How-To-Automate eCADSTAR

Information about the structure of workspaces for correct automation with macros, user commands, a user-defined ribbon menu and an example of a practical definition structure.

CSK

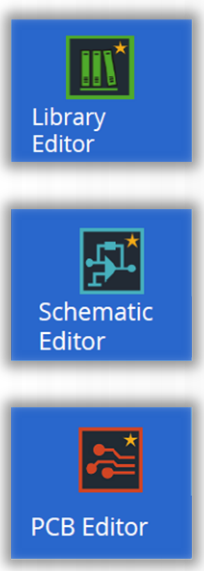
eCADSTAR™

Definition: Workspaces

- **Workspace files contain the working environment of the entire eCADSTAR program, which has saved all settings that are required for working.** This way enables you to switch between different work environments or to use the different workspaces at the same time for different instances.

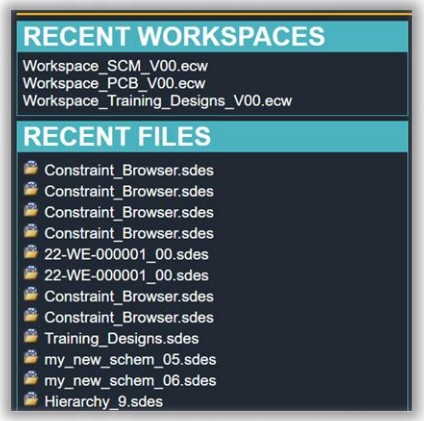
- This is can be helpful if you have to switch between different work environments from time to time.
  - This could be the case when switching between the guidelines of design offices and customer designs with special requirements. Or between the guidelines of different departments in a company.

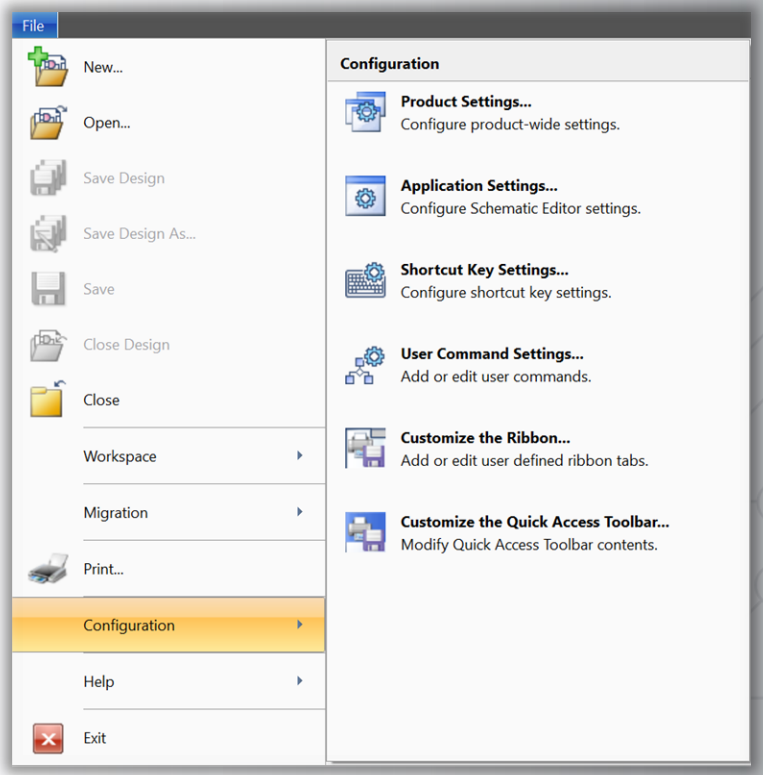
One Workspace.ecw
can be used for all applications



Settings saved with Workspaces

- All Product Settings
  - The only exception is the stored license, as this is a machine-specific setting.
- All Application Settings
- Custom Ribbons
- Custom Hotkeys
- Custom Quick Access Toolbar
- Recent Files
- Last Accessed Directories
- Windows size and position
  - Rule Editor
  - Tech Editor
  - M.O.O.



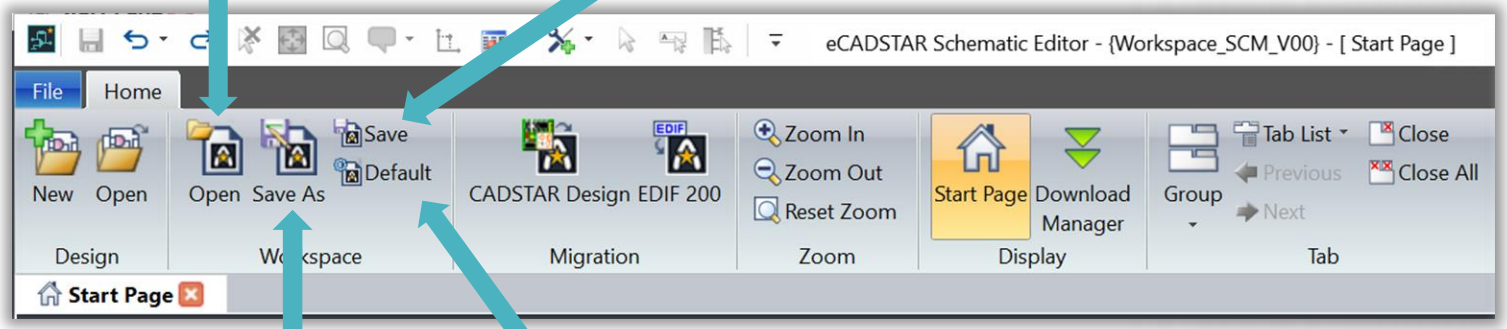


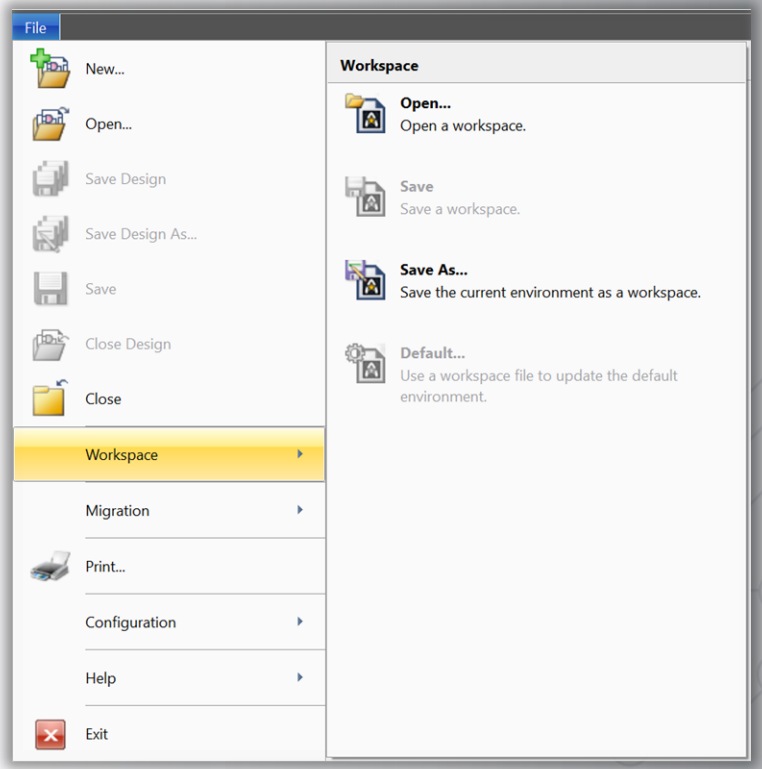
eCADSTAR Workspace GUI

Open file browser to search for previous saved workspace.

Will **save** any changes made to the opened workspace.

The same bottoms can be found on file menu workspace:

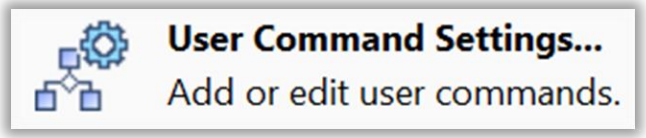




Save the current environment **as** a workspace and will it open a file browser to select location.

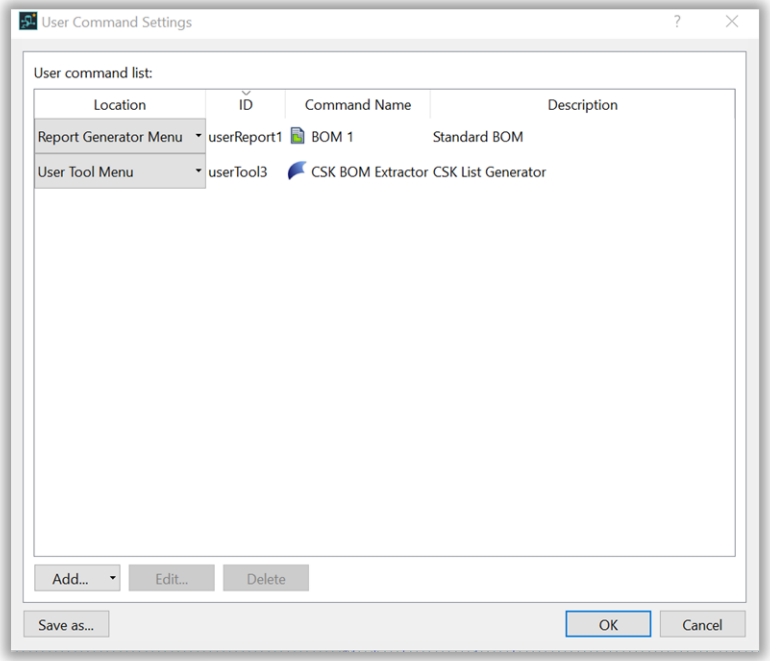
Set the current workspace as the **default** and start eCADSTAR with these settings from now on.

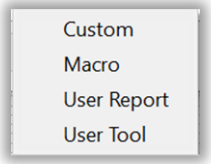
User Command - Setting Add User Tool



Add Microsoft Excel as user tool in eCADSTAR

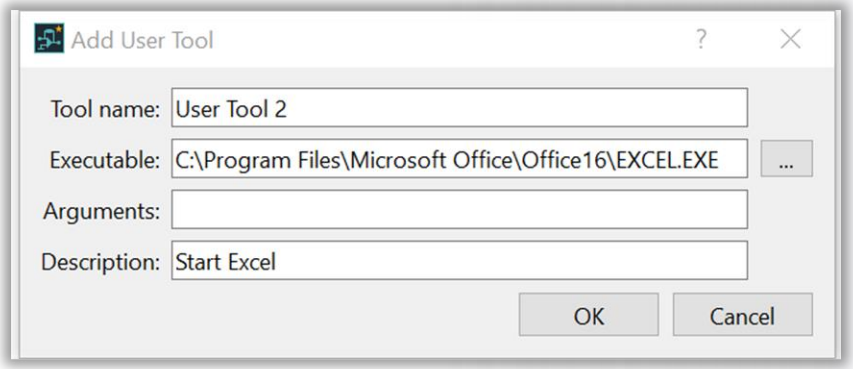
View / Select User Command



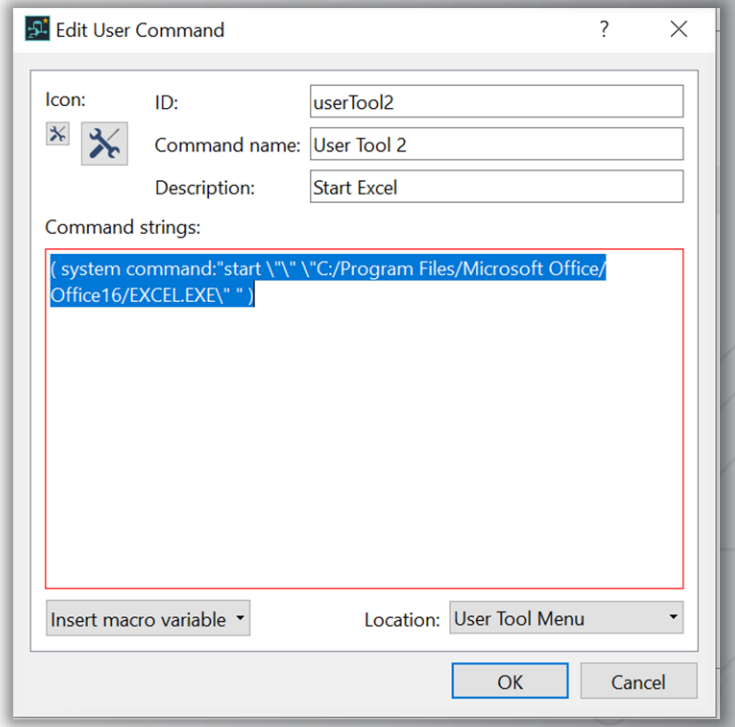


Select the type of User Command

Add new User Command properties

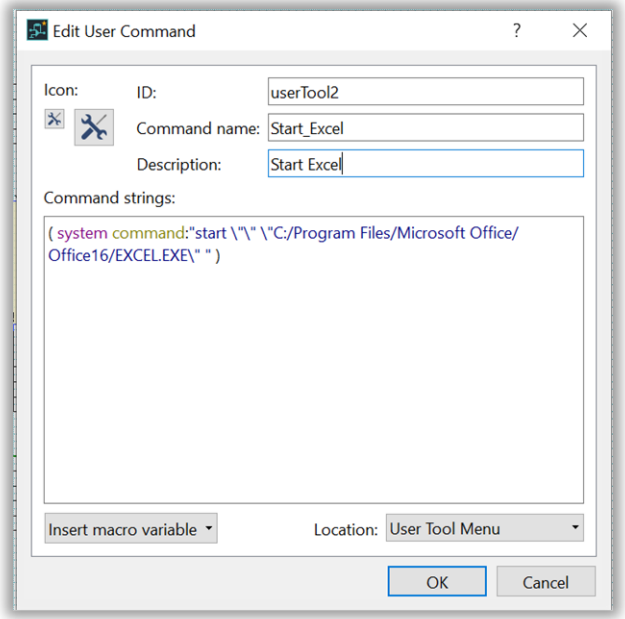


Edit User Command

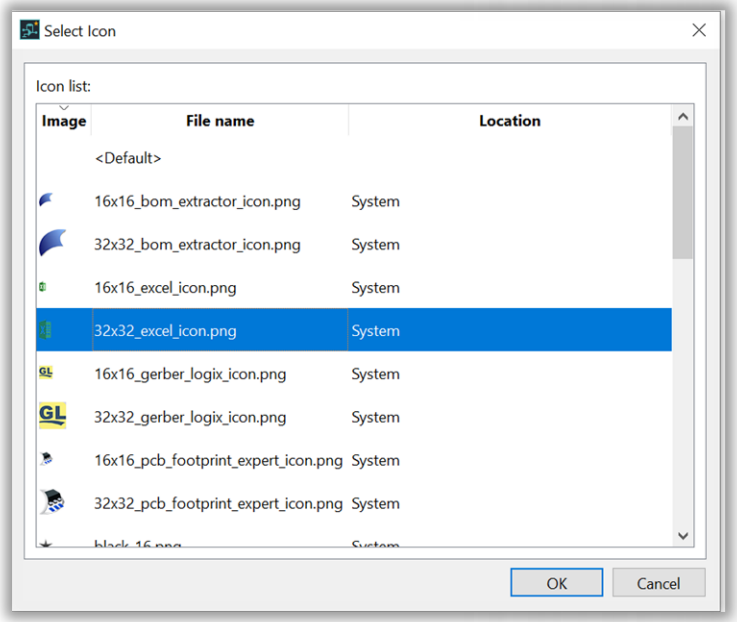


User Command - Select Icon

Click at the
small and large icon



Select a 16 x 16
and 32 x 32 application icon

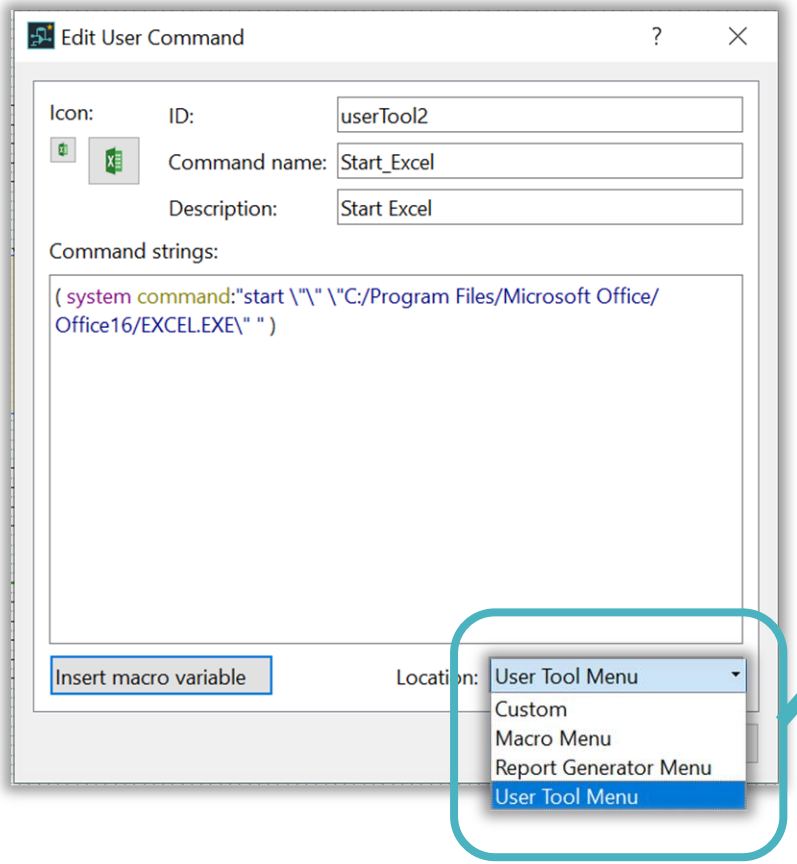


System Path:
C:\Program Files\eCADSTAR\eCADSTAR 2021.0\system\gui\images\icons

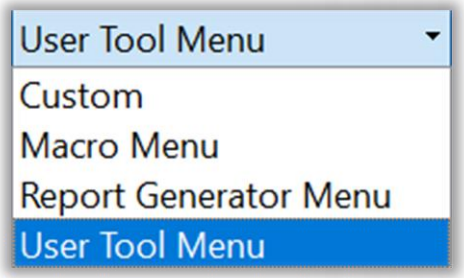
User Path:
C:\Users\Kluwetasch\AppData\Roaming\Zuken\eCADSTAR\2021.0\settings.ncs\gui\images\usericons

User Command - Set Appearance Location

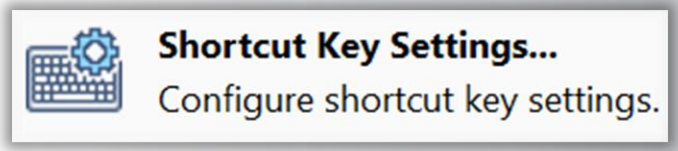
Select the location

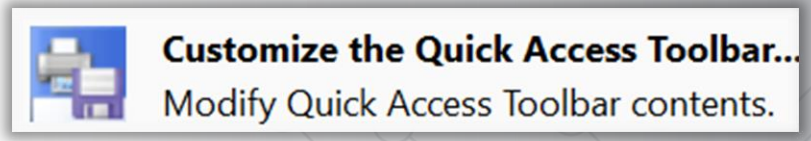


Location



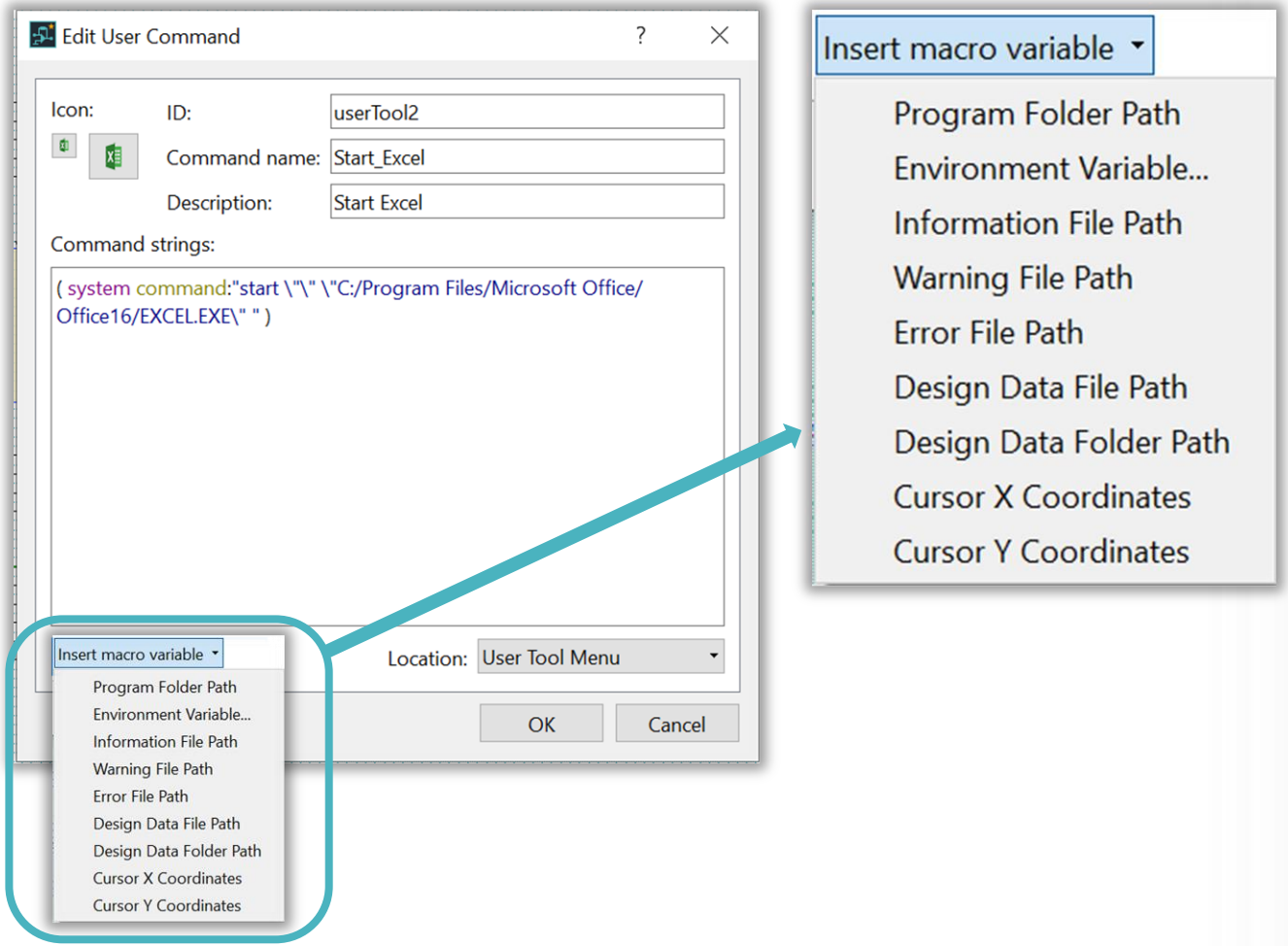
Possible location are in





User Command - Setting Macro Variable

Insert macro Variable

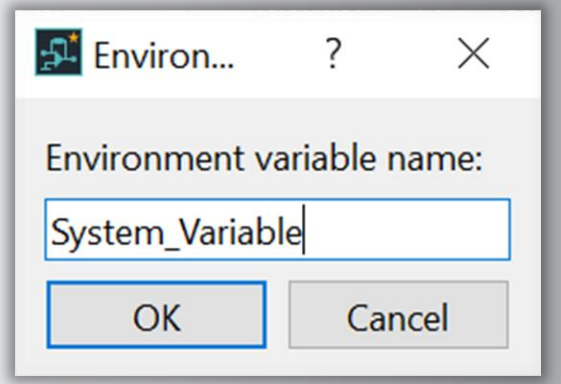


Macro Variable Name

Variable Name

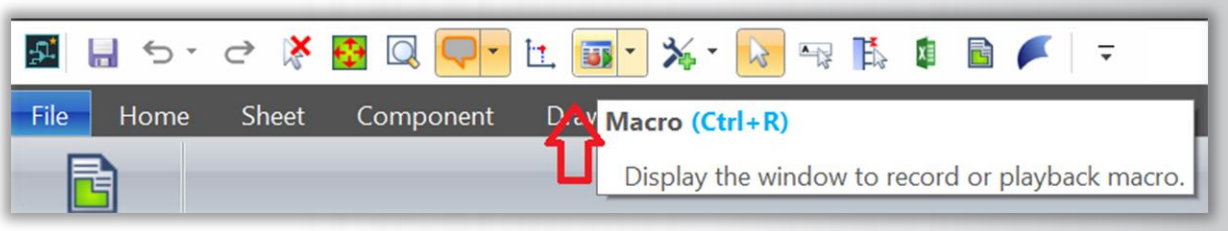
${binDirPath}
${env:System_Variable}
${warningFilePath}
${infoFilePath}
${errorFilePath}
${dsgnPath}
${dsgnDirPath}
${cursorPointX}
${cursorPointY}

Environment Variable

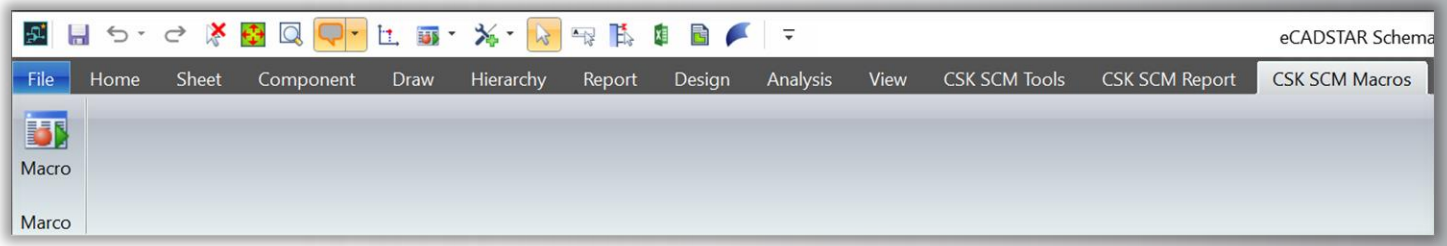


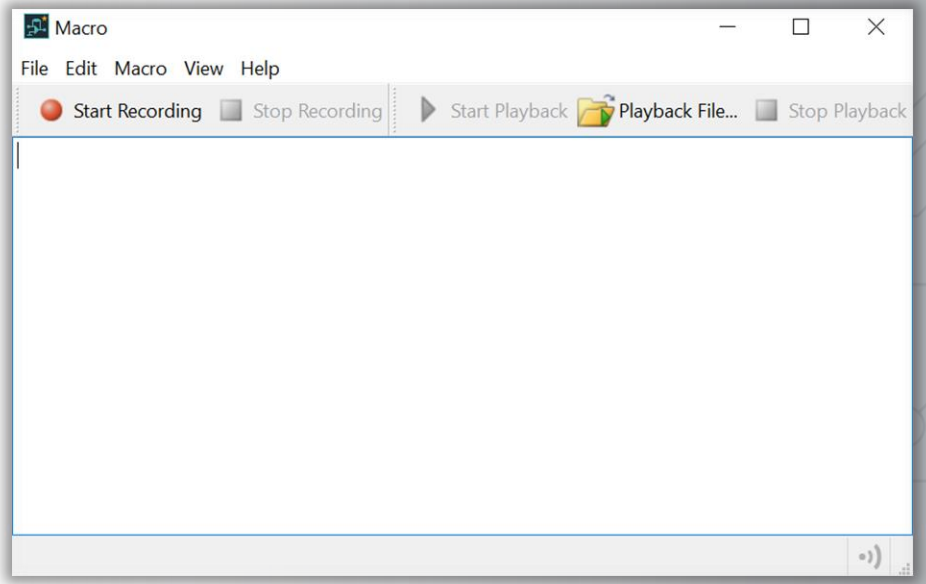
User Command - Create Macro in SCM

Default Macro Menu location inside the QAT:



Possible location at the Ribbon Menu:



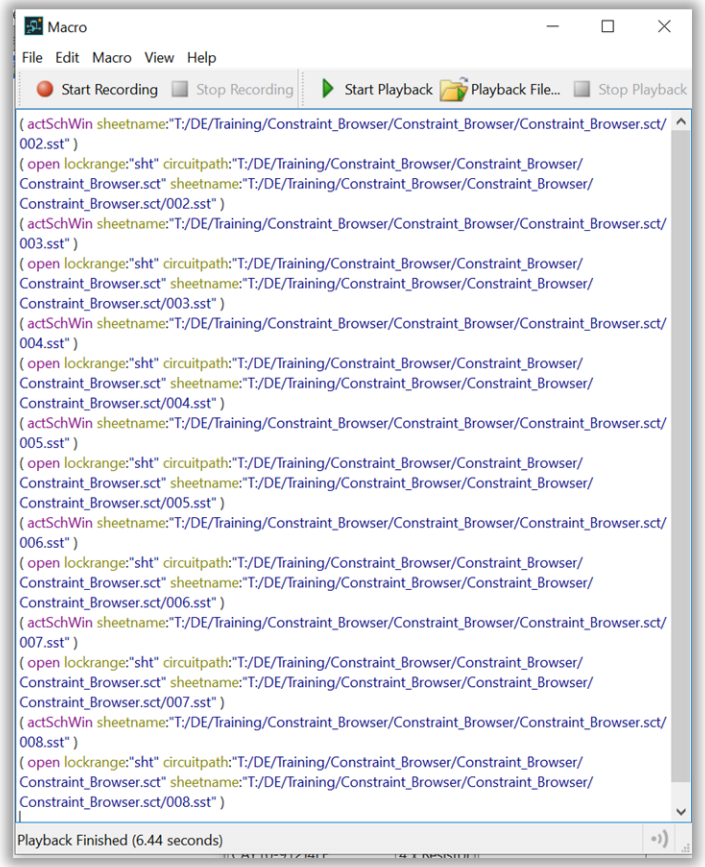


Note:
A macro file only records editing operations on a sheet editor; editing operations in a Component Browser are not recorded.

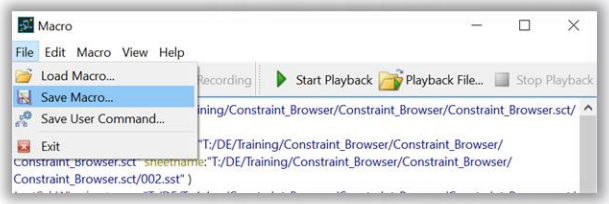
User Command - Macro

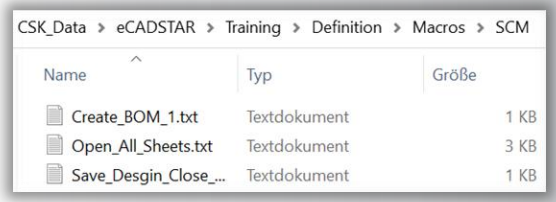
A macro to open all 8 sheets in the SCM:

1. The recording is started with Start Recording.

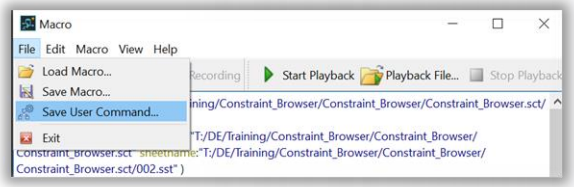


2a. Save the macro text file in the system directory.

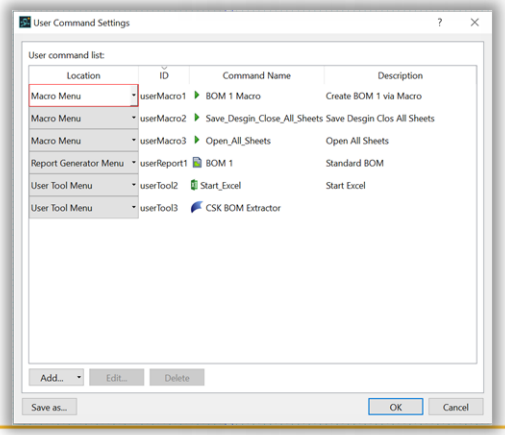




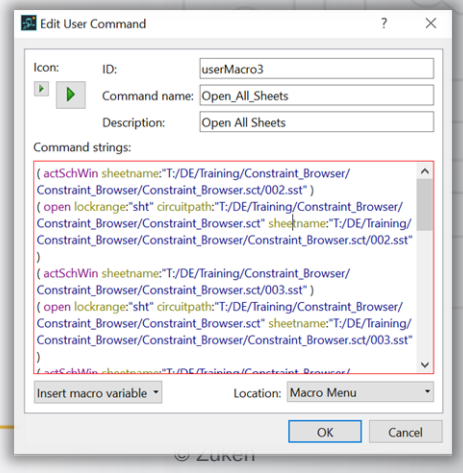
2b. Save the macro as a User Command.



3. A new user command is created.



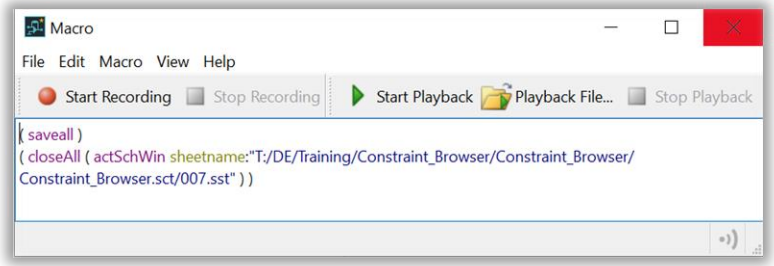
4. Edit the new user command.



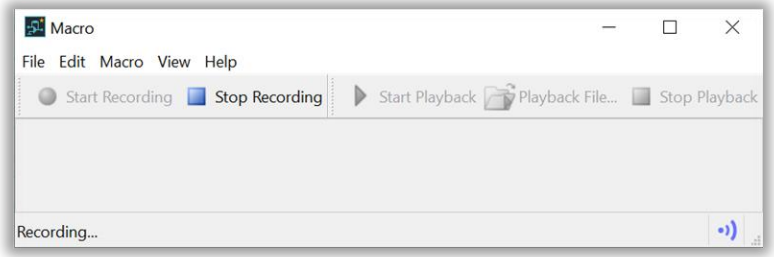
User Command - Macro

A macro to save the design and close all Sheets:

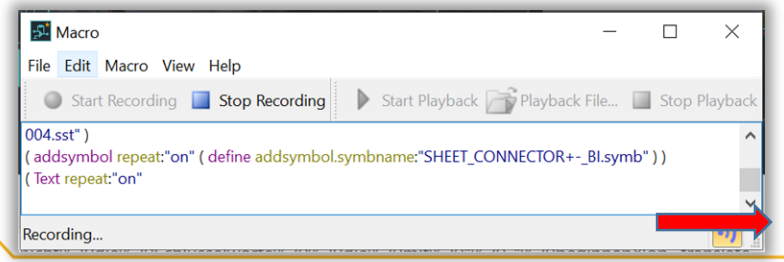
1. The recording is started with Start Recording.



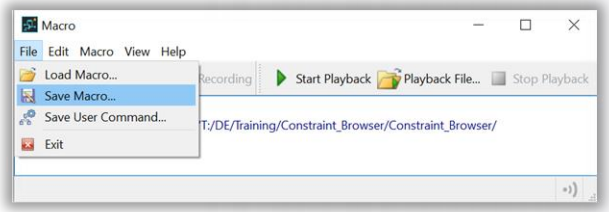
The recording stopped with Stop Recording.

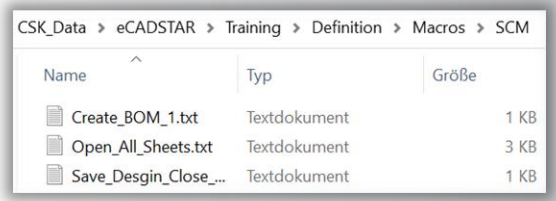


View online Recording.

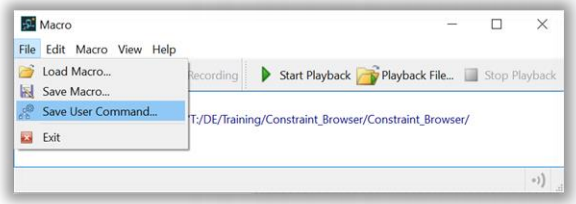


2a. Save the macro text file in the system directory.

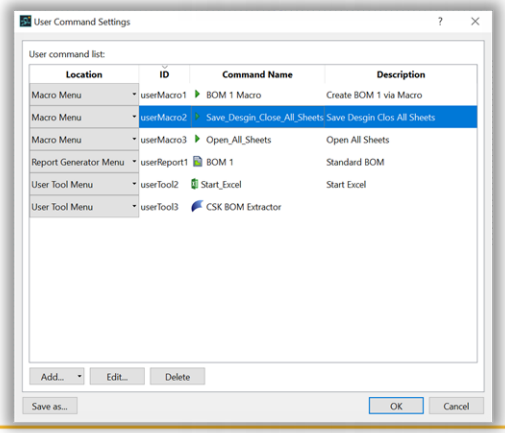




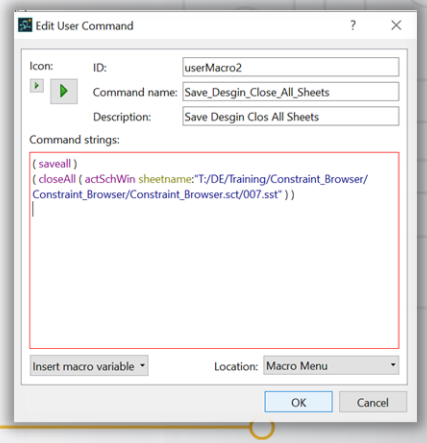
2b. Save the macro as a User Command.



3. A new user command is created.

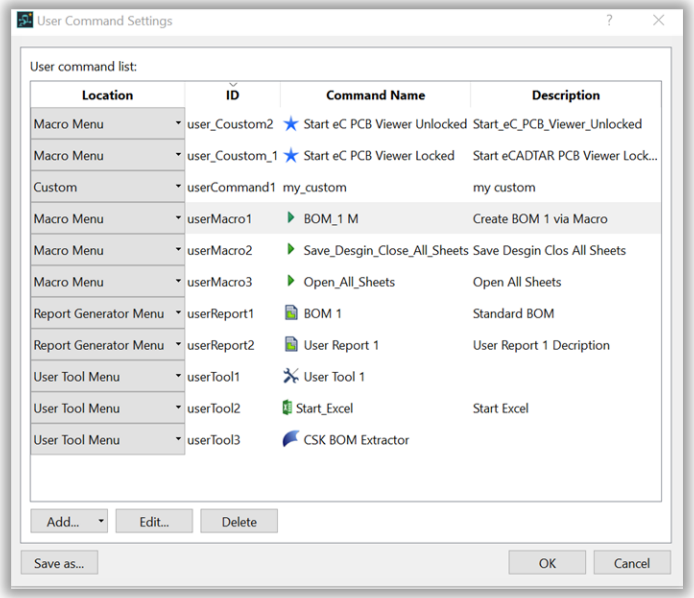


4. Edit the new user command.

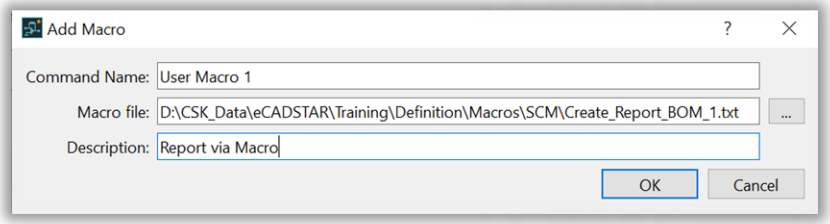


User Command - SCM use existing macro

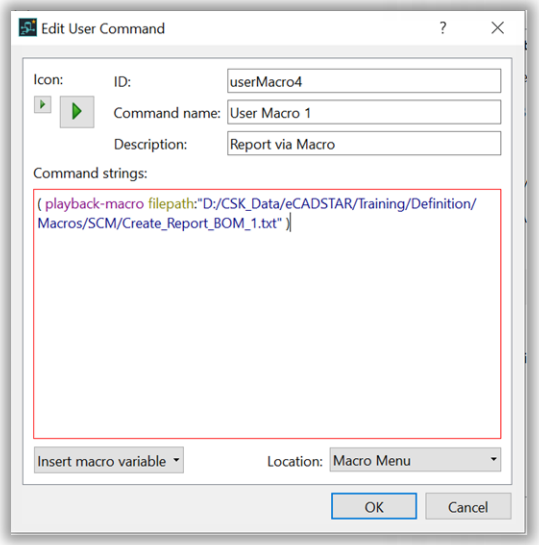
Add User Command:



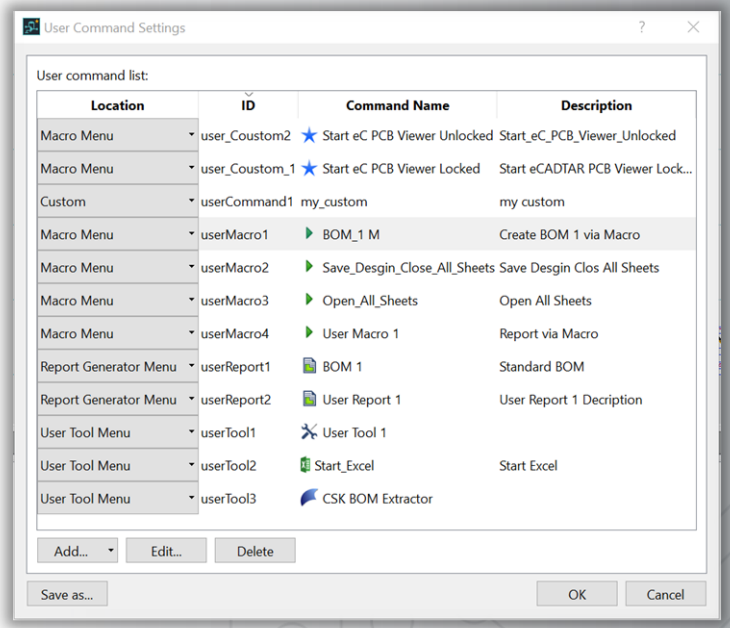
Select a Report:



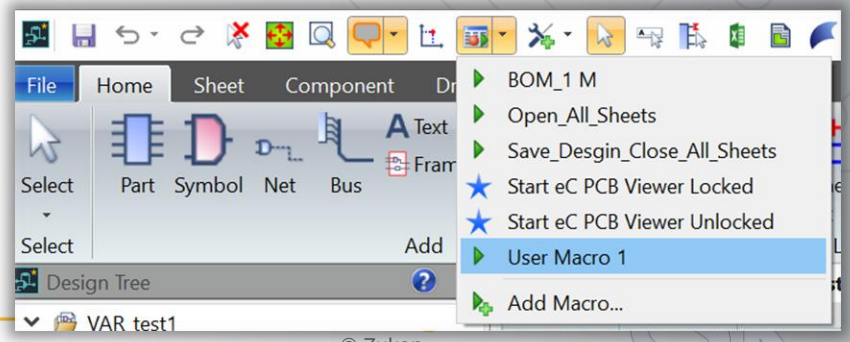
Edit User Command added:



New User Command added:

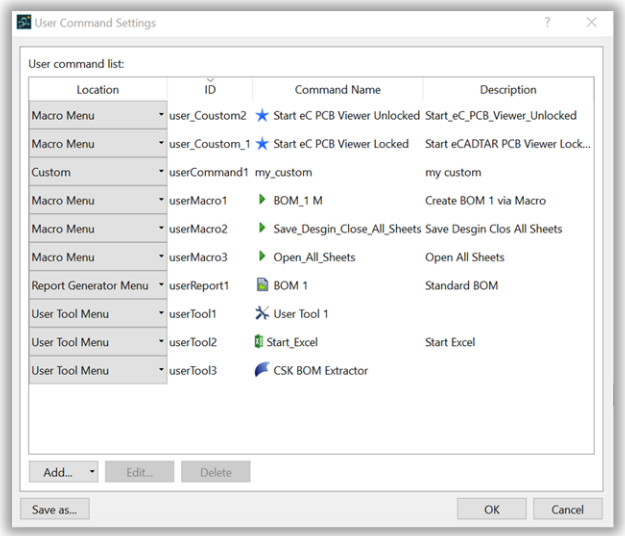


User new report icon:

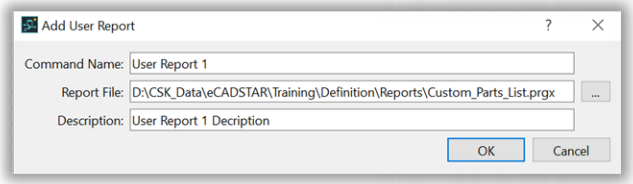


User Command - SCM use existing report

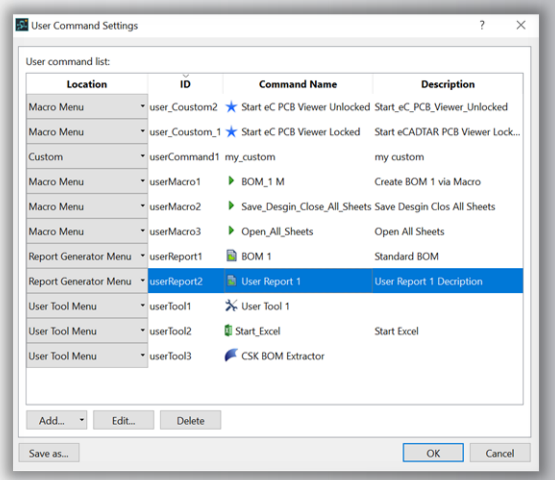
Add User Command:



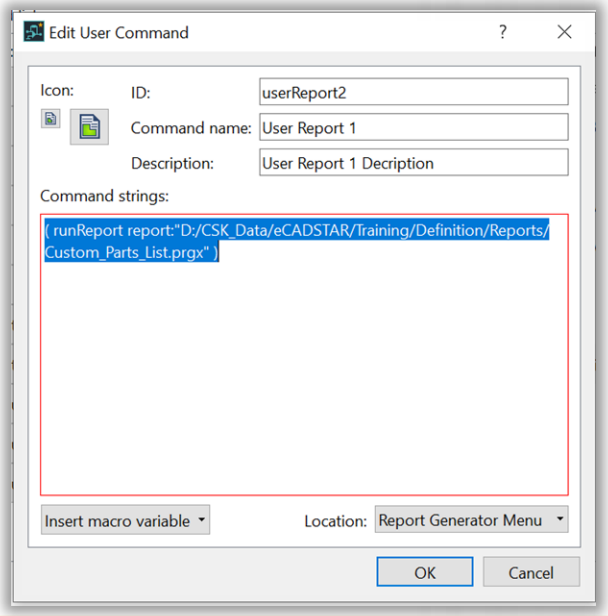
Select a Report:



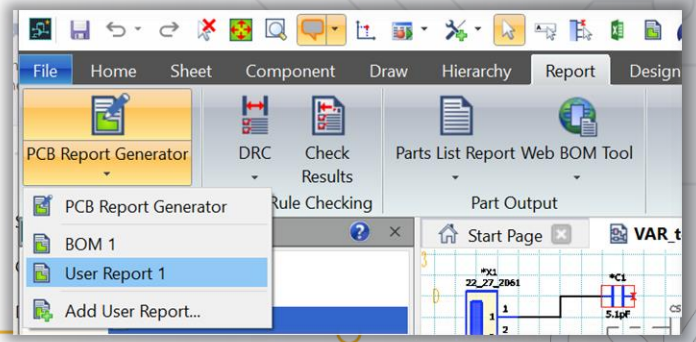
New User Command added:



Edit User Command added:

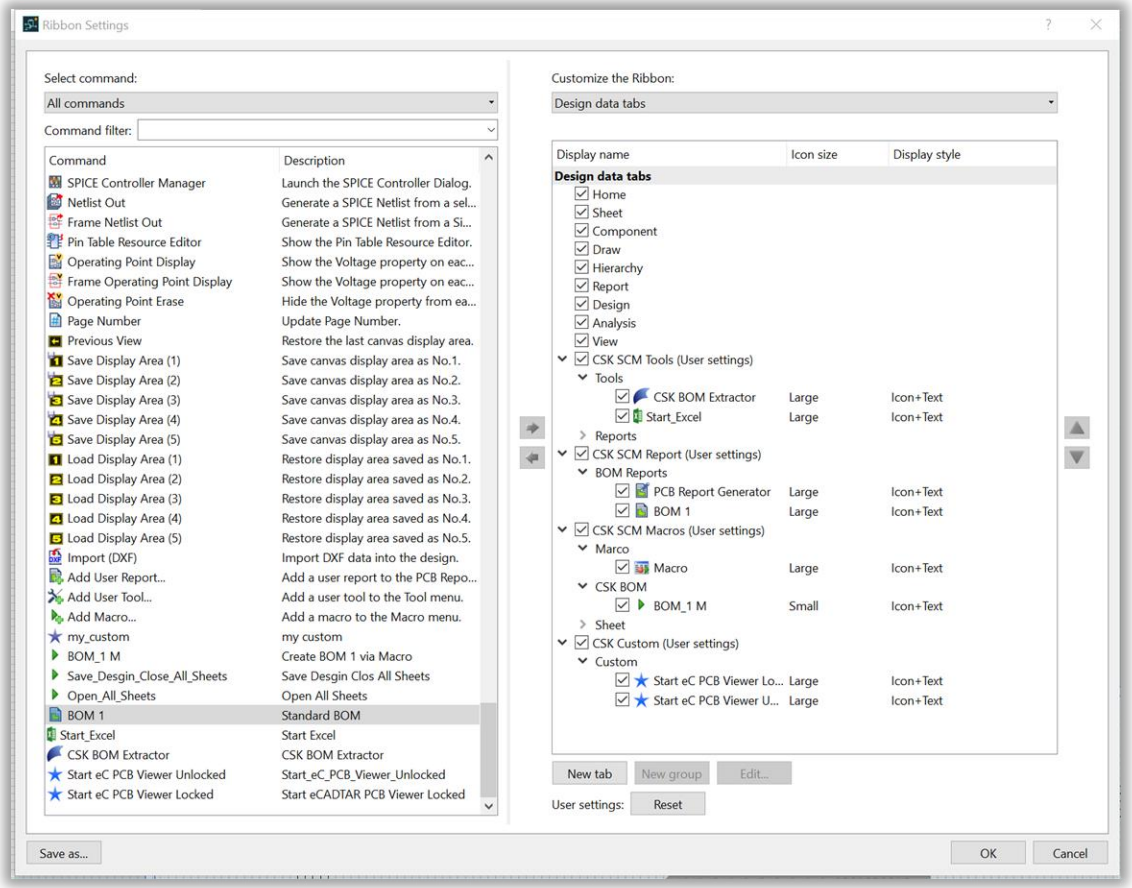


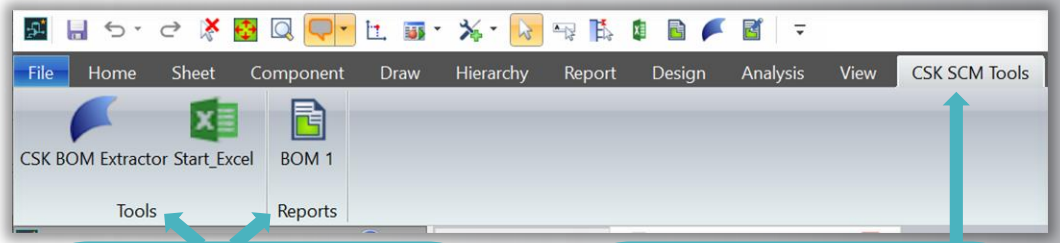
User new report icon:



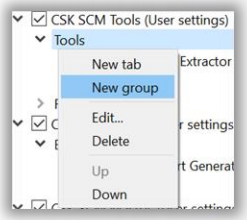
Ribbon Settings - Add new Item

Customize the Ribbon...
Add or edit user defined ribbon tabs.



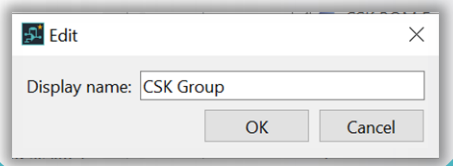


1. Add new Group

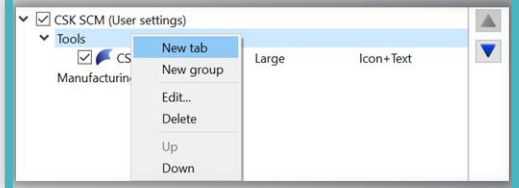


2. Name the Group

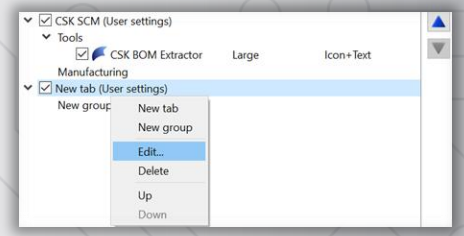
3. Enter Name



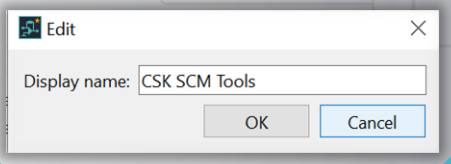
1. Add new Tab



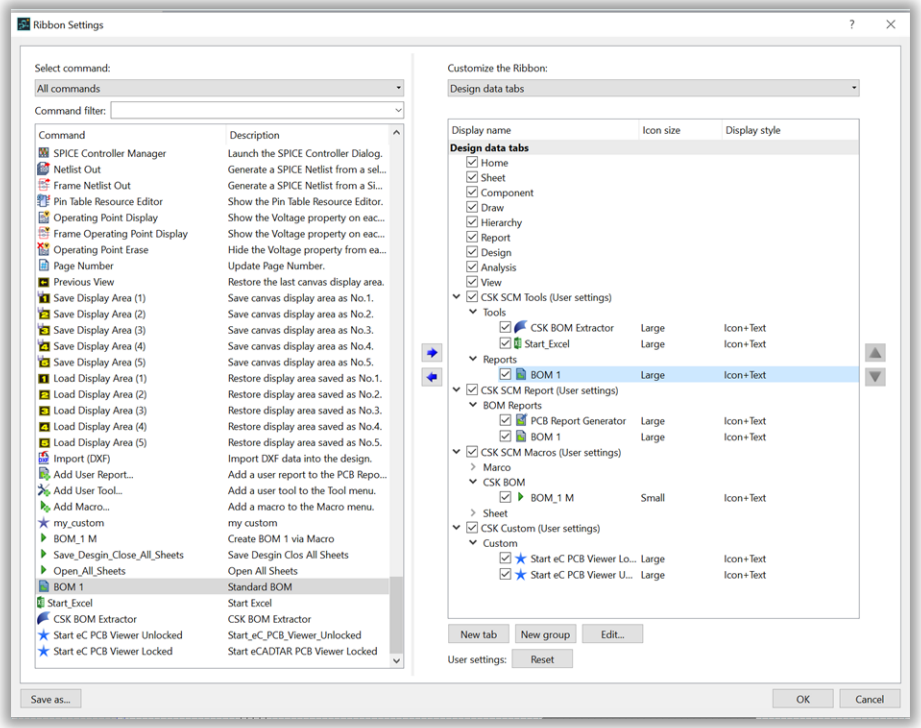
2. Name the Tab



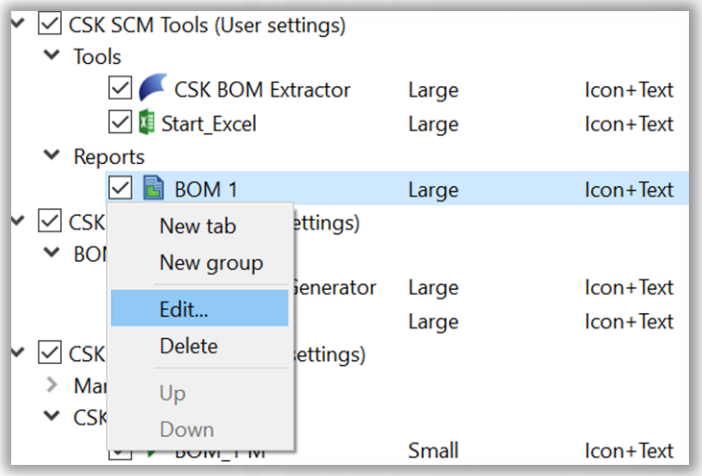
3. Enter Name



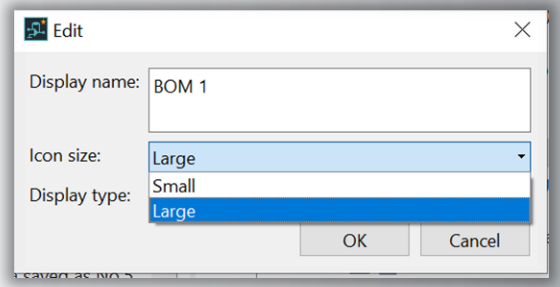
Ribbon Settings - Edit Item



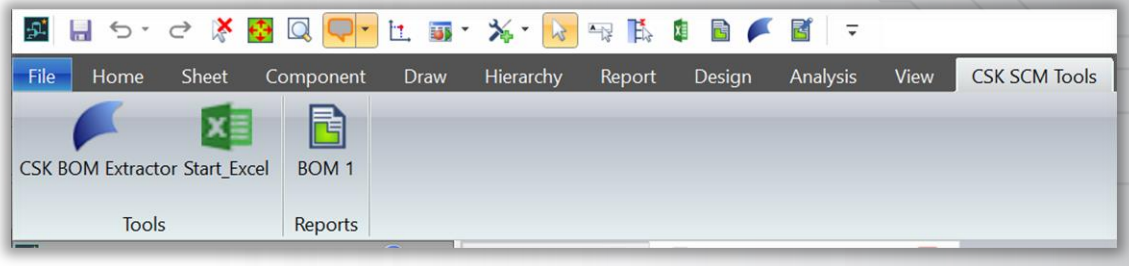
Edit the Ribbon properties



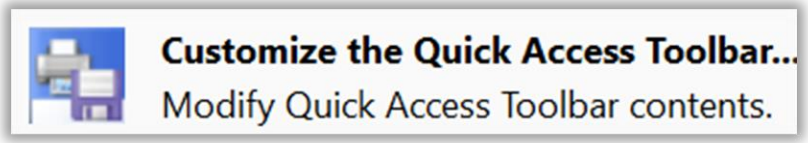
1. Name the icon
2. Choose the icon size



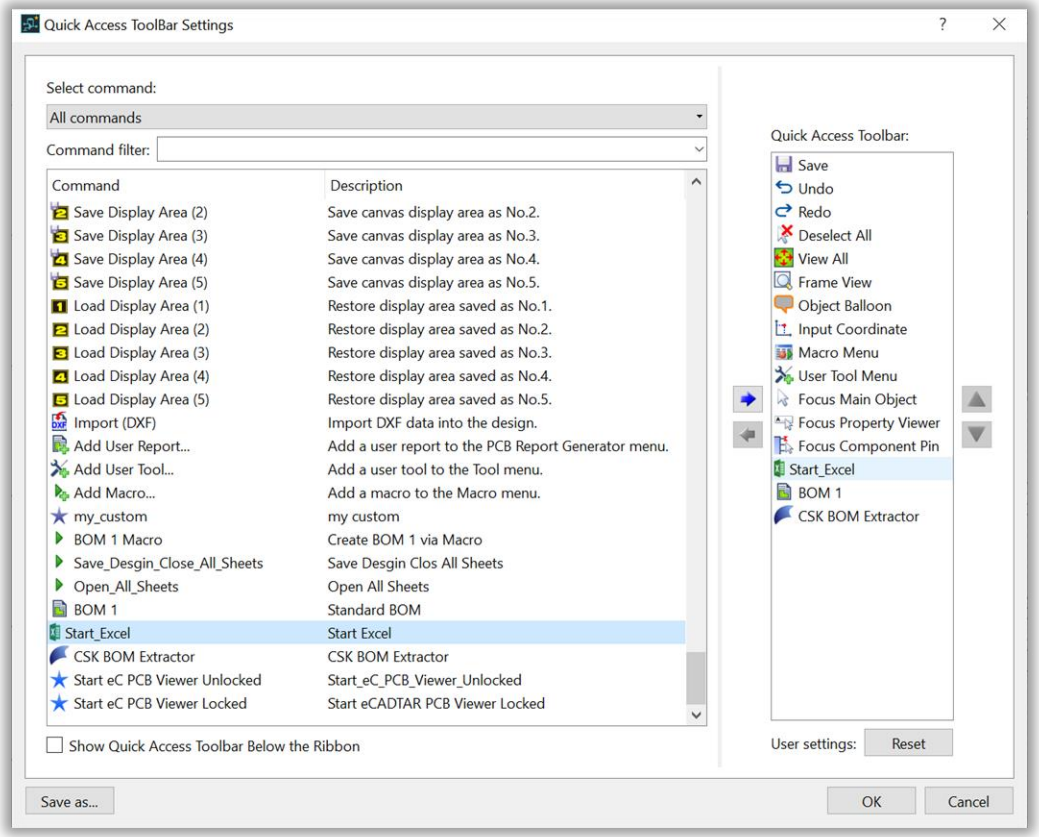
The Ribbon appearance



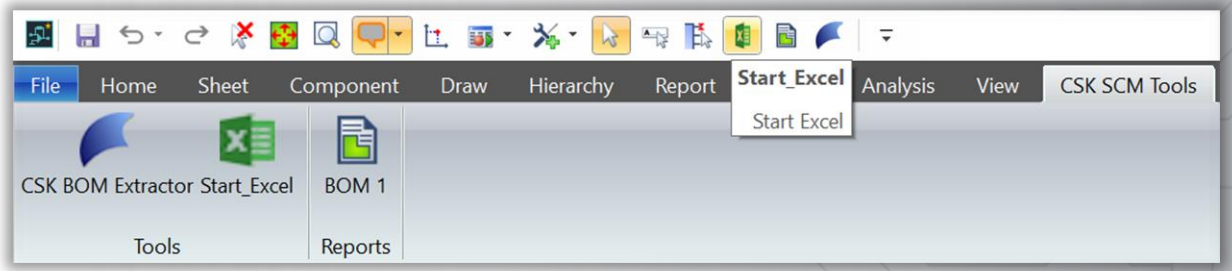
Quick Access Tool Bar - Settings



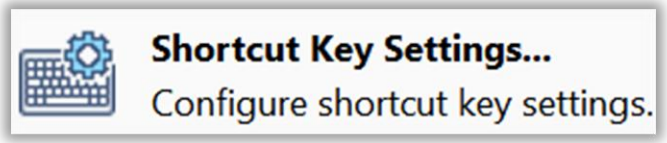
Add the command to the Quick Access Tool Bar



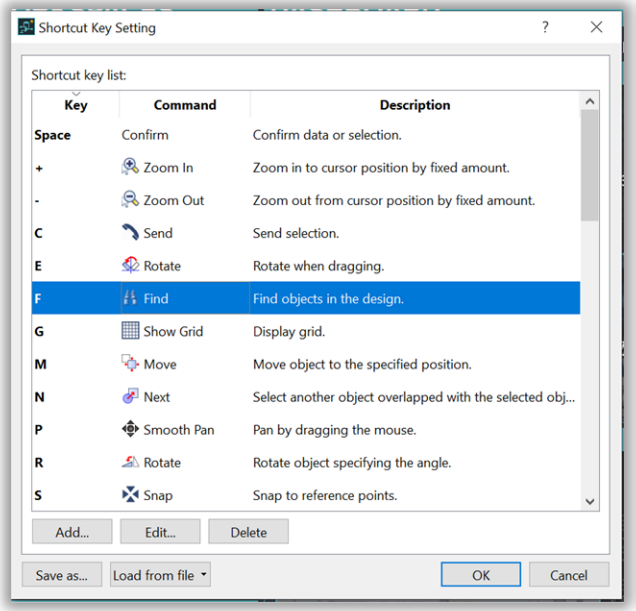
The new command in the Quick Access Tool Bar:



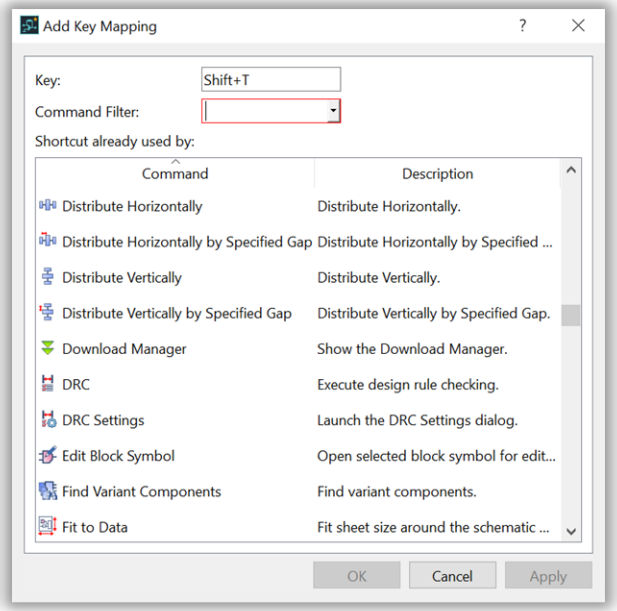
Shortcut Key Settings



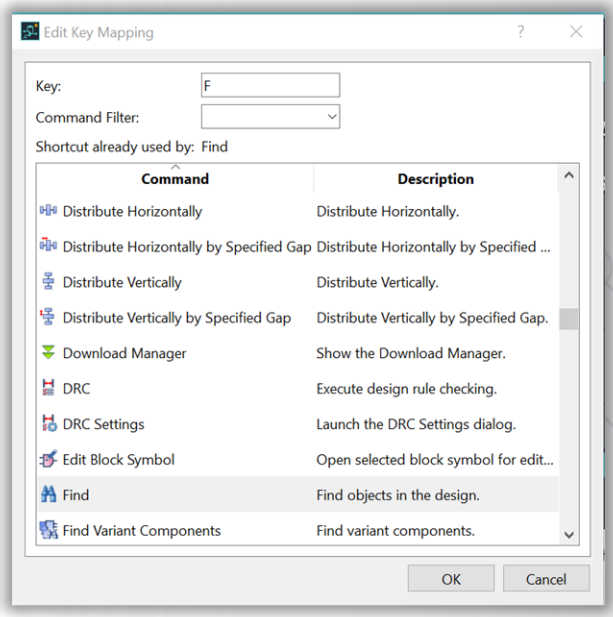
View/Select Key Mapping:



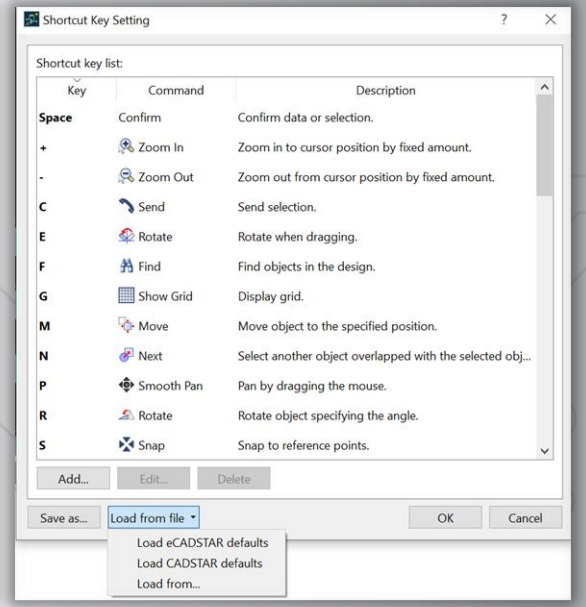
Add Key Mapping:



Edit Key Mapping:

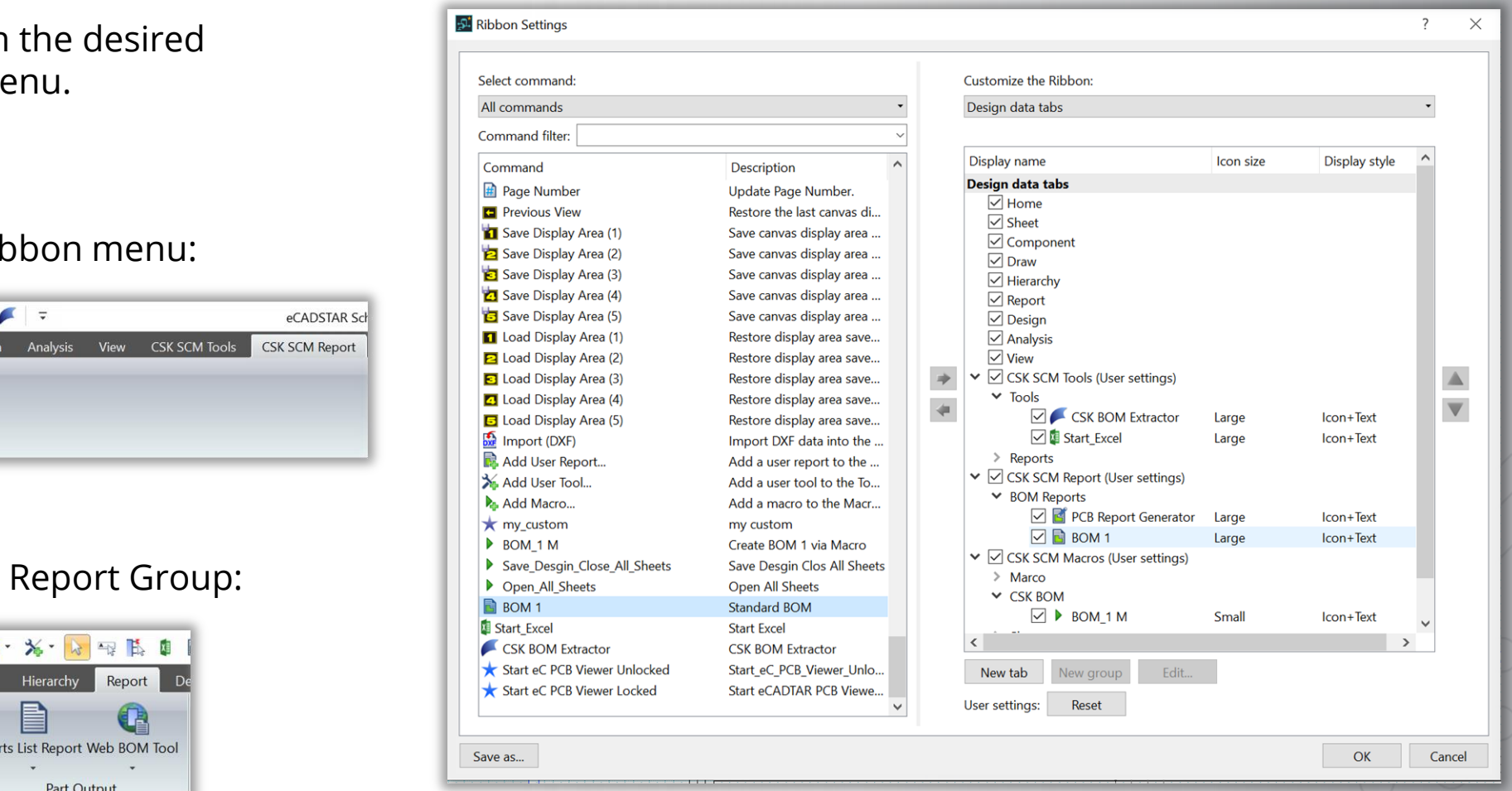


Save Key Mapping:

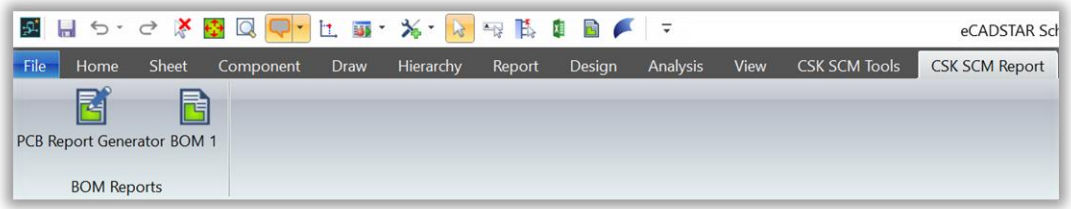


User Command - Report at the ribbon menu

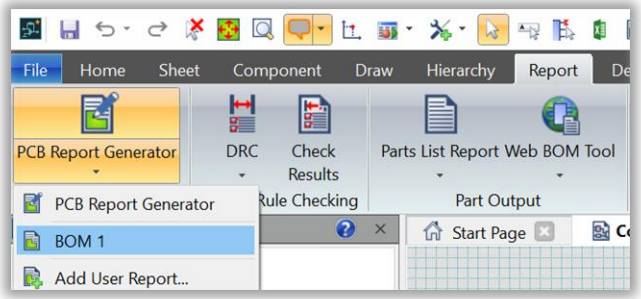
Insert the new macros in the desired position in the ribbon menu.



The new report in ribbon menu:



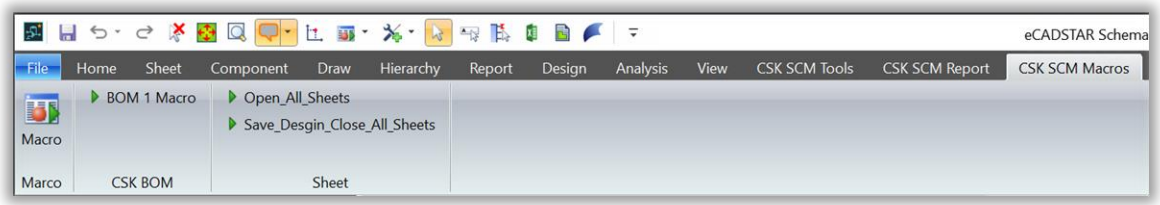
The new macros in the Report Group:



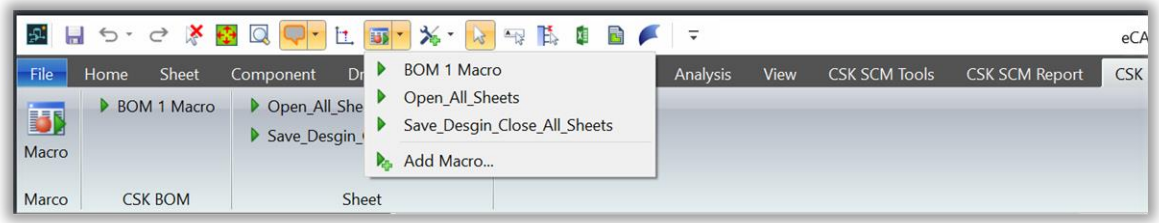
User Command - Macro at the ribbon menu

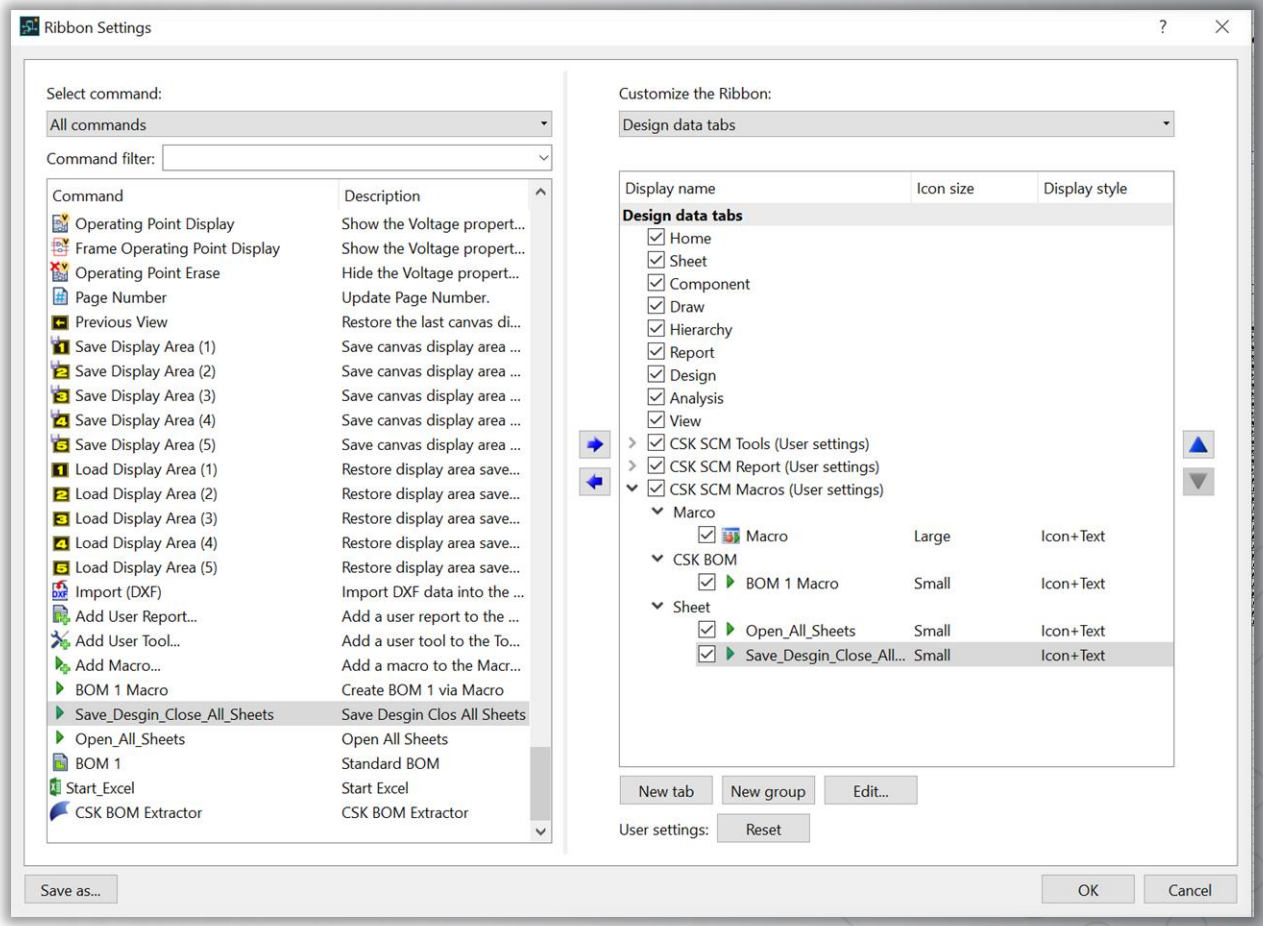
Insert the new macros in the desired position in the ribbon menu. A new group can also be created for a better overview.

The new macro in ribbon menu.



The new macros in the QAT Bar.





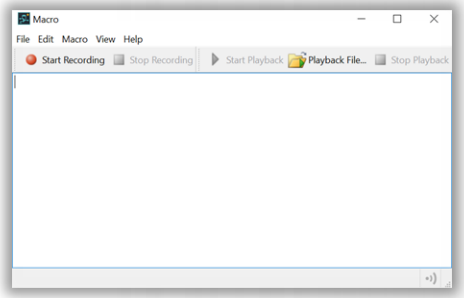
Macro Recording in PCB

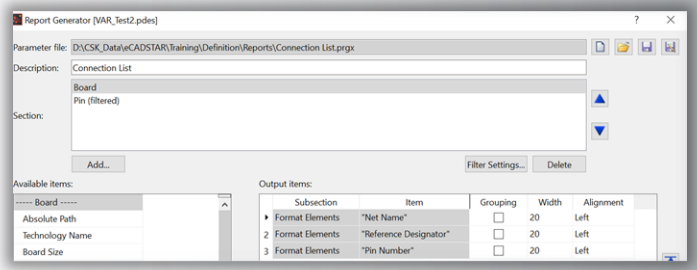
Default Macro Actions outside of eCADSTAR cannot be recorded in the macro. As is the case with the report generator, for example.

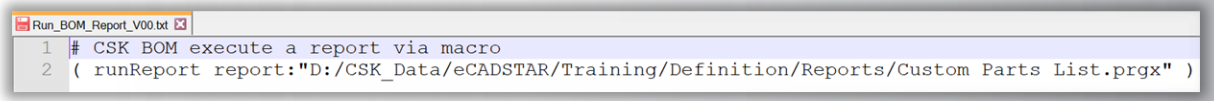
The report can still be called as a macro. To do this, set up the required call line automatically according to the familiar pattern in the text editor

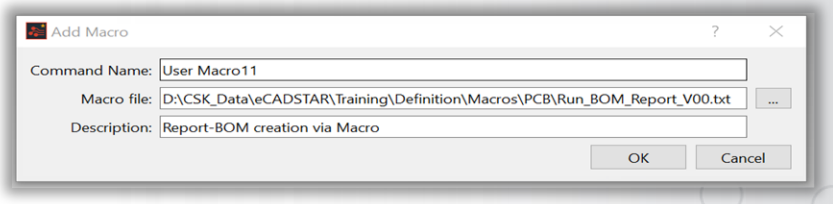
The user command is then created as usual.

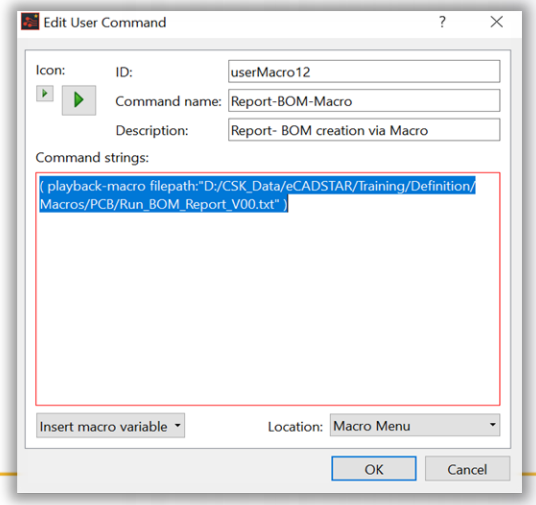
The internally required call line for the macro is created automatically by eCADSTAR.





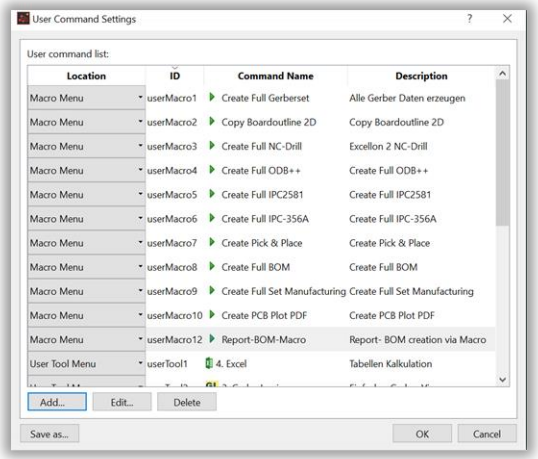




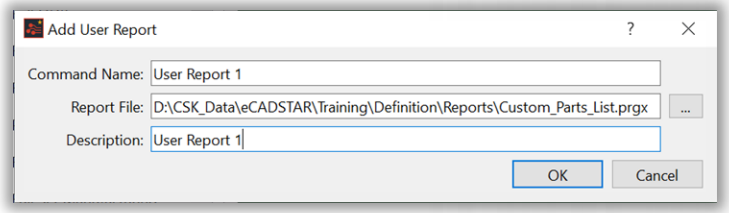


User Command - PCB use existing Report

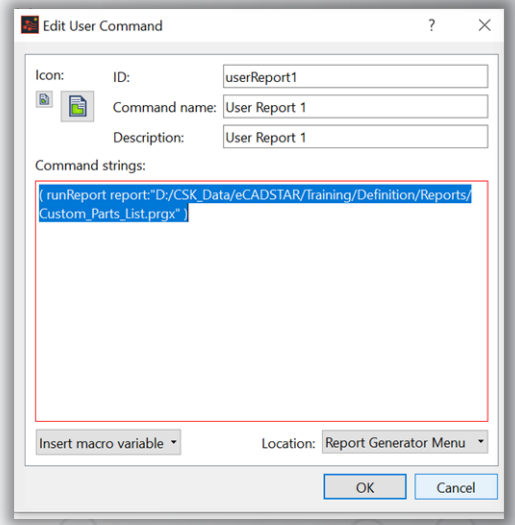
Add User Command:



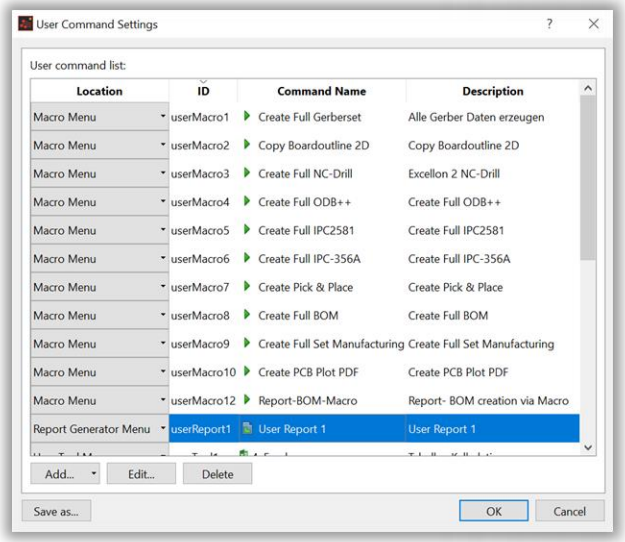
Select a Report:



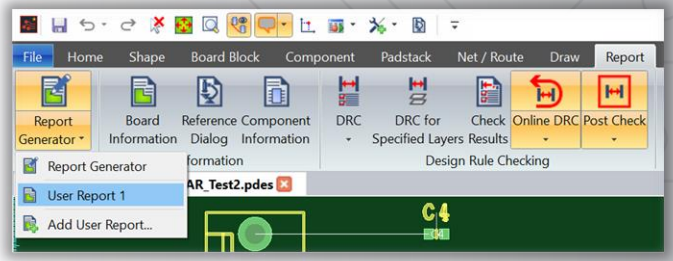
New User Command added:



Edit User Command added:

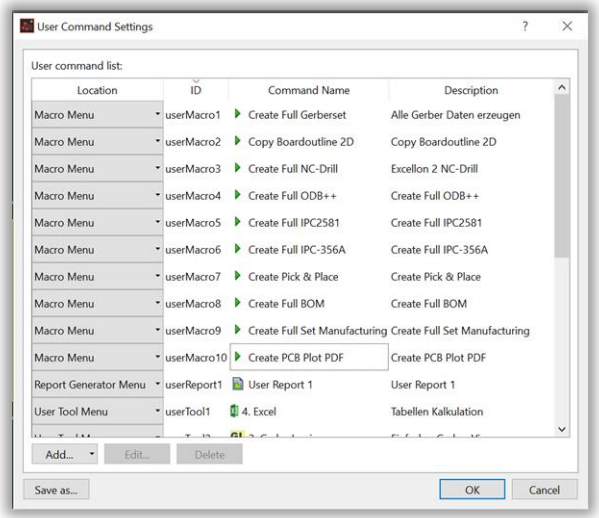


User new report icon:

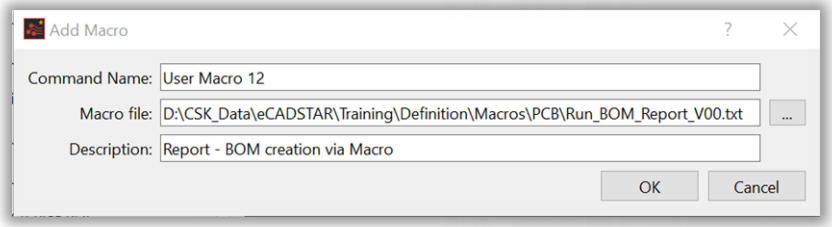


User Command - PCB use existing macro

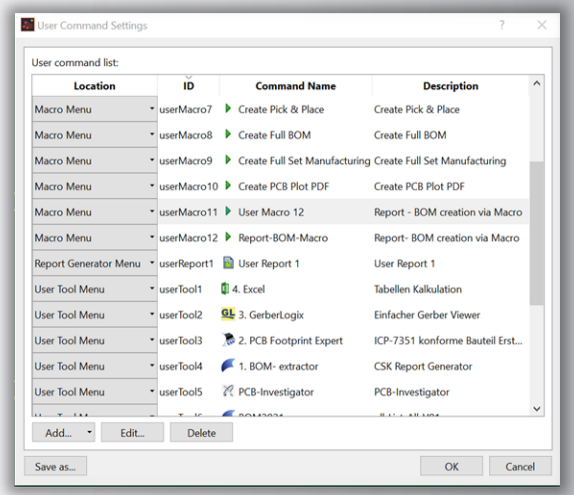
Add User Command:



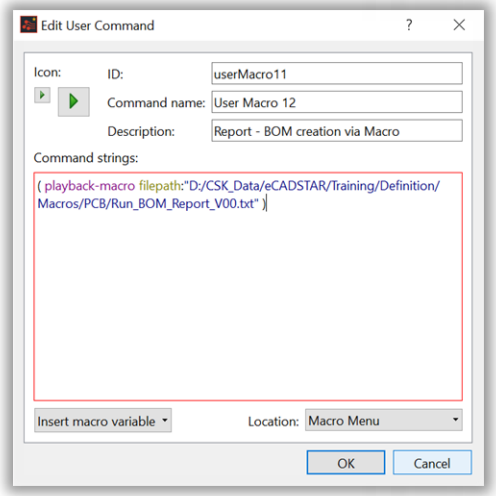
Select a Report:



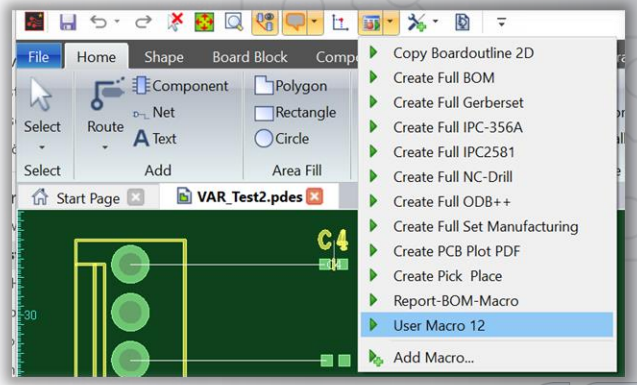
New User Command added:



Edit User Command added:

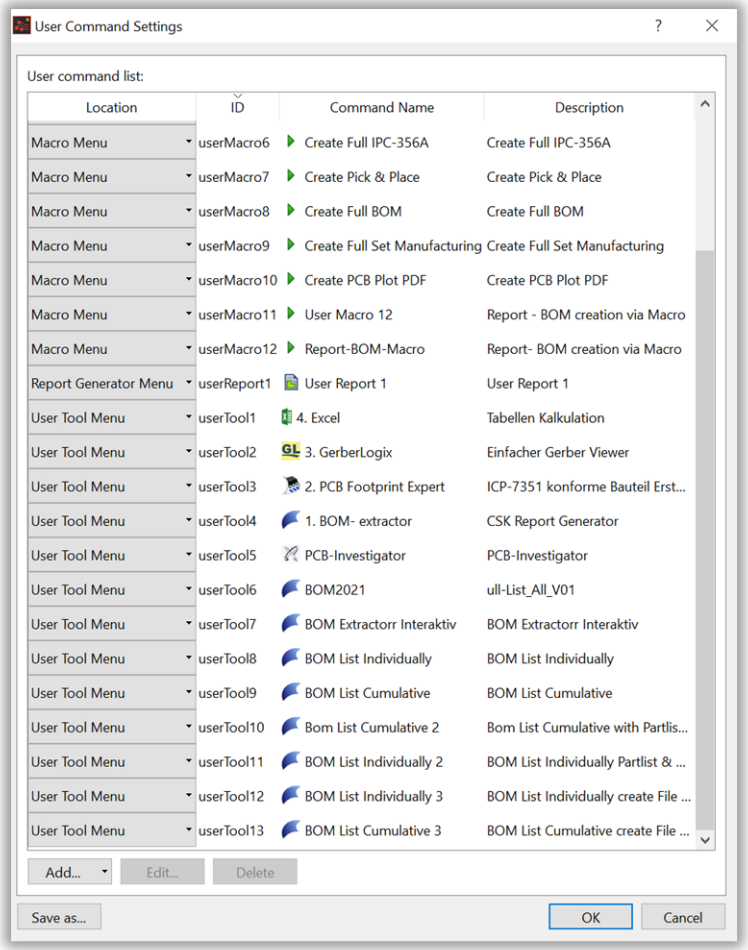


User new report icon:

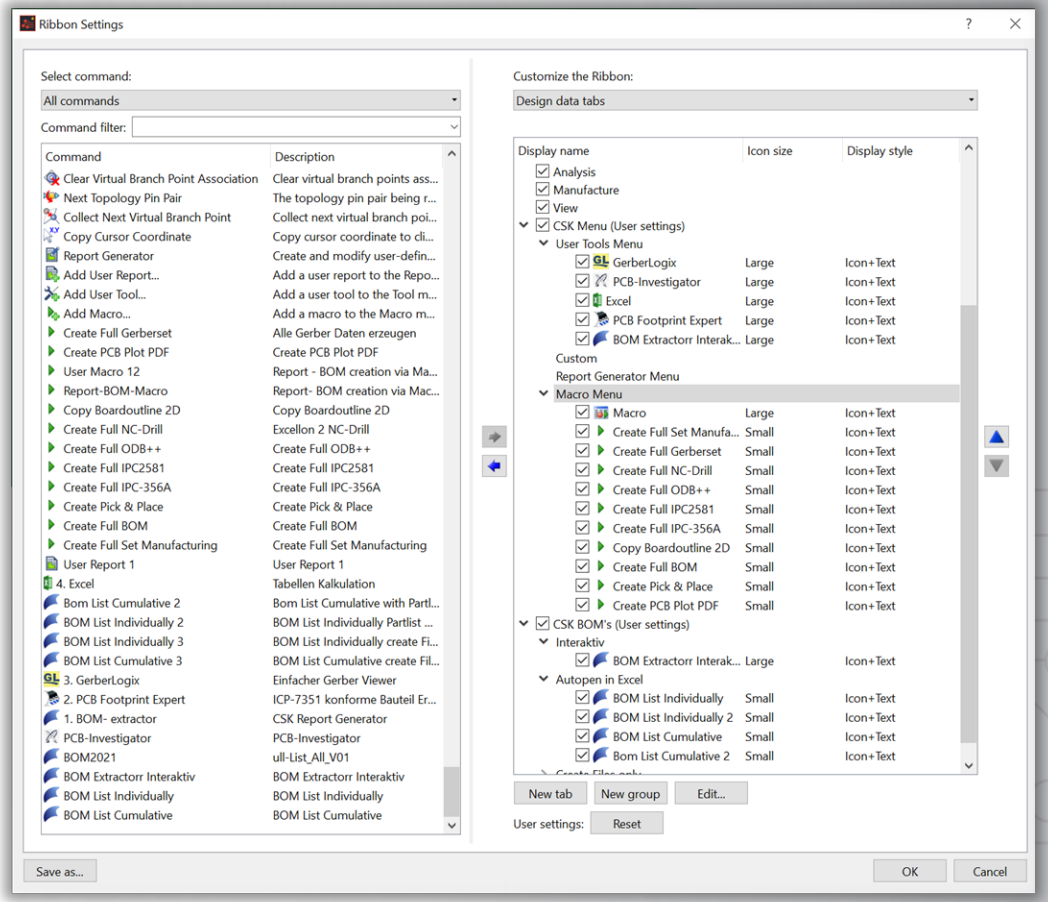


Ribbon Example - Setting in PCB

Exiting User Command:

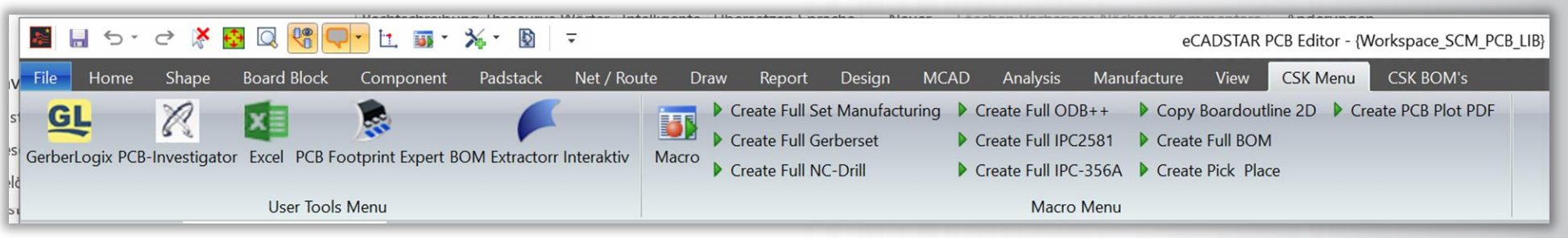


Inserting Commands into new tabs and/or groups in the ribbon menu:

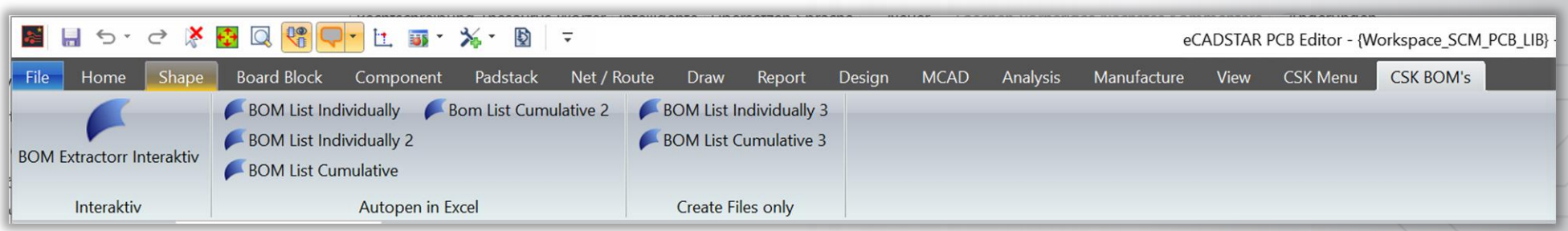


Ribbon Appearance in PCB

Different Tools and Macros at one user Ribbon tab with two Groups:



One Tool at one user Ribbon tab with different tool arguments:



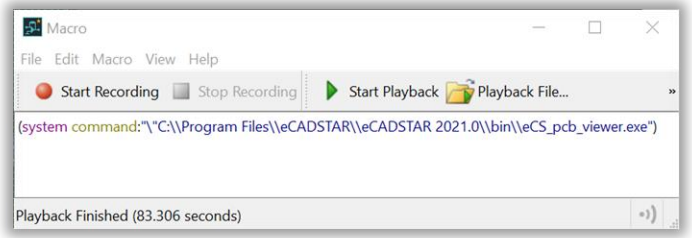
Add User Command - Custom Locked

In a locked state, you cannot use the eCADSTAR application until the external program is closed, or the process is ended in **Task Manager**.

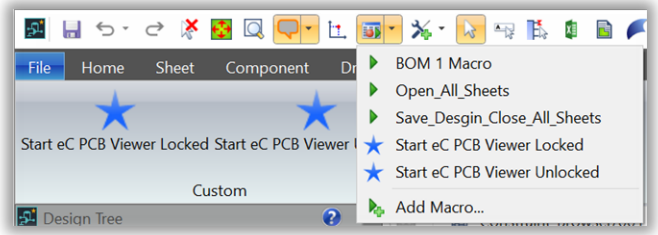
[System Command] [External Application Executable] [External Application Arguments/Parameter].

(system command:"\"C:\\Program Files\\eCADSTAR\\eCADSTAR 2021.0\\bin\\eCS_pcb_viewer.exe")

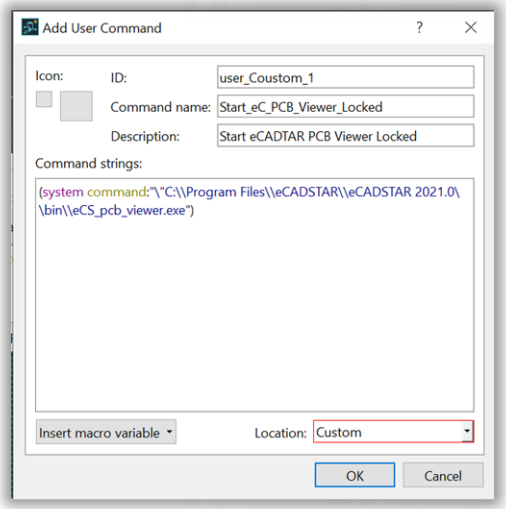
Macro content



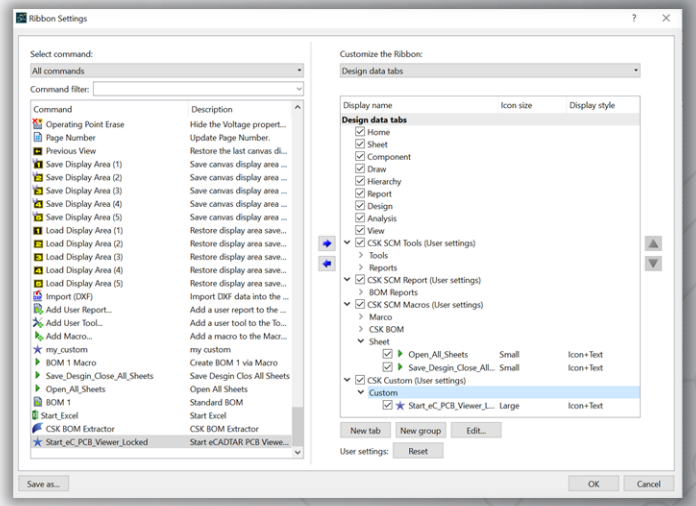
Custom's are in the Marco Menu



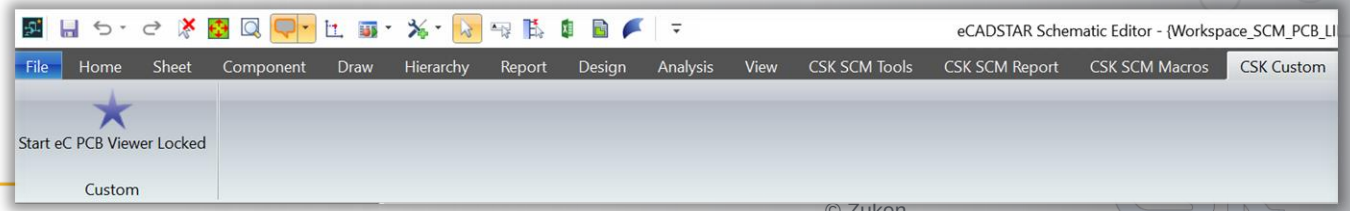
Save the macro as a User Command



Add to Ribbon



In Ribbon



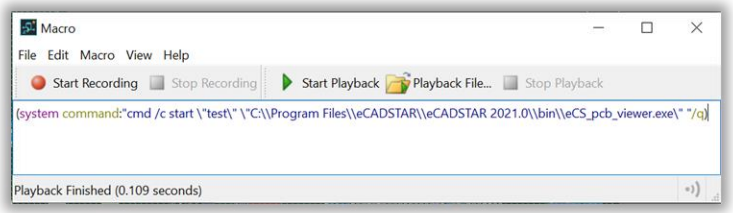
Add User Command - Custom Unlocked

To launch an external program in an unlocked state, the following format is used:

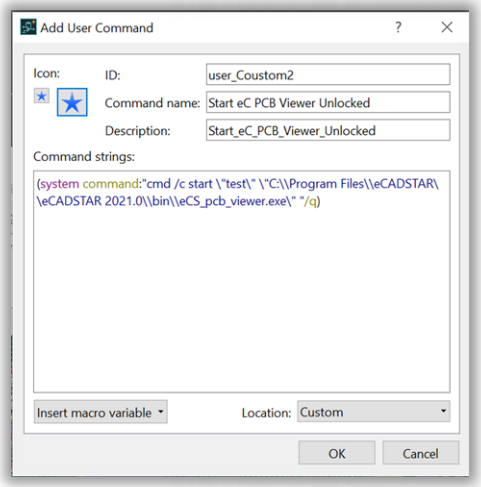
[System Command] [Command Parameter] [Command Argument] [Start Parameter] [Start Argument] [External Application Executable] [External Application Arguments/Paramter]

(system command:"cmd /c start \"test\" \"C:\\Program Files\\eCADSTAR\\eCADSTAR 2021.0\\bin\\eCS_pcb_viewer.exe\" "/q)

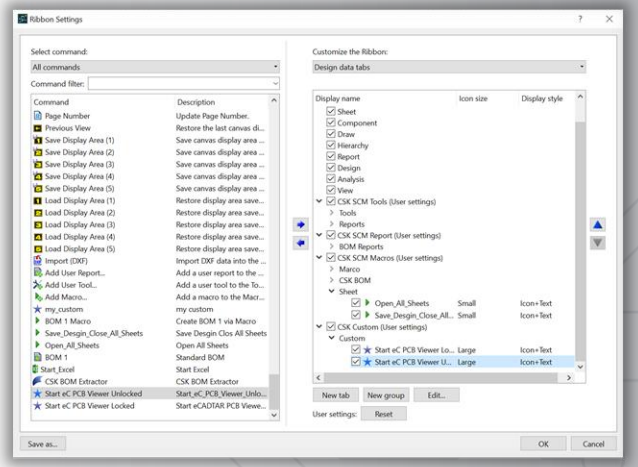
Macro content



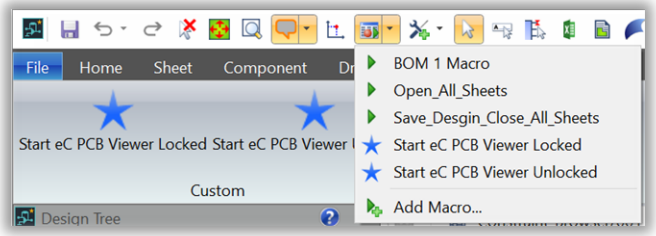
Save the macro as a User Command



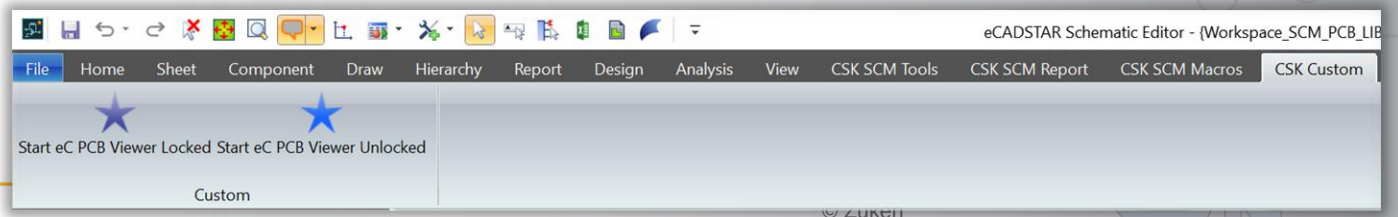
Add to Ribbon



Custom's are in the Marco Menu



In Ribbon



External launch of eCADSTAR

You can launch eCADSTAR applications from the command line by entering the following string: "*[eCADSTAR installation directory]\bin\eCS_pcb.exe [optional parameters]".*

The following is an example which shows the complete path. The displayed quotation marks are required.

Start eCADSTAR SCM Editor = "C:\Program Files\eCADSTAR\eCADSTAR 2021.0\bin\eCS_scm.exe“

Start eCADSTAR SCM Viewer = "C:\Program Files\eCADSTAR\eCADSTAR 2021.0\bin\eCS_scm_viewer.exe"

Start eCADSTAR PCB Editor = "C:\Program Files\eCADSTAR\eCADSTAR 2021.0\bin\eCS_pcb.exe"

Start eCADSTAR PCB Viewer = "C:\Program Files\eCADSTAR\eCADSTAR 2021.0\bin\eCS_pcb_viewer.exe"

Start eCADSTAR Library Editor = "C:\Program Files\eCADSTAR\eCADSTAR 2021.0\bin\eCS_lib.exe"

External launch of eCADSTAR

Optional Parameters: Parameters can be appended to the end of the command line. This allows you to open workspaces, designs and macros when you launch eCADSTAR from the command line.

Workspace: The parameter, followed by the path of the workspace file, will open the workspace when the application is launched.

Playback: The parameter, followed by the path of the macro file, will play the macro when the application is launched.

File name / path: Specifying a file path will open the design that is specified in the file path.

When using all the parameters, the format of the command is as follows:

[File path to application] [-Workspace] [-playback (Macro)] [File path to design].

Each value should place between " " (Not only the keywords that begin with “–name:“)

"C:\Program Files\eCADSTAR\eCADSTAR 2021.0\bin\eCS_lib.exe“ **or** -app:ftped -object:"SOT363+-_N"

External launch of the eCADSTAR PCB Editor

To launch eCADSTAR PCB Editor and a Workspace:

"C:\Program Files\eCADSTAR\eCADSTAR 2020.0\bin\eCS_pcb.exe"
-workspace:"C:\Users\public\eCADSTAR\eCADSTAR2020.0\Designs\DIY_Training\workspace.ecw"

To launch eCADSTAR PCB Editor, a Workspace and a Design:

"C:\Program Files\eCADSTAR\eCADSTAR 2020.0\bin\eCS_pcb.exe"
-workspace:"C:\Users\public\eCADSTAR\eCADSTAR2020.0\Designs\DIY_Training\workspace.ecw"
"C:\ public\eCADSTAR\eCADSTAR2020.0\Designs\DIY_Training\PCB\Design1.pdes"

To launch eCADSTAR PCB Editor, a Workspace and a Design, and then Run a Macro*:

"C:\Program Files\eCADSTAR\eCADSTAR 2020.0\bin\eCS_pcb.exe"
-workspace:"C:\Users\public\eCADSTAR\eCADSTAR2020.0\Designs\DIY_Training\PCB\workspace.ecw"
-playback:"C:\Users\public\eCADSTAR\eCADSTAR2020.0\Designs\DIY_Training\PCB\macro.txt"
"C:\ public\eCADSTAR\eCADSTAR2020.0\Designs\DIY_Training\PCB\Design1.pdes"

Note: Each command are separate with a space.

* Coming soon eCADSTAR 2021.1 autumn 2021

External launch of the eCADSTAR SCM Editor

To launch eCADSTAR SCM Editor and a Workspace:

"C:\Program Files\eCADSTAR\eCADSTAR 2021.0\bin\eCS_pcb.exe"
-workspace:"C:\Users\public\eCADSTAR\eCADSTAR2020.0\Designs\DIY_Training\workspace.ecw"

To launch eCADSTAR SCM Editor, a Workspace and a Design*:

"C:\Program Files\eCADSTAR\eCADSTAR 2021.0\bin\eCS_pcb.exe"
-workspace:"C:\Users\public\eCADSTAR\eCADSTAR202010\Designs\DIY_Training\workspace.ecw"
"C:\ public\eCADSTAR\eCADSTAR2020.0\Designs\DIY_Training\PCB\Design1.pdes"

To launch eCADSTAR SCM Editor, a Workspace and a Design and then run a Macro*:

"C:\Program Files\eCADSTAR\eCADSTAR 2021.0\bin\eCS_pcb.exe"
-workspace:"C:\Users\public\eCADSTAR\eCADSTAR2021.0\Designs\DIY_Training\PCB\workspace.ecw"
-playback:"C:\Users\public\eCADSTAR\eCADSTAR2021.0\Designs\DIY_Training\PCB\macro.txt"
"C:\ public\eCADSTAR\eCADSTAR2020.0\Designs\DIY_Training\PCB\Design1.pdes"

Note: Each command are separate with a space.

* Coming soon eCADSTAR 2021.1 autumn 2021

External launch of the eCADSTAR Library Editor

To launch the Library Editor: "<installed path to eCS_lib.exe>"

To open a specific part:
"C:\Program Files\eCADSTAR\eCADSTAR 2021.0\bin\eCS_lib.exe"
-libpath:"D:\CSK_Data\eCADSTAR\Training\Definition\Libraries\Library"
-app:parted -object:"part name"

To open a specific symbol:
"C:\Program Files\eCADSTAR\eCADSTAR 2021.0\bin\eCS_lib.exe"
-libpath:"D:\CSK_Data\eCADSTAR\Training\Definition\Libraries\Library"
-app:symed -object:"symbol name"
If the symbol uses an alternate you need to use
"C:\Program Files\eCADSTAR\eCADSTAR 2021.0\bin\eCS_lib.exe"
-libpath:"D:\CSK_Data\eCADSTAR\Training\Definition\Libraries\Library"
-app:ftped -object:"footprint name**+-**_alternate name"

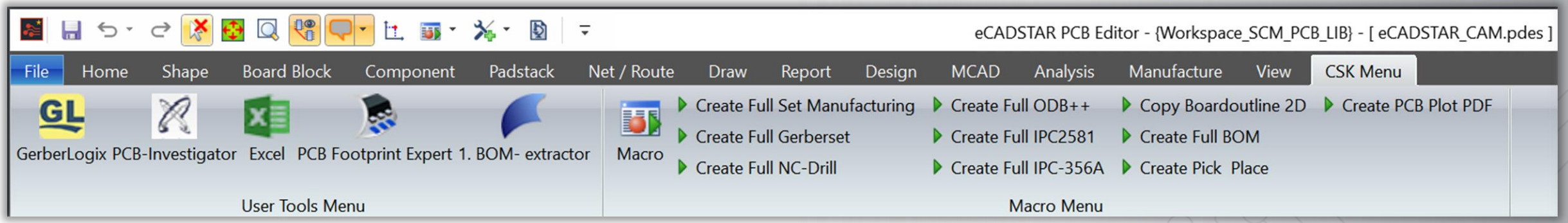
To open specific footprint:
"C:\Program Files\eCADSTAR\eCADSTAR 2021.0\bin\eCS_lib.exe"
-libpath:"D:\CSK_Data\eCADSTAR\Training\Definition\Libraries\Library"
-app:ftped -object:"footprint name"
If the symbol uses an alternate you need to use:
"C:\Program Files\eCADSTAR\eCADSTAR 2021.0\bin\eCS_lib.exe"
-libpath:"D:\CSK_Data\eCADSTAR\Training\Definition\Libraries\Library"
-app:ftped -object:"footprint name**+-**_alternate name"

To launch eCADSTAR Library Editor:
"C:\Program Files\eCADSTAR\eCADSTAR 2021.0\bin\eCS_lib.exe"
-libpath:"D:\CSK_Data\eCADSTAR\Training\Definition\Libraries\Library"

Note: Each command are separate with a space.

Overview - Uses of automation

1. Use of the automation possibilities in eCADSTAR PCB.
2. All external tools should be called directly from the eCADSTAR interface.
3. All necessary production data should be automatically created individually or in groups.



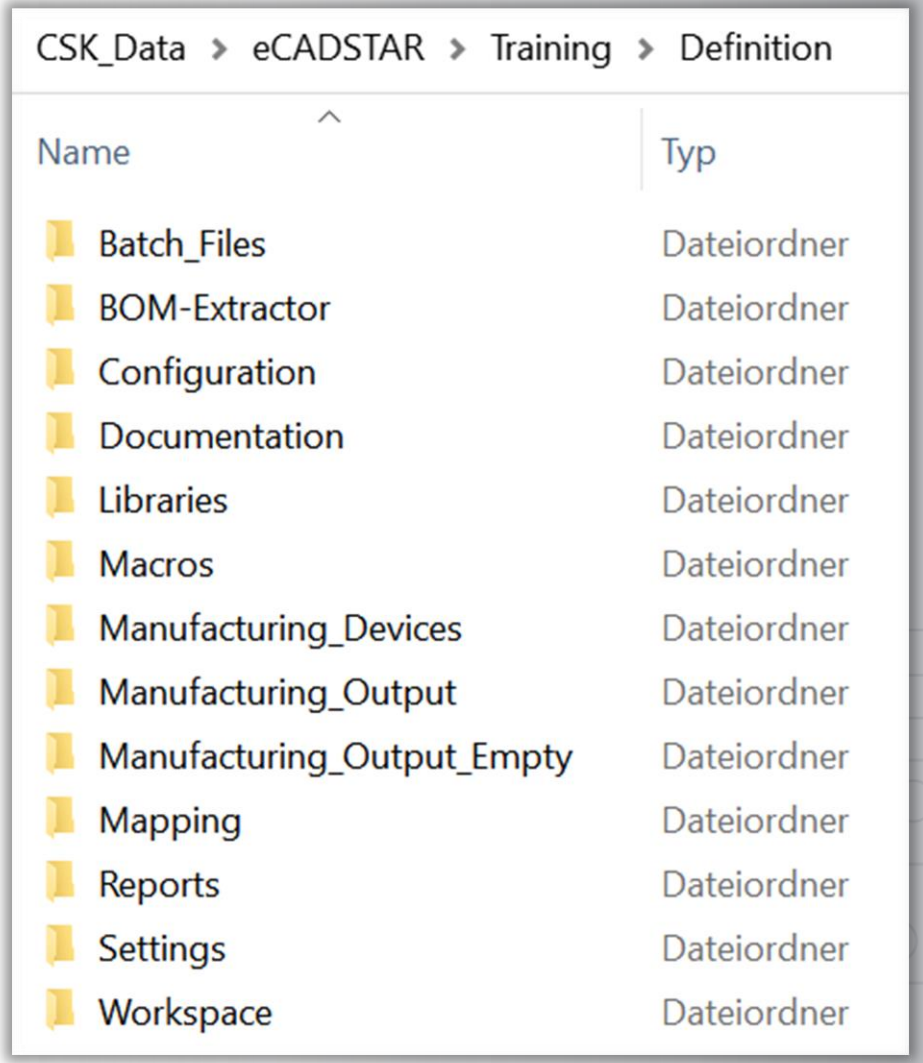
eCADSTAR - Definition structure

In principle, there are no regulations on how the required eCADSTAR data is organized.

The structures shown here have currently developed over time in the context of many projects and are subject to constant optimization.

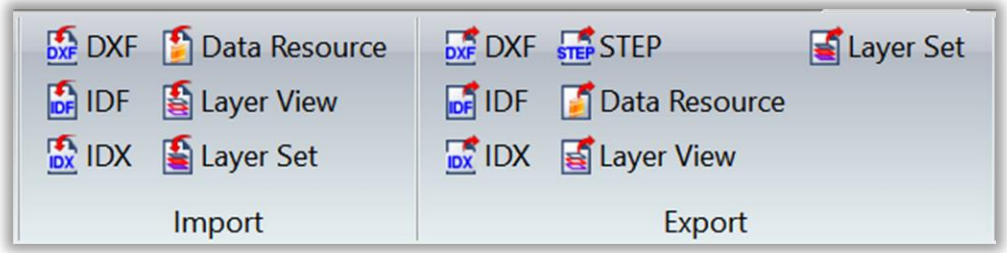
The library is the leading element for definitions, templates and settings.

All possible options are combined in groups and transferred to a directory structure.

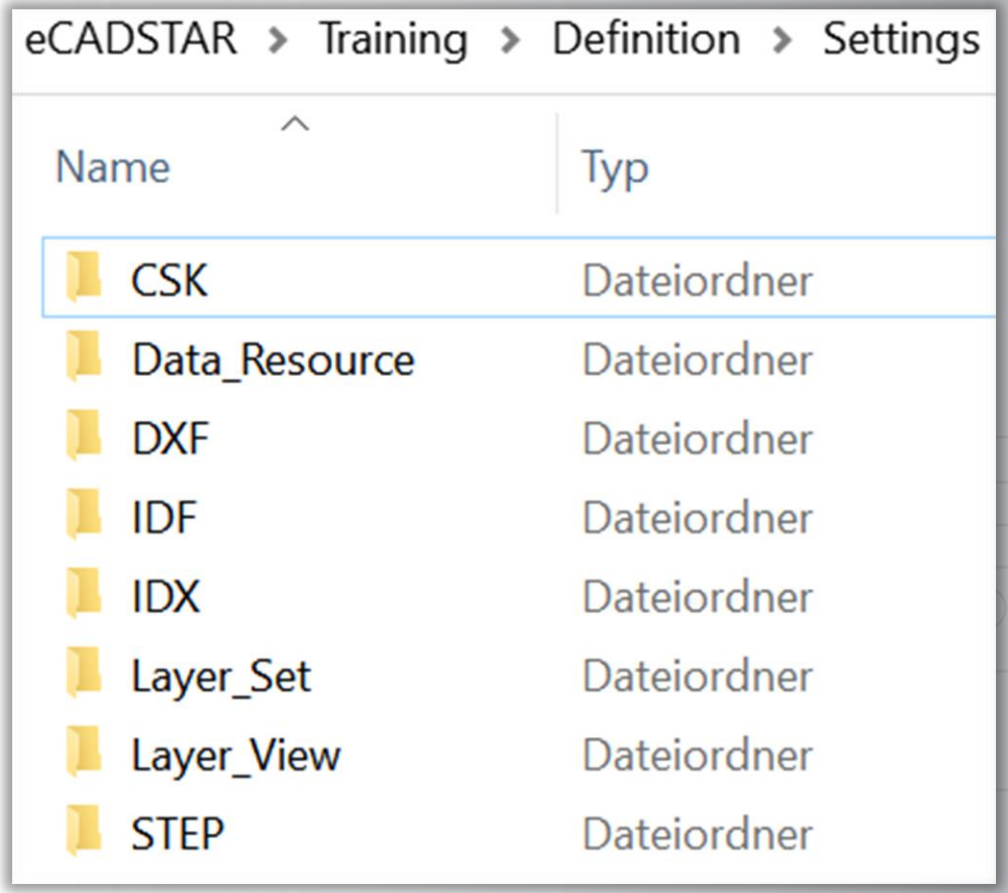


eCADSTAR - Definition Settings

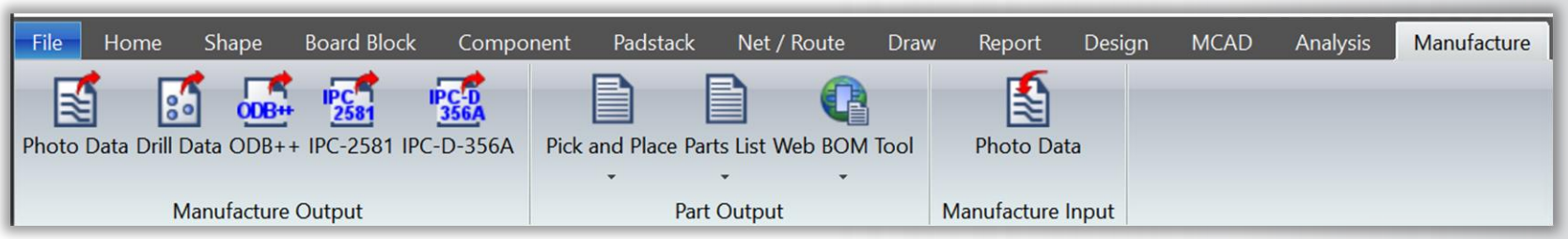
You can find these import and export settings in the Design Tab:



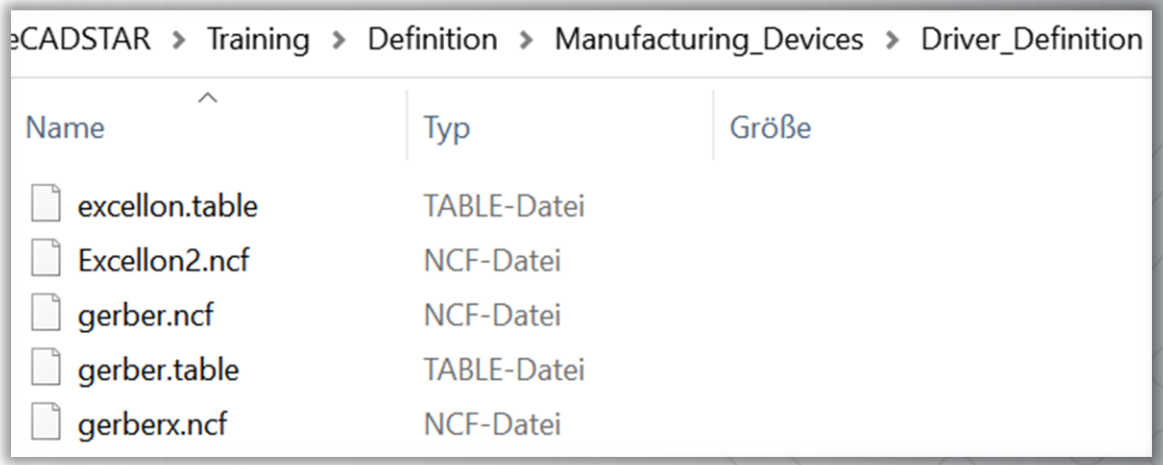
It is recommended to use the same settings also in your definition structure:



Manufacturing - Driver Directories



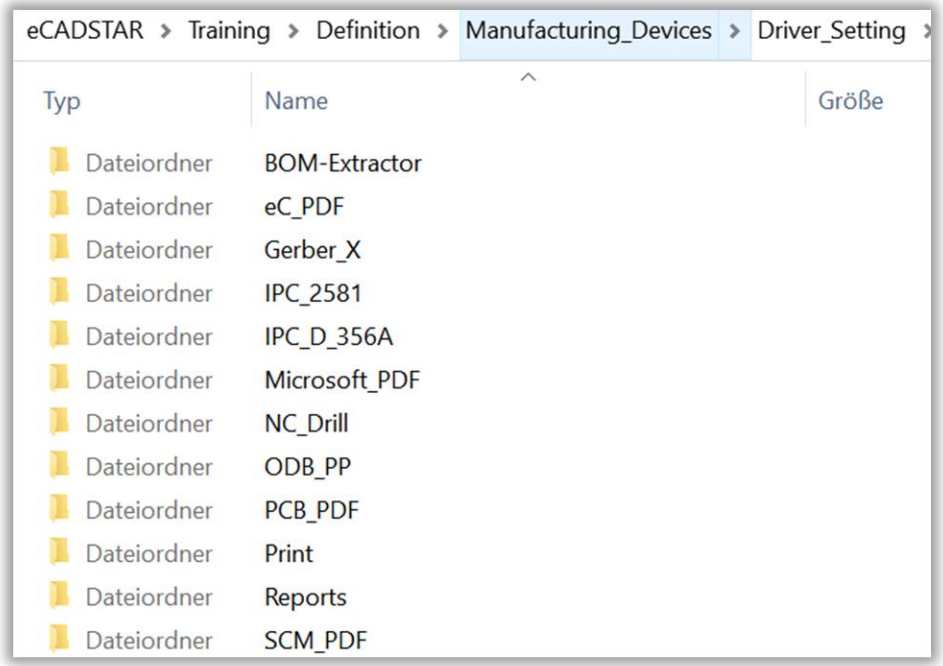
Each of these manufacturing issues has its own settings. The Driver Definition directory contains the various device drivers (for creating the Gerber data or drilling data).



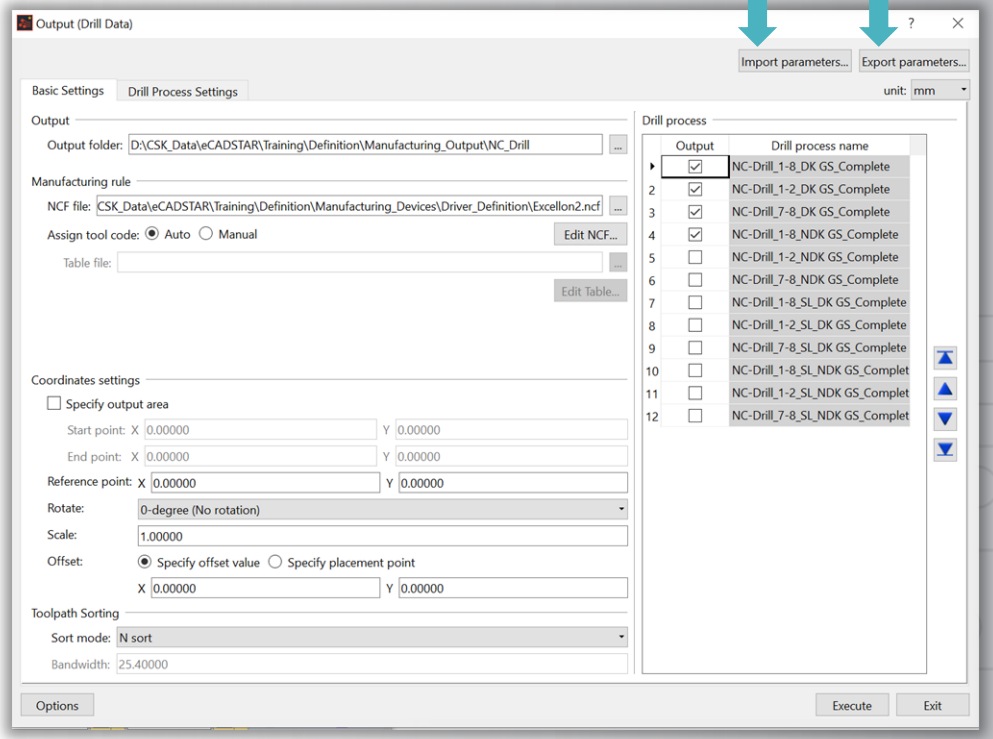
Manufacturing – Export and Import Parameters

All manufacturing tasks can be predefined. So that standardized documents are created.

The output definitions:

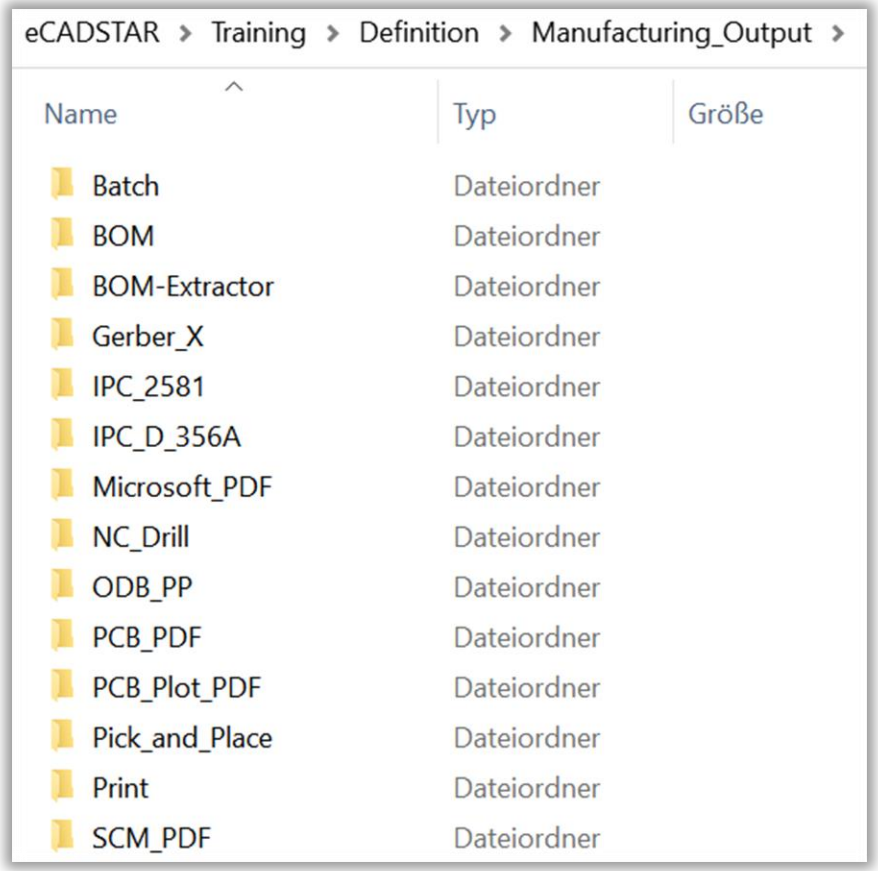


For each output format the necessary settings:

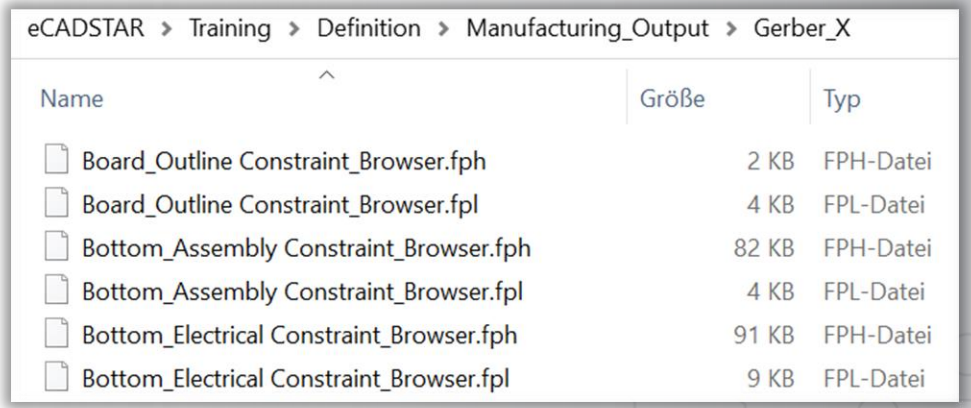


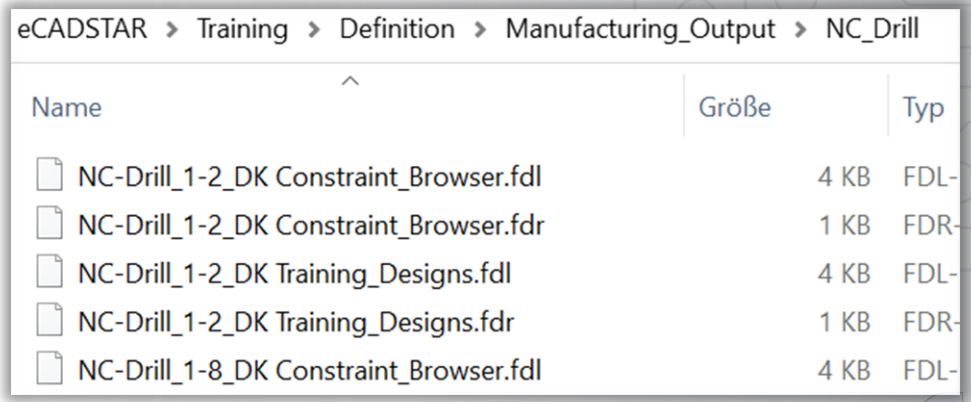
Manufacturing - Output Directories

A separate output directory is selected for each output format:



As a rule, this structure is complete or in a reduced form with or without variants created and used in the respective design project directory:

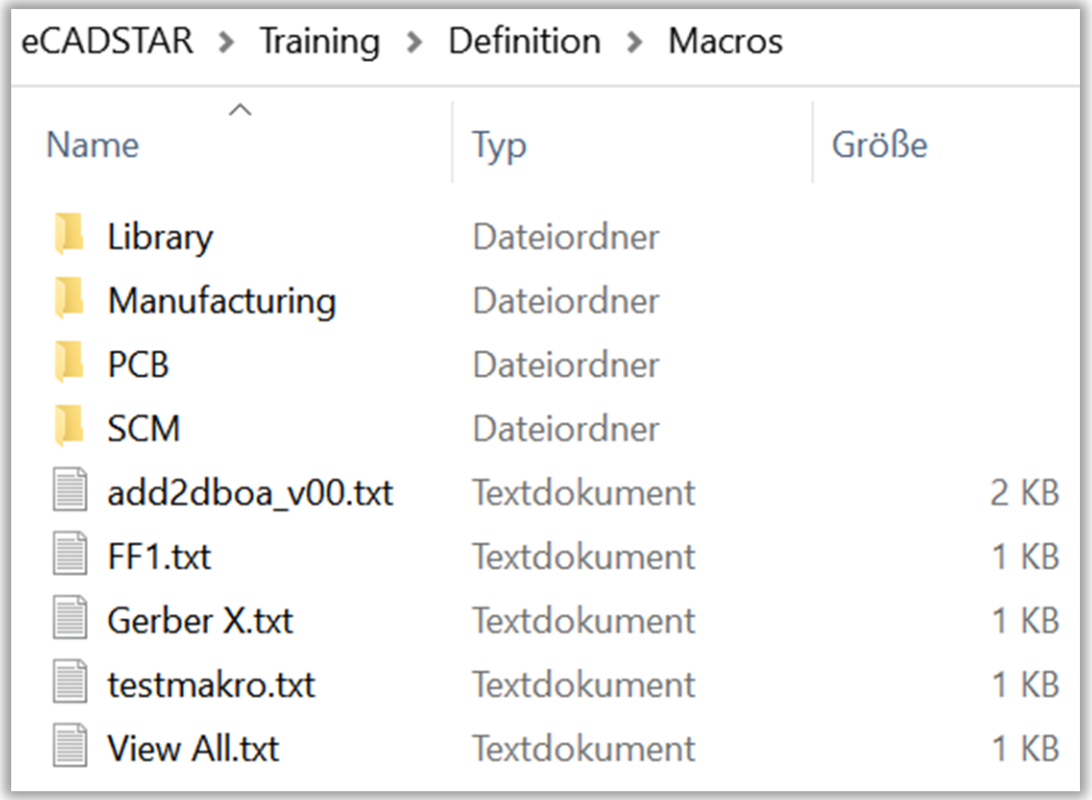




Macro Directories

In eCADSTAR, macros for the automation of repetitive tasks are very often created.

The macros directories:



Whether it is a single directory or different directories depends on the number of macros. In the course of time there will be more and more macros, so it makes sense to create a structure from the start.

Macro content:

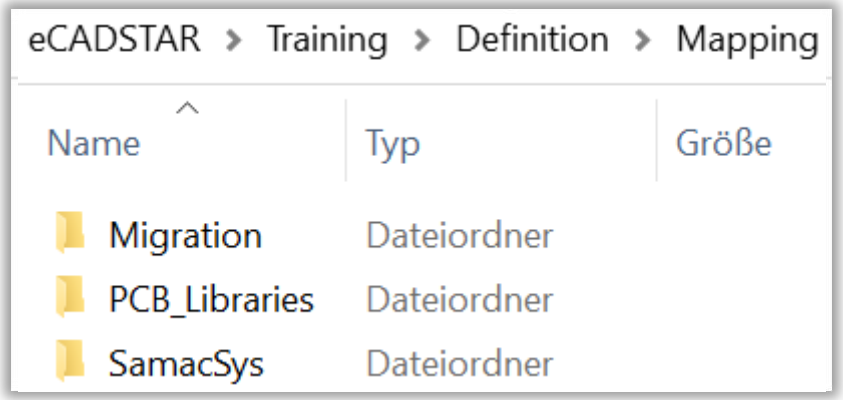
```
( export-photo
prmfile:"D:\\CSK_Data\\eCADSTAR\\Training\\Definition\\Manufacturing_Devices\\Driver_Setting\\Gerber_X\\8-Layer\\Gerber_X_8-Layer_V00.photo"
exec )
```

Mapping Directories

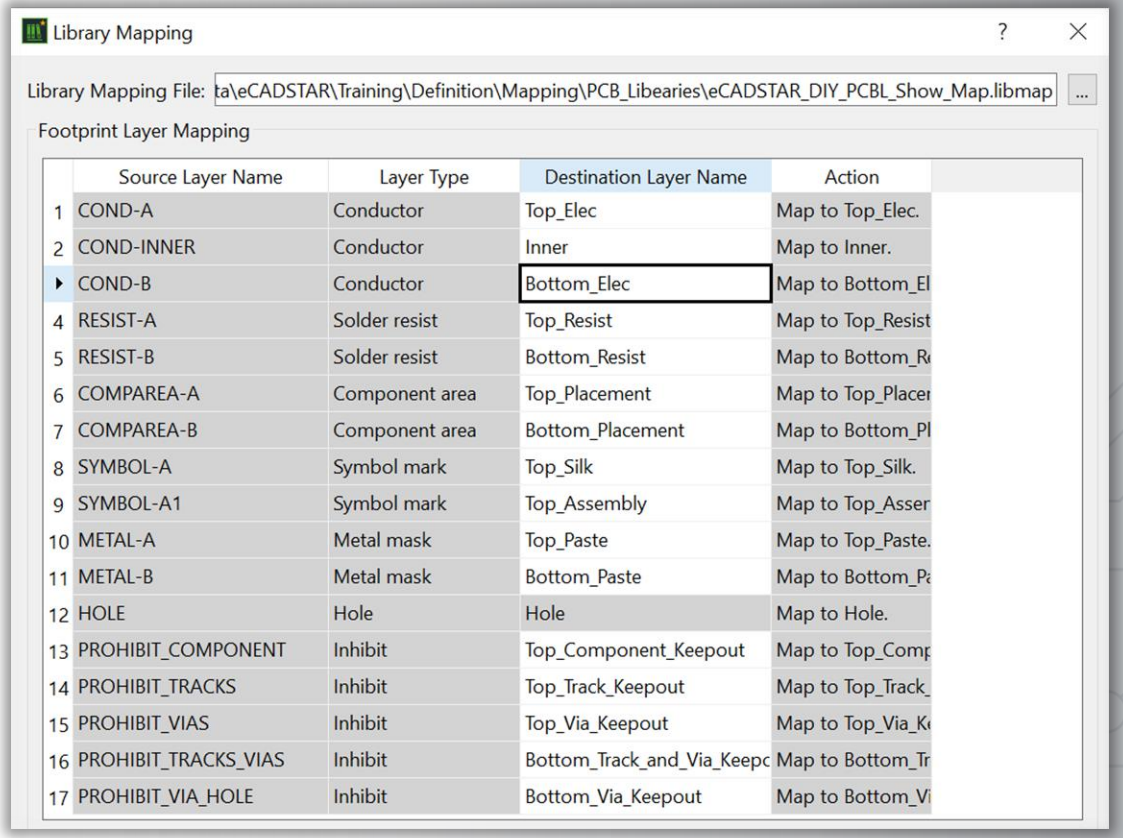
Mapping is needed for a correct classification of layers and all information of migration.

Whether it is a single directory or different directories depends on the number of mapping files. In the course of time there will be more and more mapping files, so it makes sense to create a structure from the start.

The mapping directories:



The content of a mapping file:

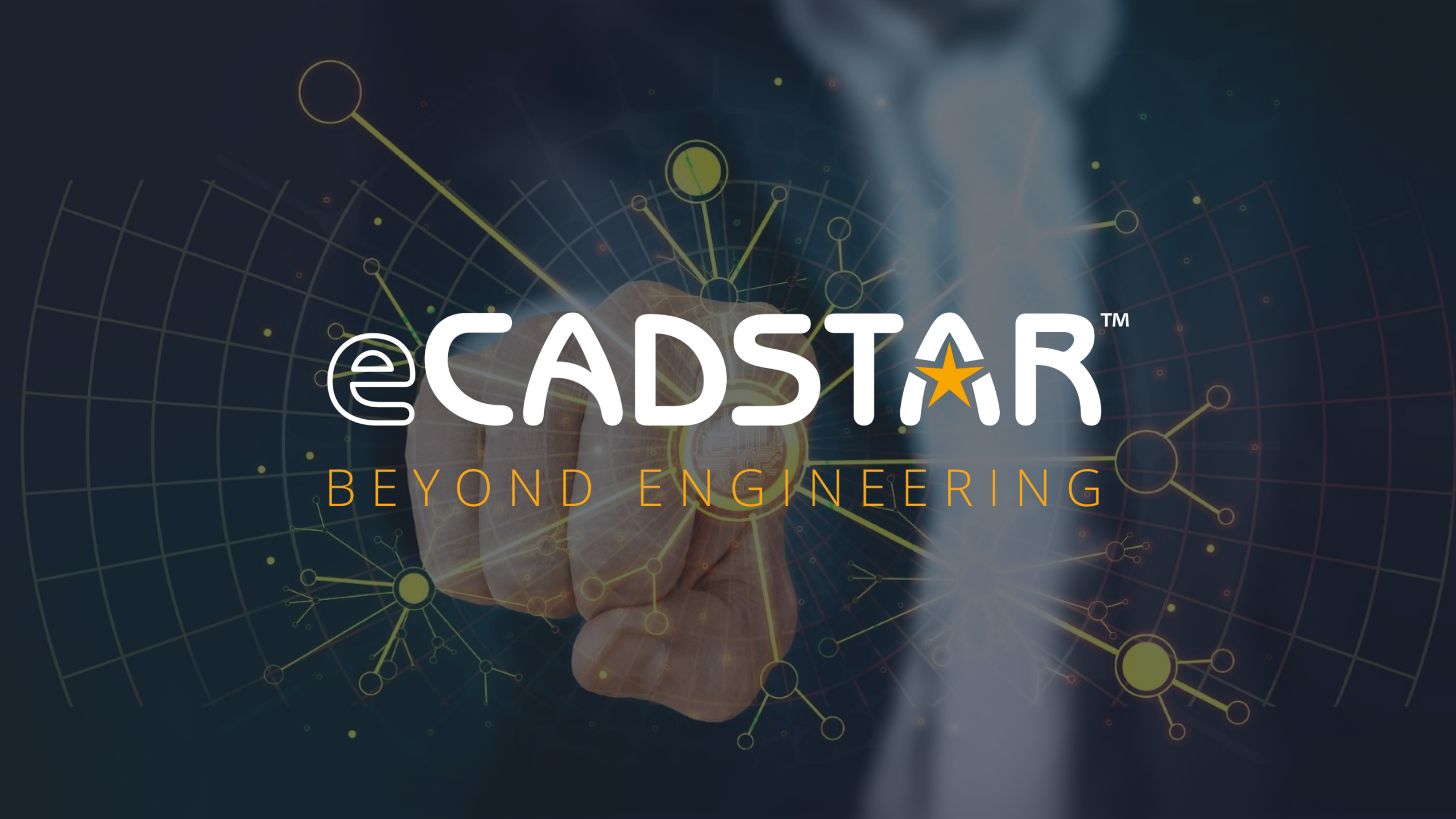


	Source Layer Name	Layer Type	Destination Layer Name	Action
1	COND-A	Conductor	Top_Elec	Map to Top_Elec.
2	COND-INNER	Conductor	Inner	Map to Inner.
▸	COND-B	Conductor	Bottom_Elec	Map to Bottom_El
4	RESIST-A	Solder resist	Top_Resist	Map to Top_Resist
5	RESIST-B	Solder resist	Bottom_Resist	Map to Bottom_R
6	COMPAREA-A	Component area	Top_Placement	Map to Top_Placer
7	COMPAREA-B	Component area	Bottom_Placement	Map to Bottom_Pl
8	SYMBOL-A	Symbol mark	Top_Silk	Map to Top_Silk.
9	SYMBOL-A1	Symbol mark	Top_Assembly	Map to Top_Asser
10	METAL-A	Metal mask	Top_Paste	Map to Top_Paste.
11	METAL-B	Metal mask	Bottom_Paste	Map to Bottom_Pa
12	HOLE	Hole	Hole	Map to Hole.
13	PROHIBIT_COMPONENT	Inhibit	Top_Component_Keepout	Map to Top_Comp
14	PROHIBIT_TRACKS	Inhibit	Top_Track_Keepout	Map to Top_Track_
15	PROHIBIT_VIAS	Inhibit	Top_Via_Keepout	Map to Top_Via_K
16	PROHIBIT_TRACKS_VIAS	Inhibit	Bottom_Track_and_Via_Keepc	Map to Bottom_Tr
17	PROHIBIT_VIA_HOLE	Inhibit	Bottom_Via_Keepout	Map to Bottom_Vi

ANY QUESTIONS?

info@cskl.de

+49 431 32132-40


eCADSTAR™
BEYOND ENGINEERING