



# THE POWER OF THE XBOM IN PTC WINDCHILL

Jean- Claude Niyonkuru  
Director MPM Solutions

June 9<sup>th</sup>, 2016

[liveworx.com](http://liveworx.com) | #LIVEWORX



---

# AGENDA

---

- xBOM concept
- PTC – IOT Manufacturing
- Road Map

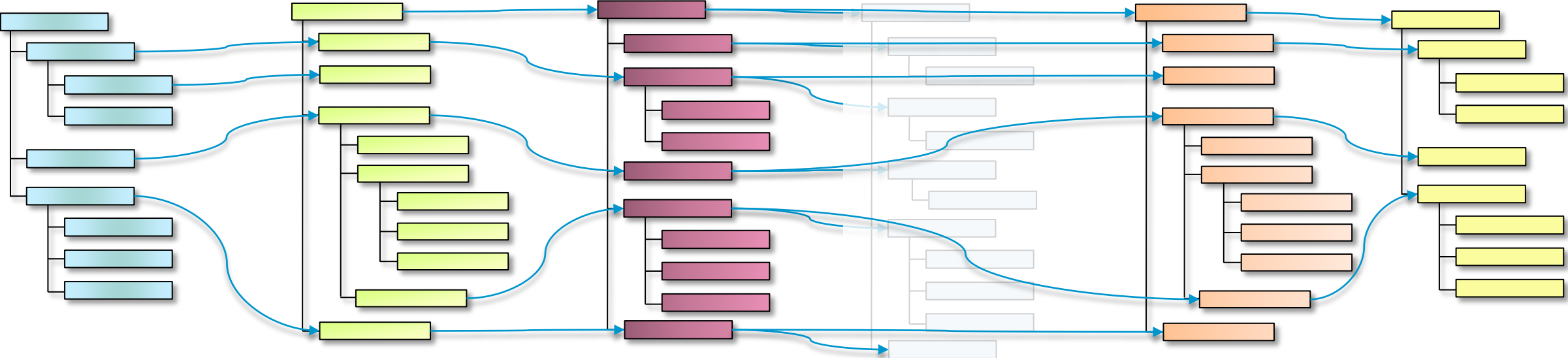
---

# AGENDA

---

- xBOM concept
- PTC – IOT Manufacturing
- Road Map

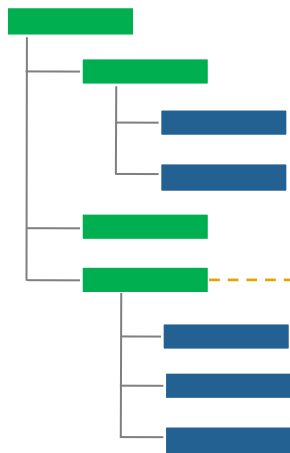
# MASTERED BOM IN SINGLE SYSTEM



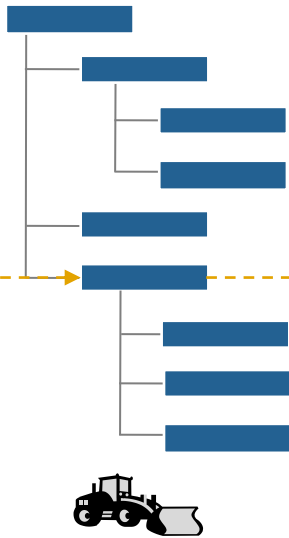
# ASSOCIATIVE BOM'S MANAGEMENT



Concept/CAD BOM



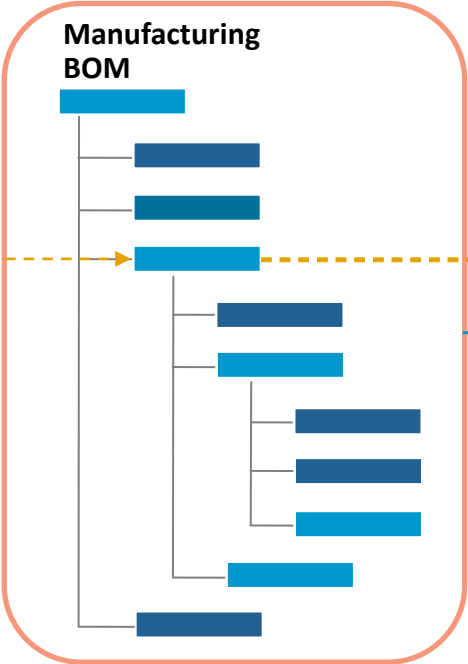
Engineering BOM



Equivalent

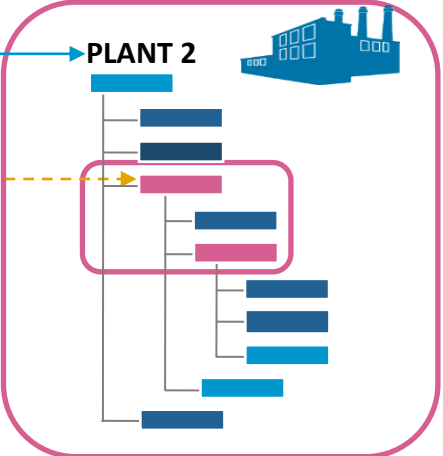
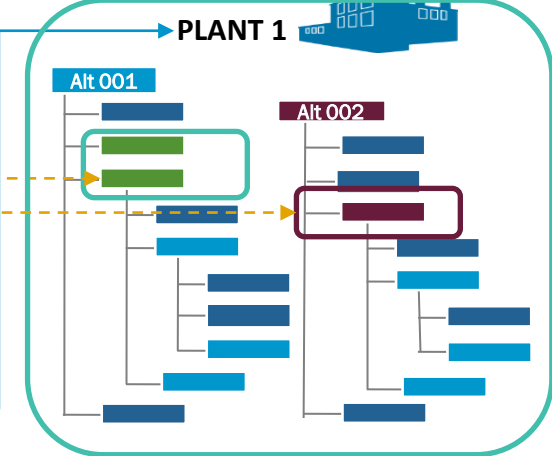
Equivalent

Global Manufacturing Strategy  
 No Replication  
 → Maximize Reuse  
 → Optimization



Full Traceability

Manage only Plant Specific Definition



# XBOM WITH PTC TRANSFORMATION JOURNEYS



## transformation journeys

Understand  
Advance  
Outperform



### Digital Engineering

Drive business results and continuous innovation by transforming your engineering practices and product designs



### Manufacturing

Continuously improve your operational performance and flexibility through digital manufacturing, real-time intelligence and predictive analytics



### Service

Generate unprecedented value for your customers and your organization by redefining the entire service model

A decorative graphic in the top-left corner consisting of several overlapping, semi-transparent shapes in shades of blue, yellow, and pink, resembling stylized arrows or blades.

---

# AGENDA

---

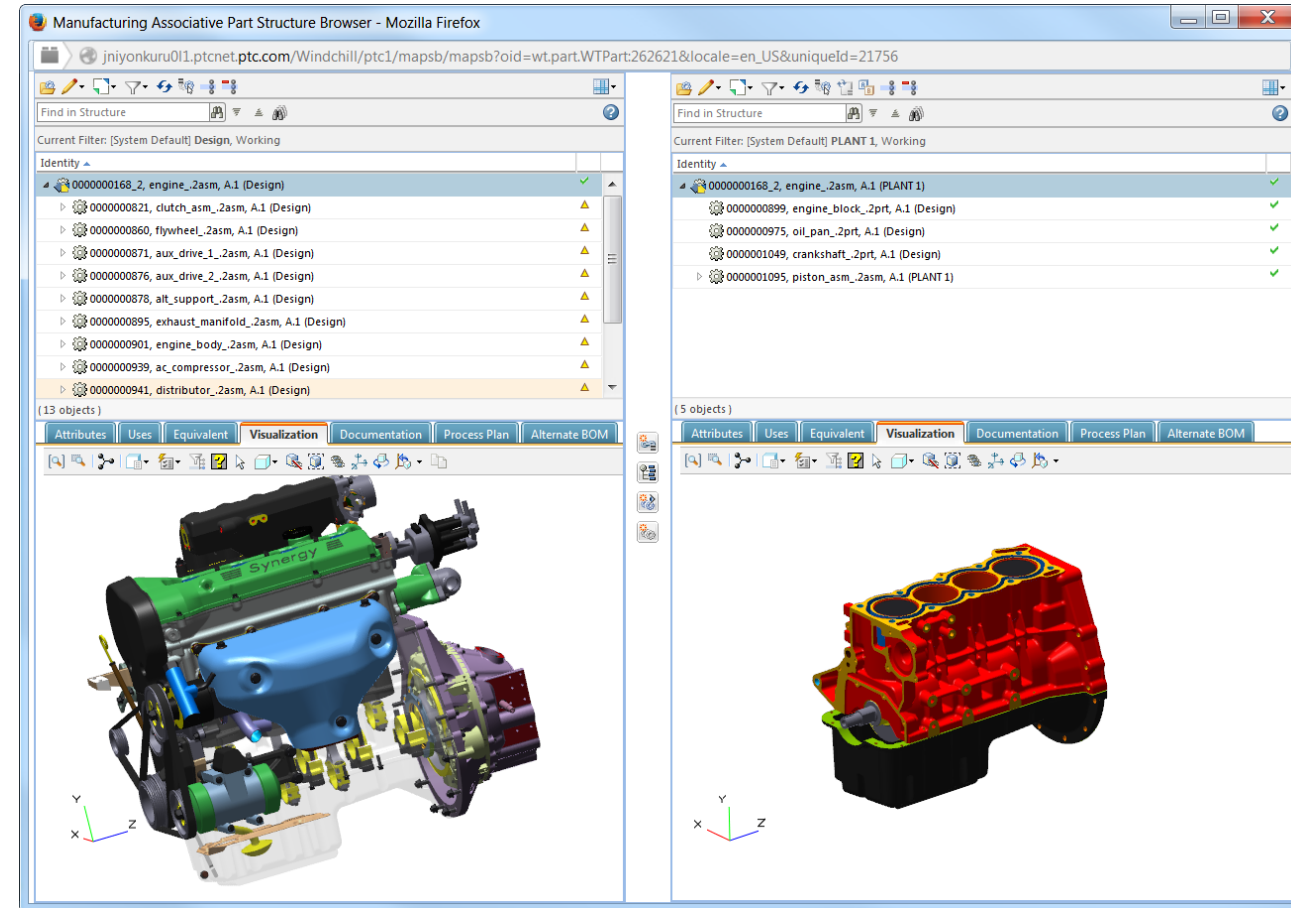
- xBOM concept
- xBOM features in Windchill 11
- Road Map

# NEW BOM TRANSFORMATION TOOL



## Collaborative Development: New User Experience

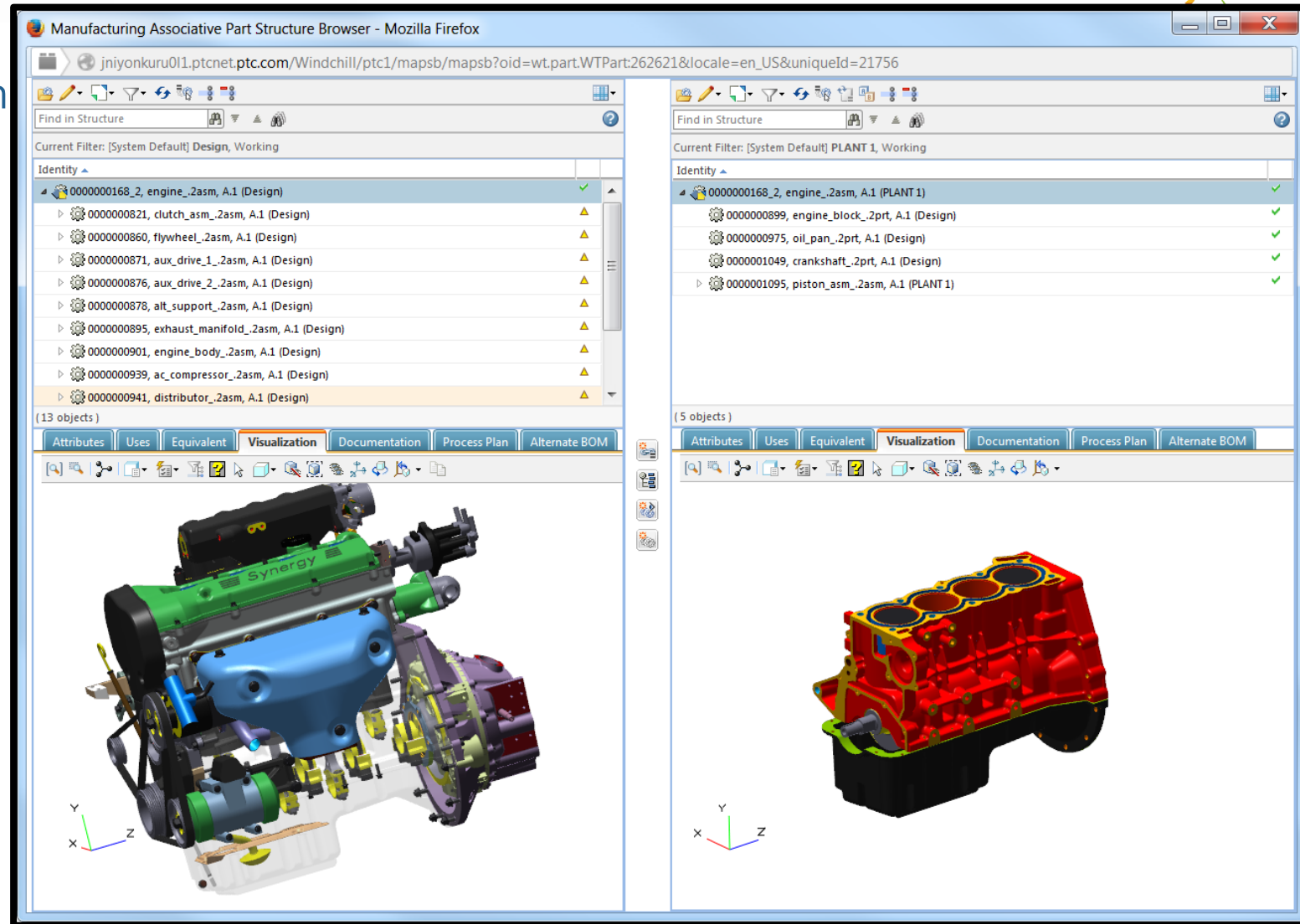
1. More Visual Environment
  - Better 3D integration
2. Improved Performance
  - Enhanced support for multiple site: 100 times
  - Action Performance: 5 to 20 times
3. Usability
  - Reduce multiple windows
  - Streamline tasks





# BOM TRANSFORMATION CORE

- Implement Core for BOM transformation actions:
  - Paste As New Branch
  - Paste As Is
  - Paste As New Part
- Manage Equivalent Part Link:
  - Self Link On/Off
  - Multiple EL Update
  - Remove completely Equivalency
- 3D integration
- Manage mBOM related information:
  - Attribute Tabs
  - Documentation Tab
  - Use Tabs

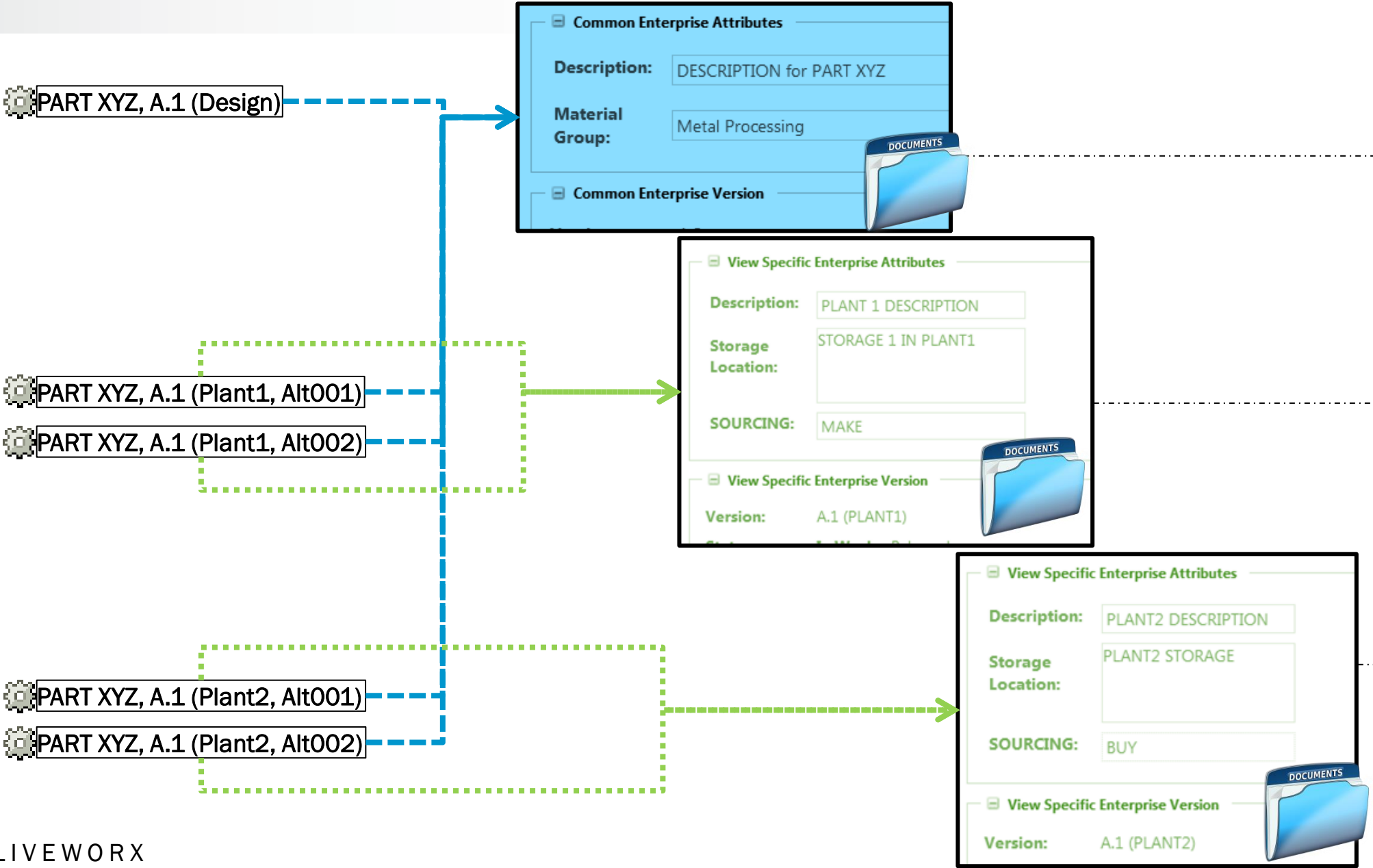


# ENTERPRISE DATA MANAGEMENT

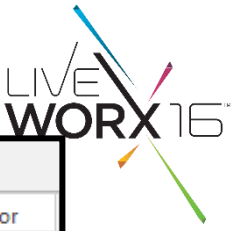
BASIC views  
1/2

PLANT 1  
views

PLANT 2  
views



# ENTERPRISE DATA



- No need to create view just for attributes or associations. Only for BOM differences
- ESI complaint

The screenshot displays the LiveWorx 16 software interface for viewing Enterprise Data. It is divided into two main sections, both showing data for the part '0000000204, Part XYZ, A.1' under the filter '[System Default] PLANT2, 001, Working...'. The top section shows a list of three objects with status indicators (green checkmarks and a yellow triangle). The bottom section shows a detailed view of the 'Common Enterprise Attributes' for the selected object, including fields for Description, Material Group, and Sourcing.

Identity	Q...	Reference Designator
0000000204, Part XYZ, A.1 (PLANT2, 001)		
0000000204, Part XYZ, A.1		
0000000204, Part XYZ, A.1 (PLANT2)		

( 3 objects )

**Attributes** | Uses | Equivalent | Visualization | Documentation | Process Plan | Alternate BOM

**Common Enterprise Attributes**

Description:

Material Group:

( 3 objects )

**Attributes** | Uses | Equivalent | Visualization | Documentation

**View Specific Enterprise Attributes**

Description:

Storage Location:

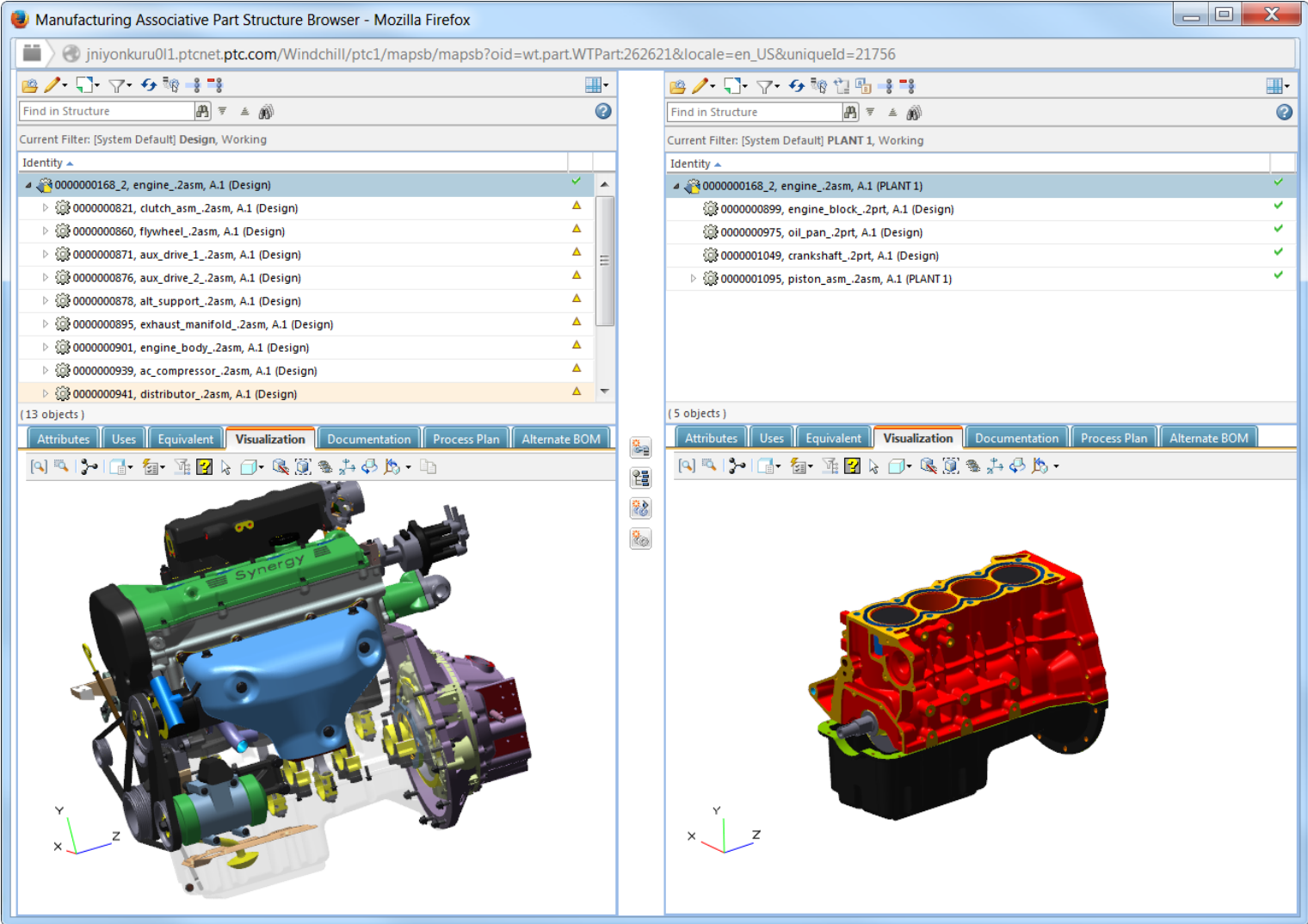
SOURCING:

**View Specific Enterprise Version**

Version:

# EQUIVALENT OCCURRENCE PATH

- Manage Equivalent Occurrence Paths
  - Traceability on occurrence level
  - Render Consumed Parts in Phantom
- Manage split of quantity at occurrence level
- Manage Positioning Traceability



# UPSTREAM DOWNSTREAM RECONCILIATION



- Quantity Discrepancies:
  - In Tree highlight quantity discrepancies
- Update Equivalency:
  - Reconcile 2 BOM's equivalencies

mon-canadians.ptcnet.ptc.com:1800/Windchill/ptc1/mapsb/mapsb?oid=wt.part.WTPart:424538&locale=en\_US&uniqueId=7894229

Find in Structure

Current Filter: [Latest] Design, Working

Identity

Identity	Quantity
QQQQ25_000630, 0000001030, OIL PAN, PLASTIC, A.1 (Design), A.1 (Design)	1
QQQQ25_000642, 0000057740, FLANGE SCREW, A.1 (Design), A.1 (Design)	1
QQQQ25_000639, 0000064275, SPRING, A.1 (Design), A.1 (Design)	1
QQQQ25_000640, 0000050075, CAP, A.1 (Design), A.1 (Design)	1
QQQQ25_000641, 0000044856, FLANGE SCREW, A.1 (Design), A.1 (Design)	1
QQQQ25_000643, 0000057740, FLANGE SCREW, A.1 (Design), A.1 (Design)	1
QQQQ25_000639, 0000064275, SPRING, A.1 (Design), A.1 (Design)	1
QQQQ25_000640, 0000050075, CAP, A.1 (Design), A.1 (Design)	1
QQQQ25_000641, 0000044856, FLANGE SCREW, A.1 (Design), A.1 (Design)	1
QQQQ25_000644, 0000057740, FLANGE SCREW, A.1 (Design), A.1 (Design)	1
QQQQ25_000639, 0000064275, SPRING, A.1 (Design), A.1 (Design)	1

(521 objects)

Attributes Uses Equivalent Visualization Documentation Process Plan Alternate BOM

mon-canadians.ptcnet.ptc.com:1800/Windchill/#

mon-canadians.ptcnet.ptc.com:1800/Windchill/ptc1/mapsb/mapsb?oid=wt.part.WTPart:424538&locale=en\_US&uniqueId=7894229

Find in Structure

Current Filter: [Latest] Manufacturing, 001, Working

Identity

Identity	Quantity
QQQQ25_001101, ENGINE ASSEMBLY TEMPLATE, A.1 (Manufacturing)	1
QQQQ25_000001, 0000052339, -, A.1 (Design), A.1 (Design)	1
QQQQ25_000062, 0000054871, COOLANT PUMP, A.1 (Design), A.1 (Design)	1
QQQQ25_000065, 0000055858, INTERMEDIATE SECTION, A.1 (Design), A.1 (Design)	1
QQQQ25_000093, 0000056045, CYLINDER BLOCK, A.1 (Design), A.1 (Design)	1
QQQQ25_000104, 0000044781, TURBOCHARGER, WASTEGATE, A.1 (Design), A.1 (Design)	1
QQQQ25_000105, 0000066385, GIC032_21067668, A.1 (Design), A.1 (Design)	1
QQQQ25_000182, 0000056880, CONTROL SYSTEM, A.1 (Design), A.1 (Design)	1
QQQQ25_000211, 0000057061, TRANSMISSION, A.1 (Design), A.1 (Design)	1
QQQQ25_000219, 0000046230, VIBRATION DAMPER, A.1 (Design), A.1 (Design)	1
QQQQ25_000036, 0000061337, FLANGE SCREW, A.1 (Design), A.1 (Design)	8

(124 objects)

Attributes Uses Equivalent Visualization Documentation Process Plan Alternate BOM

Actions

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

Find in Structure

- Identity
- JD\_004319, AT308471\_CP.ASM, A.1 (Design)
    - JD\_002751, AT211415.ASM, A.1 (Design)
    - JD\_002760, AT309322.ASM, A.1 (Design)
    - JD\_002789, AT300525.ASM, A.1 (Design)
    - JD\_002798, AT206644.ASM, A.1 (Design)
    - JD\_002804, AT202727.ASM, A.1 (Design)
    - JD\_002865, AT309502.ASM, A.1 (Design)
    - JD\_002882, AT311003.ASM, A.1 (Design)
    - JD\_002899, AT308543.ASM, A.1 (Design)
    - JD\_002911, AT311546.ASM, A.1 (Design)
    - JD\_002933, AT227989.ASM, A.1 (Design)
    - JD\_002943, AT228403.ASM, A.1 (Design)
    - JD\_003115, AT311112.ASM, A.1 (Design)
    - JD\_003121, AT202774.ASM, A.1 (Design)
    - JD\_003152, DASH\_BOARD.ASM, A.1 (Design)
    - JD\_003156, AT327448.ASM, A.1 (Design)
    - JD\_003163, AT223312.ASM, A.1 (Design)
    - JD\_003420, AT308542.ASM, A.1 (Design)
    - JD\_003455, AT311467.ASM, A.1 (Design)
    - JD\_003459, AT223320.ASM, A.1 (Design)
    - JD\_003627, AT228251.ASM, A.1 (Design)
    - JD\_003635, AT224939.ASM, A.1 (Design)
    - JD\_003641, AT223307.ASM, A.1 (Design)
    - JD\_003652, AT227790.ASM, A.1 (Design)
    - JD\_003677, AT227966.ASM, A.1 (Design)
    - JD\_003681, AT309712.ASM, A.1 (Design)
    - JD\_003820, AT306824.ASM, A.2 (Design)
- (35 objects)

Attributes Visualization Uses Occurrences Supersedes



Search | Browse

Navigator

---

# AGENDA

---

- xBOM concept
- xBOM features in Windchill 11
- Road Map

# XBOM VISION



## Core

- Performance (HTML Enablement)
- BOM Transformation core actions

## Occurrence Management

- 3D Integration
- Consumption Rendering

## Enterprise Data

- Plant Specific Data management
- Alternate BOM's

## BOM Reconciliation

- Discrepancies Search
- Synchronisation of eBOM and mBOM

## Associative Configuration

- Propagate and synchronise Options from Upstream to Downstream

## Usability

- Capability to define BOM Transformation rules e.g mapping Type, Folder, etc...

## Multiple Variants

- Allow to create multiple downstream BOM's from multiple Upstream BOM SKU's.
- Ability to reconcile multiple BOM variants at once

## Associative Configuration

- Propagate and synchronise Effectivity from Upstream to Downstream

## Usability

- Assist BOM transformation: Quantity Update, Short Cuts, Better Selection, Tree Highlight, Auto Allocation etc...
- Assist BOM Reconciliation

10.2

11.0

11.10

Future



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 of the frame. 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](http://liveworx.com)