

PTC® Live Global

PTC 310 - Moving to MBOM (Unifying Engineering and MFG Planning) with PTC Windchill MPMLink

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Solution Manager Director

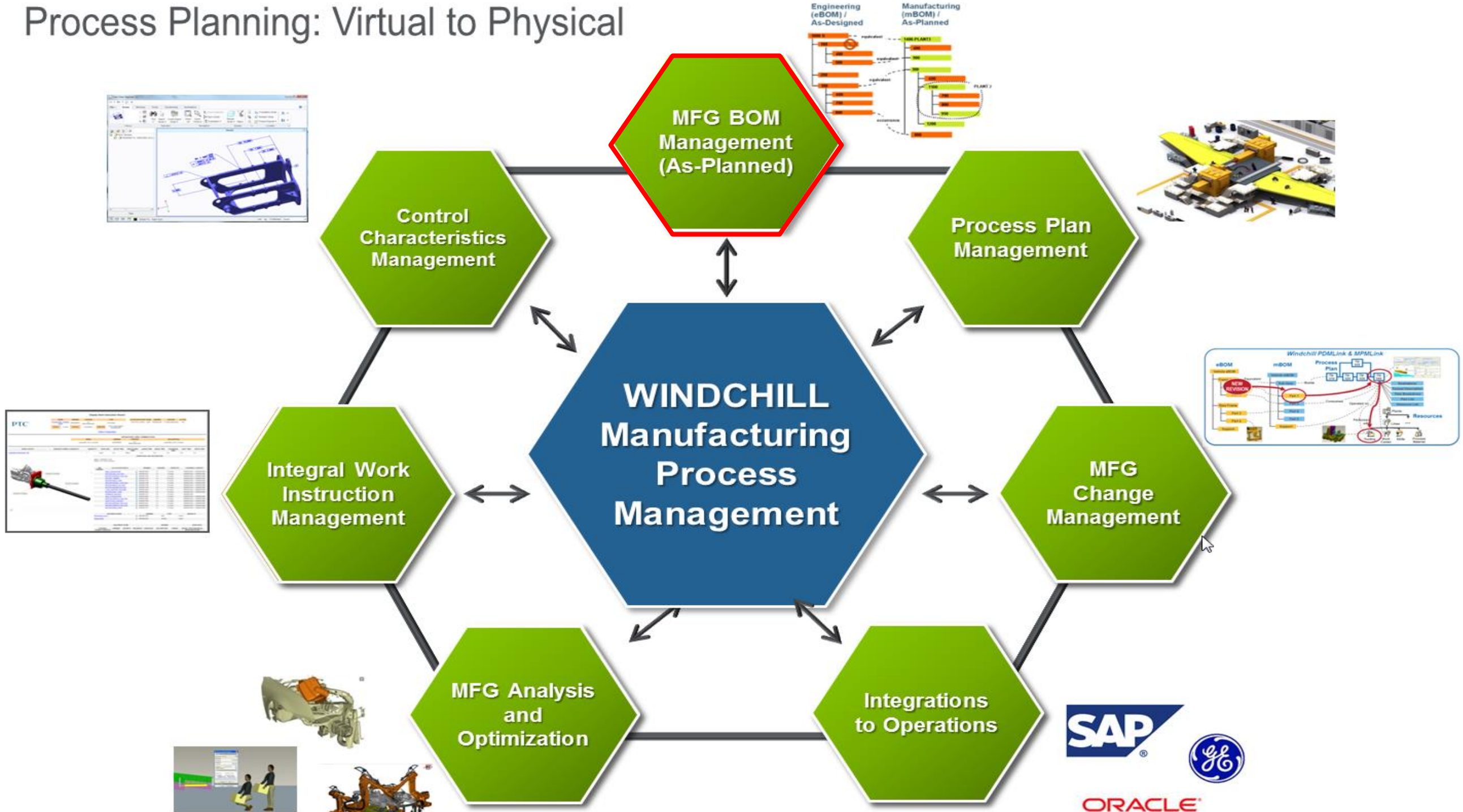


- PTC Windchill MPMLink Associative BOM Value Proposition
- Associative BOM in PTC Windchill MPMLink
- 10.3 Preview (Demo)



PTC Windchill MPMLink Associative BOM Value Proposition

Process Planning: Virtual to Physical



PLANNING

EXECUTION

PTC®
NC / Add. Mfg.

PTC®
MPM / Digital Mfg


MES

ThingWorx

“IoT / Smart, Conn. Mfg.”

Parts Planning & NC/DNC data management PTC®


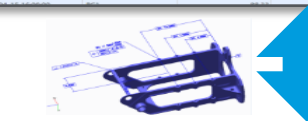
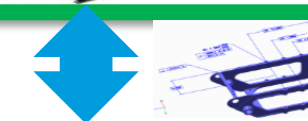
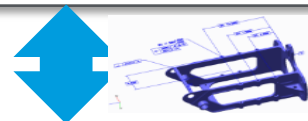
PTC offers powerful 3D based Part Machining (NC and CMM)

- Tooling
 - Automatic Core/Cavity Design
 - Integrated Injection Molding Simulation
 - Mold Base Design
 - Progressive Die development
 - Die Forming Simulation
 - Electrode design
 - Mold & Die machining
- NC Programming
 - Automatic tool path generation for
 - 2 to 5 axis milling
 - 2 to 4 axis turning and live tooling
 - 2 to 4 axis wire EDM
 - Punchpress / laser
 - NC simulation and Verification
 - NC Post-processing
- Quality Insurance
 - CMM Programming
 - First article inspection




Proficiency for manufacturing capabilities PTC® Live Global


PTC® Windchill MPMLink (Process Plan)

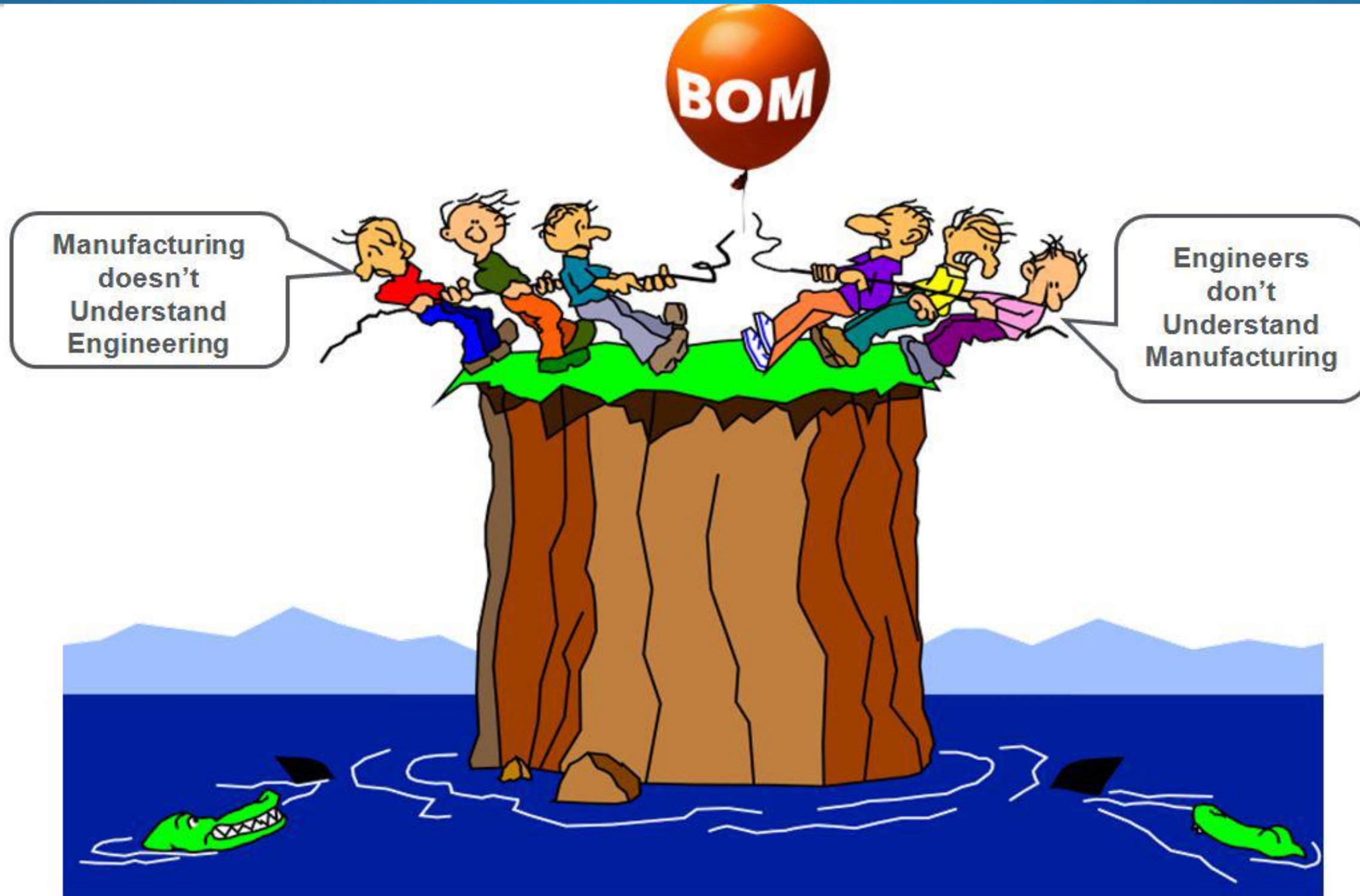
PTC Windchill PLM / SLM

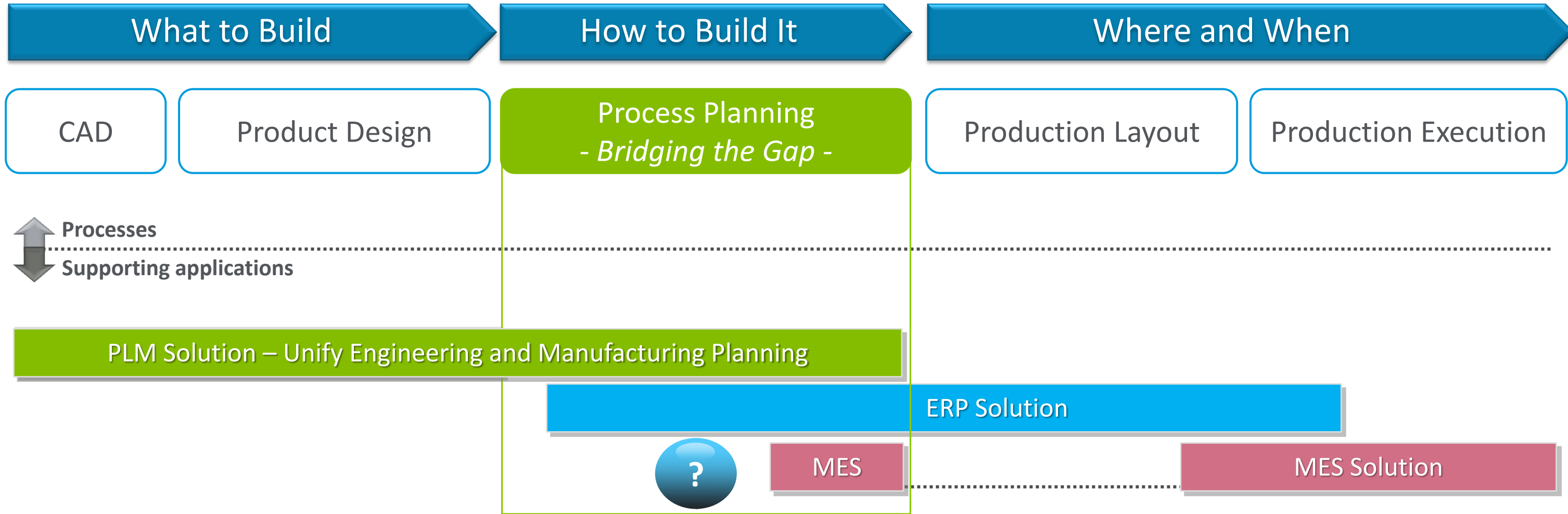


ERP and Business Systems



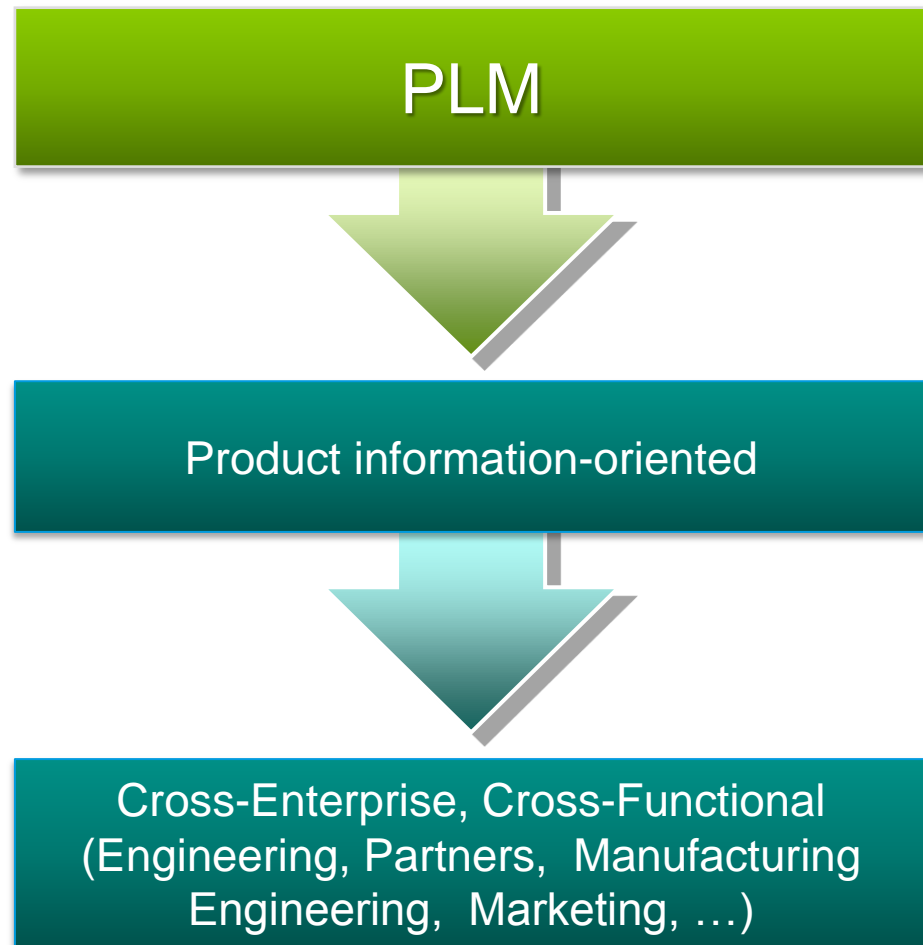
Gain competitive
advantage through
improved process
planning





What Approach should you use?

What is required to maximize business value?



ERP **PLM** MES

**MANUFACTURING PROCESS MANAGEMENT
IS THE RIGHT APPROACH:**

- Provides a combined design and process planning platform
- Digital process-planning directly from design data
- Integrated change and configuration management
- Validation and Optimization of the Processes

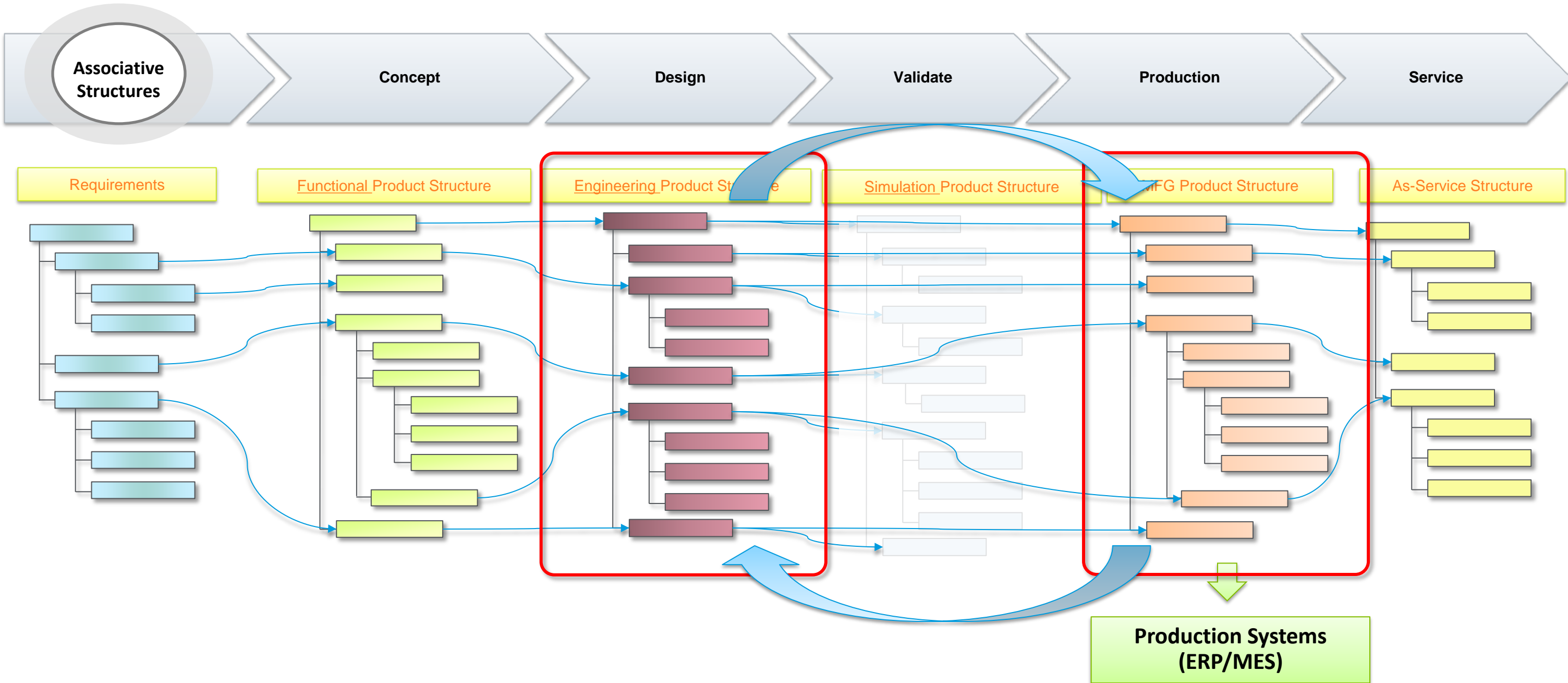
Transaction-Oriented Event-Oriented

Cross-Enterprise, Cross-Functional
(Production, Financial, Procurement, HR, ...)

Internal – Shop Floor & Production Users

Associative BOM in PTC Windchill MPMLink

Mastered BOM in Single System



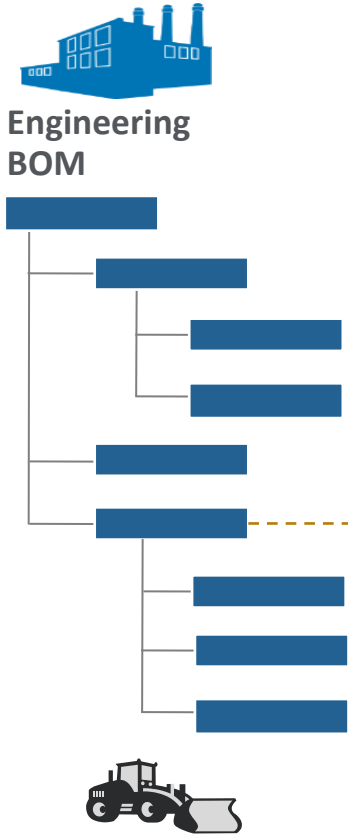
Unify ENG and MFG: Associative EBOM and MBOM Management

Engineering Definition

MFG Planning Definition

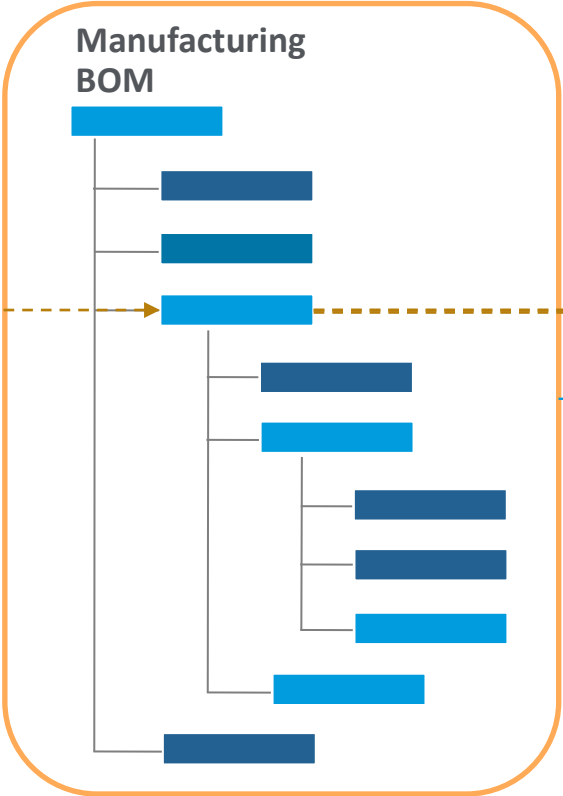
Plant Specific Definition

Plant Execution



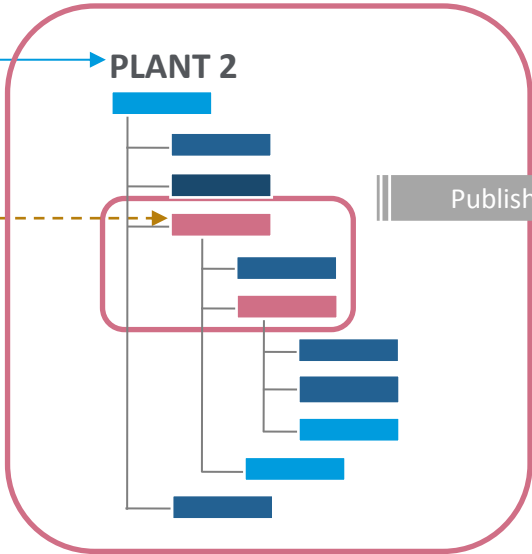
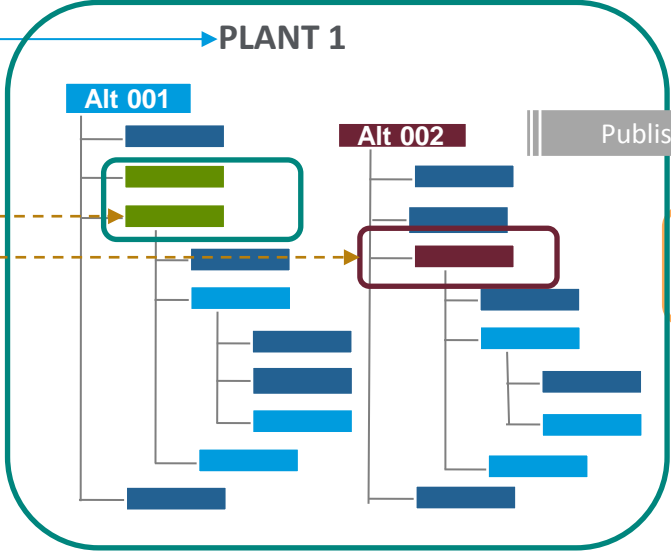
Equivalent

Global Manufacturing Strategy
No Replication
→ Maximize Reuse
→ Optimization

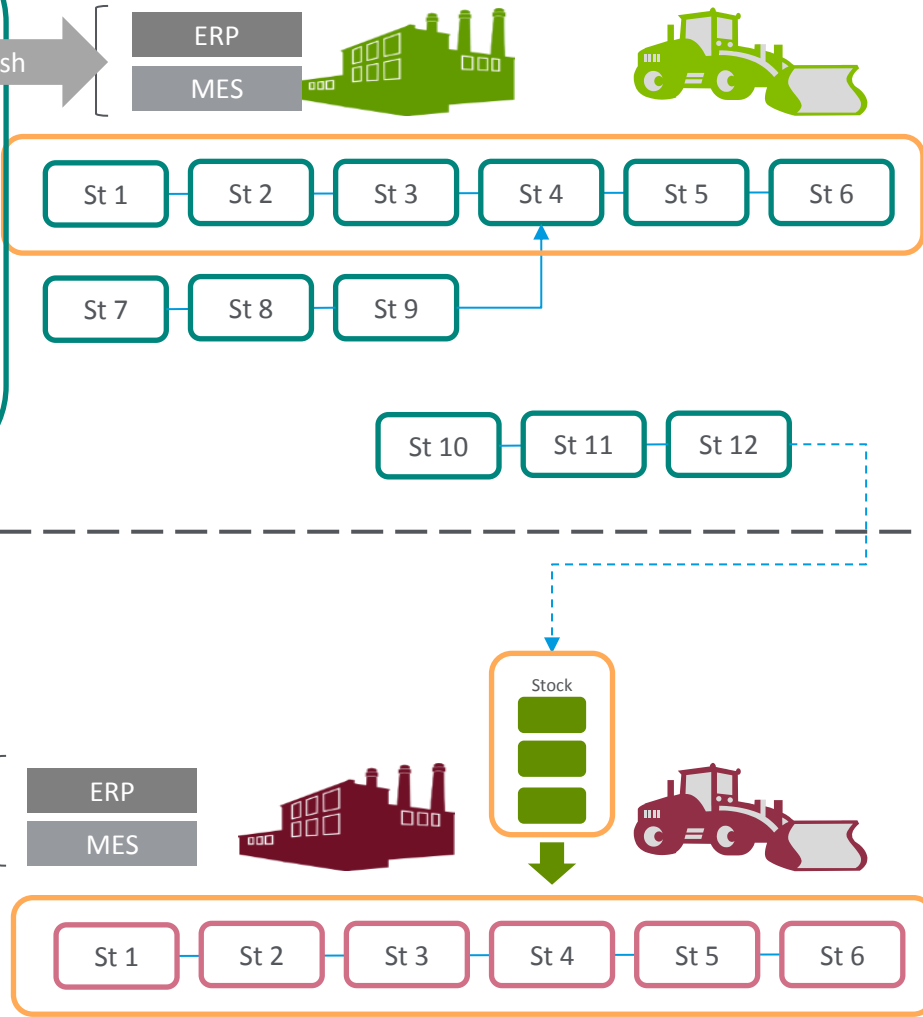


Full Traceability

Manage only Plant Specific Definition



CAB is assembled by Plant 1 for Both Plant 1 and Plant 2



Associative EBOM & MBOM

Role based views of product information that update to remain in-synch

Reduce errors; enable faster time to production

The screenshot displays the Service Product Structure Explorer (SPSE) interface, split into two panes. The left pane shows the 'Upstream' view for a design, and the right pane shows the 'Downstream' view for a service.

Upstream View (Design): Edit : PTC - 000000001, VEHICULE TOIUT TERRAIN, Demo Organization, A.5 (Design). Latest: Design. This view shows a hierarchical tree of design components. The table below represents the data shown in this view.

Number	Version	State	Quantity	Unit	Name	Org
PTC - 000000001	A.5 (Design)	In Work			VEHICULE TOIUT ...	Dem
PTC - 000000002	A.2 (Design)	In Work	1	each	SYSTEME EQUIPE...	Dem
PTC - 000000005	A.2 (Design)	In Work	1	each	SYSTEME ANTI M...	Dem
PTC - 000000008	A.2 (Design)	In Work	1	each	VEHICULE MODEL...	Dem
PTC - 000000011	A.2 (Design)	In Work	1	each	VEHICULE S_EQUI...	Dem
PTC - 000000012	A.2 (Design)	In Work	1	each	KIT FIXATION AN...	Dem
PTC - 000000013	A.1 (Design)	In Work	1	each	MECANIQUE ORIE...	Dem
PTC - 000000014	A.1 (Design)	In Work	1	each	CABLE ANTENNE ...	Dem
PTC - 000000015	A.1 (Design)	In Work	1	each	MAT ANTENNE	Dem
PTC - 000000016	A.2 (Design)	In Work	1	each	BRAS MANIPULAT...	Dem
PTC - 000000019	A.1 (Design)	In Work	1	each	MECANISME PINCE	Dem
PTC - 000000020	A.1 (Design)	In Work	1	each	ROTULE PINCE M...	Dem
PTC - 000000027	A.1 (Design)	In Work	1	each	AXE POUTRE	Dem
PTC - 000000028	A.1 (Design)	In Work	1	each	POUTRE PORTEUSE	Dem
PTC - 000000029	A.1 (Design)	In Work	1	each	DURITE 750	Dem
PTC - 000000030	A.1 (Design)	In Work	1	each	DURITE 930	Dem
PTC - 000000031	A.2 (Design)	In Work	1	each	VERIN HYDRAULI...	Dem
PTC - 000000032	A.1 (Design)	In Work	1	each	FUSIBLE	Dem
PTC - 000000033	A.2 (Design)	In Work	1	each	TETE CAPTEURS	Dem
PTC - 000000034	A.1 (Design)	In Work	1	each	CAPTEUR EMETT...	Dem
PTC - 000000035	A.1 (Design)	In Work	1	each	CAPTEUR VIDEO	Dem
PTC - 000000036	A.1 (Design)	In Work	1	each	DETECTEUR GAZ	Dem
PTC - 000000037	A.1 (Design)	In Work	1	each	TETE SOUS EQUI...	Dem
PTC - 000000038	A.2 (Design)	In Work	1	each	ENSEMBLE RADIO...	Dem
PTC - 000000041	A.2 (Design)	In Work	1	each	ANTENNE SPECIFI...	Dem
PTC - 000000042	A.1 (Design)	In Work	1	each	ANTENNE	Dem
PTC - 000000043	A.1 (Design)	In Work	1	each	CABLAGE	Dem
PTC - 000000044	A.2 (Design)	In Work	1	each	EMETTEUR/RECE...	Dem
PTC - 000000045	A.1 (Design)	In Work	1	each	BLOC ALIMENAT...	Dem
PTC - 000000046	A.1 (Design)	In Work	1	each	SERVITUDES	Dem
PTC - 000000047	A.1 (Design)	In Work	1	each	AMPLIFICATEUR ...	Dem
PTC - 000000048	A.1 (Design)	In Work	1	each	RECEPTEUR	Dem
PTC - 000000049	A.1 (Design)	In Work	1	each	SYNTHETISEUR	Dem
PTC - 000000050	A.1 (Design)	In Work	1	each	ELECTRONIQUE	Dem
PTC - 000000051	A.1 (Design)	In Work	1	each	CHASSIS CABLE	Dem
PTC - 000000052	A.1 (Design)	In Work	8	each	VIS	Dem
PTC - 000000053	A.2 (Design)	In Work	1	each	CALCULATEUR V	Dem
PTC - 000000054	A.1 (Design)	In Work	1	each	UNITE CENTRALE	Dem
PTC - 000000055	A.1 (Design)	In Work	1	each	INTERFACE BRAS	Dem
PTC - 000000056	A.1 (Design)	In Work	1	each	INTERFACE VEHL...	Dem
PTC - 000000057	A.1 (Design)	In Work	1	each	INTERFACE CAPT...	Dem
PTC - 000000072	A.1 (Design)	In Work	1	each	BLOC ALIMENAT...	Dem
PTC - 000000073	A.2 (Design)	In Work	1	each	RECEPTEUR SECU...	Dem

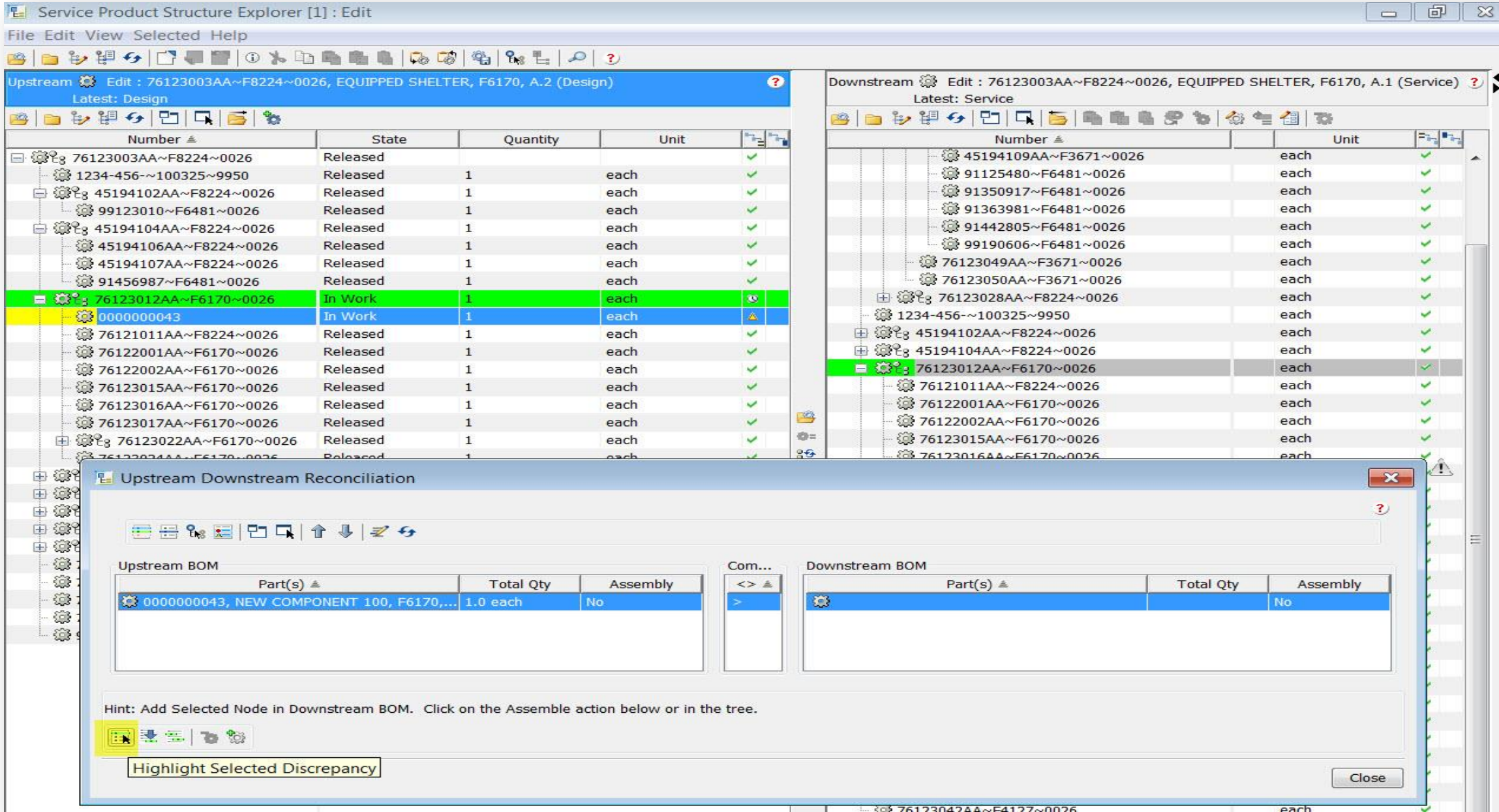
Downstream View (Service): Edit : 0000000284, VEHICULE TOIUT TERRAIN, Demo Organization, A.1 (Service). Latest: Service. This view shows a hierarchical tree of service components. The table below represents the data shown in this view.

Number	Version	State	Quantity	Unit	Name	Organization Name
0000000284	A.1 (Service)	In Work			VEHICULE TOIUT...	Demo Organization
0000000269	A.1 (Service)	In Work	1	each	SYSTEME EQUIP...	Demo Organization
0000000266	A.1 (Service)	In Work	1	each	SYSTEME ANTI ...	Demo Organization
0000000277	A.1 (Service)	In Work	1	each	TOURELLE EQUIP...	Demo Organization
0000000161	A.1 (Service)	In Work	1	each	ALIMENTATION E...	Demo Organization
0000000172	A.1 (Service)	In Work	1	each	BOITIER ALIMEN...	Demo Organization
0000000223	A.1 (Service)	In Work	1	each	FUSIBLE F375-45...	Demo Organization
0000000255	A.1 (Service)	In Work	1	each	PANNEAU CONNE...	Demo Organization
0000000257	A.1 (Service)	In Work	1	each	RADIATEUR	Demo Organization
0000000186	A.1 (Service)	In Work	1	each	CARTE +12V N12...	Demo Organization
0000000187	A.1 (Service)	In Work	1	each	CARTE +12V P12...	Demo Organization
0000000188	A.1 (Service)	In Work	1	each	CARTE +24V PN2...	Demo Organization
0000000189	A.1 (Service)	In Work	1	each	CARTE AUXILIAIRE	Demo Organization
0000000191	A.1 (Service)	In Work	1	each	CARTE ONDULEU...	Demo Organization
0000000192	A.1 (Service)	In Work	1	each	CHASSIS ALIMEN...	Demo Organization
0000000167	A.1 (Service)	In Work	1	each	ANTENNE SYSTE...	Demo Organization
0000000165	A.1 (Service)	In Work	1	each	ANTENNE	Demo Organization
0000000179	A.1 (Service)	In Work	1	each	CABLAGE	Demo Organization
0000000182	A.1 (Service)	In Work	1	each	CALCULATEUR S	Demo Organization
0000000228	A.1 (Service)	In Work	1	each	INTERFACE CON...	Demo Organization
0000000229	A.1 (Service)	In Work	1	each	INTERFACE CON...	Demo Organization
0000000231	A.1 (Service)	In Work	1	each	INTERFACE VIDEO	Demo Organization
0000000190	A.1 (Service)	In Work	1	each	CARTE INTERFA...	Demo Organization
0000000200	A.1 (Service)	In Work	1	each	COSSE A SERTIR	Demo Organization
0000000206	A.1 (Service)	In Work	1	each	DIODE LIGHT-EMIT	Demo Organization
0000000224	A.1 (Service)	In Work	1	each	HE501N09VP6	Demo Organization
0000000240	A.1 (Service)	In Work	1	each	M8 25MM SCREW	Demo Organization
0000000279	A.1 (Service)	In Work	1	each	UNITE CENTRALE	Demo Organization
0000000197	A.1 (Service)	In Work	1	each	CLIMATISEUR T...	Demo Organization
0000000198	A.1 (Service)	In Work	1	each	CONSOLE COMM...	Demo Organization
0000000196	A.1 (Service)	In Work	1	each	CHASSIS CABLE	Demo Organization
0000000210	A.1 (Service)	In Work	1	each	ELECTRON COM...	Demo Organization
0000000247	A.1 (Service)	In Work	1	each	ORGANES COMM...	Demo Organization
0000000174	A.1 (Service)	In Work	1	each	BOUTON POUSS...	Demo Organization
0000000204	A.1 (Service)	In Work	1	each	DIODE LIGHT-EMIT	Demo Organization
0000000205	A.1 (Service)	In Work	1	each	DIODE LIGHT-EMIT	Demo Organization
0000000216	A.1 (Service)	In Work	1	each	EMBASE HE 905	Demo Organization
0000000233	A.1 (Service)	In Work	1	each	INTERRUPTEUR ...	Demo Organization
0000000235	A.1 (Service)	In Work	1	each	JOYSTICK N594	Demo Organization
0000000253	A.1 (Service)	In Work	1	each	PANNEAU COMM...	Demo Organization
0000000199	A.1 (Service)	In Work	1	each	CONSOLE COND...	Demo Organization
0000000195	A.1 (Service)	In Work	1	each	CHASSIS CABLE	Demo Organization
0000000211	A.1 (Service)	In Work	1	each	ELECTRON COND...	Demo Organization

Detailed Reports

Quickly compare and contrast different versions and iterations of product information

Improved quality



Unified Change Management

Streamline change across engineering and manufacturing

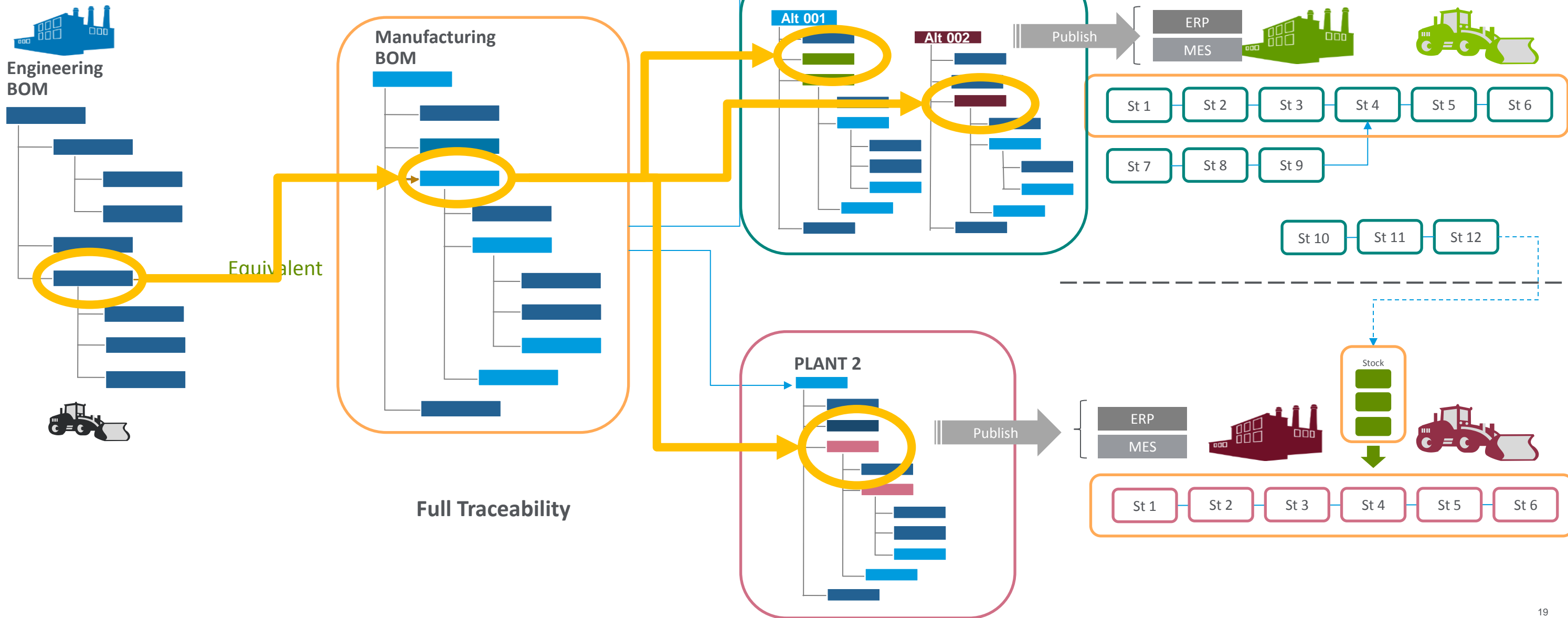
Reduce scrap and rework

Engineering Definition

MFG Planning Definition

Plant Specific Definition

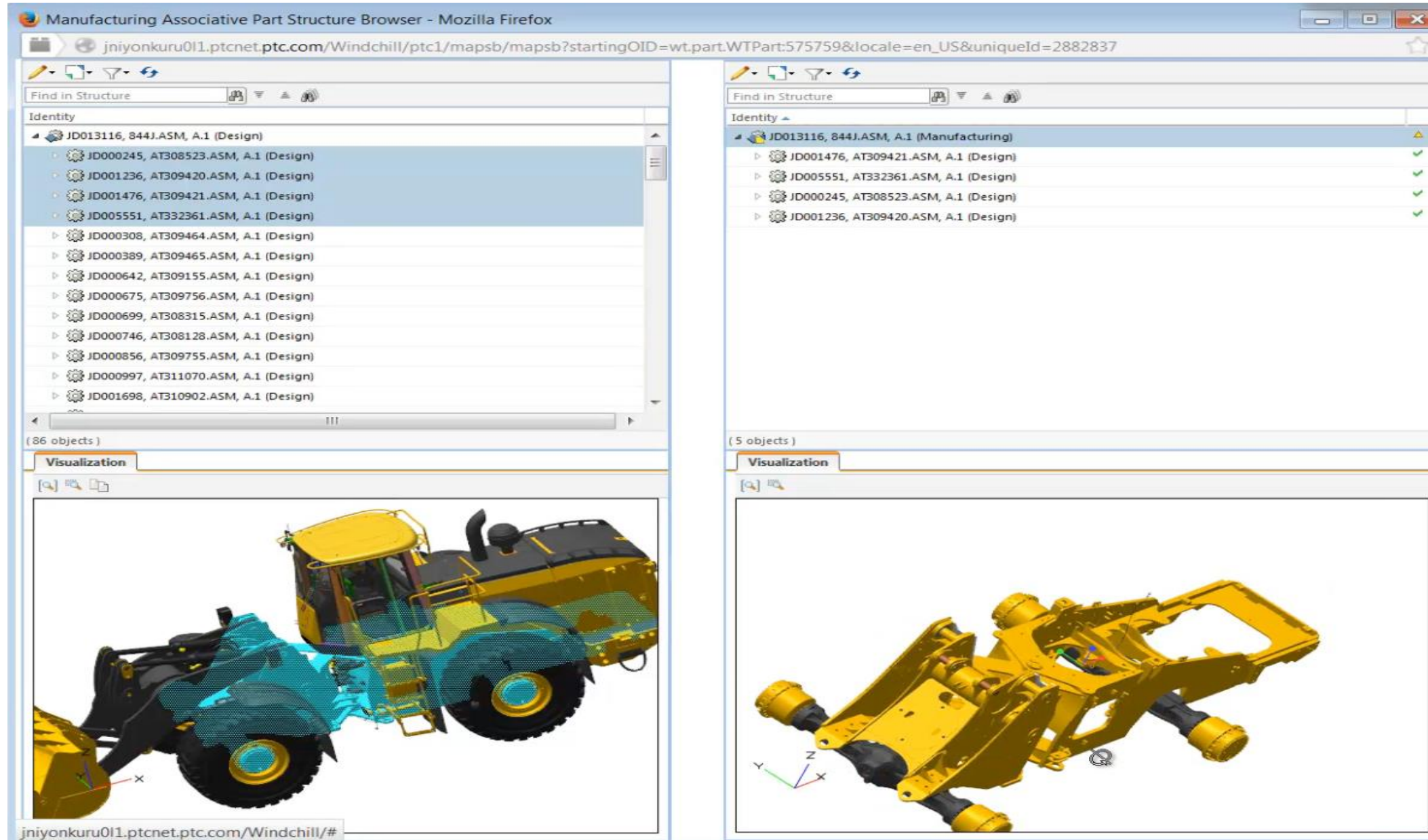
Plant Execution



3D Design Data in MFG
Process

Leverage rich design data to create manufacturing
information*

Improved planning decisions



Automatic Publish to MES/ERP

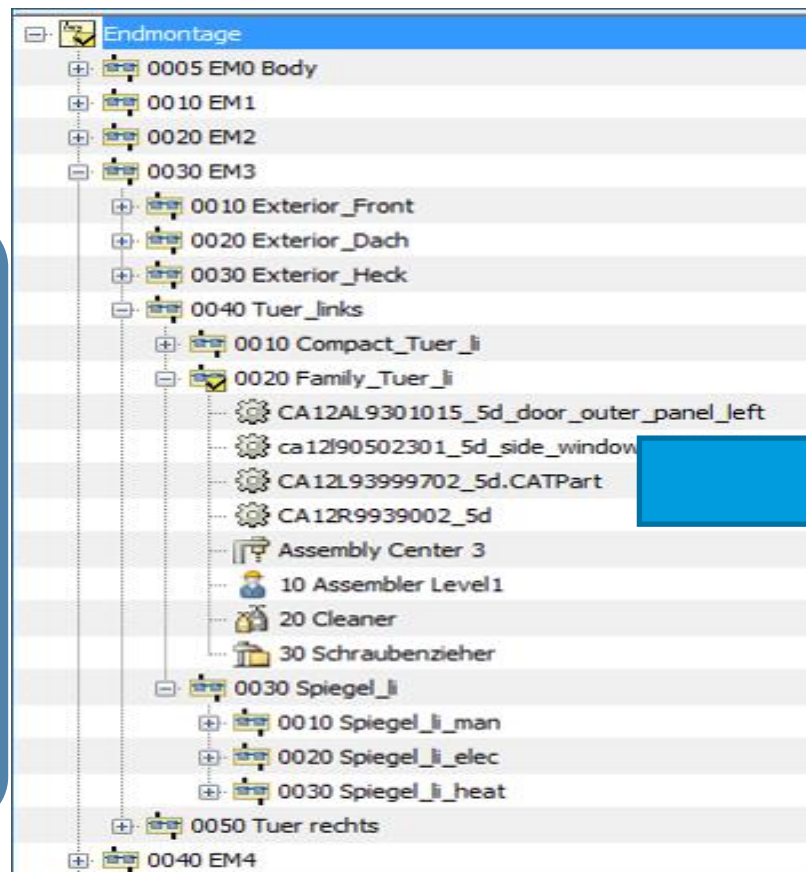
Ensure information is up-to-date in production systems

Speed time-to-production

- Automatically exchange and share product and manufacturing content using secure and reliable technology
 - Out-of-the-box Integration to SAP and Oracle Manufacturing
 - Flexible and open framework for integration to other systems

PTC Windchill

- Parts
- eBOM
- mBOM
- Change
- Process Plans
- Documents URL (Work instructions)
- Tooling
- Skills
- Process Material



A screenshot of the SAP 'Display Routing: Operation Overview' window. The window title is 'SAP' and the menu bar includes 'Routing', 'Edit', 'Goto', 'Details', 'Extras', 'Environment', 'System', and 'Help'. The main content area shows a table with the following columns: 'Op...', 'SOp', 'Work Ce...', 'Plnt', 'Co...', 'Standar...', 'Description', 'Lo...', 'P...', 'Cl...', 'O...', 'P...', and 'C...'. The table contains 14 rows of data, with the first row being '0010' and the last row being '0120'. A blue arrow points from the '0020 Family_Tuer_li' sub-assembly in the Windchill tree to the first row of the SAP table.

Op...	SOp	Work Ce...	Plnt	Co...	Standar...	Description	Lo...	P...	Cl...	O...	P...	C...
0010			1100	MPI1		Screw PCB Board to Internal Frame						
0020			1100	MPI1		Clean Housing Interior						
0030			1100	MPI1		Set PCB Assembly in Housing						
0040			1100	MPI1		Align and Position Gauge Panel						
0050			1100	MPI1		Lock Gauge Pane (U Bracket)						
0060			1100	MPI1		Insert Dials						
0070			1100	MPI1		Install LCD Display						
0080			1100	MPI1		Display test (On/Off Electrical Test)						
0090			1100	MPI1		Clip Protective Screen to Front Panel						
0095			1100	MPI1		Align and Position Front Panel Frame						
0100			1100	MPI1		Glue Button Panel						
0110			1100	MPI1		Assemble Casing and Front Frame						
0120			1100	MPI1		Insert Plugs						
						Final Inspection						

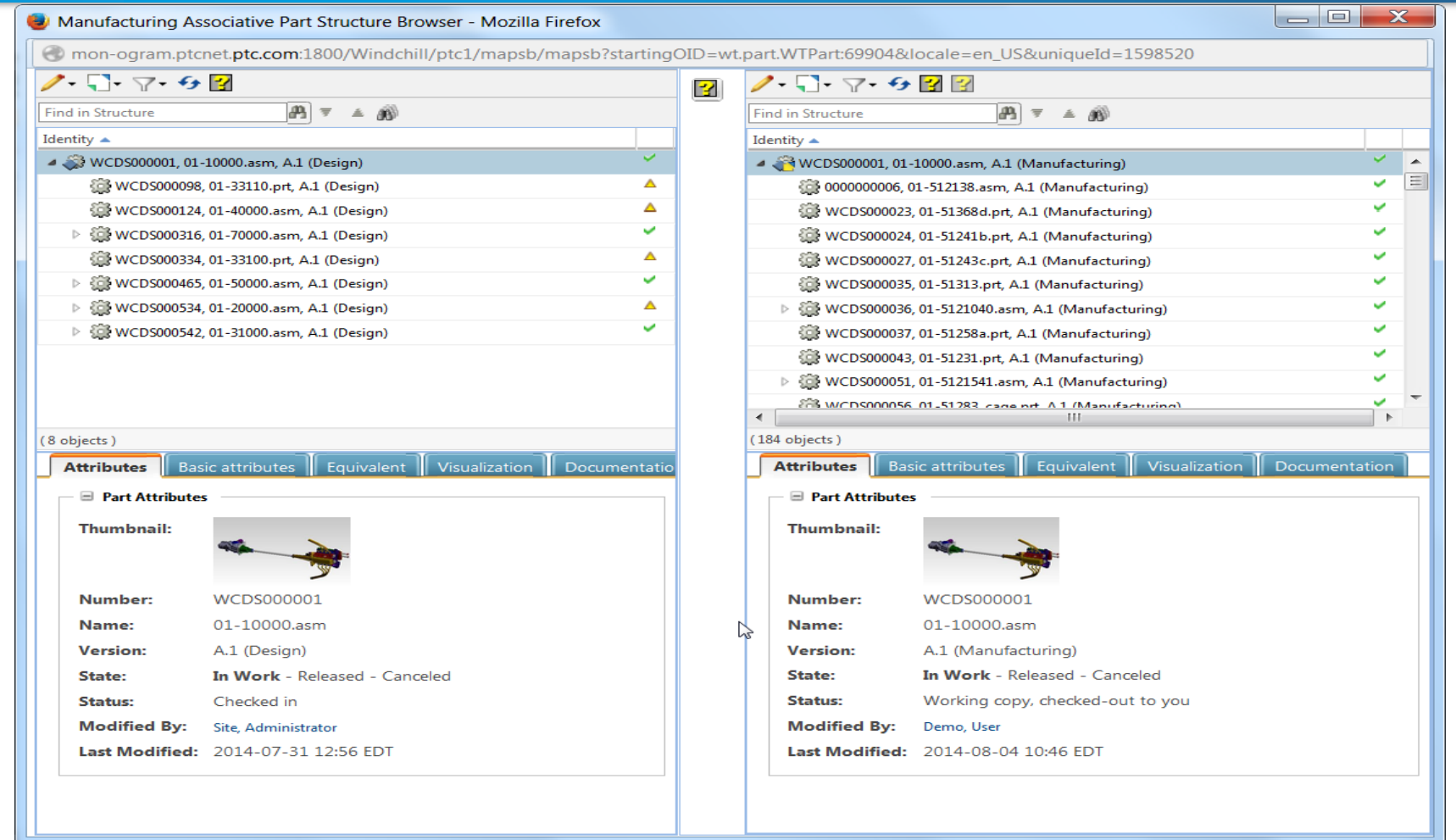
Production Systems (ERP/MES)



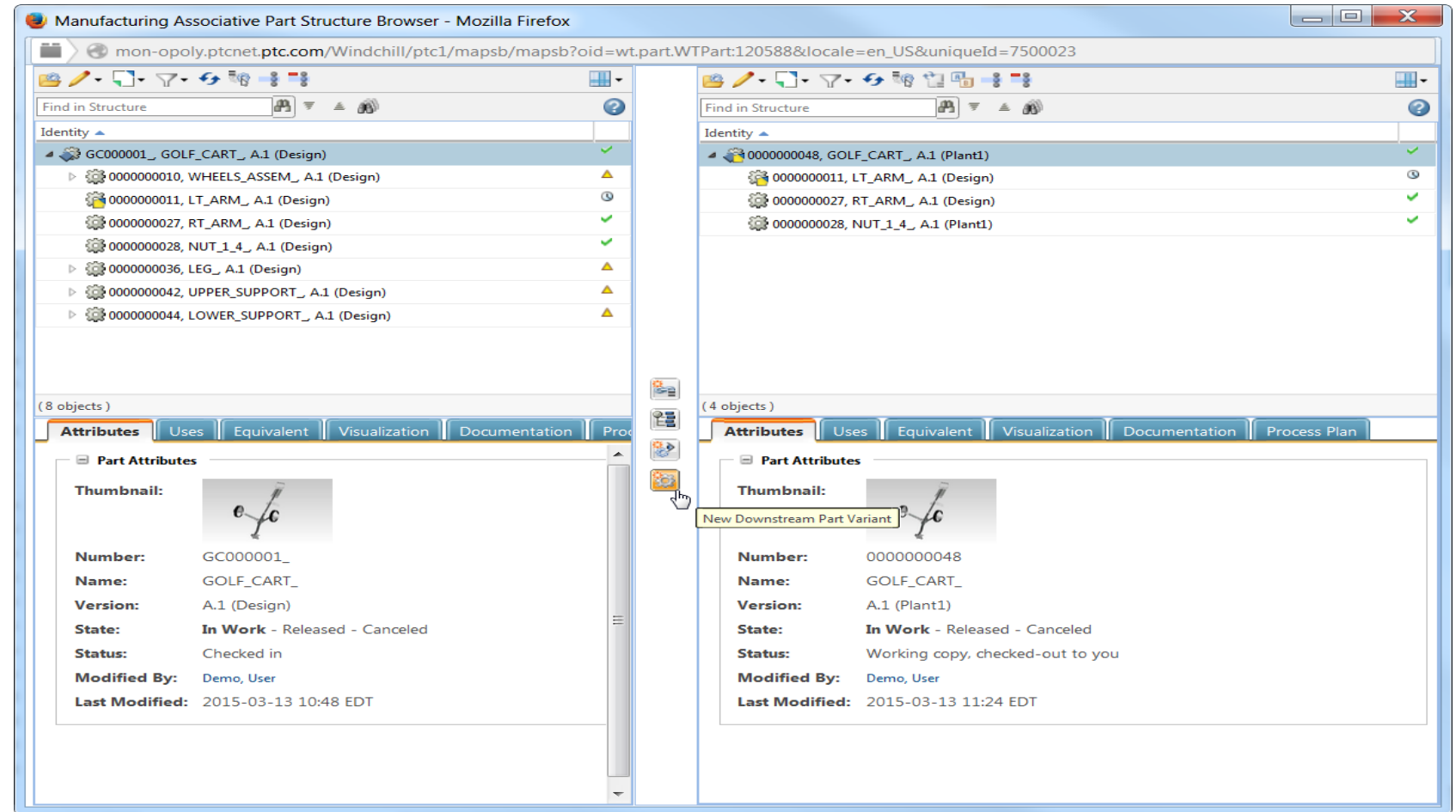
CAPABILITIES		BENEFITS
Associative EBOM & MBOM	Role based views of product information that update to remain in-synch	Reduce errors; enable faster time to production
Detailed Reconciliation Reports	Quickly compare and contrast different versions and iterations of product information	Improved quality
Unified Change Management	Streamline change across engineering and manufacturing	Reduce scrap and rework
3D Design Data in MFG Planning	Leverage rich design data to create manufacturing information*	Improved planning decisions
Automatic Publish to MES/ERP	Ensure information is up-to-date in production systems	Speed time-to-production

10.2

- Implement Core for BOM transformation actions:
 - Paste As New Branch
 - Paste As Is
 - Paste As New Part
- Manage Equivalent Part Link (No Occurrence Link)
- 3D integration
- Manage mBOM related information:
 - Attribute Tabs
 - Documentation Tab
 - Use Tabs
 - Process Plan
- Performance:
 - Multi-Site: 100 times
 - Action Performance: 5 to 20 times



- **Alternate BOM:**
 - Alternate BOM
 - Different BOM Types e.g. Costing
- **Multiple BOM's :**
 - Ability to create mBOM from existing by maintaining links
 - New Downstream Part Variants



- Manage Enterprise Info on Part level:
 - Define and Manage attributes and association valid for all view versions of a master
- Manage Plant Info on Part level:
 - Define and Manage attributes and association valid for all BOM Type or Alternate BOM of a specific View)

Identity ▾

- 0000000021, Shruti_P100, A.1 (Design) ▲
- 0000000021, Shruti_P100, A.1 ▲
- 0000000021, Shruti_P100, A.1 (Design) ▲

(3 objects)

Attributes Uses Equivalent Visualization Documentation

Attributes

Description:

Material Group: ▼

Version

*Version: A.1

*State: **In Work** - Under Review - Released

*Status: Checked in

*Modified By: Demo, User

Last Modified: 2014-10-27 11:16 EDT

More Usable --- Visual --- Performing

The image displays two side-by-side screenshots of the Manufacturing Associative Part Structure Browser (MAPSB) interface, accessed via Mozilla Firefox. The browser window title is "Manufacturing Associative Part Structure Browser - Mozilla Firefox" and the address bar shows the URL: jnyonkuru011.ptcnet.ptc.com/Windchill/ptc1/mapsb/mapsb?startingOID=wt.part.WTPart:575759&locale=en_US&uniqueId=2882837.

Left Screenshot: The "Identity" pane shows a tree view for "JD013116, 844J.ASM, A.1 (Design)". It lists 16 sub-components, all marked as "(Design)". The "Visualization" pane shows a 3D model of a yellow and black machine component with a cyan-colored sub-assembly highlighted. The status bar indicates "(86 objects)".

Right Screenshot: The "Identity" pane shows a tree view for "JD013116, 844J.ASM, A.1 (Manufacturing)". It lists 5 sub-components, all marked as "(Design)". The "Visualization" pane shows a 3D model of the same machine component, but with a different sub-assembly highlighted in yellow. The status bar indicates "(5 objects)".

Demo: eBOM mBOM



Firefox

Part - JD013116, 844J.ASM, A.1 (Design)

jnyonkuru011.ptcnet.ptc.com/Windchill/app/#ptc1/tcomp/infoPage?oid=VR%3Awt.part.WTPart%3A...

Conduit Search

PTC® Windchill® demo

Products > 844J > Folders

Part - JD013116, 844J.ASM, A.1 (Design) In Work

Details Structure Related Objects Changes History Where Used Traceability Relationship Explorer New Tab 1

Editing: Insert Existing, Remove, Insert New, Edit
Check Out/In: Check Out, Revise, Check In, My Checkouts
Clipboard: Paste, Copy
Viewing: Show/Hide, Views, Display
New/Add To: New, Add to
Filter: Edit Filter, Current Filter, Saved Filters
Tools: Compare, Open in
Reports: Reports, Export

Find in Structure

Identity

- JD013116, 844J.ASM, A.1 (Design)
 - JD000245, AT308523.ASM, A.1 (Design)
 - JD000308, AT309464.ASM, A.1 (Design)
 - JD000389, AT309465.ASM, A.1 (Design)
 - JD000642, AT309155.ASM, A.1 (Design)
 - JD000675, AT309756.ASM, A.1 (Design)
 - JD000699, AT308315.ASM, A.1 (Design)
 - JD000746, AT308128.ASM, A.1 (Design)
 - JD000856, AT309755.ASM, A.1 (Design)
 - JD000997, AT311070.ASM, A.1 (Design)
 - JD001236, AT309420.ASM, A.1 (Design)
 - JD001476, AT309421.ASM, A.1 (Design)
 - JD001698, AT310902.ASM, A.1 (Design)
 - JD001704, AT323364.ASM, A.1 (Design)
 - JD001765, AT308449.ASM, A.1 (Design)
 - JD001782, AT308450.ASM, A.1 (Design)
 - JD001842, AT324923.ASM, A.1 (Design)
 - JD002430, AT332234.ASM, A.1 (Design)
 - JD002680, AT332334.ASM, A.1 (Design)
 - JD002693, AT311117.ASM, A.1 (Design)
 - JD002706, AT309468.ASM, A.1 (Design)
 - JD002729, AT320891.ASM, A.1 (Design)
 - JD002852, AT310659.ASM, A.1 (Design)
 - JD002997, AT308454.ASM, A.1 (Design)

(86 objects)

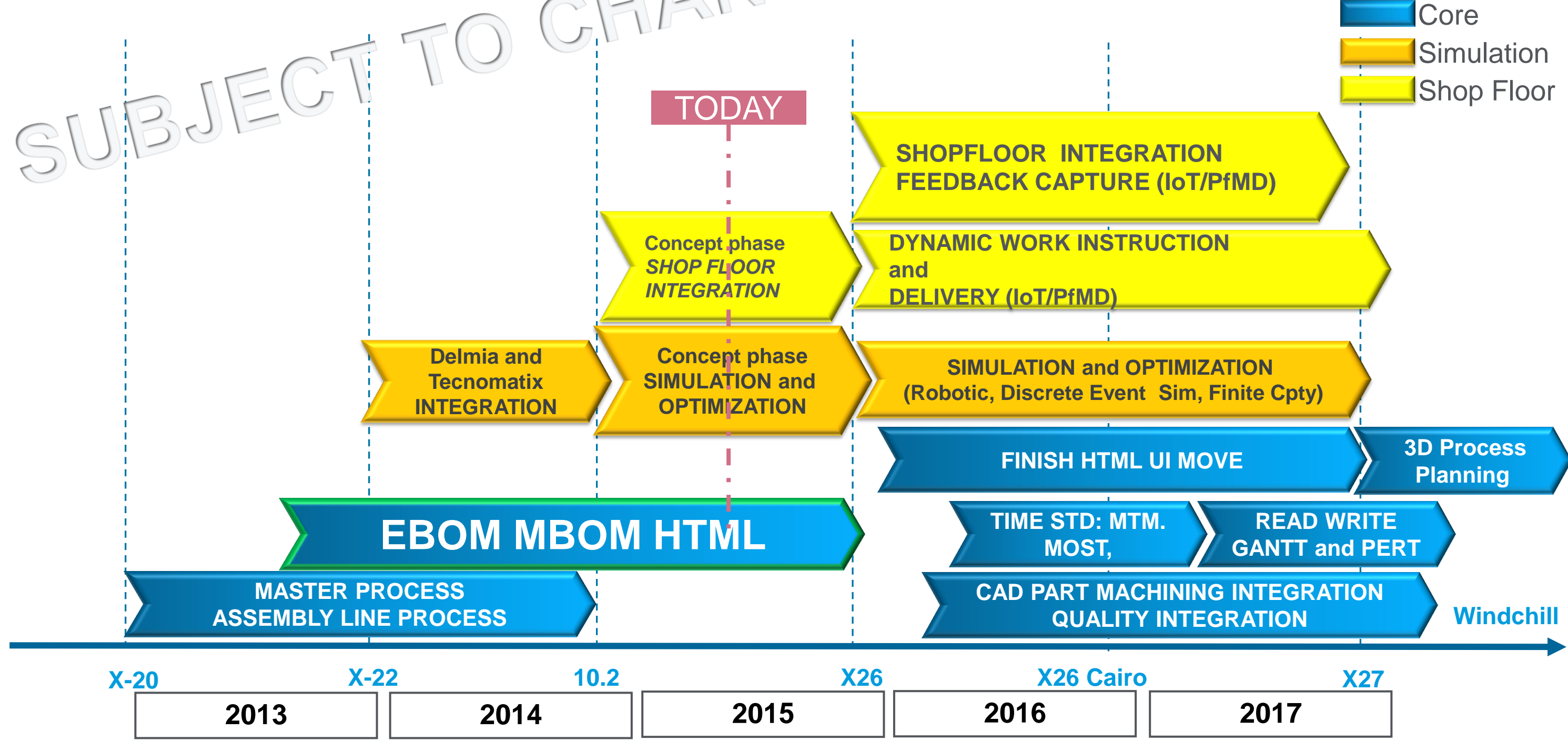
Attributes Visualization Uses Occurrences

X26

- Access Control based on View
- Equivalent Occurrences
- Integration of 3D (Phantom mode)
- Discrepancies Analysis

SUBJECT TO CHANGE

- Core
- Simulation
- Shop Floor



- Your feedback is valuable
- Don't miss out on the chance to provide your feedback
- Gain a chance to win an instant prize!
- Complete your session evaluation now

PTC[®] Live Global