PL2570-P: BOM Management with Autodesk® PLM 360: Configuration Management

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REVISION CONTROL, EFFECTIVITY, AND CHANGE MANAGEMENT

Class summary

Learn how to implement configuration management and release processes in Autodesk PLM 360 cloud-based product lifecycle management software. The class covers the concepts of change management and effectivity. We demonstrate the basic workflows and concepts.

Class Flow

- Introductions and Administration
- What is Configuration Management
- Items, Revisions, and Effectivity
- BOMs, BOM Relationships, and BOM Configuration
- Change Management and Change Impact Assessment
- Q&A

Confidentiality

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What Is Configuration Management

A Little History

- CM was first introduced by the Air Force in 1962 as means to ensure
  - Documentation delivered with product matched the product delivered
  - Ability of suppliers to create additional identical products
- Concepts of CM were widely adopted by industry and are at the core of SE, CMMI, ITIL, ISO 9000 and other
  - Military standard replaced in 1994 by ‘best commercial practices’
  - ANSI GEIA-STD-649 is the DoD sponsored alternative
- CMII refers to the Institute of Configuration Management (ICM) ‘The Path to Integrated Process Excellence’

Find the Differences!

Wikipedia

Configuration management

From Wikipedia, the free encyclopedia

This article is about the broad systems engineering process. For the specific ITIL process, see Configuration Management (ITSM).

Configuration management (CM) is a systems engineering process for establishing and maintaining consistency of a product's performance, functional and physical attributes with its requirements, design and operational information throughout its life.[1][2] The CM process is widely used by military engineering organizations to manage complex systems, such as weapon systems, vehicles, and information systems. Outside the military, the CM process is also used with IT service management as defined by ITIL, resp. ISO/IEC 20000, and with other domain models in the civil engineering and other industrial engineering segments such as roads, bridges, canals, dams, and buildings.[3][4][5]

Overview [edit source]

CM is the practice of handling changes systematically so that a system maintains its integrity over time. CM implements the policies, procedures, techniques, and tools that are required to manage, evaluate proposed changes, track the status of changes, and to maintain an inventory of system and support documents as the system changes. CM programs and plans provide technical and administrative direction to the development and implementation of the procedures, functions, services, tools, processes, and resources required to successfully develop and support a complex system. During system development, CM allows program management to track requirements throughout the life cycle through acceptance and operations and maintenance. As changes are inevitably made to the requirements and design, they must be approved and documented, creating an accurate record of the system status. Ideally the CM process is applied throughout the system lifecycle.

Changes (To Your BOM) Occur Constantly

- Availability of components or raw materials
- Incorporate warranty and field learning
- Need to diversify supply chains due to capacity, quality, location, or other constraints
- Cost reduction initiatives

It is virtually impossible to make identical products over long durations of time

CM Common Questions

- How did this item change over time?
- What did it look like last week? What will it look like in 2 weeks?
- What did we build for this customer last time?
- If we wanted to build another one of those, what would it look like today?

Get Changes Under Control

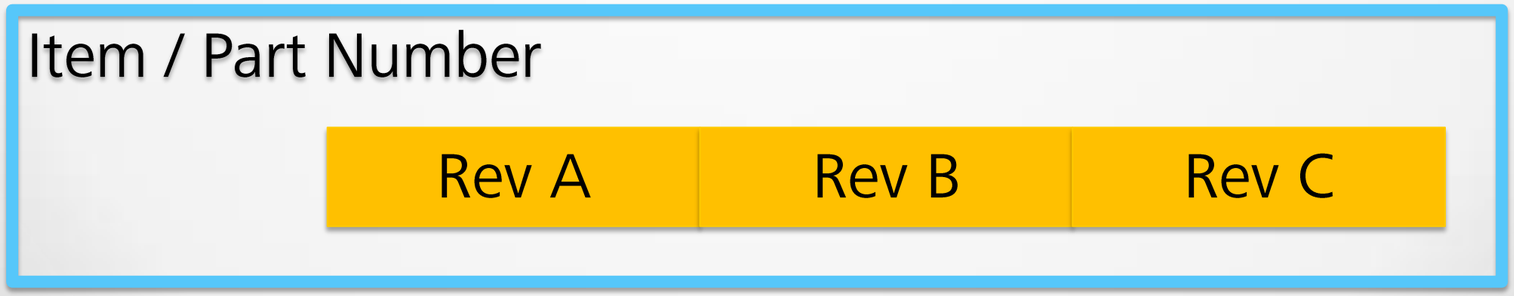
BOM Management
Change Control
Configuration Management

Items, Revisions, and Effectivity

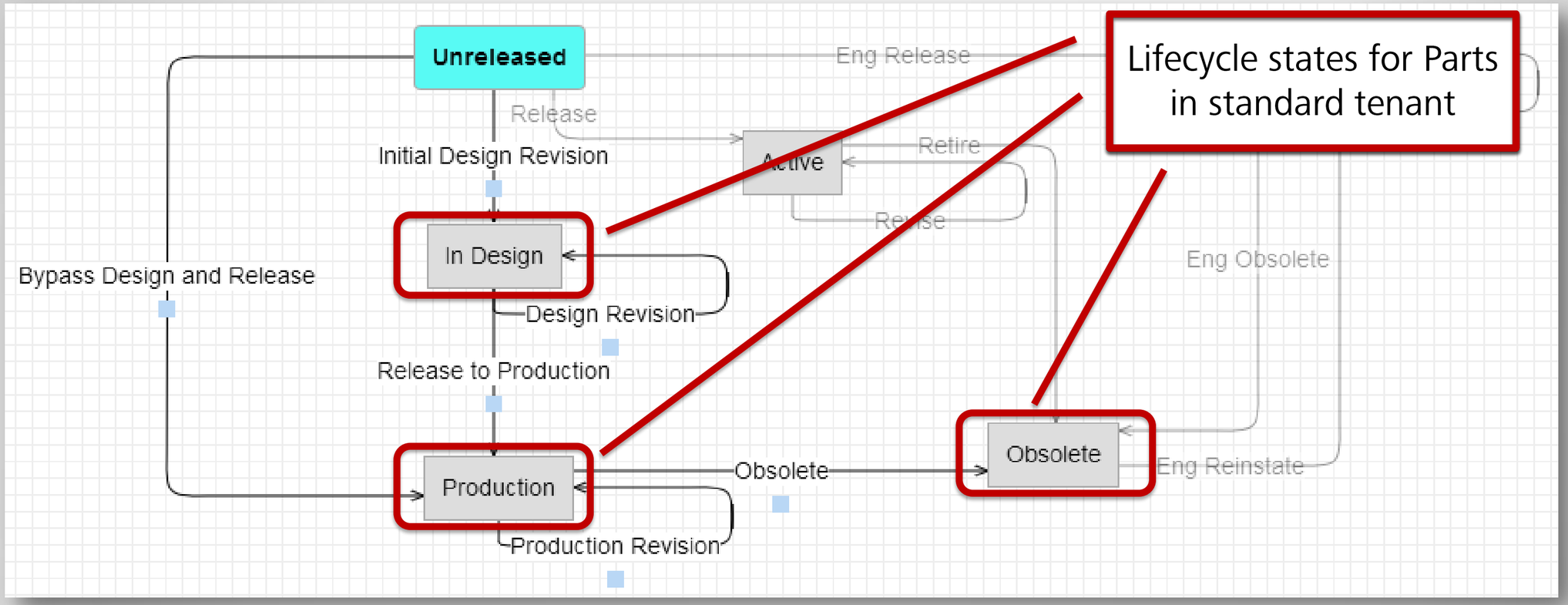
Items Go Through Changes

- When item is ‘Ready’, an Item Revision is ‘locked’
  - Ready for review
  - Ready for prototype
  - Ready for production

Revisions, rather than a new PN, usually require no change in Form, Fit, or Function



‘Readiness’ Captured In Lifecycle States



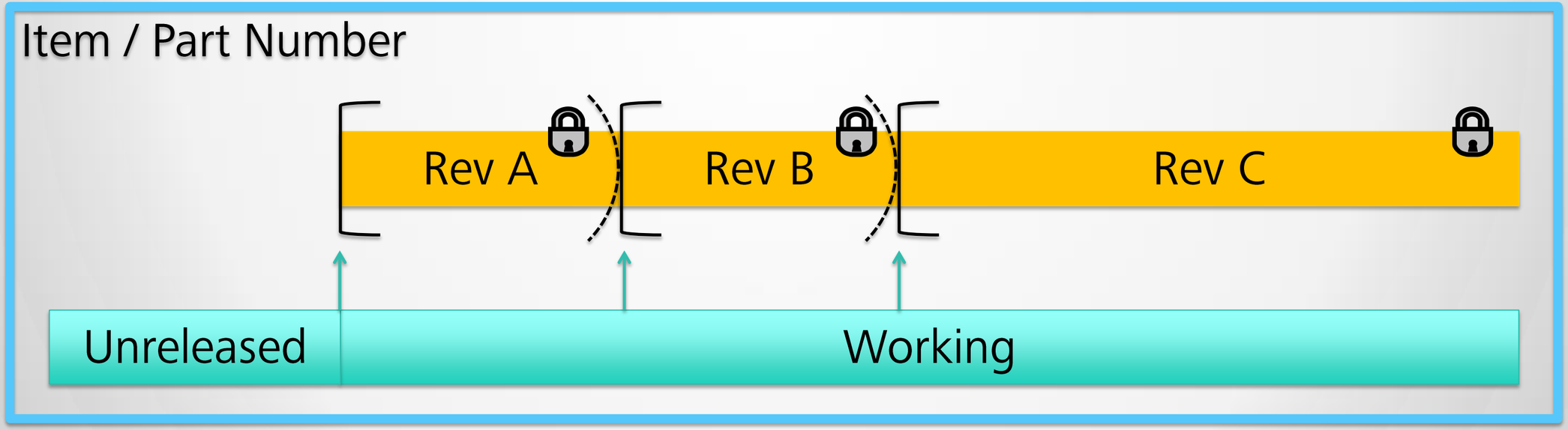
Lifecycle States may represent Maturity or Gateway Readiness

Item / Part Number

Rev A	Rev B	Rev C
[In Design]	[In Design]	[Production]

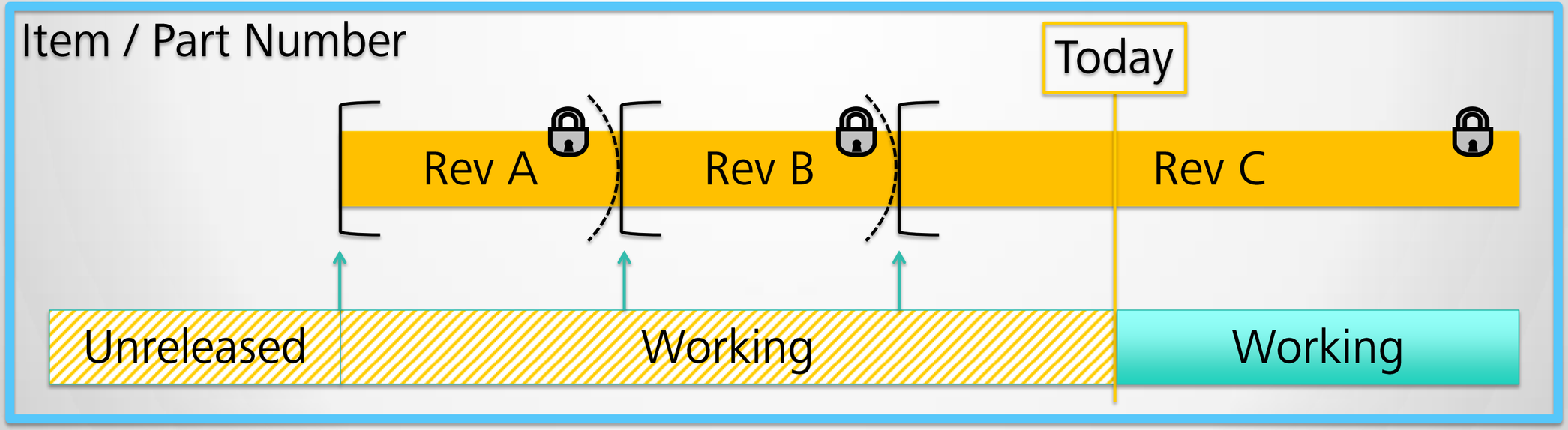
Working Revision

- ‘Working’ is always available for editing
- Revisions are Locked



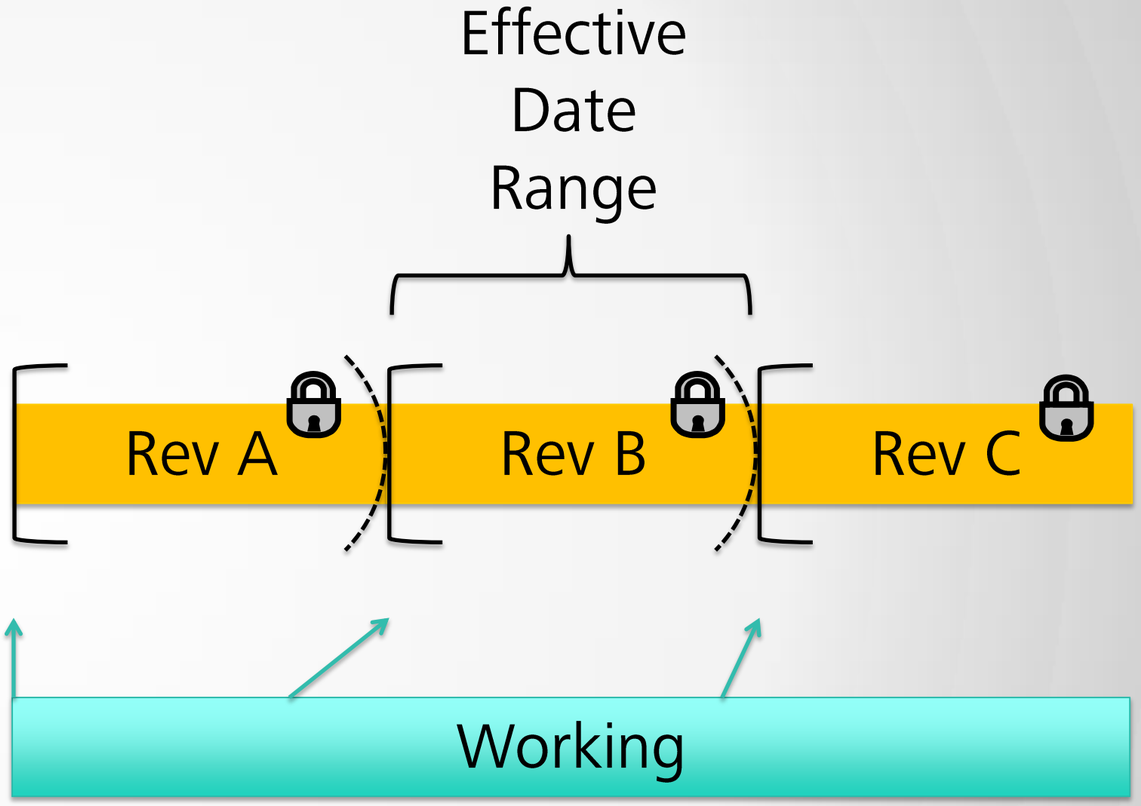
Working Revision Has No History

No way to ask
'What did Working look like a month ago?!'



Effectivity

- Sometimes, there is a gap between the ***Approval Date*** and the ***Effective Date***



To avoid gaps in Effective Range, PLM 360 has no 'End Effectivity'

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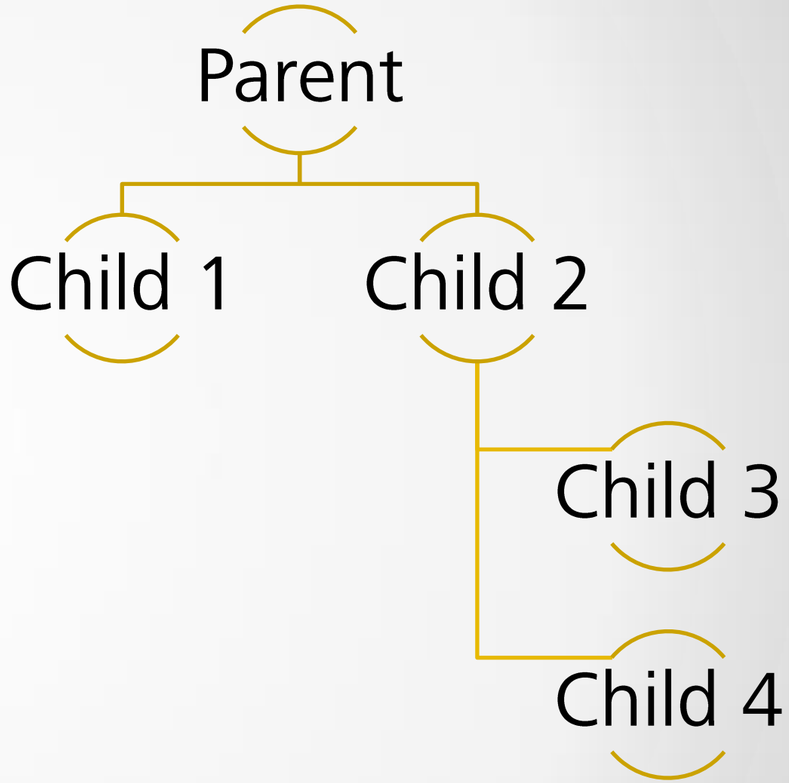
Items, Revisions, and Effectivity

BOMs, BOM Relationships, and BOM Configuration

What Is A BOM

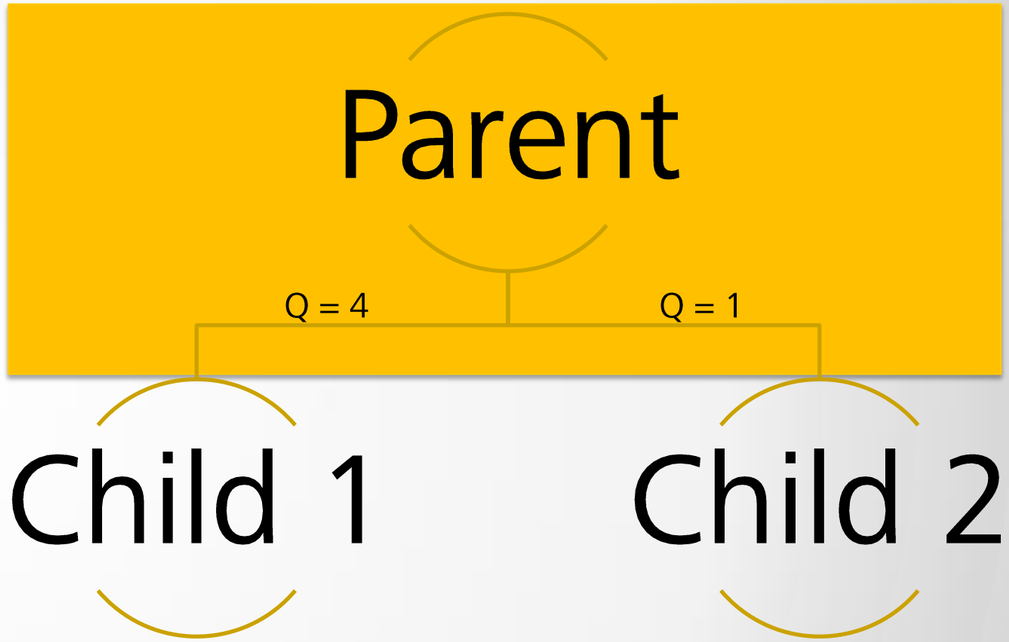
- A Parent, or Assembly, is ‘Made-Of’ one or more Child, or Part items
- Every item can be both a Parent and a Child



Any item may have a BOM

BOM Relationships Are Property Of The Parent

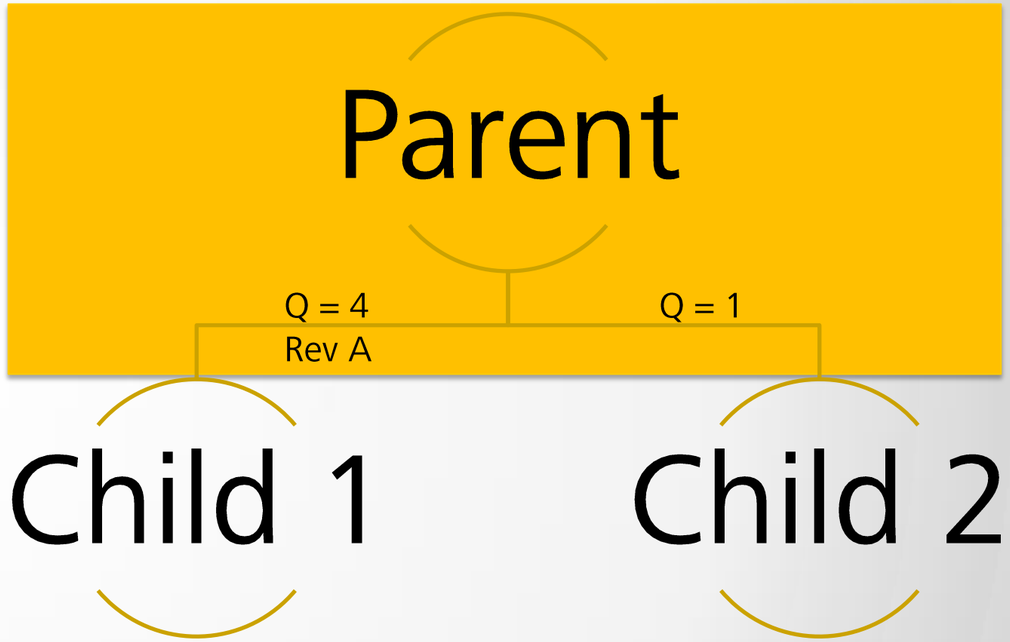
- BOM relationships are owned and managed by the Parent item
- Multi-level BOMs happen when you have a BOM relationship between two Parent items
- However, BOM edits are always one-level deep



To change the BOM or any BOM Property, the parent item must be revised

Built-In BOM Properties

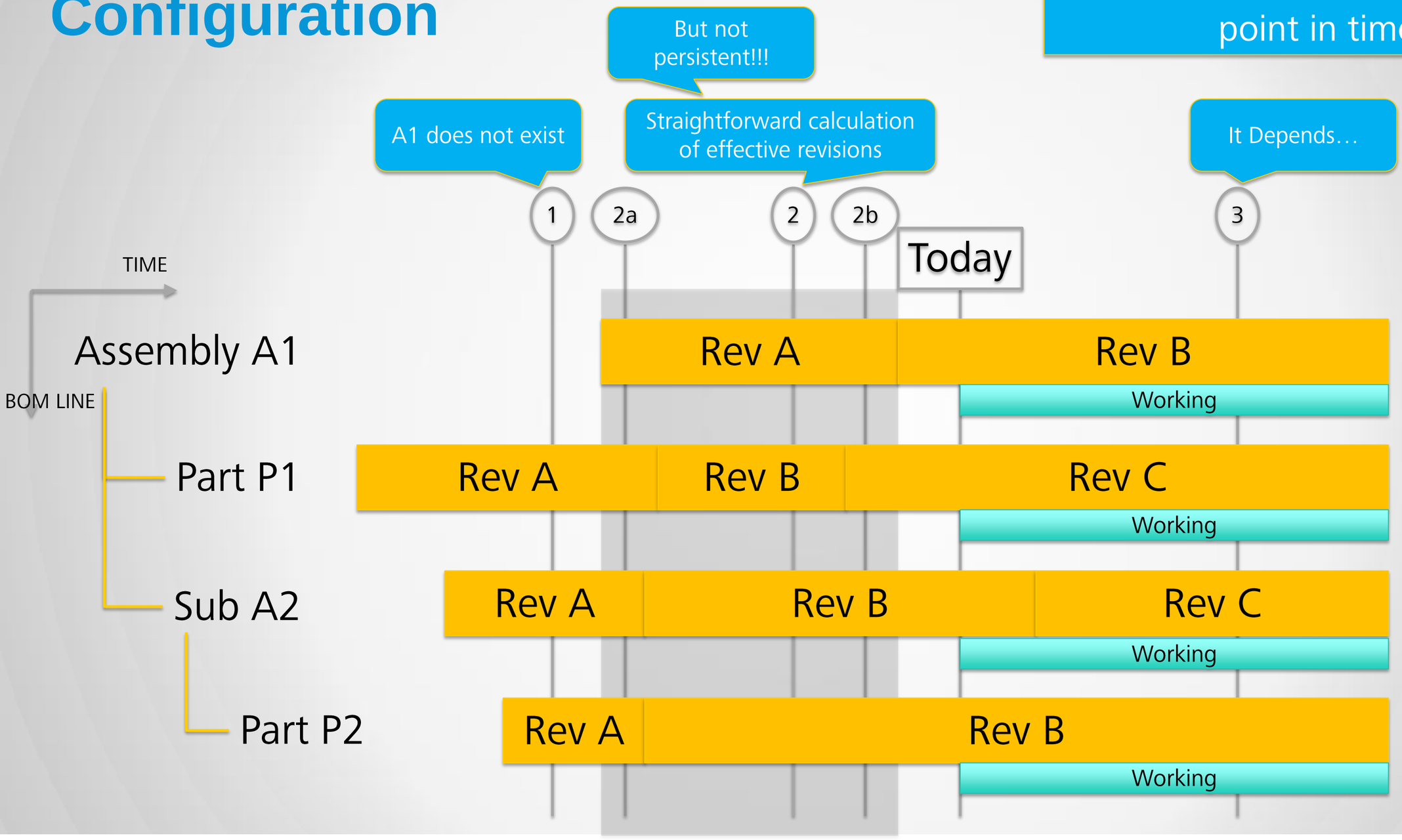
- Line Number
- Quantity
- Float/Fixed Revisions (‘Revision Pinning’)
- Sourcing Quote



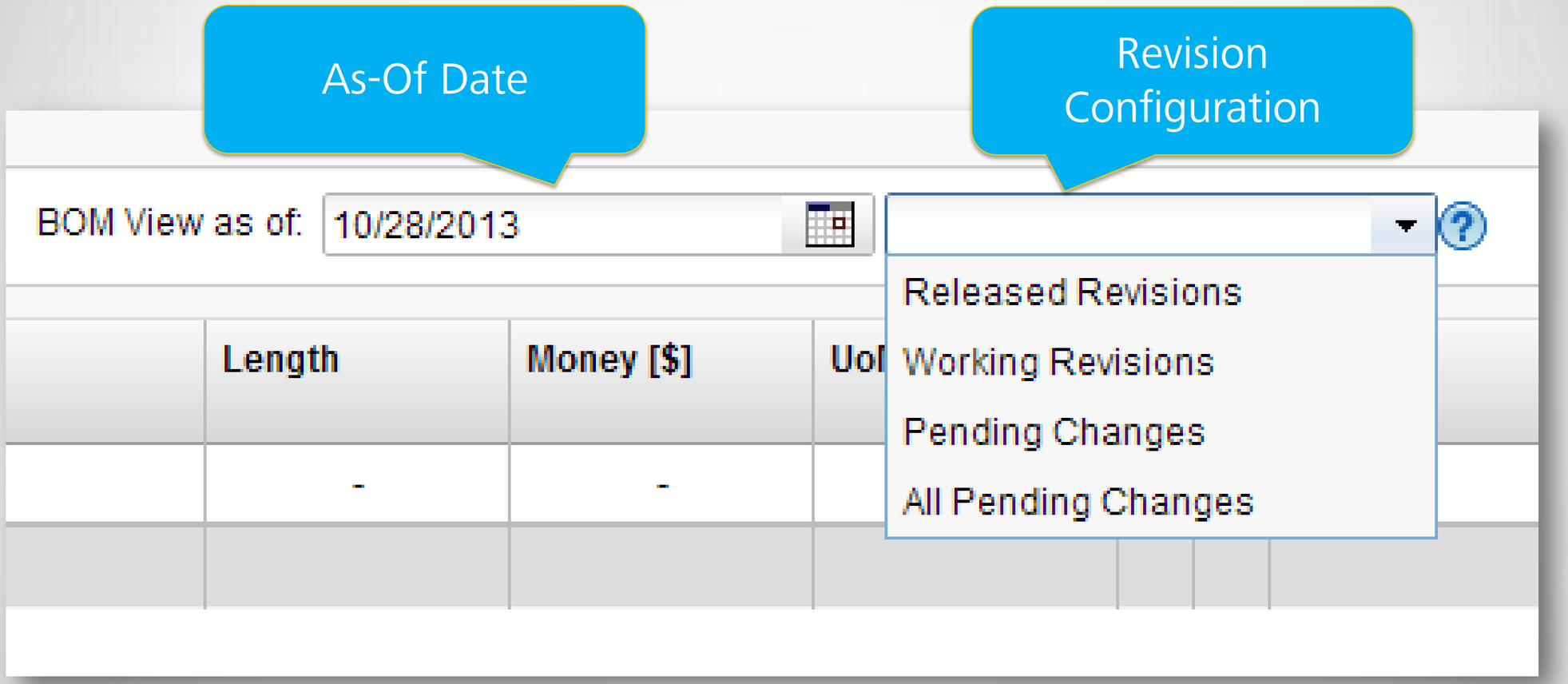
If enforcing the ‘no change to Fit, Form or Function’ rule for new Revisions, you should never need to use Pinning!

Configuration

What would A1 look like at each point in time?

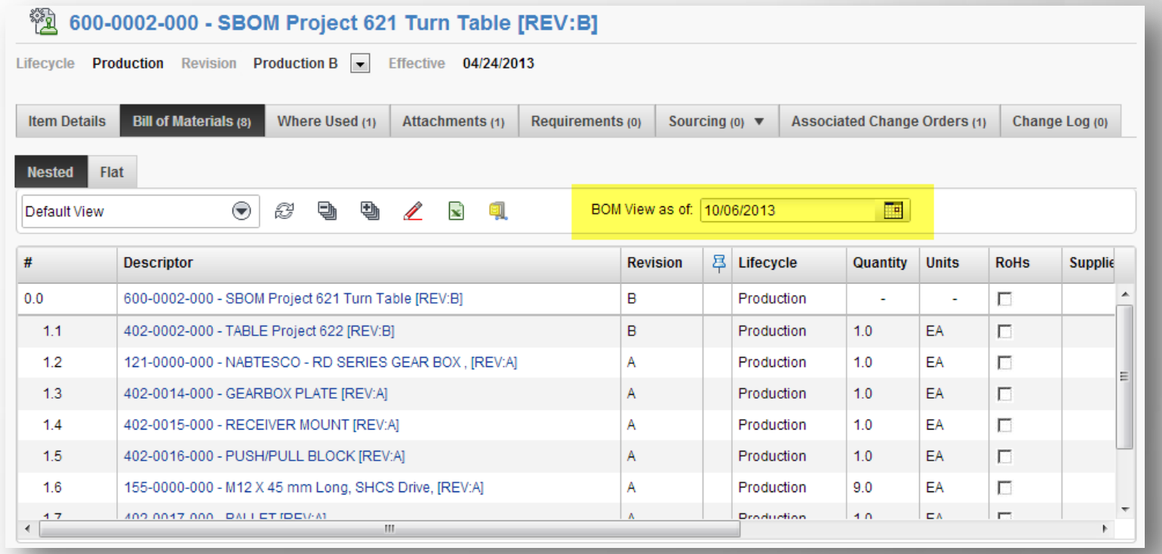


Configuration Options

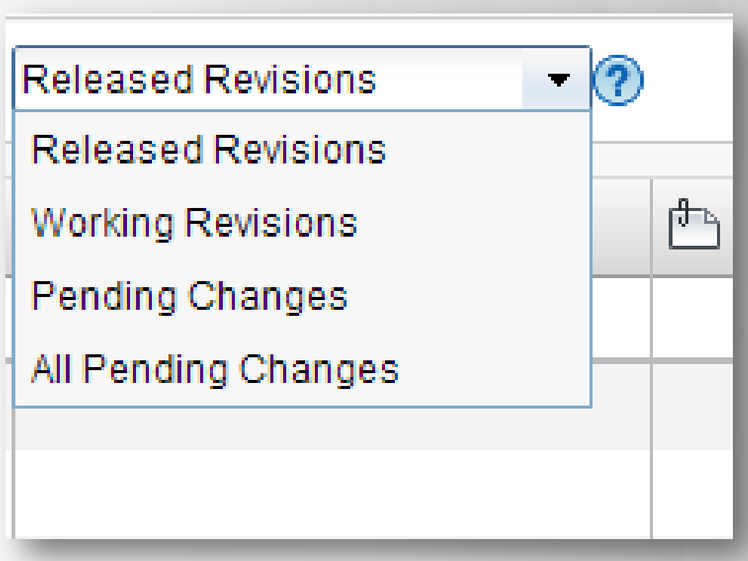


As-Of Date

- Choice Criteria
  - Pinned revision (if pinned) THEN
  - Effective Revision on that date (or working revision if required by Revision Configuration rule)



Revision Configuration



- Released Revisions
  - Choose the released revision effective on the As-Of date
- Working Revisions
  - Choose the working revision, unless a revision is Pinned
- Pending Changes
  - If working revision is associated to same Change Order as the current item, use it. Otherwise, use the Released revision in effect
- All Pending Changes
  - If working revision is associated to any Change Order, use it. Otherwise, use the Released revision in effect

Revision Configuration other than Released is only applicable for Today and Future As-Of Dates

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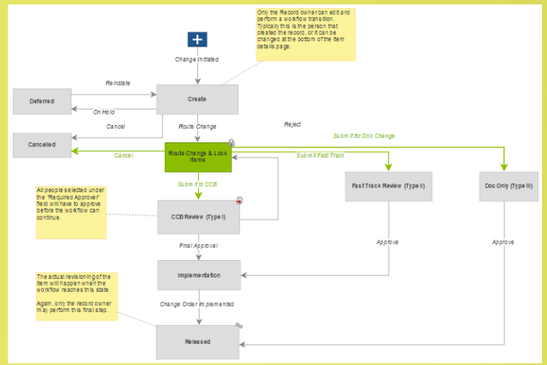
BOMs, BOM Relationships, and BOM Configuration

Change Management and Change Impact Assessment

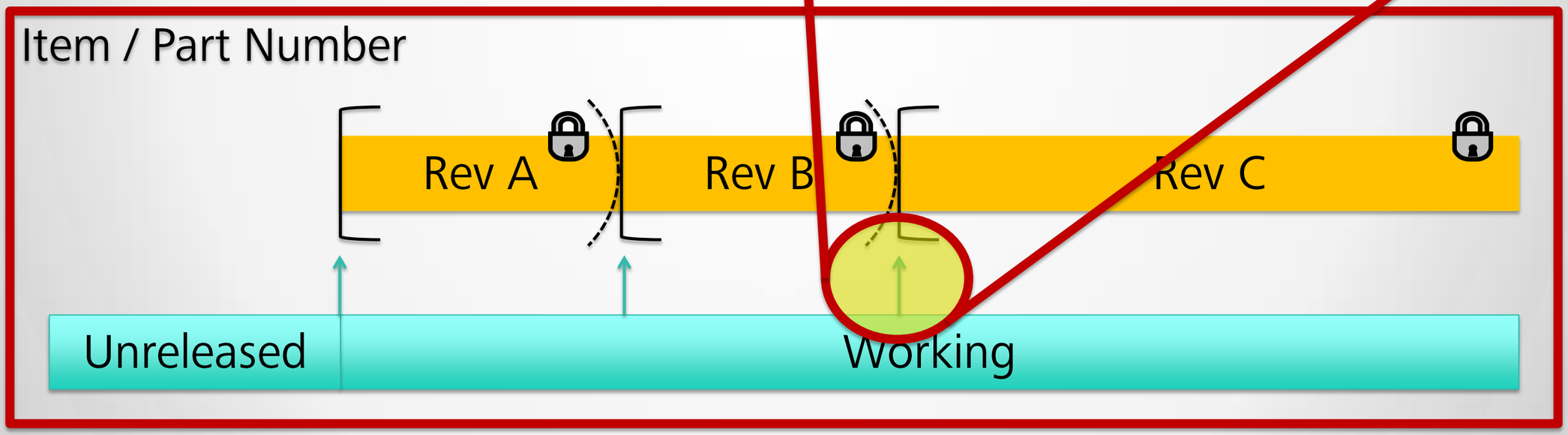
Release/Revision Process

Approval Process is associated to a Revisioning Item aka Change Order

Approval Process

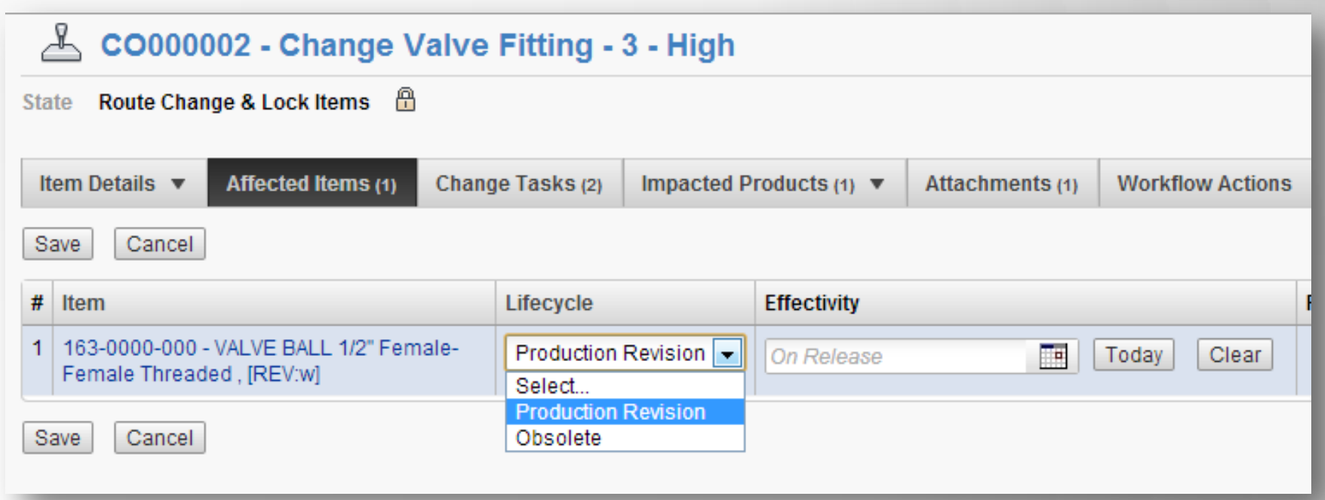


Item / Part Number



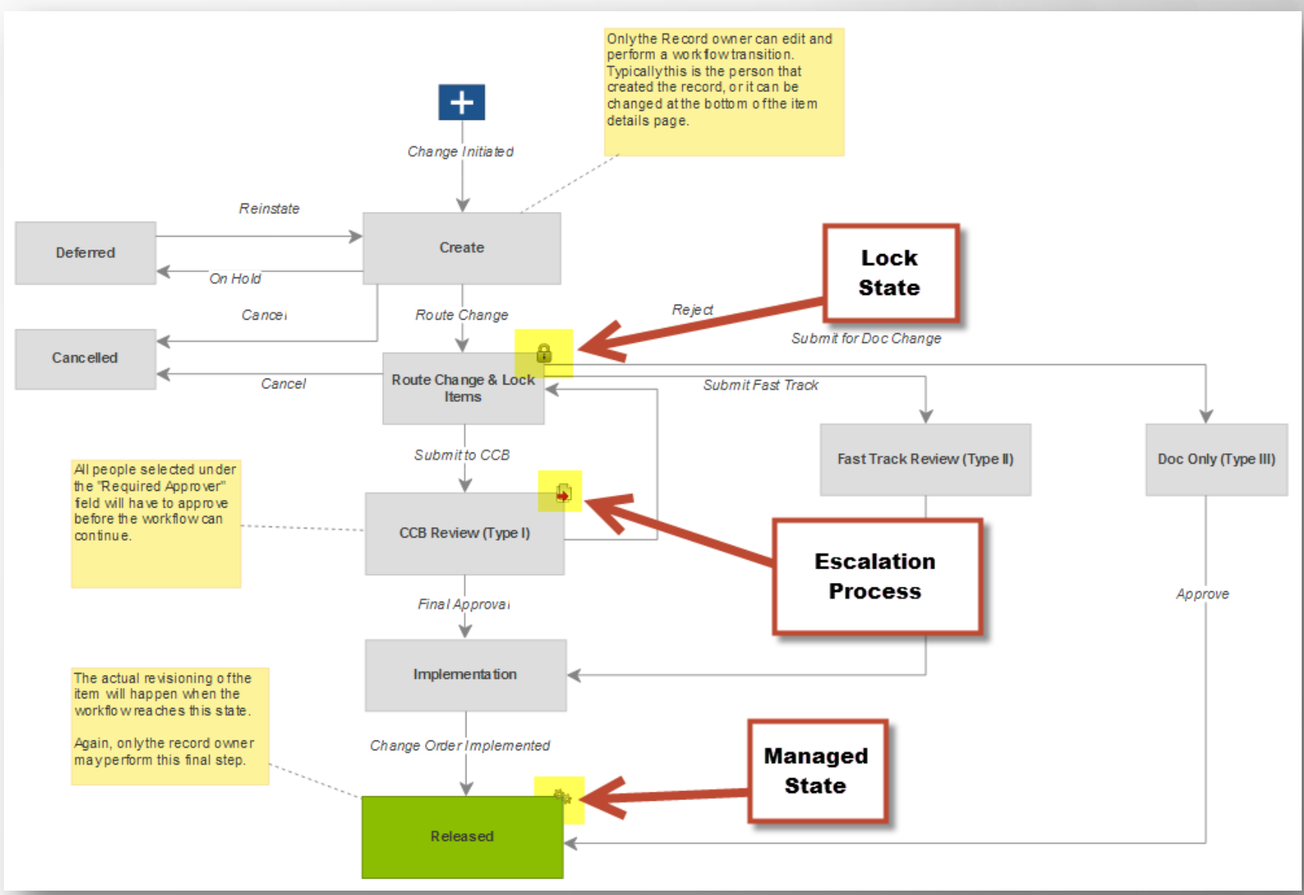
Use Change Order To Revision Items

- Change Order is used to Release/Revise an item
  - Set Lifecycle transition
  - Set Effectivity
- Consistent with CMII practice



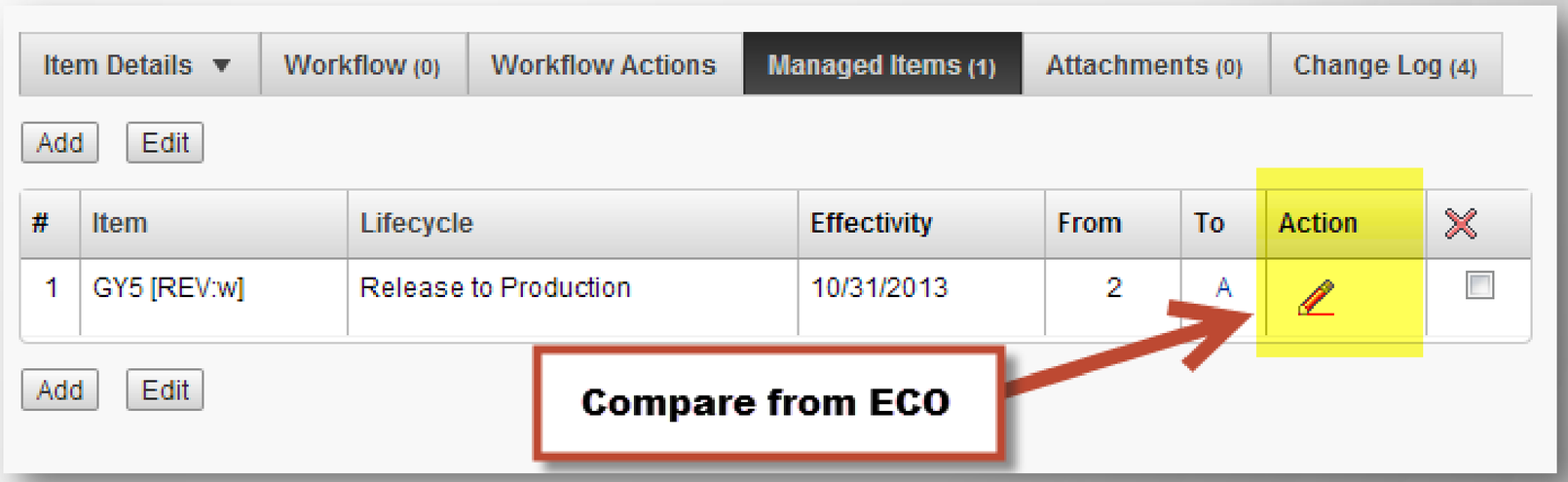
Change Order Workflow

- Fully customizable
- Noteworthy
  - Lock State
  - Managed State
  - Escalation Process
  - Fast Track (CMII recommendation)



Assess Changes

- Compare from ECO
  - Open the item
  - Initiate compare
  - Default to comparing the ‘To Be’ state of the item to the ‘Latest Release’



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Change Management and Change Impact Assessment

Summary

Summary

- Items Change
- Release Process
- Assess Changes / BOM Compare
- Effective Date of Change
- Configure
  - As-Of Date
  - Selection Rule

Related Classes

Class	Day / Time / Room	Presenter	Synopsis
PL2569 BOM Management with Autodesk® PLM 360: Introduction	Wednesday, 1:00 PM	Hagay Dvir Martin Gasevski	Very basic introduction to BOM management with PLM. Intended for beginners with some PLM 360 knowledge
PL2572 BOM Management with Autodesk® PLM 360: Advanced Topics	Wednesday, 2:30 PM	Hagay Dvir Martin Gasevski	Tips and tricks for customizing the BOM in PLM 360, meant for IT managers , PLM implementers, and users with advanced knowledge in PLM 360

Questions?

- Now, or stay after class
- By email: hagay.dvir@autodesk.com
- At the 360 Lounge:
  - Wednesday around 9 to 11 AM
  - Thursday around 9 to 11 AM

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