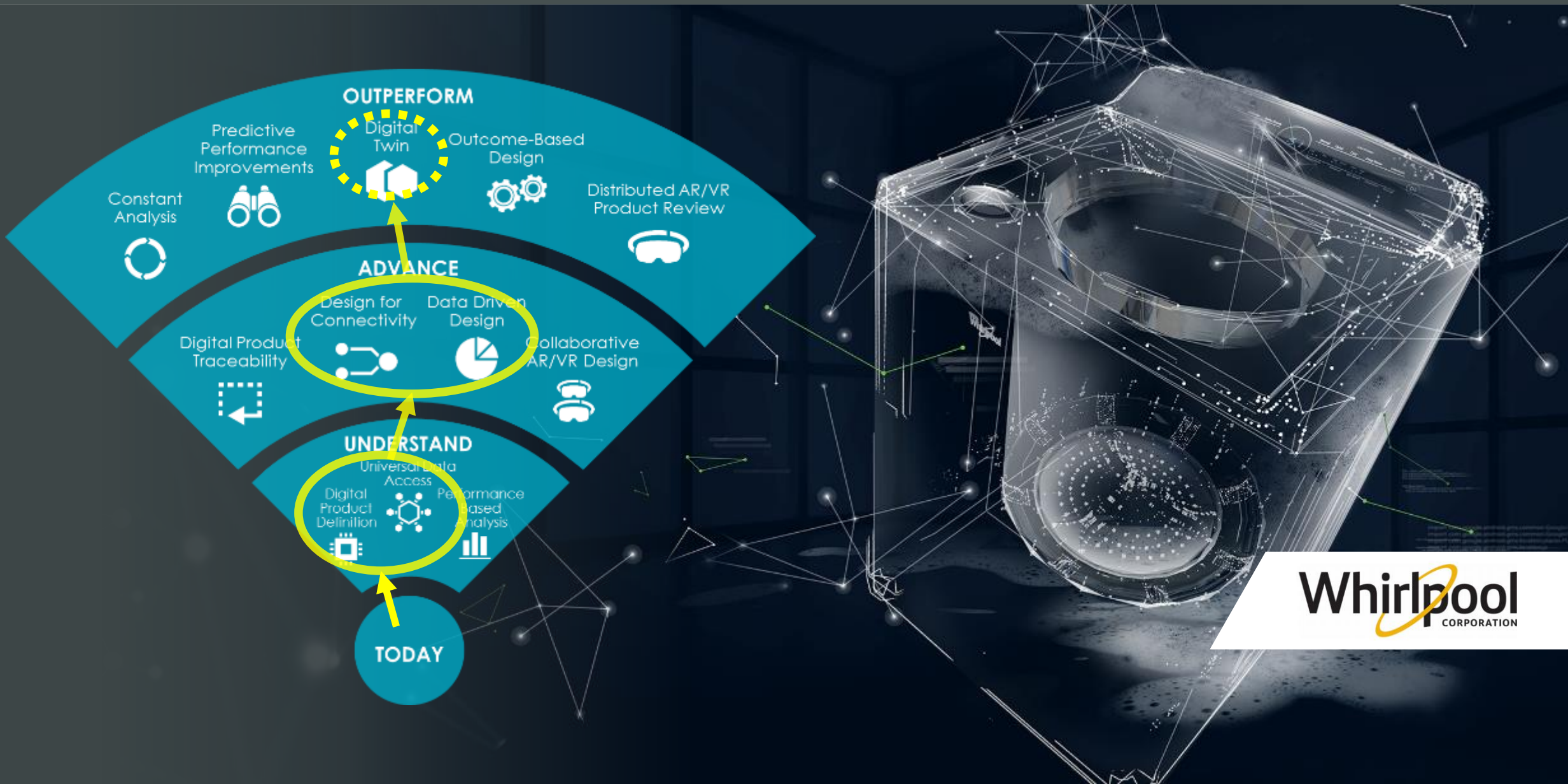


OUTCOMES TO CHALLENGES			
	NPI	Cost	Quality
METRICS TO CHALLENGES			
	Efficiency 3D at Time	Cost of Goods Sold 3D at Time	Quality Avoid Cost
PROCESS TO CHALLENGES			
	NPI	Cost	Quality
Project Management	●	●	●
Change and Configuration Management	●	●	◐
Quality and Reliability Management	◐	●	◐
Requirement and Validation Management	◐	●	◐
Concept Development	●	◐	◐
System Architecture Design	●	◐	◐
Platform Design and Variant Generation	●	●	●
Mechanical, Electrical and Software Development	●	●	●
Design and Manufacturing Outsourcing	●	●	●
Regulation and Material Compliance	◐	◐	●
Component and Supplier Management	●	●	◐
Manufacturing Process Management	●	●	●

For the home of the future, that is focused around providing outstanding products that are smart and connected.

- Every tech innovation is inspired by the impact it will have on the consumer and their loved ones
- It's all about making products **easier, faster, and better** to improve the home experience for every consumer
- **PLM will reduce overall complexity and improve processes/ efficiencies, enabling tech innovation**





WATCH: ENTERPRISE PLM & CONNECTED DEVICES AT WHIRLPOOL CORP.





Core

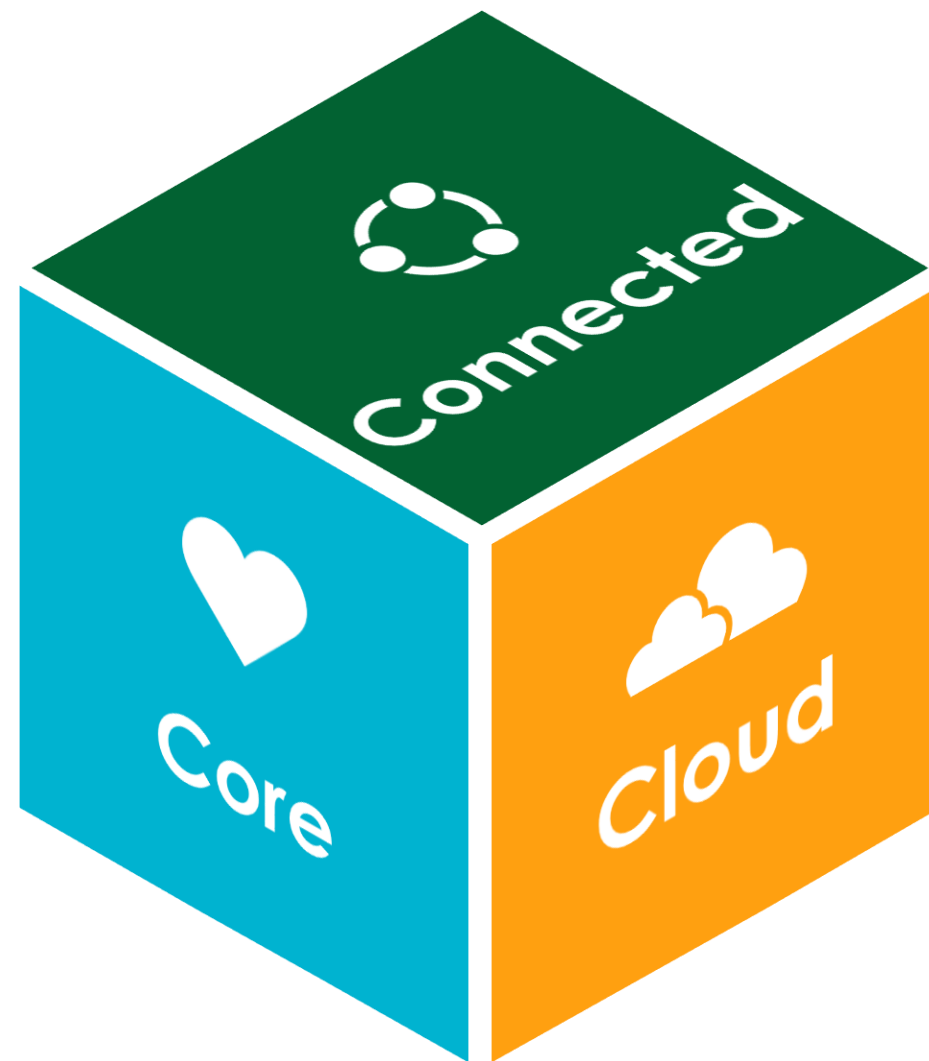
- Continued Strategic Platform
- Strengthened and modernized capabilities and openness
- Enterprise identity management modernization

Cloud

- Ready for cloud operation with PaaS components
- Storage
- Database
- Compute and Operating Systems
- Scalability and elasticity enhancements
- Opportunistic refactoring for micro-services

Connected

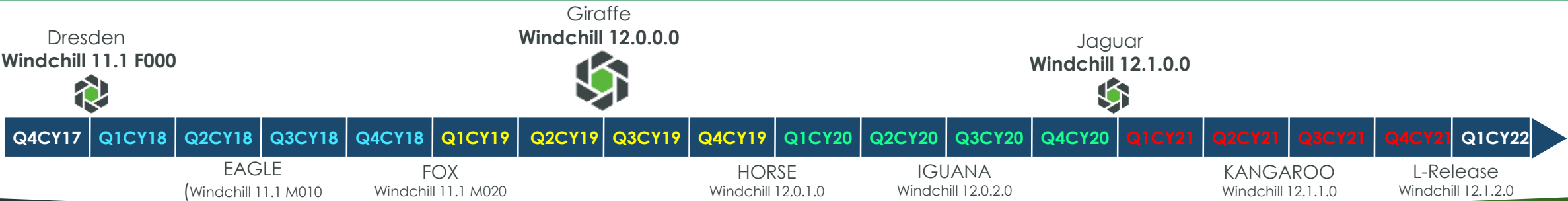
- Navigate View and Contribute
- REST web services
- Data orchestration
- AI / Analytics enablement
- Collaborative AR Design Review
- Performance advisor and support monitoring



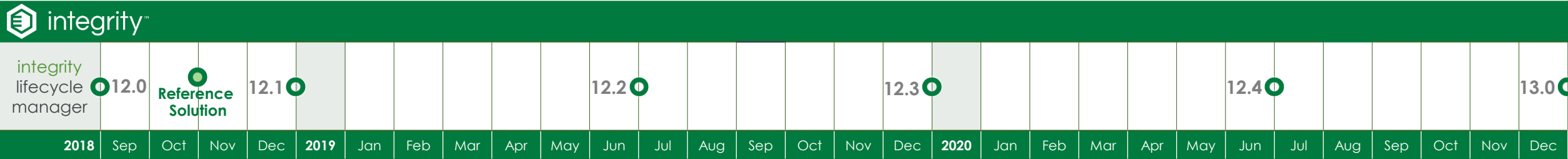
PLM PRODUCT FAMILY - RELEASE SCHEDULE



PLM Product Family									
Windchill	🕒 11.1 F000	11.1 M010 🕒		11.1 M020 🕒			12.0.0.0 🕒		12.0.1.0 🕒
Windchill SIM/SP	🕒 11.1 F000	11.1 M010 🕒		11.1 M020 🕒			12.0.0.0 🕒		12.0.1.0 🕒
Creo View		5.0 🕒		5.1 🕒			6.0 🕒		6.1 🕒
ThingWorx Navigate	View 1.6 🕒	View 1.7 🕒		🕒 View 1.8			Navigate 2.0 🕒		Navigate 2.1 🕒
PTC Risk & Reliability							11.1 M010 🕒		
Windchill Performance Advisor	3.0 🕒 Continuous delivery 🕒 4.0 5.0 🕒 Continuous delivery 🕒 6.0								
integrity modeler		8.5a 🕒		9.0 🕒		9.1 🕒	9.2 🕒		9.3 🕒
Integrity lifecycle manager			12.0 🕒	12.1 🕒			12.2 🕒		12.3 🕒
2018	Q1	Q2	Q3	Q4	2019	Q1	Q2	Q3	Q4



integrity™ lifecycle manager - CORE PRODUCT ROADMAP



integrity lifecycle manager Releases	Themes
integrity lifecycle manager 12.0 – Aug 2018	Test Case & Result Versioning & Application Server Replacement with Tomcat 8.5
integrity lifecycle manager 12.1 – Dec 2018	ThingWorx Orchestration Adaptor, OSLC Server & Usability
integrity lifecycle manager 12.2 – June 2019	OSLC Client, Perspectives, Reference Links, Source & Usability
integrity lifecycle manager 12.3 – Dec 2019	Source Code Management, Reporting, Administration & Groups
integrity lifecycle manager 12.4 – June 2020	ThingWorx Orchestration for Source and 150% R&V
integrity lifecycle manager 13.0 – Dec 2020	Rich Client, Taxonomy Library, Active Reuse & Staging Rollback

integrity™ modeler - PRODUCT ROADMAP



integrity
modeler

8.5a

9.0

9.1

9.2

9.3

2018

Apr

May

Jun

Jul

Aug

Sep

Oct

Nov

Dec

2019

Jan

Feb

Mar

Apr

May

Jun

Jul

Aug

Sep

Oct

Nov

Dec

integrity modeler Releases

Themes

integrity modeler 8.5 – Jan 2018

OMG UAF, OSLC Suspecting, Variant Selector Additions & Fresh-look Diagrams

integrity modeler 9.0 – Sept 2018

Live Repository Technology Upgrade – Microsoft SQL Server & Co-Simulation

integrity modeler 9.1 – Jan 2019

OSLC for Integrity Lifecycle Manager, Performance & Simplification

integrity modeler 9.2 – June 2019

Windows UI Update, OSLC for Windchill

integrity modeler 9.3 – Dec 2019

Diagramming Productivity & SysML Focus

- **Platform**

- Applet removal & web GL visualization
- Licensing Compliance
- Windows Server 2016
- ESI Support for SAP S4 HANA
- DTI Support for Office 265 ProPlus

- **Usability**

- #1 Customer Enhancement request :
Cascading attributes
- Rich Text in Change Mngt

- **Core**

- CAD Data Management
- Usability improvements in PSB
- IP Protection
- Federation by replication (Package)

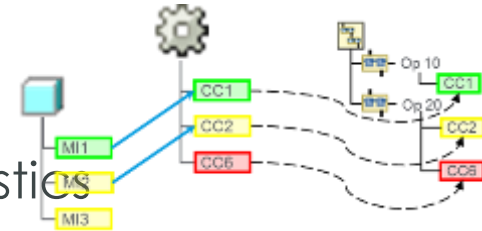
- **Multi-CAD AR Publishing**

- **Medical Device Configuration**

- Task table in CAPA, CEM, NC
- Support for eMDR HL7 Release 2

- **Windchill MPMLink**

- Digital Thread with
Control Characteristics



- **Project Execution**

- Deliverable based scheduling /
execution

- **Product Family Management**

- Enable Product Family Definition for
the Configurable Platform

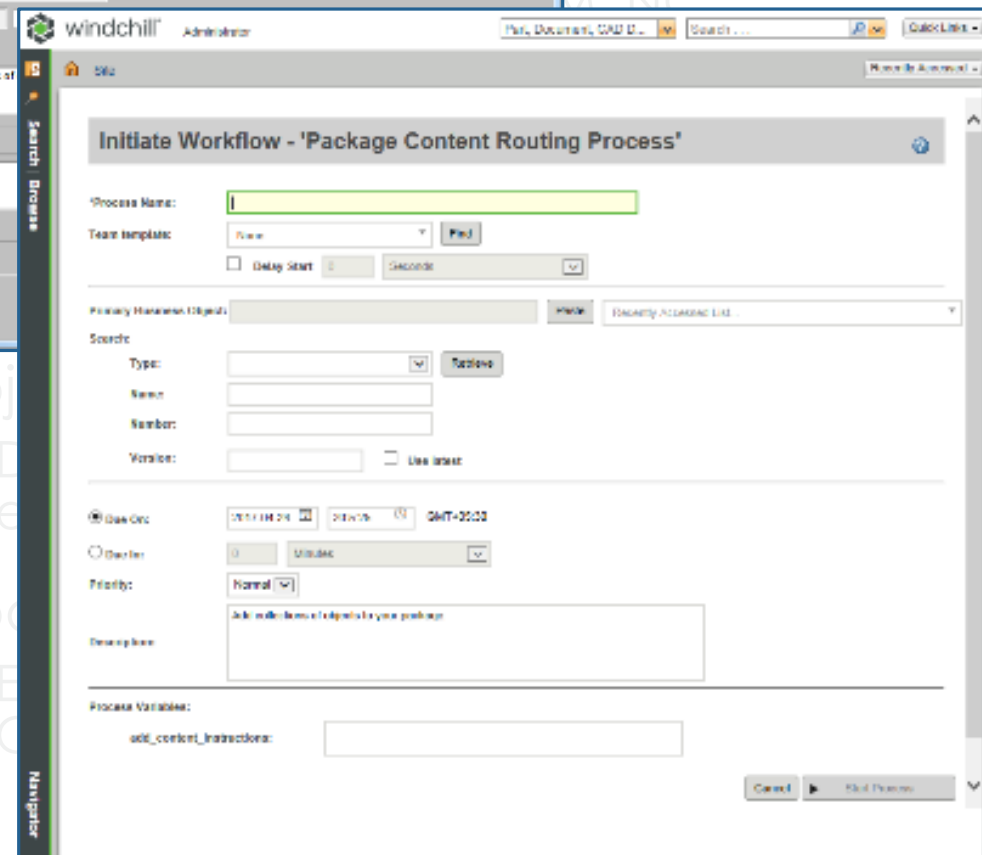
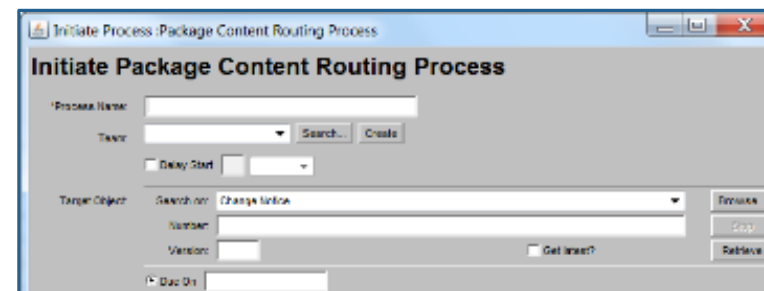
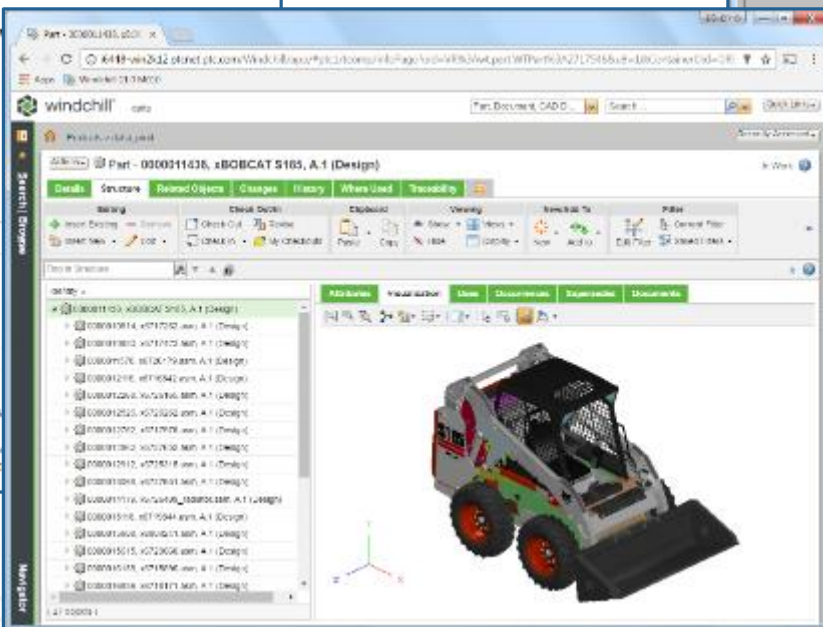
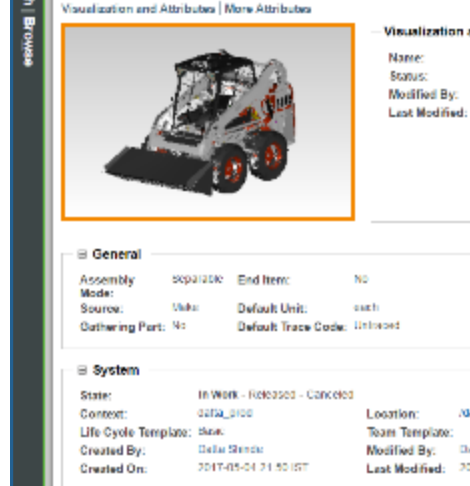
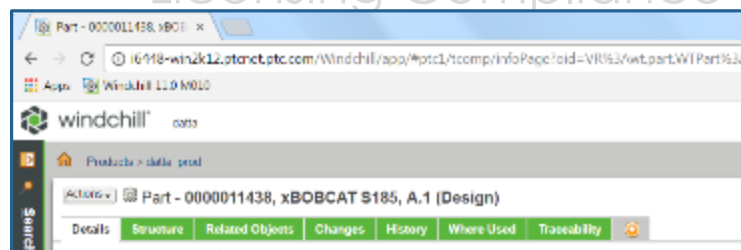
WINDCHILL 11.1 OVERVIEW



- Platform

- Applet removal & web GL visualization

- Licensing Compliance



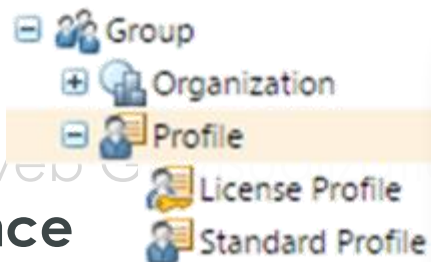
- IP Protection
- Federation

WINDCHILL 11.1 OVERVIEW



- Platform

- Applet removal & web client
- Licensing Compliance

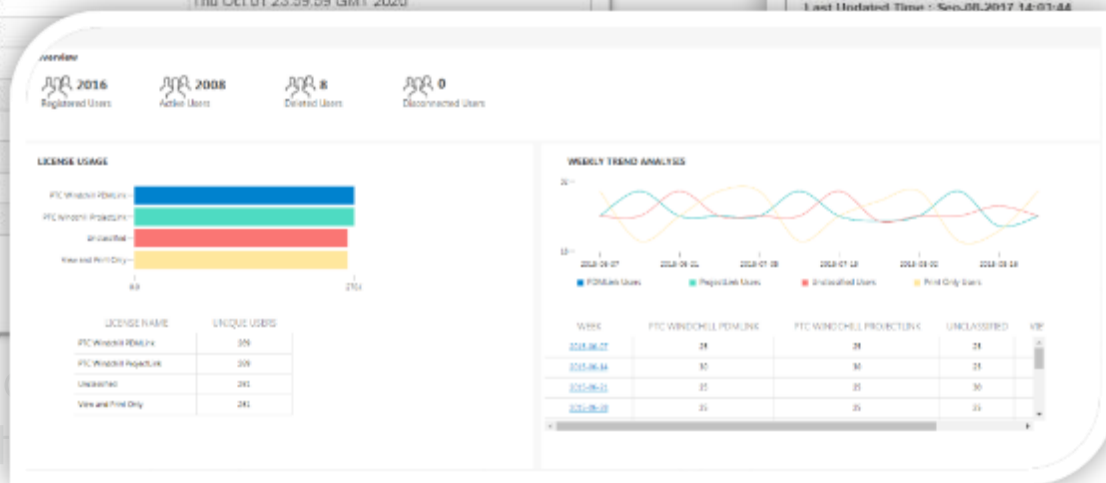


License Management

Settings Feature Information

Feature Information

License Feature	Count	Available Count	Expiry Date
ptc_navigate_view_concurrent	100	100	Thu Oct 01 23:59:59 GMT 2020
ptc_mfg_named	100	100	Thu Oct 01 23:59:59 GMT 2020
ptc_ip_protection_named	100	100	Thu Oct 01 23:59:59 GMT 2020
ptc_mech_design_2_named	100	100	Thu Oct 01 23:59:59 GMT 2020
ptc_navigate_contribute_named	100	100	
ptc_navigate_author_named	100	100	
ptc_mech_design_1_named	100	100	
ptc_navigate_contribute_conc	100	100	
ptc_mplink_license_named	100	100	
ptc_navigate_view	100	100	
ptc_design_ctrl_named	100	100	



License Management

Settings Feature Information

Import Windchill License

☐ Retrieve license online

☐ Import license from a file

PTC Username*

PTC Password*

Activation ID/Entitlement ID*

ecb9-6be3-a1f6-46f7-9d6c-b500-3f23-4216

Retry Attempts*

5

Retry Interval (In minutes)*

5

Save Settings Get License

Last Updated Time : Sep.08.2017 14:03:44

License Management

Settings Feature Information

Import Windchill License

☐ Retrieve license online

☒ Import license from a file

Choose this option to manually activate your license key through ptc.com License Management tool

1. Specify Activation ID

Activation ID*

93cd-476a-6006-46b0-ad61-6b97-4f24-0452

Save Settings

2. Generate license activation request

Download license request :

Generate Capability Request

3. Import activated license

Select Capability Response : trainresponse(2).bin

Browse

Process Capability Response

Last Updated Time : Sep.08.2017 14:03:44

- Platform

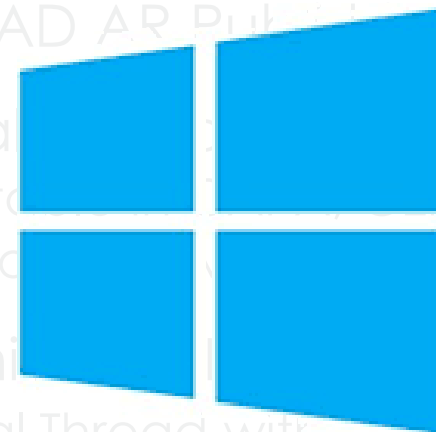
- Applet removal & web GL visualization
- Licensing Compliance
- **Windows Server 2016**
- **ESI Support for SAP S4 HANA**
- **DTI Support for Office 265 ProPlus**

- #1 Customer Enhancement request : Cascading Attributes
- Rich Text in Change Mngt

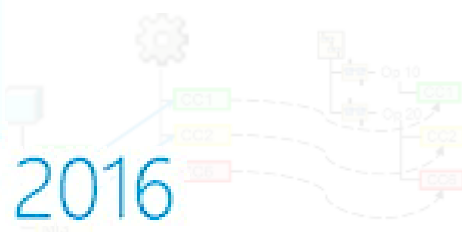


Office 365 ProPlus

- # Office 365 ProPlus



Windows Server 2016



WINDCHILL 11.1 OVERVIEW

CA Group

Continent: North America

Country: U S A

State: Minnesota

City: Blaine

[illegible]

- **Usability**
 - #1 Customer Enhancement request :
Cascading attributes

- Core:
 - CAD Management
 - Improvements in PSB
 - Production
 - Communication (Po



Easily define and manage type specific Cascading Attributes in Type Manager

WINDCHILL 11.1 OVERVIEW



• **Process**

Use additional formatting such as bold, italic, underline and bulleted/numbered lists

Change Request - 00001

Details | Process | History

Attributes | More Attributes | Attachments | Annotations | Affected Objects | Affected End Items | Associated Process Objects | Associated Reference Objects

Attributes

Name: Update Engine Design
Category: Product Improvement
Change Admin I: Administrators
Description: This change will introduce the new quantum flux injection stabilization. The goals of this change are as follows:

1. Add next gen quantum flux injection system
2. Should **reduce** system cost by 12%
3. Increase efficiency across all cycles by 8%
4. Simplify service and lower warranty costs (projected 13.3% reduction)

Proposed Solution: Engine WCDS0000000044 currently in development has been running in two mule trials and 4 test stands. The engines have all been run to test marks. Engines are all development units made with early run pre-production soft tooling and assembled by the engine lab technicians. All engine units showed valve train life and thermal management issues as detailed in Lab Report 123.XYZ by Bob Barker. Specifically the valve

Support Description (and Proposal on Change Request) fields of any length

New Change Request

Set Attributes | Select Affected End Items | Select Affected Objects | Set Attachments | Select Associations

*Type: Change Request

Attributes

Number: (Generated)
*Name: Update Engine Design
Category: Product Improvement
Request Priority: High
Need Date: 2017-09-23
Description:

This change will introduce the new quantum flux injection stabilization. The goals of this change are as follows:

1. Add next gen quantum flux injection system
2. Should **reduce** system cost by 12%
3. Increase efficiency across all cycles by 8%
4. Simplify service and lower warranty costs (projected 13.3% reduction)

Proposed Solution:

valvetrain updates for the Engine WCDS0000000044 design project. Please make sure this work is completed before the order phase is started for Evolution II of the project which is June 10, 2011.

Proposal:
The proposed changes are as follows:
Revise Head Assembly, WCDS 0000000729 from A to B
Revise Valve Exhaust 2, WCDS0000000343 from A to B

* Indicates required fields.

Back Next Finish Cancel

• Usability

- #1 Customer Enhancement request : Cascading attributes
- **Rich Text in Change Mngt**

• Core

- CAD Data Management
- Usability improvements in PSB
- IP Protection
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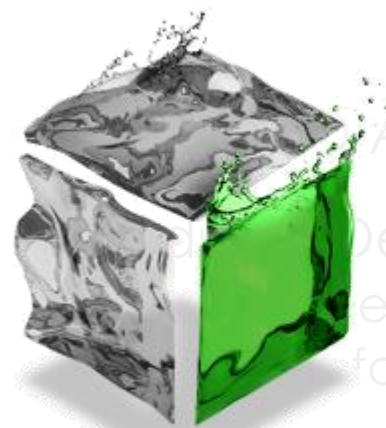
WINDCHILL 11.1 OVERVIEW

- NX 12
- SolidWorks 2018
- CEDM 20.1 M010 and 20.0 M040
- CEDD 20.1 M010 and 20.0 M040
- CATIA V5-6R2018
- Creo Illustrate 5.0
- IsoDraw 7.3 M090
- MathCAD 15.0 M050
- Zuken CR-5000 18/19/20
- Altium 18

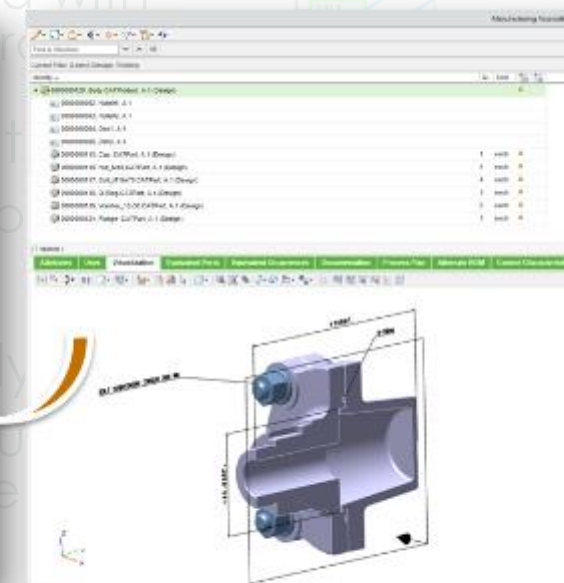
- **Core**

- **CAD Data Management**

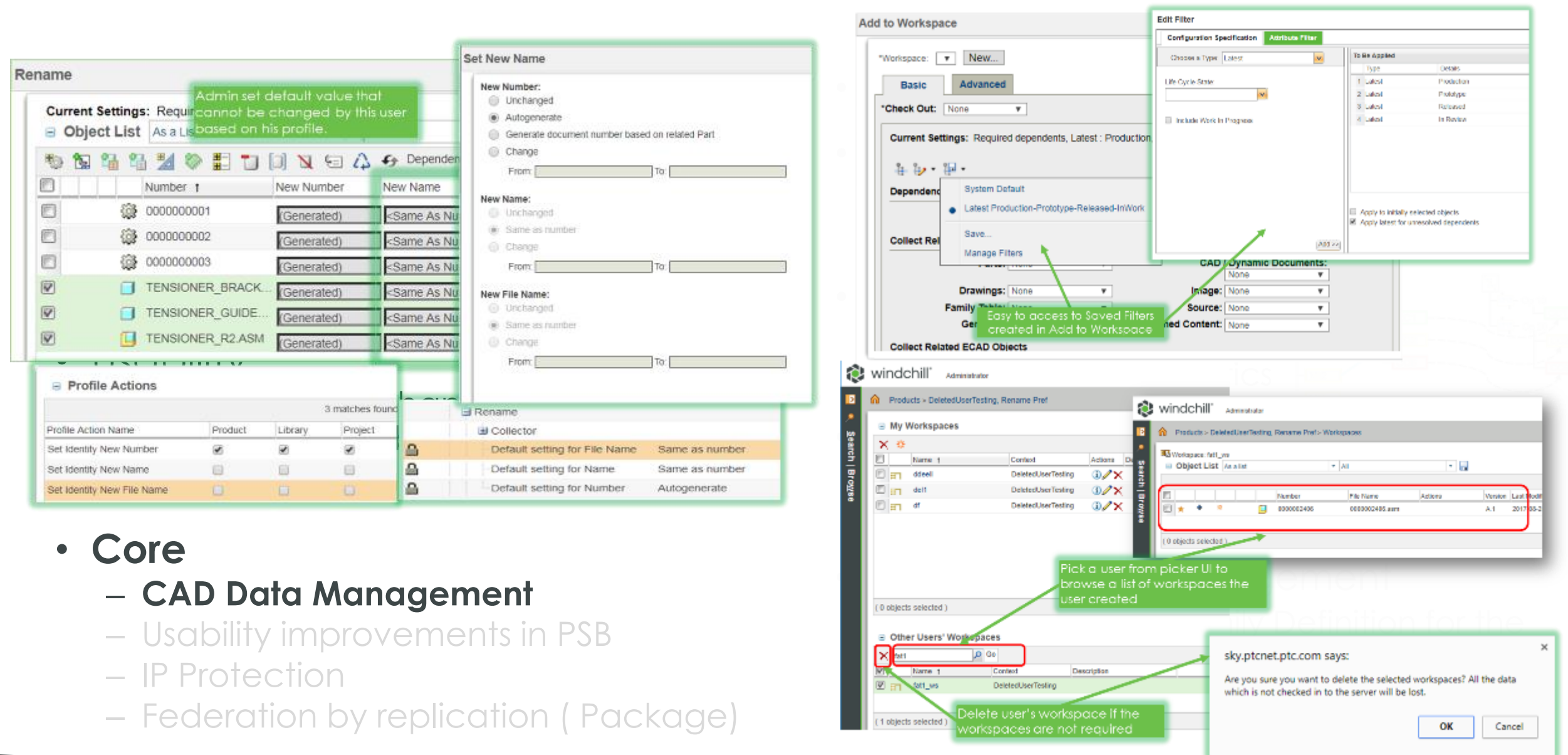
- Usability improvements in PSB
 - IP Protection
 - Federation by replication (Package)



possibilities 5.0



WINDCHILL 11.1 OVERVIEW



The screenshot displays several Windchill 11.1 administrative interfaces. On the left, the 'Rename' dialog shows 'Current Settings' with a note: 'Admin set default value that cannot be changed by this user based on his profile.' Below it, the 'Profile Actions' table lists actions for 'Set Identity New Number', 'Set Identity New Name', and 'Set Identity New File Name'. In the center, the 'Set New Name' dialog shows options for 'New Number' (Unchanged, Autogenerate, etc.) and 'New Name' (Unchanged, Same as number, etc.). On the right, the 'Add to Workspace' dialog shows 'Basic' and 'Advanced' tabs, with a note: 'Easy to access to Saved Filters created in Add to Workspace'. Below it, the 'Edit Filter' dialog shows 'Configuration Specification' and 'Attribute Filter' tabs. At the bottom, the 'My Workspaces' table lists workspaces, with a note: 'Delete user's workspace if the workspaces are not required'. A dialog box from 'sky.ptcnet.ptc.com' asks: 'Are you sure you want to delete the selected workspaces? All the data which is not checked in to the server will be lost.'

Rename

Current Settings: Required dependencies, Latest: Production

Object List

Number	New Number	New Name
000000001	(Generated)	<Same As Nu
000000002	(Generated)	<Same As Nu
000000003	(Generated)	<Same As Nu
TENSIONER_BRACK...	(Generated)	<Same As Nu
TENSIONER_GUIDE...	(Generated)	<Same As Nu
TENSIONER_R2.ASM	(Generated)	<Same As Nu

Profile Actions

Profile Action Name	Product	Library	Project
Set Identity New Number	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Set Identity New Name	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Set Identity New File Name	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Set New Name

New Number:

Unchanged

Autogenerate

Generate document number based on related Part

Change

From: To:

New Name:

Unchanged

Same as number

Change

From: To:

New File Name:

Unchanged

Same as number

Change

From: To:

Add to Workspace

Workspace: New...

Basic

Advanced

*Check Out: None

Current Settings: Required dependencies, Latest: Production

Dependent

System Default

Latest Production-Prototype-Released-InWork

Collect Related

Save...

Manage Filters

Drawings: None

Family

Ger

Easy to access to Saved Filters created in Add to Workspace

Collect Related ECAD Objects

Edit Filter

Configuration Specification

Attribute Filter

Choose a Type: Latest

Life Cycle State

Include Work In Progress

To Be Applied

Type	Details
1: Latest	Production
2: Latest	Prototype
3: Latest	Released
4: Latest	In Review

Apply to initially selected objects

Apply latest for unresolved dependencies

CAD Dynamic Documents:

None

Image: None

Source: None

Linked Content: None

My Workspaces

Name	Content	Actions
dsteel	DeletedUserTesting	
dell	DeletedUserTesting	
df	DeletedUserTesting	

Pick a user from picker UI to browse a list of workspaces the user created

Other Users' Workspaces

Name	Content	Description
df	DeletedUserTesting	

Delete user's workspace if the workspaces are not required

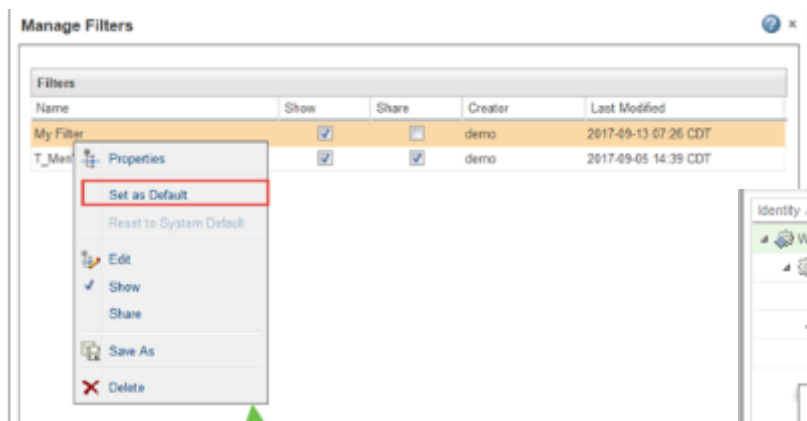
sky.ptcnet.ptc.com says:

Are you sure you want to delete the selected workspaces? All the data which is not checked in to the server will be lost.

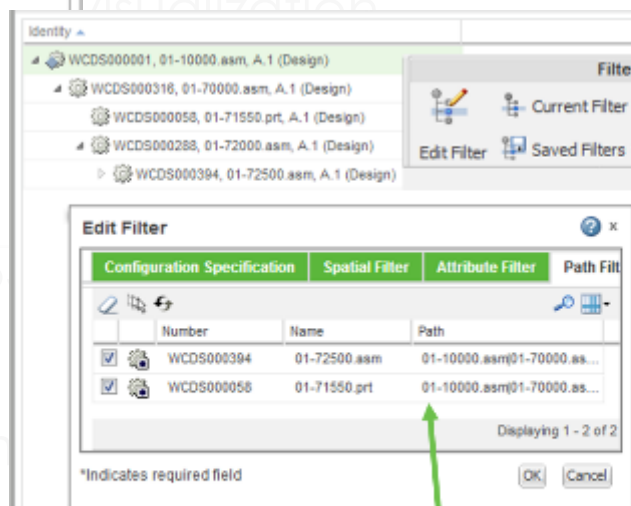
OK

Cancel

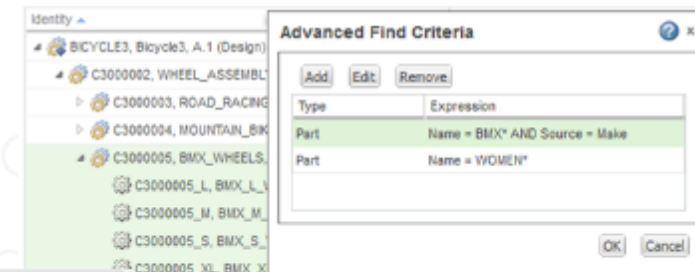
WINDCHILL 11.1 OVERVIEW



User can select a Saved Filter as their default for Part clients



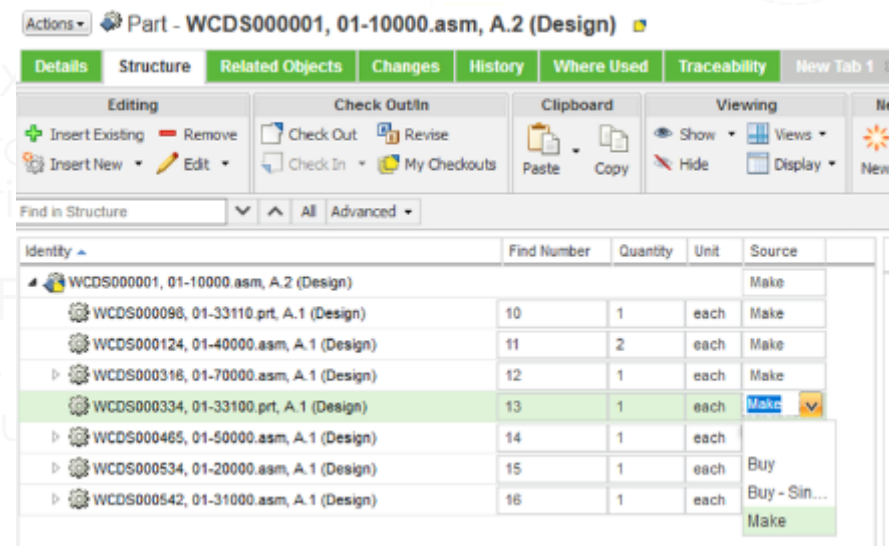
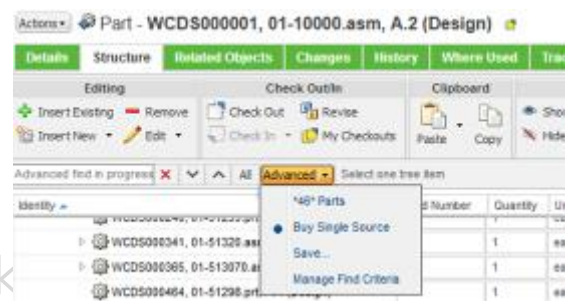
Speed up working with the BOM by only displaying Parts of interest



Create powerful searches to easily find Parts in your BOM

- Core

- CAD Data Management
- **Usability improvements in PSB**
- IP Protection
- Federation by replication (Pack



Find Number	Quantity	Unit	Source
WCD000001, 01-10000.asm, A.2 (Design)			Make
WCD000098, 01-33110.prt, A.1 (Design)	10	1	each
WCD000124, 01-40000.asm, A.1 (Design)	11	2	each
WCD000316, 01-70000.asm, A.1 (Design)	12	1	each
WCD000334, 01-33110.prt, A.1 (Design)	13	1	each
WCD000465, 01-50000.asm, A.1 (Design)	14	1	each
WCD000534, 01-20000.asm, A.1 (Design)	15	1	each
WCD000542, 01-31000.asm, A.1 (Design)	16	1	each

WINDCHILL 11.1 OVERVIEW

- Platform

- Applet removal & web GL visualization
- Licensing Compliance
- Windows Server 2016
- ESI Support for SAP S4 HANA
- DTI Support for Office 265 ProPlus

- Usability

- #1 Customer Enhancement
- Cascading attribute
- Rich Text in Change

- Core

- CAD Data Management
- Usability improvements
- **IP Protection**
- Federation by replication

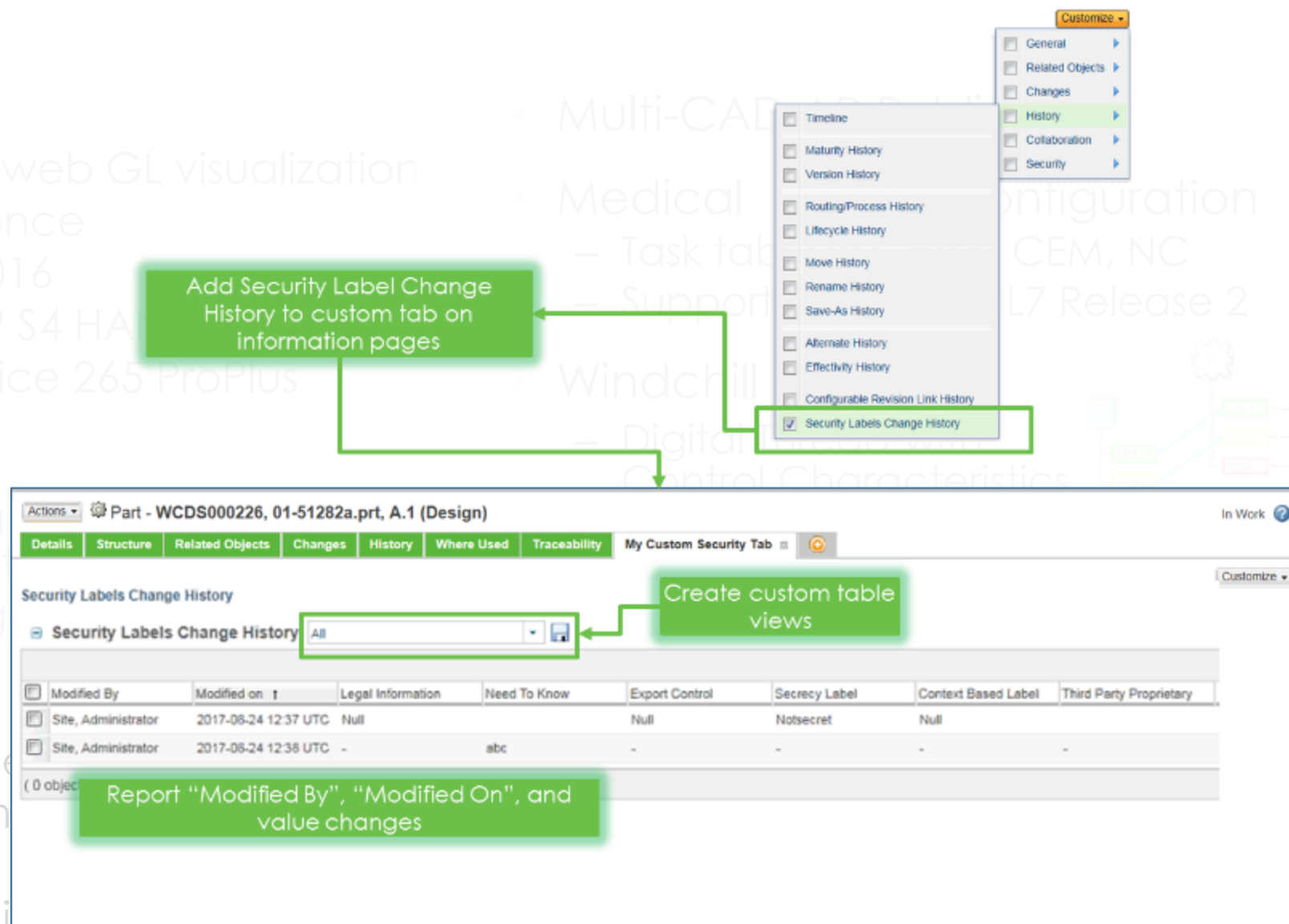
- Multi-CAD

- Medical

- Task taking
- Support

- Windchill

- Digital Thread
- Control Characteristics



The screenshot shows the Windchill interface for a part named 'Part - WCDS000226, 01-51282a.prt, A.1 (Design)'. The 'My Custom Security Tab' is active, displaying the 'Security Labels Change History' section. A green box highlights the 'Security Labels Change History' option in the 'Customize' menu, with an arrow pointing to the 'Add Security Label Change History to custom tab on information pages' text. Another green box highlights the 'Create custom table views' text, with an arrow pointing to the 'All' dropdown menu. A third green box highlights the 'Report "Modified By", "Modified On", and value changes' text, with an arrow pointing to the table data.

Customize

- General
- Related Objects
- Changes
- History
- Collaboration
- Security

- Timeline
- Maturity History
- Version History
- Routing/Process History
- Lifecycle History
- Move History
- Rename History
- Save-As History
- Alternate History
- Effectivity History
- Configurable Revision Link History
- ☒ Security Labels Change History

Part - WCDS000226, 01-51282a.prt, A.1 (Design)

Details Structure Related Objects Changes History Where Used Traceability My Custom Security Tab

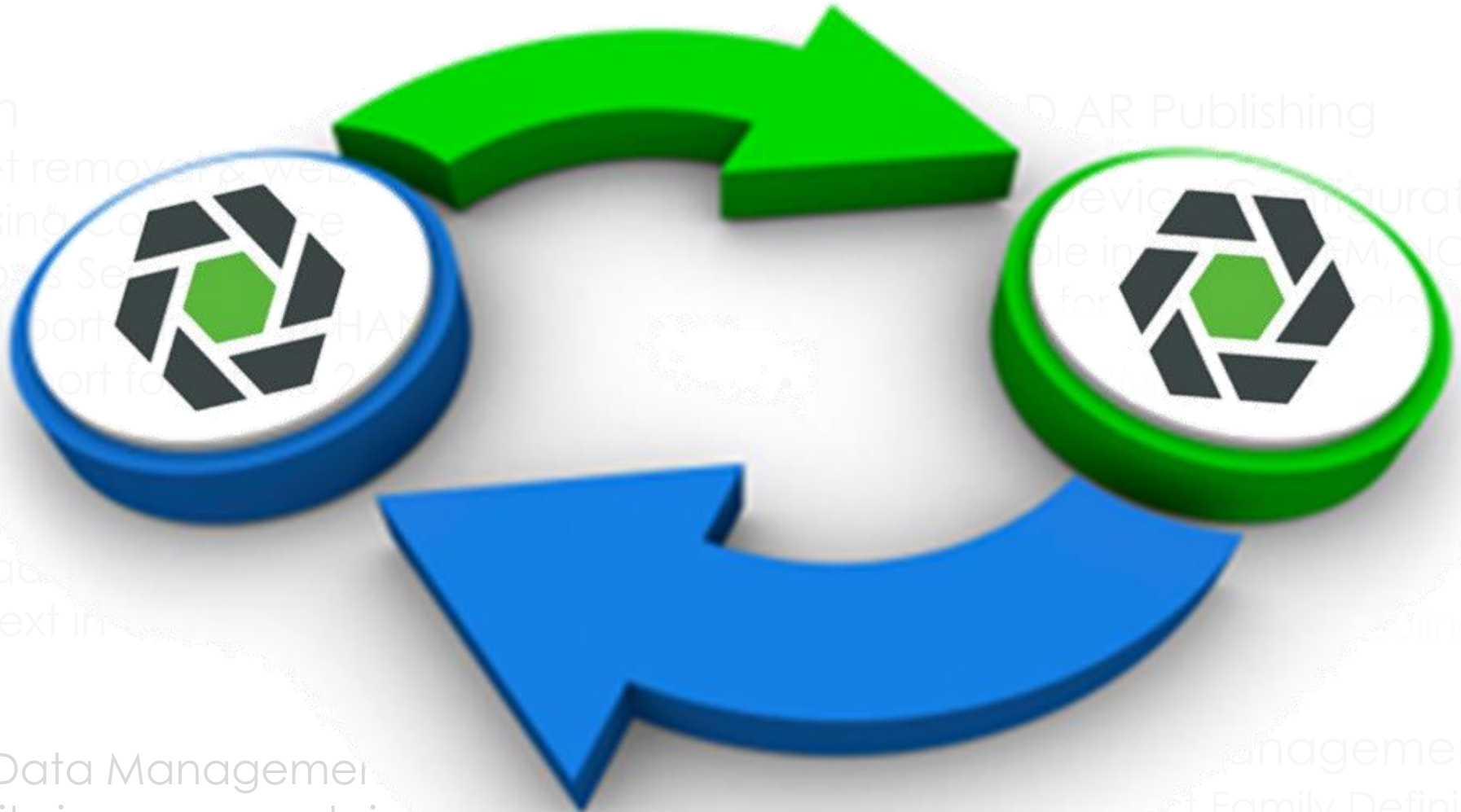
Security Labels Change History

Security Labels Change History All

Modified By	Modified on	Legal Information	Need To Know	Export Control	Secrecy Label	Context Based Label	Third Party Proprietary
Site, Administrator	2017-08-24 12:37 UTC	Null		Null	Notsecret	Null	
Site, Administrator	2017-08-24 12:38 UTC	-	abc	-	-	-	-

(0 objects)

WINDCHILL 11.1 OVERVIEW

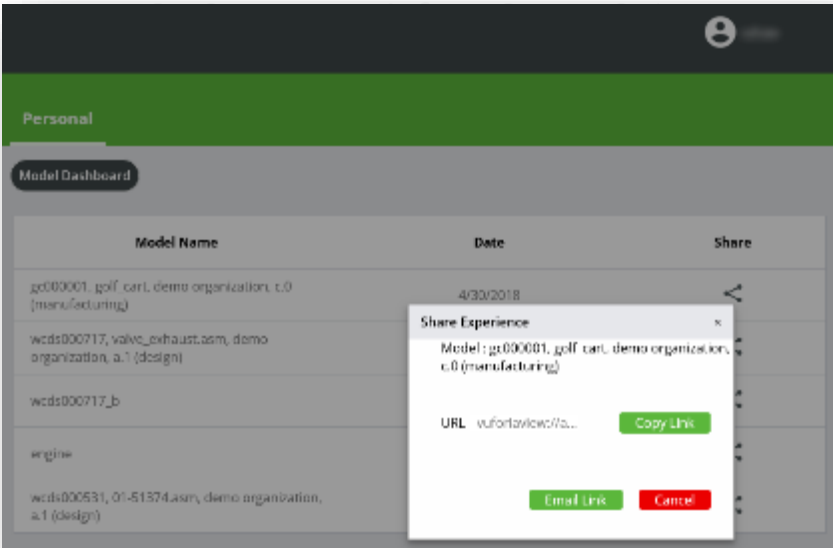
- 
- Platform
 - Applet removal & web
 - Licensing Coexistence
 - Windows Security
 - ESI Support for HAM
 - DTI Support for 2
 - Usability
 - #1 Customer Satisfaction
 - Cascade
 - Rich Text in
 - Core
 - CAD Data Management
 - Usability improvements in
 - IP Protection
 - **Federation by replication (Package)**

WINDCHILL 11.1 OVERVIEW

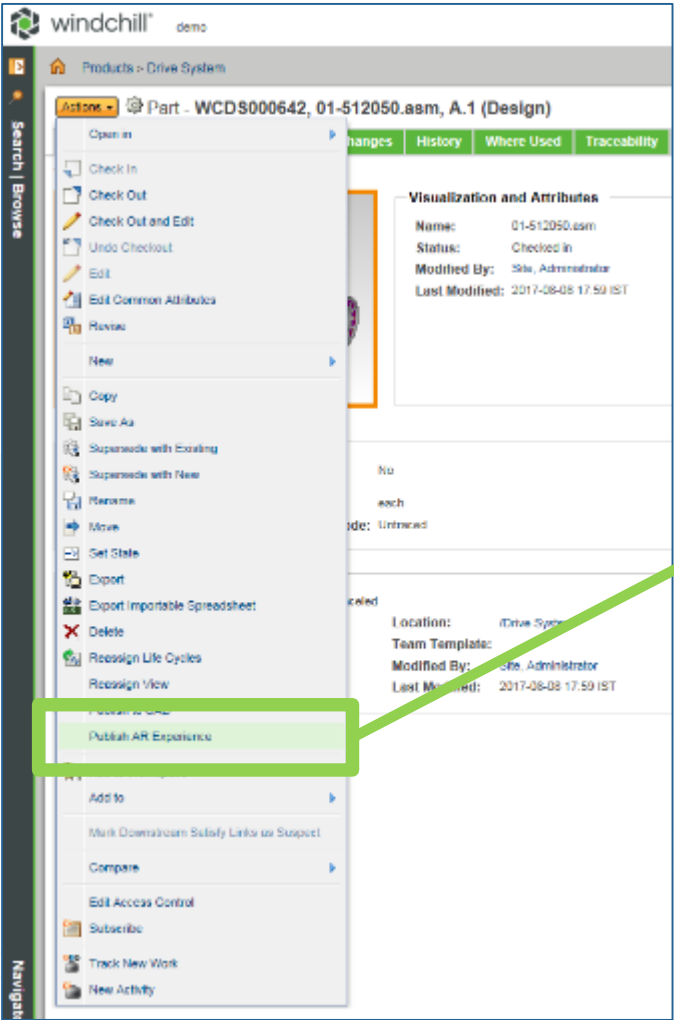


- Platform

- Apple Remote Desktop (AR) visual
- Licensing
- Windows Server 2016



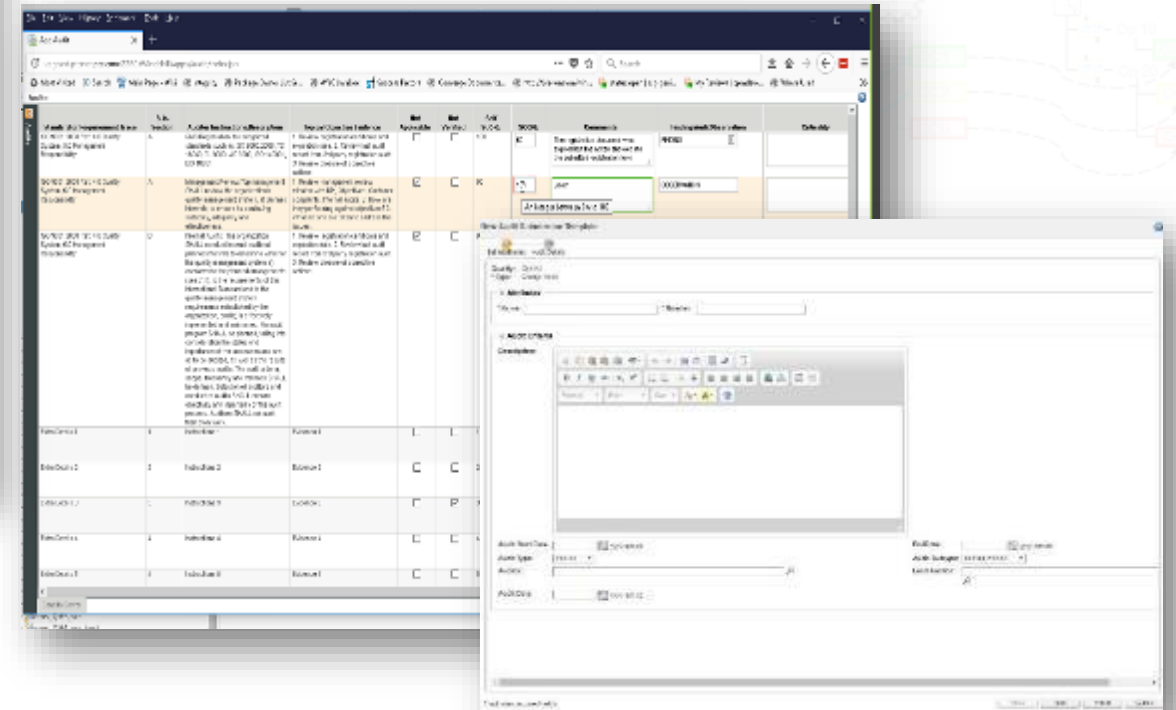
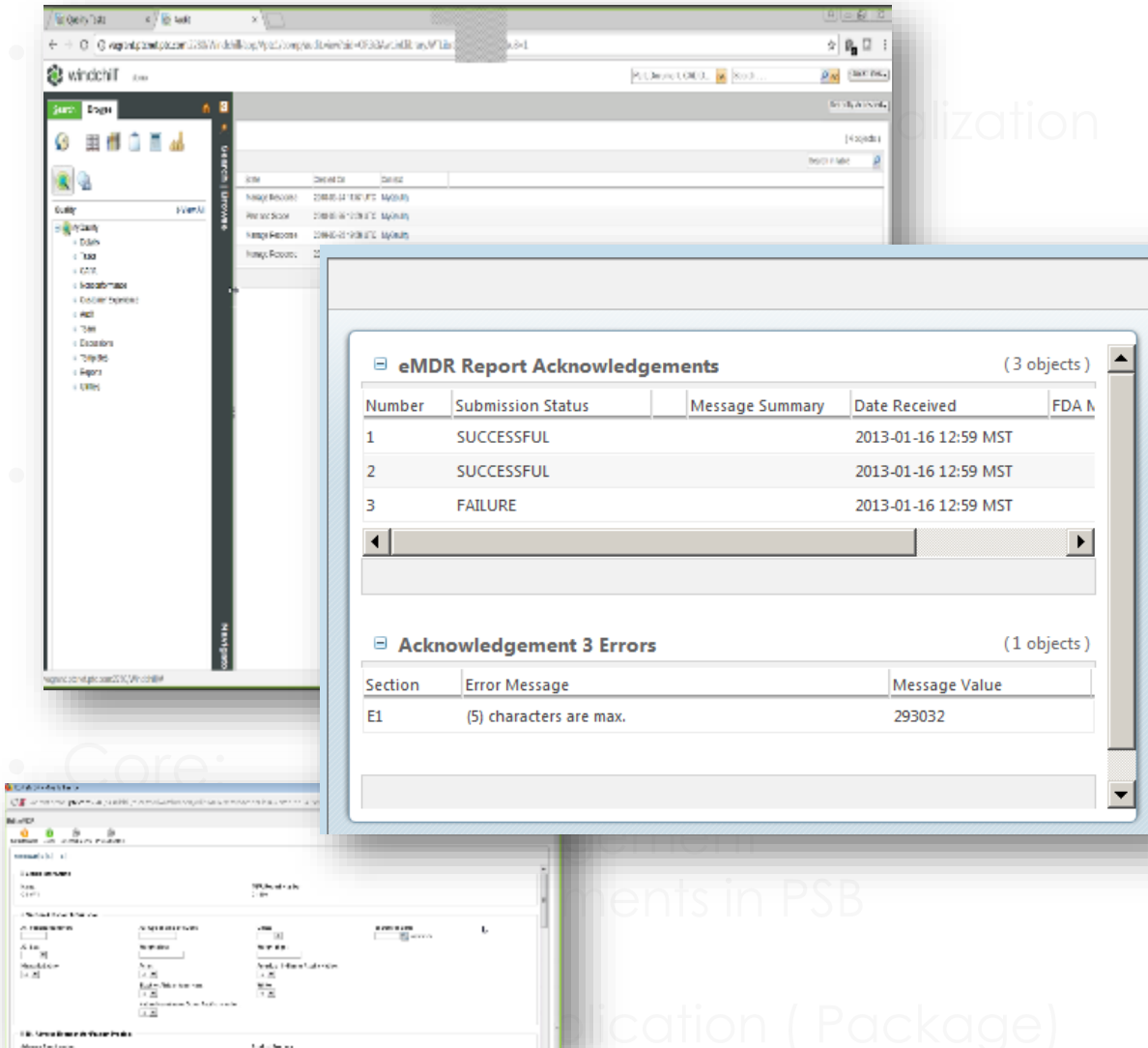
- Multi-CAD AR Publishing



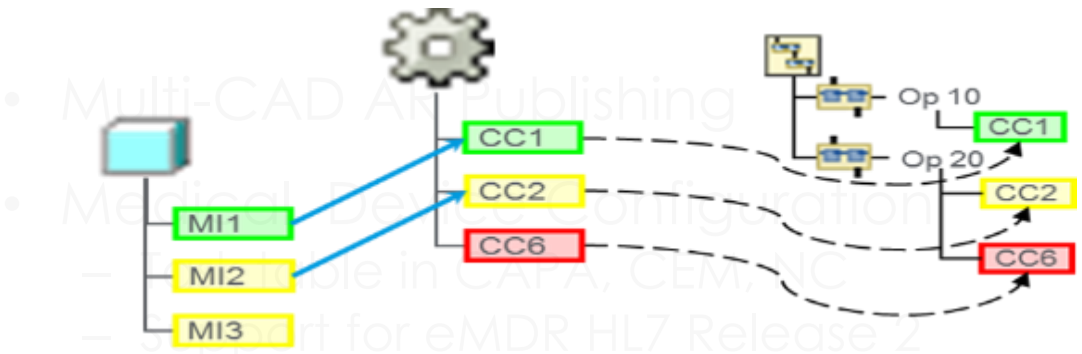
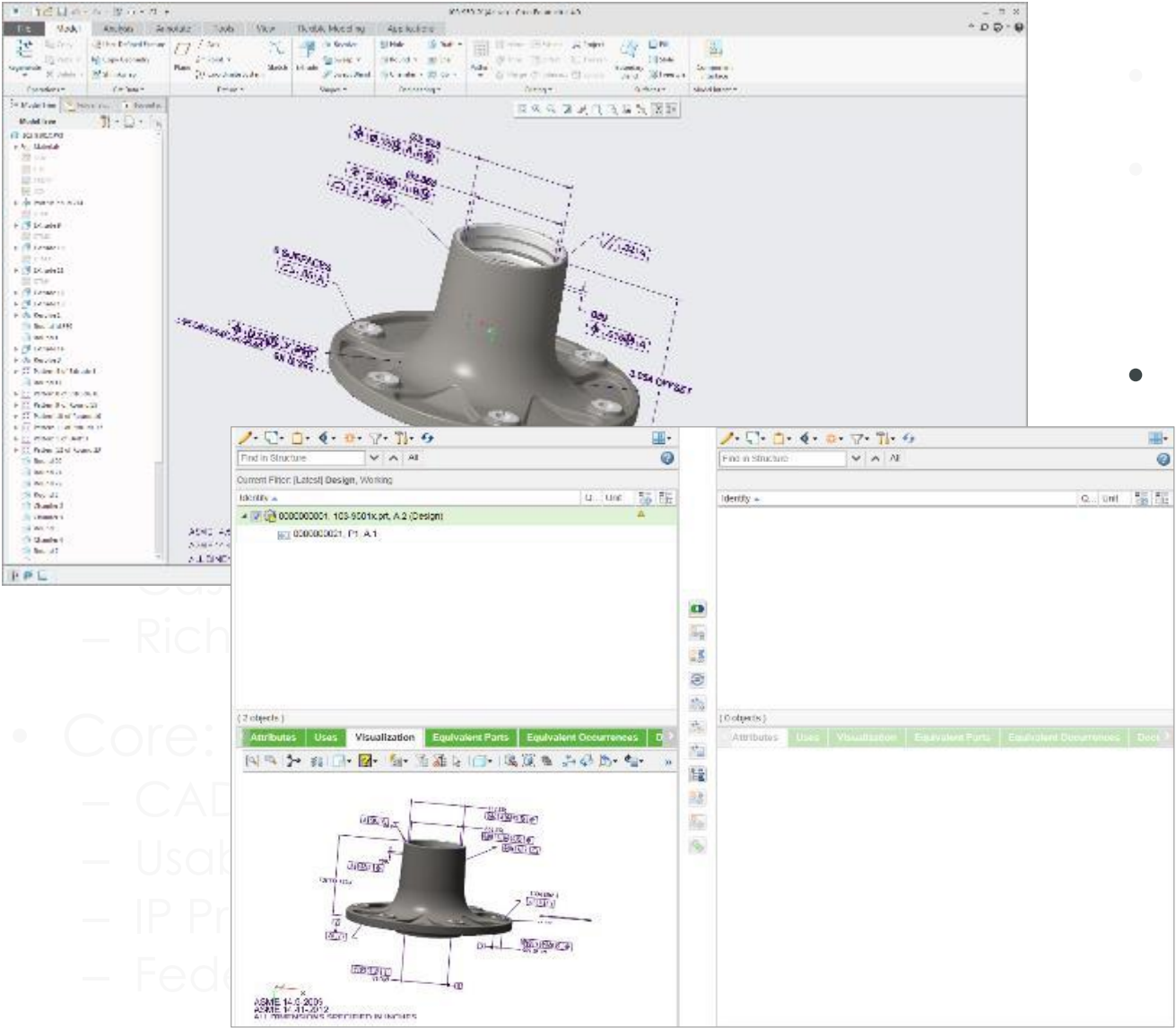
WINDCHILL 11.1 OVERVIEW



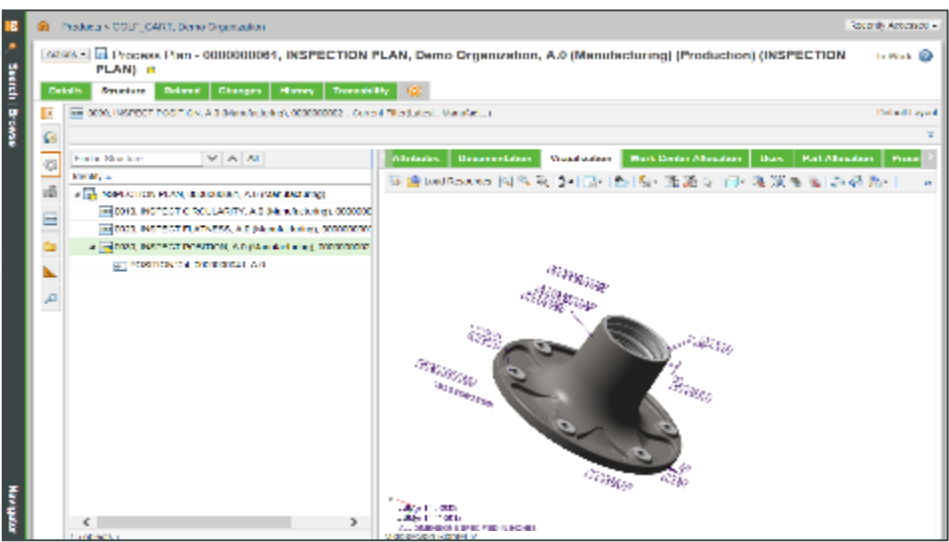
- Multi-CAD AR Publishing
- **Medical Device Configuration**
 - Task table in CAPA, CEM, NC
 - Support for eMDR HL7 Release 2
 - Audit Module



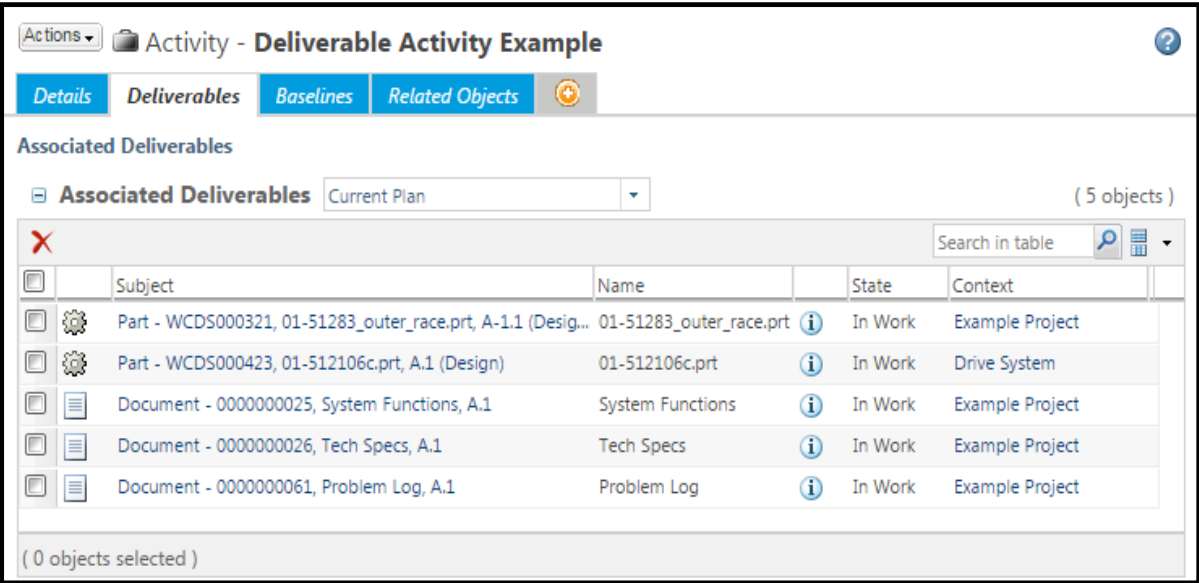
WINDCHILL 11.1 OVERVIEW



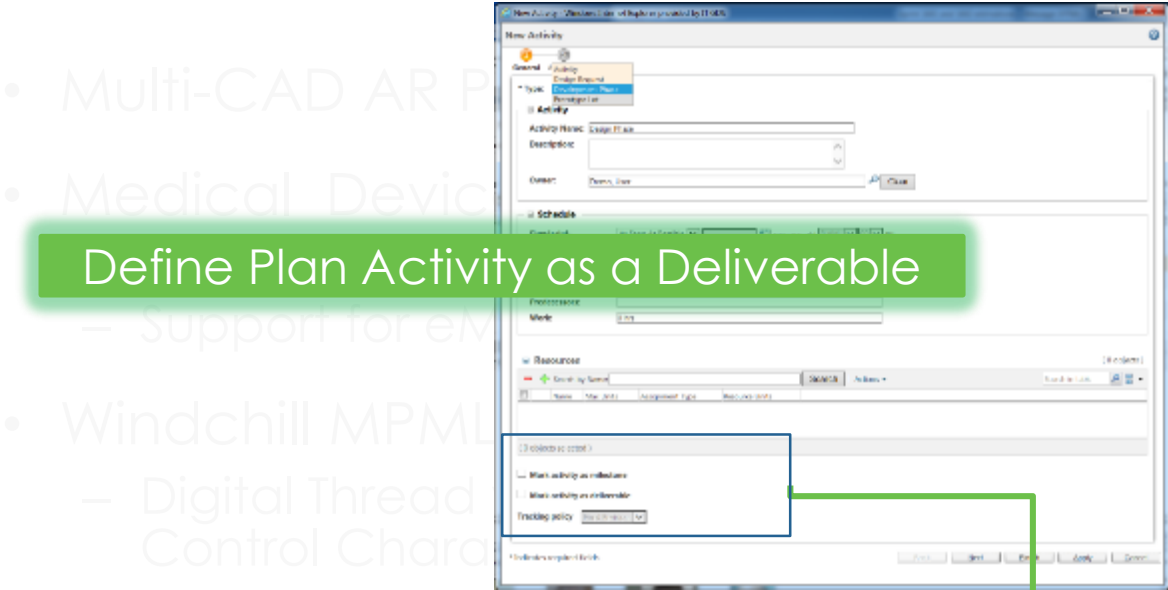
- Windchill MPMLink
 - Digital Thread with Control Characteristics



WINDCHILL 11.1 OVERVIEW



Track Multiple Deliverables



- Project Execution :
 - Deliverable based scheduling / execution

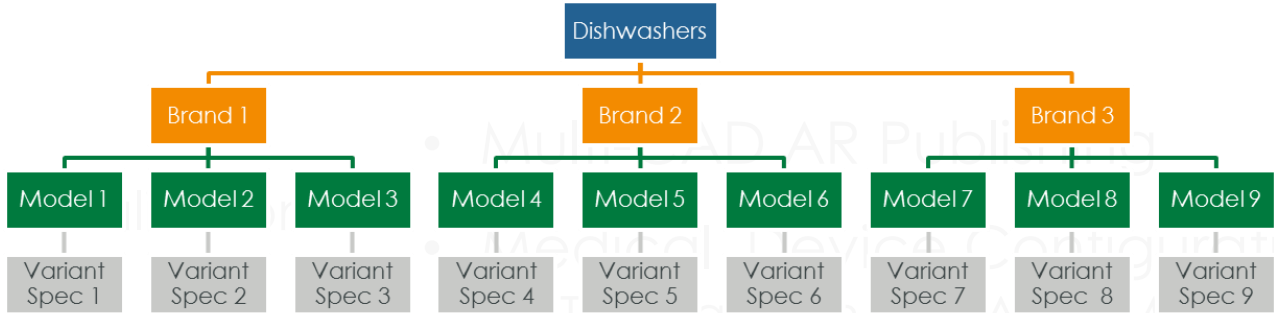


WINDCHILL 11.1 OVERVIEW



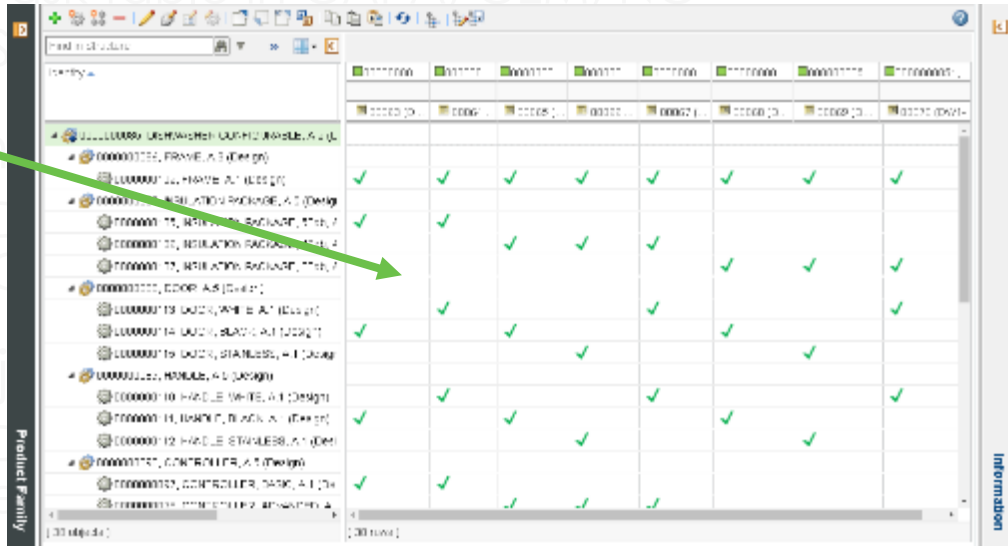
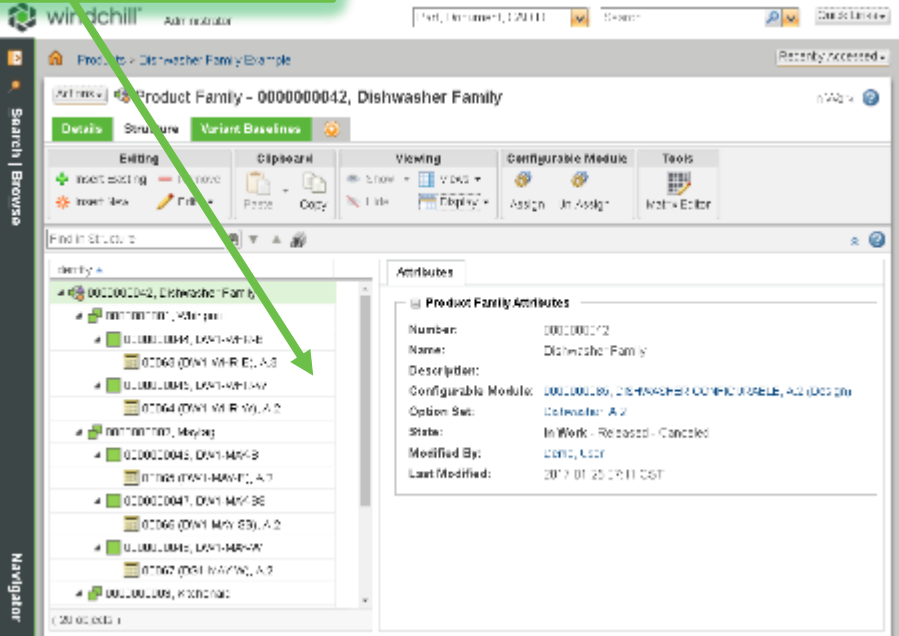
Part of Windchill Platform Structures Module

- Product Family
- Product Model Grouping
- Product Model
- Variant Specification



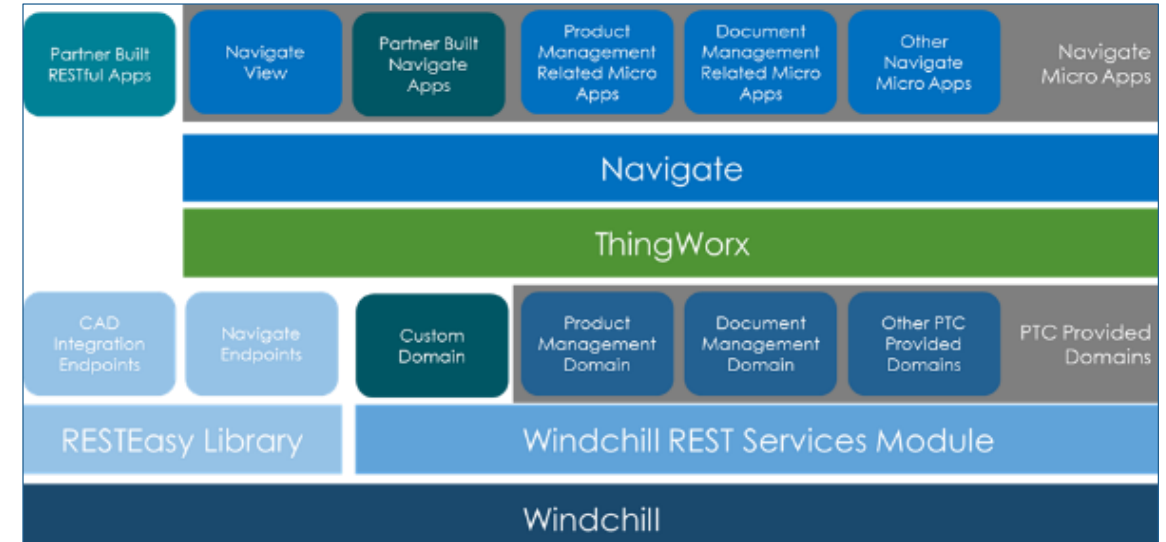
Develop a Product Family for a Configurable Product

Easily see and manage the Product Family in a matrix view



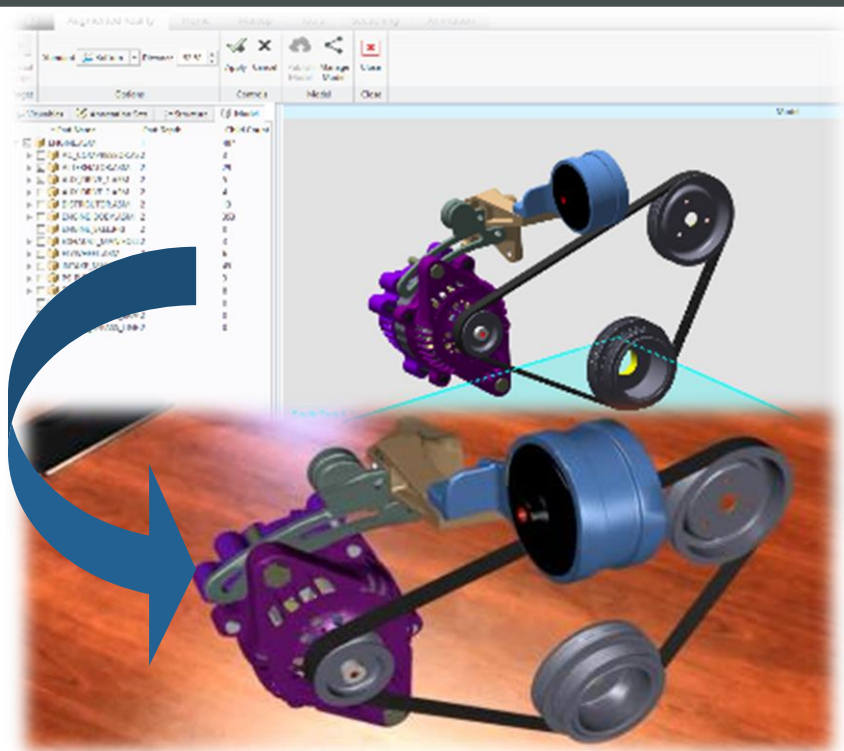
- Product Family Management
 - Enable Product Family Definition for the Configurable Platform

- A Windchill module that allows development of RESTful Windchill services
 - Exposes Windchill persistable objects as OData entities
- Includes PTC provided domains with endpoints for different functional areas of Windchill
 - Product Management
 - Document Management
 - Data Administration
 - Principal Management
 - Etc.
- Releases asynchronously from Windchill



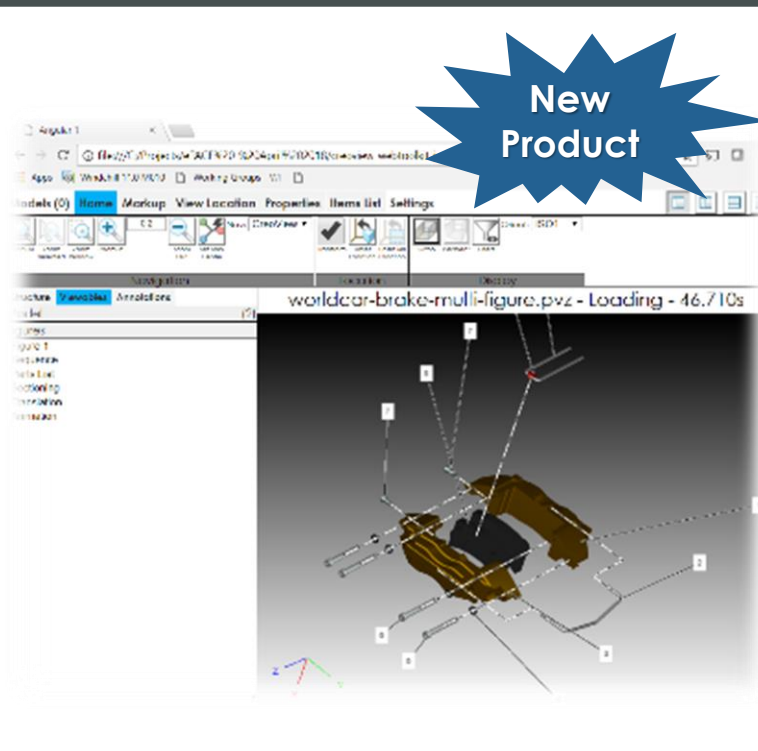
- Goal is 3 month release cadence
- Windchill Rest Services 1.2
 - 11.0 M030 CPS11 - Aug 1st 2018
 - 11.1 F000 CPS07 - July 25th 2018
 - 11.1 M010 CPS02 - Aug 14th 2018

CREO VIEW 5.0 – HIGHLIGHTS



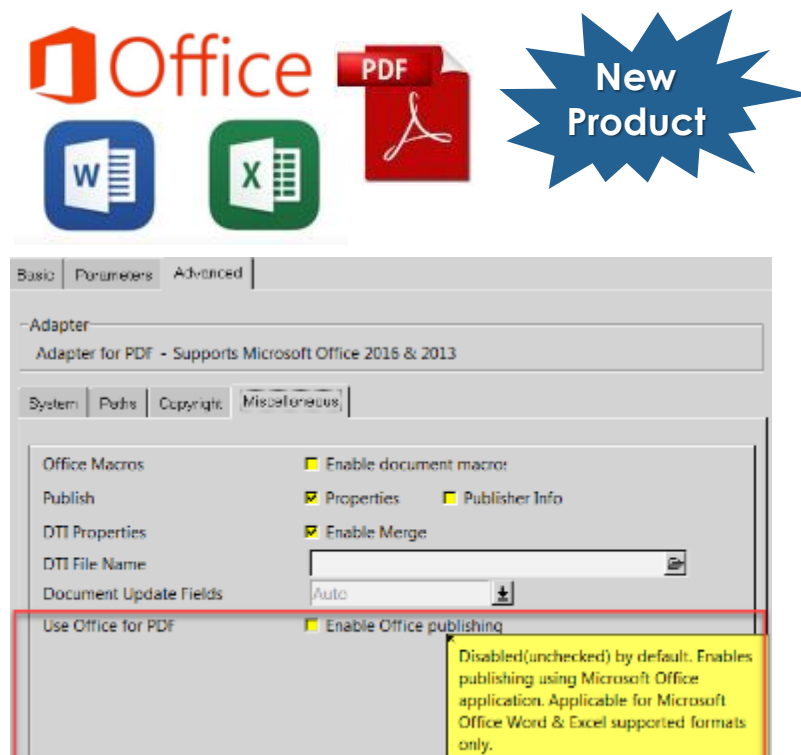
AR Publishing

Share 3D DMU with colleagues, partners, suppliers, customers in AR



Creo View 3D WebGL Viewer and Toolkit

Build custom applications leveraging Creo View data and native web technology



Office PDF Generator

No need for Adobe Experience Manager (AEM) for PDF generation



PTC CLOUD TO ELEVATE YOUR PLM VALUE



Fast Time to Value –
Quickly onboard and scale



Lower TCO –
Reduce IT spend



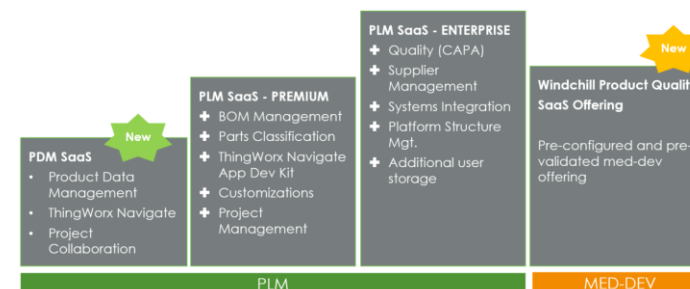
Latest Innovation –
Be first to get new solutions



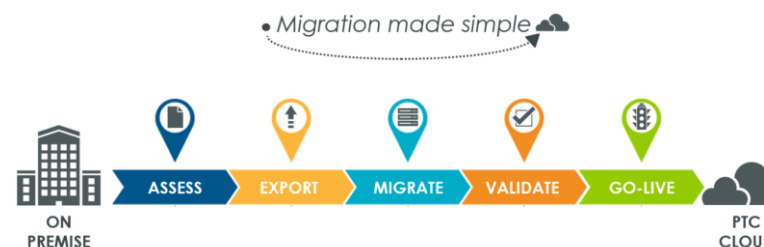
World Class Security –
Safeguard IP & operations

Benefits of PTC Cloud Service Offerings

SaaS



Managed Services



Availability –
guaranteed uptime and support SLAs

Security – ISO Certified, SOC2 Compliant, FedRAMP Authorized

Performance –
24x7 monitoring, actively managed

Support –
integrated across infrastructure and software

Maintenance –
Upgrades, patches, 3rd party components

GIRAFFE RELEASES – HIGH LEVEL GOALS



CAD to PART

MICROSOFT
AZURE

WEB SERVICES

MEDICAL
DEVICE
EU-MDR

ALM/PLM

DOCUMENT
MANAGEMENT

PROJECT
MANAGEMENT

XBOM
MPMLink

CONFIG
MANAGEMENT
OPTIONS & VARIANTS

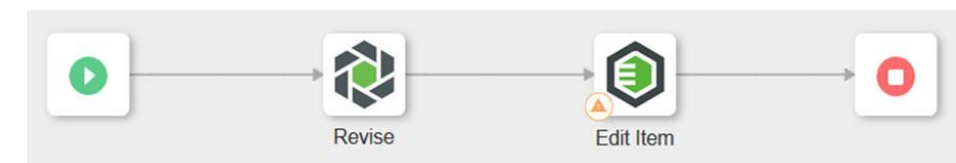
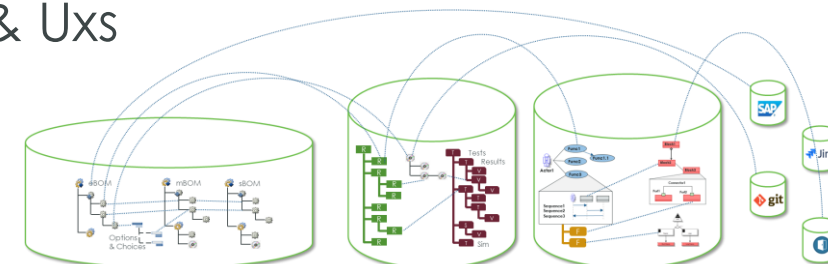
CASCADING
ATTRIBUTES

PLM ANALYTICS

COLLABORATIVE
AR DESIGN
REVIEW

TECHNOLOGY STACK – PERFORMANCE – SECURITY – PERFECTIVE MAINTENANCE

- Toolchain integration across PTC Product family and 3rd party tools
 - Digital Thread for Design Abstraction, Compliance Traceability and Impact Analysis
 - Persistent Inter-System of Record Links using Product Uls & Uxs
 - Link-not-synch in context
 - OSLC on REST
- ThingWorx Orchestration – adds new Workflow Design & Execution, with Tool Tasks, Data Passing & Transformation opportunities, e.g. between tools



Integrity Modeler

Lifecycle Manager
& Modeler

Lifecycle Manager/Modeler
& Windchill

Windchill
Parts

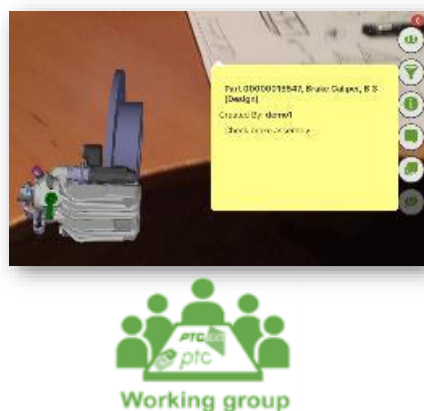
OSLC Schedule

Capabilities

2018 Apr May Jun Jul Aug Sep Oct Nov Dec 2019 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

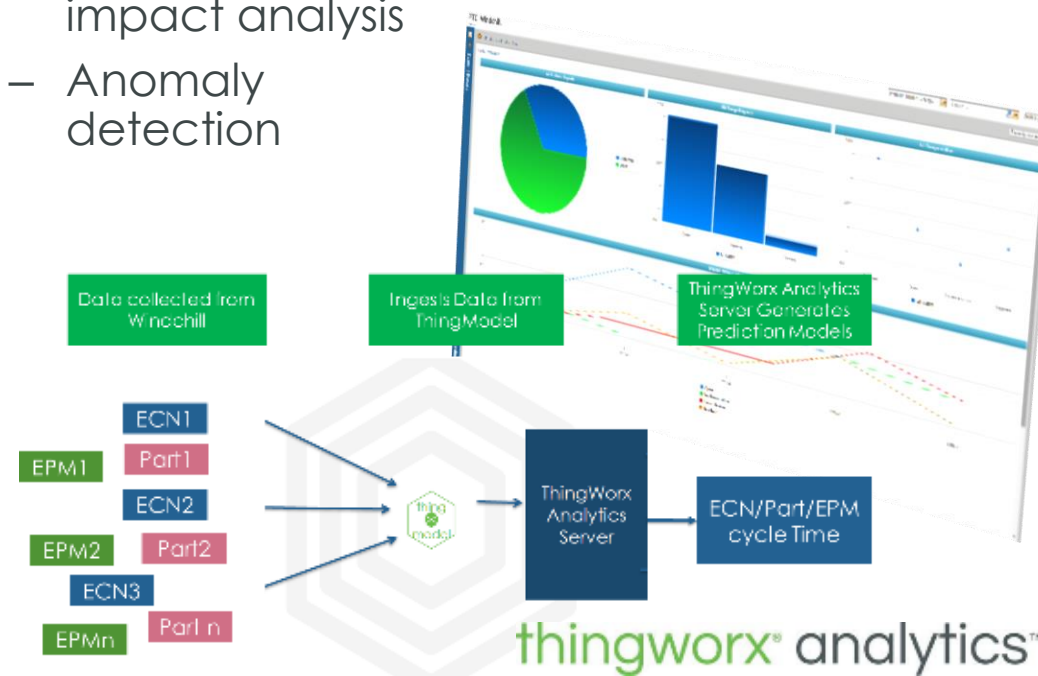
Collaborative AR Design Review

- Alpha Preview – Spring / Summer 2018
 - Real-time, Multi-user, remote collaboration powered by **ThingWorx Studio/View** (in future integrate Project Chalk)
 - Leverage **ThingWorx Navigate** to access context specific 2D, 3D product and supporting data
 - Capture and record notes/feedback directly within the app for future reference



PLM and Analytics

- Get insight in your current PLM data during product development process
- Interpret and Recommend actions
 - Predictive change impact analysis
 - Anomaly detection



QUESTIONS



