

OpenAA Manual

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C r e a t o r	Megatrade Co., Ltd.
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Change History

Edition	Date	Rev Number	changer	Details of the Changes
first edition	August 16, 2026	1	Masanori Sasai	

About Copyright

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The contents of this instruction manual, as well as the product specifications and design, may change without prior notice.

Terminology Notes

An environment that can run OpenAA systems

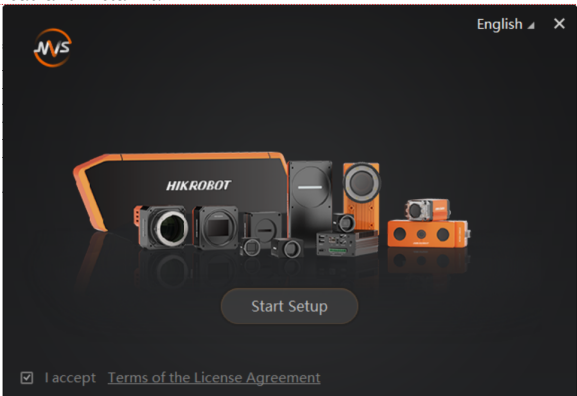
item	Necessary requirements	Notes
CPU	Intel and AMD companies CPU with AVX-2	
Memory	16GB or more recommended	
Graphics	1 9 2 0 × 1 2 8 0 That's all	
THE	Windows11	Japanese
HDD	Recommended free space of 10GB or more	
Ethernet	1GigaBase-T	It is preferable to be connected to a HUB.
Camera	OpenAA General-Purpose Camera	

Minimum installation of the OpenAA system

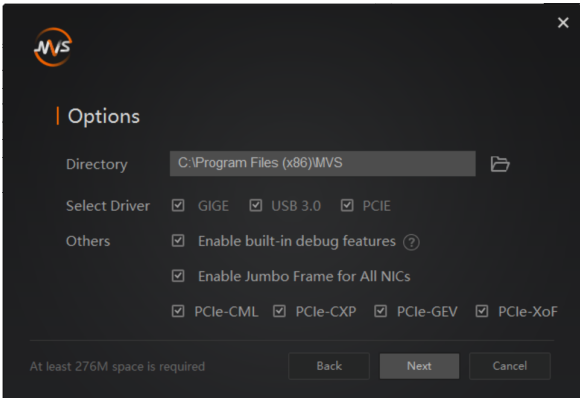
1 Installing Drivers

1. Launch your web browser and access the URL below.
2. URL: <https://www.hikrobotics.com/en/machinevision/service/download/?module=02>.
3. Download Machine Vision Software MVS V5.0.2 (Windows) (August 18, 2026)
4. If you have a HIKRobot camera, connect it and turn on the power
5. Download and install it.

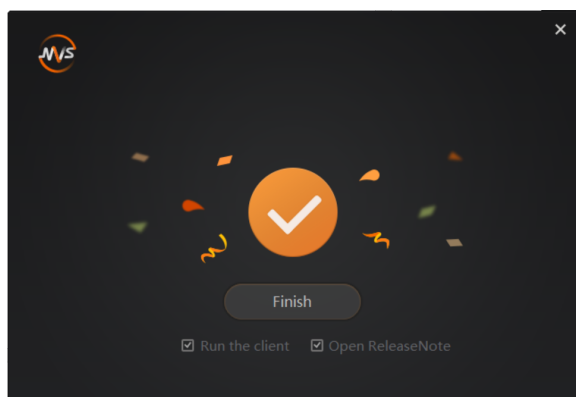
Deleted: 4



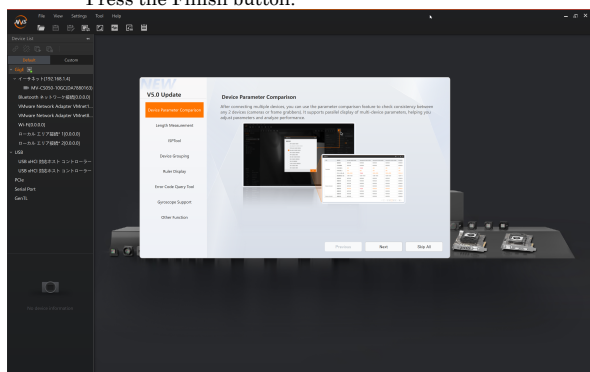
Start with Start Setup



If there are no particular issues, press the Next button as is.



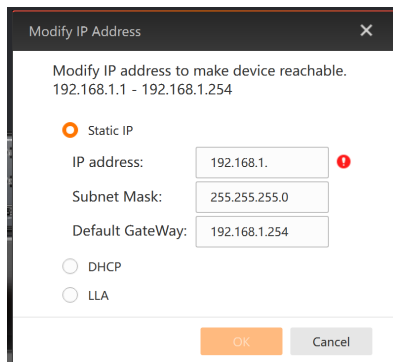
Press the Finish button.



Press the Skip all button to proceed.



If the camera was connected, it was found under the "Ethernet" in the upper left corner. The camera will be displayed.



Modify IP Address

Modify IP address to make device reachable.
192.168.1.1 - 192.168.1.254

☒ Static IP

IP address: 192.168.1. !

Subnet Mask: 255.255.255.0

Default GateWay: 192.168.1.254

☐ DHCP

☐ LLA

OK Cancel

If you double-click the field of the found camera, the IP address does not match.
When you see a window like this, set your IP address. It will be done this way.

2 Installing OpenAA



Launch the OpenAAInstaller.exe



Press "Next."



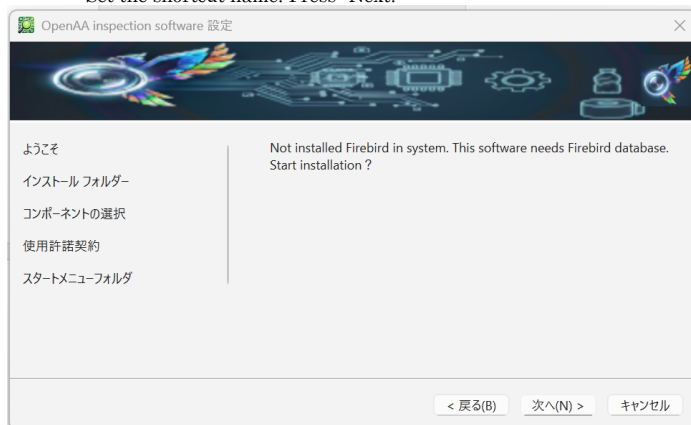
Set the folder where the software will be installed. Press "Next."



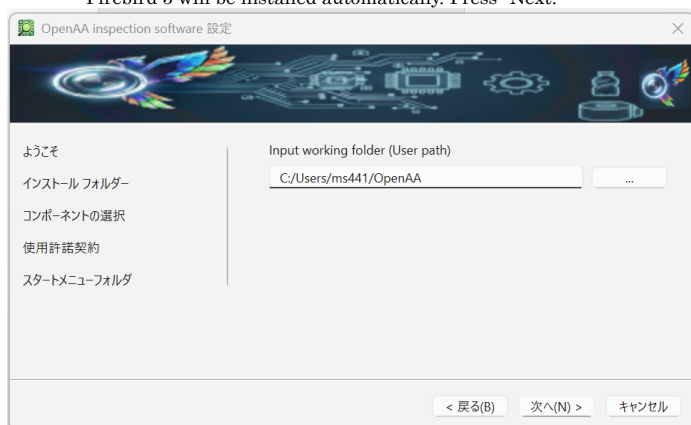
If you check "I agree to the license," press "Next. The license terms comply with GPL ver3.



Set the shortcut name. Press "Next."



Firebird 5 will be installed automatically. Press "Next."



Set the location where the configuration file will be saved. Press "Next."



Folders for database access and database data storage - Set it up. Press "Next."



Click "Install" to install it.

Overview of the operation method

Examples of what you want to do	operation
I want to change the type of camera	In EditParameter, configure the component file on the Plugin tab
Want to change the number of cameras	Set the number of system cameras and pages in EditParameter
I want to change the database access destination.	In EditParameter, set folder or database file names under the File tab
I want to change the timeout time.	Set it up in the Timming tab of the EditParameter
I want to load the specified GUI file	When launching a shortcut in Inspection Fast Player, enter the file name after G as a link parameter to start
Want to change exposure time or camera gain	Set it using the inspection software that launches the GUI file where the camera configuration components are placed
Want to flip the image	Set it in the Image direction tab of EditParameter
Want to change the number of scans per test	Set the number of Pages and Strategy in the EditParameter
I want to change the execution screen	Edit with EditGUI and load the created GUI file as an executable
I want to remove unnecessary icons from the execution screen.	Change it using component properties in EditGUI
I want to switch the display language.	Set the language in FileRegistryEditor

Basic Operations

1 Setting up the EditParameter

The screenshot shows the 'EditParameter.exe' window with the title bar 'C:/OpenAA-Execute/Global.dat'. The window has a tabbed interface with tabs: Global, Strategy, Communicate, OutlineOffset, Algorithm, Transfer, Filter, and SyncGUI. The 'Global' tab is active. Below the tabs, there is a 'File Name' field containing 'Global.dat'. A sub-tabbed interface shows tabs: Global, Timing, Result, Bootup, Operation, Plugin, File, File, Transfer, and Glo. The 'Global' sub-tab is active. The main area contains a list of parameters with their current values:

Parameter	Value
Count of page local	1
画像の横のドット数	2448
画像の縦のドット数	2048
レイヤー数	3
ページ数	1
Phase回数	1
Maximum X pixels	16384
Maximum Y pixels	65535
システムの全カメラ数	1
横方向の分解能 (ナノメートル単位)	20000
縦方向の分解能 (ナノメートル単位)	20000
カメラのビット数	8
Waiting time (millicsec) for connection to slave	1000
画像の左右反転	☐
部品起源のアイテムのしきい値を変更するかどうか	☒
配置方法 1 : X方向にタイル配置、2 : Y方向にタイル配置	1

At the bottom of the window, there are buttons: 'Each page', 'Save', 'Overwrite', 'Load', and 'Close'.

Start the EditParameter.exe.

2 FileRegistryEditor Settings

The screenshot shows the FileRegistryEditor application window. The main window has a title bar with standard Windows controls. Inside, there are several fields and buttons:

- Path:** A text field containing "C:/OpenAA-Execute" and a browse button "...".
- MachineID:** A dropdown menu showing "1" with up and down arrows.
- Language:** A dropdown menu showing "日本語" with a down arrow.
- Edit multiple machine:** An unchecked checkbox.
- Save and Close:** A button at the bottom left.
- Cancel:** A button at the bottom right.

A **Database** configuration dialog is open in the center, containing:

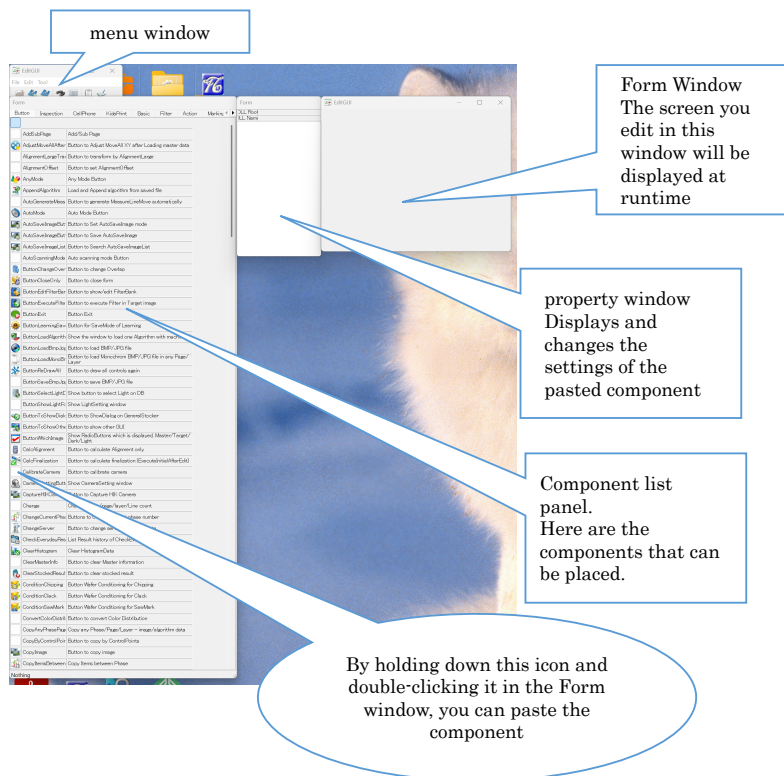
- Host Name:** A text field containing "localhost".
- Database name:** A text field containing "d:/data/Regulus64.fdb".
- Port number:** A dropdown menu showing "3051" with up and down arrows.
- Machine Name from database:** An empty text field.
- Load database:** A button at the bottom of the dialog.

FileRegistryEditor.exeLaunch it. Set the language and device number.

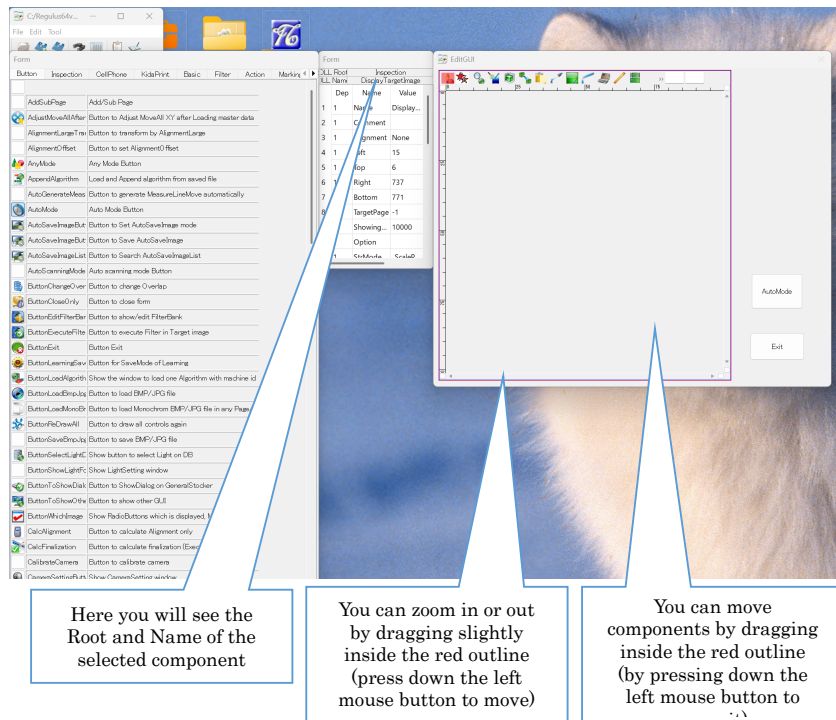
3 Screen Editing with EditGUI

The program (algorithm) for processing is linked to the components placed on the screen. Therefore, there is no need to set processing details or links. StartUp EditGUI.exe

If an error occurs, it may be due to an old DLL file being mixed in. Inside the Algorithm, GUI, Plugin DLL, and Integrator/GUI folder in the installation folder, old DLL files. Please check if there are any such items.



Operating Edit GUI



4 Execution

Run the screen you created. StartUp InspectionPlayer.exe G[XXXX.gui] NDM W1 -R

Startup parameters are required.

G[XXXX.gui] is not necessary. Enter the name of the created screen file after the G

NDM Database check messages are not displayed.

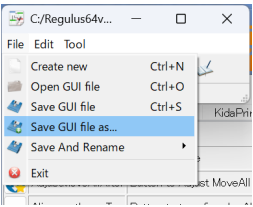
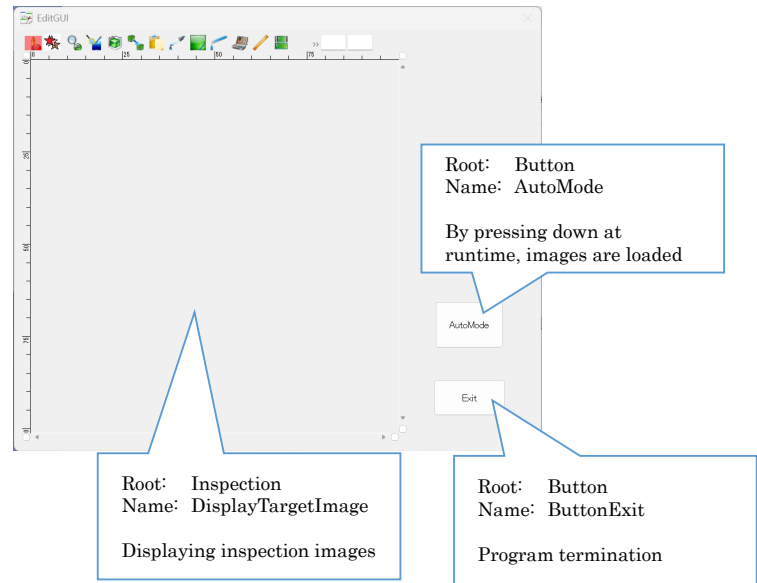
W1 Automatically prioritize the worker at startup

-R Delete unnecessary DLLs from memory

1. Simple screen

When you start your PC or launch a program, the following screen will appear.

Screen file name:Senario1-ShowImagefromCamera.gui

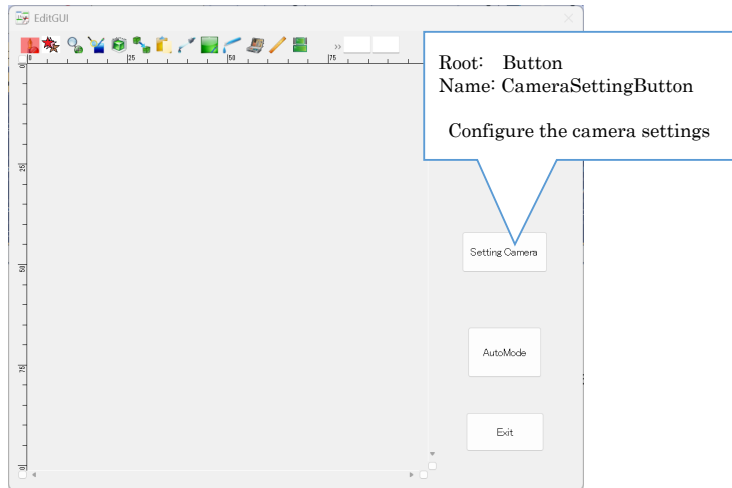


- | | |
|---------------------|---|
| Open GUI file | Load the GUI file you are saving |
| Save GUI file | Overwrite and save to the imported GUI file |
| Save GUI file as... | Save the new GUI file with a new name |

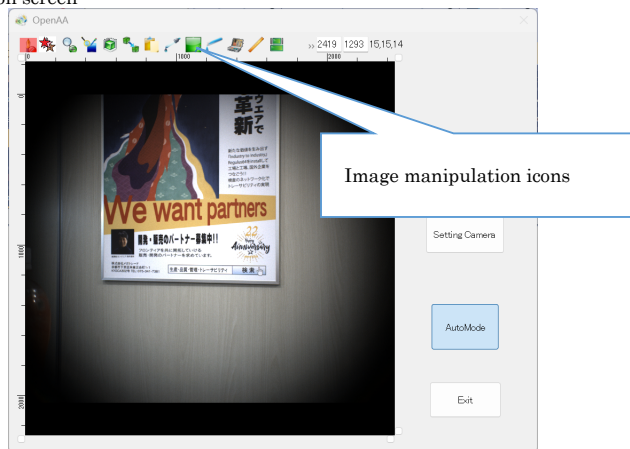
 Learn how to arrange components

2. Camera Settings and Image Editing

Screen file name: Senario2-Setting Camera. gui



Execution screen



Camera settings (for HIKRobot's area cameras, CameraMVSGigE.dll)

Dialog

Device

MV-CS050-10GC (DA7880163)

192.168.1.44

Exposure Auto

Off

Exposure mode

Timed

Exposure time

500000.00

Gain

0.00

☐ Reverse

☐ Reverse

Trigger Mode

Off

Trigger source

Software

Black Level

☐ 240

White balance

Once

Red

0

Green

0

Blue

0

Binning

1 X 1

Decimation

1 X 1

AOI

Offset X

0

Offset Y

0

Width

2448

Height

2048

User selector

Default

Save

Load

OK

Cancel

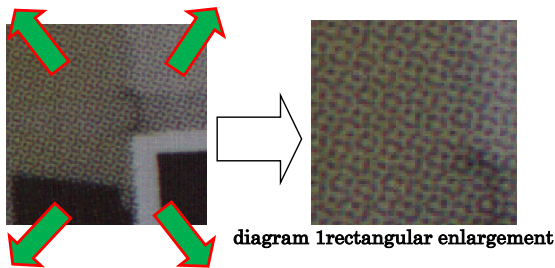
Exposure Auto	Automatic exposure time setting
Exposure mode	Exposure Mode
Exposure time	exposure time Increasing the value increases exposure time and brightens the image.
Gain	Gain: When the value is large, the image brightens.
Trigger Mode	Imaging Trigger Mode
Trigger source	Choosing the trigger signal
Black Level	Black Level Settings When checked, the black level is set automatically.
White balance	White balance settings.
Binning	Binning Settings
Decimation	Decimation
AOI	Partial shooting area settings
User selector	Storage address number
Save/Load	Save/Load Camera Settings

General Operation



Try operating the camera.
Manipulate the images and see what you can do

- 1 No operation Nothing is manipulated
- 2 Scale Down Left-click with the mouse to enlarge, right-click to zoom in
- 3 Rectangular Enlargement Enlarge the rectangular area drawn with the mouse to maximize display.



- 4 Show All Click the button to enlarge the entire image
The rate is adjusted, and the upper left becomes (0,0)
- 5 Image Copy The image enclosed in a rectangle is copied.

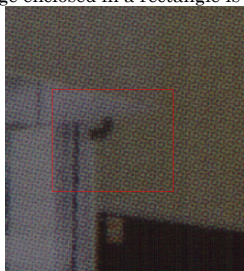


diagram 2 image copy

This is a feature similar to
Windows copy, but it won't
be copied to the clipboard.

6 Paste image Paste the copied image.



While holding down the button, the copied image will appear semitransparent as it moves the mouse. The copied image will be pasted at the mouse click-click position.

diagram 3 image Paste

7 Color extraction Extract the color of the image you clicked with your mouse.

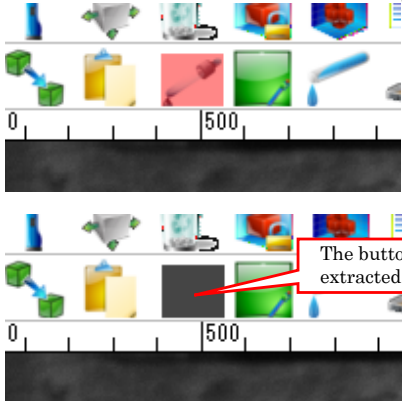
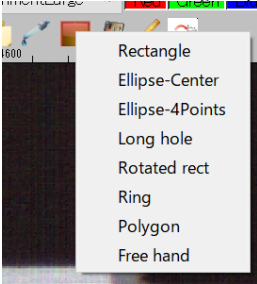


diagram 4 color extraction

8 Drawing with Extracted Color draw with the extracted colors.
You can set the drawing shape by clicking the mouse button on the icon.



Rectangle	Draw with a square
Ellipse-Center	Draw with an ellipse set for center, major axis, and minor axis
Ellipse-4Points	Draw with ellipses set vertically, horizontally, left, and right.
Long hole	Drawing with a long hole
Rotated rect	Drawing with a rotated rectangle
Ring	Drawing in ring shape
PViews	Drawing with Polygons
Free hand	Drawing with freeform

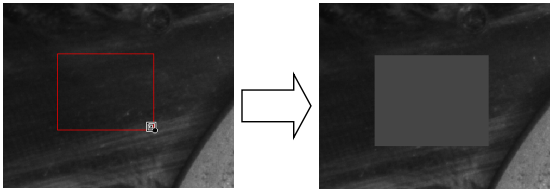


diagram 5 Drawing with extraction colors

- Procedure
- ① Perform the "Color Extraction" mentioned in the previous section
 - ② Press and press the 'Draw with Extract Color' button
 - ③ Select the shape you want to draw using the drawing tool.
 - ④ When you draw shapes, the inside of the image is filled in.

9 Pointillism with Extracted Colors for the extracted color, one pixel of the coordinate clicked with the mouse draw in cells

10 Image operation menu Displays the menu related to image manipulation.



diagram 6 image manipulation

10-1 Changing the Image Start Position

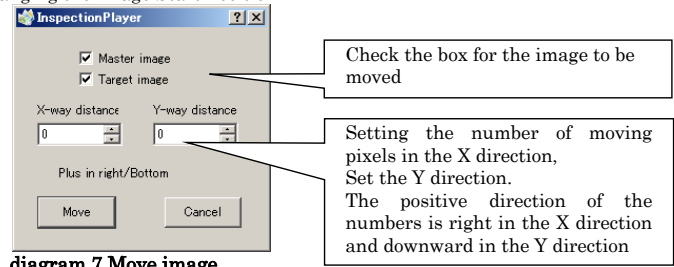
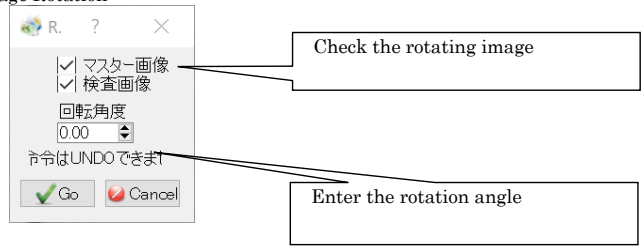


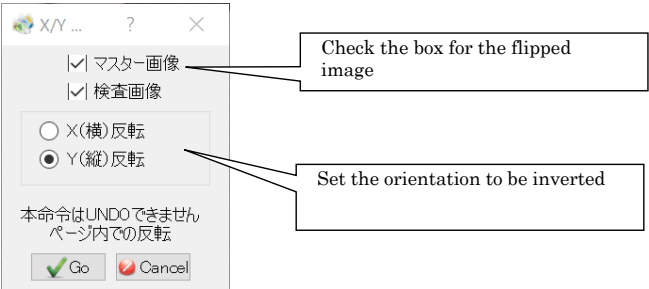
diagram 7 Move image

Movement starts when you press the "Move" button

10-2 Image Rotation



10-3 Image Inversion



10-4 Image Replacement

Swap the master image and the target image

10-5 Reversal of Light and Dark

Image Negative/Positive Conversion

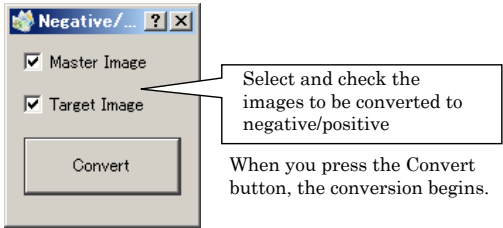


diagram 8 Negative Positive Conversion

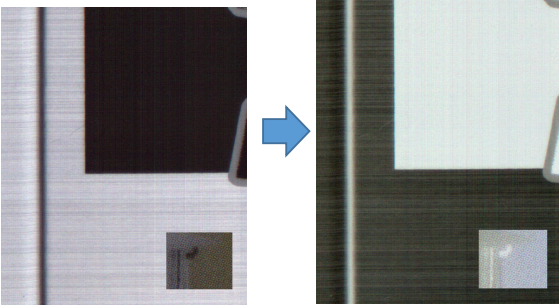
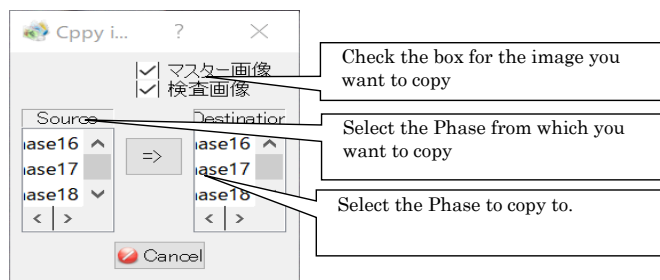


diagram 9 Example of Negative Positive Conversion
Image before conversion Image after conversion

10-6 Clear the Master Image
Set the brightness of all pixels in the master image to zero

10-7 Clear the Target Image
Set the brightness of all pixels in the target image to zero

10-8 Image Copy Between Phases



Pressing the "=>" button will execute the copy.

11 Length Measurement Displays the number of pixels between two points clicked with the mouse.

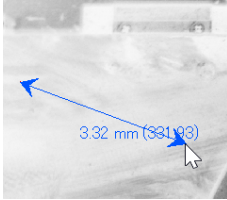


diagram 10 Measuring length

With the button down, set the starting point on the first click and specify the end point on the second click.

12 UNDO Canceling Operations

13: Crop images and save BMP files



Depending on your settings, this icon may appear.

Press down this icon and draw a rectangle on the screen, then select the file save selection window. The dialog opens, allowing you to save the image of the area you drew to a file.

14: Crop images at set size and save BMP files

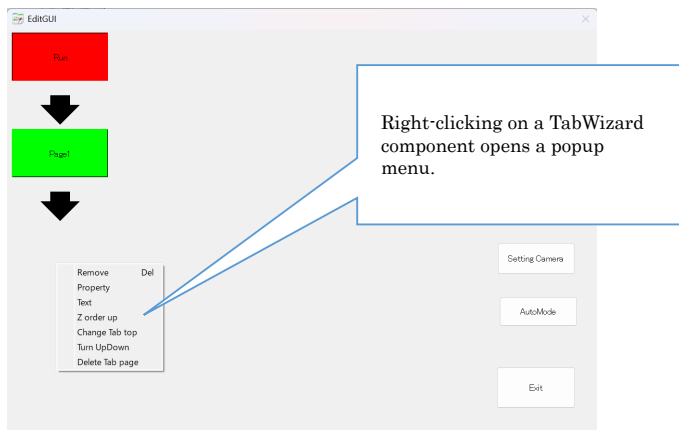
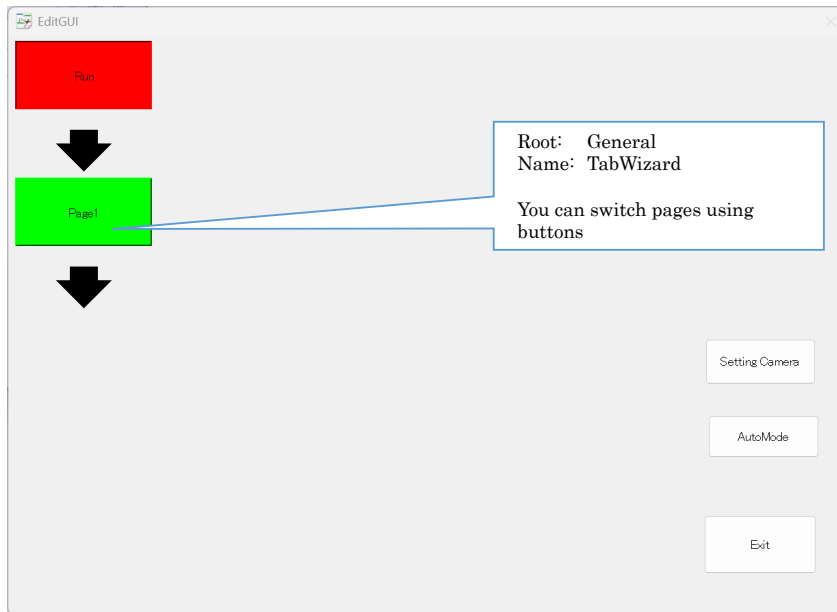


Depending on your settings, this icon may appear.

Press down this icon and click it on the screen to open the file save selection window. so you can save the image of the area you drew at the set size to a file.

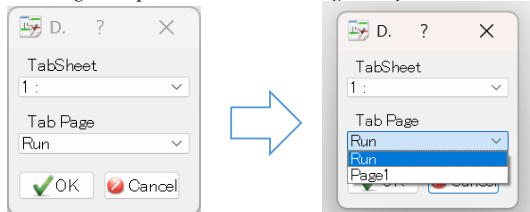
3. Paste the Screen Switching Wizard

Screen file name: Senario3-PutWizard.gui



Switching tabs

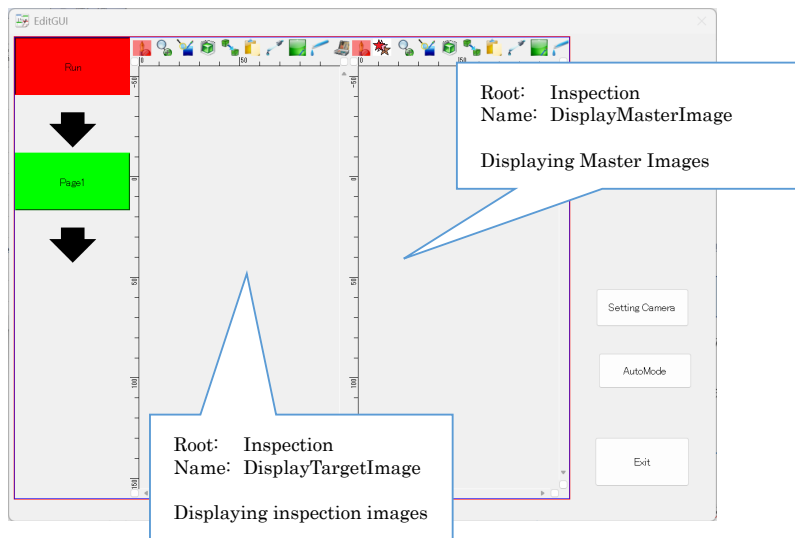
- 1: Open "Change Tab top" from the popup menu
- 2: The next dialog will open; select it on TabPage and press the OK button.



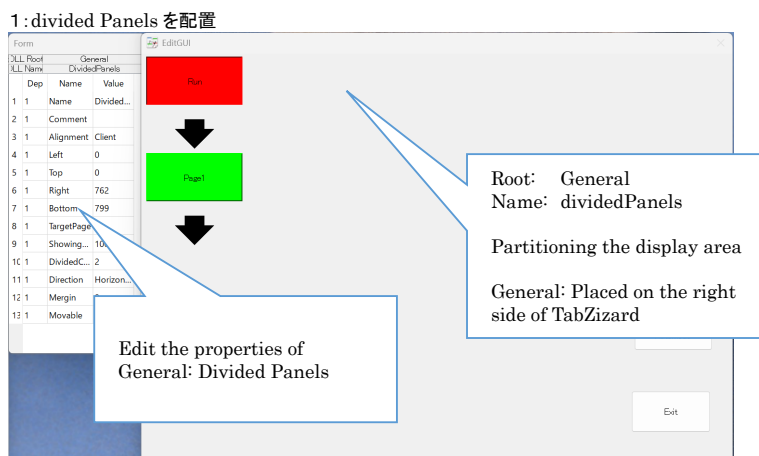
Check the screen switching tabs

4. Split and Create an Image Display Screen

Screen file name: Senario4-DivideAndImagePanel.gui



How to create



Components can be stacked multiple times. The placement tier cannot be changed.

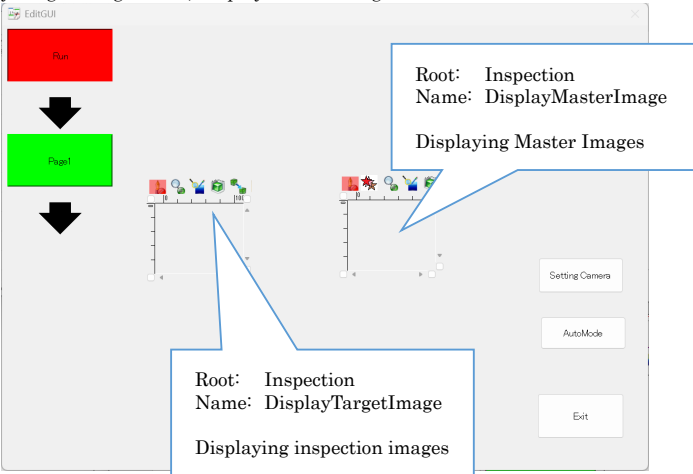
2: Edit the General: divided Panels properties - Change Alignment

Form		
XLL Root		General
XLL Name		Divided Panels
Dep	Name	Value
1	Name	Divided...
2	Comment	
3	Alignment	Client
4	Left	None
5	Top	Top
6	Right	Left
7	Bottom	Right
8	TargetPage	-1
9	Showing...	10000
10	DividedC...	2
11	Direction	Horizon...
12	Mergin	0
13	Movable	false

Double-clicking the right side of the Alignment item will change to a combo box. Set the placement method.

- None Fixed position in editing
- Top Arranged so that it sticks to the top
- Left Arranged so they stick to the left
- Right Arranged so it sticks to the right
- Bottom Arranged so that it sticks to the bottom
- Client Spread out across the entire surface

3: Display Target Image Panel, Display Master Image Placement

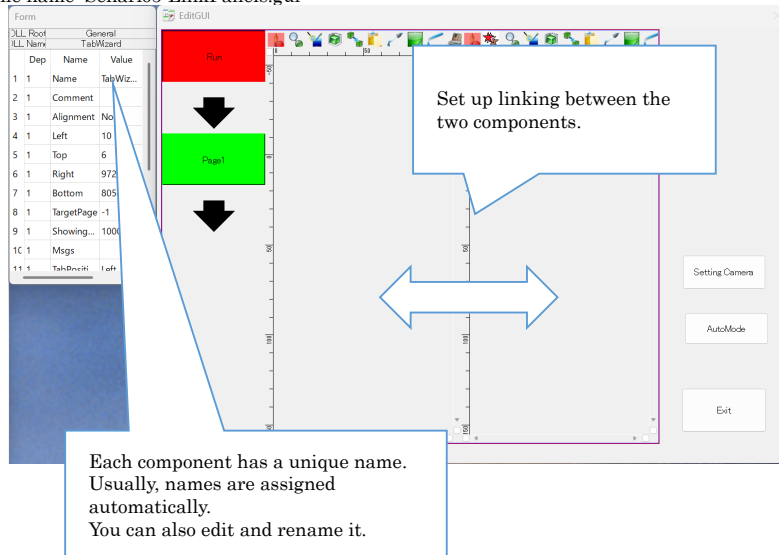


4: Edit the properties of Display Target Image Panel and Display Master Image:
Change Alignment by setting each alignment to the client, you can expand the entire area that can be placed.
It will be displayed. *If set in Alignment, you can place the window in relative positions,
so you can change the window size.
The position and placement are automatically set.

 Arrange components hierarchically and master alignment settings

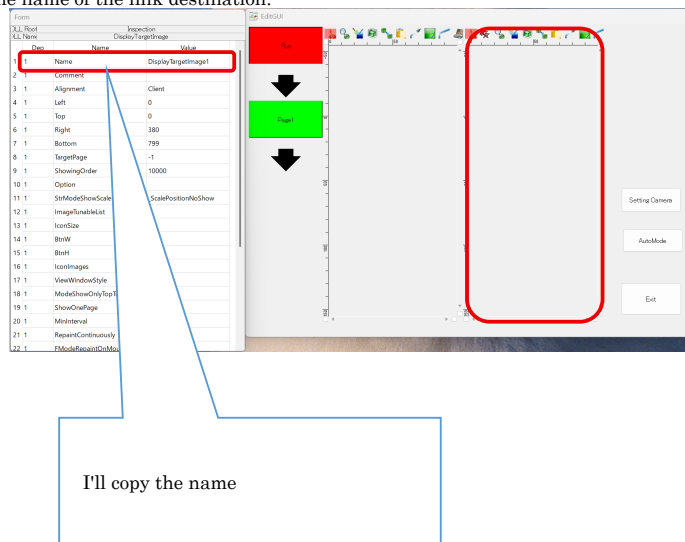
5. Component Link Settings

Screen file name: Senario5-LinkPanels.gui

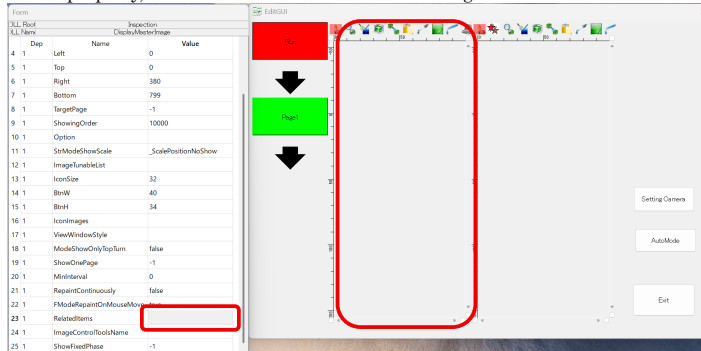


How to set up links

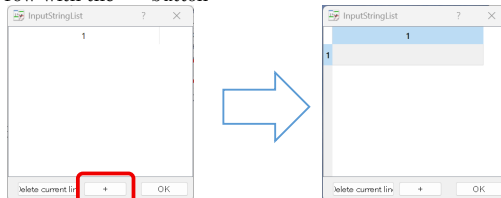
1: Get the name of the link destination.



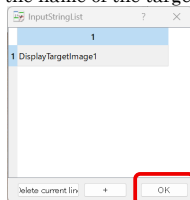
2: In the linked property, double-click the RelatedItems setting value field



3: Add a row with the "+" button

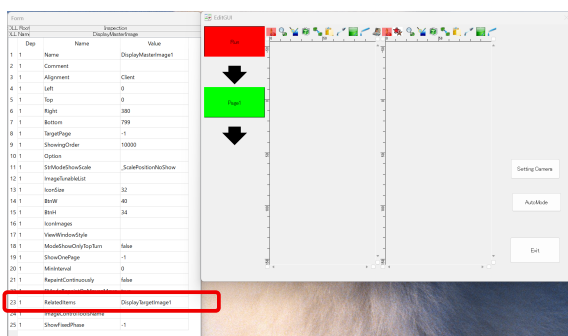


4: Enter the name of the target component you copied from 1 in the added line



Press the OK button to set it to the property.

5: If you set it up like this, you're good to go. Set it in the same way for Display Target Image

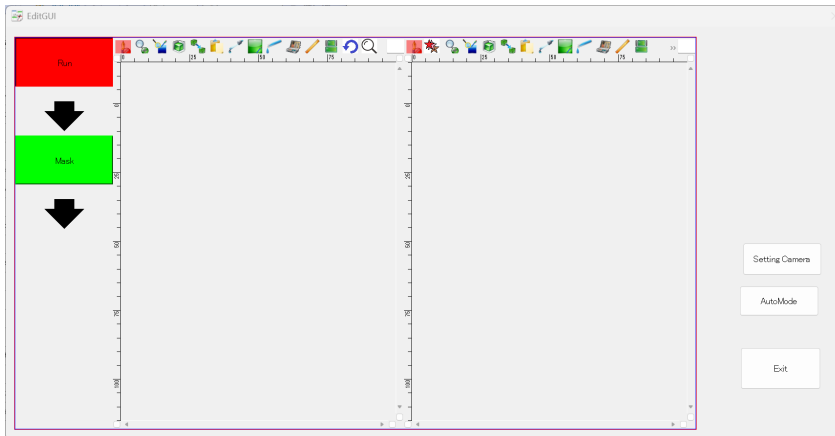


Learn how to set up links.

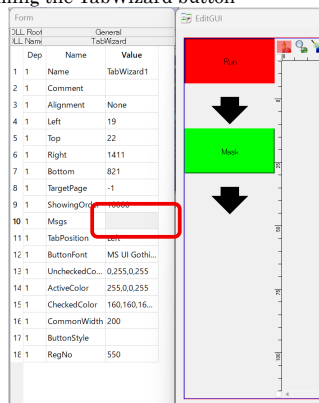
6. Creating a mask screen

Screen file name: Senario6-SetMaskImagePanel.gui

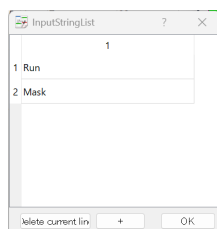
☛ For more details Masking.docx



1: Renaming the TabWizard button



General: TabWizard properties
Double-clicking the MSGS settings value field will open the settings dialog.



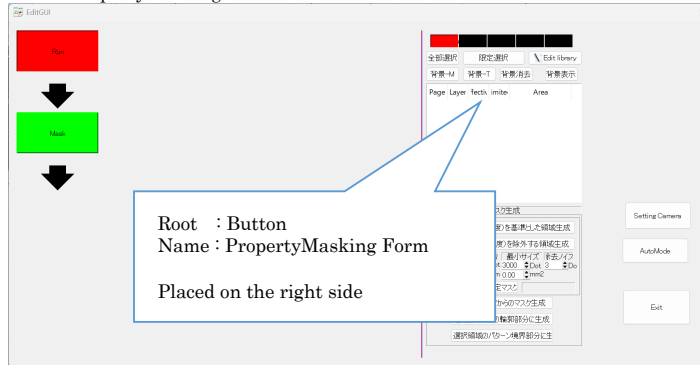
You can add lines or rename them like this.
The text you set here becomes the button name.

2: Switching the Tab Wizard screen

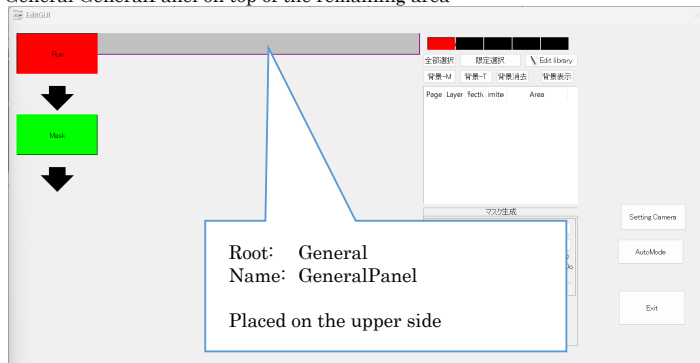
Please switch to the screen of the configured Mask

→ See Tutorial 3

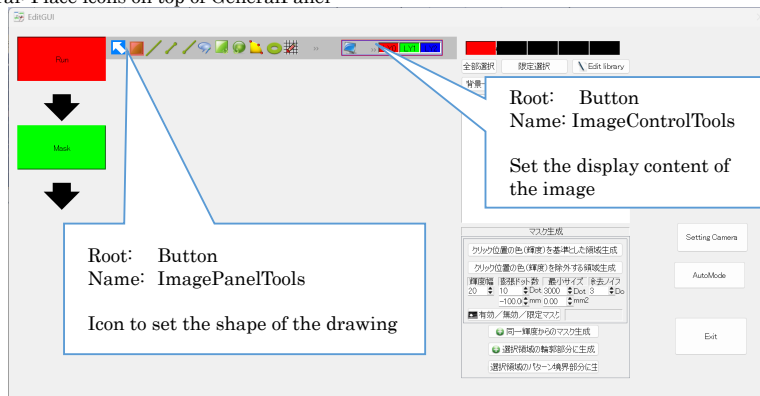
3: Paste Button:PropertyMaskingForm onto the Mask screen



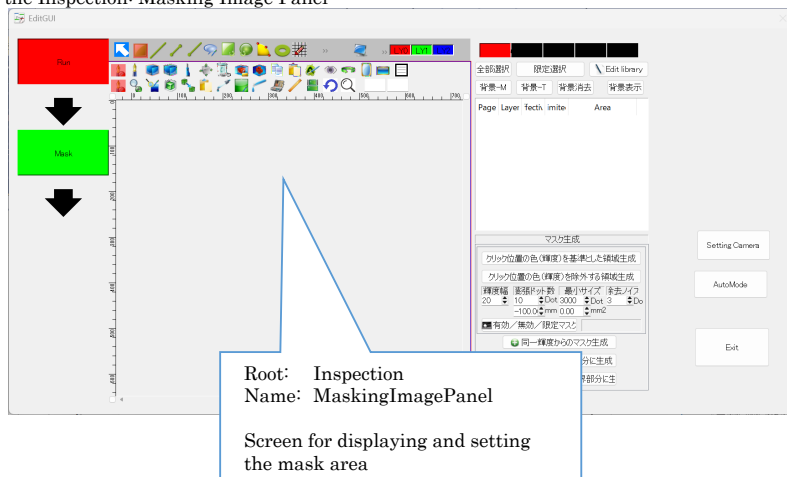
4: Paste General:GeneralPanel on top of the remaining area



5: General: Place icons on top of GeneralPanel

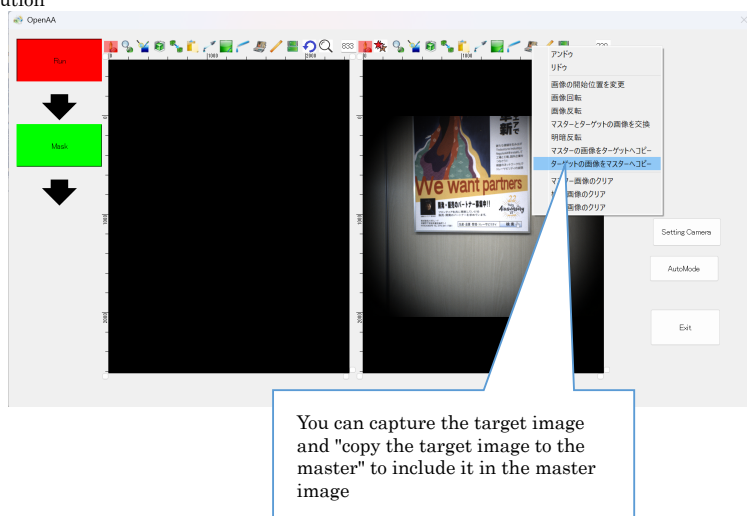


6: Paste the Inspection: Masking Image Panel

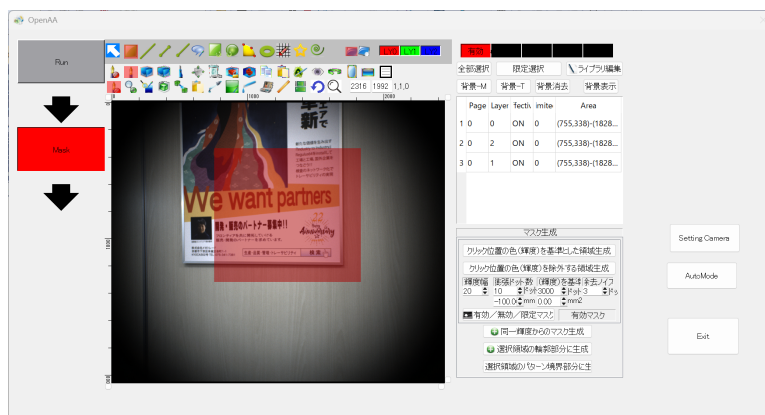


* Originally, between Image Panel Tools, Image Control Tools, and Masking Image Panel
You need to set up a link, and by sticking it in this step, the link will automatically be created.

■ Execution



Switch to the Mask tab and check the rendering.

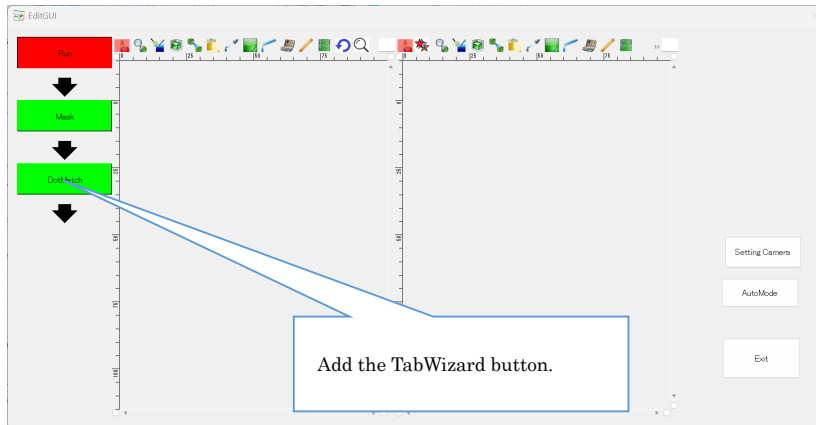


Please check the algorithm (Masking) properties and the placement of the Imagen Panel

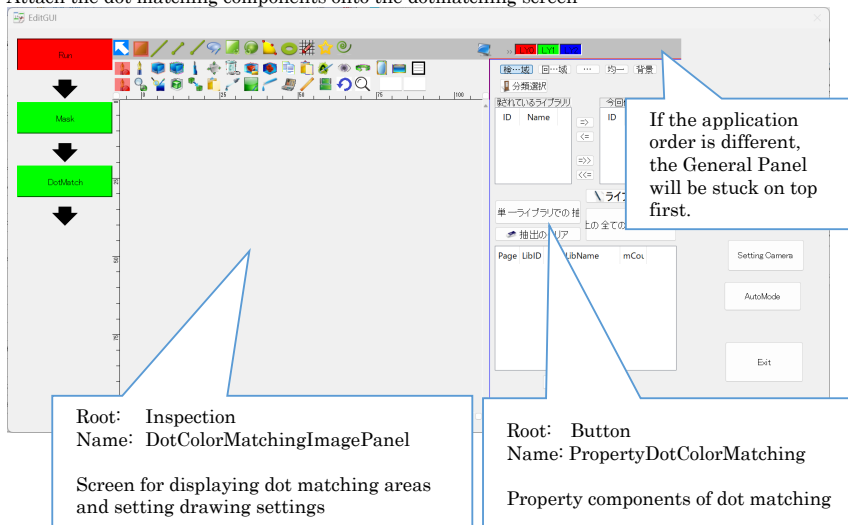
7. Applying dot matching

Screen file name: Senario7-SetDotColorMatching.gui

For more details: DotColorMatching.docx



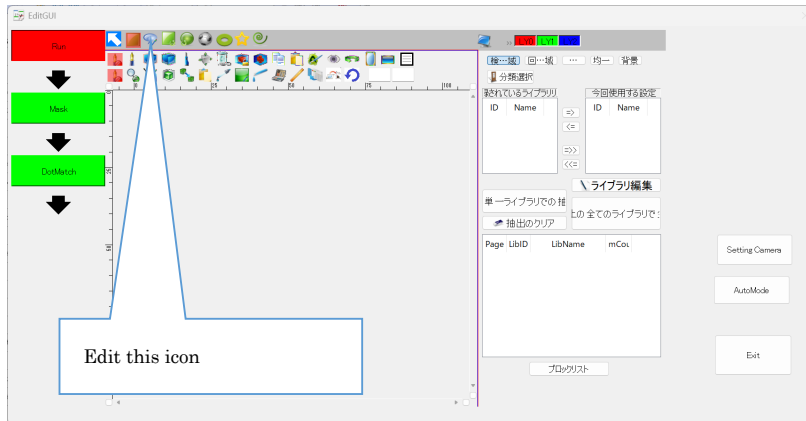
Attach the dot matching components onto the dotmatching screen



Please check the properties of the algorithm (Dot Color Matching) and the placement of the ImagePanel.

8: Showing or Hiding Icons

Screen file name: Senario8-EditIcons.gui



Form			
ALL Root	Button		
U.I. Name	ImagePanelTools		
Dep	Name	Value	
1	Name	ImagePanelToo...	
2	Comment		
3	Alignment	Left	
4	Left	0	
5	Top	0	
6	Right	536	
7	Bottom	43	
8	TargetPage	-1	
9	ShowingOrder	10000	
10	ShowRectangle	true	
11	ShowEndlessLine	false	
12	ShowLine	false	
13	ShowHLine	false	
14	ShowVLine	false	
15	ShowHAllLine	false	
16	ShowEllipse	false	
17	ShowEllipse4	true	
18	ShowArc	false	
19	ShowArc3	false	
20	ShowCircle	false	
21	ShowCircle3	false	
22	ShowRotRectangle	true	
23	ShowRotEllipse	true	
24	ShowRing	true	
25	ShowLongCircle	true	
26	ShowDot	false	
27	ShowPolyline	true	
28	ShowFreeline	true	
29	ShowRingArc1	false	
30	ShowRingArc4	false	
31	LineColor	255.0.0.255	
32	RelatedPanels	DotColorMatc...	
33	IconSize	32	

In the properties of Button: Image Panel Tools, toggle this red setting to true/false to toggle the icon on display/hide.

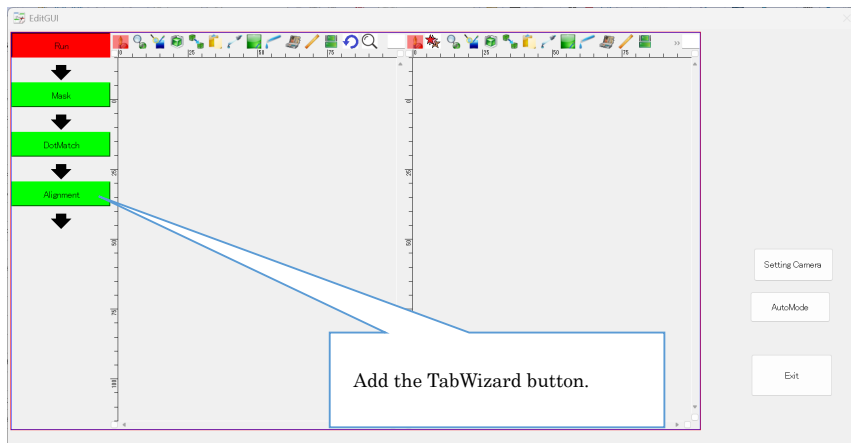


Check how to show or hide icons

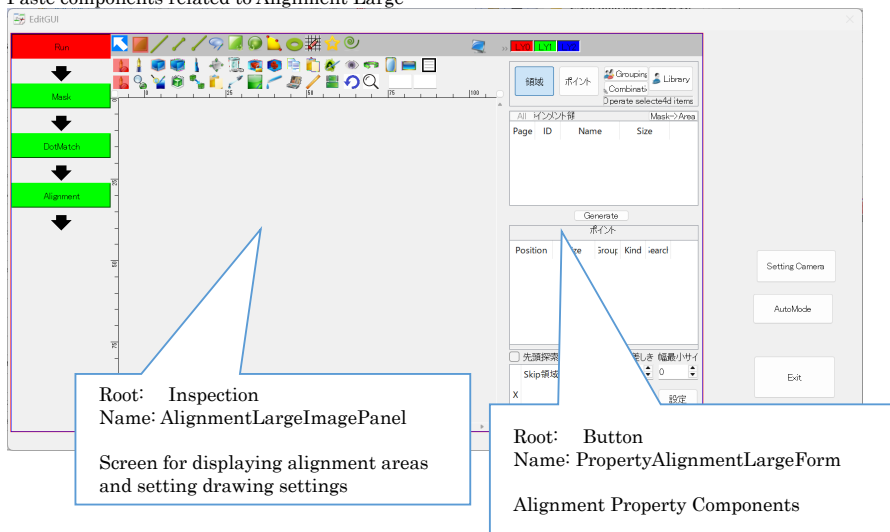
9: Create a Alignment Screen

Screen file name: Senario9-AddAlignment.Gui

For more details Alignment Large.docx



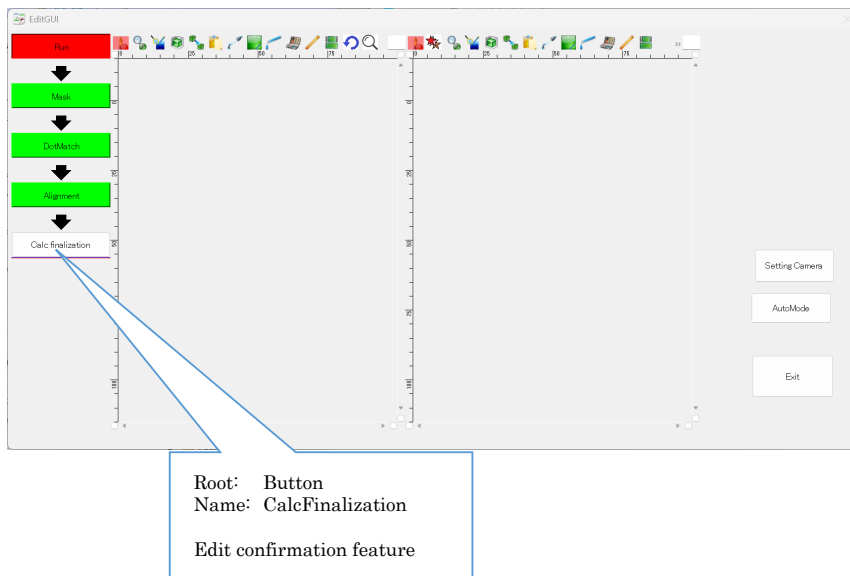
Paste components related to Alignment Large



Place the alignment components

10. Paste the Edit Confirm Button

Screen file name: Senario10-AddCalcFinalization.Gui



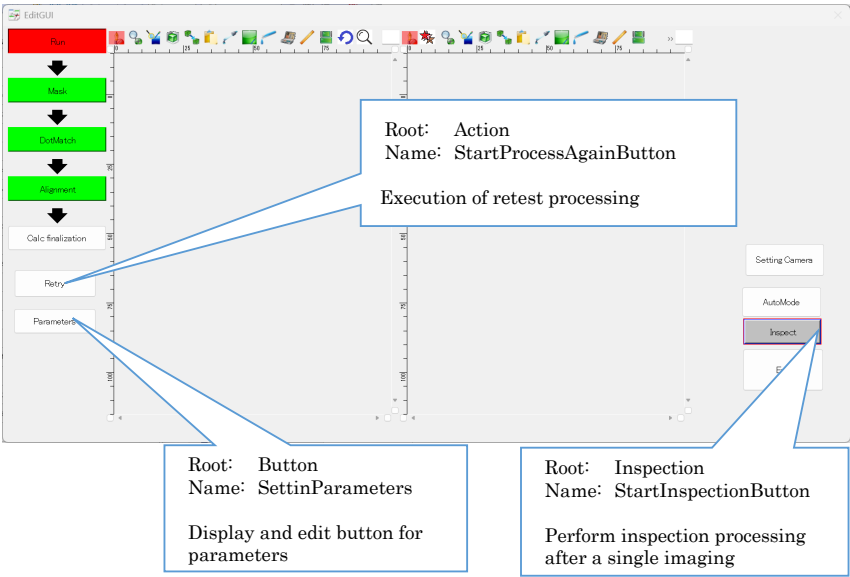
Button: Places the Calc Finalization button and presses it at runtime to handle master data for inspection processing. You can create it.



Button: Let's place the Calc Finalization button.

11. Attach inspection and re-examination buttons

Screen file name: Senario11-InspectionAndRetry.gui



* The function of components does not change regardless of where they are attached.

 Check the component attachment for inspection processing.

12. Pasting Read/Write Components into Master Data

Screen file name: Senario12-MasterLoadAndSave.gui



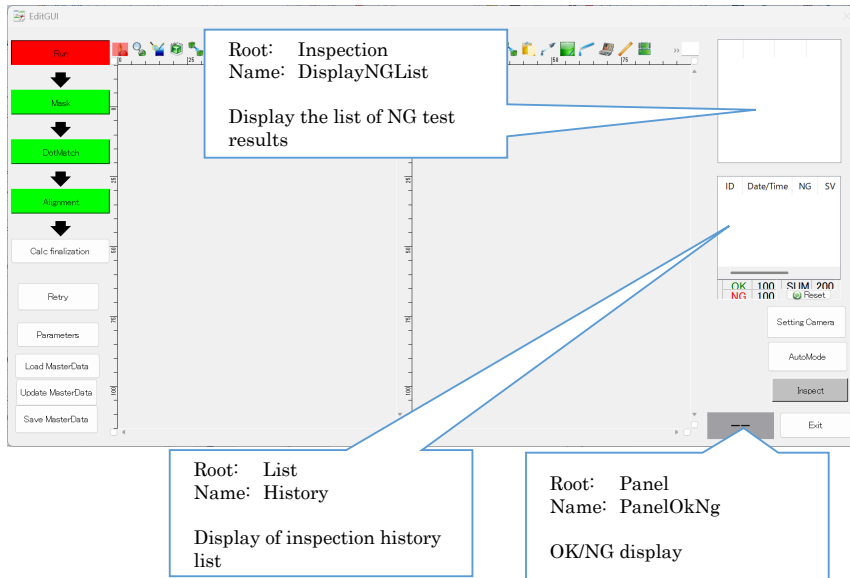
* The function of components does not change regardless of where they are attached.



Let's check the components for reading and writing master data.

13. Attaching components related to inspection process display

Screen file name.Senario13-ShowHistoryOKNG.gui



Let's review the components related to the display of inspection processing

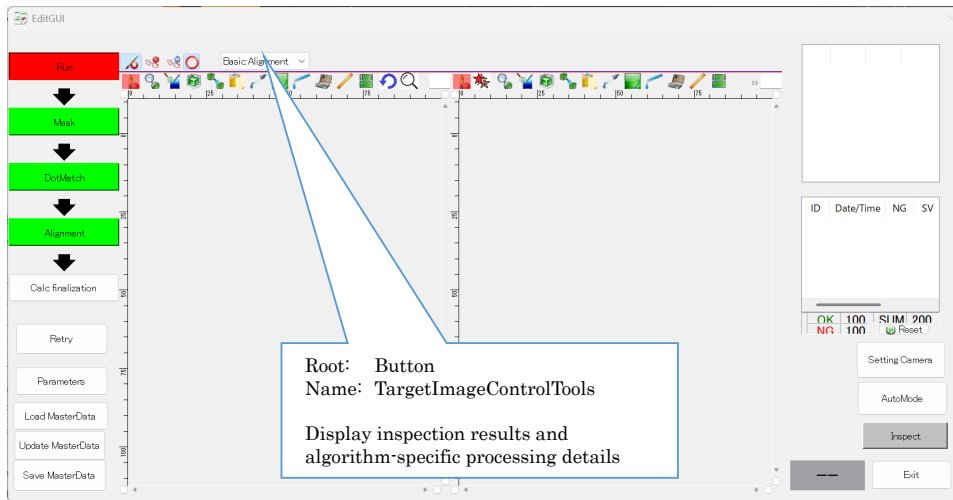
What you can do so far

Creating this screen enables standard inspection processes.

- 1: Create an image
- 2: Set the area for areas requiring inspection or special inspections
- 3: Alignment Settings
- 4: Create inspection areas for dot matching
- 5: Performing inspection processing using dot matching
- 6: Display test results
- 7: Inspection data can be saved or read into master data

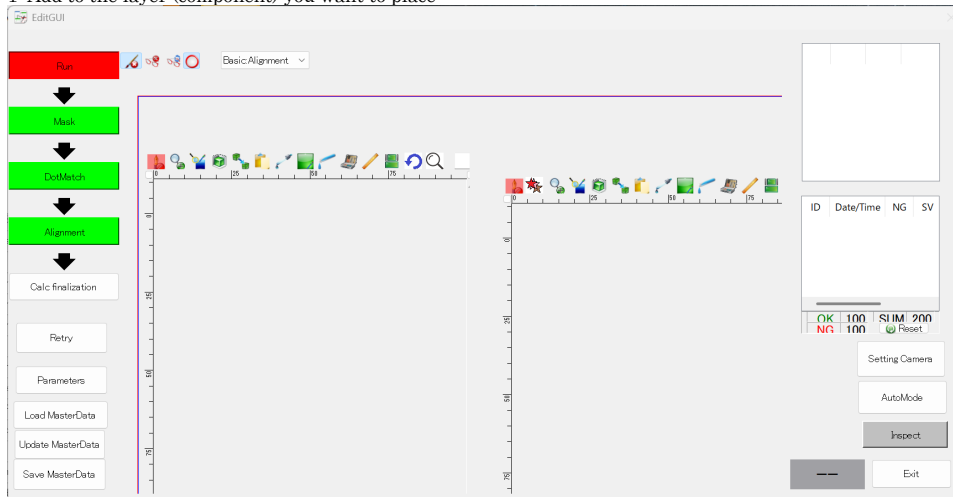
1 4. Attaching components related to NG information display

Screen file name: Scenario14-AddTargetImageControlTools.gui



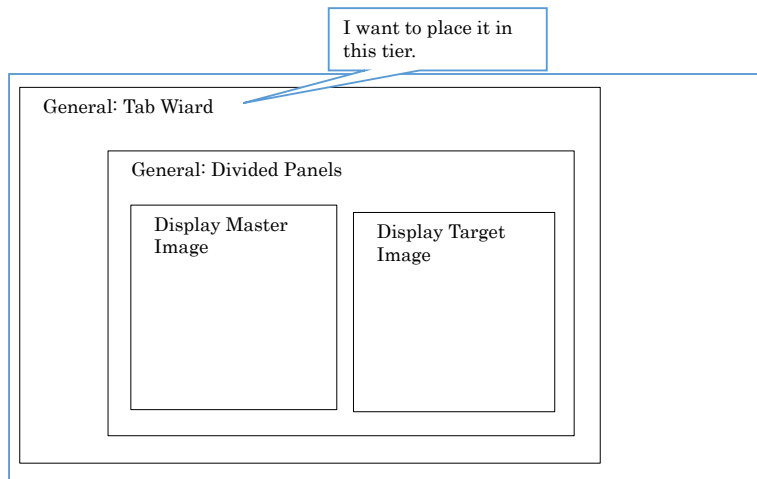
*How to add the Target Image Control Tools component

1: Add to the layer (component) you want to place

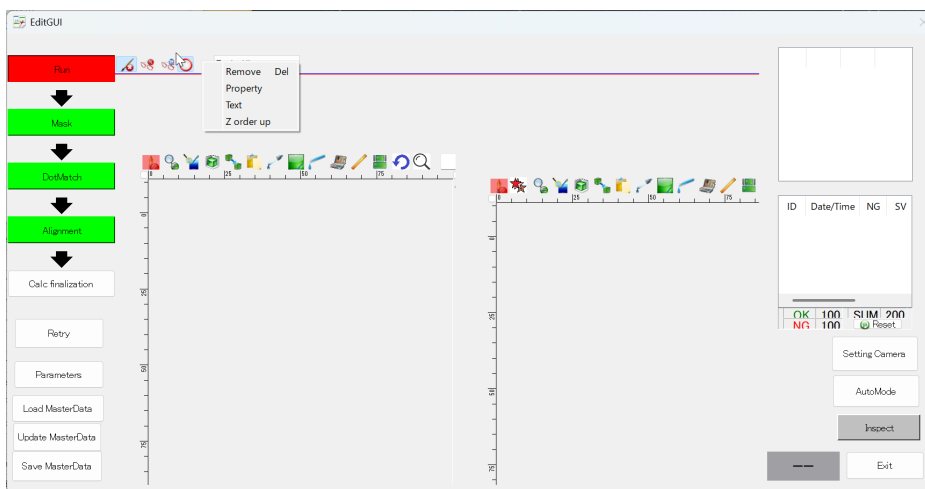


Temporarily shift other components to display and add the hierarchy to be placed.

* If you accidentally attach it to another layer (on a component), you cannot change the layer, so please delete it for now. Please add a new one.



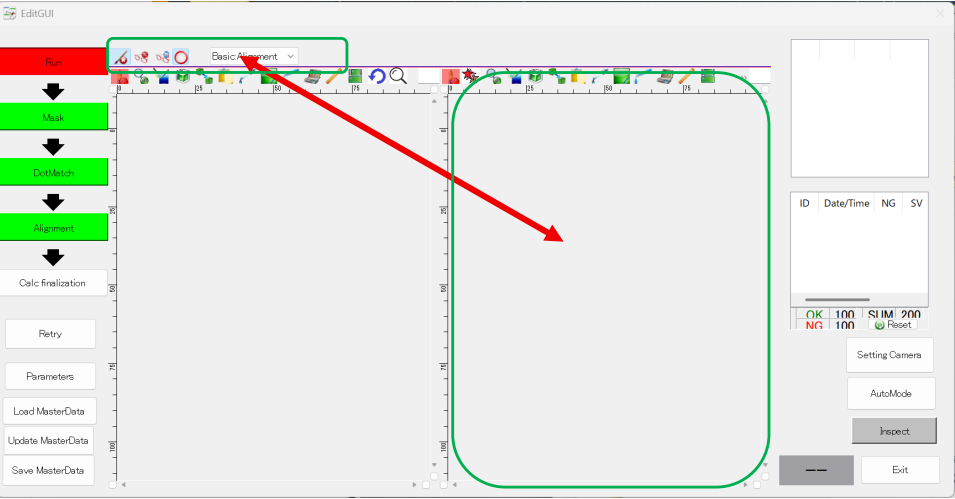
2: Place the added Target Image Control Tools higher in the Z-Order.



Right-clicking on a component will bring up a popup menu.
By selecting "Z order up," you can rearrange the component in the order it was placed first.
This allows you to change the order of settings in the Alignment property.

3: By setting it to Top in the Alignment of the Target Image Control Tools property, you can place it at the top.

*Let's create a link



By linking these two components, you can apply the settings of Target Image Control Tools to the display. Yes, you can.

Properties of Target Image Control Tools.

Form			
JLL Pool		Button	
JLL Name		TargetImageControlTools	
Dep	Name	Value	
1	1	Name	TargetImageControlTool...
2	1	Comment	
3	1	Alignment	Top
4	1	Left	0
5	1	Top	0
6	1	Right	1198
7	1	Bottom	33
8	1	TargetPage	-1
9	1	ShowingOrder	10000
10	1	ShowNGItemButton	true
11	1	ShowLayer	true
12	1	ShowComboboxLib	true
13	1	RelatedPanels	DisplayTargetImageI
14	1	ShowAllItemsButton	true
15	1	IconSize	32
16	1	ExclusiveLayer	false
17	1	ShowLayerAtFirst	0
18	1	InitONNoItemButton	true
19	1	InitONNGItemButton	false
20	1	InitONAllItemsButton	false
21	1	InitONRedCircleButton	true
22	1	BlinkNGMilliSec	0

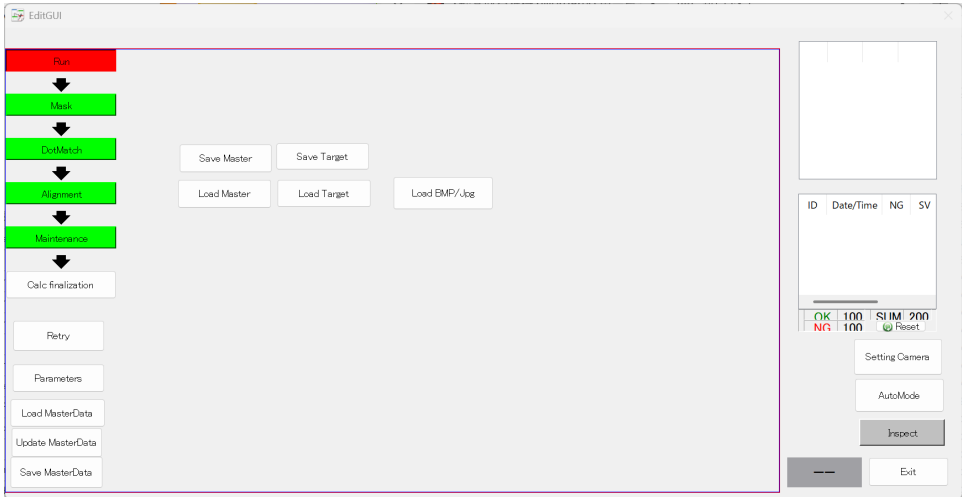
By setting the name of the display panel on the right here, you can associate it.



Let's try out and check the features of Target Image Control Tools

15. Pasting Image Input and Output Components

Screen file name: Senario15-LoadSaveImage.gui



1: Add a new page (button) to the menu ⇒ See Tutorial 6 Maintenance

2: Open the Maintenance page you added ⇒ See Tutorial 3

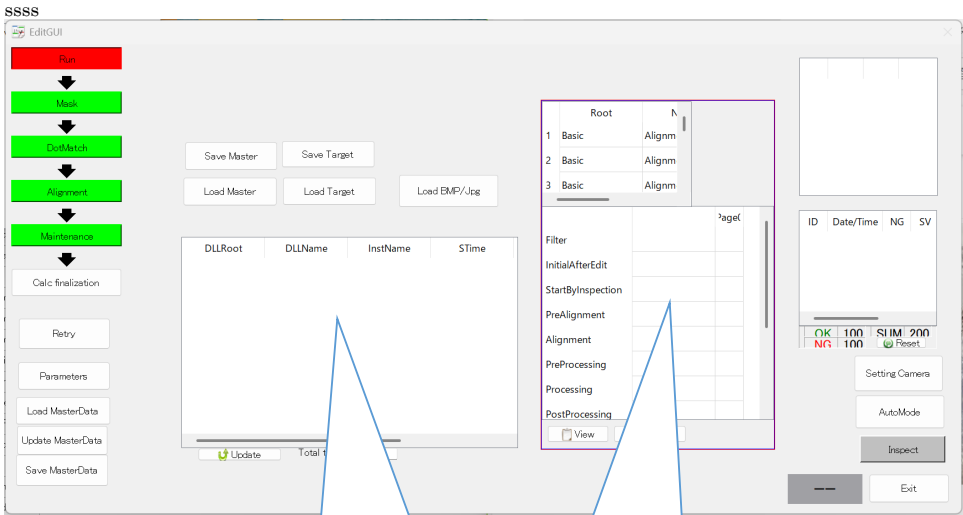
3: Add the following components

DLL Root: Inspection	DLL Name: SaveImageMasterButton
DLL Root: Inspection	DLL Name: SaveImageTargetButton
DLL Root: Inspection	DLL Name: LoadImageMasterButton
DLL Root: Inspection	DLL Name: LoadImageTargetButton
DLL Root: Button	DLL Name: ButtonLoadBmpJpg

Saving Master Images
Saving inspection images
Import to master image
Import inspection images
BMP/JPEG files Load

16. Pasting the processing time display component

Screen file name:Senario16-ShowProcessTime.gui



Root: List
Name: GUITime

Display processing time for each GUI component

Root: List
Name: ProcesssTime

By displaying processing time, it is used to check which processes are taking

Memo