



# Getting from Document Management to BOM Management

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Founding Partners



Innovation &  
Collaboration

*Bringing together  
the users of  
Dassault Systemes  
PLM solutions*



## Agenda

- Document Versus Item
- Challenges of Change
- Benefits of Change
- Scenario
- Avoiding the Bleeding Edge
- ENOVIA SmarTeam Tools
- Where to Start



## Document Versus Item

- Drawings
  - Traditional representations of physical items
  - Drawing trees = product structure?
  - Good framework for 2D drafting



## Document Versus Item

- Drawings
  - Traditional representations of physical items
  - Drawing trees = product structure?
  - Good framework for 2D drafting
- Items
  - Concept introduced with databases and MRP/ERP
  - Item = collection of data that describes a physical entity
  - Item structure now independent from document structure



## Document Versus Item

**Document is the product record**

VS.

**Document as part of the product record**



## Challenges of Change

- Keeping 2 (maybe 3+) revisions per physical part:
  - Item revision
  - Drawing revision
  - 3D model revision



## Challenges of Change

- Keeping 2 (maybe 3+) revisions per physical part:
- Product structure duplication
  - Structure is created during CAD design
  - Time is wasted to re-enter it into MRP/ERP as items



## Challenges of Change

- Keeping 2 (maybe 3+) revisions per physical part:
- Product structure duplication
- Giving up control
  - Creating/managing structure in 3D CAD means Engineering controls product structure
  - Items could be viewed/manipulated by all groups



## Challenges of Change

- Keeping 2 (maybe 3+) revisions per physical part:
- Product structure duplication
- Giving up control
- Possible to create impossible designs
  - Items don't have geometry to check FFF



## Challenges of Change

- Keeping 2 (maybe 3+) revisions per physical part:
- Product structure duplication
- Giving up control
- Possible to create impossible designs
- Doc. Cntrl. is *easy*, Configuration Mgmt. is *hard*
  - CM has a bad name – its perceived as complex
  - Doc. Ctrl. has a bad name – its perceived as mundane



## Benefits of Change

- Stop modeling EVERYTHING in CAD



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- Stop worrying about revision/PN bubble-up in CAD
- Communicate across disciplines (electrical/mechanical) *early* in the design process
- Collaborate with partners without CAD interoperability worries



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- Take down the fences between CAD, PDM, and ERP and let everyone share data
- Add BOM components that don’t have geometry – and feel good about it
- Stop confusing a document’s status with an item’s maturity (and free yourself from a 20 person drawing release process)



## Avoiding the Bleeding Edge

- Good Config. Mgmt. is the heart of item-centricity



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- Good Config. Mgmt. is the heart of item-centricity
- CM got a bad name in the Defense industry
- Going from Documents to Items is a *big* change
- Culture change will always hurt



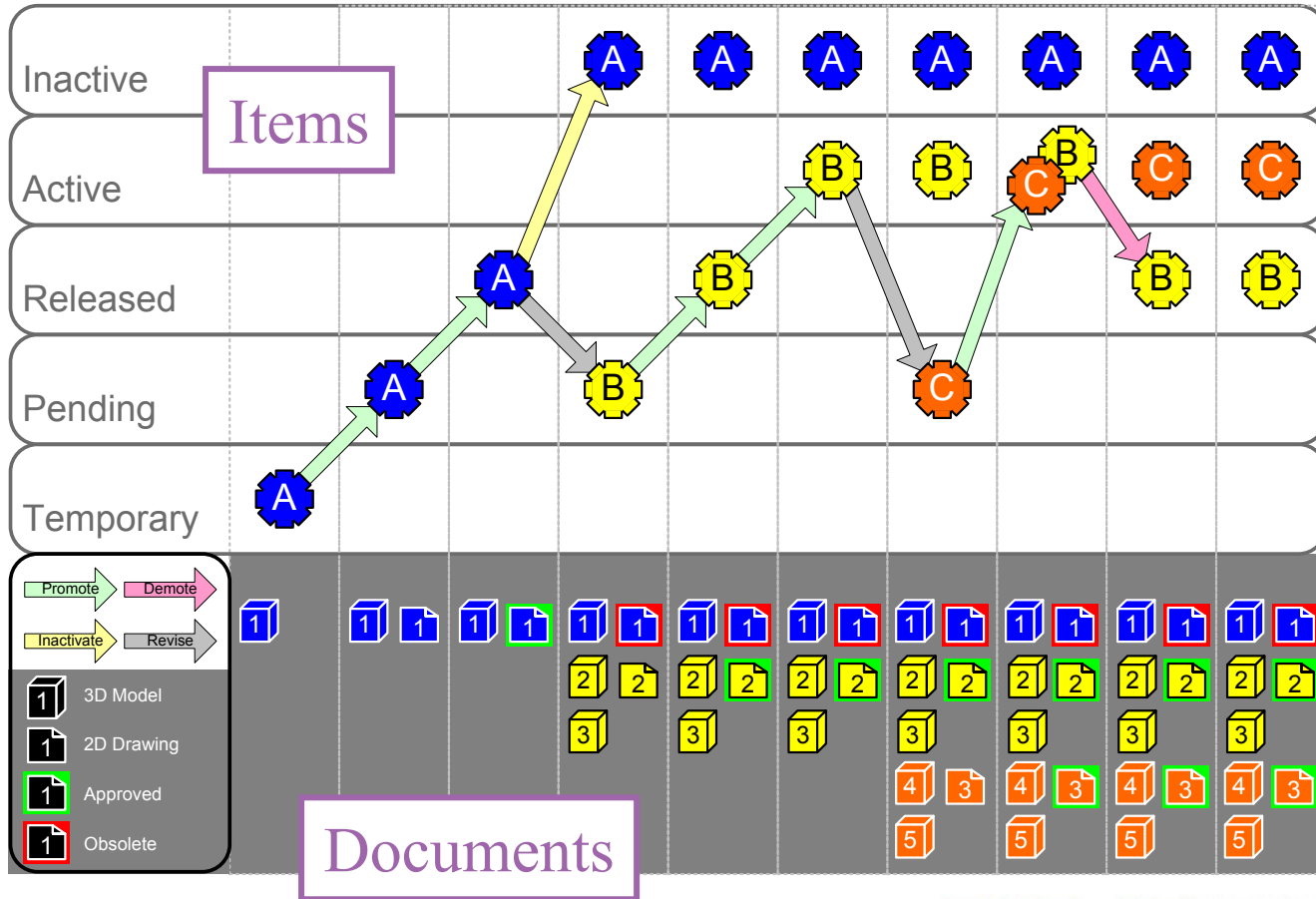
## Avoiding the Bleeding Edge

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- CM got a bad name in the Defense industry
- Going from Documents to Items is a *big* change
- Culture change will always hurt
- Follow the leaders:
  - CMII
  - EIA-649
  - MIL-STD-973A



## Scenario Preview

Time →

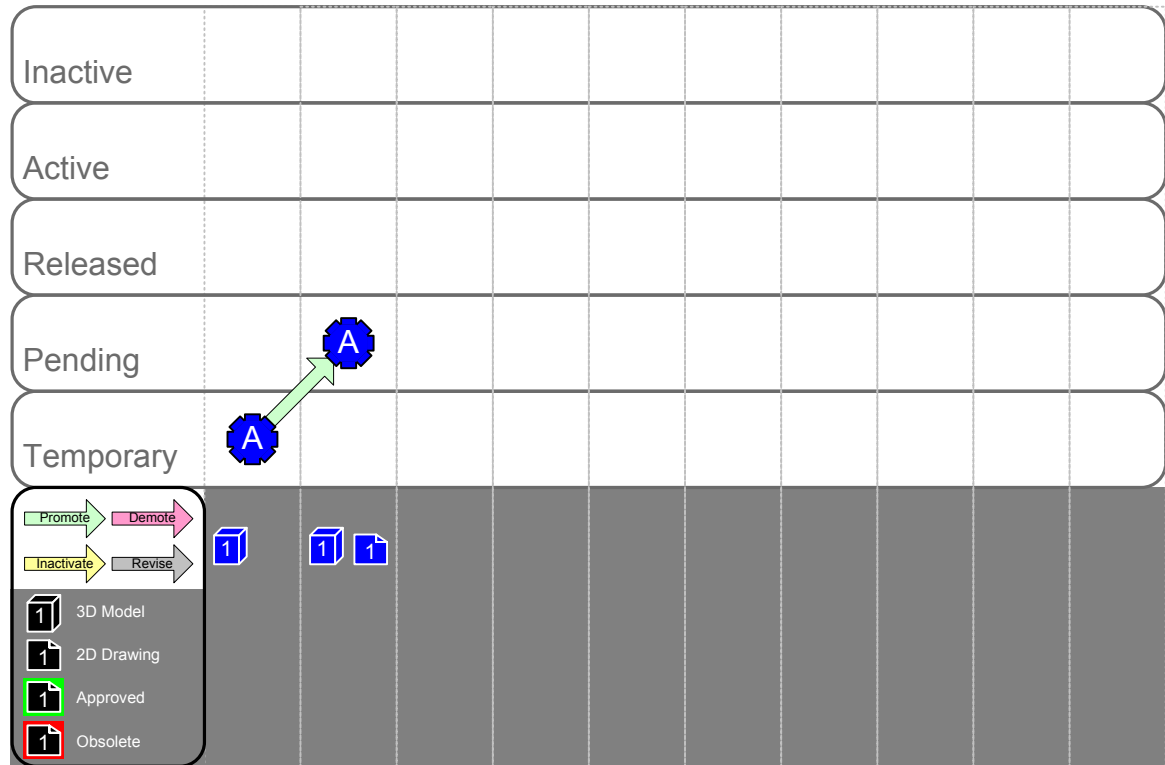






## Scenario

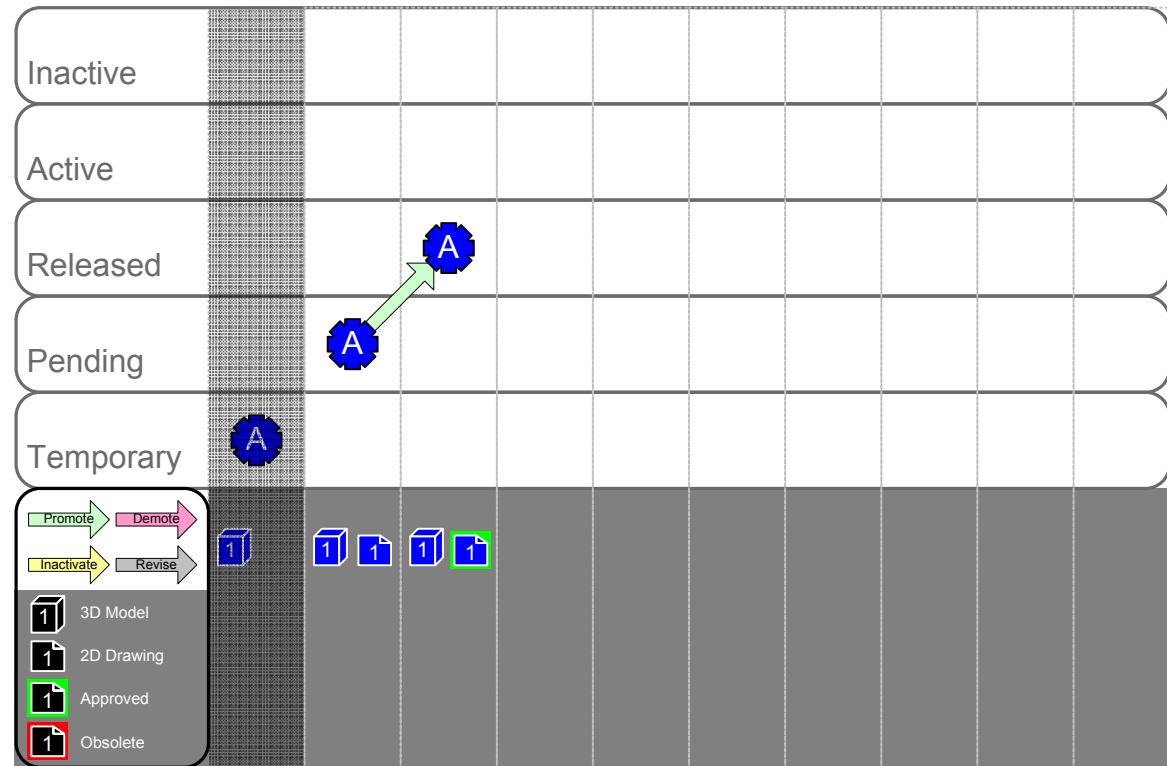
- Specifying drawing created
- Item set as “pending” and given part number





## Scenario

- Specifying drawing approved
- Pending item promoted to state “released”



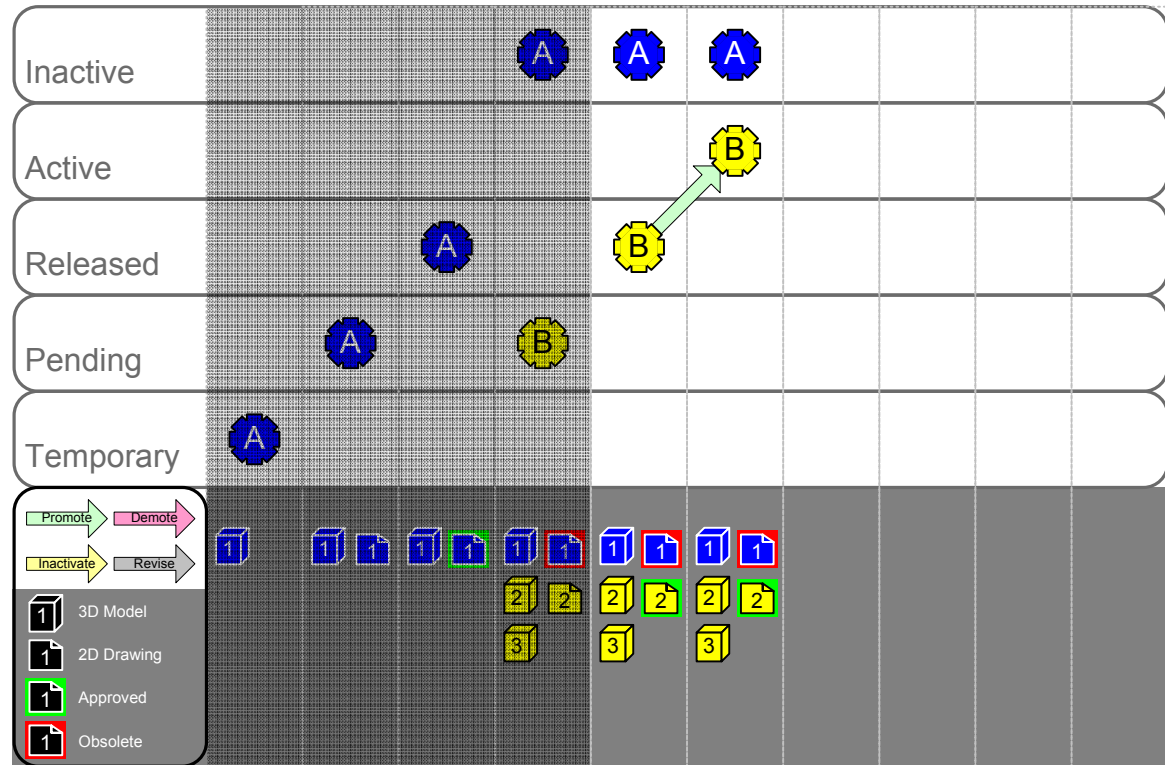






## Scenario

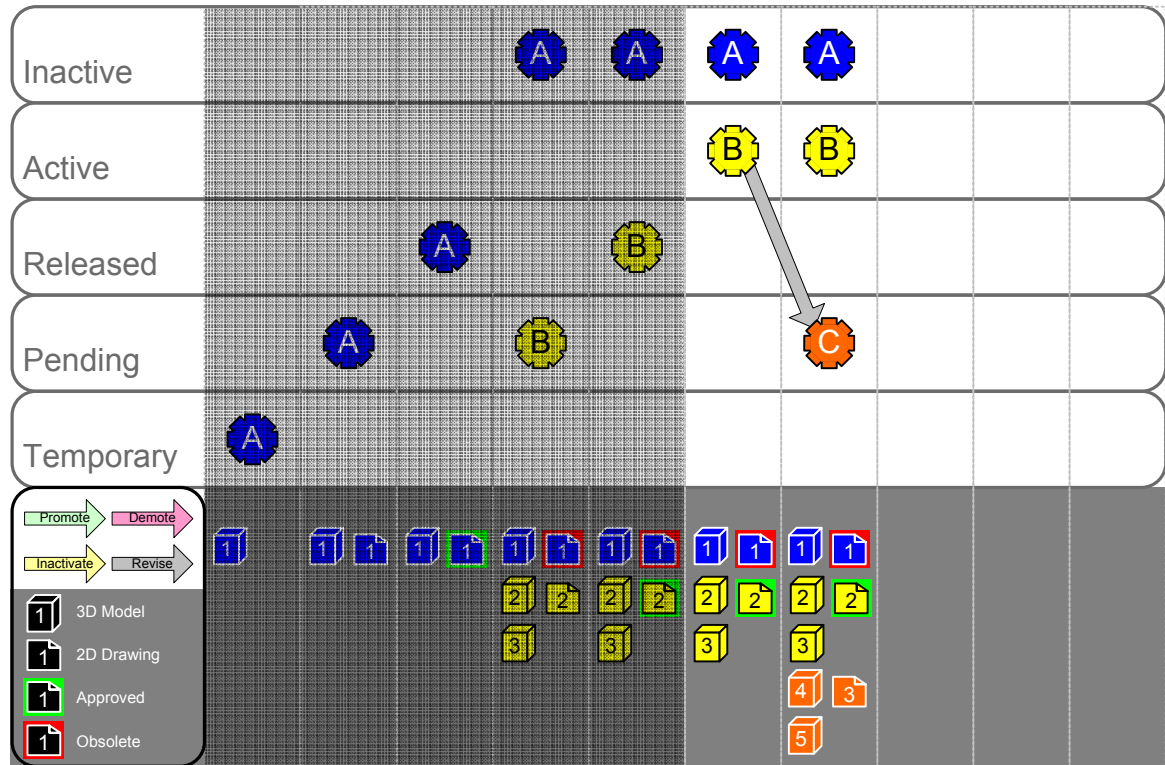
- Tooling completed
- Item rev B promoted from “released” to “active”
- Production begins





## Scenario

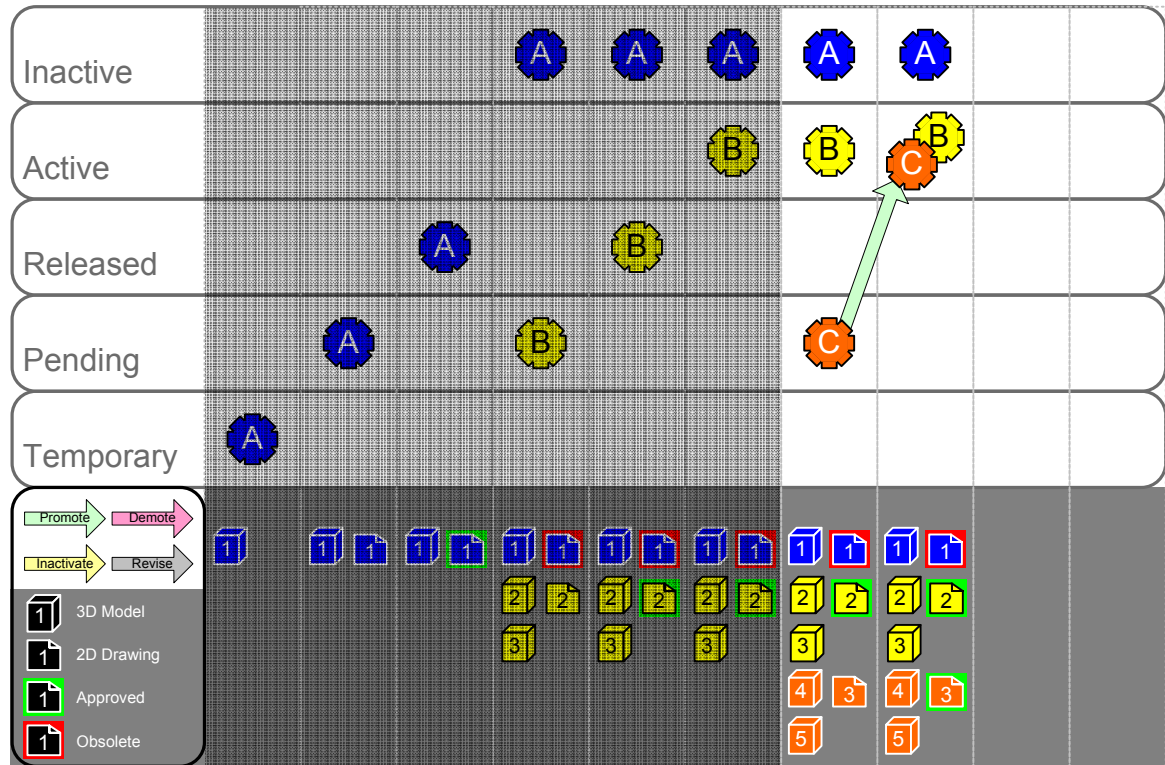
- Item redesign initiated for cost savings program
- New revision needed (rev C)
- New 3D and 2D prepared





## Scenario

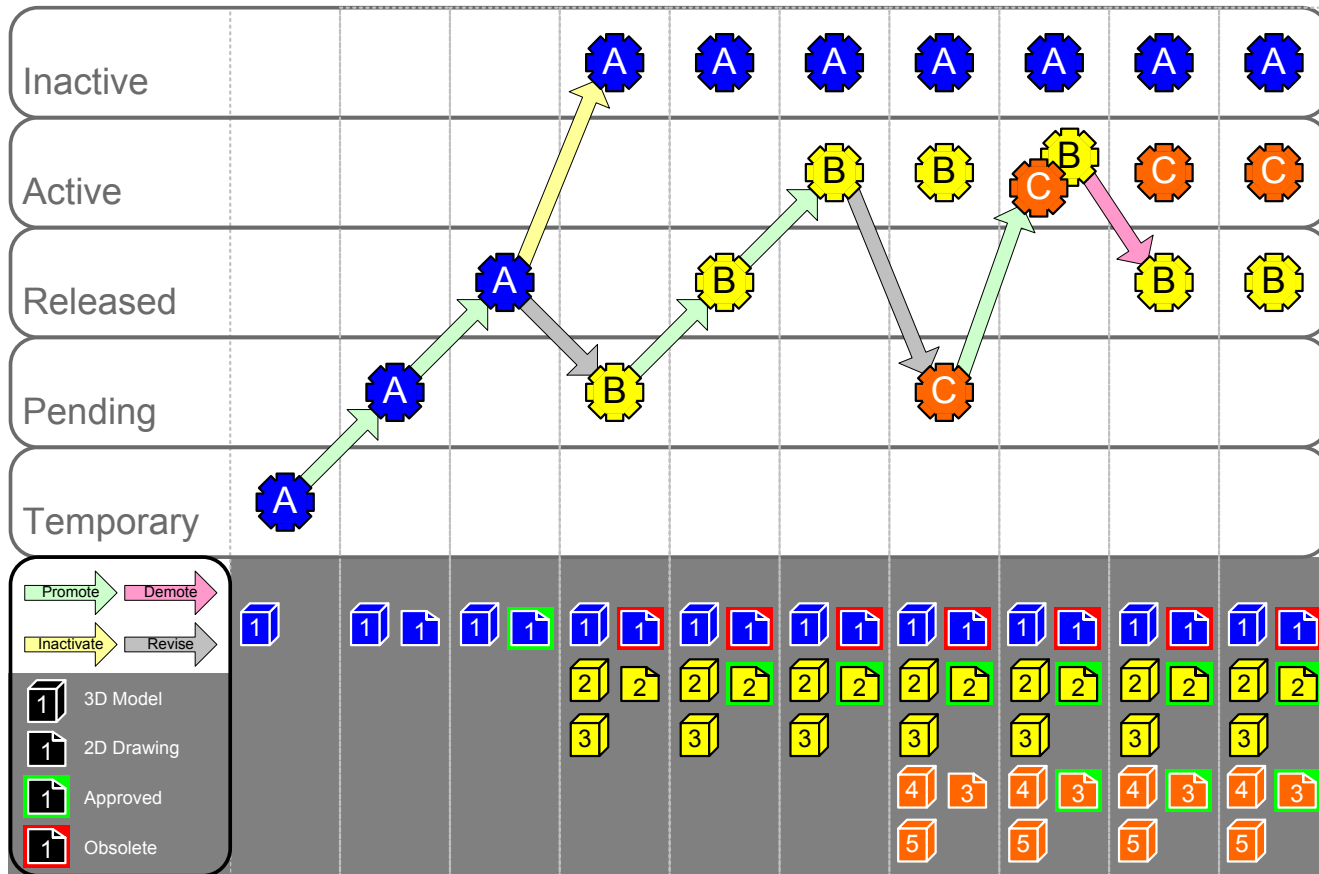
- New 2D drawing approved
- Item rev C promoted from “pending” directly to “active”
- 2 revisions of the item in production at one time





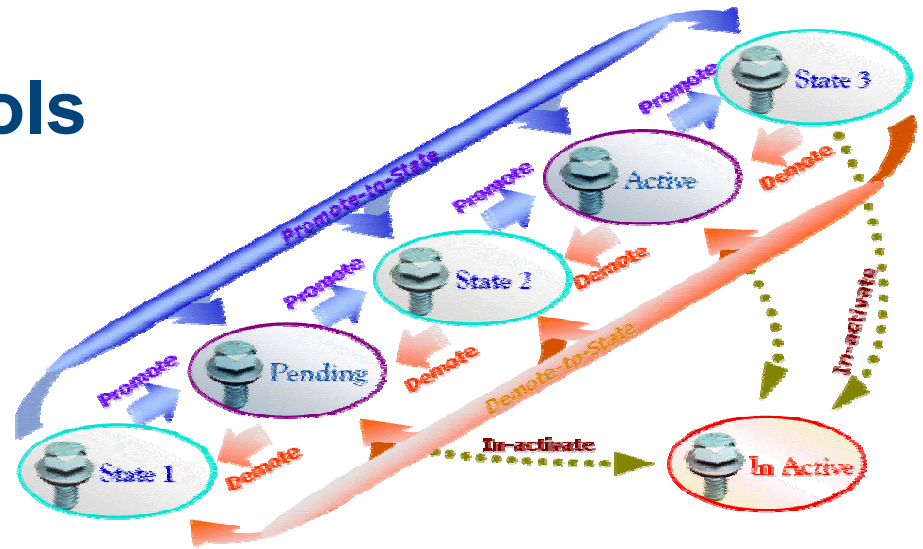


## Scenario





# ENOVIA SmarTeam Tools



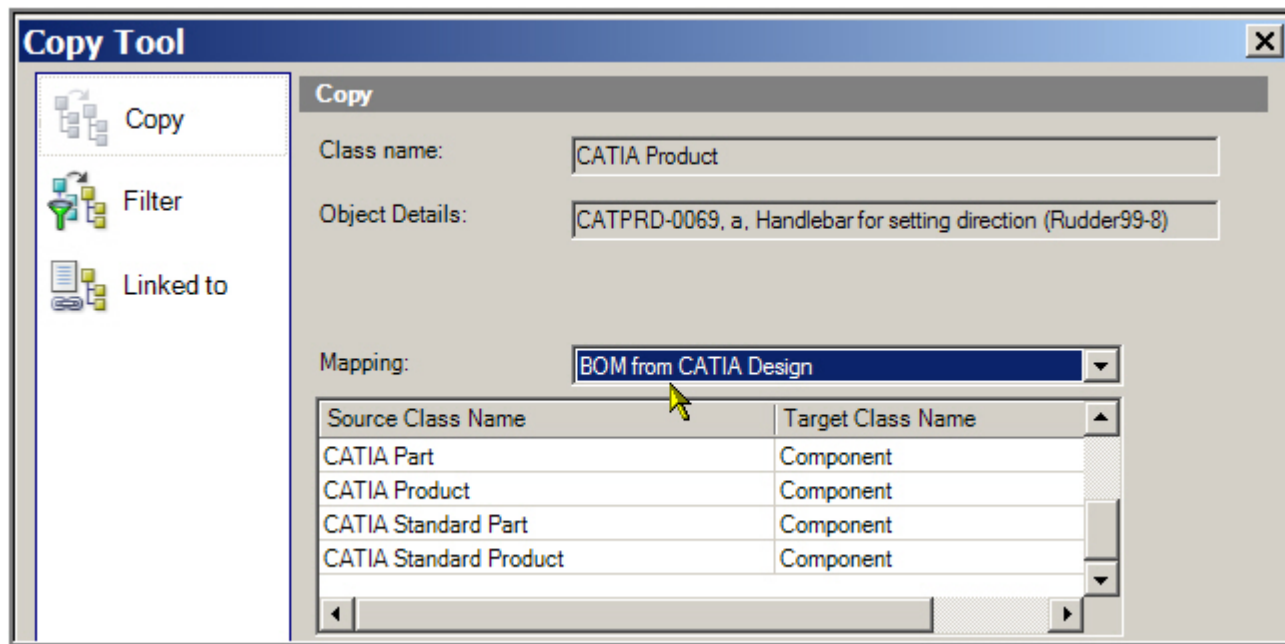
	Temporary	Pending	Prototype	Release	Active
Temporary		↔	✗	✗	✗
Pending	↔		↔	✗	✗
Prototype	✗	↔		↔	✗
Release	✗	✗	✗		↔
Active	✗	✗	✗	↔	

Name	Description	Lock	Revise	InActive	Public
Inactive	Inactive	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Temporary</b>	<b>Temporary</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Pending	Pending	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Prototype	Prototype	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Release	Release	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Active	Active	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Rules Explorer	Item Destination State	Minimum Child State	Children Action	Specification	Specification Action
Lifecycle Rules	Active	Active	Treat as error	Released	Treat as error
Documents Rules	Pending	Temporary	Do not check	Do not check	Do not check
General Rules	Prototype	Pending	Show warning	Do not check	Do not check
Integration Rules	Release	Release	Treat as error	Checked In	Treat as error
Items Rules					
Demote					
InActivate					
Promote					



## ENOVIA SmarTeam Tools





# ENOVIA SmarTeam Tools

**Edit Mapping - BOM from CATIA Design**

Source	Target	Condition
CATIA Design Table	Component	
CATIA Drawing	Component	
CATIA Internal Com...	Component	
CATIA Other	Component	
CATIA Part	Component	
Documents Tree	Items Tree	
CATIA Product	Component	
CATIA Standard Part	Component	
CATIA Standard Pro...	Component	

Relational Link:

Attributes:

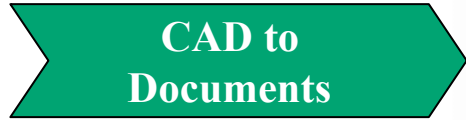
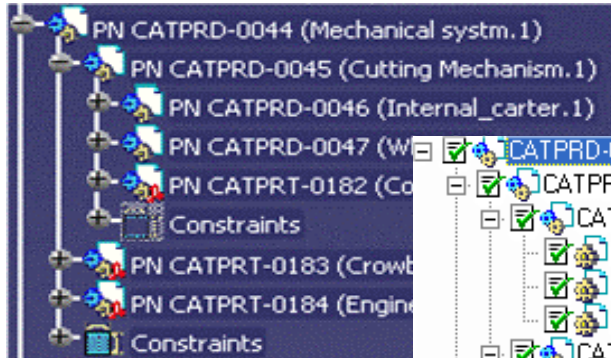
Source	Target	Default Value	Sequence
Related Item Number	ID		
Phase	Phase		
Approval Date	Approval Date		
Effective From	Effective From		
Effective Until	Effective Until		
Under Operation	Under Operation		
Original Creation Date	Date of first revision creation		
Description	Description		
Nomenclature	Nomenclature		

Attributes | Conditions

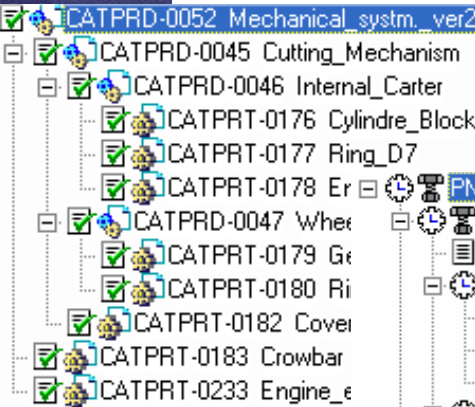
OK Cancel



## ENOVIA SmarTeam Tools



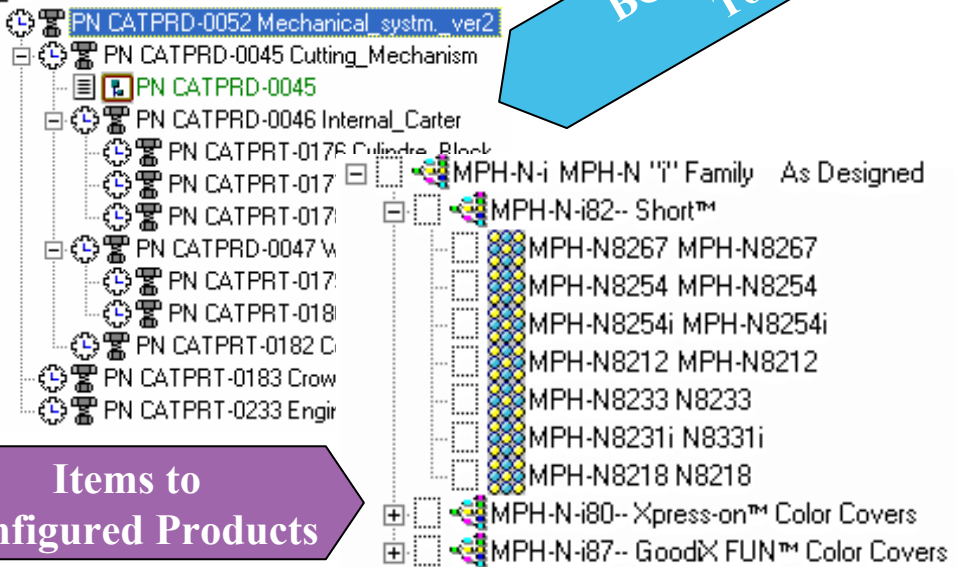
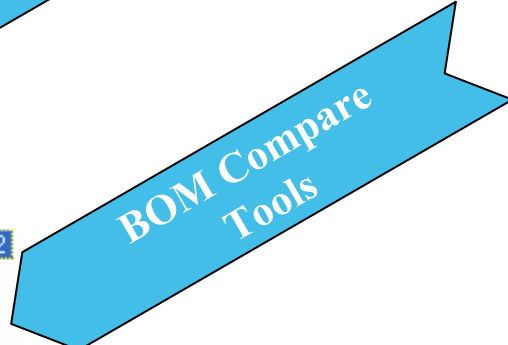
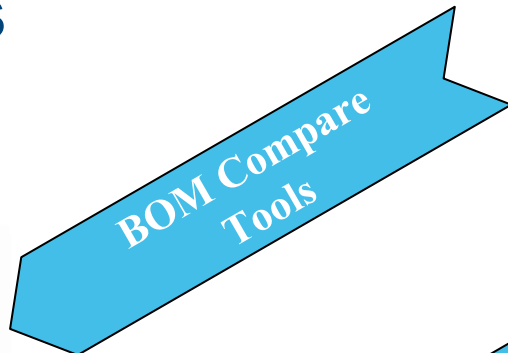
CAD Integrations



BOM Copy Tools



BOM Copy Tools





## Where to Start

- What kind of CM does your company do today?
- What CM standards does your company follow?
- Would these changes benefit your business?
  - Broader functional group involvement in design
  - Supplier collaboration regardless of CAD platform
  - Reduced time-to-market through design parallelism
  - Reduced time-to-market through simpler decision-making and approval processes
  - Automated data sharing across the enterprise (CAD, PLM, ERP)



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  - <http://www.razorleaf.com/COE2007.html>



Founded in 2000, Razorleaf is an independent systems integrator for PLM and RPM, supporting over 100 customers with more than 20 team members across North America. Razorleaf is driven by the core belief that today's organizations can be market leaders through the proper application of business process that take advantage of tomorrow's technologies.