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I-deas to NX Content Migration Manager Process and Best Practices

Review and discussion concerning the migration of content from I-deas to NX, and suggested process methodologies

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Best Practice

Visit to the Milford Migration Lab

- Your data, your pace, our experts and systems
- Latest configuration of products, at times prerelease

Focus on the objective

- NX and Teamcenter/Product Life Cycle Management
  - ***Beyond Step1, TDM to Teamcenter***
  - ***Beyond Step2, CMM***

"I skate to where the puck is going to be, not where it has been."
Wayne Gretzky

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CMM Process Overview

Migration is focused on a specific item revision

- In ***general***, only a single item revision of an item should be ***feature*** processed
- I-deas determines the configuration of dependent item revisions
- Equivalent NX CAD datasets are developed
- NX Design ownership is established for the next working revision
- CMM only orchestrates the processes, conforming to TcE rules

For consideration

- No physical system reacts well to a step function input
  - on demand rolling boil of dataset creation
  - massively massive migration with every item/rev in change
  - hurry up and wait
  - Develop a plan
    - Scope, schedule, resources

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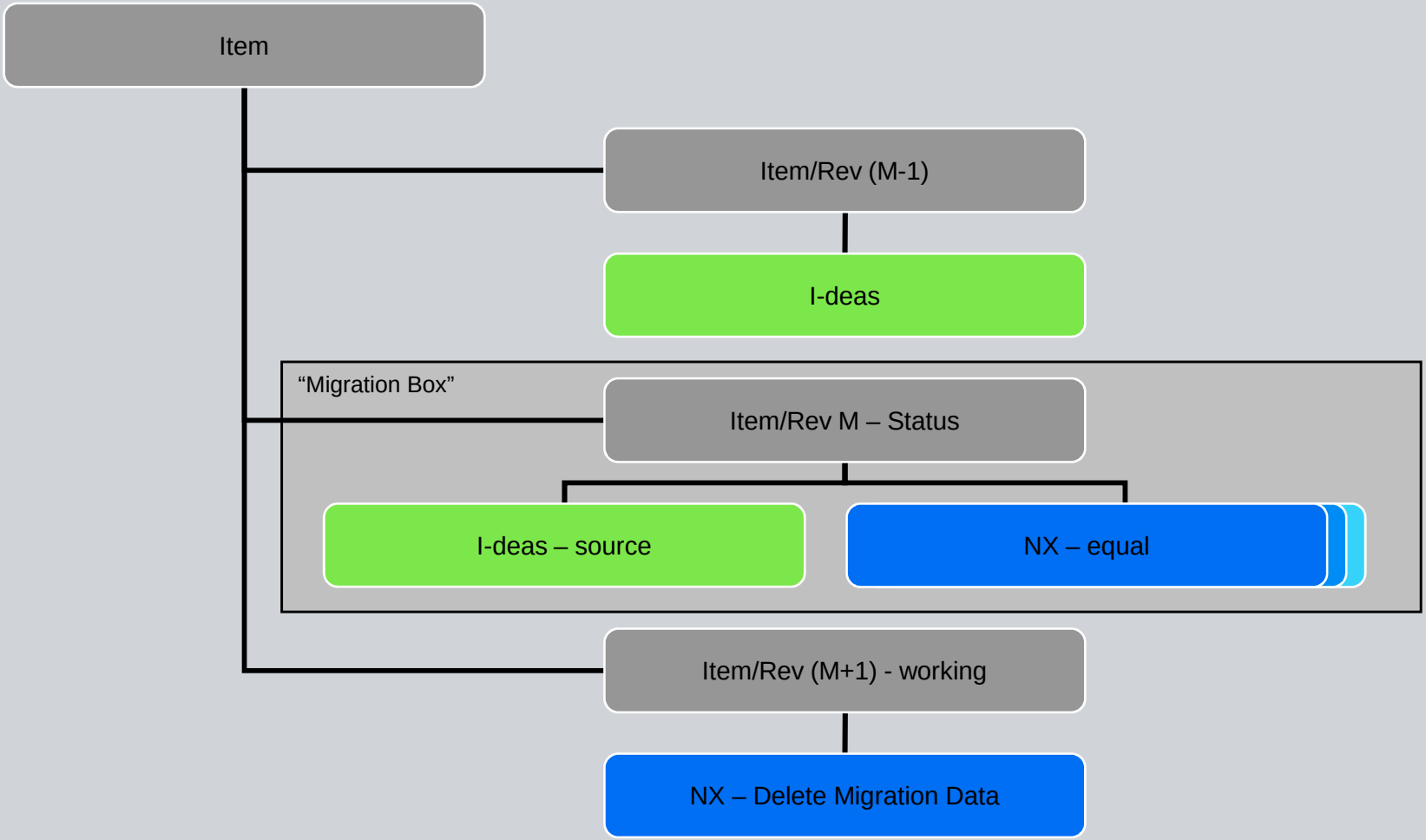
Migration Box



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CMM Attribute Form
Metadata to support workflows

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My Navigator - Teamcenter Engineering V9.1.2.8c

File Edit View I-DEAS CMM Tools Desktop Help

Search Favorites

TEAMCENTER

Back My Navigator (Paul McDonald (mcdonald) - dba/DBA [IMC-1449034548])

Engineering

My Navigator

More...

Manufacturing

More...

Search

CMM Search

SessionID:

ReportStatus:

ReviewStatus:

DataType:

User_Field_1:

User_Field_2:

User_Field_3:

User_Field_4:

Less ...

Advanced... Edit Options ...

Home | Item... (1) | Item... (2) | InnerBypass_assy/2423637-A | Item... (3) | Item... (4) | Item... (5)

outer platform vane 1/242054
insert vane 1/2420425
001109/2420424
front insert vane 1/2420422
Sealing ring machined/2420
001110/HG2650-global-2
Inner vane ring machined/24
Inner sleeve vane 1/2420371
Main inner ring brazing/2420
Outer sleeve vane 1/2420372
Swirl generator Brazing/2420
Pipe/2420483-1
001111/2420482-1
Plug/2420704-1
001112/2420705-1
001113/2420474-1
Pipe with spherical attachme
Wedge/2420472-1
Wedge
Wedge/1/2420472-1
Wedge/1
Wedge/1
Wedge/1
Wedge-1
Wedge/1
view
Outer seal strip vane 1/24204
Inner seal strip vane 1/24204
Internal retaining ring/242070
E-sealing internal pressure/2
Honeycomb/2420498-1
001114/2420498-2
001115/2420498-3

Properties | Viewer | References | Display Data

CMMVersion: 4.0.0.208

Comments:

DataType: part

IdeasVersionGuid: c2f4e913-7474-11d6-8a4f-87c50f802e2

MigrationDate: 1/11/06 7:22 AM

ReportStatus: success

ReviewStatus: pending

SessionID: mcdonald_cii3p081_20060111055458309

User_Field_1: Paul McDonald

User_Field_2:

User_Field_3:

User_Field_4:

Apply

Ready

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What if CMM operates overtly aka 'on demand/open loop'

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Ideas datasets have traceability

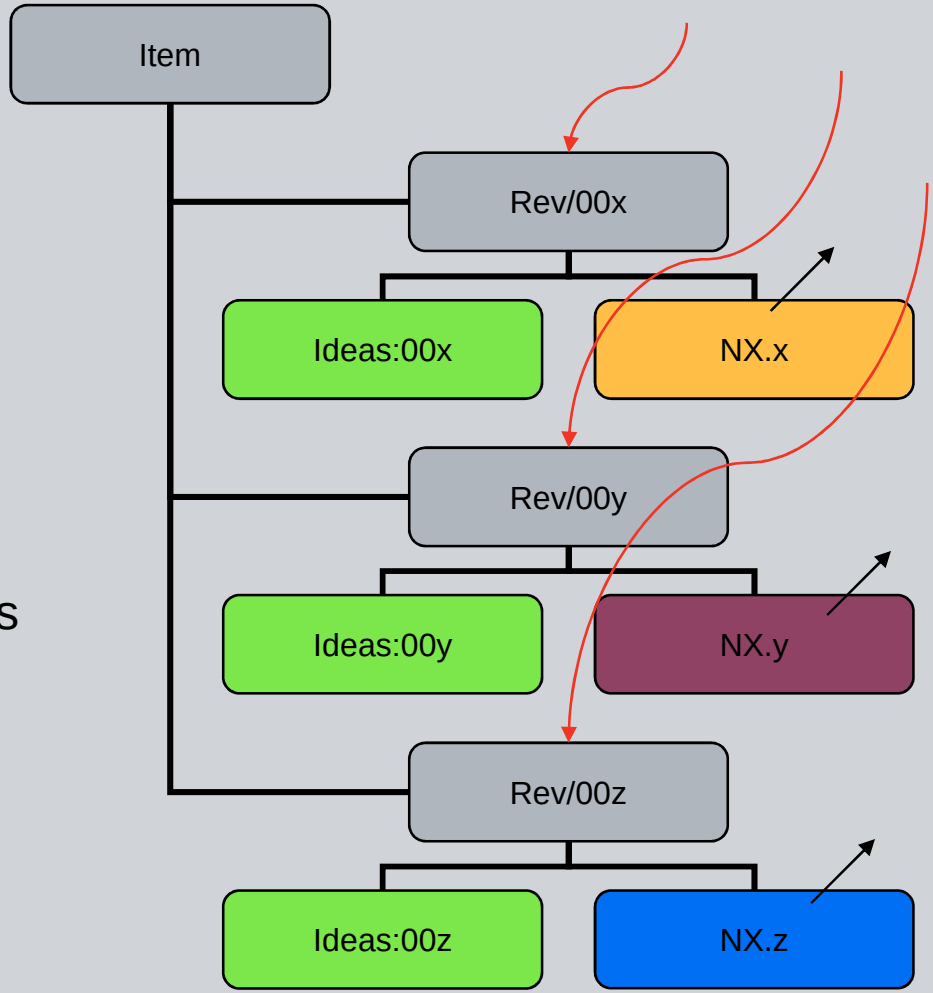
NX dataset via CMM are original

…which NX dataset will carry the design authority forward?

…MIMO process

CMM does not update out of data ideas assemblies

- 0ption to create BREP for item revisions which are not the latest



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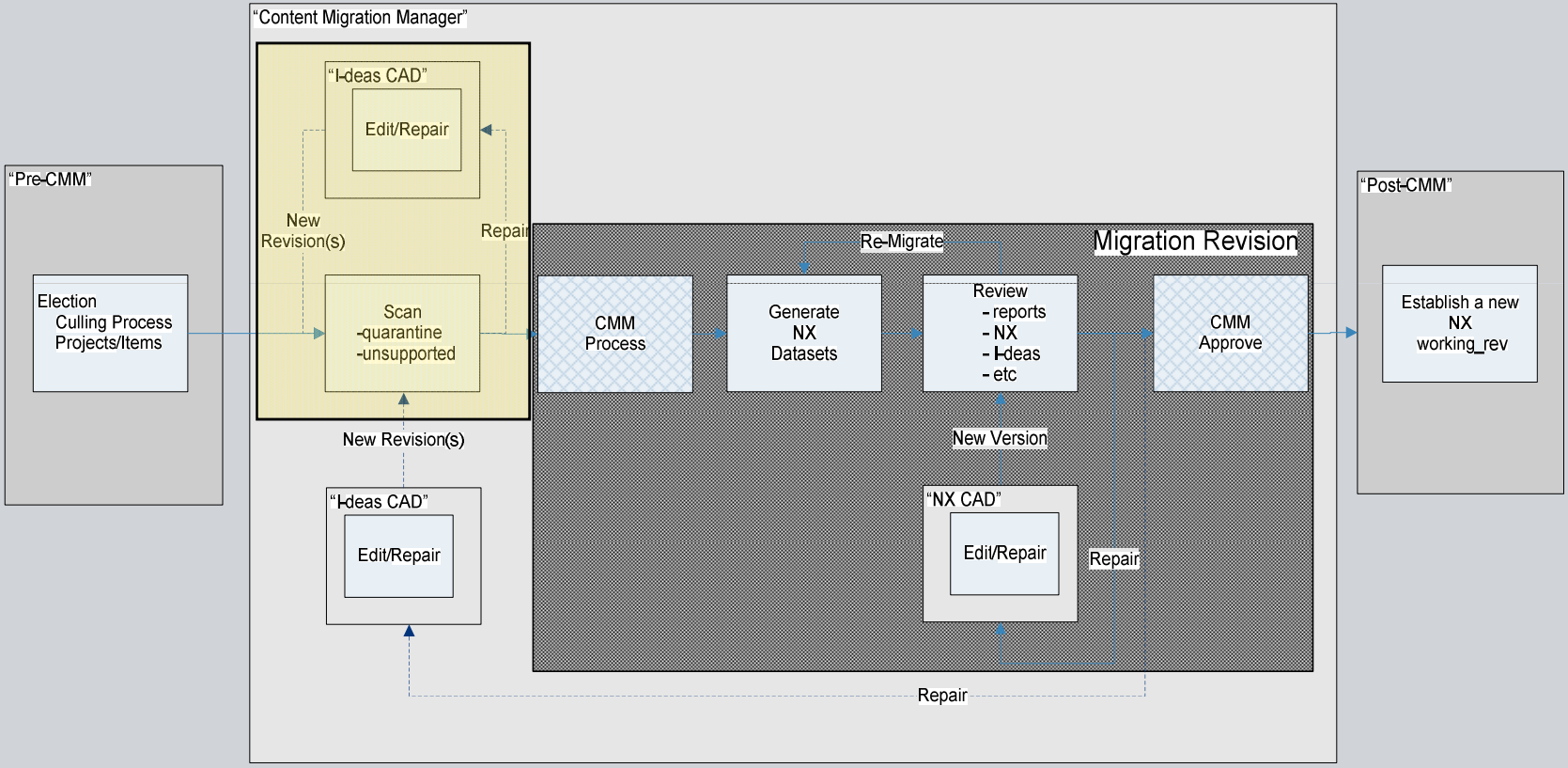
CMM Workflow/Process/Transfer Function



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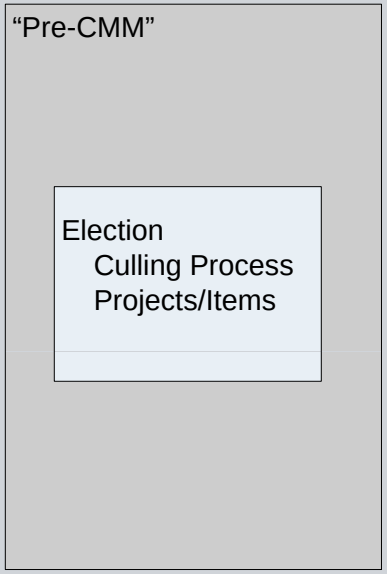
Pre-CMM

Selection of I-deas datasets

- Before executing CMM
- Leverage existing Teamcenter mechanisms
  - Checkout, status, ACL, workflow
- CMM Attribute form…schema

Poor scope and resource decisions made at this stage will compound throughout the migration process



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CMM – Generation/Review/Repair

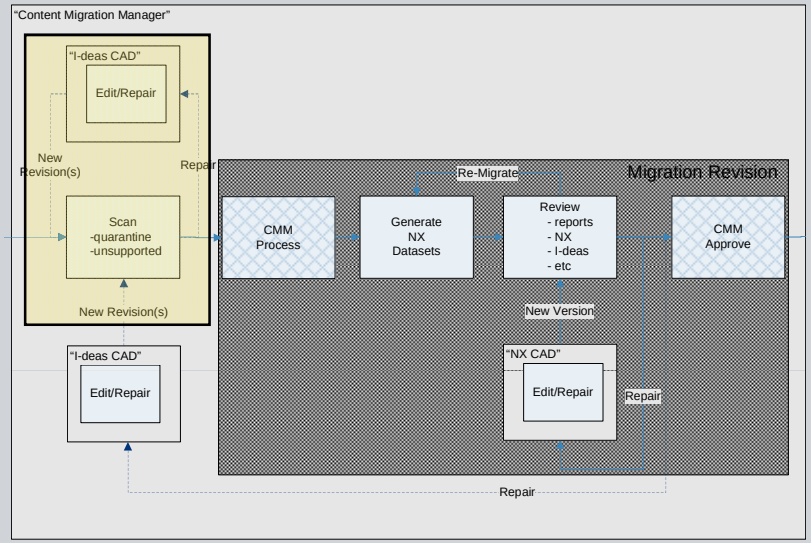
Scan
- Source data integrity check

Migration
- Generation of NX datasets

Review Migration Reports
- Session failures
- Failed, unsupported, un-attempted

Typical CAD activity
- NX – dataset is versioned
  - as repaired

Atypical CAD activity
- I-deas – dataset in new revision
  - re-enters the process



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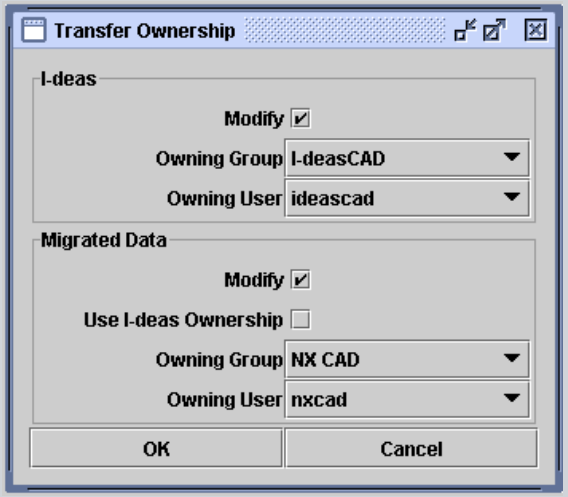
Post CMM

Set NX datasets into motion, turn over full control to NX

- Leverage existing Teamcenter mechanisms
  - Transfer ownership
  - Apply Process

New working item revision

- Save As
- Delete migration data



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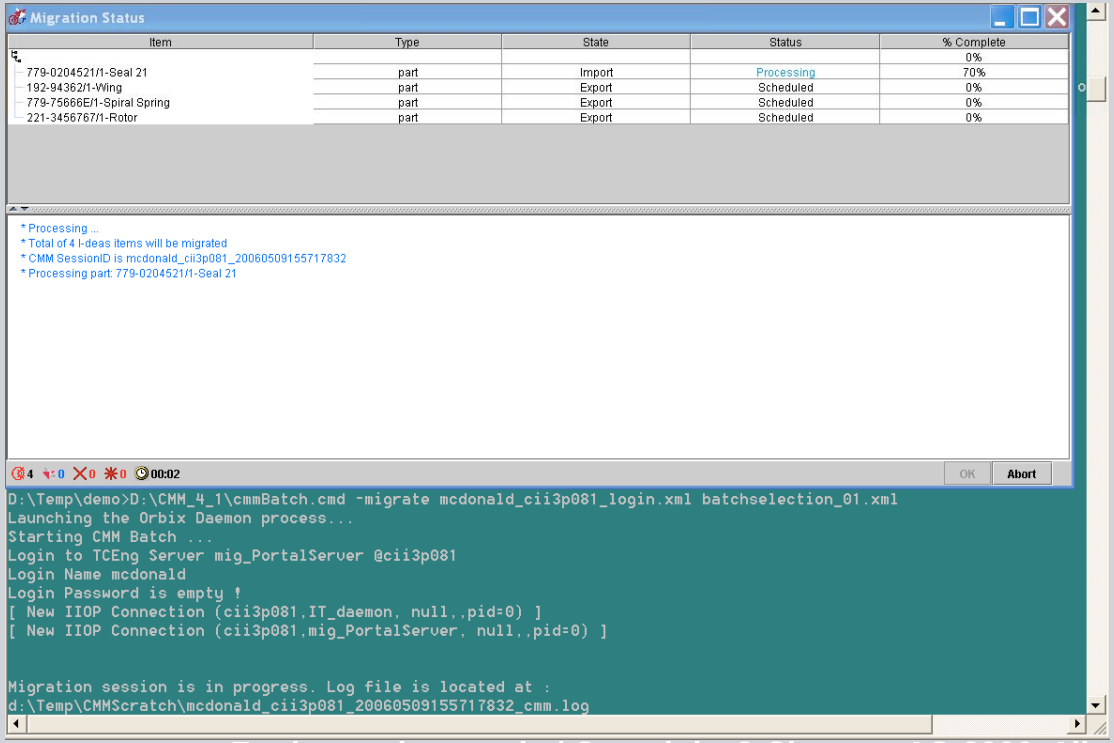
CMM Batch

cmmBatch -migrate loginFileName selectionFileName [optionsFileName]

cmmBatch -scan loginFileName selectionFileName [optionsFileName] (‘feature audit’)

cmmBatch -attributes loginFileName xmlFileName (update CMM attributes form/schema)

cmmBatch -options [optionsFileName]



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Culling and Reporting; report.cmd
Leverage Office Tools and Teamcenter

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D:\CMM_5_0\cmmReport.cmd -post -o summary

A1 | Migration Summary

Migration Summary

Summary

Type	Items	%	Fully	%	Successful	%	Warnings	%	Failures	%	Duration	%
Part	55	50	42	76.36	36	65.45	9	16.36	10	18.18	1:25:35	38.69
Assembly	23	20.91	23	100	22	95.65	0	0	1	4.35	0:17:35	7.95
Drawing	32	29.09	32	100	11	34.38	0	0	21	65.62	1:58:03	53.36
	110	100	97	88.18	69	62.73	9	8.18	32	29.09	3:41:13	100

Item Details

Item Id	Item	Name	Type	Total	Features	%	Item	NX	Report	Date	Duration	Machi	CMM	I-deas
1	3	RED RING CONNECTOR	part	5	5	100	passed	success	success	3/14/2005 15:42	11	cii3w168	2.2.0.128	11.4.0.22
2	3	SHELL TOP MD750	part	1	1	100	failure	success	success	3/14/2005 14:25	317	cii3w168	2.2.0.128	11.4.0.22
3	1	LG RING CONNECTOR	part	5	5	100	passed	success	success	3/14/2005 15:43	11	cii3w168	2.2.0.128	11.4.0.22
4	2	4PIN CONNECTOR PS-MOTOR	part	3	3	100	passed	success	success	3/14/2005 15:40	13	cii3w168	2.2.0.128	11.4.0.22
5	1	5PIN CONNECTOR MOTOR-PS	part	3	3	100	passed	success	success	3/14/2005 15:41	20	cii3w168	2.2.0.128	11.4.0.22
6	1	3PIN CONNECTOR PS-MOTOR	part	3	3	100	passed	success	success	3/14/2005 15:41	10	cii3w168	2.2.0.128	11.4.0.22
7	1	3PIN CONNECTOR MOTOR-PS	part	11	11	100	passed	success	warnings	3/14/2005 15:41	13	cii3w168	2.2.0.128	11.4.0.22
8	3	8PIN MICRO CONNECTOR	part	21	21	100	passed	success	success	3/14/2005 15:41	21	cii3w168	2.2.0.128	11.4.0.22
9	2	8PIN MINI CONNECTOR	part	27	27	100	passed	success	success	3/14/2005 15:42	18	cii3w168	2.2.0.128	11.4.0.22
10	1	filter model 750	part	8	8	100	passed	success	success	3/14/2005 14:29	9	cii3w168	2.2.0.128	11.4.0.22
11	1	FERRITE BEAD SENSOR CABLE	part	6	6	100	passed	success	success	3/14/2005 15:43	10	cii3w168	2.2.0.128	11.4.0.22
12	5	POWER ENTRY MODULE MODEL 750	part	23	23	100	passed	success	success	3/14/2005 15:42	20	cii3w168	2.2.0.128	11.4.0.22
13	5	POWER SUP-CONTROL BOARD	part	73	53	74.68	passed	success	warnings	3/14/2005 14:34	64	cii3w168	2.2.0.128	11.4.0.22
13	6	POWER SUP-CONTROL BOARD	part	101	70	69.31		success	failure	3/14/2005 15:47	31	cii3w168	2.2.0.128	11.4.0.22
14	1	COBRA BUMPER	part	1	1	100	passed	success	success	3/14/2005 14:28	15	cii3w168	2.2.0.128	11.4.0.22
15	2	COBRA HANDLE	part	1	1	100	passed	success	success	3/14/2005 14:20	63	cii3w168	2.2.0.128	11.4.0.22
16	1	ENCLOSURE BOTTOM MODEL 750	legacyDrawing	0	0			success	failure	3/14/2005 16:31	112	cii3w168	2.2.0.128	
16	2	ENCLOSURE BOTTOM MODEL 750	legacyDrawing	0	0			success	failure	3/14/2005 16:33	86	cii3w168	2.2.0.128	
16	3	ENCLOSURE BOTTOM MODEL 750	drawing	1	1	100	passed	success	failure	3/14/2005 13:53	116	cii3w168	2.2.0.128	
16	4	ENCLOSURE BOTTOM MODEL 750	drawing	1	1	100	passed	success	failure	3/14/2005 13:55	93	cii3w168	2.2.0.128	
16	5	ENCLOSURE BOTTOM MODEL 750	drawing	1	1	100	passed	success	failure	3/14/2005 13:56	98	cii3w168	2.2.0.128	
16	6	ENCLOSURE BOTTOM MODEL 750	drawing	1	1	100	passed	success	failure	3/14/2005 13:58	97	cii3w168	2.2.0.128	

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Murphy's Migration Law

Mixed CAD Design Environment

- Ideas will be used at the same time as NX
  - without process or workflows
  - despite our best wishes
  - "we are OOTB"

Complications can arise when CMM is introduced

- let's review some process tenets

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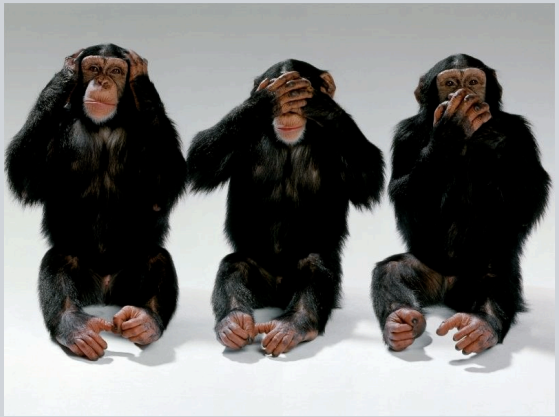
Dataset versioning or item revision-ing



Hear no status, see no status, speak no status
- TCii/Ideas does not version datasets
- all item revisions are “working”

NX versions are open, until statused
- status is a weigh point, a navigational beacon
- special ACL can be defined
- “model file” analogy

CMM does NOT version NX prt files during a re-migration
- matchless to previous versions, (File Open = new)
- Impacts NX, concerning load options and substitution

While Ideas datasets are versions of each other in subsequent item revisions, datasets created in those item revisions via CMM are NOT versions of each other; they are matchless/unique

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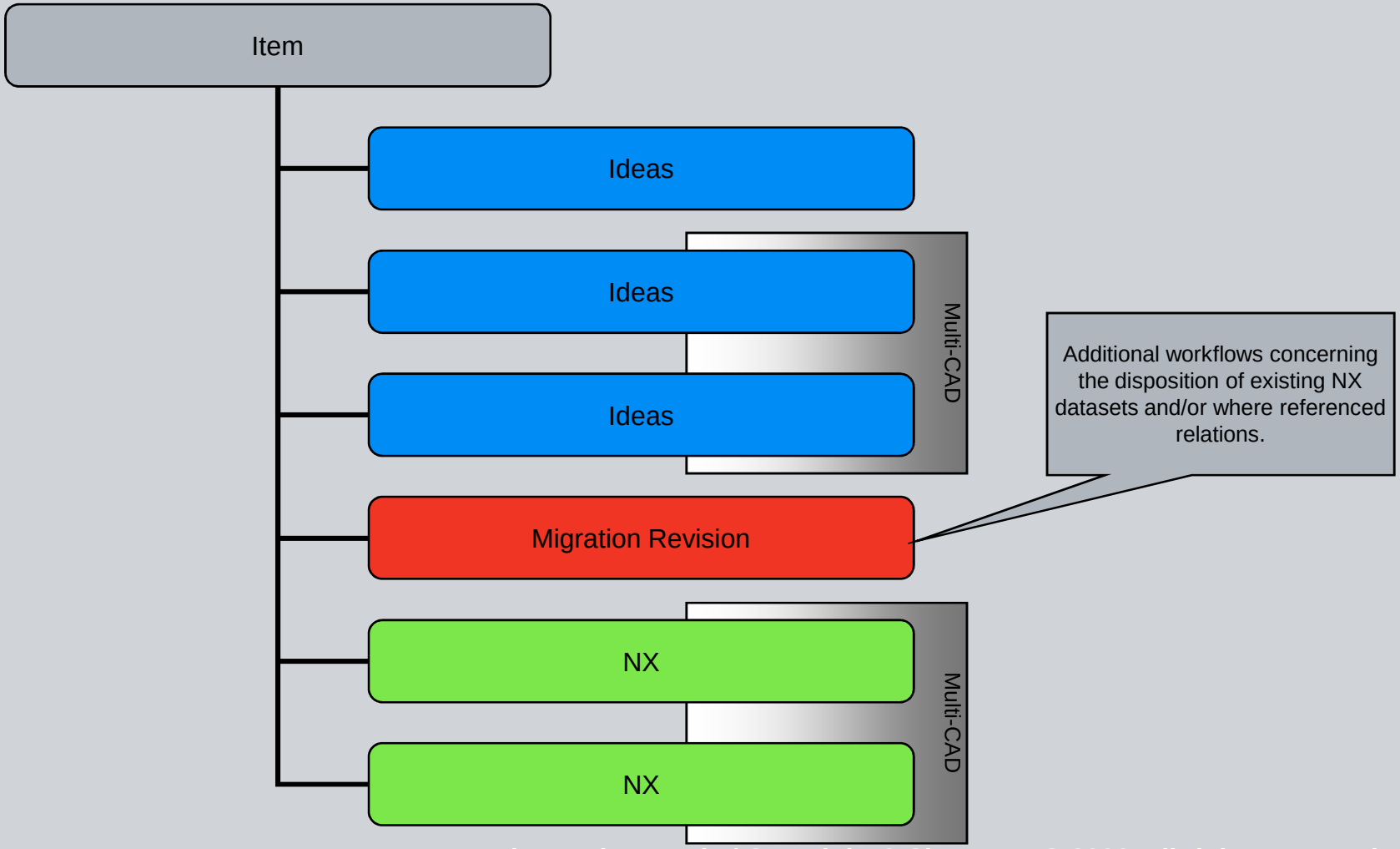
CMM on Ideas Items revisions w/ Multi-CAD



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CMM Process, recap a little more detail

- Establish transition of ownership to NX
  - Identify migration targets
  - Migration of all revisions is not required
- Apply an explicit migration status to target item revisions
  - e.g. CMM Migration
- Employ phased migration
  - Top down selection, bottom up processing
- Repair migrated NX data as required
- Apply an explicit migration status to these item revisions
  - e.g. CMM Approved

Authority migrated to NX

- create new working item revision-NX only
- delete migration data from prt file

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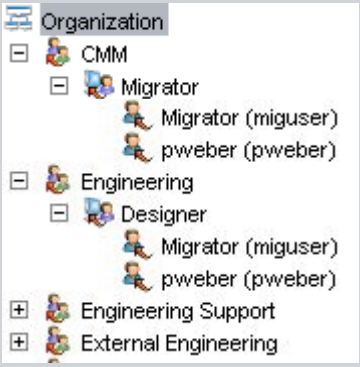
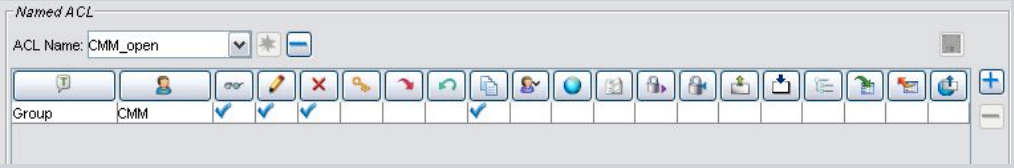
CMM Configuration

- Organization: Group CMM, Role Migrator
- Status: Content Migration / CMM Approved
- Access Manager: grant access for CMM group to CMM objects
- Workflow: CMM Initial / CMM Approve





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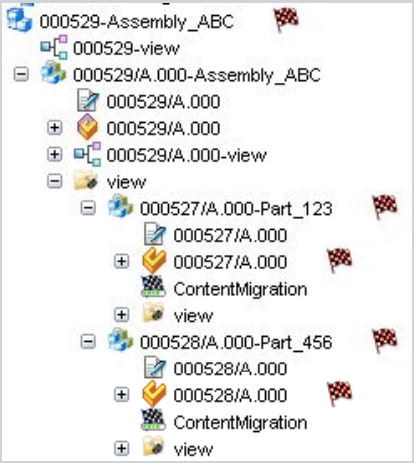
Paint your targets, via Process

Migration targets for an assembly are:

- specific assembly revision
- Select all target and execute workflow
  - Apply Workflow “CMM Initial”

K.I.S.S.

- Keep it simple silly



Result: all migration targets get a state “CMM Initial” and therefore are secured (write access only for CMM group)

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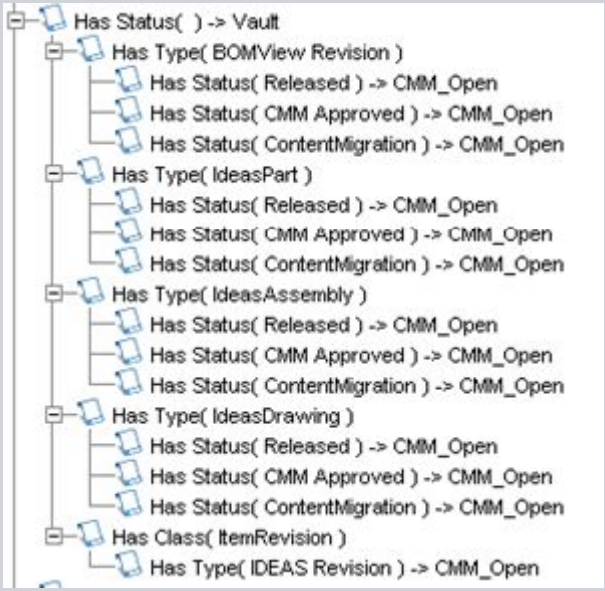
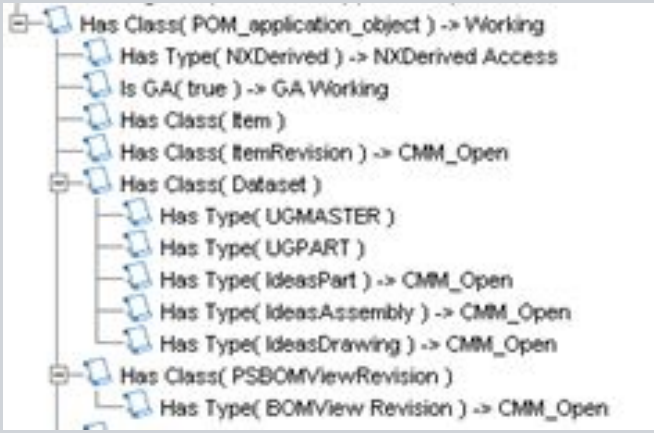
Access Manager

Has Status( ) → Vault



Has Class(POM_application_object) → Working



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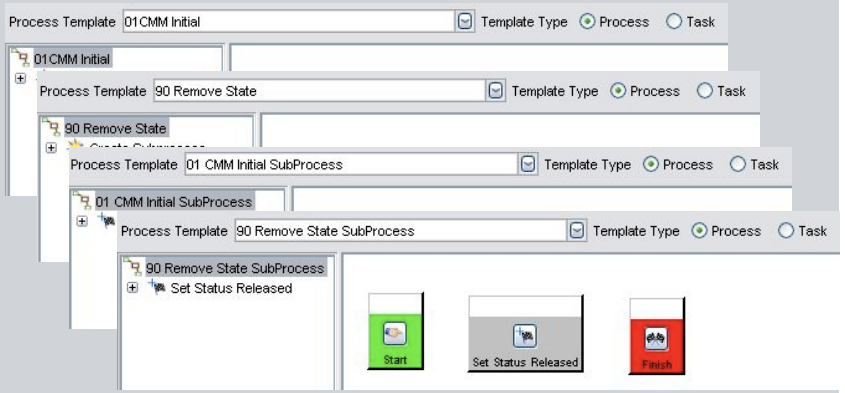
CMM Workflow – Basic Handshakes

Workflow:

- Initiate
  - 01 CMM Initial SubProcess
- Approve/Release
  - 02 CMM Approved SubProcess
- Remove, unset, rescind
  - 90 Remove status SubProcess



Use of SubProcess needs the following Preference to be set **EPM_multiple_processes_targets = ON**

Icon Customization:

- common_user.properties (local\portal\com\ugsolutions\iman\common)
- Icon Definitions
- release_status_list.ContentMigration.ICON=images/CMM_intermediate_16.png
- release_statuses.ContentMigration.ICON=images/CMM_intermediate_16.png
- release_status_list.CMM\ Approved.ICON=images/CMM_approved_16.png
- release_statuses.CMM\ Approved.ICON=images/CMM_approved_16.png

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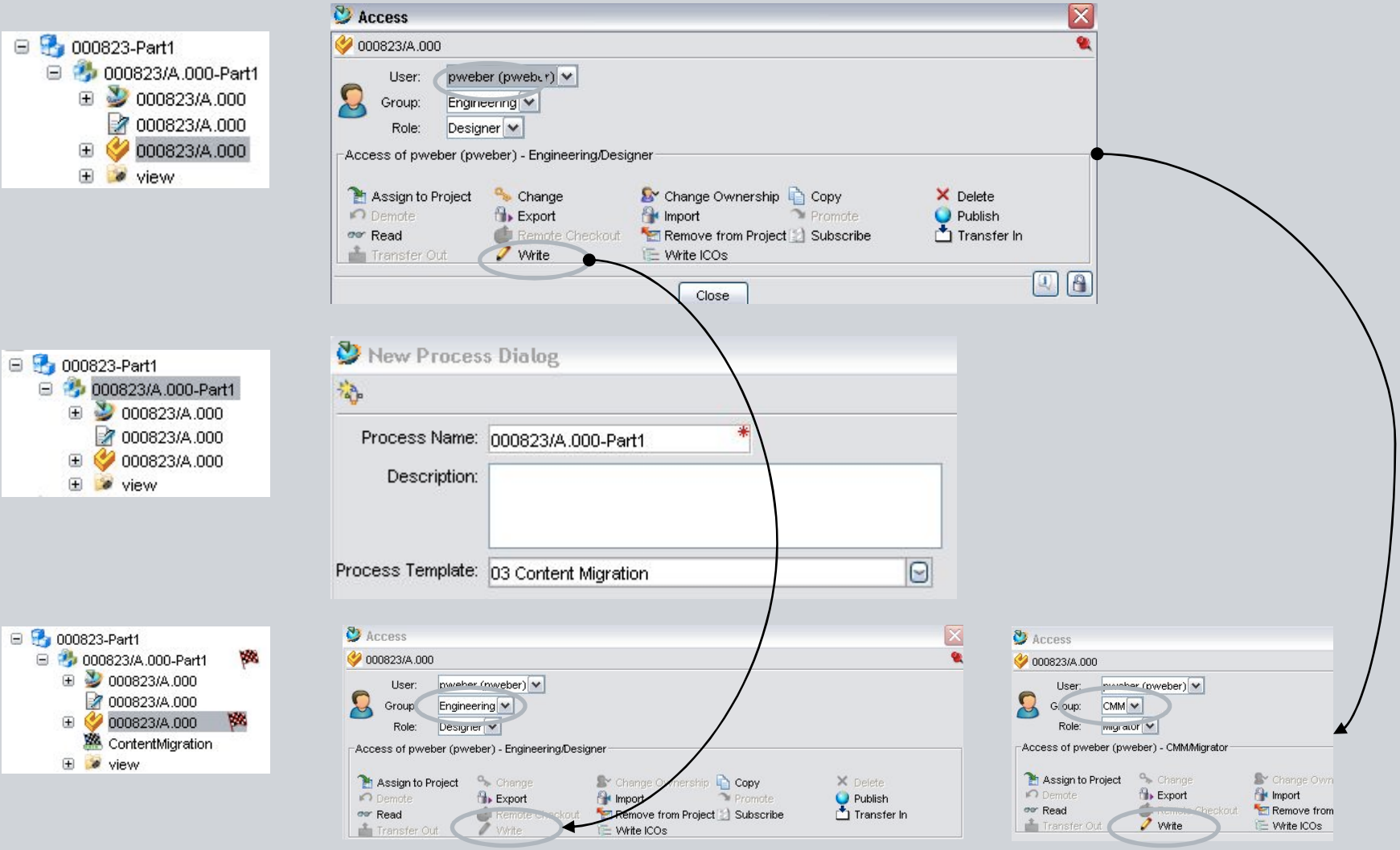
Content Migration Process Template Application



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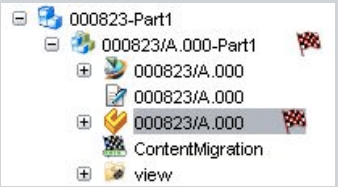
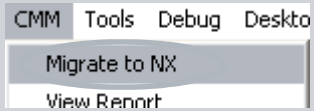
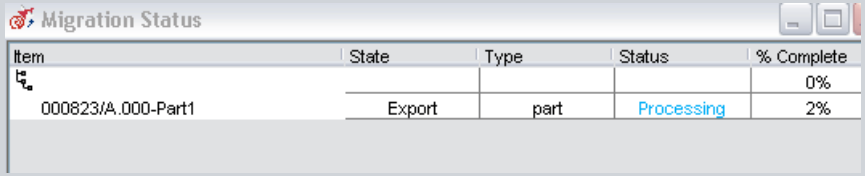
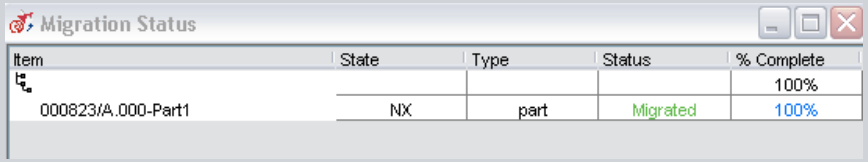
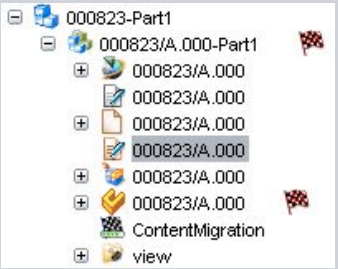
CMM Execution, setting appovals – not checked

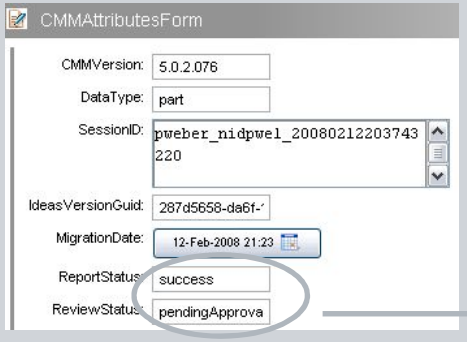












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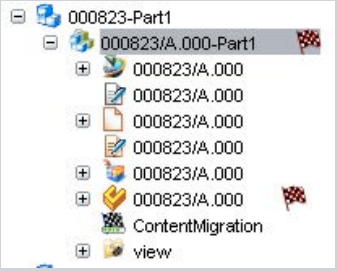
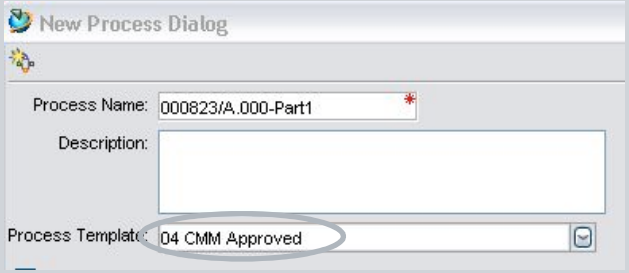
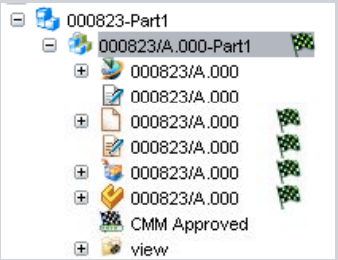
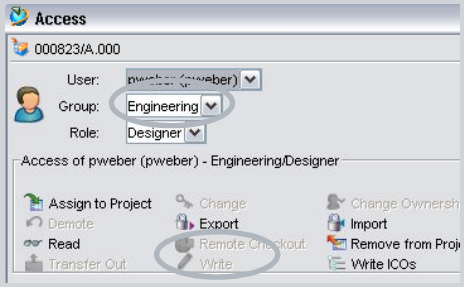
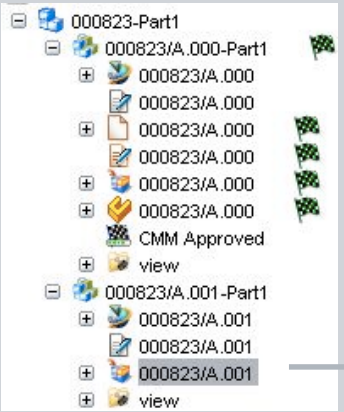
CMM Approved Process Template Application

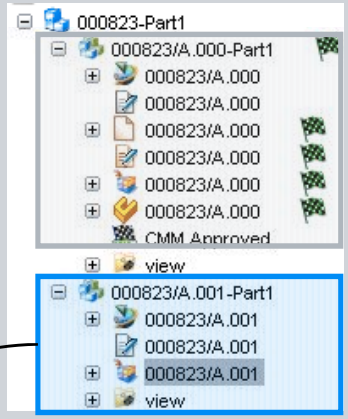












CMM Revision

NX Revision

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Case 1 - CMM Parent of Multi-CAD I-deas assembly referring JT/NX part

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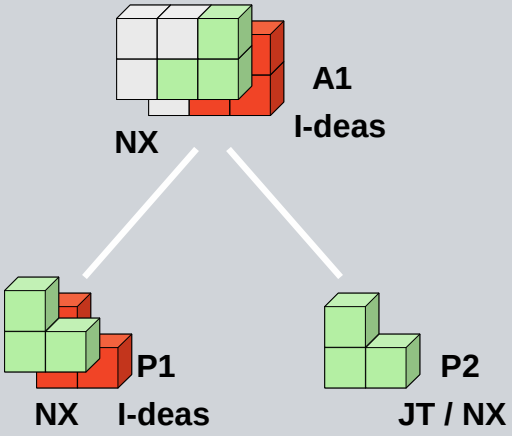

- Similar to I-deas to NX Migration. Arrangements, sequence. Assembly features should be migrated
- Constraints to native I-deas parts should be supported
- References to geometry in JT/NX part (constraints, PMI etc) is not supported
- NX Part should be present at each level
- Currently supported via CMM

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Case 2 – CMM of parent I-deas assembly referring pure NX/JT PS

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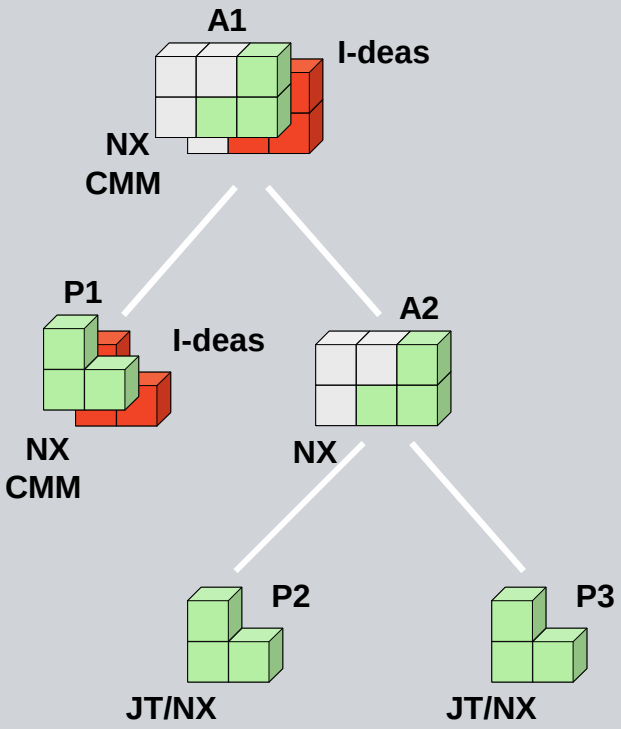

- Similar to I-deas to NX Migration.
  - Arrangements, sequence. Assembly features should be migrated
- Constraints to native I-deas parts should be supported
- References to geometry in JT/NX part (constraints, PMI etc) is not supported
- NX Part should be present at each level
- Currently supported by CMM

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Case 3 - CMM Child of NX Parent
I-deas part P2 initially providing NX/JT to A1

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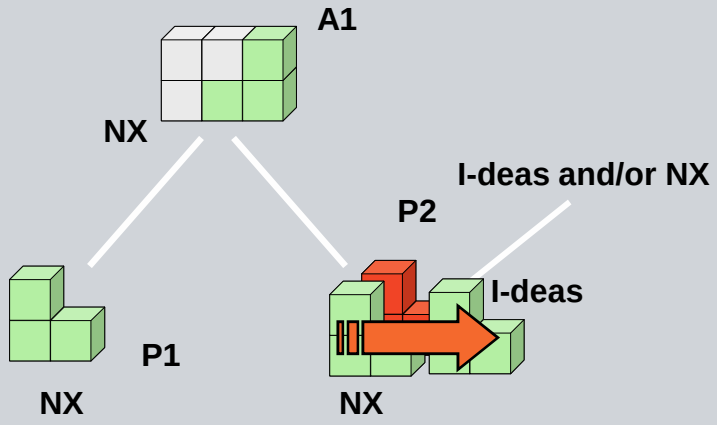

- Application of CMM on P2 will over write existing NX datasets if remigration is on and cause NX loading of A1 to fail
- The new NX dataset has no information concerning the previous dataset, it is NOT as version of it; CMM looks exclusively to I-deas for precise information.
- Allow substitution will load the new dataset, but constraints will be not validate

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Case 4 – CMM Child of NX Parent
I-deas assembly A2 initially providing NX/JT to A1

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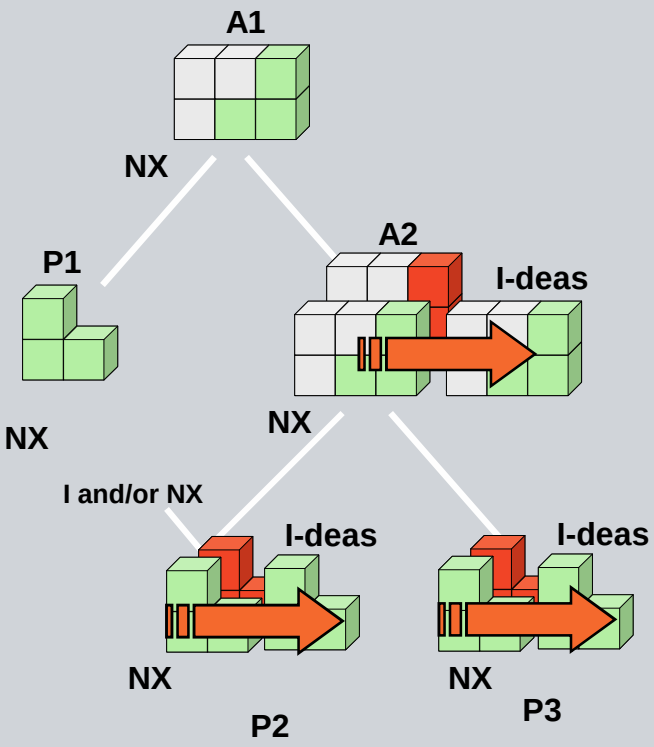

- Application of CMM upon A2 will over write existing NX datasets if remigration is on and cause NX loading of A1 to fail
- The new NX dataset has no information concerning the previous dataset, it is NOT as version of it; CMM looks exclusively to I-deas for precise information.

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