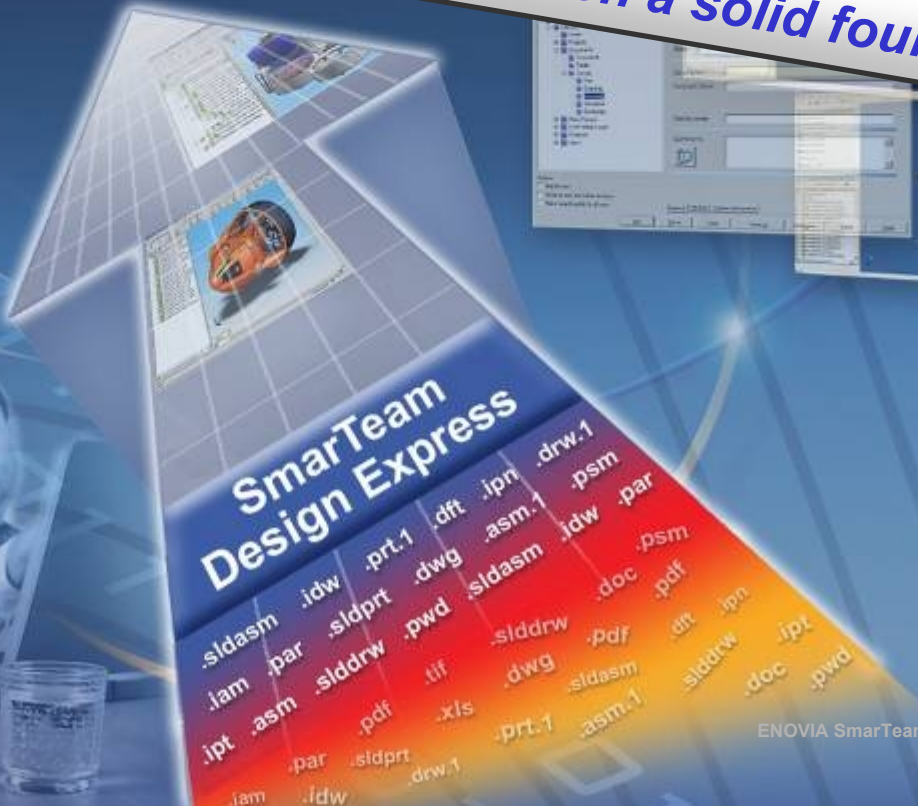


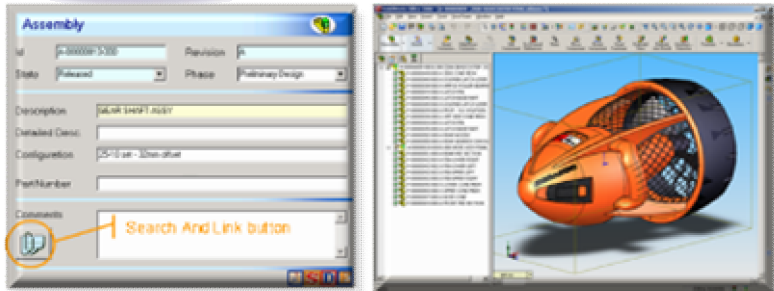
SmarTeam Design Express for Multi-CAD: Pro/ENGINEER™

The fastest, simplest way to build your PLM on a solid foundation



SmarTeam Design Express for Multi-CAD

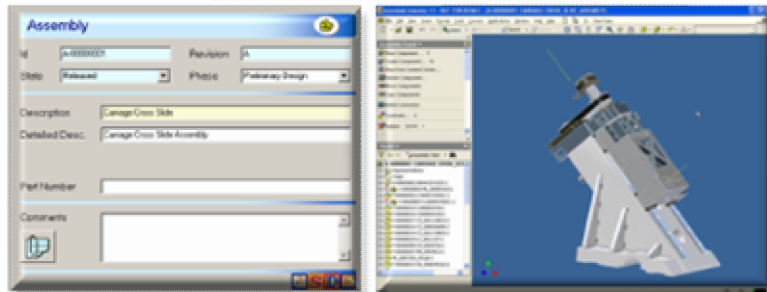
SolidWorks



Rich & flexible data model

Implemented in 10 days

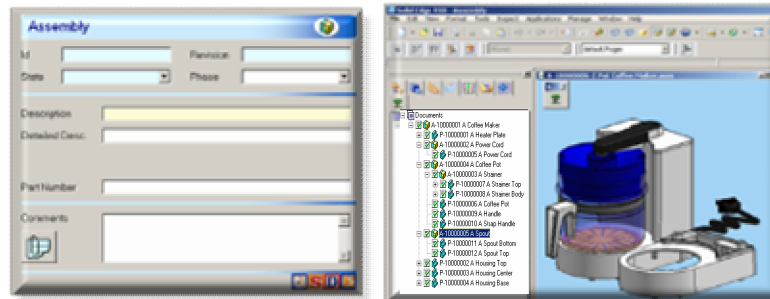
Inventor



Proven Methodology

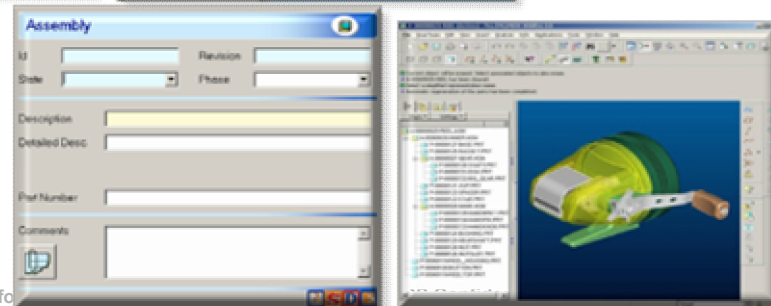
Robust Integration

SolidEdge



Scalable

Pro/E



Agenda

- 1 **What is SDE for Multi-CAD: Pro/ENGINEER?**
- 2 **How SDE Resolves your PDM Challenges**
- 3 **Customers**
- 4 **Key Differentiators**
- 5 **Typical Project Plan**
- 6 **Next Steps: Beyond SmarTeam Design Express**



1.1

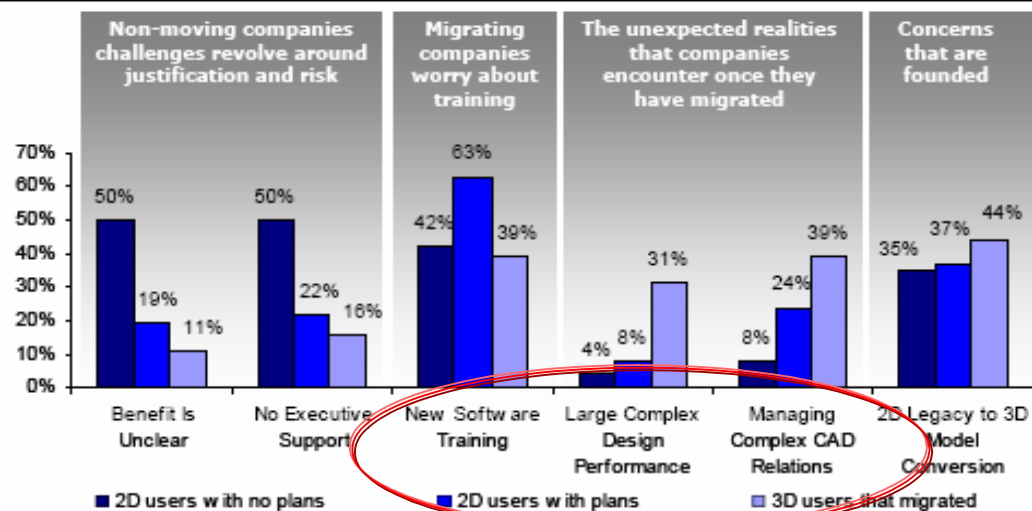
Power brings Complexity: 3D Data Management

- Using Pro/ENGINEER for 3D modeling gives you power, but adds complexity that requires sophisticated data management

While best in class performers are taking advantage of 3D modeling's extended and downstream capabilities, many manufacturers run into the unexpected negative consequences of managing complex CAD relationships (39% in Figure 1). To address this issue, best in class performers are taking greater advantage of core data management technologies than their laggard peers.

“The Transition from 2D Drafting to 3D Modeling Benchmark Report – Improving Engineering Efficiency”
 Aberdeen Group,
 September 2006

Figure 1: Challenges to Using 3D Modeling



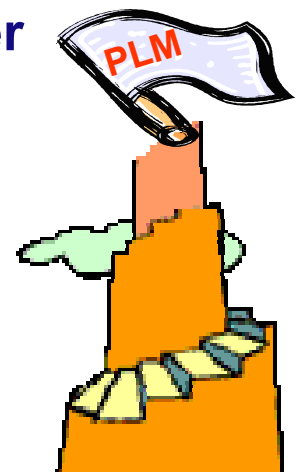
Source: Aberdeen Group, September 2006



1.2

A Step-by-Step Approach to 3D Data Management

- You need the right solution to manage your Pro/ENGINEER designs.
- Industry analysts today indicate that, like their larger competitors, mid-sized manufacturers must adopt Product Lifecycle Management (PLM) solutions to survive.
- But many of these manufacturers find PLM to be too complex, disruptive and costly to implement.
- We offer you a **modular approach** that lets you take practical steps to manage your 3D data today, achieve incremental success that creates momentum for further adoption, and at the same time build a foundation that will let you gradually gain the full benefits of PLM.



1.3

What is SDE for Multi-CAD: Pro/ENGINEER?

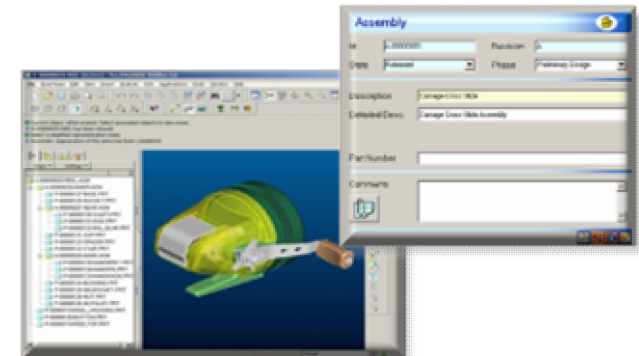
- ENOVIA SmarTeam is a **Windows-based PLM system** that at its PDM core secures product data of all kinds in a robust database and enables your extended design team to easily control and manipulate that data
- SmarTeam Design Express is a **quick-start package** combining:
 - ✦ SmarTeam Editor and the powerful, embedded SmarTeam-Pro/ENGINEER™ Integration
 - ✦ a pre-configured database and data model optimized for collaborative design, leveraging the combined power of SmarTeam and Pro/ENGINEER
 - ✦ a methodology guide that sets out the Collaborative Design practices you need
 - ✦ a dedicated training pack
 - ✦ An implementation program that allows **install within 10 days**
- SmarTeam Design Express is designed to help you start out by getting more benefit from your Pro/ENGINEER data, **fast**



1.4

What is SDE for Multi-CAD: Pro/ENGINEER?

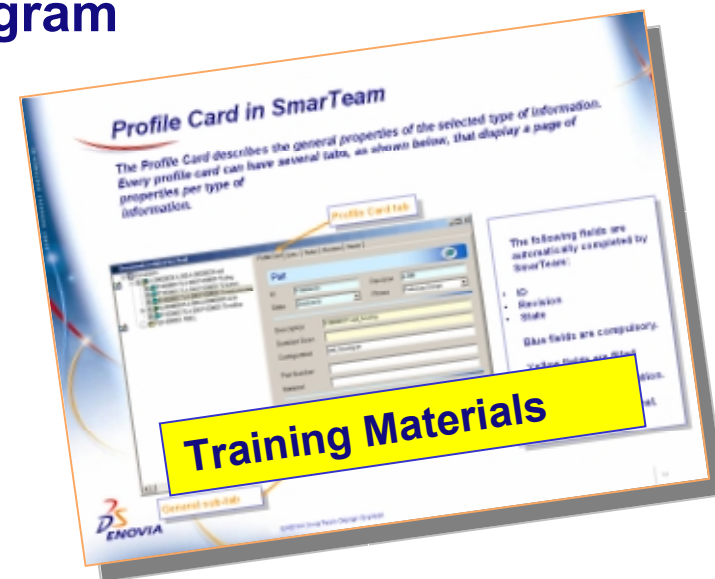
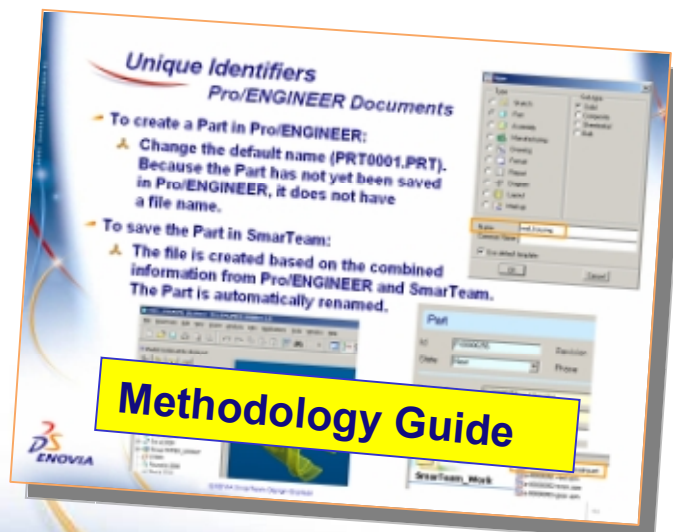
- **Optimized collaborative CAD design and data management**
 - 👤 **Secure, structured repository for Pro/ENGINEER and other product data (2D and 3D CAD data and associated documents) in the engineering department.**
 - 👤 **Full product document history, with traceability, full revision and version control**
 - 👤 **Advanced search and query capabilities for documents, links and references**
 - 👤 **Controlled document sharing**
 - 👤 **Use of standard designs, promoting design reuse**
 - 👤 **Embedded viewing of over 450 data formats without native application**



1.5

What is SDE for Multi-CAD: Pro/ENGINEER?

- Proven methodologies for design teams to optimally and efficiently create, organize, change and share data:
 - Straightforward User Scenarios
 - Optimized settings for executing these user scenarios
 - Methodology support for managing standards
 - Business methods for using the 3D CAD system
 - Tools for drafting and BOM management
 - Dedicated training program



1.6

SDE for Multi-CAD: Pro/E – Reliable PLM for the future

- SDE is an entry point solution that scales to full ENOVIA SmarTeam PLM

Pro/INTRALINK Advisor

Getting Started | Install | Data Migration | Administration | Learning | Additional Resources

[Home >](#)

[Print this page](#)

But We Just Moved Off of Pro/PDM! Making PLM History.

"We just moved from Pro/PDM to Pro/INTRALINK 3.x, and now it looks like we'll have to move yet again. Why are you doing this, PTC?"

I've received this question from several people lately, and I suspect that there are

JEFF REMBOLD
PTC APPLICATION ENGINEER

"We just moved from Pro/PDM to Pro/INTRALINK 3.x, and now it looks like we'll have to move yet again. Why are you doing this, PTC?"

workgroup data management from enterprise PLM and to assume among the PLM powers of the earth, the separate but far superior station of PLM leader to which the Laws of Internet Architecture and of a true Product Development System entitle them, a decent respect to the opinions of Pro/INTRALINK 3.x customers requires that they should declare the causes which impel them to the separation."

[Discuss the Pro/INTRALINK upgrade on our forums](#)

1.7

SDE for Multi-CAD – PLM tailored for Mid-Market

- **Out-of-the-box solutions are best fit for mid-sized manufacturers**
- Analysts forecast strong growth in PLM sales to the mid-market for vendors that adapt their solutions to these companies' key needs:
 - ✎ **A simple, focused project scope:** by starting with basic PDM
 - ✎ **Low implementation costs:** via templates and pre-packaged solutions combining software, services and training
 - ✎ **Take out the guesswork:** via recommending best practices
- **Start small, aim high:** Mid-market companies can better adopt PLM through a phased approach. **SDE is the solid foundation for this PLM.**

PDM will remain the **foundation** for any PLM implementation... this segment (will) continue to capture the bulk of non-CAD PLM investment, **16% CAGR**.

AMR Research Market Analytix Report: Market Sizing Series - PLM Applications Report, 2004–2009, Michael Burkett

SMEs face some unique challenges with PLM arising from their size, including the cost of implementation, the need to change business processes, and a lack of internal resources... leading SMEs are adopting PLM with tools including **templates**, industry-specific solutions, and **best practice processes**...

From Aberdeen report: The PLM for Small to Medium-Size Manufacturers Benchmark Report, March 2006

Tier 2 and Tier 3 will grow significantly over the forecast period due to PLM providers being able to offer both software and service solution sets more **tailored to the requirements and budgets of the SMB market**.

From Product Lifecycle Management Worldwide Outlook, Dick Slansky, ARC Advisory Group, 2006

Agenda

- 1 What is SDE for Multi-CAD: Pro/ENGINEER?
- 2 How SDE Resolves your PDM Challenges
- 3 Customers
- 4 Key Differentiators
- 5 Typical Project Plan
- 6 Next Steps: Beyond SmarTeam Design Express



2.1

SmarTeam Design Express first resolves the most basic PDM challenges facing the design team

1

You need to store, structure and secure your product data

2

You need to keep track of changes to documents through revisions and maturity

3

You need to efficiently search for and quickly find the right data within its context

4

You need to enable the design team to share documents in a controlled manner

5

You need your designers to reuse standard parts and designs

6

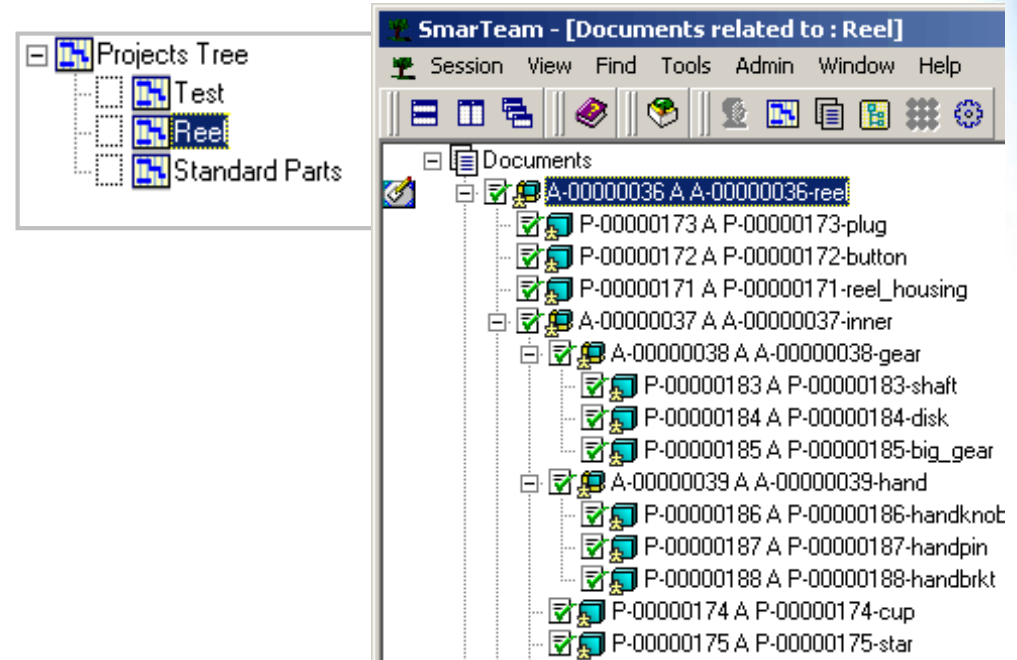
You need to view various data formats without their native applications

2.1

Store, structure and secure your data

Store: Collect and store all product-related data on a single, secure server.

Structure: Organise the documents in a standardized way, using categories such as projects, customers, users, etc. to create one homogeneous filing system for everyone, replacing the standard Windows directory structure.



Secure: Data is only accessed via a login ID and password-protected connection, stored on a server with security functions and with an automated tape back-up process.

2.1

Securing and structuring valuable product knowledge

Challenge: As the volume of unwieldy CAD data, complete with assemblies, parts, dependencies, references, links, etc. grows, the data becomes very unmanageable

Solution: SDE offers a pre-configured data model that structures the access to your CAD data, replacing the standard Windows file directory with a product tree, profile cards, queries and wizards that guide users to find any CAD object they need, any time

“We needed a tool to manage a wide range of information concerning product structures and relationships between parts ... because of the huge amount of data involved in our 500 product lines, some of the most complex of which contain up to 2,000 components.... there’s an incalculable gain in efficiency when data is entered once and reused many times.” **Alec Gil, Engineering Manager, S&C Electric, USA**

- Benefits:**
- 👤 Speeds access to product knowledge, spurring innovation
 - 👤 reduces file administration headaches, lowering cost of maintenance
 - 👤 reduces file loss and duplication, saving IT resources and reducing errors

2.2

Tracking changes to documents

- Keep track of the changes made to each document as it matures, without ever renaming the document or copying it to another directory.
- Maintain each revision of the document, enabling access to and reuse of each revision, as well as comparison to previous versions

The screenshot displays the ENOVIA SmarTeam Design Express interface. The main window, titled 'SPI Session', shows a list of documents with columns for Conflicts, Identification, Name, Type, Revision, State, File Status, and ProE Status. A table of document revisions is shown below the main list, with columns for Class, State, Revision, and Detailed Description. A 'Check Out: Assembly' dialog box is open, showing a tree view of the assembly structure. A context menu is visible over the 'Check Out' button in the dialog.

Conflicts	Identification	Name	Type	Revision	State	File Status	ProE Status
0	A-00000001 - A.000	a-00000001-reel.asm	Assembly	A.000	Checked In	Up To Date	Up To Date
0	A-00000002 - A.000	a-00000002-inner.asm	Assembly	A.000	Checked In	Up To Date	Up To Date
0	A-00000003 - A.000	a-00000003-gear.asm	Assembly	A.000	Checked In	Up To Date	Up To Date
0	A-00000004 - A.000	a-00000004-hand.asm	Assembly	A.000	Checked In	Up To Date	Up To Date
0	P-00000001 - A.000	p-00000001-reeltop.prt	Part	A.000	Checked In	Up To Date	Up To Date
1	P-00000002 - A.001	p-00000002-reel_housing.prt	Part	A.001	Checked Out	Up To Date	Up To Date
0	P-00000003 - A.000	p-00000003-button.prt	Part	A.000	Checked In	Up To Date	Up To Date
0	P-00000004 - A.000	p-00000004-cup.prt	Part	A.000	Checked In	Up To Date	Up To Date
0	P-00000005 - A.000	p-00000005-star.prt	Part	A.000	Checked In	Up To Date	Up To Date
0	P-00000006 - A.000	p-00000006-spacer.prt	Part	A.000	Checked In	Up To Date	Up To Date
0	P-00000007 - A.000	p-00000007-bushing.prt	Part	A.000	Checked In	Up To Date	Up To Date
0	P-00000008 - A.000	p-00000008-ratchet.prt	Part	A.000	Checked In	Up To Date	Up To Date

Class	State	Revision	Detailed Description
Assembly	Checked In	A.000	Fishing Reel FR 75
Assembly	Checked Out	A.001	Fishing Reel FR 75

Document count:24

Check Out: Assembly

- Assembly
 - A-00000001 A.000 A-00000001-reel
 - P-00000003 A.000 P-00000003-button
 - P-00000002 A.001 P-00000002-reel_housing
 - P-00000001 A.000 P-00000001-reeltop
 - A-00000002 A.000 A-00000002-inner

2.2 Tracking revisions, versions and product history

Challenge: Reuse of parts in different products and projects usually requires modifications. The more complex the assembly, the more difficult to trace modifications. When multiple designers access the same files, tracing becomes even more problematic.

Functionality: Checking each revision of a document into the vault enables designers to easily retrace steps to find the exact version needed.

“With SmarTeam production personnel access only the most current design versions, incorrect revisions can no longer get to the shop floor... Departments can collaborate to develop innovative designs and optimize their manufacture.” – Jason Lindgren, Project Manager, Sub-Zero Freezer Co., USA

Benefits:

- Full visibility into design processes
- Avoid errors caused by using wrong revision
- Comply with standards requiring product history

2.3 Efficiently search for the right data within context

- Click once to see in which assemblies a design part has been used
- Find out via a product or part search if a 3D design exists
- Quickly locate all documents associated with any project.
- Search by relations between data, for example, to find a specification document via its relation to a 3D or 2D design, or a new part design via its relation to a price quotation

Search by Attribute - Pro/ENGINEER Assemblies

Search class: Assembly

Class Browser:

- Class Browser
 - Classes
 - Users
 - Projects
 - Documents
 - Document
 - Folder
 - Design
 - Part
 - Drawing
 - Assembly
 - Standard Part
 - Exchange
 - Flow Process
 - BOM White Board
 - Products
 - Items

Options:

- Match case
- Retrieve only last public revisions
- Make search public to all users

Search Editor

Select a search:

	Ownership	Name
1	Public	UDF Library
2	Public	Design - Checked In
3	Public	Design - Released
4	Public	Parts
5	Public	Drawings
6	Public	Design - New
7	Public	Assemblies
8	Public	Standard Parts
9	Public	Exchange
10	Public	Documents

Buttons: Run, Close, Add, Modify, Delete, Help

Text: Saved searches save time

2.3

Efficient search mechanisms show data in context

Challenge: As data accumulates and file names are similar, it becomes problematic and time-consuming to find any given design by its file name

Functionality: Advanced keyword and text search and query mechanisms allow designers to find exactly what they need, and in full design context, allowing them to better evaluate if the file located is the most relevant to their needs

“Users can search and find parts, configurations, drawings and assemblies by any attribute, such as revision, drawing name, description, drawing number, part number, etc. The software tracks where-used and composed-of relationships automatically, making it easy to determine where a certain part can be found within different assemblies...” Jim Farrell, Lord Corporation, USA – industrial components manufacturer

Benefits:

- ✚ Save valuable time consumed in file administration
- ✚ Avoid redundant design through quicker location of existing files

2.4

Controlled sharing of documents by multiple users

- 👤 **Protect** the work of all members of the team; information is not overwritten, so each modification can be tracked individually.
- 👤 **Audit** the system to see who performed which change at what time
- 👤 **Safely access** the same document concurrently without modifying the original - when one user owns a document for editing, others can only use it in view mode.

The screenshot displays a CAD software interface with a 'Check Out: Part' dialog box and a 'SPI Check Document Permission Warning' dialog box. The 'Check Out: Part' dialog has tabs for 'Notes', 'Revision', and 'Viewer', and a 'Comment:' field. The 'SPI Check Document Permission Warning' dialog shows a warning icon and the message: 'Document 'p-00000148-reel_housing.prt' cannot be modified. Do you want to check it out?' with 'Yes' and 'No' buttons.

Documents

- A-00000001 B.000 A-00000001-reel
- A-00000001 A A-00000001-reel
- P-00000004 A P-00000004-plug
- P-00000003 A P-00000003-button
- P-00000002 A P-00000002-reel_housing
- A-00000002 A A-00000002-inner
- A-00000003 A A-00000003-gear
- P-00000005 A P-00000005-cup
- P-00000006 A P-00000006-star
- P-00000007 A P-00000007-spacer
- P-00000008 A P-00000008-bushing
- A-00000004 A A-00000004-hand
- P-00000009 A P-00000009-ratchet
- P-00000010 A P-00000010-nutslot
- P-00000011 A P-00000011-base
- P-00000012 A P-00000012...

Check Out: Part

OK Cancel Help Tree Views Actions Set Default

Part

P-00000002 A.000 P-00000002-reel_housing

Notes Revision Viewer

General Effectivity Options Profile Card Link

Check Out

Comment:

Current revision: A.000

Next revision: A.001 Create new

SPI Check Document Permission Warning

Document 'p-00000148-reel_housing.prt' cannot be modified. Do you want to check it out?

Yes No

2.4 Collaborative Design Management

Challenge: Designers collaborating on a shared data set cannot concentrate on pure design tasks if they need to worry about other users accidentally erasing or changing their work through inadequate mechanisms to control the collaboration



Functionality: Lifecycle mechanisms give designers visibility into each design's status and detailed records of each revision, enabling them to confidently work concurrently on the same files

"We work as a team using a number of linked 3D models and associated design tools to ensure designs adhere to defined rules ... the latest project data is easily available to all engineers employed on the project, thereby ensuring that engineers are not working in isolation; they have full visibility of all design changes as they happen." Darren Caines, Integral Powertrain, automotive engineering firm, UK

Benefits:

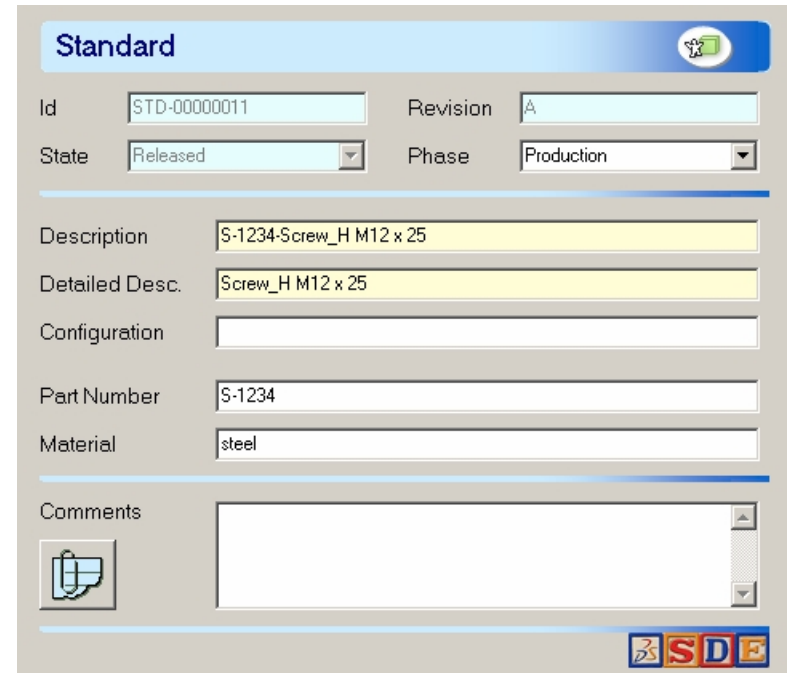
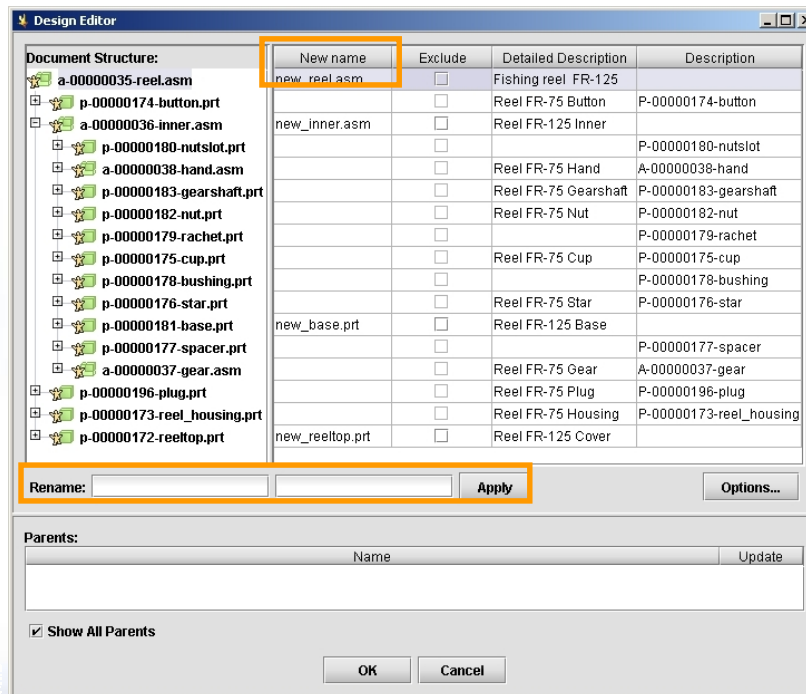
- Drive innovation through meeting of minds**
- Raise productivity through efficient allocation of design resources**
- Reduce bottlenecks via better visibility into joint design tasks**

2.5 Promote the reuse of standards and existing data

 **Promote** and support the mandatory use of standard documents (purchased parts or designs) and ensure their correct use with no duplications or non-traceable changes in design 

 **Reduce** the number of duplications of similar parts to minimize stocks and enforce sourcing policies

 **Encourage** the use of copies of existing product as starting points for new designs, eliminating duplication of designs in multiple projects.



2.5 Promoting Part Standardization and Design Reuse

Challenge: If designers are free to select any parts or components, especially purchased components, the company will stock low volume of a wide range of parts, causing inventory and pricing problems; starting new design projects from scratch expends valuable design resources on redundant work

Functionality: Designation of standard or “master” parts for common components; use of “design copy” to jump-start new projects with proven, existing designs that can be innovatively modified to meet new requirements


“Using (SmarTeam) to archive files also can reduce part counts and associated costs by facilitating design standardization procedures that uncover slight variations in multiple components where a single configuration would suffice. (It) greatly improves our ability to manage part configurations.” Swagelok, USA – industrial components manufacturer (valves)


Benefits:

- Reduce inventory overhead and delays due to inefficient sourcing**
- Speed time to market and drive innovation by reusing existing designs**

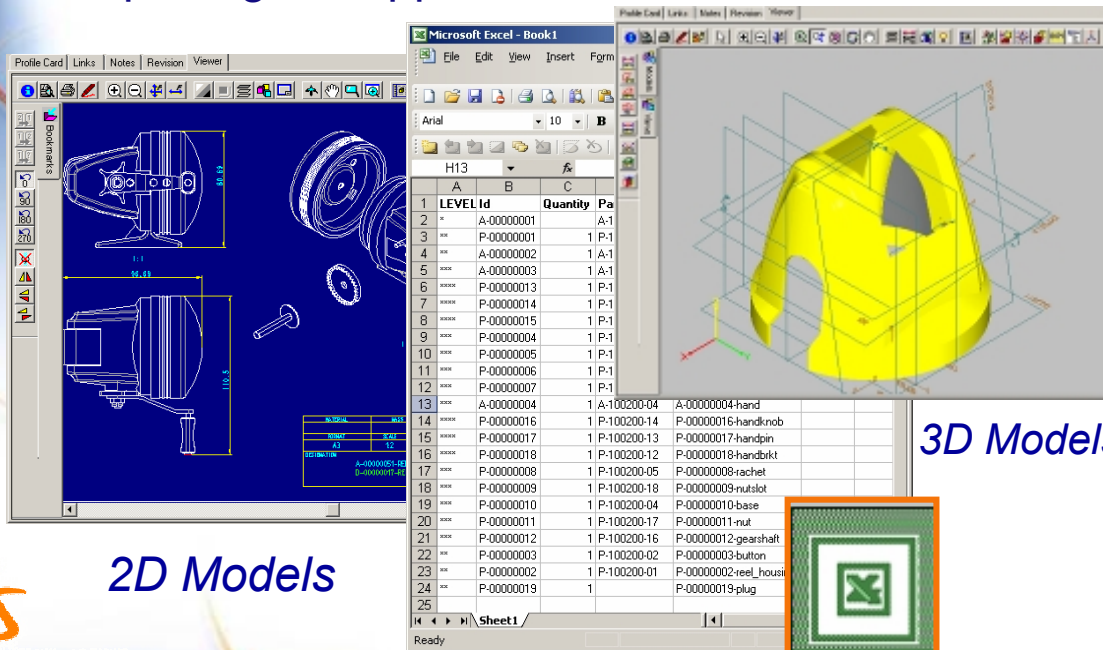
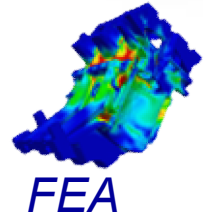
2.6

View variety of data formats

 **Manage and map** information inside documents through the SmarTeam integrations to various CADs, MS Word, MS Excel, etc.

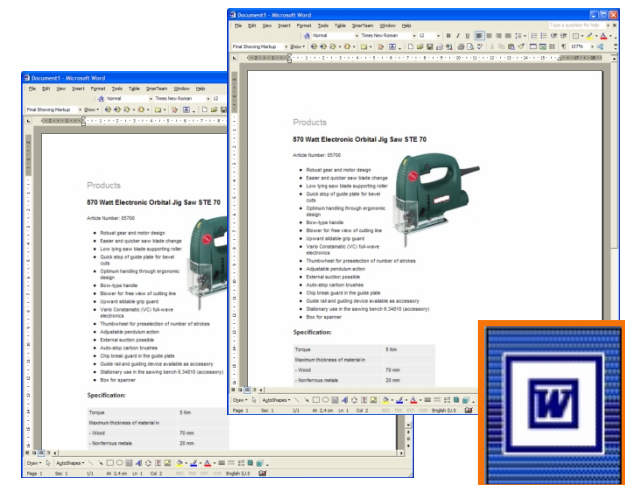
 **Visualize** via SmarTeam digital documents in any of more than 450 formats (.prt, .asm, .drw, .mfg, .lay, .frm, tif, pdf, etc.) that are stored in any location.

 **Display** integrated MS Word and Excel files within SmarTeam without opening the applications



LEVEL	Id	Quantity	Pa
2	A-00000001		A-1
3	P-00000001	1	P-1
4	A-00000002		A-1
5	A-00000003		A-1
6	P-00000013	1	P-1
7	P-00000014	1	P-1
8	P-00000015	1	P-1
9	P-00000004	1	P-1
10	P-00000005	1	P-1
11	P-00000006	1	P-1
12	P-00000007	1	P-1
13	A-00000004	1	A-100200-04
14	P-00000016	1	P-100200-14
15	P-00000017	1	P-100200-13
16	P-00000018	1	P-100200-12
17	P-00000008	1	P-100200-05
18	P-00000009	1	P-100200-18
19	P-00000010	1	P-100200-04
20	P-00000011	1	P-100200-17
21	P-00000012	1	P-100200-16
22	P-00000003	1	P-100200-02
23	P-00000002	1	P-100200-01
24	P-00000019	1	P-00000019

3D Models



Specifications and Documentation



2.6

View Various Data Formats without Native Applications

Challenge: Designers prefer to stay inside the design workspace and to avoid devoting time and memory resources to view documents related to design that require them to open additional applications

Functionality: SmarTeam enables designers, as well as other users, to view files in more than 450 different formats without needing the native application. This functionality enables designers to properly classify and link various kinds of documents to projects and to designs to ensure that all the data can be easily viewed in context.

“It is important for us to give access to our clients in order for them to visualize their projects in real time, and observe the progress, while securing the data and maintaining confidentiality,” Jean-Pierre Bregeon, ABMI, project engineering firm, France

Benefits:

- Save time and resources otherwise spent to purchase, install, train on and maintain other software applications
- Save designers' time and memory needed to run additional applications

2.7

SmarTeam Design Express Resolves Basic PDM Challenges

1

Secure, structured storage of valuable product knowledge

2

Revision tracking, version control and product history

3

Efficient searching that shows data in context

4

Collaborative Design Management

5

Part Standardization and Design Reuse

6

Viewing of Data without its Native Application

Agenda

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3.1

Egholm Maskiner: Collaborating around Single Source of Product Data



Company Profile:

- ✚ *Egholm Maskiner designs and manufactures utility machines for year-round outdoor maintenance*
- ✚ *Annual Turnover of some DKr 61 million; 67 employees*
- ✚ *Headquartered in Denmark, maintain also facilities in Germany*

Business Challenges:

- ✚ *Need to collaborate on Pro/ENGINEER data and share with the construction department*
- ✚ *Need accurate version management of design data*



3.1

Egholm Maskiner: Collaborating around Single Source of Product Data



Solution:

- ✈ SmarTeam Editor, SmarTeam Pro/ENGINEER Integration**
- ✈ Project initiated with 5 seats in design engineering department, already planning to add seats across other departments, starting with Quality Assurance**
- ✈ Accurate SmarTeam data is now distributed across departments such as procurement and production**
- ✈ In future considering adding SmarTeam Workflow**

Benefits:

- ✈ Expecting to reduce number of design iterations and speed product development**
- ✈ Ability to create Pro/E assemblies directly from ST/SPI saves design time**
- ✈ Quick user acceptance**



3.1

Egholm Maskiner: Collaborating around Single Source of Product Data



“Enovia SmarTeam is helping us manage our **Pro/ENGINEER designs and product data** more efficiently; enabling the entire company to collaborate around one global source of product data will make Egholm more effective...”

“To achieve our PLM goals we needed a **scalable, modular solution** that is easy to implement and can expand with our changing needs, so we selected SmarTeam.”

*Mikael Pedersen, Project Coordinator
Egholm Maskiner A/S*



3.2

Viking Range: Broad but Controlled Access to Engineering Data



Company Profile:

- Viking Range, based in Mississippi, USA, manufactures and markets upscale, professional-grade consumer kitchen appliances such as dishwashers, disposals, refrigerators, freezers, ovens, outdoor grills, kitchen cabinetry and stoves**
- Operate 4 manufacturing plants and a distribution center, employing over 1,000 persons and exporting product to more than 80 countries**
- BP - Rand**

Business Challenges

- Viking was a loyal PTC customer**
- Evaluated several PDM systems**
- Needed to improve product quality and time to market**
- Looked to propagate engineering data throughout the enterprise**



3.2

Viking Range: Broad but Controlled Access to Engineering Data



Solution:

- ✚ ***Solution Deployed: SMARTEAM Editor with SPI (Pro/ENGINEER Integration) and Multi-Site across three locations***
- ✚ ***Migration of data from PTC Pro/INTRALINK to SmarTeam***
- ✚ ***Plans to roll out to some 800 users across the company, expanding to use SmarTeam BOM, Program Management, Gateway to ERP (Oracle Apps) and Community Workspace***

Benefits:

- ✚ ***11/06 achieved Go Live to specification, on time***
- ✚ ***4 Business Units now have secure control over engineering data and consistent processes***
- ✚ ***Improved collaboration between engineering and other groups***
- ✚ ***Electronic Change Order Process providing feedback from many different departments***



Agenda

1

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Next Steps: Beyond SmarTeam Design Express

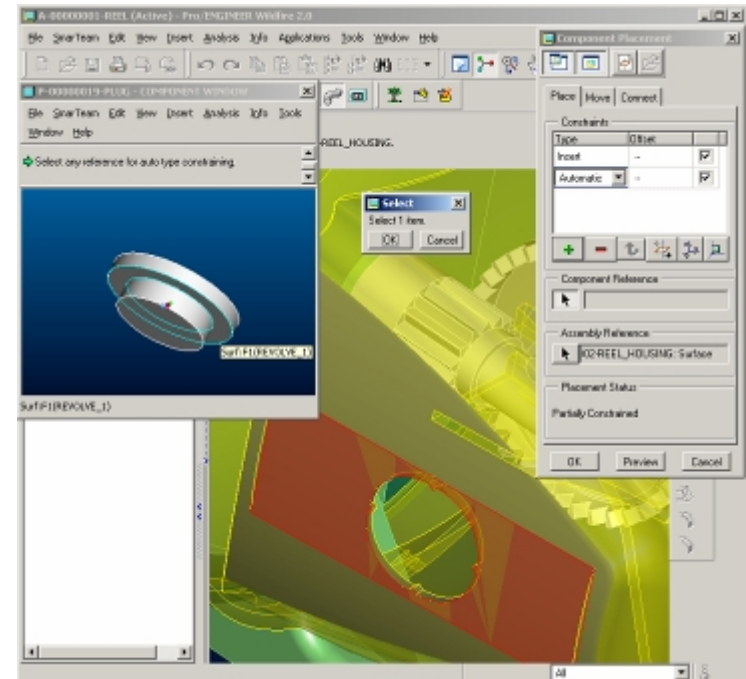


4.1

SDE for Multi-CAD: Pro/ENGINEER – Key Values

- **SmarTeam Design Express for Pro/ENGINEER (SDE-Pro/E – based on the SPI integration) enables *streamlined management of 3D design*, managing parts, assemblies, drawings and Bills Of Material derived from drawings. SDE best practice for collaborative design optimizes:**

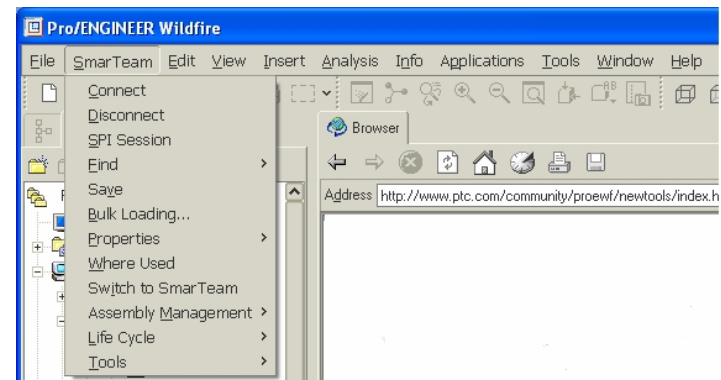
- ✚ Management of all types of Pro/ENGINEER documents (.prt, .asm, .drw, .mfg, .lay, .frm)
- ✚ Support of Simplified Representations for Large Assembly management
- ✚ Optimized Management of Nested Family Tables
- ✚ Advanced Search capabilities
- ✚ Collaborative lifecycle and revision management
- ✚ Design Reuse
- ✚ Easy Engineering BOM document management



4.2

ENOVIA SmarTeam –Pro/ENGINEER Integration Key Features

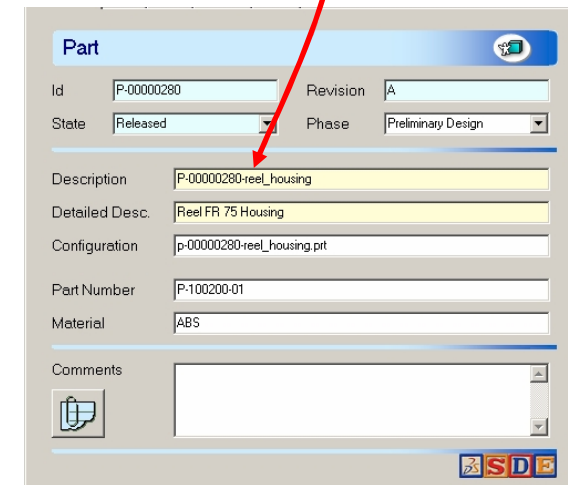
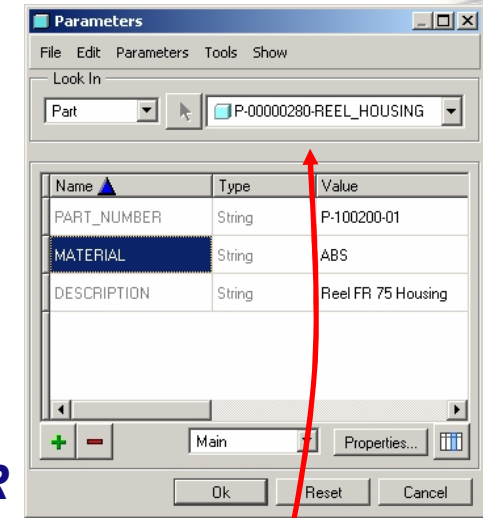
- **Seamless integration** between Pro/ENGINEER and SmarTeam
- Support of advanced Pro/ENGINEER functionality
- **Easy-to-use** for Pro/ENGINEER users
- Support for **mobile** users
- Embedded SmarTeam menu accessible from within Pro/ENGINEER environment



4.2

ENOVIA SmarTeam –Pro/ENGINEER Integration Key Features

- Support of all main document types (*.prt, *.asm, *.drw, *.frm, *.mfg, *.mrk, ...)
- Full support of Nested Family Tables
- Support of Skeleton models
- Support of Simplified Representation
- Bi-directional update of parameter values
- Automatically create parameters in Pro/ENGINEER
- Automatically create parameters in Family Tables
- Automatically check parameter's value and formatting
- Automatically insert component by predefined conditions
- Check uniqueness of file name
- Automatically save a document
- Automatically check required operations and notify the user

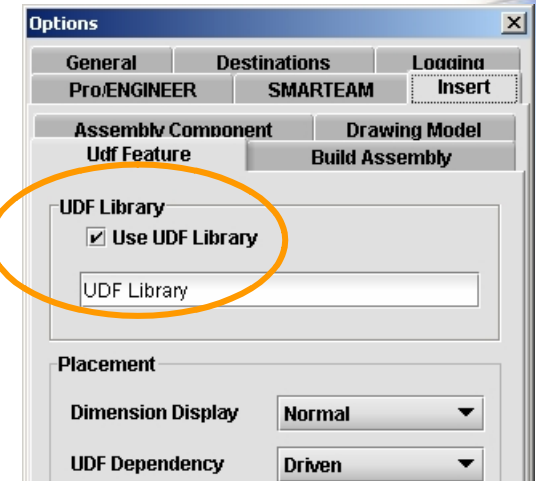


Work off-line with Pro/ENGINEER data

4.2

ENOVIA SmarTeam –Pro/ENGINEER Integration Key Features






- **Shared Workspace support**
- **Default class configuration**
- **Working directory synchronization**
- **Prompt for “Save in Batch mode” on-the-fly**
- **Default Parent options extension**
- **New support for User Define Feature (UDF represents by *.gph file) as documents that can be inserted from library located in the SMARTEAM database**
- **New support for Instance Accelerators as documents in the SMARTEAM database for Pro/ENGINEER Assemblies and Parts**
- **SPI Session grid pane contains also mapped attributes**






4.2

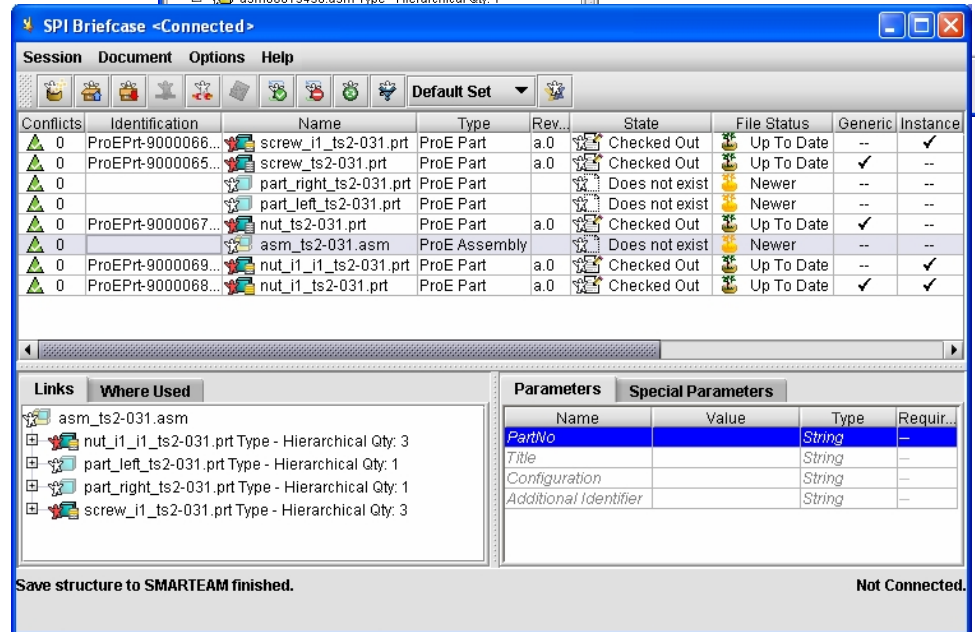
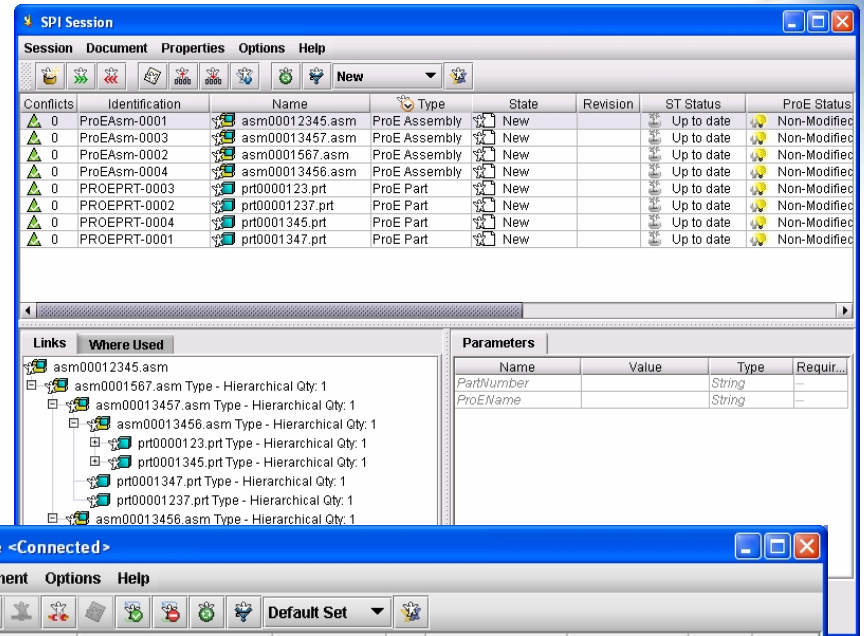
ENOVIA SmarTeam –Pro/ENGINEER Integration Key Features

SPI Session

-  **Complex view on data**
-  **Multiselect operations**
-  **Structure of data**
-  **Where used**
-  **Parameters**

SPI Briefcase






-  **Similar tool to SPI Session**
-  **Work offline**
-  **Save to SmarTeam and Check In operation**






4.2

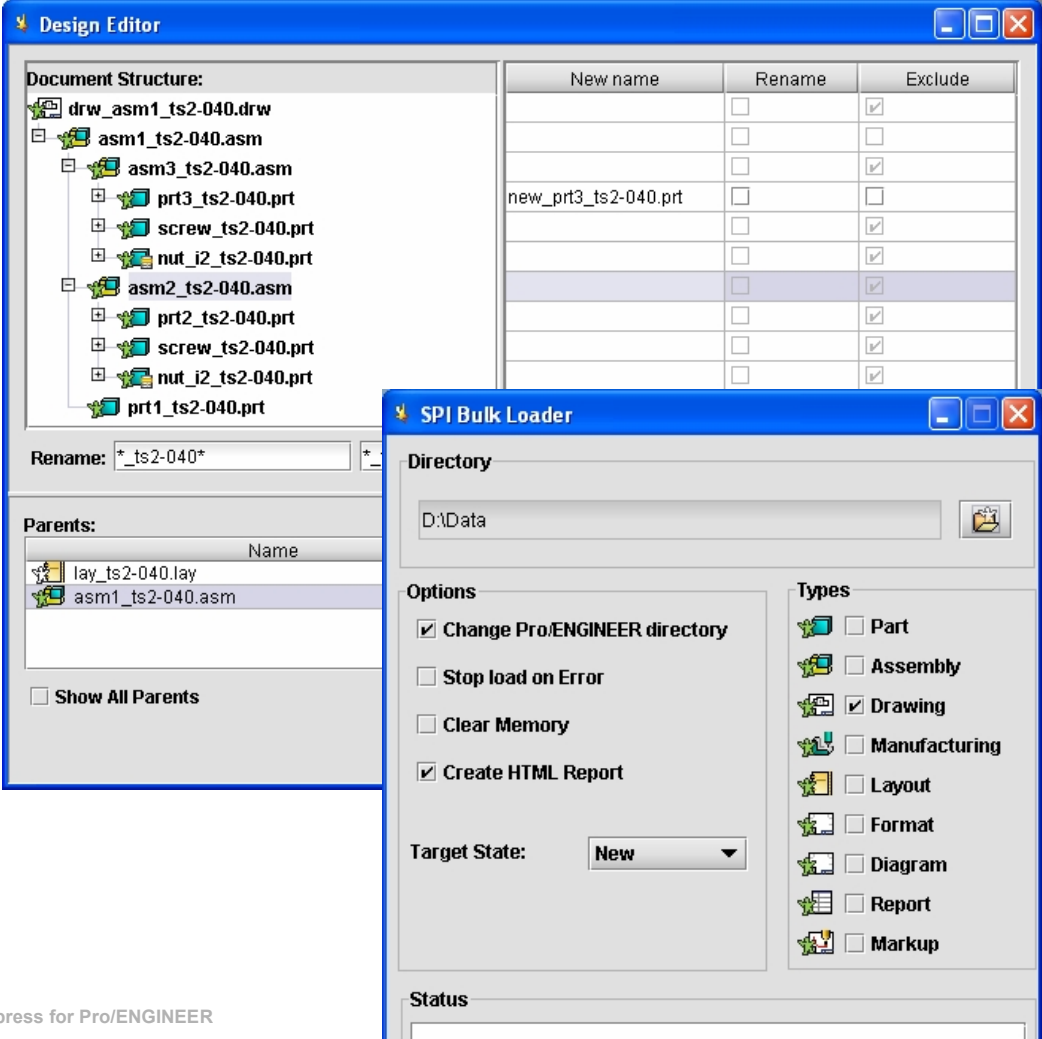
ENOVIA SmarTeam –Pro/ENGINEER Integration Key Features

SPI Design Editor

-  **Copy of design structure including drawings**
-  **Rename existing objects**
-  **Update related parents**
-  **New name by mask**
-  **Silent mode**

SPI Bulk Loader

-  **Batch process of loading**
-  **Document Type Selection**
-  **Options of process**



The screenshot displays two software windows. The 'Design Editor' window shows a hierarchical 'Document Structure' tree with folders for drawings and assemblies, and a table for renaming objects. The 'SPI Bulk Loader' window shows a directory selection field, options for loading behavior, and a list of document types to load.

New name	Rename	Exclude
	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
new_prt3_ts2-040.prt	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Parents:

Name
lay_ts2-040.lay
asm1_ts2-040.asm

Options:

- Change Pro/ENGINEER directory
- Stop load on Error
- Clear Memory
- Create HTML Report

Types:

- Part
- Assembly
- Drawing
- Manufacturing
- Layout
- Format
- Diagram
- Report
- Markup

Target State:

• **New ENOVIA SmarTeam Major Release**

- ✚ Will certify one latest available CAD release (Pro/ENGINEER Wildfire 3.0)
- ✚ Major CAD feature support will be treated as SmarTeam highlights

• **New CAD Major Release**

- ✚ Will be added to the following available ENOVIA SmarTeam Service Pack
- ✚ Will be certified by ENOVIA SmarTeam up to 5 months in most cases (according to SP dates and policy)

• **Service Pack Certification**

- ✚ ENOVIA SmarTeam will certify CAD SPs based on customer needs
- ✚ Supported CAD SPs will be included in the subsequent ENOVIA SmarTeam SPs

4.4

ENOVIA SmarTeam – Robust Multi-CAD Integrations

Robust Multi-CAD Integrations:

- 👤 **Single collaborative platform** among diverse engineering teams, working on different CADs
- 👤 **Full part and assembly management**, incl. their component parts, while maintaining dependencies and integrity during lifecycle operations
- 👤 **Embedded functionality** in the CAD Application: manage, view, edit, and annotate
- 👤 **Latest CAD Version Certification**



"We needed multi-CAD PDM software which could interface not only with CATIA but also with all the other software applications, since we have over 250 CAD stations equipped with the major software applications on the market."

Jean-Pierre Bregeon, CEO, **Groupe ABMI**, engineering consulting firm, France

VALUE: *Eliminates the need to re-key data and prevent work on outdated designs, dramatically reducing errors and saving valuable time*



4.4

ENOVIA SmarTeam – Robust Multi-CAD Integrations

- **Only ENOVIA SmarTeam supports all the following capabilities for all major CAD tools: (for 3D CADs: CATIA V5, SolidWorks, Pro/ENGINEER, Autodesk Inventor, Solid Edge; for 2-D CADs: AutoCAD, MicroStation)**
 - 👤 View CAD Files in the native format without conversions
 - 👤 View Native CAD Geometry
 - 👤 Maintain Relationship with Core Files (Part, ASM, Drawing)
 - 👤 Check In / Check Out Directly from CAD Application
 - 👤 Revision Block and Title Block mapping
 - 👤 SmarTeam Data Manager Tree (DMT) in CAD Application
 - 👤 Open from SmarTeam CAD documents by browsing in SmarTeam projects
 - 👤 Store and Maintain Relationship with Associated files (Family Tables, Design Table, etc...)
 - 👤 Design copy – unique design re-use functionality
 - 👤 Bi-Directional Attribute Mapping
- **Other vendors may support this level of integration only for their own CAD tools**



4.4

ENOVIA SmarTeam – Robust Multi-CAD Integrations

- Enables users to **seamlessly** manage, view, edit, and annotate a **multiplicity of CAD designs** and other related documents
- Supports the **“in-process” methodology**, enabling CAD users to manage documents and drawings from within their native CAD environment
- **Eliminates the need to re-key data** and prevent work on outdated designs, dramatically reducing errors and saving valuable time
- Provides full Part and Assembly Management, enabling the management of **complex assembly hierarchy structures**-including component parts--while maintaining dependencies and integrity during lifecycle operations



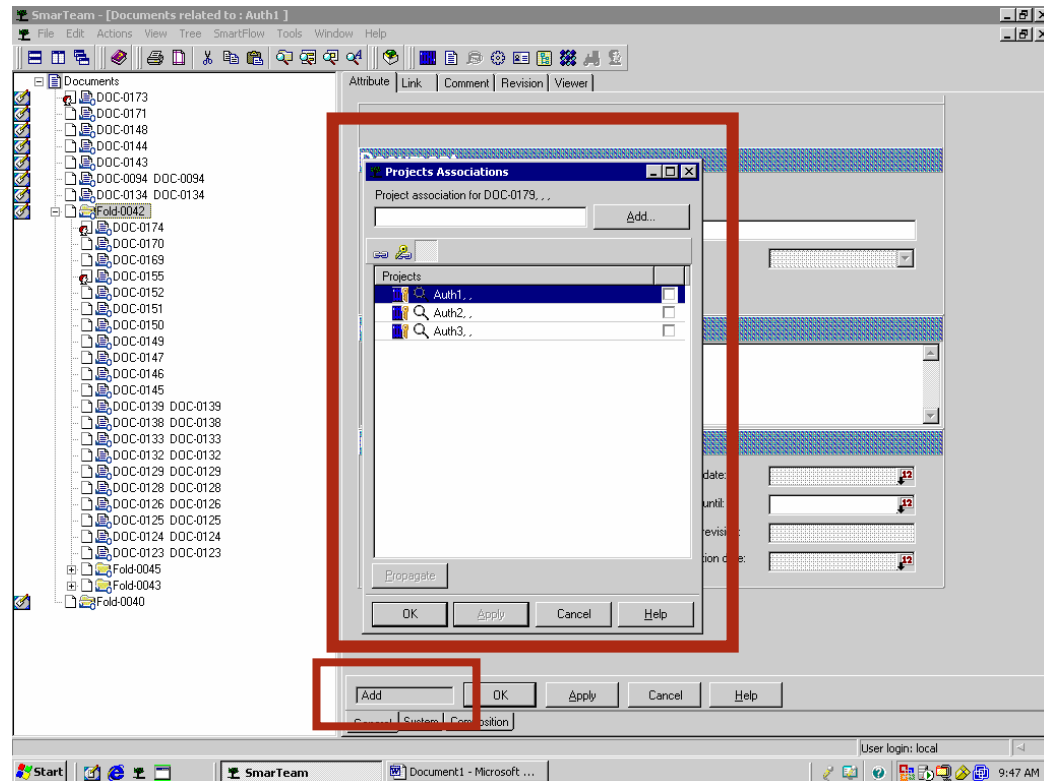
4.4

ENOVIA SmarTeam – Robust Multi-CAD Integrations

Enhanced Security Mechanism

- ✚ Add & secure objects to restricted projects – across the entire SmarTeam portfolio
- ✚ Based on users project-based authorizations
- ✚ Adheres to enterprise security work model

New in V5R17



- **Latest IT support**
- Supports Microsoft Windows XP SP2, and Windows Server 2003 SP1
- Supports Microsoft Word, Excel and Outlook 2003 SP1 and 2002 (XP) SP3
- **64-Bit Certification**
 - 👤 Customers operating CAD in a 64-bit environment benefit from full robust use of SmarTeam
 - 👤 Extends relational design on very large assembly work
 - 👤 Preserves link integrity across whole datasets

→ Enhances overall user productivity gain

→ Promotes processes shaped by customer needs, not IT

Agenda

- 1 **What is SDE for Multi-CAD: Pro/ENGINEER?**
- 2 **How SDE Resolves your PDM Challenges**
- 3 **Customers**
- 4 **Key Differentiators**
- 5 **Typical Project Plan**
- 6 **Next Steps: Beyond SmarTeam Design Express**

5.1

Typical Project Plan

- SmarTeam Design Express is packaged as an **out-of-the-box** application:
- The approach was developed through implementing SmarTeam for many existing customers. It includes a **combination of software and services** necessary for a quick and low cost implementation of Pro/ENGINEER and SmarTeam.
- SDE has been designed for “plug & play” use within your company, **without any customisation** other than the name of the users and the installation and working directories.
- An SDE for Multi-CAD: Pro/ENGINEER project does not include the Pro/ENGINEER implementation itself: the installation of Pro/ENGINEER workstations and Pro/ENGINEER user training are prerequisites.
- The project incorporates:
 - **Training** of users on the Collaborative Pro/ENGINEER Design Management methodology
 - **Validation** of methodologies at the customer site
 - **Execution** of methodology

5.2

Using SDE in the Pro/ENGINEER Environment

Design Collaboration

Work concurrently around the same assembly always accessing accurate information

Project-based Navigation
Arranged per product, per customer, per order

Organization

Built-in structure and rules to leverage traceability and reuse

Management of Pro/ENGINEER Relations
View relations between all Pro/ENGINEER data immediately, such as parts, assemblies, drawings, etc. ...

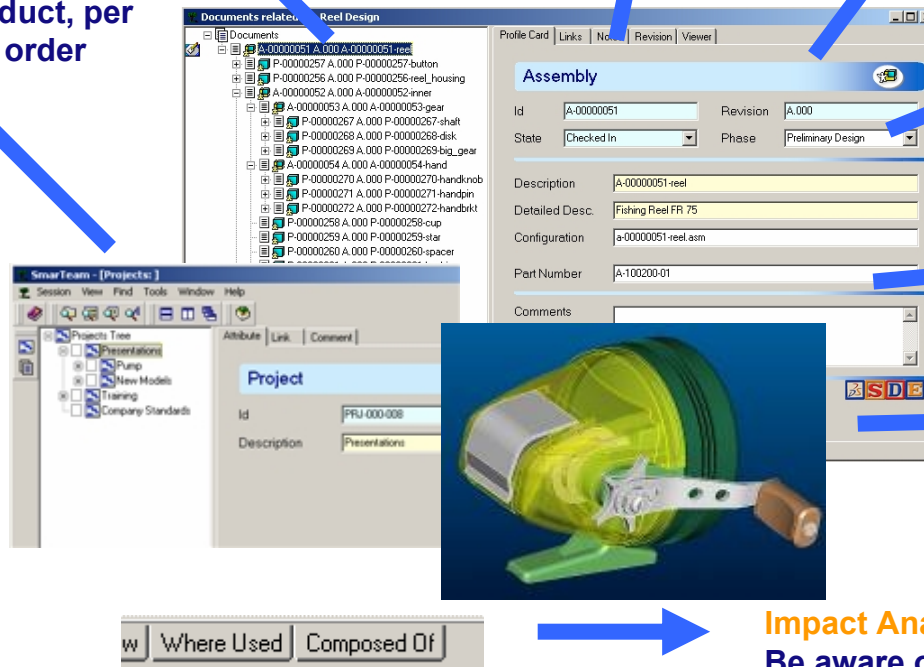
Change Management
Support the lifecycle and different revisions of all documents

Promote Reuse
Business standards management

Extend Secure Access
Allows non-CAD users to visualize CAD data

Impact Analysis

Be aware of the impact of engineering changes



The “**quick start package**” provides:

- **Pre-configured database** with data model for optimized Pro/ENGINEER collaborative design management
- **Methodology Guide** to steer the implementation in your engineering department
- **Delivery Notebook** to track your implementation, from software installation through to completion of the final checklist after training and review of the methodology
- **Technical training materials**, including demonstration
- **Value proposition** explaining how to expand beyond engineering / design department management out to management of the full product lifecycle across your enterprise



Agenda

1

What is SDE for Multi-CAD: Pro/ENGINEER?

2

How SDE Resolves your PDM Challenges

3

Customers

4

Key Differentiators

5

Typical Project Plan

6

Next Steps: Beyond SmarTeam Design Express



6.1

Beyond SmarTeam Design Express

The initial objective of SmarTeam Design Express is to provide an **out-of-the-box solution** for the design department which meets all the basic needs.

However the openness of ENOVIA SmarTeam allows you to extend the implementation **beyond these basic needs**. There are various ways to expand beyond the first step:

Inside the design department enhancing the basic implementation with company-specific needs

- Title block enhancements
- Batch printing
- Non CAD document management
- Release and change processes
- Etc ...

Inside the engineering department extending the management of product data:

- Items management
- Multi-discipline collaboration around the BOM
- Release and change processes (ECR/ECO)
- Link to ERP

Across the supply chain to manage design and product data with your OEM's or suppliers

- Exchange data with suppliers
- Bidding and costing
- Quality processes
- Etc...

SmarTeam Design Express: ***Foundation for the Future***

Typical Successful Customer Implementation:

- **Phase One: secure design document management**
 - ✚ Designers get used to managing lifecycles with ENOVIA SmarTeam
 - ✚ Database accumulates accurate design data reflecting product structure combining assemblies, master designs and standard parts
- **Successive phases (not necessarily in this order)**
 - ✚ Optimized BOM management
 - ✚ Automated business process management
 - ✚ Distributed multi-site product development
 - ✚ Enterprise application integration
- **A well-defined, limited project scope is a **key success factor**, especially in the first phase. After gaining experience with PDM, you understand how to best proceed to the next phases, **step-by-step**.**

“Building up a Product Lifecycle Management system can only happen in small stages. Employee acceptance is extremely important because staff have to change their procedures.”

- Roland Weidmann, Kässbohrer GmbH



- **Easy to implement and very scalable:**
 - ⤴ No need for costly software programming teams
 - ⤴ No need for full-time, expert system administrator
 - ⤴ Easy to implement within the context of an enterprise business system environment (ERP, etc)

- **User Interface easy to tailor for each typical user:**
 - ⤴ Design Engineer / Manufacturing Engineer
 - ⤴ Purchasing Agent
 - ⤴ Sales Representative / Pre-sales or Marketing
 - ⤴ Customer Support / Documentation Writer
 - ⤴ Project Manager

- **Database Structure is easy to customise**
 - ⤴ Add / Change attributes
 - ⤴ New object / document / form add on or edit

- **Easy graphical WORKFLOW Design and Execute process (beyond SDE)**

Thank You!

Questions?

Contact your authorized ENOVIA SmarTeam reseller

For any other unanswered questions, contact
sde@smarteam.com

