SmarTeam CATIA Supply Chain Engineering Exchange

User's Guide

Version 5 Release 19

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SmarTeam CATIA Supply Chain Engineering Exchange

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- Identifying the Targeted SmarTeam Documents
- Defining Reconciliation Rules
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- Saving and Checking In all the Documents in SmarTeam

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Overview

This book is intended for users who need to become quickly familiar with the ENOVIA SmarTeam - CATIA Supply Chain Engineering Exchange application.

This overview provides the following information:

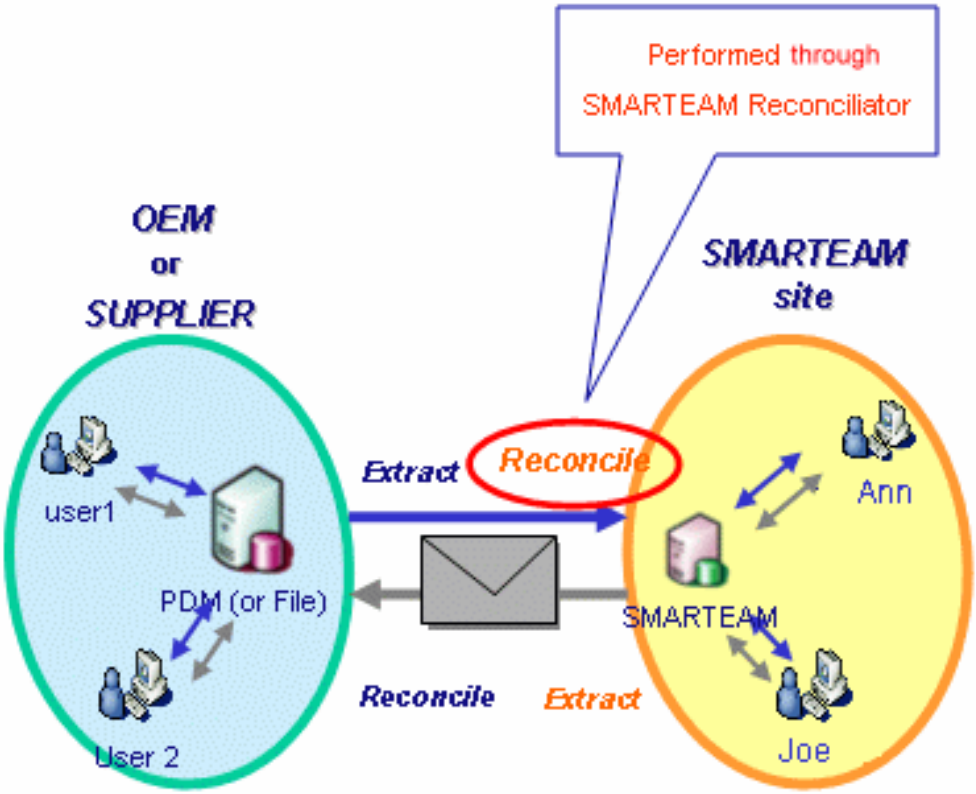
- SmarTeam-CATIA Supply Chain Engineering Exchange in a Nutshell
- Before Reading this Guide
- Getting the Most out of this Guide
- Accessing sample documents
- Conventions Used in this Guide

ENOVIA SmarTeam - CATIA Supply Chain Engineering Exchange in a Nutshell

In the manufacturing industry, suppliers are greatly involved in the design and the manufacturing of goods. Since early design, manufacturers (OEM) need to exchange data with their suppliers. This design and manufacturing process is becoming more and more global in nearly all industries.

- The OEMs need to extract information from their information systems such as CAD documents, assembly structures, drawings and part definitions, to enable suppliers to receive the working context (such as a part of the 3D representation of a car) and/or a set of documents that will need to be updated.
- The suppliers send the result of their work with updated or new CATIA documents, assembly structures, drawings or applicative data (kinematics, numerical command) to the OEMs.
- The OEMs re-import this data into the corporate information systems.

Many companies use CATIA in collaboration with SmarTeam. Depending on the information semantic that needs to be exchanged, several tools are available. In case the CATIA design needs to be shared between the supplier and OEM, CATIA native files are exchanged between the OEM and the supplier. The SmarTeam Reconciliator makes it possible to interactively compare and reconcile a set of CATIA documents coming from an OEM or supplier with documents stored in a targeted SmarTeam installation.



ENOVIA SmarTeam - CATIA Supply Chain Engineering Exchange (SEE) makes it possible to interactively compare and reconcile a set of CATIA documents coming from an OEM or supplier with documents stored in a targeted SmarTeam installation. The reconciliation process starts with the loading o f the source in CATIA V5, then enables to identify documents which are common between source and target, then compare them. Finally, as a decision support tool, it enables to manage the trade off between source and target This is done while maintaining links consistency and data integrity regardless of the source.

The graphical interface is flexible and intuitive and very productive. End user interactions can be minimized by the reconciliation business rules integrated in SEE. They can be enriched by an easy customization. By supporting heterogeneous OEM's or supplier's environments (e.g. SmarTeam, ENOVIA V5 VPM, ENOVIA VPM - note that in the case of ENOVIA V5 VPM or ENOVIA VPM, the source document can be the result of the extraction of a "structure exposed" assembly-,file-based systems, etc.), SEE provides a valuable solution for key business scenarios.

Before Reading this Guide

Before reading this guide, the user should be familiar with the basic Version 5 concepts such as document windows, standard and view toolbars. Therefore it is recommended that you read the *Infrastructure User's Guide* that describes generic capabilities common to all Version 5 products.

Getting the Most out of this Guide

To get the most of this guide, it is suggested that you start reading the step-by-step Getting Started tutorial. Once you have finished, you should move on to the User Tasks section, then to Customizing section, which explains how to set up the options and finally to the Methodology section.

Accessing sample documents

To perform the scenarios, you will be using sample documents contained in the `online/seeug_C2/samples`. For documents which exist in the SmarTeam database. For more information about sample documents, see Accessing Sample Documents in the Infrastructure User's Guide.

Conventions Used in this Guide

To learn more about the conventions used in this guide, see the Conventions section.

What's New?

Enhancements

The following enhancements have been added in this release:

- **GUI enhancements which improve Reconciliator's usability**:
    - Reconciliator window size & position are remembered
    - Global-Set may be run by double-clicking
- **Reconciliation of CATShape documents**: This enhancement extends the Reconciliator product to manage the CATShape document.
  The CATShape is found primarily in the following contexts:
    - CATShape referenced as shape representation in assembly structure
    - CATShape referenced as multi-representation and generated for instance by Piping & Tubing application.
- **Exposed Reconciliator CAA APIs**: Enables the development of CAA applications which integrate Reconciliator functionality and enables the customization of existing Reconciliator functionality by adding new criteria or implementing existing user criteria.
- **Save & Restore Reconciliation session**: Two new icons, **Save reconciliation session** and **Restore reconciliation session** , have been added to the toolbar, enabling the user to easily save and restore settings previously defined for mapping & rules of the interactive Reconciliator application.
- **Inhibit Part and Product update**: Two new options have been added within the Reconciliator application, enabling the prevention of part and product update before a Save operation is performed.

Getting Started

Before getting into the detailed instructions for using SmarTeam - CATIA Supply Chain Engineering Exchange, the following tutorial aims at giving you a feel as to what you can do with the product. It provides a step-by-step exercise based on a realistic design scenario showing you how to use key reconciliator functionalities for reconciling different documents.

The reconciliation process starts with the loading of the source in CATIA V5, then enables you to identify documents which are common to the source and the target SmarTeam database, then compares them. Finally, as a decision support tool, it enables you to manage the trade off between the source and target. This is done while maintaining links consistency and data integrity regardless of the source.

The scenario assumes that a Skateboard. CATProduct document including six CATProduct and CATPart documents is stored in the SmarTeam vault. The skateboard document was sent to a supplier who in turn, made different modifications to it. The tasks to be performed show you how to review and reconcile the updated data sent back by the supplier, with the data stored in SmarTeam.

Before you Begin

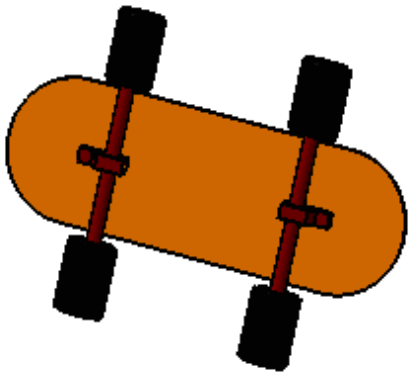
Before going thru the different tasks of this tutorial, you need to perform a few preliminary operations for preparing the data we need.

- Saving the document in SmarTeam
  First, you need to place the Skateboard.CATProduct document in SmarTeam.

  - Use **SmarTeam > Save** to save the skateboard. CATProduct document into SmarTeam, in the Project of your choice. Before validating the save operation, select the **Add to Desktop** and **Link to Projects** options.
  - In your CATIA session, apply **SmarTeam > Life Cycle > Check In** to the Skateboard product in CATIA.
  - Close all SmarTeam windows which have been opened.

  Now that the skateboard product is no longer in CATIA. For reference information about save and check in operations, see the *SmarTeam - CATIA Integration User's Guide*.

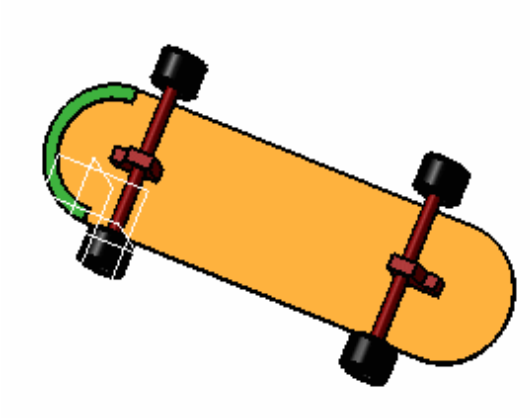
Skateboard stored in SmarTeam



- Opening the document modified by the customer in CATIA
  Just click Skateboard.CATProduct to open the data which you will reconcile with the data stored in SmarTeam.

Skateboard modified by the supplier

Looking at the skateboard supplied, you can notice that the board has been elongated, the wheels have been reduced and that a brake has been added.



Scenario

The main tasks covered in this section are:

Displaying the Reconcile Window
Identifying the Targeted SmarTeam Documents
Defining Reconciliation Rules
Applying Reconciliation Rules
Saving and Checking In all the Documents in SmarTeam

All together, the tasks should take about 15 minutes to complete.

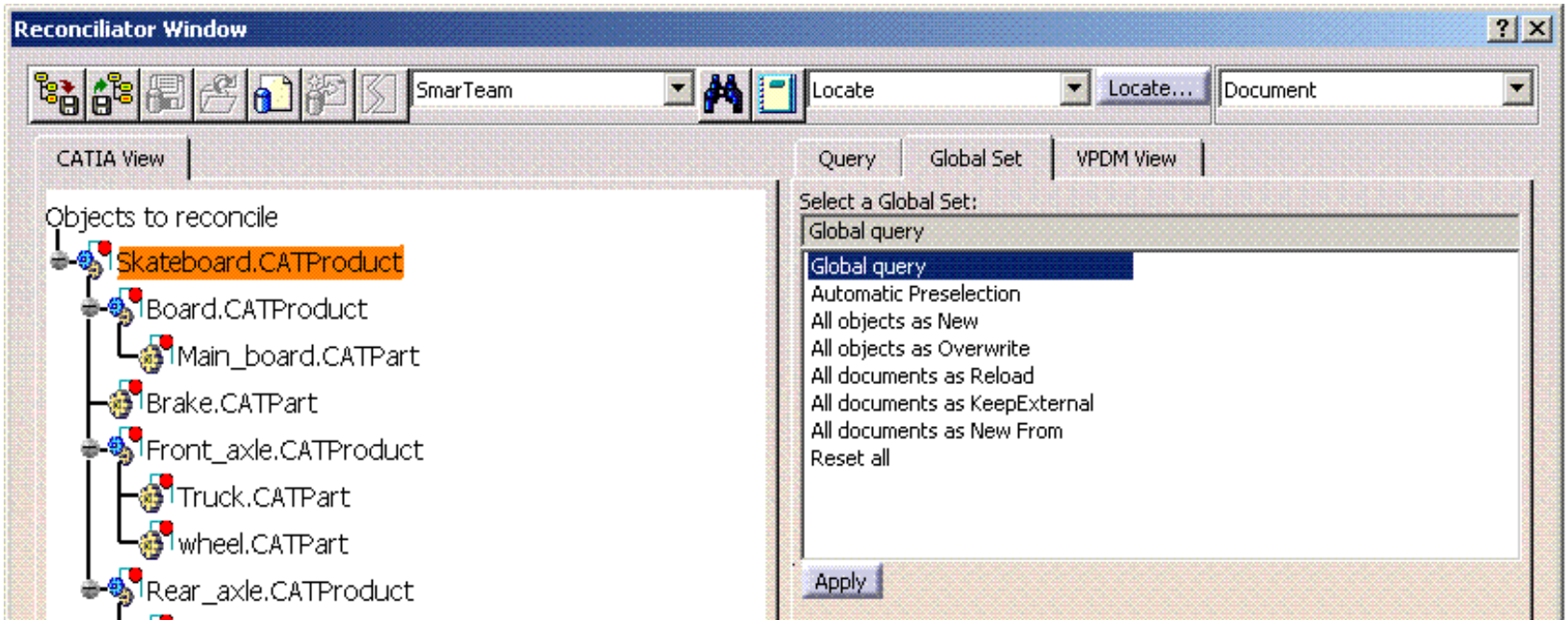
Displaying the Reconcile Window

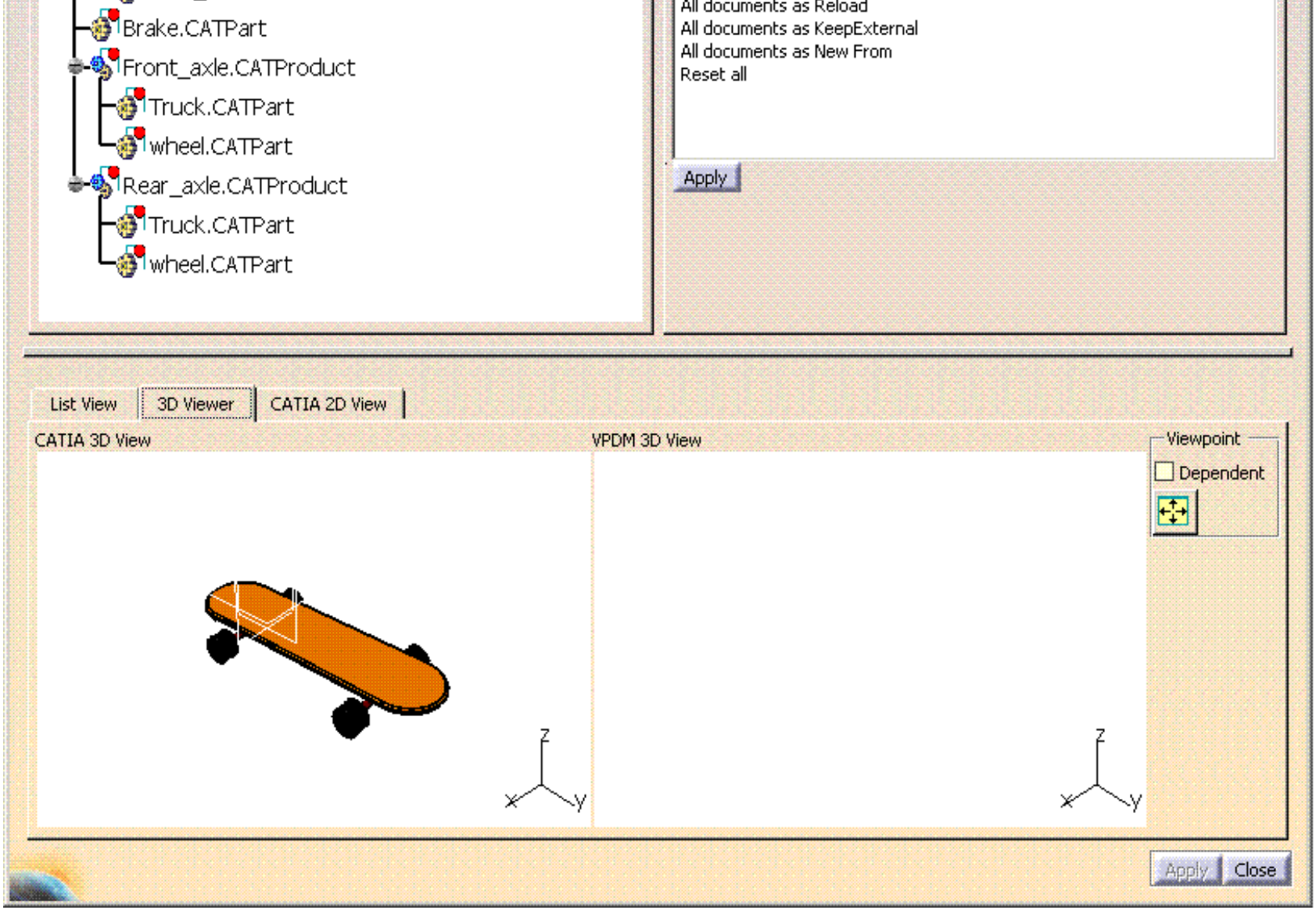
The first step of the reconciliation transaction consist in loading from the file system the source documents which need to be reconciled, and then in launching the interactive reconciliation dialog box. The load operation has already been done as explained in Before You Begin. This task now shows you how to access the **Reconcile Window**.

1. Select **SmarTeam > Collaboration > Launch Reconciliation**.

   As an alternative, click **Launch Reconciliation** from the **Reconcile** toolbar .
   If the toolbar is not available, select **View > Toolbars > Reconcile** and select **Reconcile** in the menu bar.
   The **Reconcile Window** that appears, contains all the commands for reconciling documents. In the **CATIA View** tab, a tree displays the files making up the selected product. The ● symbol indicates that reconciliation rules are not set for the documents to reconcile.

2. In the **CATIA View** tab, select the root document -Skateboard (skateboard) - from the **Objects to reconcile** tree.
   For reference information about the **Reconcile Window**, click Interface Description.



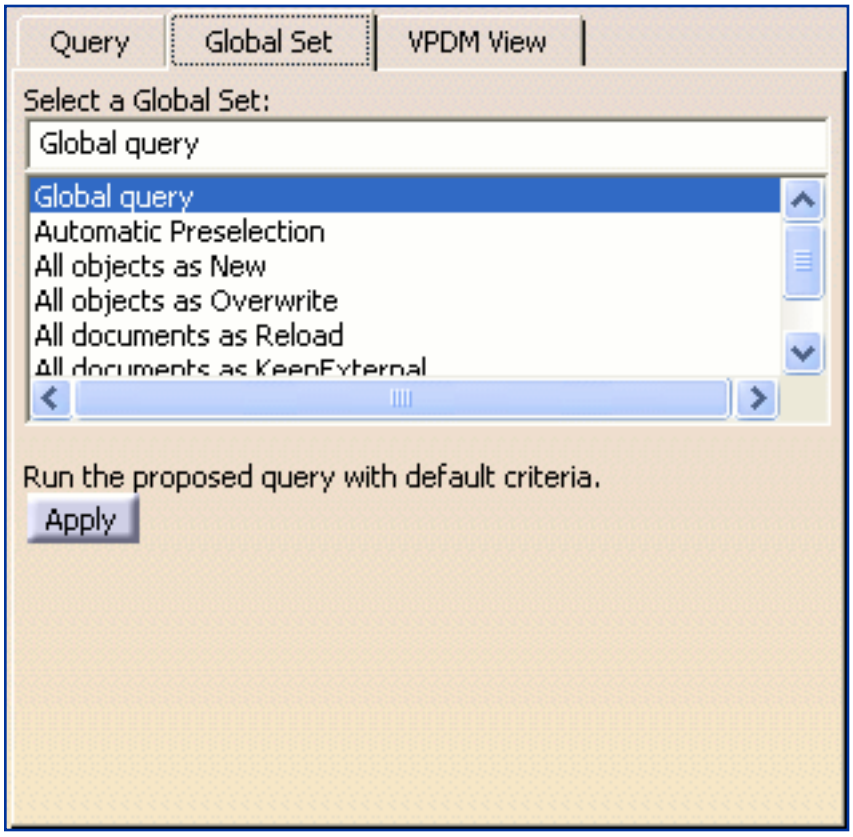


You are now ready to start reconciling documents. Let's first identify the Targeted SmarTeam Documents.

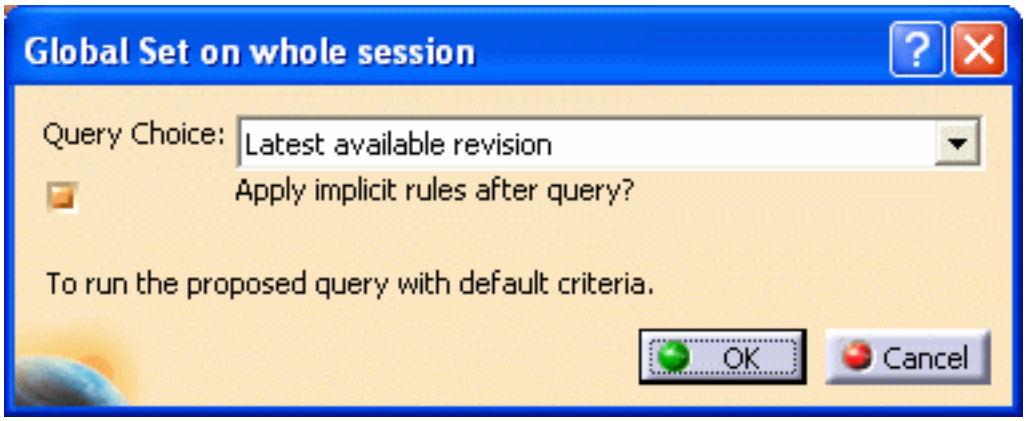
Identifying the Targeted SmarTeam Documents

The second step of the reconciliation transaction consists in checking if the documents to be reconciled already exists in SmarTeam. In this task, you identify from the source documents loaded in CATIA the corresponding documents stored in the SmarTeam database.

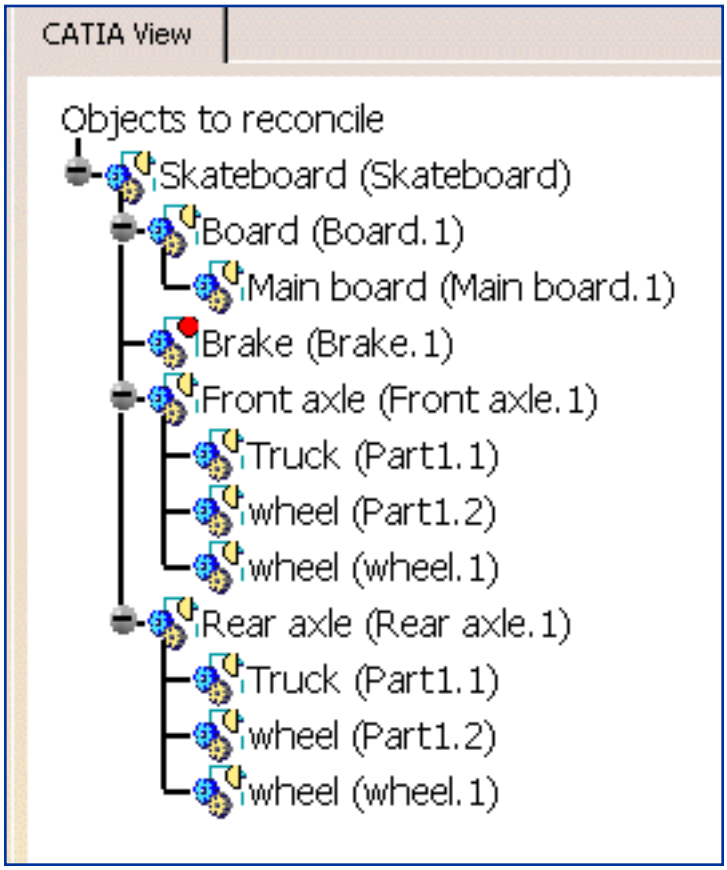
1. Select **Skateboard** as the product to be reconciled.
2. Click the **Global Set** tab.
3. Click **Global query** from the list of options.
   Global query performs a query for all documents in only one operation.



4. Click **Apply** to confirm the operation.
   The **Global Set** dialog box is displayed.



5. Click **OK** to confirm your decision.
   The documents making up the assembly in your CATIA session have been mapped, except for the **Brake** part.
   The symbol indicates that mappings have been done between the CATIA and the SmarTeam objects, but reconciliation rules are not set yet. As a new part created by the supplier, **Brake** part is not present in the SmarTeam vault. It therefore keeps the symbol.



In this scenario, you have identified all targeted documents automatically. However, using **Global Query** is not the only way of **identifying** documents. A manual identification per document is possible. For reference information about all query types, see Identifying SmarTeam Documents.

Defining Reconciliation Rules

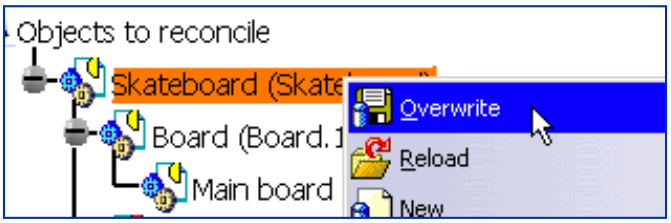
Now, you need to define and apply a reconciliation rule for each document (mapped or not) in the tree. A Reconciliation Rule is a set of information required to reconcile the documents loaded in the CATIA session with the ones stored in SmarTeam vault. This operation is necessary to integrate the document loaded in CATIA into SmarTeam.

After noticing in the 3D Viewer of the **Reconcile window** the modifications made by the supplier and comparing it with the PDM 3D view, you decide to :

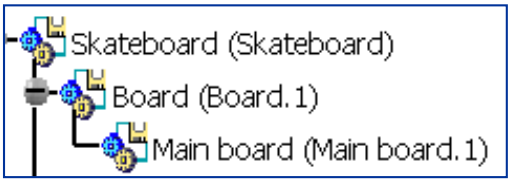
- Overwrite the Main board part in order to keep the modifications
- Set as new the Brake part because you haven't it in your database
- Reload the wheels in order to keep your previous version (those in SmarTeam)

For more information about the 3D Viewer, see Using the Viewers.

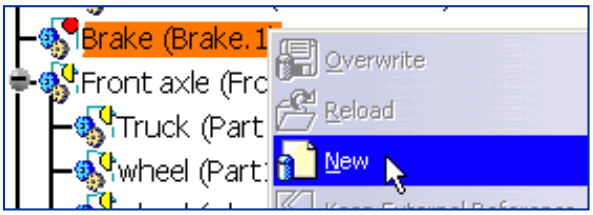
1. Because you set as overwrite the main board, you must also choose to overwrite the Skateboard and the **Board** products. Right-click these documents and select **Overwrite**.



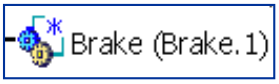
As an alternative, just select **Skateboard** and click . The result is immediate. Once done, new icons indicate the rule set for these documents.



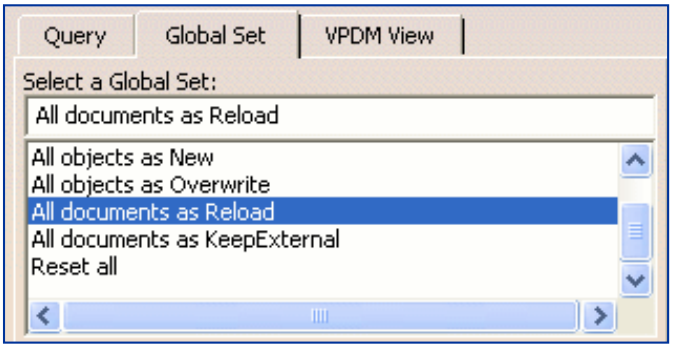
2. Set **Brake** part as a new part: right-click on it and select **New**.



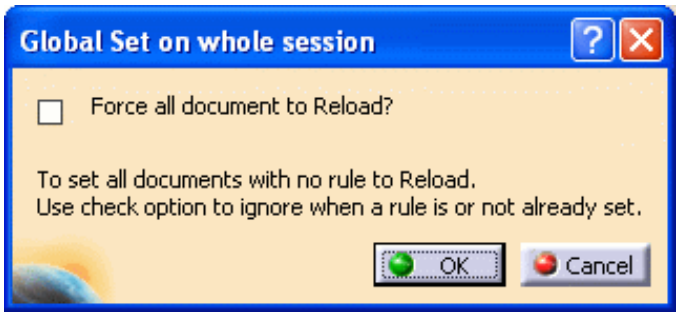
As an alternative, just select **Brake** and click . Once done, a new icon indicates the rule set for this document.



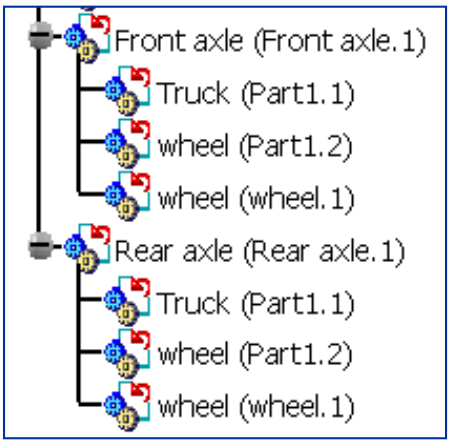
3. Concerning the other documents, you decide to reload them because they have not been modified or you do not accept the modifications made. In order to perform this type of treatment in one single operation, click on **Global Set** and choose **All documents as Reload** from the list.



4. Click **Apply** to confirm the operation.
   The **Global Set** dialog box is displayed. Ensure that **Force all documents to Reload** is not selected.



5. Click **OK** to confirm your choice and close the **Global Set** dialog box.
   When done, new icons indicate the rule set for these documents.



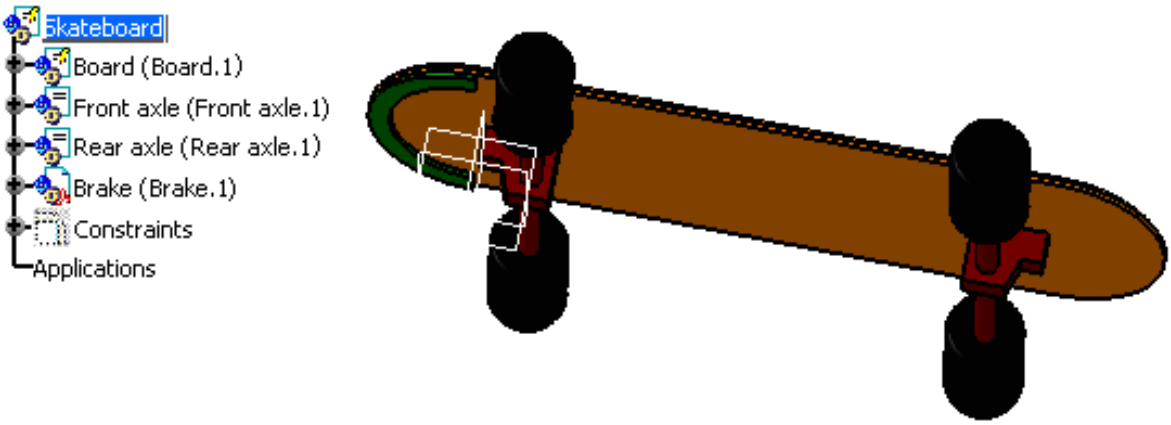
In this task, you have defined three reconciliation rules , , , to meet your needs. For reference information about all reconciliation rules, see Defining Reconciliation Rules. Now just move to the next task to launch the reconciliation.

Applying Reconciliation Rules

In the previous task you have defined a reconciliation rule for each document. You now just need to launch the reconciliation process.

1. Click **Apply** to launch the reconciliation operation.
2. Validate the check out window that appears.
   This window lets you check out the main board part, the Skateboard and the Board products.
3. Once the reconciliation is complete, the message "Reconciliation successfully executed" is issued by the application. Click **OK** to close this information window.

4. Close the **Reconcile Window.**
   In your CATIA session, you can observe the new structure and geometry of the assembly. The Brake part has been added, the board elongated. The wheels remain unchanged.



The reconciliation process is over. Let's now complete the scenario by saving and checking in this assembly in SmarTeam.

Saving and Checking In All the Documents in SmarTeam

Once the data is reconciled, the last step of the scenario consists of saving and checking in the modified skateboard in SmarTeam.

1. Select the skateboard product in CATIA.
2. Select **SmarTeam > Save**.
   If the **Batch mode save** option is on, no profile card appears. Otherwise, complete the Brake profile card as you want.
3. Select the skateboard product.
4. Select **SmarTeam > Life Cycle > Check In**.
5. Click **OK** to confirm the operation..
   The skateboard is stored in SmarTeam and closed in CATIA.

You have now finished the Getting Started scenario. If you wish to take a closer look at the product, you should move on to the User Tasks section.

User Tasks

The tasks documented in this section explain the different possible ways of reconciling documents.

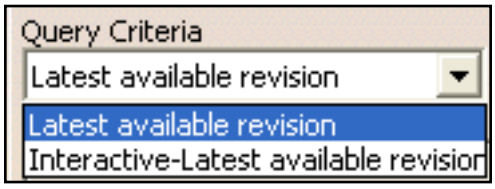
Identifying SmarTeam Documents
Defining Reconciliation Rules
Using Reconciliation Tools
Automating Reconcilications Using the Automatic Preselection Command
Automating Reconcilications Using the CATStiReconcileBatch Batch Tool
Generating a Reconciliation Report

Identifying SmarTeam Documents

The first step of the reconciliation transaction consists in opening in CATIA the source documents received by an OEM or supplier and in launching the Reconcilator. The second step consists in identifying the corresponding target documents stored in SmarTeam thru query criteria. Two types of customizable queries are available for end users:

- **Query by Latest Revision**
- **Interactive-Latest Available Revision**.

The identification process is also called "mapping". The list of available queries are displayed inside the **Query Criteria** list.



Note: You need to select an object form the CATIA view tab in order to display the list of available query criteria.

This section discusses the different methods for performing queries.

Performing a Query by Latest Available Revision
Performing an Interactive Query
Identifying the Documents Globally
Undoing Document Mapping
Tracking Documents With New Identifiers

Using SmarTeam databases

If you are using SmarTeam databases other than Version 5 Release 16, administrators must have first customized your environment prior to performing queries. For more information, see Customizing Queries and Customizing Query Results.

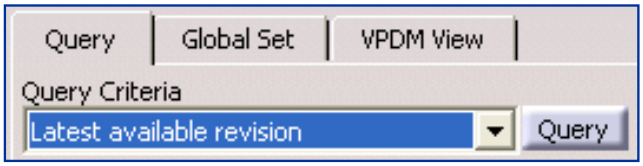
Performing a Query by Latest Available Revision

This task shows you how you to perform a non-interactive query. Non-interactive queries are done using the **Latest available revision** option. This option filters out the possible different versions of a document located in SmarTeam to display the latest revisions only.

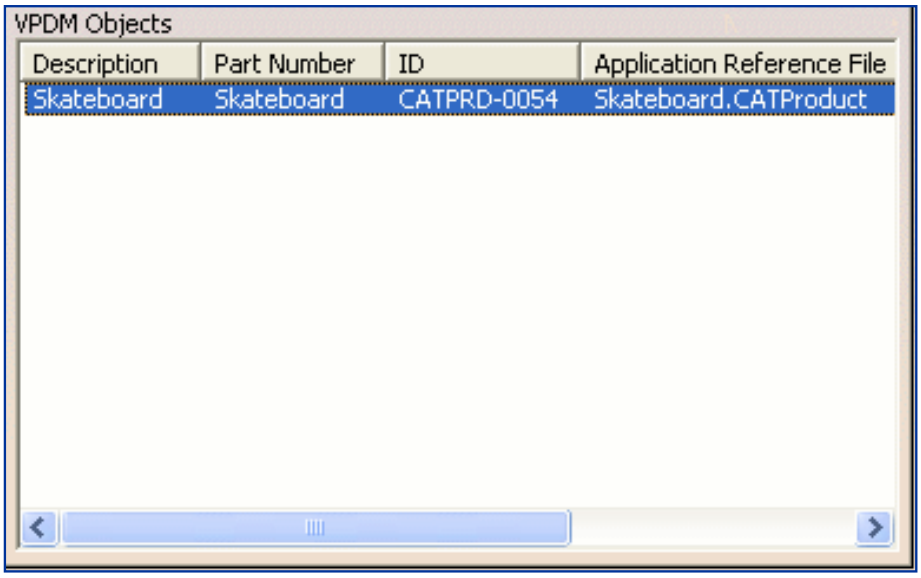
Note that you can customize queries using the **Integration Tool Setup** utility. For more information, see Customizing Queries and Customizing Query Results.

In CATIA, open a product containing at least one sub-product to reconcile and display the Reconcile Window.

1. In the CATIA View, select the document you wish to map onto a SmarTeam object.
2. From the **Reconcile Window**, in the **Query** tab from the drop-down list for query criteria, set **Latest Available Revision** if not already done.



3. Click **Query**.
   If the document exists in SmarTeam, the application displays its latest revision in the **Objects** area. In addition to this type of information, this area may also display other helpful information. The number of information displayed depends on the way the query operation has been customized. For more information, see Customizing Query Results.



In **CATIA View**, the symbol indicates that mapping has been done between the CATIA and the SmarTeam object, but a reconciliation rule is not set yet.
If no document is found, the application displays **No Object Found**.

Query Contextual Command

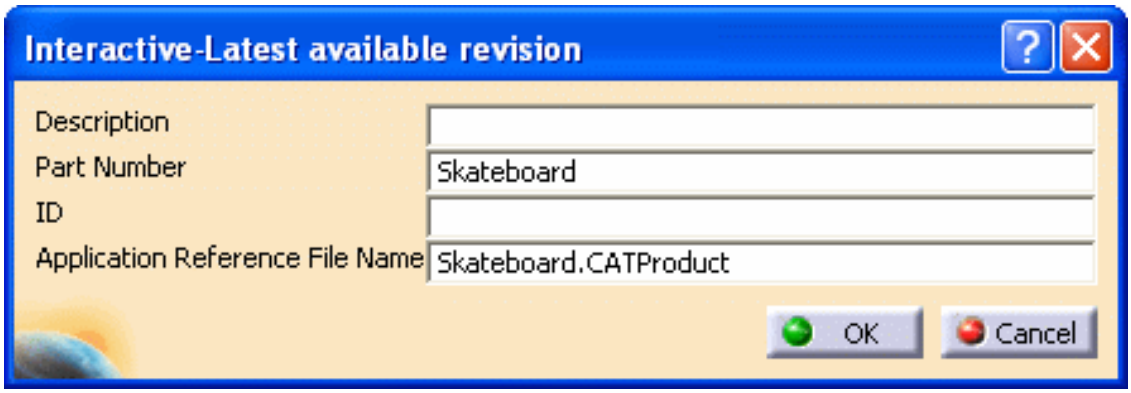
Searching for SmarTeam objects can be done using the **Query** contextual command. The query type that will be executed - **Interactive-Latest Available Revision** or **Latest Available Revision** - is the query selected in the **Query Criteria** field.

Performing an Interactive Query

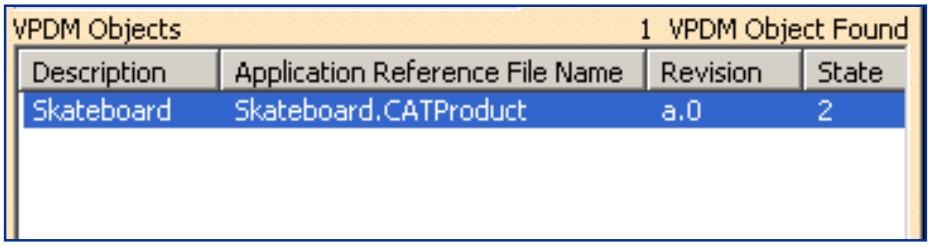
This task shows you how you to perform an interactive query. Interactive queries are search for objects in SmarTeam using the **latest available revisions** criterion and additional criteria you can enter in a **Query** dialog box. These additional criteria can be customized using the **Integration Tools Setup** utility. For more information, see Customizing Queries and Customizing Query Results.

In CATIA, open a product containing several sub-products to reconcile and display the Reconcile Window.

1. From the **Reconcile Window**, in the **Query** tab set **Interactive-Latest available revision** from the drop down list.
2. Click **Query**.
   The **Interactive-Latest available revision** dialog box is displayed. By default, the **Part Number** field is pre-set by SmarTeam.



3. Enter a document ID, a description or a reference file name in the corresponding fields or fill in all fields.
4. Click **OK** to run the query.
   If the application has detected a SmarTeam document which the document can be mapped to, the application displays its latest revision in the **Objects** area.
   In addition to this type of information, this area may also display other helpful information. The number of information displayed depends on the way the query operation has been customized. For more information, see Customizing Query Results.



In **CATIA View**, the symbol indicates that mapping has been done between the CATIA and the SmarTeam object, but a reconciliation rule is not set yet.

If no document is found, the application displays **No Object Found**.

Optimizing Interactive Queries

From V5R18 onwards, the application memorizes the values you entered in the **Query** dialog box for searching for a given document. In concrete terms, each time you will relaunch an interactive query for that document, you will do not need to fill in the fields. The application will display them as default values.

Query Contextual Command

Searching for SmarTeam objects can be done using the **Query** contextual command. The query type that will be executed - **Interactive-Latest Available Revision** or **Latest Available Revision** - is the query selected in the **Query Criteria** field.

Identifying the Documents Globally

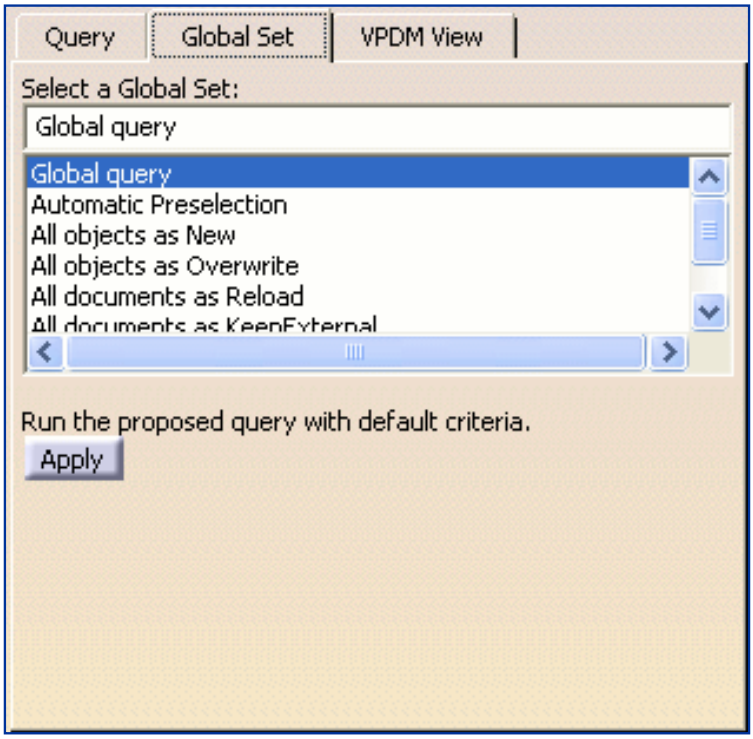
In case you need to reconcile a large number of documents sent by your OEM or supplier, you can perform a global query to accelerate the first step of the reconciliation operation which consists of checking if all the objects to reconcile already exist in SmarTeam.

Once the global identification is done, you need to define the rules you wish to apply to the source documents loaded in CATIA with respect to the targeted documents located in SmarTeam. To know how you can perform these operations in a productive way, see Automating the Valuation of Reconciliation Rules.

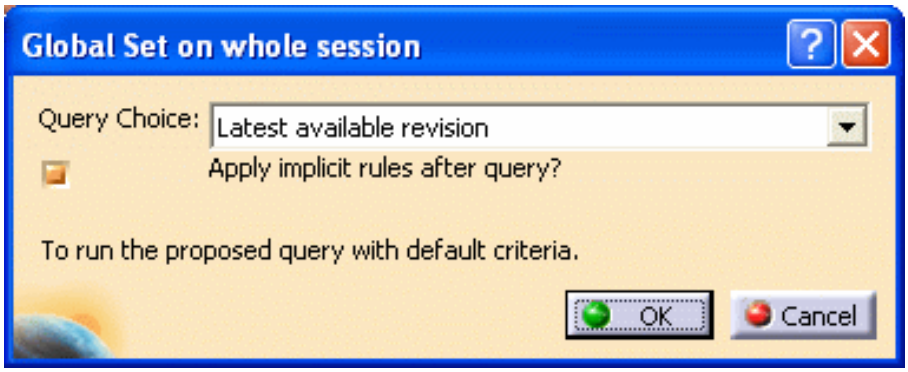
This task shows you how you to perform a global query using the **Global Query** capability.

In CATIA, open a product containing several sub-products to reconcile and display the Reconcile Window.

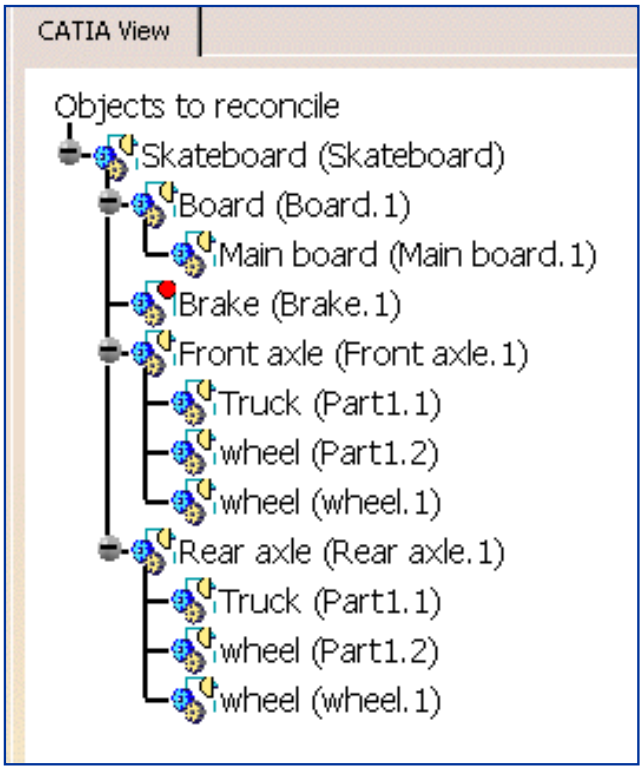
1. In the **Reconcile Window**, click the **Global Set** tab.
2. Select **Global query** from the list.
   Global Query performs a query for all documents in only one operation.



3. Click **Apply**.
   The **Global Set** dialog box is displayed.



4. Click **OK** to confirm your decision.
   A progress bar is displayed. You can use the **Cancel** button to stop the query at any time.
   Once the operation has been performed, the documents making up the assembly in your CATIA session are mapped, except for new parts.
   The symbol indicates that mappings have been done between the CATIA and the SmarTeam objects, but reconciliation rules are not set yet. If your assembly contains new parts, because these are not present in the SmarTeam vault the symbol remains on their icons.



Restricting the Global Set Options to Some Objects

You can now apply the following commands to sub-trees selected in the **CATIA View** area: you just need to select the node of the branches on interest prior to using the command:

- **Global query**
- **All objects as New**
- **All objects as Overwrite**

- **All documents as Reload**

Note that you cannot apply the capability to multi-selected nodes.

Undoing Document Mapping

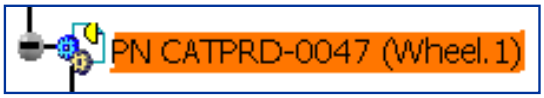
This task shows you how you to undo the mapping of documents resulting from query operations. The application lets you undo mapping for one document in particular or for all the documents of the **Objects to reconcile** tree.

In CATIA, open a product containing several sub-products to reconcile and perform a query as explained in Identifying SmarTeam Documents.

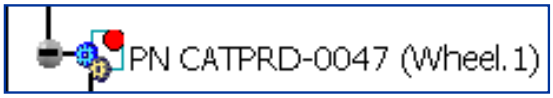
Undoing One Mapping

The **Reset** contextual command lets you reset one object mapping.

1. Select a document which has been mapped to a SmarTeam object.



2. Right-click and select **Reset**.
   The document is no longer mapped as indicated by the ● symbol.



Undoing All Mappings

To undo the mapping of several documents, we recommend you use the **Reset all** command. This undoes several documents mappings but also resets the reconciliation rules which have been defined.

Reset all is available from the **Global Set** tab. For more information, see Resetting All Rules.

Defining Reconciliation Rules

This section discusses the different reconciliation rules you can define once your documents have been mapped onto SmarTeam objects.

Defining the Reconciliation Rule You Need
Automating the Valuation of Reconciliation Rules
Resetting Reconciliation Rules

Defining the Reconciliation Rule You Need

Once you have mapped the documents to reconcile, you need to define how you want to reconcile them. Defining this consists of setting reconciliation rules.
A reconciliation rule is a set of information required to reconcile the documents loaded in the CATIA session with the ones stored in the SmarTeam vault.

Five reconciliation rules can be defined:

- **Overwrite**
- **Reload**
- **New**
- **New From**
- **Keep As External**

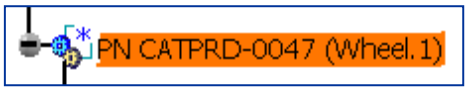
This task shows you how to define a reconciliation rule for each document loaded in your CATIA session. It assumes that you have already performed a query.

The steps described must be followed if your session contains a small number of documents. Whenever you will need to reconcile a large number of documents, we recommend you automate the valuation of reconciliation rules.

1. From the **Objects to reconcile** tree, select the document which has already been mapped to a SmarTeam object.
2. Right-click and select any of the following rules:
   - New
   - New From
   - Overwrite
   - Reload
   - Keep as external

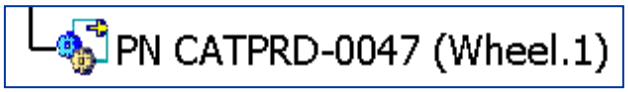
New

Right-click and select **New**. As an alternative, you can click .
When applying the **New** rule, the reference object is considered as a new object in SmarTeam. Once done, a new icon indicates the rule set for this document.



New From

Right-click and select **New From**. As an alternative, you can click .
When applying the **New From** rule, the reference object is considered as a new object in SmarTeam. Once done, a new icon indicates the rule set for this document.



The **New From** rule is used when, for example, you are reconciling a structure exposed document.

Because it is not possible to set the **Overwrite** rule to CATProduct documents saved in structure exposed mode, you can use the **New From** rule to keep the history of the different versions of a product. When saved to SmarTeam, a document with the **New From** rule applied results in a new document created along with a link between the new document and the SmarTeam document it is

mapped to. **New From** is available only if the following are all true:

- The CATIA document is mapped to a SmarTeam document
- The two documents have the same type (CATProduct, CATPart, CATDrawing …)
- The two documents don't have the same CATIA Internal Identifier (UUID)

Overwrite

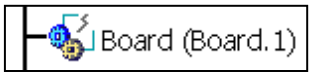
Right-click and select **Overwrite**. As an alternative, you can click .
When applying the **Overwrite** rule, the object loaded in the CATIA session overwrites the one stored in SmarTeam. Once done, a new icon indicates the rule set for this document.

Reload

Right-click and select **Reload**. As an alternative, you can click .
When applying the **Reload** rule, the SmarTeam object is kept.
Once done, a new icon indicates the rule set for this document.

Keep as External

Right-click and select **Keep As External.** As an alternative, you can click .
The **Keep As External** rule is available only for documents that are not present. This rule enables you to ignore broken links in the reconciliation process.
When done, a new icon indicates the rule set for this document.



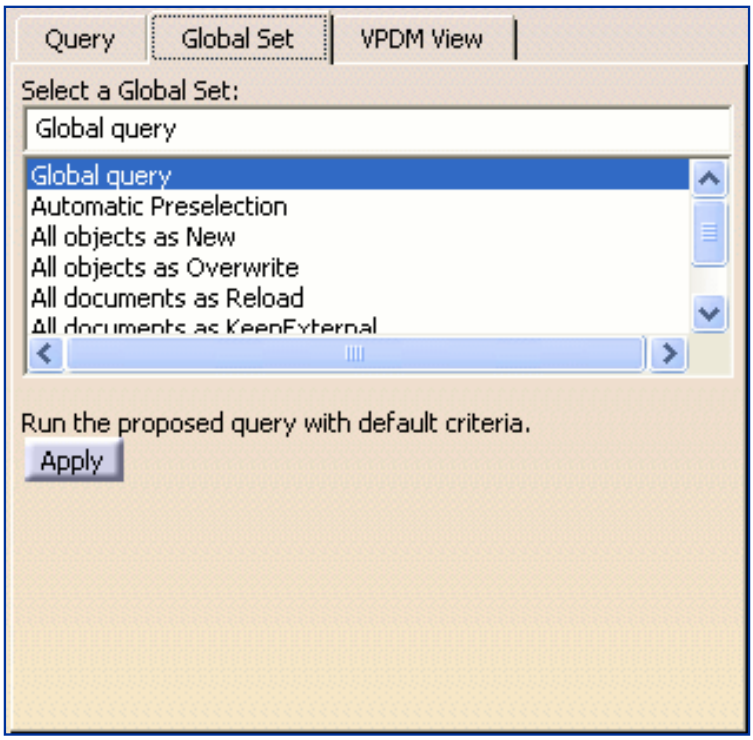
For more information, see Managing Broken Links and Internal Intellectual Property (I.P.) Protection - Integrating Subsets of Data.

Automating the Valuation of Reconciliation Rules

In case you need to reconcile a large number of documents sent by your OEM or supplier, you can automate reconciliation tasks by setting rules which apply to all the objects to reconcile. This task shows you how to do so.

This task assumes that you have already performed a query operation for mapping documents. For productivity reasons, prior to performing this kind of operation which involves a certain large number of documents, we recommend you perform a global query as explained in Identifying the Documents Globally.

1. In the **Reconcile Window**, click the **Global Set** tab.
   The different options available from this tab let you apply global rules among predefined list of automatic valuation strategy.

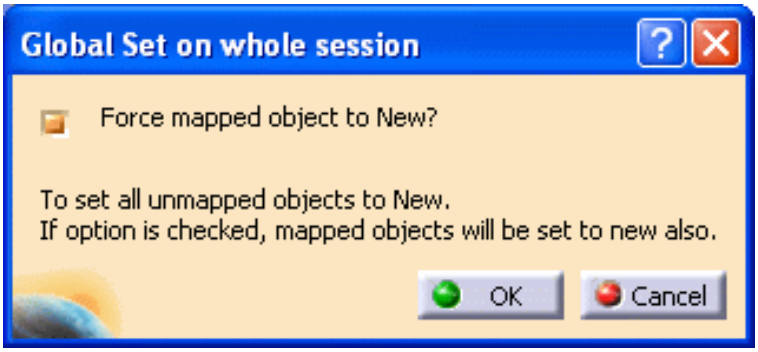


2. Select any of the following rules:
   - All objects as New
   - All objects as Overwrite
   - All documents as Reload
   - All objects as New From

All objects as New

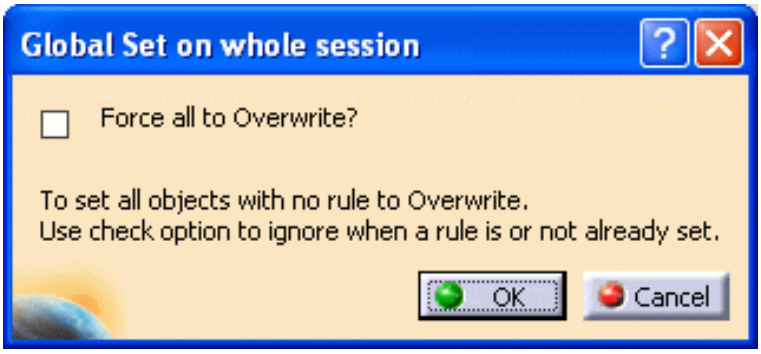
All objects as New sets all objects to **New**.
When you select this option and click the **Apply** button, the dialog box that

appears, displays the **Force mapped object to New** option. If you select it, all the objects, even those that are already mapped, will be set to **New**.



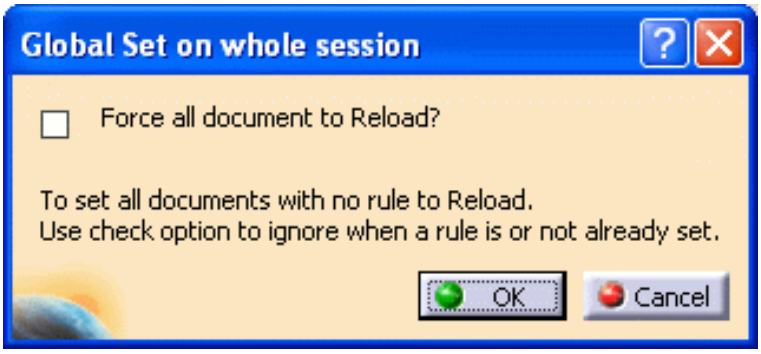
All objects as Overwrite

All objects as Overwrite sets all mapped objects with no rule to **Overwrite**. When you select this option and click the **Apply** button, the dialog box that appears, displays the **Force all to Overwrite** option. If you select it, the rules that were previously applied to these objects will be overwritten.



All objects as Reload

All objects as Reload sets all mapped documents to **Reload**.
When you select this option and click the **Apply** button, the dialog box that appears, displays the **Force all documents to Reload** option.

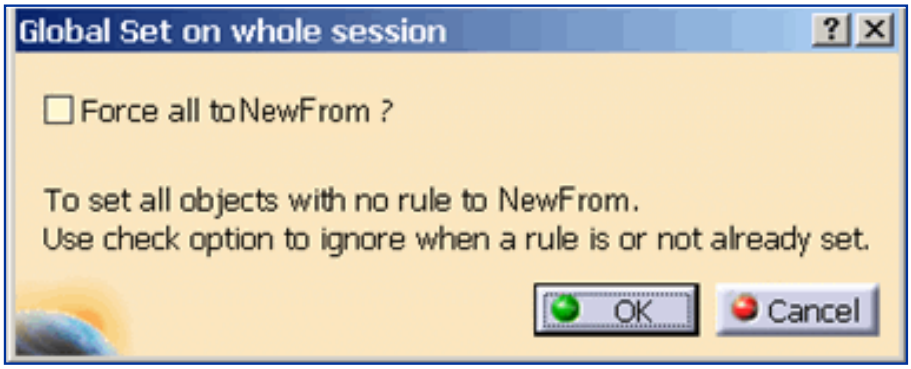


If you select it, all existing rules will be overwritten and replaced with **Reload**.

All objects as New From

All objects as New From sets all objects to **New From** if the New From conditions are satisified (see Defining the Reconciliation Rule You Need for more information). When you select this option and click the **Apply** button, the

dialog box that appears, displays the **Force mapped object to New** option. If you select it, all the objects, even those that are already mapped, will be set to **New From**.



Resetting Reconciliation Rules

This task shows you how you to reset reconciliation rules. The application lets you reset the rule defined for one document in particular or all the rules you have defined for all the documents of the **Objects to reconcile** tree.

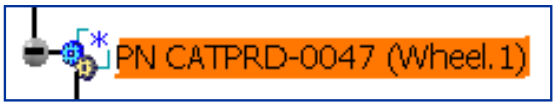
When resetting the rules for all documents, you can choose between resetting only the rules or the rules and the mapping.

In CATIA, open a product containing several sub-products to reconcile and set three reconciliation rules.

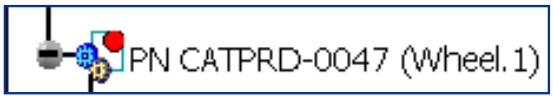
Resetting One Rule

The **Reset** contextual command lets you reset the rule defined for one document.

1. Select a document for which a rule has been defined.
   In our example, the **New** rule has been defined.

2. Right-click and select **Reset**.
   The rule has been reset and the document is no longer mapped as indicated by the ● symbol.

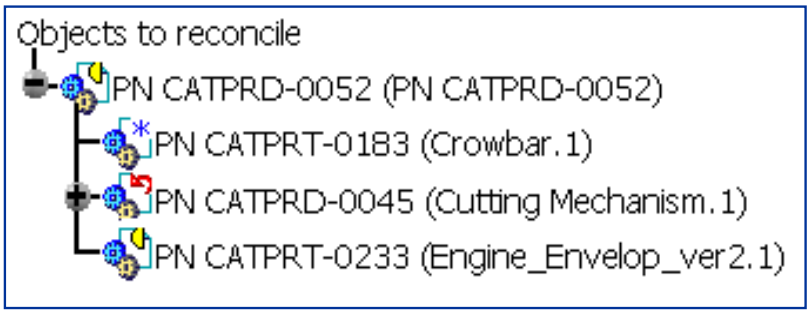
   

Resetting All Rules

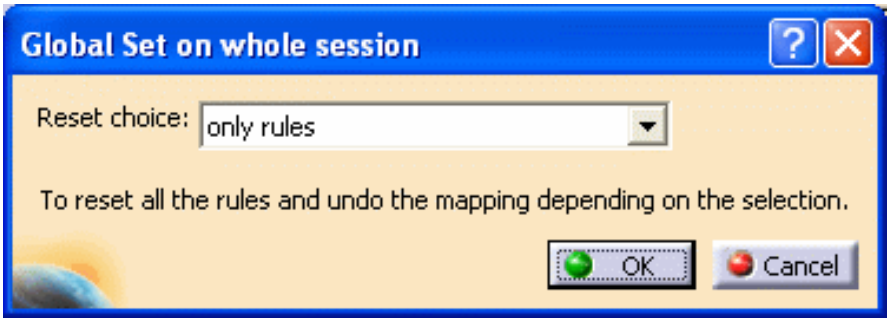
The **Reset all** command lets you choose between:

- resetting all the reconciliation rules which have been defined.
- resetting all the reconciliation rules which have been defined and undoing all documents mappings.

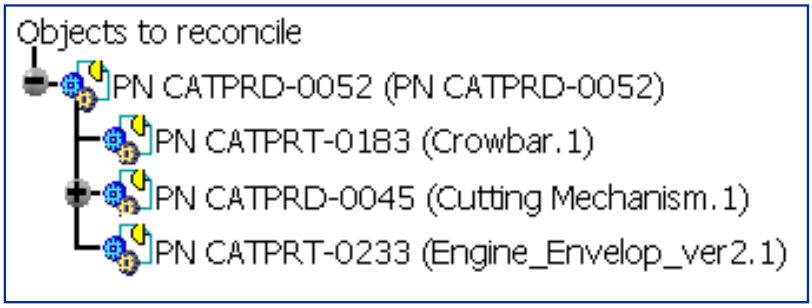
1. Click the **Global set** tab.
   In our example, two rules have been defined: one for PN CATPRT-0183 (Crowbar.1) and one for PN CATPRD-0045 (Cutting Mechanism.1).

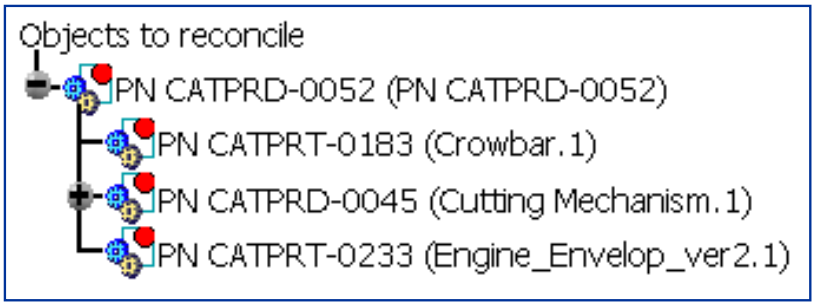
2. Select **Reset all** from the drop-down list.
3. Click **Apply.**
   The **Global Set** dialog box is displayed. The **Reset choice** drop-down list provides two reset options:
   - **only rules** (default option): resets reconciliation rules only
   - **rules and mapping**



4. Keep **only rules**, and click **OK** to confirm.
   Both rules are removed, the mapping is maintained as indicated by the symbol.



   Setting **rules and mapping** would let you obtain this result:
   The documents are no longer mapped as indicated by the symbol and the rules have been reset.



See also Undoing Document Mapping.

Using Reconciliation Tools

The application provides different tools to help you reconcile documents.

Managing Broken Links
Using the Locate Tool
Using the Sort Tool
Using the Viewers
Showing Profile Cards

Managing Broken Links

Sometimes, for different possible reasons, suppliers send incomplete design. In such cases, the **Reconcile Window** displays broken links for the product loaded in your CATIA session.

ENOVIA SmarTeam - CATIA Supply Chain Engineering Exchange enables you to integrate incomplete design received from suppliers. Because a specific rule lets you manage broken links, it is then possible for suppliers or manufacturers (OEMs) to choose not to expose all documents. This therefore ensures Intellectual Property protection.

This rule is **Keep as External** . It is available for documents that are part of the design or of the assembly but that are missing while reconciling. Available only for documents that are not present, it enables you to integrate incomplete design received from a supplier.

For an example of when you can use this rule see Exchanging Modified Documents Only and Internal Intellectual Property (I.P.) Protection - Integrating Subsets of Data in the Methodology section of this guide.

Using the Locate Tool

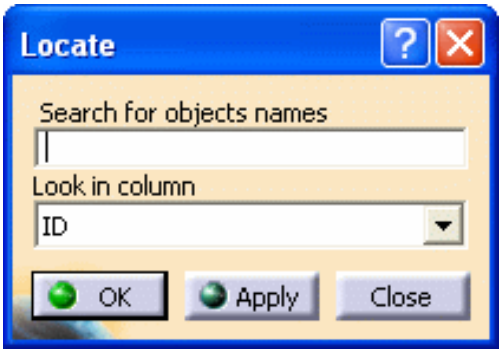
This task shows you how to search for objects to reconcile using their attributes values in the **Objects to reconcile** tree and in the List View according to the attribute selected in the Locate dialog box.

The Locate tool enables you to work on specific objects for example objects having a specific type (CATProduct) or a specific naming rule.

You can use this functionality at any step of the reconciliation definition to perform a search.

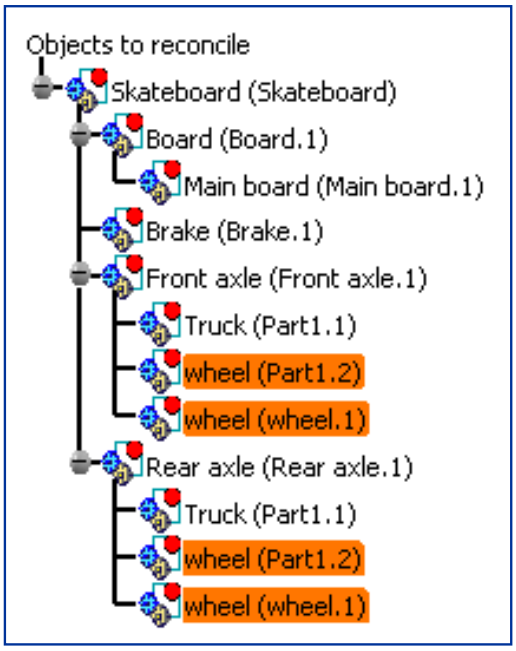
In CATIA, open any product to reconcile and display the Reconcile Window.

1. Click **Locate** or right-click an item in either the **Objects to reconcile** tree or in the **List View** and select **Locate**.
   The **Locate** dialog box is displayed.



2. The different search criteria available in the **Look in column** scrolling list are:
   - ID
   - Rule
   - Type
   - Document
   - Environment

   For example, select **ID**.
3. Enter ***Wheel*** in the **Search for objects names** field.
4. Click **Apply**.
   The documents containing the "Axle" string are highlighted both in the **CATIA view** and in the **List View**.



List View | 3D Viewer | 2D Viewer

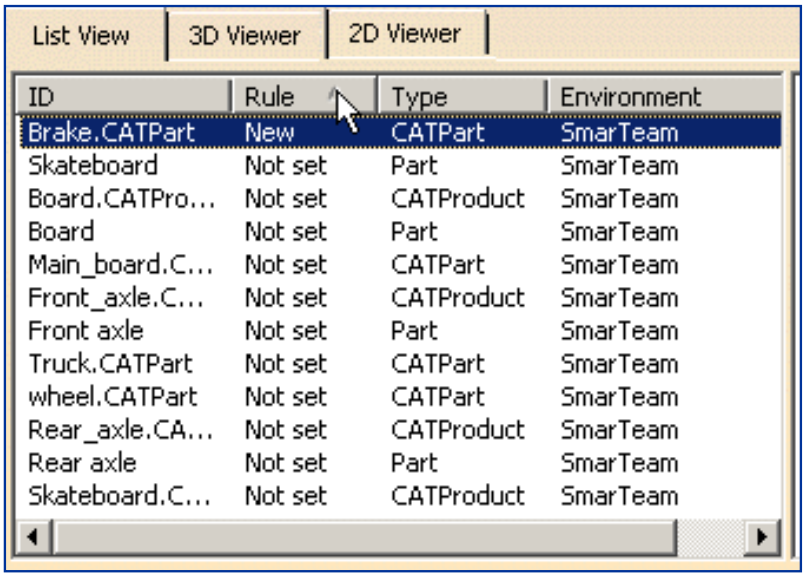
ID	Rule	Type	Environment
Skateboard	Not set	Instance	SmarTeam
Board.1	Not set	Instance	SmarTeam
Main board.1	Not set	Instance	SmarTeam
Brake.1	Not set	Instance	SmarTeam
Front axle.1	Not set	Instance	SmarTeam
Part1.1	Not set	Instance	SmarTeam
Part1.2	Not set	Instance	SmarTeam
wheel.1	Not set	Instance	SmarTeam
Rear axle.1	Not set	Instance	SmarTeam
Part1.1	Not set	Instance	SmarTeam
Part1.2	Not set	Instance	SmarTeam
wheel.1	Not set	Instance	SmarTeam

5. Click **OK** when done.

Using the Sort Tool

This task shows you how to sort objects to reconcile in the **List View**.

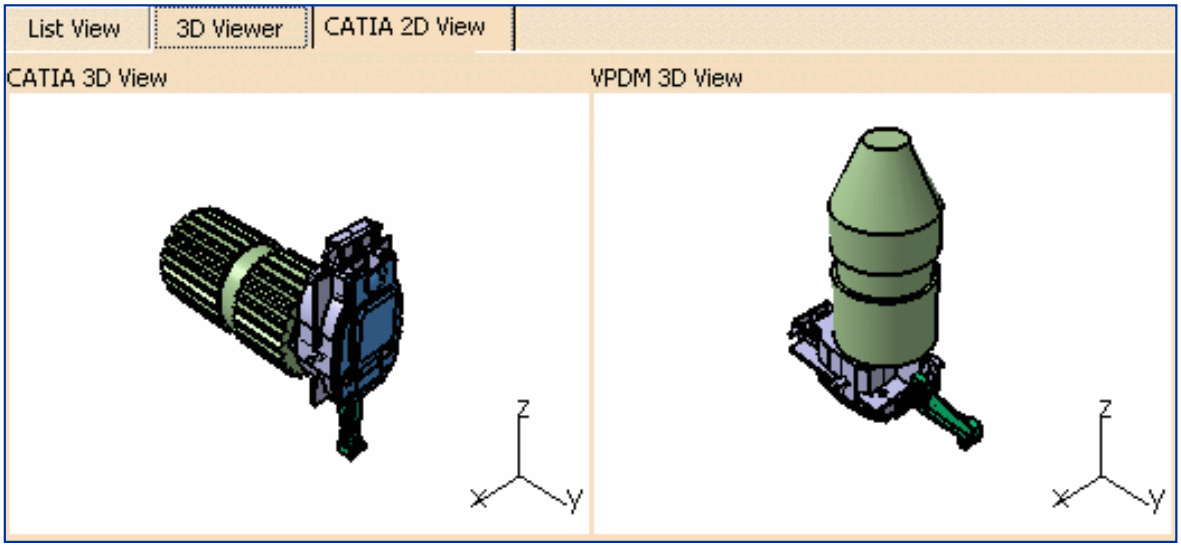
1. In CATIA, open any product to reconcile.
2. Display the Reconcile Window.
3. Select the **Part&Document** view and click the **List View** tab.
4. In the **CATIA View**, click any document you wish to be considered as new.
5. Click **New Object** .
   It will be considered as a new document when saved in the database.
6. In the **List View** field, click the top of the **Rule** column.
   The **Rule** column is sorted accordingly. The arrow indicates whether the column is sorted by ascending order or descending order.



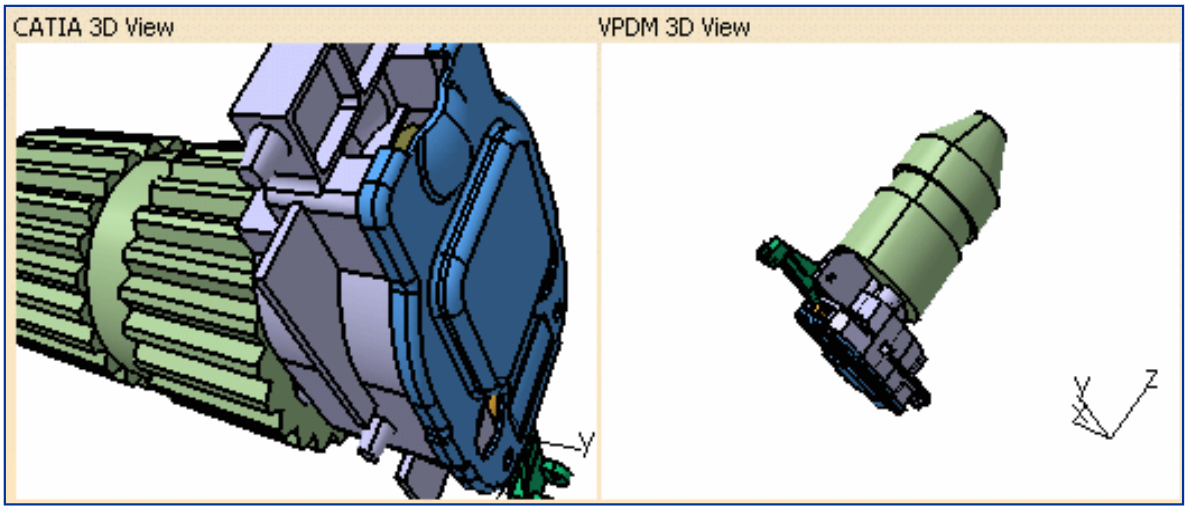
Using the Viewers

This task shows you how to use the viewers to visually compare the object loaded in the CATIA session and the one stored in SmarTeam.

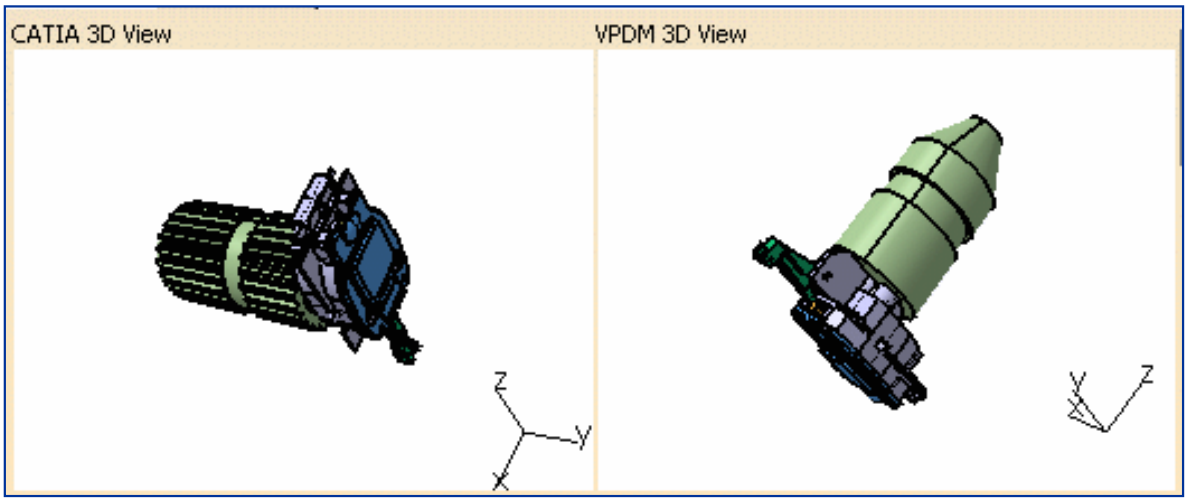
1. In CATIA, open any product to reconcile.
2. Display the Reconcile Window.
3. Click the **3D Viewer** tab.
   The CATIA 3D and the PDM 3D Viewer are displayed.
   The 3D visualization is available:
   - in the PDM view for CATPart documents and CATIA V4 models
   - in the CATIA view for CATProducts, CATParts and CATIA V4 models.



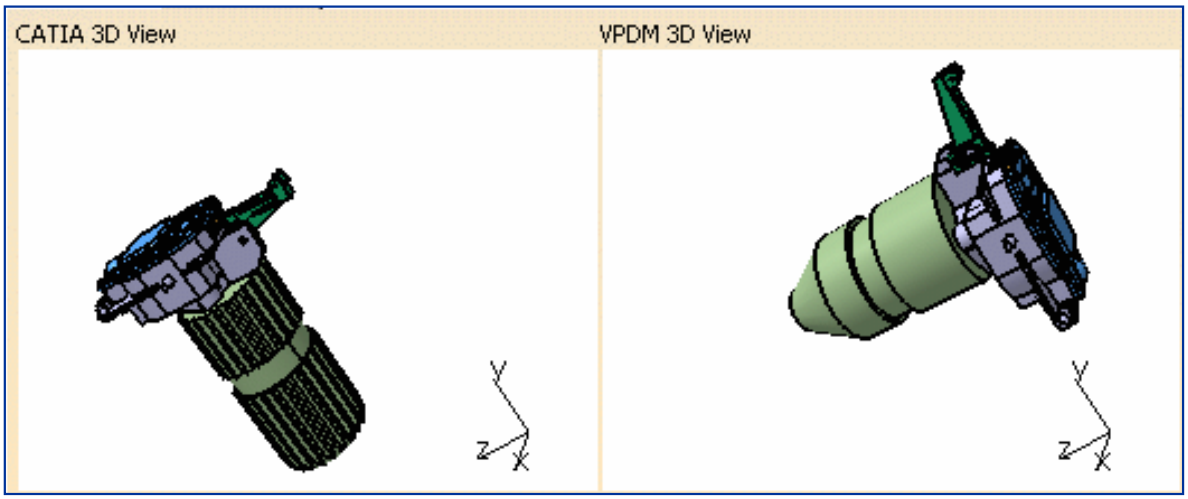
4. In both viewers you can zoom out or rotate the geometry as you usually do in CATIA.



5. Click **Fit All In** .
   Fit All In zooms the current view out so that all the document contents fit into the space available in the geometry area.



6. Select **Dependent** to be able to rotate and zoom both views simultaneously.
7. For example, rotate out any view.
   Both views are rotated simultaneously, as the **Dependent** option is on.



Showing Profile Cards

This task shows you how to access SmarTeam profile cards for the documents of your choice.

In CATIA, open any product to reconcile and display the Reconcile Window.

1. In **CATIA View** right-click the object which profile card you want to see.
2. Select **Show Profile Card** in the contextual menu.
   The profile card corresponding to the document is displayed.

- **Show Profile Card** is available only if the document has been mapped onto a SmarTeam object.
- You cannot use this capability after multi-selecting objects.

Automating Reconciliations Using the CATPDMReconcileSTBatch Tool

In this page, you will find information about how to automate the reconciliation process. The method described here is particularly recommended for large assemblies. It allows you to gain a considerable amount of time.

Two scenarios are described:

- Running CATPDMReconcileSTBatch
- Reusing the Same Reconciliation Batch Process

You can launch a reconciliation process via **CATPDMReconcileSTBatch.** The entire process will be automatic. It uses a particular syntax. The basic syntax must include:

- List of file names of the root documents (giving a list a file names is equivalent to launch interactively the reconciliation command from **File > Desk**).
- Rules to be applied on each document.
- SmarTeam user name and password for connection.

The batch process uses as input the root of the assembly on which the reconciliation will be done.

Running CATPDMReconcileSTBatch

As a reminder, when running batches, you must always use the `catstart` command to set the global environment (for more details, see the *Infrastructure Guide, Basic Tasks, Starting a Session on Windows*).

e.g. in a MS-DOS window:

1. Change to the default folder in which the product is installed. The default folder is:
   `C:\Program Files\Dassault Systemes\B17\intel_a\code\bin`
2. Set the global environment.
   `catstart -env CATIAR17 -direnv D:\CATIAEnv`
3. Start the reconcile batch
   `CATPDMReconcileSTBatch -user joe -file "E:\BatchReconile\RootProduct.CATProduct" -simul Rule`

Syntax

The syntax to be used is the following:

```
CATPDMReconcileSTBatch -user xxx [-pwd xxx] -file filename [-simul
(Execute|Rule|NoRule)] [-reload docname] [-keepExternal docname] [-newFrom object]
[-inxml filename] [-completeWithDefaultMapping] [-epexml fileName]
[-queryName queryname][-autoPreselect] [-noCheckout] [-xml filename] [-checkDoc numberOfDocs]
[-outputFileList filename][-noPartUpdate] [-noDraftingUpdate]
```

Note: "filename" stands for the document path and "docname" for the document name.

As described in the following table, all parameters are not required. The parameters can be written in any order. In case of missing, wrong of conflicting parameters, an error message is contained in the trace file (see Diagnostics).

Parameter	Description	Mandatory/Optional

-**help**	Help	optional
-**user** xxx	User for SmarTeam connection.	mandatory
-**pwd** `xxx`	User password for SmarTeam connection.	Optional if no password is required for the connection; mandatory otherwise.
-**file** `filename`	Name of the CATIA file to be loaded and reconciled. Several file statements are possible (-**file** c:\supplier\Part1.CATPart -**file** c:\supplier\Part2.CATPart).However only one root product could be reconciled (see Restrictions)	mandatory
-**simul** `Execute|Rule|NoRule`	Enable not to execute Save or Apply in SmarTeam database. `Execute` means that reconciliation is applied, but the save is not done. Performs automatic CO/NewRelease if overwrite rule is set. `Rule` means that the mapping and rules are set but neither the reconciliation is applied nor the save is done `NoRule` means that only reconciliation session creation is done. This is equivalent to run the interactive reconcile command without doing anything else. If the **-simul** option is not set, the reconciliation will be applied and if the reconciliation is successful, a save will be done in the SmarTeam database. If the reconciliation is not successful, data are not saved in SmarTeam but checked-out documents are kept ; a report explaining the failure is also generated (see Diagnostics).	optional

-**reload** `docname`	Enable to set rule to Reload instead of Overwrite for an object with a specified name. Several reload statements are possible (**-reload** Part1.CATPart **-reload** Part2.CATPart)	optional
-**keepExternal** `docname`	Enable to set rule to Keep as External reference for an unloaded document. Several keepExternal statements are possible (**-keepExternal** Part1.CATPart **-keepExternal** Part2.CATPart)	optional
-**newFrom** `object`	Enable to declare that one document will be saved as a new document in the database and a link will be created between this new document and the one which has been identified (by **object**).	optional
-**autoPreselect**	Execute Automatic Preselection on the assembly to be reconciled. Not to be used with any of the following options: *reload and keepExternal.*	optional
- **queryName** `queryname`	Name of the criterion to be searched (Default is Query By Latest Available Revision). This is required when we have multiple queries and want to execute the non default query.	optional The default query is -**Latest Available Revision**-
-epexml `filename`	Enables to generate an EpeXML file that will be used with option -**inxml**	optional
-inxml `filename`	Enables to specify an input EpeXML file to restart the batch from a previous reconcilation session; this option should be used with -completeWithDefaultMapping if the XML file does not specify the mapping for all objects. (Format same as epexml file generated)	optional
-**xml** `filename`	Stream Reconciliation session in an XML file for reporting purpose.	optional
-**completeWithDefaultMapping**	In some cases (more than one query result), the mapping is not automatically done by the reconcile batch. Setting this parameter enable to map the CATIA document on the first query result if no other mapping is performed.	optional

-**noCheckOut**	Does not Checkout/New Release a document in case of Overwrite rule on a document. This option has a real added value when **-simul Execute** option is set with some overwrite rules. When running the batch without **-simul** option, overwritten documents should be checked-out, otherwise the save will fail. The documents can be manually checked-out before running the reconcile batch or they can be automatically checked-out by the reconcile batch. In this case the **-noCheckOut** option should not be set otherwise the save will fail.	optional
-checkDoc `number`	Provide number of expected documents in the Reconcile session. The number of documents loaded in the reconcile session should be the same than the number provided through the -**checkDoc** parameter otherwise the reconcile batch stops and fails.	optional
-outputFileList `filename`	Enables to define the path of an output file containing the CATIA file names that will be reconciled. The Output File generated is text file (.txt)	optional
-noPartUpdate	Enables the prevention of updates on CATPart and CATProduct before saving	optional
-noDraftingUpdate	Enables the prevention of updates on CATDrawing before saving	optional

Building the reconciliation session from information given in an input XML file enables the user to explicitly indicate which rule and mapping will be applied to each object to be reconciled.

The basic scenario is as follows:

1. First the batch user runs reconciliation in simulation mode (simulation mode is specified using the option `-simul` on the batch command line) and using the command line parameter `-epexml` so that the batch will generate an XML file (called EpeXML file) of the reconciliation session state. This XML file will be

used as a pre-valuated template in the ensuing steps.

2. The user will eventually have to complete the generated EpeXML file to resolve those ambiguities that were not resolved by the simulation (e.g. if the query returned several results, the mapping must be completed by hand). The user can also modify the EpeXML file to explicitly indicate the rule and mapping to be applied to a given object.
3. Then using the completed EpeXML file, the user reruns the reconciliation batch with the command line parameter `-inxml`.
4. The batch can be rerun multiple times using the same EpeXML file with `-inxml` command line parameter.

The reconcile batch sets the rules according to the following priorities:

1. If the options `- reload` , `-keepExternal`, `-autoPreselect`, are not set in the command line, the overwrite rule is applied on each mapped object, the new rule is applied on each object having no query result.
2. The `-reload`, `-keepExternal` options overwrite the previous rules on the specified document.
3. The `-autoPreselect` option sets the rules according to the specifications set in the Automatic Preselection. In such a case `-reload`, `-keepExternal` options are forbidden.

Rules can also be set through the epexml file:

Rule Name	Description
PUBEXP_OVERWRITEINPDM	***Overwrite*** in SmarTeam repository
PUBEXP_RELOADFRMPDM	***Reload*** from SmarTeam repository
PUBEXP_NEWOBJECT	***New*** Object in SmarTeam repository
PUBEXP_EXTERNALREFERENCE	***Keep External***

Diagnostics

A summary of actions and a global status of the reconcile batch execution is written in the standard output file (the standard output file is controlled through the CNEXTOUTPUT environment variable). Possible exit

status values are:

- 0: successful completion
- 4: failure due to one or more of the standalone documents
  This diagnostic could be returned when the reconciliation is ran on several standalone documents (`-file` Part1.CATPart `-file` Part2.CATPart) and when the reconciliation is failing on one document but successful on other documents.
- 8: Failure due to any of the following:
  - Query failed
  - Load of SmarTeam data failed
  - Save of loaded data failed
- 202: Connection failed

Reusing the Same Reconciliation Batch Process

To re-run the reconciliation using the same mapping and rules, proceed as follows:

1. Run a reconciliation in simulation mode: the simulation mode is specified using `-simul` on the batch command line.
2. Ask the batch to dump the reconcile session using the `-epexml` command line parameter.
   This generates a pre-valuated template of the EpeXML fil

   You may need to complete the generated EpeXML file when some ambiguities were not resolved by the simulation (for example when the query returned several results, the mapping must be completed by hand).
3. Then use the completed EpeXML file to re-run the reconciliator batch with the `-inxml` command line parameter.
4. Re-run the script several times using the same EpeXML file with the `-inxml` command line parameter.
   This EpeXML file will thus be generated by a reconciliation simulation. It is an xml file located in the directory specified thru the `-epexml` parameter.

Saving and Restoring a Reconciliation Session

When using the interactive Reconciliator application, use the following options to save and later reload the contents of a reconciliation session, including the information for setting storage mode, mapping, and the reconciliation rule to be applied for the selected object.

Save reconciliation session - saves the content of the reconciliation session. The information is captured in an XML that is similar to, and compliant with, the file generated by the Reconciliator batch utility.

Restore reconciliation session - restores the reconciliation information from the saved XML file, and applies the following for the CATIA object that will be reconciled:

- VPDM system selected
- storage mode
- mapping with a VPDM object
- Reconciliation rule for the selected object

You may save multiple XML files representing different reconciliation sessions. In this way, you may easily restore an XML that is partially filled or XMLs that represent different assemblies.

Note: Information such as the view selected, the assembly structure filter or the display state is not preserved.

XML File Description

XML files can be generated for two purposes:::

- for Reporting purpose (`-xml` option)
- for Stop/Restart purpose (`-epexml` option).

The table below compares the content of both files:

	XML for Report (-xml)	EpeXML for Stop/Restart (-epexml)
Descriptionn	Light dump of the Reconcile Session: it sums up for each object to reconcile its characteristics (Name, PDM environment, storage mode, reconciliation rule, Identifier) and comparison status**.	All information needed to rebuild the Reconcile Session is dumped. That is for all documents the exposition mode, the mapping and rule to apply. The list of Query result is also diumped.
Usage	To have a report of what will be done in the reconciliation session at execution. The layout of the report could be customized through definition of a xsl document.	To be able to rebuild a reconciliation session several times using same mapping and rules.
Content under document and proxy-document tags	FileName + Path + DocType Rule + PersistencyMode Mapping: the selected PdmObject+its attributes* <Query result not present>	FileName + Path + DocType Rule + PersistencyMode Mapping: the PdmObject+its attributes* List of query result (PdmObjects), the one used for mapping is differentiated using an attribute selected=-yes-.

Content under Part tags	PartName + isRoot Rule + PersistencyMode Mapping: the selected PdmObject+its attributes* < Query result not present > Comparison status**	PartName + isRoot Rule + PersistencyMode Mapping: the PdmObject + its attributes* List of query result, the one used for mapping is differentiated using an attribute selected=-yes-. <Comparison status not present>
Content under AR tags	Name Comparison status**	Name <Comparison status not present>

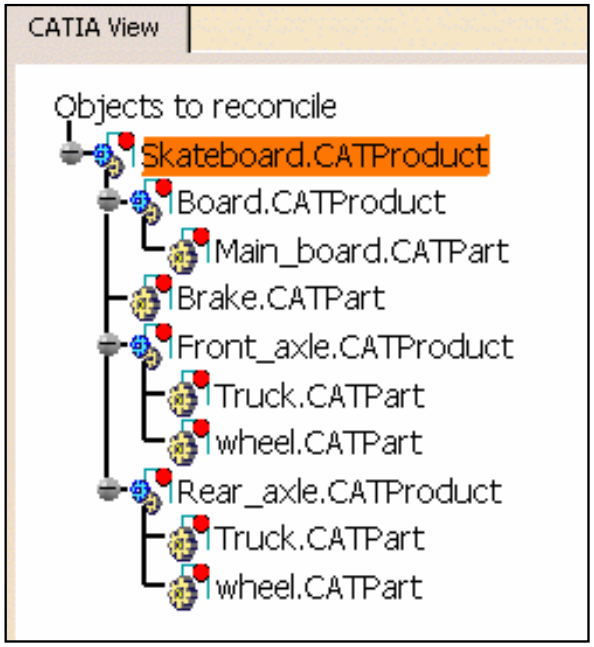
Notes

*The Number of PdmObject Attributes will vary as per the configuration used for query in Integration Tools Setup.

**SmarTeam does not set any comparison status: default value of the status is -New-.

Samples of the Different Versions of the XML File:

The samples provided were generated using the following assembly structure:



Sample of an EPXML File for StopRestart

This file has been generated by the reconcile batch process. It could be used without any modification to re-run the reconcile batch process with the `-inxml` parameter because all documents are mapped and a rule is also set for all objects. In this example it is possible to modify the Rule value.

```
CATPDMReconcileSTBatch -user joe -file E:\Data\Skateboard\supplier\Skateboard.CATProduct
-simul Rule -epexml  e:\Data\Skateboard\epexml.xml
```

```
<?xml version="1.0" encoding="UTF-8" ?>
 <!-- COPYRIGHT DASSAULT SYSTEMES 2005  --> f(clean);
  - <Session Name="Reconcile Session" Env="TeamPDM" Status="None">
  - <Document Name="Skateboard.CATProduct" Type="CATProduct"
  File="E:\Data\Skateboard\supplier\Skateboard.CATProduct" Mode="PUBLICATION_EXPOSED"
  Rule="PUBEXP_OVERWRITEINPDM">
  - <PdmObject selected="true" PdmId="0_764_412b30e3_827" PdmName="688_1187"
  PdmType="CATProduct" PdmProvider="TeamPDM_Provider">
    <PdmObjectAttr name="Description">Skateboard</PdmObjectAttr>
    <PdmObjectAttr name="Part Number">Skateboard</PdmObjectAttr>
    <PdmObjectAttr name="ID">CATPRD-0060</PdmObjectAttr>
    <PdmObjectAttr name="Application Reference File Name">Skateboard.CATProduct</PdmObjectAttr>
    <PdmObjectAttr name="Revision" />
    <PdmObjectAttr name="State">Checked In</PdmObjectAttr>
 </PdmObject>
 </Document>
  - <Document Name="Board.CATProduct" Type="CATProduct"
  File="E:\Data\Skateboard\supplier\Board.CATProduct" Mode="PUBLICATION_EXPOSED"
  Rule="PUBEXP_OVERWRITEINPDM">
  - <PdmObject selected="true" PdmId="f1b3f3f3_7a0_42dcc5e3_809" PdmName="688_1188"
  PdmType="CATProduct" PdmProvider="TeamPDM_Provider">
    <PdmObjectAttr name="Description">Board</PdmObjectAttr>
    <PdmObjectAttr name="Part Number">Board</PdmObjectAttr>
    <PdmObjectAttr name="ID">CATPRD-0061</PdmObjectAttr>
    <PdmObjectAttr name="Application Reference File Name">Board.CATProduct</PdmObjectAttr>
    <PdmObjectAttr name="Revision" />
    <PdmObjectAttr name="State">Checked In</PdmObjectAttr>
 </PdmObject>
 </Document>
  - <Document Name="Main_board.CATPart" Type="CATPart"
  File="E:\Data\Skateboard\supplier\Main_board.CATPart" Mode="PUBLICATION_EXPOSED"
  Rule="PUBEXP_OVERWRITEINPDM">
  - <PdmObject selected="true" PdmId="0_1064_40d80b7e_3da" PdmName="687_1189"
  PdmType="CATPart" PdmProvider="TeamPDM_Provider">
    <PdmObjectAttr name="Description">Main_board</PdmObjectAttr>
    <PdmObjectAttr name="Part Number">Main board</PdmObjectAttr>
    <PdmObjectAttr name="ID">CATPRT-0243</PdmObjectAttr>
    <PdmObjectAttr name="Application Reference File Name">Main_board.CATPart</PdmObjectAttr>
```

```
    <PdmObjectAttr name="Revision" />
    <PdmObjectAttr name="State">Checked In</PdmObjectAttr>
  </PdmObject>
  </Document>
  - <Document Name="Front_axle.CATProduct" Type="CATProduct"
  File="E:\Data\Skateboard\supplier\Front_axle.CATProduct" Mode="PUBLICATION_EXPOSED"
  Rule="PUBEXP_OVERWRITEINPDM">
  - <PdmObject selected="true" PdmId="f1b3f3f3_7a0_42dcc5e6_81d" PdmName="688_1190"
  PdmType="CATProduct" PdmProvider="TeamPDM_Provider">
    <PdmObjectAttr name="Description">Front_axle</PdmObjectAttr>
    <PdmObjectAttr name="Part Number">Front axle</PdmObjectAttr>
    <PdmObjectAttr name="ID">CATPRD-0062</PdmObjectAttr>
    <PdmObjectAttr name="Application Reference File Name">Front_axle.CATProduct</PdmObjectAttr>
    <PdmObjectAttr name="Revision" />
    <PdmObjectAttr name="State">Checked In</PdmObjectAttr>
  </PdmObject>
  </Document>
  - <Document Name="Truck.CATPart" Type="CATPart"
  File="E:\Data\Skateboard\supplier\Truck.CATPart" Mode="PUBLICATION_EXPOSED"
  Rule="PUBEXP_OVERWRITEINPDM">
  - <PdmObject selected="true" PdmId="0_1064_40d80c50_679" PdmName="687_1191"
  PdmType="CATPart" PdmProvider="TeamPDM_Provider">
    <PdmObjectAttr name="Description">Truck</PdmObjectAttr>
    <PdmObjectAttr name="Part Number">Truck</PdmObjectAttr>
    <PdmObjectAttr name="ID">CATPRT-0244</PdmObjectAttr>
    <PdmObjectAttr name="Application Reference File Name">Truck.CATPart</PdmObjectAttr>
    <PdmObjectAttr name="Revision" />
    <PdmObjectAttr name="State">Checked In</PdmObjectAttr>
  </PdmObject>
  </Document>
  - <Document Name="wheel.CATPart" Type="CATPart"
  File="E:\Data\Skateboard\supplier\wheel.CATPart" Mode="PUBLICATION_EXPOSED"
  Rule="PUBEXP_OVERWRITEINPDM">
  - <PdmObject selected="true" PdmId="0_1064_40d80d78_743" PdmName="687_1192"
  PdmType="CATPart" PdmProvider="TeamPDM_Provider">
    <PdmObjectAttr name="Description">wheel</PdmObjectAttr>
    <PdmObjectAttr name="Part Number">wheel</PdmObjectAttr>
    <PdmObjectAttr name="ID">CATPRT-0245</PdmObjectAttr>
```

```
    <PdmObjectAttr name="Application Reference File Name">wheel.CATPart</PdmObjectAttr>
    <PdmObjectAttr name="Revision" />
    <PdmObjectAttr name="State">Checked In</PdmObjectAttr>
  </PdmObject>
  </Document>
   - <Document Name="Rear_axle.CATProduct" Type="CATProduct"
   File="E:\Data\Skateboard\supplier\Rear_axle.CATProduct" Mode="PUBLICATION_EXPOSED"
   Rule="PUBEXP_OVERWRITEINPDM">
   - <PdmObject selected="true" PdmId="f1b3f3f3_7a0_42dcc5e8_831" PdmName="688_1193"
   PdmType="CATProduct" PdmProvider="TeamPDM_Provider">
    <PdmObjectAttr name="Description">Rear_axle</PdmObjectAttr>
    <PdmObjectAttr name="Part Number">Rear axle</PdmObjectAttr>
    <PdmObjectAttr name="ID">CATPRD-0063</PdmObjectAttr>
    <PdmObjectAttr name="Application Reference File Name">Rear_axle.CATProduct</PdmObjectAttr>
    <PdmObjectAttr name="Revision" />
    <PdmObjectAttr name="State">Checked In</PdmObjectAttr>
  </PdmObject>
  </Document>
    <Document Name="Brake.CATPart" Type="CATPart"
   File="E:\Data\Skateboard\supplier\Brake.CATPart" Mode="PUBLICATION_EXPOSED"
   Rule="PUBEXP_NEWOBJECT" />
  </Session>
```


Sample of Batch Reconcile Command

Two methods are available:

- From an xml input file
- Run the batch reconciliation using the command

From an xml input file

1. Open the epexml.xml file previously generated.
2. Change the rules from PUBEXP_OVERWRITEINPDM to PUBEXP_RELOADFRMPDM on the following documents: Front_axle.CATProduct,Rear_axle.CATProduct,Truck.CATPart, Wheel.CATPart
3. Save the file under inxml.xml.

```
<?xml version="1.0" encoding="UTF-8" ?>
 <!-- COPYRIGHT DASSAULT SYSTEMES 2005  --> f(clean);
  - <Session Name="Reconcile Session" Env="TeamPDM" Status="None">
  - <Document Name="Skateboard.CATProduct" Type="CATProduct"
  File="E:\Data\Skateboard\supplier\Skateboard.CATProduct" Mode="PUBLICATION_EXPOSED"
  Rule="PUBEXP_OVERWRITEINPDM">
  - <PdmObject selected="true" PdmId="0_764_412b30e3_827" PdmName="688_1187"
  PdmType="CATProduct" PdmProvider="TeamPDM_Provider">
    <PdmObjectAttr name="Description">Skateboard</PdmObjectAttr>
    <PdmObjectAttr name="Part Number">Skateboard</PdmObjectAttr>
    <PdmObjectAttr name="ID">CATPRD-0060</PdmObjectAttr>
    <PdmObjectAttr name="Application Reference File Name">Skateboard.CATProduct</PdmObjectAttr>
    <PdmObjectAttr name="Revision" />
    <PdmObjectAttr name="State">Checked In</PdmObjectAttr>
 </PdmObject>
 </Document>
  - <Document Name="Board.CATProduct" Type="CATProduct"
  File="E:\Data\Skateboard\supplier\Board.CATProduct" Mode="PUBLICATION_EXPOSED"
  Rule="PUBEXP_OVERWRITEINPDM">
  - <PdmObject selected="true" PdmId="f1b3f3f3_7a0_42dcc5e3_809" PdmName="688_1188"
  PdmType="CATProduct" PdmProvider="TeamPDM_Provider">
    <PdmObjectAttr name="Description">Board</PdmObjectAttr>
    <PdmObjectAttr name="Part Number">Board</PdmObjectAttr>
    <PdmObjectAttr name="ID">CATPRD-0061</PdmObjectAttr>
    <PdmObjectAttr name="Application Reference File Name">Board.CATProduct</PdmObjectAttr>
    <PdmObjectAttr name="Revision" />
    <PdmObjectAttr name="State">Checked In</PdmObjectAttr>
 </PdmObject>
 </Document>
  - <Document Name="Main_board.CATPart" Type="CATPart"
  File="E:\Data\Skateboard\supplier\Main_board.CATPart" Mode="PUBLICATION_EXPOSED"
  Rule="PUBEXP_OVERWRITEINPDM">
  - <PdmObject selected="true" PdmId="0_1064_40d80b7e_3da" PdmName="687_1189"
  PdmType="CATPart" PdmProvider="TeamPDM_Provider">
    <PdmObjectAttr name="Description">Main_board</PdmObjectAttr>
    <PdmObjectAttr name="Part Number">Main board</PdmObjectAttr>
    <PdmObjectAttr name="ID">CATPRT-0243</PdmObjectAttr>
    <PdmObjectAttr name="Application Reference File Name">Main_board.CATPart</PdmObjectAttr>
```

```
    <PdmObjectAttr name="Revision" />
    <PdmObjectAttr name="State">Checked In</PdmObjectAttr>
  </PdmObject>
  </Document>
  - <Document Name="Front_axle.CATProduct" Type="CATProduct"
  File="E:\Data\Skateboard\supplier\Front_axle.CATProduct" Mode="PUBLICATION_EXPOSED"
  Rule="PUBEXP_RELOADFRMPDM">
  - <PdmObject selected="true" PdmId="f1b3f3f3_7a0_42dcc5e6_81d" PdmName="688_1190"
  PdmType="CATProduct" PdmProvider="TeamPDM_Provider">
    <PdmObjectAttr name="Description">Front_axle</PdmObjectAttr>
    <PdmObjectAttr name="Part Number">Front axle</PdmObjectAttr>
    <PdmObjectAttr name="ID">CATPRD-0062</PdmObjectAttr>
    <PdmObjectAttr name="Application Reference File Name">Front_axle.CATProduct</PdmObjectAttr>
    <PdmObjectAttr name="Revision" />
    <PdmObjectAttr name="State">Checked In</PdmObjectAttr>
  </PdmObject>
  </Document>
  - <Document Name="Truck.CATPart" Type="CATPart"
  File="E:\Data\Skateboard\supplier\Truck.CATPart" Mode="PUBLICATION_EXPOSED"
  Rule="PUBEXP_RELOADFRMPDM">
  - <PdmObject selected="true" PdmId="0_1064_40d80c50_679" PdmName="687_1191"
  PdmType="CATPart" PdmProvider="TeamPDM_Provider">
    <PdmObjectAttr name="Description">Truck</PdmObjectAttr>
    <PdmObjectAttr name="Part Number">Truck</PdmObjectAttr>
    <PdmObjectAttr name="ID">CATPRT-0244</PdmObjectAttr>
    <PdmObjectAttr name="Application Reference File Name">Truck.CATPart</PdmObjectAttr>
    <PdmObjectAttr name="Revision" />
    <PdmObjectAttr name="State">Checked In</PdmObjectAttr>
  </PdmObject>
  </Document>
  - <Document Name="wheel.CATPart" Type="CATPart"
  File="E:\Data\Skateboard\supplier\wheel.CATPart" Mode="PUBLICATION_EXPOSED"
  Rule="PUBEXP_RELOADFRMPDM">
  - <PdmObject selected="true" PdmId="0_1064_40d80d78_743" PdmName="687_1192"
  PdmType="CATPart" PdmProvider="TeamPDM_Provider">
    <PdmObjectAttr name="Description">wheel</PdmObjectAttr>
    <PdmObjectAttr name="Part Number">wheel</PdmObjectAttr>
    <PdmObjectAttr name="ID">CATPRT-0245</PdmObjectAttr>
```

```
    <PdmObjectAttr name="Application Reference File Name">wheel.CATPart</PdmObjectAttr>
    <PdmObjectAttr name="Revision" />
    <PdmObjectAttr name="State">Checked In</PdmObjectAttr>
  </PdmObject>
  </Document>
   - <Document Name="Rear_axle.CATProduct" Type="CATProduct"
   File="E:\Data\Skateboard\supplier\Rear_axle.CATProduct" Mode="PUBLICATION_EXPOSED"
   Rule="PUBEXP_RELOADFRMPDM">
   - <PdmObject selected="true" PdmId="f1b3f3f3_7a0_42dcc5e8_831" PdmName="688_1193"
   PdmType="CATProduct" PdmProvider="TeamPDM_Provider">
    <PdmObjectAttr name="Description">Rear_axle</PdmObjectAttr>
    <PdmObjectAttr name="Part Number">Rear axle</PdmObjectAttr>
    <PdmObjectAttr name="ID">CATPRD-0063</PdmObjectAttr>
    <PdmObjectAttr name="Application Reference File Name">Rear_axle.CATProduct</PdmObjectAttr>
    <PdmObjectAttr name="Revision" />
    <PdmObjectAttr name="State">Checked In</PdmObjectAttr>
  </PdmObject>
  </Document>
    <Document Name="Brake.CATPart" Type="CATPart"
   File="E:\Data\Skateboard\supplier\Brake.CATPart" Mode="PUBLICATION_EXPOSED"
   Rule="PUBEXP_NEWOBJECT" />
  </Session>
```


4. Run the batch reconciliation using the command:
   `CATPDMReconcileSTBatch -user joe -file E:\Data\Skateboard\supplier\Skateboard.CATProduct -inxml e:\data\Skateboard\inxml.xml`

Run the batch reconciliation using the command

1. Run the batch reconciliation using the command:
   `CATPDMReconcileSTBatch -user joe -file E:\Data\Skateboard\supplier\Skateboard.CATProduct -reload Front_axle.CATProduct -reload Rear_axle.CATProduct -reload Truck.CATPart -reload Wheel.CATPart`

Restrictions

The following restrictions apply to the **CATPDMReconcileSTBatch** tool:

- Only one assembly structure
  The `-file` option can be used to reconcile several CATProducts, but the reconciliation will succeed only if all the listed CATProducts compose the same assembly structure: only one assembly root per reconciliation is accepted.
- Batch reconciliation does not call CheckOut on the link-dirty documents due to Checkout performed on the objects with Overwrite rule. This can be resolved by opening the final assembly in CATIA and when you connect to SmarTeam, all the Check Out messages will be displayed.

  NB: The final assembly is saved (SmarTeam save) if the `-simul` option is not set and if the reconciliation is successful. The checked-out and new documents will be saved in the work directory.

Accessing the Help Information

To retrieve the help information about **CATPDMReconcileStBatch**, just enter:
`CATPDMReconcileSTBatch -help`

Customizing

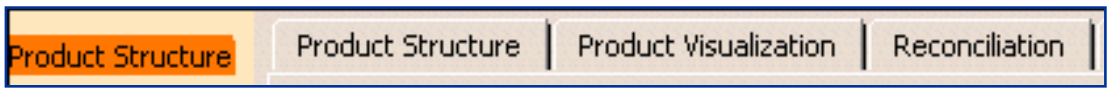
This section discusses the different ways of customizing your environment.

Customizing your Environment
Customizing Queries
Customizing Query Results Display
Customizing Report Layouts
Creating a Link for Tracking Documents with New Identifiers
Customizing Pre-V5R18 Databases to use Automatic Pre-selection
Customizing your Environment for Reconciling ENOVIA Data

Customizing your Environment

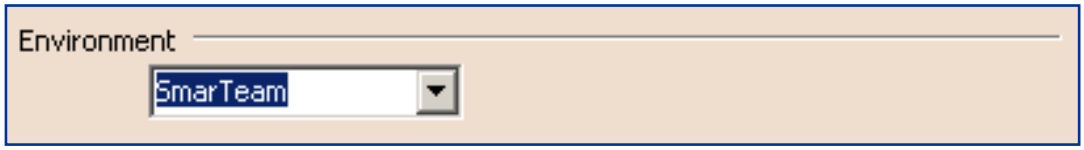
Before you start your first working session, you can customize the way you work to suit your habits.
This type of customization is stored in permanent setting files: these settings will not be lost if you end your session.

1. Select **Tools > Options**.
   The **Options** dialog box is displayed.
2. Choose the **Infrastructure** > **Product Structure** category in the left-hand box.
   The options for Product Structure settings appear, organized in tab pages.



3. Click the **Reconciliation** tab.

Environment



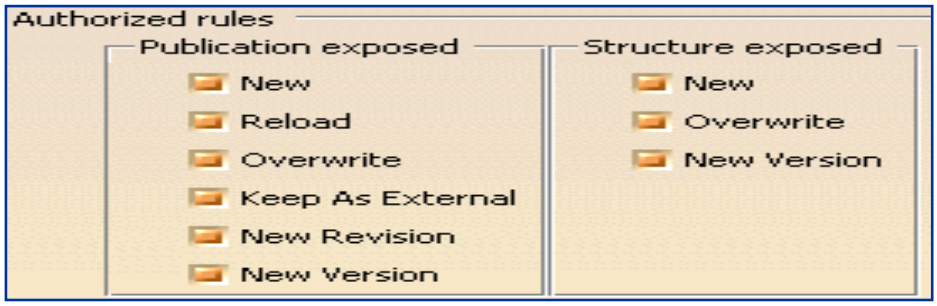
Enables you to select your working environment.

- **ENOVIA VPM V4**: sets ENOVIA VPM V4 as your default working environment.
- **ENOVIA V5 VPM**: sets ENOVIA V5 VPM as your default working environment.
- **SmarTeam**: sets SmarTeam as your default working environment.

By default, this option is set to SmarTeam. If you do not set SmarTeam as the active option, the **Reconcile Window** looks different depending on whether you click or select **SmarTeam> Collaboration >Launch Reconciliation** to launch the application.

By clicking , the **Reconcile Window** that is displayed, provides options for working in a VPM environment.

Authorized rules for publications exposed mode



Options available in this tab let you define the Reconciliation rules you want to make available in your Reconciliation session.

- **New**: you can save new objects in the SmarTeam.
- **Load**: you can reload objects from the SmarTeam..
- **Overwrite**: you can overwrite the objects stored in SmarTeam by those loaded in session.
- **Keep External**: The broken link will be accepted as "broken" during the reconciliation phase.

By default, all options are enabled.

Customizing Queries

Integration Rules Setup
Custom Queries

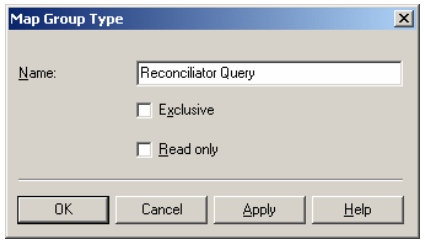
Integration Rules Setup

This task shows you how to customize query operations. Customizing queries consists of choosing the query criteria which best meet your needs.

The procedure described here applies to both query types, that is to **queries by latest revisions only** and to **interactive queries**. This means that once you have followed the steps as explained here, both query types are affected by your customization.

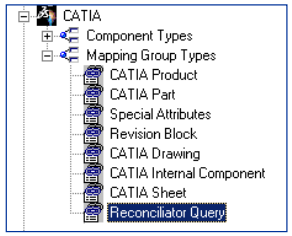
For reference information about queries, see Identifying SmarTeam Documents.

1. Launch the **Integration Tools Setup** utility as explained in the SmarTeam documentation.
2. From the **Integration Tool Setup** window, expand the **CATIA** category.
3. In the **CATIA** category, right-click **Mapping Group Types** and select **Add mapping group type**.
   The **Mapping Group Type** dialog box is displayed.
4. Enter **Reconciliator Query** in the **Name** field of the **Mapping Group Type** dialog box.

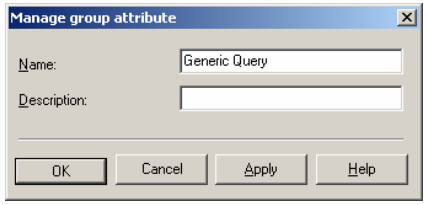


5. Click **OK** to confirm.

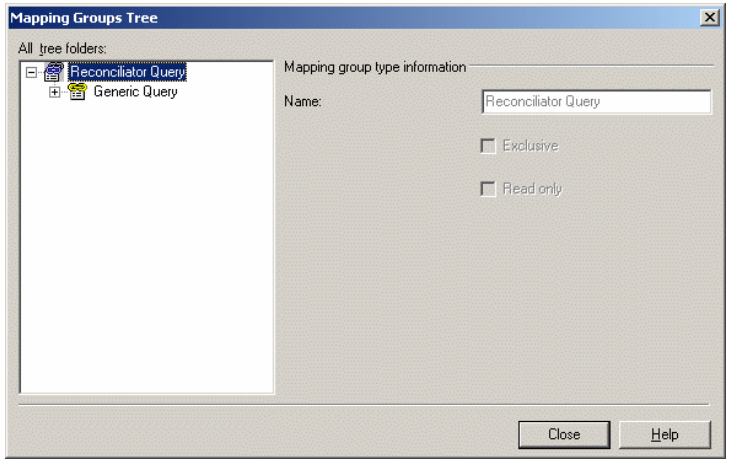
   The new group type **Reconciliator Query** is now displayed in the **Mapping Group Types** list.



6. Right-click **Reconciliator Query** and select **Open groups tree.**
   The **Mapping Groups Tree** dialog box is displayed.
7. Right-click **Reconciliator Query** and select **Add.**
8. Enter **Generic Query** in the **Name** field of the **Manage group attribute** dialog box that appears.



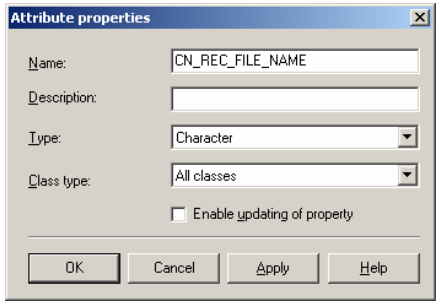
9. Click **OK** to confirm.
   The **Mapping Groups Tree** dialog box looks like this:



10. Right-click **Generic Query** and select **Add.**
The **Attribute properties** dialog box is displayed.

11. In this dialog box, you need to enter property names as they appear in CATIA. See Properties and Related Attributes for the complete list of all properties which can be added.

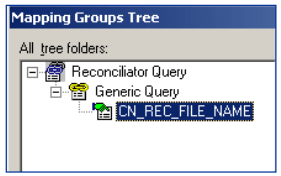
For the purposes of our example, enter **CN_REC_FILE_NAME** as property name in the **Name** field.



Note

If you select **Enable updating of property**, the application automatically provides default values for properties. We recommend you activate this option if the OEM or supplier exchanges CATIA files with the same file name as the ones in SmarTeam. Conversely, this option should be disabled when exchanging CATIA data with an ENOVIA OEM (file name is not stable in ENOVIA revision mechanism).

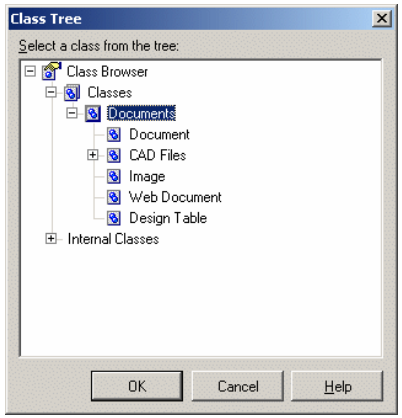
12. Click **OK** to confirm.
CN_REC_FILE_NAME is now displayed in the **Reconciliator Query** tree of the **Mapping Groups Tree** dialog box.



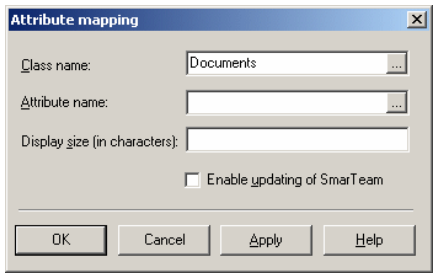
13. Right-click **CN_REC_FILE_NAME** and select **Add.**

14. In the **Attribute mapping** dialog box that is displayed, click ... to the right of the **Class name** field to access the list of classes which are available for the **CN_REC_FILE_NAME** property.

15. From the **Class Tree** dialog box which appears, select **Documents** as the class you want.



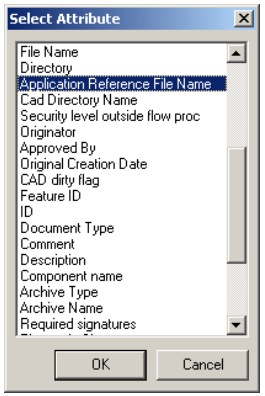
16. Click **OK** to confirm.
The **Attribute mapping** dialog box now looks like this:



17. From the **Attribute mapping** dialog box, click ... to the right of the **Attribute name** field to access the list of attributes which are available for the **CN_REC_FILE_NAME** property.

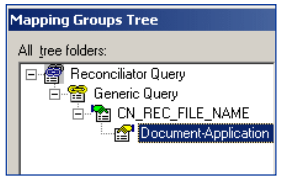
18. From the **Select Attribute** dialog box which appears, select **Application Reference File Name** as the attribute you want to assign.

Note that you need to select **Application Reference File Name**, not **File Name.**



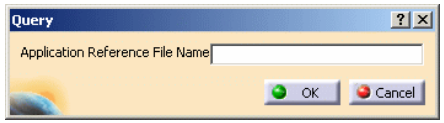
19. Click **OK** to confirm.
The **Attribute mapping** dialog box now displays **Application Reference File Name** in the **Attribute name** field.

20. Click **OK** to confirm and close this dialog box.
The **Reconciliator Query** list now looks like this in the **Mapping Groups Tree** dialog box:



21. Click **OK** to confirm your customization and close the **Mapping Groups Tree** dialog box.
22. Click **Close** to close the **Integration Tools Setup** utility.

    Both query types you can perform in the **Reconcile Window** are affected by your customization. Launching an interactive query reflects that **CN_REC_FILE_NAME** is the only property which you have defined in this scenario.



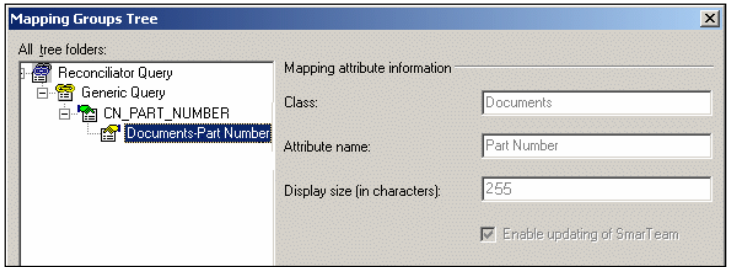
Properties and Related Attributes

The table below provides a list of all the properties and related attributes which you can set for customizing queries:

Property Name in CATIA	Attribute class in SmarTeam	Attribute Name in SmarTeam database	Attribute Display Name in SmarTeam	Mapping Direction
CN_PART_NUMBER	Documents	CN_PART_NUMBER	Part Number	CATIA->Database
CN_DESCRIPTIONREF	Documents	TDM_DESCRIPTION	Description	CATIA->Database
CN_REC_DocumentID	Documents	TDM_ID	ID	None
CN_REC_FILE_NAME	Documents	CAD_REF_FILE_NAME	Application Reference File Name	CATIA->Database

Notes

- CN_PART_NUMBER
  Check that the display size for the Part number is set to 255 characters at least.



- CN_REC_FILE_NAME
  We recommend you set this option to NONE when exchanging CATIA data with an ENOVIA OEM (file name is not stable in ENOVIA revision mechanism).

For reference information about the Integration Tools Setup Utility, see the SmarTeam documentation.

Custom Queries

How to Define Custom Queries

All custom queries are added to a single xml file, **CATReconcileCustomize.xml**.

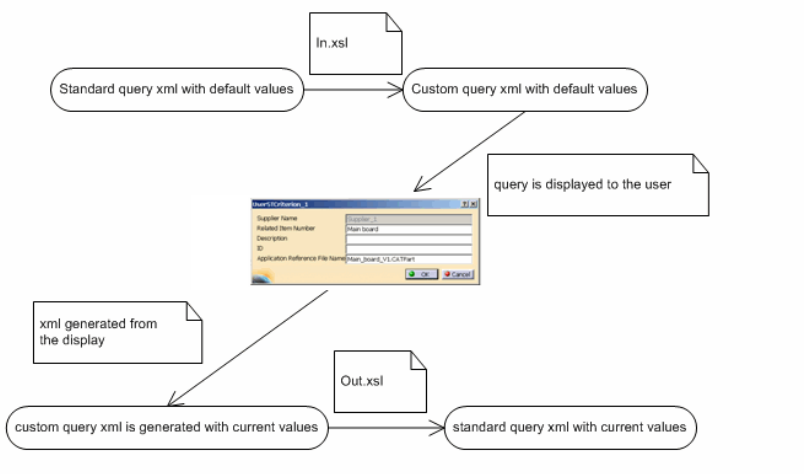
```
<?xml version="1.0" encoding="UTF-8"?>
<configuration classpath="c:\java\xslutil.jar;c:\java\V5JSystem.jar;c:\java\xmltools.jar;c:\java\xmlapi.jar">
<criterionList>
<criterion name="Test1" environment="TeamPDM" father="Interactive-Latest available
revision" order="1" In="c:\tmp\Test1_in.xsl" Out="c:\tmp\Test1_out.xsl" />
</criterionList>
</configuration>
```

The environment variable **CATReconcilePath** specifies the path where the CATReconcileCustomize.xml file is located. The following command can be used to set your environment:

```
chcatenv -e $CATDefaultEnvironment -a user -var "CATReconcilePath=../ReconciliatorCustom
```

For more information on setting your environment please refer to the CATIA Installation and Deployment Guide> Customizing your Environment on Windows.

Queries are used to map objects loaded in CATIA to objects existing in the SmarTeam database. The SmarTeam reconciliator provides one query, **Latest available revision**, which can be launched without an interface or interactively. Custom queries can be defined based on any of the standard (base DS) queries. Custom queries can define the parameters that make up the query and/or supply default values for the query parameters. Only parameters defined in the Integration Rules Setup are available for custom queries. The following steps summarize how the custom query works:



- The In.xsl file converts the standard query xml to the custom query xml
- The query panel is displayed based on the parameters specified in the custom query xml.
- The user establishes their query criteria in the query panel and clicks the Ok button of the query panel.
- The custom query xml stream is generated by the system based on the query panel.
- The Out.xsl file converts the custom query xml to the standard query xml which can be read by the system to return the desired query results.

To produce a custom query you will need to:

- Understand the xml for the standard query you want to customize.
- Create the In xslt file
- Create the Out xslt file
- Define the custom query name

In the CATReconcileCustomize.xml file, each custom query will define, at a minimum, the query name, the standard query on which it is based and the xslt (Extensible Stylesheet Language Transformations) files (In/Out).

Example of a Custom Query definition

This sample CATReconcileCustomize.xml file defines two custom queries: UserCriterion_1 and UserCriterion_2. Both are based on the **Interactive-Latest Available Revision** standard query. All specify the same In/Out xslt files: UserCriterionIn.xsl and UserCriterionOut.xsl.

```
<?xml version="1.0" encoding="UTF-8"?>

<configuration classpath="xslutil.jar;V5JSystem.jar;xmltools.jar;xmlapi.jar">
<criterionList>
<criterion name="UserCriterion_1" environment="TEAMPDM" father="Interactive-Latest
available revision" order="1"
In="c:\tmp\UserCriterionIn.xsl" Out="c:\tmp\UserCriterionOut.xsl"/>
<criterion name="UserCriterion_2" environment="TEAMPDM" father="Interactive-Latest
available revision" order="2"
In="c:\tmp\UserCriterionIn.xsl" Out="c:\tmp\UserCriterionOut.xsl"/>
</criterionList>

</configuration>
```

The following table details the structure of the query definition in the CATReconcileCustomize xml file:

XML Node	Attribute	Definition
configuration	classpath	Specifies the java $CLASSPATH for the xslt conversion. The absolute path must be specified (or libraries should be local).
criterionList		
criterion	name	The name of the custom query
	environment	VPDM environment applicable for this query. Setting this value will automatically set the correct VPDM when this query is chosen. Value for SmarTeam: TEAMPDM.
	father	Name of the query on which the custom query is based. Values for SmarTeam: Latest available revision, Interactive-Latest available revision
	order	Enables the criteria to be displayed in the specified order in the user interface.
	In	Name of the xslt file used to transform the standard (father) query's xml file into a new xml that describes the customized query. Only the transformed xml file can be used to display the query in the list of queries. The absolute path must be specified.
	Out	Name of the xslt file used after the user inputs their search criteria and executes the search. The Out xslt file is used to transform the customized query into one that can be used by the query. The absolute path must be specified.

How to Use a Custom Query in the Global Query/ Global Set

The custom queries you develop can be incorporated in the Global Query and/or Automatic Preselection Global Set by editing the xml that describes the parameters of this global set. To do this, modify the following file located in:

UNIX: <unload_dir>/<os>_a/reffiles/SuppChain

MS-Windows: <unload_dir>\<os>_a\reffiles\SuppChain

For Global Query: CATPDMAutoRulesValuator_GlobalQueryXMLForm_TeamPDM.xml

For Automatic Preselection: CATPDMAutoRulesValuator_AutoPreselectionXMLForm_TeamPDM.xml

Add a line for each custom query in the `queryName` section of the xml definition as follows (in this example, the custom query **UserCriterion_1** is added to the list of standard queries of Automatic Preselection Global Set):

```
<ParametersList>
<Parameter Name="queryName" Type="String"
Alias="%CATPDMReconcileAutoRules:queryName%" Mandatory="Yes">
<DefaultValuesList>
<DefaultValue>%STIPDMCriterion:STI.ByLastRevision%</DefaultValue>
<DefaultValue>UserCriterion_1</DefaultValue>
</DefaultValuesList>
<CurrentValue>%STIPDMCriterion:STI.ByLastRevision%</CurrentValue>
</Parameter>
...
</ParametersList>
```

Defining the In/Out XSLT Files

Each of the standard queries is defined by an xml file which describes all the available attributes for the

query. When you are mapping objects in the reconciliator and you select a particular query the xml file defining all the attributes is used to create the query displayed.

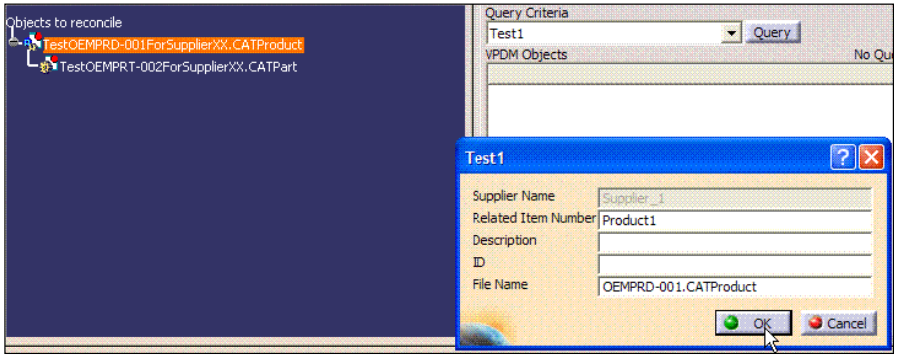
To assist you in defining your own custom queries, the environment variable REC_Display_CustomCriterion=1 can be set to display (in standard output) the xml for any query in the reconciliator.

The following table details the structure of the query xml file

XML Node	Attribute	Definition
Parameter List		Root of the xml document
Parameter	Name	Query parameter identifier
	Type	Attribute type (i.e. String)
	Alias	Query parameter display name
	Shown	Indicates if the query parameter is to be displayed. Values: Yes/No
	Mandatory	Indicates if the query parameter must be defined. Values: Yes/No
	Sensitive	Indicates if updating the query parameter will result in the check process. Values: Yes/No
	AccessMode	Indicates how the values can be accessed. Values: ReadWrite/ReadOnly
	Template	Values: Yes/No
	AccessMode	Indicates how the values can be accessed. Values: ReadWrite/Read
	Multi-valuated	Indicates if the query parameter allows multiple values. Values: Yes/No
	DefaultListExtensible	Indicates if the query parameter has authorized values (i.e. a drop-down list of possible values is shown). If yes then the DefaultValuesList is used to populate the the list of authorized values). Values: Yes/No
DefaultValuesList		Used to define a list of authorized values
DefaultValue		Authorized value for a parameter
CurrentValue		Current value for the parameter

To create a custom query, you will need to create two xslt files

- The **In xslt** file transforms the standard query xml into a new custom query xml. The new custom query xml file is used to display the custom query when it has been chosen by the user.
  Example: The In xslt file Test1_in.xsl, can be used to produce the following customized query, Test1



  The standard query has been customized in the following ways:

  - **Supplier Name** is a new read only field that contains the default value: Supplier_1.
  - **File Name** has been modified by suppressing the four first characters and limiting the name to ten characters (in the example above TestOEMPRT-002ForSupplierXX.CATPart is modified by removing the first four characters ("Test") and then only taking the next ten characters (eliminating "ForSupplierXX").

- The **Out xslt** file is used (after the user inputs their criteria into the query dialog and applies the query) to transform the custom query xml into the xml file of the chosen standard query so it can be used by the system to retrieve the query results.
  Example: The Out xslt file, Test1_out.xsl, transforms the custom query back into the standard one which can be used by the sytem to execute the query.

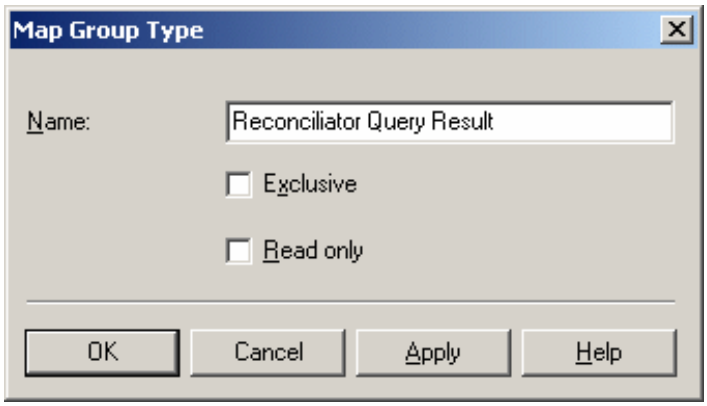
Customizing Query Results Display

This task shows you how to customize the way query results are displayed in the **Reconcile Window**. Whatever query type you perform, the result obtained by following the procedure described here is the same for all queries.

Customizing query result display can be done at any time. Note that if you are using SmarTeam databases anterior to Version 5 Release 16 this operation is not mandatory prior to using the **Reconcile** capability for the first time. If you do not customize the display, this will be based upon the properties set for the query as explained in Customizing Queries.

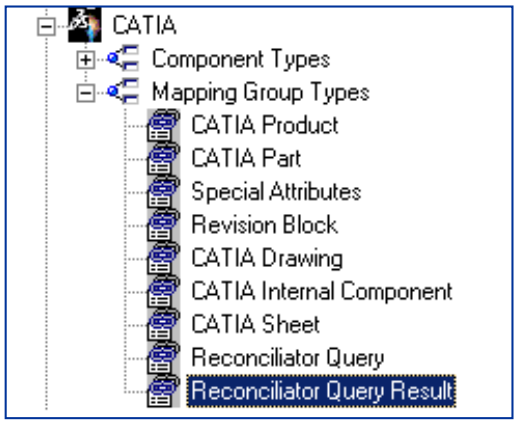
For reference information about queries, see Identifying SmarTeam Documents.

1. Launch the **Integration Tools Setup** utility as explained in the SmarTeam documentation.
2. From the **Integration Tool Setup** window, expand the **CATIA** category.
3. In the **CATIA** category, right-click **Mapping Group Types** and select **Add mapping group type**.
   The **Mapping Group Type** dialog box is displayed.
4. Enter **Reconciliator Query Result** in the **Name** field of the **Mapping Group Type** dialog box.
   The **Reconciliator Query Result** mapping group type name is not mandatory: if it is not defined, the reconciliator will displayed the attribute listed in the **Reconciliator Query** mapping group.



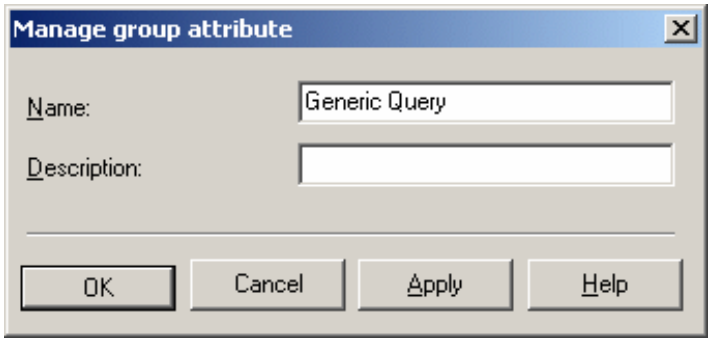
5. Click **OK** to confirm.

   The new group type **Reconciliator Query Result** is now displayed in the **Mapping Group Types** list.

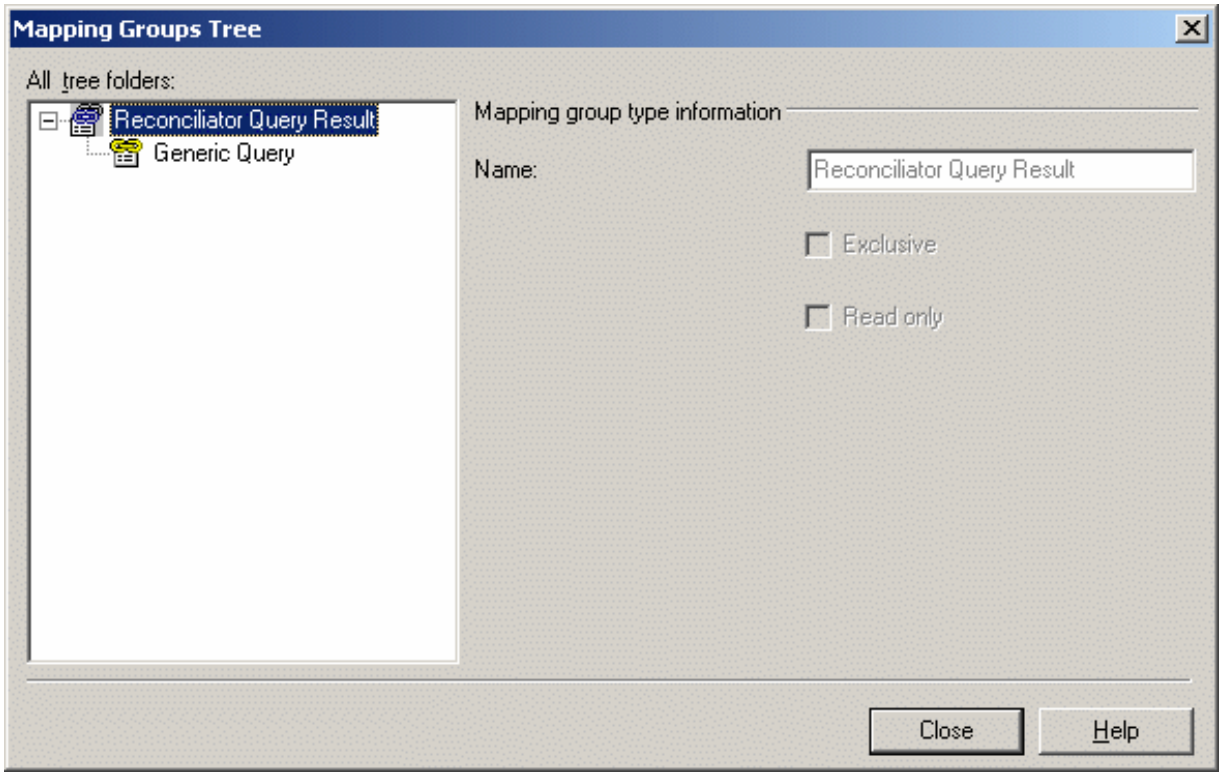


6. Right-click **Reconciliator Query Result** and select **Open groups tree.**
   The **Mapping Groups Tree** dialog box is displayed.
7. Right-click **Reconciliator Query Result** and select **Add.**

8. Enter **Generic Query** in the **Name** field of the **Manage group attribute** dialog box that appears.



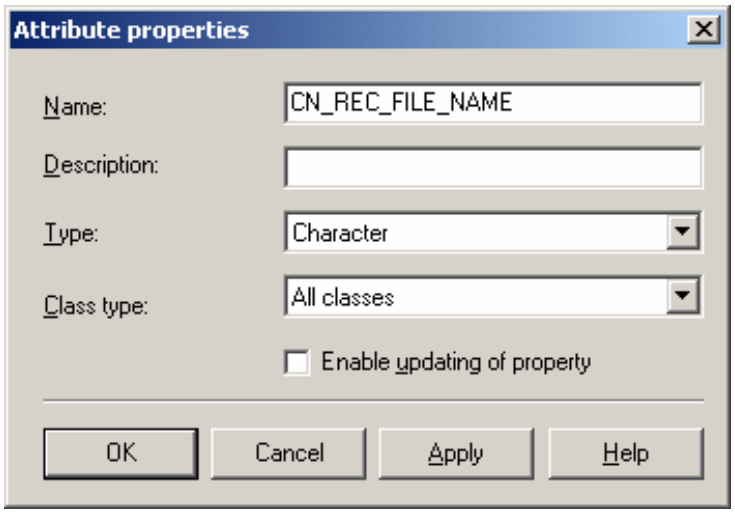
9. Click **OK** to confirm.
   The **Mapping Groups Tree** dialog box looks like this:



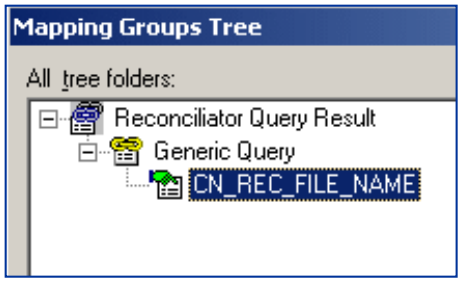
10. Right-click **Generic Query** and select **Add.**
    The **Attribute properties** dialog box is displayed.

11. In this dialog box, you need to enter property names as they appear in CATIA. See Properties and Related Attributes for the complete list of all properties which can be added.

    For the purposes of our example, enter **CN_REC_FILE_NAME** as property name in the **Name** field.



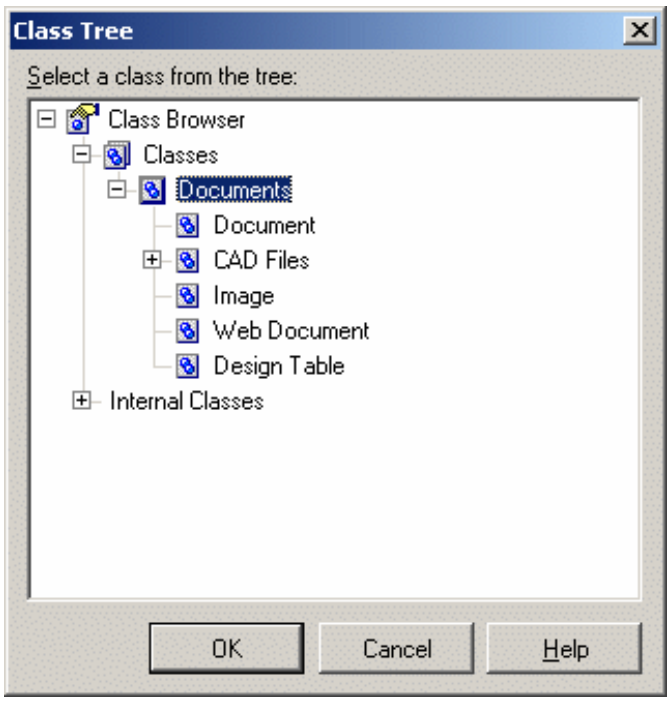
12. Click **OK** to confirm.
CN_REC_FILE_NAME is now displayed in the **Reconciliator Query** tree of the **Mapping Groups Tree** dialog box.



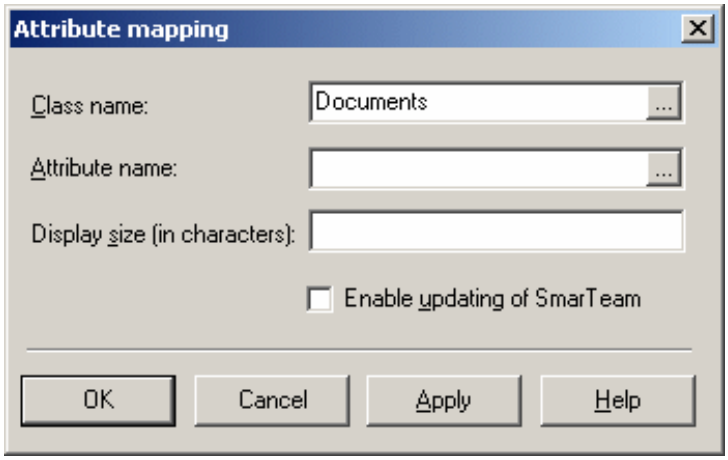
13. Right-click **CN_REC_FILE_NAME** and select **Add.**

14. In the **Attribute mapping** dialog box that is displayed, click ... to the right of the **Class name** field to access the list of classes which are available for the **CN_REC_FILE_NAME** property.

15. From the **Class Tree** dialog box which appears, select **Documents** as the class you want. The mapping property should be mapped on the **Documents** class. The mapping property name is currently not taken into account. The mapping attribute name is the External name displayed in the query panel result.



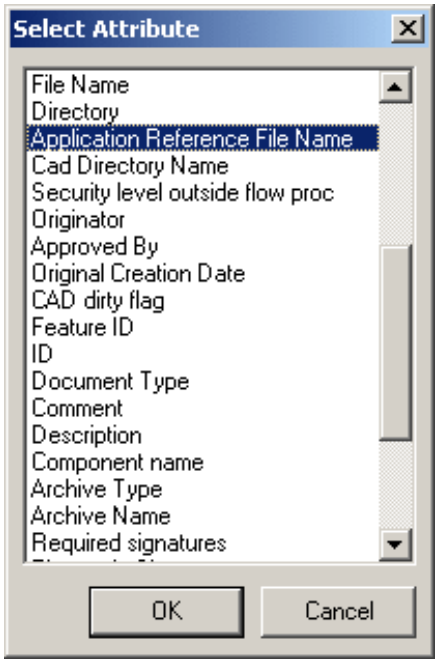
16. Click **OK** to confirm.
The **Attribute mapping** dialog box now looks like this:



17. From the **Attribute mapping** dialog box, click ... to the right of the **Attribute name** field to access the list of attributes which are available for the **CN_REC_FILE_NAME** property.

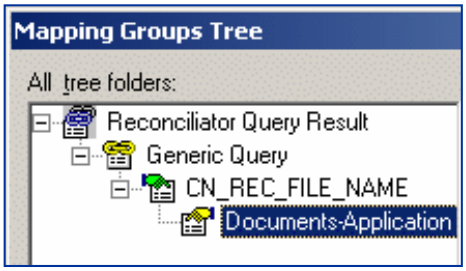
18. From the **Select Attribute** dialog box which appears, select **Application Reference File Name** as the attribute you want to assign.

Note that you need to select **Application Reference File Name**, not **File Name.**



19. Click **OK** to confirm.
The **Attribute mapping** dialog box now displays **Application Reference File Name** in the **Attribute name** field.

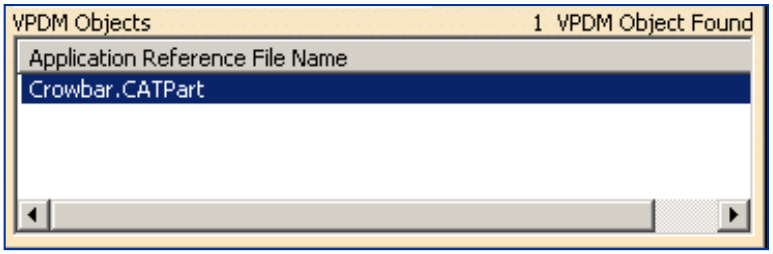
20. Click **OK** to confirm and close this dialog box.
The **Reconciliator Query Result** list now looks like this in the **Mapping Groups Tree** dialog box:



21. Click **OK** to confirm your customization and close the **Mapping Groups Tree** dialog box.

22. Click **Close** to close the **Integration Tools Setup** utility.

Whatever query type you perform, query results will appear like this in the **Reconcile Window**:



Properties and Related Attributes

The table below provides a list of all the properties and related attributes which you can set for customizing queries:

Property Name in CATIA	Attribute class in SmarTeam	Attribute Name in SmarTeam database	Attribute Display Name in SmarTeam	Mapping Direction
CN_DESCRIPTIONREF	Documents	TDM_DESCRIPTION	Description	Not applicable
CN_REC_DocumentID	Documents	TDM_ID	ID	Not applicable
CN_REVISION	Documents	REVISION	Revision	Not applicable
CN_STATE	Documents	STATE	State	Not applicable
CN_PART_NUMBER	Documents	CN_PART_NUMBER	Part Number	Not applicable
CN_REC_FILE_NAME	Documents	CN_REC_FILE_NAME	Application Reference File Name	Not applicable

For reference information about the SmarTeam Integration Tools Setup Utility, see the SmarTeam documentation.

Customizing your Environment for Reconciling ENOVIA Data

Before you starting working with ENOVIA data, you must customize your environment as explained below:

From V5R18 onwards, the CATIA_TEAM_PDM_SUPPLIER_EV5 environment variable is no longer required

1. Launch the **SmarTeam Integration Tools Setup** utility.
2. Remove the File Name query criterion because this information is not stable. "Publication Exposed" documents coming from ENOVIA have a file name convention which includes the ENOVIA revision information. For more information about customization, see Customizing Queries.

Methodology

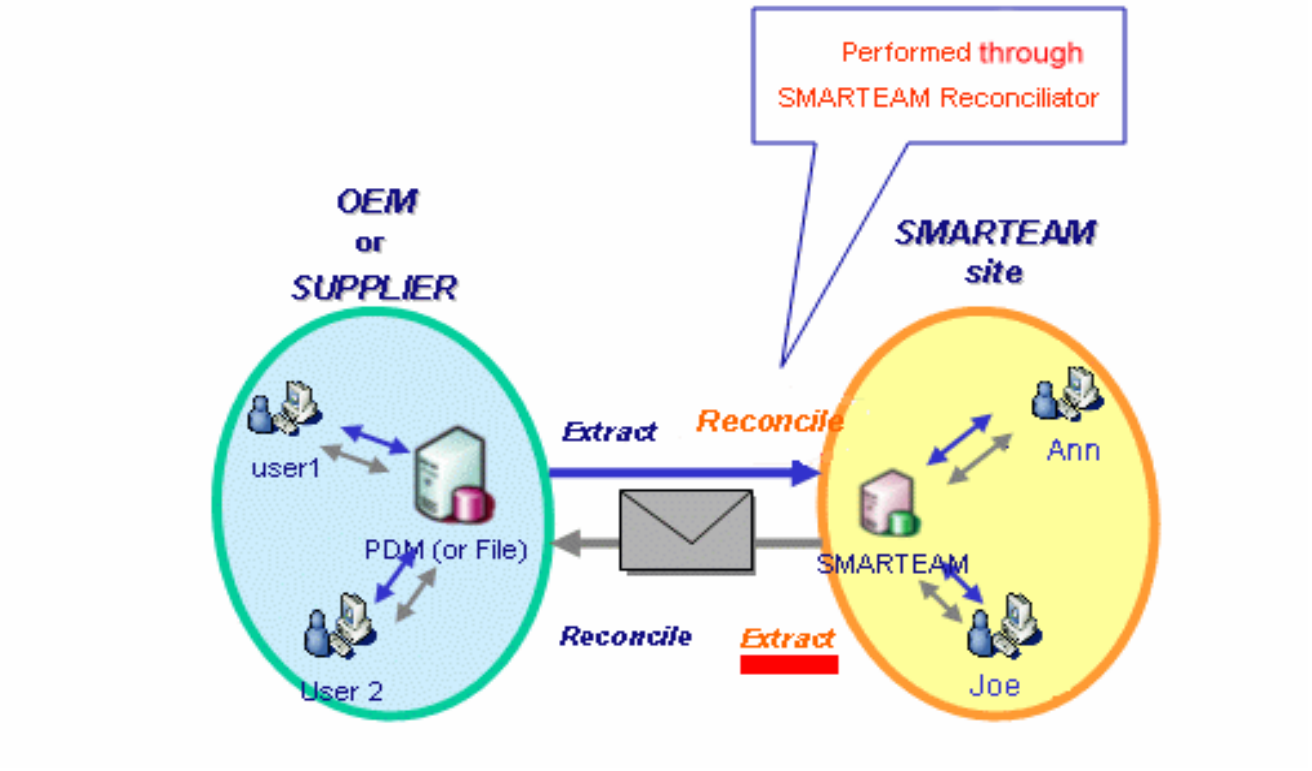
In the industry, since early design, manufacturers (OEMs) need to exchange data with their suppliers. Sometimes, for different possible reasons, suppliers send incomplete design while manufacturers (OEMs) choose not to expose all of their documents.

This section discusses how data can be exchanged so that Intellectual Property (I.P.) protection is ensured. It explains how subsets of data can be sent as well as how incomplete design can be reintegrated into the information system (SmarTeam).

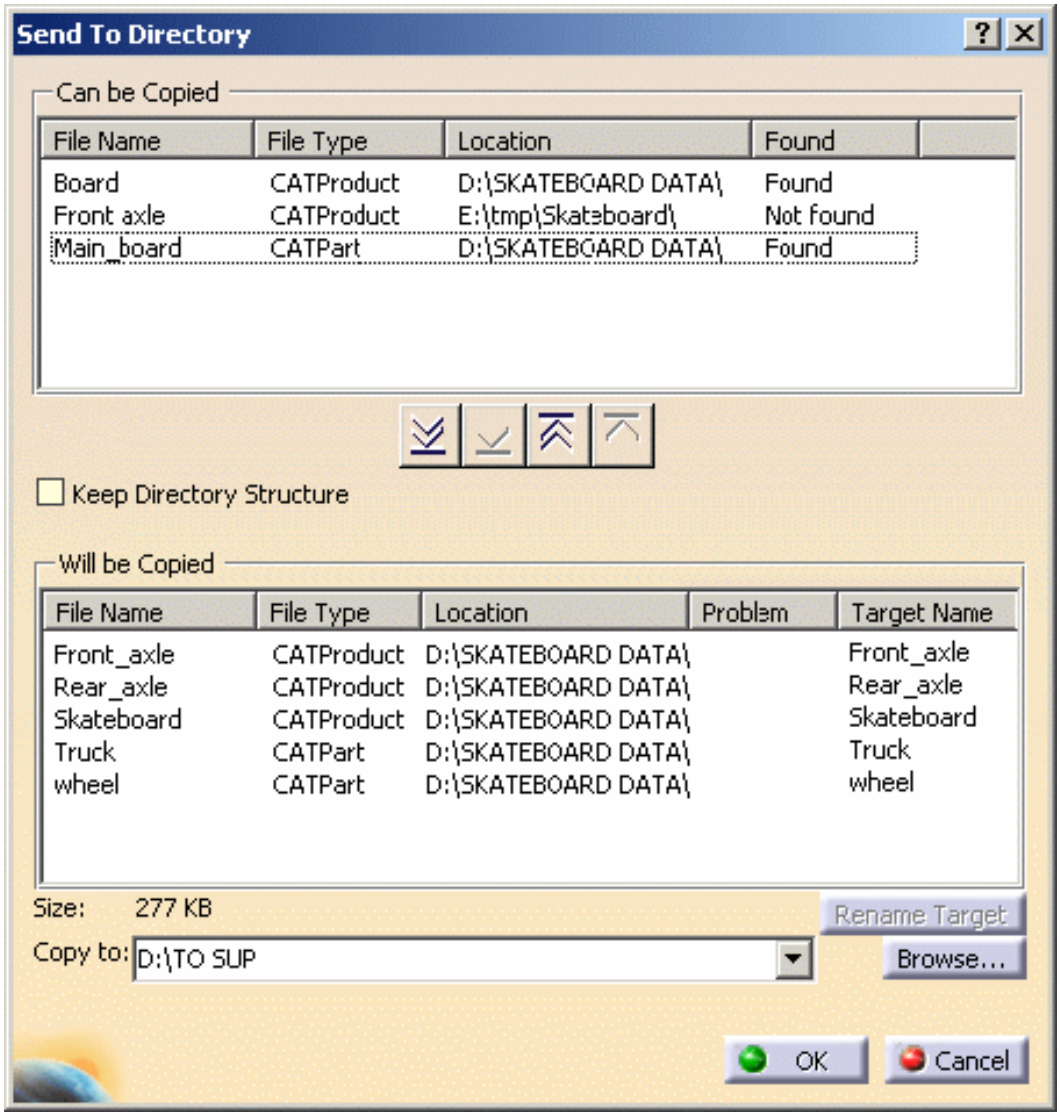
Exporting Data
Internal Intellectual Property (I.P.) Protection - Integrating Subsets of Data
Exchanging Modified Documents Only
Reconciling ENOVIA Data with SmarTeam Documents
Reconciling ENOVIA Data Saved in Structured Exposed Mode
Reconciling an Assembly Containing a Contextual Part

Exporting Data

In case you want to protect your data and therefore prefer to send a subset of it to the supplier or OEM, CATIA lets you specifically select the number of documents to be sent. This section lists the steps to perform, to achieve this.



1. Launch CATIA to open your documents.
2. Use the CATIA **Search** or **File Open** capabilities to open the data you want to extract.
3. When done, select **File>Send To >Directory**.
4. Click the **Open** button to open the **Send To Directory** dialog box.
5. Sort out the documents you want to copy: use the icons to move the files to the **Will be Copied** section.
6. Select a dedicated temporary directory on your local disk.



7. Confirm the copy of the documents you want to share with your supplier by clicking **OK**.
   When the copy has been performed the **Files Copied** dialog box appears telling you the number, size and type of the files copied.
   For details on how to use the **Send To >Directory**, see the CATIA Infrastructure User's Guide.
8. Optionally compress the data which is now ready for being sent to your supplier. Compressing data can help you ensure that you send all the data required.

Intellectual Property Protection

In case you want to protect your data and therefore prefer to send a subset of it to your supplier or OEM, the CATIA **Send To** capability lets you restrict the number of documents to send.

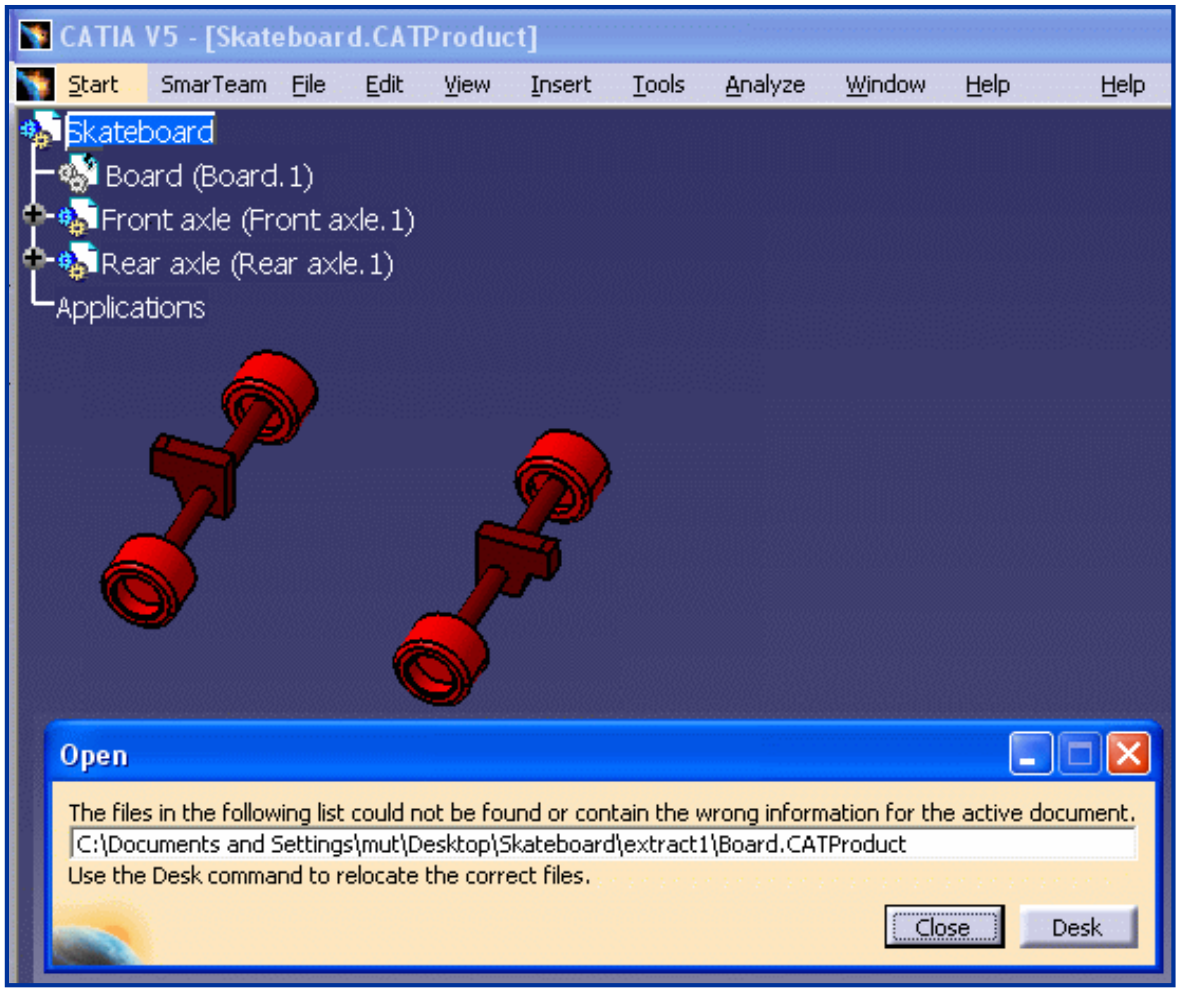
Note: To know how to re-integrate into SmarTeam subsets of data updated and sent by suppliers, see Internal Intellectual Property (I.P.) Protection - Integrating Subsets of Data

Internal Intellectual Property (I.P.) Protection

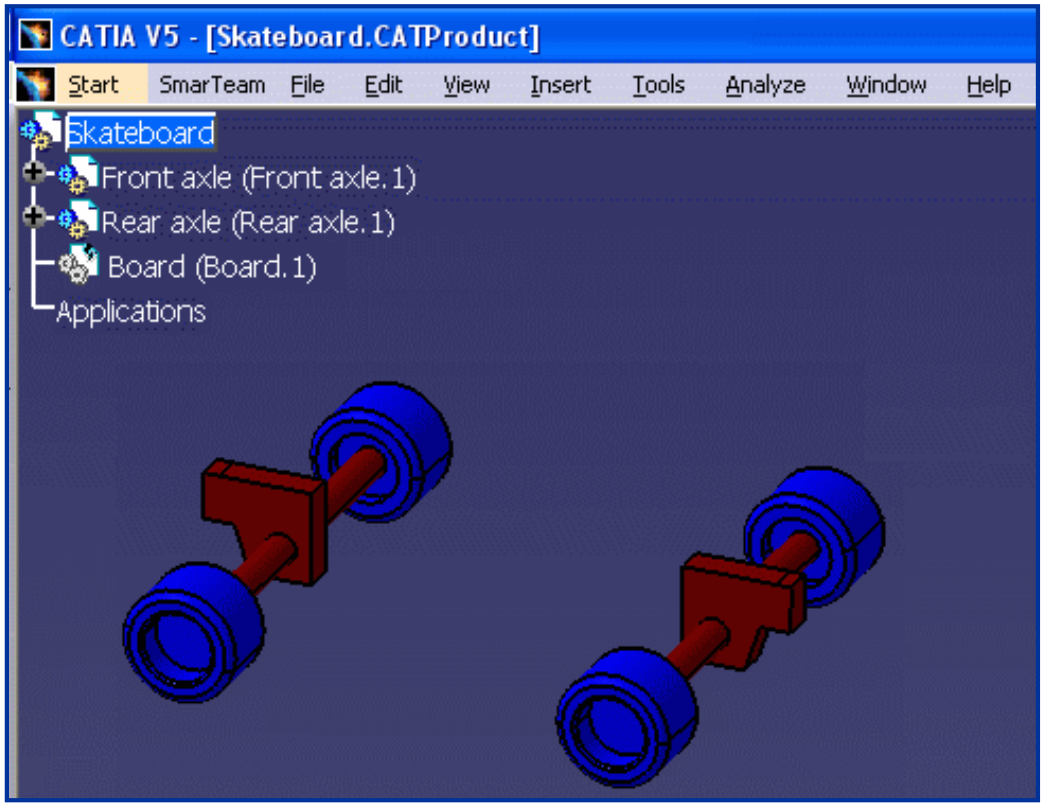
This section illustrates how suppliers and OEMs can exchange subsets of data while protecting their own data. In the following scenario we assume that you are a supplier to whom the OEM has sent a skateboard structure without the board data.

To know how to send subsets of data, see Exporting Data.

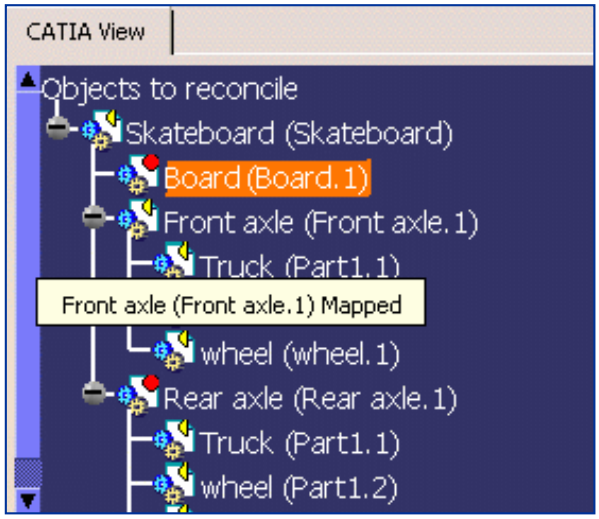
1. Open the documents sent by the OEM.
   As the board has not been sent, CATIA specification tree displays a broken link for the board document.



2. Save the skateboard in SmarTeam and check it in.
3. The OEM sends you a second engineering package which still does not contain the Board. Open these documents. The design has been modified. A broken link for the Board is still displayed in the specification tree.

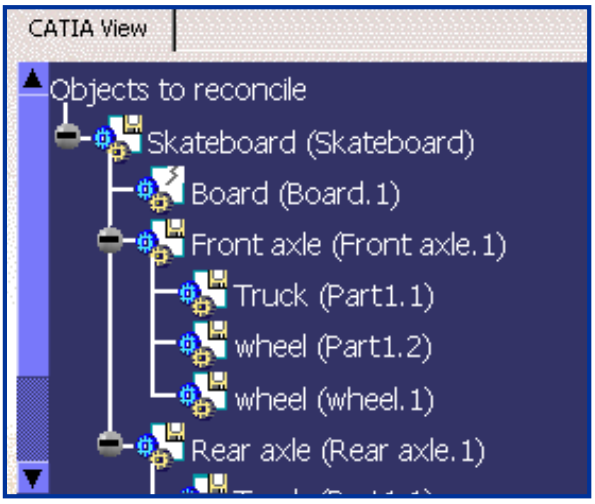


4. To integrate the data sent into SmarTeam, click **Launch Reconciliation** .
5. In the **Reconcile Window** that appears, perform the necessary query for the documents.

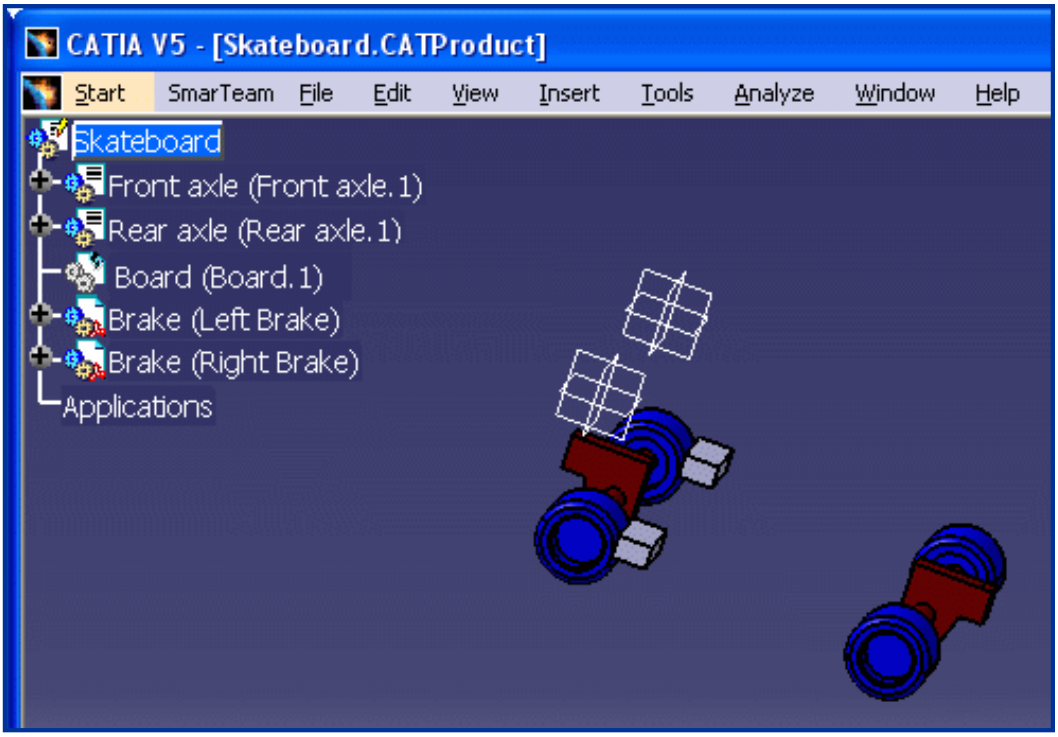


6. The next step consists in defining reconciliation rules. Set the **Overwrite** rule for the mapped documents as you want to re-write the modifications coming in.

7. Because the board cannot be found in SmarTeam, set **Keep as External** which is the only rule available for that document. **Keep as External** allows you to keep temporary the broken link in the CATIA session.
   When done, the **Objects to reconcile** tree must look like this:

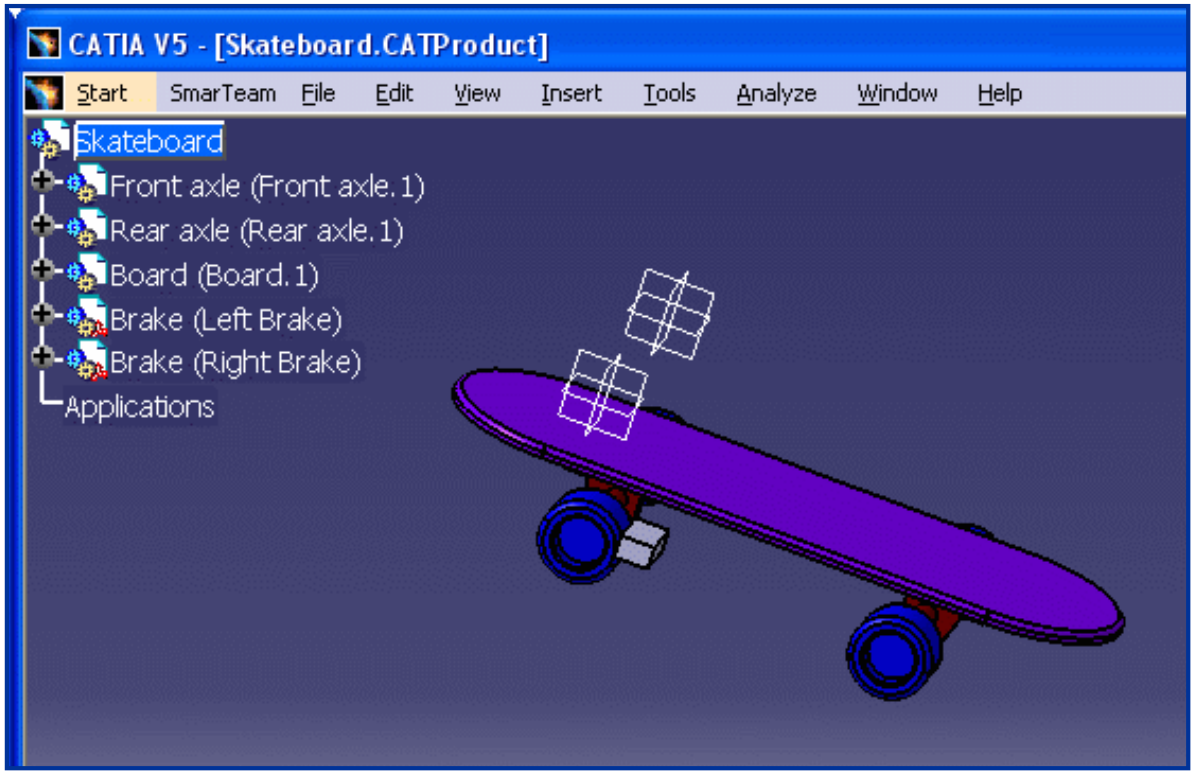


8. Save the skateboard in SmarTeam and check it in.
9. Later on, you decide to modify the skateboard. You add two braking systems to it, although the assembly has got a broken link.



10. Save the skateboard in SmarTeam and check it in.
11. Extract the data and send it to the OEM.
12. The OEM imports the data into his system. If he stores his data in SmarTeam, he will use the ENOVIA SmarTeam - CATIA Supply Chain Engineering Exchange to reconcile the data, using the **Reload** rule. Otherwise, if he works on a file base system, he will put all the documents sent by the supplier in a dedicated directory. The board will be found thru CATIA standard localization strategies (**Folder of the link**, **Folder of the pointing** capabilities etc.).

    The OEM can work on his latest board and integrate all the modifications made by the supplier, without sharing the whole board design.


CATIA V5 - [Skateboard.CATProduct]
Start
SmarTeam
File
Edit
View
Insert
Tools
Analyze
Window
Help
Skateboard
Front axle (Front axle.1)
Rear axle (Rear axle.1)
Board (Board.1)
Brake (Left Brake)
Brake (Right Brake)
Applications

Exchanging Modified Documents Only

This section illustrates how to exchange only the documents which have been modified since the previous exchange. We recommend this data exchange method for optimizing all exchanges (bandwith optimization). The methodology for extracting only a subset of data from SmarTeam consists in:

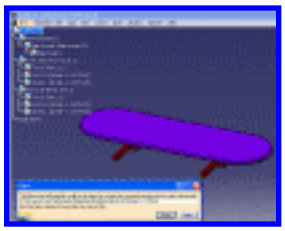
- opening documents in CATIA
- launching the **Send To** functionality
- defining only the documents which need to be extracted.

The extraction methodology is equivalent to the one used for I.P. protection. For more information, see Exporting Data.

In the following example, as a supplier you need to re-integrate documents which have been modified since the last exchange with your OEM. In this scenario, we assume that not all the documents were sent back to you.

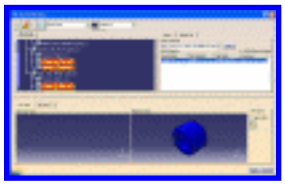
1. Open the assembly sent by the OEM.

   This assembly constitutes a skateboard. As the wheel has not been sent by the OEM, CATIA displays a broken link in the specification tree.

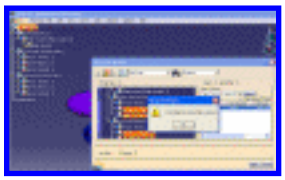
   

2. Click **Launch Reconciliation** .
   In the **Reconcile Window**, the CATIA 3D View is empty as the wheel is not present in the CATIA session.
3. Perform the necessary query for the documents.
   Note that in case you are handling a document stored in ENOVIA, as the part number is not known by the CATIA session, you must use **Interactive-Latest available revision** to identify the appropriate SmarTeam document.
4. To set a reconciliation rule for the missing wheel, you need to

choose between two possible rules which are **Reload** and **Keep as External**. When applying the **Reload** rule, the SmarTeam object is kept. The **Keep as External** rule allows you to keep temporary the broken link in the CATIA session so that next time you will open the assembly from SmarTeam, the wheel will be found.
You decide to reload the wheel from SmarTeam.



Once the reconciliation is done, the wheel is reloaded. The transfer of incomplete data has not affected the CATIA consistency of your data.



ENOVIA Data

In case of a broken link to a CATPart or CATProduct inside a CATProduct, the Part Number of the missing file is not known. If the document comes from ENOVIA, the file name is not stable (due to ENOVIA revision mechanism) and cannot be used for the identification phase. As there is no accessible information allowing you to identify the missing part or product, you must perform an interactive query.

Reconciling ENOVIA Data with SmarTeam Documents

This section explains how to compare and reconcile a set of CATIA documents proceeding from ENOVIA with documents stored in the SmarTeam database.

Prior to reconciling ENOVIA Data with SmarTeam documents, you must have customized your environment as explained in Customizing your Environment for Reconciling ENOVIA Data.

Concepts

Prior to reconciling ENOVIA data using the ENOVIA SmarTeam - CATIA Supply Chain Engineering Exchange application, you should be familiar with two concepts: Publication Exposed documents and Structured Exposed documents.

Publication Exposed

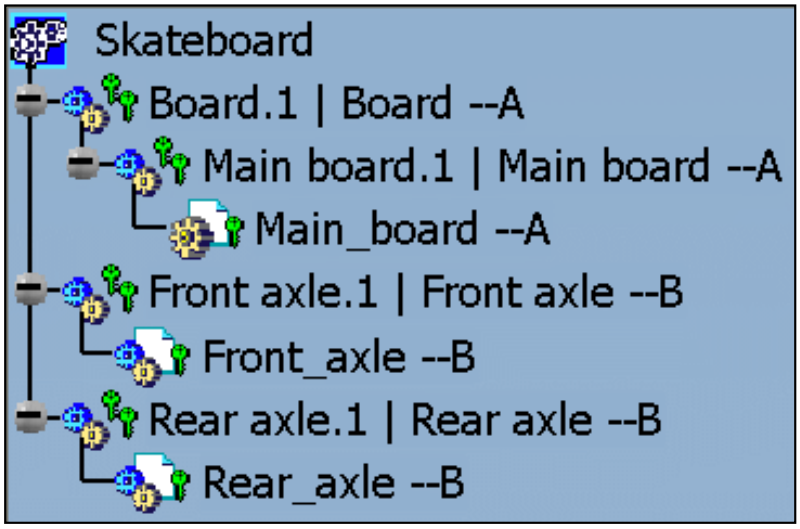
Used by ENOVIA, this term applies to all document type (CATDrawing, CATPart, CATProduct etc.). The CATIA document information is stored as a document (same as in SmarTeam). For instance, a "Publication Exposed" product will be stored as a CATProduct file in the vault.

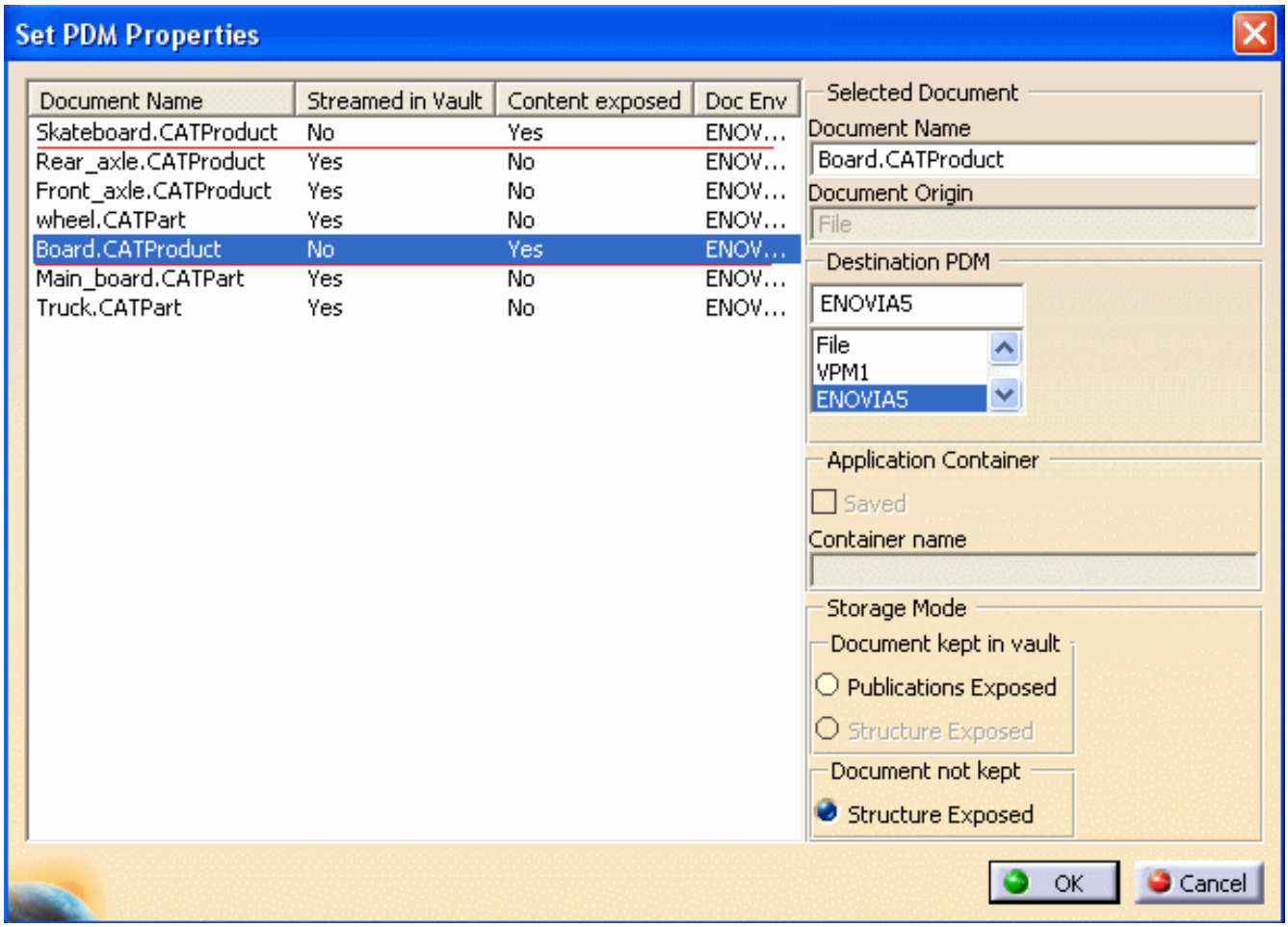
As a reminder, SmarTeam - CATIA Integration (CAI) stores CATIA documents as "documents". Therefore, although we do not use the "Publication Exposed" terminology, we can consider that CATIA documents are "publication exposed".

Structure Exposed

Used by ENOVIA V5 VPM, this term applies to product information (CATProduct documents). The product structure information is stored thru database objects and no CATProduct document is stored in the vault. In that case, structure exposed CATProduct documents proceeding from an Open operation in CATIA can be seen as temporary CATIA formats.

In the example below, Skateboard.CATProduct and Board.CATProduct are structure exposed documents.





Extracting Data

When extracting "publication exposed" data coming from ENOVIA, the extraction consists in loading the data from the vault and saving it on the local disk. The document file name is not guaranteed due to file naming conventions based on the document revision.

When opening "structured exposed" data in CATIA, a temporary CATProduct is created. Its internal CATIA identifier is also temporary (it is created during the ENOVIA>CATIA operation).

Reconciling Data Stored in ENOVIA

Documents Stored as "Publication Exposed"

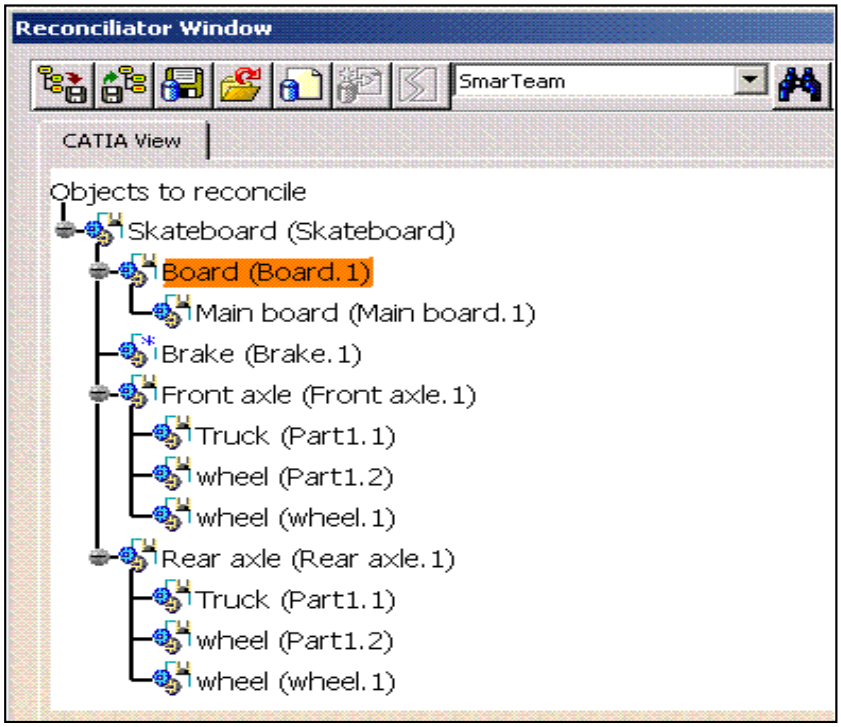
The file name of the document by default incorporates some ENOVIA naming conventions (the document revision value included). It is necessary to use the Part Number as a query criteria (and not the file name). For more information, see Customizing Queries.

Documents Stored as "Structured Exposed"

We recommend you use the Part Number as a query criteria. The CATIA internal identifier (UUID) is not a stable information across various engineering exchanges. This is the reason why such documents cannot override other versions of documents stored in SmarTeam 'different internal identifiers. **The application therefore proposes to the end-user either to create a new object or to reload another object from the database.**

In the example below, the supplier incorporates all the modifications made by the OEM. He has

applied the **Overwrite** rule to all documents except for the skateboard and the board which proceed from a Structure exposed extraction. For both of these documents, he has applied the **New** rule .



Methodology

To keep the history of the different versions of a product ENOVIA documents, you need to create a fake product. For more information, see Reconciling ENOVIA Data Saved in Structured Exposed Mode.

Reconciling ENOVIA Data Saved in Structured Exposed Mode

When reconciling ENOVIA data saved in structure exposed mode with SmarTeam data the Overwrite rule cannot be used.

Instead, the New From rule can be used to create a new document and maintain a link between the original object. An alternate methodology is described below.

It assumes that as an OEM you design the original skateboard, create a fake product for this assembly and save it in SmarTeam. Then you send the fake product only to one of your suppliers. The supplier modifies the data, save it in ENOVIA using the structure exposed mode and then sends it back to you. Now you need to reconcile this ENOVIA data with the documents in your SmarTeam database.
To perform the steps described, first customize your environment for reconciling ENOVIA data.

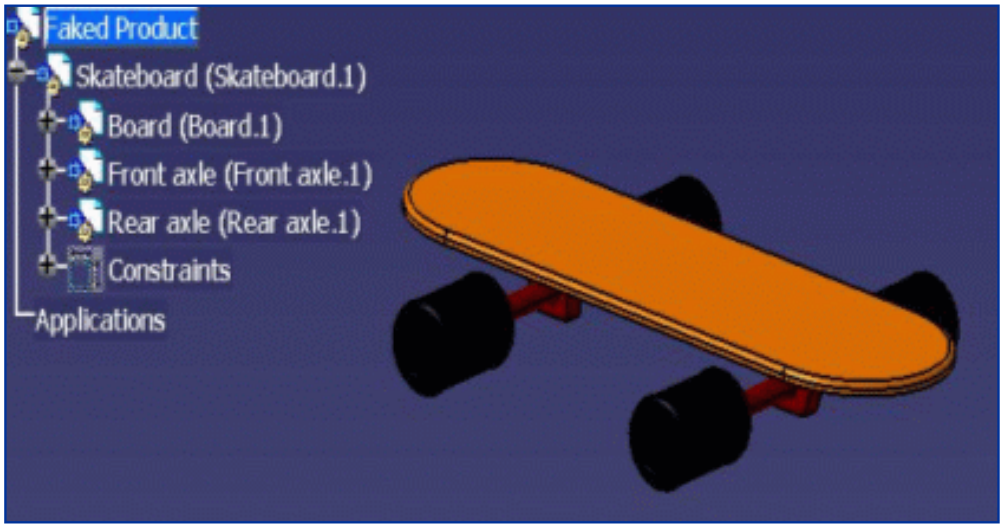
To know how to reconcile ENOVIA data saved in publication exposed mode, see Documents Stored as "Publication Exposed".

Because it is not possible to set the **Overwrite** rule to CATProduct documents saved in structure exposed mode, to be able to keep the history of the different versions of a product including those documents, you need to create a fake product. In this fake product, you insert the data of your product. The interest of a fake product is that at any time you can know its revisions. This therefore informs you on the revisions performed on all its sub-products and specially on all ENOVIA data.

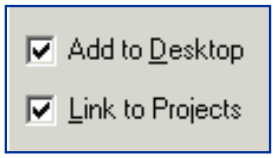
Before Reconciliation: Creation of a Fake Product

In CATIA you create a fake product as you usually create products.

1. Create a new product in a CATIA session.
2. Still in CATIA, using **Components > Existing Components**, insert the skateboard data (several CATProducts) into this fake product.
3. Name it as "Fake Product".



4. Save **Fake Product** in SmarTeam using **SmarTeam > Save** with these options on:
   - **Batch Mode Save**
   - **Add to Desktop**
   - **Link to Projects**

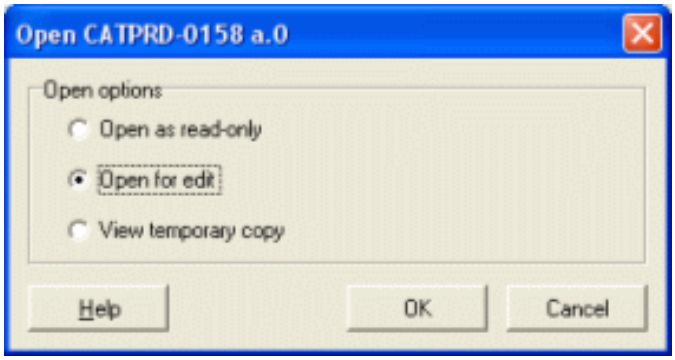


5. Select **SmarTeam > Life Cycle** > **Check In**.
   The Check In operation applies to all documents.
6. Confirm the operation.

Using the Fake Product

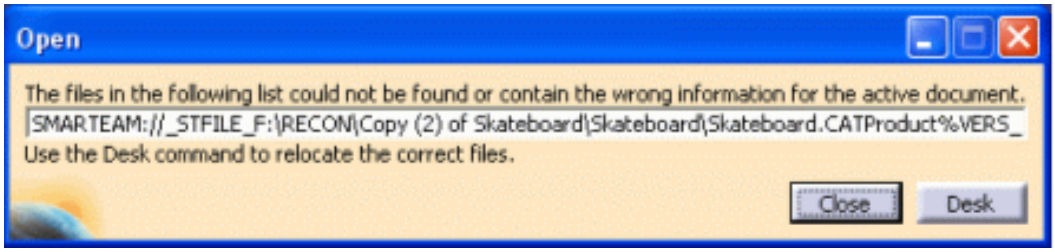
In the following tasks, you will link the ENOVIA data to the fake product.

7. In SmarTeam select the fake product document.
8. Right-click to select **File Operation-> Open For...** .
9. Check the **Open for edit** option in the **Open** dialog box that appears.
   The **Open for edit** capability both checks out the document but also copies it.



   All the documents are now open in the CATIA session.
10. Click the button before the skateboard product so as to retrieve this document from the **Open for edit** operation. The button must turn gray, as shown below, indicating that no operation will be performed on the corresponding document.

The fake product opens but a warning message is displayed warning you that some files it references could not be found. This is why the symbol for broken links is displayed before Skateboard in CATIA specification tree.



11. Delete Skateboard.1.
12. Right-click **Faked Product** and select **Component > Existing Component** to insert the ENOVIA data sent by the supplier.

    When done, the specification tree shows that documents have been inserted are not saved yet in SmarTeam.

Reconciliation of ENOVIA Data

Now that Faked Product references the documents sent back by the supplier, you can run the reconciliation process to incorporate these documents into SmarTeam.

13. Select **SmarTeam > Collaboration > Launch Reconciliation**.
14. Perform the queries you need.
15. Select the rules of your choice for the documents: set **New** or **Reload** for ENOVIA products.

    Overwrite is not available.
16. Set **Overwrite** for the fake product.
    Because the fake product is not an ENOVIA document, you can apply

Overwrite onto it, which makes it possible to keep the history for the documents it contains.

Documents Pointing to the Documents You Reconciled

If you do not use the fake product methodology described above, reconciling ENOVIA documents saved in Structured exposed mode is still possible. However, after reconciliation, the documents (for example CATDrawings) which used to point onto these documents before being sent to suppliers will no longer point onto reconciled documents.

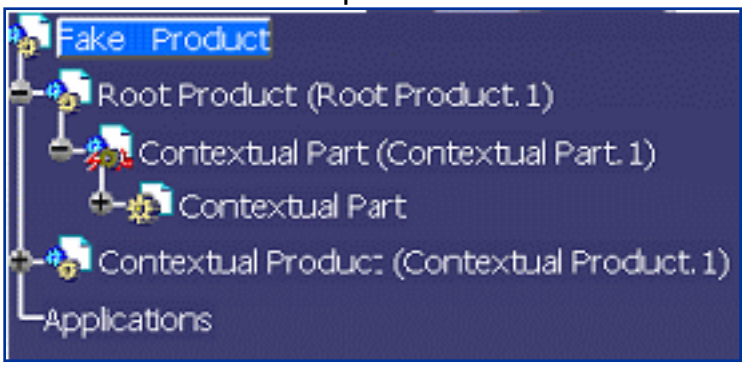
In a nutshell, fake products:

- allow you to keep the history of of the different versions of a product including documents saved in structure exposed mode in ENOVIA,
- allow you to keep the links between SmarTeam documents pointing onto ENOVIA documents you reconcile.

Reconciling an Assembly Containing a Contextual Part

The application reconciles single root assemblies. If you need to reconcile an assembly containing a contextual part, you need to follow the steps described in this task.

1. When reconciling an assembly containing a contextual part, the application triggers a message informing you that the reconciliation can be performed only for one single root assembly. To achieve your reconciliation process, from the local disk open the root product sent by the OEM or supplier.
2. Copy the root product node.
3. Create a new product that will be used as a fake product.
4. Paste the original product into the fake product.
   Note: to import the contextual product, you can:
   - Open it thru **Edit Links** on the contextual part
   - Copy the contextual product root node
   - Paste it on the fake product node.



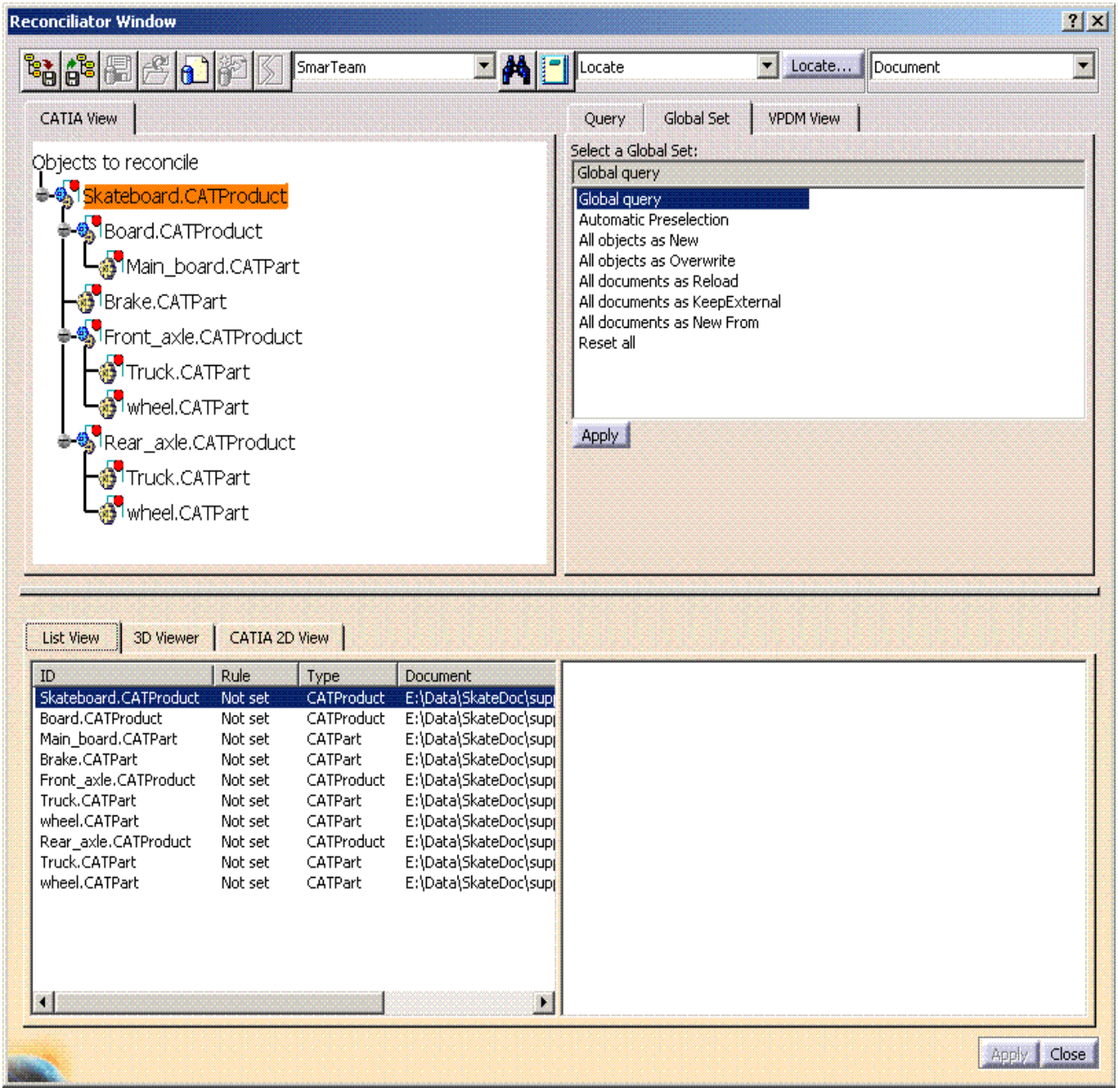
5. Select **SmarTeam>Collaboration>Launch Reconciliation** to display the **Reconcile Window**.
   You can note that the fake product does not exist in SmarTeam.
   We recommend you use the **New** rule for the fake product.
   The other documents should be reconciled.
6. When the reconciliation is complete, we recommend that you save in SmarTeam only the root product, **not the fake product**.
   Note: in case the **Overwrite** rule is set for the contextual product, the contextual product is automatically saved when saving the root product.

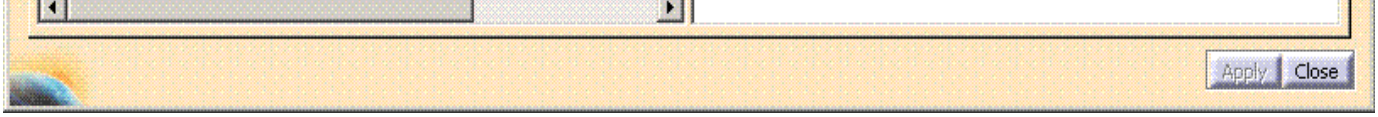
Interface Description

To display the **Reconcile window**, select **SmarTeam>Collaboration>Launch Reconciliation** or click **Launch Reconciliation** from the **Reconcile** toolbar

.

Click the hot spots to access the related documentation.





Actions Toolbar
CATIA View Tab
Query, Global Set Tabs
List View, 3D Viewer and CATIA 2D View Tabs

Actions Toolbar

The actions toolbar enables you to set perform the following actions on the objects to reconcile:

- Setting Reconciliation Rules
- Locating Objects By Attributes
- Selecting The View Type

Setting Reconciliation Rules

The **Reconciliation Rules** toolbar enables you to define if the object to store is to be considered as new (**New**), if the PDM version is to be kept (**Reload**) or if the CATIA version will replace the information stored in the PDM repository (**Overwrite**).

Overwrite in SmarTeam: The object loaded in the CATIA session overwrites the one stored in the PDM repository. See Defining Reconciliation Rules.

Reload from SmarTeam: The SmarTeam object version is kept. See Defining Reconciliation Rules.

New Object in SmarTeam: The object is considered as a new one. See Defining Reconciliation Rules.

Keep as External: The broken link will be accepted as "broken" during the reconciliation process. After saving the documents in the database, the external reference will remain "broken". See Managing Broken Links.

Locating Objects By Attributes

Locate object by attribute: searches for objects to reconcile using their attributes values in the Objects to reconcile tree and in the List View according to the attribute selected in the Locate dialog box. See Using the Locate Tool.

Generating a Report

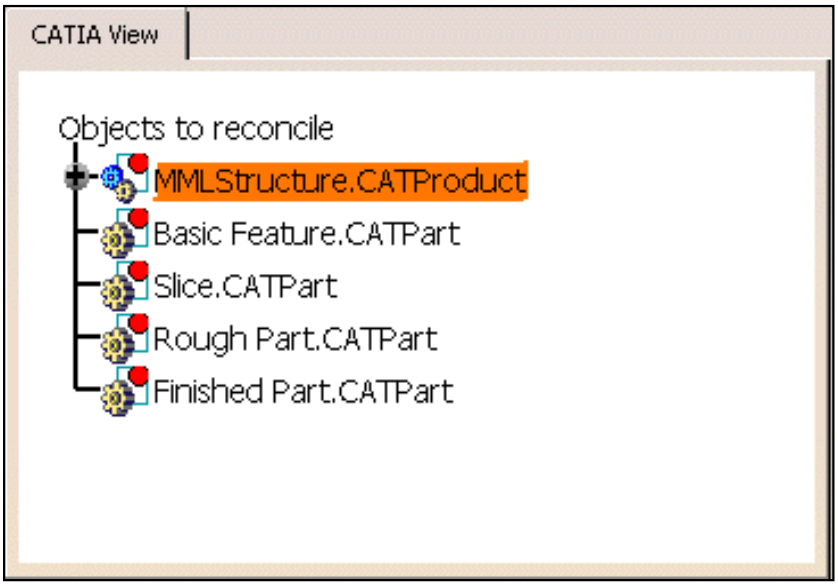
Report: generates a report on the different reconciliation options you set for the documents to to reconciled. See Automating Reconciliations Using the Automatic Pre-selection Command.

Selecting the View Type

This scrolling list enables you to select the view type you want to display in the CATIA View:

- **Document:** represents the documents to be reconciled as a tree of documents. This is the default view.
- **Instance:** Both tabular and graph views represent the CATIA Product structure view, i.e. the objects presented with instances.

CATIA View Tab



Objects

The **Object to reconcile** tree displays the files making up the selected product.

The items displayed in the objects to reconcile tree depend on the selection you made:

- **Part & Document**: Displays the objects to reconcile as reference objects (documents) at the first level. At the second level, the Parts are shown.
- **Instance**: Presents a product structure view and all documents that are linked to this product structure.

The different components are displayed along with an icon indicating their status:

Part and Document View

Refers to a Part contained in a CATProduct saved in Publications Exposed storage mode.

Instance View

Indicates that the mapping between the CATIA and the SmarTeam object is one, but the reconciliation rule is not set.

Indicates that the reconciliation rule is not set.

Contextual Commands

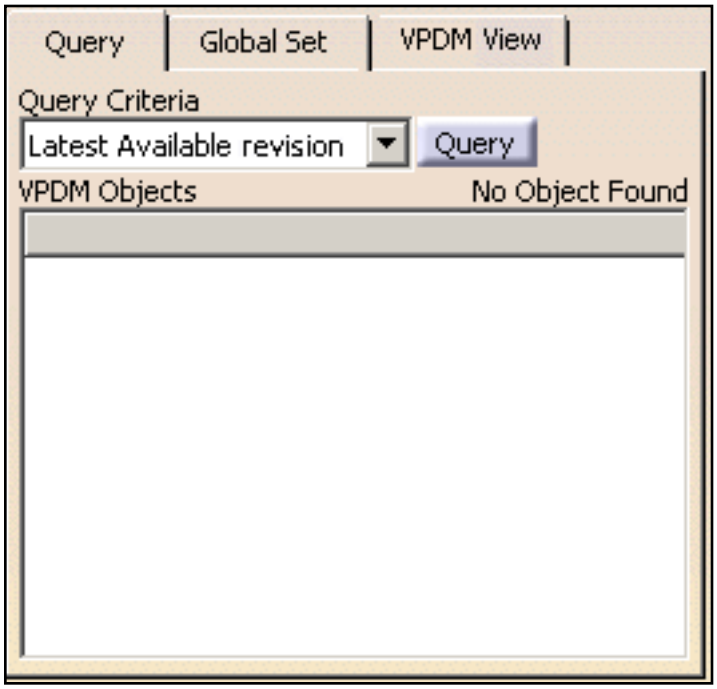
The following contextual commands are available from each object:

- **Overwrite:** See Defining Reconciliation Rules.
- **Reload:** See Defining Reconciliation Rules.
- **New:** See Defining Reconciliation Rules.
- **Keep as External References:** See Managing Broken Links.

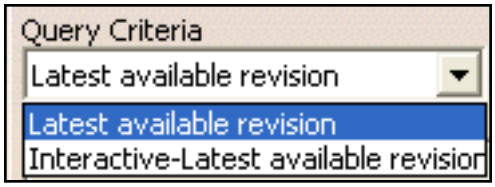
- **Reset**: See Undoing Document Mapping
- **Query...**: See Query Contextual Command
- **Show Profile Card**: See Showing Profile Cards
- **Locate:** See Using the Locate Tool.

Query, Global Set and VPDM View Tabs

Query Tab



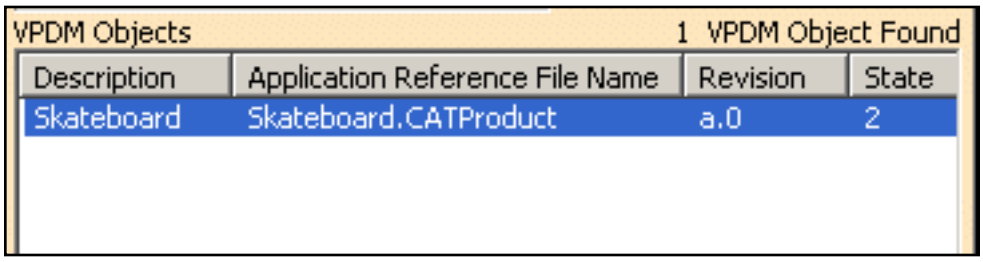
Query Criteria



There are two different query criteria available:

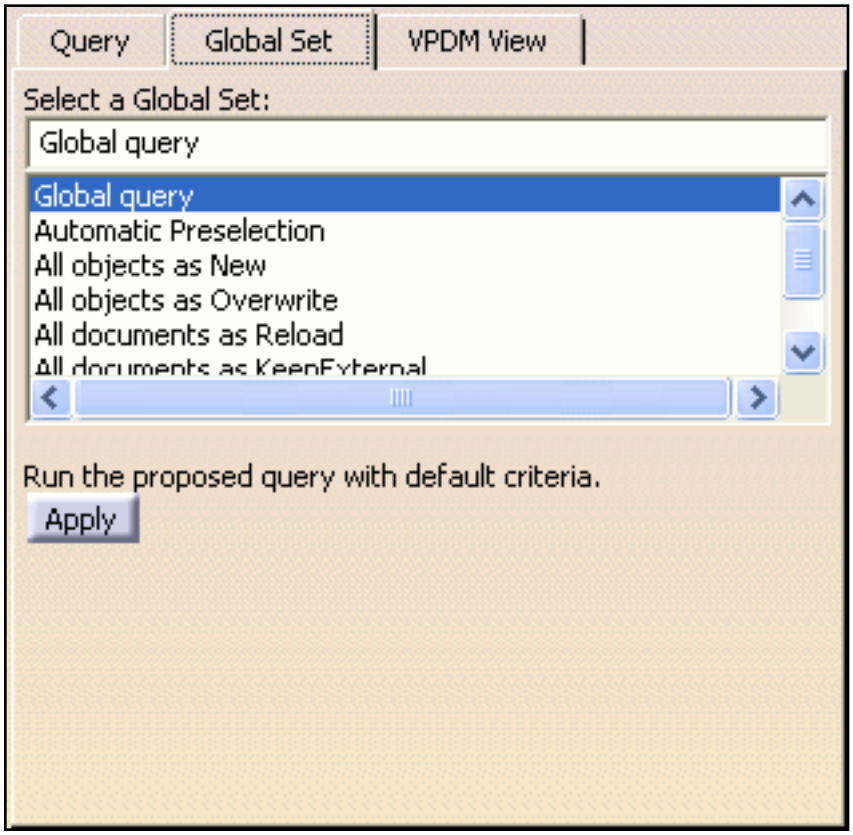
- Latest available revision
- Interactive- Latest available revision

Objects



Enables you to display a tree based on the expanded PDM root product corresponding to the CATIA root product. this tree is displayed only after the root Part of the assembly structure has been mapped.

Global Set Tab

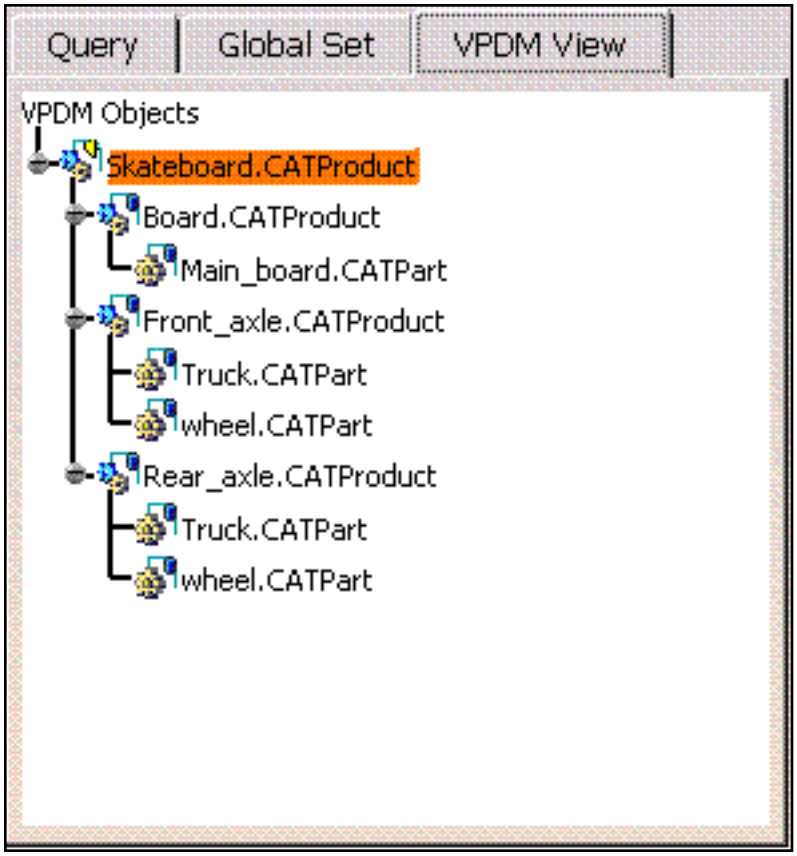


Enables you to automate the valuation of the reconciliation rules.

Global query	Enables you to perform a query using the **Latest available revision** criteria. When you select this option and click the **Apply** button, a dialog box is displayed, prompting you to apply the implicit rules after the query. This query is used to automate the mapping of all objects to reconcile. If the query returns only one result then this result will be mapped to the object on which the query was run.

Automatic Pre-selection	Enables you to automatically perform queries, identification of targeted SmarTeam Documents and selection of reconciliation rules each time you launch the **Reconcile Window**.
All objects as New	Enables you to set all objects to New. When you select this option and click the **Apply** button, a dialog box is displayed. If you check the **Force mapped object to New** option, all the objects, even those that are already mapped, will be set to **New**.
All objects as Overwrite	Enables you to set all mapped objects with no rule to Overwrite. When you select this option and click the **Apply** button, a dialog box is displayed. If you check the **Force all to Overwrite**, the rules that were previously applied to these objects will be overwritten.
All objects as Reload	Enables you to set all mapped documents to Reload. When you select this option and click the **Apply** button, a dialog box is displayed. If you check the **Force all documents to Reload**, all existing rules will be overwritten and replaced with Reload.
All objects as Keep External	
Reset all	Enables you to reset all objects mapping and/or rules. When you select this option, and click the **Apply** button, a dialog box is displayed. You may then decide to reset only the rules or the rules and the mapping.

VPDM View Tab



Displays a tree based on the expanded SmarTeam root product corresponding to the CATIA root product. This tree is displayed only after the root Part of the assembly structure has been mapped. This allows you to use this view to establish a mapping between one CATIA object and a SmarTeam object.

List View, 3D Viewer and CATIA 2D View Tabs

List View Tab

List View | 3D Viewer | CATIA 2D View

ID	Rule	Type	Document	Environment
PN CATPRD-0052	New	Instance	Mechanical systm._VER2.CATProduct	SmarTeam
Crowbar.1	Re-load	Instance	Crowbar.CATPart	SmarTeam
Cutting Mechanism.1	Re-load	Instance	Cutting_Mechanism.CATProduct	SmarTeam
Cover.1	Re-load	Instance	Cover.CATPart	SmarTeam
Internal_carter.1	Re-load	Instance	Internal_Carter.CATProduct	SmarTeam
bagueD7.1	Not set	Instance	Ring_D7.CATPart	SmarTeam
Coussinet-cyl.1	Not set	Instance	Cylindre_Block.CATPart	SmarTeam
Part1.1	Overwrite	Instance	Engine_Carter.CATPart	SmarTeam

The **List View** is a tabular view of the reconciliation tree.

ID Indicates the name of the displayed object.

Rule Indicates the rule applied to the document: **Overwrite in SmarTeam**, **Reload from SmarTeam**, or **New Object in SmarTeam**

Type Indicates the type of the displayed object:

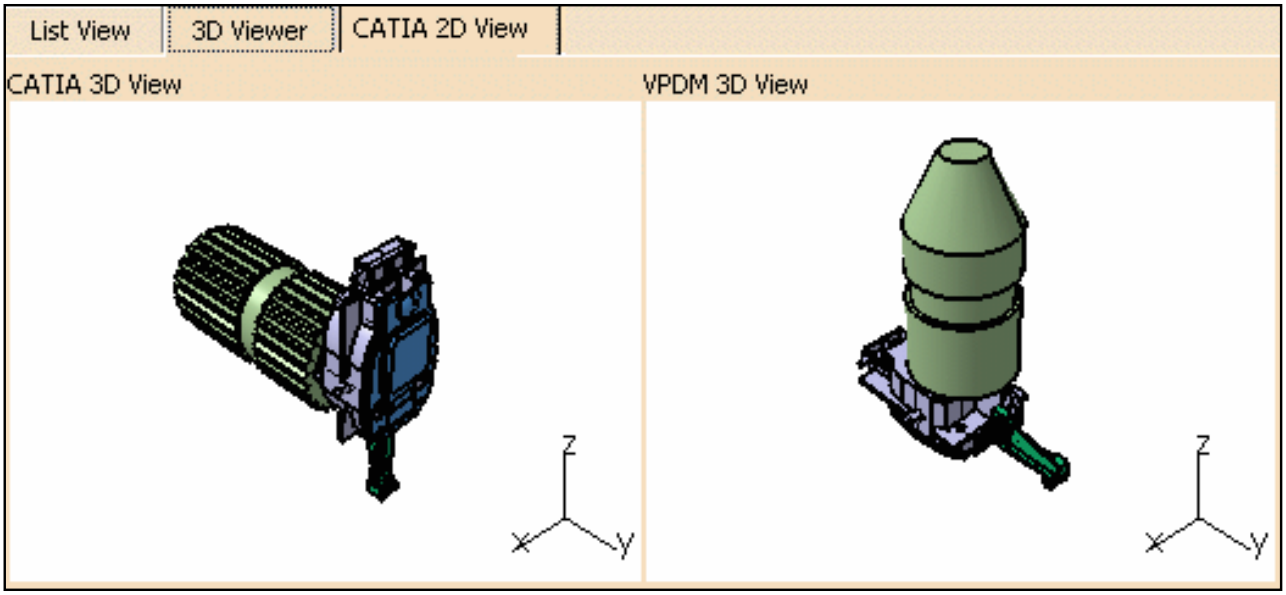
- Part and/or Product if **Part & Document** is selected in the scrolling list or
- Instance if **Instance** is selected in the scrolling list.

Document Indicates the name and the path of the document.

Environment Indicates the selected database (SmarTeam).

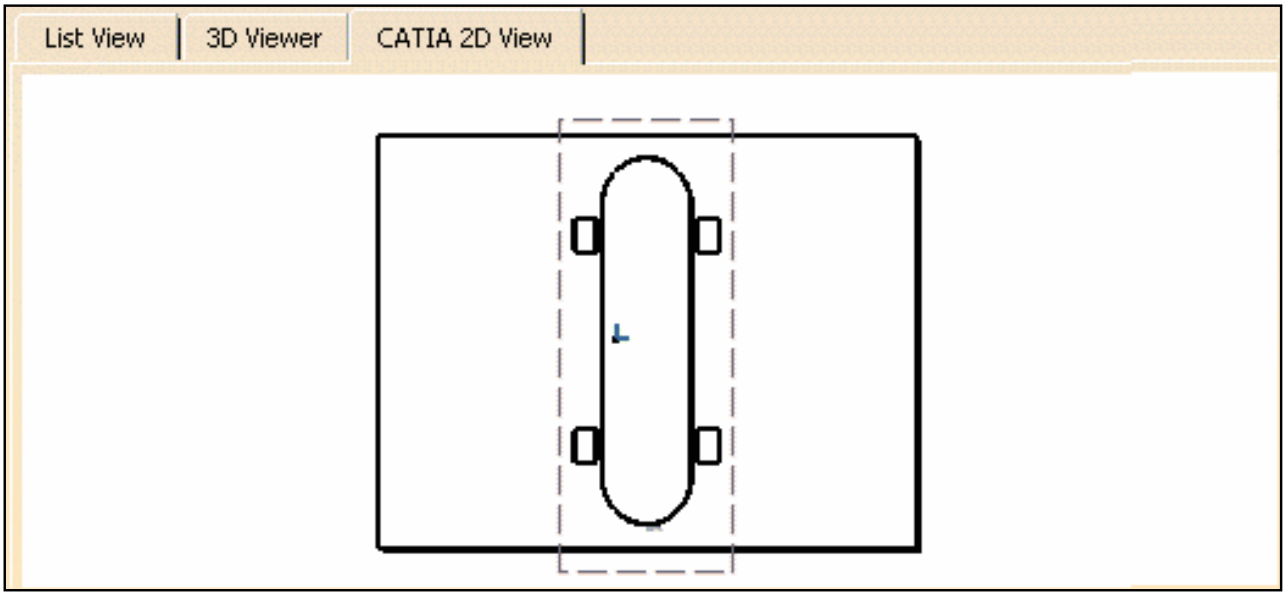
For more information, see Using the Sort Tool.

3D Viewer Tab



The **3D Viewer** tab enables you to visually compare the object loaded in the CATIA session and the one stored in SmarTeam. For more information, see Using the Viewers.

CATIA 2D View Tab



A **CATIA 2D View** tab is now displayed in the lower part of the **Reconciliator** window. It previews CATIA CATDrawing documents. You can improve the view of the active sheet inside this CATDrawing document using zoom in and zoom out capabilities.