

# UGS CONNECTION



AMERICAS 2008



Siemens PLM Software

**SIEMENS**

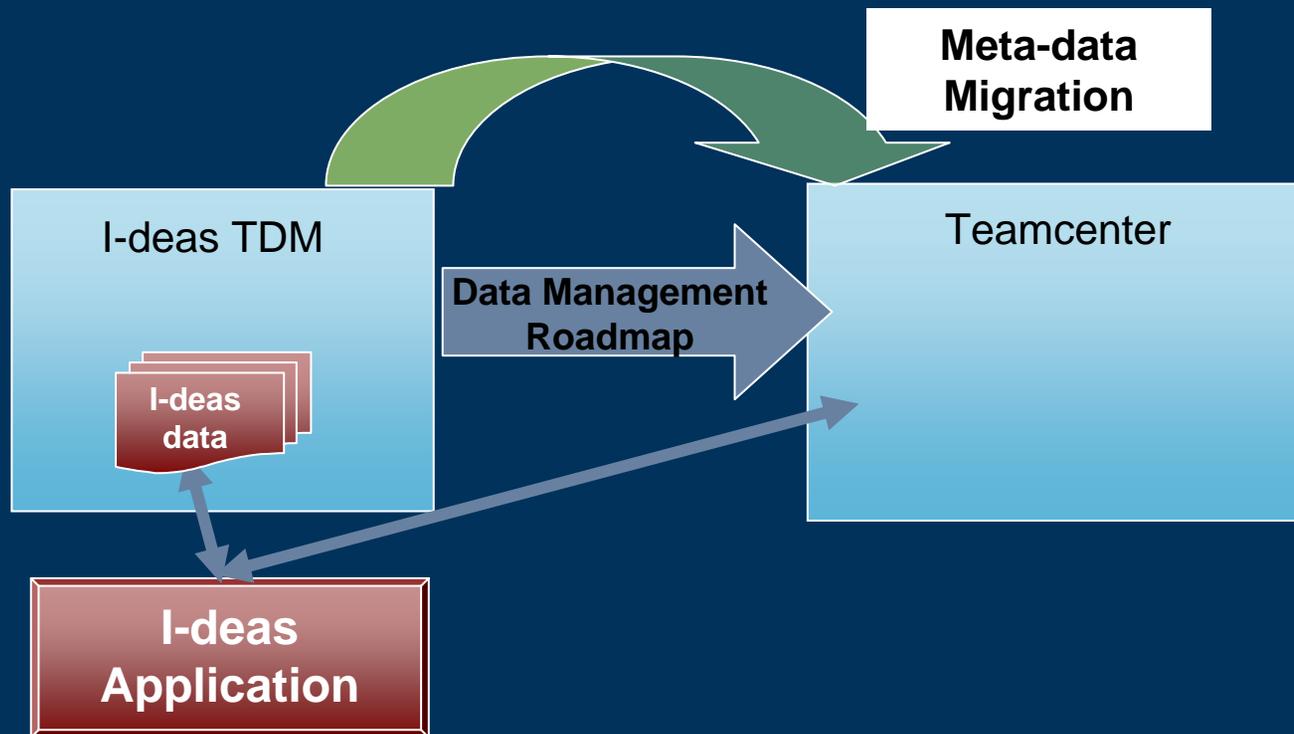
## Preparing a TDM for Migration to Teamcenter

Leo Thiel  
I-deas to NX Program Office



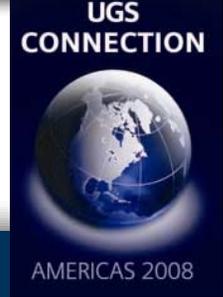
# TDM to Teamcenter

- ▶ Data Management
  - ▶ Migrate I-deas TDM to Teamcenter
  - ▶ Continue to run I-deas (as CAD Tool) with TC Engineering

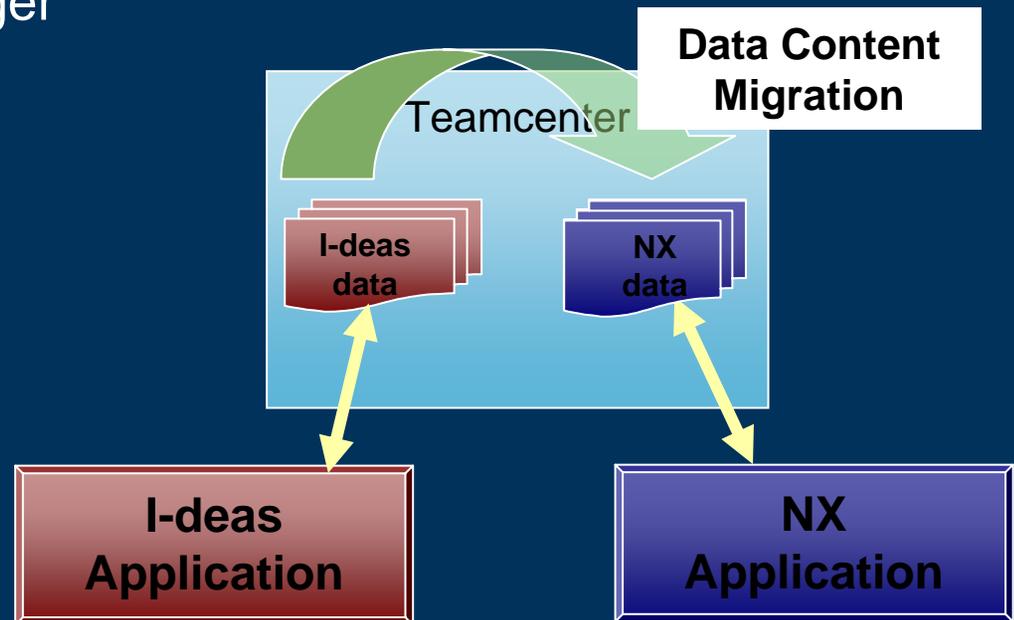


# Data Migration Process Overview

## Step 2



- ▶ Two Step I-deas to NX Data Migration Process
- ▶ Step 2: Content Data Migration
  - ▶ I-deas Data to NX Data within Context of Teamcenter
  - ▶ Audit I-deas Data
  - ▶ Content Migration Manager

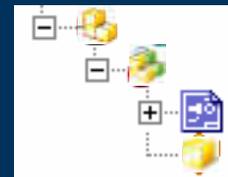
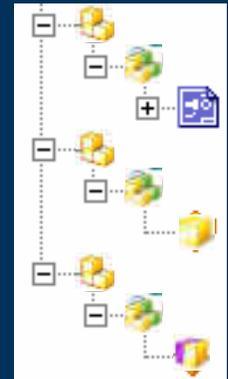


# Background

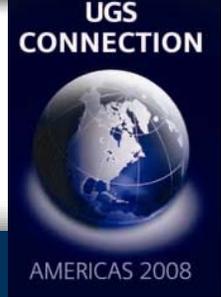
## Preparing for TDM Migration



- ▶ Recommendation: “One Path” is a Set of Options that Must be Used in the Migration from I-deas to NX through Teamcenter
  - ▶ One Version Per Revision
    - ▶ During Metadata Migration
    - ▶ During Save to Teamcenter Engineering
  - ▶ Part, Assembly, Drawing & FEM Datasets
    - ▶ Each Dataset Type in It’s Own Item Revision
    - ▶ No Two Dataset Types in the Same Item Revision
      - ▶ One Acceptable Exception is to Have Drawings of a Single Part or Assembly with the Same Item ID (Part Number) in the Same Item Revision
  - ▶ *Integration for I-deas* Installation Defaults



# TDM Administration



- ▶ Migration relies on a “healthy” TDM
  - ▶ Typical administration tools (dmadmin, idvfy, etc.) should be used regularly to prevent corruptions.
- ▶ Teamcenter Configuration affects the necessary TDM cleanup.
- ▶ TDM cleanup can be simple...
  - ▶ IF TDM administrator monitors TDM health
  - ▶ IF TDM users employed good data management practices
  - ▶ IF you’re willing to auto-assign ItemIDs during migration

# Check TDM Integrity with dmadmin

- ▶ Diag; chrw 4 to check installation for relationship integrity  
NOTE: On some version of dmadmin this is “chrw 3”

Run Proj; CL and Proj; CLRW to remove errors based on table below:

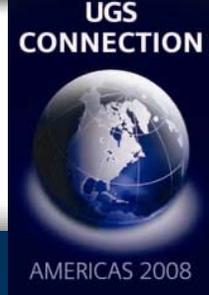
▶ Error	Command for Cleanup
COR_Version_Hierarch	PROJ; CL
COR_Version_Item	PROJ; CLRW
COR_Hier_Version	PROJ; CLRW
COR_Version_Hierarch	PROJ; CL (after PROJ; CLRW for COR_Hier_Version)

- ▶ Diag; CH 4 to check meta-data and integrity of entire database  
NOTE: On some version of dmadmin this is “CH 3”
- ▶ Mig; OOD to identify assemblies and drawings in need of an update



# Integrity Check: dmadmin & idfvfy

- ▶ If drawings migrated into Item with 3D model AND multiple versions migrated:
  - ▶ Dmadmin: Mig; Mult to find multiple versions of drawings related to a single part version. (Older versions will be 'lost' during migration)
- ▶ Run Library Files Check and Location Report
- ▶ Dmadmin: Mig; TMT to run Missing TMT Report and generate program file to correct.
- ▶ Run idfvfy to validate no corruptions exist in the data installation's .imd and all .pmd files.



# Siemens PLM Recommendations

- ▶ Remove unnecessary versions
  - ▶ Update I-DEAS Assemblies and Drawings as much as possible
  - ▶ During migration each I-deas **version** will become a **revision** in Teamcenter
  - ▶ Drawings may migrate into the same item as the 3D model or into a different Item Series.
    - ▶ Default migrates to a separate item so no drawings are lost during migration.
    - ▶ NX handles drawings better if in the same item.
  - ▶ After migration, each new I-deas version will create a new Teamcenter revision
    - ▶ A new revision of the part or assembly is created each time the user saves to Teamcenter.



# Planning for Data Migration

- ▶ Part Number vs Part Name
  - ▶ ItemID must be unique in Teamcenter.
    - ▶ TDM: Duplicate Part Numbers exist across projects and libraries.
  - ▶ Migration tool will swap name / number – but all or none
  - ▶ miadmin can swap one or more items from the TDM
- ▶ Revision Naming Scheme
  - ▶ Each version creates a revision
  - ▶ Typically <TDM\_Rev>+<TDM\_Version\_Number>  
i.e. 001, 002, A003, 004, B005...
- ▶ Members, Roles, States, TcEng Projects
  - ▶ TcEng configuration and desired item access affect TDM cleanup.



# Planning for Data Migration

- ▶ Item Ownership
  - ▶ Migration User / Group owns all migrated data without import / export lock unless:
    - ▶ IDEAS\_import\_default\_tcuser=
    - ▶ IDEAS\_import\_default\_tcgroup=
    - ▶ IDEAS\_import\_default\_tcproject=
    - ▶ -OR- Migration Mapping Wizard maps TDM Project/Library to TcEng Group
  - ▶ TDM import/export lock maps to User defined by IDEAS\_external\_owning\_user\_name preference
    - ▶ must be defined in order to start migration
- ▶ TDM Numbers / Names can be 80 characters long
  - ▶ TcEng limited to 32 characters
- ▶ Multi-Site
  - ▶ multiple TDMs

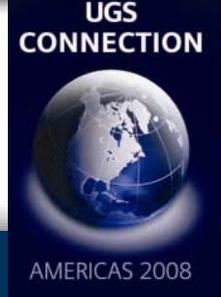


# TDM Preparation, Known Issues

## Part Numbers

- ▶ Migration will handle missing or duplicate part numbers by:
  - ▶ Auto-generating unique suffix to existing part number  
IDEAS\_append\_autoassignid\_to\_originalid=MIGRATE
  - ▶ Auto-generating part numbers
    - ▶ customizable IDSUSER\_import\_attrmap\_pre function
    - ▶ Different versions of the same item will be given the same part number
    - ▶ re-numbered items will be located by internal ID -> GUID
  - ▶ Or Skipping null or conflicting part numbers during migration
    - ▶ Any skipped item will cause all items dependent on that item to be skipped also.

# Miadmin

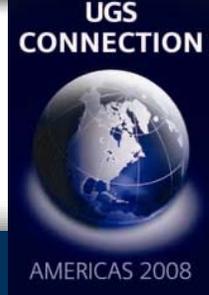


- ▶ Command Line Tool
- ▶ Open an I-deas Command Window
  - ▶ Start > Programs > I-deas > Command Window
  - ▶ `oaxx start OITERMRUN` in the I-deas Prompt Window
- ▶ Set preferences in  
`%SDRC_INSTL%\prl\miadmin_pref.dat`
- ▶ Scan > Analyze > Update (Scan > Analyze)
  - ▶ `miadmin -s -i <imd_file> -n <namespace_file>`
  - ▶ `miadmin -a -t # -n <namespace_file> -e <error_file>`
  - ▶ `miadmin -u -i <imd_file> -c <corrections_file> -r <report_file>`



# TDM Preparation - Difficult Issues

- ▶ Missing Library Files
- ▶ MIGRATED\_DRAWING\_DUPLICATE\_VERSION\_NUMBER
  - ▶ Typically Drafting Setups not migrated for these.
- ▶ DUPLICATE\_VERSION\_GUID
  - ▶ Often caused by incomplete library move.
- ▶ DUPLICATE\_ITEM\_GUID
  - ▶ Also caused by incomplete library move.
- ▶ DUPLICATE\_VERSION\_NUMBER
  - ▶ Cannot migrate both item versions – or parents and ancestors.
  - ▶ Caused by clearing Import / Export Locks.
- ▶ MULTIPLE\_LEGACY\_DRAWINGS



# TDM Preparation miadmin Best Practices

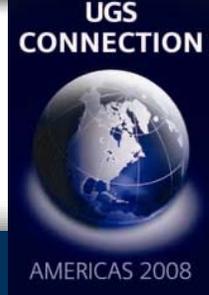
- ▶ Start by working on one installation at a time.
  - ▶ Address the following errors first
    - ▶ Resolve Migrated and Legacy drawing errors (analysis type 1)
    - ▶ Resolve Duplicate GUID errors next (Type 64)
    - ▶ Resolve DUPLICATE\_VERSION\_NUMBER errors (types 1 and 64)
  - ▶ Resolve BAD\_HIERARCHY\_RELATIONSHIP errors next (Type 32)
  - ▶ Resolve MISSING\_DRAWING\_SET\_RELATIONSHIP errors (Type 512)
- ▶ Then transition to Multiple TDM analysis / corrections
  - ▶ Resolve CREATE\_TIME\_SEQUENCE\_ERROR issues (Type 16)
  - ▶ Resolve Import/Export locks next (Type 1 again)
  - ▶ Resolve Name / Number errors next (types 1, 2 and possibly 4)
    - ▶ Correct at “Owning” TDM
  - ▶ Resolve related duplicate number next (types 128)
- ▶ *Review ALL suggested corrections BEFORE Update!*

# Miadmin analysis type 0

- ▶ Useful to examine entire database
- ▶ Many items will have descriptions for part numbers
- ▶ Part numbers may not match customer standards
- ▶ Numbers may contain number and description
- ▶ Revision may contain invalid text
- ▶ Also used for post-migration to reconcile progress (what was migrated to TCE and what remains in TDM)

# MIGRATED\_DRAWING\_DUPLICATE\_VERSION\_NUMBER

## Package File Edit



```
version = {
  item_passport = "144574071:832982470:2380"
  version_passport = "c87d1abd-35d0-11d6-aaf6-
00306e089c2b"
  name = "TOOL_ CARRIER CALIBRATION"
  type = "LIB DRAFTING SETUP"
  part_number = "76347"
  version_number = 14
  filename = "76347_0033.drw"
  :
}
version = {
  item_passport = "6c8941f9-5adf-11d7-9212-001083cf5723"
  version_passport = "6c8941fa-5adf-11d7-9212-
001083cf5723"
  name = "TOOL_ CARRIER CALIBRATION"
  type = "LIB DRAWING"
  part_number = "76347"
  version_number = 1
  filename = "76347_0034.mdf"
  :
```



# Duplicate GUID Errors

## Duplicate Version Errors

- ▶ These can cause problems for both TDM and migration.
  - ▶ Duplicate Version Errors are typically multi-TDM errors
- ▶ There is no automated resolution using miadmin.
- ▶ One of the item versions must be deleted or not migrated to Teamcenter
- ▶ Use dmadm MIG > MIAD to identify where this item is used (drawings and assemblies)
  - ▶ Replace this item in the assemblies
    - ▶ Older versions of assemblies need to be deleted
  - ▶ Delete the drawings
  - ▶ Delete the item from TDM



# Multiple Legacy Drawings

- ▶ 2 or more binary drawings have a relationship pointing to the same drafting setup.
- ▶ Miadmin will suggest corrections for most.
- ▶ User will need to determine which relationship to fix and which to break.
  - ▶ You may need to merge changes from both binary drawings into one of them.
- ▶ You should delete the invalid drawings after breaking the relationships.

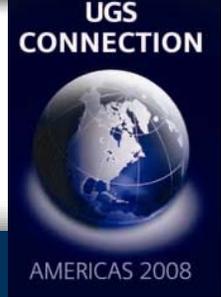


# Description with Number

Item Name	Part Number	Item Type Name	Version	Revision	New Value	Action	Library f
Ejector_Top	Purcell P976B	LIB PART	1				kpu-lib
Ejector_Top	Purcell P976B	LIB PART	2				kpu-lib
Ejector_Top	Purcell P976B	LIB PART	3				kpu-lib
Ejector_Top	Purcell P976B	LIB PART	4				kpu-lib
Switch_Interlock	Eaton/Cutler-Hammer SS12ET10-21Y3	LIB PART	1				kpu-lib
Switch_Interlock	Eaton/Cutler-Hammer SS12ET10-21Y3	LIB PART	2				kpu-lib

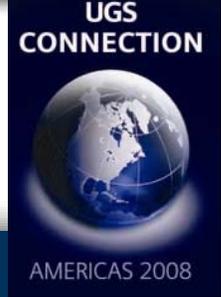
- ▶ Can only make one change (one New Value) per line with miadmin
- ▶ To move description text to name and modify number
  - ▶ Modify Part Number on one version, Name on another version.
  - ▶ Insert line in .nsc file
  - ▶ Copy line to new line
  - ▶ Change Name in one, Number in other
  - ▶ Update with Override (-o) option
- ▶ Or use modifyTDM to change both

# Revision Names



- ▶ Customers often want to map TDM Revision Name to TcEng Item Revision Name.
- ▶ TDM Revision names need not be unique
- ▶ TDM Revision names often contain invalid text
- ▶ Use analysis type 0 or modifyTDM to verify that each revision name is used only once in each item series!
  - ▶ Then set `IDEAS_revision_id_format_specifier=%s`
  - ▶ Also set `IDEAS_revision_id_format_blank_ideas_rev=%d`

# TDM Preparation - Analysis/Fixing Tools



- ▶ Primary Tools
  - ▶ dmadmin utility – for cleanup and report generation
    - ▶ Monitor integrity and health of TDM
    - ▶ TMT check on assembly data
    - ▶ I-DEAS library data report (for creating GUID files to control migration)
  - ▶ miadmin utility – Identifies and fixes most of the problems

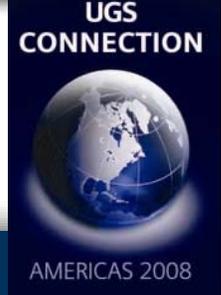


# TDM Preparation – Helper Tool

- ▶ modifyTDM utility - OI Java application distributed in ulib directory
  - ▶ Swap part name / number
  - ▶ Specify new part name
  - ▶ Specify new part number
  - ▶ Specify new Revision
  - ▶ Specify new State
  - ▶ Specify new Description
  - ▶ Set / Clear Import/Export, Protect and Reserve locks
  - ▶ Project / Library Moves
  - ▶ View / Set / Define User Defined Attributes
  - ▶ Verify existence / location of library files

---
- ▶ List Parts / Assemblies associated with Drawings
- ▶ List Drawings associated with Parts / Assemblies

# modifyTDM



- ▶ Can be used to make multiple changes at the same time
- ▶ Launch command window from I-deas
  - ▶ **oaxx start OITERMRUN**
- ▶ cd to desired directory (be sure there are no spaces in path)
- ▶ Copy modifyTDM.bat and modifyTDM.jar to current working directory
  - ▶ Or put modifyTDM.bat in a PATH directory and edit it to add the jar file to CLASSPATH
- ▶ Use to scan '-s', analyze '-a' or update '-u'
  - ▶ Analyze is directly on TDM, not from Scan output file.
- ▶ Always follow update with miadmin Scan and Analyze



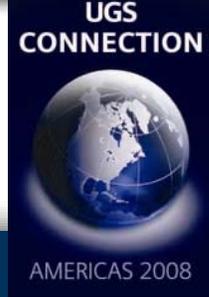
# Using Drawings to set Part Numbers

- ▶ modifyTDM drawing analysis
  - ▶ Lists each drawing in a library followed by the related 3D model.
  - ▶ Output can be used to edit Part name, number, revision, etc. to match the Drawing.
  - ▶ No scan is necessary – just analyze the TDM
- ▶ Edit the output file in Excel (or your favorite tool)
- ▶ Update the TDM with the changes

```
modifyTDM -a -t 2 ...
```

```
modifyTDM -u -c <correctionFile> ...
```

# Automating repetitive tasks



- ▶ Scripts
- ▶ Formula to flag where error group changes
  - ▶ =If(logical\_test,value\_if\_true,value\_if\_false)
  - ▶ In column AH7 add:  
=if(B8<>B7,"Y","N")
  - ▶ Copy that to the bottom of the nsc file
  - ▶ Filter for "Y" in column AH
  - ▶ Fill those rows with background color



mi\_anal\_ex.txt



# Duplicate Revision Names

- ▶ Customers often want to map TDM Revision Name to TcEng Item Revision Name.
- ▶ TDM Revision names need not be unique
- ▶ If you set IDEAS\_revision\_id\_format\_specifier=%s
  - ▶ You must insure the TDM revision names ARE unique
  - ▶ Starting with miadmin type 0 analysis
  - ▶ In column AH add...

```
=IF(B7=B8,  
  IF(G7=G8,"DUP_REV",""),  
  IF(B7=B6,  
    IF(G7=G6,"DUP_REV",""),  
    ""))
```
  - ▶ ***This will flag Drafting Setup / Drawing Pairs as duplicates***



# Duplicate Revision Formula

## Eliminate Drafting Setup / Drawing Pairs

```

    TRUE {
        F TRUE {
            FT
            =IF(B7=B8,
                IF(G7=G8,
                    IF(AND(LEFT(E7,8)="LIB DRAF",OR
                        (LEFT(E8,5)="LIB A",LEFT(E8,5)="LIB B")),
                        "",
                        "DUP_REV"),
                    ""),
                IF(B7=B6,
                    IF(G7=G6,
                        IF(AND(LEFT(E6,8)="LIB DRAF",OR
                            (LEFT(E7,5)="LIB A",LEFT(E7,5)="LIB B")),
                            "",
                            "DUP_REV"),
                        ""),
                    ""))
        }
    }
    FALSE {
        F TRUE {
            FT
            =IF(B7=B8,
                IF(G7=G8,
                    IF(AND(LEFT(E7,8)="LIB DRAF",OR
                        (LEFT(E8,5)="LIB A",LEFT(E8,5)="LIB B")),
                        "",
                        "DUP_REV"),
                    ""),
                IF(B7=B6,
                    IF(G7=G6,
                        IF(AND(LEFT(E6,8)="LIB DRAF",OR
                            (LEFT(E7,5)="LIB A",LEFT(E7,5)="LIB B")),
                            "",
                            "DUP_REV"),
                        ""),
                    ""))
        }
    }
    
```

# UGS CONNECTION



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Thank You!  
Questions?