

I-deas to NX Migration

Bob Haubrock, Mike Hicks, Paul McDonald
I-deas Migration

Timing of Migration

All NX I-deas customers can migrate NOW!!

Over 50% have started on the “evolution of excellence” (aka – I-deas to NX)

CAE ready since NX 5

Sheet Metal ready since NX 5

Teamcenter Integration for I-deas passes 20,000 user mark

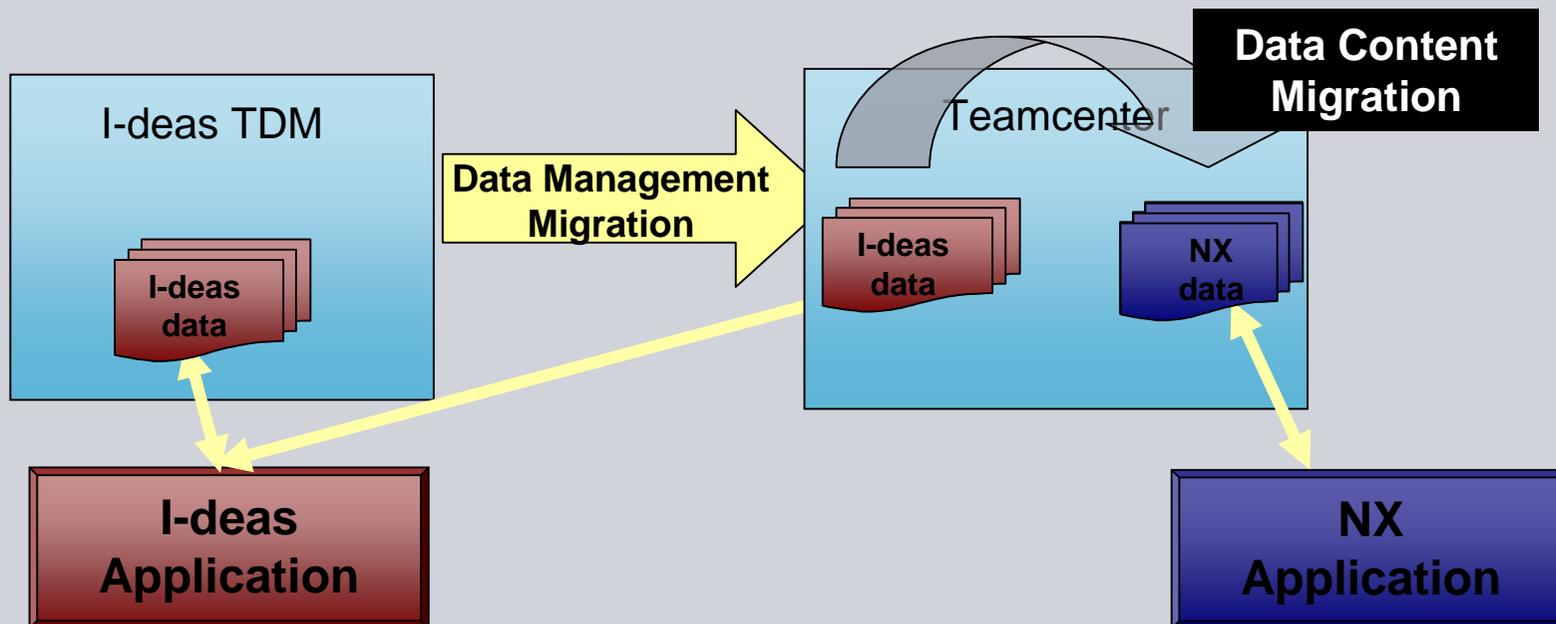
NX 6 makes your migration easier and more powerful using NX Design Freedom Powered by Synchronous Technology

Migration Steps

Migration is a two step process

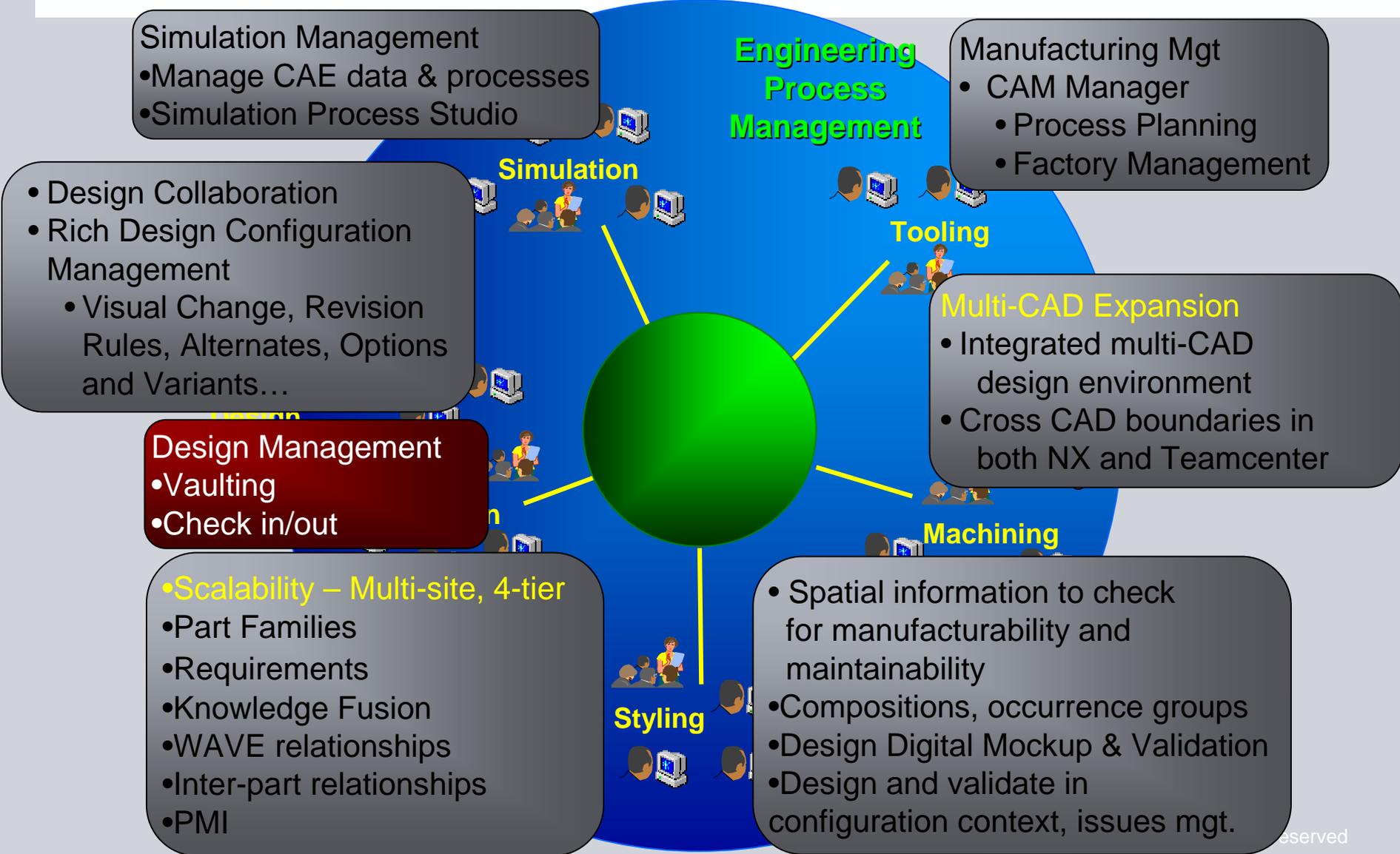
First move from I-deas TDM to Teamcenter

Second step of migration is to move CAD data and users from I-deas to NX



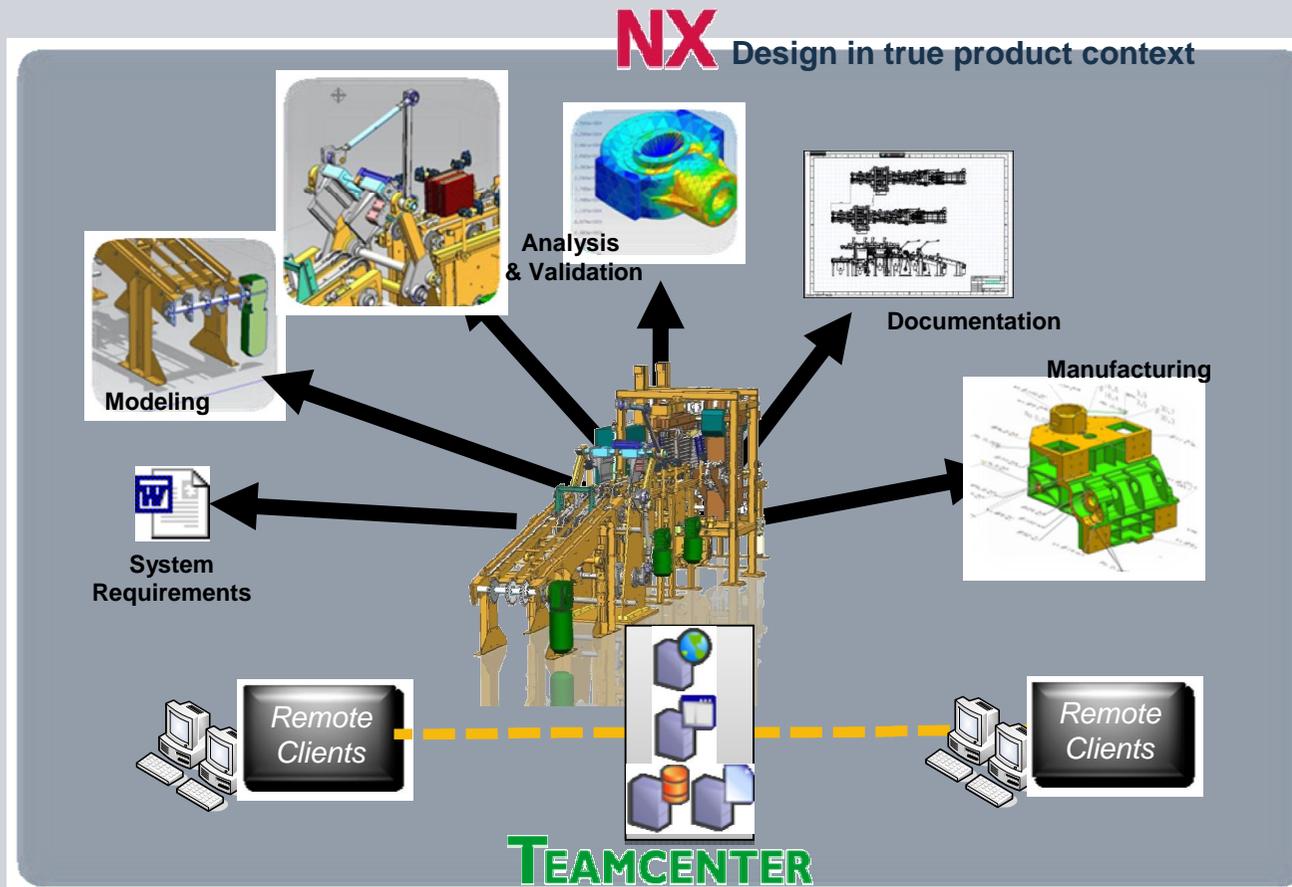
NX Engineering Process Management

NX and Teamcenter are scalable and functionally rich



Leveraging Product Development Knowledge

Inside NX access to centrally managed data enables global teams to work with discipline specific views of live product designs



High usability through instant access to Teamcenter information directly from within NX

Facilitates concurrent design process among collaborating design teams

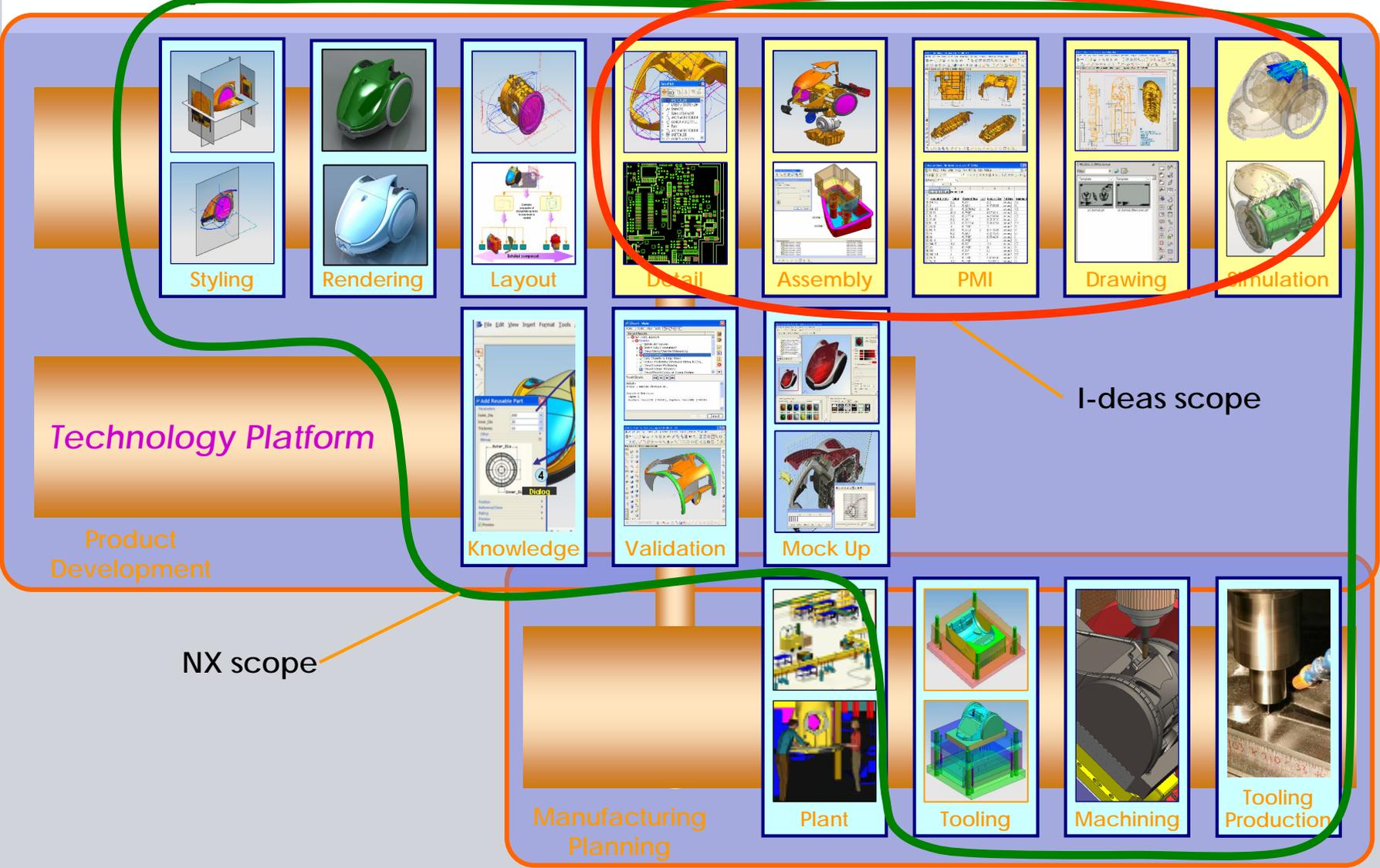
Enables accelerated supplier collaboration through NX multi-CAD

Captures, manages and promotes data reuse throughout the organization

Biggest Benefits of moving to Teamcenter Integration for I-deas users on TDM

- Performance of check-in and check-out is much better for over 3 users
- Use of JT data for visualization in PDM as well as check out to I-deas
 - Many customers use JT data to check out 80% of the data they used to check out fully featured parts
 - JT with XT Brep can is used with Design Freedom the same as Native NX data
- Full security, scalability of a PDM system
- Multi-site and/or 4-tier
- Path of data migration to NX

NX Scope Broader than I-deas



NX Value over I-deas

| NX Difference | Value to Customer |
|------------------------------|--|
| Design Freedom | <ul style="list-style-type: none"> ▪ Edit Brep Models without need of history tree ▪ Add modifications to Paramertized parts ▪ SPEED |
| Commercial geometry kernel | <ul style="list-style-type: none"> ▪ Guaranteed reliability ▪ Choice of many compatible applications |
| Knowledge & automation tools | <ul style="list-style-type: none"> ▪ Easy development of custom applications ▪ Productivity through automation of design and validation tasks |
| Product development | <ul style="list-style-type: none"> ▪ Tools for managing highly associative structures ▪ Rapid development of re-usable sub assemblies |
| Integrated styling | <ul style="list-style-type: none"> ▪ Completely integrated solution ▪ Proven state-of-the-art functionality |
| Tooling development | <ul style="list-style-type: none"> ▪ Completely integrated solution ▪ Industry leading capabilities for die design and NC |
| Process wizards | <ul style="list-style-type: none"> ▪ Built-in task-specific knowledge ▪ Higher productivity than generic functions ▪ Less training – easier to deploy |
| Stable modern architecture | <ul style="list-style-type: none"> ▪ Performance and reliability ▪ Rapid adoption of new technologies ▪ Stability into the future |

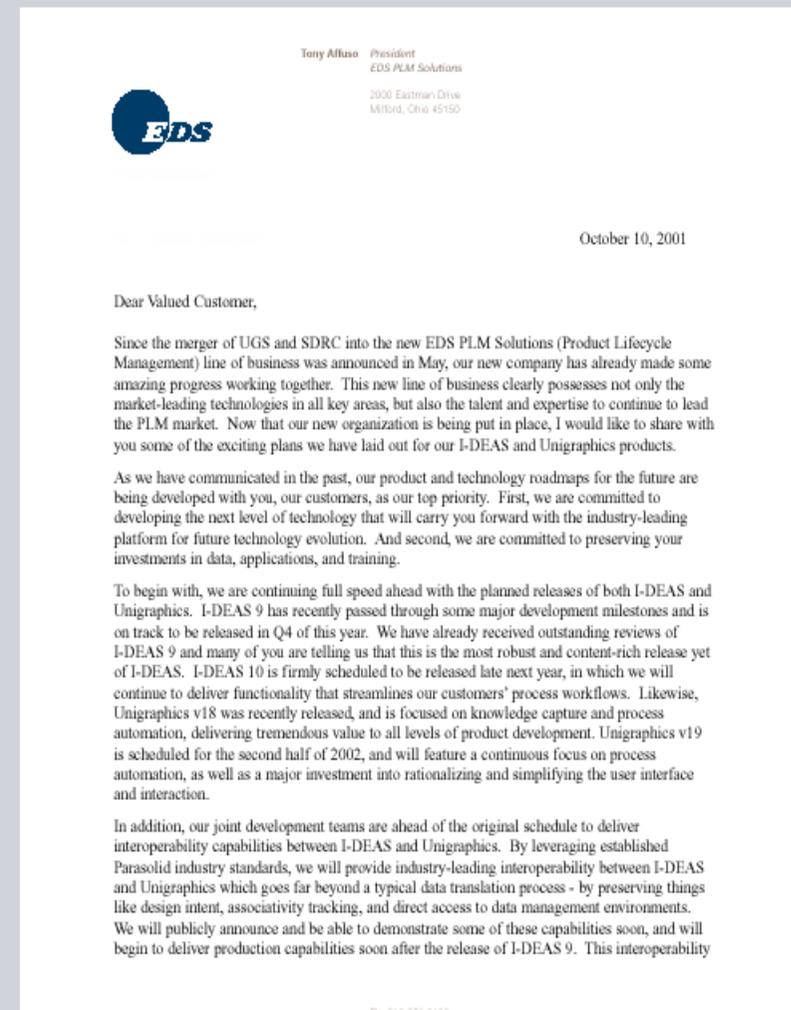
I-deas to NX Migration – Objective

To migrate customer data from the I-deas environment into the NX environment

- Preserving customer investment and intellectual capital held within the data
- Improving workflows and processes

To preserve customer investment in our software with like functionality

*Customer Letter
October 16, 2001
Tony Affuso, President*



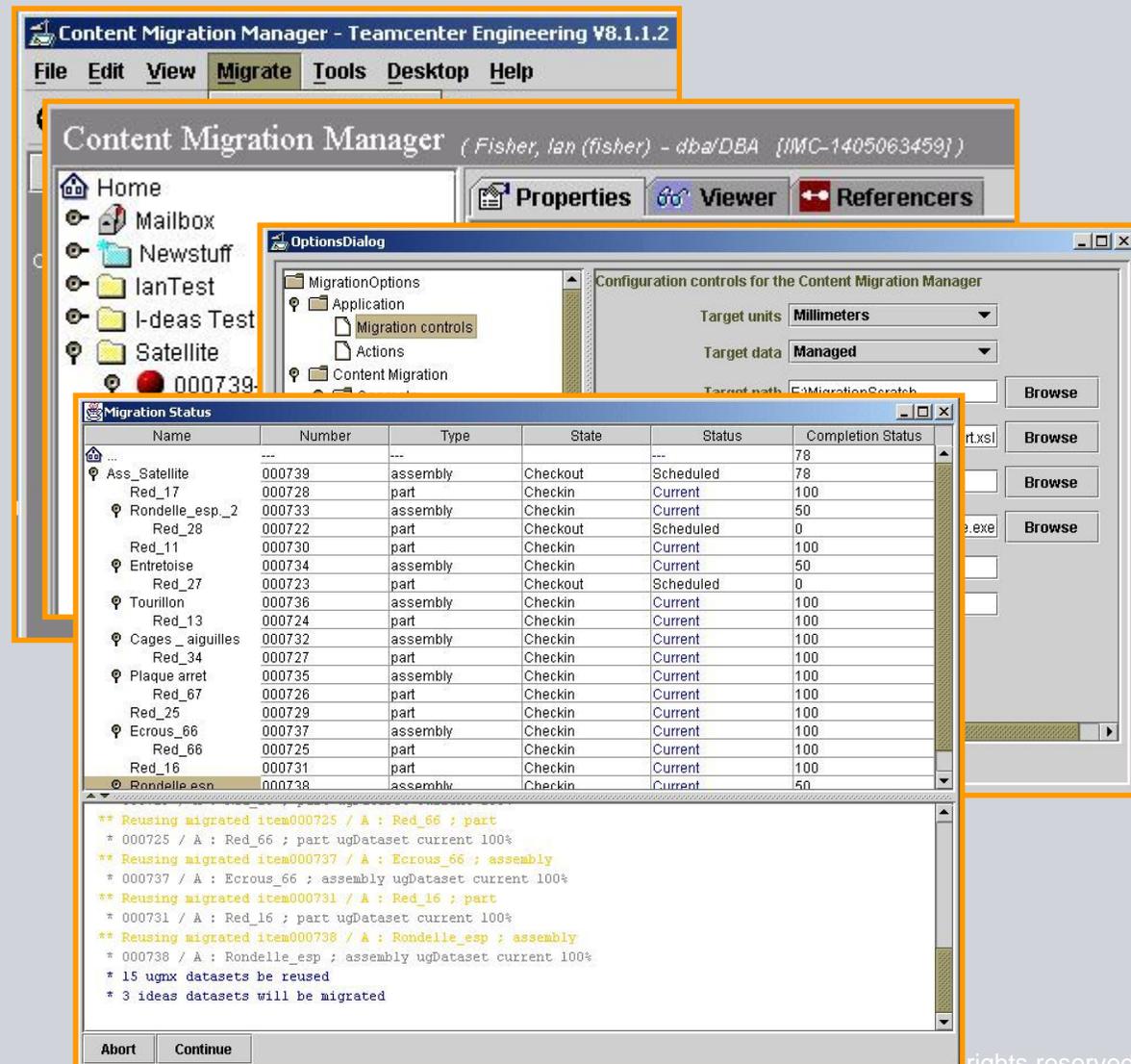
Content Migration Manager (CMM)

Migration Modes
Interactive UI
Command line/bulk tools

Select data for migration
User may select items, item/revisions or folders
CMM resolves dependencies

Configure Migration
User may configure the migration operation
Style of migration (e.g., Brep vs features)
Success criteria
Level of checking

Migration Reporting
Pre-migration report
In-migration status (dashboard)
Post-migration summaries
Item migration reports (persistent)



rights reserved

Part Migration Options

JT file with precise data

- Full support for design in context
- Facet and precise measure, cross section and interference
- Full support of PMI between JT parts and native geometry

Boundary Representation

- NX Design Freedom powered by Synchronous Technology
- I-deas Coincident Point Tolerance accuracy guaranteed

Features

- Full and partial featured models
- I-deas Coincident Point Tolerance accuracy guaranteed
- Partial featured models still have all parameters of all futures stored with model
 - Aids in recreation of fully featured model
 - Aids in information to modify design intent for many modifications

Migration Part Test

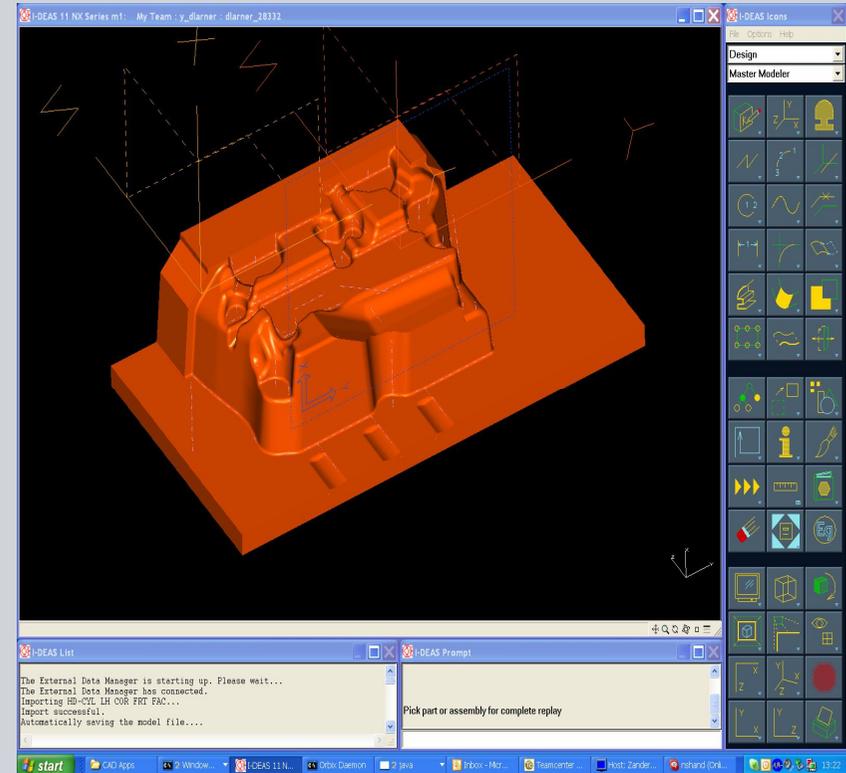
Automotive Migration Part

- Front Core Cylinder Head
- I-deas 10 M1 Part
- Part Version 22
- 191 Major and Minor History Steps

Migration Results Released Code

- NX 3.0.1 and I-deas 11 M2
- 97% Feature Pass Rate
- 6 Advanced Fillet Issues
 - Rollover and stop short
- Manual repair to get same part as I-deas took 20 minutes

Rebuilding all geometry from scratch in I-deas took 20 hours



Part Migration Value 60 to 1

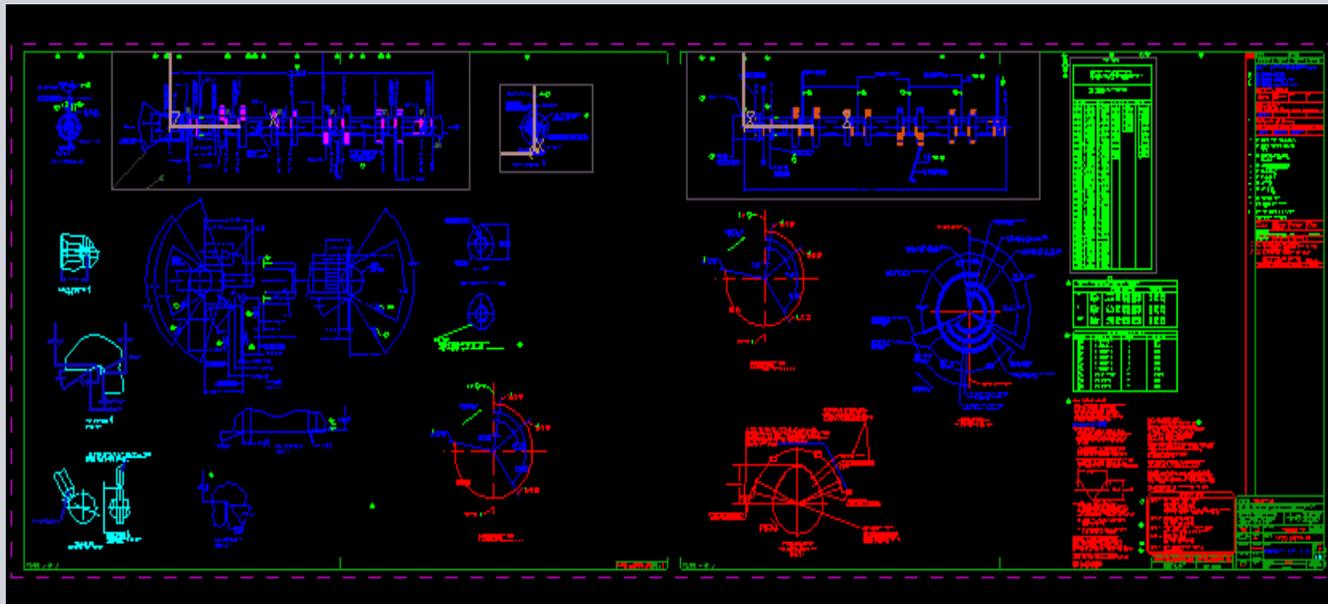
Drawing Migration Results

Example of Drawing migration test at Consumer Electronics Customer

Drawing migration certified for fidelity and associativity

Migration pass rate for this set of drawings in NX 4.0.0 is 92% or 193,572 entities migrated successfully

Most conservative estimate of value of migration of these drawing compared to going to any other CAD system is **75 to 1**



Fidelity Certification of All Migrated Data

Parts

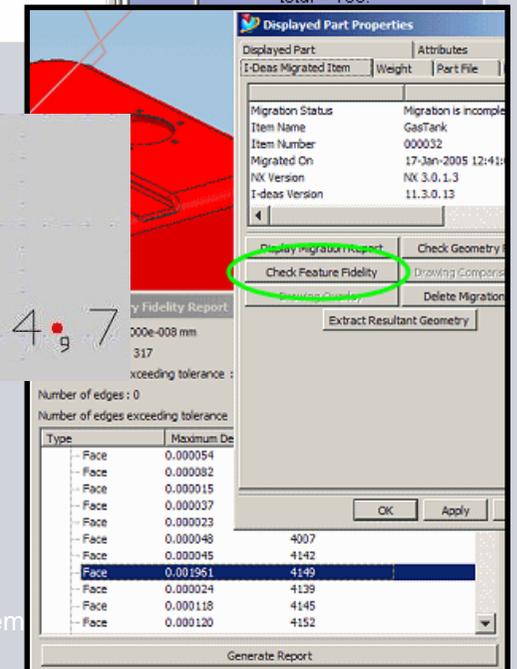
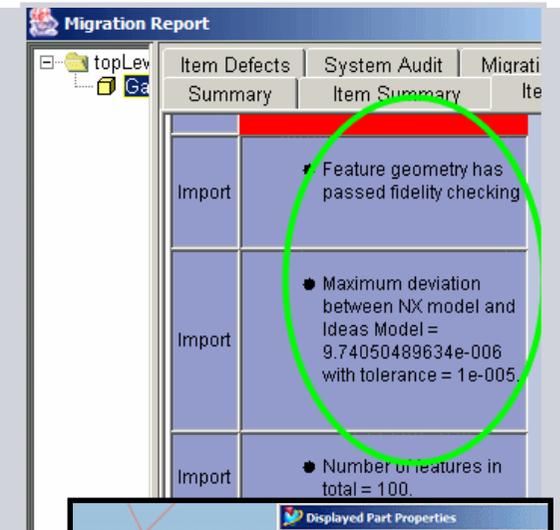
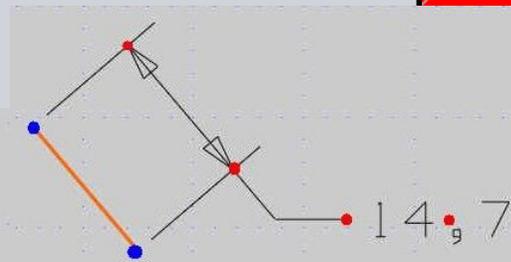
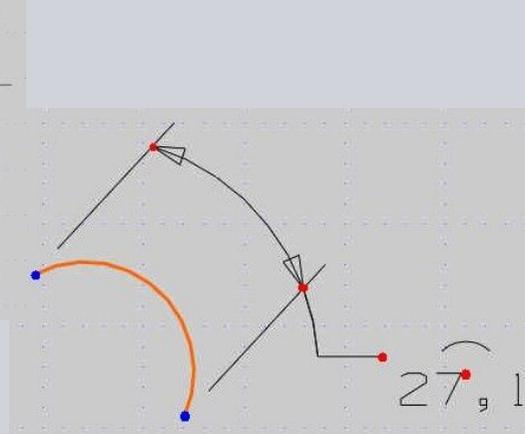
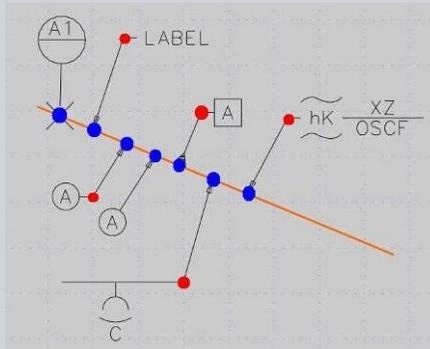
- Fidelity Measured at I-deas Coincident Point Tolerance (PCT) of $1e-5m$
 - “/up f” Developed Originally as Joint Project with Ford
- All Faces are Compared with the Original I-deas Faces

Drawings

- Pixel, vector and unique “key point” drawing entity certification tool
- All drawing entities are certified with associativity

Assemblies

- Location, configurations, constraints and ACF relations all certified



Open I-deas and Program File Migration Mapping Tool

Open I-deas

Updated map of all of the Open C methods added in NX4 that are valid equivalents for OI methods.
 Updated map of all of the new methods in ITK 9.1 that are valid equivalents for OI TDM methods.
 Mapping from OI methods to new NX Open Common API

Program Files

Update the Program File Migration tool to provide access to a functionality map between I-deas commands and NX 4
 Tool is a stand-alone kit that is available with every seat of I-deas Series 12

The screenshot displays the 'Program File Migration' tool interface, which is a web-based application accessed via Microsoft Internet Explorer. The interface is divided into several panes:

- Usage Histogram:** A table showing the frequency of OI methods.

| OI Method | Count | Usage Bar |
|-----------------|-------|-----------|
| GetErrorMessage | 1037 | [Bar] |
| GetErrorCode | 451 | [Bar] |
- Statistics Frame:** A table showing the frequency of menu commands.

| Menu Command | Frequency |
|--------------|-----------|
| delete | 12 |
- Program File List:** A list of program files with checkboxes indicating their status.
 - win.list
 - arc text.prg
 - fillet loop.prg
 - sec.prg
- Commands Table:** A table showing the mapping of menu commands to line numbers in program files.

| Menu Command | Line Numbers |
|--------------------------------------|--------------|
| create line single_line | 21 |
| create point | 38 |
| display_options line_hidden_options. | 34, 57, 78 |
| file program_files | 79 |
| modify wireframe fillet | 49, 70 |
- Keywords Table:** A table showing the mapping of keywords to line numbers.

| Keyword | Line Numbers |
|---------|--------------|
| goto | 32 |

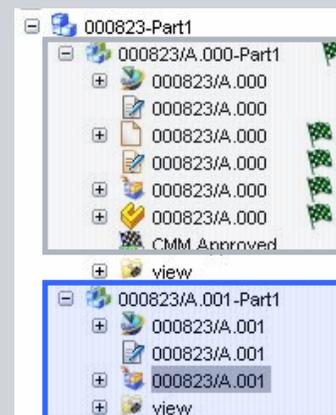
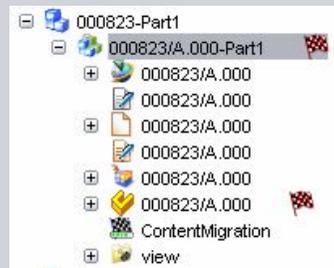
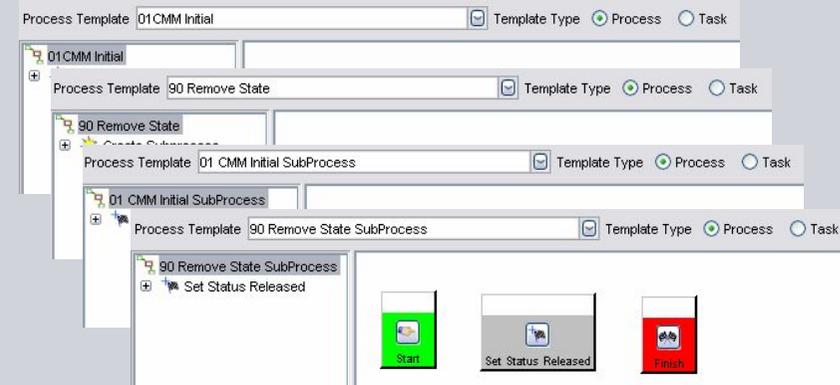
Annotations in the image include:

- 1. Click on any row in the Commands table.
- 2. Program file lines using that command and the associated program file lines will get highlighted.
- 3. Corresponding Structured English lines will get highlighted.

CMM Workflow – Quick Release

Workflow:

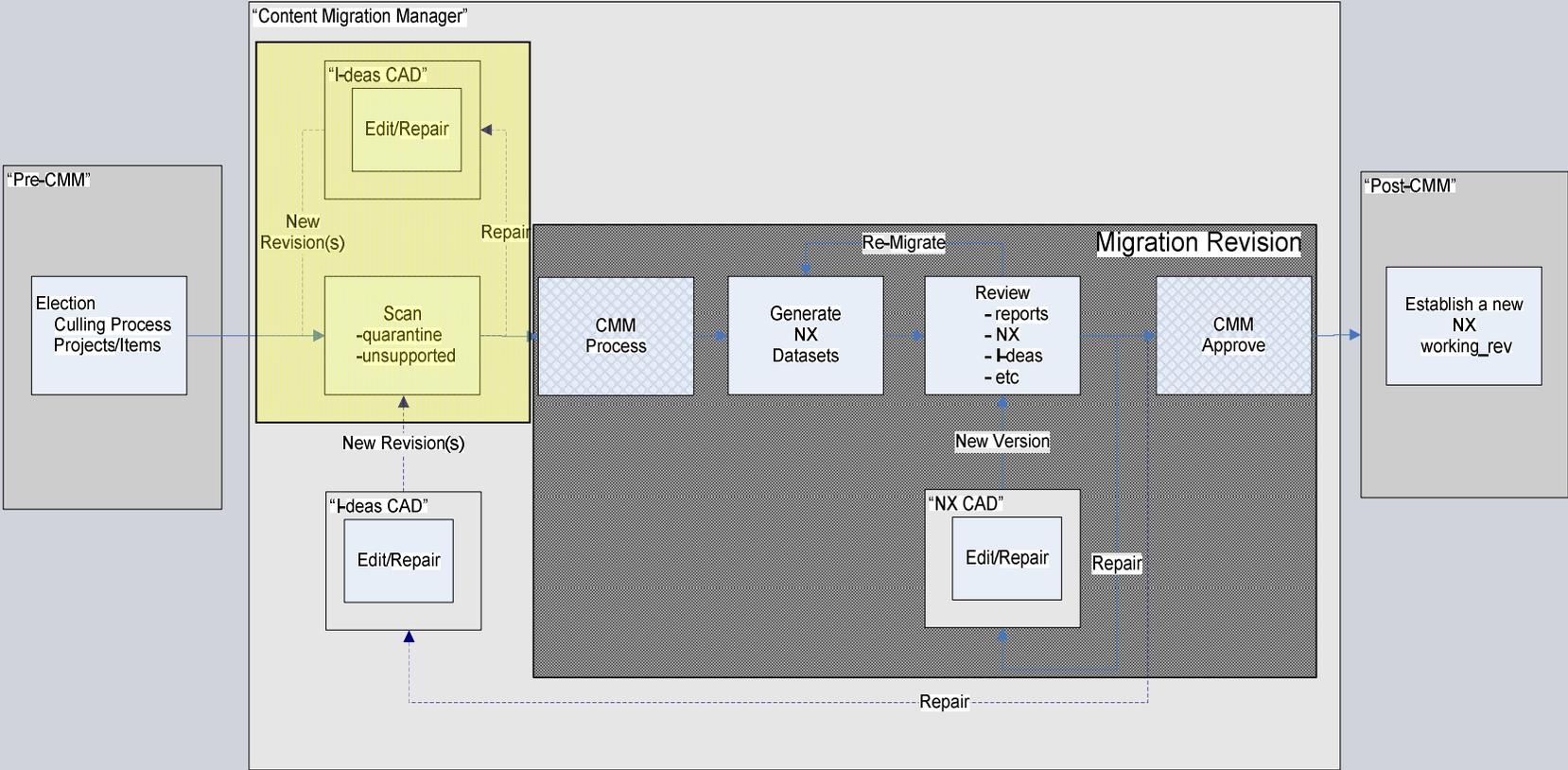
- CMM Content Migration
 - 01 CMM Initial SubProcess
- CMM Approved
 - 02 CMM Approved SubProcess
- Remove status
 - 90 Remove status SubProcess



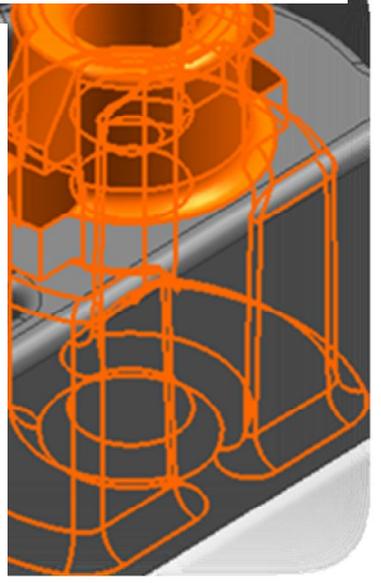
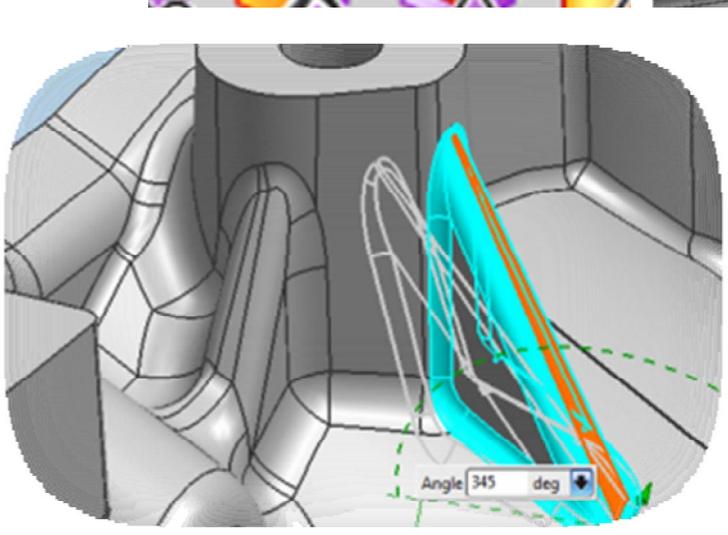
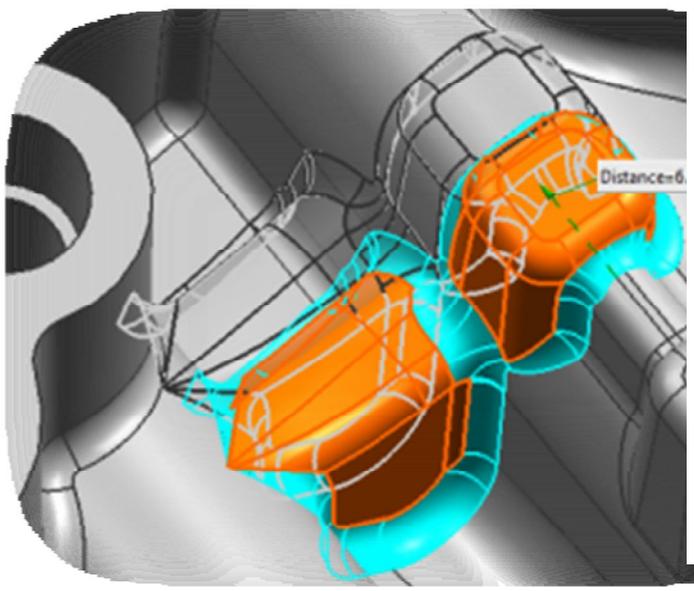
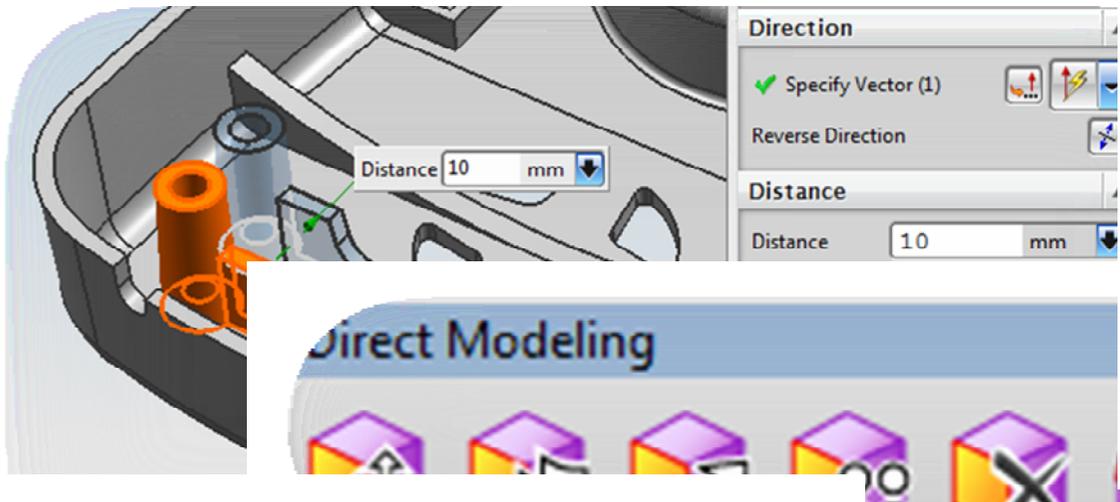
CMM Revision

NX Revision

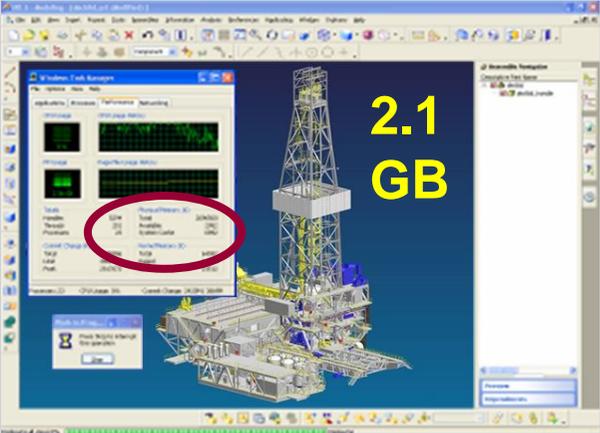
Diagrammed CMM Workflow



Design Freedom



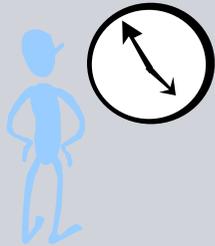
Modern Architecture



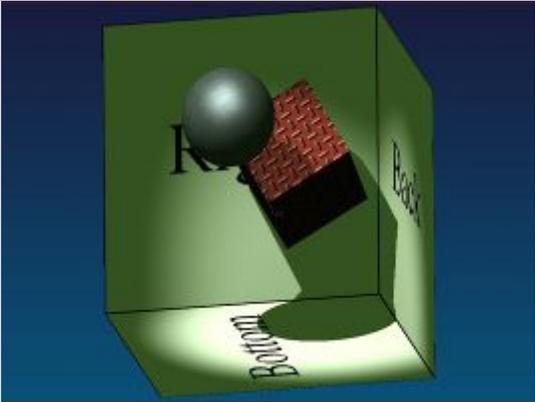
64-bit addressing
Support for large models, DMU

Time Reduction With Two Processors

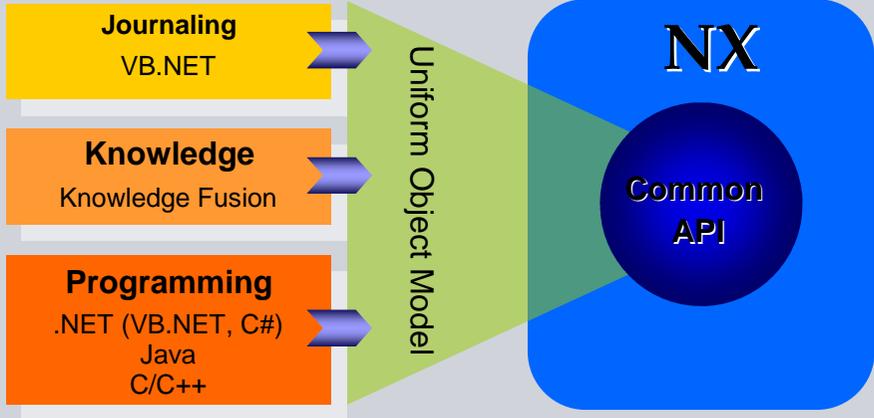
| | | |
|---------------------|--|-----|
| Mass Properties | | 46% |
| Booleans | | 35% |
| Hidden Line Removal | | 41% |



Symmetric Multi-Processing
Optimal performance



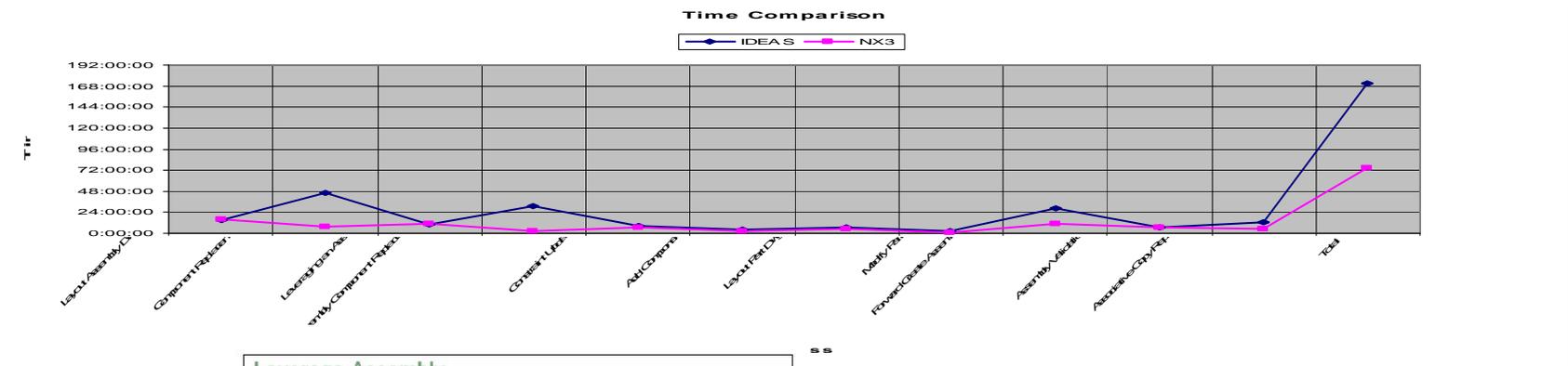
Graphics pixel shaders
Highly realistic images in real time



Macros & programming unified via .NET

NX Value over I-deas

30% productivity improvement at four very detailed studies at Nissan, Canon, Seagate and Samsung



Leverage Assembly Modify - Component Replace

Time to Complete (min:sec):

- IDEAS: 30:45
- NX : 2:16 (mating const automatically)

Leverage Assembly - Details

- Have TCe loaded (Only concerned w/ process time, not load time of TCe)
- Using a PC Stopwatch to measure time.
- Clone the Assm 000124/1
- 43 total components
- All Components were assigned new part numbers that were pre-determined
- All components were cloned.
- Clone the Assembly
- Open the new assembly and verify all mating constraints are present and clean. If they are not, fix the broken ones.
- Major time difference was due to typing of file names

UGS I-deas to NX performance benchmarks Summary

| ID | Process/Task Description | AS-IS | TO-BE | Measured Improvement | Estimated Improvement |
|----|--|---------|---------|----------------------|-----------------------|
| 1 | Leverage Assy - clone TLA, renumber components | 9:35 | 10:42 | -11.7% | -11.7% |
| 2 | Leverage Assembly Modify - Component Replace | 0:30:45 | 0:02:16 | 92.6% | 61.8% |
| 3 | Leverage Assembly Modify - Constraint Update | 8:24 | 6:33 | 22.0% | 22.0% |
| 4 | Leverage Assembly Modify - Add Component | 3:58 | 2:26 | 38.7% | 38.7% |
| 5 | Create Assembly Drawing | 15:22 | 15:52 | -3.3% | -3.3% |
| 6 | Create Assembly Drawing Update - Component Replace | 0:16:20 | 0:07:53 | 51.7% | 51.7% |
| 7 | Create Part Drawing | 6:20 | 4:50 | 23.7% | 23.7% |
| 8 | Create Part Drawing Update Modify Part | 2:18 | 1:00 | 56.5% | 56.5% |
| 9 | Forward Create Assembly | 0:28:15 | 0:11:05 | 60.8% | 60.8% |
| 10 | Forward Create Assembly Validate / Analyze | 6:42 | 6:55 | -3.2% | -3.2% |
| 11 | Forward Create Assembly Modify - Associative Copy Repair | 12:52 | 5:03 | 60.8% | 60.8% |
| 11 | Forward Create New Part | 0:24 | 0:18 | 25.0% | 10.0% |

Key advantages over I-deas with Styling

Single integrated environment for Product Design

- No data translation
- No loss of data
- All NX commands are available
- End result is a manufacturable model

Curve and surface tools well suitable for ID

Real-time and photo-realistic rendering

Reverse Engineering

Customers
achieved 38-45 %
time reduction by
using Shape
Studio vs. Alias +
CAD

Data Migration and Preservation

Revolutionary tools that benchmark 100 times better than the competition on moving data from I-deas to NX

- Only tool that can migrate fully associated native production drawings
 - Competitors just migrate cartoons for production drawings

Over 50 full time dedicated staff in GSS and 15 in PD on migration world-wide

- We have the resources and the skills to make your customer successful

Certified Migration Partners



Extensive training and testing by UGS
Partners in Local Geographies

- Tesis, Metafore, ISI-d, Dipro, Alphacam, Incat, Majotech, Dreide, Team Engineering, HD Solutions, Steinhilber Schwehr , Lippold & Lippold

World-wide Partners in Low Cost Geographies

- Mahindra Engineering – 40 trained engineers with proven part and drawing migration repair expertise
- Tata Engineering Services – 15 trained engineers with proven processes from the worlds largest engineering services company
- Geometric – Long time development partner and longest history of working with UGS on migration
- Wipro – Our newest partner with experience in migration for other CAD systems



Initial Audit for I-deas Customers

Initial Migration Audit

- Evaluates and Captures Customer's Data, Process and Usage
- Set Expectations for Migration in the Current and Upcoming NX Releases
- Typically 2 Day Experience at Customer Site
- Initial Audit Provided Free of Charge
- Result is Delivery of Audit Report

Customer Feedback

- Nearly 400 Audits Completed Worldwide
- Has Initiated Several Teamcenter Implementations
- Audit is Most Productive and Informative Activity about I-deas to NX Migration
- Live Data Migration Demos with Customer Data



Audit Summary Report

Customer Background

- Customer Company Overview
- I-deas Usage Information

TDM Analysis

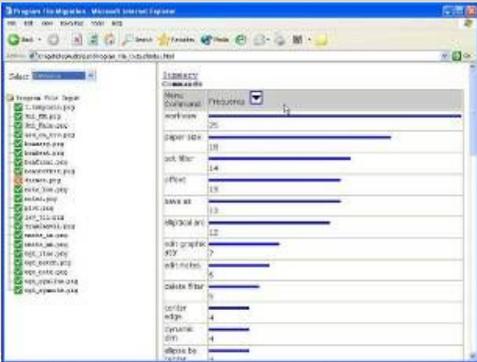
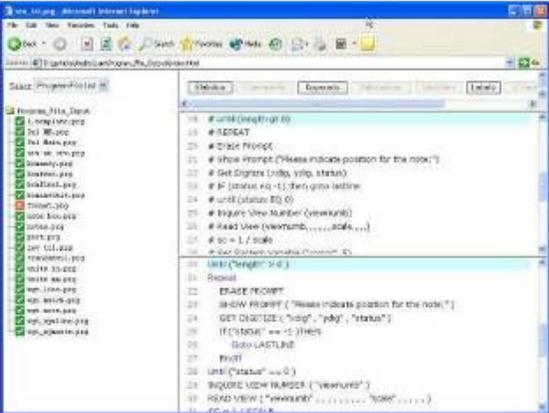
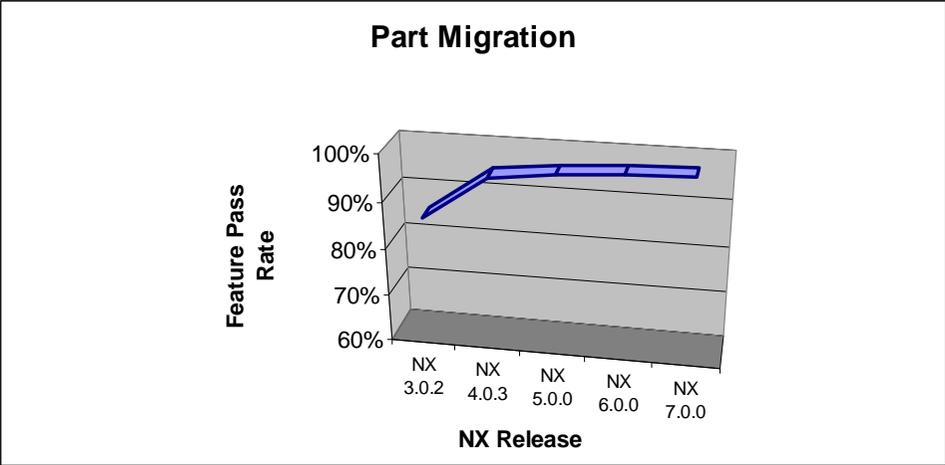
- Metadata Integrity Report
- Actions Needed to Address TDM Conditions

Part Feature, Drawings, and Assembly Analysis

- Identifies Feature Usage
- Compares to Customer Base "Averages"
- Estimate Pass Rates through NX7

```

Analysis Summary:
2 MISSING_ITEM_NAME errors found
12756 MISSING_PART_NUMBER errors found
28 MULTIPLE_PART_NUMBERS errors found
16 MIGRATED_DRAWING_DUPLICATE_VERSION_NUMBER errors found
10 MULTIPLE_MIGRATED_DRAWINGS errors found
4206 DUPLICATE_PART_NUMBER errors found
56 INVALID_MIGRATED_DRAWING_ATTRIBUTE errors found
4809 DUPLICATE_ITEM_NAME errors found
53 INVALID_CHARACTERS_IN_ITEM_NAME errors found
508 ITEM_NAME_TOO_LONG errors found
155 PART_NUMBER_TOO_LONG errors found
    
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Migration Summit Events

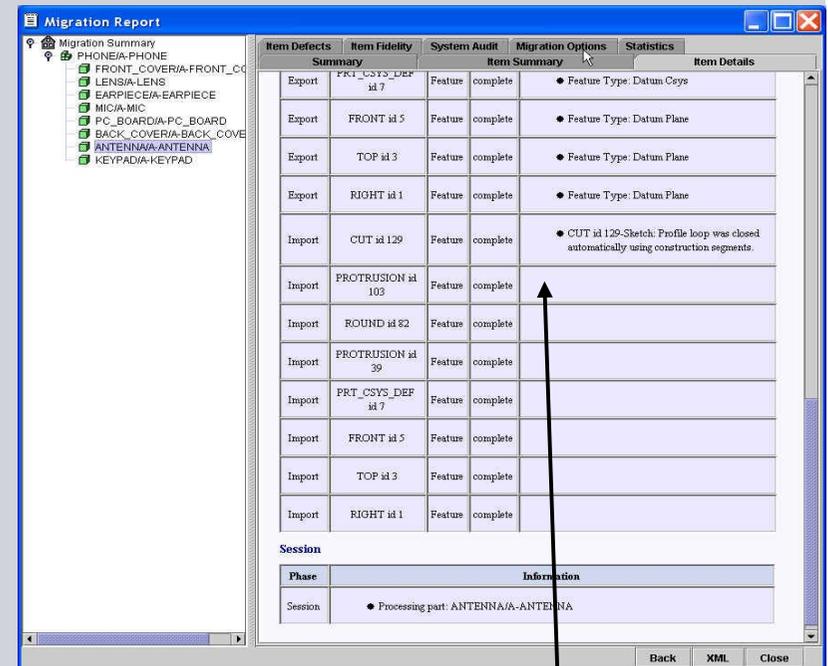
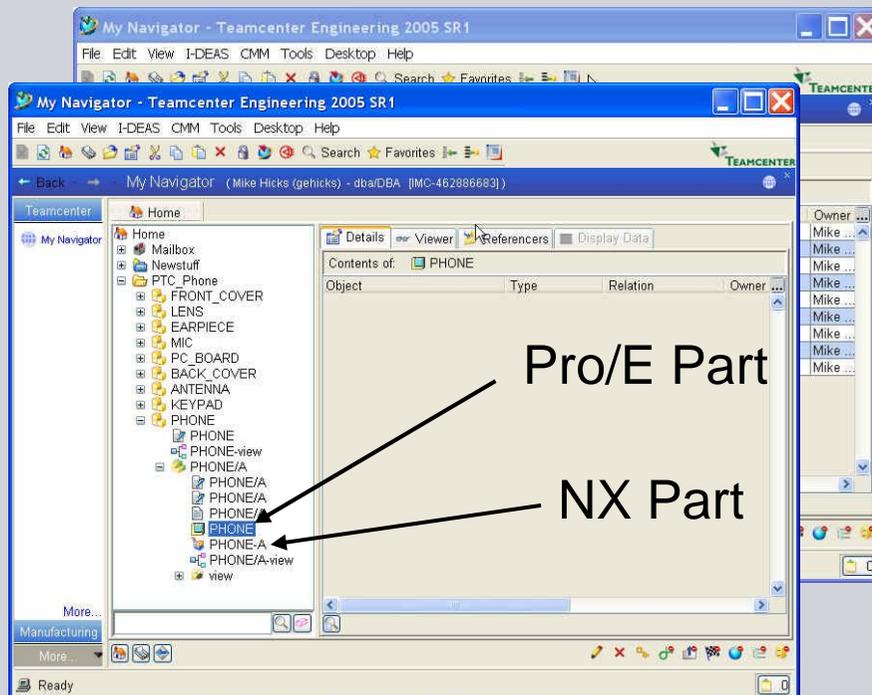
Held for each major release
Customer get hands on
experience with latest “to-be
released” code
Test out workflows and prepare
for future implementations



CMM Product Expanded Coverage

Now supports migration of Pro ENGINEER Data to NX

- Inside Teamcenter Managed Environment
- Part Features, Drawings and Assemblies Maintained



Reports saved in Teamcenter

I-deas and NX License Sharing Policy

UGS provides a licensing sharing policy between I-deas and NX for LIKE functionality

- Supports I-deas customer evaluation of NX
- Supports phased I-deas to NX deployments
- Product modules mapped following existing “Like Module”

I-deas 6 and NX 6 share like functionality licenses

- Supports direct licensing sharing between I-deas and NX
- Future I-deas and NX paired releases will continue license mapping

Future releases of I-deas will be maintenance in nature and have paired nature



Separate License Keys

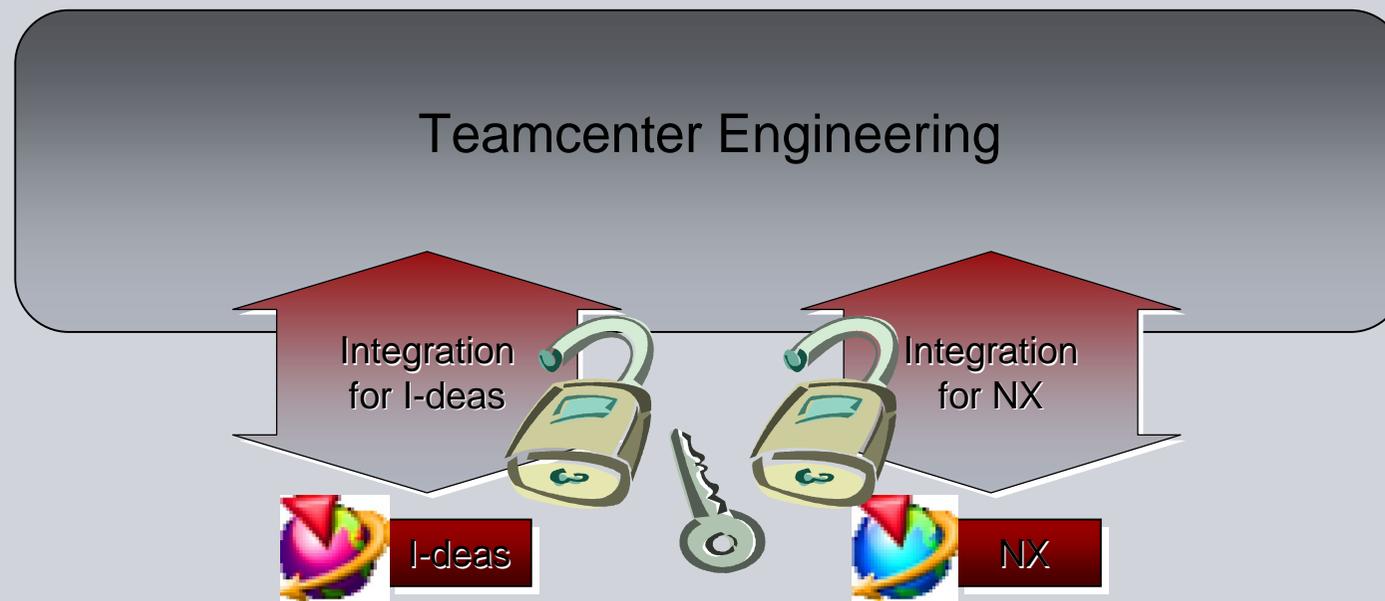


Same Key for I-deas and NX

License Sharing – Teamcenter Engineering Integration for I-deas and Integration for NX

SIEMENS

Shared licensing supports Teamcenter Engineering *Integration for I-deas* products now allow access to *Integration for NX*



One Product – Two License Features

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Thank You!

