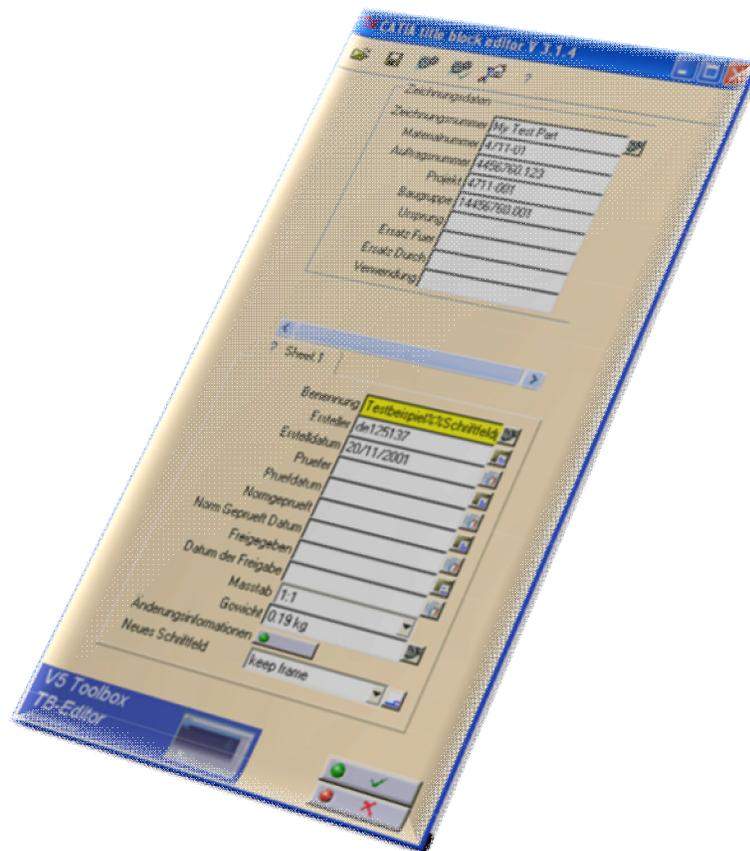




# CATIA V5 Title Block Editor V 4.4.3



Michael Neukirchen

mailto:michael.neukirchen@3ds.com

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## 1 Preface

The title block editor provides an example (it was small in the beginning) for an easy integration of CATIA V5 with other applications. The program is free and can be distributed and used free of charge. The copyright follows the GNU copyright.

The program consists of 2 parts:

- 1) a CATScript macro which extracts the title block data from the CATIA drawing and which performs the modifications
- 2) a TCL/TK program which displays the GUI and allows an easy modification of the data.

Both programs run under Windows (currently tested on Windows XP and in intervals on Unix). The script is wrapped into an executable .exe file (for the Unix platforms you can download the executable as well), so the installation effort is minimal. Any help/experience is welcome.

### 1.1 Acknowledgments

Thank's a lot to

- ✚ Martin Röcker (thanx for the parameter tips and the Diagram support)
- ✚ Stephane Reautey (thanx for the UNIX testing and doc!!)
- ✚ Daniel Schnorf (ideas for correct termination of the GUI, Performance issues)
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For testing, suggesting and reporting.

I would be happy to get some sample screenshot for the usage of the macro. These samples will be documented within this documentation and help the users to design their configurations.

## 1.2 What's new

Summary of the history

| Release           | Remarks   |
|-------------------|---|
| 2.2.0             | Add a title block based on a template<br>Exchange a title block<br>Scrollable Notebook area for large title blocks  |
| 2.3.0             | Specification for fields which are valid and identical for all sheets (drawing level fields)<br>Check of availability of all title block fields<br>additional fields referring to 3d data<br>description for V5R8 added   |
| 2.3.1             | Error correction for the exchange of frames<br>Display of the list of 3d models for generative drawings   |
| 2.3.2             | Allowed to change all revision entries. New revisions will be added on top of the old ones.<br>Macro does not stay in the Background view any more  |
| 2.3.3,2.3.4,2.4.0 | Lots of changes for Unix compatibility<br>New date chooser to avoid iWidget set, meaning standard tk + Bwidget set is all you need.<br>Possibility to use CATIA parameters linked to text. This is the way TD1 exchanges the data.                                      |
| 2.4.1             | Improved parameter handling (performance)<br>Check and information for inconsistencies regarding parameters<br>Check for termination by selecting the Windows "x"<br>Switch from foreground mode to background mode → CATIA repaints its window.                        |
| 2.4.3             | GUI configurable through skin.tcl<br>Background/Foreground through basics.cfg<br>UNIX compatibility   |
| 2.4.4             | Editor works, even if no revisions are defined (all relevant elements are hidden)<br>Debugging  |
| 2.4.5             | Bug Fix   |
| 2.4.6             | Doc Changes<br>Bug fix for revision changes<br>Support for scrolling on the revision panel (the size of the panel can be configured in the title_block_config.tcl data set)   |
| 2.4.7             | In case of missing fields a choice for a new frame is offered.<br>Tracing capability added<br>NLS support for German and English (any translation is welcome and will be added)<br>Ok, cancel buttons replaced by graphical buttons (avoids language dependant buttons) |
| 2.4.8             | Scrolling of Drawing Data Area enabled  |
| 2.4.9             | Default values for revisions enabled  |

| <b>Release</b>  | <b>Remarks</b>  |
|-----------------|---|
|                 | Compatibility to V5R11 – 2.4.8 causes problems  |
| 2.4.10          | Bug Fix   |
| 2.4.11          | Support of Starkit on Windows, resulting in a smaller package<br>Support of dedicated location name for the CATIA template drawings   |
| 2.4.12          | Bug fix for multiple sheet drawings, ANSI/ISO issues<br>Support of components from libraries  |
| 2.4.14          | Bug fixes<br>Possibility to include CATIA Version   |
| 2.4.15          | Bug fixes   |
| 2.4.16          | CATIA infos added   |
| 2.4.17          | Documentation change (error fro SheetNum → NumSheets)<br>Entry width for panels configurable  |
| 2.4.18          | Documentation change (Tip added from John)<br>Bug fixes (NumSheets, Scale > 1)  |
| 2.5.0           | Prompt to retrieve 3D analysis data (mass etc.) to avoid long response times<br>Retrieval of User Properties from the 3D master.  |
| 2.5.1           | Access to 3D info for each sheet individually<br>Bug fixes  |
| 3.0.0           | Bom Management included (see 3.3.6)   |
| 3.0.1,<br>3.0.2 | Bug fixes, 3.0.2 circumvents a bug in the API (introduced ~ V5R12SP9). Tested on R14 level.   |
| 3.0.3           | Translation supported for messages coming from the CATScript part of the macro.<br>Bug fixes<br>Doc part of customization restructured<br>Configuration for the prefix of Tblock entries added. |
| 3.1.0           | Unix Support with Starkits  |
| 3.1.1           | Bug fixes, Check for active document is drawing<br>Support of Description field from 3D   |
| 3.1.2,<br>3.1.3 | 3.1.2 first code parts for a general table editor (streaming)<br>Bug fix for BOMs, which have the title line at the top, Direction of BOM top down  |
| 3.1.4           | First version for a table editor added<br>Link to 3D in the case when the user selects a partbody first corrected.<br>Support for Units added   |
| 3.1.5           | Link to 3D in the case when the user selects a partbody first corrected – now it works.   |
| 3.2.0           | Support of Diagrams, support for R16. Any version below 3.2.0 will not work on R16 due to a naming conflict (FromSelection)   |
| 3.2.1           | Bug fixed for ST parameters   |
| 3.3.0           | Bug fix for ST parameter mapping<br>Introduction of mandatory/optional fields   |
| 4.0.0           | Multiple configurations, rework of config directories   |

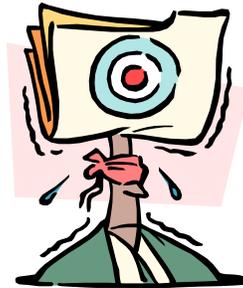
| Release | Remarks  |
|---------|--|
|         | <p>Scenes check: Drawing derived from scenes</p> <p>Preserve of User entered data in BOM</p> <p>Table Editing: columnWidths automatically adjusted to maximum entry</p> <p>If no document is active, a blank CATDrawing will be created automatically</p> <p>Doc: Within the index you will find the current updates under the entry "update 4.0.0"</p> <p>The TitleBlock GUI will stay on top of all applications.</p> <p>Bug fixed for ST parameter mapping</p> <p>Bug fixed for details</p>   |
| 4.0.1   | <p>Bug fixing for revisions</p> <p>Table handling enhanced (insert / delete rows)</p> <p>Revision Block:: Cancel Option added</p>  |
| 4.0.2   | <p>Cut, Copy Paste like windows (Control c,v,x)</p> <p>Bom Table hides in those cases of a generative sheet of a CATPart or no generative sheet. This enables the usage of one template for Parts, Products and interactive 2D designs. Ability to show/hide a BOM Table.</p> <p>Extended Field definition: entry_mode added to give the possibility to disable fields (so the user cannot edit the field)</p> <p>NoShow possibility for the buttonBox at the top of the TB</p> <p>Error reading files solved.</p>   |
| 4.0.3   | <p>Support of text fields for multiple line entries</p> <p>Check, if a l_variable field is defined in case of list fields.</p> <p>Display of PartNumber in BOM wrong (HTML code)</p> <p>Open error in line 788</p> <p>TB editor does not work in 64 bit environment (windows)</p> <p>Mode forced does not work in a new drawing</p> <p>Mass problem for german environment solved</p> <p>TB should offer the possibility to display 3D document name (incl Path) from cad.de</p> <p>→ TitleBlock_Text_3DmodelFullName, TitleBlock_Text_3DmodelName added</p> |
| 4.0.4   | <p>Special character window added e.g. to enter diameter signs</p> <p>Change Panel updated</p> <p>Documentation restructured in a User Part and an Admin Part</p> <p>Support for CADDWGModelName</p> <p>Option, to stream all Properties from 3D to the editor without UP prefix.</p> <p>Extended field definition to directly insert the values from 3D into the GUI (without the need to press the button)</p> <p>Problem with mass (". " And ", " problem) fixed.</p> <p>Material property supported for generative Drawings</p>                          |
| 4.1.0   | <p>Bug fixes for material and array problem for multiple sheets</p> <p>Bug fix for large number of TB Entries</p> <p>Bug fix for special CharacterWindow within the Change Panel</p> <p>Bug fix for scenes</p>   |

| Release | Remarks  |
|---------|--|
|         | <p>Bug fix for AllLevel Boms</p> <p>Modify Bom pre-selection configurable</p> <p>User selection enabled to switch between OneLevel and AllLevels for BOMs</p> <p>Width etc. configurable for the frame selection panel</p> <p>The frame selection panel will show a sorted list of frames</p> <p>Associated 3D model will be automatically be loaded -&gt; that fixes the problem with mass calculation (configurable in Basics.cfg)</p> <p>CADDWGModelNameWithoutExtension supported, which returns the Drawing name without extension</p> <p>Mapping possibility added, to map 'legacy' fields to TB-field names</p> <p>Delete for Revision entries optional</p> <p>Cut/copy/paste behavior for Windows enhanced (Shift Control works too)</p> <p>Tables work on AIX</p> |
| 4.1.1   | <p>Bug fixes</p> <p>User selection for BOM OneLevel, AllLevels reworked</p>  |
| 4.1.2   | <p>Bug fix: path names for windows did not show the "\"</p> <p>Bug fix: ProductScenes do work now</p> <p>Bom: Selection of no Sow Bom will deselect the other Bom related switches</p> <p>Call Back added for TB-entries: Automatism possible</p>  |
| 4.1.3   | <p>Bug fixes</p>   |
| 4.2.0   | <p>Library restructuring (internal)</p> <p>Configuration option added to avoid leading zeroes for sheet numbers</p> <p>Problem with Unicode fixed ('TBConfig error')</p>   |
| 4.2.1   | <p>Bug Fixes</p> <ul style="list-style-type: none"> <li> Error TBeExit for the change panel</li> <li> Error leadingZeroes</li> <li> Show the right config within the change panel for multiple configs.</li> <li> CATIA_TEMPLATES</li> </ul> <p>Added the option Default Values for extended field definition.</p>   |
| 4.3.0   | <p>Bug Fixes</p> <ul style="list-style-type: none"> <li> Drawings derived from CATParts didn't show the relation to the 3D model</li> </ul> <p>Sorting for AllLevel Bom enabled</p>   |
| 4.3.1   | <p>New mode 'hidden' for TB fields: Setting the Mode to hidden, will skip the display on the panel. This is useful, if you want to import data from the 3D model and process the data using the callback mechanism and fill in other fields depending on derived values.</p>   |
| 4.3.2   | <p>Bug Fixes</p> <ul style="list-style-type: none"> <li> Error for linked 3D models in VPM context</li> <li> Error field length for field being not mandatory</li> </ul>   |
| 4.3.3   | <p>Bug Fixes</p> <ul style="list-style-type: none"> <li> Error for piping / tubing R18 (Thanks to Gmür Philipp from Helbling!)</li> <li> extFieldDef – "Default" problem fixed</li> </ul>  |

| <b>Release</b> | <b>Remarks</b>  |
|----------------|---|
|                |   |
| 4.4.0          | English sample for a config data set provided, manual changed accordingly<br>IBMTitleblock.CATScript renamed to Titleblock.CATScript<br>Internal renamings. |
| 4.4.1          | Mapping of texts did only work for one sheet  |
| 4.4.2          | The NumSheets variable was always set to 1. Bug fixed   |
| 4.4.3          | Sporadic error in translateinit fixed   |

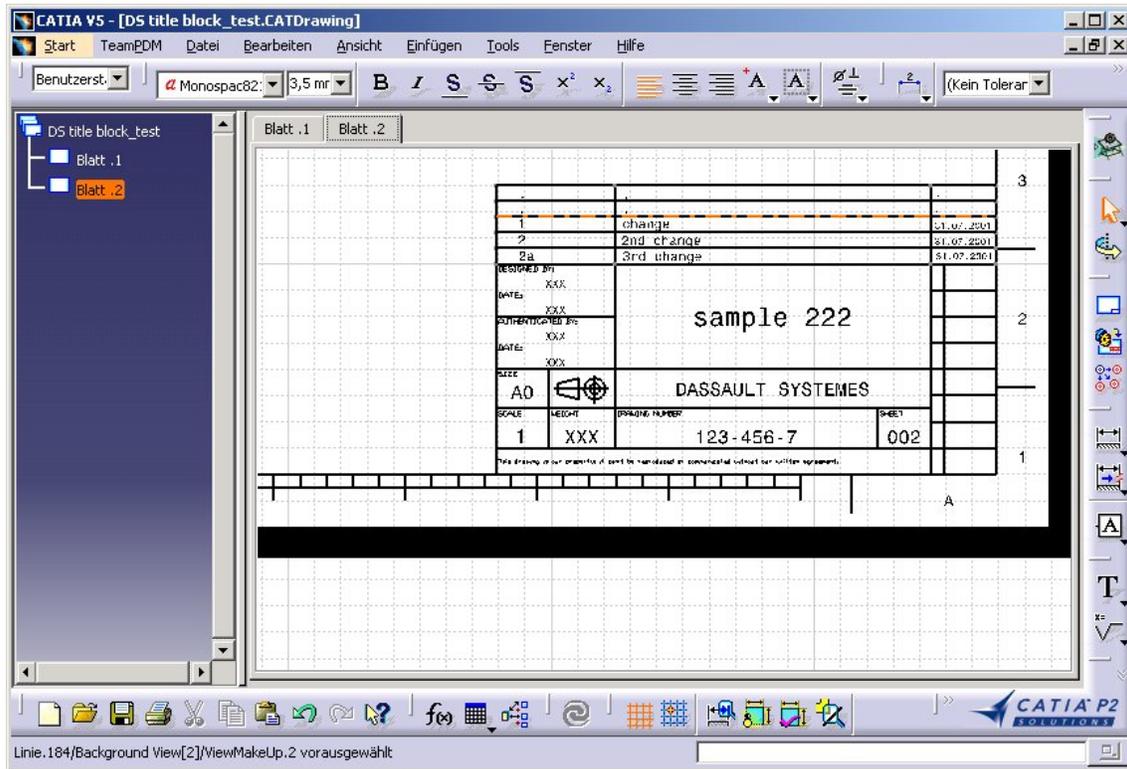
## 2 Part I: User Guide

# CATIA V5 Title Block Editor V 4.4.3 User Guide



## 2.1 First start

Start a new drawing and run the macro from Tools/Macro. The result, after filling the title block entries will be similar to:



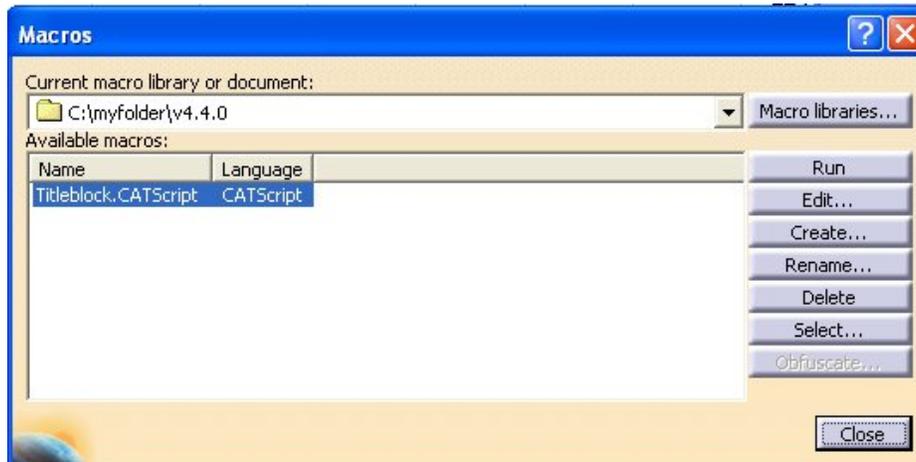
Picture 1: Sample drawing frame

The following chapters will guide you through the process in detail.

## 2.2 Call the Macro

You can start the macro either by calling it directly or by using a dedicated button in the command area of CATIA (see chapter 8).

Select the directory, where you have installed the title block macro (Library). Then you will see the Titleblock.CATScript macro.



Picture 2: Call a macro in CATIA step 2

## 2.3 First Dialogues

After starting the TitleBlock program, it depends on the kind of model you have active.

- Diagrams
- Drawings with an empty background
- Drawings, which already contain a 'proper' title-block

If you have decided to run with multiple configurations, and you have an active drawing containing TB data, the macro will check which configuration fits best to the drawing.

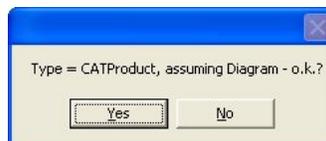
If no document is available, i.e. you have a session with no CATIA document, the program will create a blank CATDrawing.

### 2.3.1 Diagrams

Diagrams (Tubing, P&ID, HVAC, ...) are stored within CATProduct type files. If you call the macro and a CATProduct is active, the macro will assume that you are working on diagrams.

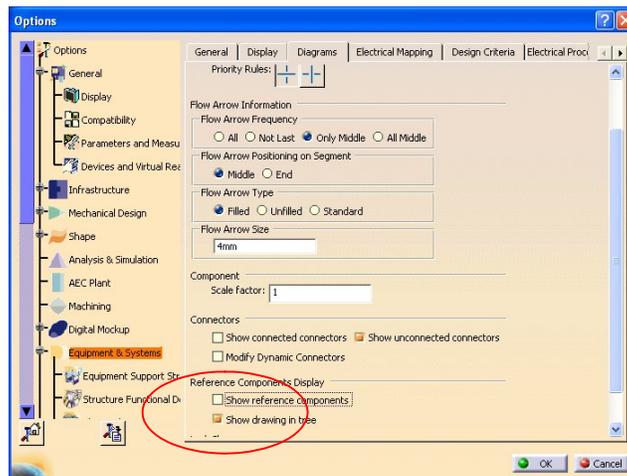


Just to be sure, the macro will pop up a window to confirm the diagram mode.



Picture 3: Diagram Mode

The macro needs access to the drawing area. So you have to activate within the tools options the toggle "Show Drawing in Tree".

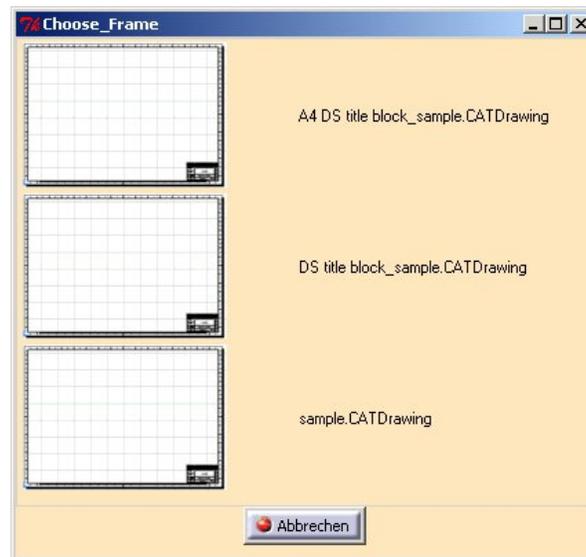


Picture 4: Options to allow Diagrams

Bad News: In CATIA V5R15 the macro will only work on diagrams starting with SP4. On R16 you will need SP1 at least. Some bugs in lower levels of the CATIA software don't allow the usage of the TB-Macro for Diagrams.

### 2.3.2 Empty Background View

If you have an active sheet with an empty background view, the macro prompts you to select a drawing frame (may be slightly different due to customisation). This will be the case, if you start a new drawing or insert a new sheet into an existing drawing.



Picture 5: Frame selector

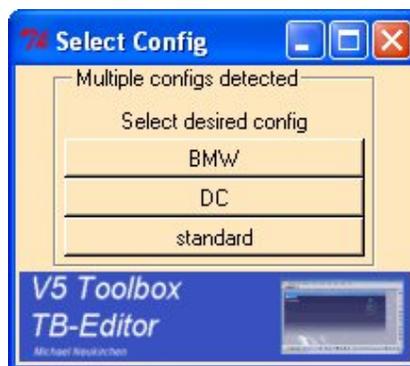
The left side shows a small image of the Title Block, on the right side you will find the CATIA names of the drawings.

You can select one of the images or the name. A selection of the Button will cancel the method. If you have more frames, the panel will have scrollbars.

### 2.3.3 Multiple Configurations

In case you have defined multiple configurations “, , **and** the current frame content fits to more than one configuration, the TB macro needs your help. This can be the case, when you have to deliver your drawings to different OEMs such as DC, BMW, ....

The TB will display a list of configs, which match to the content of your current active drawing.



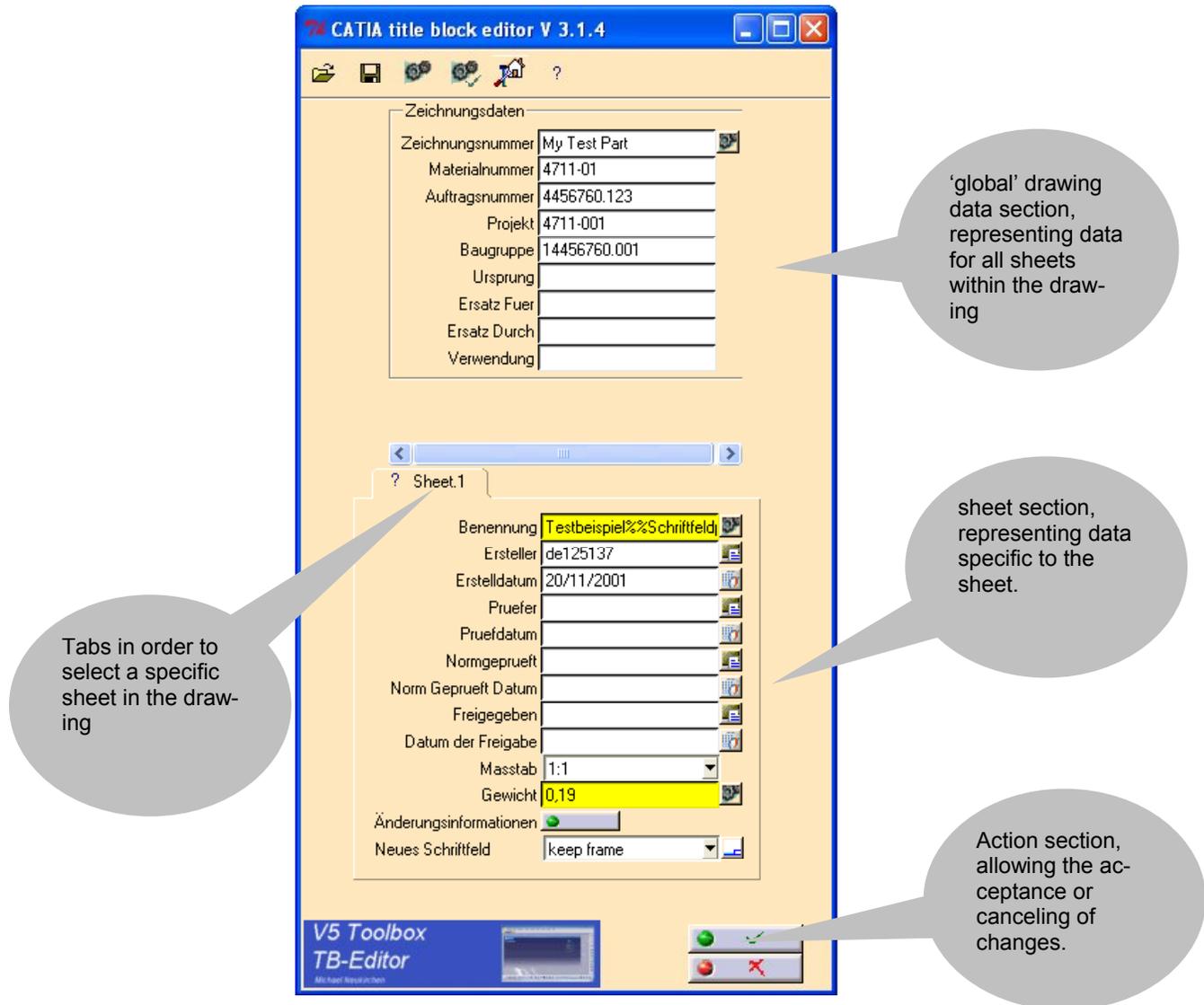
Picture 6: Multiple configs

0.0.4

## 2.4 Edit Title Block

The Macro scans the model and shows the GUI to enter / change data. If you select a pushbutton near to an entry field, a default will be put into the entry area.

All descriptions -labels- are configured in the config data set, to ensure a maximum of flexibility (see the admin section).



Picture 7: The main panel

## 2.4.1 Copy & Paste info between fields

You can use the standard behavior to copy and paste data between different entry fields. On Windows you can use Control-c, Control-v, Control-x.

On top you can use a drag and drop mechanism by selecting the text you want to move to another entry field and drag that text to a target field (keep mouse button 1 pressed and drag).

## 2.4.2 Insert special characters

Not all characters can be entered via the keyboard. You can use the Alt key together with the s key to show a panel with special characters (can be customized by your admin).



Picture 8: Special Character window

Select one of the symbols shown and the symbol will be inserted at the current cursor position in the current entry field of the TB editor.

The cancel button will close the panel without inserting a character.

## 2.4.3 The different options on the main panel

The main panel will display a user interface to allow the modification of the title block fields.

### 2.4.3.1 Buttons on the top of the Panel

The buttons at the top of the panel allow general actions for the TB environment such as

-  Save and load of TB data
-  Configuration Options
-  General acceptance of 3D data
-  General Info on ST interop
-  Help

This button bar can be enabled or disabled.

#### 2.4.3.1.1 Open File

This button allows the import TitleBlock entries of a previous stored sheet into the current sheet.

#### 2.4.3.1.2 Save File

 saves the contents of the current sheet's TitleBlock entries to disk. A save as dialog appears to select the file. You can use this option, to import data into a blank model. (Previously you have to export data with the save option).

With Open/Save you can perform a copy/paste style of action for TB-entries from one Drawing to another.

#### 2.4.3.1.3 Show 3D models linked to the drawing

Here you can display a list of the 3D models which are linked to the drawing



**Picture 9: Link to 3D models**

The sample shows the original link for the drawing on my machine.

#### 2.4.3.1.4 Accept all 3D infos (optional)

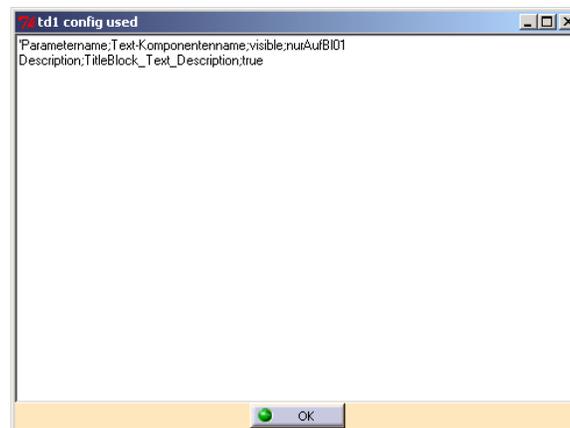
You can accept all data which comes from the 3d associated model in one shot. All 'yellow' entry fields will be filled with the info from 3D.

Yellow fields show discrepancies between entries in the TitleBlock fields and the data in the corresponding 3D model.

This menu item is optional – depending on the configuration.

#### 2.4.3.1.5 TD1 compatibility

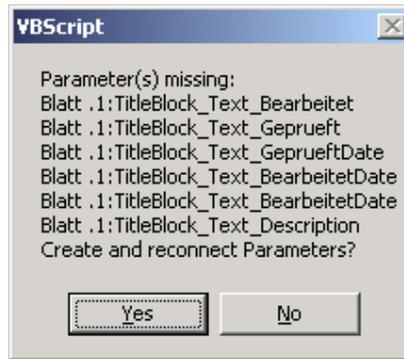
As soon as the TD1 configuration data set is available in the config directory, the TD1 icon is shown. If you select this icon, you will see the configuration data set.



**Picture 10: TD1 configuration**

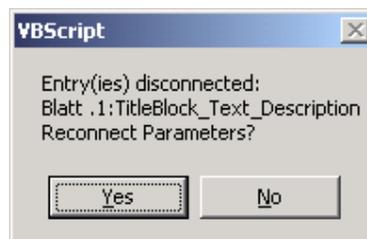
The macro checks the parameters defined in the config data set against the actual values. It detects the following problems

- Missing parameters. This can happen, if a user has deleted a parameter, or additional parameters have been defined for a TD1 integration.



Picture 11: Missing parameters

- Parameters which are not longer connected to a text entry (i.e. parameter value is different from text entry). The disconnecting of parameters can happen, if a user edits a text field directly instead of modifying the corresponding parameter.



Picture 12: Disconnected parameters

In both cases, the user can accept corrective actions. Then the macro will delete the defined parameters, recreate them and connect the parameters to texts. Depending on the total number of parameters in the drawing (e.g. lots of views), this will take time.



#### 2.4.3.1.6 Configuration (optional)

If you allow the user to select this menu item, he will get the following panel:



Picture 13: Select Units

##### 2.4.3.1.6.1 BackGround View

A selection of the Background View activate toggle will leave the background active, when you leave the macro. This is important in the case of Diagrams – it is the only way to access the background, if you want to change something manually.

##### 2.4.3.1.6.2 Units

You can specify another unit within the unit config dialogue. The units shown are dependant of the configuration.

After you select a unit, the TB macro will ask you, if all values from 3D should be accepted. If you confirm here, all values will be accepted (the yellow field will vanish) and the weight, volume and wetarea fields are re-calculated.



#### 2.4.3.1.7 Help

Shows this doc in pdf format.

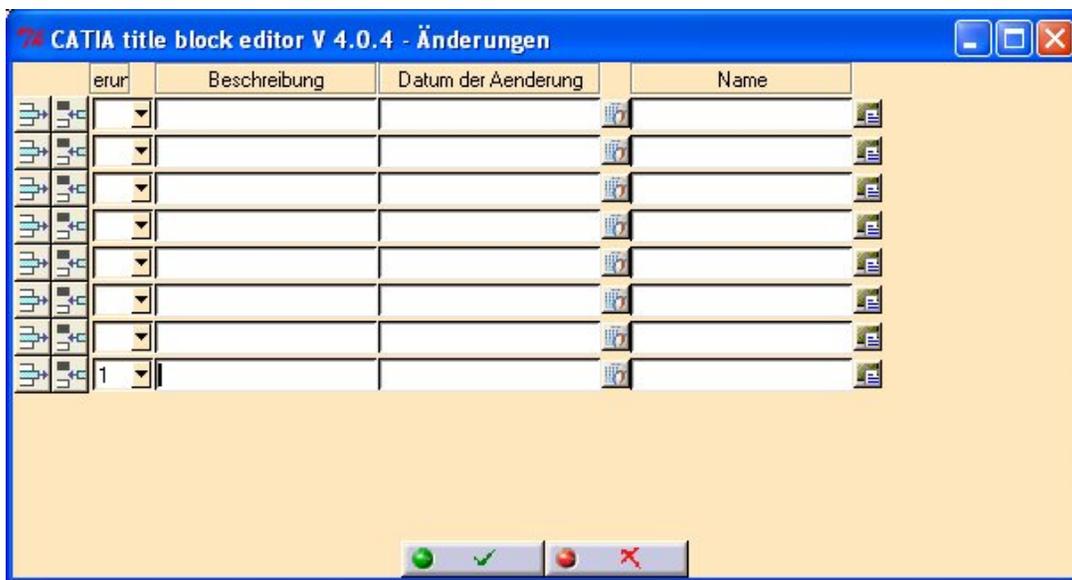
#### 2.4.3.2 Copy data from

If the CATIA model contains more than one sheet, the macro offers the possibility to copy the contents from another sheet. This can be used in cases of new – blank – sheets to quickly fill most of the fields.

First select the arrow to choose the desired sheet. This sheet will be the source of the data. After pressing the copy button  the values will be copied to the actual page.

#### 2.4.3.3 Add revision info

The makro shows the change history, as far as it is stored in the model (the cat\_title\_block\_change fields). The entry fields allow you to enter / change data for the revisions.



Picture 14: Adding change infos

On the left hand side, you can select for each line a button to add a line  or delete a line .

The cancel button will reset the values and close the panel. The ok button will accept the entries done.

#### 2.4.3.4 Default Values

A selection of the default Button  will enter the default value into the corresponding entry field. Default values can be specified in the configuration data set (see below).

#### 2.4.3.5 Default Values from the 3d master

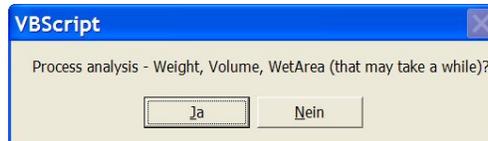
If data from a 3d master is available, i.e. at least one view in the sheet is a derived view, the editor offers the data by the  icon. The entry field will be yellow in those cases, the 3d info differs from the actual title block entry:



**Picture 15 3D info differs from actual title block entry**

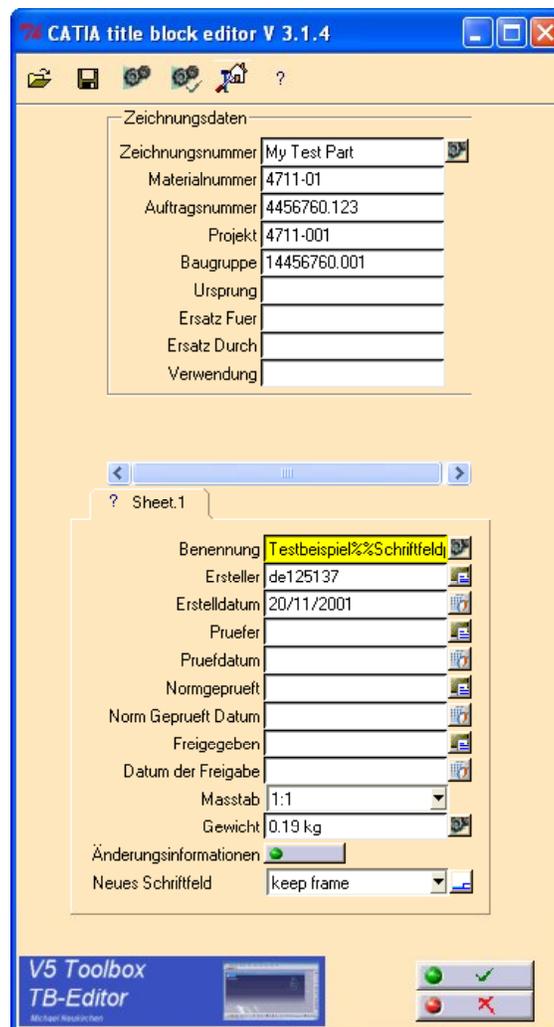
Pointing with the mouse on the Button will display the 3D info. Clicking the button will copy the 3d info data into the entry field. The editor takes the **last** derivative view found in the sheet as the source for this info.

In case the drawing is derived from a CATProduct, the macro will prompt the user to decide whether 3D analysis data such as Weight, Volume and WetArea should be retrieved from the 3D master. This can take a while, since CATIA will recalculate these items.



**Picture 16 Checkbox to retrieve data from 3d**

Since 3.1.4 you can convert the CATIA units, which are given in the mks-system to other units. These units can be specified in the configuration dataset.

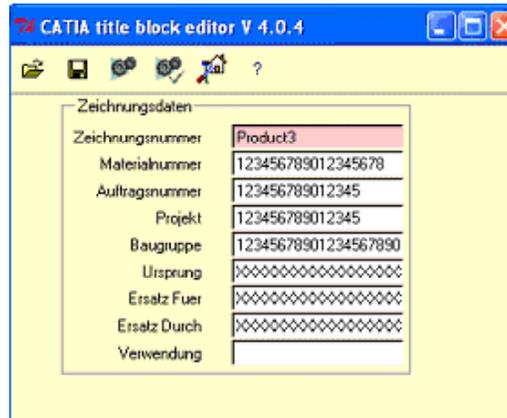


**Picture 17: Unit added to weight**

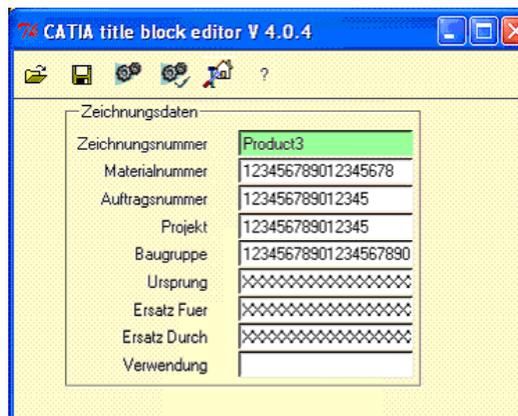
You can switch the unit, by selecting the appropriate values within the configuration dialogue (  ).

### Automatic insertion of properties

Your Admin can decide that specific values will be directly inserted into the TB-Editor. Colors will signal, that the data is originated from the 3D model (green color, if data from 3D and drawing from the drawing are equal, red color, if the values differ). A sample below is provided.



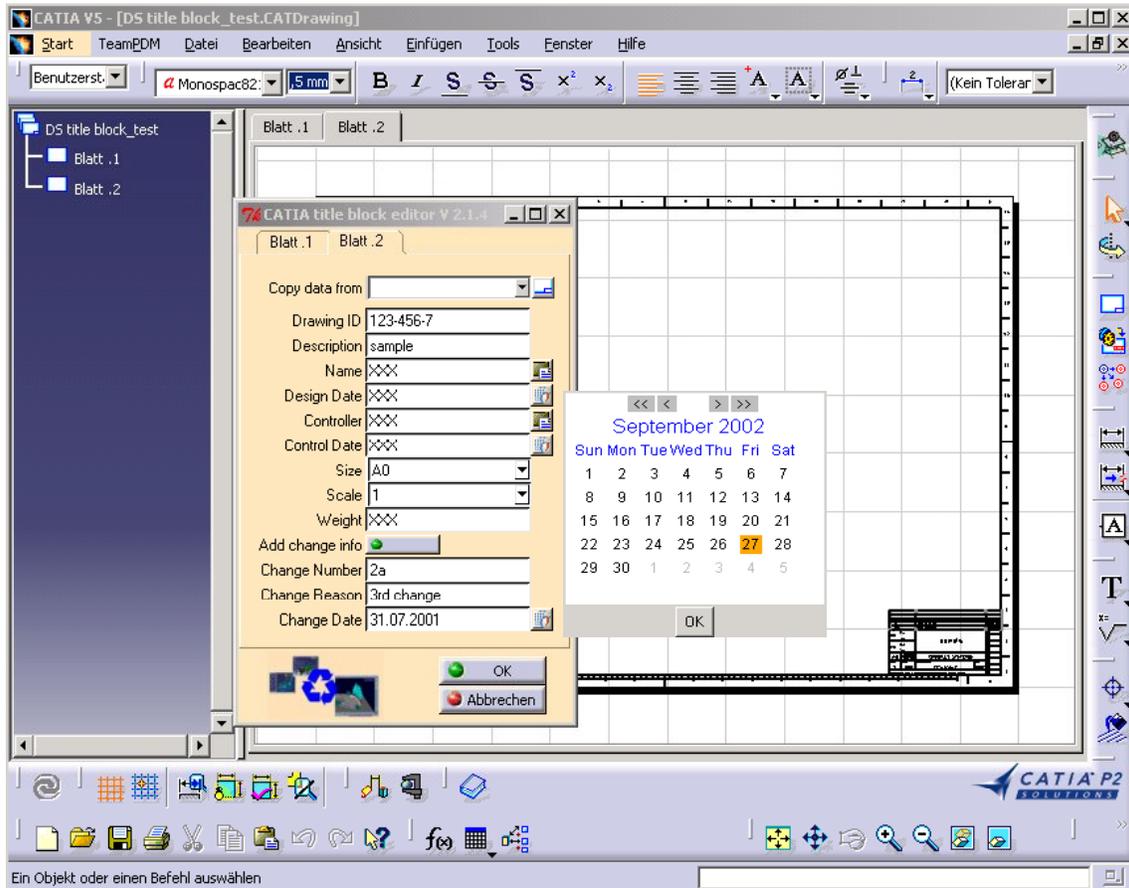
Picture 18: 3D Value differs



Picture 19: 3D Value and Value in the Drawing are equal

### 2.4.3.6 Date Chooser

Selecting the date chooser icon  gives the possibility to select the desired date. The date format can be specified within the config data set.



Picture 20: Date chooser

In order to select the current date, select it and then the ok Button

### 2.4.3.7 Mandatory Fields

Beginning with 3.3.0 the administrator can define mandatory fields. These fields will be marked by red or green dots.

- signals, that the field has a value
- signals, that the field is empty and a value is expected from the user

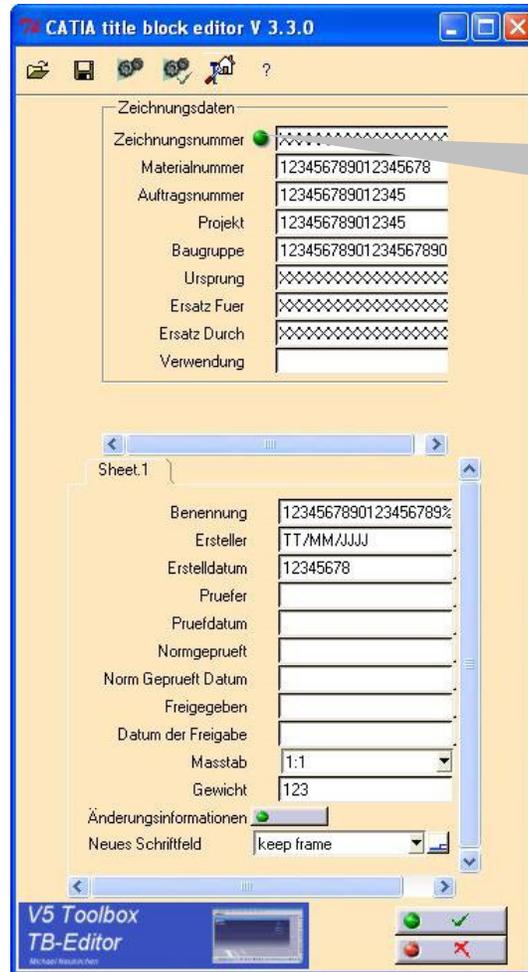
Depending on the mode the administrator has chosen, the macro will prompt the user for the missing values.

Since CATIA doesn't allow real empty fields for texts, a so called "empty char" has been introduced. Usually this character will equal to "-". Each field, which has only this "empty char" will be treated as empty and the user will get a hint or will be forced to enter data for this field.

A field can be defined as mandatory within the extended field definition.

Sample:

CATIA Title Block Editor 443.doc



Picture 21 TB with mandatory Fields

#### 2.4.3.7.1 Enabled

In case the macro is running in the “enabled” mode, the macro will issue a warning, that values are missing. The user can decide to continue anyway – leaving some mandatory fields empty.

#### 2.4.3.7.2 Forced

In that case the user cannot leave the macro by the ok button until all mandatory field are filled in. The only way to leave the macro is to select the cancel button, discarding all changes which may have been done.

#### 2.4.3.8 New Drawing Frame

You can select a new drawing frame for the active sheet (you won't find this option on the tabs of the other sheets). In case of a selected button, the macro will replace the drawing frame of the active sheet by a new one. All entries which are in the edit environment will be put back onto the drawing frame.

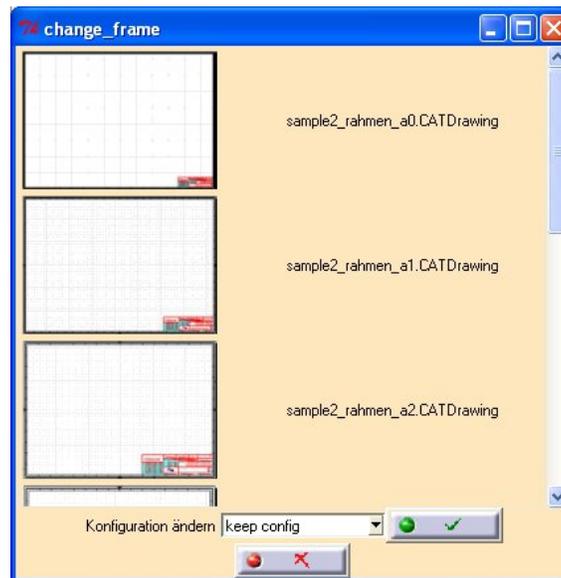


Picture 22: Change of drawing frames

The box shows the possible frames, if you select the button on the right the panel for the selection of the frames will appear. The “keep frame” title block will preserve the current drawing frame.

If you want to work this way, entries such as A4 should not be editable but a fix component of the frames.

If you select the little frame icon, the selection box for the selection of frames will pop up.



**Picture 23 Selection Panel for Frames**

#### 2.4.3.8.1 Selection of a frame icon

If you select one of the frame icons, the current frame in your drawing will be exchanged. Usually you can do that to increase/decrease the size of a frame.

#### 2.4.3.8.2 Selection of the drop down list

The drop down list offers to change the configuration for the TB macro. This drop down is only shown, if you are using more than one configuration. This targets at the scenario that you have to deploy your drawings to several OEMs.

After selection of a different configuration, the displayed Icons will change and you will be able to select a drawing frame.

#### 2.4.3.8.3 Selection of the ok button

In case you start the TB macro with a configuration that does not fit to your current drawing, you will get a lot of errors (see missing fields below). If you only want to change the configuration and not exchange the drawing frame, then select the desired configuration and press the “ok” button.

#### 2.4.3.8.4 Selection of the cancel button

The panel will disappear without changes.

### 2.4.3.9 Modify Bom

If your drawing has a table with a component ID: MyBomTable, then the macro offers you the possibility to rebuild the bom automatically from the 3D master product.

Starting with 3.3.0 the checkbox will not be pre selected. You have to select the box in order to modify the bom.



**Picture 24 Modify Bom Checkbutton**

**2.0.4**

If you want to hide/show the Bom table in the drawing, you can check the 2<sup>nd</sup> checkbox:



This will only work for drawings derived from a CATProduct. If the current sheet is not linked to a 3D product, the following message will pop up:



**Picture 25 Bom Info message**

and the bom will stay as it is.

### 2.4.3.10 Handling of CATIA tables

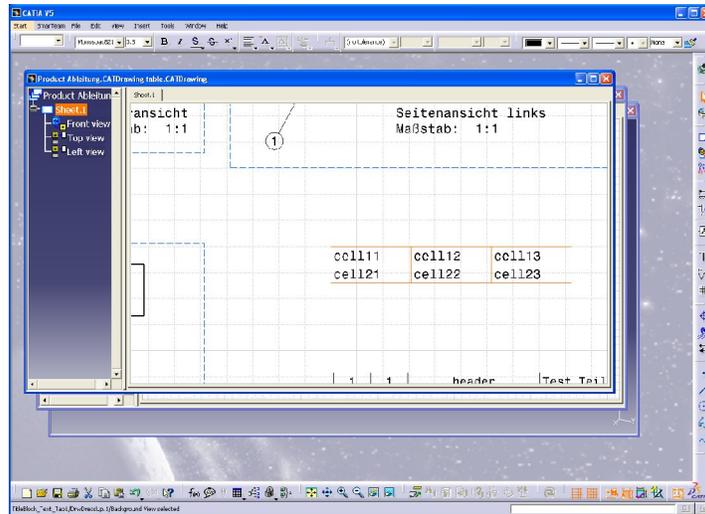
The titleblock editor allows to edit tables which have names according to the editor convention. If you place a table in your drawing and assign a component id of

TitleBlock\_Text\_TableName

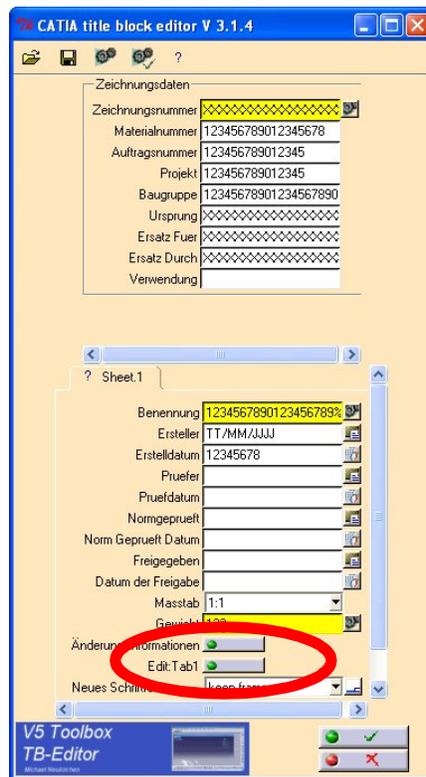
Then the editor will offer you the possibility to edit that table.

### 2.4.4 Sample Table

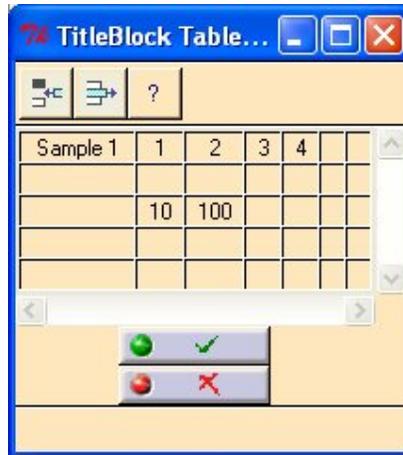
The sample below shows a 3by2 Table. The editor offers an additional button to edit the table.



Picture 26 Table in CATIA Drawing



Picture 27 Button to edit the table



Picture 28 Table Editor

The Ok Button will accept the changes, the Cancel button discard changes done in the Table Editor.

The Buttons in the upper part of the panel allow you to add or to delete a row. Alternatively you can use the right mouse button to get a pop up menu. In each case, a cell has to be selected first.



**Merging of cells is not supported!**

## 2.5 Missing fields

In case of missing title block fields in the CATIA model, the macro will display a summary of the fields missing. You should add the required fields to your model.



Picture 29: Missing Elements in the drawing frame

This sample message reports one error:

The field *TitleBlock\_Text\_Number* is missing in sheet *Blatt .1*  
(Here you can see the German translation)

### 2.5.1 Change

In case you erroneously had active a wrong TitleBlock the selection of Change (upper button) will pop up the dialog to select a new frame. This new frame will be loaded into the background view.

## 2.5.2 Cancel

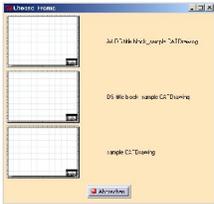
Selection of Cancel will cancel the macro. No changes will be made.

## 2.6 Use Cases

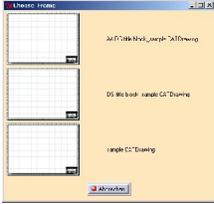
This chapter describes some use cases for the macro



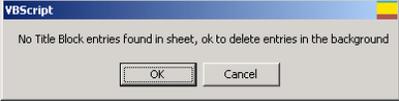
### 2.6.1 Empty Model

| Action                                 | Response   |
|--|--|
| Call the macro                         | Display of frame selection panel<br>   |
| Select Cancel                          | The process is aborted, the model remains empty  |
| Select Frame                           | The frame is copied into the background of the current sheet<br><br>The editor pops up<br> |
| Edit data within the editor panel + ok | Data is sent to the model and is edited in the frame   |
| Select cancel                          | The data from the template frame will be in the model  |

## 2.6.2 Model containing a frame

| Action                                 | Response  |
|--|---|
| Call the macro                         | <p>The editor pops up</p>    |
| Select Cancel                          | <p>The process is aborted, the model remains as before</p>  |
| Select a New frame + ok                | <p>The frame selector shows up</p>  <p>The new frame is copied into the background of the current sheet</p>  <p>The editor pops up again</p>  |
| Edit data within the editor panel + ok | <p>Data is sent to the model and is edited in the frame</p>   |
| Select cancel                          | <p>The data from the template frame will be in the model</p>  |

### 2.6.3 Model with something else in the background view

| Action         | Response  |
|----------------|---|
| Call the macro | <p>An message is displayed, showing that the macro couldn't identify the geometry in the background.</p>  |
| Select ok      | The geometry in the background is erased and the frame selection panel pops up and the sequence continues like the <i>empty model case</i>  |
| Select cancel  | The macro quits   |

### 3 Part II: Admin Guide

# CATIA V5 Title Block Editor V 4.4.3 Admin Guide



## 3.1 Installation

### 3.1.1 General Client / Server installation

If you want to test the program on a Server machine, follow the instructions below.

If you want to give access to a community of users, install the macro on a server like shown below. The directory has to be accessible by the clients. The sInstallDir has to be the path as 'seen' from the clients.

### 3.1.2 National Language Support

Within the skin.tcl data set in the config directory, you will be able to choose the language. As of today

de (german)

en (english)

are supported. English will be the default.

The specific names of the TB fields (e.g. Materialnummer) are defined within the config data set config\custom\standard\title\_block\_config.tcl. The default panel is in German language. **If you want to use English panels, please replace the title\_block\_config.tcl by title\_block\_config\_en.tcl**

### 3.1.3 Windows / Unix Change of the TitleBlock.Catscript file

Extract the *title\_block.zip* file to an arbitrary directory. You have to change one line inside the TitleBlock.CATScript file to reflect the location of the files:

```
sInstallDir = "C:\data\data_actual\src\catia\title_block\v4.4.0"
```

**You must not use blanks in the install path!**

For Windows: If you want/have to use blanks within the path name, you should use the 'good old' windows/dos convention like

```
'C:\Dassault Systemes\scripts' → 'C:\DASSAU~1\scripts'
```

The old naming convention can be checked by using the dir /X command.

### 3.1.4 Unix

The application now (beginning with 3.1.0) uses pre-built starkits which include the necessary widgets.

Download the Unix – Support for the TitleBlock Macro from [www.catiav5forum.de](http://www.catiav5forum.de) and place the binaries in the corresponding directory/directories. The version TB-UnixSupport\_V1.1 will be necessary.

|             |             |
|-------------|-------------|
| bin/intel   | windows     |
| bin/hpux    | HP-HPUX     |
| bin/irix    | SGI-IRIX    |
| bin/solaris | Sun-Solaris |
| bin/aix     | IBM-AIX     |

The program has been tested under AIX. Any experiences are welcome and will be integrated.

**You have to change the executable flag for the binaries, so issue a command like**

```
chmod a+x Titleblock.exe
```

### 3.1.5 Ready to Go!

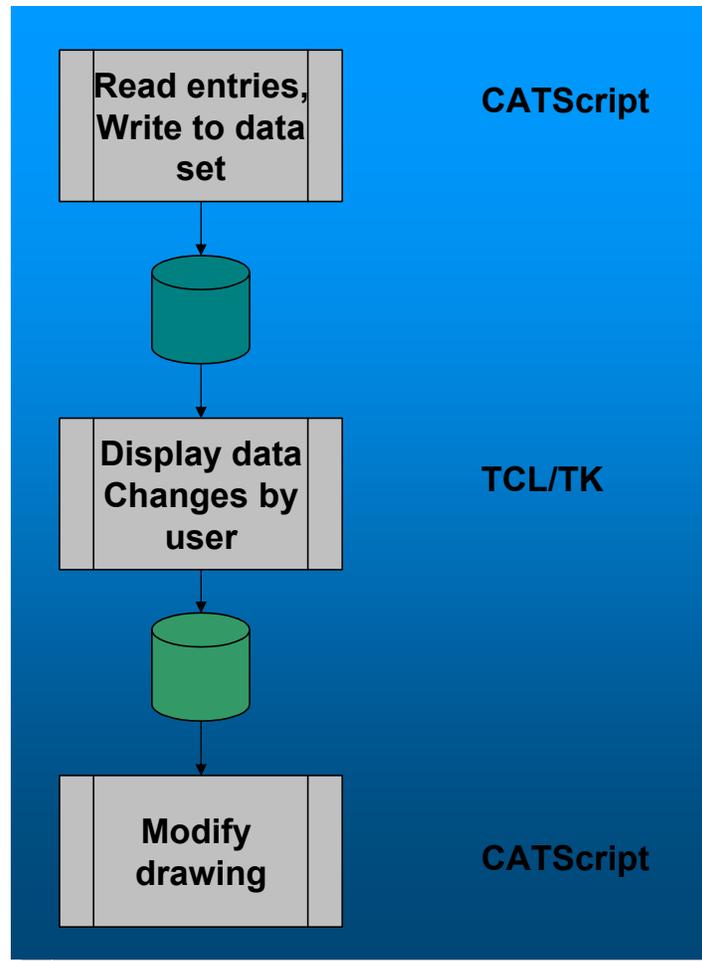
You should now be ready to go. Add the path of the macro to your Macro libraries and execute it.

## 3.2 How does it work?

### 3.2.1 In general

The macro is written in Basic Script and TCL/TK. The Basic script does the interface to CATIA, the TK part provides the GUI to enter data.

First the macro checks, if the drawing already has title block info in the background view. If so, the GUI pops up and the user can change data. If not, a selection panel for title block frames pops up. In this case, all info in the back ground is deleted and the macro copies the selected frame to the background view of the current drawing.



In case you exchange an existing frame in the drawing (e.g. replacing an A1 by an A0 size frame) the macro will erase the background completely. So ensure that you only have the frame info in the background (instatiated details – components will be preserved). If you need additional geometry individually for drawings, you can add this by details. Possibly you will have to rearrange the details after replacing the frame.

The script uses starting with 2.4.1 a brute force communication between the GUI and the CATIA script. A temp data set

cat\_title\_block\_3.txt

is used to check if the GUI is still active. CATIA polls the whole time. If CATIA hangs after the macro, kill this data set in the temp directory.

### 3.2.2 CATIA documents supported

In CATIA V5 you can define drawings within CATDrawings (no wonder), CATProducts (Diagrams) and CATParts (with the help of LO1).

With release 3.2.0 the TB Macro supports

- CATDrawings
- CATProducts for Diagrams

### 3.2.3 SMARTEAM compatibility

If the configuration data set for SMARTEAM/TD1 is available, the macro assumes a TD1 compatibility. The CATIA SMARTEAM Integration relies on the mapping of parameters from CATIA to SMARTEAM

objects. The macro will connect the title-block entries with CATIA parameters. The program works as follows:

- Delete the parameters, which are specified in the config data set
- Create the parameters and connect them to the corresponding title block entries

This procedure allows an exchange of title block frames, because all title block entries are automatically reconnected to the corresponding parameters. Even drawings, which don't have parameters, will be provided with the parameters and can be easily interfaced with TD1. The basics are: Have title-blocks containing texts with the 'right' object names.

### 3.2.4 Support of Library Components

You can use CATIA libraries to place components on the background. This can be modular title blocks or geometry like welding info.

If you want to include texts in the components, which should show up in the editor, you can use modifiable texts using the same naming conventions (meaning TitleBlock\_Text\_...).

If you exchange the frame, the components will be copied to the new frame. A shift in x-direction will be performed according to the different horizontal sizes.

Do not use other geometry on the background view, since this geometry will be deleted, in case you will perform an exchange of the title frame geometry (e.g. A1 → A0).

### 3.2.5 Multiple configurations

In some cases it is necessary, that you use more than one configuration. That may happen for instance when you are part of a supply chain. These configurations can be defined and stored in the config/custom directory. Simply add an new directory which will hold your configuration files.

If you start the macro, and you already have TB-Data within your drawing, the macro checks, which config fits best to your active drawing. It compares the field definitions of the configuration data set with the entries in your drawing. In case it finds a config which has all fields defined, the macro will switch to this config.

You are able to switch configs and frames. In that case, the macro will map the existing entries in your drawing to the new field definition. **If you have defined a field on your drawing, and that field is not defined in the new configuration, the entry information will be lost.**

Starting with 4.0.0 the TB macro supports multiple configurations. However, as long as you are using one configuration – the “standard” config – the behaviour of the TB-Macro will be as in Release 3.

The default directory will be the “standard” directory . If you want to use another name, you can do so by specifying the default directory within the basics.cfg data set. This default configuration will be used for new drawing frames.

4  
0  
0  
4

### 3.3 Customization



Roadmaps to configure the title block scenario. Since lots of requests have been posted, the configuration has lots of entries.

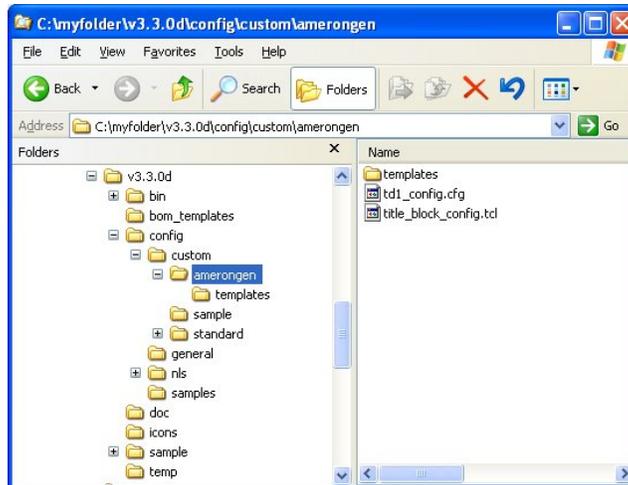
Just start with the template provided, and check if the customization described in this chapter offers some parameters to exactly tailor the titleblock macro to your needs.

#### 3.3.1 Unload directory

The files can be unpacked anywhere. Under the unload directory you will find

| Name                    | Type      | Comment  |
|-------------------------|-----------|--|
| Titleblock.CATScript    | File      | CATIA Macro  |
| Bin                     | directory | Launcher for help, main script file, tcl scripts, executables (Windows)  |
| Doc                     | directory | Documentation  |
| Icons                   | directory | Pictures, used by the TCL script   |
| Config                  | directory | Configuration files  |
| Sample                  | directory | Sample CATIA files   |
| config/custom/templates | directory | Templates for the drawing frames, that is a pair <ul style="list-style-type: none"> <li>• Frame_Sample.CATDrawing</li> <li>• Frame_Sample.gif</li> </ul> The gif will be shown, to give the user a help to select the right frame. |

# 0:0:4



Picture 30 Unload structure

Within the config directory you will find general configs (mainly NLS or skin related) and the individual configs. If you only want to use one configuration, simply use the config/custom directory for your changes.

### 3.3.2 English Panels

If you want to use the English version, please rename the config data set

config\custom\standard\ title\_block\_config\_en.tcl to

config\custom\standard\ title\_block\_config.tcl

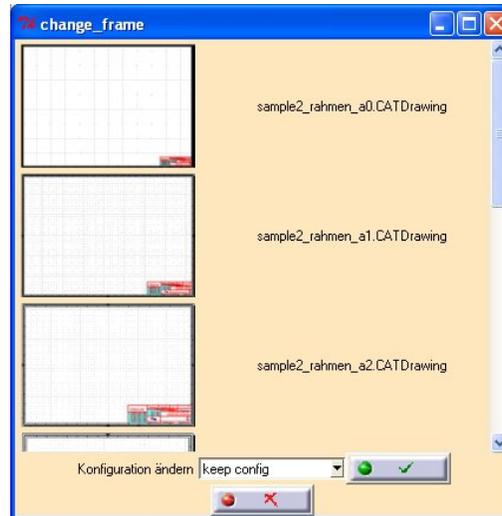
This will give you a first impression of the standard behaviour of the TB Macro with English panels. For other languages, please edit the title\_block\_config.tcl and use your specific expressions.

### 3.3.3 Add a new drawing frame

Fur sure, your company will have other drawing frames than the templates provides. In order to use your own drawing frames you have to perform the following steps:

- 1) Get the geometry from one of your existing frames (import it from dxf, ccd, ....).
- 2) Modify the component names of the relevant texts in your frame (see following chapter). Relevant texts are those texts, which should be edited using the titleblock macro. E.g.: The description field of your frame may have a component name like Text.154. This will have to be changed to be changed to TitleBlock\_Text\_Description. (Details see below).
- 3) Put the geometry into the Background (select all, cut, paste)
- 4) Put the model into the template directory
- 5) Make a picture for the drawing (capture it with Alt/Print (Alt/Druck) and use a paint program to cut and size it). Store it with the same name as the drawing, but in gif file format. If you have a drawing named "frame1.CATDrawing", you should store the picture under "frame1.gif" in the same directory.
- 6) Take one note and change the component name to Frame\_Name\_name\_of\_the\_drawing. In our sample: Frame\_Name\_frame1. This will enable a batch exchange of the drawing frames. In my samples I use the format specifier (e.g. A4).

Now you have a new frame available and you can select it.



Picture 31: Selection of drawing frames

### 3.3.4 Overview

The program uses the naming convention

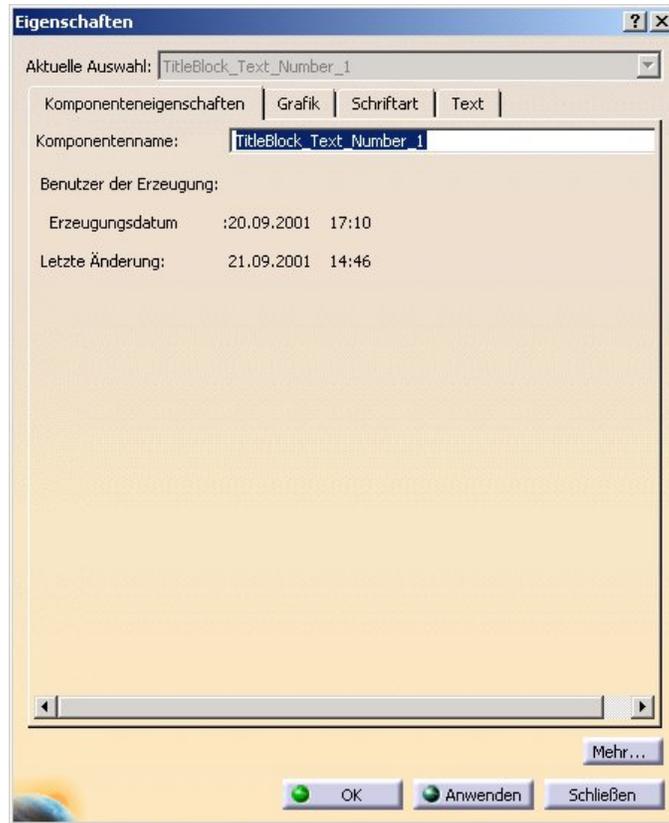
TitleBlock\_Text\_field

for standard fields and

RevisionBlock\_Text\_field\_A.m

for change info fields (higher revisions will go to \_B, \_C and so forth, the sequence is customizable in the config data set). This must be the component names of the CATIA title block texts (change the default name via the properties contextual menu in CATIA).

The naming convention follows the Dassault sample Title Block macro (sample 2) found in the installation directory Vbscript.



Picture 32: CATIA component names

The program checks with the config/title\_block\_config.tcl the values found within the CATIA drawing. Within this configuration file you can specify the GUI of the macro (sequence of fields, Labels, entry-types).

Some values from 3d are hardcoded such as:



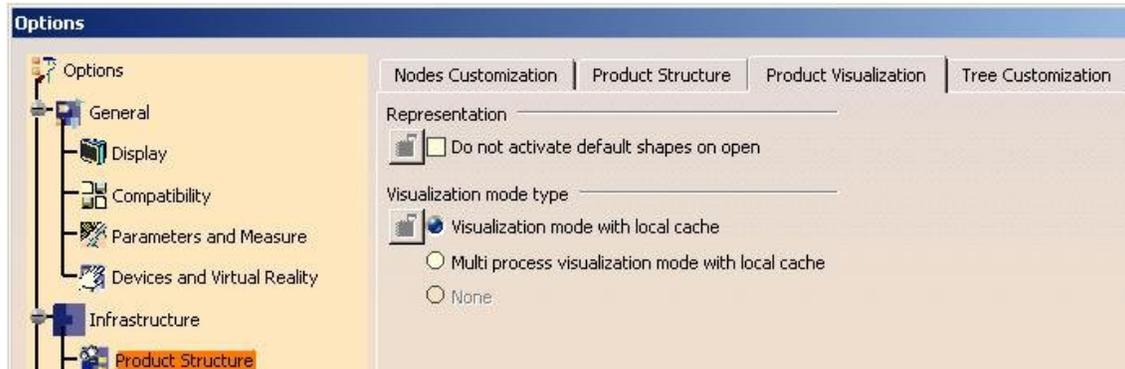
4.0.4

| Value in 3D Part                  | Name of title block entry       |
|-----------------------------------|---------------------------------|
| Number                            | TitleBlock_Text_Number          |
| Title                             | TitleBlock_Text_Title           |
| Revision                          | TitleBlock_Text_Revision        |
| Nomenclature                      | TitleBlock_Text_Nomenclature    |
| Source                            | TitleBlock_Text_Source          |
| Weight                            | TitleBlock_Text_Weight          |
| Volume                            | TitleBlock_Text_Volume          |
| WetArea                           | TitleBlock_Text_WetArea         |
| Description                       | TitleBlock_Text_Description     |
| Material Path                     | TitleBlock_Text_Material        |
| Name of linked 3D model incl Path | TitleBlock_Text_3DModelFullName |

|                         |                             |
|-------------------------|-----------------------------|
| Name of linked 3D model | TitleBlock_Text_3DModelName |
|-------------------------|-----------------------------|

Be aware:

the weight will not appear automatically on the title block if the Tools/Options/Product Visualization/Do not activate default shapes on open is selected.



Picture 33: Option Setting to get the Weight Info



The Macro identifies the number of revision by the field: **RevisionBlock\_Text\_Rev\_n**, so this component names should be in the model.

Starting from 3.0.3 the prefix for the titleblock fields can be configured. This is done in the basics.cfg data set. You are no longer fixed to the TitleBlock\_Text component name and can use other names, which may be given by your customer. If you specify a prefix (e.g. ABC) , the macro will check for texts like ABC\_field instead of TitleBlock\_Text\_field (see above).

### 3.3.5 Configuration data sets

This chapter describes the different configuration sets for the macro.

#### 3.3.5.1 Basic configuration – basics.cfg

Within this data set you can define the GUI behavior and the TD1 compatibility and turn on some tracing.

```
' compliance to TD1, i.e. the config data set will be read and parameters will be generated
' True / False
' Default: False

' → obsolete TD1_compliant=False
' disable tracing
Trace_Mode=none
' enable tracing: give the name of the file
' Trace_Mode=c:\titleblock_trace.txt
' Trace_Mode=/tmp/titleblock_trace.txt
' Trace_Mode=c:\titleblock_trace.txt
' The call of the GUI can be doen in foreground or in background
' foreground: CATIA will not repaint its window
' background: High CPU utilisation, CATIA will hang, if the GUI abends somehow (you have to
delete
' the temporary data set, the CATIA will continue)
' Default: background
CALL_GUI_Mode=foreground
' CATIA Version String will be edited by the actual Values of Version, Release and SP Pack
'
' Variables to use: &Version
'                  &Release
'                  &SP
' CADSystem=CATIA V&VersionR&ReleaseSP&SP
CADSystem=CATIA V&VersionR&Release
' Retrieve 3D Analysis Data From 3d (set it to false and no prompting for the retrieval
' will be done
3DAnalysis=true
'
' Prefix for the component name of Texts: Default TitleBlock_Text
TBPrefix=TitleBlock_Text

' Default Configuration, will be taken if a config cannot be determined from an existing frame
DefaultConfig=standard
'
' Stream all properties with their original name (without prefix UP)
StreamAllProperties=False

' leading zeroes for sheet numbers below ten
leadingZeroes = True
```

The TD1\_compliant variable is no longer necessary. If you place a TD1 config file within the config directory, the macro will assume a TD1 compatibility mode.

If you need more than one prefix – maybe you use some programs to extract data form the TB – you can also specify a list of prefixes :

Sample

```
TBPrefix=SAP,SC5
```

#### 3.3.5.2 title\_block\_config.tcl configuration data set

This data set can be found under the directory config.

For the title block fields we have mainly 2 types

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0.0.4





0.0.4

0.0.6

```
set fields(9)           {FreigegebenDate "Datum der Freigabe" date}
set fields(10)          {Masstab          Masstab          list}
set fields(11)          {Origin           Origin           entry}
set fields(12)          {Projection_1st_Angle Projection_1st_Angle entry}
set fields(13)          {Projection_1st_Angle Projection_3rd_Angle entry}
```

```
#####
# Extended field definitions
#####
```

```
set extFieldDef(Projekt) {"entry width=9" "entry alignment=right" \
                          "Mode=mandatory" "Mask=0000-0000" \
                          "Help=4711-4711"}
```

```
# a text entry field with 2 lines and 20 characters width
set extFieldDef(Description) {"text_width=20" "text_height=2"}
```

```
# Date Format, dateUpper Yes will force everything to uppercase: Wed -> WED
```

```
set date_format "%d/%m/%Y"
set dateUpper "Yes"
```

```
#####
# modeMandatory can be one of:
#   none      - no field is mandatory
#   enabled   - fields are mandatory and a warning is issued if mandatory
#               fields are not filled
#   forced    - the TB macro will only offer an ok, if all mandatory
#               fields are filled
# default: none
#
```

```
# to mark a field as mandatory, you can add as a last item for the field
# the string mandatory
#
```

```
# sample:
# set fields(1) {Description Benennung entry mandatory}
#
```

```
# the character, which will be seen as an unfilled field can be defined
# through the emptyChar Variable (default "-")
#####
```

```
set modeMandatory none
set emptyChar "-"
```

```
#####
# display extended menus, if you don't want to offer the menus, set
# the value to false - default: true
#####
```

```
set showMenuConfig true
set showMenuAllFrom3D false
```

```
#####
# Units section
#####
```

```
# define the list of fields for which a Unit conversion will be done
set u_Units {Weight}
# define the Units for each field, the first unit will be the default
set u_Weight { {kg 1} {g 1000} {mg 1000000} {t 0.001} {lb 2.204623} {oz
35.27396} {slug 0.06852177} }
```

```
# define the precision (decimal digits) for each field
set dp_Weight 2
# use the old behavior - don't display the Unit in the tb, switch to yes
```

```

# to add the unit (kg, lb, ...)
set showUnit_Weight no

#####
# Predefined Lists section
#####

# Define Lists for selections
# the name of the list must correlate to the name of the field
# i.e. l_CATIAName

set l_Massstab      {"1:1" "1:2.5" "1:5"}

#####
# Revision section
#####

# Define the possible revisions , has to be the same convention like for
the
# Component Names of the revision entries in the CATIA titleblock

set revisions { 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 }

set change_fields(1) {Rev          "Aenderungs ID"      entry}
set change_fields(2) {Aenderung    "Beschreibung"   entry}
set change_fields(3) {Datum        "Datum der Aenderung" date}
set change_fields(4) {Name         "Name"           entry}

# Add default values to select for the Rev entry in the revision panel
# this will offer combo boxes with values from 1..15
set l_Rev          {1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 }
set revisionEnableDelete "yes"

#####
# Default section
#####
# Add default values
# --> set cat_title_block_field_default variable

if {$tcl_platform(machine) == "intel"} then {
  set TitleBlock_Text_Bearbeitet_default $env(USERNAME)
  set TitleBlock_Text_Freigegeben_default $env(USERNAME)
  set TitleBlock_Text_Norm_default      $env(USERNAME)
  set TitleBlock_Text_Geprueft_default  $env(USERNAME)
  set RevisionBlock_Text_Name_default   $env(USERNAME)
} else {
  set TitleBlock_Text_Bearbeitet_default $env(USER)
  set TitleBlock_Text_Freigegeben_default $env(USER)
  set TitleBlock_Text_Norm_default      $env(USER)
  set TitleBlock_Text_Geprueft_default  $env(USER)
  set RevisionBlock_Text_Name_default   $env(USER)
}
}

#####
# template section
#####
# define the directory for the CATIA Drawing Templates

set CATIA_TEMPLATES "$where_am_i/config/custom/standard/templates"

#####
# GUI section
CATIA Title Block Editor 443.doc

```

5.0.4

5.1.4

```
#####
# width for entries
set entry_width 20

#Screen size for the notebook part of the window
set screen_height 300
set screen_width 270
#Screen size for the revision fields - all revisions will be scrolled in
this area
set change_height 270
set change_width 300
#Screen size for the drawing data area
set dwgdata_height 270
set dwgdata_width 300
#Screen size for frame chooser panel (Height #entries, Width: #character, #
# Deltay: hight per entry in pixel
set choosePanelHeight 3
set choosePanelWidth 50
set choosePanelDeltaY 110

#####
# show, noshow the button box
# default : yes
# noshow : no
#####
set showButtonBox "yes"
#####
# define a table for special characters (use Alt-s to activate)
#####
set specCharacterTable { "\u00D8" "\u00A9" "\u00AE" "\u00BC" "\u00BD" \
"\u00B5" "\u00A2" "\u00A7" "\u00B1" "\u00B2" \
"\u00B3"}

#####
# For Boms: preselect Modify Bom
# default : yes
#####
set preselectModifyBom "yes"
#####
# Enable call backs for TB fields
# default : no
# this sample switches dependent from the valus of an Origin Field
# the value of 2 other fields
#####
set callBackEnabled "yes"
proc tbFieldCallBack {mode sheet field number} {
  if {$field == "Origin"} then {
    if {[getTBData $sheet $field] == "EU" } then
      setTBData $sheet "Projection_1st_Angle" "X"
      setTBData $sheet "Projection_3rd_Angle" "."
    }
    if {[getTBData $sheet $field] == "USA" } then {
      setTBData $sheet "Projection_1st_Angle" "."
      setTBData $sheet "Projection_3rd_Angle" "X"
    }
  }
}
set preselectModifyBom "yes"
```

### 3.3.5.3 Fields

The field section describes the entries, which are specific to individual sheets. A typical example is the sheet number or the description, which will be different on every sheet.

The TB Macro support the following types of fields

- entry
- date
- list
- text

### 3.3.5.4 Global fields

A global field can e.g. be a CATIA **parameter** like they are used by the TD1 integration for SmarTeam. Global fields are valid for the whole drawing i.e. all sheets.

### 3.3.5.5 Extended field definition

Several requests have been posted to give more flexibility to the definition of fields such as

- Mandatory fields
- individual entry width
- individual alignment (left, right, center)
- mask definitions

I want to keep the 'basic' config as simple as possible. So I introduced a new variable `extFieldDef` which holds the additional information. You only need to use this variable, in case you want to specify one of the above attributes of a field.

The general syntax is

Set `extFieldDef(fieldname) { "Attributname1=AttributValue1" "Attributname2=AttributValue2" ... }`

#### 3.3.5.5.1 attribute `entry_width`, `entry_alignment`

`entry_width` specifies the width of the field length as shown in the TB panel. The default will be 20. A general value for all values can be specified by the `entry_width` variable (see below).

**Sample: "entry\_width=10"**

The `entry_alignment` allows justification within the field. Allowed values are

- right
- left
- center

The variable `entry_alignment` will give a default for all fields. It defaults to "left".

**Sample: "entry\_alignment=right"**

#### 3.3.5.5.2 attribute Mask

With the help of the mask attribute, you can specify some formats, the macro will follow. For instance, if you have a part number, which follows the convention

abcd-1234-12

**Sample: "Mask=aaaa-0000-00"** you can specify this mask, which will enforce 4 alpha character, a "-", 4 numeric, a "-" and 2 numeric characters.

Any entry of a 'false' character will result in a beep and the input will not be accepted. Characters like "-", which are specified within the mask will be automatically converted (any input will be converted to this special character).

Characters for the definition of a mask:

|   |       |
|---|-------|
| 0 | Digit |
|---|-------|

|   |                                 |
|---|---------------------------------|
| A | Uppercase alphabet character    |
| a | Lowercase alphabet character    |
| W | Space / Blank                   |
| Z | Any alphabet character          |
| Z | Any alphabet or digit character |

### 3.3.5.5.3 attribute Help

The help attribute will display an individual help balloon for the field. Especially, if you use the Mask attribute, you can display a sample entry for the end user.

**Sample “Help=4711-1234”**

### 3.3.5.5.4 attribute Mode

Setting the Mode to mandatory, identifies this field as a mandatory item for input. See mandatory mode below.

**Sample “Mode=mandatory”**

Setting the Mode to hidden, will skip the display on the panel. This is useful, if you want to import data from the 3D model and process the data using the callback mechanism and fill in other fields depending on derived values.

Assume the Partname is 0001-0088-099\_Sample99 and you want to split that up into the fields Name and Number

**Sample “Mode=hidden”**

```
set extFieldDef(Partname) {Mode="hidden"}

proc tbFieldCallBack {mode sheet field number} {
    if {$field == "Partname"} then {
        set data [getTBData $sheet $field]
        set temp [split $data "_"]
        setTBData $sheet "Name" [lindex $temp 1]
        setTBData $sheet "Number" [lindex $temp 0]
    }
}
```

Here the Partname field will not be shown, and the values of Name and Number will be set to the values derived from Partname. You will find a description for the TCL string command in chapter 5, most likely, you will need that ☺.

### 3.3.5.5.5 attribute pass3dProperties

Setting the Mode to **Yes** will directly insert the properties from the 3D master part or product into the TB-Editor. The user does not have to select the button in order to manually insert the value.

Default: No

### 3.3.5.5.6 attribute Default

The associated default value will be entered into the corresponding field in case the field is empty (see also emptyChar).

Default: No default value

**Sample**

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```
set extFieldDef(Location) {Default="Frankfurt"}
```

To set the default location to the city Frankfurt.

If you want to insert the current date for date fields you have to set the default to autoInsertDate

**Sample**

```
set extFieldDef(GepruftDate) {Default=" autoInsertDate "}
```

### 3.3.5.6 Revisions

Revisions are specified in the line revisions and change\_fields. If you don't want to work with revisions, comment or delete these lines.

#### 3.3.5.6.1 Configure the revision panel

If you do not want your users to be able to delete revision entries, you can leave the configuration as is, that will be the default.

```
set revisionEnableDelete "yes"
```

Setting the value to no will hide the corresponding buttons

```
set revisionEnableDelete "no"
```

### 3.3.5.7 Units

Units can be specified for the Weight, WetArea and Volume fields. In the sample above you can see a configuration for the Weight field.

A sample to configure all three field is shown below:

```
#####
# Units section
#####
# define the list of fields for which a Unit conversion will be done
set u_Units {Weight WetArea Volume}
# define the Units for each field
set u_Weight { {kg 1} {g 1000} {mg 1000000} {t 0.001} {lb 2.204623} {oz 35.27396} {slug 0.06852177} }
# define the precision (decimal digits) for each field
set dp_Weight 2
# display the Unit in the tb
set showUnit_Weight yes

set u_WetArea { {MM2 1} {CM2 0.01} {DM2 0.0001} {M2 0.000001} }
# define the precision (decimal digits) for each field
set dp_WetArea 2
# display the Unit in the tb
set showUnit_WetArea yes

set u_Volume { {MM3 1} {CM3 0.0001} {DM3 0.000001} {M3 0.000000001} }
# define the precision (decimal digits) for each field
set dp_Volume 2
# display the Unit in the tb
```

`set showUnit_Volume yes`

The `u_Units` variable holds a list of Units, which will be treated by the TB. In the sample above: Weight, WetArea and Volume. The `u_field` holds a list of values. Each pair describes the unit and a factor to convert from the unit to other units. The `dp_field` holds the “decimal places” and the `showUnit_field` provides the unit in the field entry of the TB or omits the unit (set to no).

### 3.3.5.8 Width of entry fields

As a default, the macro uses a width of 20 characters for all entry fields. You can override this value by specifying the `entry_width`. As an example, we will use a width of 40 characters:

`set entry_width 40`

### 3.3.5.9 Definition of the height/width of the notebook area

In case of very complex title blocks, you can configure the height and width for the notebook area.

The definition can be done within the configuration data set.

Defaults:

|                            |     |
|----------------------------|-----|
| <code>screen_height</code> | 400 |
| <code>screen_width</code>  | 270 |

If the notebook exceeds these values, the area will be scrolled.

### 3.3.5.10 Definition of the height/width of the frame chooser

You can specify the height and width for the frame chooser panel.

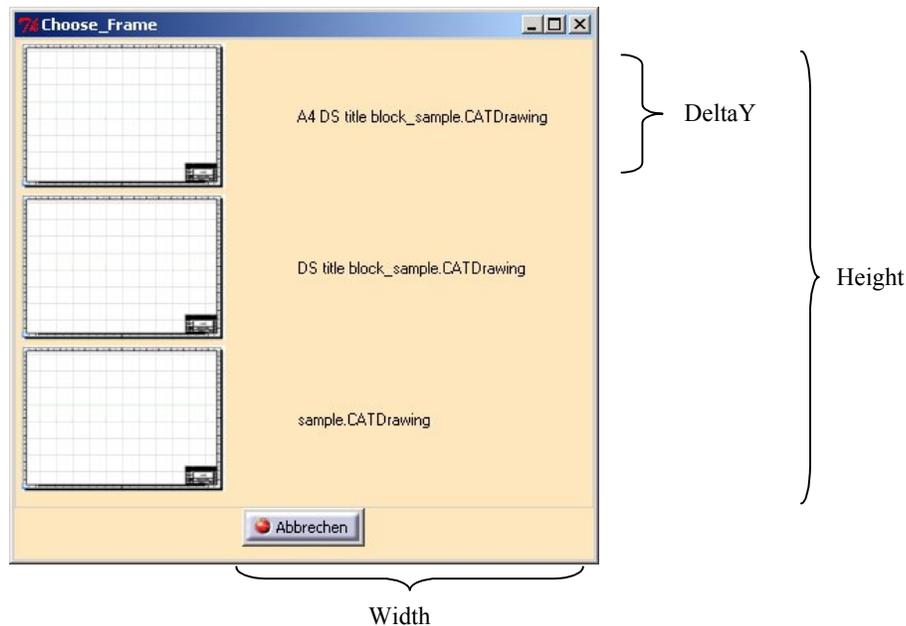
`choosePanelHeight`: number of frames (lines) in the chooser.

`choosePanelWidth`: Number of character for the drawing names

`choosePanelDeltaY`: Height for the frames

Defaults:

```
set choosePanelHeight 3
set choosePanelWidth 50
set choosePanelDeltaY 110
```



### 3.3.5.11 Date Format

For the date selector you can specify the date format. The following formats are available:

|    |  |
|----|--|
| %a | Abbreviated weekday name (Mon, Tue, etc.).                   |
| %A | Full weekday name (Monday, Tuesday, etc.).                   |
| %b | Abbreviated month name (Jan, Feb, etc.).                     |
| %B | Full month name.   |
| %c | Locale specific date and time.                               |
| %d | Day of month (01 - 31).                                      |
| %H | Hour in 24-hour format (00 - 23).                            |
| %I | Hour in 12-hour format (00 - 12).                            |
| %j | Day of year (001 - 366).                                     |
| %m | Month number (01 - 12).                                      |
| %M | Minute (00 - 59).  |
| %p | AM/PM indicator.   |
| %S | Seconds (00 - 59).   |
| %U | Week of year (00 - 52), Sunday is the first day of the week. |
| %w | Weekday number (Sunday = 0).                                 |
| %W | Week of year (00 - 52), Monday is the first day of the week. |
| %x | Locale specific date format.                                 |
| %X | Locale specific time format.                                 |
| %y | Year without century (00 - 99).                              |
| %Y | Year with century (e.g. 1990)                                |
| %Z | Time zone name.  |

### 3.3.5.12 Areas

The last configurations define the areas of the different panels/sub panels of the GUI. If the contents of these parts are larger than the area specified, scroll bars will be inserted. Vice versa: If you encounter not wanted scrollbars when you call the macro, increase the sizes appropriately.

```
#Screen size for the revision fields - all revisions will be scrolled in
this area
set change_height 270
set change_width 300
#Screen size for the drawing data area
set dwgdata_height 270
set dwgdata_width 300
```

### 3.3.5.13 Special Character

You can specify a list of special characters which normally cannot be entered via the keyboard. The user can invoke the special window by using the Alt-Key together with the s key.

The characters have to be specified by their ASCII values (see appendix). If the specCharacterTable variable is not defined, the Alt-s key is disabled and no window will pop up.

```
set specCharacterTable { "\u00D8" "\u00A9" "\u00AE" "\u00BC" "\u00BD" \
"\u00B5" "\u00A2" "\u00A7" "\u00B1" "\u00B2" \
"\u00B3"}
```

### 3.3.5.14 Special Variables Containing CATIA infos

You can insert values, which are known by the CATIA macro, by using specific variables with predefined names.

#### 3.3.5.14.1 CATIAVERSION

If you want to show the CATIA Version in a title block field, then use the special field TitleBlock\_Text\_CADSystem. The string which shall be displayed can be specified in the basics.cfg data set.

The sample below used the default

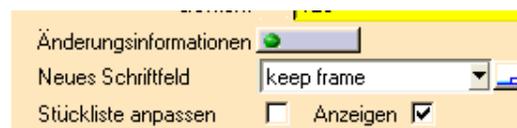
```
CADSystem=CATIA V&VersionR&Release
```

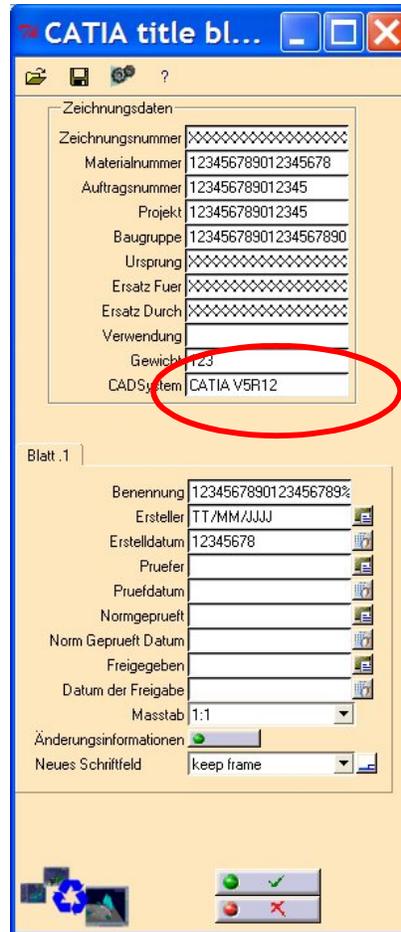
setting.

### 3.3.5.15 Pre-selection of the Modify Bom entry

You can switch the pre-selection of the modify bom option within then panel to on or off.

```
set preselectModifyBom "yes"
```





Picture 34 Entry panel with CATIA version and release

### 3.3.5.15.1 Number of Sheets

Use the TitleBlock\_Text\_NumSheets variable to let CATIA automatically insert the total number of drawing sheets (details not included). If the number is less than 10, a leading 0 will be used (e.g. 05).

This should be a global variable.

### 3.3.5.15.2 Number of Actual Sheet

Use the TitleBlock\_Text\_numActSheet variable to let CATIA automatically insert the actual number of the current sheet. If the number is less than 10, a leading 0 will be used (e.g. 05). The macro will give the first sheet number 1, the second number 2 and so forth – independent of the naming convention used within the tbs on top of the sheets.

This should be a sheet specific variable.

### 3.3.5.15.3 Scale of the sheet

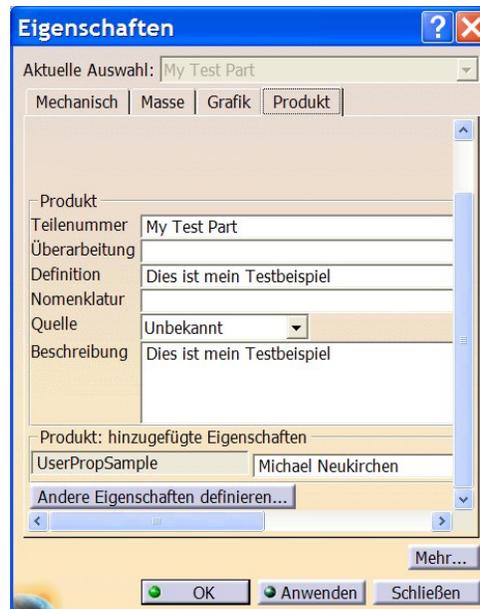
Use the TitleBlock\_Text\_SheetScale variable to let CATIA automatically insert the main scale of the sheet. The scale will be shown as 1:Number (e.g. 1:10).

This should be a sheet specific variable.

### 3.3.5.15.4 Values from the 3D-Master

Besides the predefined values mentioned above, the macro will extract the user properties of the 3D-master part/product (only if the drawing is derived from a 3D master).

Sample:



Picture 35 User defined property

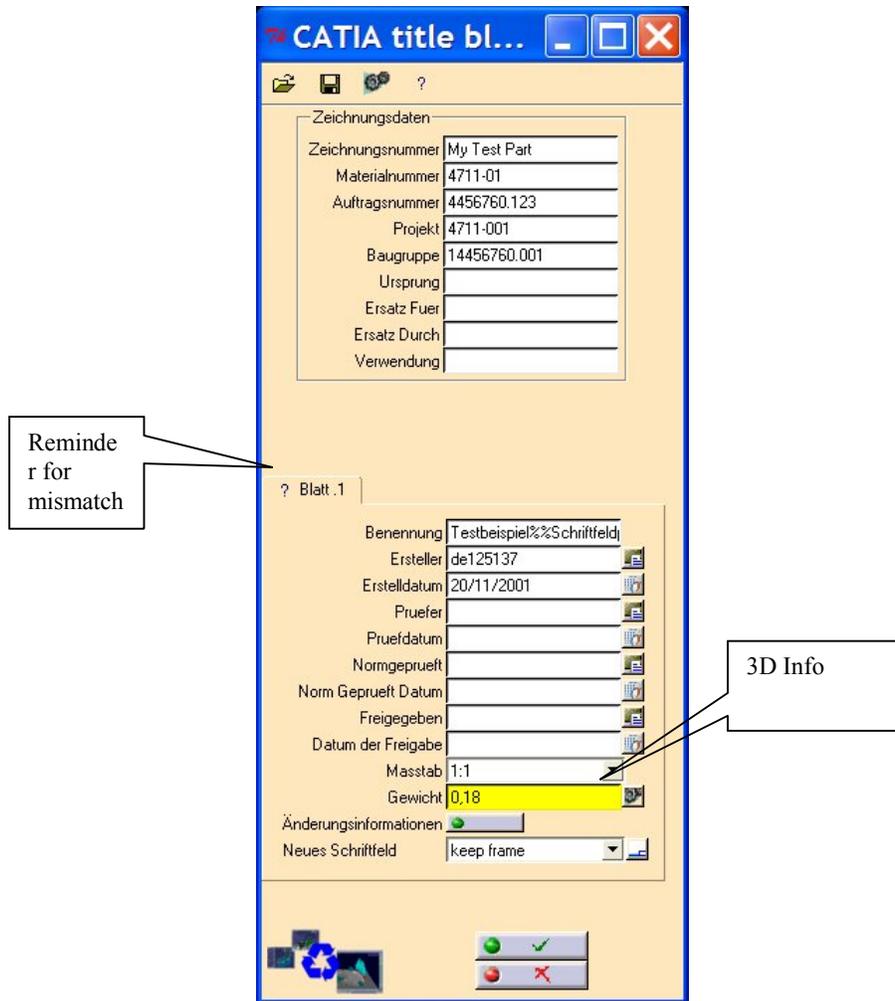
The macro will extract this info to a TitleBlock\_Text\_UPUserPropSample field. The name used is UP + Name of property.



You should use the UP prefix convention in cases, you frequently exchange models with other partners since you cannot foresee the properties which are stored in the 3D models. Since 4.0.4 you can set the variable StreamAllProperties to yes and the TB macro will pass all properties with their original name (i.e. without the UP prefix) to the user interface.

You must not use blanks in the name of a property.

If the macro detects differences regarding the actual entries in the title block field and the values from 3D, these entries will be marked with a yellow background color and the corresponding tab of the sheet is flagged with a question mark.



Picture 36 Value differs 3D and actual entry

If you press the 3D logo on the right side of the entry, the 3D value will be taken and the yellow color will change to white. If all entries are accepted, the question mark on the tab will be removed.

### 3.3.5.15.5 Summary of pre configured values

Here a table which shows the built in values which are directly extracted from CATIA (3D values and special values as mentioned above).

| Name of title block entry    | Meaning      | Source             |
|------------------------------|--------------|--------------------|
| TitleBlock_Text_Number       | Number       | 3D-Master Property |
| TitleBlock_Text_Title        | Title        | 3D-Master Property |
| TitleBlock_Text_Revision     | Revision     | 3D-Master Property |
| TitleBlock_Text_Nomenclature | Nomenclature | 3D-Master Property |
| TitleBlock_Text_Source       | Source       | 3D-Master Property |
| TitleBlock_Text_Weight       | Weight       | 3D-Master Property |
| TitleBlock_Text_Volume       | Volume       | 3D-Master Property |
| TitleBlock_Text_WetArea      | WetArea      | 3D-Master Property |

|   |  |   |
|---|--|---|
| TitleBlock_Text_Material                        | Material   | 3D-Master Property, if no material is assigned, a blank (" ") will be shown |
| TitleBlock_Text_CADSystem                       | Version, Release, Service Pack                         | CATDrawing  |
| TitleBlock_Text_NumSheets                       | Number of sheets in the drawing (details not included) | CATDrawing  |
| TitleBlock_Text_numActSheet                     | Number of the sheet in the sequence of sheets          | CATDrawing  |
| TitleBlock_Text_SheetScale                      | Main scale of the sheet                                | CATDrawing  |
| TitleBlock_Text_CADDWGModelName                 | Name of 2D Drawing                                     | CATDrawing  |
| TitleBlock_Text_CADDWGModelFull-Name            | Name of 2D Drawing                                     | CATDrawing  |
| TitleBlock_Text_CADDWGModelNameWithoutExtension | Name of 2D Drawing without the .CATDrawing extension   | CATDrawing  |
| TitleBlock_Text_UPName                          | User Property from the 3D Master                       | 3D-Master User Property   |
| TitleBlock_Text_3DModelFullName                 | Name of linked 3D model incl Path                      | 3D-Master Property  |
| TitleBlock_Text_3DModelName                     | Name of linked 3D model                                | 3D-Master Property  |

### 3.3.5.16 Automatism for TB entries

Starting with 4.1.2 the TB macro allows a callback for TB entries. This mechanism can be activated by the "callBackEnabled" variable. Setting this variable to yes, will turn on the call back mechanism.

```
set callBackEnabled "yes"
```

Each time, a variable is modified within the GUI or filled before the GUI is shown, the tbFieldCallBack procedure will be called (see the sample below). Using this mechanism, you can reflect automatic changes of entries. The tbFieldCallBack procedure is called with 4 parameters:

|              |        |                 |                                   |
|--------------|--------|-----------------|-----------------------------------|
| <b>4.1.2</b> | mode   | normal          | for the main panel                |
|              |        | revision        | for the change panel of revisions |
|              | sheet  | number of sheet | 0 for global parameters           |
|              |        |                 | >0 for sheet specific parameters  |
|              | field  | name            | name of the field changed         |
|              | number | revision number | 0 for the main panel              |
|              |        |                 | >0 for the change panel           |

The TB fields can be accessed from the procedure by:

```
getTBData sheet field
setTBData sheet field data
getTBRData sheet field number
setTBRData sheet field number data
```

data will be the data to be set for the corresponding TB field.

Sample:

```

proc tbFieldCallBack {mode sheet field number} {
  if {$field == "Origin"} then {
    if {[getTBData $sheet $field] == "EU" } then
      setTBData $sheet "Projection_1st_Angle" "X"
      setTBData $sheet "Projection_3rd_Angle" "."
    }
    if {[getTBData $sheet $field] == "USA" } then {
      setTBData $sheet "Projection_1st_Angle" "."
      setTBData $sheet "Projection_3rd_Angle" "X"
    }
  }
}

```

The proc first checks for the field which is changed, then it sets the value of `Projection_1st_Angle` and `Projection_3rd_Angle` dependent from the value of the Origin field.

Please keep in mind: the proc is called for every change. So if the user types USA in the sample above, the proc will be called 3 times: first for the change of Origin to U, then to US then to USA.

You will find a description for the TCL string command in chapter 5, most likely, you will need that ☺.

The procedure has to be defined within the config data set.

### 3.3.5.17TD1 compatibility – td1\_config.cfg

The file for the TD1 compatibility has to be stored in the config directory. The naming has to be:

config/custom/standard/td1\_config.cfg

If this file is available, the macro will assume compatibility to SMARTEAM and will map the defined title block entries to CATIA parameters.

If set in the basics.cfg, the macro will link the given parameter to the corresponding title block field (s) if necessary.

Sample provided:

```

' Each line has the following info
' - SmarTeam Parameter Name
' - Name of text component on the sheet
' - Parameter visible in V5 tree
' - Parameter only linked on sheet 1 (e.g. as scale, material, ...)
,
'Parameter name;Text component name;visible;sheet1_only
Description;TitleBlock_Text_Description>true>false
Creation Date;TitleBlock_Text_BearbeitetDate>true>false
Approval Date;TitleBlock_Text_GeprueftDate>true>false
Originator;TitleBlock_Text_Bearbeitet>true>false
Approved By;TitleBlock_Text_Geprueft>true>false
Original Creation Date;TitleBlock_Text_BearbeitetDate>true>false
Title;TitleBlock_Text_Number>true>false
Scale;TitleBlock_Text_Masstab>true>true

```

Lines with a ' in the first column are regarded as comments.

### 3.3.5.18 Changing Text Names

In some cases you will need to change some existing texts in your drawings in order to match the tilblock naming convention.

For example:

You have drawings which contain the Text Material instead of TitleBlock\_Text\_Material.

With the help of the mapper file, you can change the names in your drawing before the TB-editor starts the scan.

Sample:

*' Text names to be changed*

*' old text name is changed to new text name*

*TitleBlock\_Text\_Part\_Name(English) = TitleBlock\_Text\_Part\_Name\_English*

### 3.3.5.19 Modifying the GUI – skin.tcl

In this data set you can provide your own icons or background color.

```
#
# define background color
#

set background_colour "#FFE7BD"
#
# define language, the default is English, omit
# the declaration, if you want to use English
#
set language "de"

#set background_colour "#FFFFFF"

#
# define the files for the icons here
# $where_am_i is the installation directory
#
image create photo but_def -file "$where_am_i/icons/pic_default_1.gif"
image create photo but_from3d -file "$where_am_i/icons/pic_from3d.gif"
image create photo but_calendar -file "$where_am_i/icons/pic_calendar_1.gif"
image create photo but_ok -file "$where_am_i/icons/pic_ok.gif"
image create photo but_can -file "$where_am_i/icons/pic_can.gif"
image create photo but_change -file "$where_am_i/icons/pic_change_small.gif"
image create photo but_data_copy -file "$where_am_i/icons/pic_data_copy.gif"
image create photo logo -file "$where_am_i/icons/logo.gif"
image create photo but_open -file "$where_am_i/icons/open.gif"
image create photo but_save -file "$where_am_i/icons/save.gif"
image create photo but_help -file "$where_am_i/icons/help.gif"
image create photo but_down -file "$where_am_i/icons/pic_down.gif"
image create photo but_tdl -file "$where_am_i/icons/tdl.gif"
```

If you want to use your own logo, simply exchange the logo.gif or choose another name.

### 3.3.5.20 NLS Support

Within the config directory, language dependant files can be supplied under an appropriate directory (e.g. de for German). The file containing the translated messages has to be named

message.cfg

The language to be selected is defined in the skin dataset (see above).

If the GUI doesn't find a message in the file, the original string (English) will be displayed. If someone supplies a file for another language – send it to me, I will add it in the distribution.

In case you want to use the English messages, set the language in the skin.tcl config file to en, sample

```
set language "en"
```

### 3.3.6 BOM management

For derived drawings, the script will pick up the associated 3d product from the active sheet and extract the bom to a table which has to be in the drawing. An existing bom will be updated.

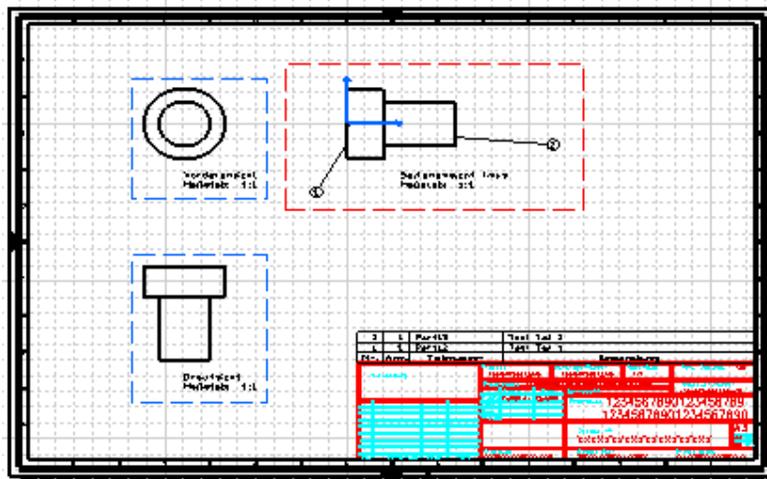
**Attention: all manually changed/entered data in the table will be overridden.**

#### 3.3.6.1 Get a Bom table

Copy the Matrix for the bom (text table) from a sample drawing or library to your drawing. A sample model is provided

CATIA Title Block Editor 443.doc

Product Ableitung.CATDrawing  
in the sample directory.



| 2   | 1    | Part13      | Test Teil 2  |
|-----|------|-------------|--------------|
| 1   | 1    | Part12      | Test Teil 1  |
| Nr. | Anz. | Teilenummer | Beschreibung |

Title block frames can be prepared in advance, to contain a bom table. E.g.: Provide a frame for A0 with a bom table and one without. One sample is provided in the template directory.

You can use all CATIA functions to build up a sample table for your bom entries. The mapping of the different columns for the bom is described in the next chapter.

The first or last row should contain the header for your bom. The placement of the bom should be up or bottom, that will keep the table in the same location even if the number of entries in the table will change. If you plan to add the bom table just above the title block, you should use the positioning bottom left (that's also done for the sample provided).

Keep playing with the options for the CATIA DrawingTable. Normally you should be able to get a layout as you want it.

### 3.3.6.2 Configure your Bom

The mapping of the CATIA internal bom to the table is done by defining the component name of the bom table in the right way.



Picture 37 Component Id for Bom Table

The component name is set up as follows

#### German Sample

MyBomTable,OneLevel,Bottom,Nummer,Menge,Teilenummer,Definition

```

|           |           |           |           |
|           |           |           |           +---- Col: 2nd Column for Bom
|           |           |           +----- Col: 1st Column for Bom
|           |           +-----Head: Header at the Bottom or Top
|           +-----Type: Type of Bom, Currently only OneLevel
+-----Tag: has to be MyBomTable

```

## English Sample

MyBomTable,OneLevel,Bottom,Number,Quantity,Part Number,Definition

```

|          |          |          |          |
|          |          |          |          +---- Col: 2nd Column for Bom
|          |          |          +----- Col: 1st Column for Bom
|          |          +-----Head: Header at the Bottom or Top
|          +-----Type: Type of Bom, Currently only OneLevel
+-----Tag: has to be MyBomTable

```

**Attention: CATIA needs the PartNumber (German: Teilenummer ) to be part of the BOM. If the PartNumber is omitted, you will only get blank entries in the BOM.**

### 3.3.6.2.1 Tag – Component Id's first item

That has to be MyBomTable and is used to find the table in the drawing. The table can be placed in any view incl. background view of the drawing.

### 3.3.6.2.2 Type

The type is currently only OneLevel . AllLevels will be give you the recapitulation (Wiederholung) which contains all parts of the assembly.

Since the recapitulation is not sorted by the Find Numbers, the macro will do the sort. The TB macro will sort the BOM by the first column in the Bom (which normally should be the find number)

### 3.3.6.2.3 Head

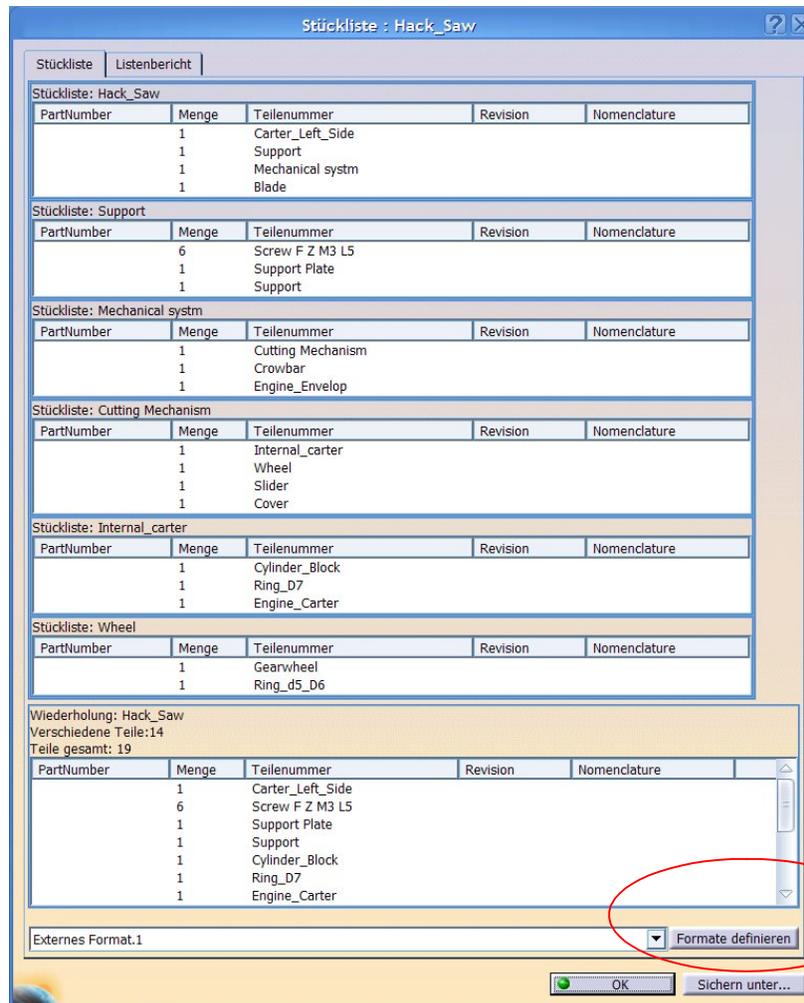
The macro will not override the first or last row of the table to preserve your headline entries for the BOM on your drawing (these headlines are normally different to the CATIA internal names for the bom entries).

Available:

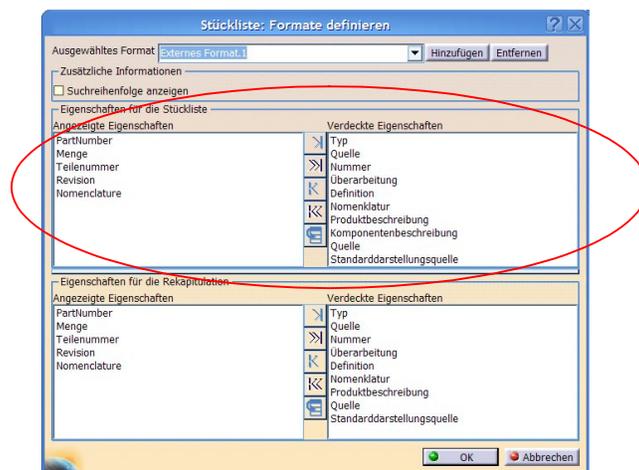
- Top
- Bottom

### 3.3.6.2.4 Col

The following entries have to be the exact names of the CATIA-Bom headers. These are language dependant and you can find them if you use the Analyze Menu when the CATIA product is active.



Picture 38 CATIA Bom Headers



Picture 39 CATIA Bom Properties

The items will be filled into the table just in the sequence you define in your definition of the component-id.

### 3.3.6.2.5 How to support Units within the BOM – Weight, WetArea, Volume

The TB macro extracts from a 3D product the weight, wetarea and volume information for the first level of its parts/products. These values can be mapped to the BOM, thus enhancing the CATIA Bom functionality.

The TB macro 'needs to know' which columns should be taken from the 3D info. This is done by placing an additional ":" and the name of the item (e.g. Weight, WetArea or Volume). In order to identify the Part, the column of the part number has to be tagged with ":Part Number".

Sample, if we want to add the weight to the BOM, we could use the sample similar as above

#### German

*MyBomTable,OneLevel,Bottom,Nummer,Menge,Teilenummer,Definition*

And modify that to

*MyBomTable,OneLevel,Bottom,Nummer,Menge,Teilenummer:Part Number,Gewicht:Weight,Definition*

#### English

*MyBomTable,OneLevel,Bottom,Number,Quantity,Part Number,Definition*

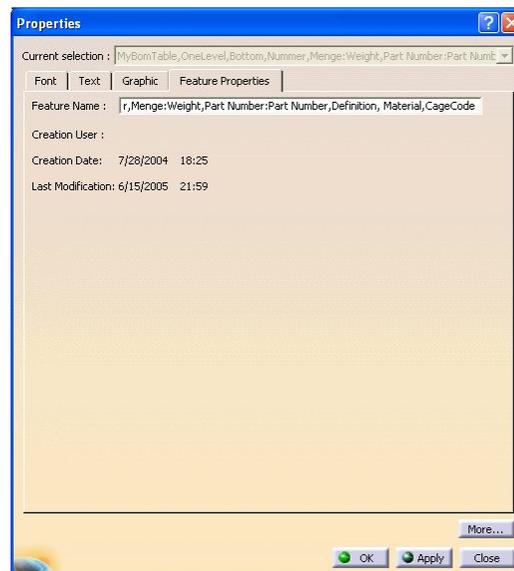
And modify that to

*MyBomTable,OneLevel,Bottom,Number,Quantity,Part Number:Part Number,Weight:Weight,Definition*

We added a column named Weight (Gewicht) and told the macro to insert the value of the part's weight (:Weight for both languages).

In english: the "Teilenummer" will be "Part Number", so this column has to be specified as Part Number:Part Number.

The defaults from the configuration file (Decimal Places, Default Unit, ...) will be taken into account.



Picture 40: Sample for Bom with Weight info

### 3.3.6.2.6 How to support user entered data

Sometimes you want to add specific data to the Bom entries. Without any special definition, this data will be erased by the macro.

However, you can specify one dedicated column, where the user can add additional data, and the macro will keep it. The naming convention for this column is User:BomData.

The TB macro checks for the PartNumber within the same line and will re-add the user defined entry. To support this feature, you have to specify the “Part Number” as above (**Part Number: Part Number** in the English sample, or **Teilenummer: Part Number** for the German Sample).

Sample:

#### German

*MyBomTable, OneLevel, Bottom, Nummer, Menge, Teilenummer:Part Number, Gewicht:Weight, Definition, User:BomData*

#### English

*MyBomTable, OneLevel, Bottom, Number, Quantity, Part Number:Part Number, Weight:Weight, Definition, User:BomData*

### 3.3.6.3 Override OneLevel / AllLevels

You can use the panel to allow your users to override the values defined within the BOM definition of the BOM tables on the fly.

The GUI will show the behavior defined within the component id of the BOM table of CATIA.

All Levels checked : AllLevels is set in the component id  
All Levels unchecked : OneLevel is set in the component id

Checking the AllLevels box will set the AllLevels behaviour, unchecking will set the OneLevel behaviour.

If you choose AllLevels then the TB Macro will sort the BOM according to the first column in the BOM (this should usually be the first column)

### 3.3.6.4 What to do if something doesn't work

Check the cat\_title\_block\_bom.txt file in the user's temp directory. Here you can see the BOM generated by CATIA.

### 3.3.6.5 Known Issues

CATIA doesn't provide a numbering for subassemblies. For subassemblies you won't get a find number (German: Positionsnummer) in the BOM. The cell for this item will be empty.

Any idea for an automatic numbering is welcome. Currently I'm thinking to number these subassemblies with P1, P2, P3... (Product 1, product 2, ...).

### 3.3.7 Temporary data sets

The macro uses 4 temporary data sets

Windows

- cat\_title\_block.txt
- cat\_title\_block\_2.txt
- cat\_title\_block\_3.txt
- cat\_title\_block\_bom.txt

in the Windows defined temporary directory

UNIX

CATIA Title Block Editor 443.doc



## 3.5 Upgrades

It should be easy to upgrade the TB-macro. I use “should”, because I cannot test all the configs you have. In case of problems, drop me a note.

The methodology to upgrade an existing customization to a higher version of the TB-macro is as follows:

Just copy the files you modified into the new config directory. These files usually are:

- basics.cfg
- skin.tcl
- title\_block\_config.tcl
- td1\_config.cfg

and the old template directory (where you place your customized frames) to the new template directory.

If you have made changes to the NLS support, you can use you customized file again. You will find the new messages of the new version at the end of the message file. Edit them and add them to your configuration.

0.0.4

### 3.5.1 Upgrade to version 4

I changed the directory structure of the macro. This will allow different configurations. Place your config data sets into the:

config/custom/standard

copy your template directory to config/custom/standard and edit the line with the CATIA\_TEMPLATE variable to \$where\_am\_i/config/custom/standard/templates.

If you want to add additional configurations, create a new directory (directory name = configuration name) and store your data sets in this directory.

If you want to change the name for your standard configuration directory, you can specify the name within the basics.cfg data set.

## 3.6 Error, Enhancement reporting

Bad news: I have to admit, that the program sometimes has one or two errors ☹

Since the site of the forum had been hacked, the wikis are gone ☹

~~To make it easier for you, I opened 2 sites in the CATIA5 wiki, where you can post errors and enhancements.~~

~~<http://www.catiawiki.de/index.php?title=Enhancements> and~~

~~<http://www.catiawiki.de/index.php?title=Errors>~~

~~check here, if you find a bug — maybe somebody already had the same problem — and maybe, I've already analyzed or even solved it.~~

Send me a mail.

## 4 Samples



Picture 41 Sample title block

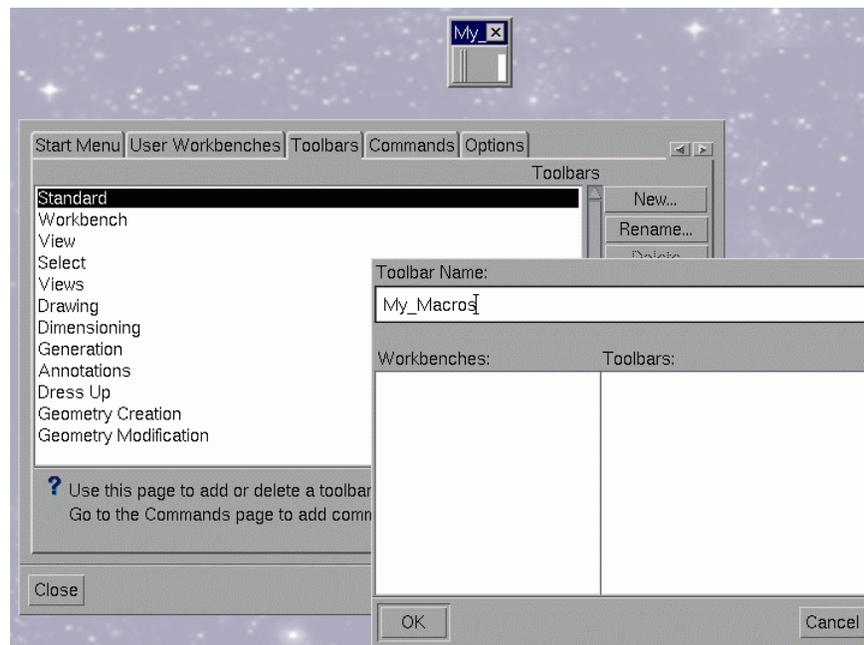
A more complex example with 2 drawing sheets within one model. You will find examples in the **sample** directory (a drawing containing generative drafting from a 3d model).

## 5 Part III: Appendix

### 5.1 How to use a button to call a CATIA macro

This paragraph shows how to create a button in your Workbench to start a CATScript macro directly.

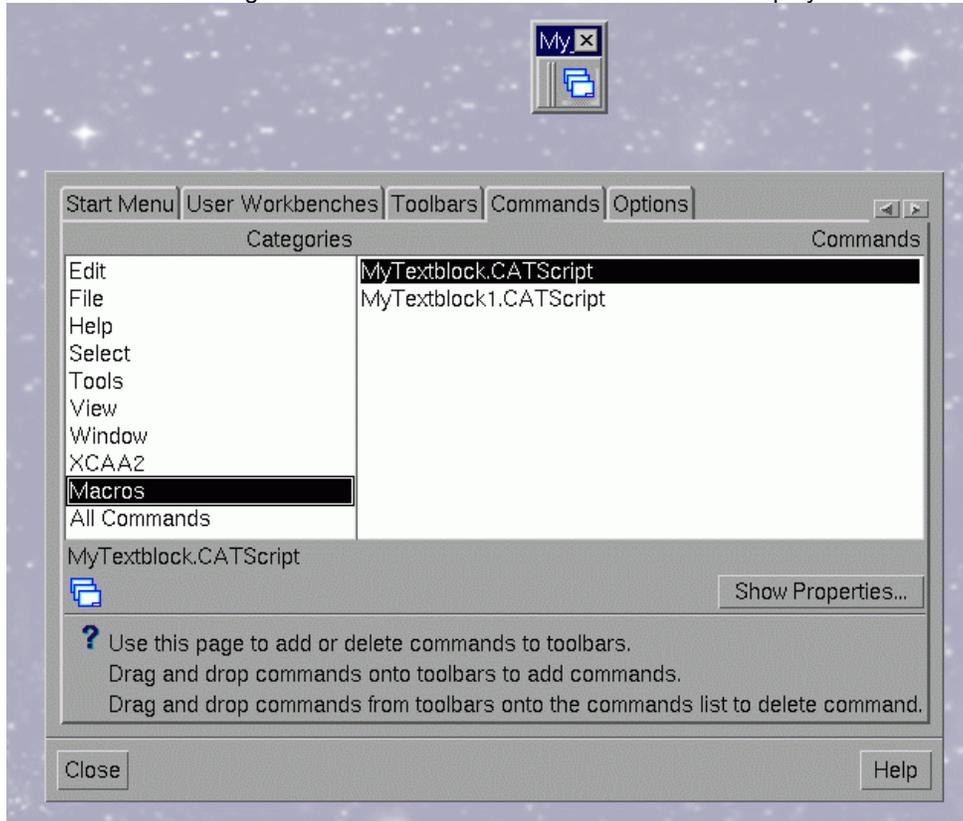
1. Start CATIA V5 and open the workbench in which the Icon should appear.
2. Open the **Tools/Customize** menu tabs
3. Select the **Toolbars Tab**
4. Select **New** button and insert a title name for this toolbar  
A small empty toolbar box is created and shows your new title



Picture 42 Toolbar definition

5. Press **OK** and switch to the **Commands** tab

6. Select **Macro** in the right column now all the known macros will be displayed in the left column.



Picture 43 Icon definition

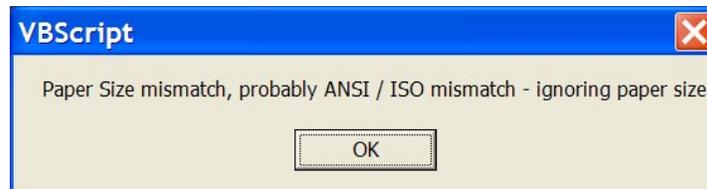
7. Select the macro which should be used in the Toolbar  
If you wish to change the Icon select **Show Properties...** and use the **Icons** button for selecting an other icon from the list.
8. Drag and drop the CATScript into the empty toolbar which you created before
9. Drag and drop the toolbar to the CATIA V5 menu bar where the new icon should appear when the Workbench is opened. ( In this example we used the bottom menu bar)

## 5.2 Known issues

### 5.2.1 PaperSize mismatch

If you have a drawing in ANSI format and the templates are in ISO format (and vice versa), the macro cannot automatically copy the right PaperSize to the drawing.

You will get the following message



Picture 44 Paper Size Mismatch

### 5.2.2 InstallDir contains blanks

The method used to call the GUI of the title block application does not allow blanks to be part of the filename. Therefore blanks must not be used.

If you specify a path, containing blanks, the following message will pop up and the macro stops.



Picture 45 Installation Path Error

### 5.2.3 Geometry in the background

Do not place any geometry other than the title frame in the background. Since the macro pastes a background from a template drawing into the current drawing, **this geometry will be lost.**

As a workaround, you can use Details/Dittos. These Details will be placed again by the program. You possibly will have to rearrange the details.

## 5.3 Hints and Tips

Hints and tips from users of the title block macro.

### 5.3.1 How to use several Notes with one title block entry

If you have text that appears twice like my companies part number it appears once in the title block and once along the border of the drawing. You want the Title Block Program to edit both with one change. This is how you can get CATIA and the Title Block Program to change the text in both places with changing only one space in the entry panel.

CATIA will not allow two texts's to have the same name if you do it manually by changing the properties. What I have done to get around this is once the part number in the title block properties has been named correctly. I used CATIA's translate copy option to position it along the border. CATIA will allow this and now you have two texts with the same named properties. Now when you run the Title Block Program and you edit the part number in the entry panel it will change the text in both places. I have given you a part number example but you can do it with any text that appears twice and you only want to edit it once.

### 5.3.2 Using the CATIA DS title block macro environment

Some hints for programmer using the macro environment of CATIA to supply Title Block Macros similar to the DS examples. This macro however is designed to be used as a standard macro (Tools/Macro), it will not work in that environment.

#### 5.3.2.1 The macro hangs somehow or does nothing

Within the title block macro environment you will not get any errors from the VB environment. Syntax errors, erroneous methods and so on will not be reported.

Develop the macro within the normal Tools/Macro environment.

#### 5.3.2.2 The published methods are not selectable

If you select the Background logo and you don't find your methods.

CATIA scans the source first to find the published methods. These methods begin with

CATDrw\_

If you don't see your methods, or a pop up with an exclamation mark appears, the code is probably not syntactically ok. To check this, call the macro with the normal Tools/Macro functionality.

#### 5.3.2.3 I don't see any macros within the macro environment

Ensure, that the directory for the macros is defined correctly. V5R7 ships as of SP4 with \VBScript\Frametitleblock and that will not work!

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Version 3, 29 June 2007

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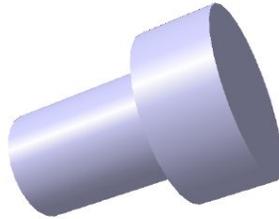
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END OF TERMS AND CONDITIONS



## 5.5 Sample Product



## 5.6 ASCII Table

| DEC | HEX | CHAR |
|-----|-----|------|-----|-----|------|-----|-----|------|-----|-----|------|
| 0   | 00  | NUL  | 32  | 20  | SP   | 64  | 40  | @    | 96  | 60  | `    |
| 1   | 01  | SOH  | 33  | 21  | !    | 65  | 41  | A    | 97  | 61  | a    |
| 2   | 02  | STX  | 34  | 22  | "    | 66  | 42  | B    | 98  | 62  | b    |
| 3   | 03  | ETX  | 35  | 23  | #    | 67  | 43  | C    | 99  | 63  | c    |
| 4   | 04  | EOT  | 36  | 24  | \$   | 68  | 44  | D    | 100 | 64  | d    |
| 5   | 05  | ENQ  | 37  | 25  | %    | 69  | 45  | E    | 101 | 65  | e    |
| 6   | 06  | ACK  | 38  | 26  | &    | 70  | 46  | F    | 102 | 66  | f    |
| 7   | 07  | BEL  | 39  | 27  | '    | 71  | 47  | G    | 103 | 67  | g    |
| 8   | 08  | BS   | 40  | 28  | (    | 72  | 48  | H    | 104 | 68  | h    |
| 9   | 09  | HT   | 41  | 29  | )    | 73  | 49  | I    | 105 | 69  | i    |
| 10  | 0A  | LF   | 42  | 2A  | *    | 74  | 4A  | J    | 106 | 6A  | j    |
| 11  | 0B  | VT   | 43  | 2B  | +    | 75  | 4B  | K    | 107 | 6B  | k    |
| 12  | 0C  | FF   | 44  | 2C  | ,    | 76  | 4C  | L    | 108 | 6C  | l    |
| 13  | 0D  | CR   | 45  | 2D  | -    | 77  | 4D  | M    | 109 | 6D  | m    |
| 14  | 0E  | SO   | 46  | 2E  | .    | 78  | 4E  | N    | 110 | 6E  | n    |
| 15  | 0F  | SI   | 47  | 2F  | /    | 79  | 4F  | O    | 111 | 6F  | o    |
| 16  | 10  | DLE  | 48  | 30  | 0    | 80  | 50  | P    | 112 | 70  | p    |
| 17  | 11  | DC1  | 49  | 31  | 1    | 81  | 51  | Q    | 113 | 71  | q    |
| 18  | 12  | DC2  | 50  | 32  | 2    | 82  | 52  | R    | 114 | 72  | r    |
| 19  | 13  | DC3  | 51  | 33  | 3    | 83  | 53  | S    | 115 | 73  | s    |
| 20  | 14  | DC4  | 52  | 34  | 4    | 84  | 54  | T    | 116 | 74  | t    |
| 21  | 15  | NAK  | 53  | 35  | 5    | 85  | 55  | U    | 117 | 75  | u    |
| 22  | 16  | SYN  | 54  | 36  | 6    | 86  | 56  | V    | 118 | 76  | v    |
| 23  | 17  | ETB  | 55  | 37  | 7    | 87  | 57  | W    | 119 | 77  | w    |
| 24  | 18  | CAN  | 56  | 38  | 8    | 88  | 58  | X    | 120 | 78  | x    |
| 25  | 19  | EM   | 57  | 39  | 9    | 89  | 59  | Y    | 121 | 79  | y    |
| 26  | 1A  | SUB  | 58  | 3A  | :    | 90  | 5A  | Z    | 122 | 7A  | z    |
| 27  | 1B  | ESC  | 59  | 3B  | ;    | 91  | 5B  | [    | 123 | 7B  | {    |
| 28  | 1C  | FS   | 60  | 3C  | <    | 92  | 5C  | \    | 124 | 7C  |      |
| 29  | 1D  | GS   | 61  | 3D  | =    | 93  | 5D  | ]    | 125 | 7D  | }    |
| 30  | 1E  | RS   | 62  | 3E  | >    | 94  | 5E  | ^    | 126 | 7E  | ~    |
| 31  | 1F  | US   | 63  | 3F  | ?    | 95  | 5F  | _    | 127 | 7F  | DEL  |



| DEC | HEX | CHAR |
|-----|-----|------|-----|-----|------|-----|-----|------|-----|-----|------|
| 128 | 80  |      | 160 | A0  | NBSP | 192 | C0  | À    | 224 | E0  | à    |
| 129 | 81  |      | 161 | A1  | ı    | 193 | C1  | Á    | 225 | E1  | á    |
| 130 | 82  |      | 162 | A2  | ı    | 194 | C2  | Â    | 226 | E2  | â    |
| 131 | 83  |      | 163 | A3  | £    | 195 | C3  | Ã    | 227 | E3  | ã    |
| 132 | 84  |      | 164 | A4  | □    | 196 | C4  | Ä    | 228 | E4  | ä    |
| 133 | 85  |      | 165 | A5  | ¥    | 197 | C5  | Å    | 229 | E5  | å    |
| 134 | 86  |      | 166 | A6  |      | 198 | C6  | Æ    | 230 | E6  | æ    |
| 135 | 87  |      | 167 | A7  | §    | 199 | C7  | Ç    | 231 | E7  | ç    |
| 136 | 88  |      | 168 | A8  | ¨    | 200 | C8  | È    | 232 | E8  | è    |
| 137 | 89  |      | 169 | A9  | ©    | 201 | C9  | É    | 233 | E9  | é    |
| 138 | 8A  |      | 170 | AA  | ²    | 202 | CA  | Ê    | 234 | EA  | ê    |
| 139 | 8B  |      | 171 | AB  | «    | 203 | CB  | Ë    | 235 | EB  | ë    |
| 140 | 8C  |      | 172 | AC  |      | 204 | CC  | Ì    | 236 | EC  | ì    |
| 141 | 8D  |      | 173 | AD  | -    | 205 | CD  | Í    | 237 | ED  | í    |
| 142 | 8E  |      | 174 | AE  | ®    | 206 | CE  | Î    | 238 | EE  | î    |
| 143 | 8F  |      | 175 | AF  | —    | 207 | CF  | Ï    | 239 | EF  | ï    |
| 144 | 90  |      | 176 | B0  | °    | 208 | D0  | Ð    | 240 | F0  | ð    |
| 145 | 91  |      | 177 | B1  | ±    | 209 | D1  | Ñ    | 241 | F1  | ñ    |
| 146 | 92  |      | 178 | B2  | ²    | 210 | D2  | Ò    | 242 | F2  | ò    |
| 147 | 93  |      | 179 | B3  | ³    | 211 | D3  | Ó    | 243 | F3  | ó    |
| 148 | 94  |      | 180 | B4  | ´    | 212 | D4  | Ô    | 244 | F4  | ô    |
| 149 | 95  |      | 181 | B5  | µ    | 213 | D5  | Õ    | 245 | F5  | õ    |
| 150 | 96  |      | 182 | B6  |      | 214 | D6  | Ö    | 246 | F6  | ö    |
| 151 | 97  |      | 183 | B7  | ·    | 215 | D7  | ×    | 247 | F7  | ÷    |
| 152 | 98  |      | 184 | B8  | ¸    | 216 | D8  | Ø    | 248 | F8  | ø    |
| 153 | 99  |      | 185 | B9  | ¹    | 217 | D9  | Ù    | 249 | F9  | ù    |
| 154 | 9A  |      | 186 | BA  | º    | 218 | DA  | Ú    | 250 | FA  | ú    |
| 155 | 9B  |      | 187 | BB  | »    | 219 | DB  | Û    | 251 | FB  | û    |
| 156 | 9C  |      | 188 | BC  | ¼    | 220 | DC  | Ü    | 252 | FC  | ü    |
| 157 | 9D  |      | 189 | BD  | ½    | 221 | DD  | Ý    | 253 | FD  | ý    |
| 158 | 9E  |      | 190 | BE  | ¾    | 222 | DE  | Þ    | 254 | FE  | þ    |
| 159 | 9F  |      | 191 | BF  | ¿    | 223 | DF  | ß    | 255 | FF  | ÿ    |

## 5.7 TCL String command

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NAME

**string** - Manipulate strings

SYNOPSIS

**string** *option arg ?arg ...?*

DESCRIPTION

Performs one of several **string** operations, depending on *option*. The legal *options* (which may be abbreviated) are:

**string** **bytlength** *string*

Returns a decimal **string** giving the number of bytes used to represent *string* in memory. Because UTF-8 uses one to three bytes to represent Unicode characters, the byte length will not be the same as the character length in general. The cases where a script cares about the byte length are rare. In almost all cases, you should use the **string length** operation. Refer to the [Tcl NumUtfChars](#) manual entry for more details on the UTF-8 representation.

**string** **compare** *?-nocase? ?-length int? string1 string2*

Perform a character-by-character comparison of strings *string1* and *string2*. Returns -1, 0, or 1, depending on whether *string1* is lexicographically less than, equal to, or greater than *string2*. If **-length** is specified, then only the first *length* characters are used in the comparison. If **-length** is negative, it is ignored. If **-nocase** is specified, then the strings are compared in a case-insensitive manner.

**string** **equal** *?-nocase? ?-length int? string1 string2*

Perform a character-by-character comparison of strings *string1* and *string2*. Returns 1 if *string1* and *string2* are identical, or 0 when not. If **-length** is specified, then only the first *length* characters are used in the comparison. If **-length** is negative, it is ignored. If **-nocase** is specified, then the strings are compared in a case-insensitive manner.

**string** **first** *string1 string2 ?startIndex?*

Search *string2* for a sequence of characters that exactly match the characters in *string1*. If found, return the index of the first character in the first such match within *string2*. If not found, return -1. If *startIndex* is specified (in any of the forms accepted by the **index** method), then the search is constrained to start with the character in *string2* specified by the index. For example,

**string** first a 0a23456789abcdef 5  
will return 10, but  
**string** first a 0123456789abcdef 11  
will return -1.

**string** index **string** *charIndex*

Returns the *charIndex*'th character of the **string** argument. A *charIndex* of 0 corresponds to the first character of the **string**. *charIndex* may be specified as follows:

*integer*

The char specified at this integral index

**end**

The last char of the **string**.

**end-integer**

The last char of the **string** minus the specified integer offset (e.g. **end-1** would refer to the "c" in "abcd").

If *charIndex* is less than 0 or greater than or equal to the length of the **string** then an empty **string** is returned.

**string** is class *?-strict? ?-failindex varname?* **string**

Returns 1 if **string** is a valid member of the specified character class, otherwise returns 0. If **-strict** is specified, then an empty **string** returns 0, otherwise and empty **string** will return 1 on any class. If **-failindex** is specified, then if the function returns 0, the index in the **string** where the class was no longer valid will be stored in the variable named *varname*. The *varname* will not be set if the function returns 1. The following character classes are recognized (the class name can be abbreviated):

**alnum**

Any Unicode alphabet or digit character.

**alpha**

Any Unicode alphabet character.

**ascii**

Any character with a value less than \u0080 (those that are in the 7-bit ascii range).

**boolean**

Any of the forms allowed to [Tcl\\_GetBoolean](#).

**control**

Any Unicode control character.

**digit**

Any Unicode digit character. Note that this includes characters outside of the [0-9] range.

**double**

Any of the valid forms for a double in Tcl, with optional surrounding whitespace. In case of under/overflow in the value, 0 is returned and the *varname* will contain -1.

**false**

Any of the forms allowed to [Tcl\\_GetBoolean](#) where the value is false.

**graph**

Any Unicode printing character, except space.

**integer**

Any of the valid forms for an integer in Tcl, with optional surrounding whitespace. In case of under/overflow in the value, 0 is returned and the *varname* will contain -1.

**lower**

Any Unicode lower case alphabet character.

**print**

Any Unicode printing character, including space.

**punct**

Any Unicode punctuation character.

**space**

Any Unicode space character.

**true**

Any of the forms allowed to [Tcl\\_GetBoolean](#) where the value is true.

**upper**

Any upper case alphabet character in the Unicode character set.

**wordchar**

Any Unicode word character. That is any alphanumeric character, and any Unicode connector punctuation characters (e.g. underscore).

### **xdigit**

Any hexadecimal digit character ([0-9A-Fa-f]).

In the case of **boolean**, **true** and **false**, if the function will return 0, then the *varname* will always be set to 0, due to the varied nature of a valid boolean value.

### **string last** *string1 string2 ?startIndex?*

Search *string2* for a sequence of characters that exactly match the characters in *string1*. If found, return the index of the first character in the last such match within *string2*. If there is no match, then return -1. If *startIndex* is specified (in any of the forms accepted by the **index** method), then only the characters in *string2* at or before the specified *startIndex* will be considered by the search. For example,

```
string last a 0a23456789abcdef 15
```

will return **10**, but

```
string last a 0a23456789abcdef 9
```

will return **1**.

### **string length** *string*

Returns a decimal **string** giving the number of characters in **string**. Note that this is not necessarily the same as the number of bytes used to store the **string**.

### **string map** *?-nocase? charMap string*

Replaces characters in **string** based on the key-value pairs in *charMap*. *charMap* is a list of *key value key value ...* as in the form returned by **array get**. Each instance of a key in the **string** will be replaced with its corresponding value. If **-nocase** is specified, then matching is done without regard to case differences. Both *key* and *value* may be multiple characters. Replacement is done in an ordered manner, so the key appearing first in the list will be checked first, and so on. **string** is only iterated over once, so earlier key replacements will have no affect for later key matches. For example,

```
string map {abc 1 ab 2 a 3 1 0} 1abcaababcabababc
```

will return the **string** **01321221**.

### **string match** *?-nocase? pattern string*

See if *pattern* matches **string**; return 1 if it does, 0 if it doesn't. If **-nocase** is specified, then the pattern attempts to match against the **string** in a case insensitive manner. For the two strings to match, their contents must be identical except that the following special sequences may appear in *pattern*:

\*

Matches any sequence of characters in **string**, including a null **string**.

?

Matches any single character in **string**.

[*chars*]

Matches any character in the set given by *chars*. If a sequence of the form *x-y* appears in *chars*, then any character between *x* and *y*, inclusive, will match. When used with **-nocase**, the end points of the range are converted to lower case first. Whereas {[A-z]} matches '\_' when matching case-sensitively ('\_' falls between the 'Z' and 'a'), with **-nocase** this is considered like {[A-Za-z]} (and probably what was meant in the first place).

\x

Matches the single character *x*. This provides a way of avoiding the special interpretation of the characters *\*?[]\* in *pattern*.

### **string range** *string first last*

Returns a range of consecutive characters from **string**, starting with the character whose index is *first* and ending with the character whose index is *last*. An index of 0 refers to the first character of the **string**. *first* and *last* may be specified as for the **index** method. If *first* is less than zero then it is treated as if it were zero, and if *last* is greater than or equal to the length of the **string** then it is treated as if it were **end**. If *first* is greater than *last* then an empty **string** is returned.

### **string repeat** *string count*

Returns **string** repeated *count* number of times.

### **string replace** *string first last ?newstring?*

Removes a range of consecutive characters from **string**, starting with the character whose index is *first* and ending with the character whose index is *last*. An index of 0 refers to the first character of the **string**. *first* and *last* may be specified as for the **index** method. If *newstring* is specified, then it is placed in the removed character range. If *first* is less than zero then it is treated as if it were zero, and if *last* is greater than or equal to the length of the **string** then it is treated as if it were **end**. If *first* is greater than *last* or the length of the initial **string**, or *last* is less than 0, then the initial **string** is returned untouched.

### **string tolower** *string ?first? ?last?*

Returns a value equal to `string` except that all upper (or title) case letters have been converted to lower case. If *first* is specified, it refers to the first char index in the `string` to start modifying. If *last* is specified, it refers to the char index in the `string` to stop at (inclusive). *first* and *last* may be specified as for the **index** method.

**string** **tolower** `string` *?first?* *?last?*

Returns a value equal to `string` except that the first character in `string` is converted to its Unicode title case variant (or upper case if there is no title case variant) and the rest of the `string` is converted to lower case. If *first* is specified, it refers to the first char index in the `string` to start modifying. If *last* is specified, it refers to the char index in the `string` to stop at (inclusive). *first* and *last* may be specified as for the **index** method.

**string** **toupper** `string` *?first?* *?last?*

Returns a value equal to `string` except that all lower (or title) case letters have been converted to upper case. If *first* is specified, it refers to the first char index in the `string` to start modifying. If *last* is specified, it refers to the char index in the `string` to stop at (inclusive). *first* and *last* may be specified as for the **index** method.

**string** **trim** `string` *?chars?*

Returns a value equal to `string` except that any leading or trailing characters from the set given by *chars* are removed. If *chars* is not specified then white space is removed (spaces, tabs, newlines, and carriage returns).

**string** **trimleft** `string` *?chars?*

Returns a value equal to `string` except that any leading characters from the set given by *chars* are removed. If *chars* is not specified then white space is removed (spaces, tabs, newlines, and carriage returns).

**string** **trimright** `string` *?chars?*

Returns a value equal to `string` except that any trailing characters from the set given by *chars* are removed. If *chars* is not specified then white space is removed (spaces, tabs, newlines, and carriage returns).

**string** **wordend** `string` *charIndex*

Returns the index of the character just after the last one in the word containing character *charIndex* of `string`. *charIndex* may be specified as for the **index** method. A word is considered to be any contiguous range of alphanumeric (Unicode letters or decimal digits) or underscore (Unicode connector punctuation) characters, or any single character other than these.

**string** **wordstart** `string` *charIndex*

Returns the index of the first character in the word containing character *charIndex* of `string`. *charIndex* may be specified as for the **index** method. A word is considered to be any contiguous range of alphanumeric (Unicode letters or decimal digits) or underscore (Unicode connector punctuation) characters, or any single character other than these.

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