

# PDM Workbench for Aras Innovator

T-Systems PLM Applications

**T Systems**

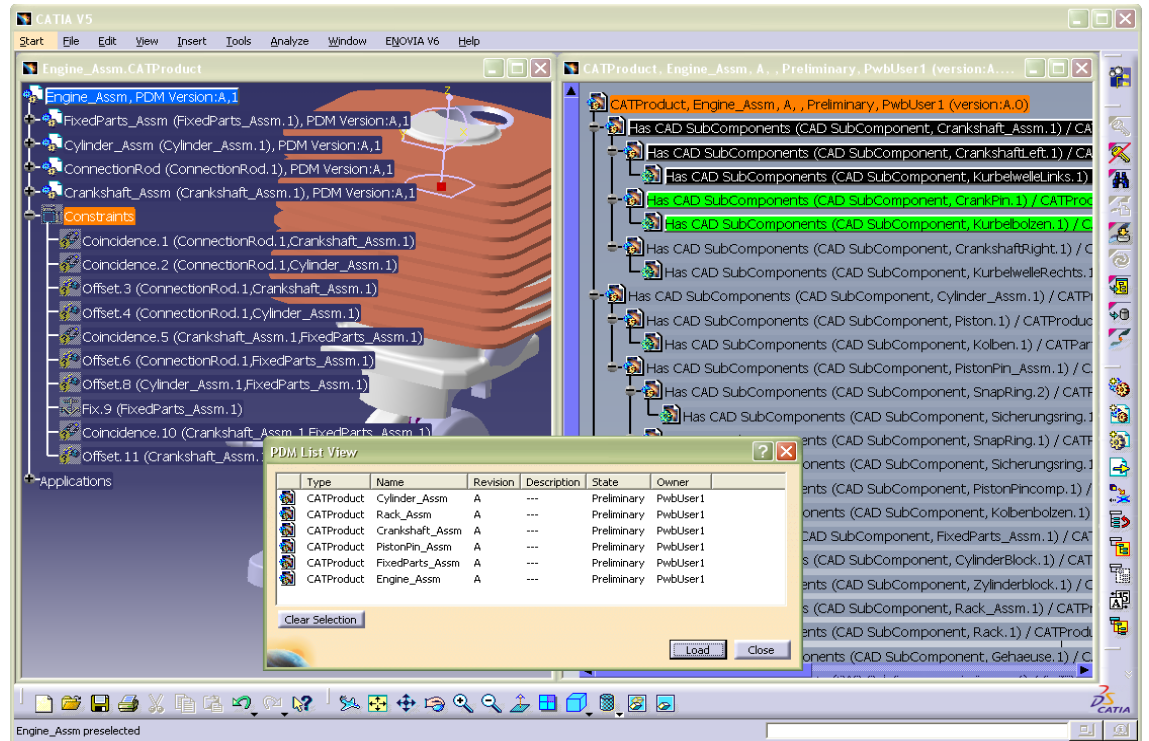


# PDM Workbench for Aras Innovator Overview

The PDM Workbench is a comprehensive PDM Rich Client seamlessly integrated in CATIA V5. It enables access to and full control of CATIA data via PDM.

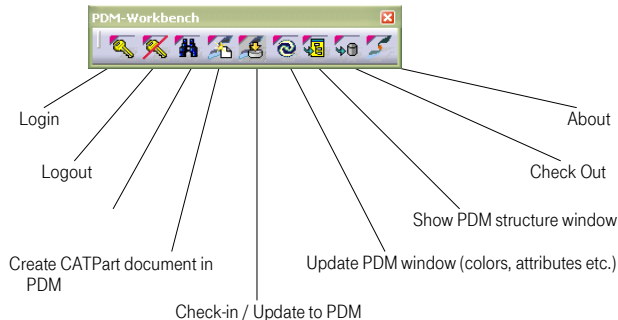
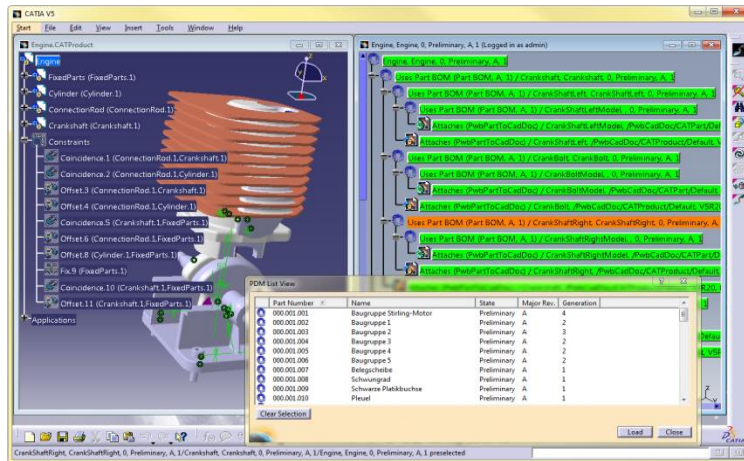
## Supported PDM systems

- SAP ERP 6.0
- Matrix/ENOVIA
- Aras Innovator
  - BOM Part Structure
  - Document Structure



# PDM Workbench for Aras Innovator

## The immersive PDM Integration for CATIA V5



- CAD specific PDM functionality in CATIA V5 enabling design engineers to stay in CATIA only.
- CATIA V5 look and feel by using standard CAA framework.
- Allows the use of any customized data model.
- Follows relevant configuration context (expand).
- PDM Workbench features can be tailored by simply editing schema files.

### Examples for PDM functionality in CATIA V5

- Check In/Out, Lock/Unlock, Update and Synchronize of CATIA data
- Comprehensive management of PDM objects and structures
- Copy & Paste, context menus, tool bar
- Tree navigation and list view
- Display and modification of PDM properties via dialogs
- Identification of nodes, display of access rights

# PDM Workbench for Aras Innovator Architecture Overview

## PDM INFRASTRUCTURE



Aras  
Innovator  
Vault



Aras  
Innovator  
Database

PWB  
SERVER

USE OF NATIVE  
ARAS INNOVATOR APIS

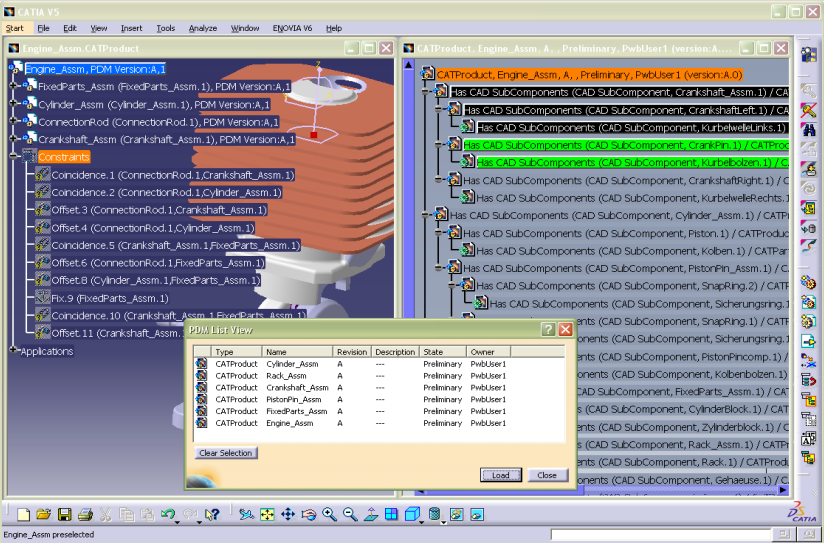
CHECK IN / OUT  
(FILE TRANSFER OF  
CATIA FILE DATA)

WEB COMMUNICATION  
(SOAP)  
PDM DATA (XML)

## CATIA V5 WORKSTATION

LOCAL  
DIRECTORY  
(CACHING)

PDM WORKBENCH  
CLIENT



# PDM Workbench for Aras Innovator

## Key Features

Supports CAD relevant PDM capabilities like

- Query
- Structure navigation
  - BoM navigation
  - CAD navigation
- Check In/Out
- Load CAD data corresponding to expanded structure
- Update of PDM and CAD data

Furthermore

- Company defined CAD Use cases as PDM Workbench Add-On's

# PDM Workbench for Aras Innovator

## Technical Highlights

No special CATIA licenses required (CAA, PX1).

Communication between CATIA session and PDM session based on Web Services.

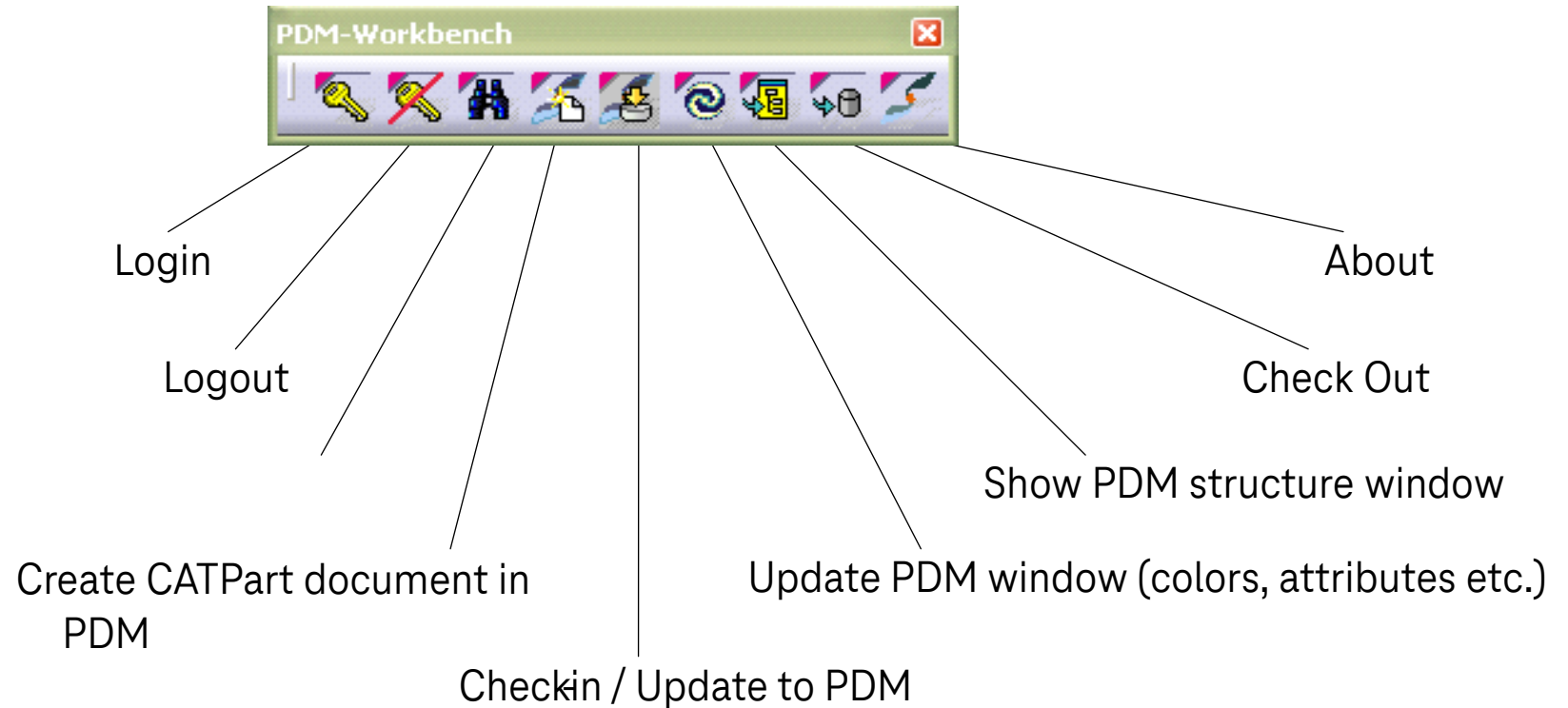
SOAP (Simple Object Access Protocol) is used as communication protocol:

- Firewall-friendly
- Using the XML-based protocol SOAP and Web Services because of:
  - Independence of
    - Platform/operating system
    - Programming language
    - Transport protocol
  - Security aspects
    - http or https can be used
    - Encryption of XML tag values

# PDM Workbench for Aras Innovator Accessibility

Directly within CATIA

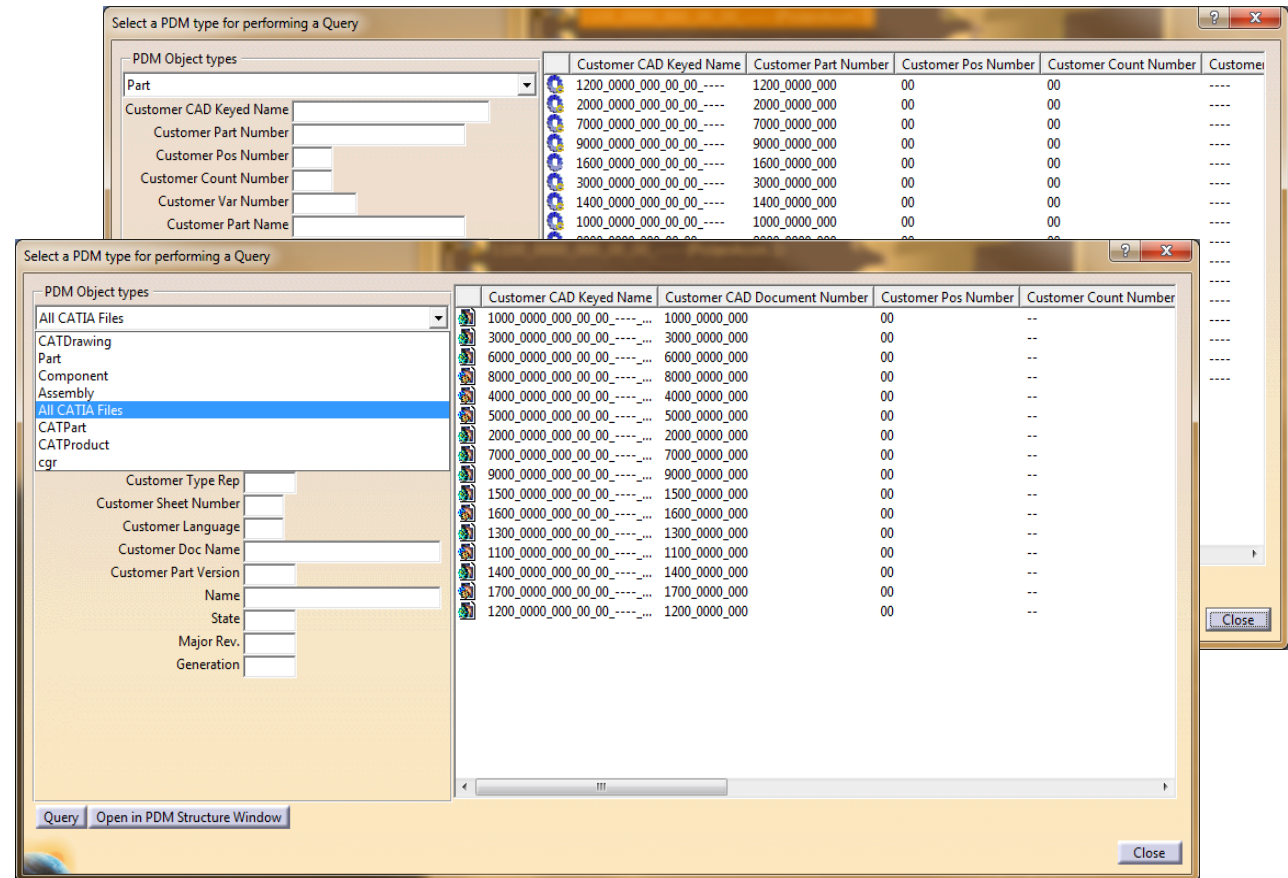
- Central Toolbar
- Context Menu
  - PDM objects
  - Product
- Part Toolbar





## PDM Workbench for Aras Innovator Query - Finding existing Documents

- Types to be queried can be selected in dropdown list
- Results can be sorted
- Contains additional functionality like selection of previously used values etc.
- Configurable
- Wildcard support





# PDM Workbench for Aras Innovator

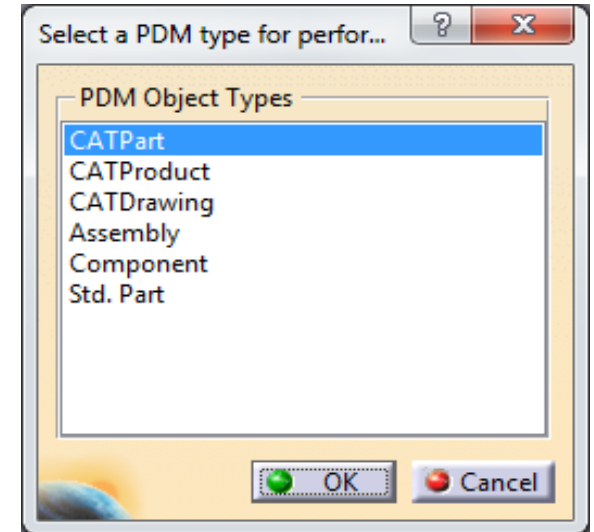
## Create – Creating new Documents and PDM Objects

Create new PDM object

- Dialog guided
- Decide which class of objects you want to create in PDM
- Specify attribute values for resulting Create dialog
- Object created in PDM appears in active PDM Workbench window

Create new PDM object in context

- Object created in PDM appears in active PDM Workbench window
- Note that created PDM object is related to its context object!!



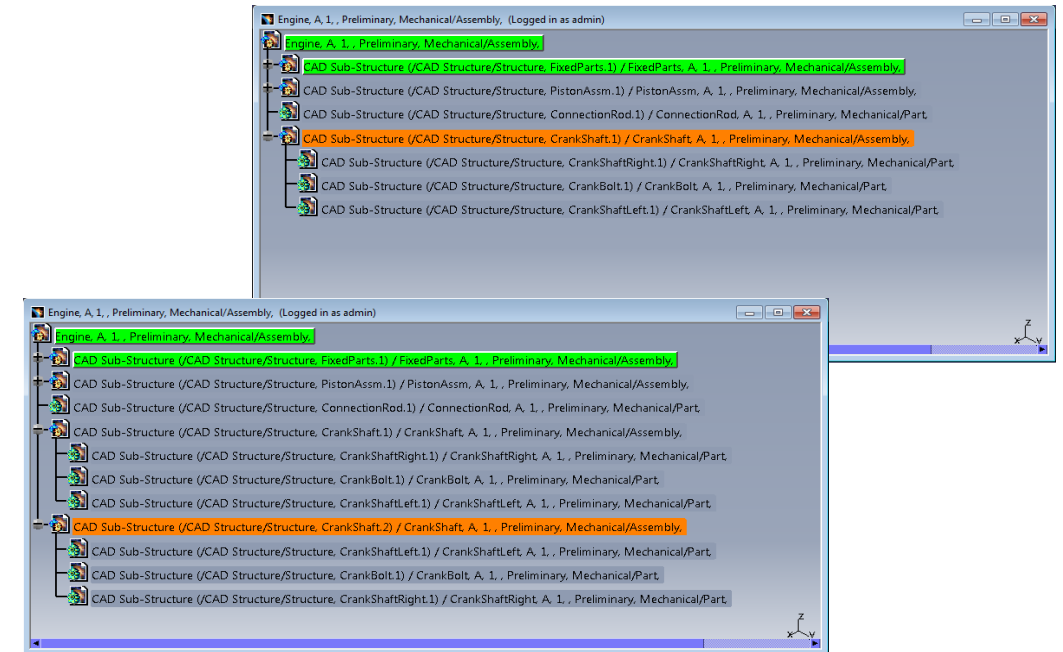
# PDM Workbench for Aras Innovator

## Modify Structure – Building Structures

Reopen structure window.

Multiple modification possibilities:

- Immediate in the PDM window
  - Copy/Paste
  - Create new PDM objects in context
- On Update
  - Copy/Paste in CATIA workshop
  - Create new in CATIA workshop



# PDM Workbench for Aras Innovator Expand – Exploring the Structure

Various relations:

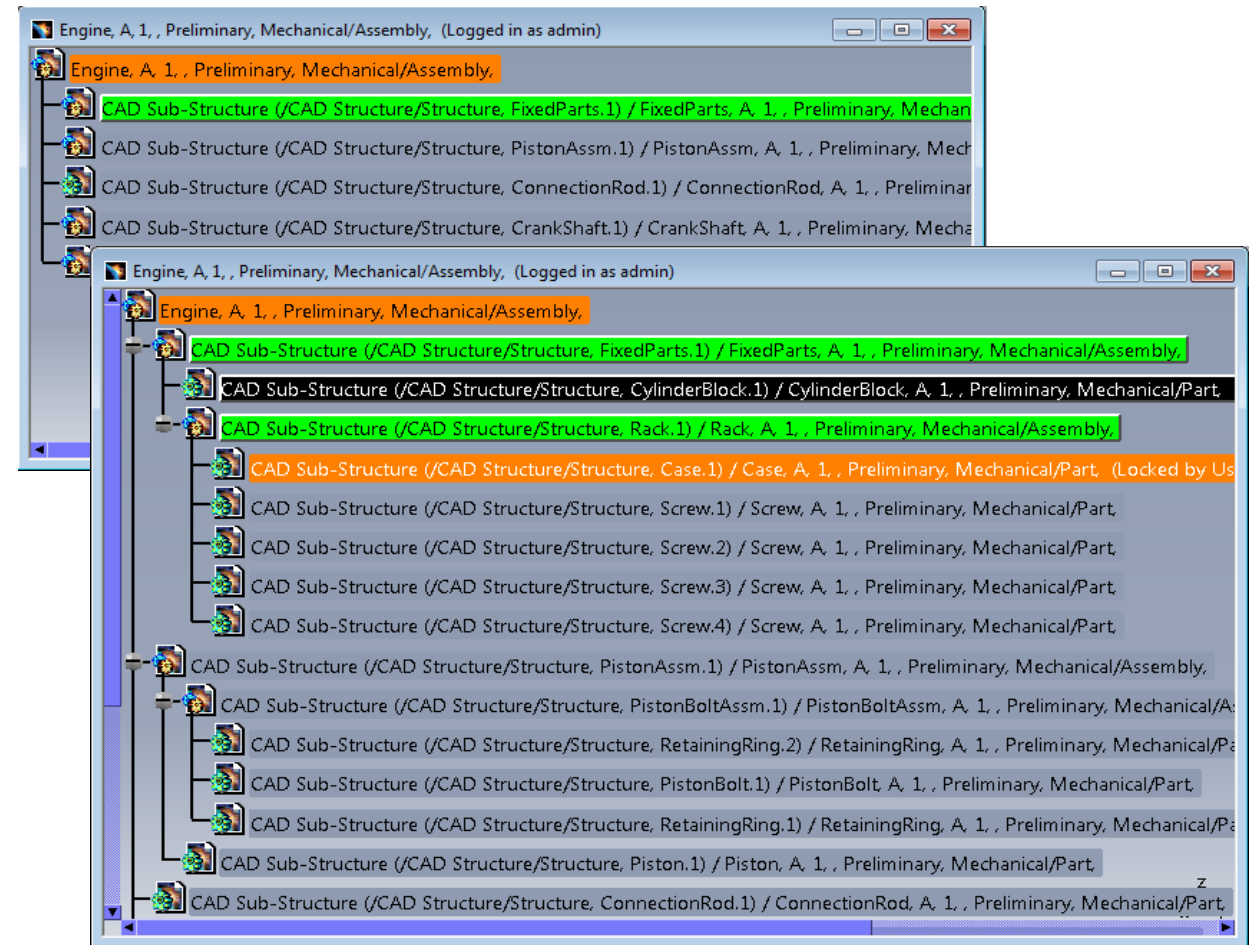
- Is attached by
- Derives drawing
- Sub-Structure
- Used in structure

Multi levels possible:

- Multiple Levels Sub-Structure
- Multiple Used in structure

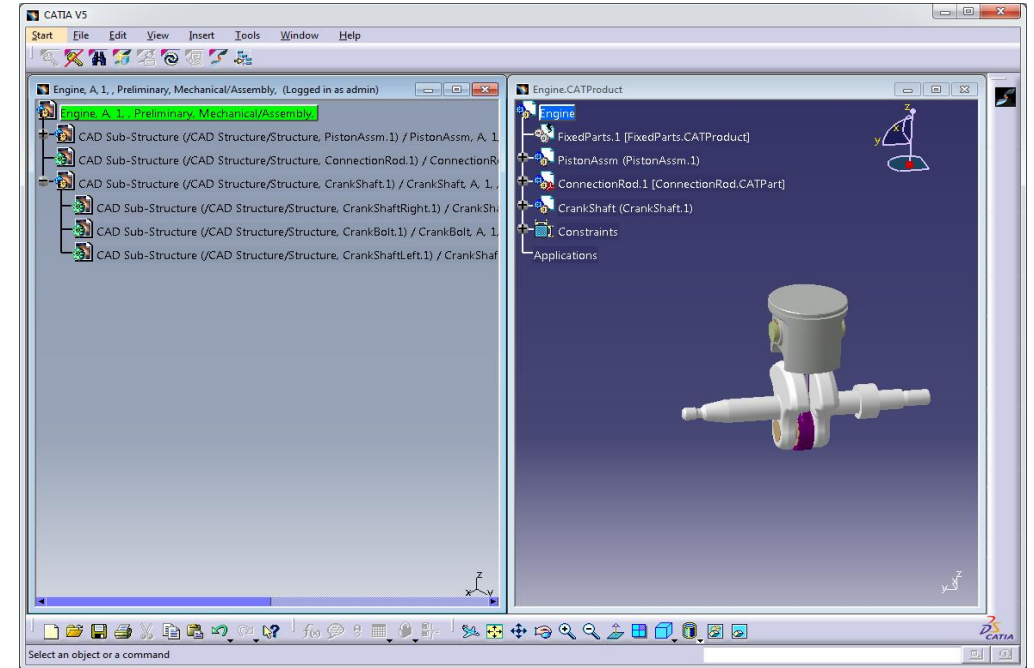
Collapse structure with:

- De-Expand



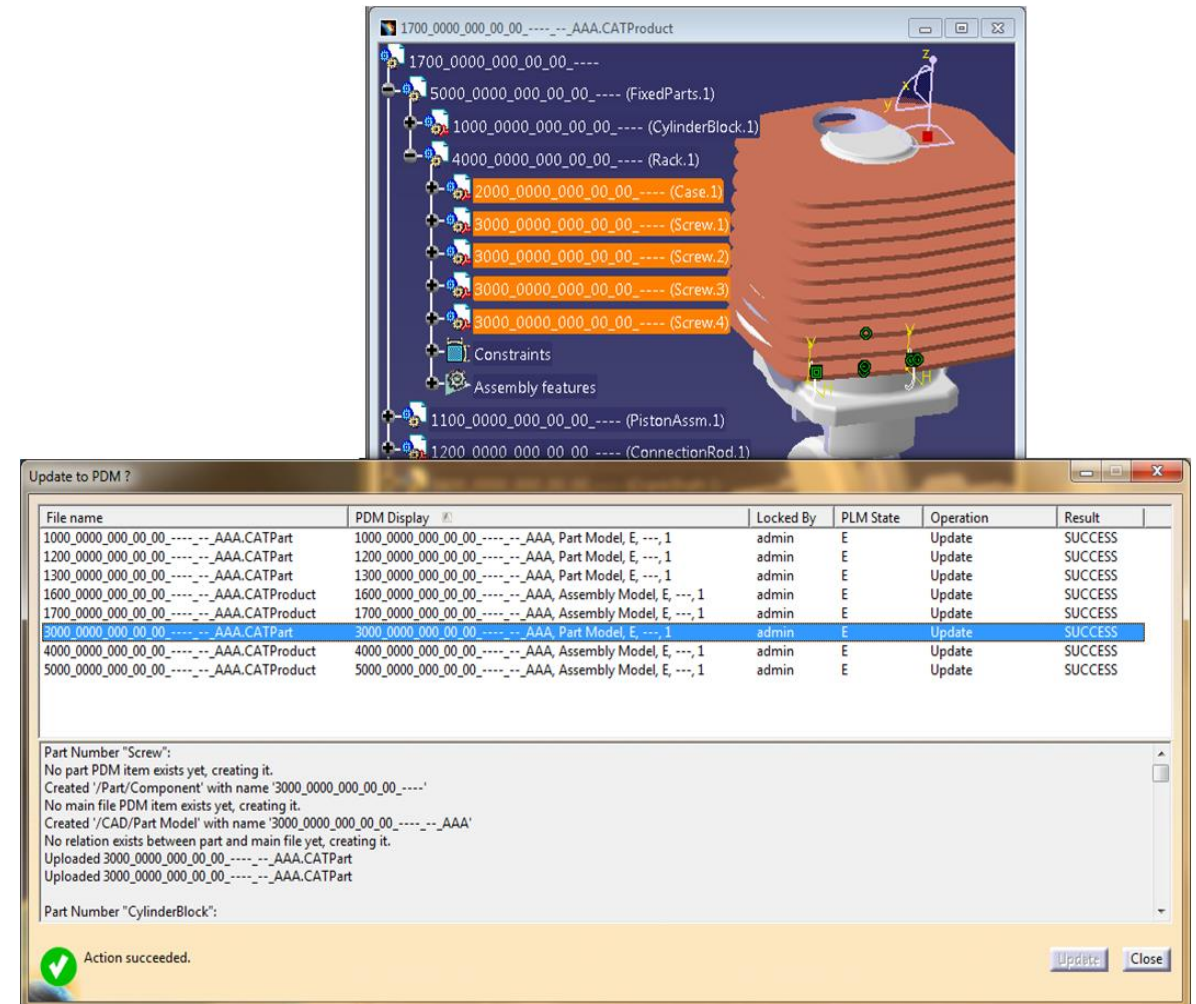
# PDM Workbench for Aras Innovator Load – Opening a Structure

- Assembly structure expanded to PDM Workbench window
  - No full expansion needed
- “Load Structure” on “root” object loads expanded product structure to CATIA V5 window
- PDM meta information as well as CAD files get downloaded out of the PDM system



# PDM Workbench for Aras Innovator Update – Create/Update Documents

- Includes highlight of the geometry of the files selected in the list
- Feedback



# PDM Workbench for Aras Innovator

## Properties – Reviewing and Editing PDM Properties

- View configured properties
- Edit configured properties directly

The screenshot shows the 'Properties' dialog box in the PDM Workbench for Aras Innovator. The 'Current selection' is 'Case, A, 1, , Preliminary, Mechanical/Part, /Rack, A, 1, , Preliminary, Mechanical/Assembly, /FixedF'. The 'Properties' tab is active, showing fields for 'CATPart' and 'CAD Structure (Structure)'. The 'CATPart' section includes fields for 'Doc. Number' (Case), 'Major Rev.' (A), 'Generation' (1), 'Name', 'State' (Preliminary), 'Description', 'New Version' (checkbox), 'Type' (Mechanical/Part), 'Assigned Creator', 'Designated User', 'Created by' (Innovator Admin), 'Created on' (2012-04-20T18:16:30), 'Modified by' (Innovator Admin), 'Modified on' (2012-04-20T18:16:36), 'Locked by' (Innovator Admin), and 'Standard Part' (checkbox). The 'CAD Structure (Structure)' section includes 'CATIA Instance Name' (Case.1) and 'CATIA Instance Descr.'. At the bottom right are buttons for 'More...', 'OK', 'Apply', and 'Close'.

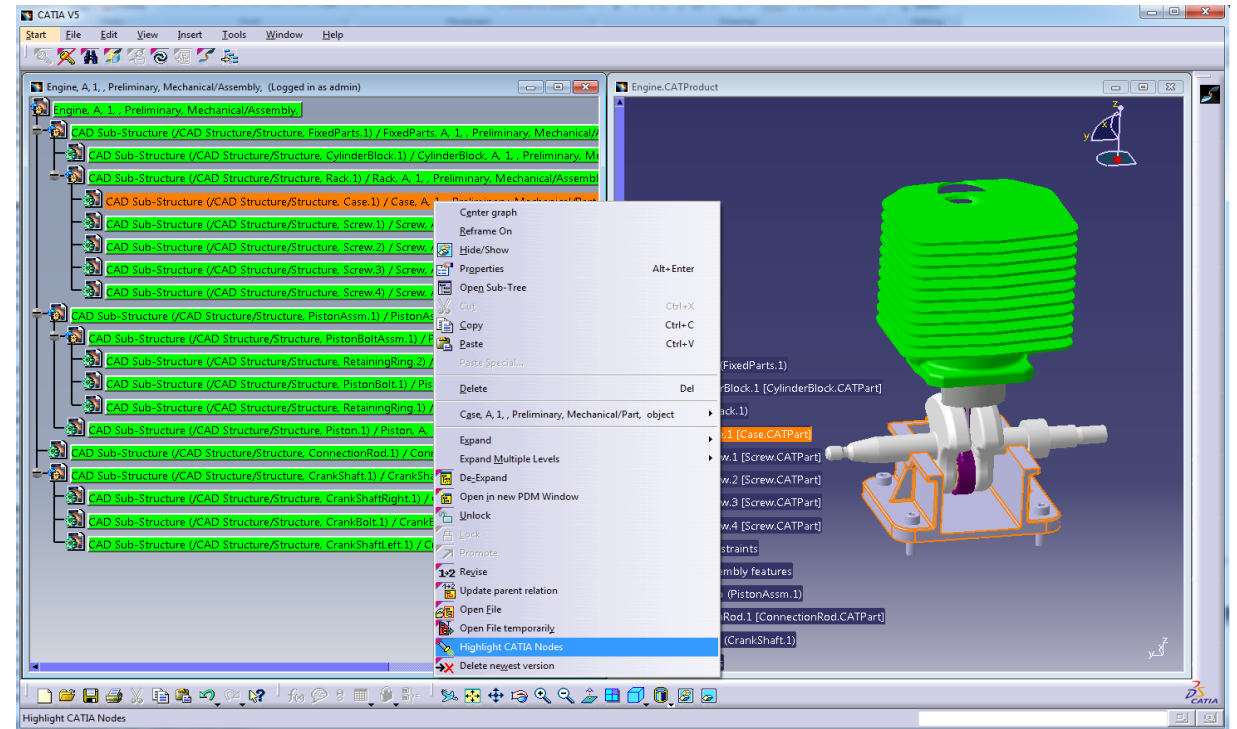
CATPart	
Doc. Number	Case
Major Rev.	A
Generation	1
Name	
State	Preliminary
Description	
New Version	<input type="checkbox"/>
Type	Mechanical/Part
Assigned Creator	
Designated User	
Created by	Innovator Admin
Created on	2012-04-20T18:16:30
Modified by	Innovator Admin
Modified on	2012-04-20T18:16:36
Locked by	Innovator Admin
Standard Part	<input type="checkbox"/>

CAD Structure (Structure)	
CATIA Instance Name	Case.1
CATIA Instance Descr.	

# PDM Workbench for Aras Innovator

## Highlight – Find Component in other View

- Highlight PDM object in Design structure
- Highlight Design component in PDM view

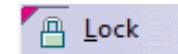
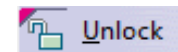




# PDM Workbench for Aras Innovator

## Lock – Locking and Unlocking PDM Objects

- Locking on demand
  - Only lock what should be updated
  - Prevents unnecessary updates on not really changed PDM objects
  - Mutual design changes lead to lost updates
- Locking on check out (recommended)
  - PDM Objects are locked before design changes
  - Only way to modify PDM structure directly in PDM window
- Locking from within CATIA design workshop

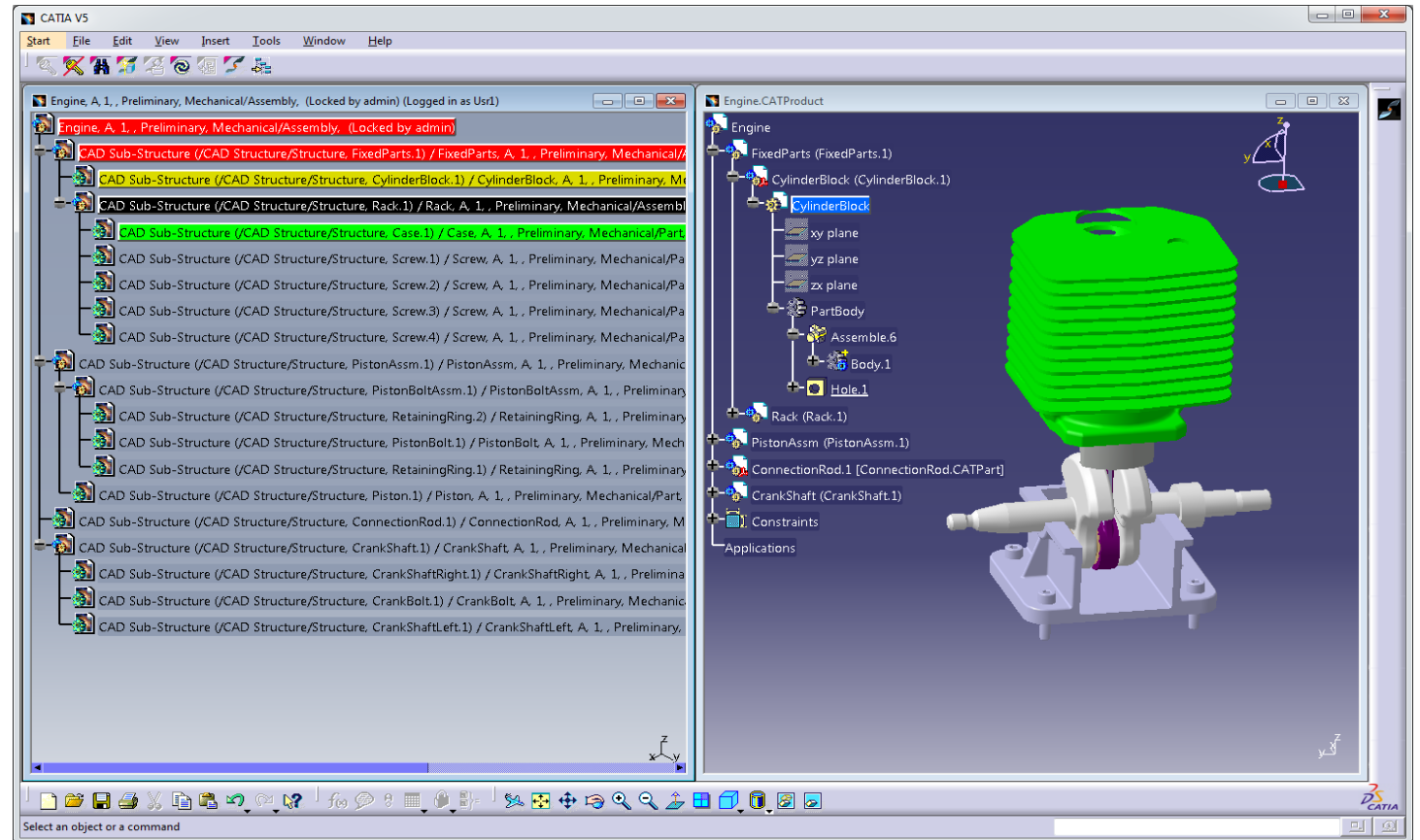


# PDM Workbench for Aras Innovator

## Visual Lock Feedback

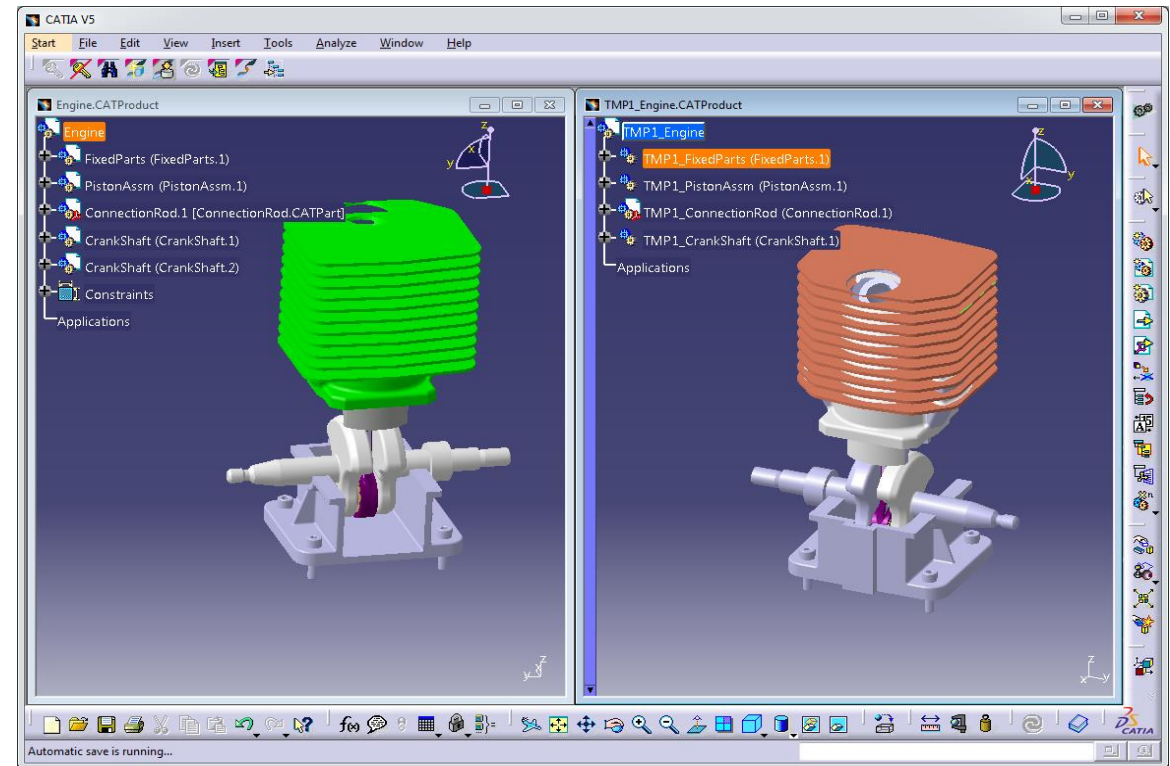
You can see if object is:

- Unlocked
- Locked (by own)
- Locked (by other)
- Modified locked
- Modified not locked
- Superseded



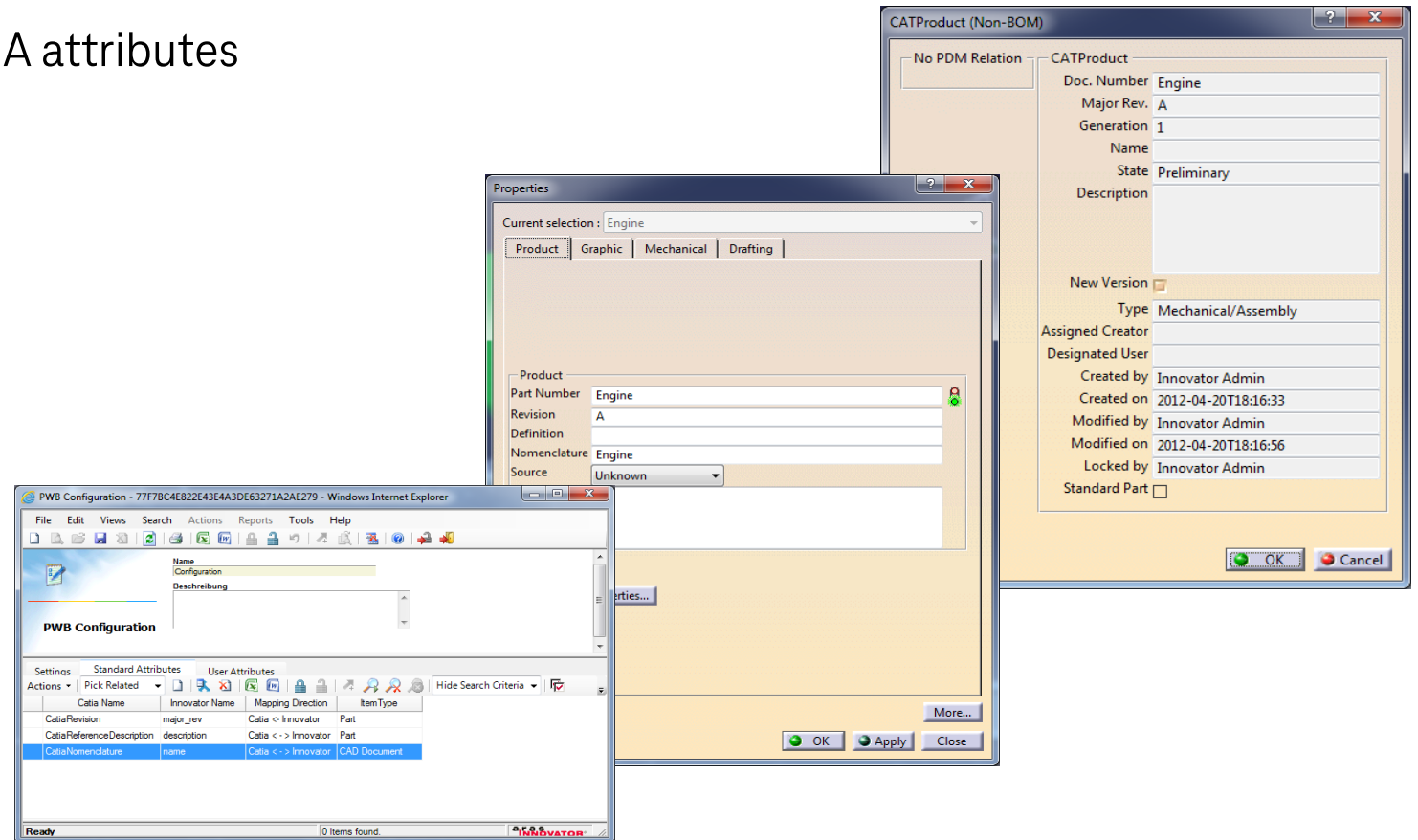
# PDM Workbench for Aras Innovator Addtemp – Comparing Structures

- Open a structure for comparison
- Generic prefix is added
- Added structure is not updateable



# PDM Workbench for Aras Innovator Attribute Mapping

- Map PDM object properties to CATIA attributes
- Unidirectional
- Bidirectional
- CATIA Standard attributes
- CATIA User attributes
- Configurable



# PDM Workbench for Aras Innovator

## Others

There are more functions available:

- Update structure relations
- Update parent relation
- Delete
  - Delete whole PDM object
  - Delete latest version of PDM Object
- Lifecycle management
  - Promote
  - Revise

# PDM Workbench for Aras Innovator

## Data in the PDM System

- Different data structures
  - CAD Structure
  - BOM Part Structure
    - Processes & Lifecycles
    - Part
- Identifying PDM objects
  - One single property value
  - Part number (default)

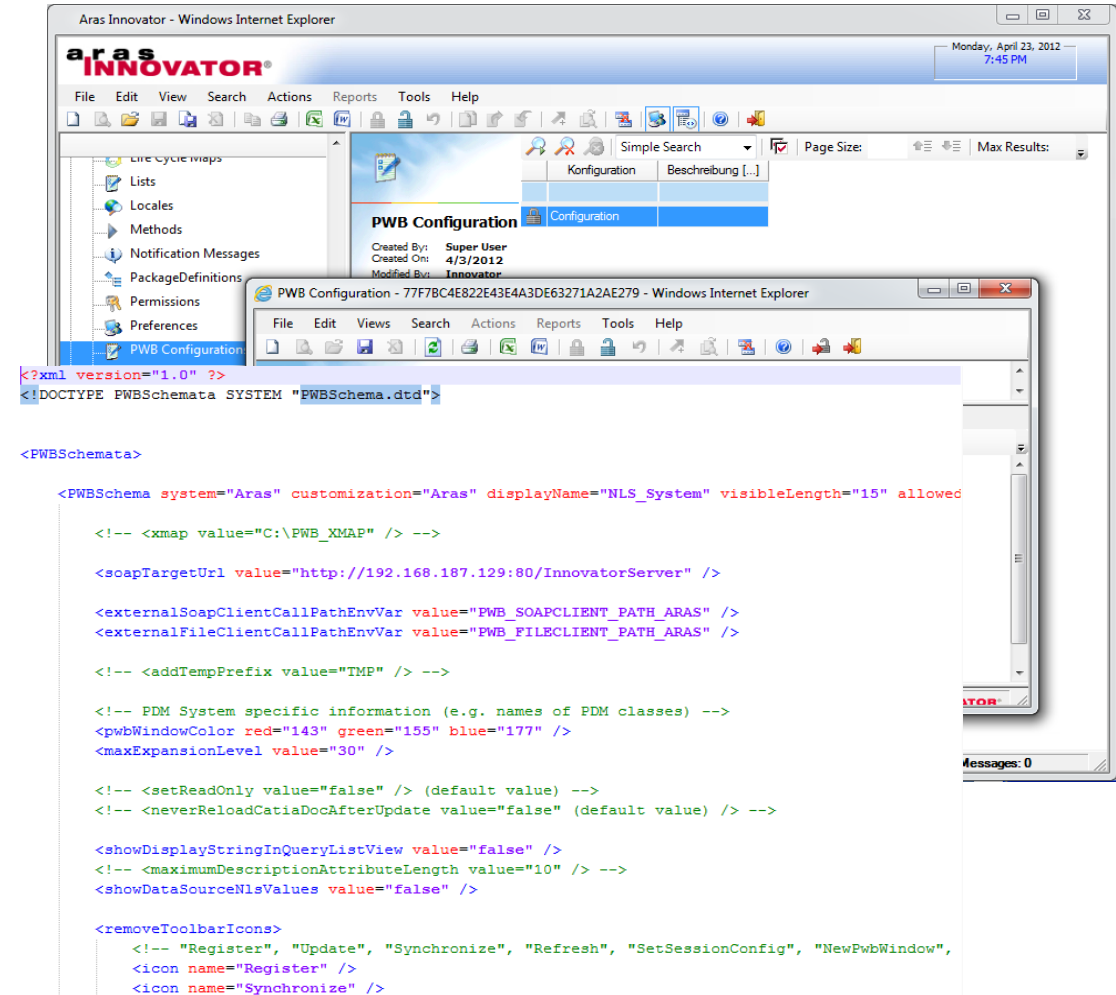
# PDM Workbench for Aras Innovator

## PWB Client and Server Configuration

The CATIA Integration UI can be configured in a wide range via XLM Schema file:

- Dialogs
- Displayed attributes
- List view
- Context menus
- Available functionality
- Data model to be supported (Part or Document data model)

```
StandardPartAdmin = Standard Part Administrator
TemplateFileAdmin = Template File Administrator
ShowCreateDialogsDuringUpdate = false
UpdateDerivedPdfFile = false
UpdateDerived3DxmlFile = false
CheckAttributeValueLength = true
CheckForDuplicateInstanceNames = false
UseDesignTables = false
UseArchives = false
```

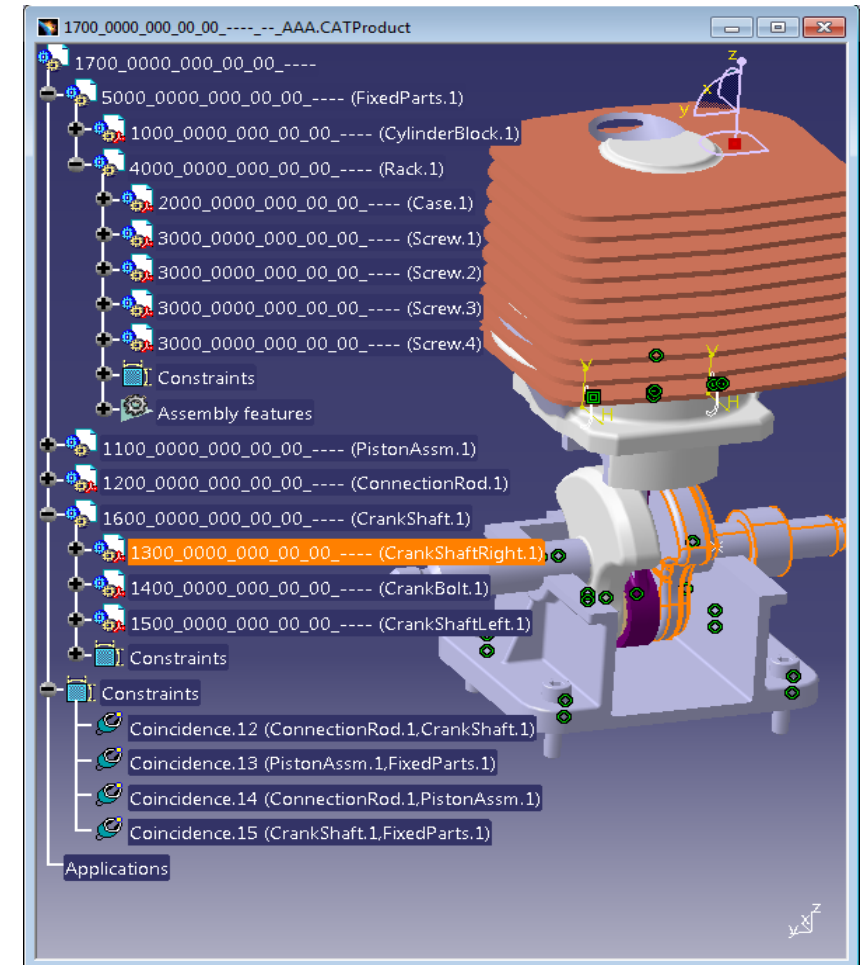




# PDM Workbench for Aras Innovator

## Customization – Specific Part Numbers

Customer-specific part numbers can be generated from the dialog attribute values (both part and document attributes) in a customizable server-side method

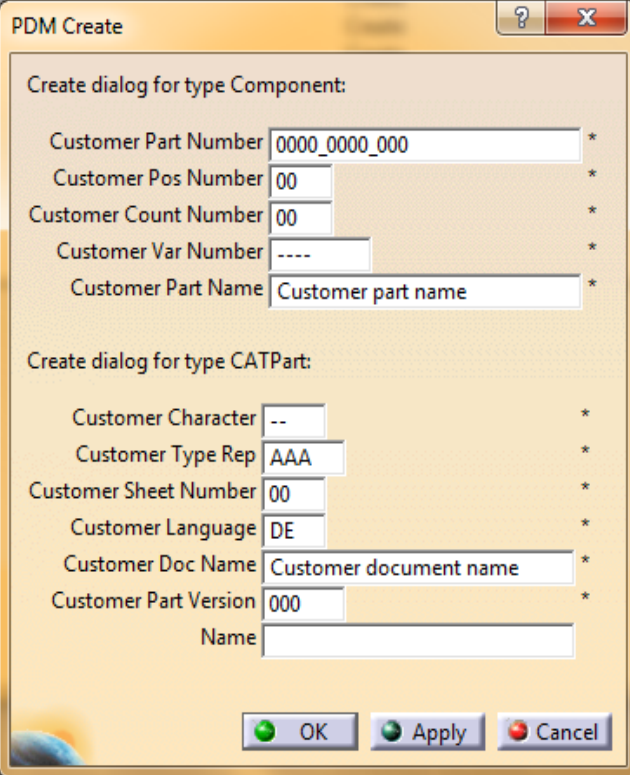


# PDM Workbench for Aras Innovator

## Customization – Specific Dialogs for the Update Process

Dialogs can contain pre-defined values, including dropdown lists

Part and CAD document are regarded as one entity, attributes for both types can be shown in one window



The screenshot shows a 'PDM Create' dialog box with two sections for creating different types of components. The first section, 'Create dialog for type Component:', includes fields for Customer Part Number (0000\_0000\_000), Customer Pos Number (00), Customer Count Number (00), Customer Var Number (----), and Customer Part Name (Customer part name). The second section, 'Create dialog for type CATPart:', includes fields for Customer Character (--), Customer Type Rep (AAA), Customer Sheet Number (00), Customer Language (DE), Customer Doc Name (Customer document name), Customer Part Version (000), and a Name field. At the bottom are OK, Apply, and Cancel buttons.

Field	Value	Required
Customer Part Number	0000_0000_000	*
Customer Pos Number	00	*
Customer Count Number	00	*
Customer Var Number	----	*
Customer Part Name	Customer part name	*
Create dialog for type CATPart:		
Customer Character	--	*
Customer Type Rep	AAA	*
Customer Sheet Number	00	*
Customer Language	DE	*
Customer Doc Name	Customer document name	*
Customer Part Version	000	*
Name		