NEXIOT

nexvic

VIC7000 Training

Garry Huang

Application Engineer

Outline

System Architecture

- VIC-7100
- VIC-7300

Software Installation

- VMWare
- VIC7000

Build Project

- Get IP
- Login
- New Project
- Get Data
- Font Learning
- Target
- Page & Recognition
- Play Project
- Database
- Protocols
- Control
- Script

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System Architecture – VIC7100

REST API (Json)

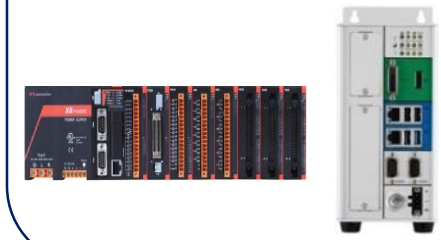
REST API

IoT Studio (Modbus)

IoT Studio
Industrial Gateway Builder

iSCADA (Modbus)

PLC/SoftPLC (Modbus)



Program interface (HTML5)

HTML

TCP/IP

Modbus

Existing Equipment

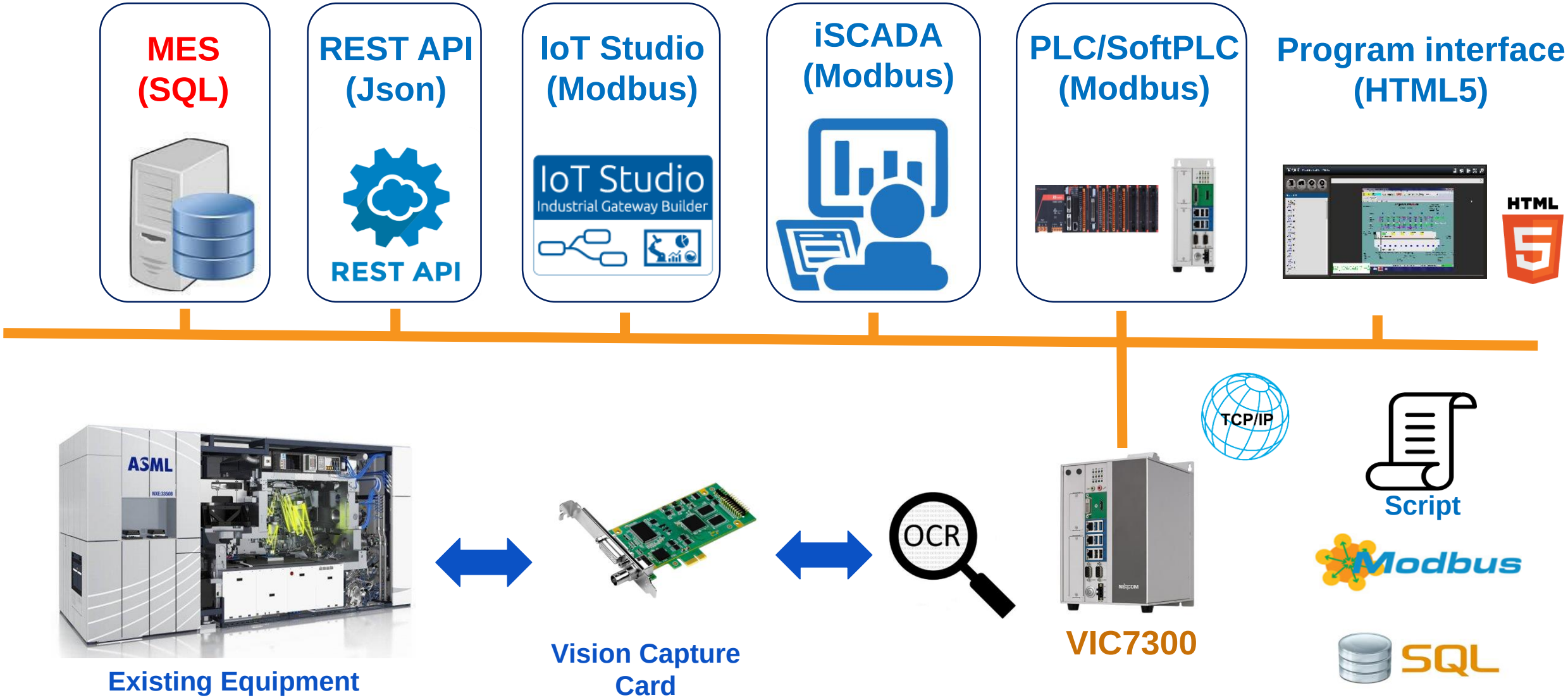
Vision Signal Converter

OCR

VIC7100

Optical Character Recognition Analysis

System Architecture – VIC7300



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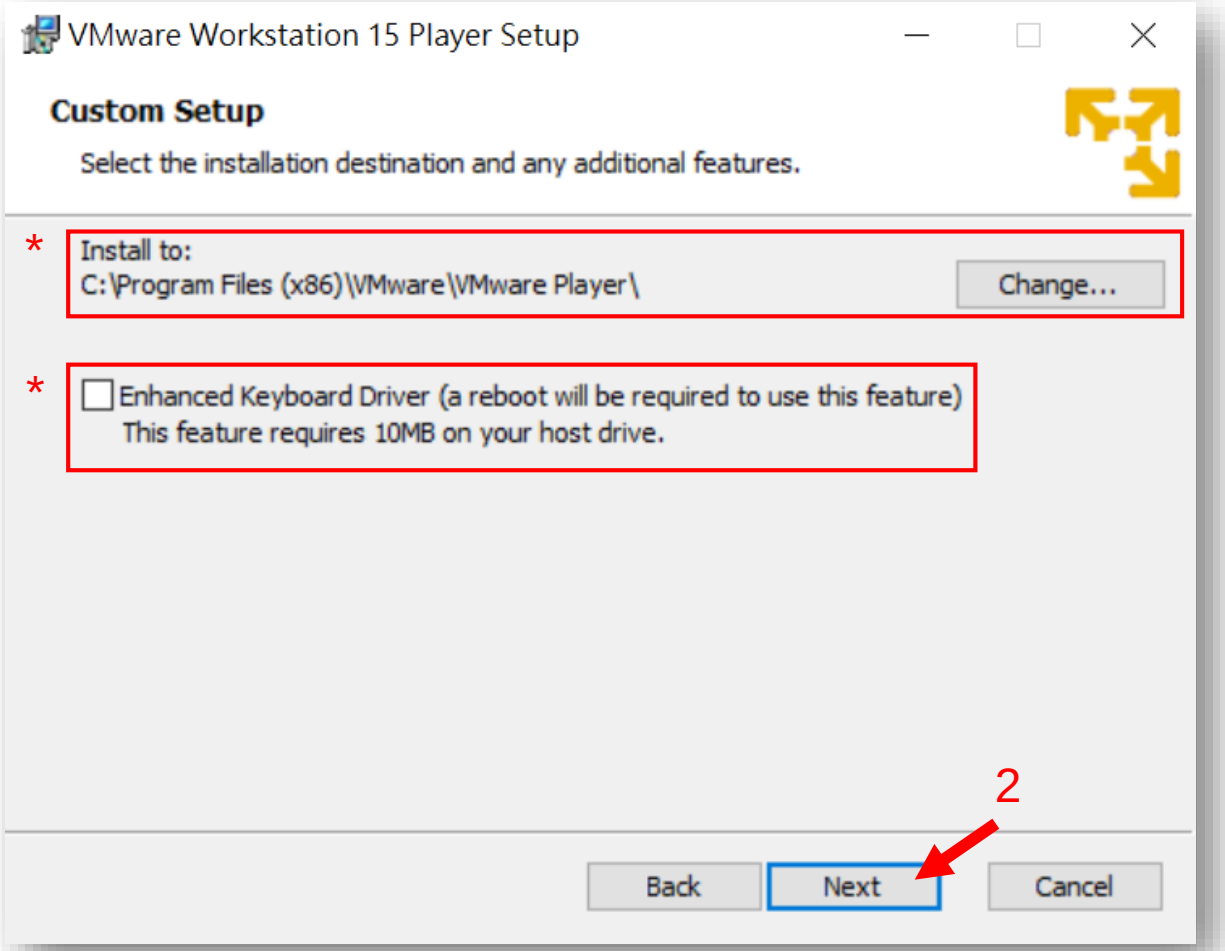
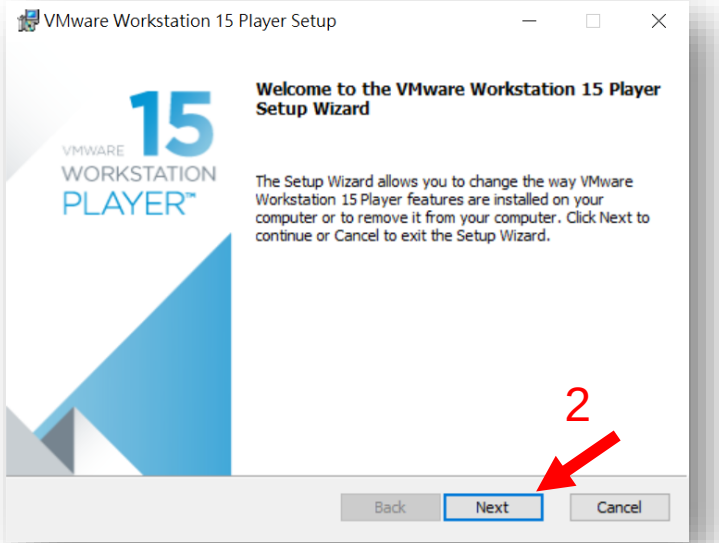
Software Installation – VMware

- **Install VMware Workstation Player**
  1. Execute **VMware-player-15.0.2-10952284** (Run as administrator)
  2. Click **Next** until installation finished

change the installation path (*) if needed

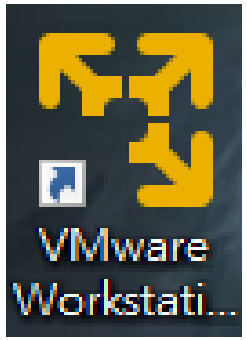
Enhanced Keyboard Driver (*) is not required

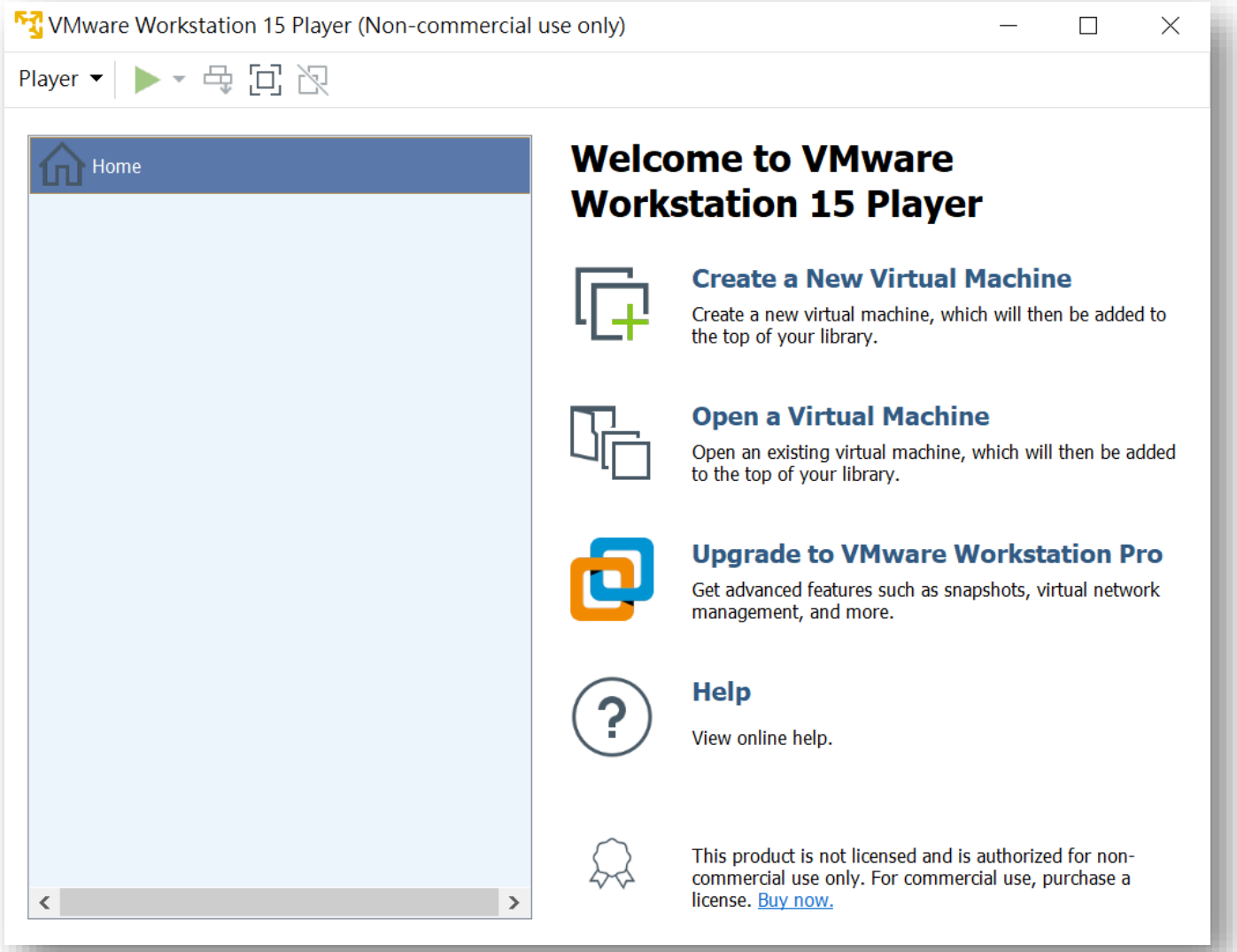




Software Installation – VMware

- **Execute VMware Workstation Player**

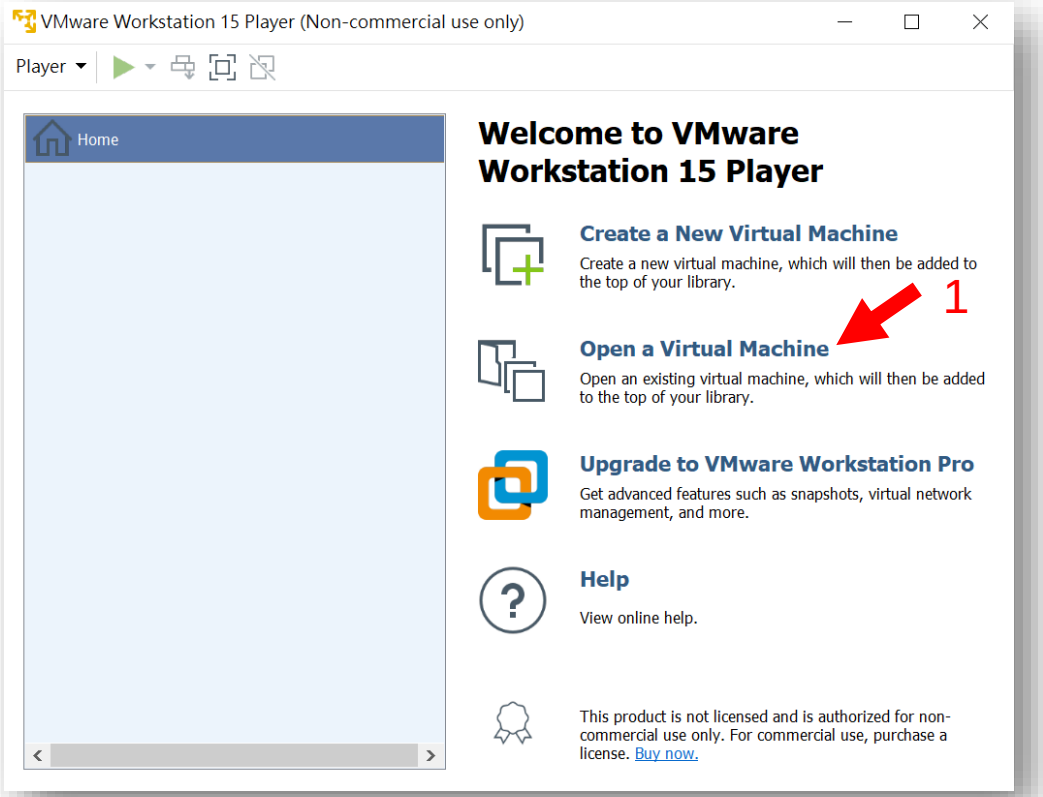


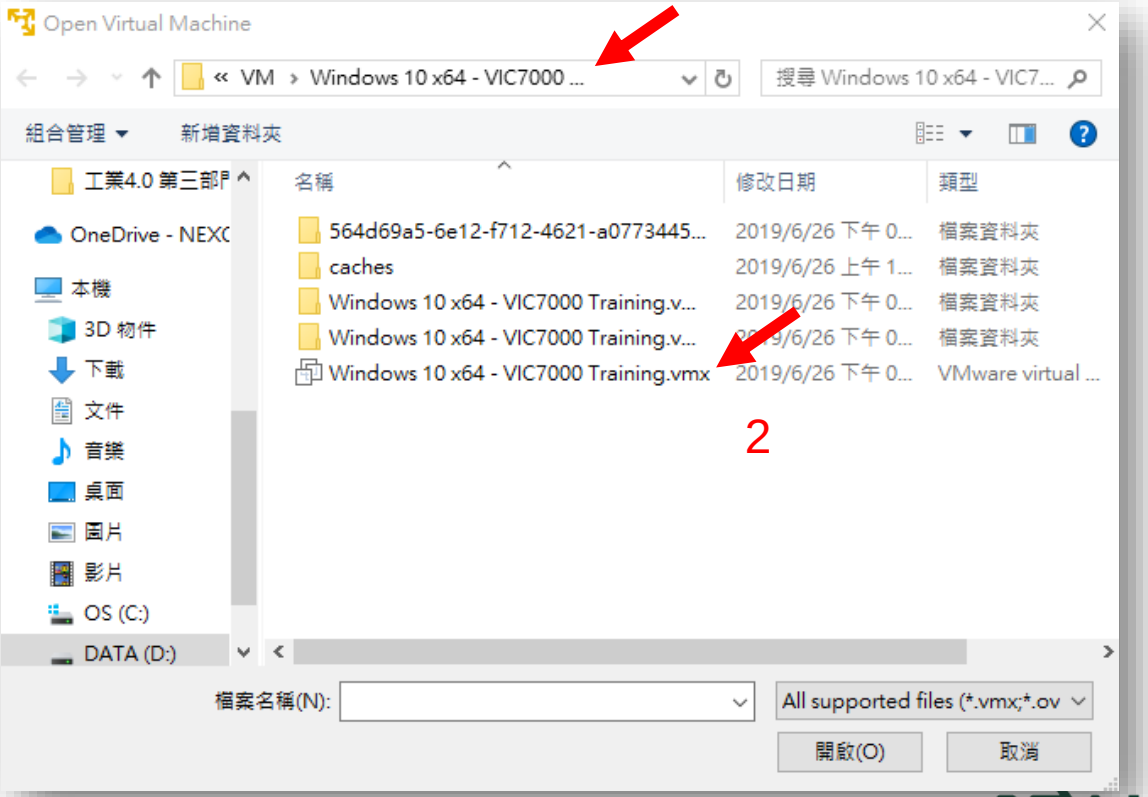


Software Installation – VMware

- **Play Virtual Machine**

  1. Play VM : Click on **Open a New Virtual Machine** → Choose **Windows 10 x64 – VIC7000 Training.vmx** in the folder named **Windows 10 x64 – VIC7000 Training**

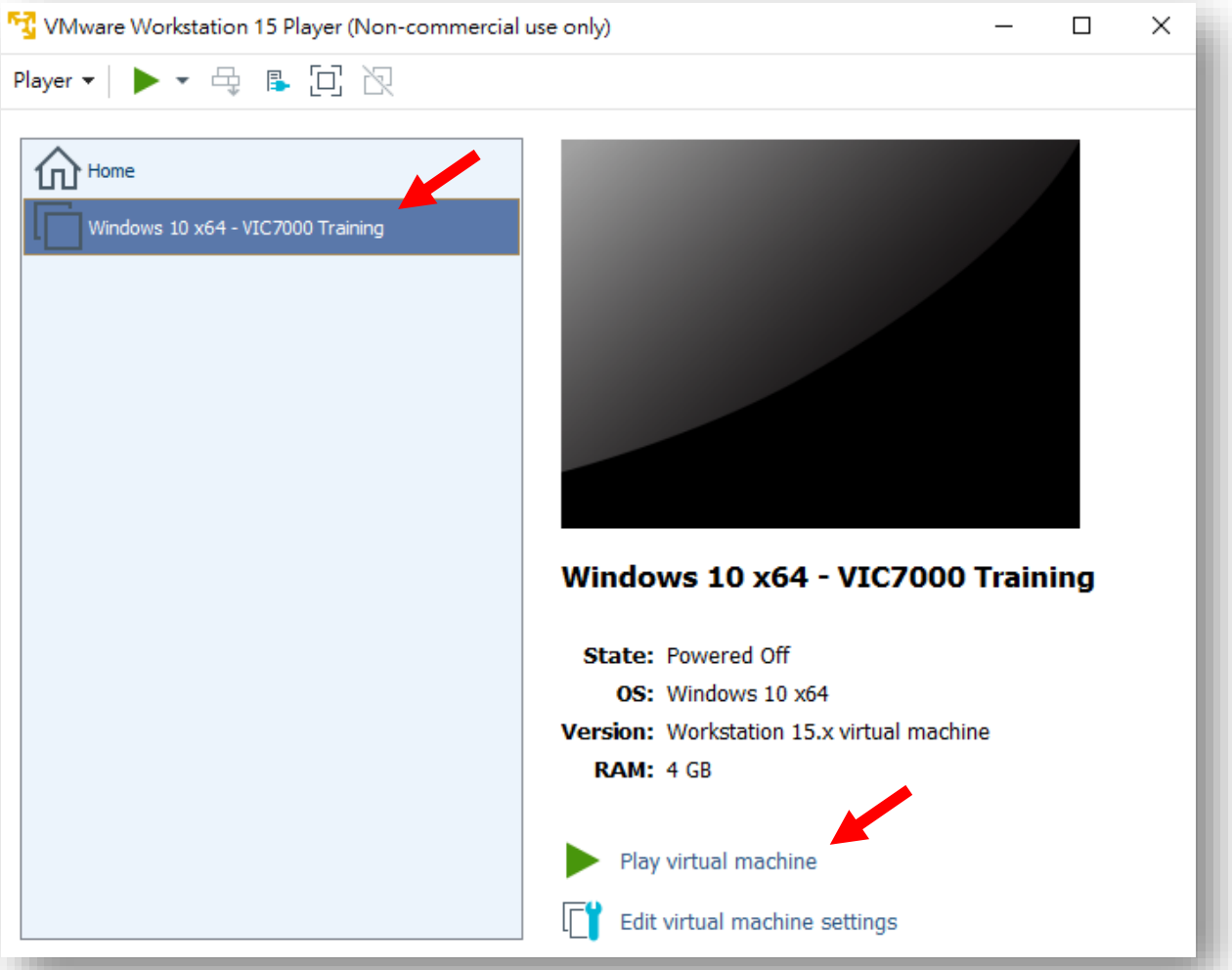


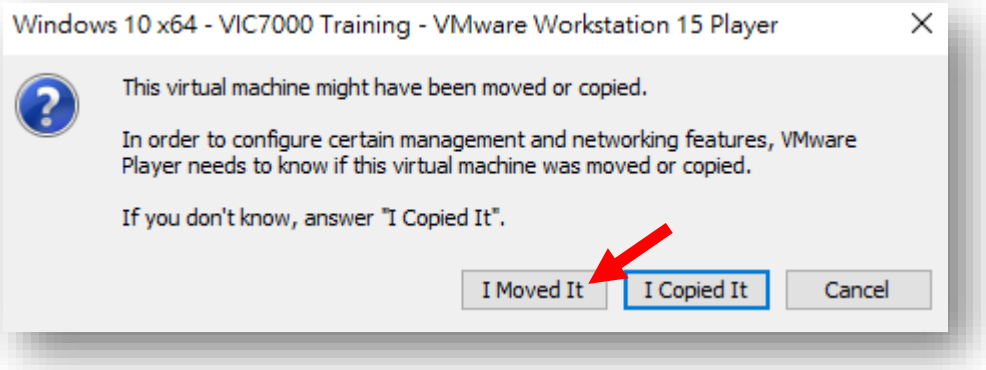


Software Installation – VMware

- **Play Virtual Machine**

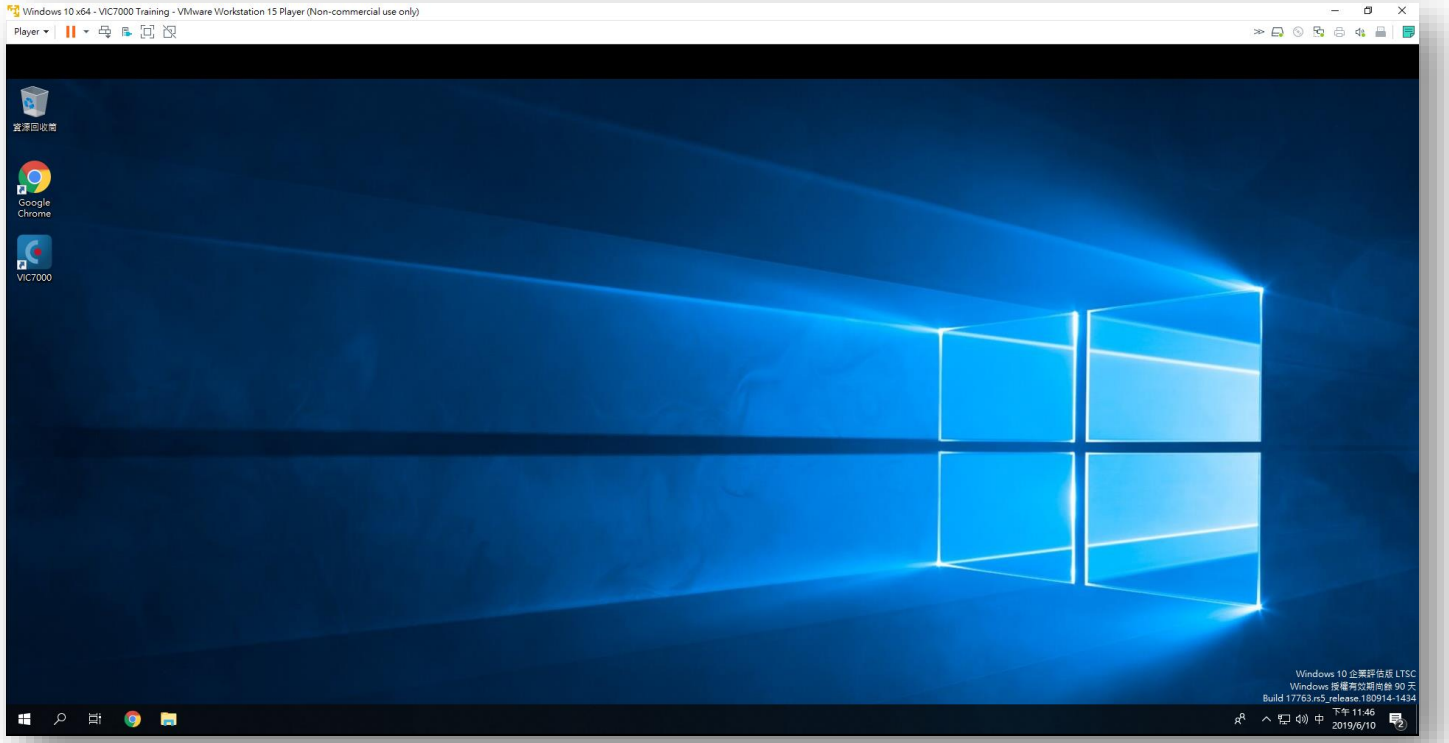
  2. Play VM : Select the new VM → Click **Play virtual machine** → Click **I Moved It**

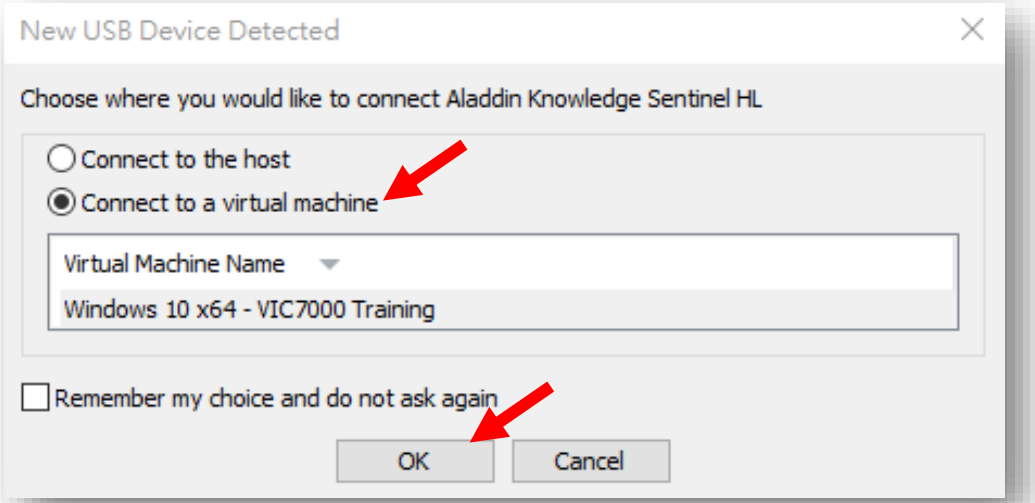




Software Installation – VIC7000

- **Execute VIC7000**
  1. Plug in Training Dongle : Choose **Connect to a virtual machine**



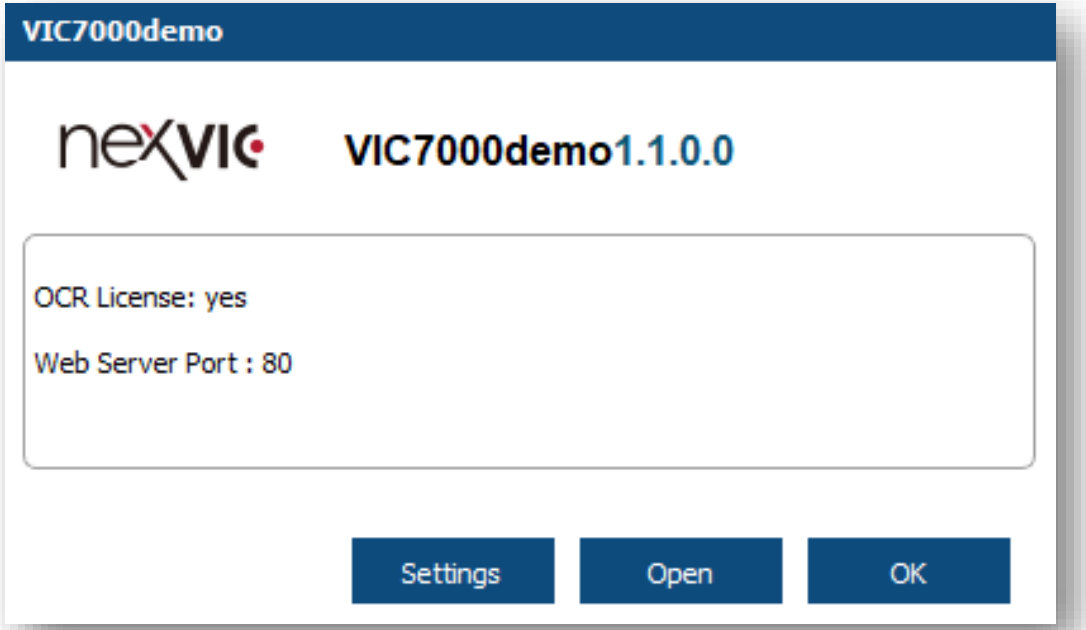


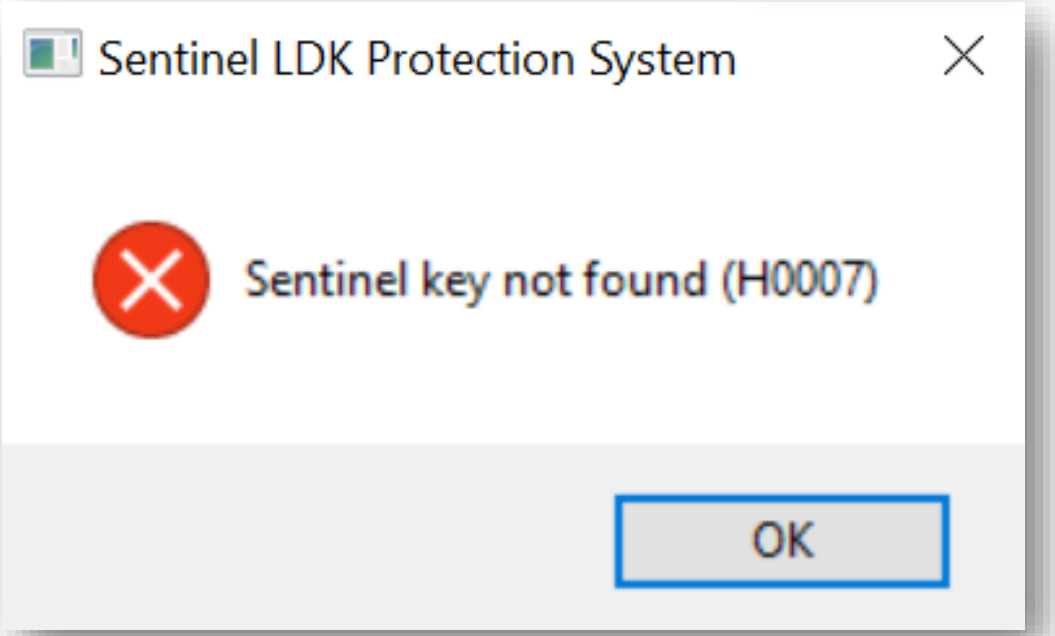
Software Installation – VIC7000

- **Execute VIC7000**

  2. Execute VIC7000 : Click the shortcut of VIC7000 on your desktop

  If an error window shows up, you need to check whether the USB dongle is actually plugged in, lit, linked to the VM or not.

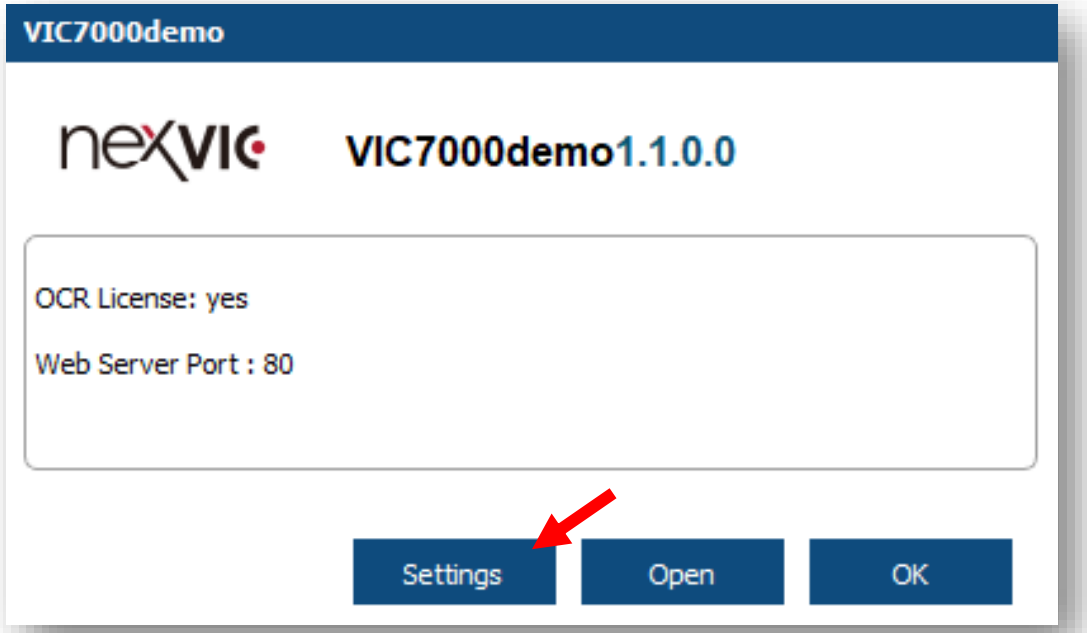


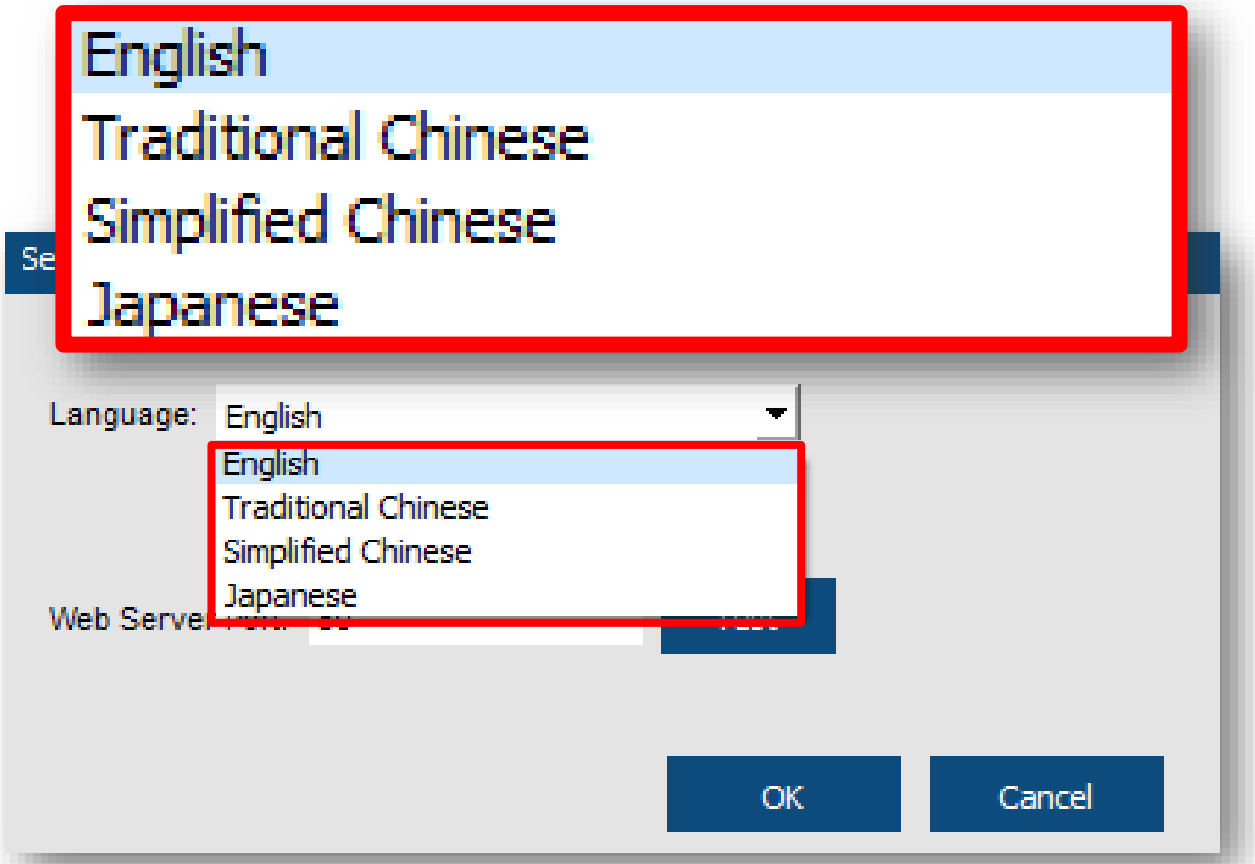


Software Installation – VIC7000

- **Language**

  Click **Settings**, and choose a suitable software language



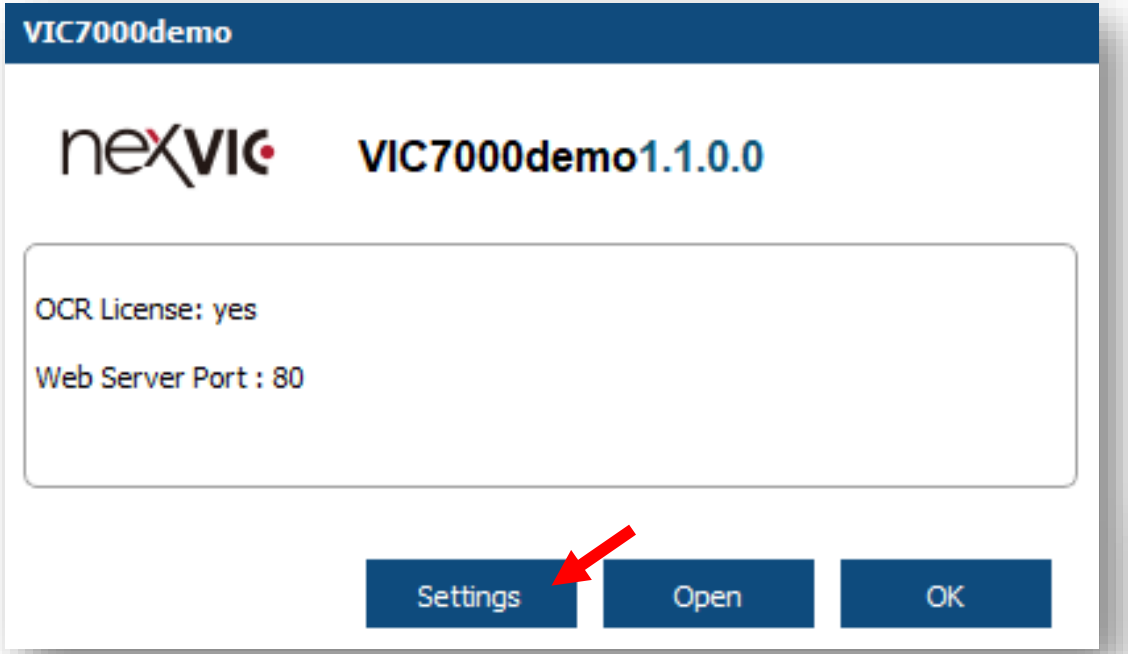


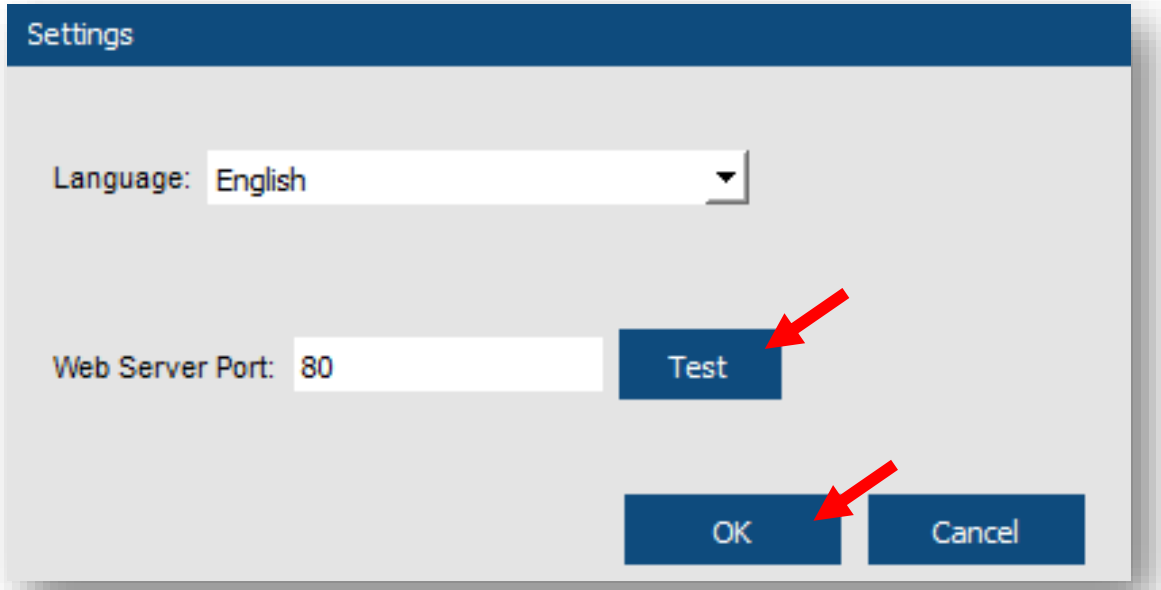
Software Installation – VIC7000

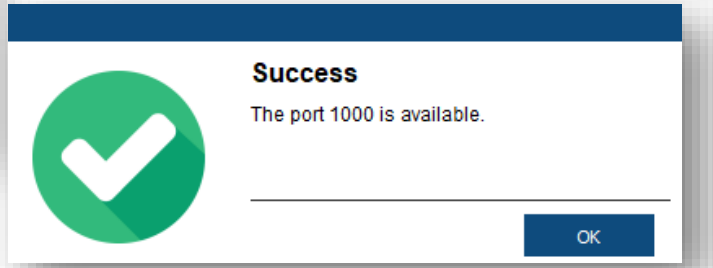
- **Port**

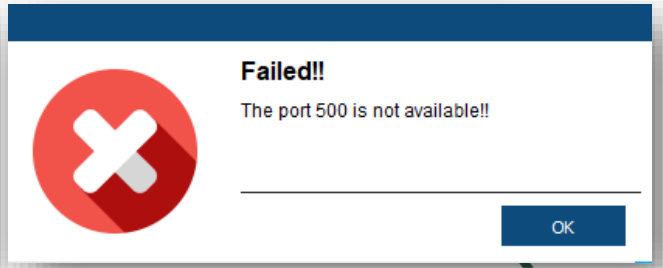
  Click **Settings** → **Web Server Port.** Default port is **80.**

  To set a new port, please make sure that it is available. Click on **Test** to check, hit **OK** to continue.









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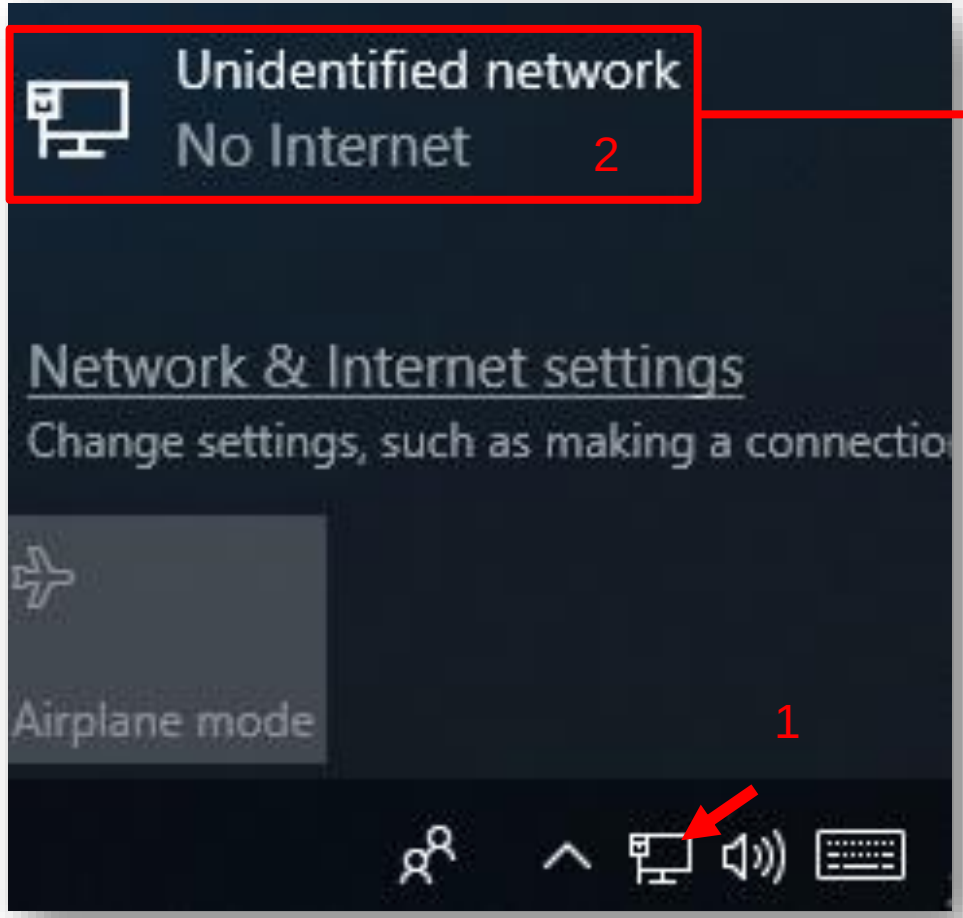
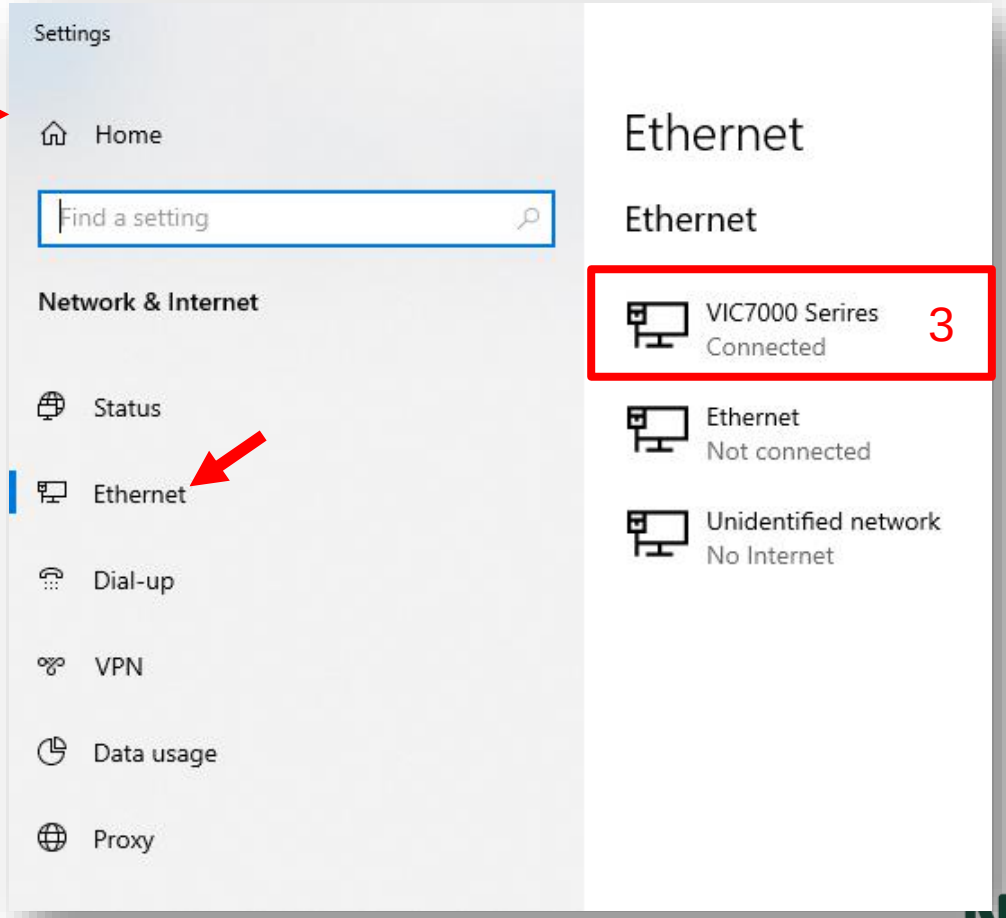
Build Project – Get IP

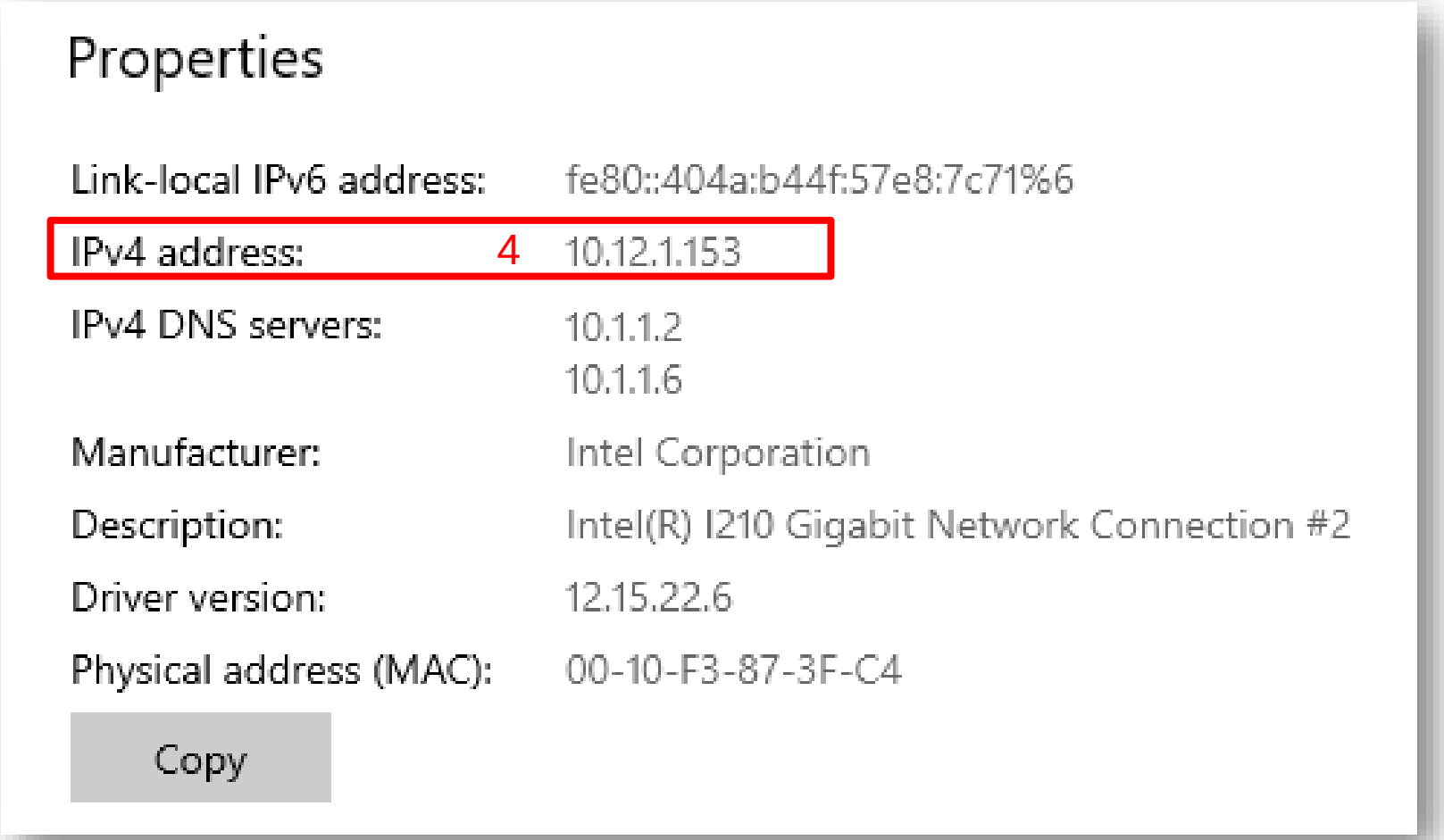
- **Get IP – Virtual Machine**
  - Get Remote IP: Go to the **network status** page then select used connection in **Ethernet**





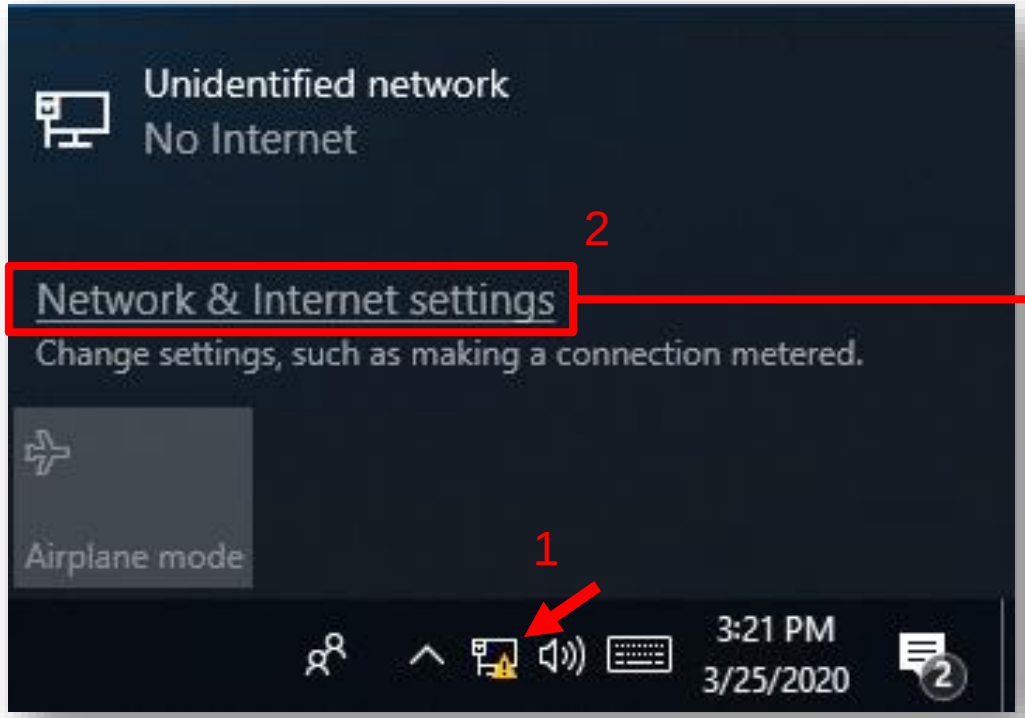
Build Project – Get IP

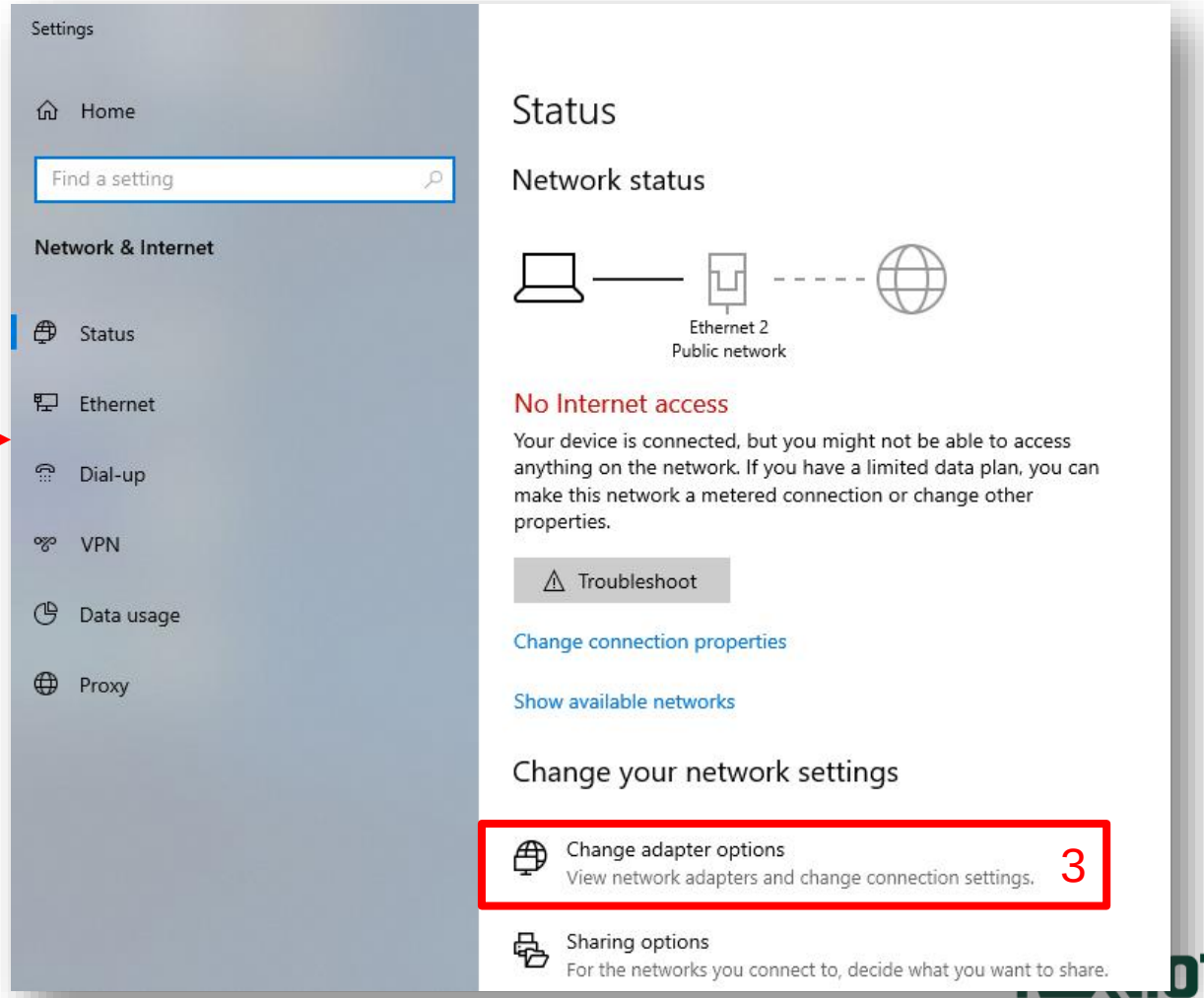
- **Get IP – Virtual Machine**
  - Get Remote IP : **IPv4 address** is the IP address of VIC7000 server as shown below



Build Project – Get IP

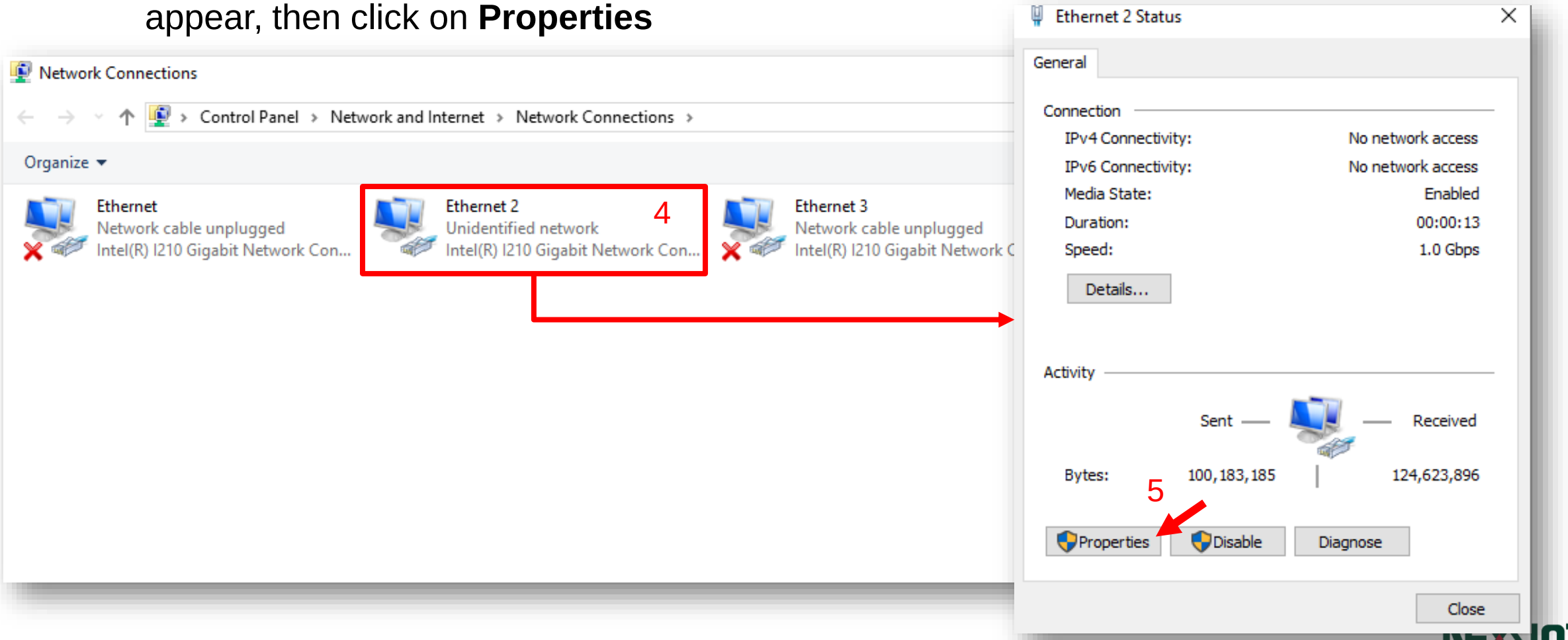
- **Get IP – Real Machine**
  - Set Static IP : Click on **Network & Internet settings**, the Setting window will appear, then choose **Change adapter options**





Build Project – Get IP

- **Get IP – Real Machine**
  - Set Static IP : Double-click on **desired adapter**, the **Status** of the adapter window will appear, then click on **Properties**



Build Project – Get IP

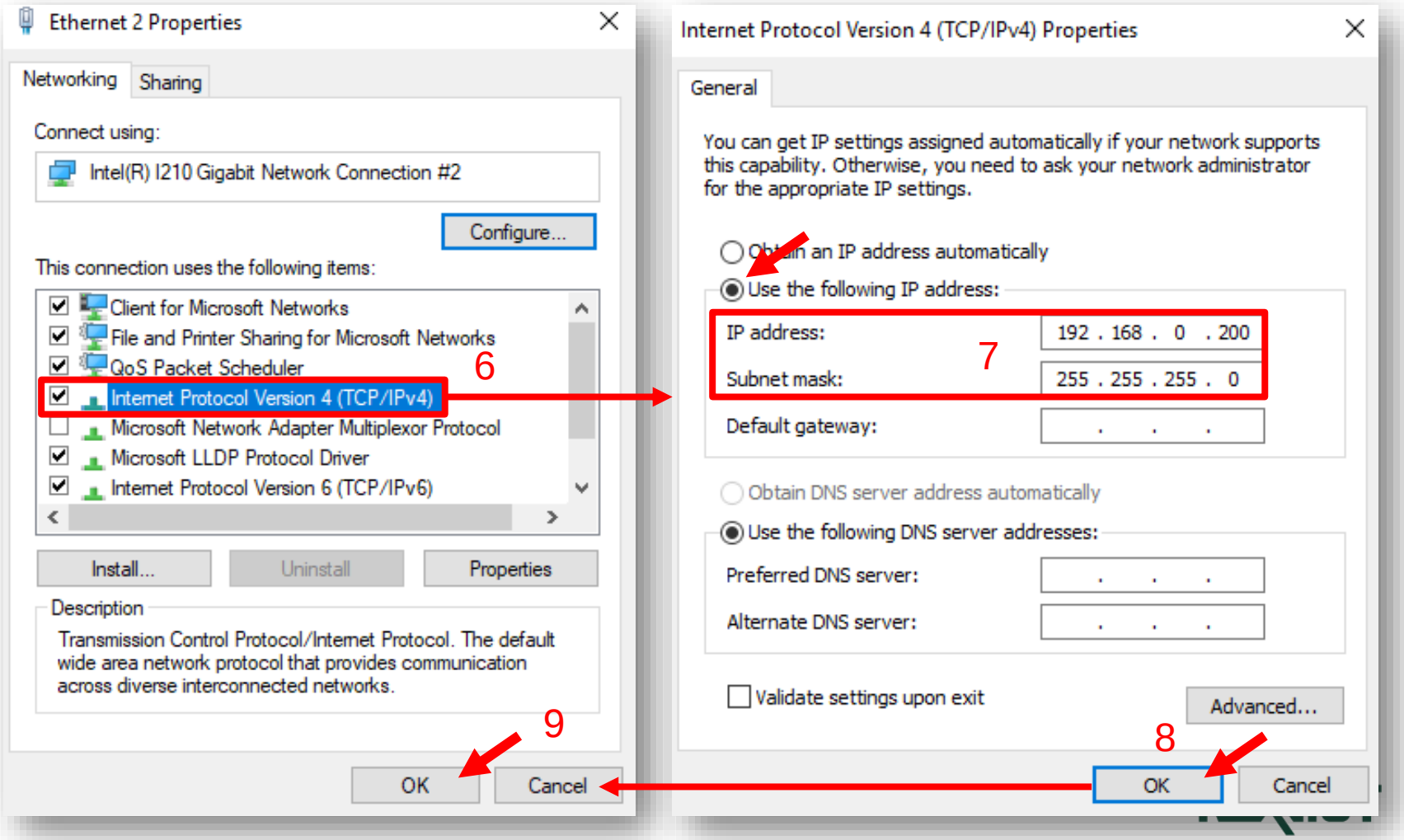
- **Get IP – Real Machine**
  - Set Static IP : Double-click on **Internet Protocol Version 4 (TCP/IPv4)**, set **IP address** and **Subnet mask**

  Finally, click on **OK**

The set IP address must be in the domain same with the IP address of the connecting computer

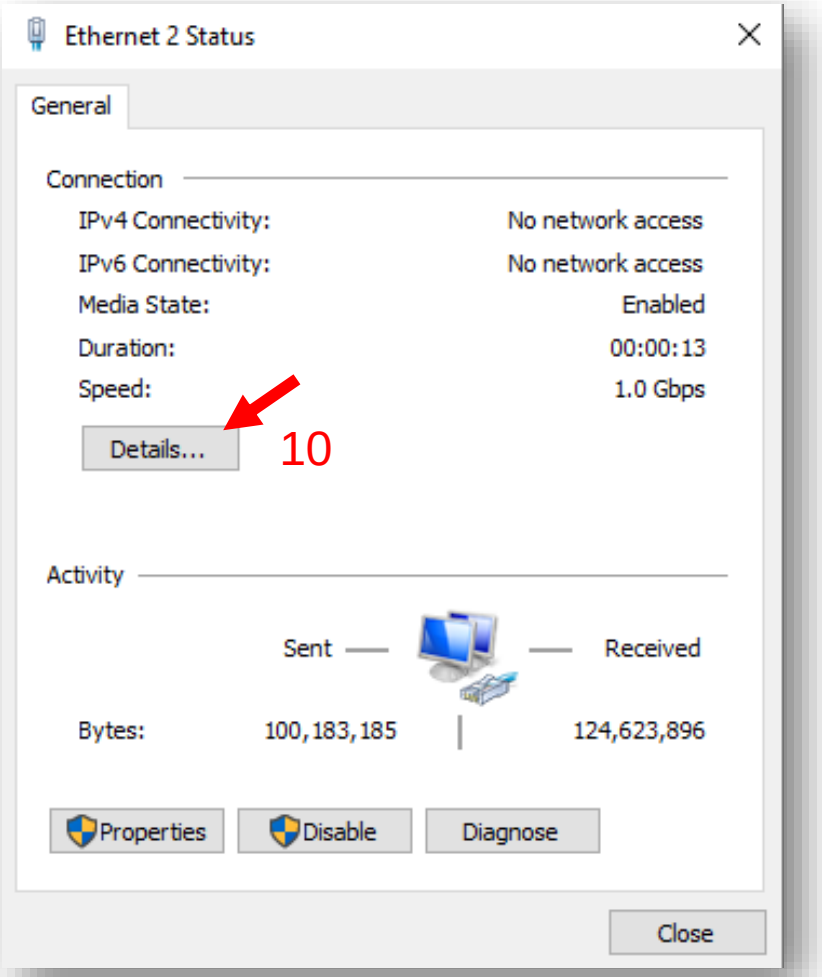
In other words, the first three fields must be the same

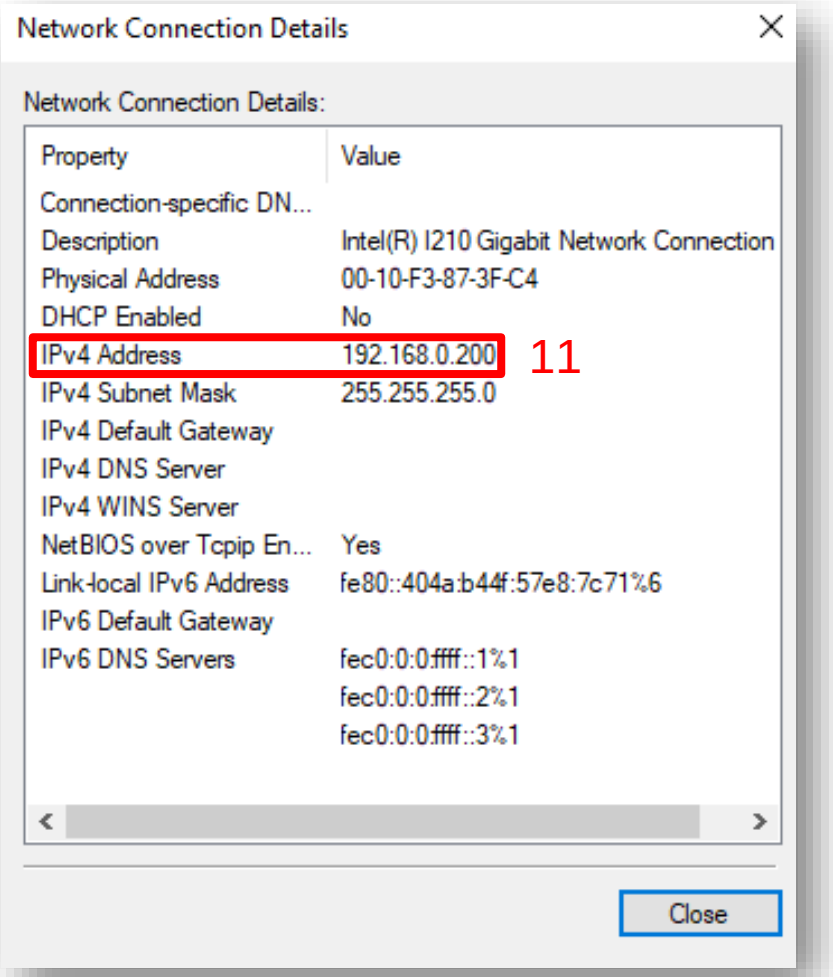
For this example, the IP address of a connecting computer must be 192.168.0.n, with n ranges from 1 to 255 and must not be repeated



Build Project – Get IP

- **Get IP – Real Machine**
  - Set Static IP : Click on **Details…** in Status window, then set IP address will appear

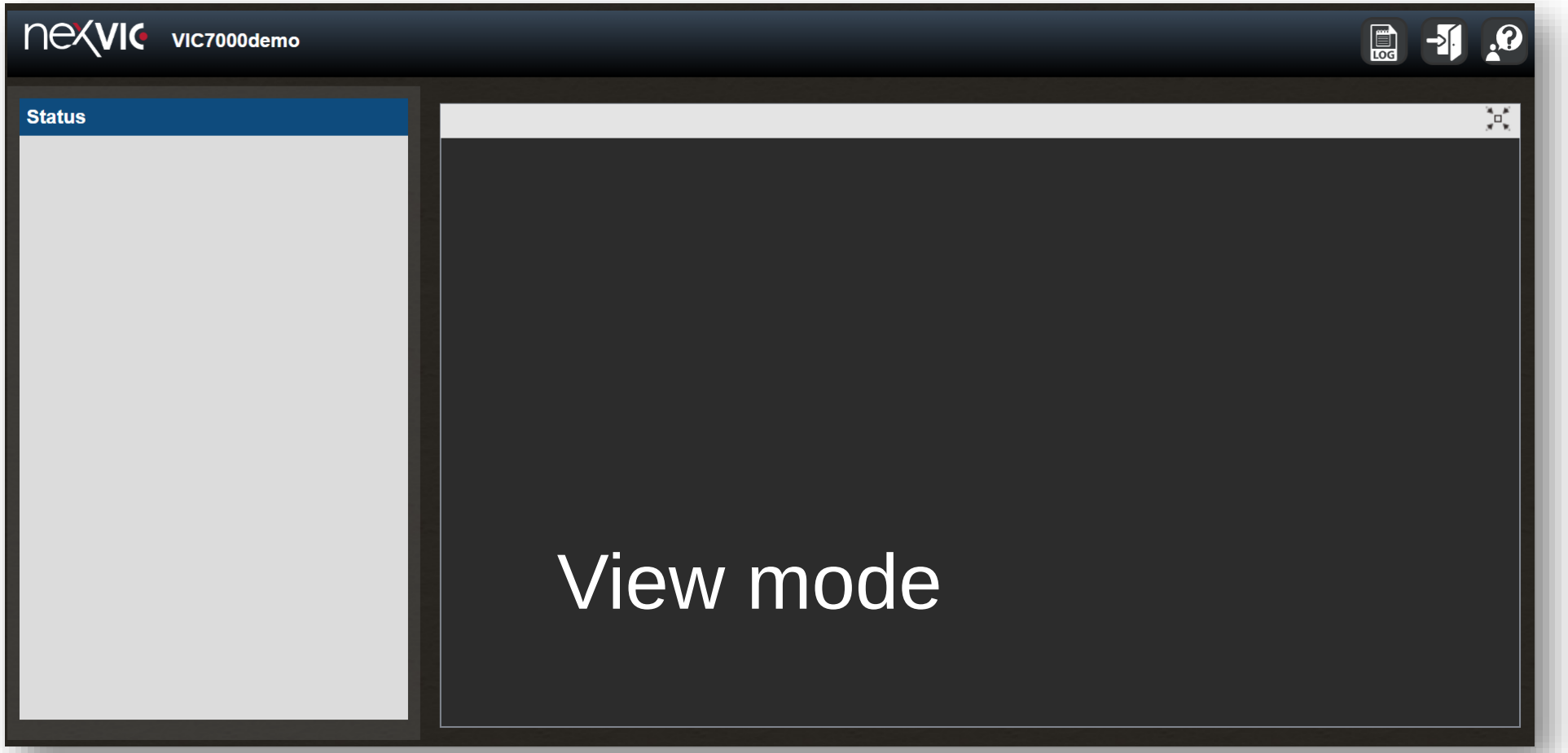




Build Project – Login

- **Entry to VIC7000**
  1. Open browser : Google Chrome or Microsoft Edge
  2. Enter Server IP:port in URL field : By default, port is not required

192.168.133.136

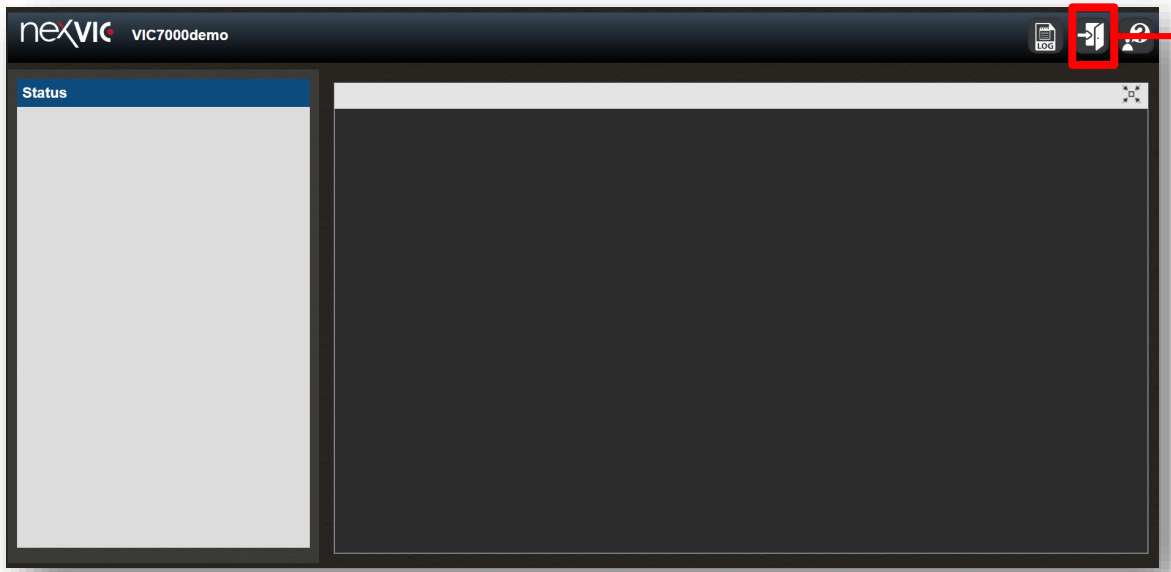


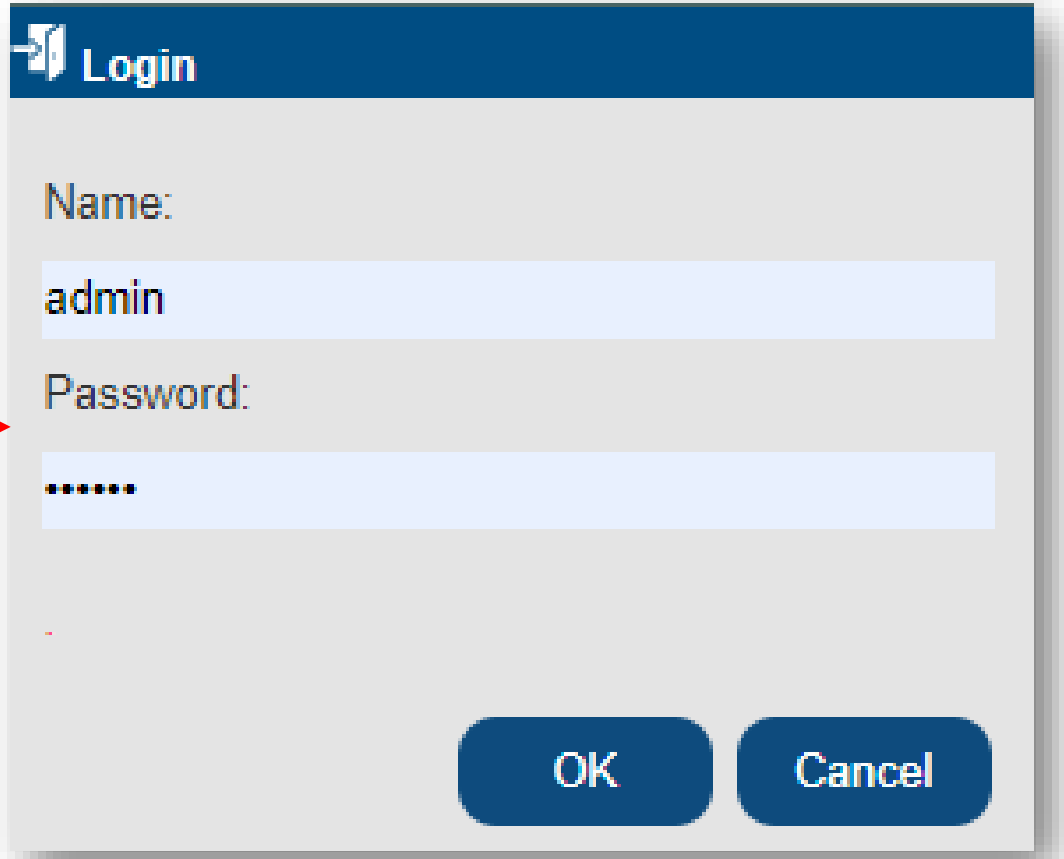
Build Project – Login

- **Login VIC7000**
  1. Click Login button in the top-right corner
  2. Enter user or administrator name and password

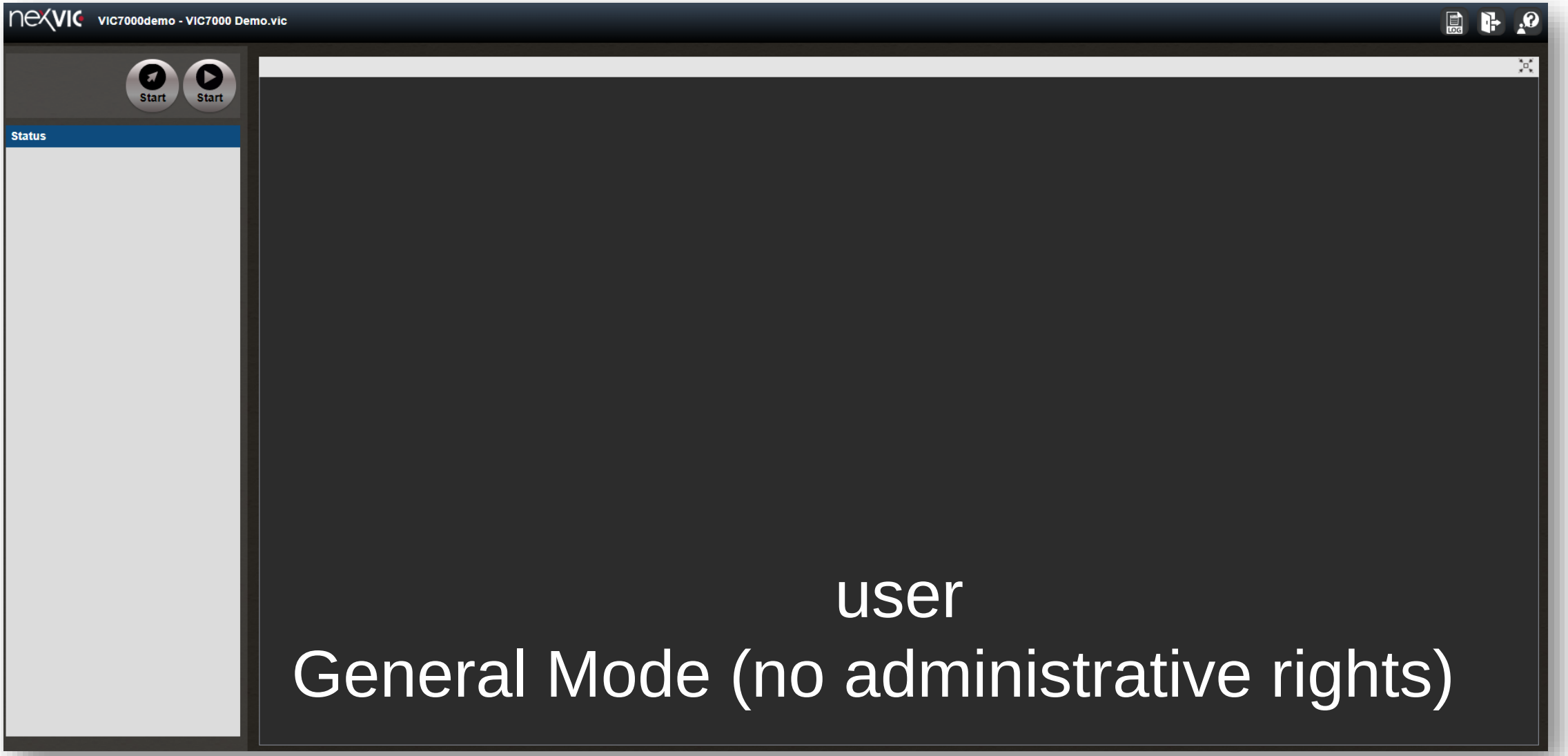
User name is **user**, administrator name is **admin**, and their default password is **123456**

If an admin logs in and stays idle for more than 30 mins, he will be forced to logout



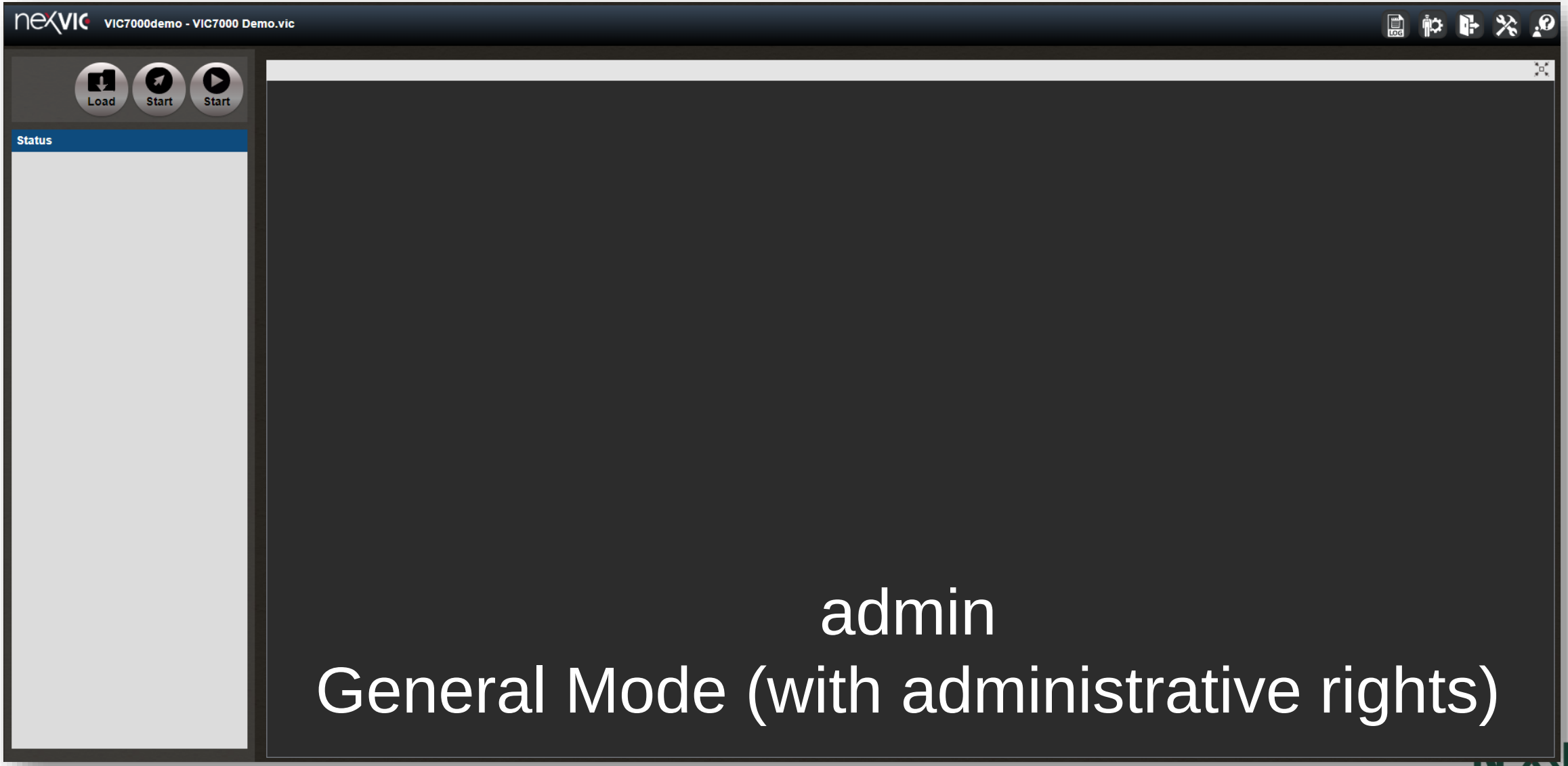


Build Project – Login



user
General Mode (no administrative rights)

Build Project – Login

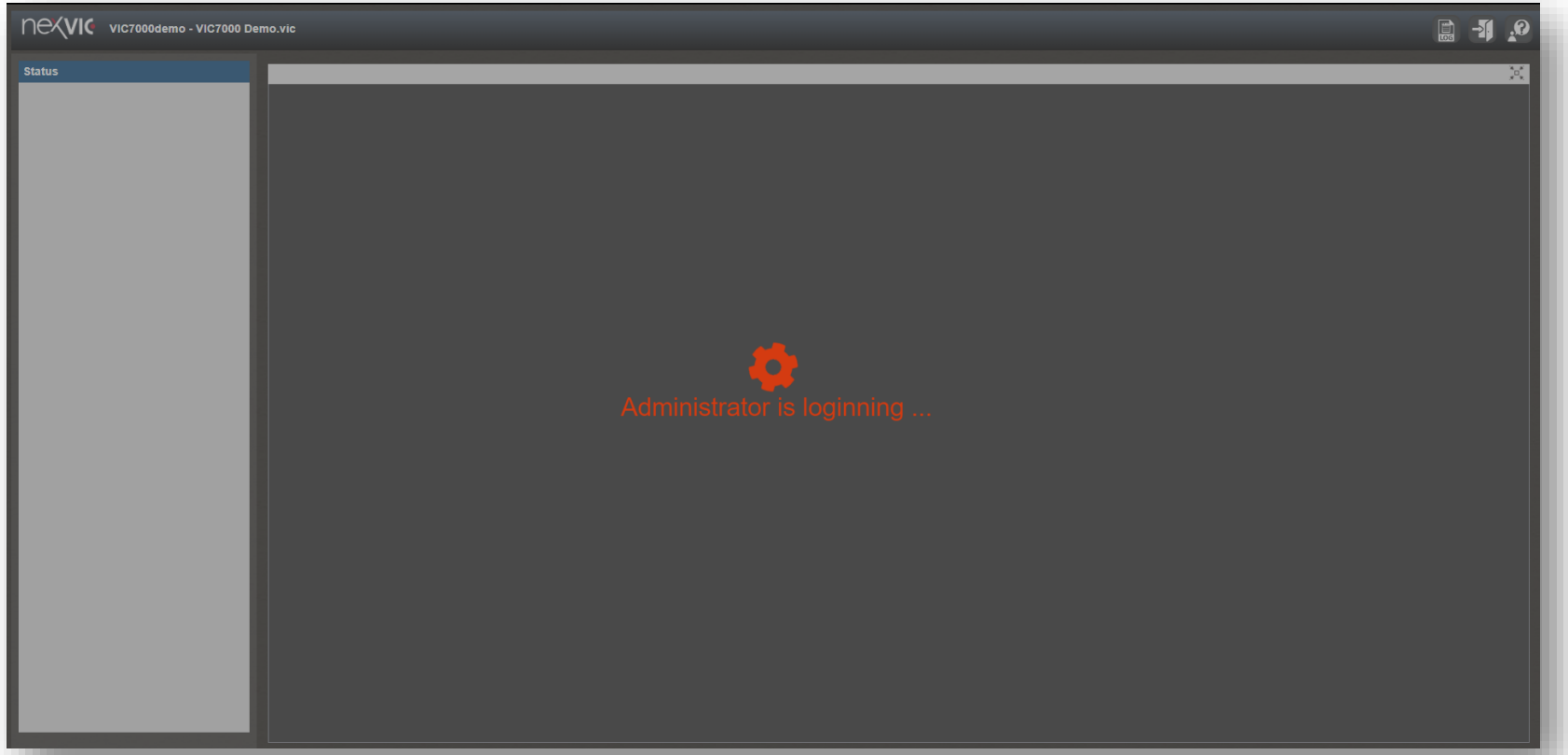


admin

General Mode (with administrative rights)

Build Project – Login

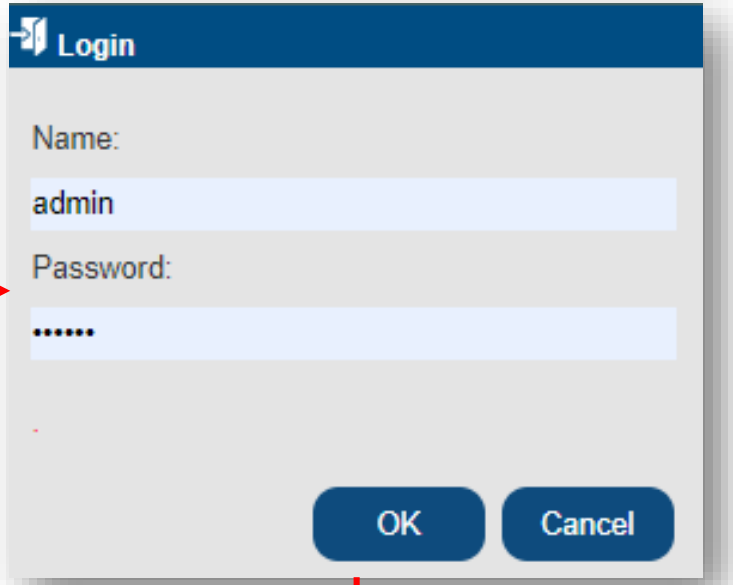
- **Login Limits**
  - Allow up to **16 users** to monitor the operation of VIC7000 in General Mode without administrative rights and View Mode at the same time
  - While **the administrator** logging in VIC7000, other users cannot login, monitor, or operate VIC7000

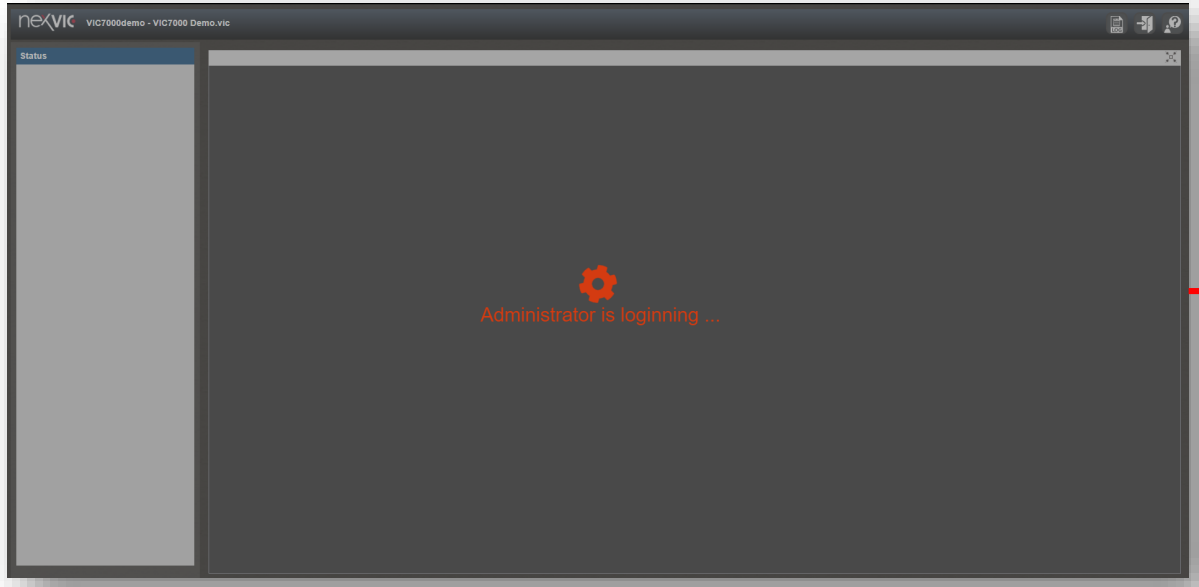


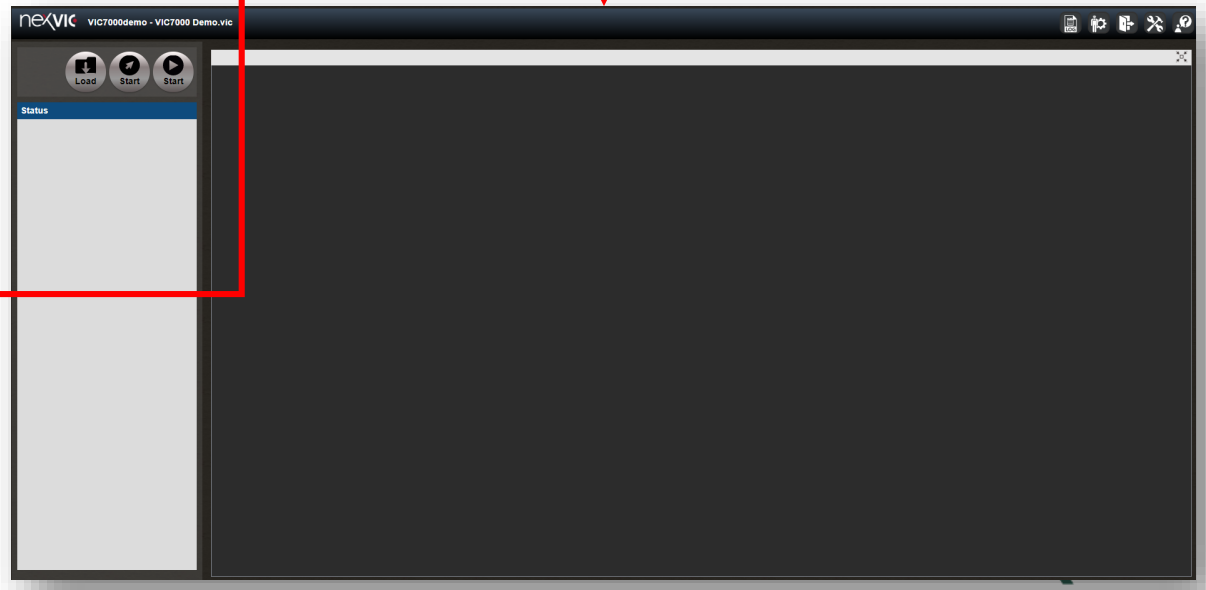
Build Project – Login

- **Replace Login**
  1. Click anywhere on the interface : A login window will show up
  2. Enter administrator name and password
  3. Click OK

  When an administrator successfully logins, the current administrator will be forced to logout.





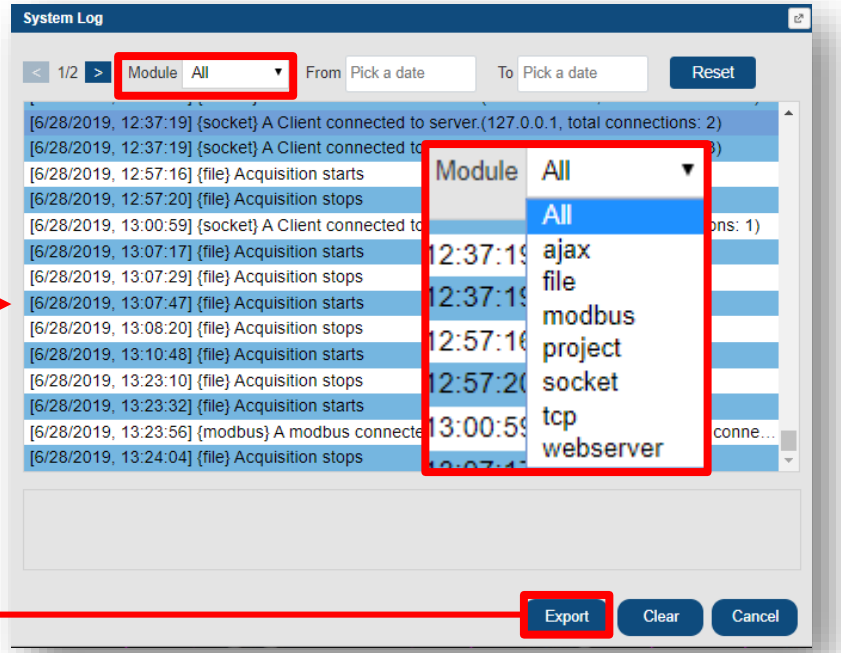


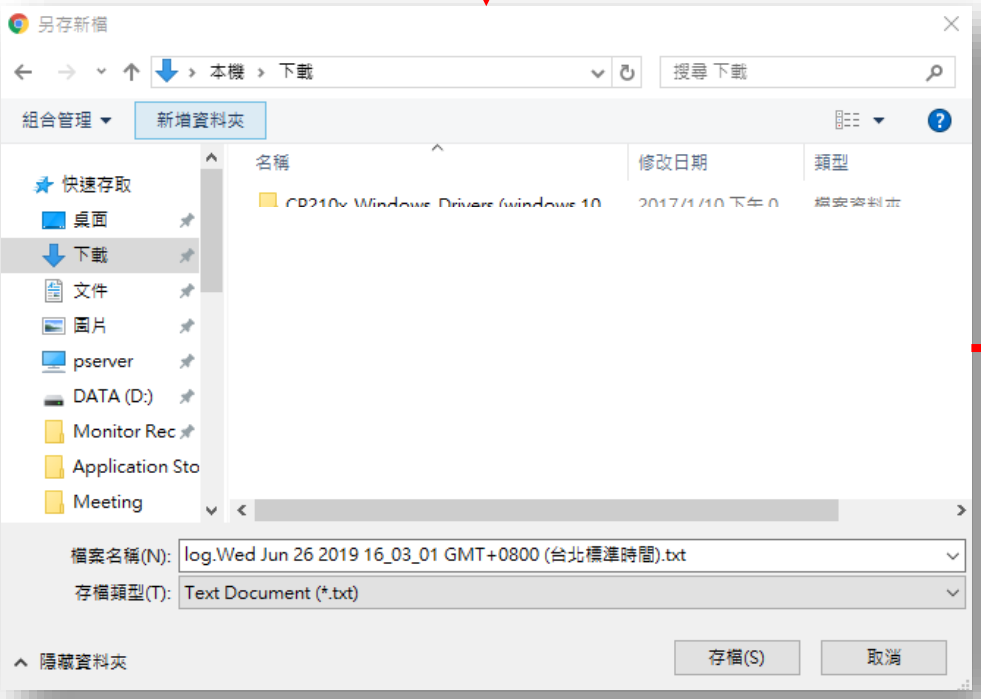
Build Project – Login

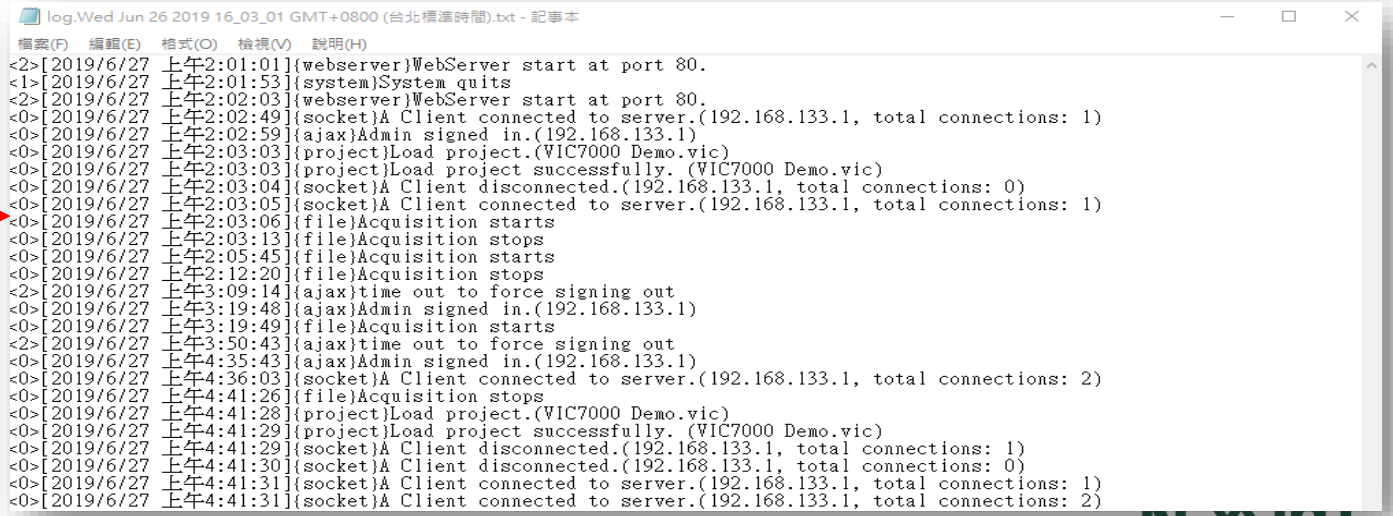
- **Buttons**
  1. Database (only for 7300)
  2. Load Project
  3. Start/stop control
  4. Start/stop project
  5. Log
  6. Administrator mode
  7. Logout
  8. System settings
  9. About

Build Project – Login

- **Log**
  - Record important software information
  - Classified recording message
  - Export as .txt
  - Export path is the download path of the browser

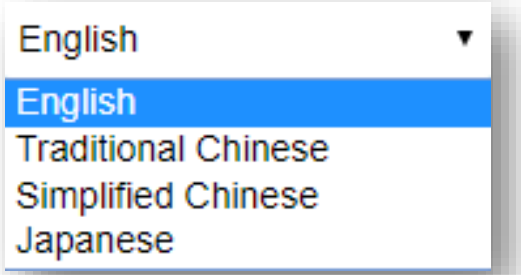


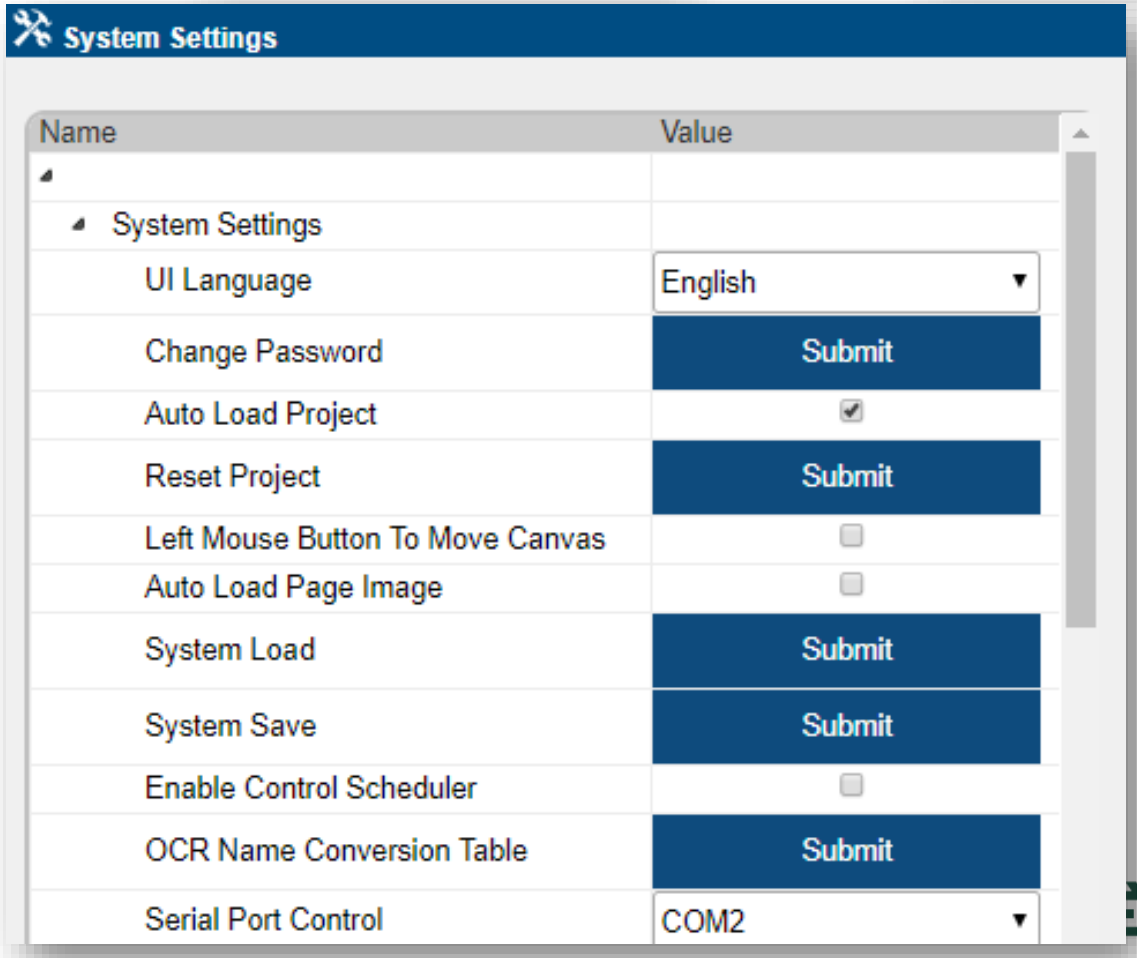




Build Project – Login

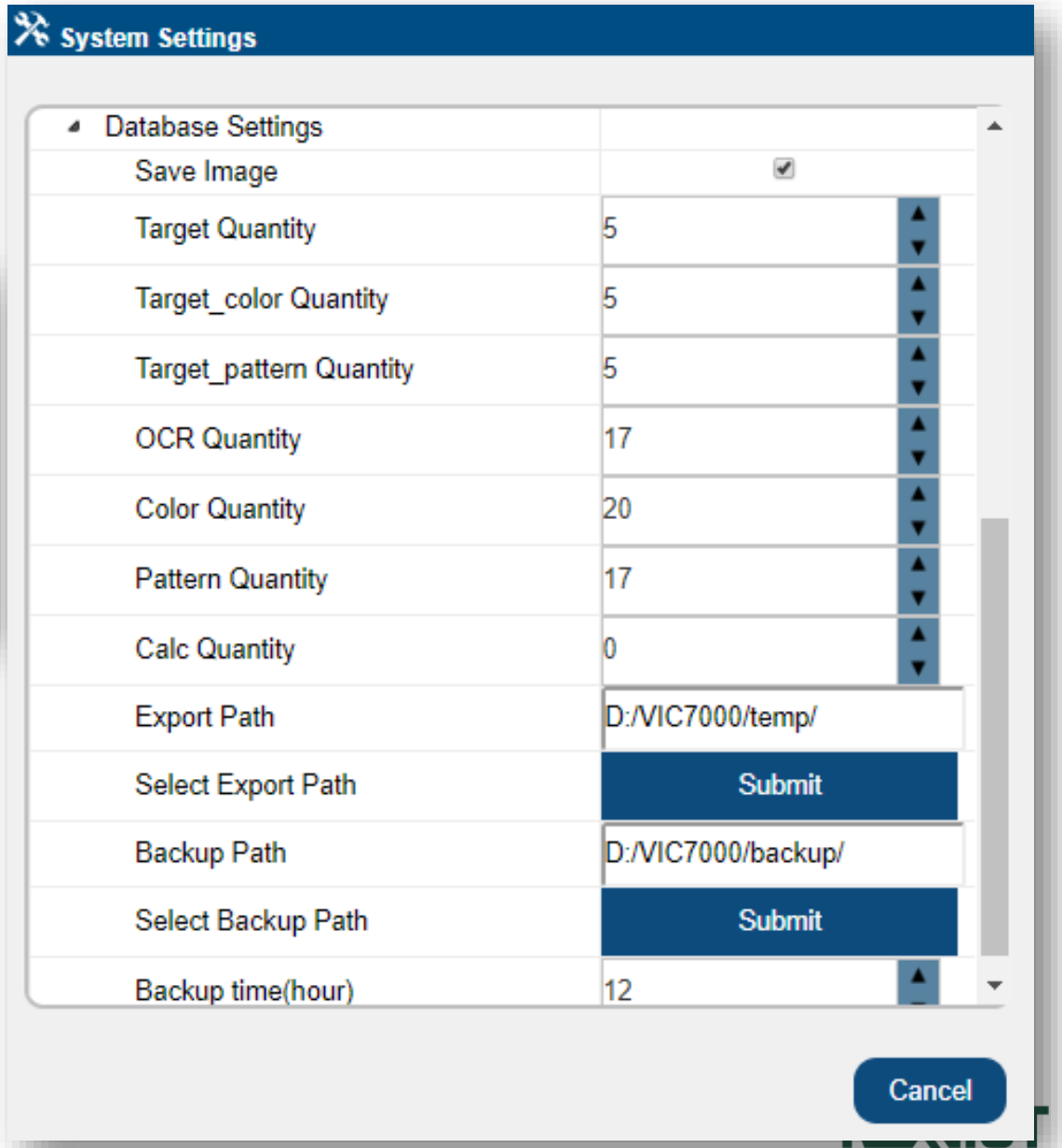
- **System Settings**
  - UI Language - English, Traditional Chinese, Simplified Chinese, Japanese
  - Change Password
  - Auto Load Project
  - Reset Project
  - Left Mouse Button To Move Canvas
  - Auto Load Page Image
  - System Load
  - System Save
  - Enable Control Scheduler
  - OCR Name Conversion Table
  - Serial Port Control





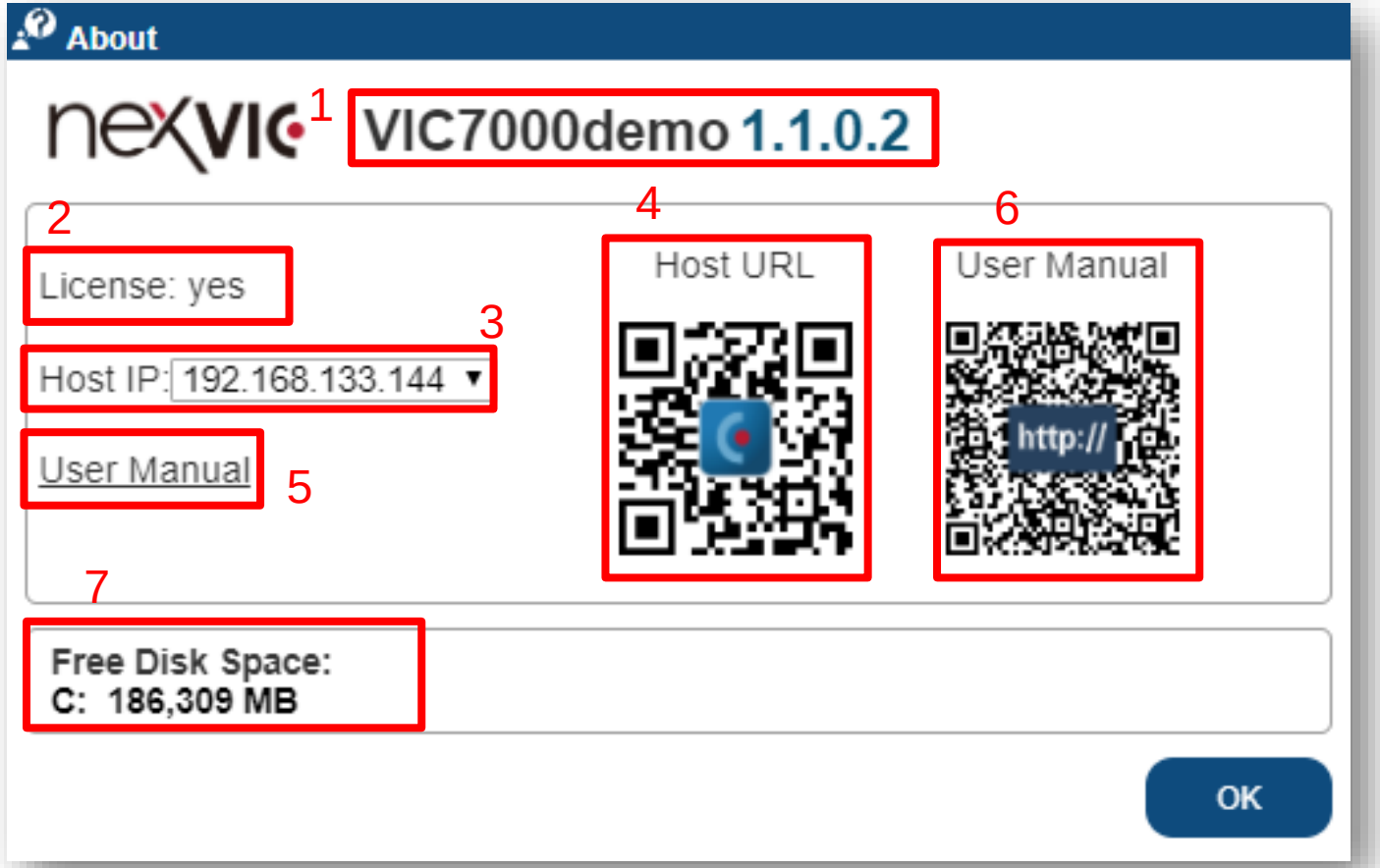
Build Project – Login

- **Database Settings**
  - Whether Save Image when recognition failed
  - Target Quantity
  - Target_color Quantity
  - Target_pattern Quantity
  - OCR Quantity
  - Color Quantity
  - Pattern Quantity
  - Calc Quantity
  - Export Path & Select Export Path
  - Backup Path & Select Backup Path
  - Backup Time (hour)



Build Project – Login

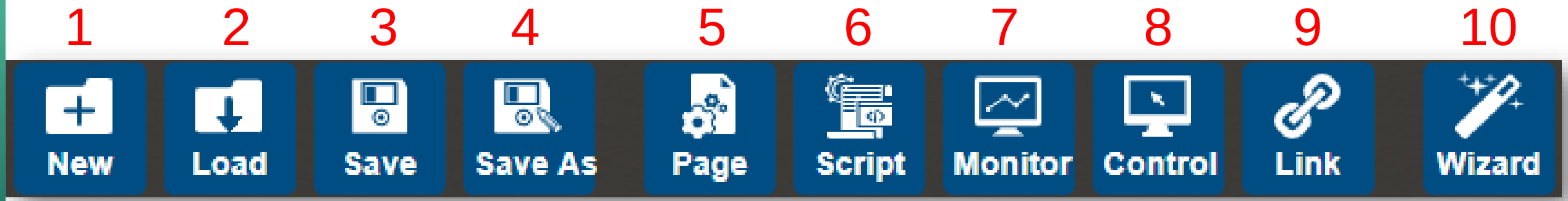
- **About**
  1. Version
  2. Software license check
  3. IP selection field of VIC7000
  4. QR code of link VIC7000
  5. Local user manual link
  6. QR code of online user manual
  7. VIC7000's PC Free Disk Space



Build Project – Login

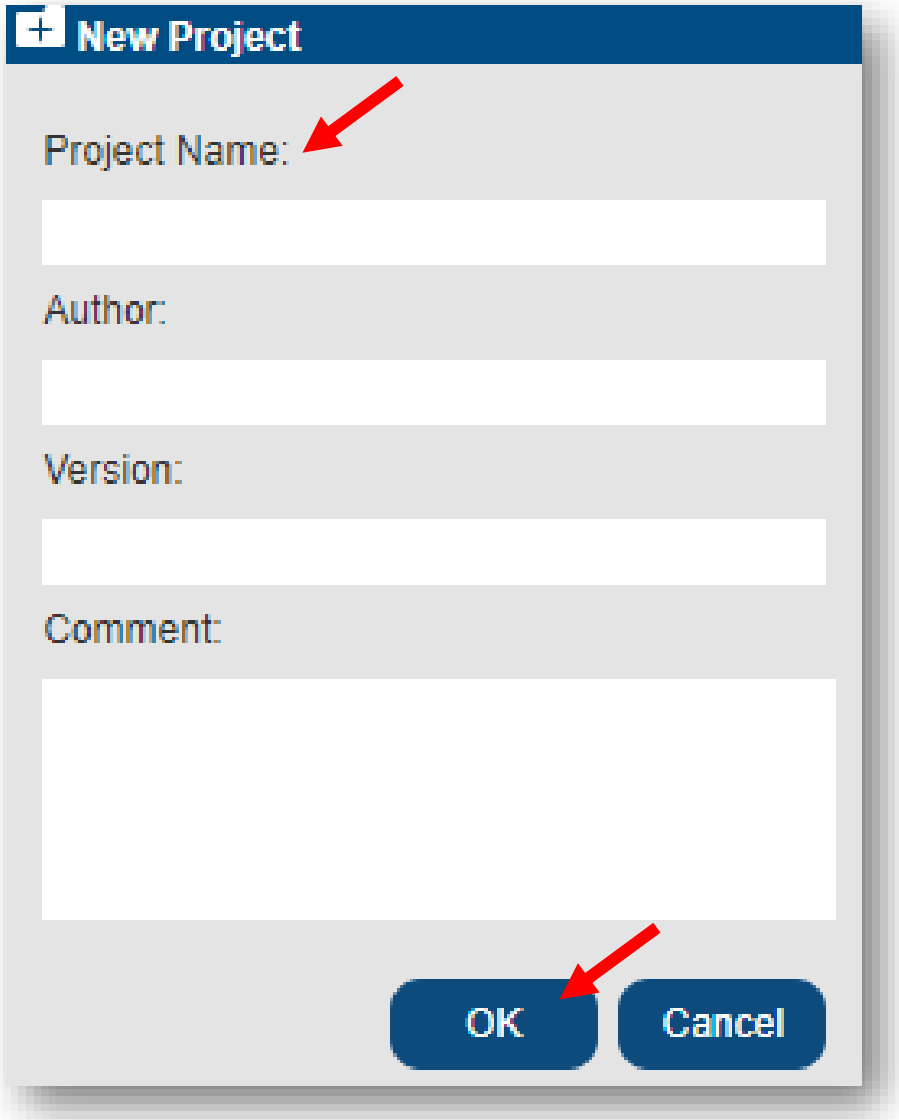
Build Project – Login

- **Buttons**
  1. New project
  2. Load project
  3. Save project
  4. Save as
  5. Recognition config page
  6. Script
  7. Monitor
  8. Control
  9. Link
  10. Wizard



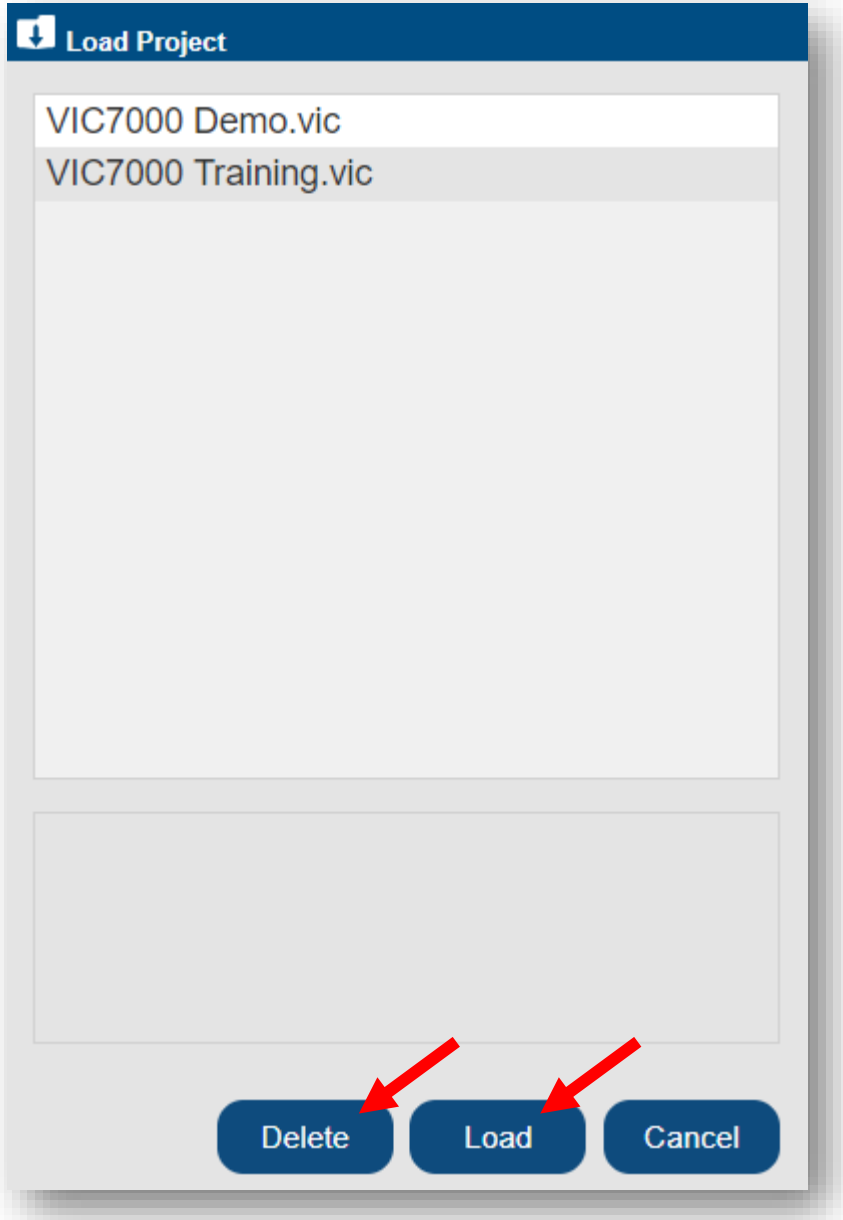
Build Project – New Project

- **New project**
  1. Enter Project Name (Required and Unique)
  2. Click OK
  - Author
  - Version
  - Comment



Build Project – New Project

- **Load Project**
  - Load project
  - Delete project

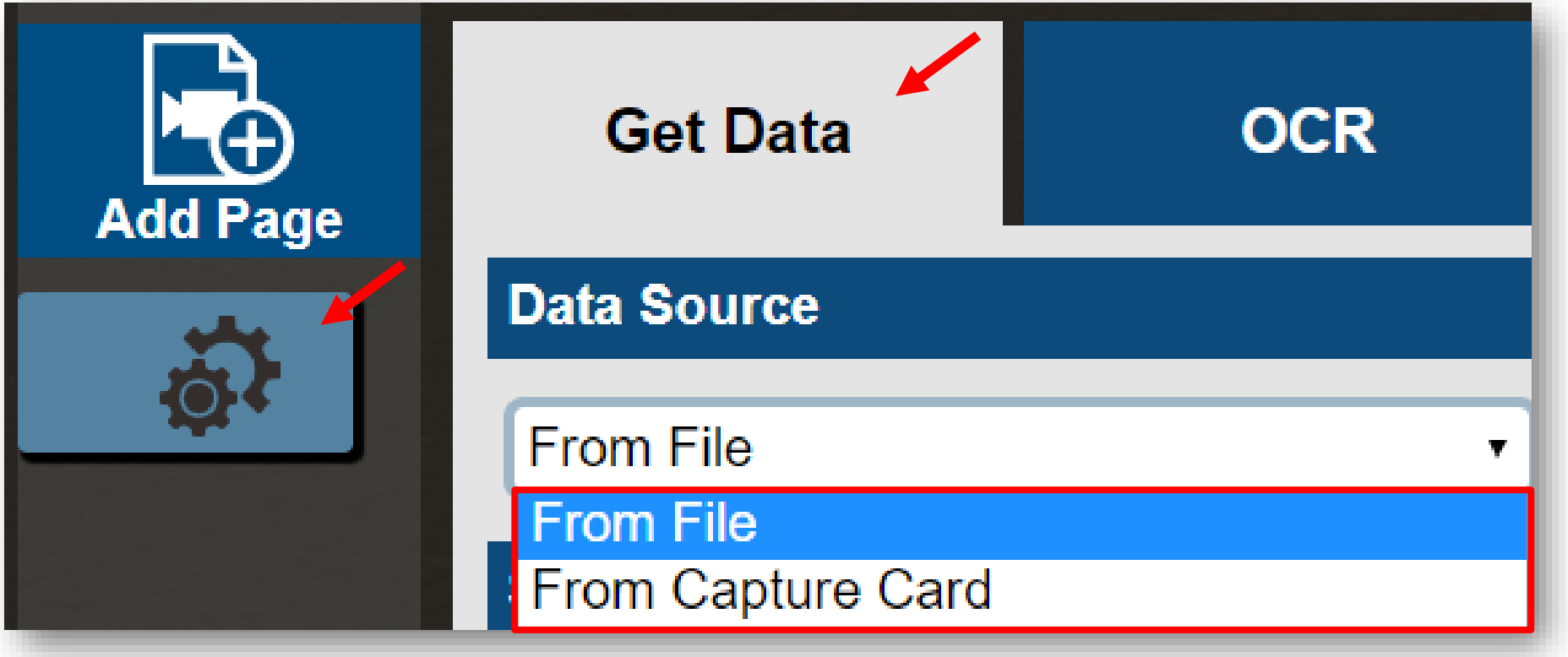


Build Project – New Project

- **Recognition Config Page**

Build Project – Get Data

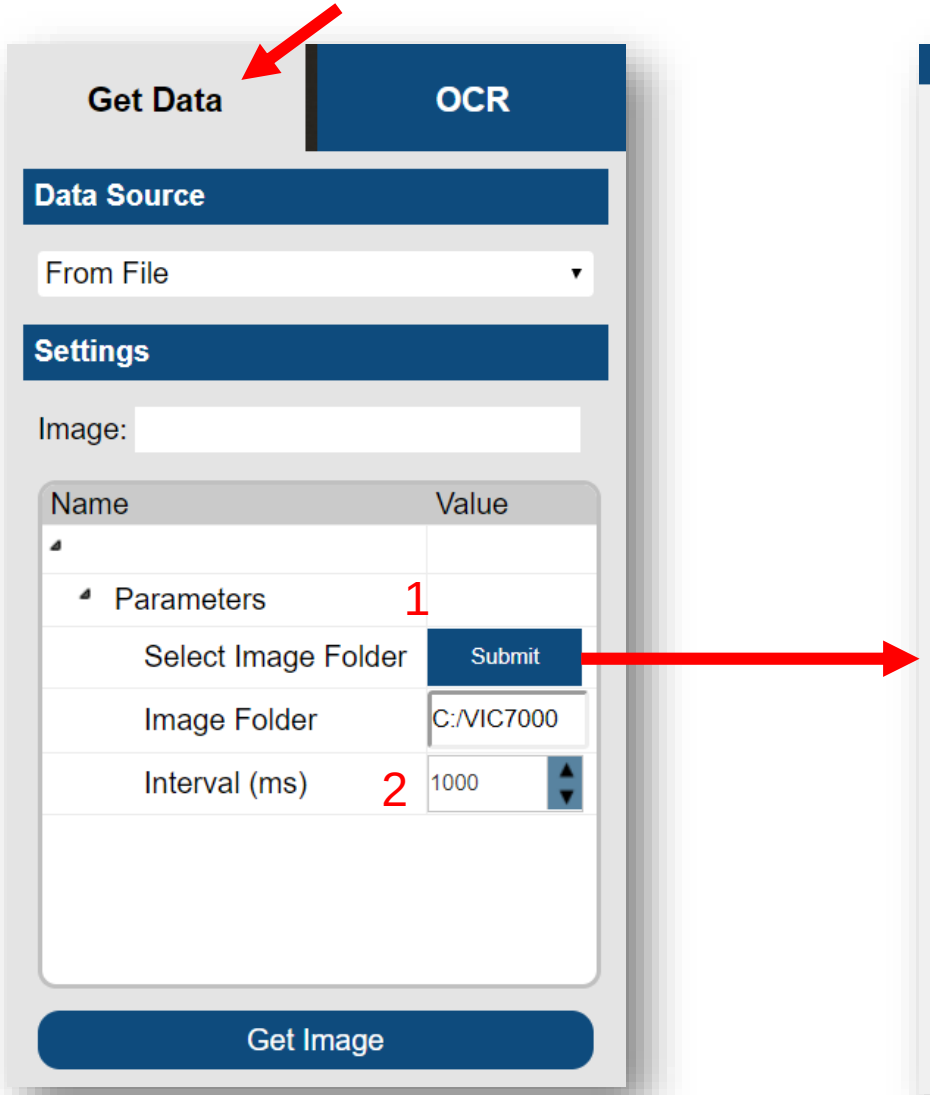
- **Image Source**
  - From File : Read images from a folder (**.bmp** or **.tif**)
  - From Capture Card : Read images captured by capture card

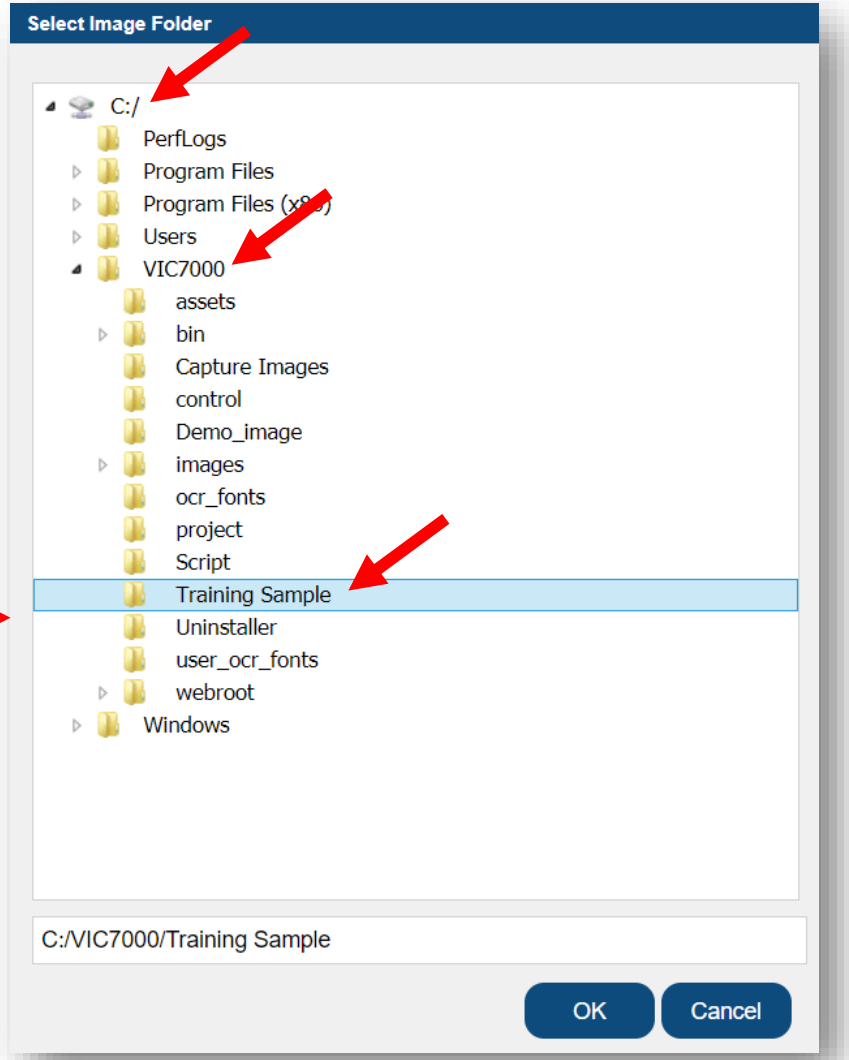


Build Project – Get Data

- **From File**
  1. Select the path of the folder where image is located
  2. Read interval

The folder path is an address inside VIC7000 computer hard drive

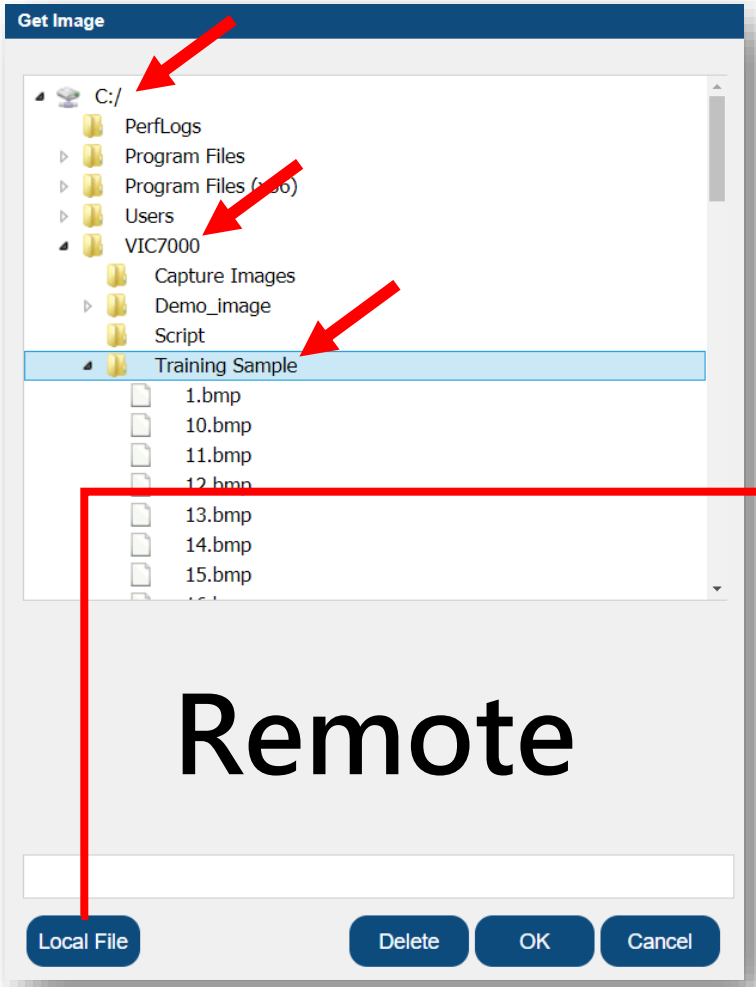


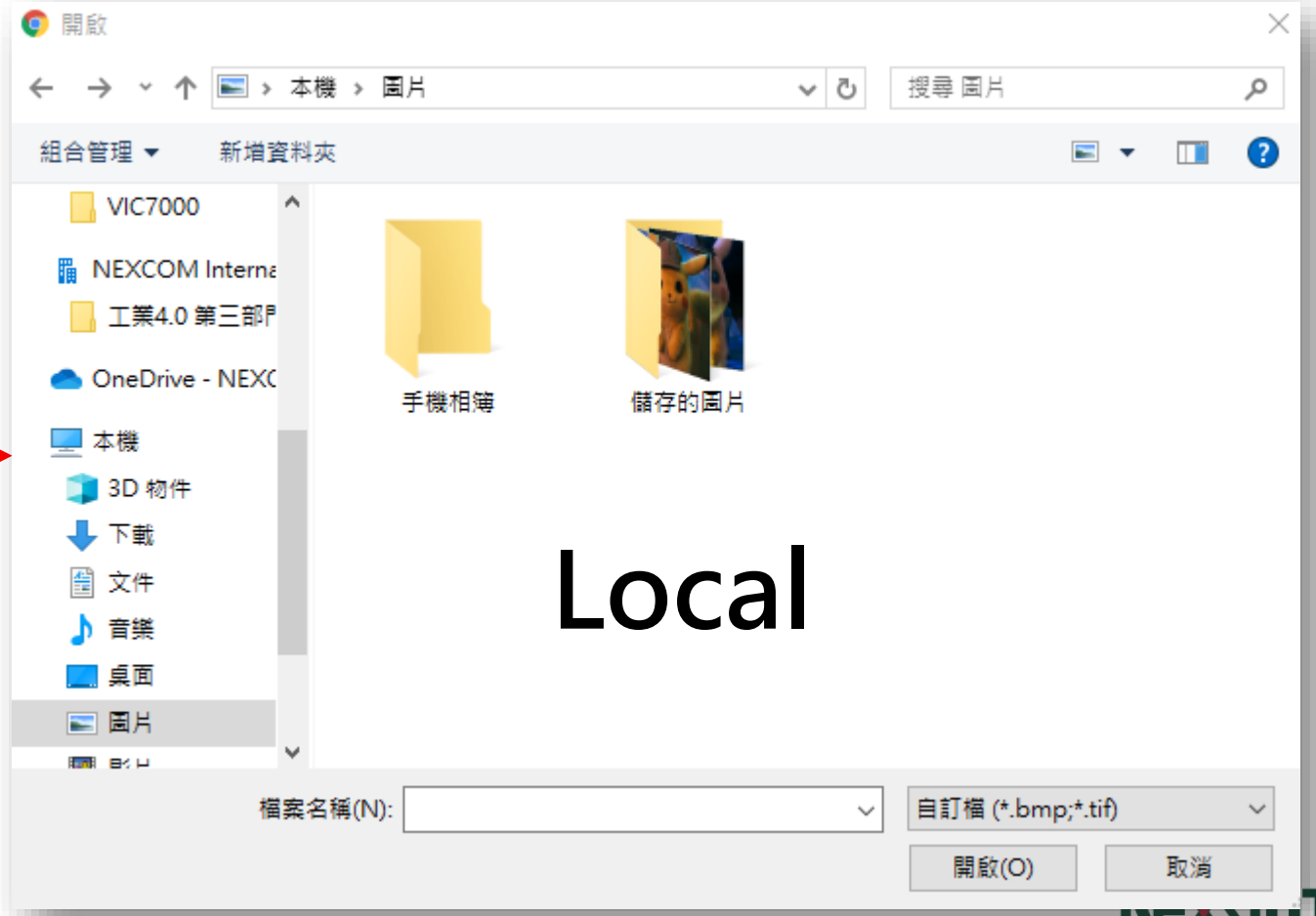


Build Project – Get Data

Get Image

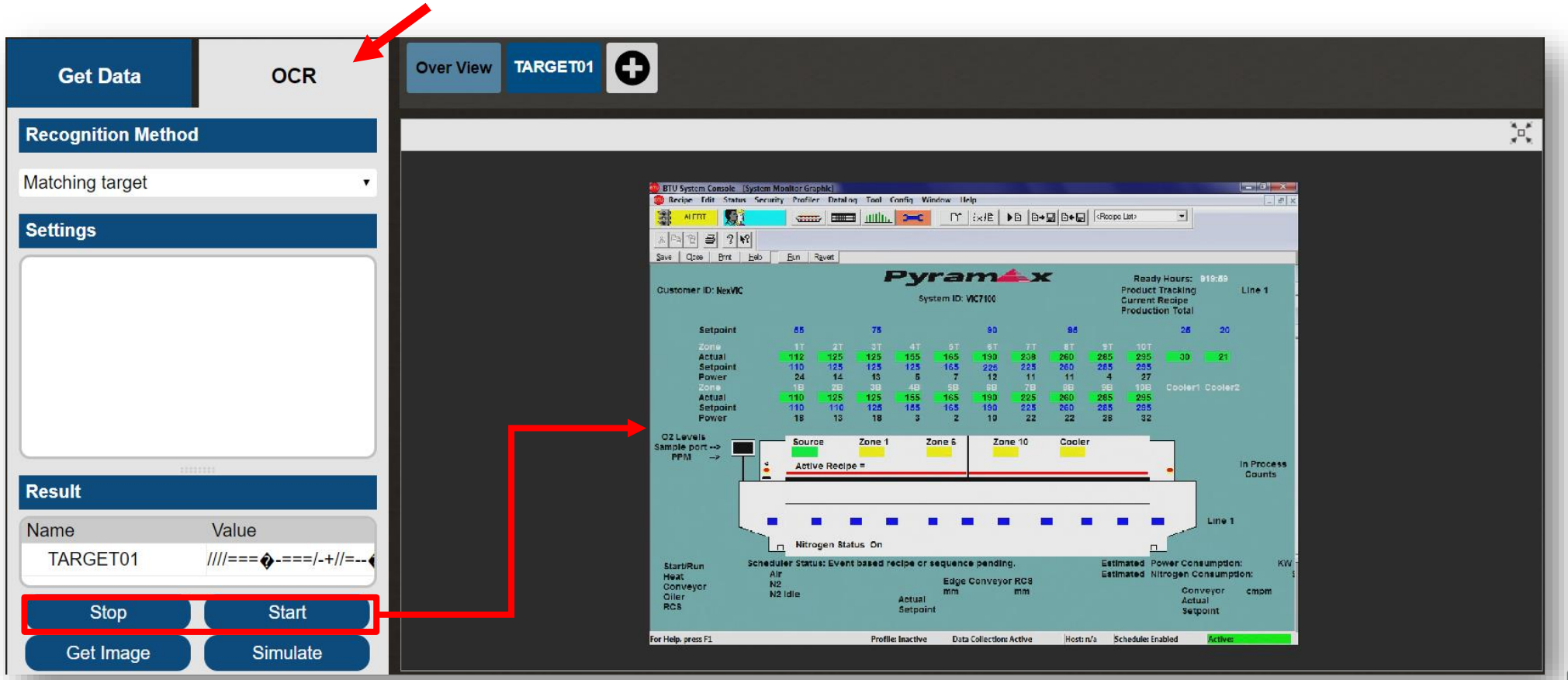
- **From File**
  - Get Image : Read images from a local folder or a remote folder





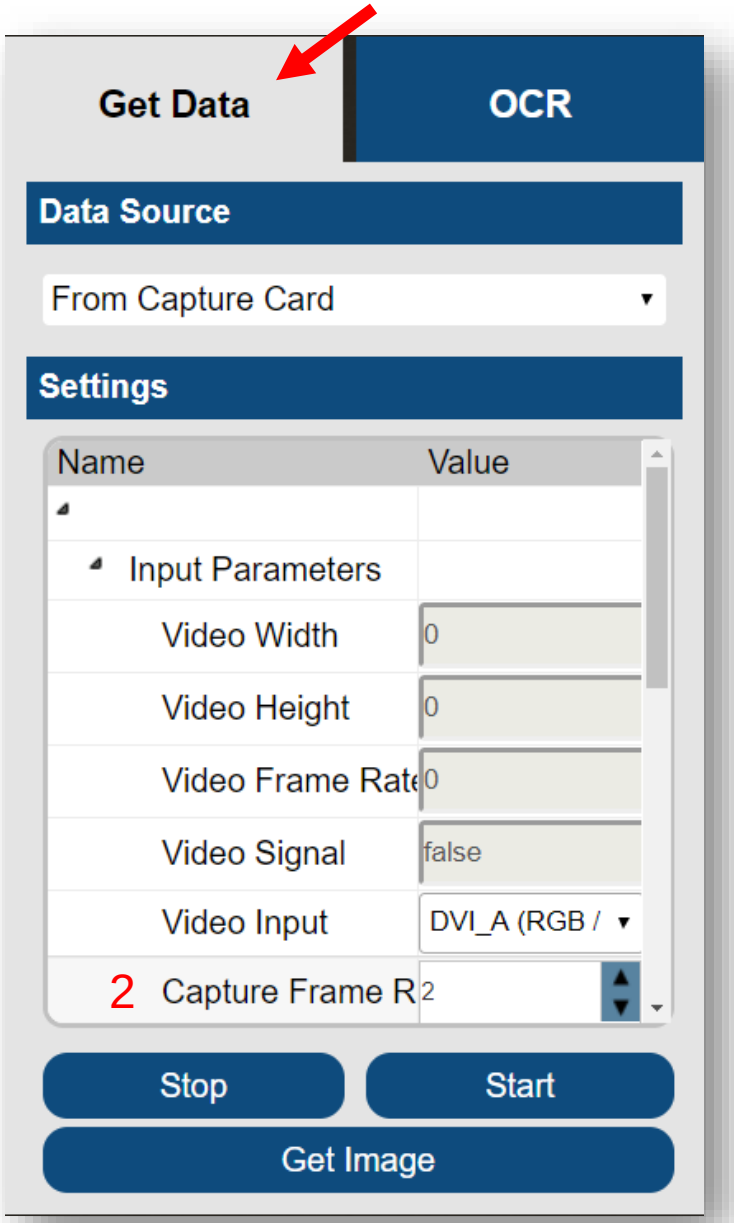
Build Project – Get Data

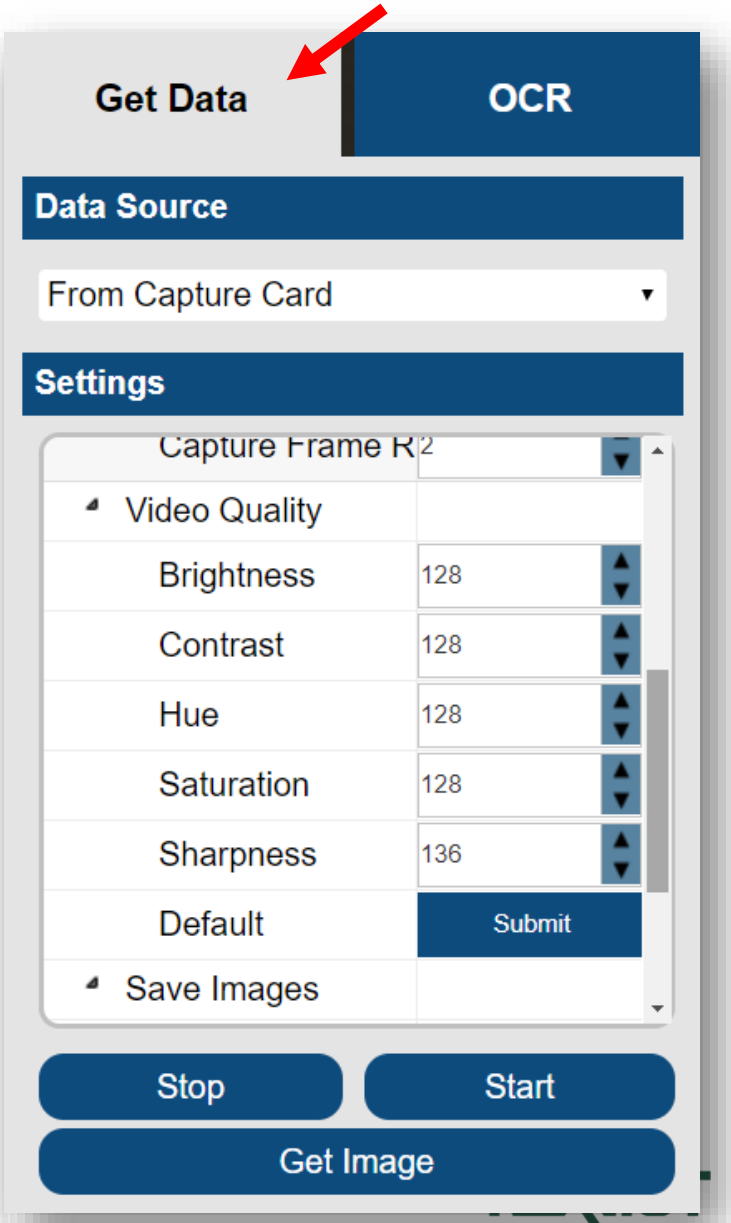
- **From File**
  3. Start/Stop : Read and recognize images from a folder
  - Get Image : Read images from a local folder or a remote folder



Build Project – Get Data

- **From Capture Card**
  1. Video Input : Generally, it is DVI_A (RGB/VGA)
  2. Set Capture Frame Rate (fps)
- Video Quality
  - Brightness
  - Contrast
  - Hue
  - Saturation
  - Sharpness
  - Default : Restore quality parameters to default settings

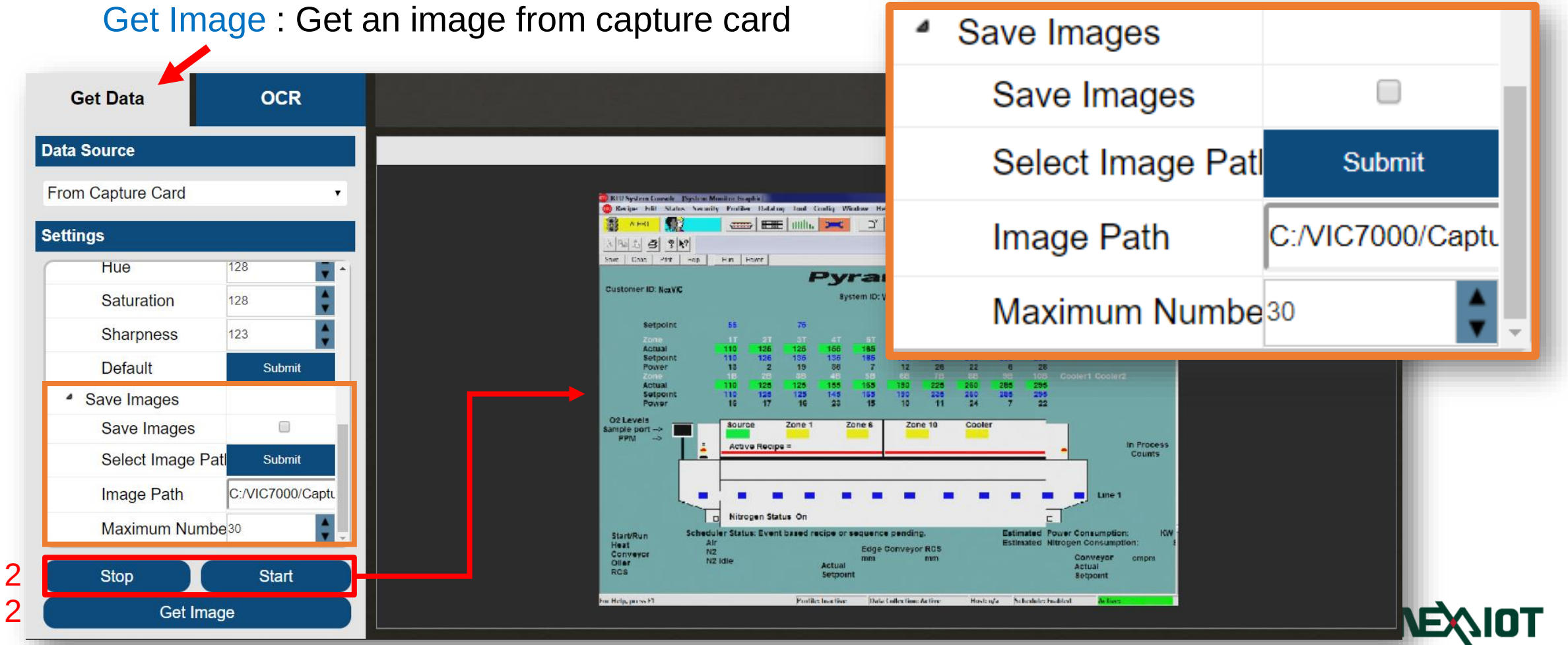




Build Project – Get Data

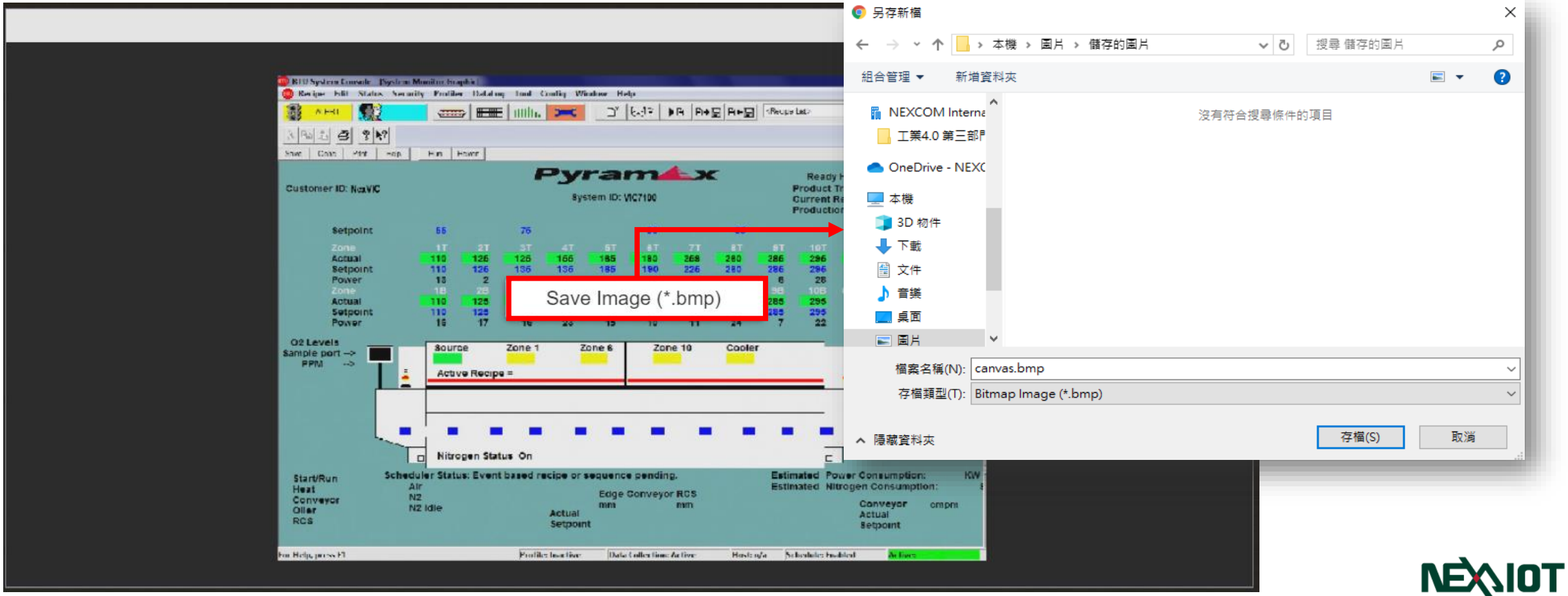
- **From Capture Card**
  2. Start/Stop : Continuously get images from capture card. It's able to get and save images simultaneously

     Get Image : Get an image from capture card



Build Project – Get Data

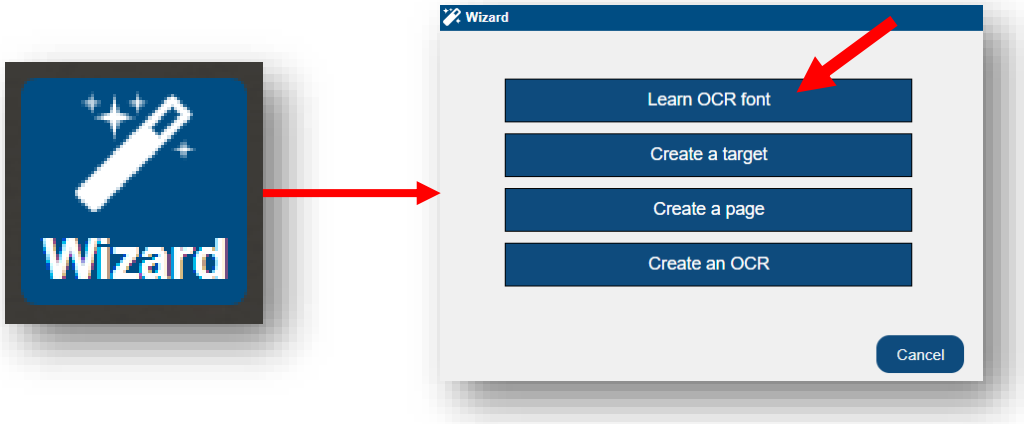
- **From Capture Card**
  - Save Image : Right-click on the image, and follow instructions to save images to the local drive



Build Project – Font Learning

- **Wizard : Learn OCR Font**
  1. Data Source

     From File or From Capture Card



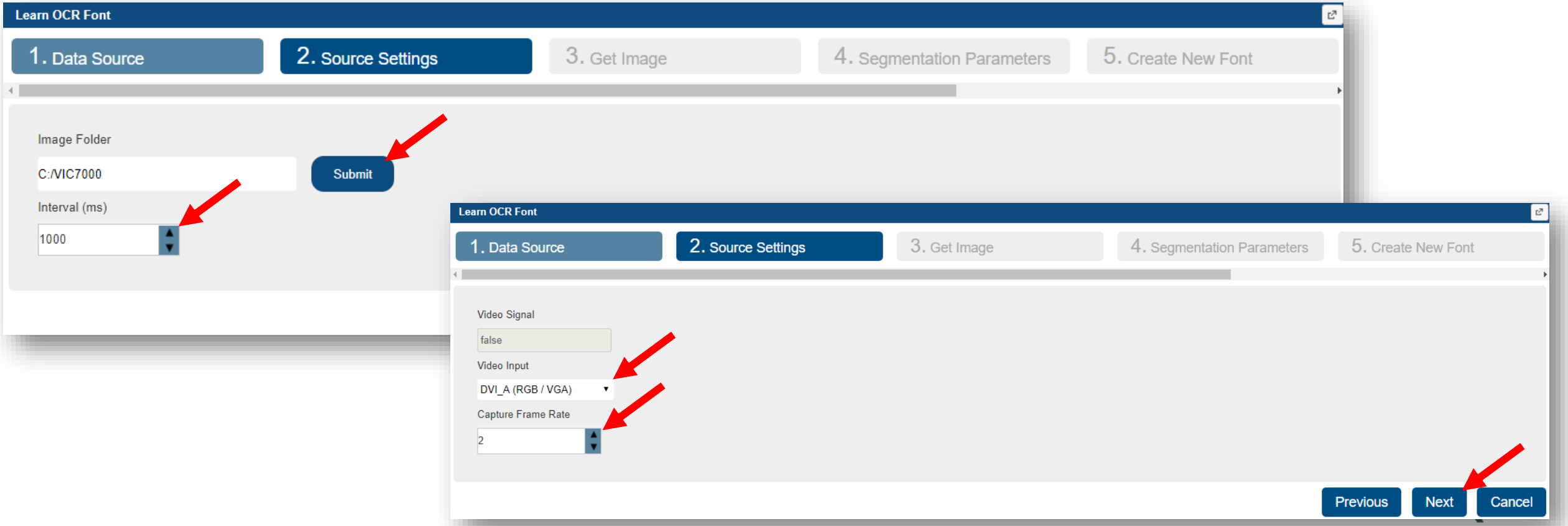
Build Project – Font Learning

- **Wizard : Learn OCR Font**

  2. Source Settings

     From File : Image folder path, Read interval

     From Capture Card : Video input signal type, Capture frame rate



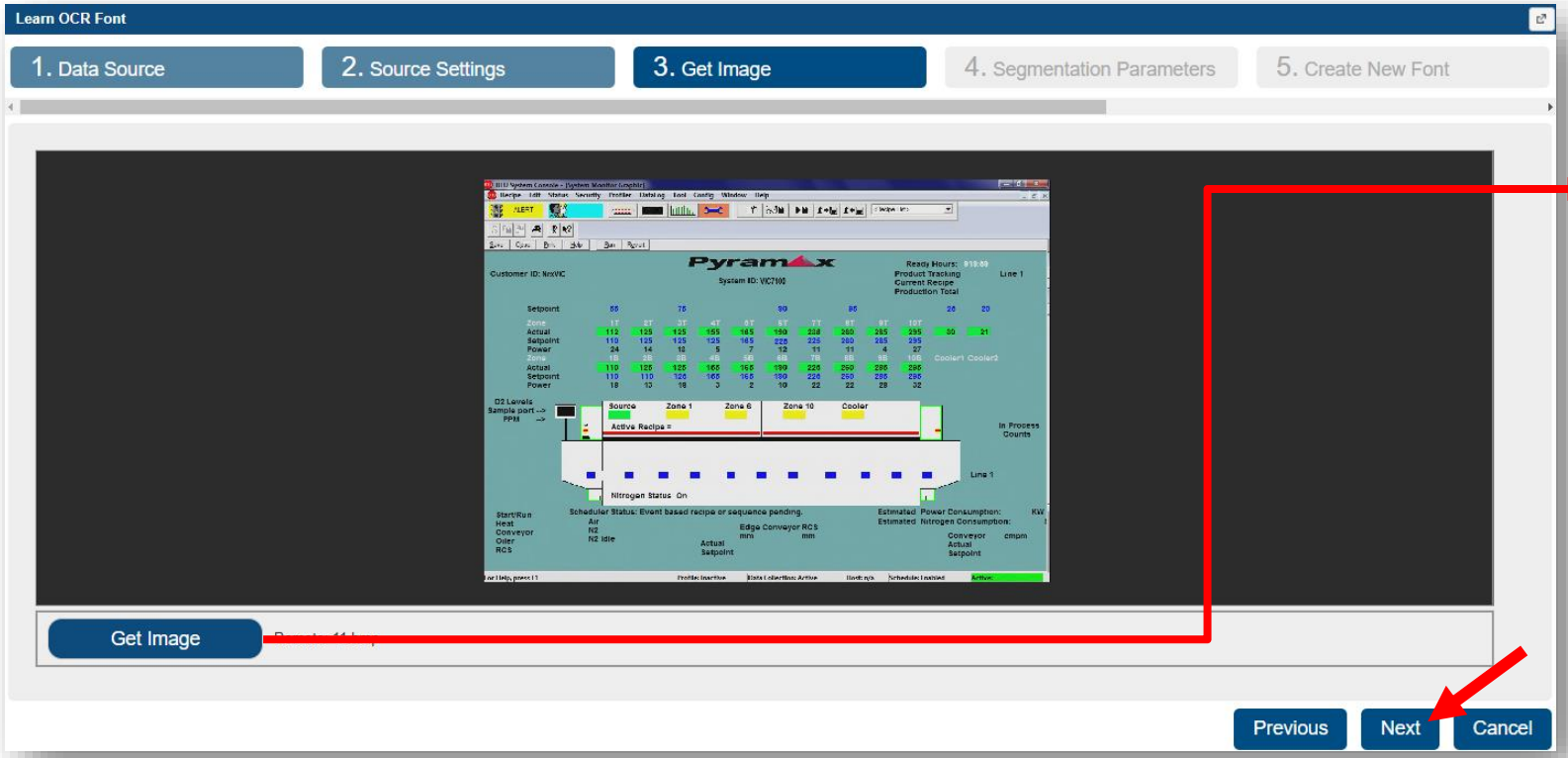
Build Project – Font Learning

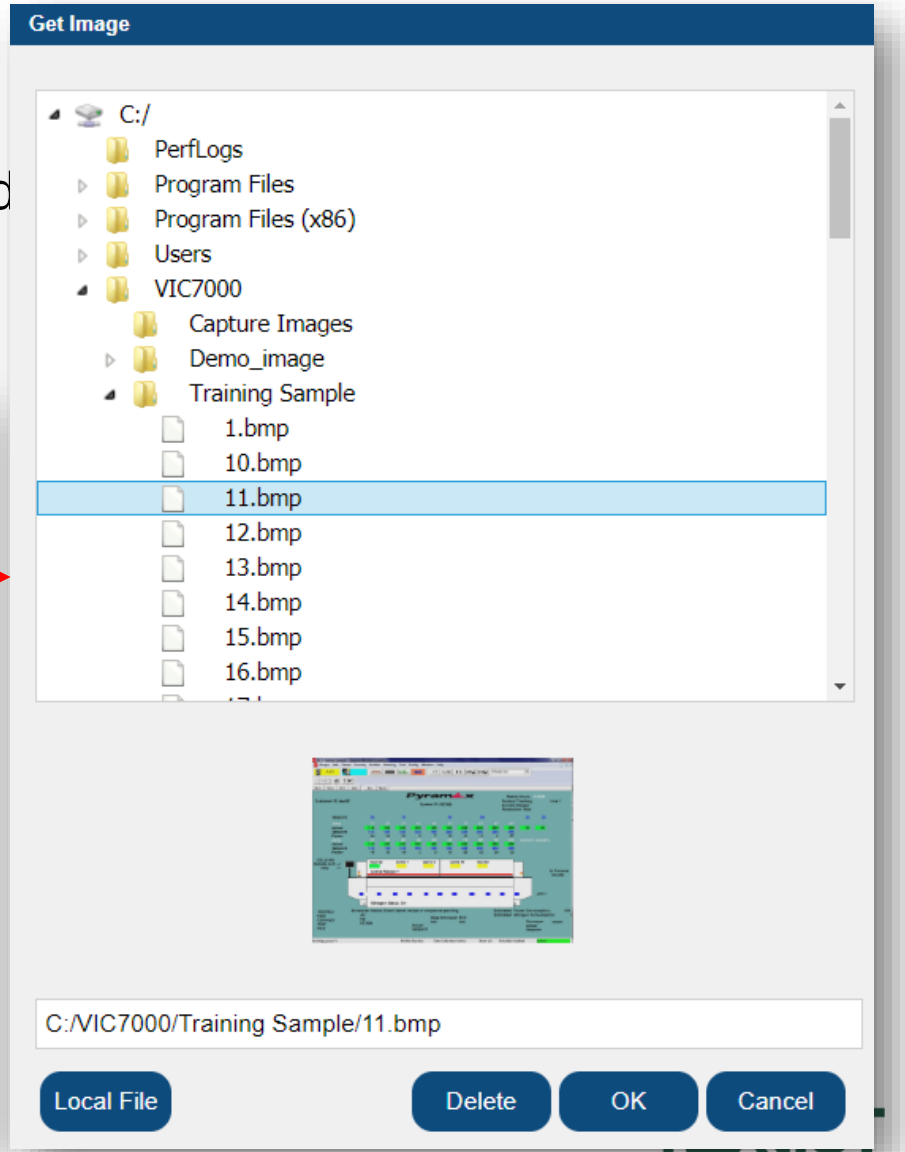
- **Wizard : Learn OCR Font**

  3. Get Image

  From File : Read images from a local folder or a remote fold

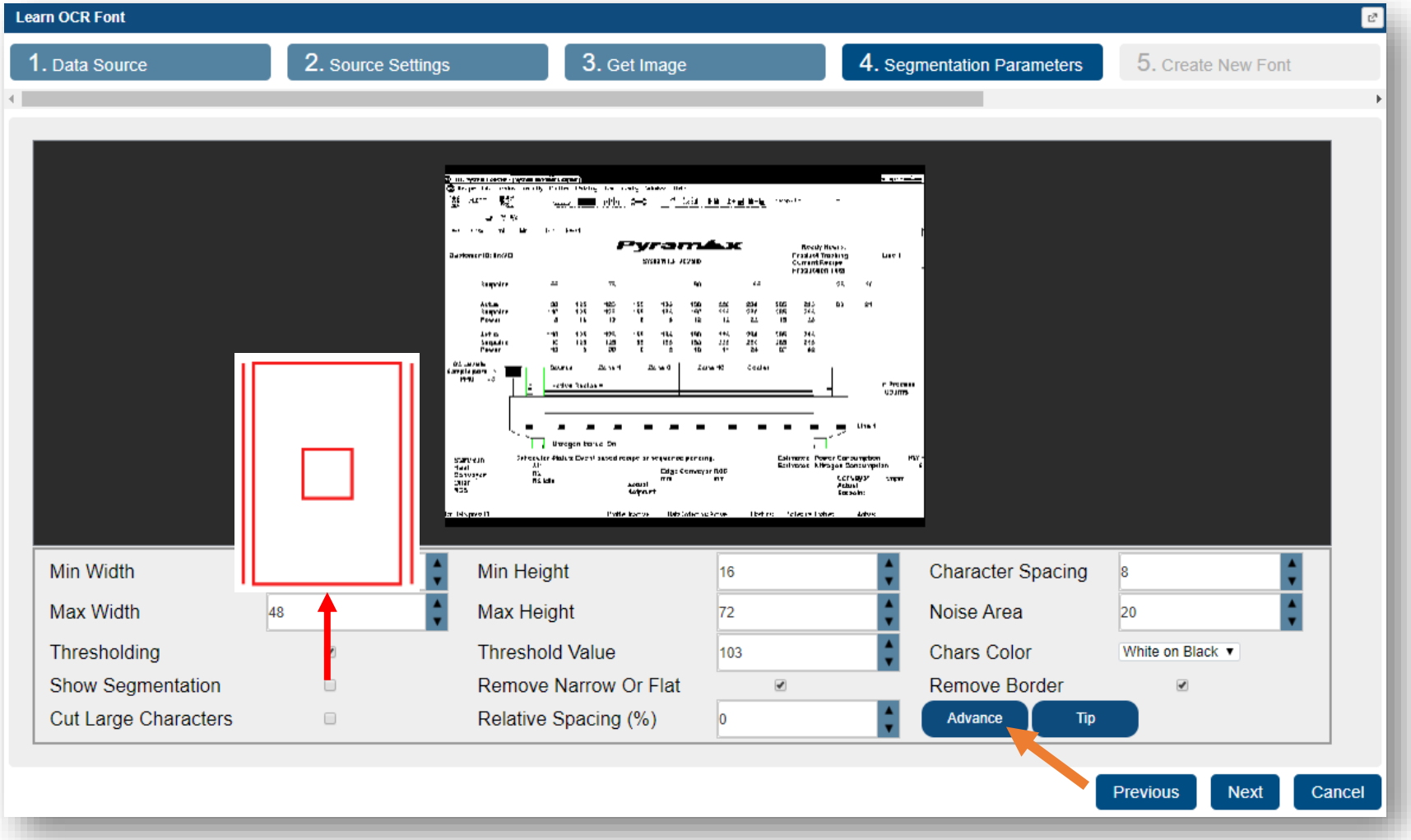
  From Capture Card : Get an image from capture card





Build Project – Font Learning

- **Wizard : Learn OCR Font**
  4. Segmentation Parameter : Adjust segmentation parameters to make characters recognizable



Build Project – Font Learning

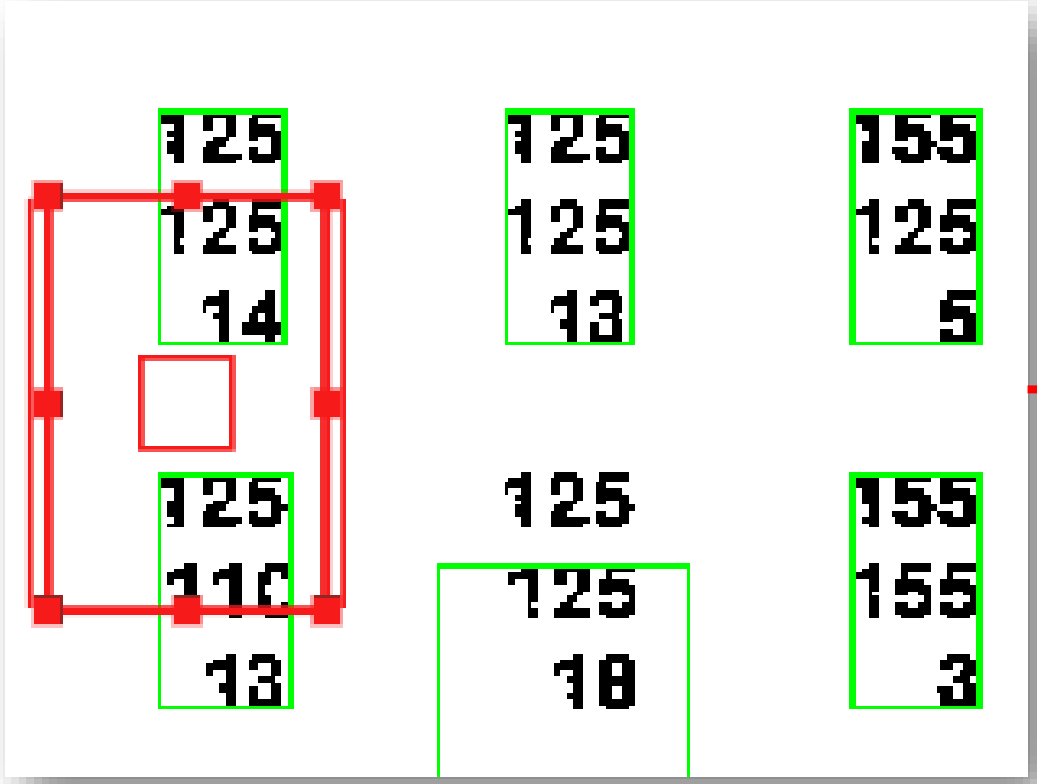
- **Segmentation Parameters**
  - **Minimum Width/Height** : The width/height of the smallest character. If the width/height of a character is smaller than this value, it will be discarded
  - **Maximum Width/Height** : The width/height of the maximum character, if the width/height of a character is larger than this value, it will be discarded
  - **Character Spacing** : The smallest space between adjacent characters. If the space between two characters is less than this value, they will be considers as two character separately
  - **Noise Area** : Spotted area smaller than this value will be discarded. Adjusting this value will preserve the small character feature, like the dot above the letter i
  - **Chars Color** : Black on White, White on Black, Dark on Light, Light on Dark
  - **Threshold** : Adjust the image binarizing threshold

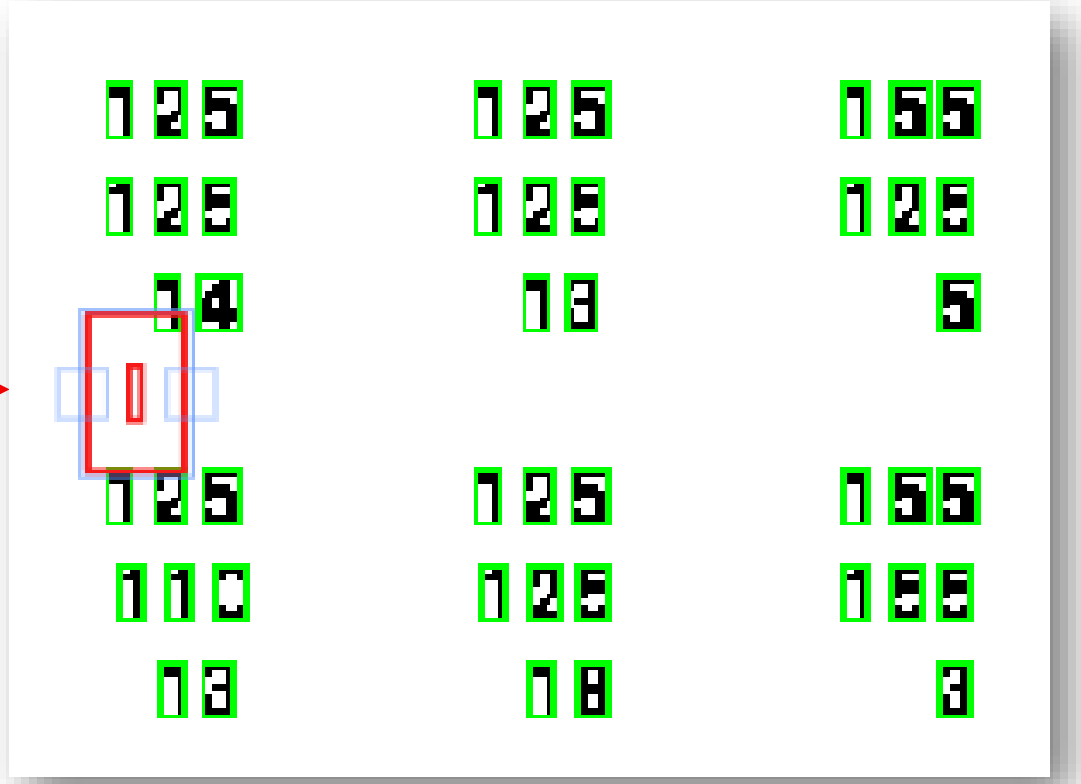
Build Project – Font Learning

- **Segmentation Parameters**
  - **Remove Narrow or Flat** : If a character has its size value less than the minimum width/height or greater than the maximum width/height, this character will be discarded. It's recommended to check this item again.
  - **Remove Border** : Discard spots on edge of image/ROI
  - **Cut Large Characters** : If enabled, characters are split as much part as possible. This item is designed for characters that cannot be separated by adjusting threshold
  - **Relative Spacing(%)** : When Cut Large Characters is checked, the empty vector is inserted between those split parts

Build Project – Font Learning

- **Wizard : Learn OCR font**
  4. Segmentation parameter : Adjust segmentation parameters to make characters recognizable

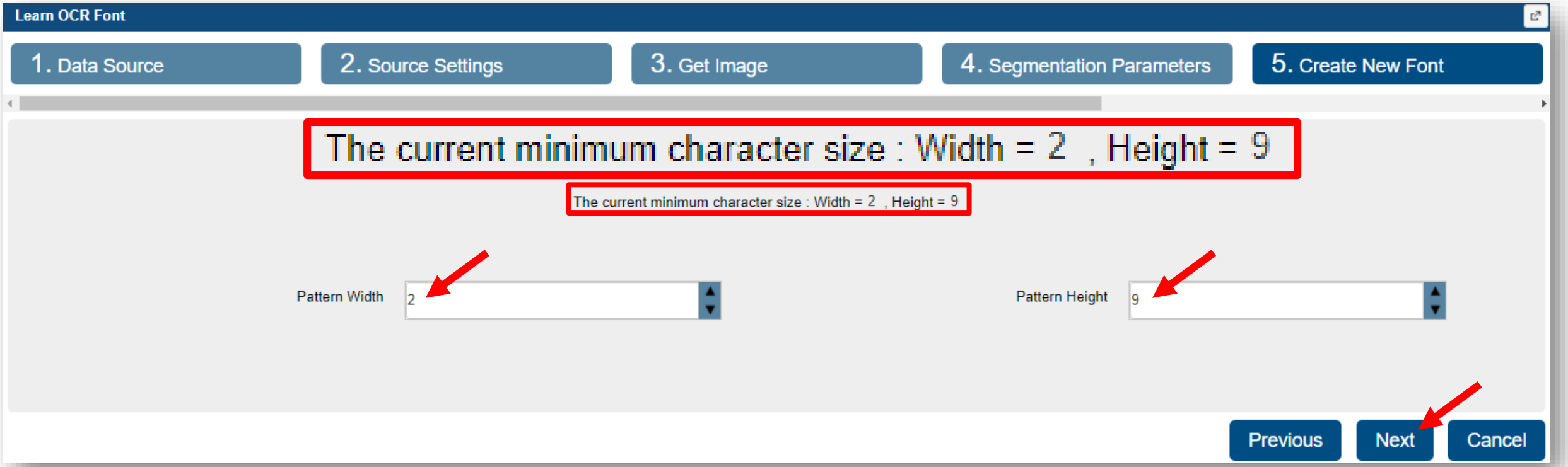




Build Project – Font Learning

- **Wizard : Learn OCR Font**

  5. Create New Font : Patterns height/width must be less than or equal to the current minimum height/width

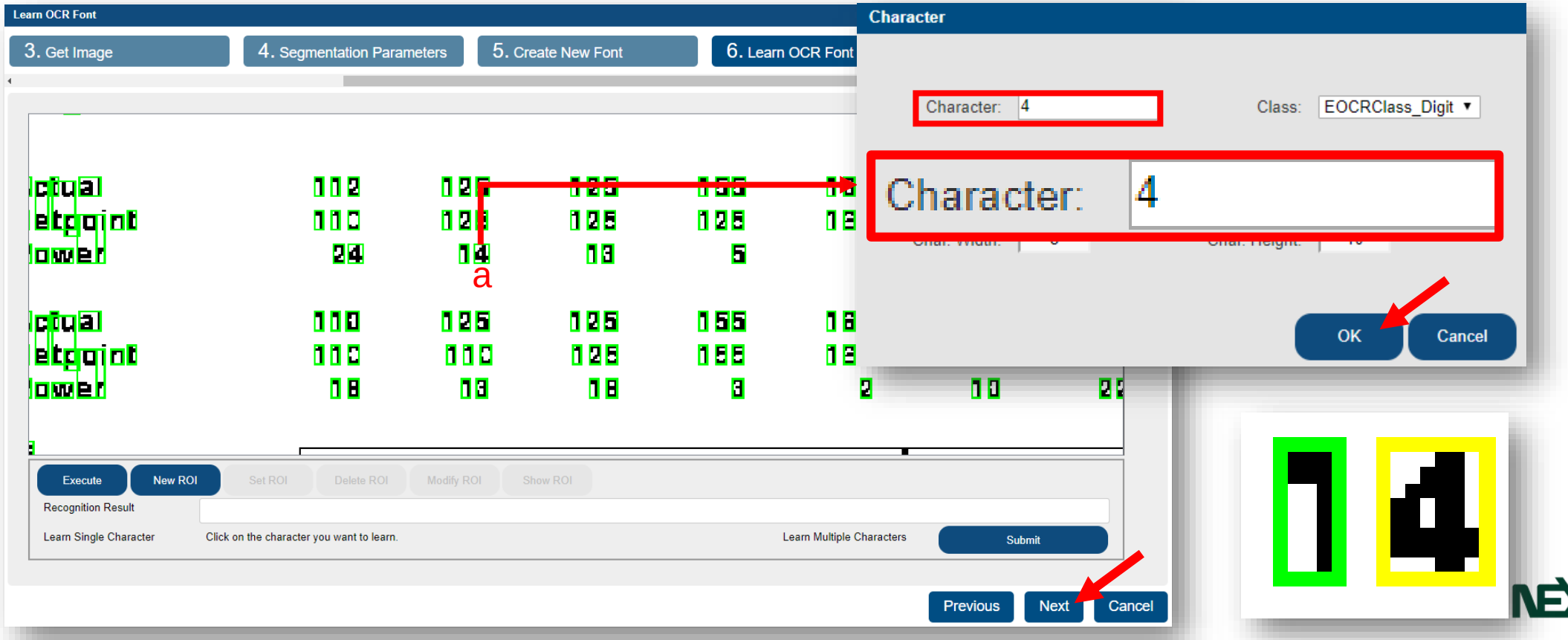


Build Project – Font Learning

- **Wizard : Learn OCR Font**

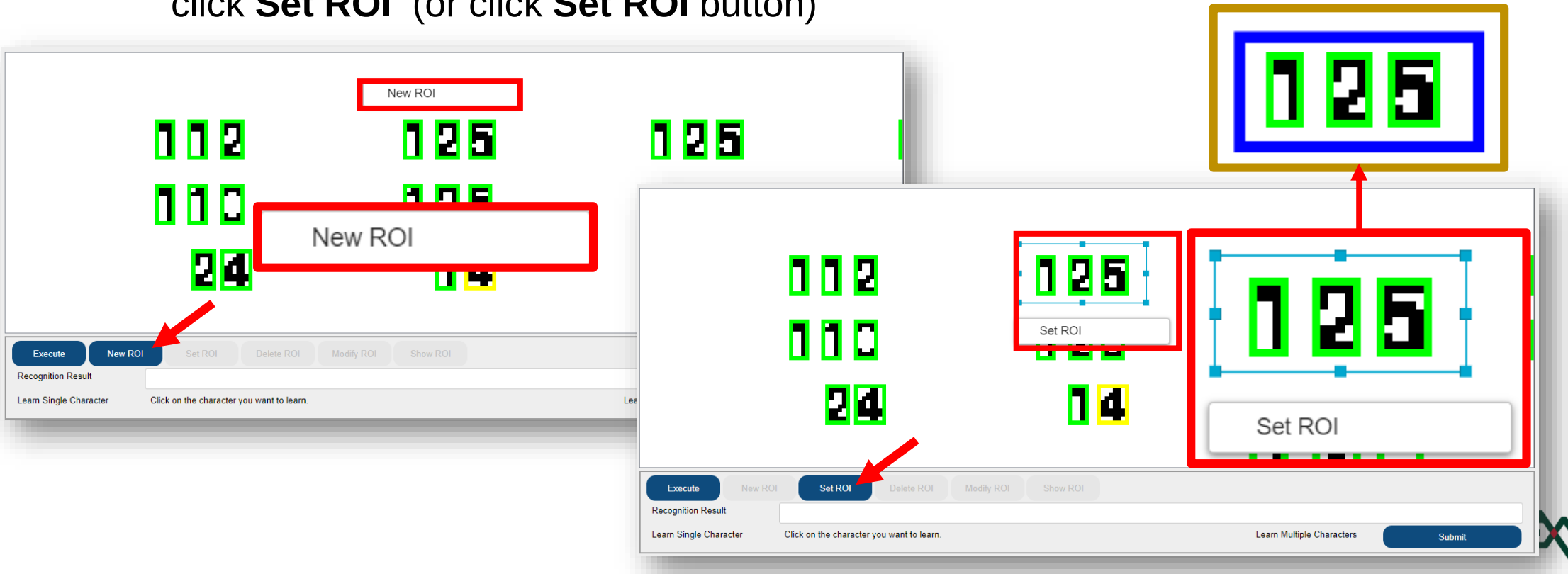
  6. Learn OCR Font

     a. Learn Single Character : Click on the aimed character → Enter aimed **Character** into the field → Click **OK**



Build Project – Font Learning

- **Wizard : Learn OCR Font**
  6. Learn OCR Font
     b. Learn Multiple Character : Right-click on the image then select **New ROI** (or Click on **New ROI** button) → adjust location and size of ROI → Right-click on the image and click **Set ROI** (or click **Set ROI** button)

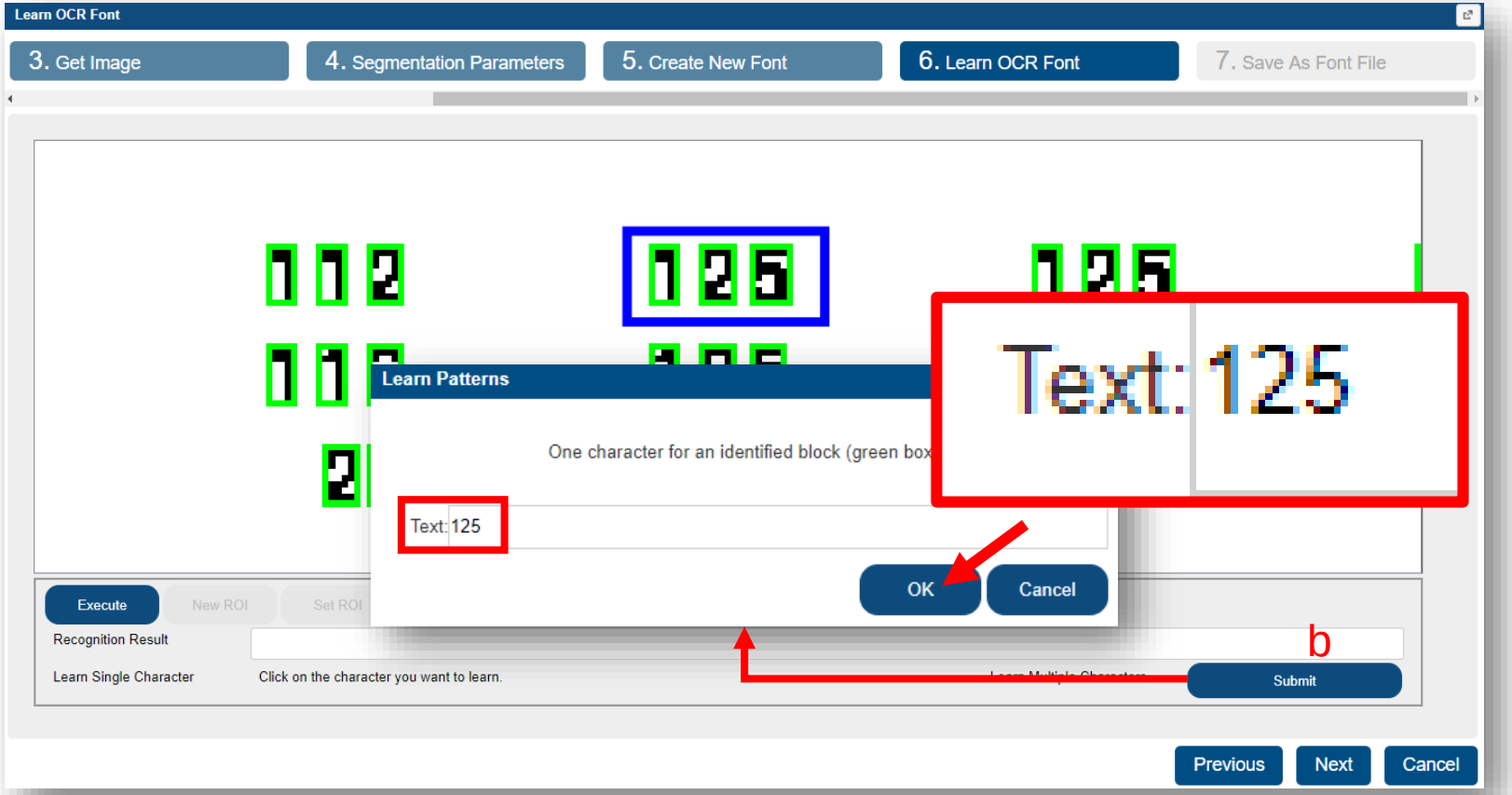


Build Project – Font Learning

- **Wizard : Learn OCR Font**

  6. Learn OCR Font

     b. Learn Multiple Character : Click **Learn Multiple Characters** button → Enter **Text** → Click **OK**

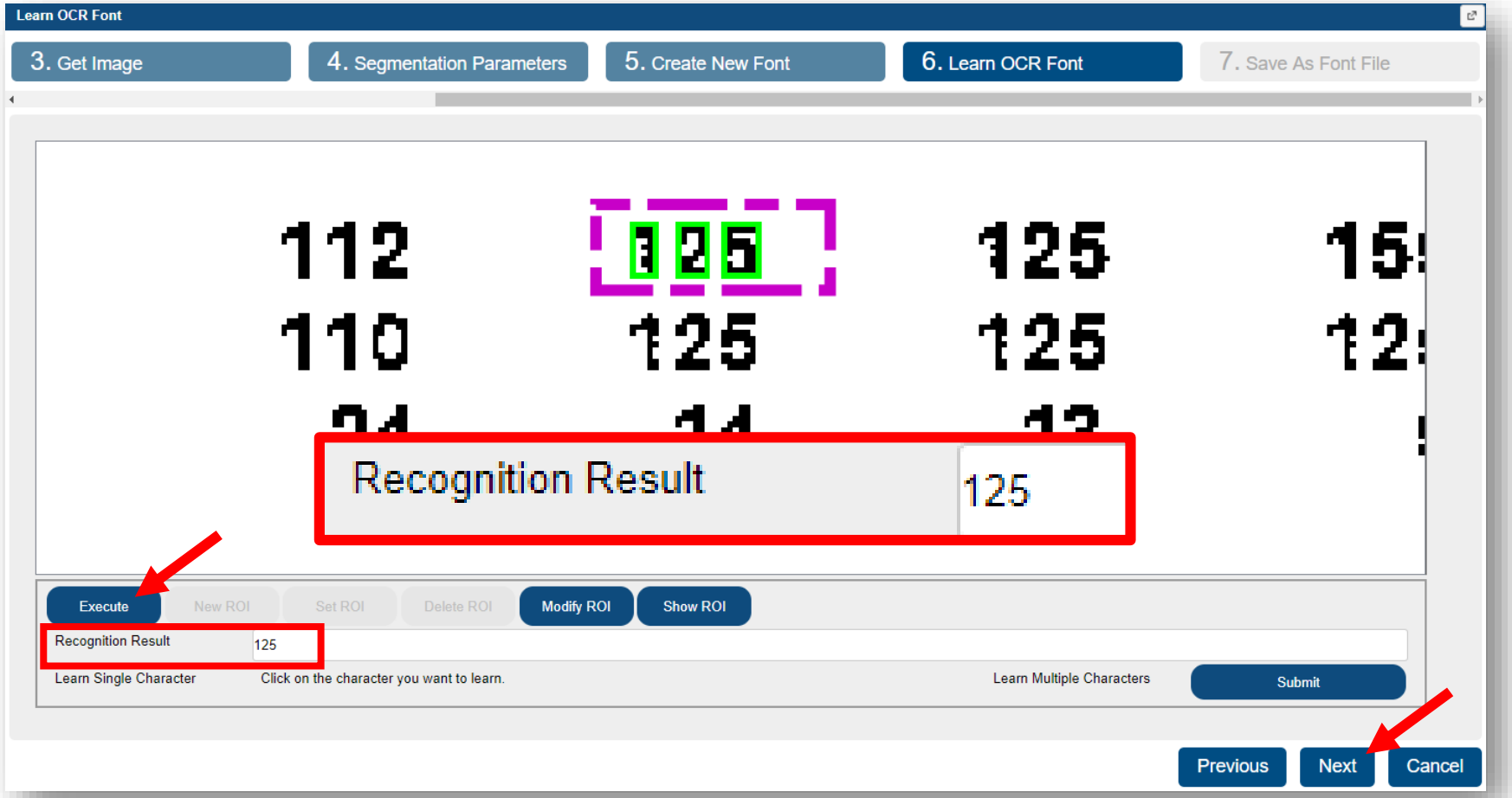


Build Project – Font Learning

- **Wizard : Learn OCR Font**

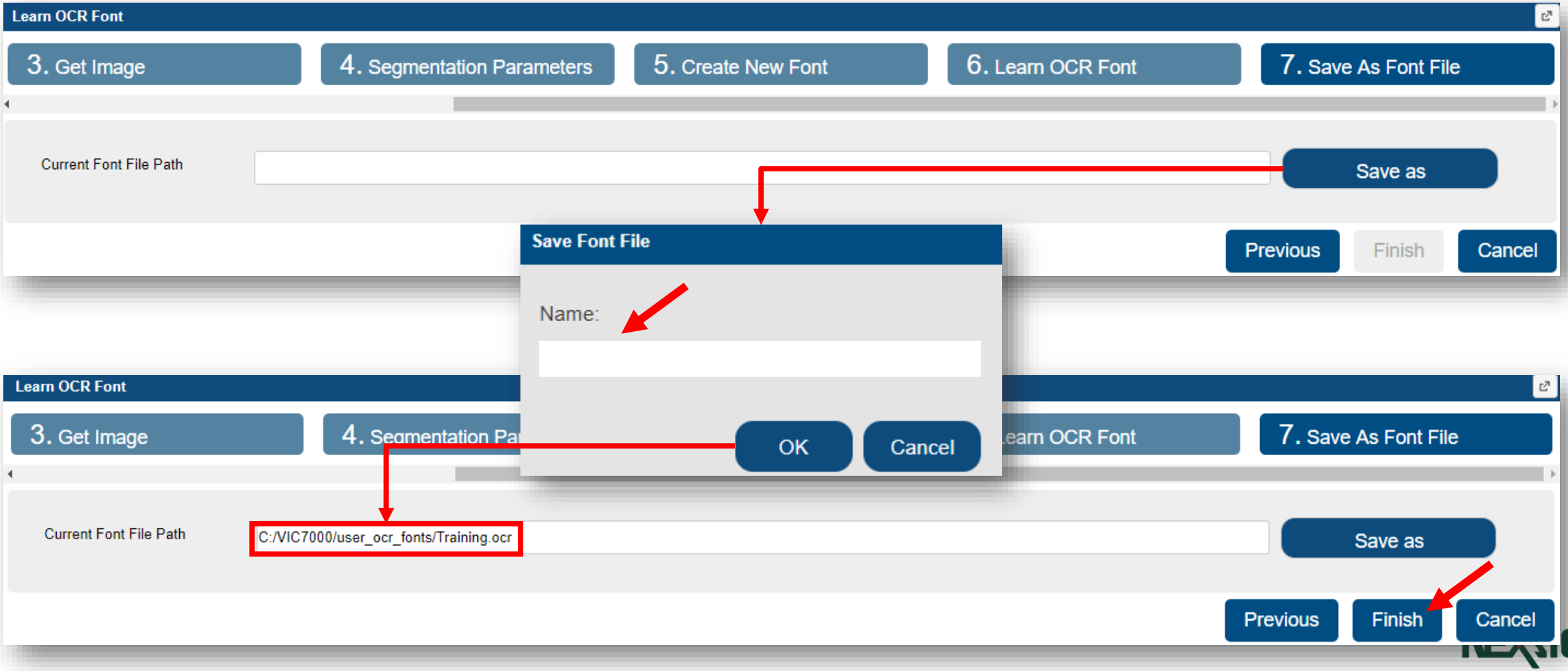
  6. Learn OCR Font

     Simulation : Click **Execute**, and confirm the result in **Recognition Result** field



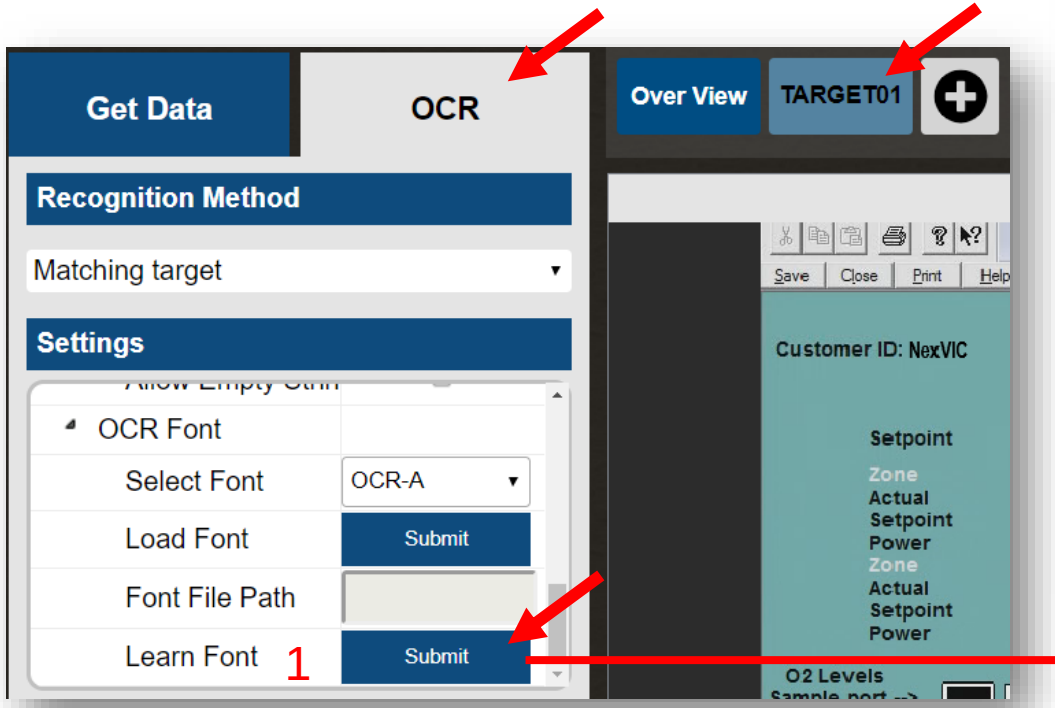
Build Project – Font Learning

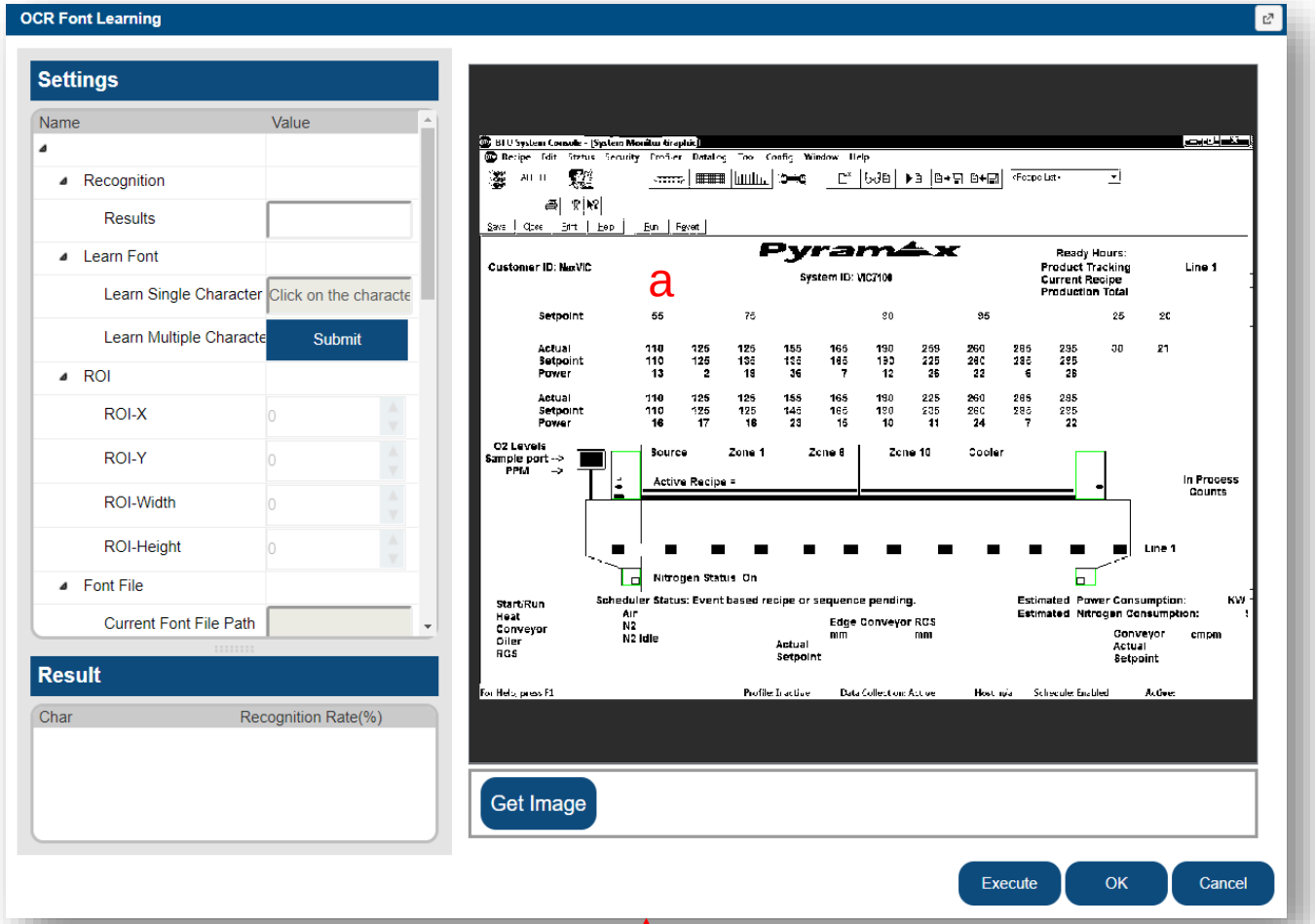
- **Wizard : Learn OCR Font**
  7. Save As Font File : Enter a **Name** for the font file



Build Project – Font Learning

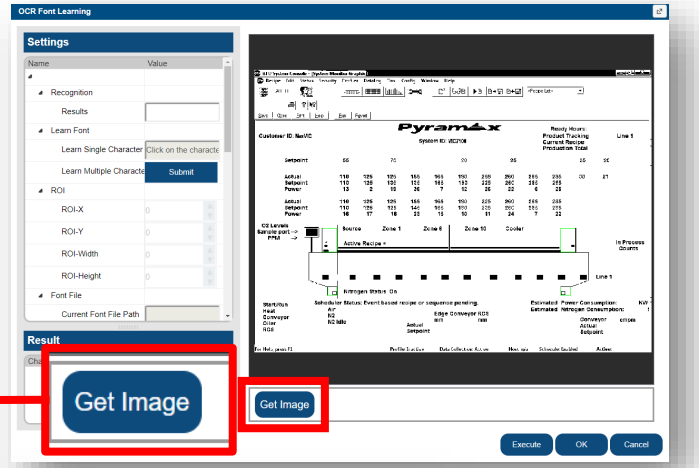
- **General : Learn OCR Font**
  1. Open OCR Font Learning Window
  2. Get Image
     a. Direct Load : Directly load images from Get Data

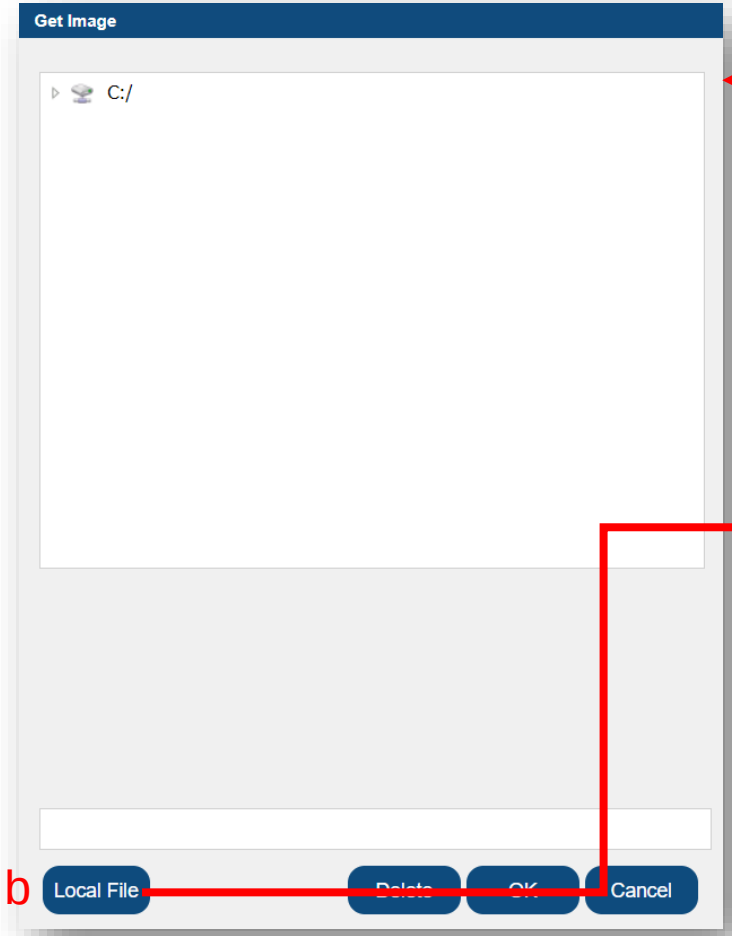


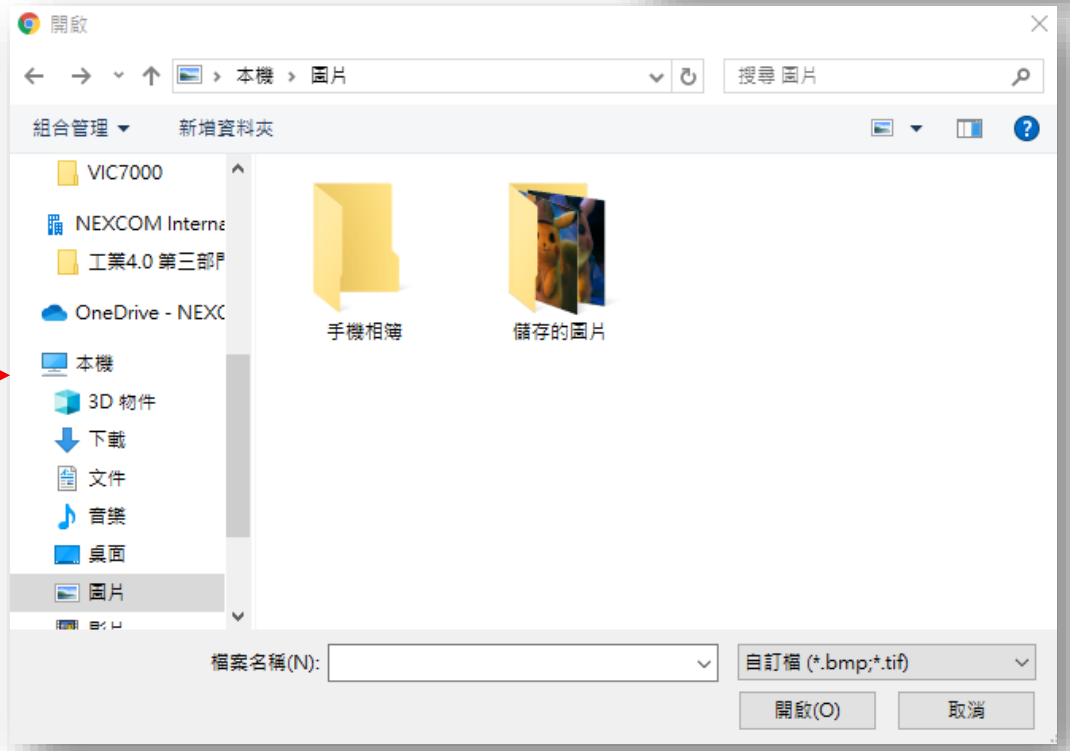


Build Project – Font Learning

- **General : Learn OCR Font**
  2. Load Image
     b. Open local image : Load images from a local folder

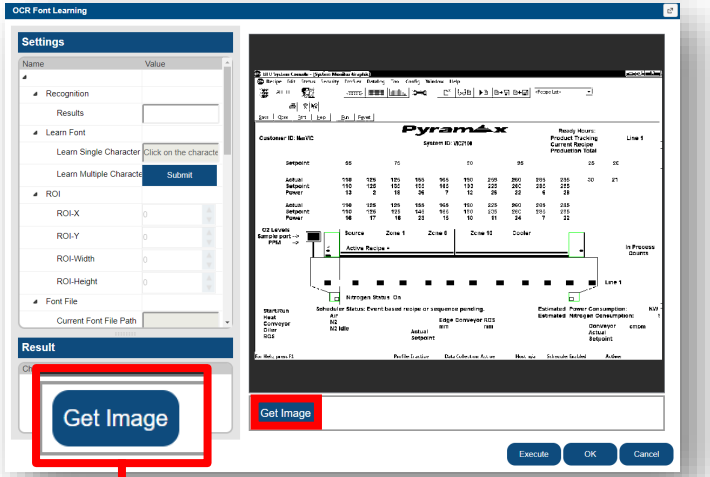


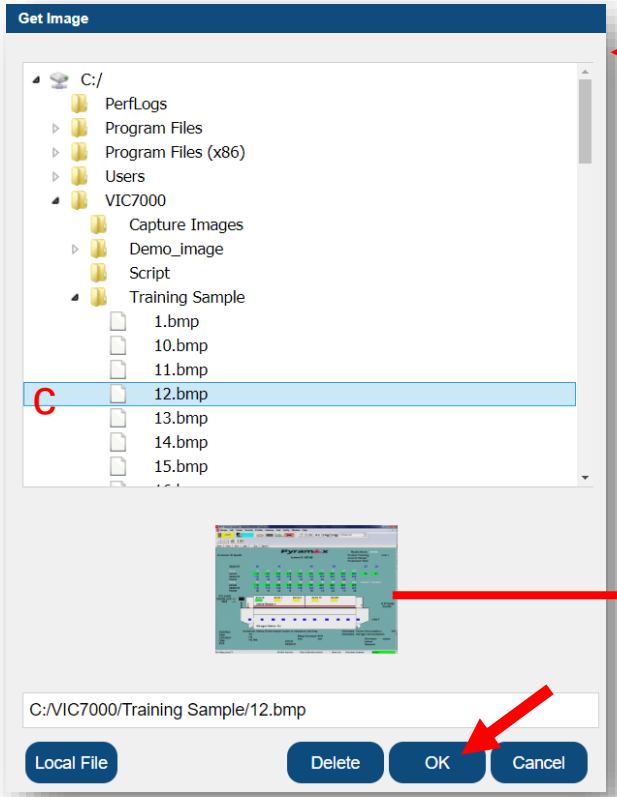


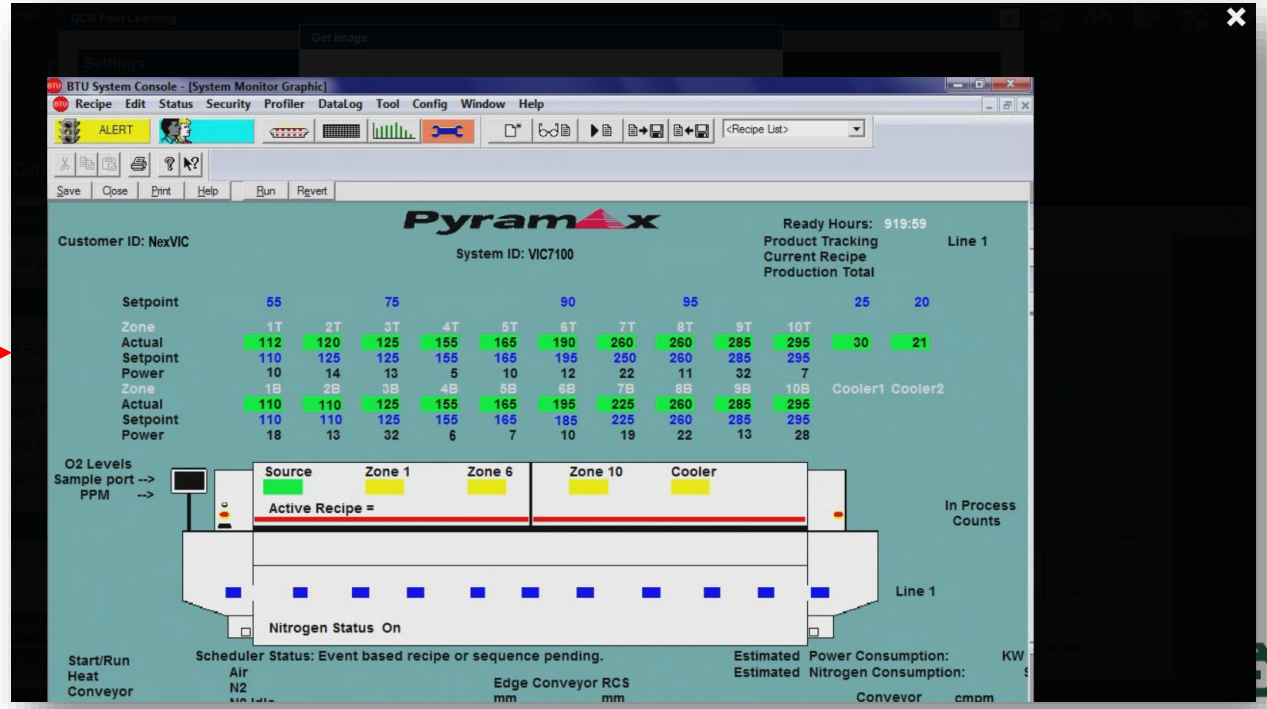


Build Project – Font Learning

- **General : Learn OCR Font**
  2. Load Image
     c. Open remote image : Load the image on a remote VIC7000 computer. Click on the preview block to enlarge selected image

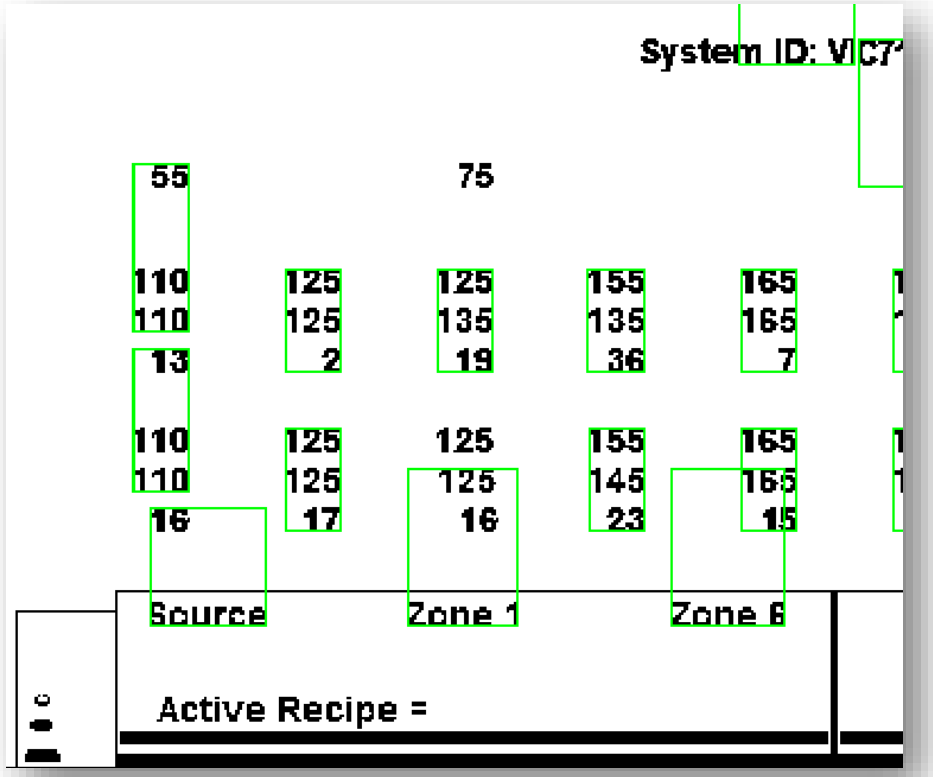


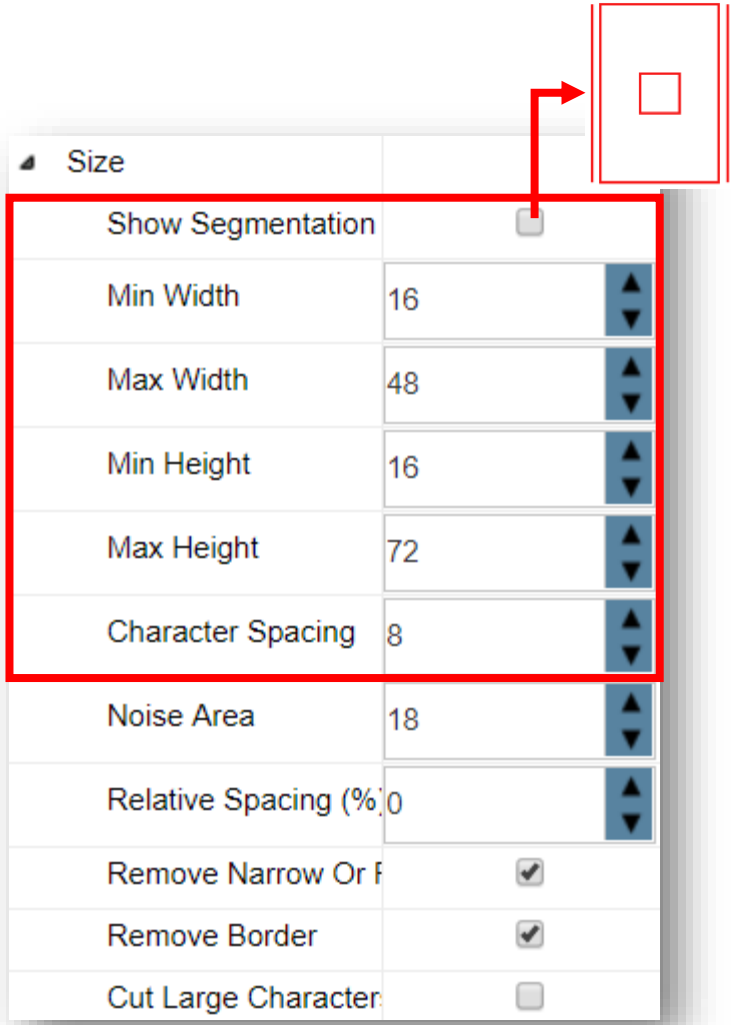


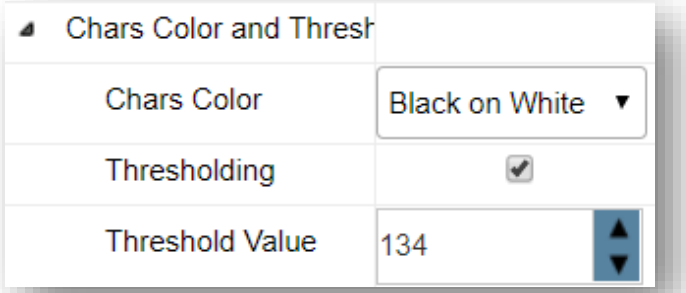


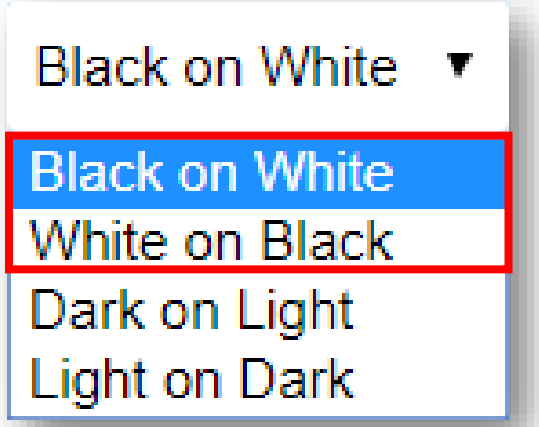
Build Project – Font Learning

- **General : Learn OCR Font**
  3. Segment Characters : Adjust segmentation parameters to make characters recognizable.









Build Project – Font Learning

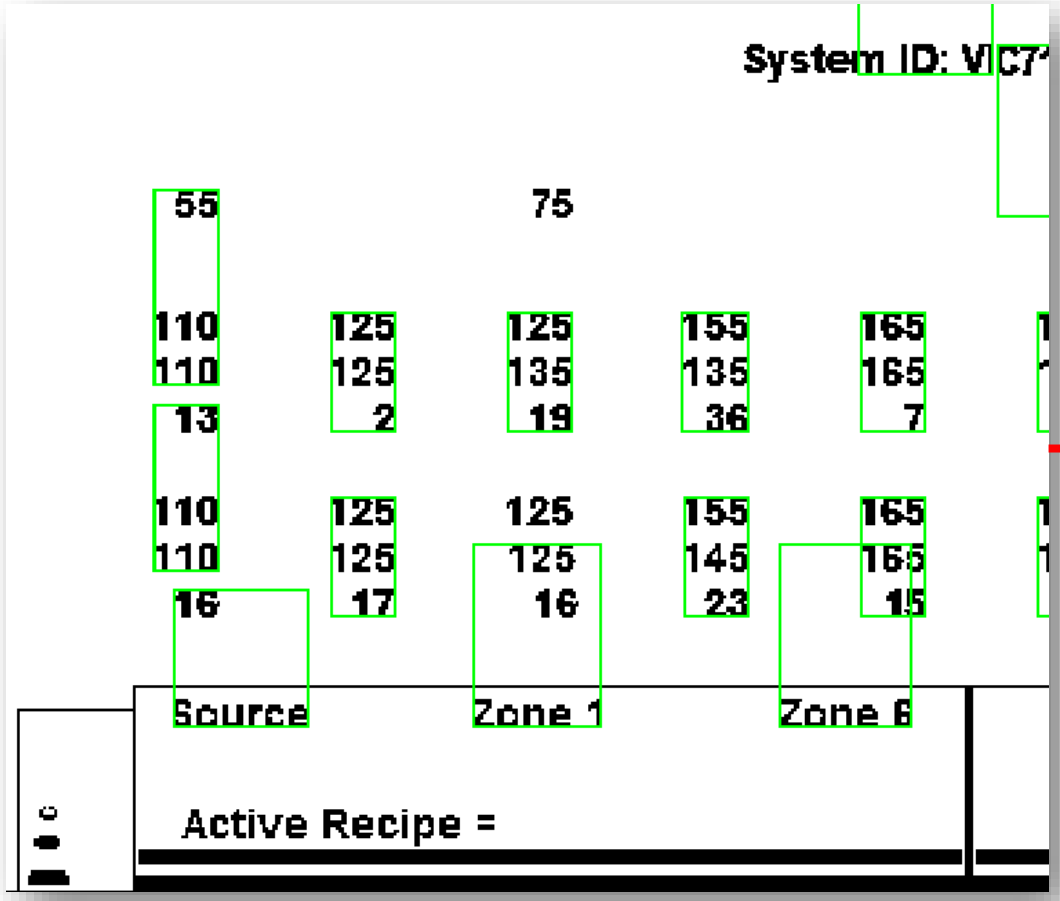
- **Segmentation Parameters**
  - **Minimum Width/Height** : The width/height of the smallest character. If the width/height of a character is smaller than this value, it will be discarded
  - **Maximum Width/Height** : The width/height of the maximum character, if the width/height of a character is larger than this value, it will be discarded
  - **Character Spacing** : The smallest space between adjacent characters. If the space between two characters is less than this value, they will be considers as two character separately
  - **Noise Area** : Spotted area smaller than this value will be discarded. Adjusting this value will preserve the small character feature, like the dot above the letter i
  - **Chars Color** : Black on White, White on Black, Dark on Light, Light on Dark
  - **Threshold** : Adjust the image binarizing threshold

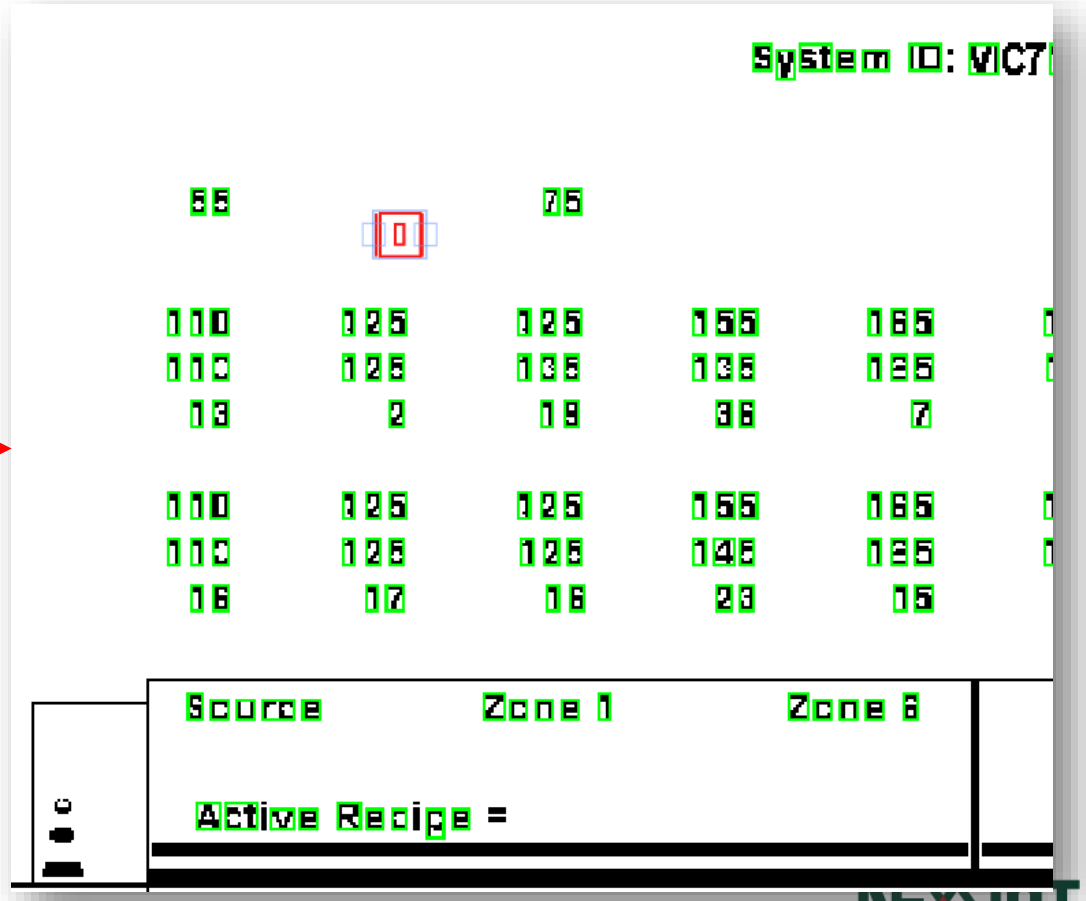
Build Project – Font Learning

- **Segmentation Parameters**
  - **Remove Narrow or Flat** : If a character has its size value less than the minimum width/height or greater than the maximum width/height, this character will be discarded. It's recommended to check this item again.
  - **Remove Border** : Discard spots on edge of image/ROI
  - **Cut Large Characters** : If enabled, characters are split as much part as possible. This item is designed for characters that cannot be separated by adjusting threshold
  - **Relative Spacing(%)** : When Cut Large Characters is checked, the empty vector is inserted between those split parts

Build Project – Font Learning

- **General : Learn OCR Font**
  3. Segment Characters : Adjust segmentation parameters to make characters recognizable

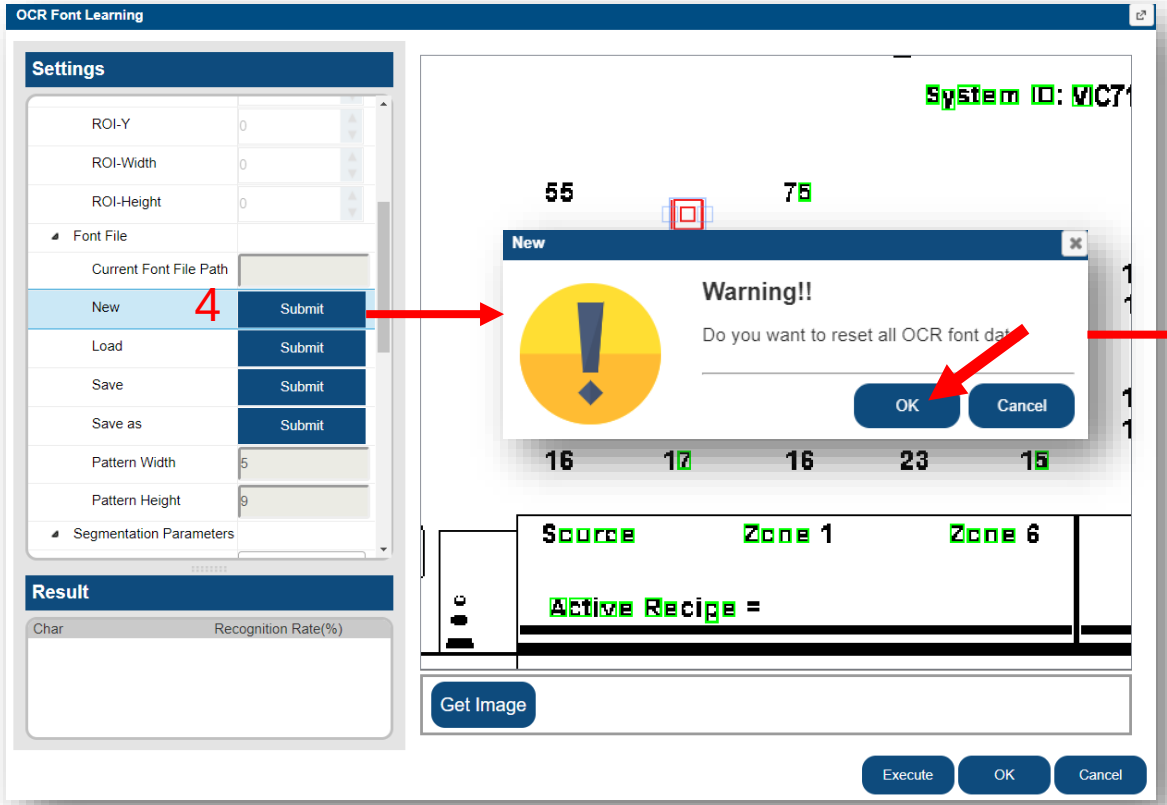


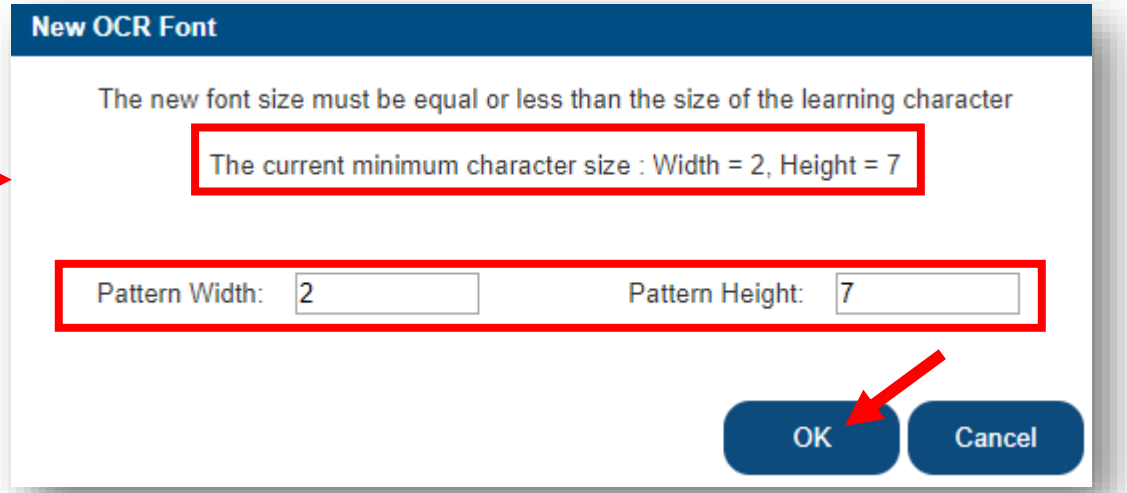


Build Project – Font Learning

- **General : Learn OCR Font**

  4. Create New Font : Patterns height/width must be less than or equal to characters minimum height/width



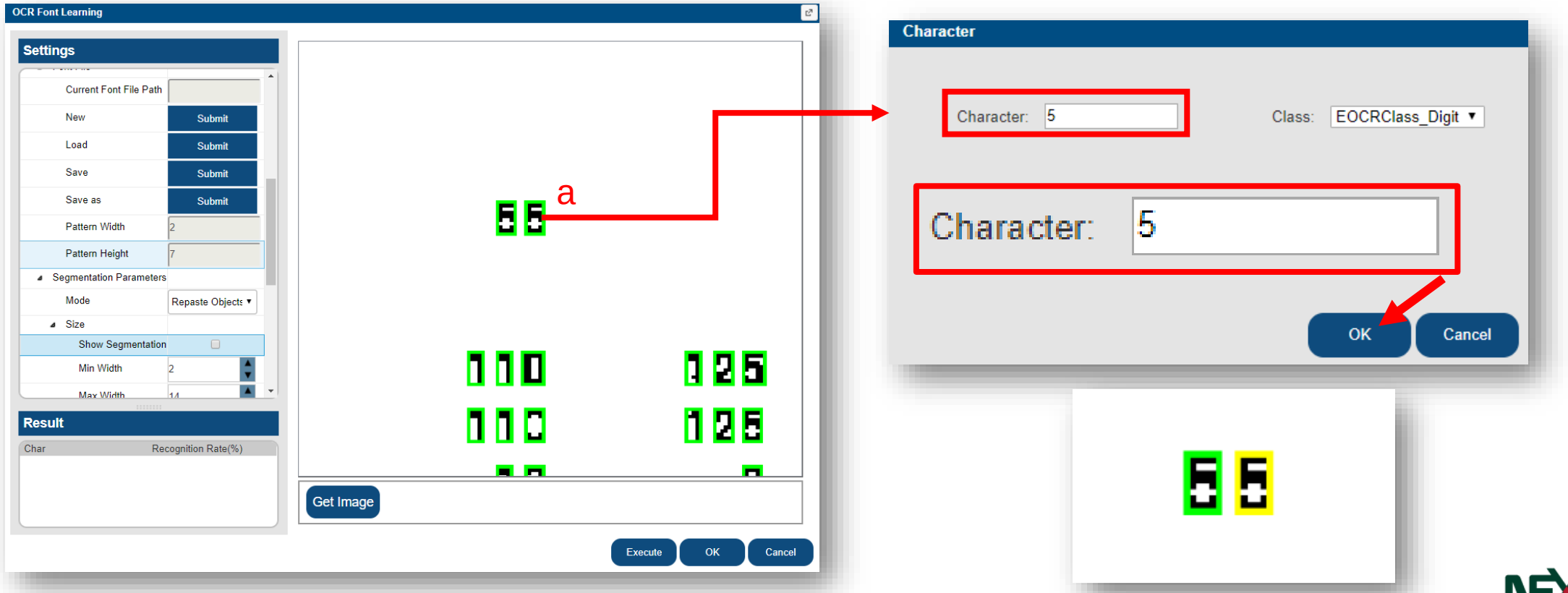


Build Project – Font Learning

- **General : Learn OCR Font**

  5. Learn OCR Font

     a. Learn Single Character : Click on the targeted character → Enter **Character** → Click **OK**

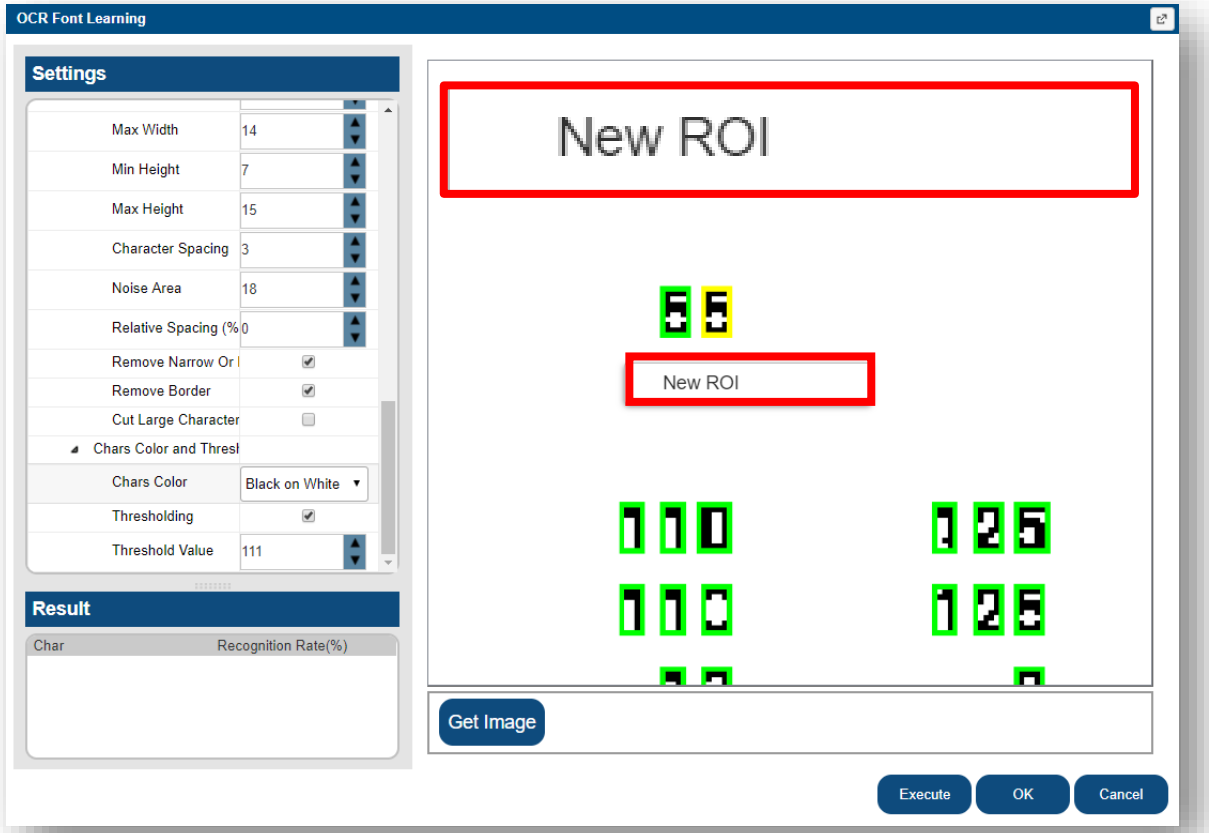


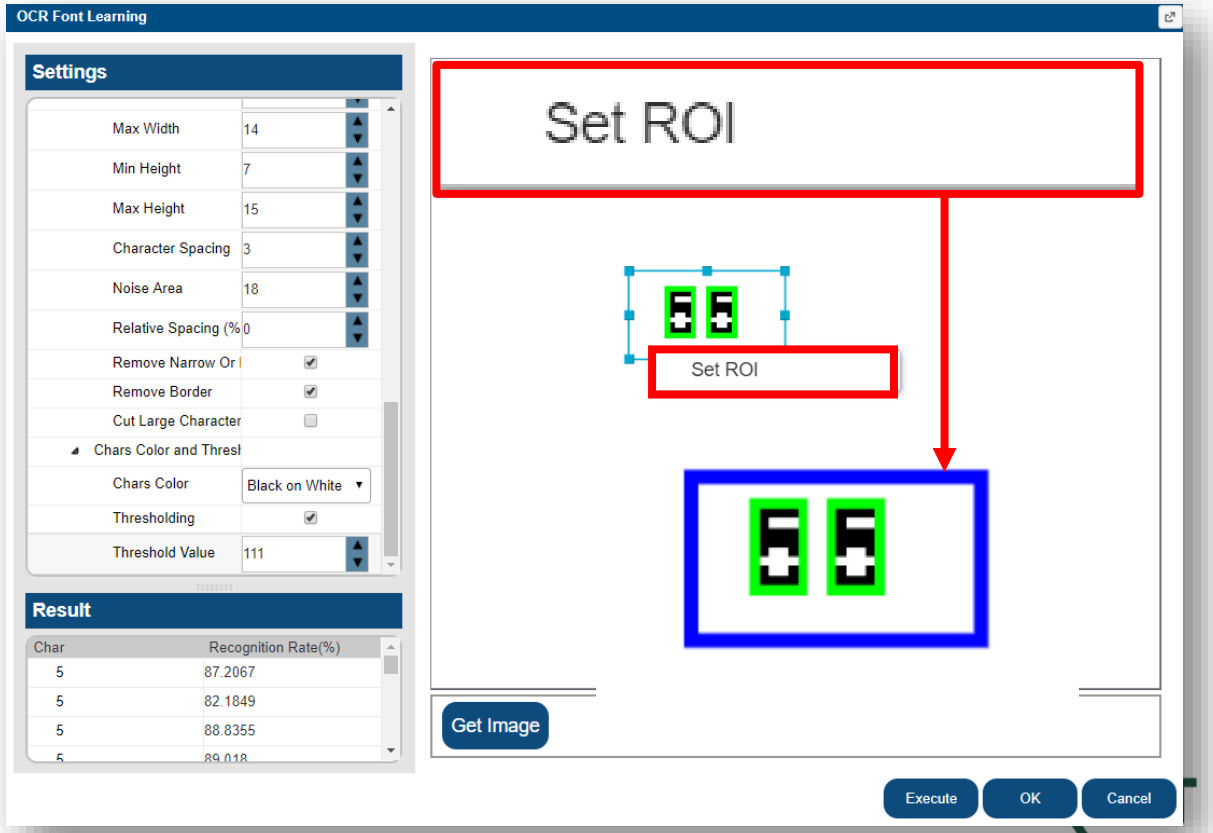
Build Project – Font Learning

- **General : Learn OCR Font**

  5. Learn OCR Font

     b. Learn Multiple Character : Right-click on the image and select **New ROI** → adjust the location and size of ROI → Right-click on the image and select **Set ROI**



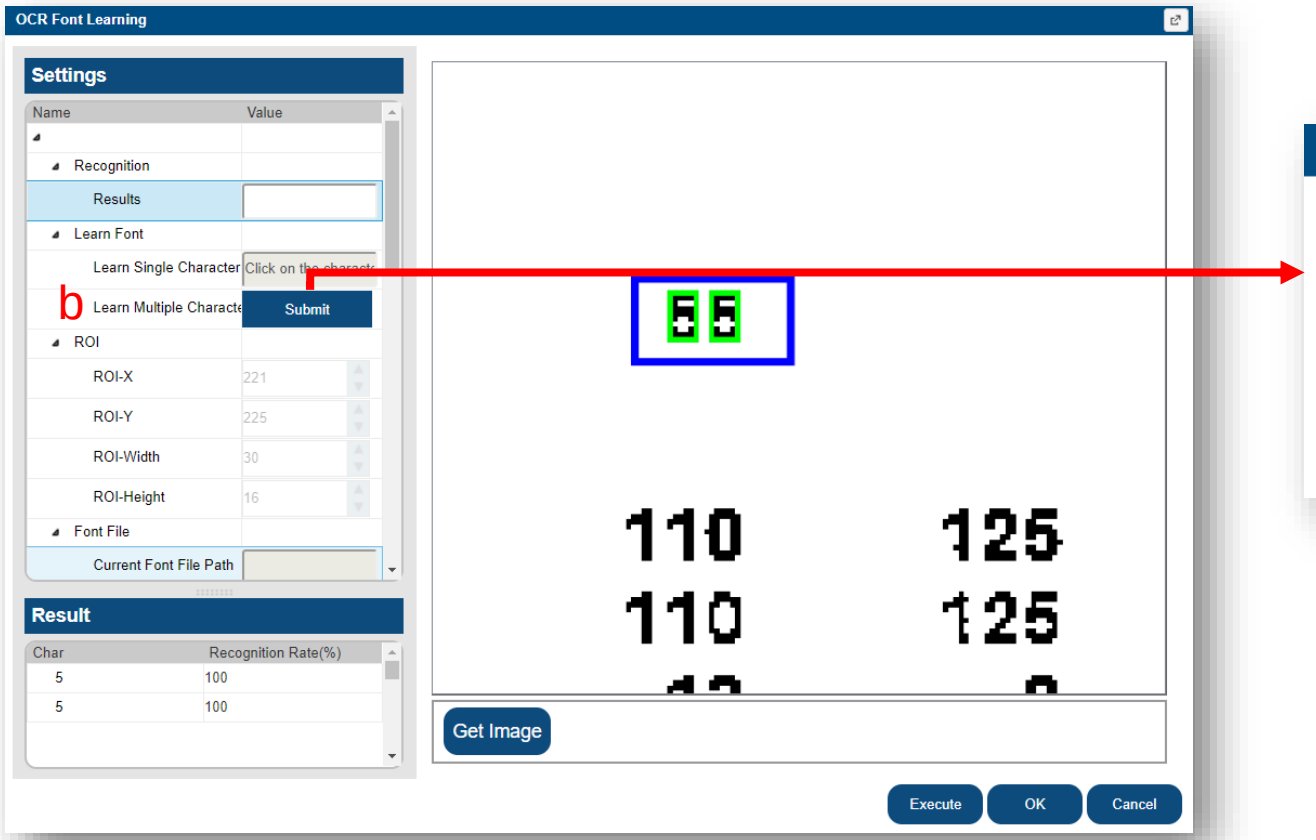


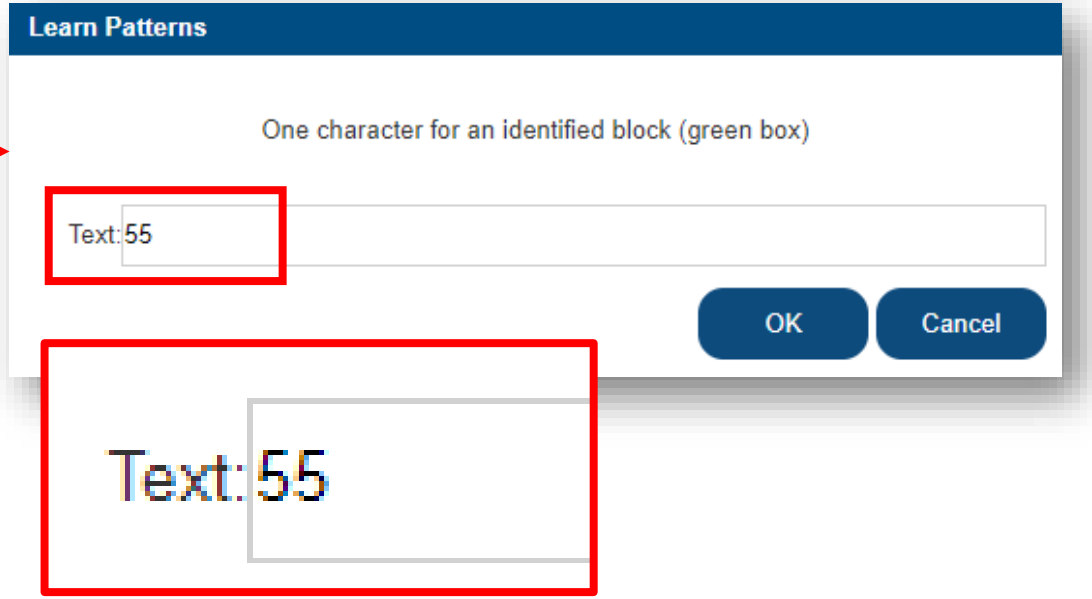
Build Project – Font Learning

- **General : Learn OCR Font**

  5. Learn OCR Font

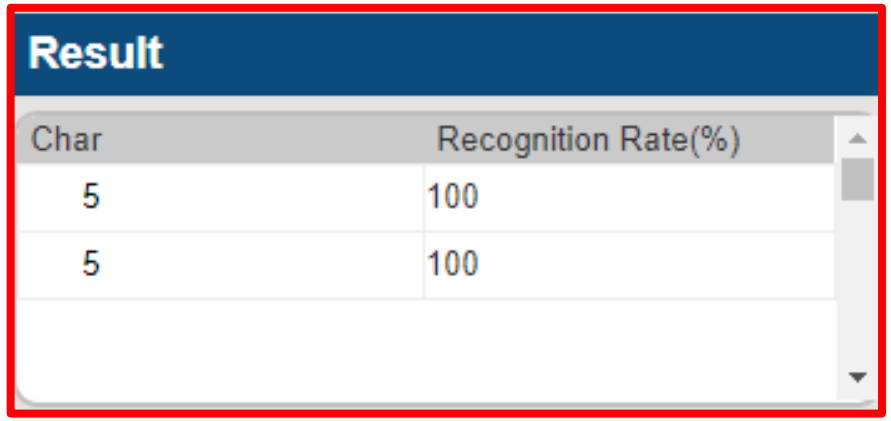
     b. Learn Multiple Character : Click **Learn Multiple Characters** → Enter **Text** → Click **OK**

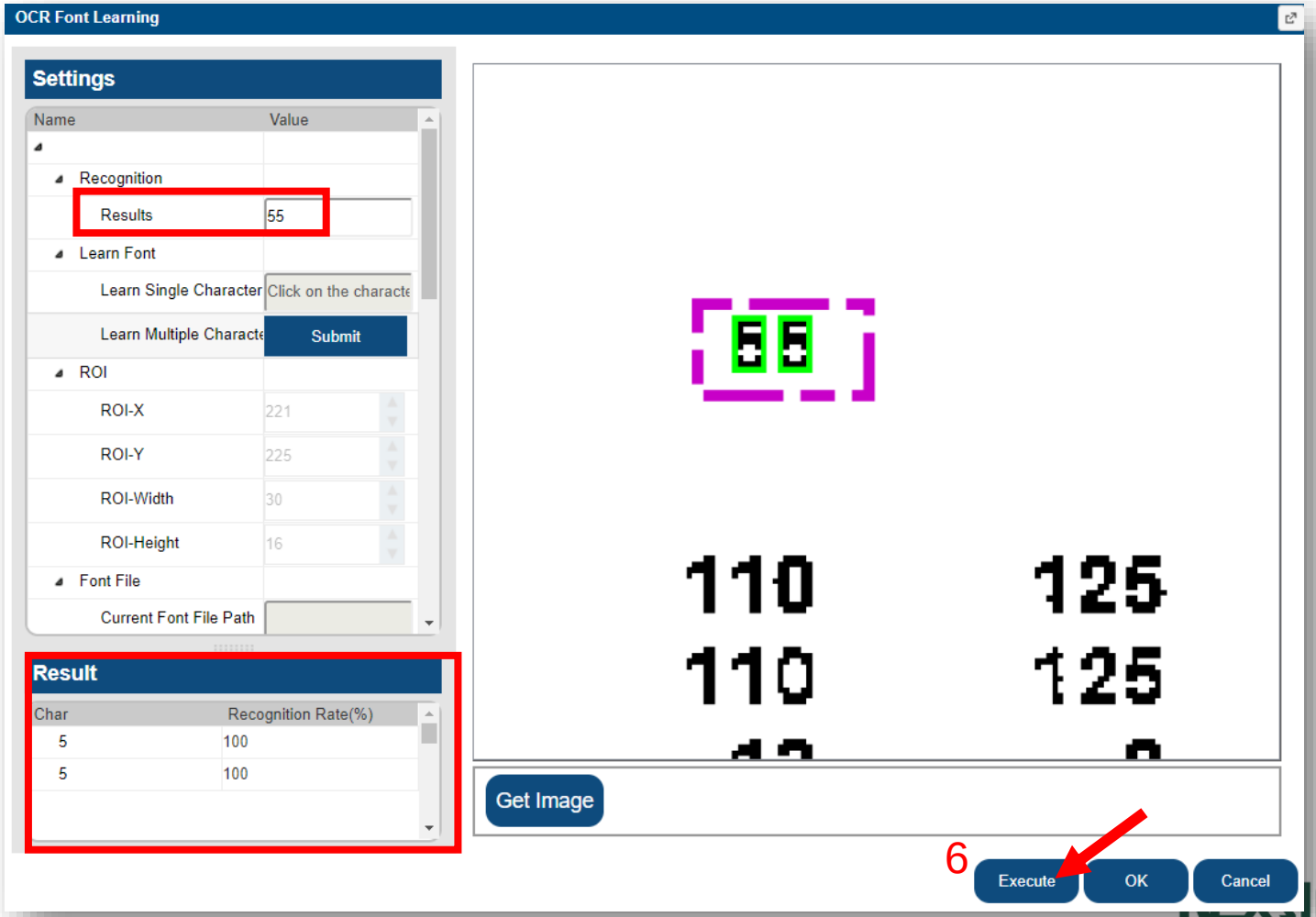




Build Project – Font Learning

- **General : Learn OCR Font**
  6. Simulation : Click **Execute**, and see the result in Recognition **Result** field

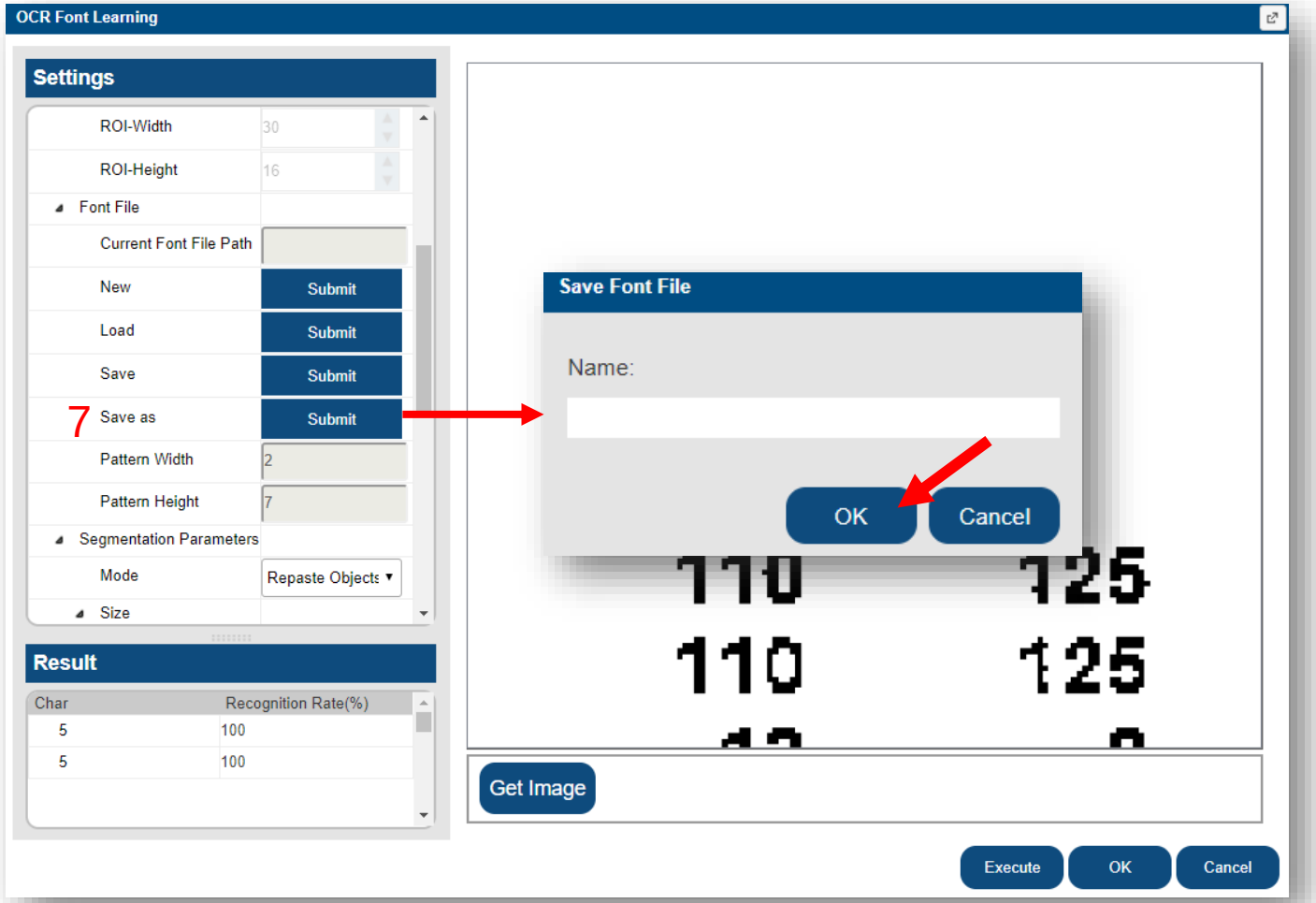




Build Project – Font Learning

- **General : Learn OCR Font**

  7. Save As Font File : Click **Save As** → Enter a **Name** for the font file → Click **OK**

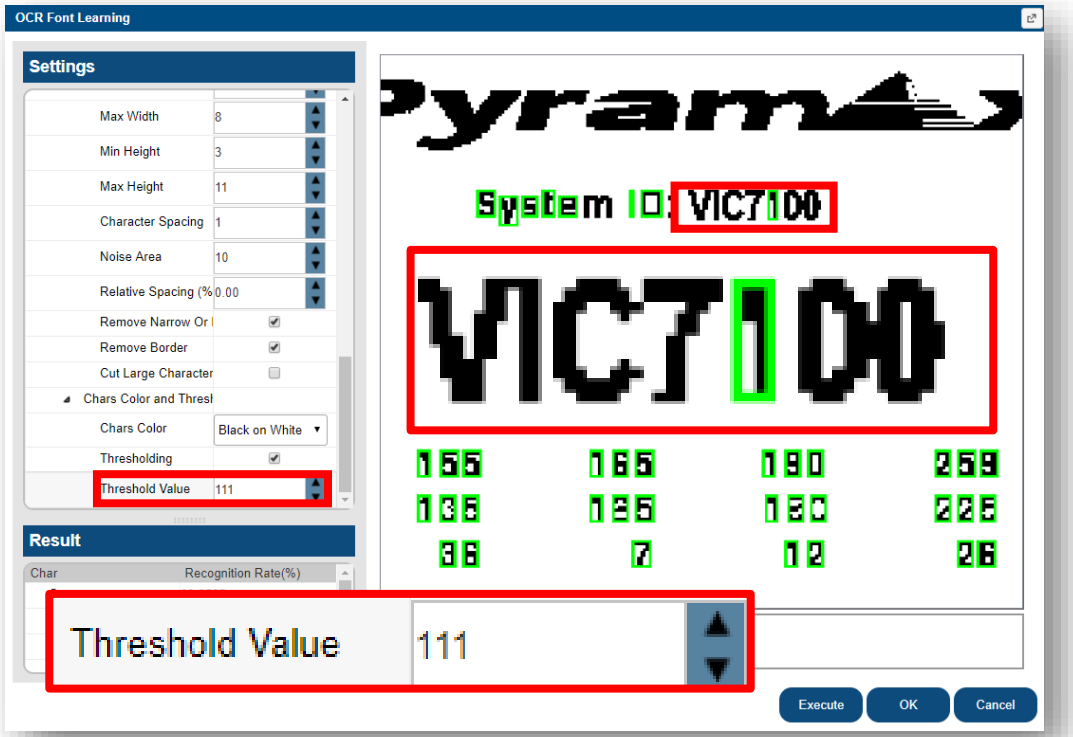


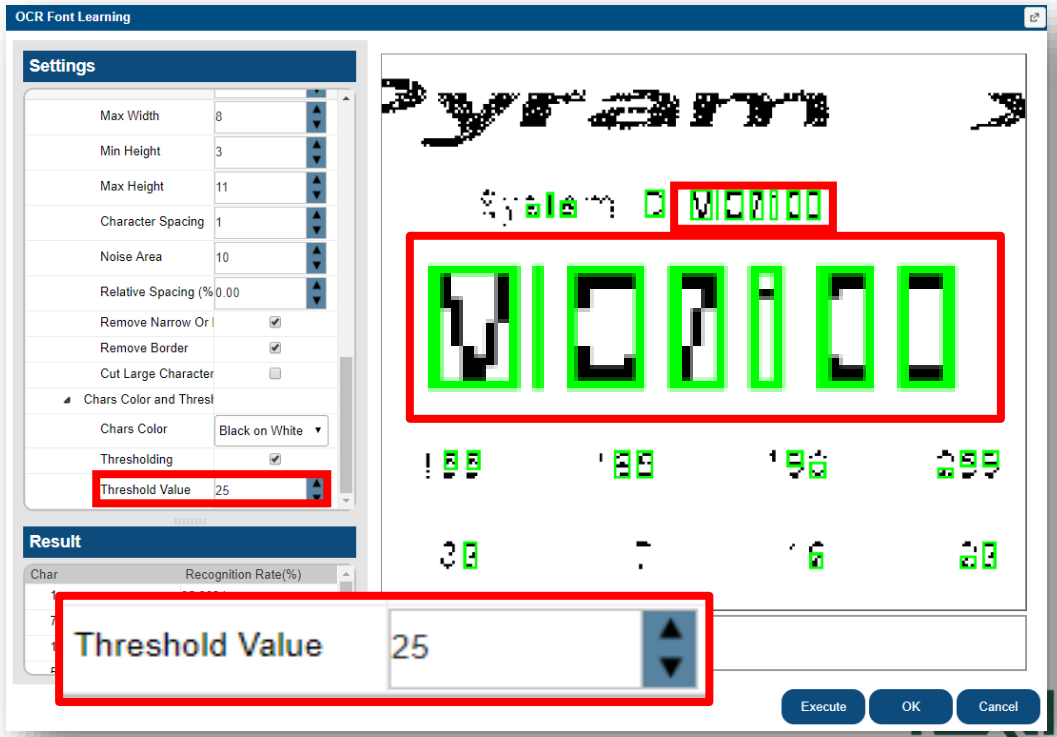
Build Project – Font Learning

- **General**
  - Segmentation Parameter : **Each font file contains its own segmentation parameters**.

    If those parameters are suffered any changes, recognition results will vary in consistent with them.

  Some characters require special segmentation parameter adjustment. Keep in mind that **Create New Font File will clear previously learnt data**. Therefore, users need to save the original font file, before create a new font file or adjust it.

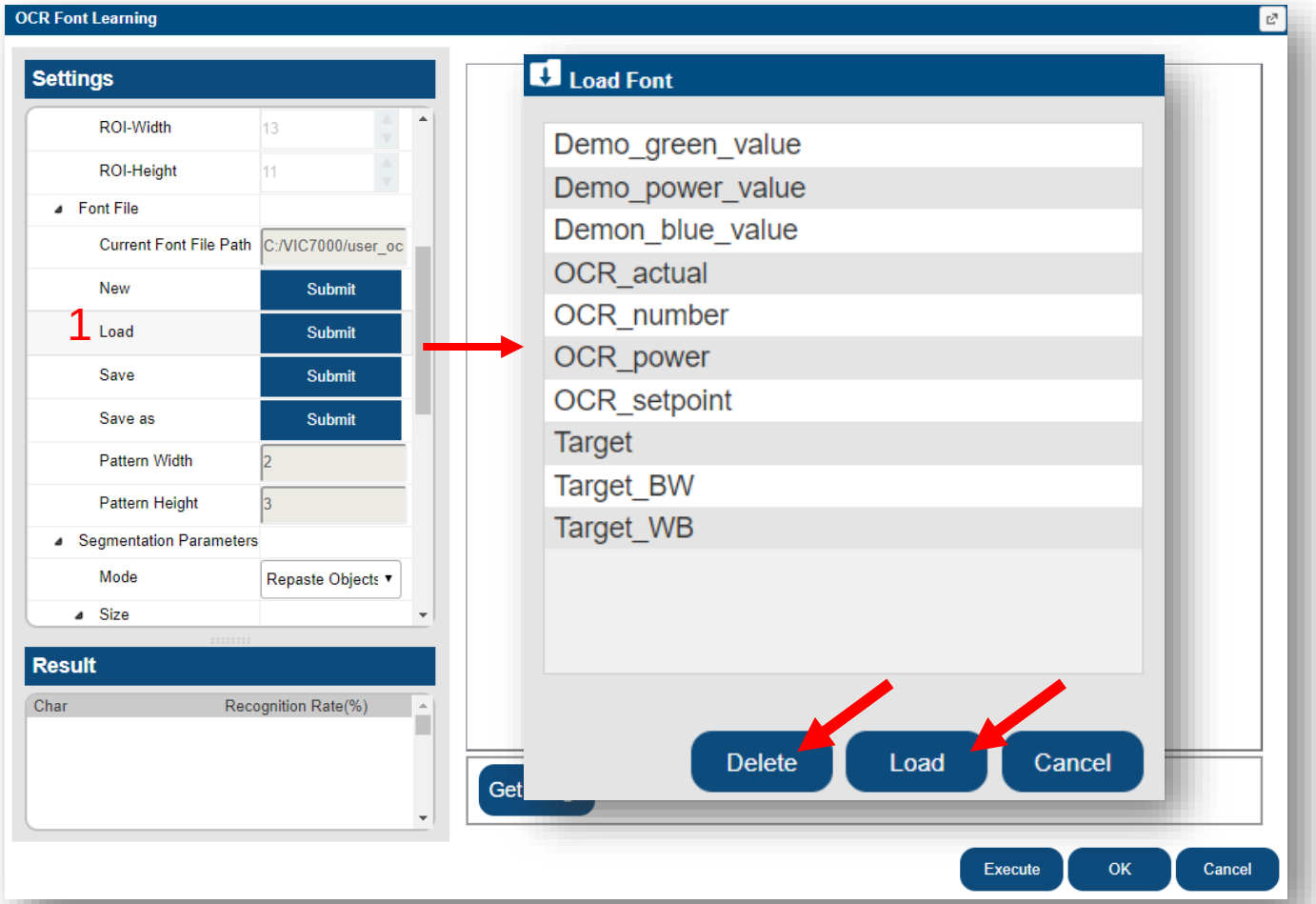




Build Project – Font Learning

- **General**
  - Keep training : Load font file and train more characters

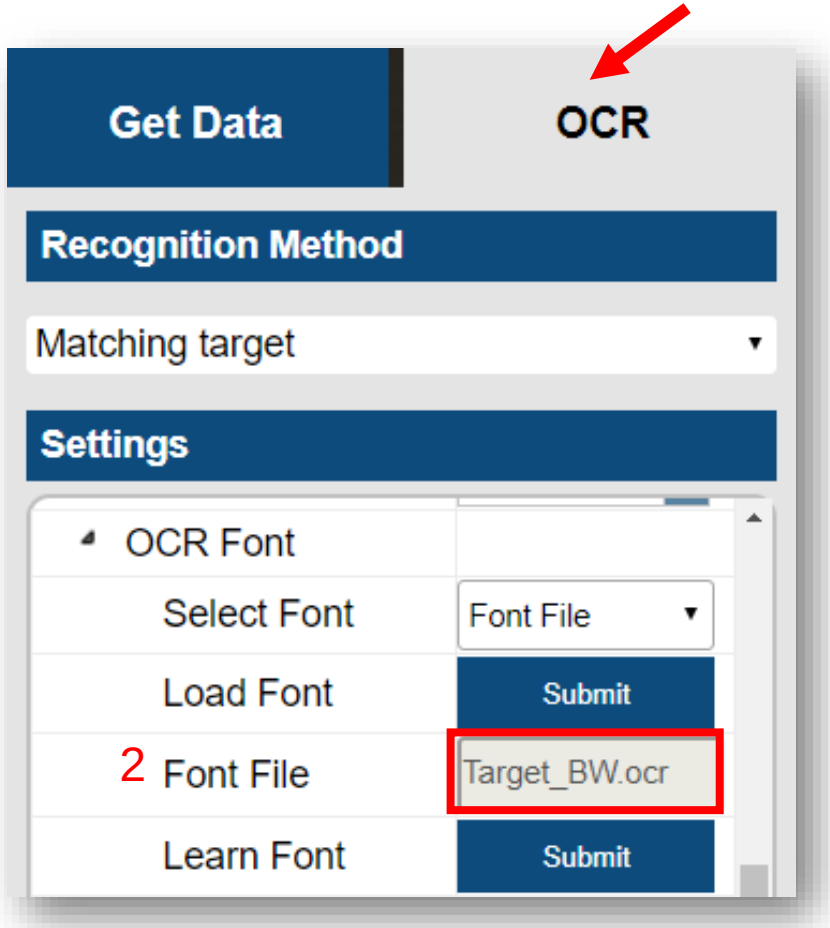
    1. Load : Load font file with **Load** button in OCR Font Learning window

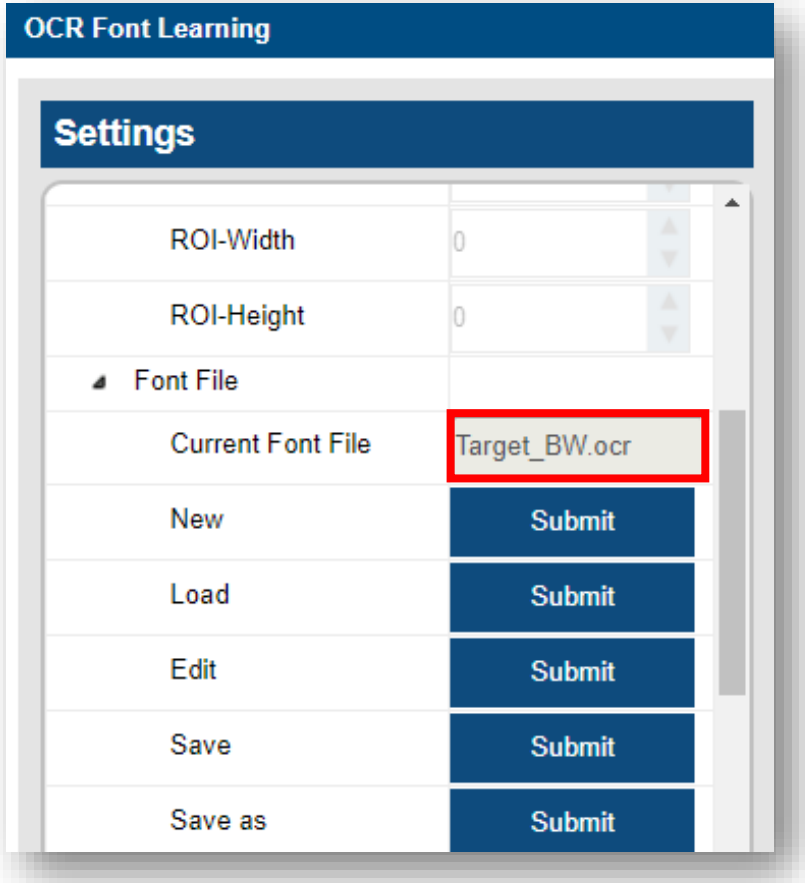


Build Project – Font Learning

- **General**
  - Keep training : Load font file and train more characters

    2. Direct Load : Directly load font file used in recognition config page

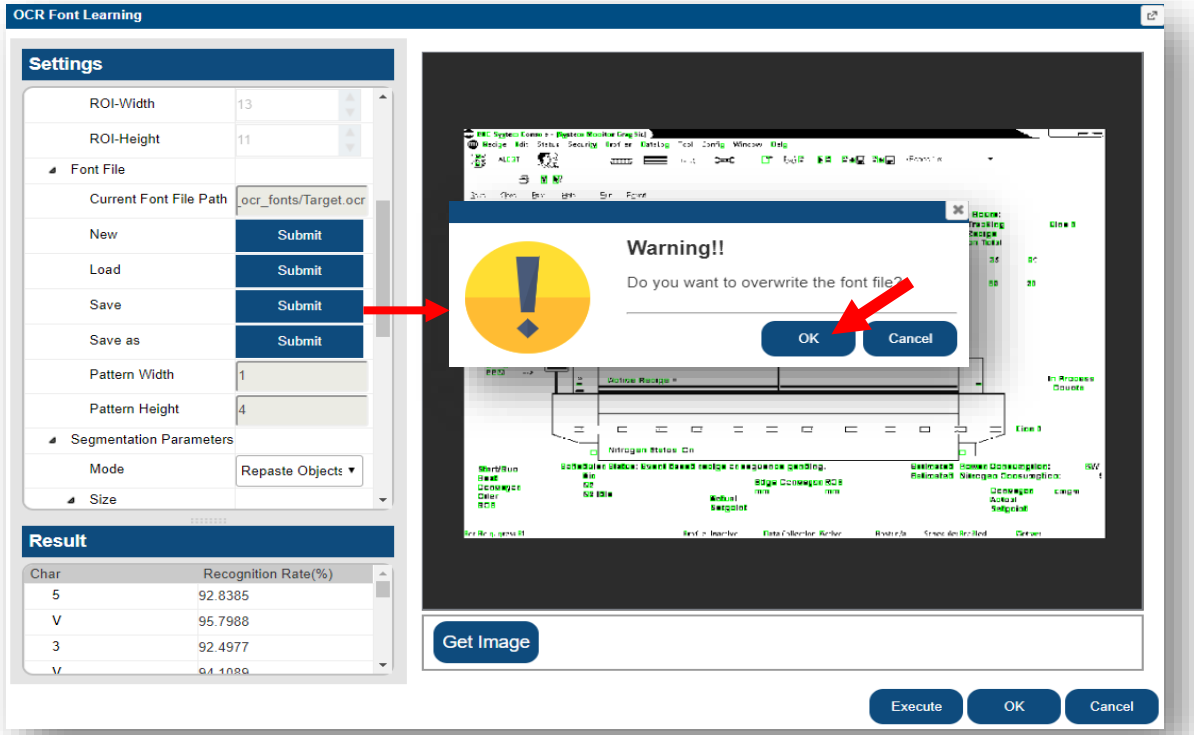




Build Project – Font Learning

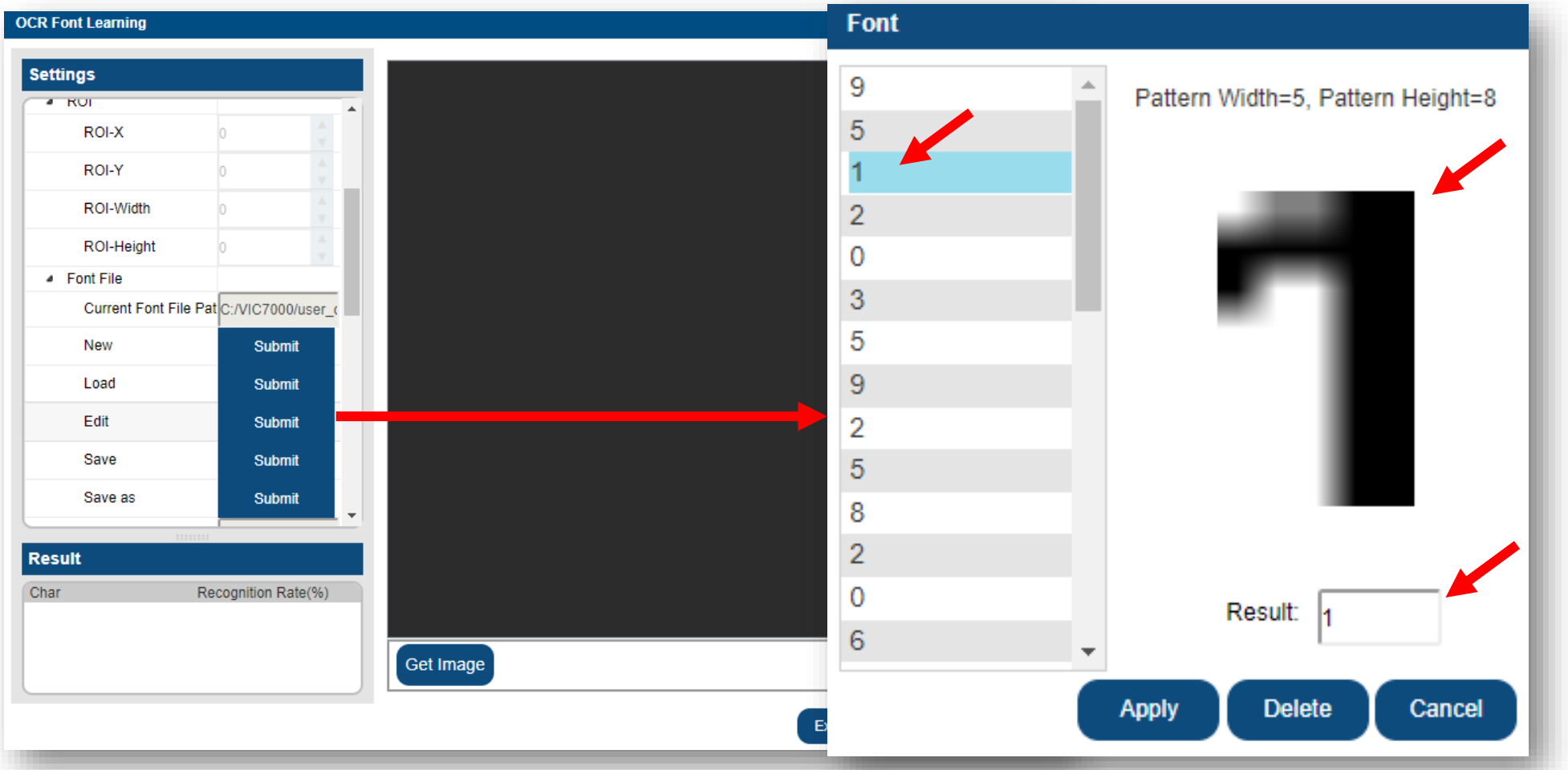
- **General**
  - Keep Learning : Once segmentation parameters are re-adjusted, the recognition processes will apply new segmentation parameters.

    When learning process is finished → Click **Save** → Click **OK** to overwrite, repeating training process until all necessary characters are trained



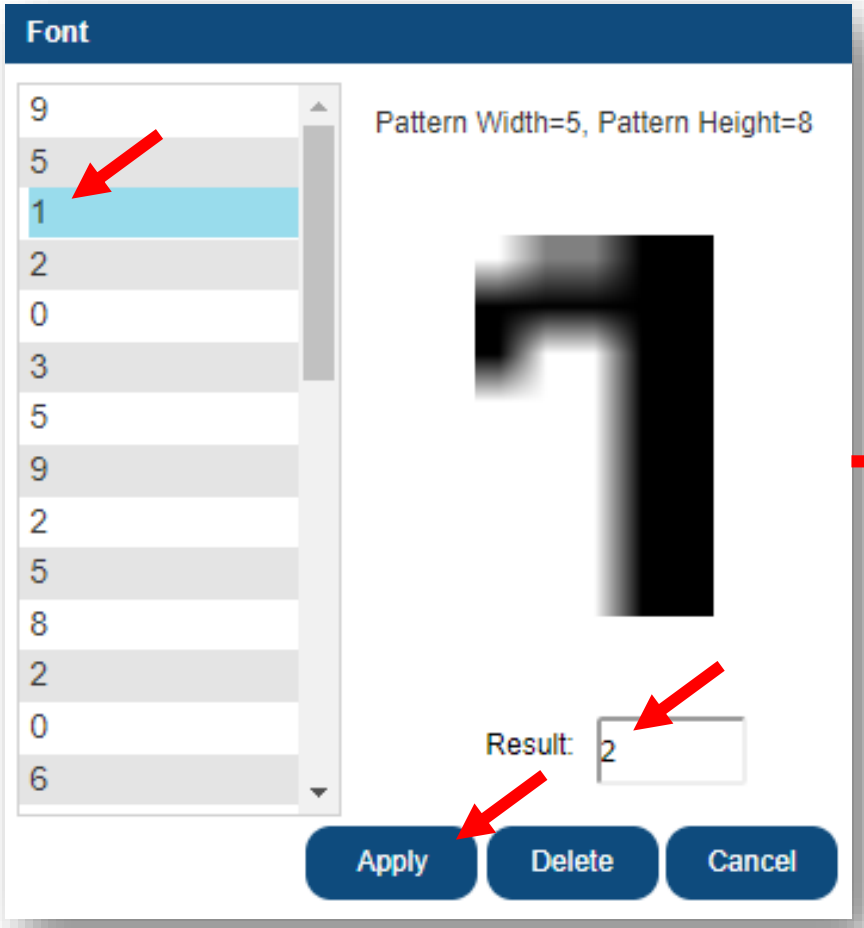
Build Project – Font Learning

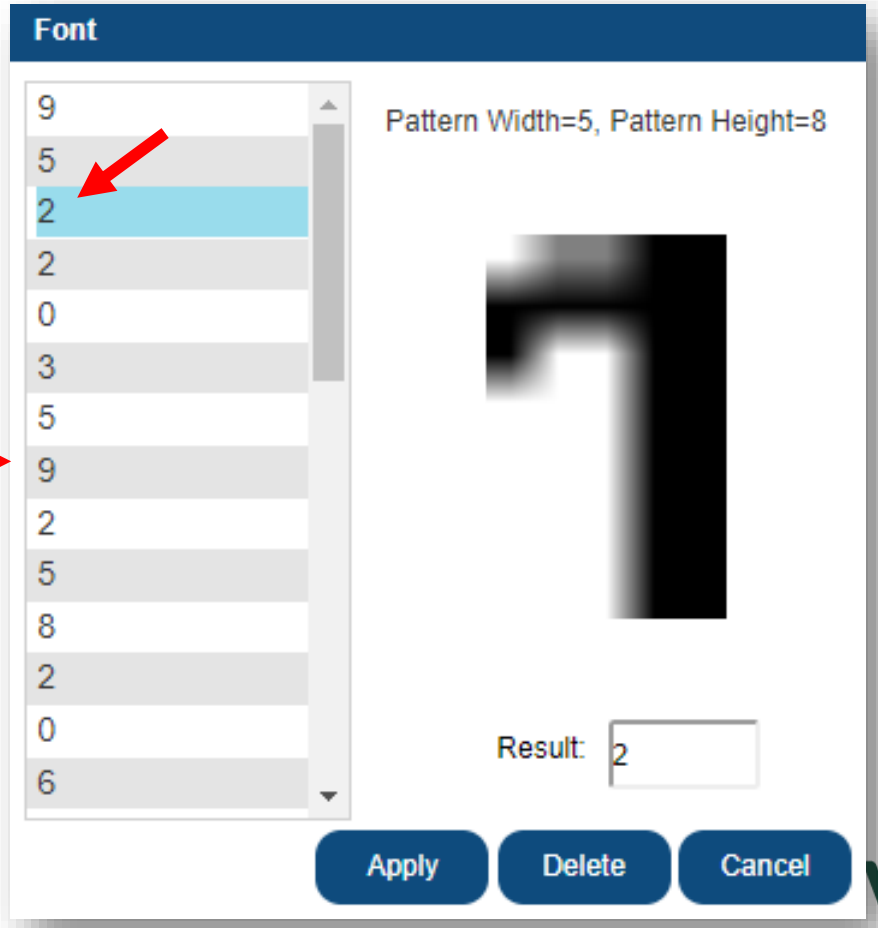
- **General**
  - Edit Font File : Click **Edit** in OCR Font Learning window. **Learnt samples and contents** can be reviewed or deleted in **Font window**.



Build Project – Font Learning

- **General**
  - Edit Font File : User can Edit learnt data in Font window. Enter changes in Result field, and click **Apply**.

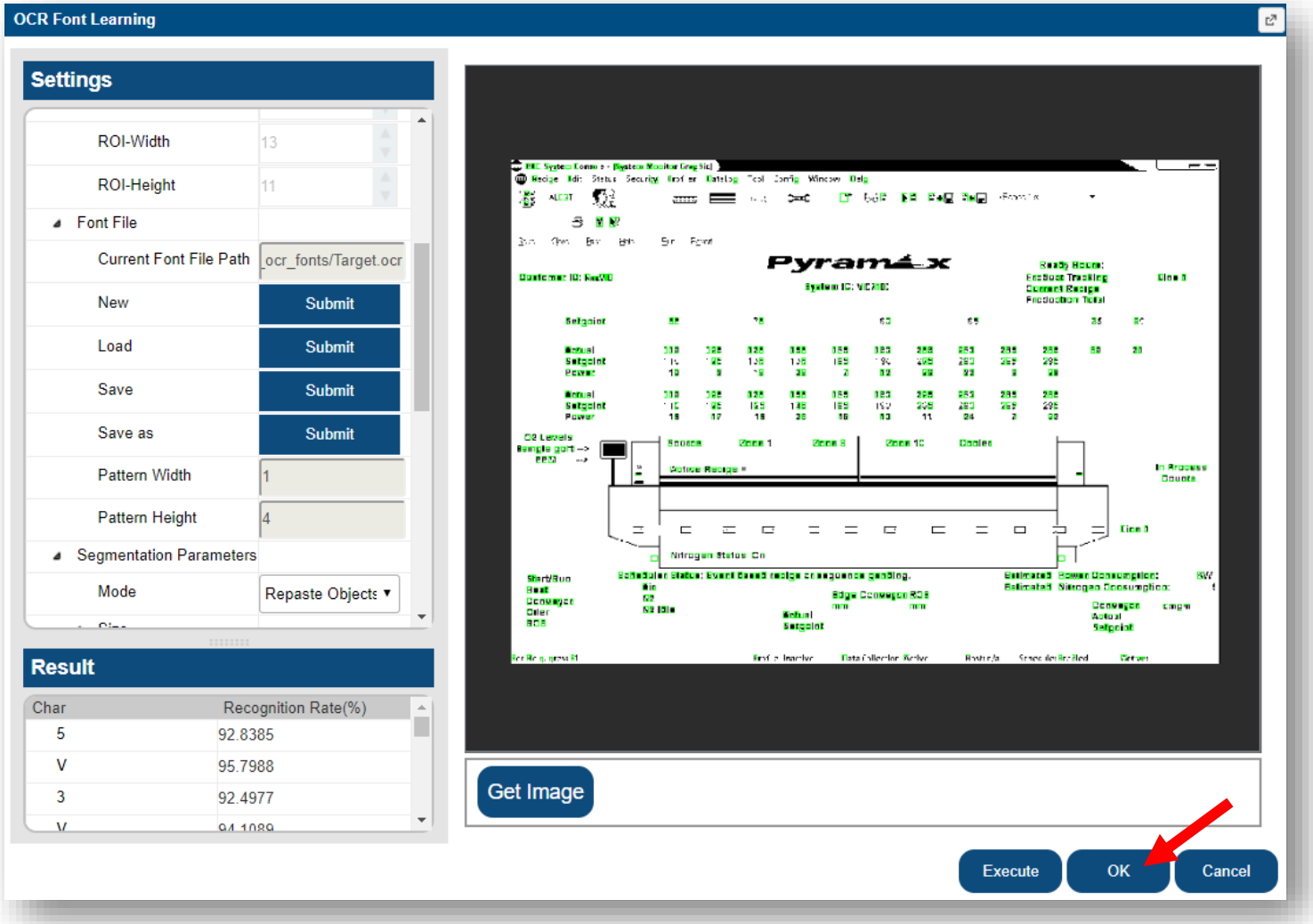




Build Project – Font Learning

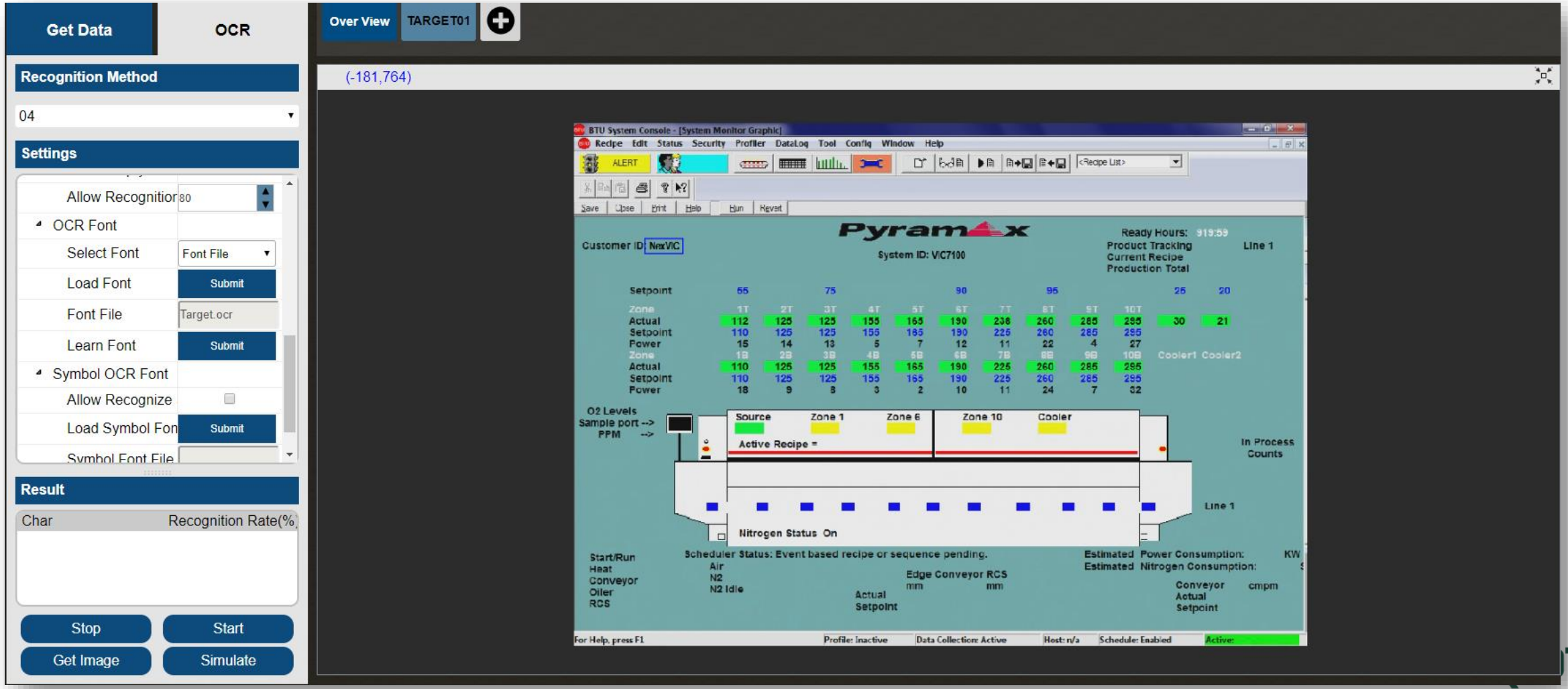
- **General : Learn OCR Font**

  8. Finish Learning : Click **OK** to close OCR Font Learning window



Build Project – Font Learning

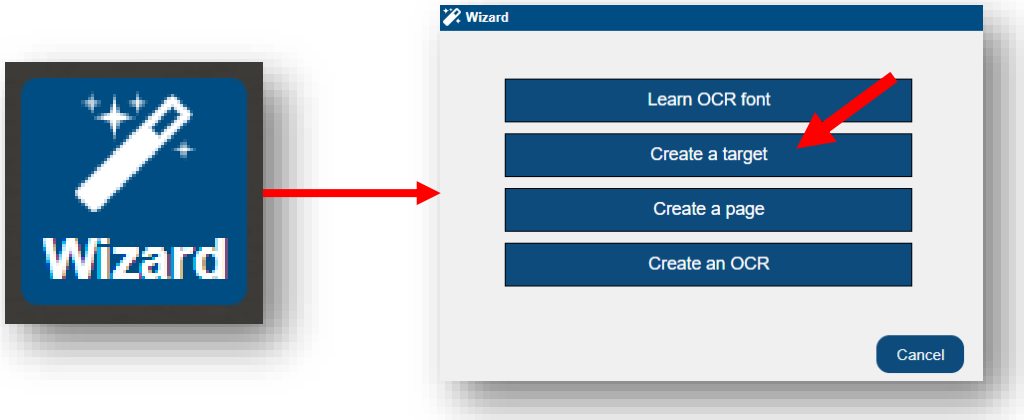
- **General : Learn OCR Font**
  8. Finish Learning : Back to OCR config page

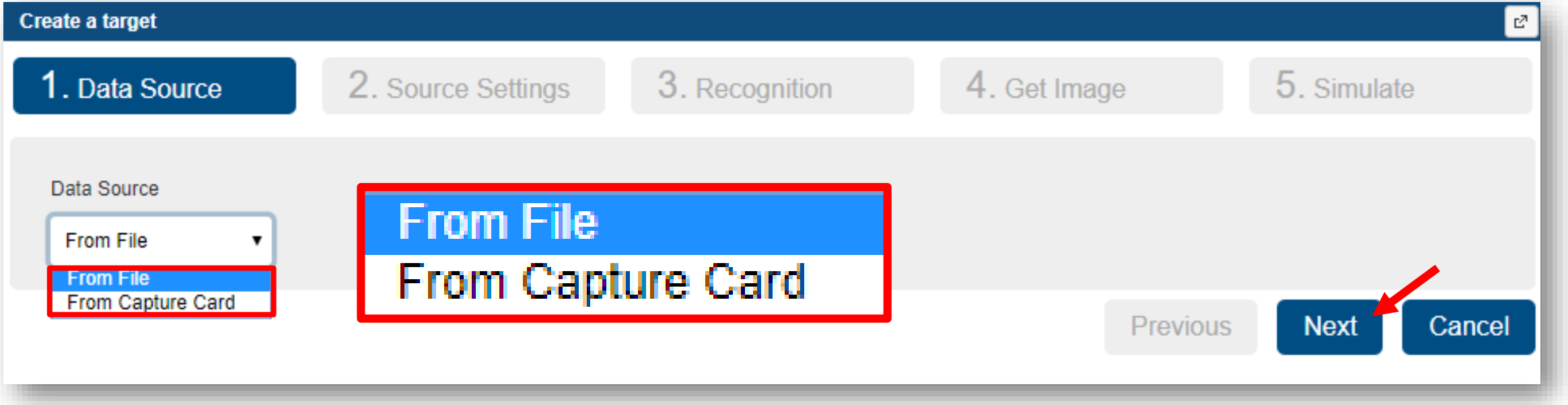


Build Project – Target

- **Wizard : Create a target**
  1. Data Source

     From File or From Capture Card



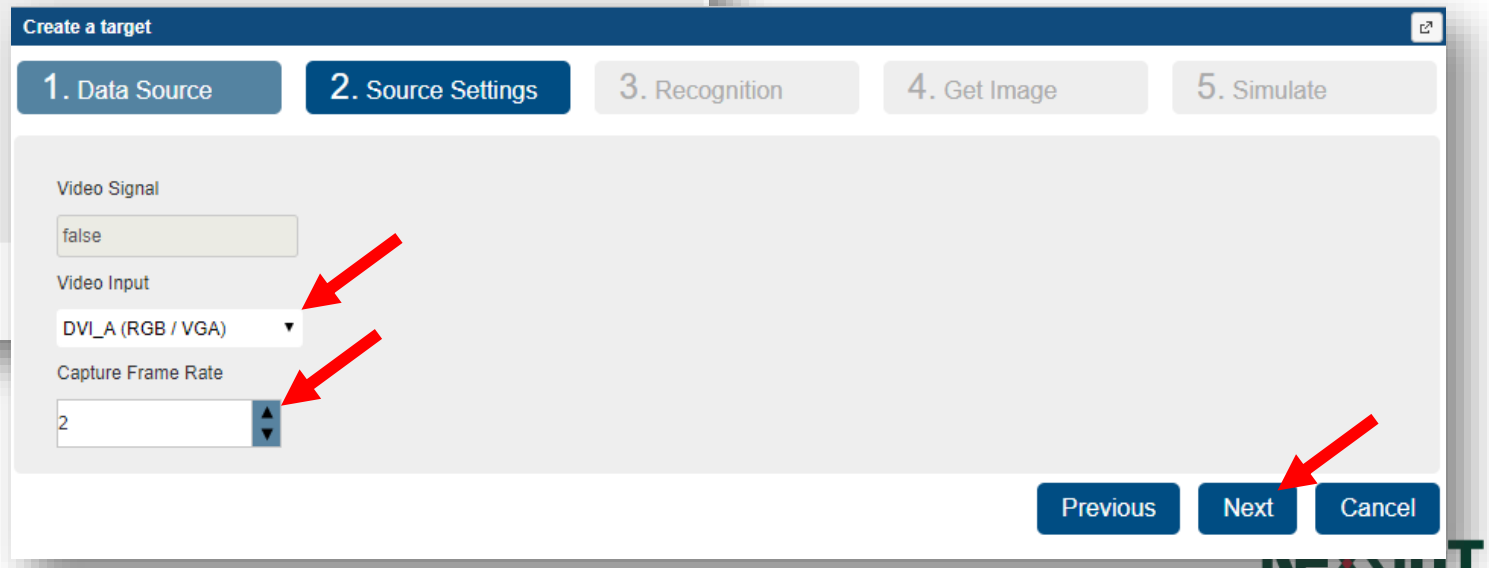


Build Project – Target

- **Wizard : Create a target**
  2. Source Settings

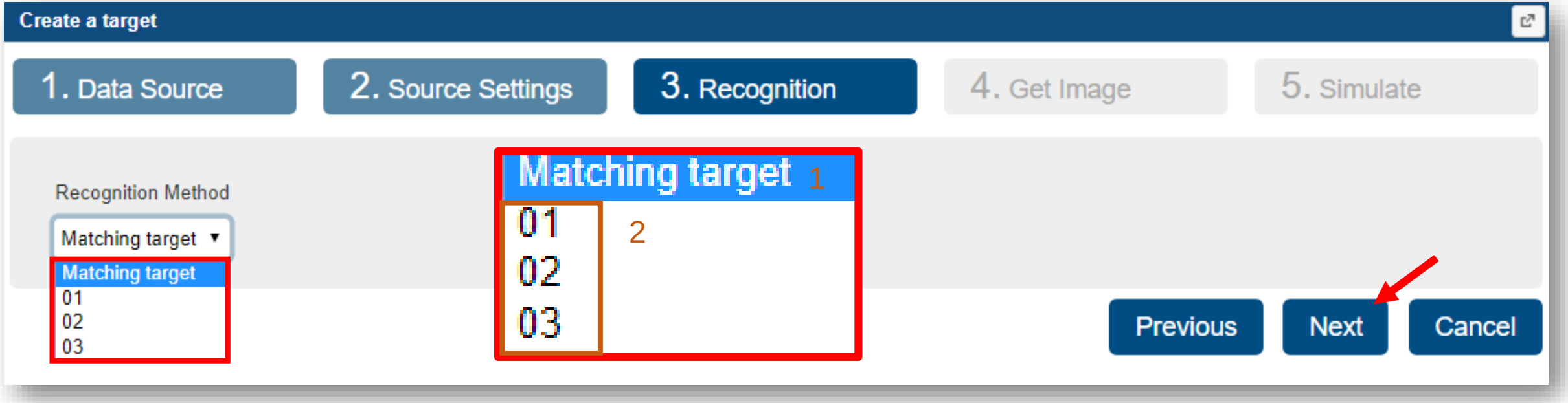
     From File : Image folder Path, Read interval

     From Capture Card : Video input signal type, Capture frame rate



Build Project – Target

- **Wizard : Create a target**
  3. Recognition
     1. Matching target : Automatically select recognition page based on target matching result
     2. Specify page : Directly specify the page to use



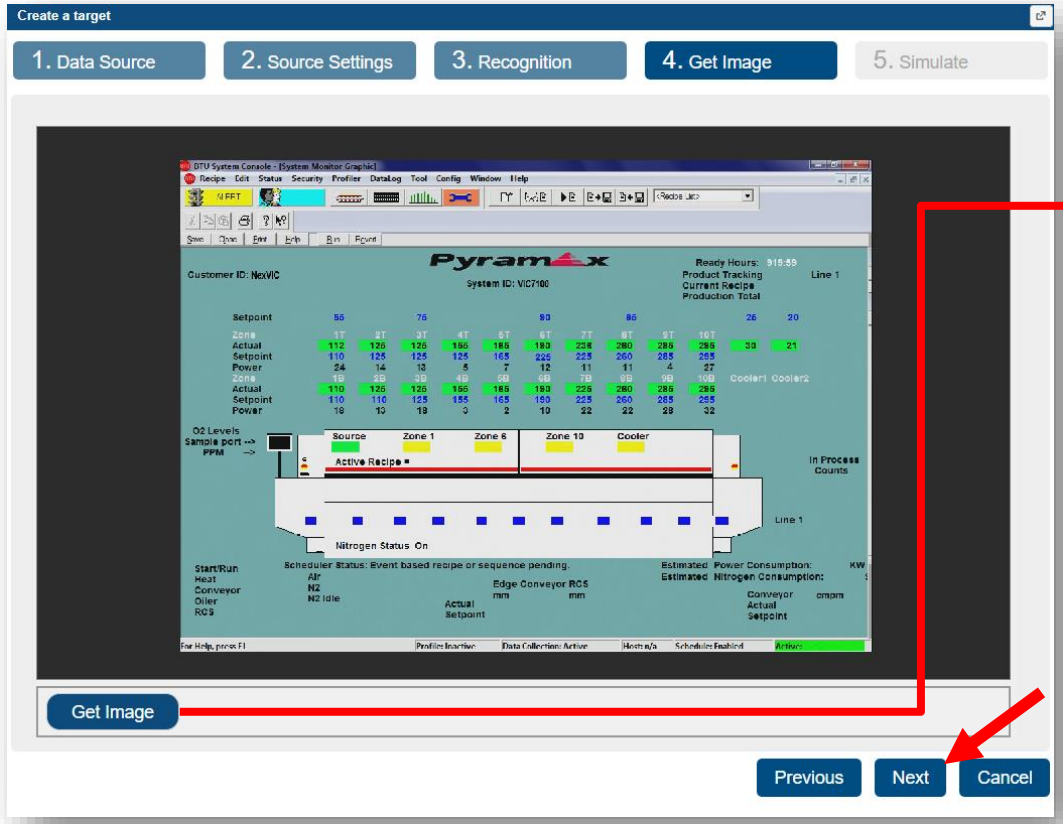
Build Project – Target

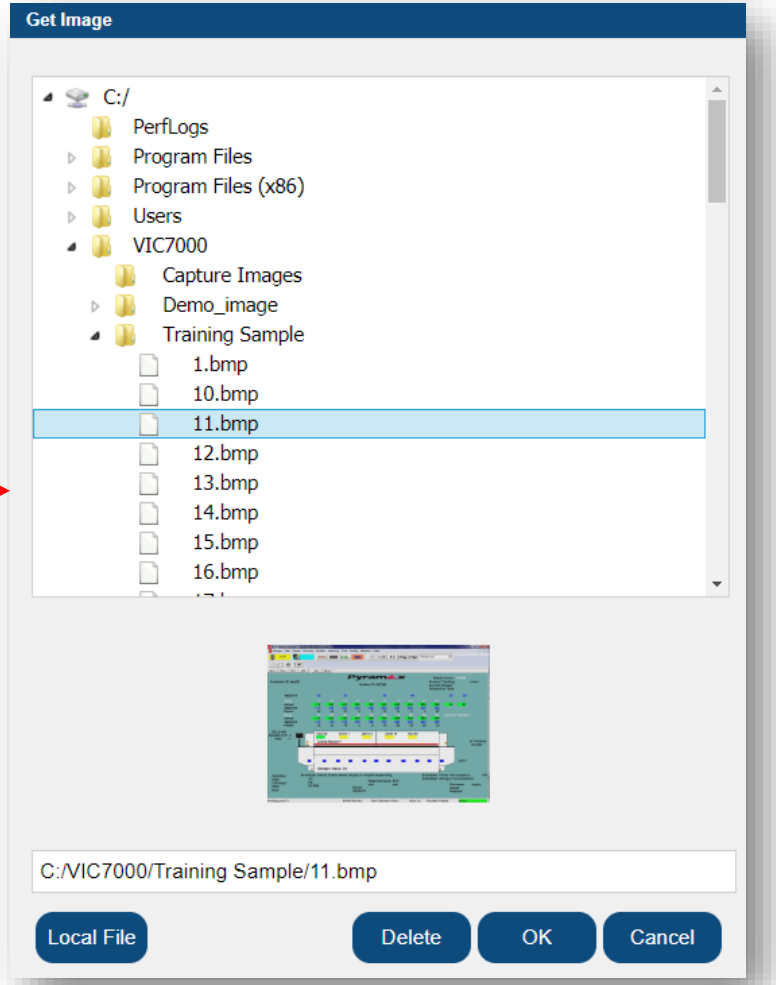
- **Wizard : Create a target**

  4. Get Image

     From File : Read images from local or remote folders

     From Capture Card : Get an image from the capture card





Build Project – Target

- **Wizard : Create a target**

  5. Simulate

     Right-click on an image and click **New ROI (**or Click **New ROI)** → Resize location and size of ROI → Right-click on the image and click **Set ROI (**or Click **Set ROI)**

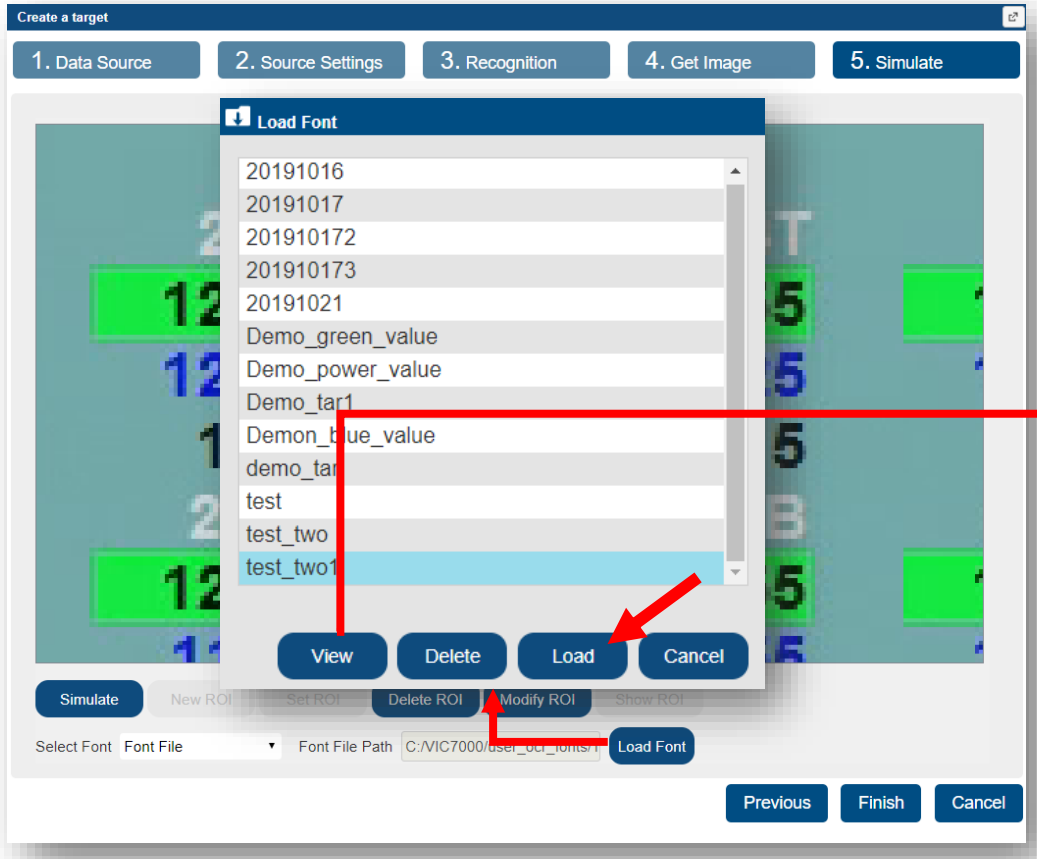
Build Project – Target

- **Wizard : Create a target**

  5. Simulate

     Click **Load Font** → Choose a font file used for recognition → Click **Load**

After selecting the font file, user can click preview to preview the learnt content of the font file



Build Project – Target

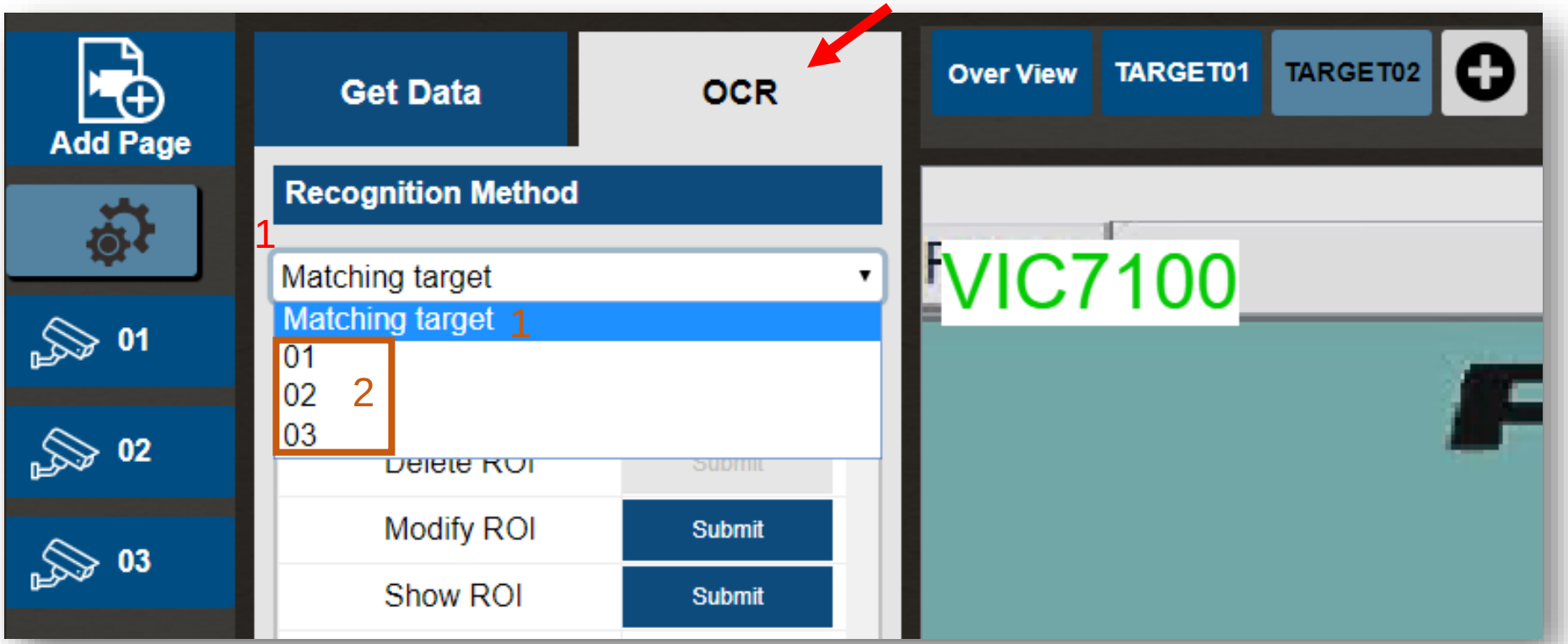
- **Wizard : Create a target**

  5. Simulate

     Click **Simulate** → Confirm the recognition result, which is used as TARGETs

Build Project – Target

- **General : Create a Target**
  1. Recognition Method
     1. Matching target : Automatically select recognition page based on target matching result
     2. Specify page : Directly specify the page to use

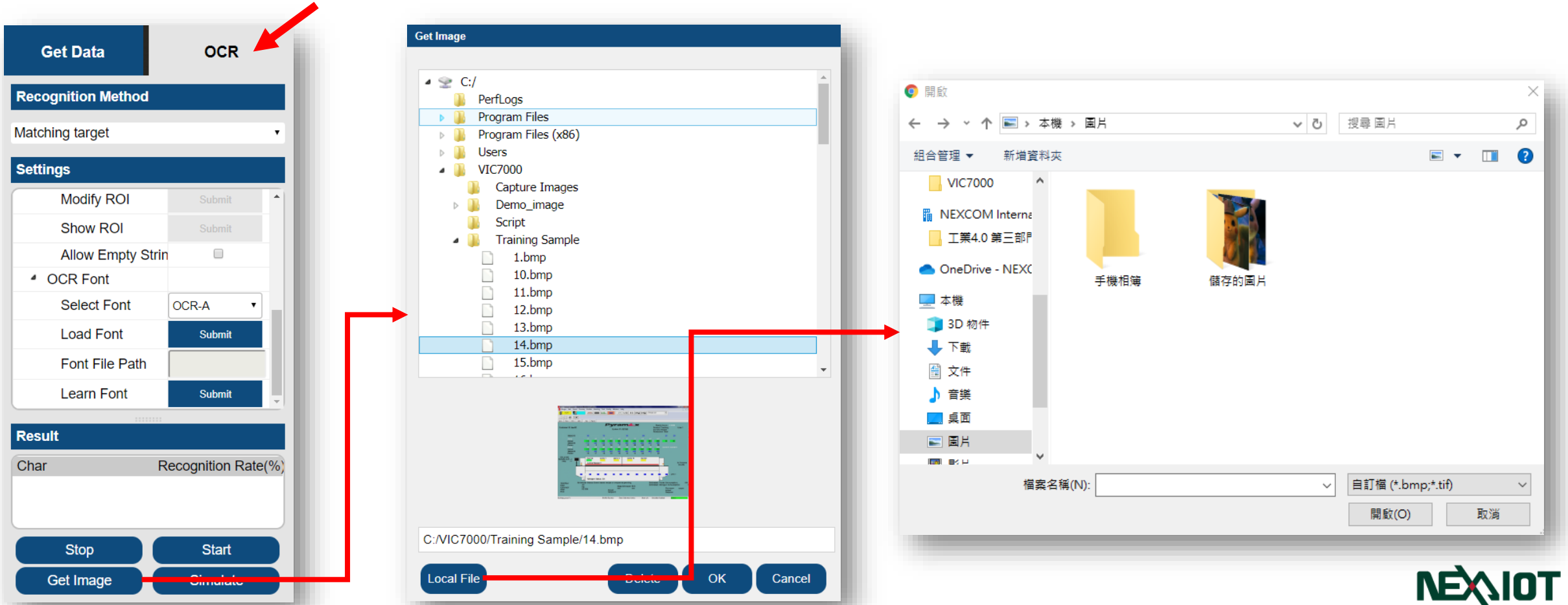


Build Project – Target

- **General : Create a Target**

  2. Get Image

     a. From File : Read images from a local folder or a remote folder

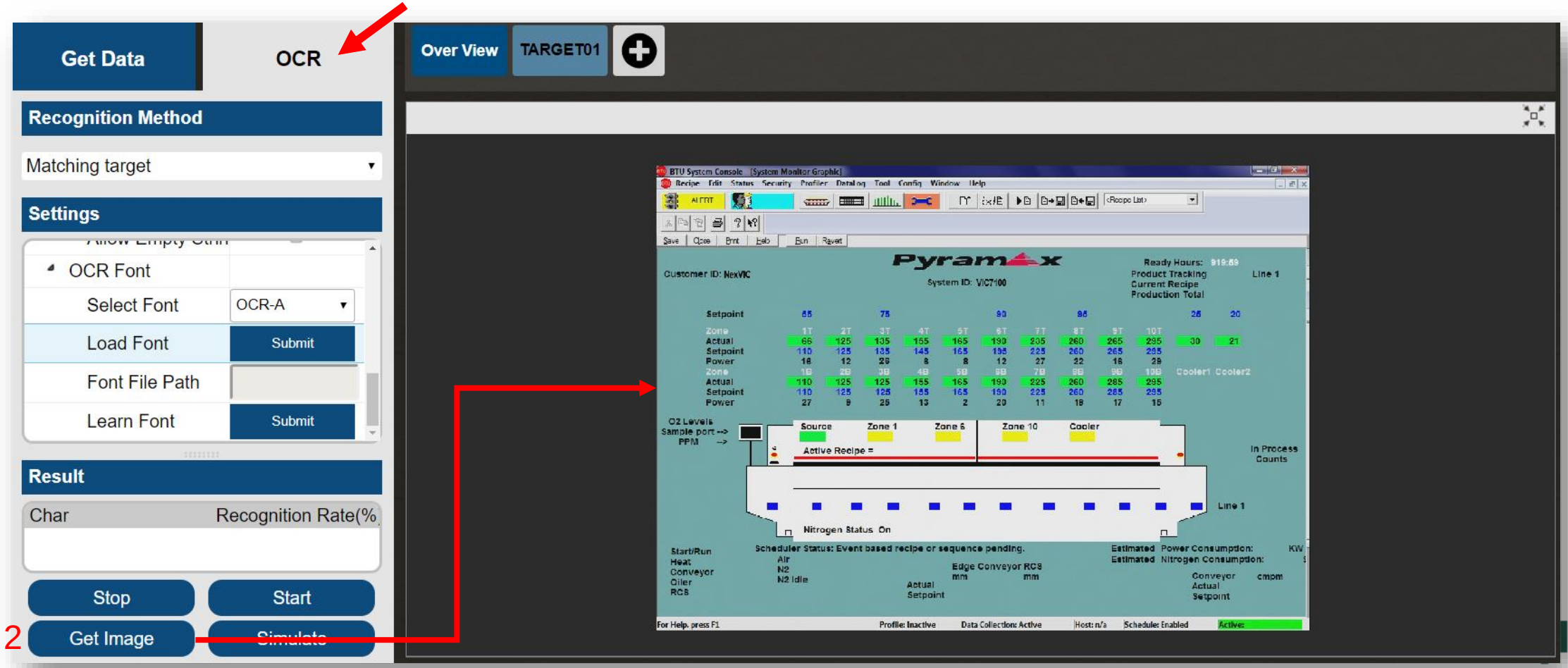


Build Project – Target

- **General : Create a Target**

  2. Get Image

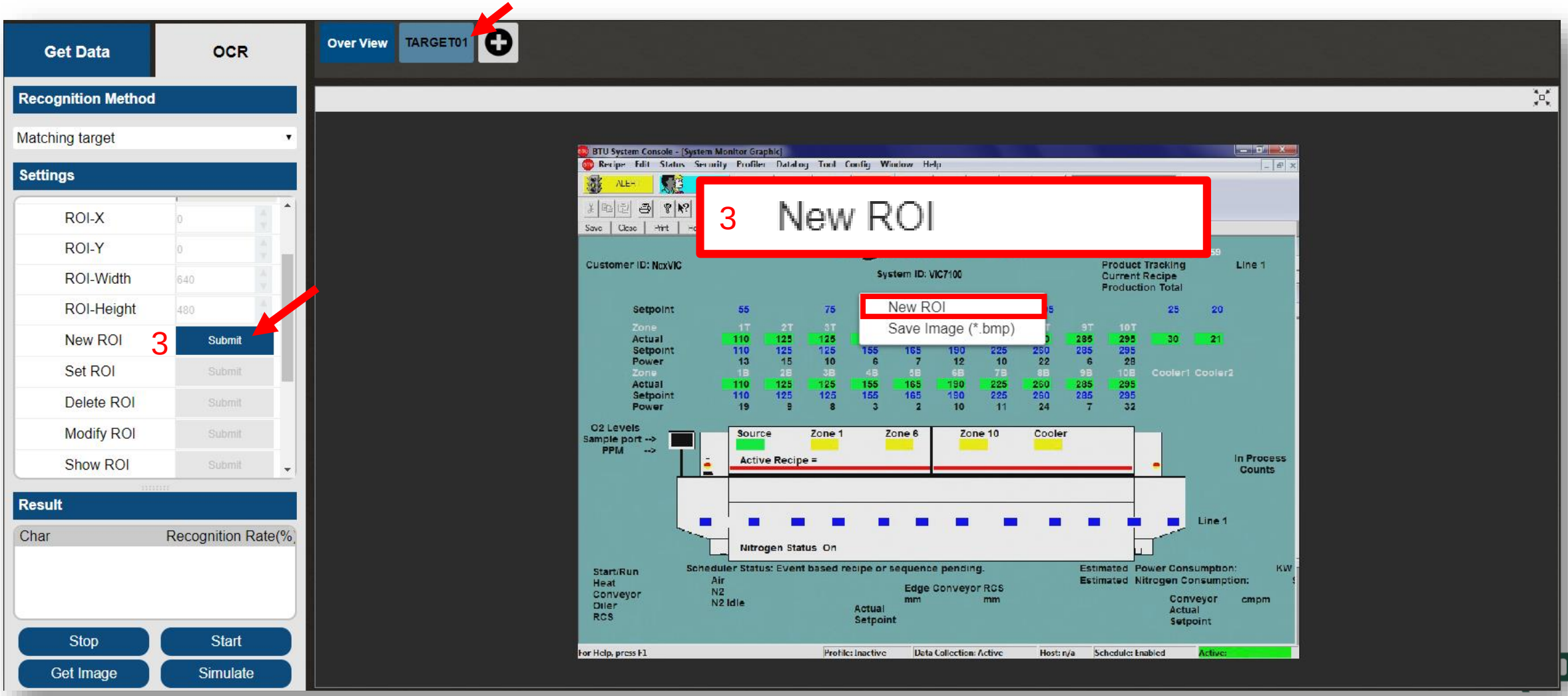
     b. From Capture Card : Get an image from capture card



Build Project – Target

- **General : Create a Target**

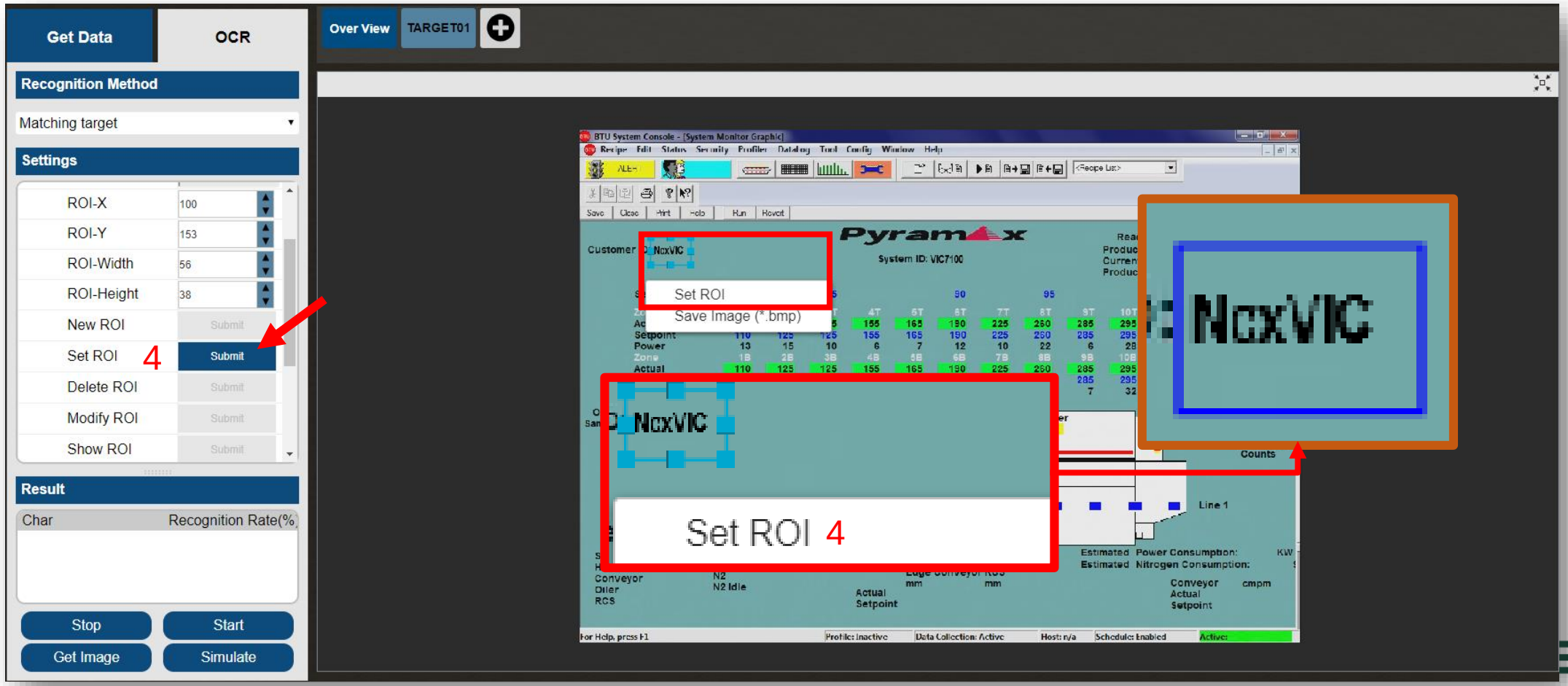
  3. New ROI : Right-click on the image and select **New ROI (**or Click **New ROI)**



Build Project – Target

- **General : Create a Target**

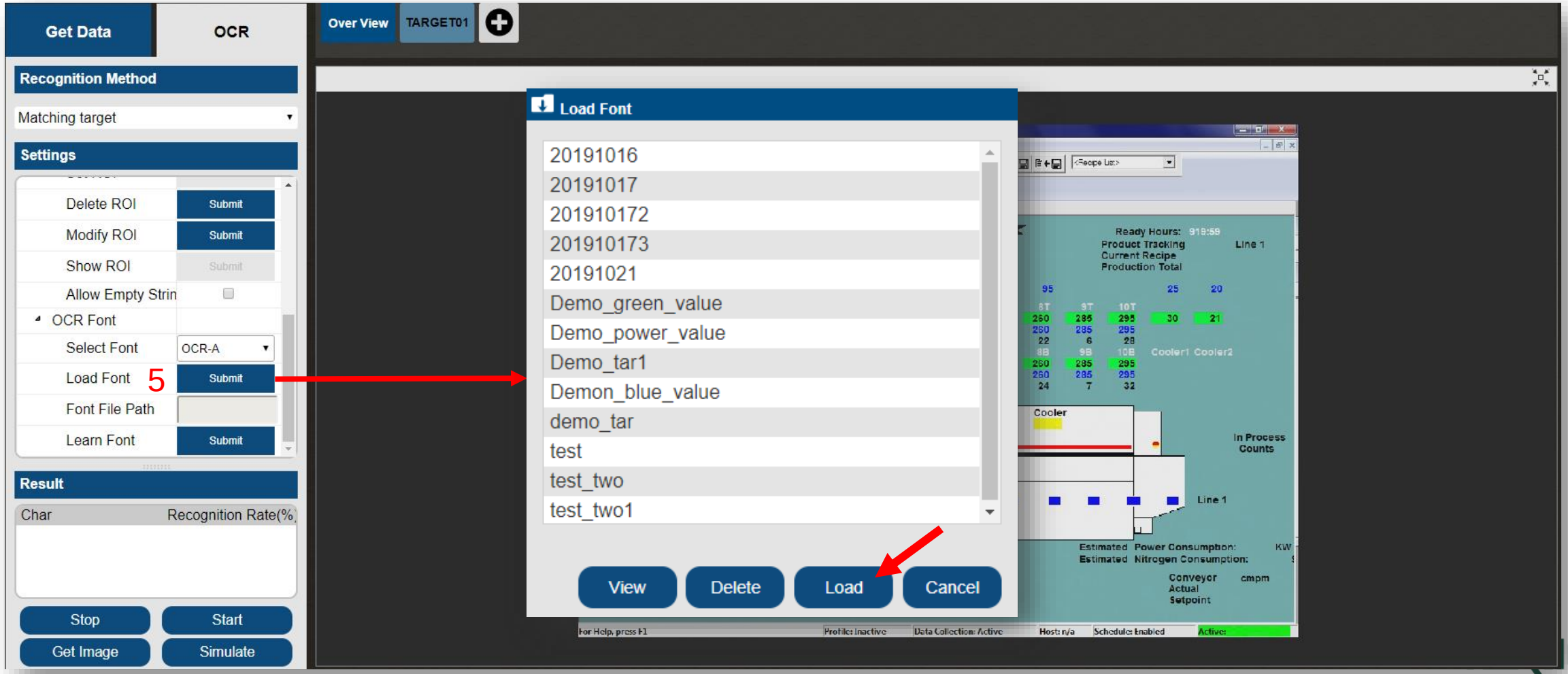
  4. Set ROI : Resize location and size of ROI → Right-click on image and click **Set ROI (**or Click **Set ROI)**



Build Project – Target

- **General : Create a Target**

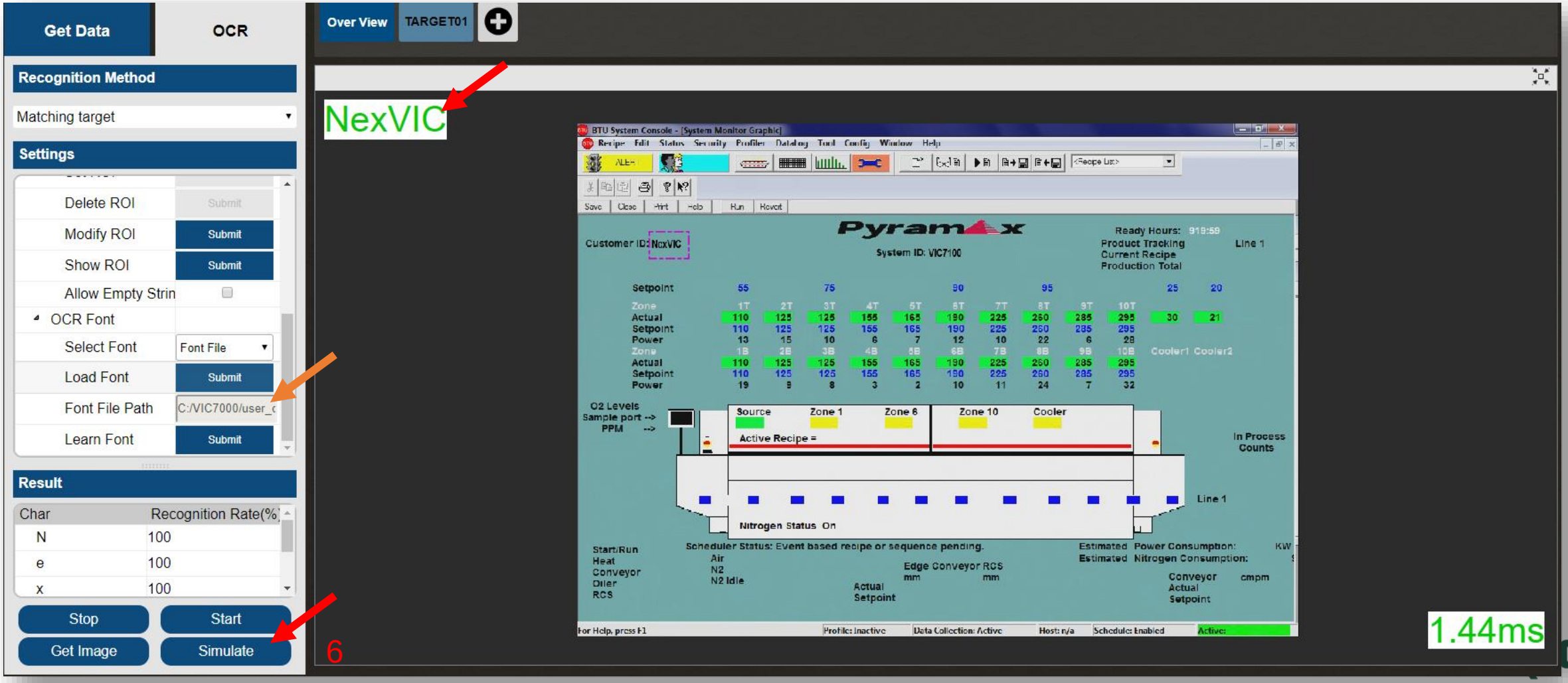
  5. Load Font : Click **Load Font** → Choose a font file used for recognition → Click **Load**



Build Project – Target

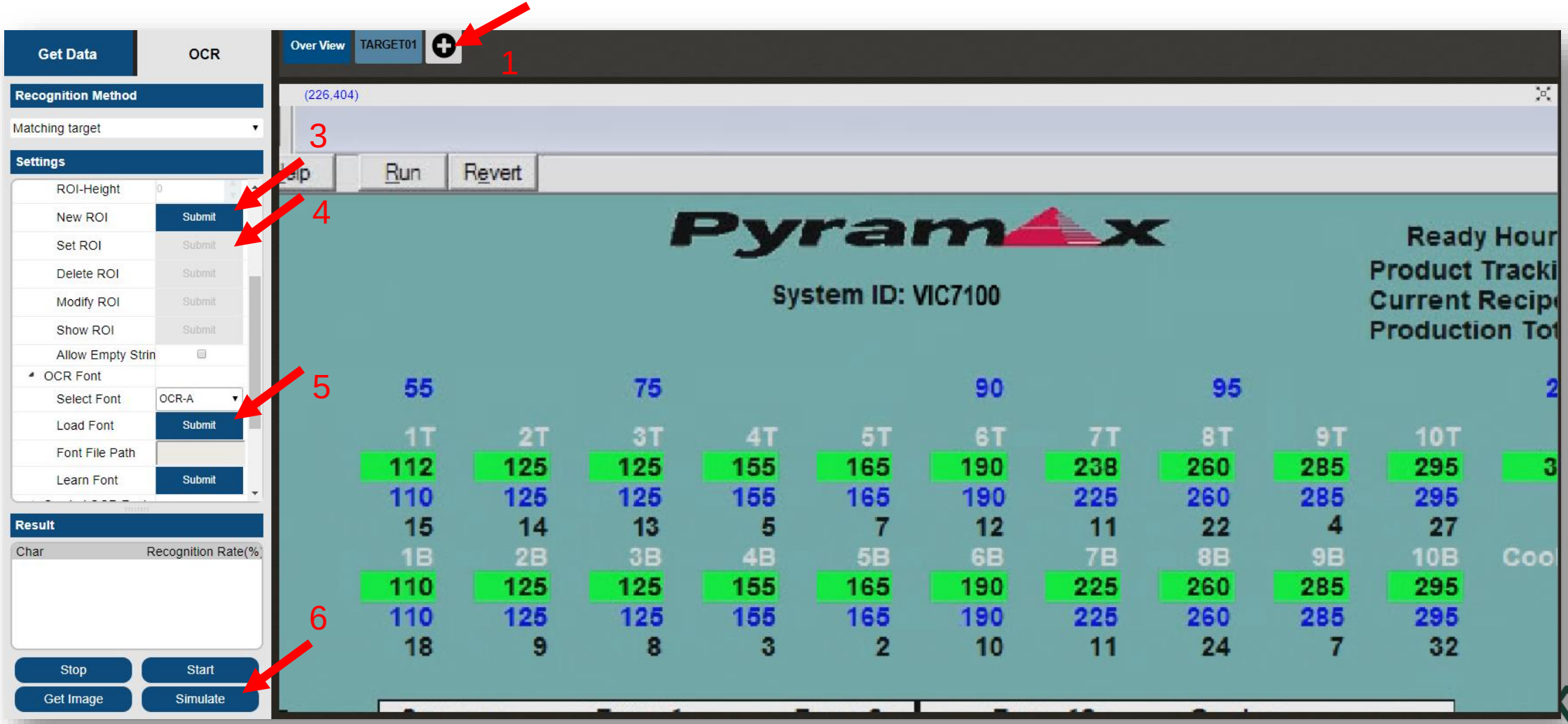
- **General : Create a Target**

  6. Simulate : Click **Simulate** → Confirm the recognition result, which is used as TARGET



Build Project – Target

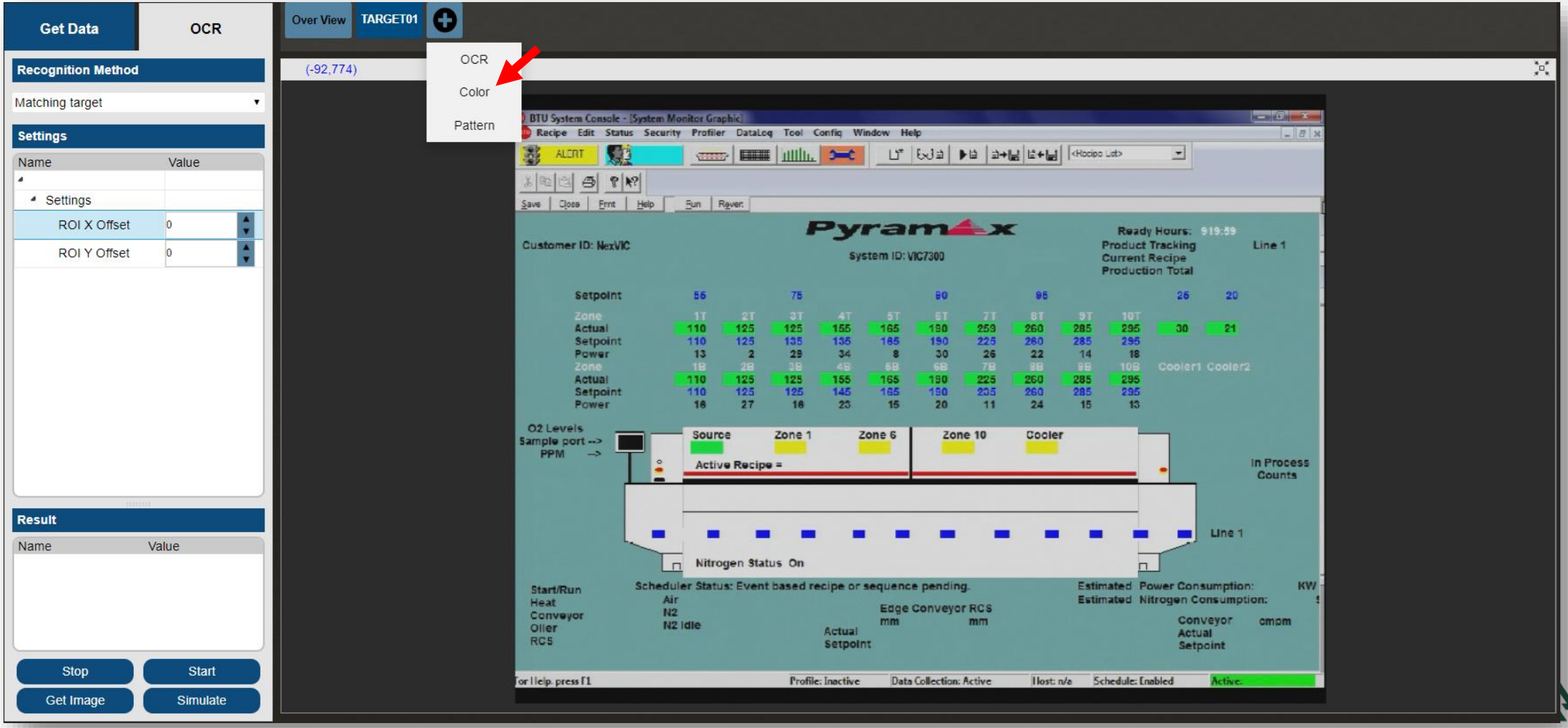
- **General : Create a Target**
  - Multiple Target : Click **Add** icon → Repeat the aforementioned steps to create Targets



Build Project – Target

- **General : Create a Target_Color**

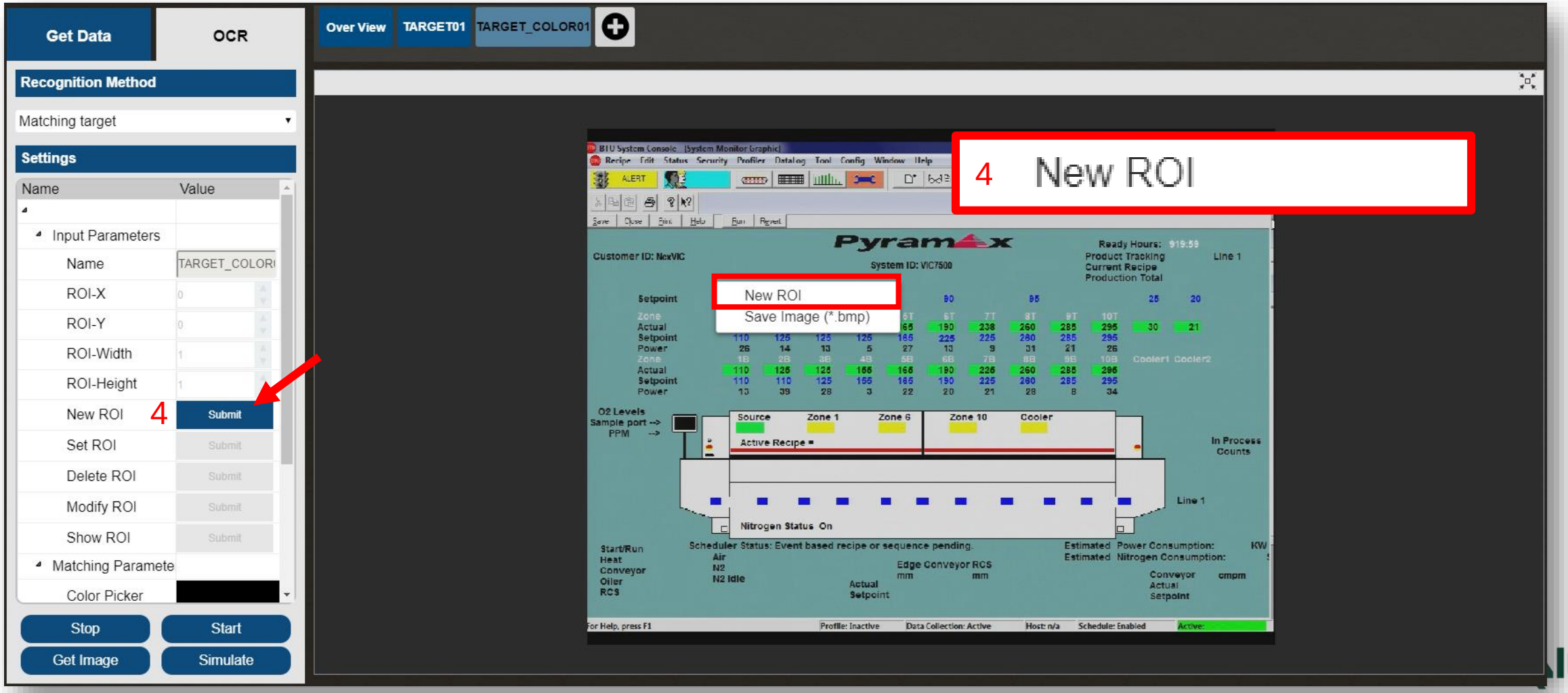
  3. Create a TARGET_COLOR : Move cursor to **Add** icon → Select **Color**



Build Project – Target

- **General : Create a Target_Color**

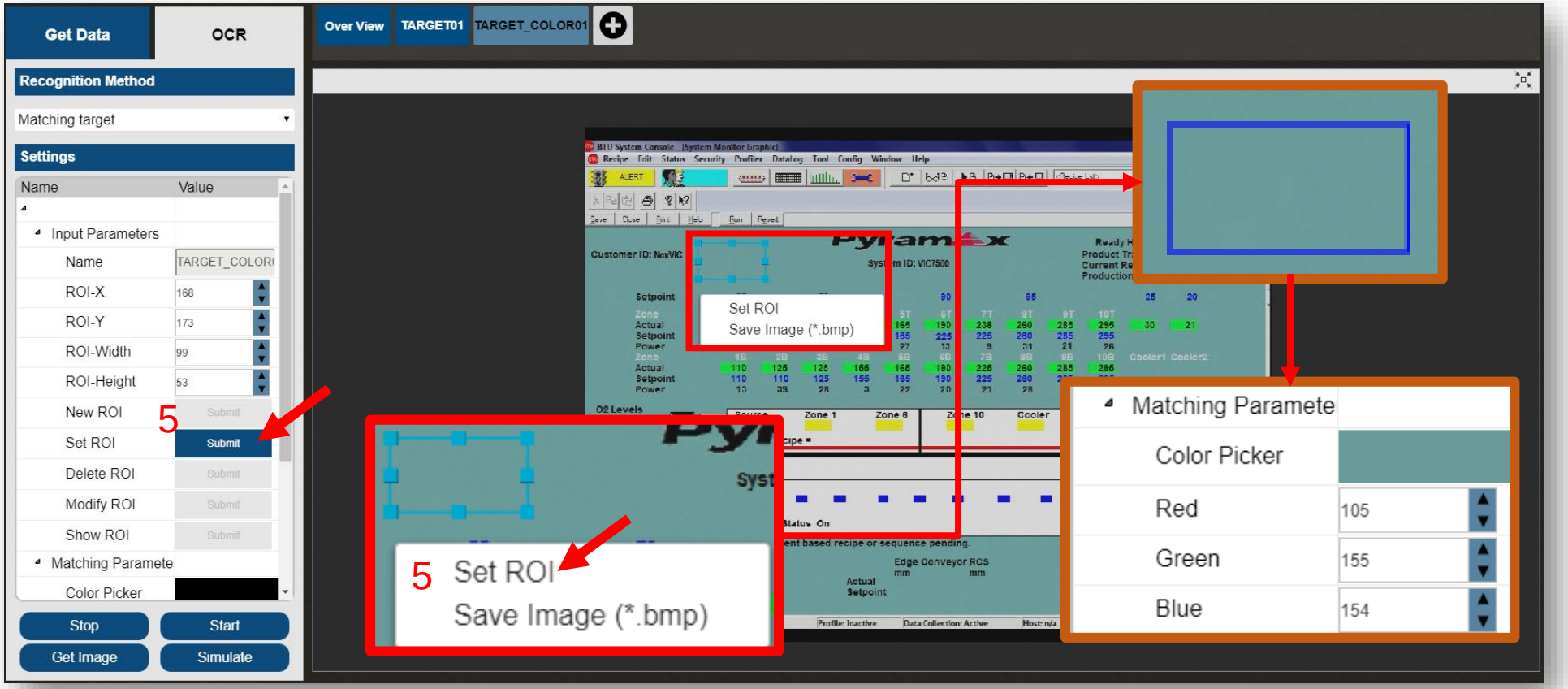
  4. New ROI : Right-click on image and click **New ROI (**or Click **New ROI)**



Build Project – Target

- **General : Create a Target_Color**

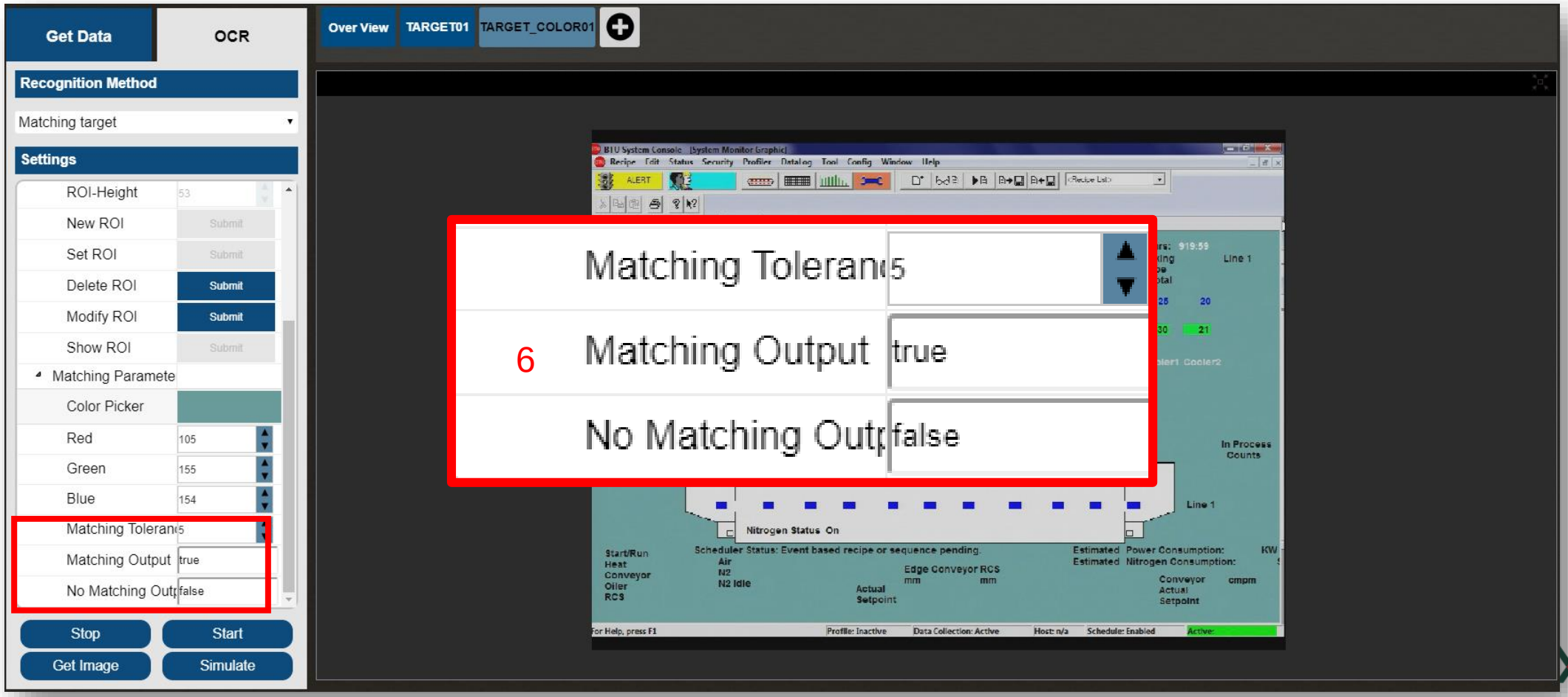
  5. Set ROI : Resize and relocate the ROI → Right-click on the image and select **Set ROI (**or Click **Set ROI)** The average RGB value of the ROI will be automatically obtained and be set as matching color



Build Project – Target

- **General : Create a Target_Color**

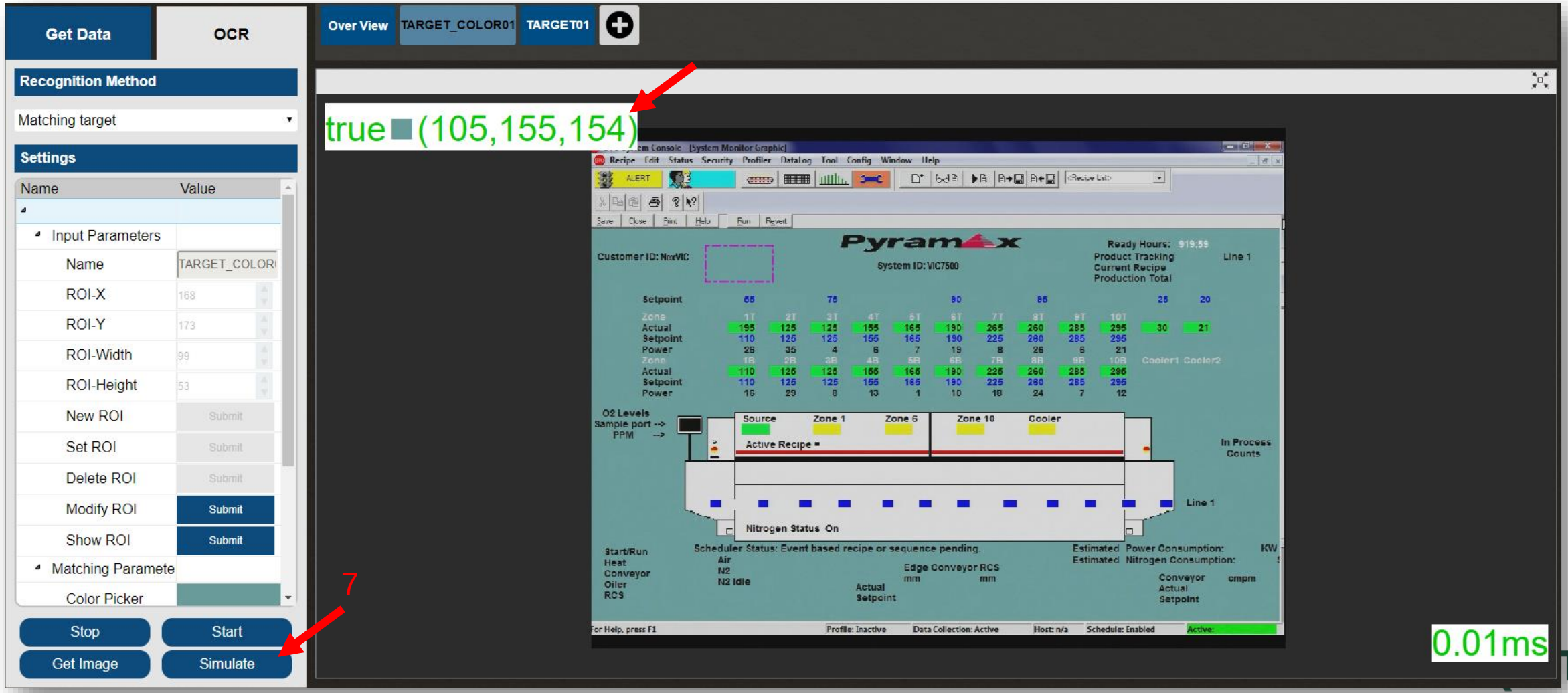
  6. Set Matching Tolerance and Result Output : Set **Matching Tolerance** (RGB±) → Enter **Matching Result Output**



Build Project – Target

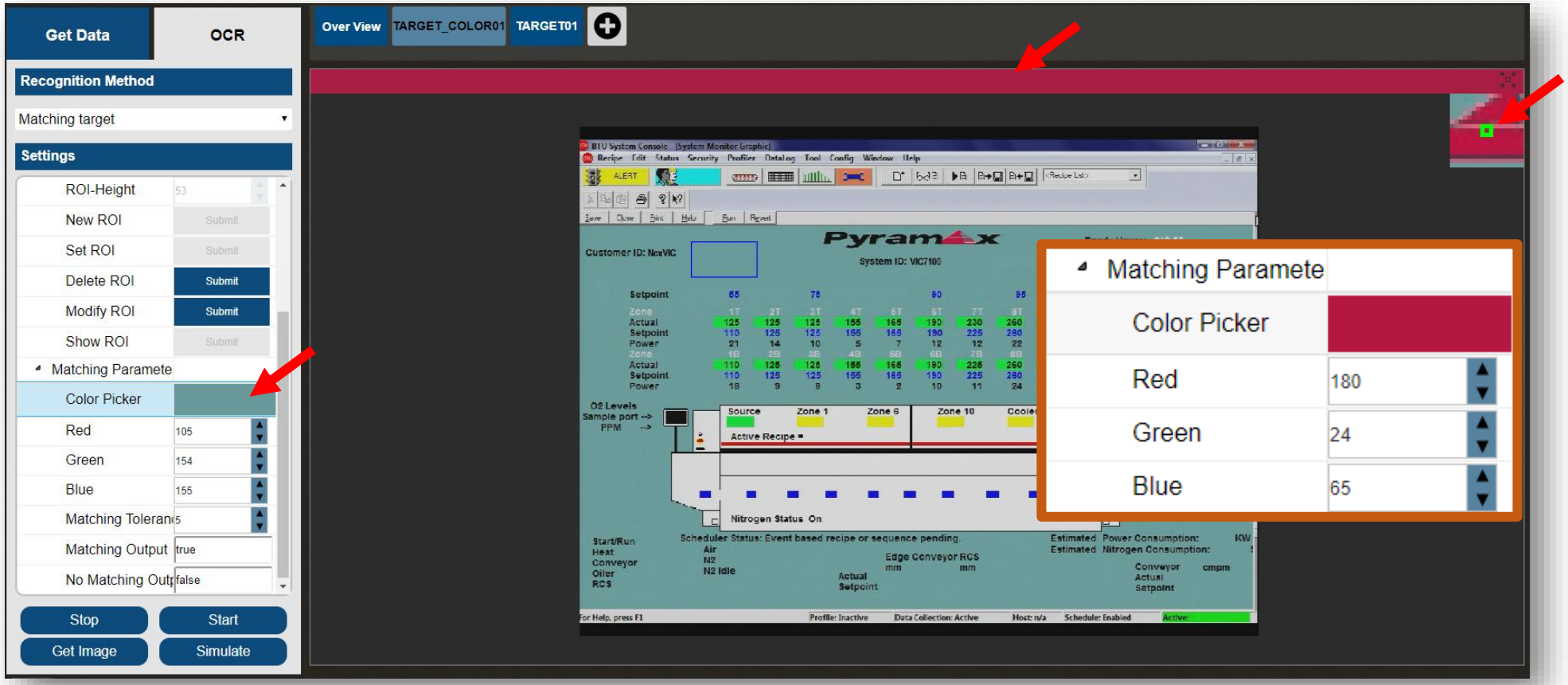
- **General : Create a Target_Color**

  7. Simulate : Click **Simulate** → Confirm matching result, which is used as TARGET_COLOR



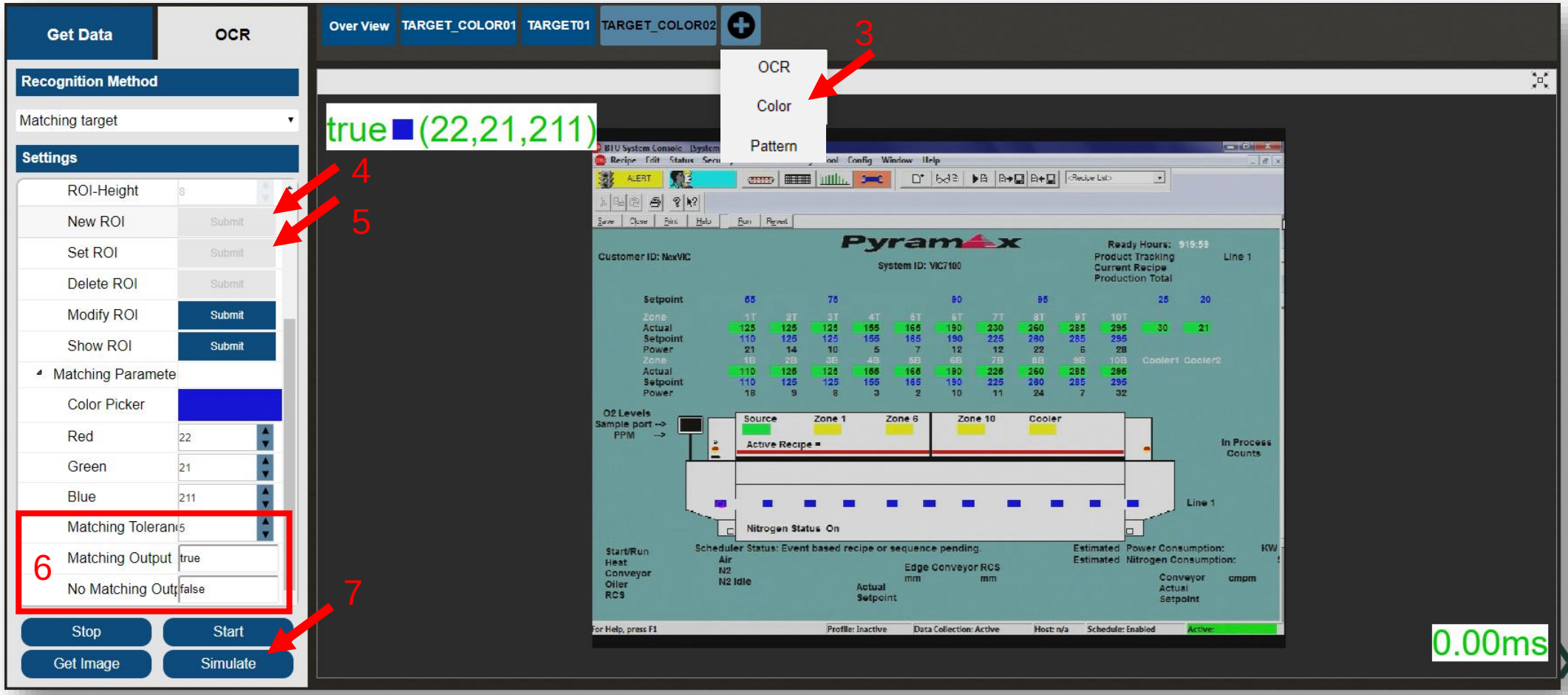
Build Project – Target

- **General : Create a Target_Color**
  - Assign color matching : Click Color Picker → Enable eyedropper tool → Select the desired matching color in the image → The matching color will be set up automatically and confirm if it is correct.



Build Project – Target

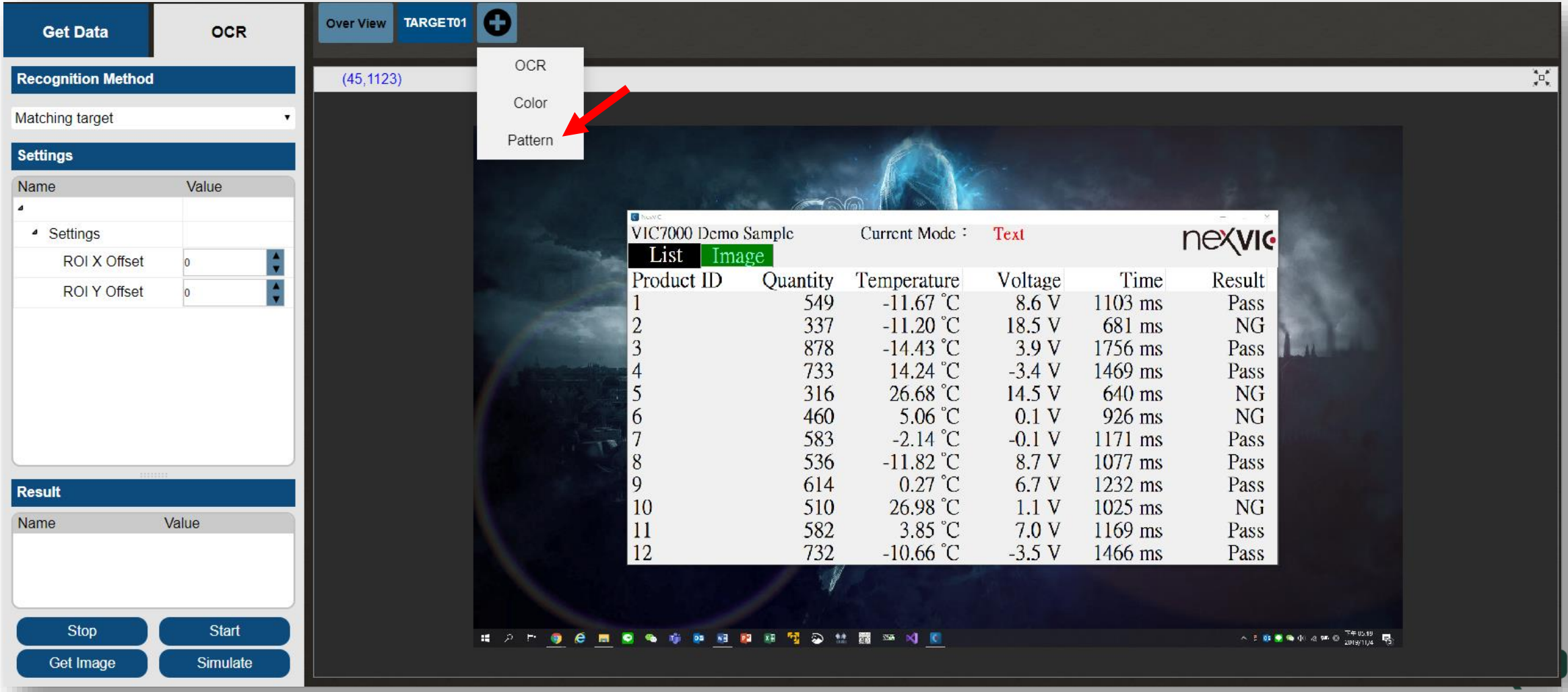
- **General : Create a Target_Color**
  - Multiple Target_color : Click **Add** icon → repeat the aforementioned steps to create Target_colors



Build Project – Target

- **General : Create a Target_Pattern**

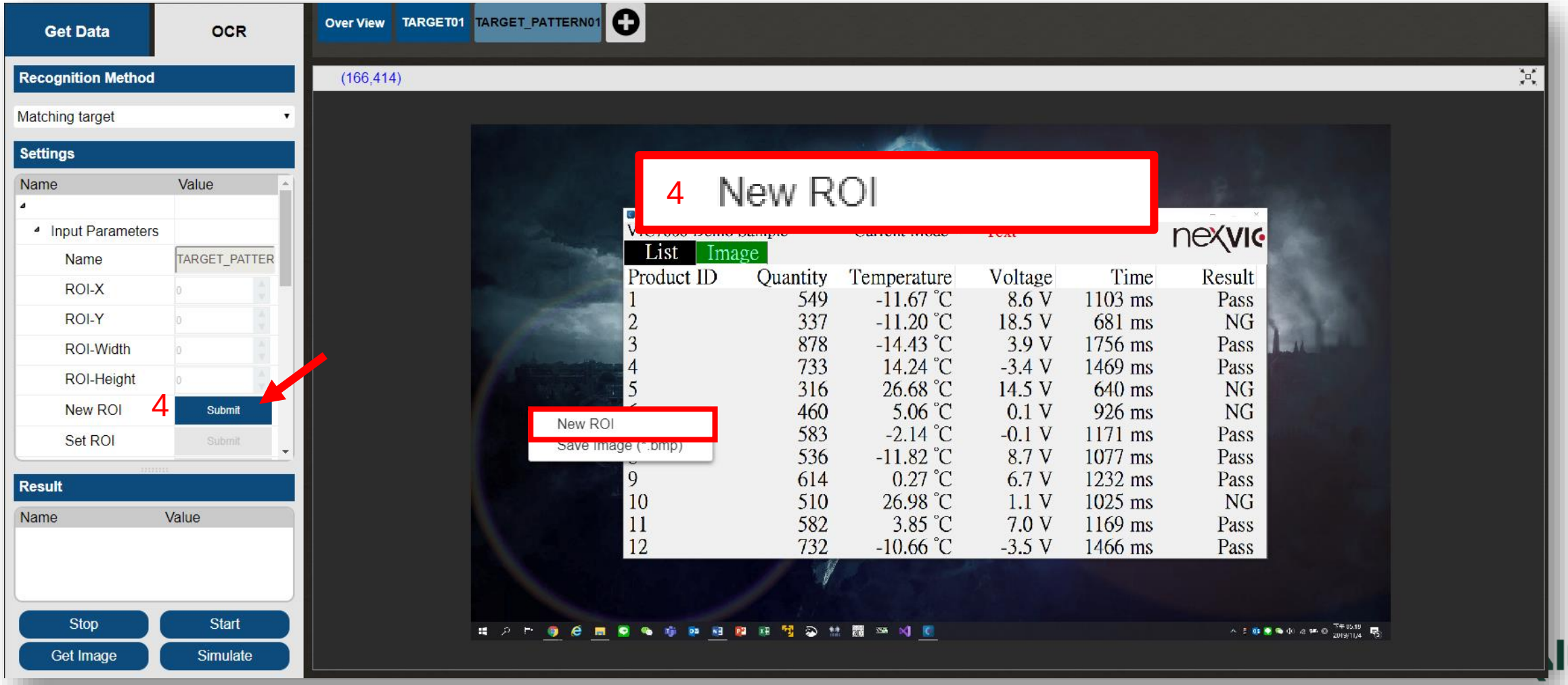
  3. Create a TARGET_PATTERN : Move cursor to **Add** icon → select **Pattern**



Build Project – Target

- **General : Create a Target_Pattern**

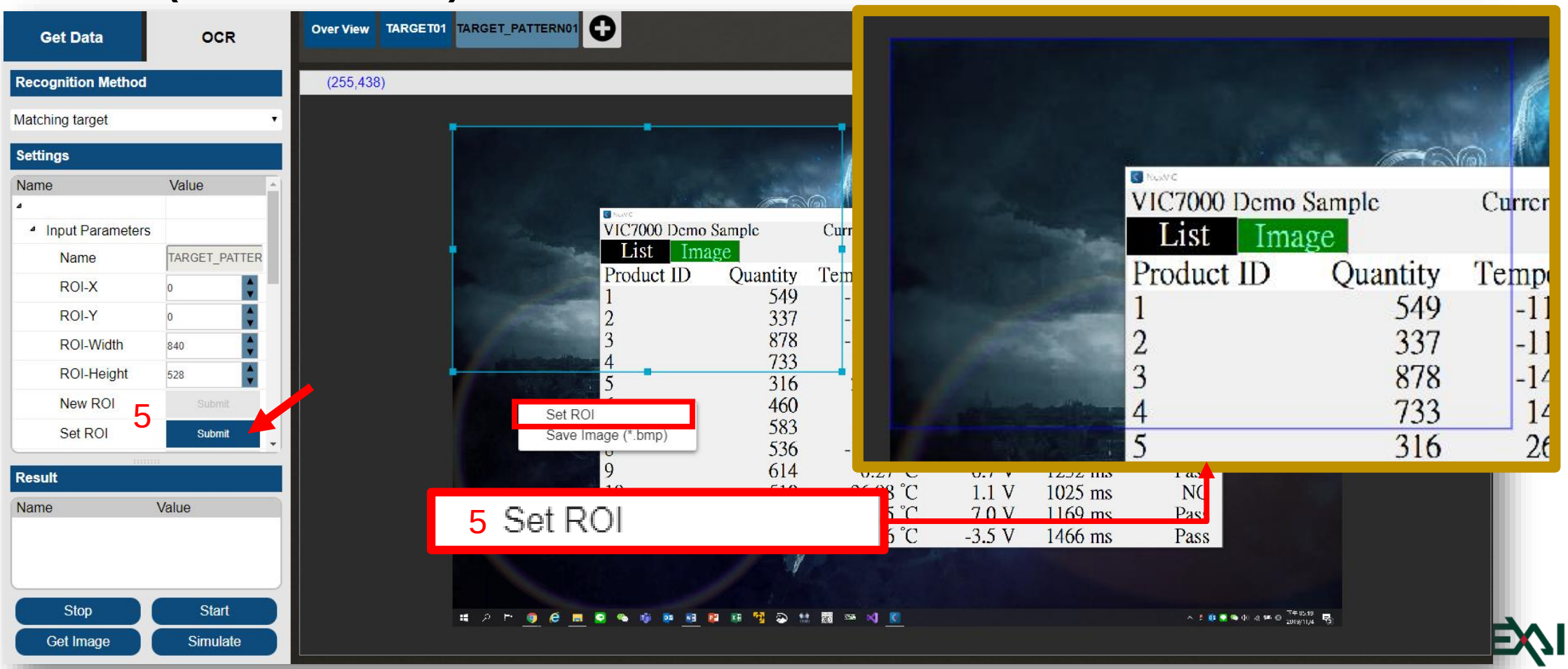
  4. New ROI : Right-click on the image and select **New ROI (**or Click **New ROI)**



Build Project – Target

- **General : Create a Target_Pattern**

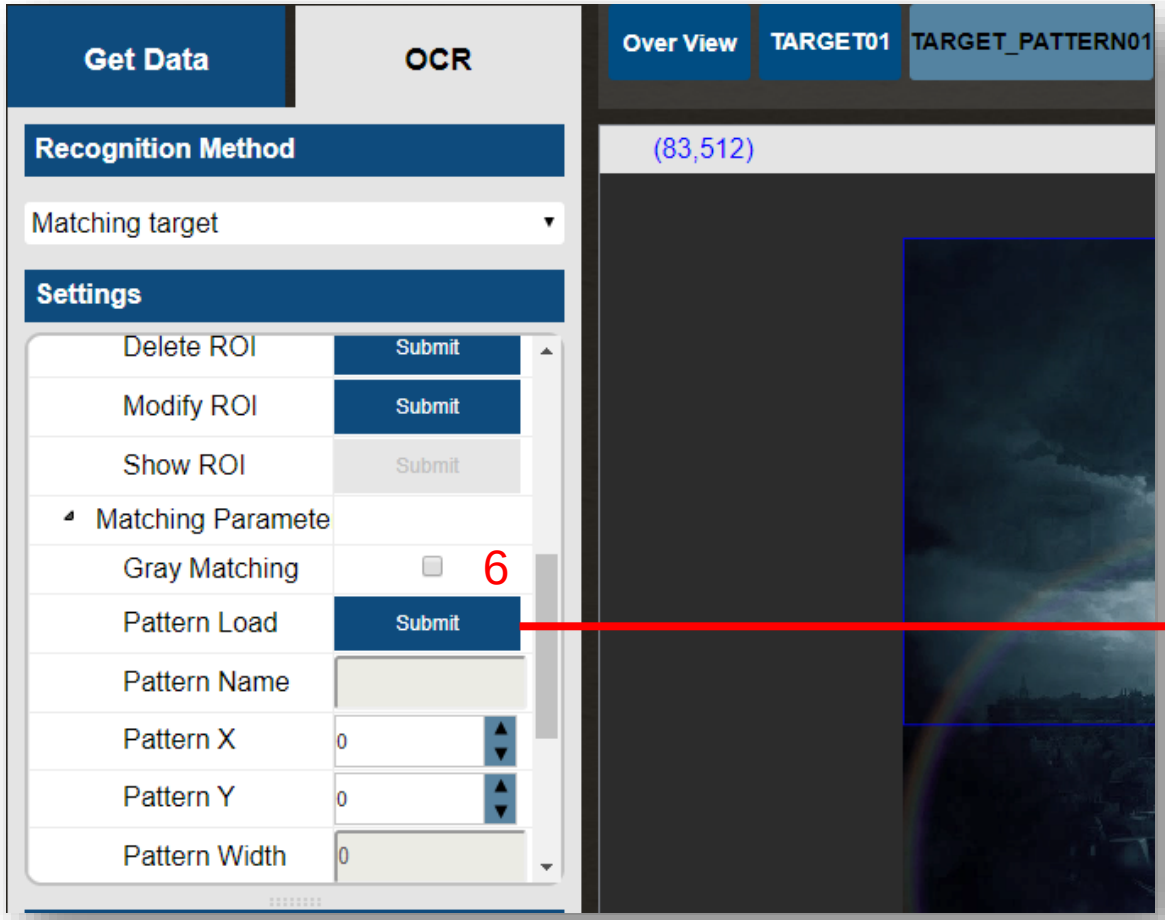
  5. Set ROI : adjust the location and size of the ROI → Right-click on image and select **Set ROI** (or Click **Set ROI**)

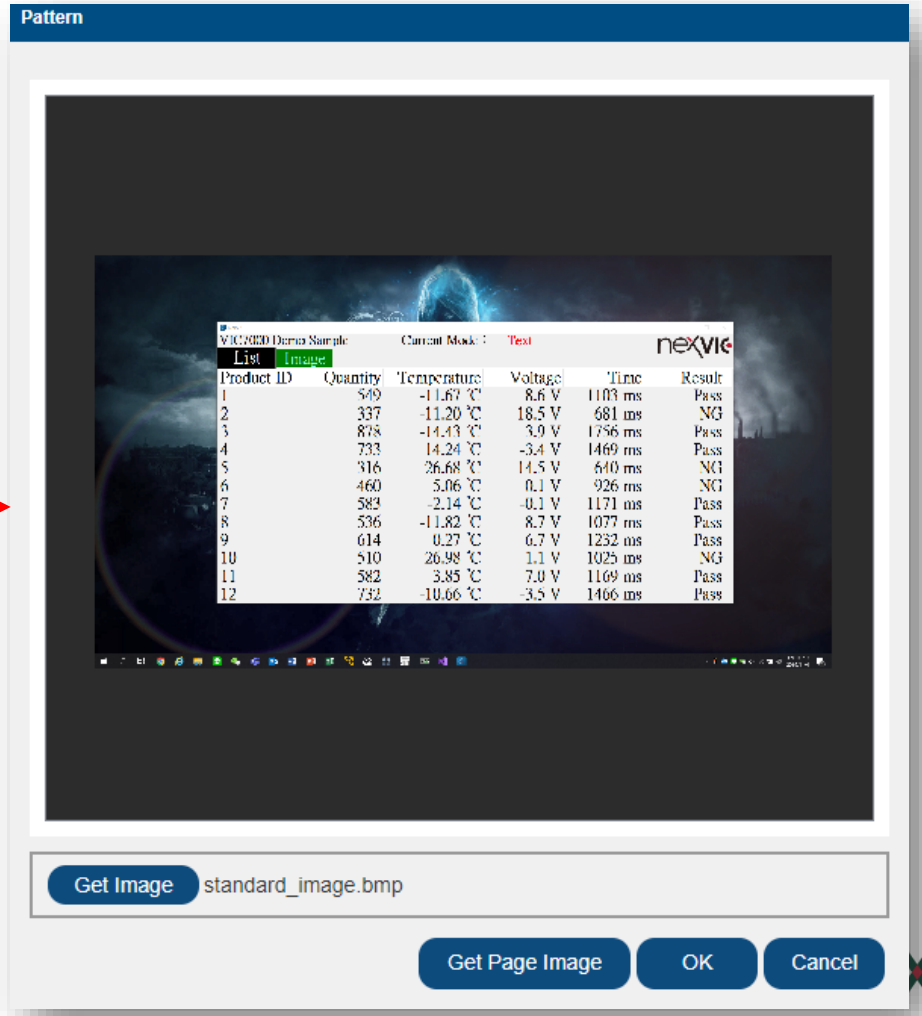


Build Project – Target

- **General : Create a Target_Pattern**

  6. Load Matching Pattern : Click **Pattern Load** → User can enter **Pattern** window, and the image will be loaded automatically

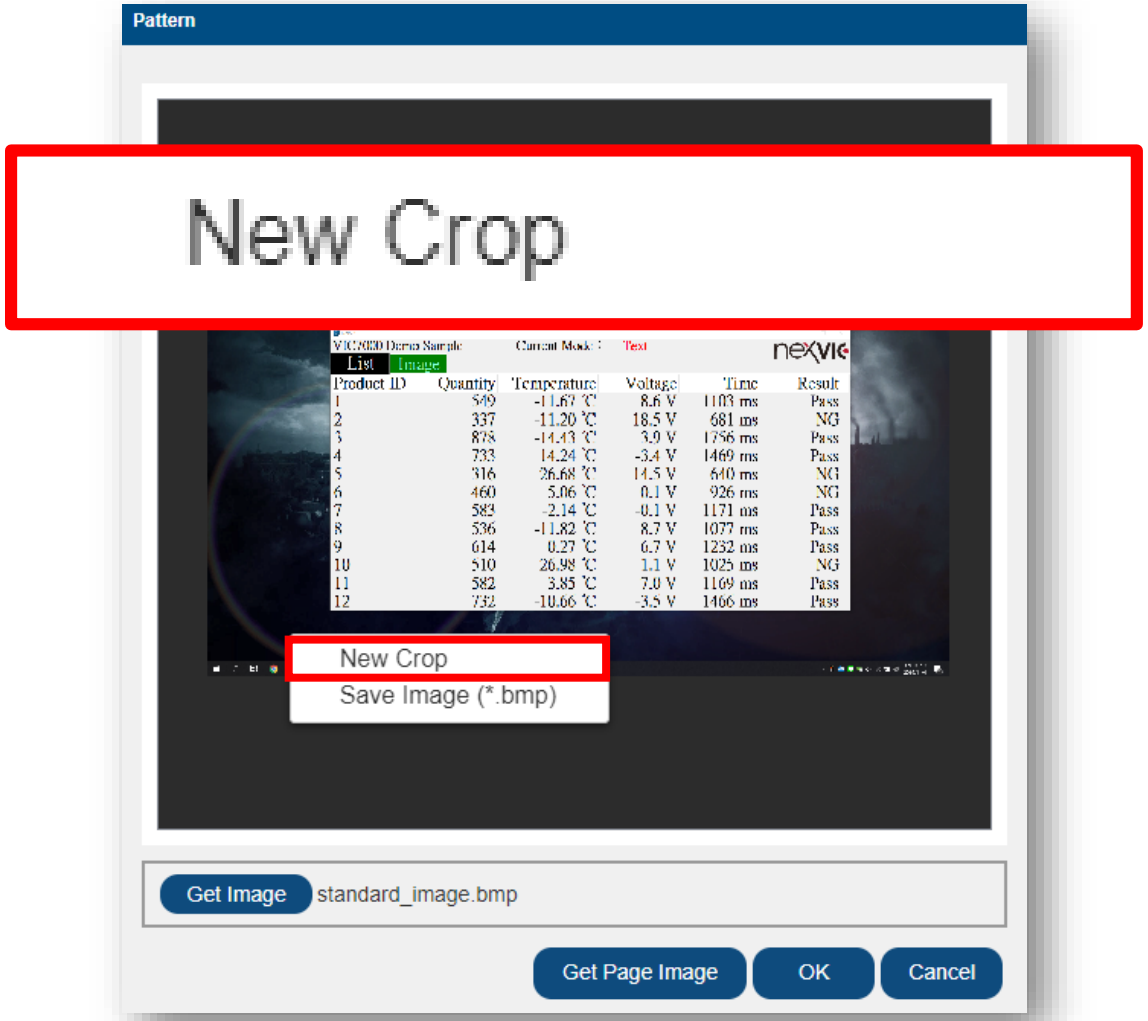




Build Project – Target

- **General : Create a Target_Pattern**

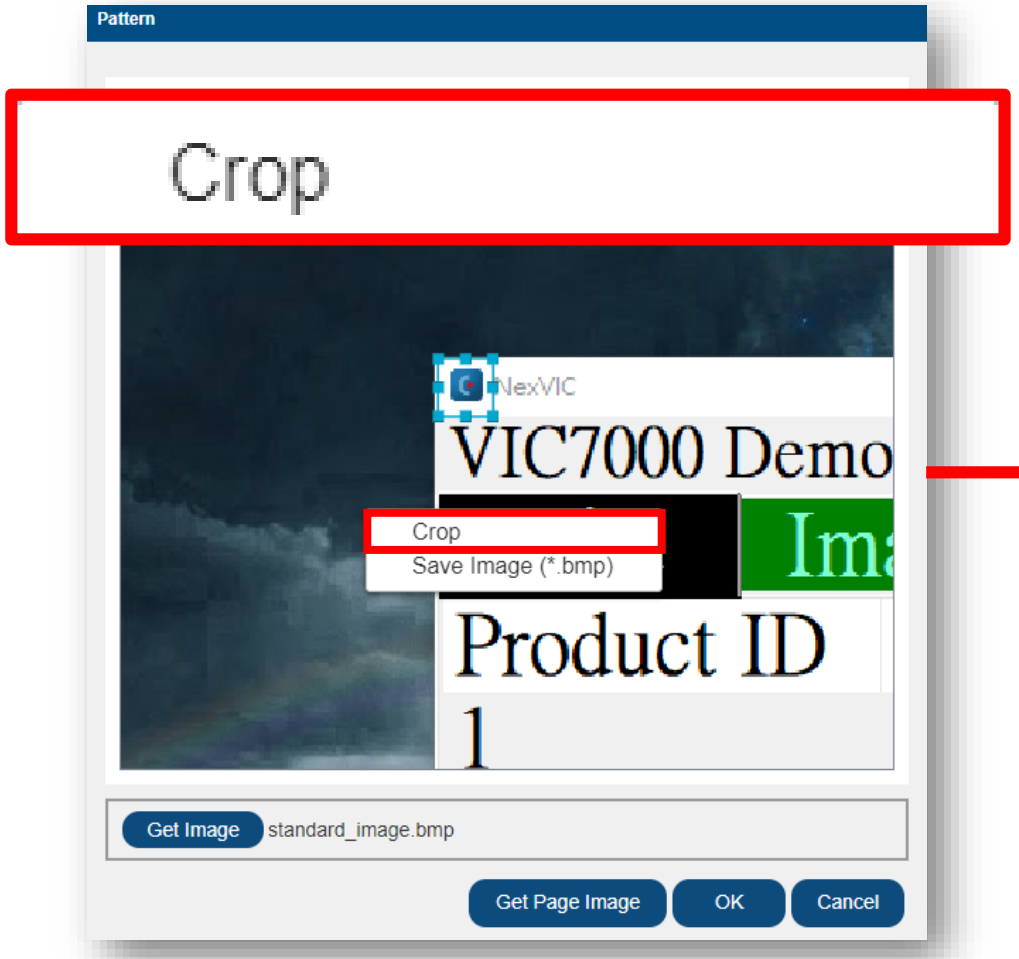
  6. Load Matching Pattern : Right-click on the image → Select **New Crop**

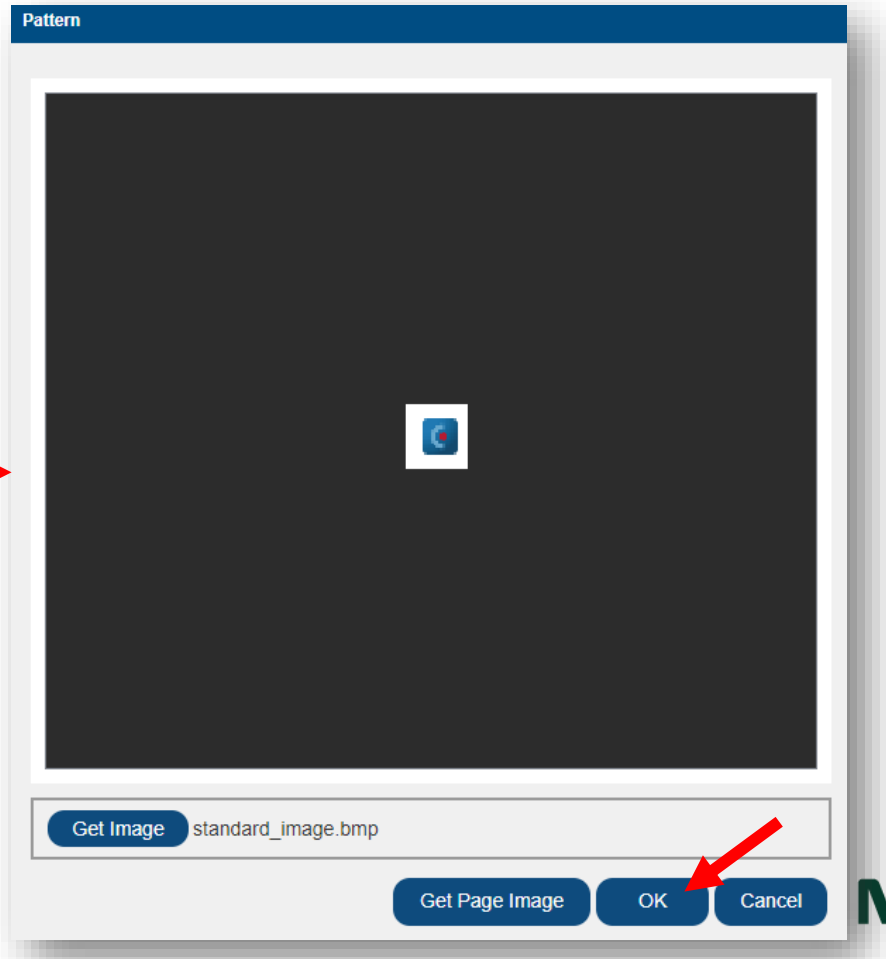


Build Project – Target

- **General : Create a Target_Pattern**

  6. Load Matching Pattern : Mark the matching pattern → Right-click on the image → Select **Crop → OK**

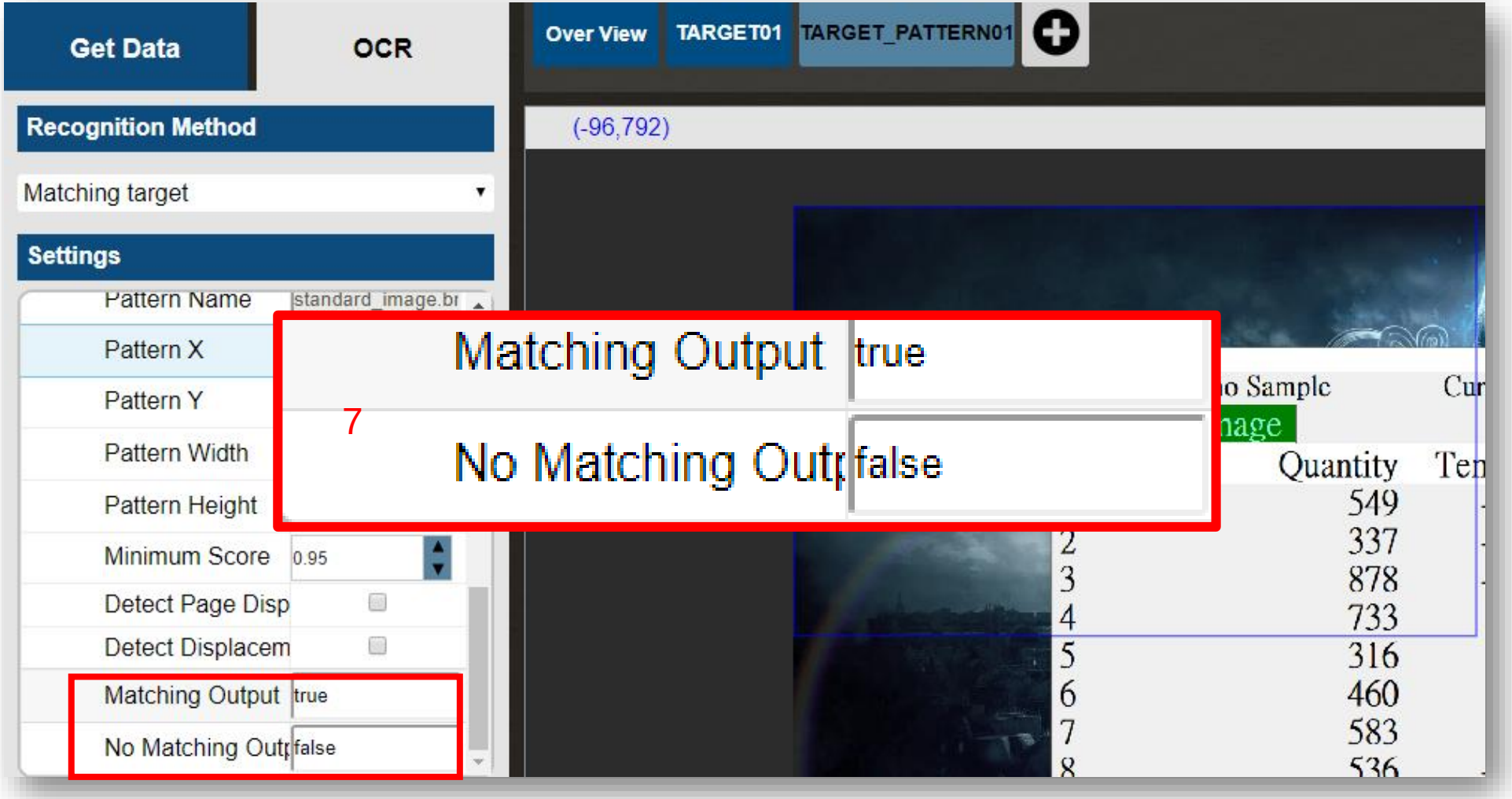




Build Project – Target

- **General : Create a Target_Pattern**

  7. Set Matching Result Output : Enter **Matching Result Output**

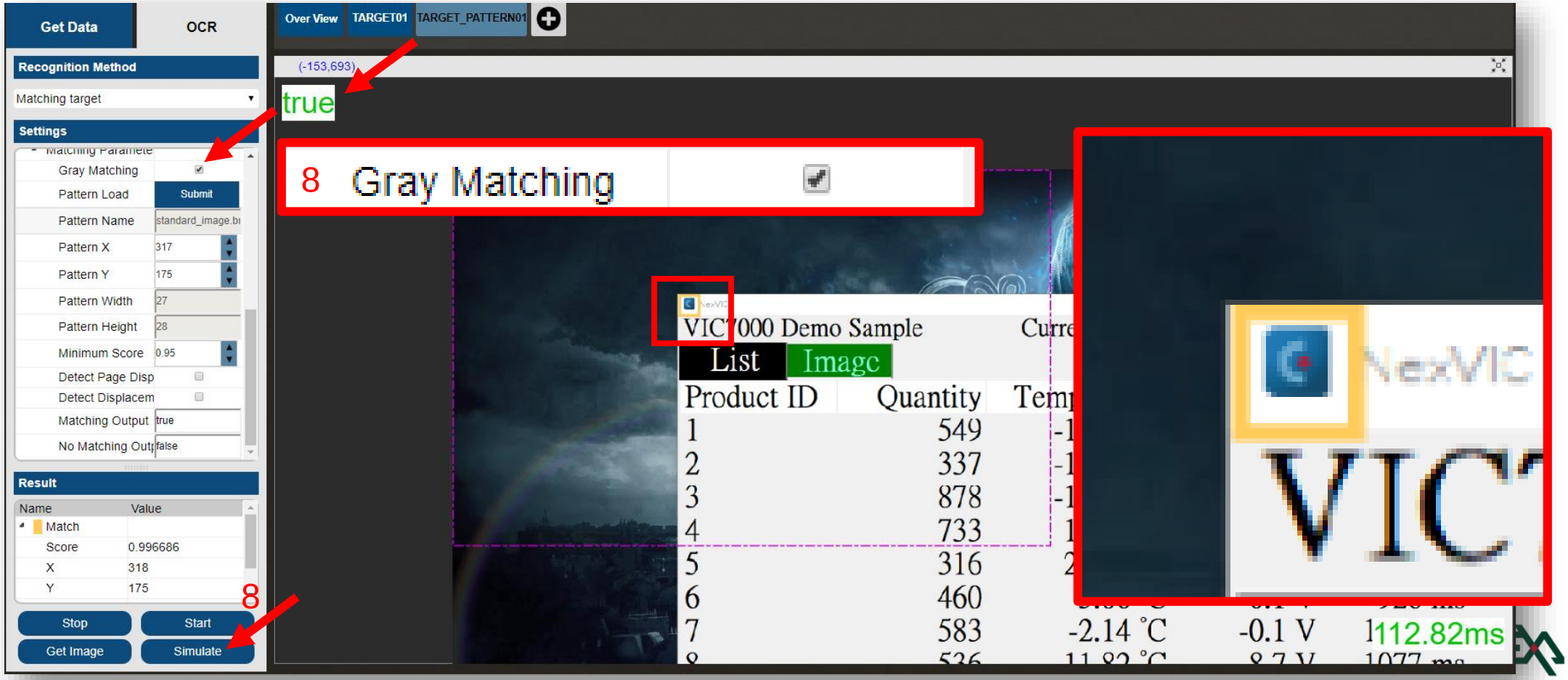


Build Project – Target

- **General : Create a Target_Pattern**

  8. Simulate : It's recommended to use Gray Matching, it will speed up recognition speed.

     Click **Simulate** → Confirm matching result, which is used as TARGET_PATTERN

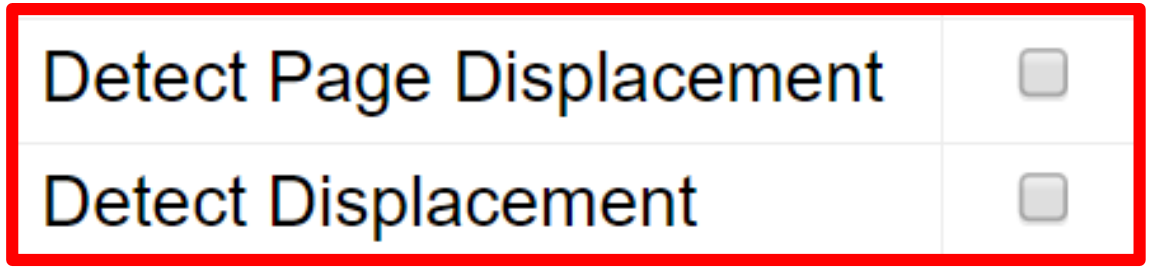


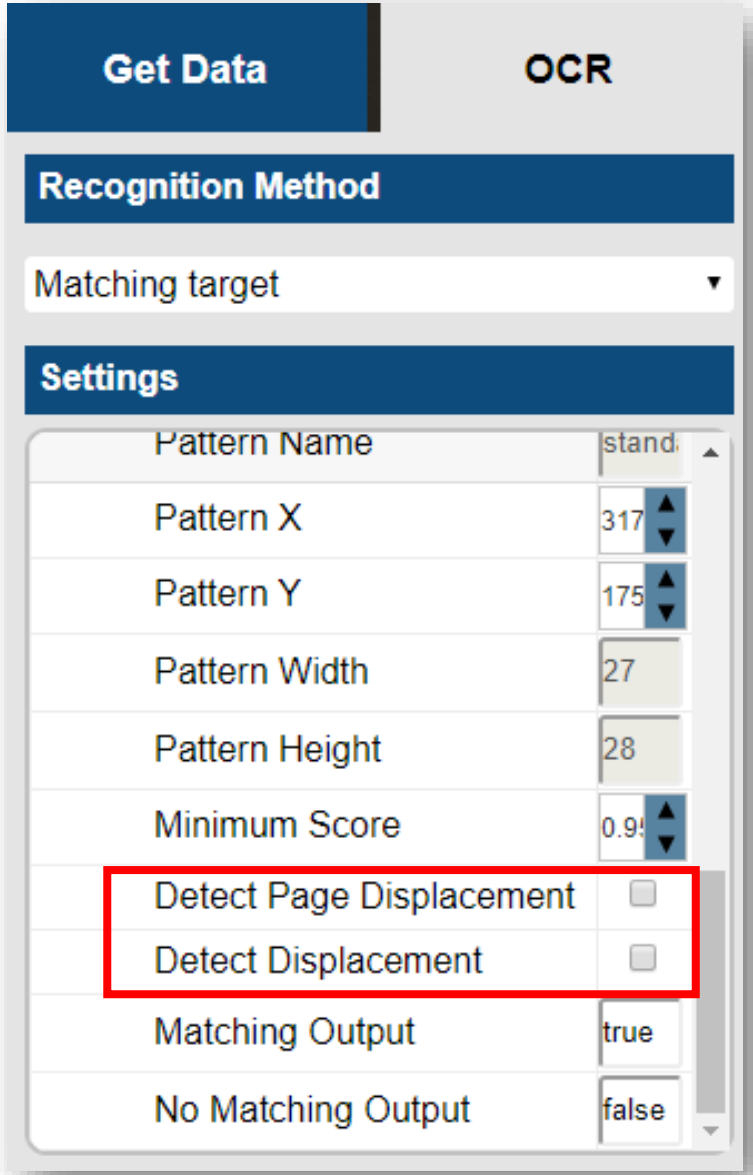
Build Project – Target

- **General**
  - Displacement Detection : Based on the position of TARGET_PATTERN on the image where Target_Pattern is set

Detect Page Displacement : Make ROI of Targets and Target_Colors move in consistent with the position of TARGET_PATTERN

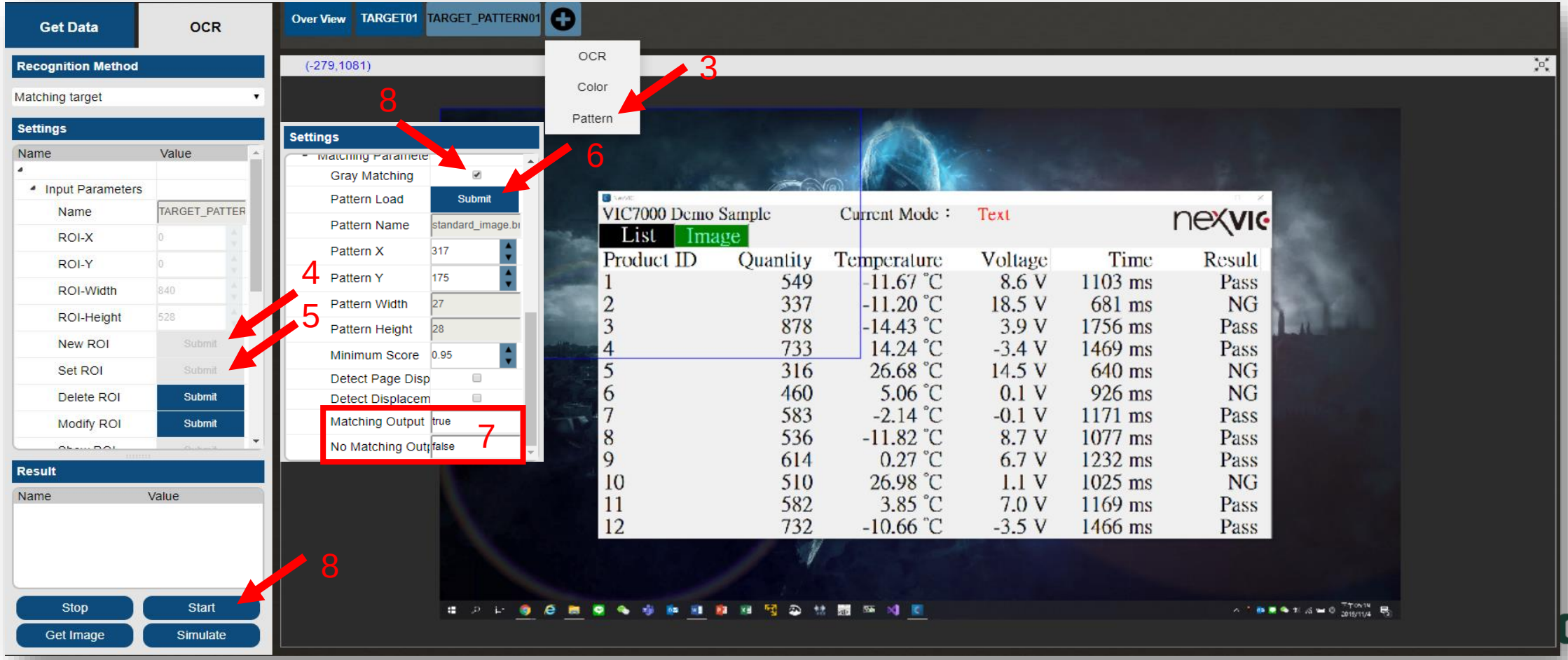
Detect Displacement : Make ROI of the page that match TARGET_PATTERN move with the position of TARGET_PATTERN





Build Project – Target

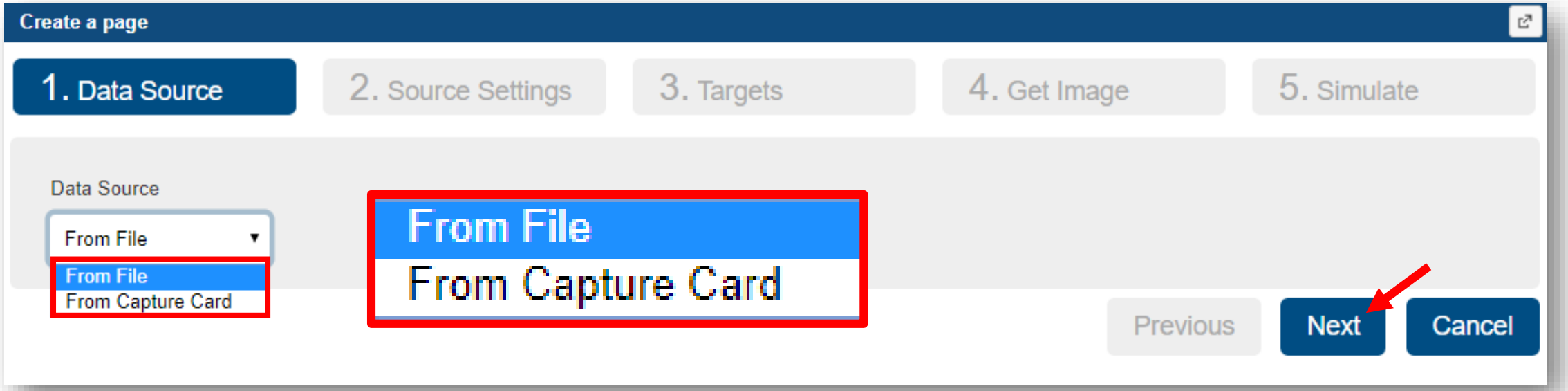
- **General : Create a Target_Pattern**
  - Multiple Target_pattern : Click **Add** icon → repeat the aforementioned steps to create Target_patterns



Build Project – Page & Recognition

- **Wizard : Create a page**
  1. Data Source

     From File or From Capture Card



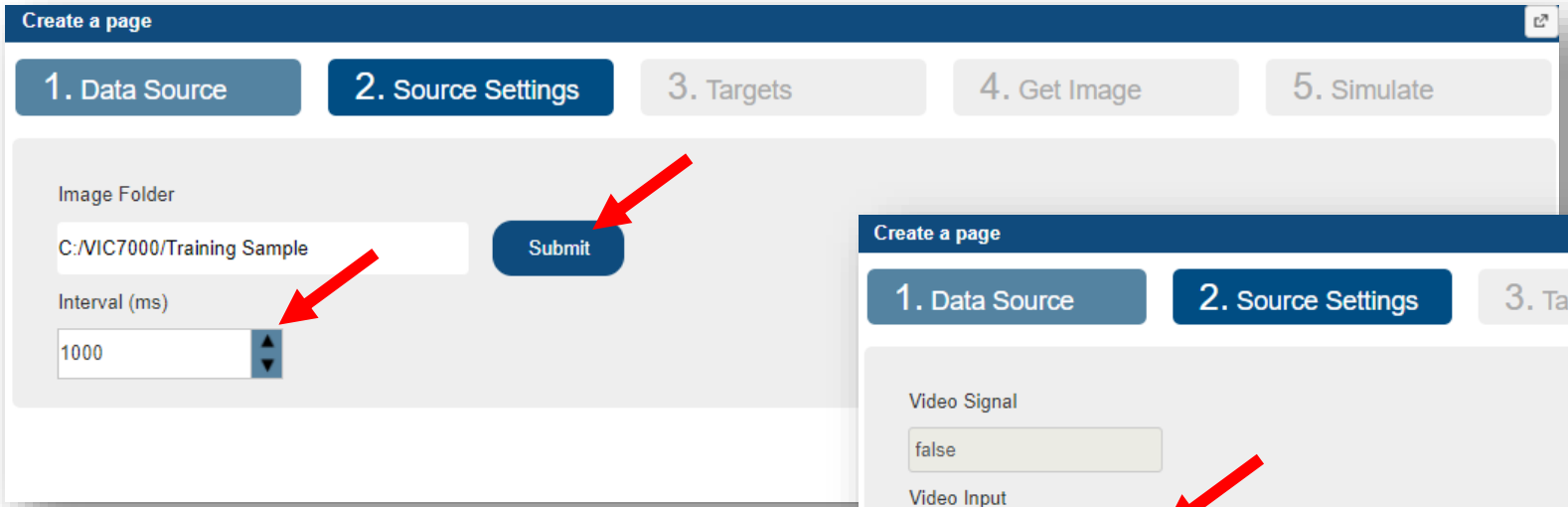
Build Project – Page & Recognition

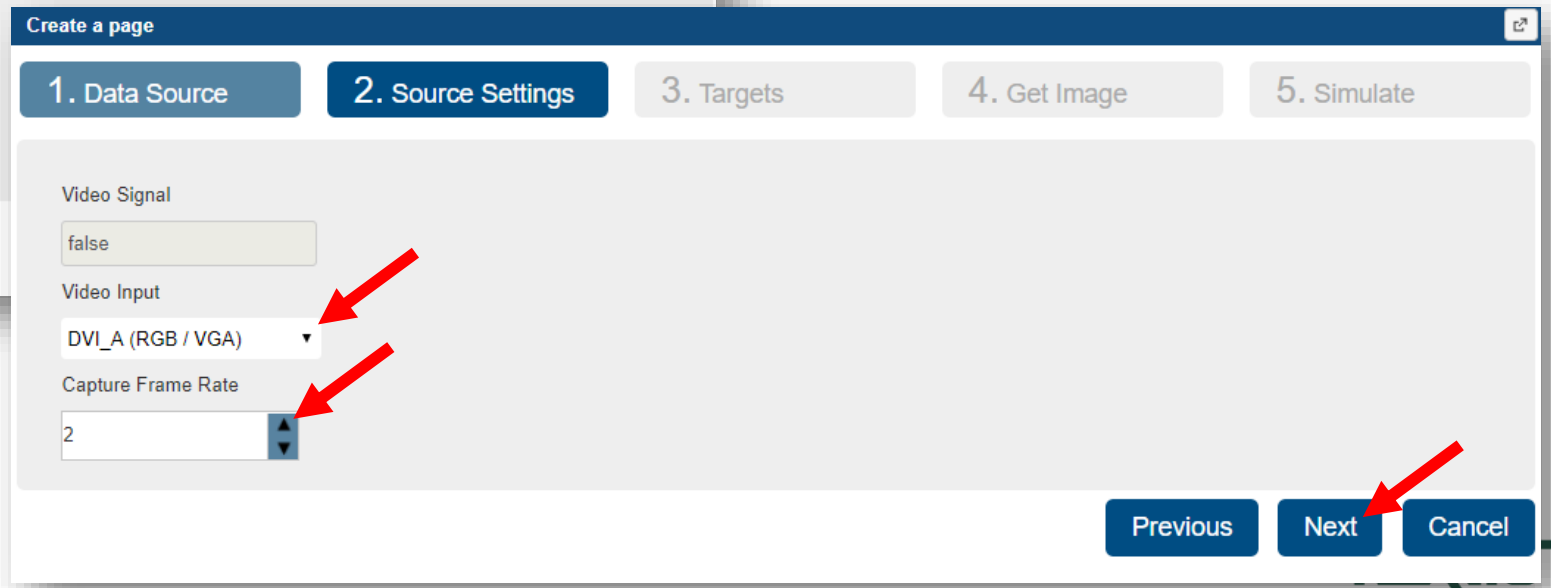
- **Wizard : Create a page**

  2. Source Settings

     From File : Image folder Path, Read interval

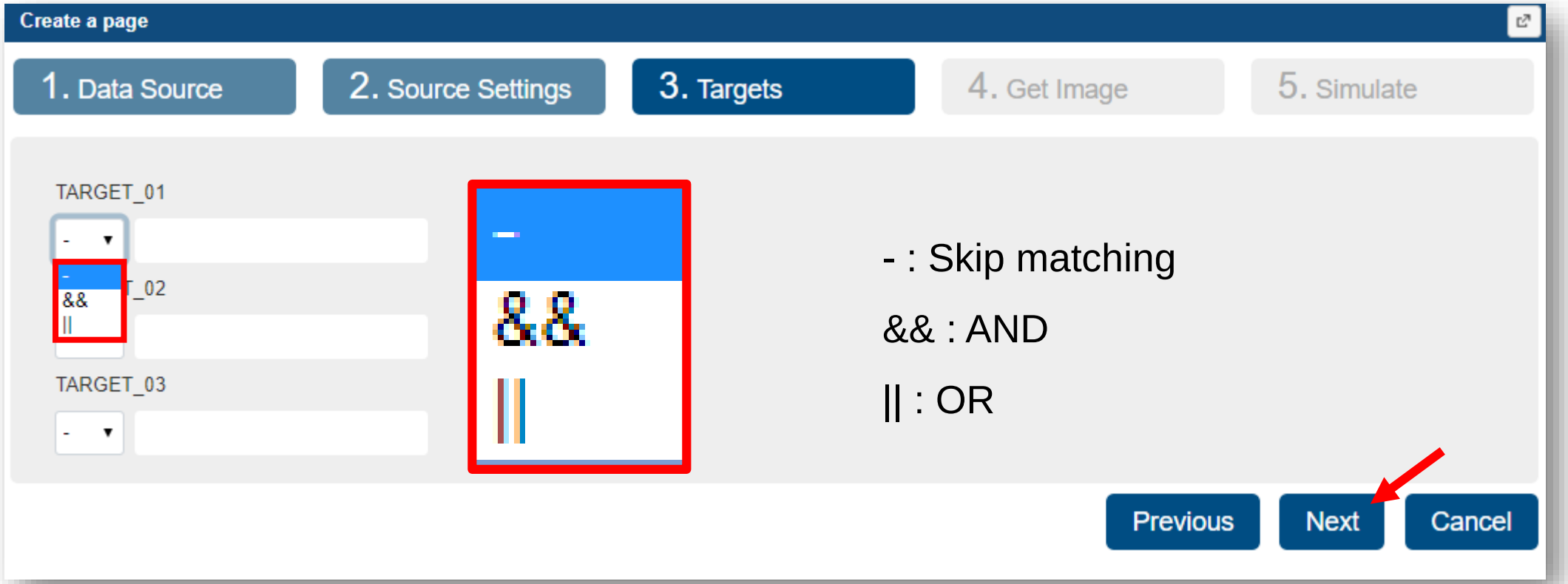
     From Capture Card : Video input signal type, Capture frame rate





Build Project – Page & Recognition

- **Wizard : Create a page**
  3. Targets : Set TARGET matching logical operators and conditions



Build Project – Page & Recognition

- **Wizard : Create a page**

3. Targets : Set Target matching logical operators and conditions for the matching logical operators:

- : Skip matching this TARGET

|| : Execute || first. If one of the TARGETs set with || is satisfied, the page is considered as matched successfully.

&& : When || is not satisfied then the && will be considered, the page will only be considered as successfully if all of the TARGETs set with && are satisfied

If more than one page matched successfully at the same time, the page with smaller index will be selected to be recognized.

Build Project – Page & Recognition

- **Wizard : Create a page**

	TARGET01		TARGET02		TARGET03		Used Page
Actual Result	125		125		155		
PAGE01	||	120	&&	130	&&	155	
PAGE02	||	125	&&	125	&&	150	Use this page

	TARGET01		TARGET02		TARGET03		Used Page
Actual Result	125		125		155		
PAGE01	&&	120	&&	125	&&	155	
PAGE02	||	110	&&	125	&&	155	Use this page

Build Project – Page & Recognition

- **Wizard : Create a page**

	TARGET01		TARGET02		TARGET03		Used Page
Actual Result	125		125		155		
PAGE01	||	120	&&	125	&&	155	Use this page
PAGE02	||	125	&&	125	&&	150	

	TARGET01		TARGET02		TARGET03		Used Page
Actual Result	125		125		155		
PAGE01	||	120	&&	125	&&	155	Use this page
PAGE02	||	110	&&	125	&&	155	

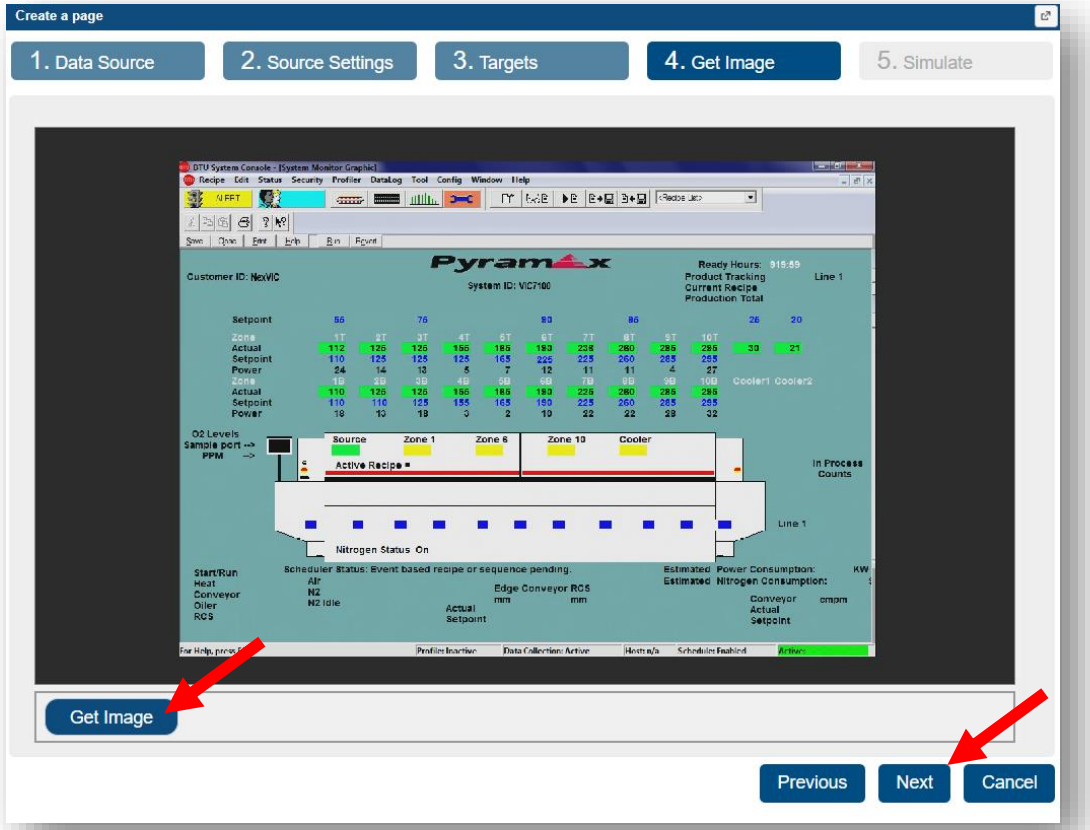
Build Project – Page & Recognition

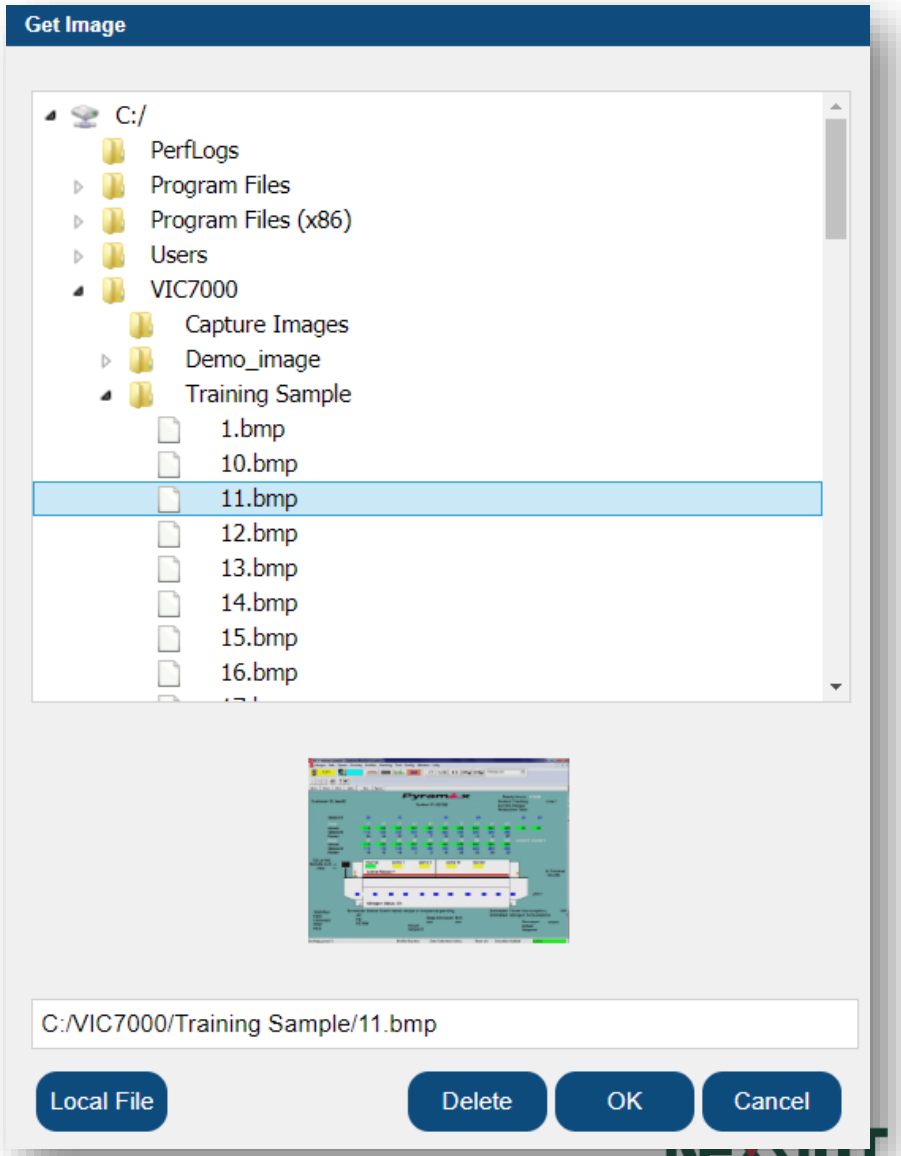
- **Wizard : Create a page**

  4. Get Image

     From File : Read images from a local or remote folder

     From Capture Card : Get an image from capture card



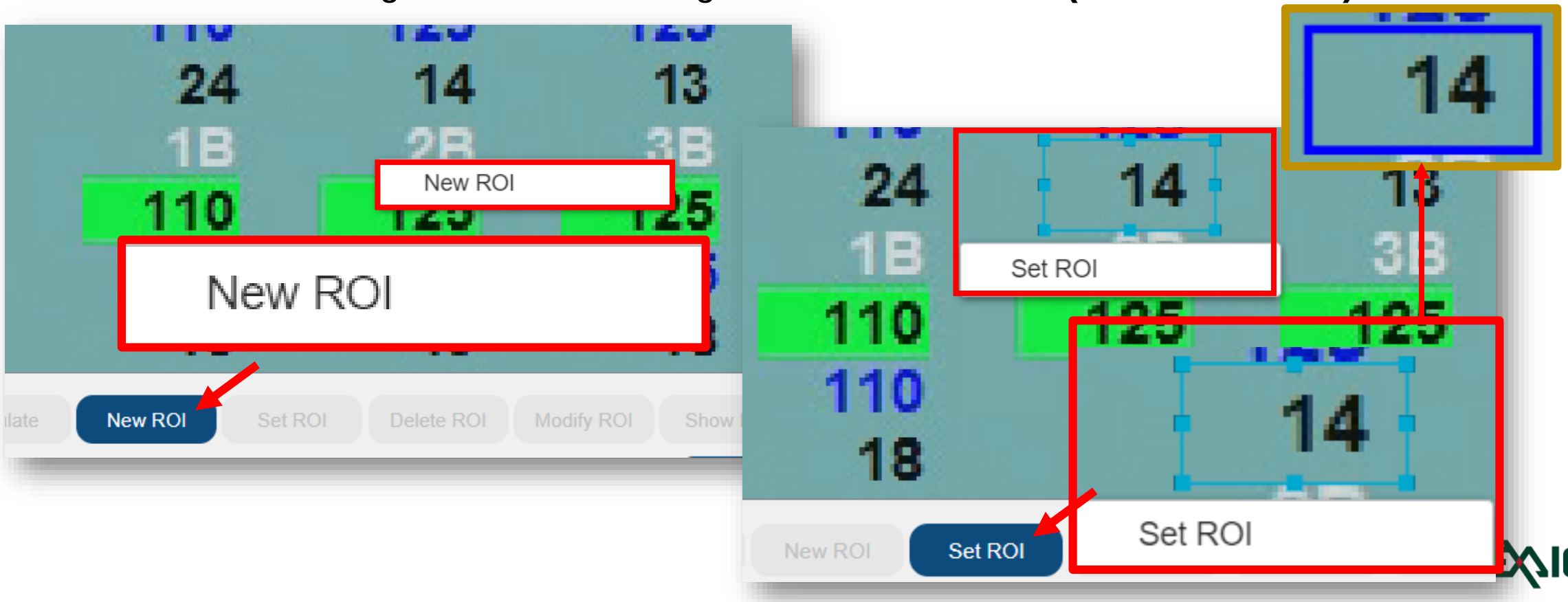


Build Project – Page & Recognition

- **Wizard : Create a page**

  5. Simulate

  Right-click on the image then select **New ROI (**or Click **New ROI)** → adjust the location and size of the ROI → Right-click on the image and select **Set ROI (**or Click **Set ROI)**

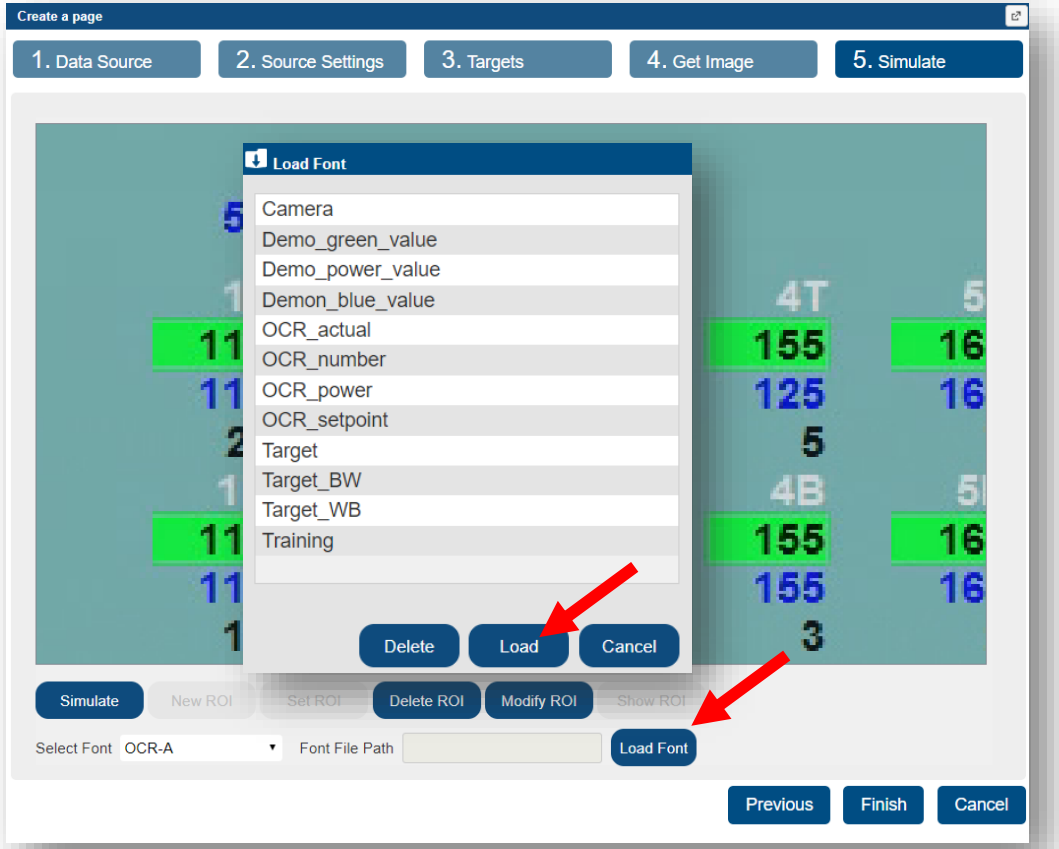


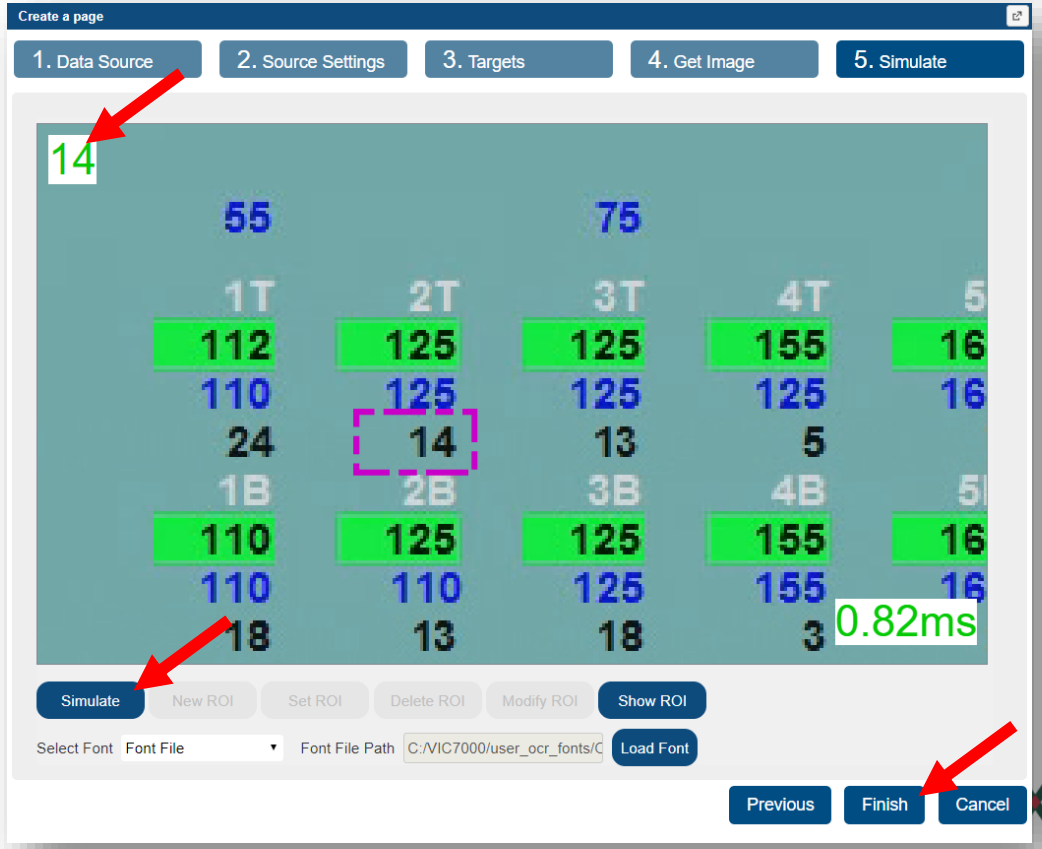
Build Project – Page & Recognition

- **Wizard : Create a page**

  5. Simulate

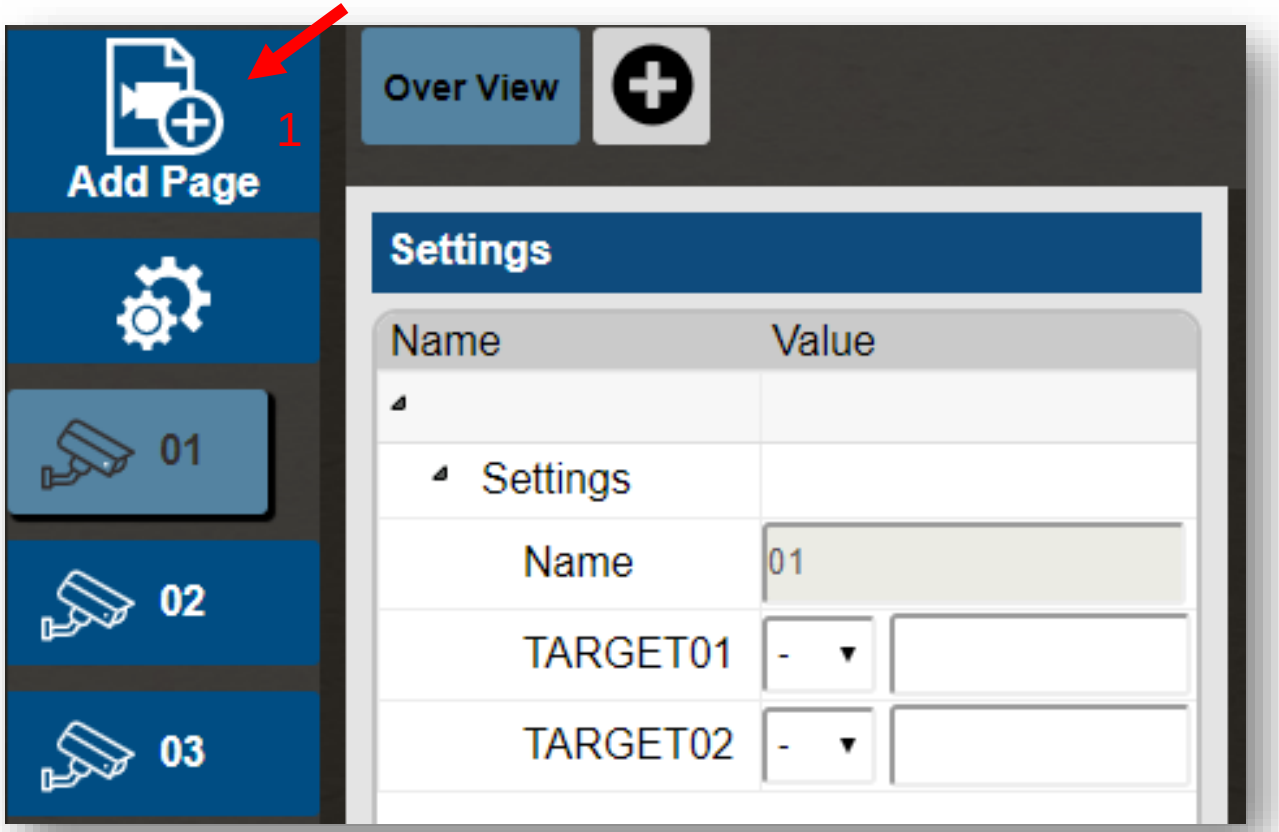
  Click **Load Font** → Choose a font file for recognition → Click **Load** → Click **Simulate** → Confirm the recognition results

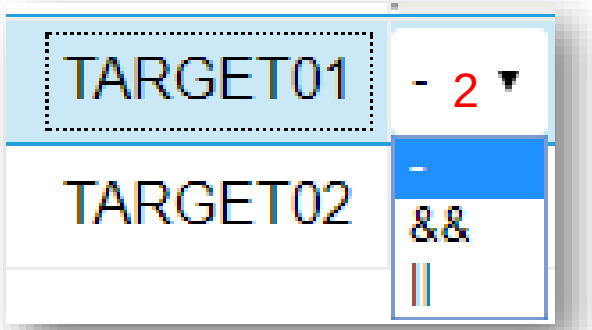




Build Project – Page & Recognition

- **General : Create a page**
  1. Create a Page : Click **Add Page** icon
  2. Targets : Set TARGET matching logical operators and conditions





- : Skip matching

&& : AND

|| : OR

Build Project – Page & Recognition

- **General : Create a page**

2. Targets : Set TARGET matching logical operators and conditions for the matching logical operators:

- : Skip matching this TARGET

|| : Execute || first. If one of the TARGETs set with || is satisfied, the page is considered as matched successfully.

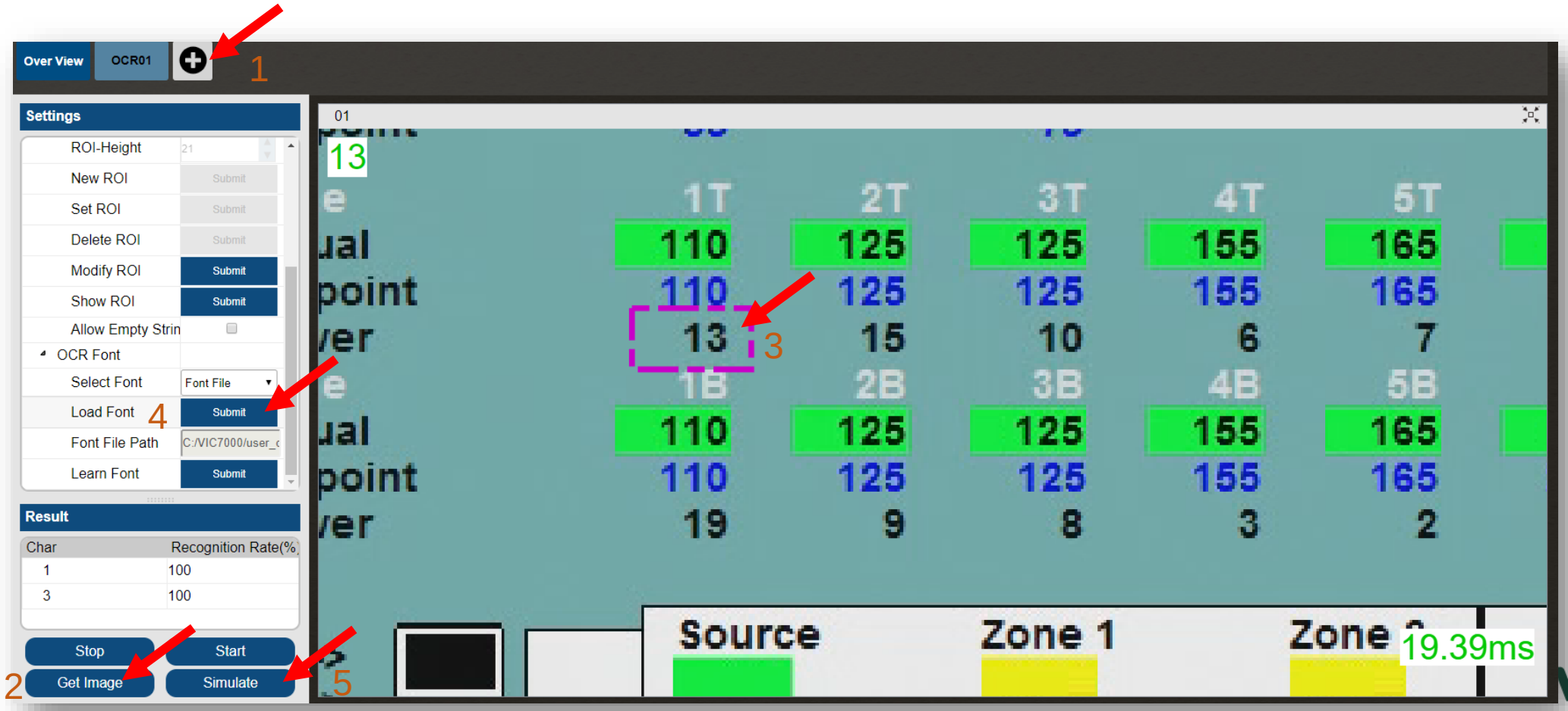
&& : When || is not satisfied then the && will be considered, the page will only be considered as successfully if all of the TARGETs set with && are satisfied

If more than one page matched successfully at the same time, the page with smaller index will be selected to be recognized.

Build Project – Page & Recognition

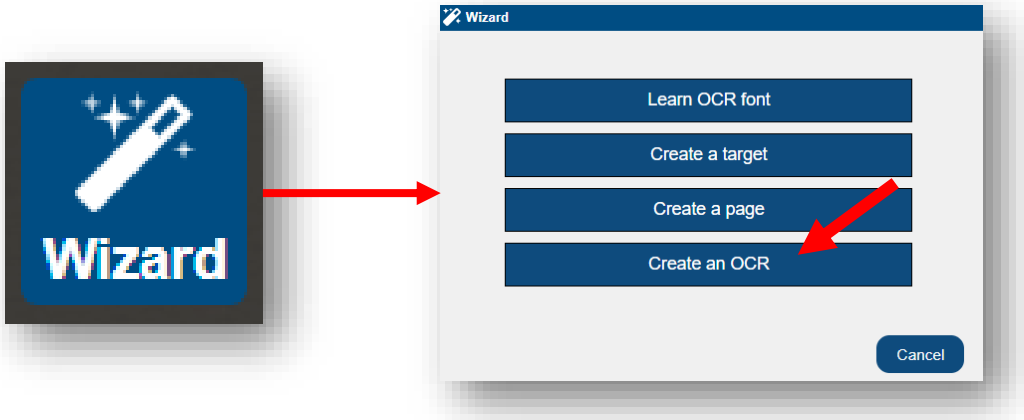
- **General : Create a page**

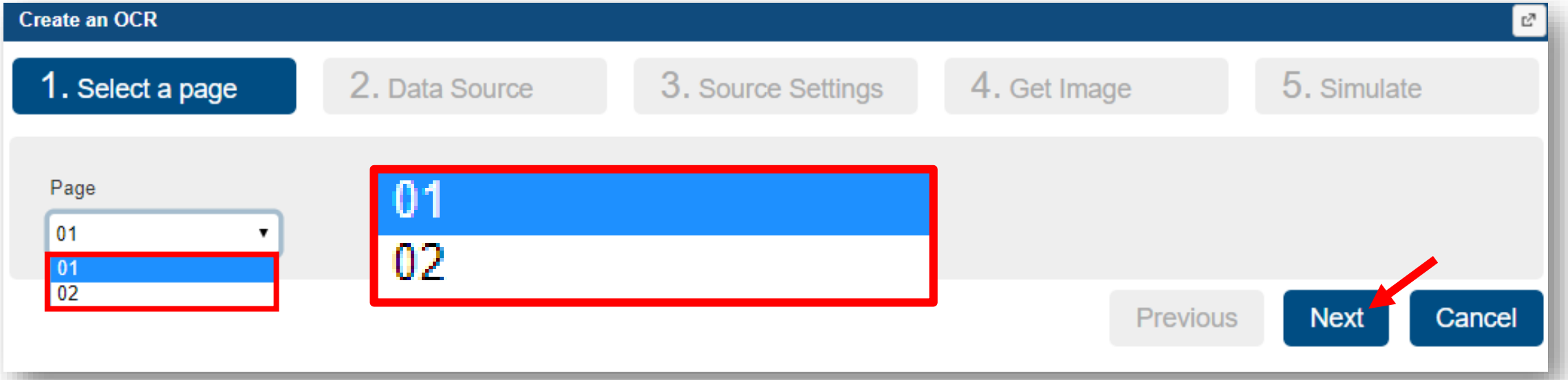
  3. Create an OCR : Click **Add** icon → Get Image → Set ROI → Load a font file → Click **Simulate** to confirm the recognition result



Build Project – Page & Recognition

- **Wizard : Create an OCR**
  1. Select a page : Choose the aimed page to create an OCR

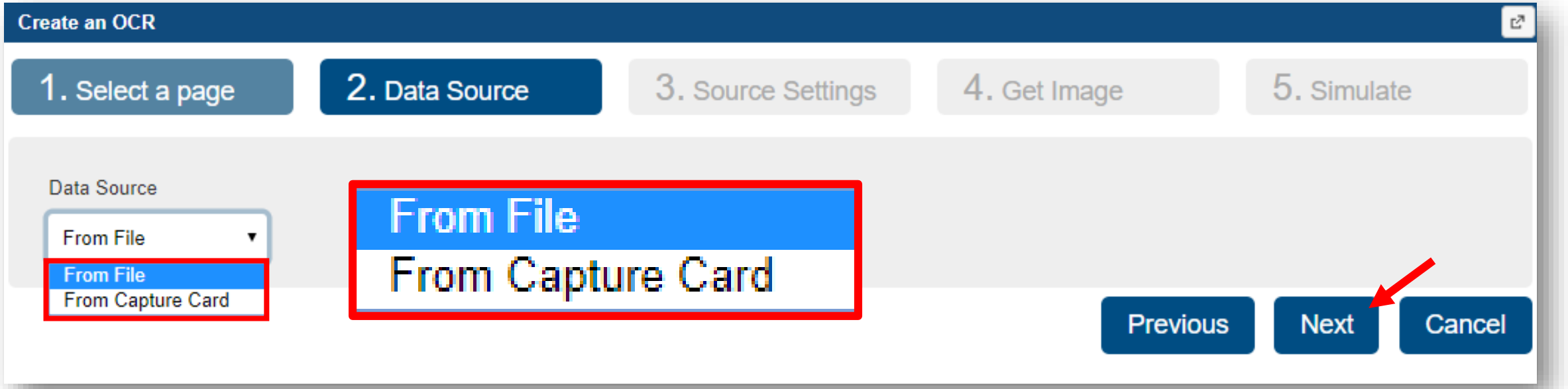




Build Project – Page & Recognition

- **Wizard : Create an OCR**
  2. Data Source

     From File or From Capture Card



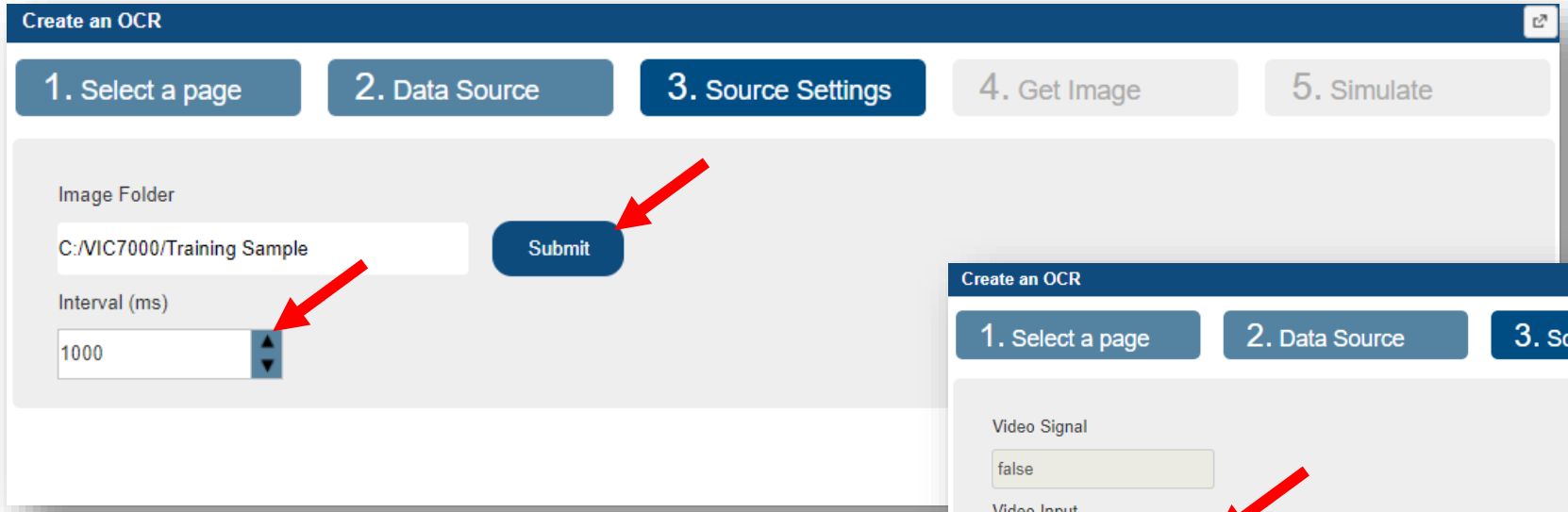
Build Project – Page & Recognition

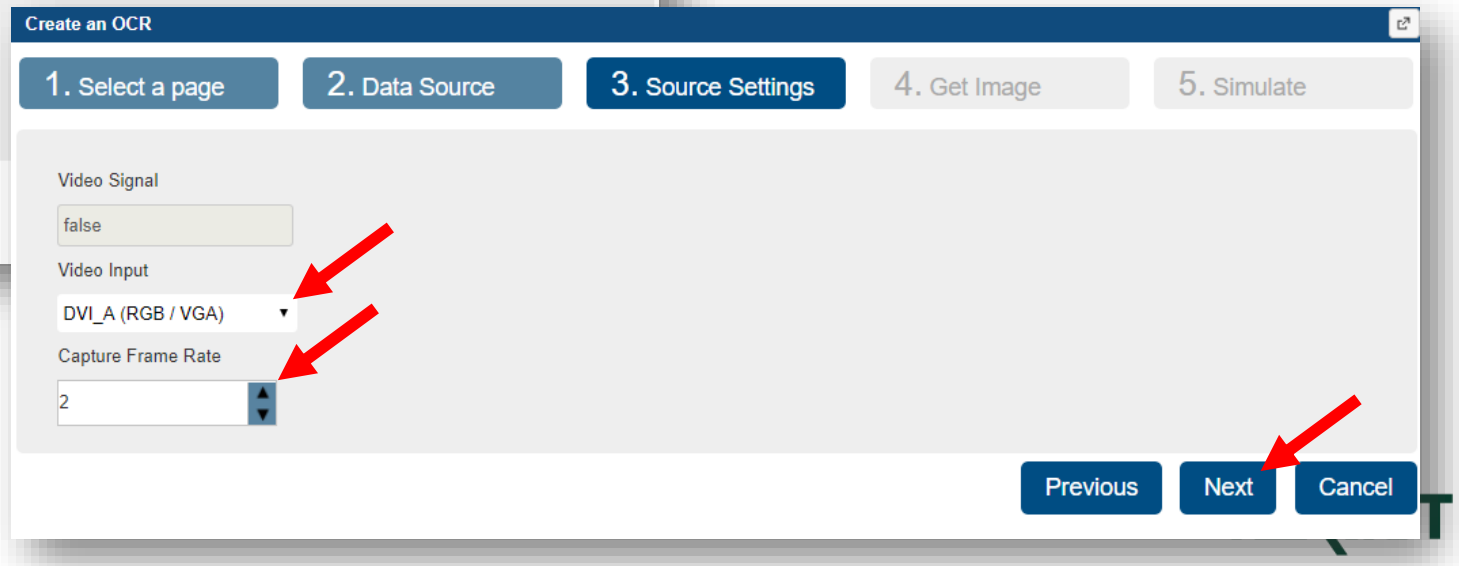
- **Wizard : Create an OCR**

  3. Source Settings

     From File : Image folder path, Read interval

     From Capture Card : Video input signal type, Capture frame rate





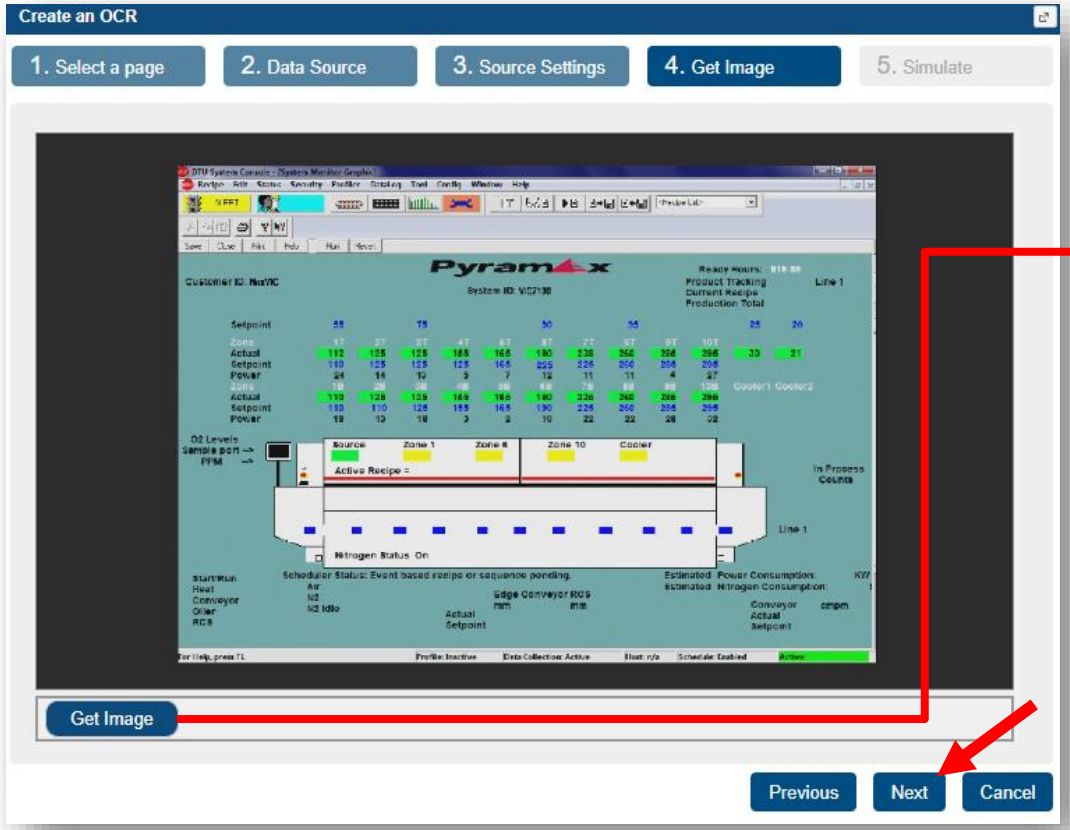
Build Project – Page & Recognition

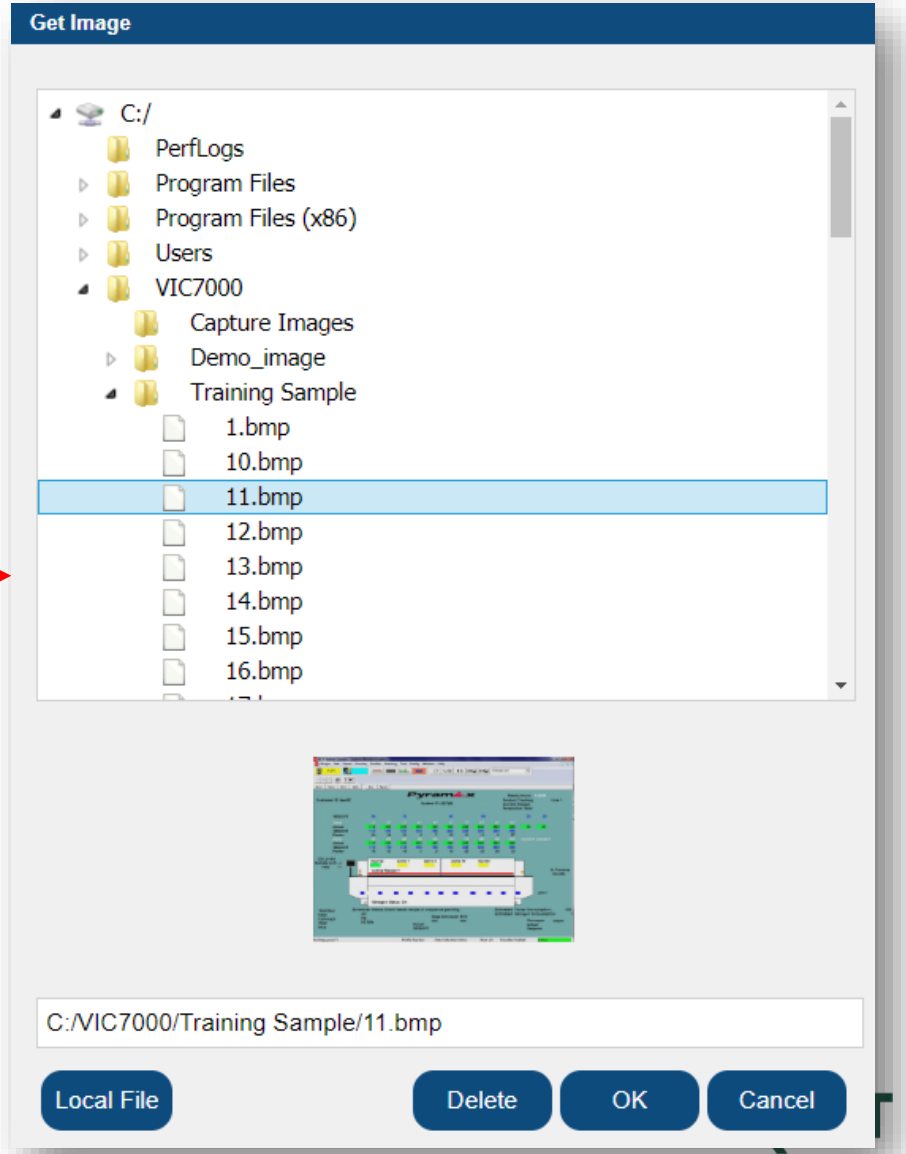
- **Wizard : Create an OCR**

  4. Get Image

     From File : Read images from a local or remote folder

     From Capture Card : Get an image from capture card





Build Project – Page & Recognition

- **Wizard : Create an OCR**

  5. Simulate

  Right-click on the image then select **New ROI (**or Click **New ROI)** → Adjust the location and size of ROI → Right-click on an image then select **Set ROI (**or Click **Set ROI)**

Build Project – Page & Recognition

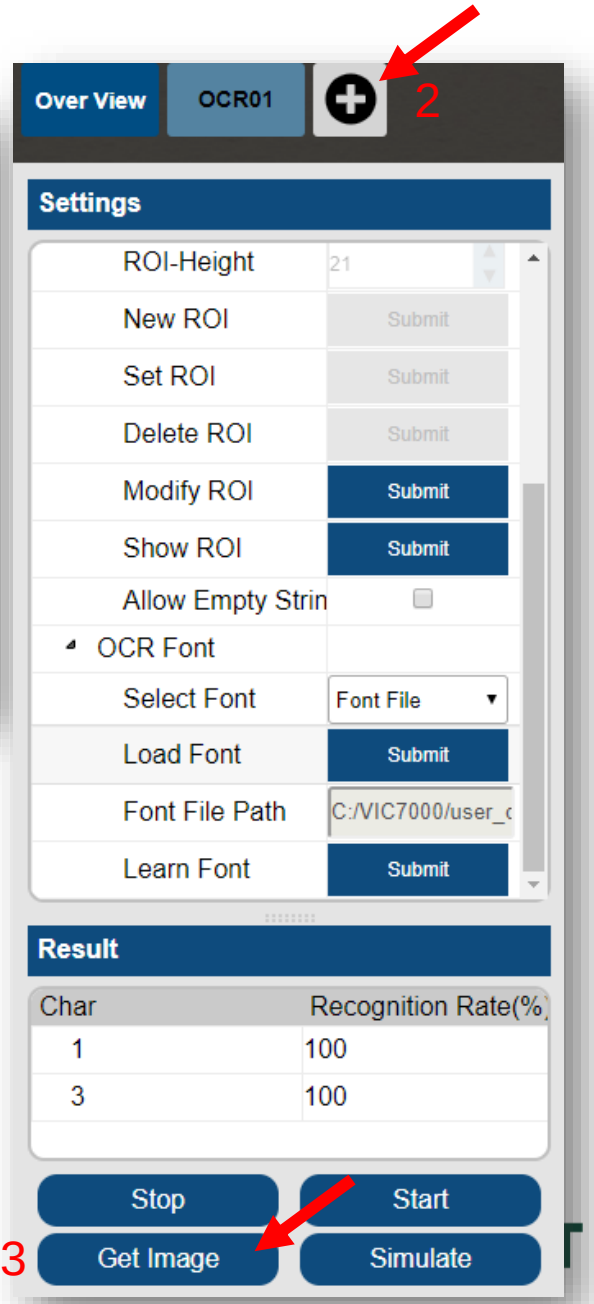
- **Wizard : Create an OCR**

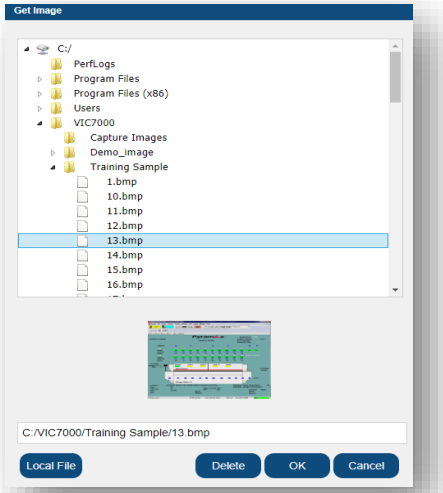
  5. Simulate

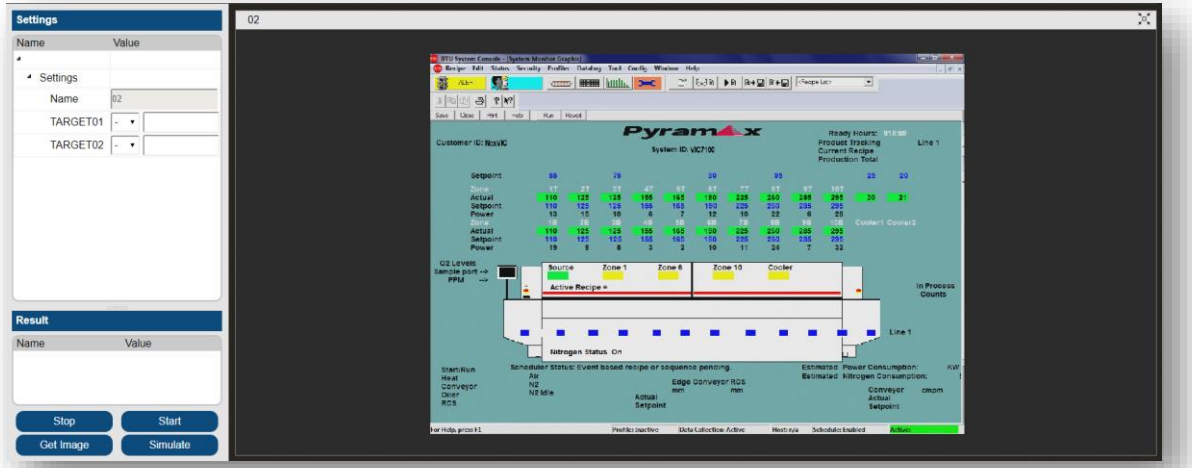
  Click **Load Font** → Choose a font file used for recognition → Click **Load** → Click **Simulate** → Confirm the recognition result

Build Project – Page & Recognition

- **General : Create an OCR**
  1. Select a page : Choose the aimed page to create an OCR
  2. Create an OCR : Add icon
  3. Get Image
     a. From File : Read images from a local or remote folder
     b. From Capture Card : Get an image from capture card



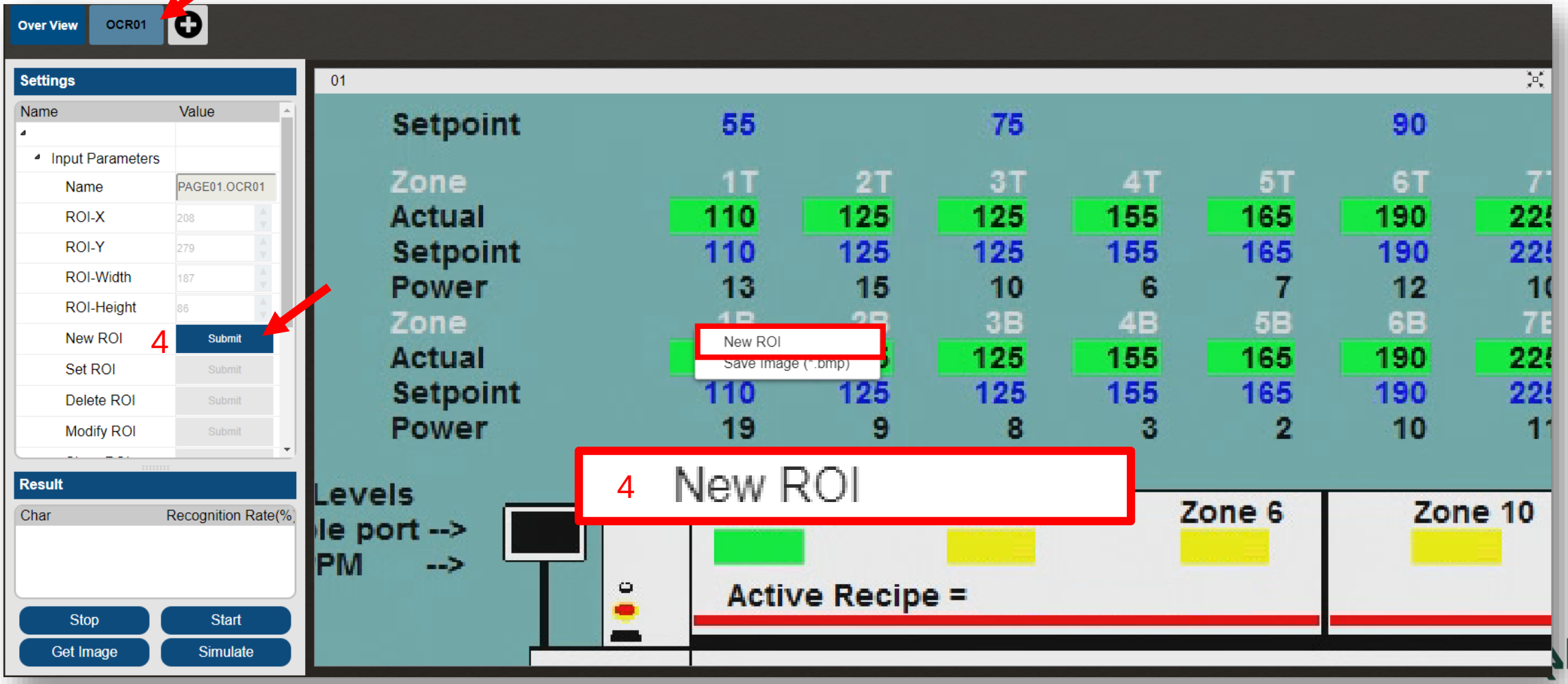




Build Project – Page & Recognition

- **General : Create an OCR**

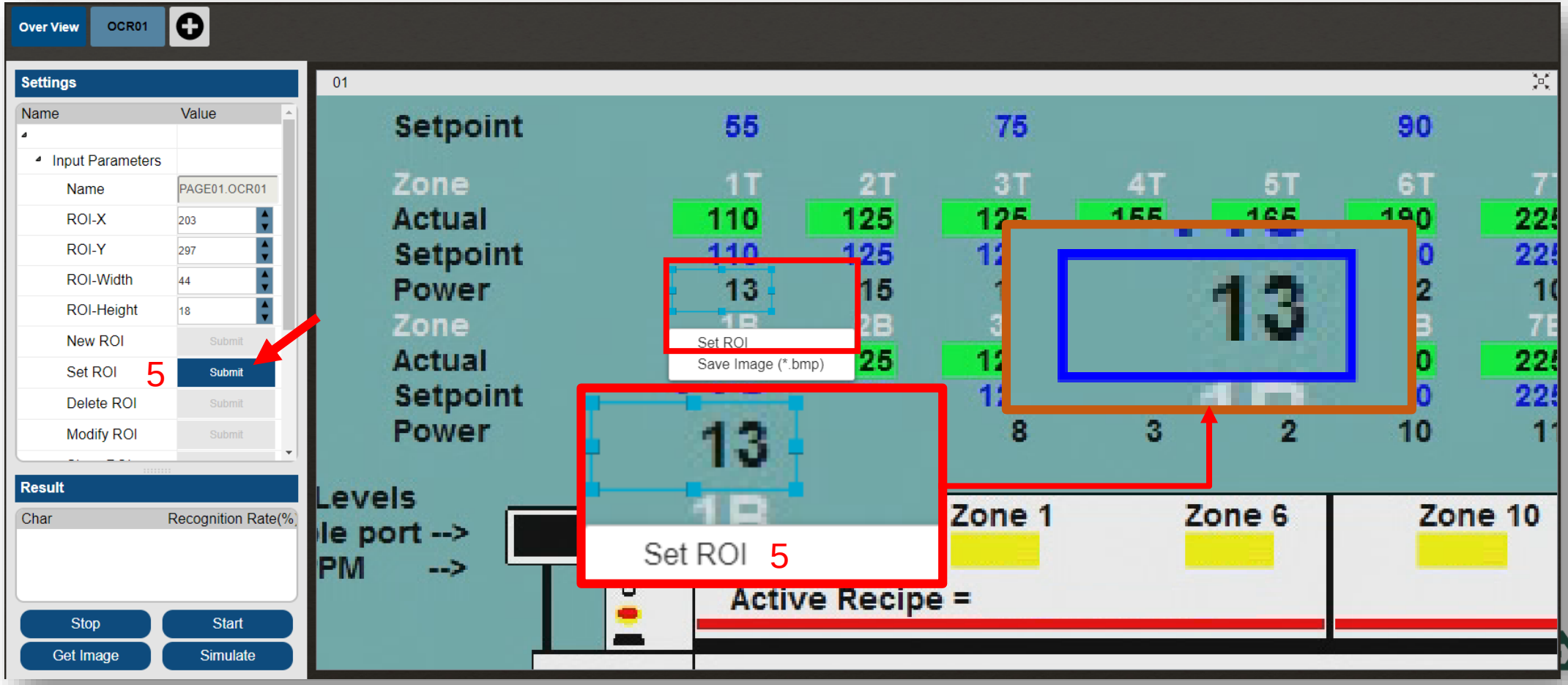
  4. New ROI : Right-click on an image then select **New ROI (**or Click **New ROI)**



Build Project – Page & Recognition

- **General : Create an OCR**

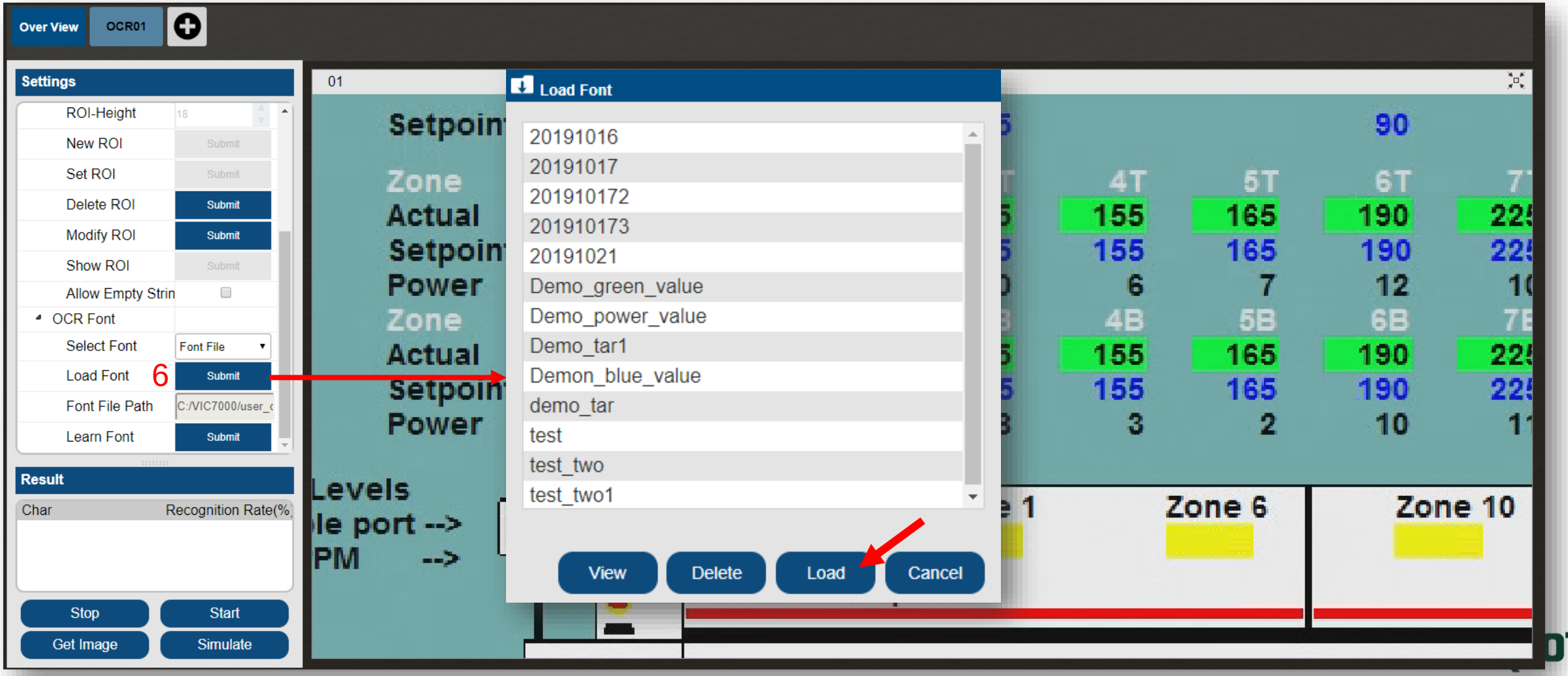
  5. Set ROI : Adjust the location and size of ROI → Right-click on an image and select **Set ROI** (or Click **Set ROI**)



Build Project – Page & Recognition

- **General : Create an OCR**

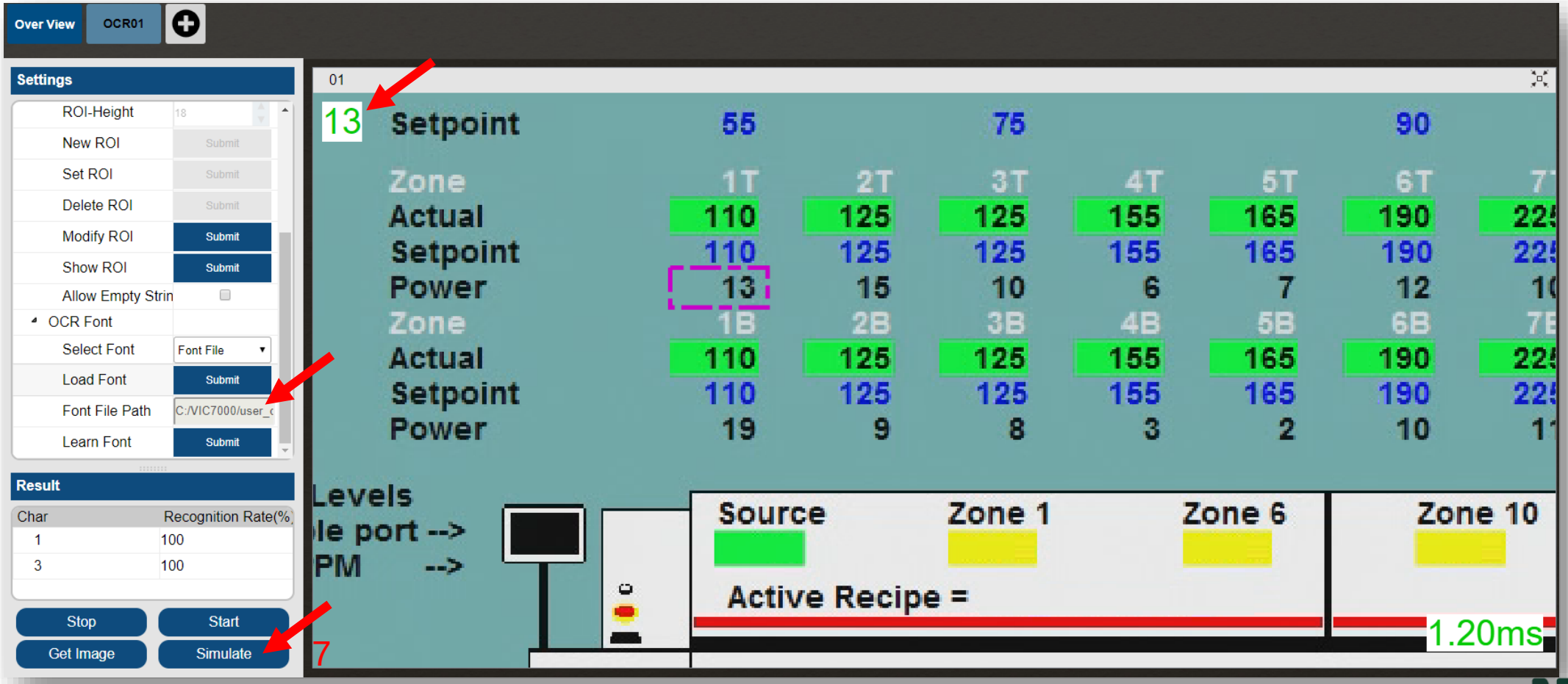
  6. Load Font : Click **Load Font** → Choose a font file used for recognition → Click **Load**



Build Project – Page & Recognition

- **General : Create an OCR**

  7. Simulate : Click **Simulate** → Confirm the recognition result



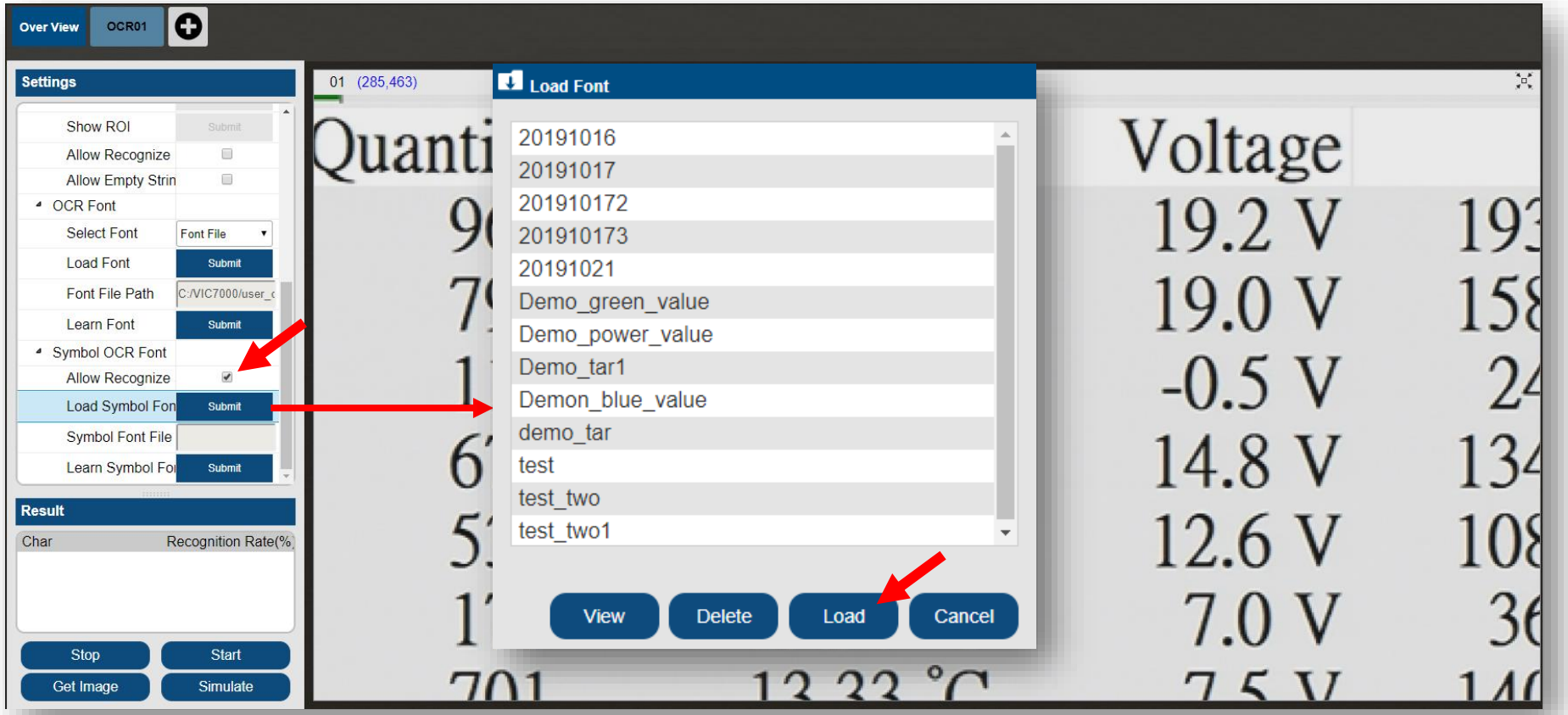
Build Project – Page & Recognition

- **OCR Config**
  - Input Parameters
    - ROI X : Set X coordinates of ROI
    - ROI Y : Set Y coordinates of ROI
    - ROI Width : Set width coordinates of ROI
    - ROI Height : Set Height coordinates of ROI
    - Allow Empty Result : If it is checked, NG won't show up when there is no character recognized in ROI
    - Allow Recognition Rate : If recognition rate is lower than this value, NG will show up

Build Project – Page & Recognition

- **General**
  - Symbol Recognition : Check on **Allow Recognize Symbol** → Click **Load Symbol Font** → Choose a symbol font file used for recognition → Click **Load**

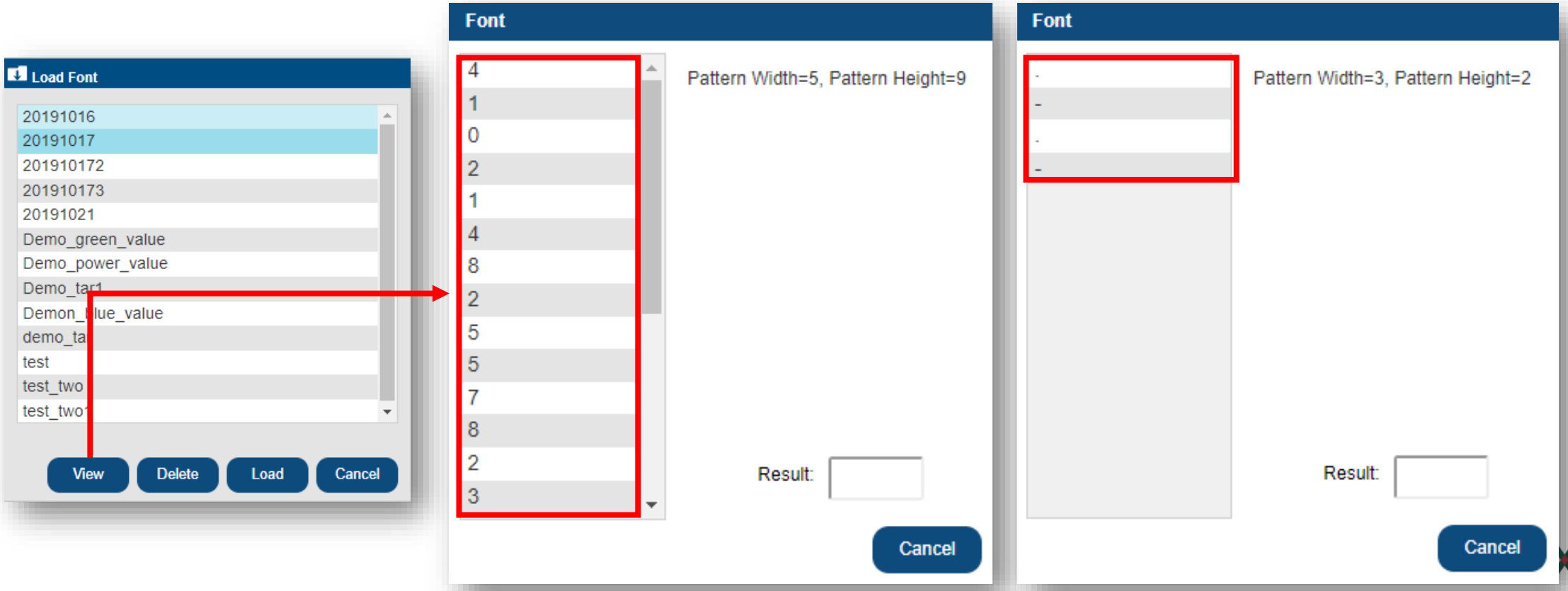
    The Symbol font file that is used **only for recognizing symbols**.



Build Project – Page & Recognition

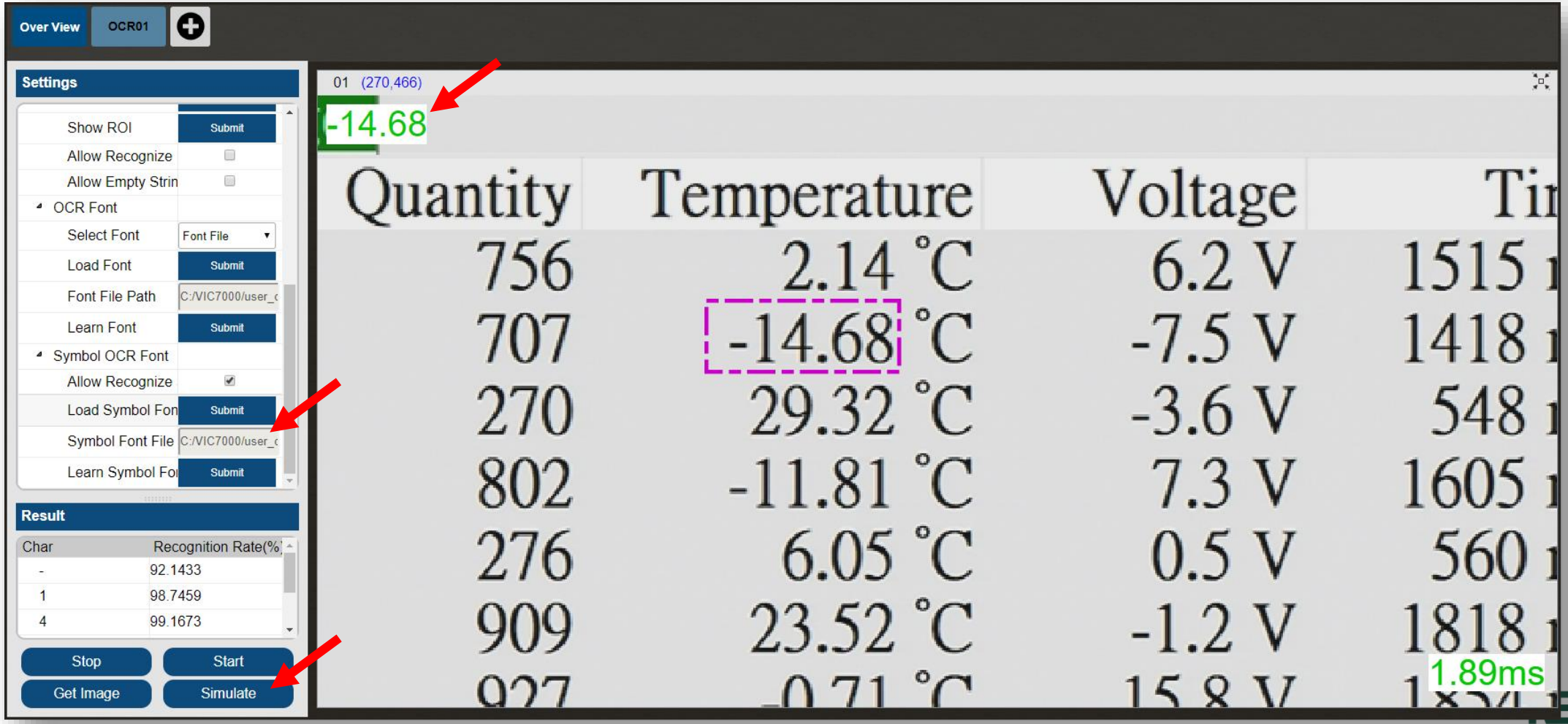
- **General**
  - Symbol Recognition : Click **View** to confirm the content of OCR font and symbol font

In this sample, the OCR font is used to recognize numbers, and the symbol font is used to recognize minus sign and decimal point.



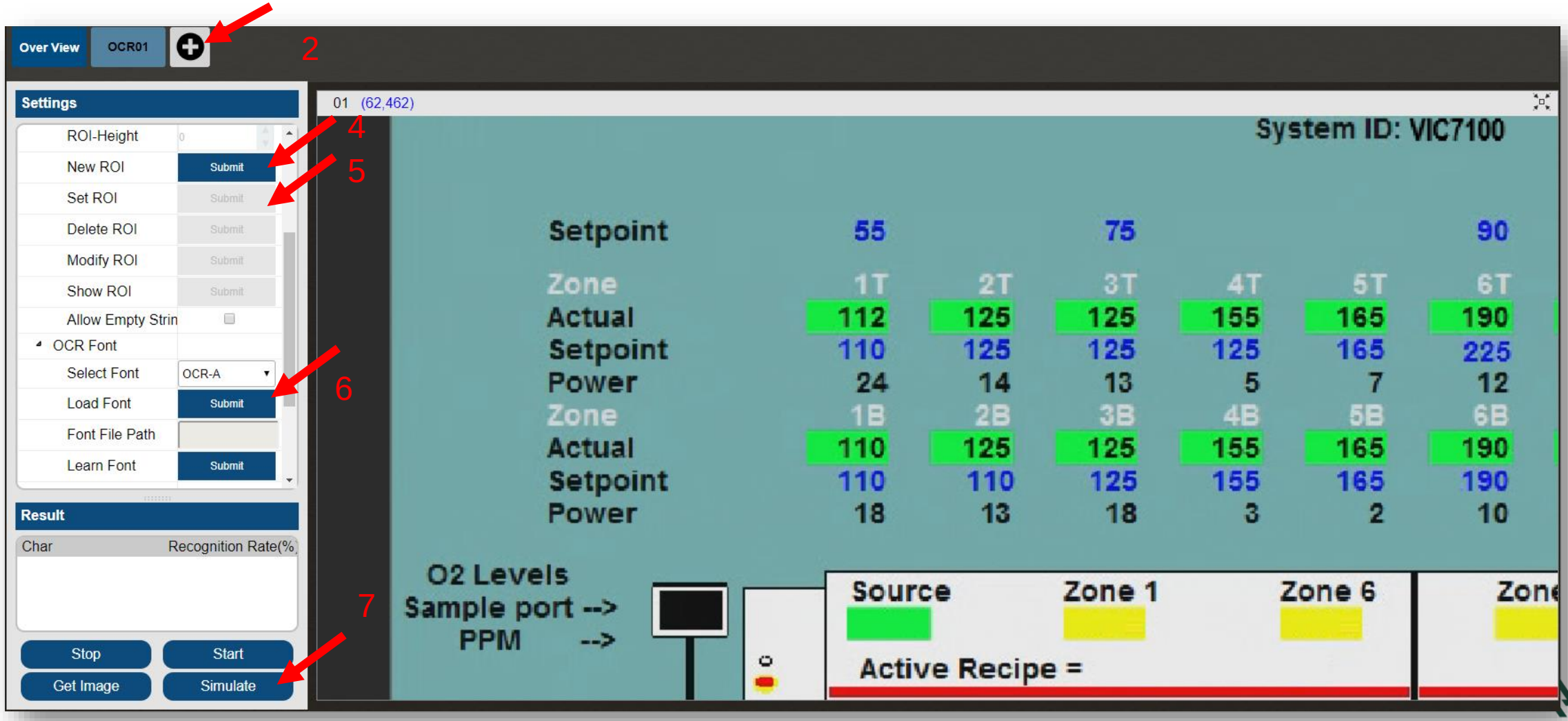
Build Project – Page & Recognition

- **General**
  - Symbol Recognition : Click **Simulate** → Confirm the recognition result



Build Project – Page & Recognition

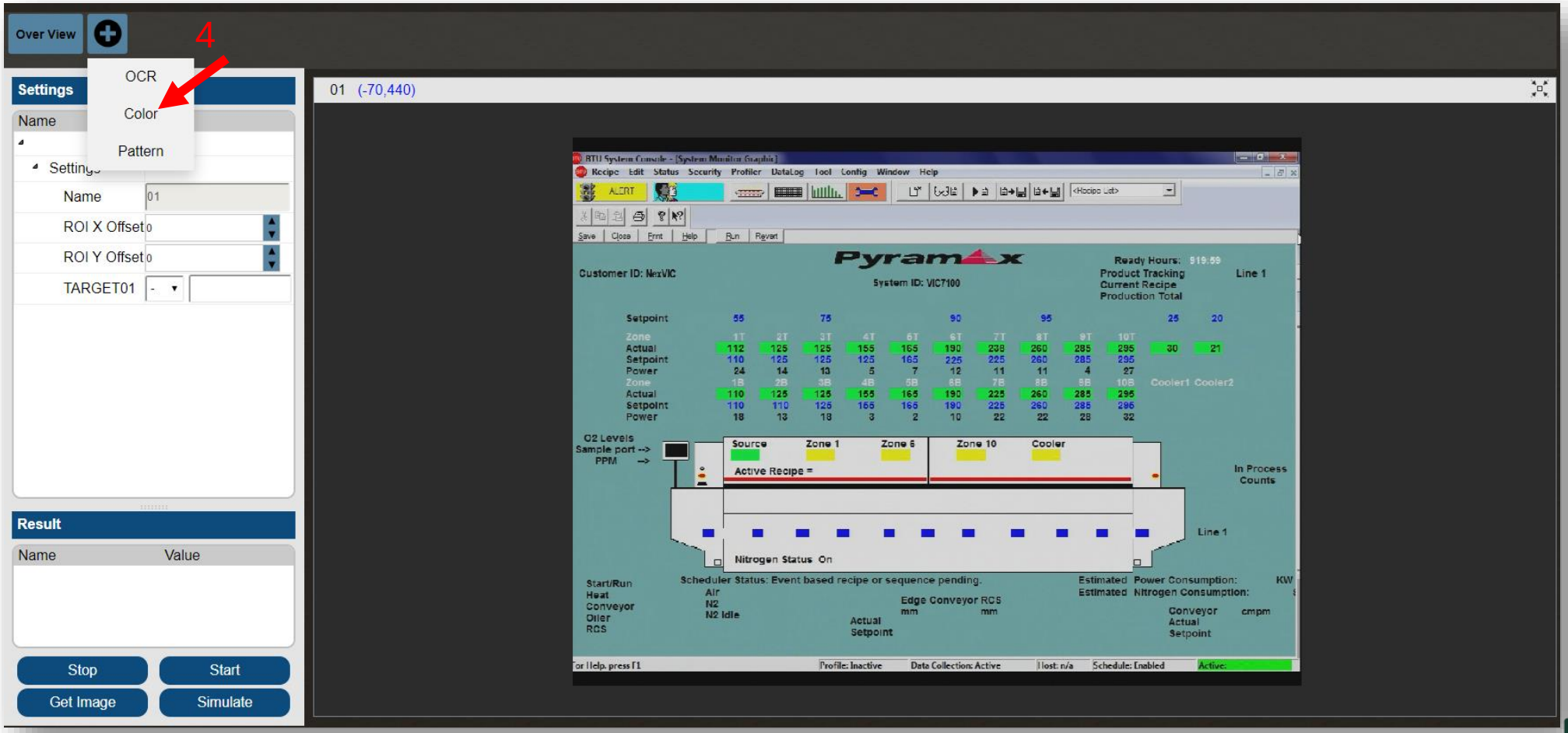
- **General : Create an OCR**
  - Multiple OCR : Click **Add** icon → Repeat the aforementioned steps to create OCRs



Build Project – Page & Recognition

- **General : Create a Color**

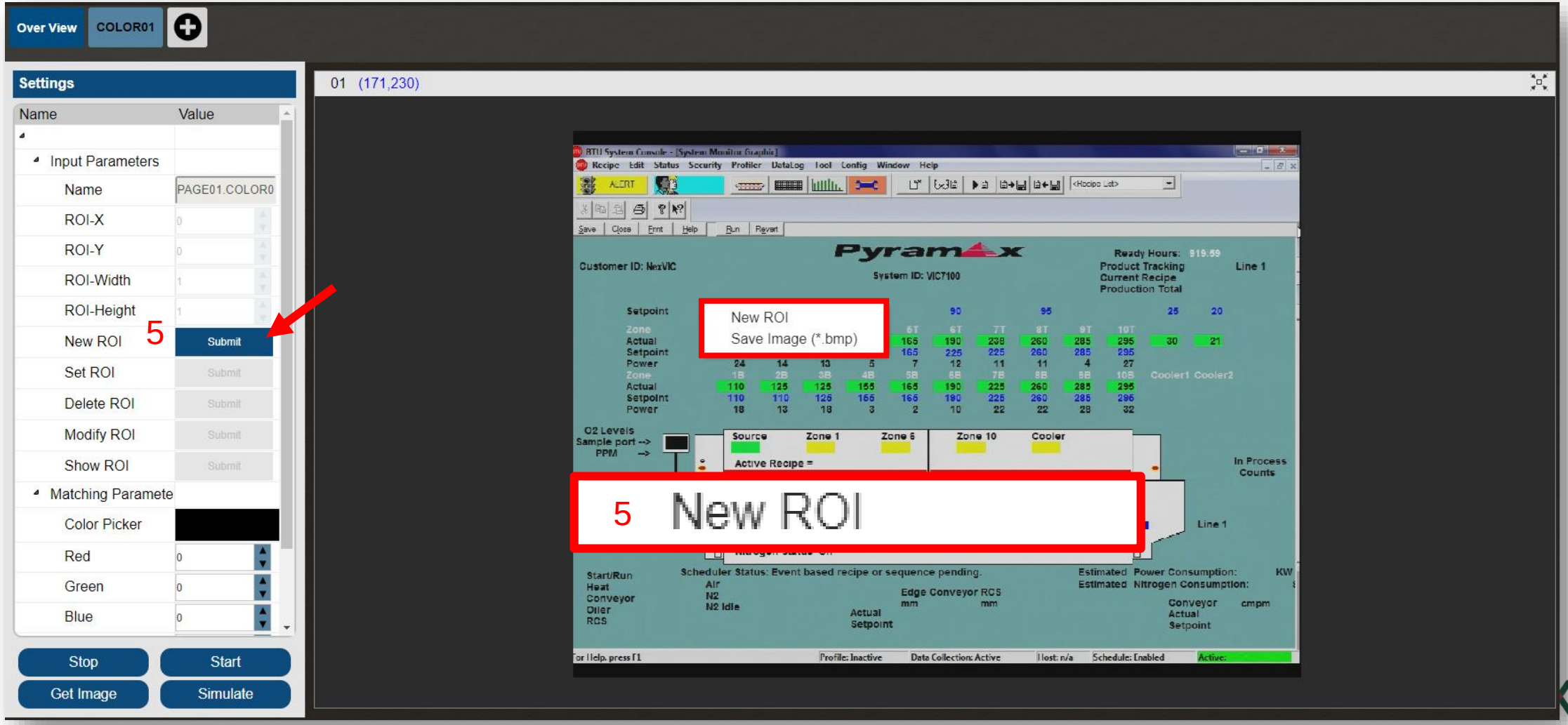
  4. Create a COLOR : Click on **Add** icon → Click **Color**



Build Project – Page & Recognition

- **General : Create a Color**

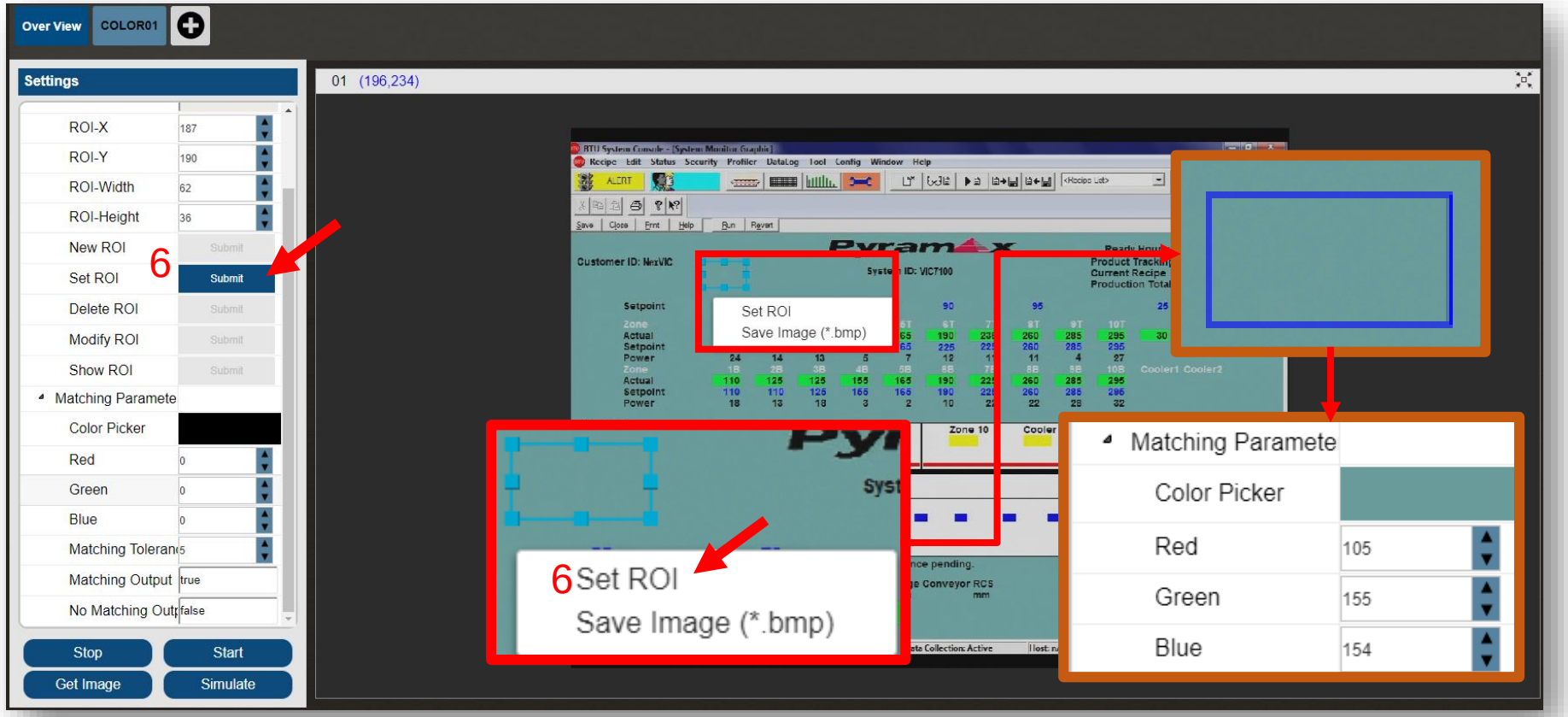
  5. New ROI : Right-click on the image and select **New ROI** (or Click **New ROI** button)



Build Project – Page & Recognition

- **General : Create a Color**

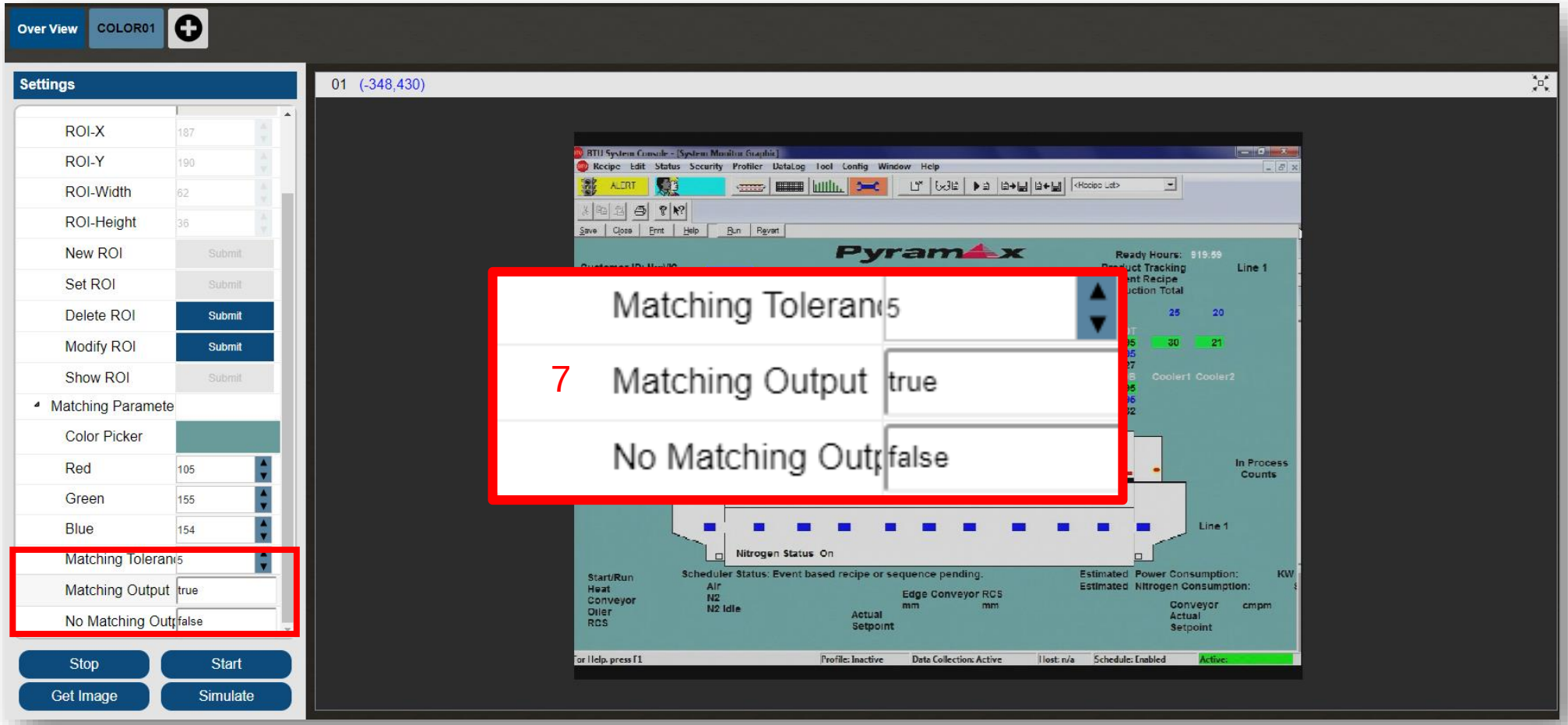
  6. Set ROI : Adjust the location and size of ROI → Right-click on the image and select **Set ROI** (or Click **Set ROI**) The average value of the RGB within the ROI is automatically obtained and be set as matching color



Build Project – Page & Recognition

- **General : Create a Color**

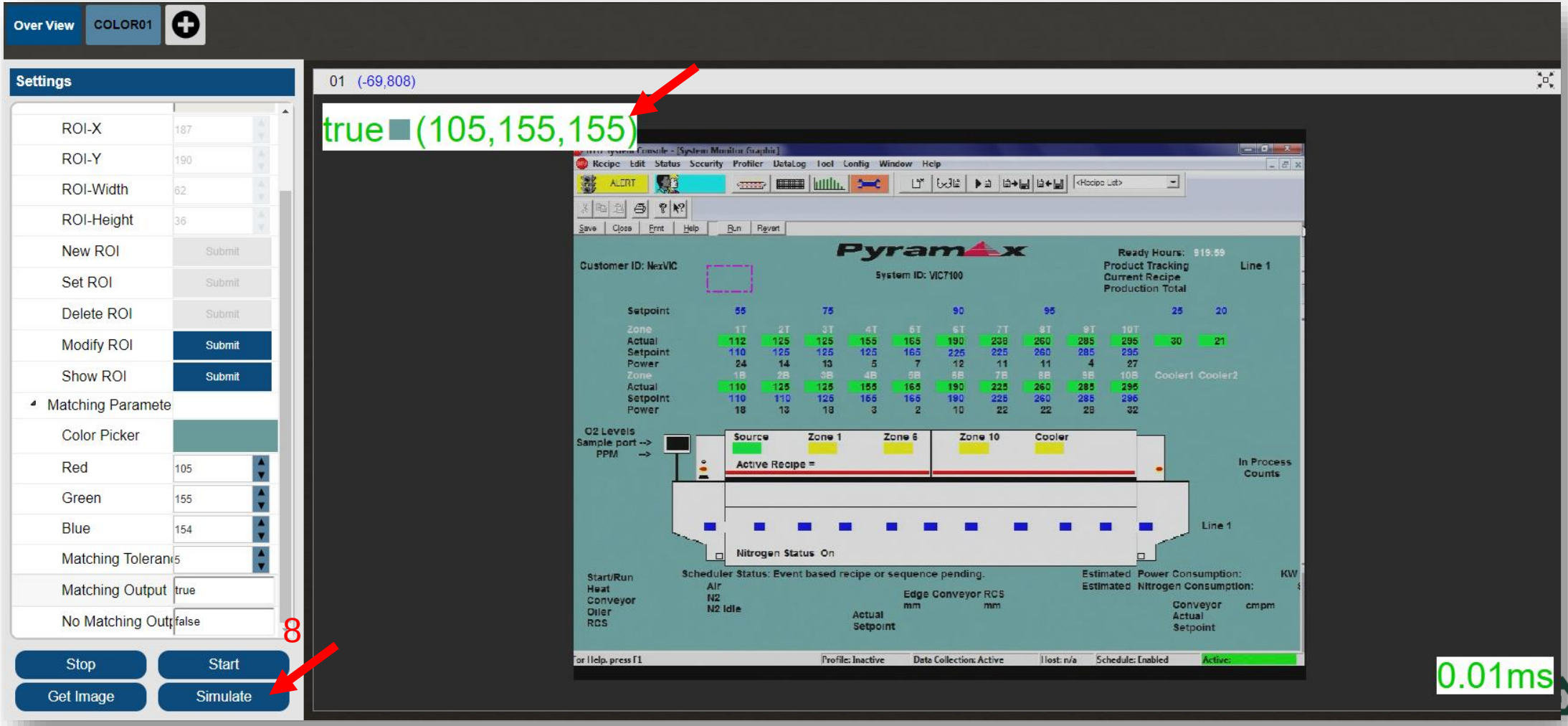
  7. Set Matching Tolerance and Result Output : Set **Matching Tolerance**(RGB±) → Enter **Matching Output Result**



Build Project – Page & Recognition

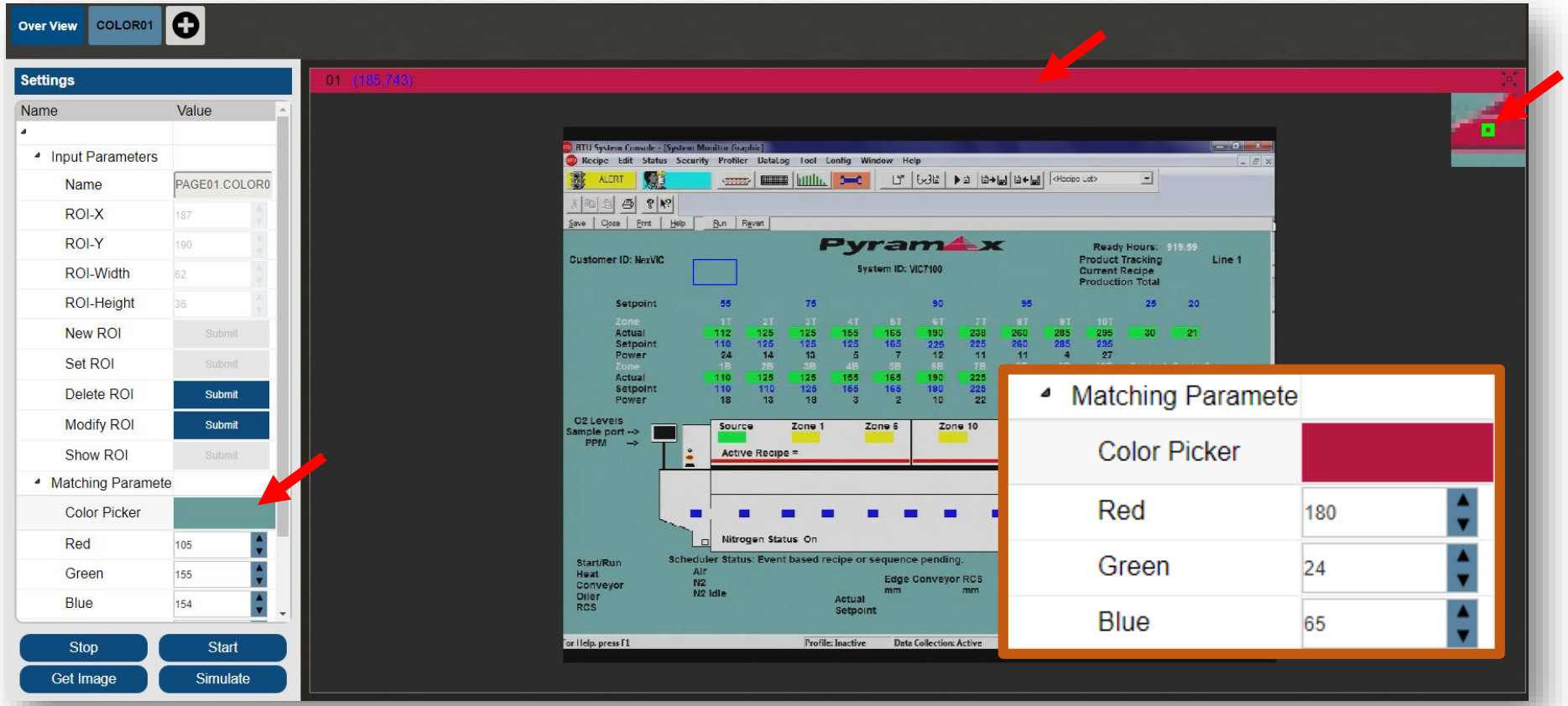
- **General : Create a Color**

  8. Simulate : Click **Simulate** → Confirm matching result



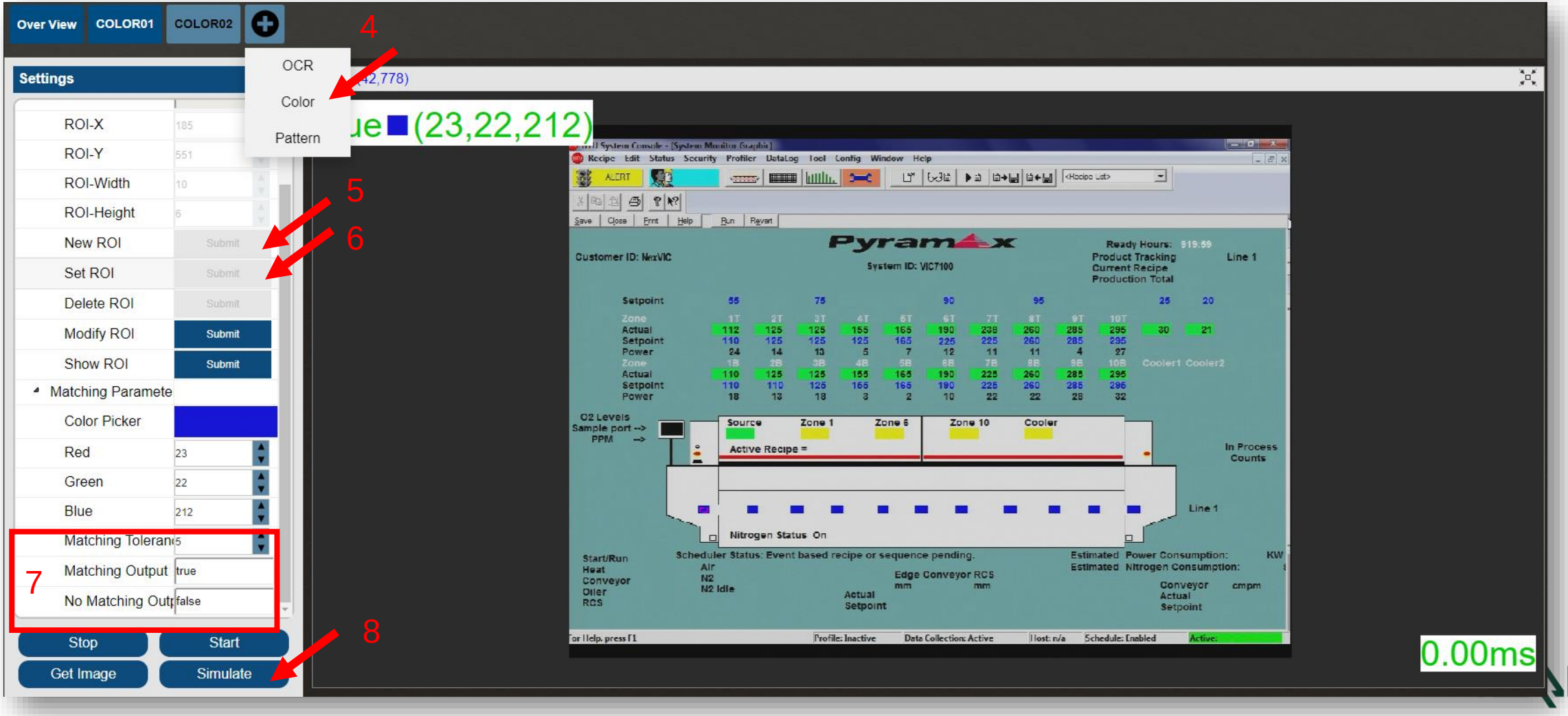
Build Project – Page & Recognition

- **General : Create a Color**
  - Assign color matching : Click Color Picker → Enable eyedropper tool → Select the desired matching color in the image → The matching color will be set up automatically and confirm if it is correct.



Build Project – Page & Recognition

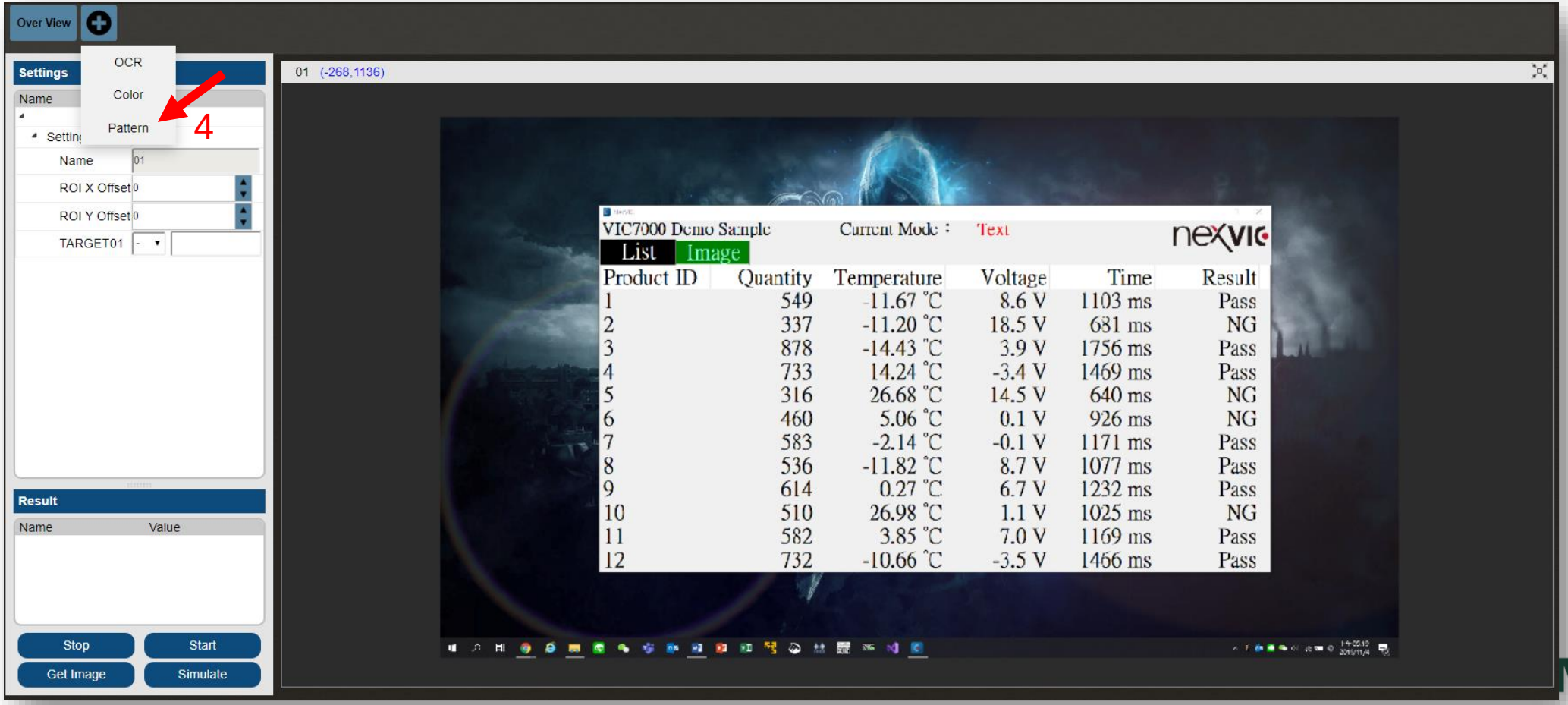
- **General : Create a Color**
  - Multiple COLOR : Click **Add** icon → Repeat the aforementioned steps to create Colors



Build Project – Page & Recognition

- **General : Create a Pattern**

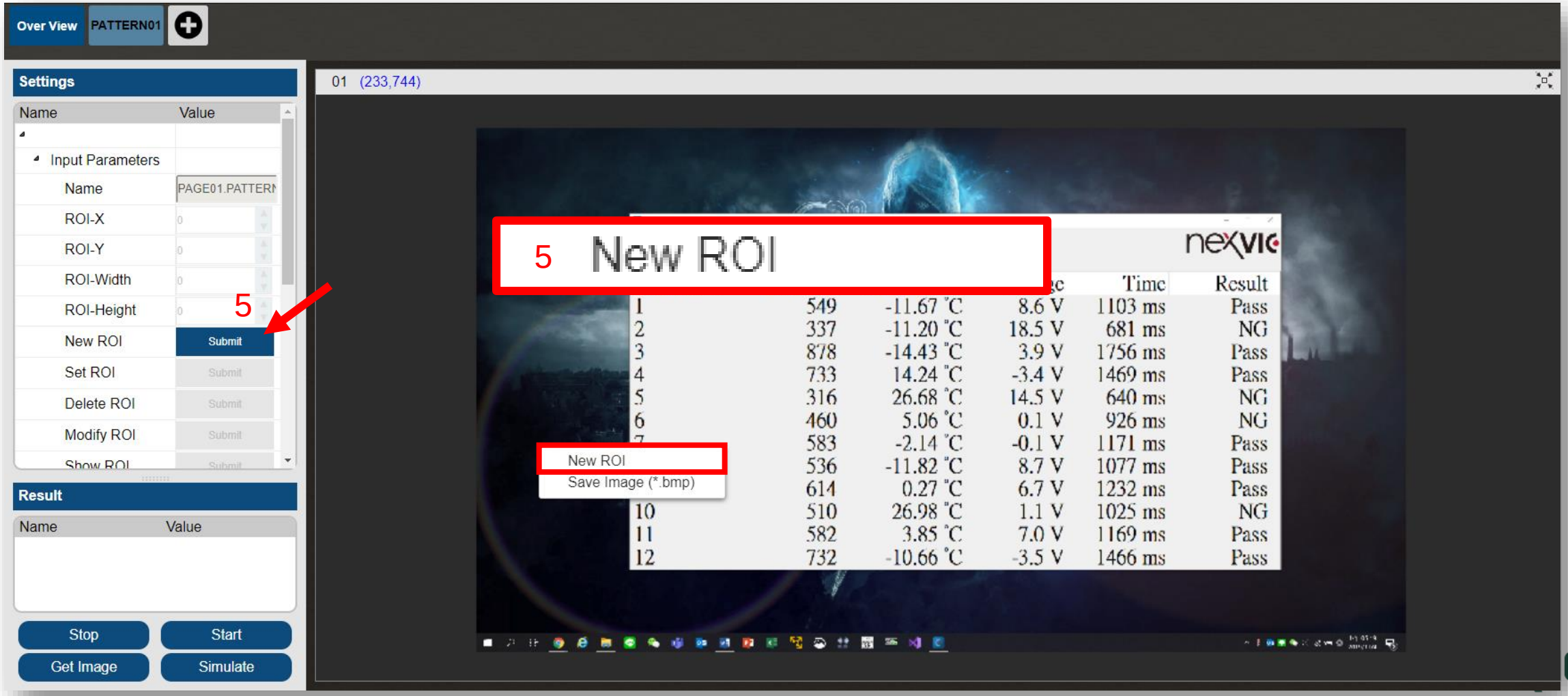
  4. Create a PATTERN : Click **Add** icon on the page user wants to create a Pattern → Click **Pattern**



Build Project – Page & Recognition

- **General : Create a Pattern**

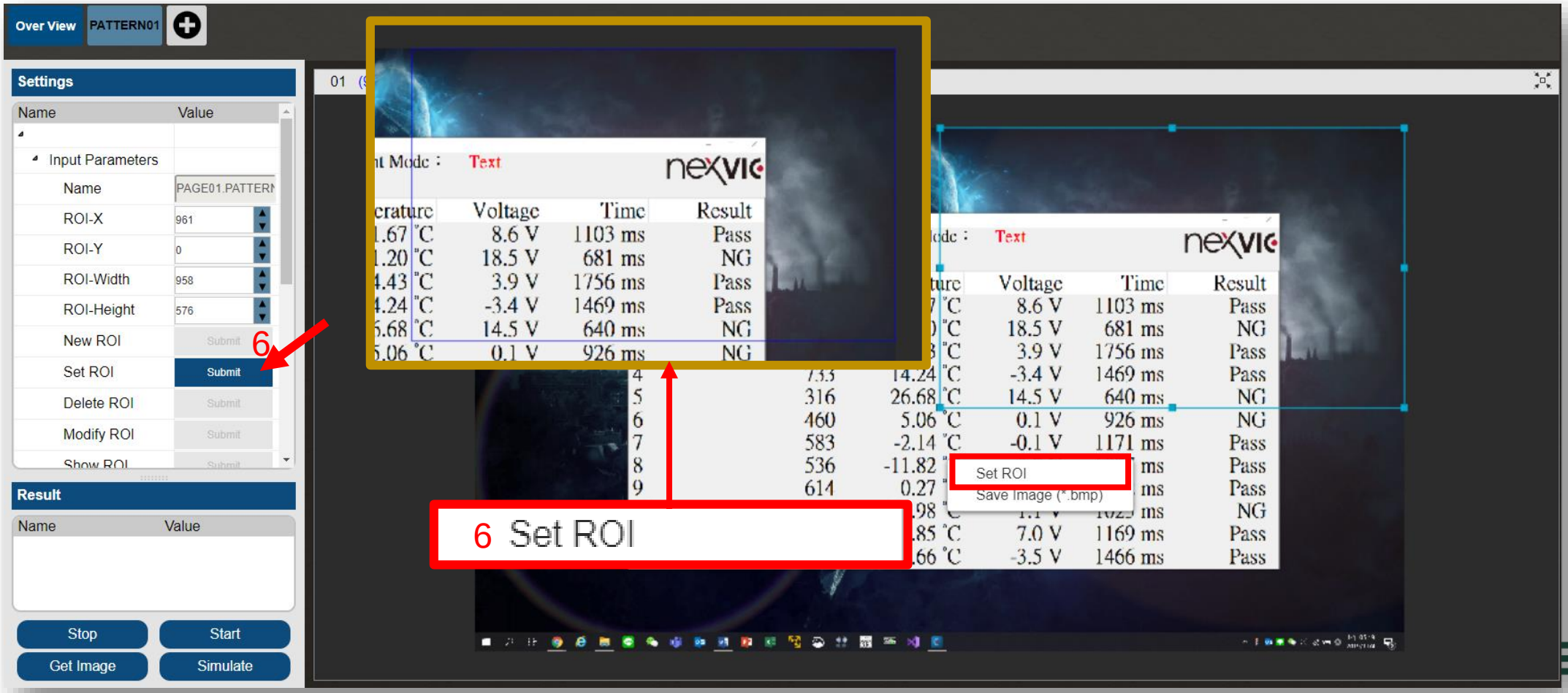
  5. New ROI : Right-click on the image and select **New ROI (**or Click **New ROI)**



Build Project – Page & Recognition

- **General : Create a Pattern**

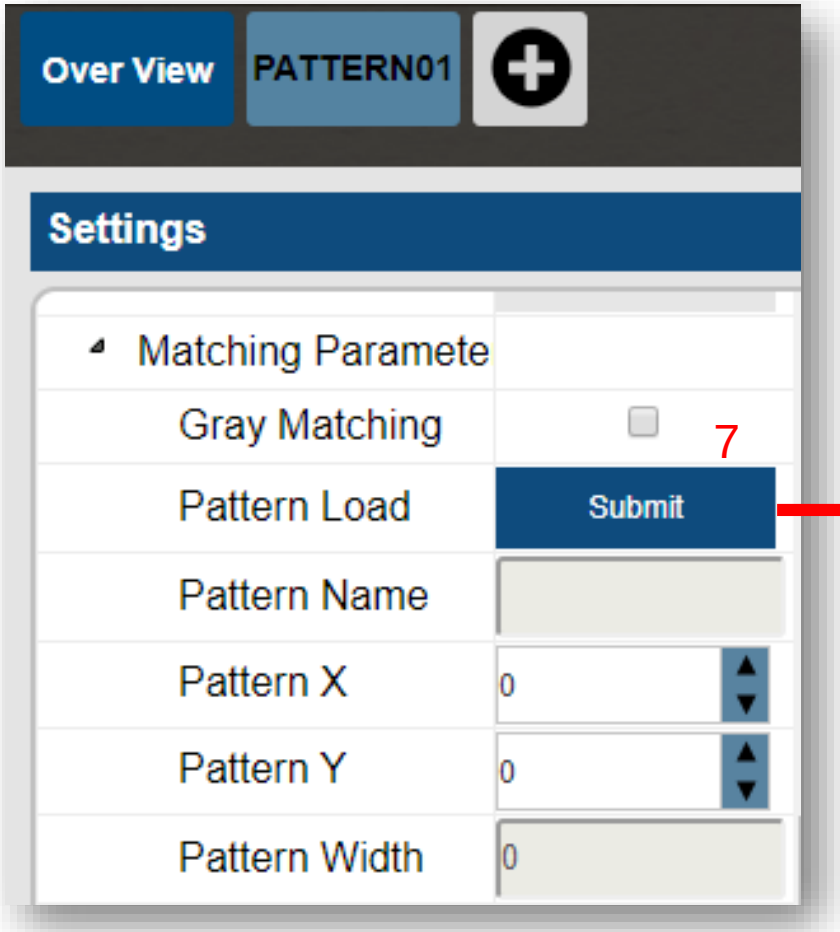
  6. Set ROI : Adjust the location and size of ROI → Right-click on the image then select **Set ROI (**or Click **Set ROI)**

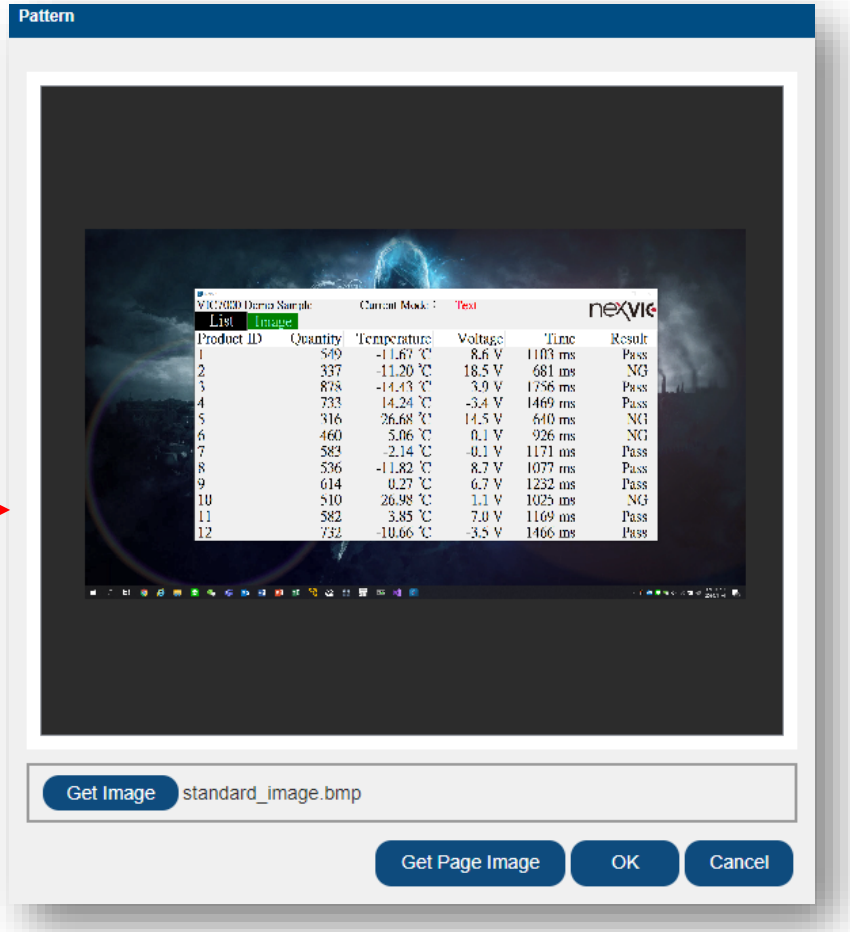


Build Project – Page & Recognition

- **General : Create a Pattern**

  7. Load Matching Pattern : Click **Pattern Load** → **Pattern** window will appear, and an image will be loaded automatically

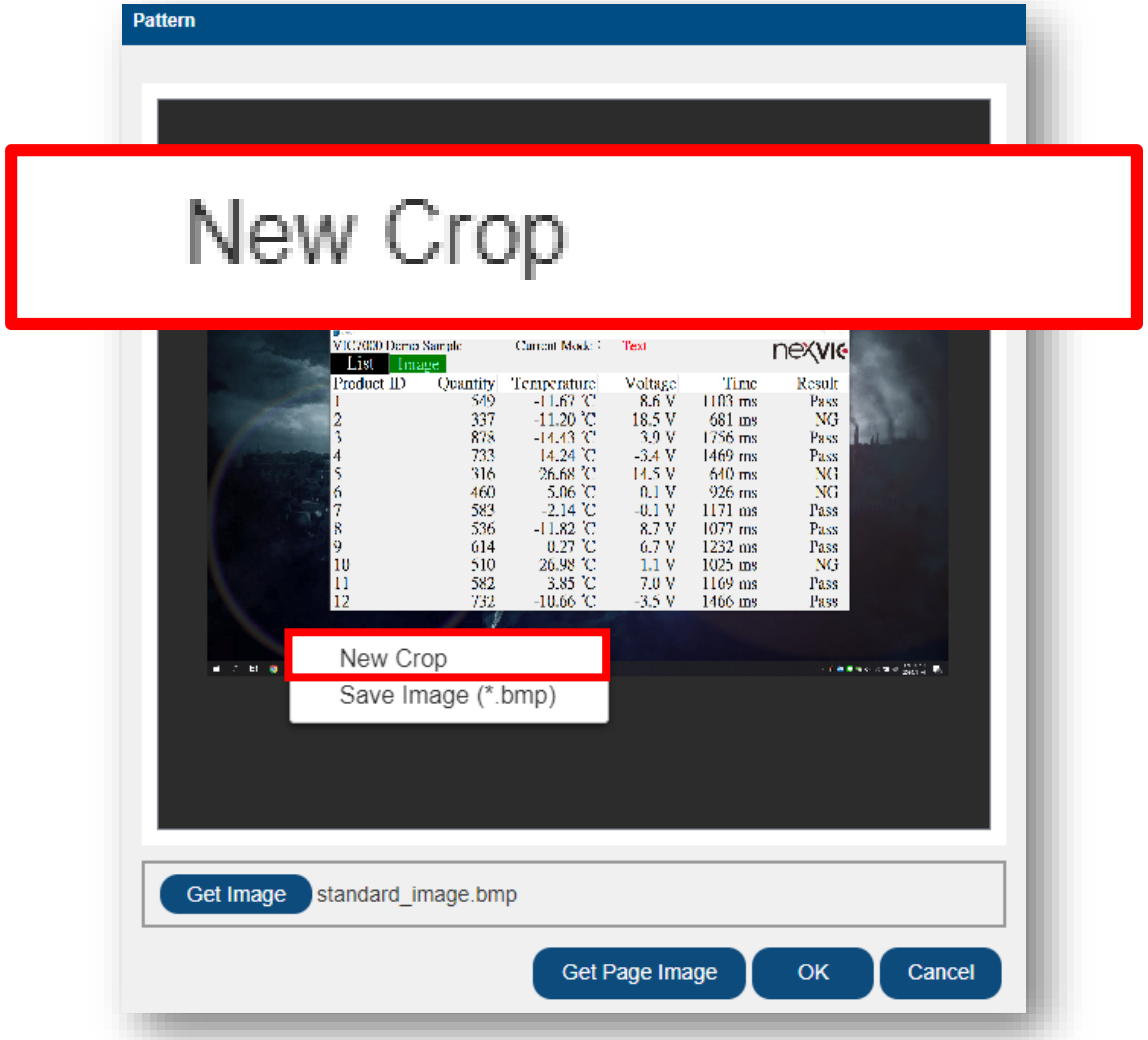




Build Project – Page & Recognition

- **General : Create a Pattern**

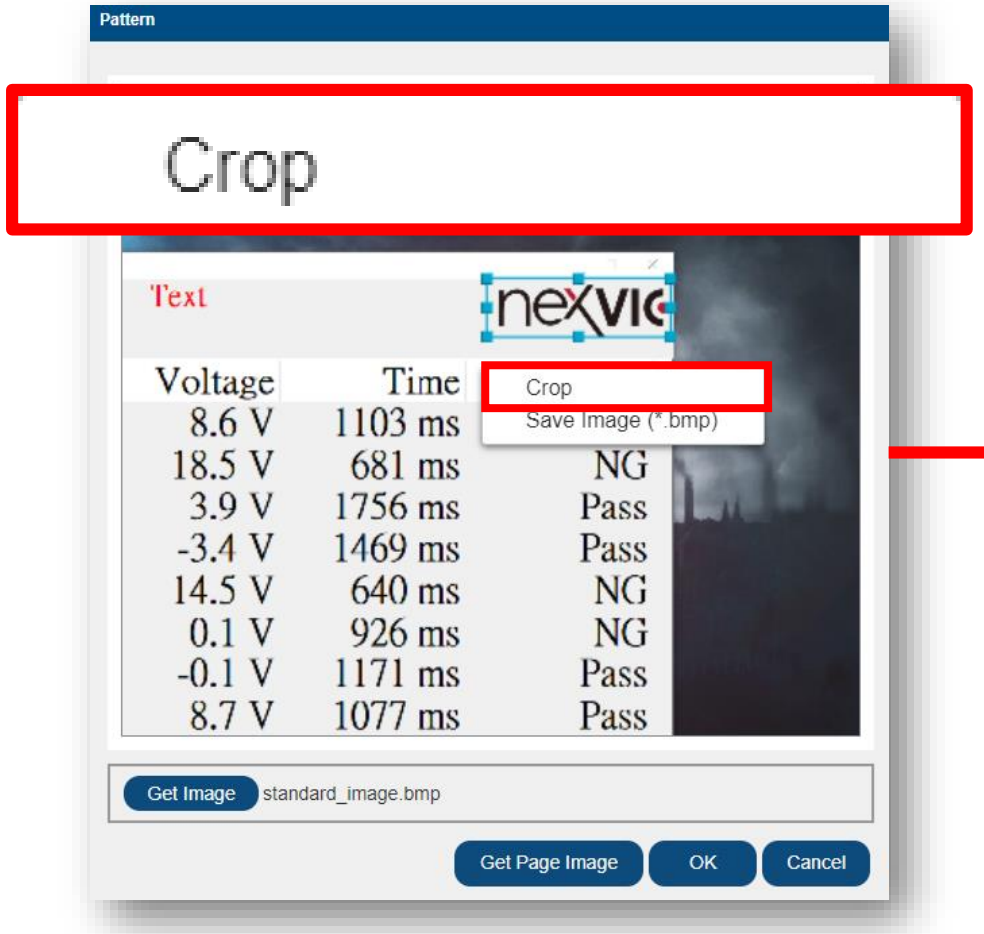
  7. Load Matching Pattern : Right-click on the image → Select **New Crop**



Build Project – Page & Recognition

- **General : Create a Pattern**

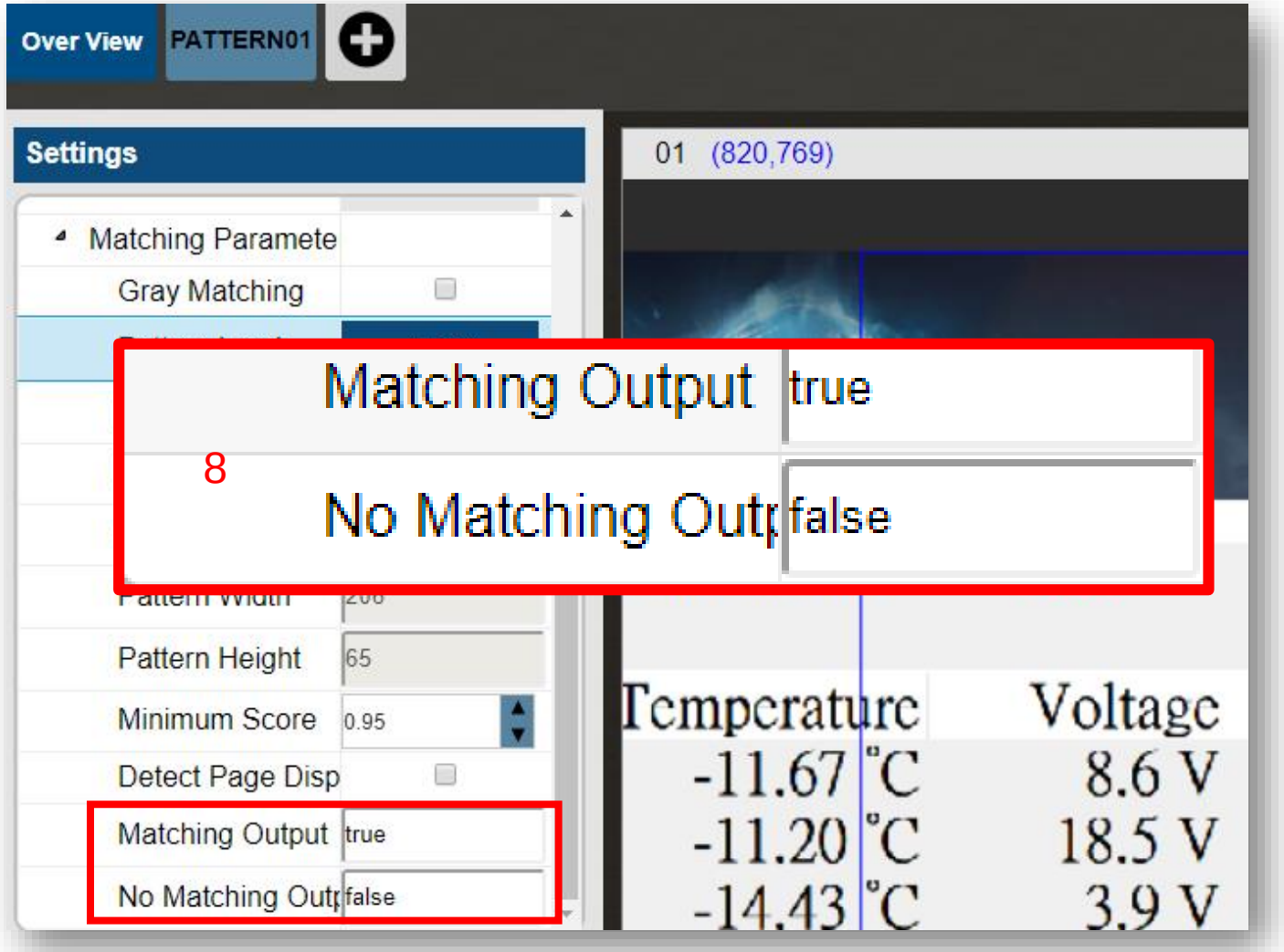
  7. Load Matching Pattern : Mark the matching pattern → Right-click on the image → Select **Crop** → Click **OK**



Build Project – Page & Recognition

- **General : Create a Pattern**

  8. Set Matching Result Output : Enter the **Output of the Matching Result**

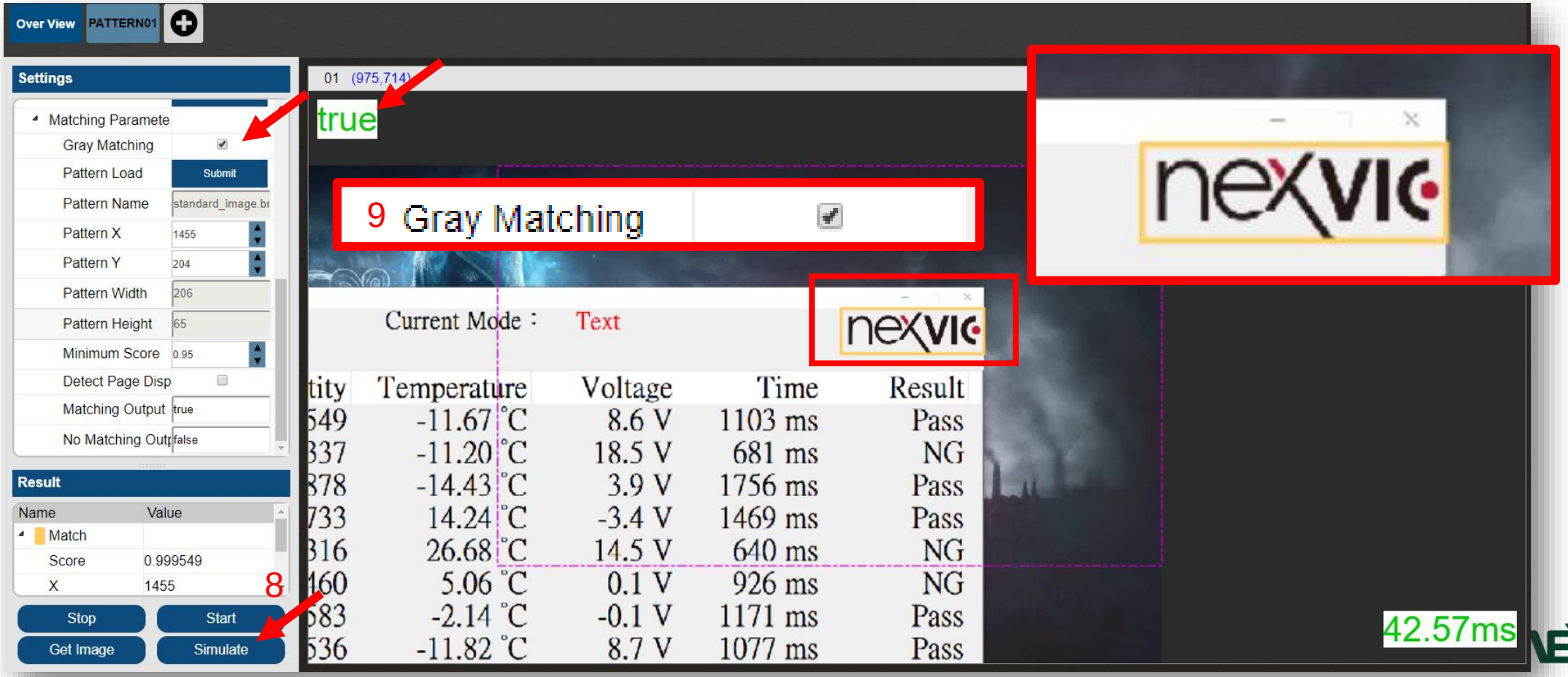


Build Project – Page & Recognition

- **General : Create a Pattern**

  9. Simulate : It's recommended to check Gray Matching to speed up recognition processes.

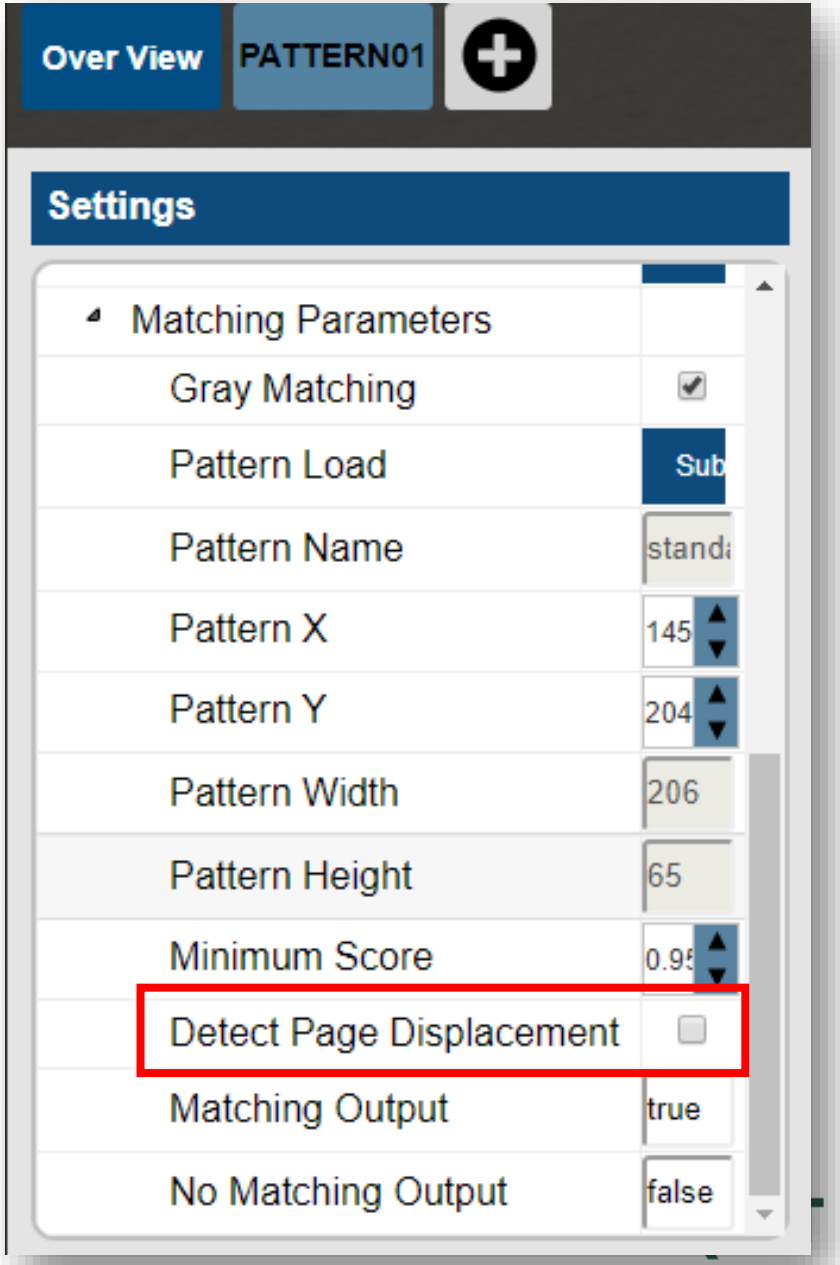
     Click **Simulate** → Confirm matching result



Build Project – Page & Recognition

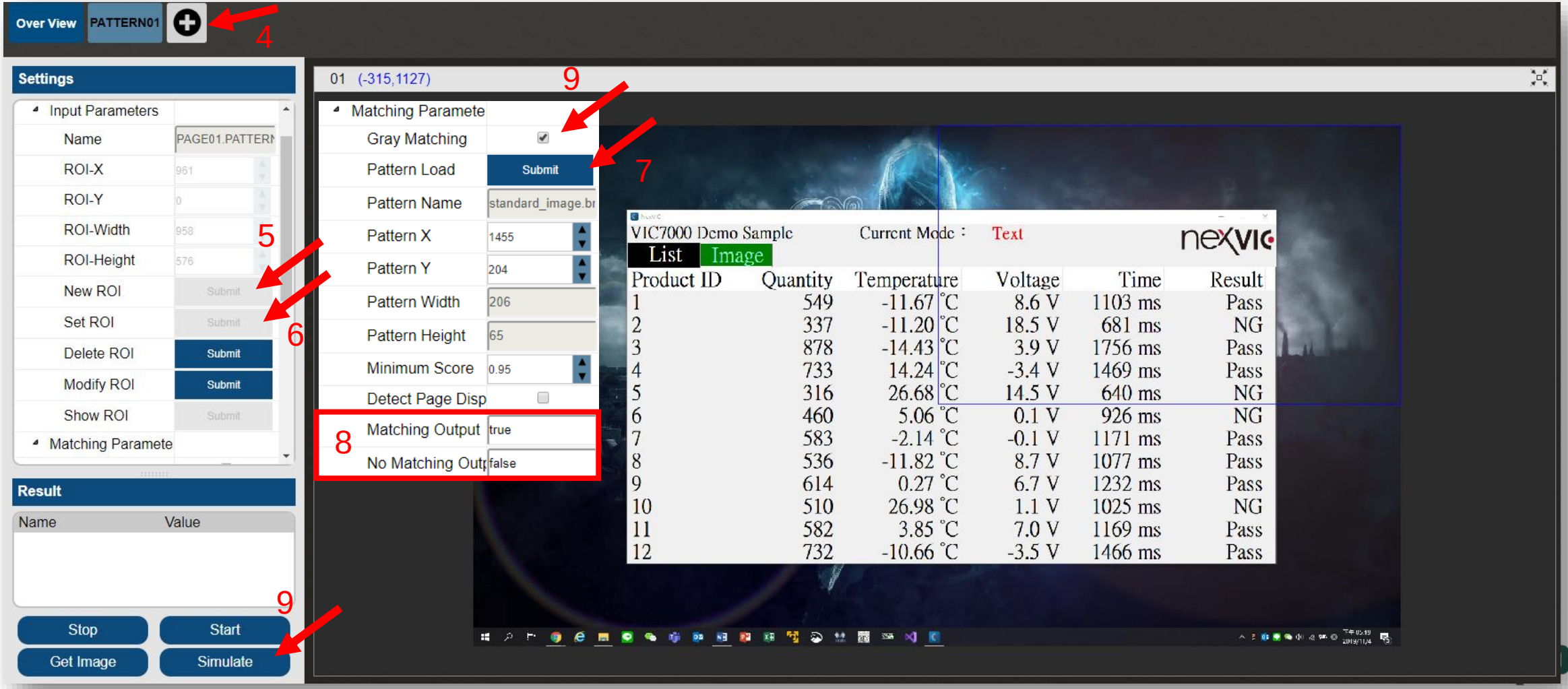
- **General**
  - Displacement Detection : Based on the positions of PATTERNs on the image where Patterns are set

Detect Page Displacement : Making ROI of OCRs and Colors move with the positions of PATTERNs



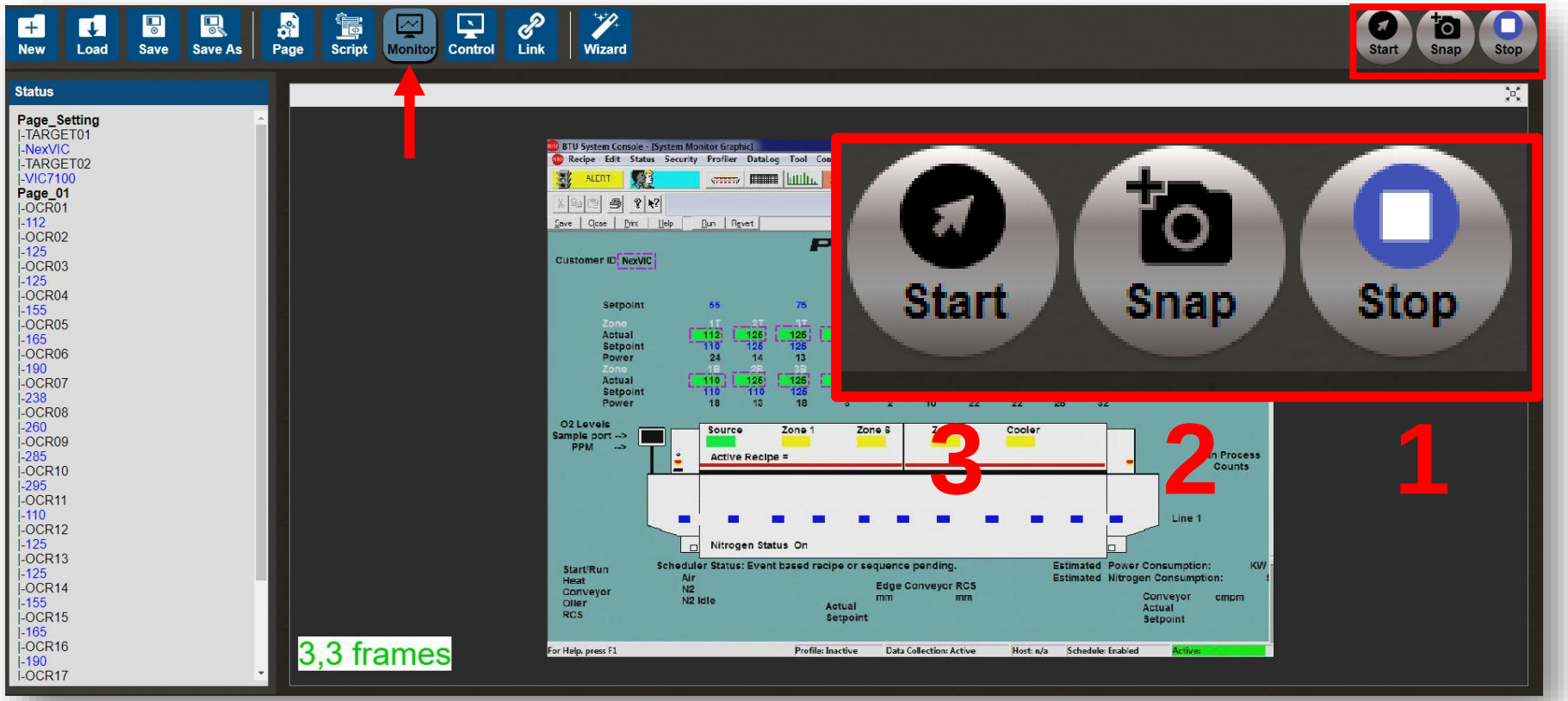
Build Project – Page & Recognition

- **General : Create a Pattern**
  - Multiple PATTERN : Click **Add** icon → Repeat the aforementioned steps to create Patterns



Build Project – Play Project

- **Monitor**
  1. Start/Stop : Get images and push them into recognition continuously
  2. Snap : Get an image and process recognition on it
  3. Control Start/Stop : Play the control file



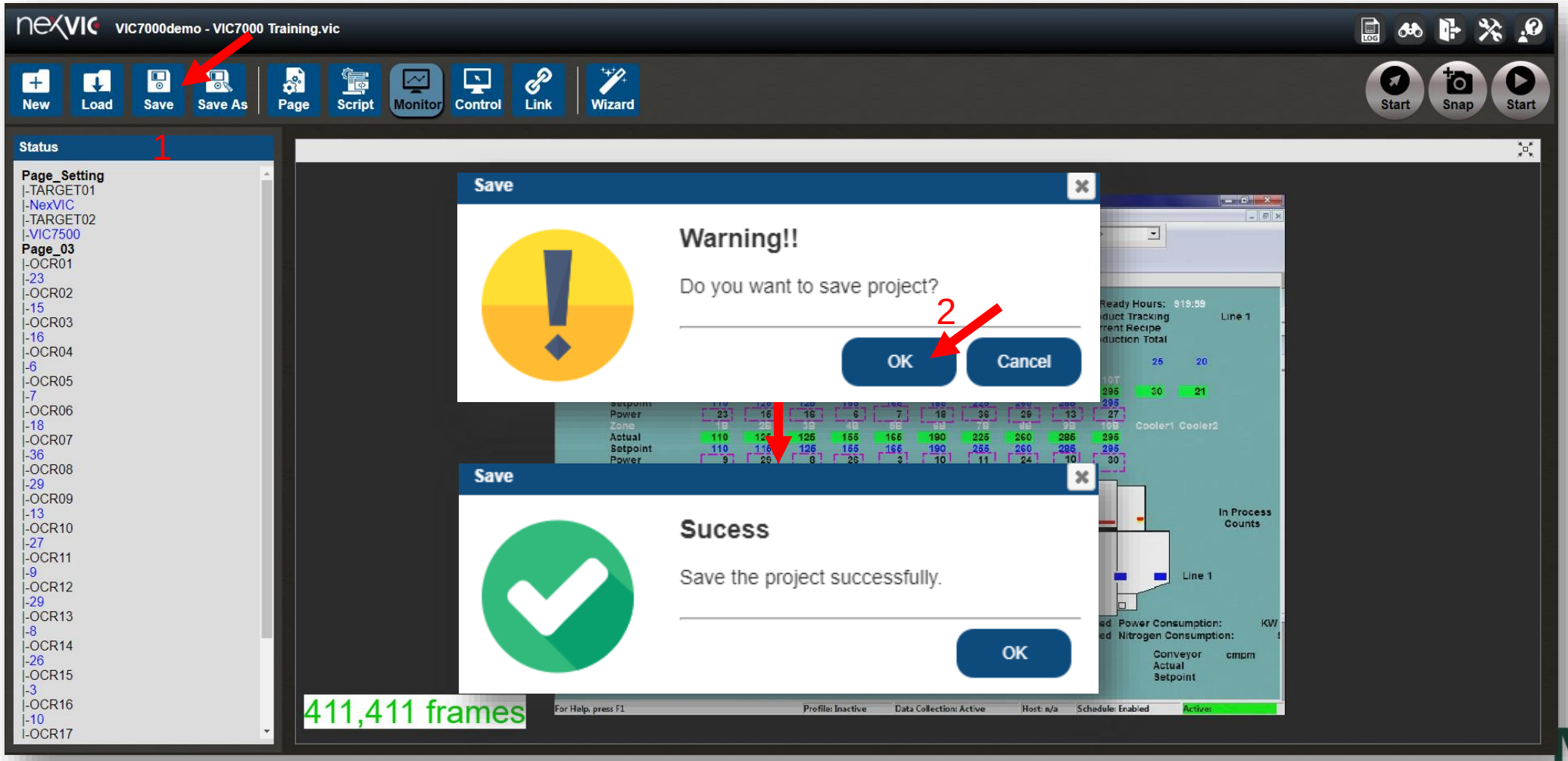
Recognition results will not be stored in Database and transported through Protocols.

While recognition process is running, Scripts will be executed.

Build Project – Play Project

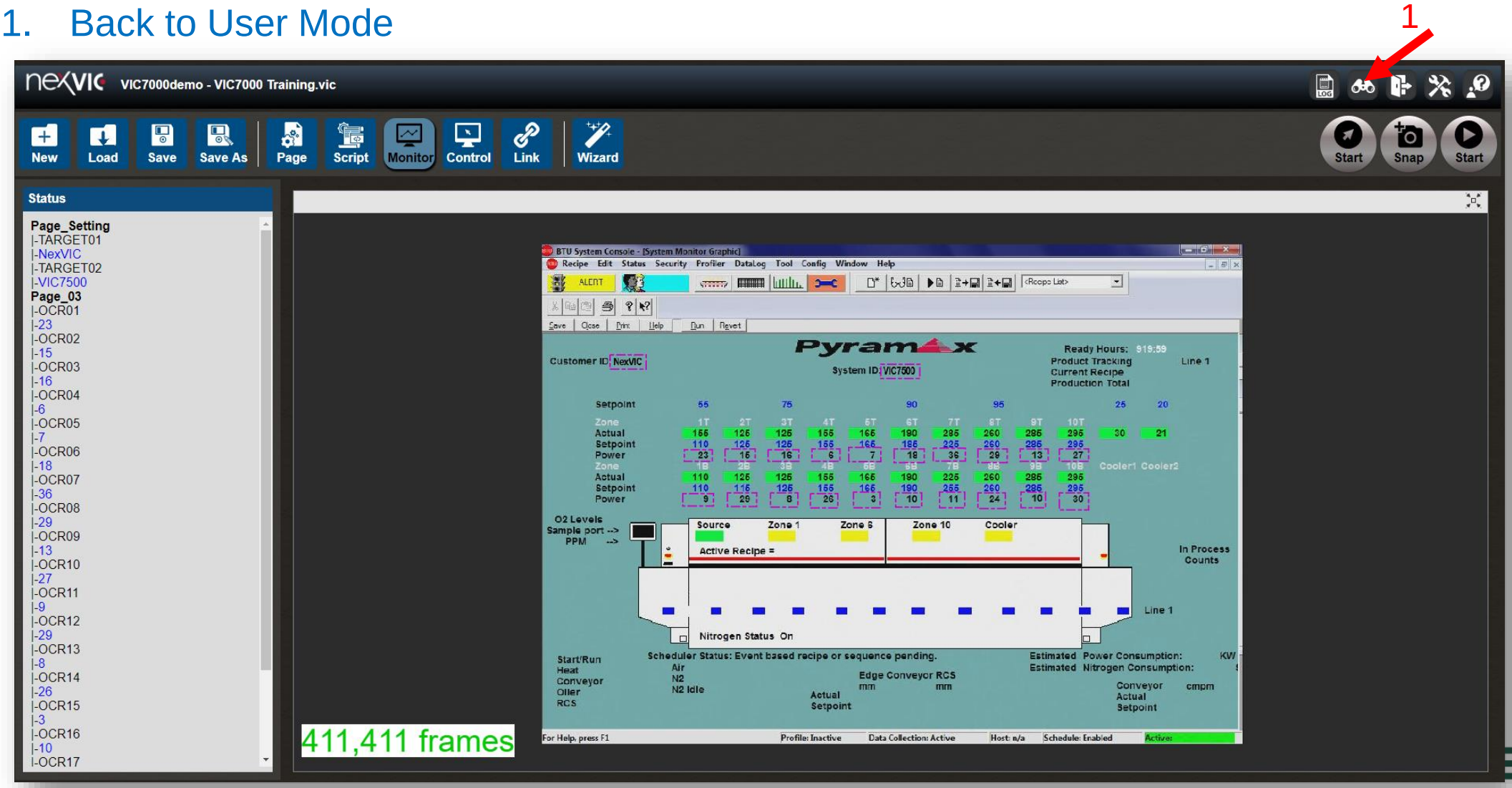
- **Save Project**

1. Save Project : Click **Save**
2. Click OK



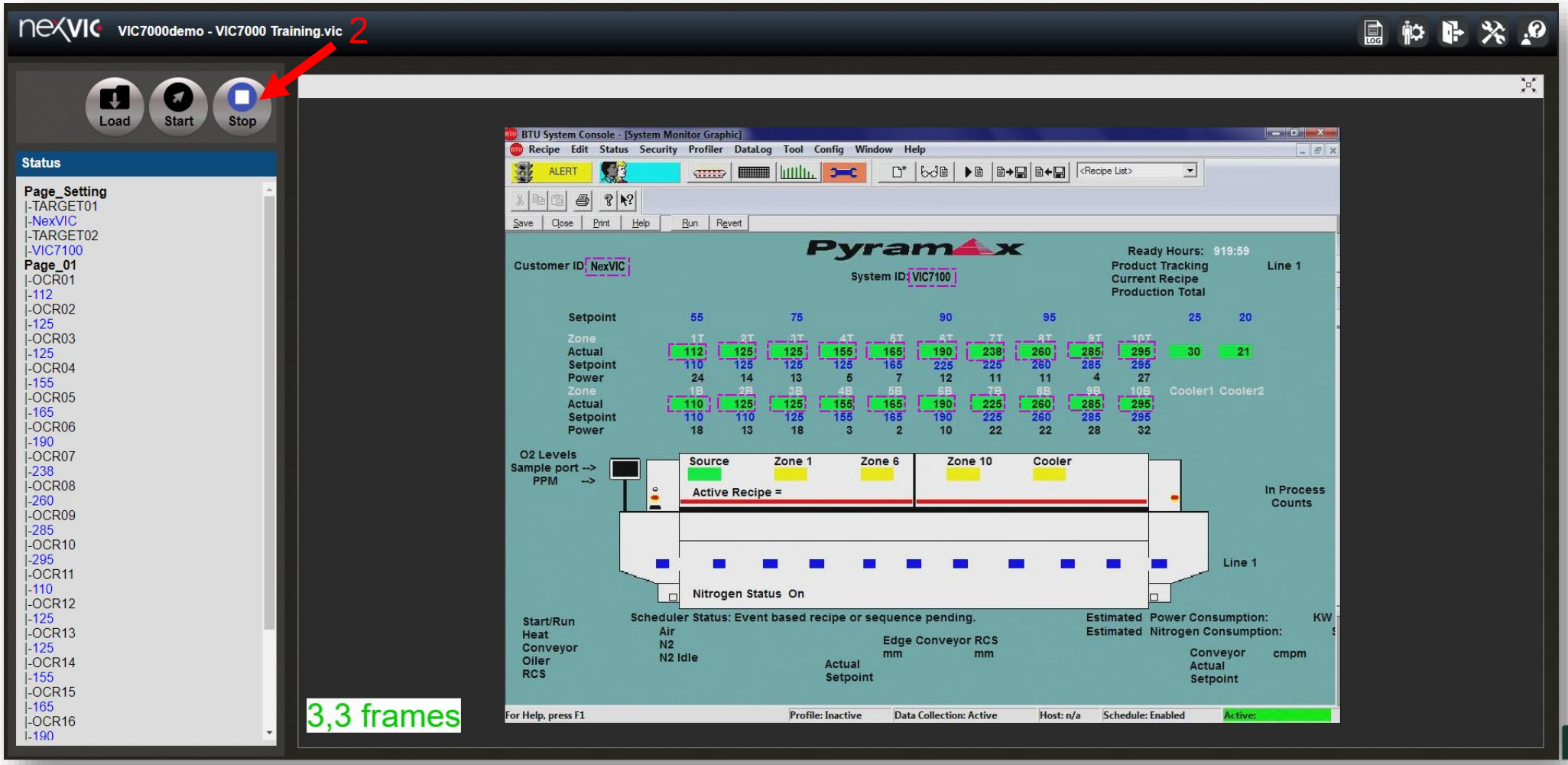
Build Project – Play Project

- **Play Project**
  1. Back to User Mode



Build Project – Play Project

- **Play Project**
  2. Click Start Project



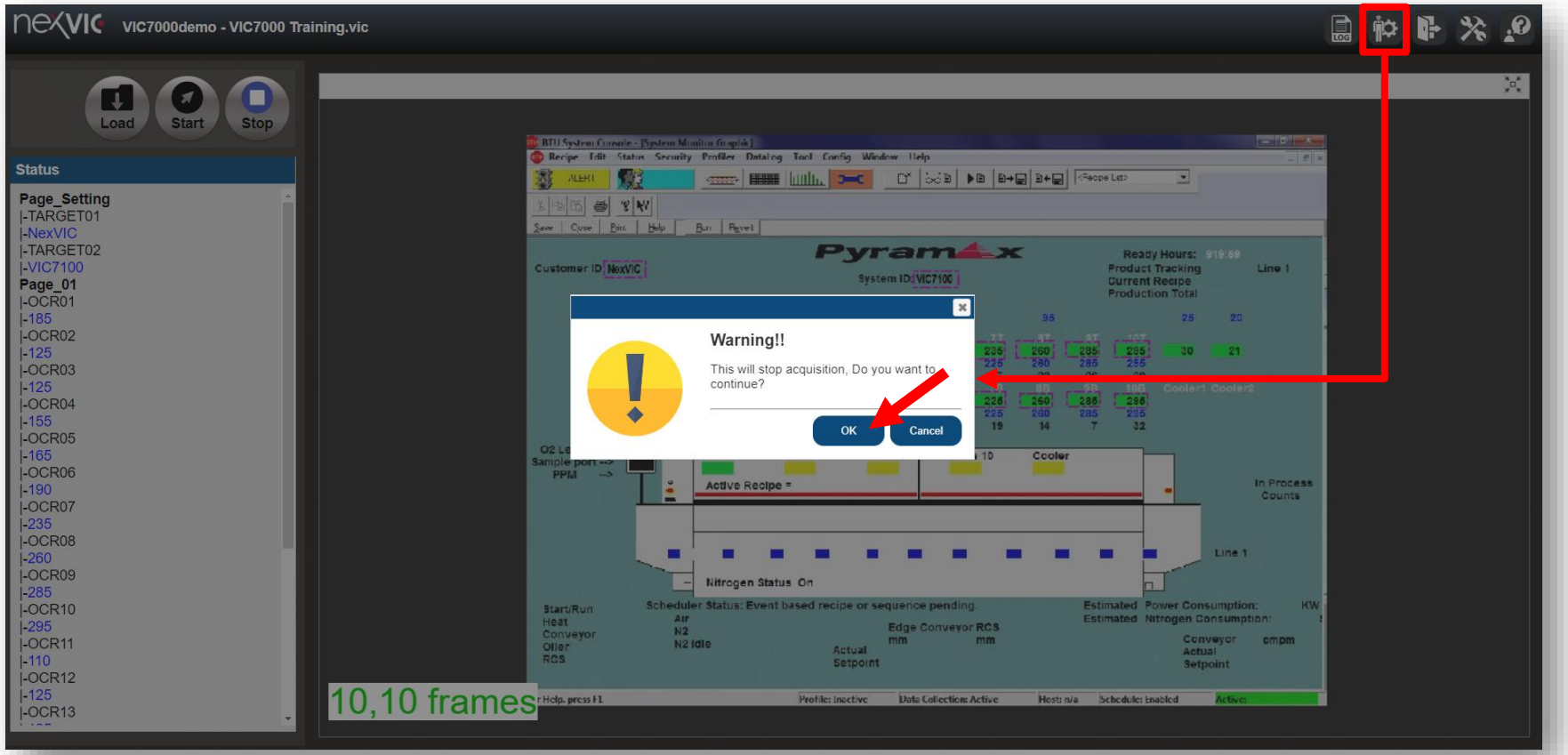
Build Project – Play Project

- **Stop Warning**

  If user switch to administrator mode while the project is playing, the project will be interrupted.

  Click on **Administrator Mode** → the Warning window will appear→ Click **OK**

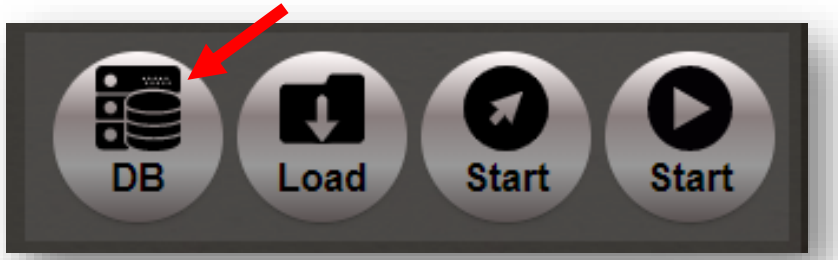
  Then user can switch to administrator mode to go on

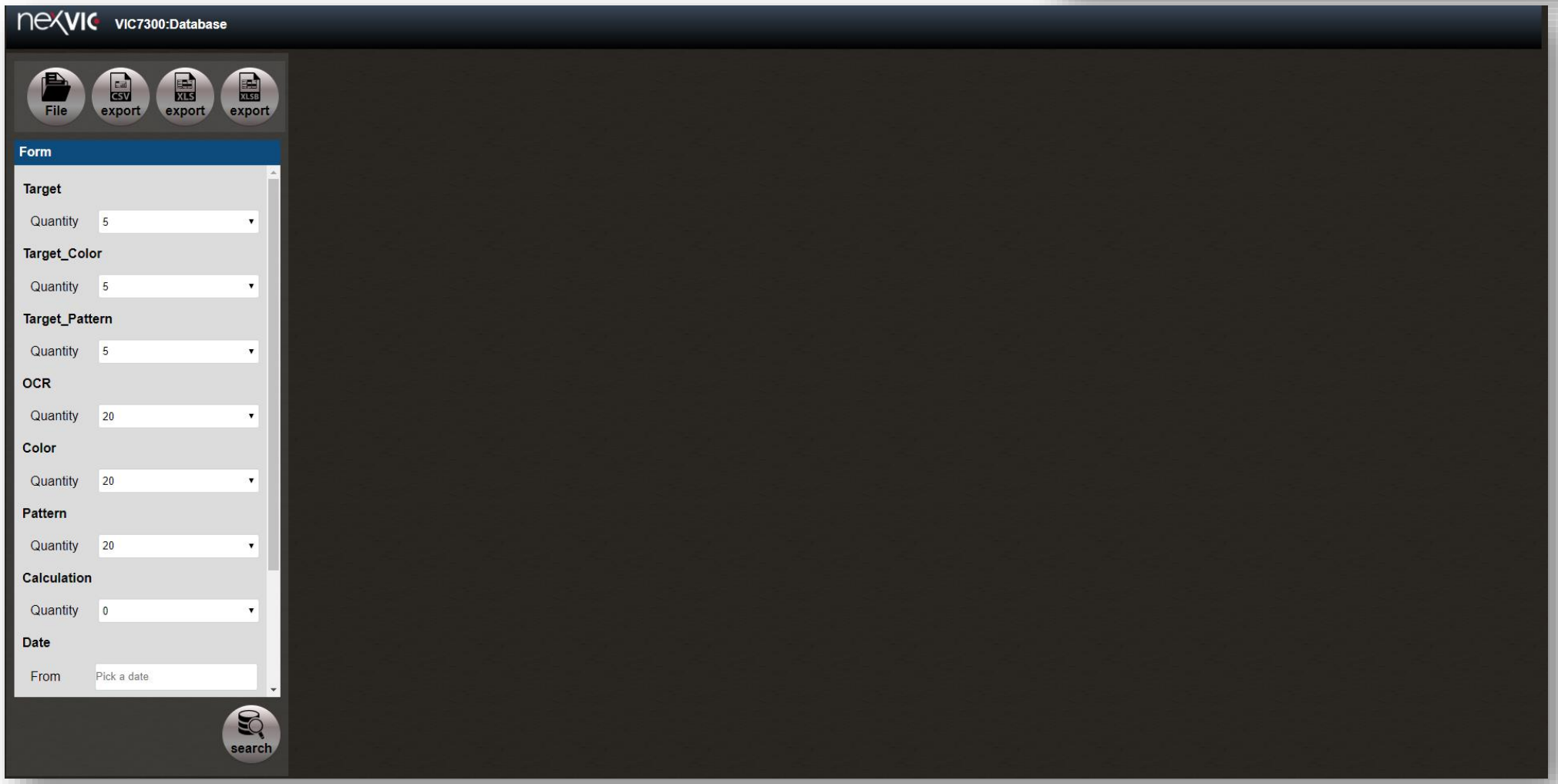


Build Project – Database

- **Use Database**
  1. Enter Database Page : Click **DB** in User Mode

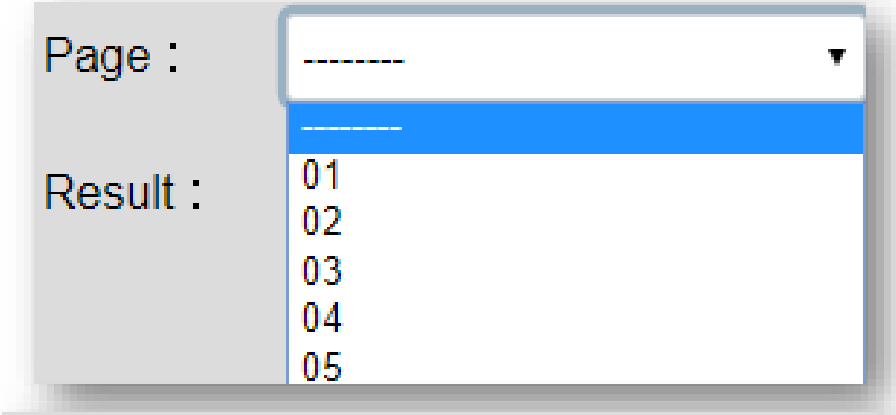
1

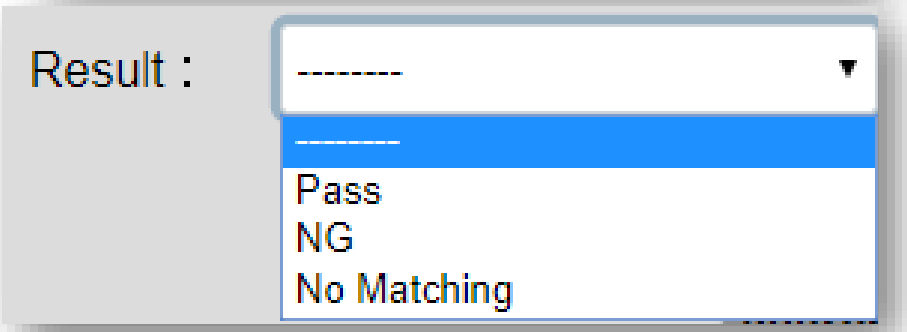


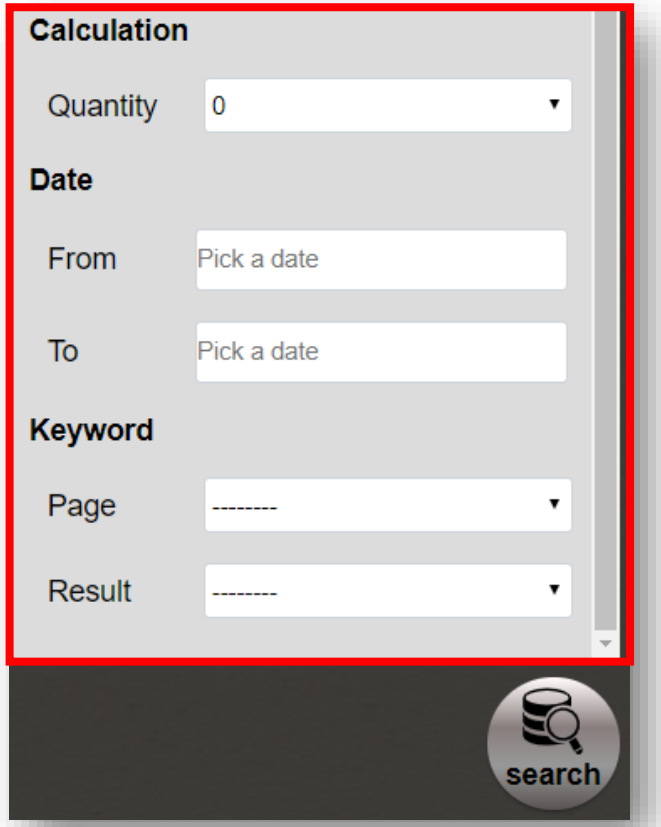


Build Project – Database

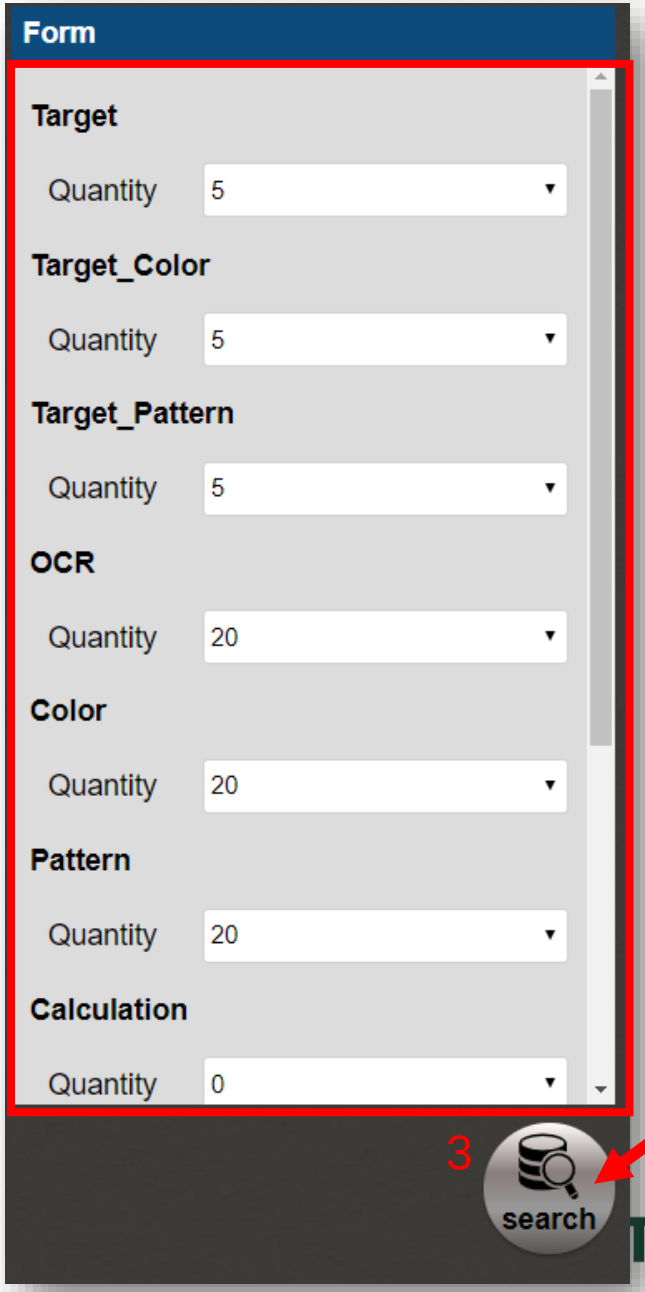
- **Use Database**
  2. Set Searching Parameters : Set the amount of **Targets**, **Target_Colors**, **Target_Patterns**, **OCRs**, **Colors**, **Patterns**, **CALC. Date**, **Keyword of Page**, **Result**
  3. Search : Click **Search**







2

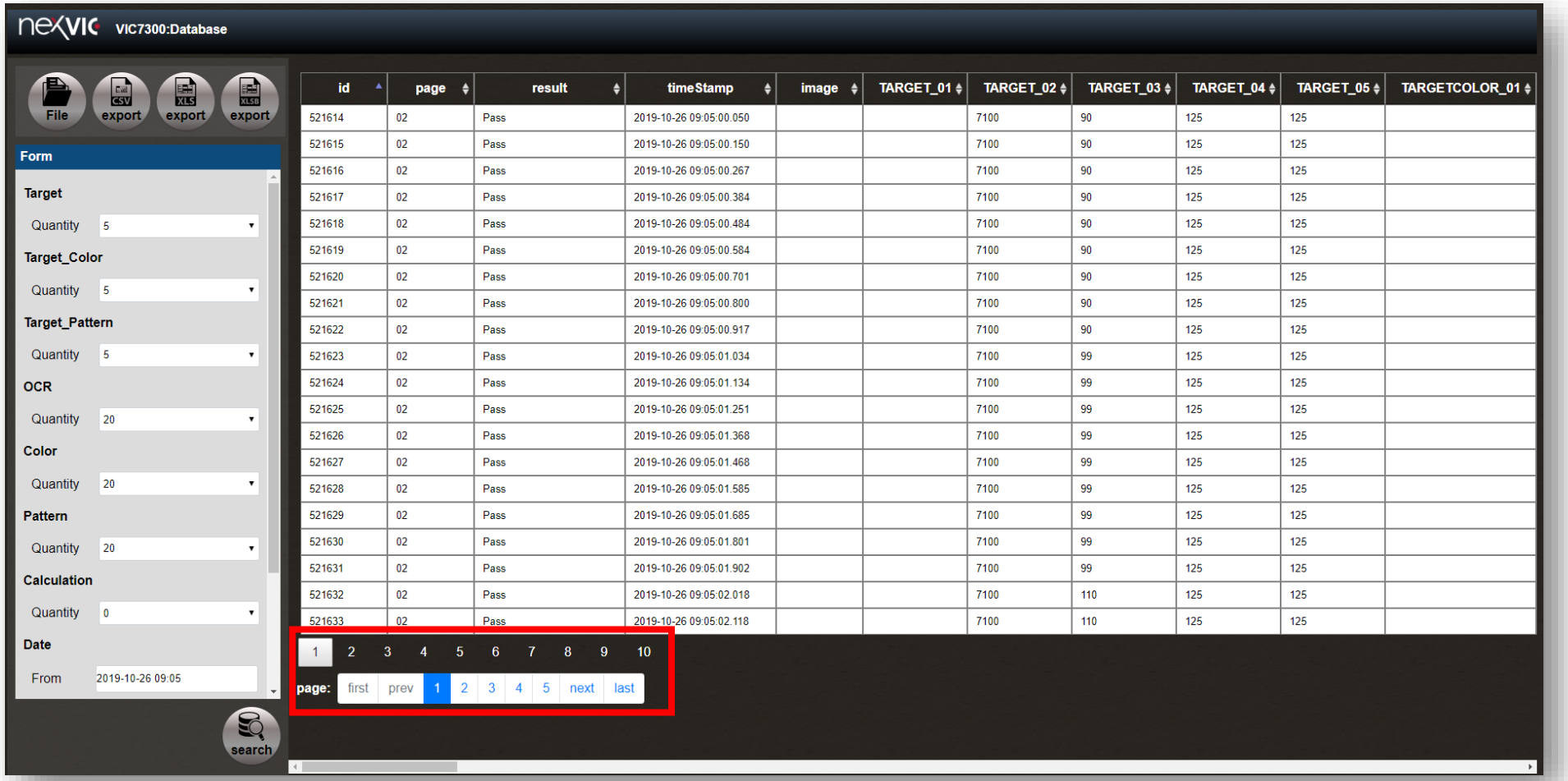


3

Build Project – Database

- **Use Database**

4. Searching Result : Seeking data following given parameters. A small page contains 20 records, and a large page contains 10 small pages

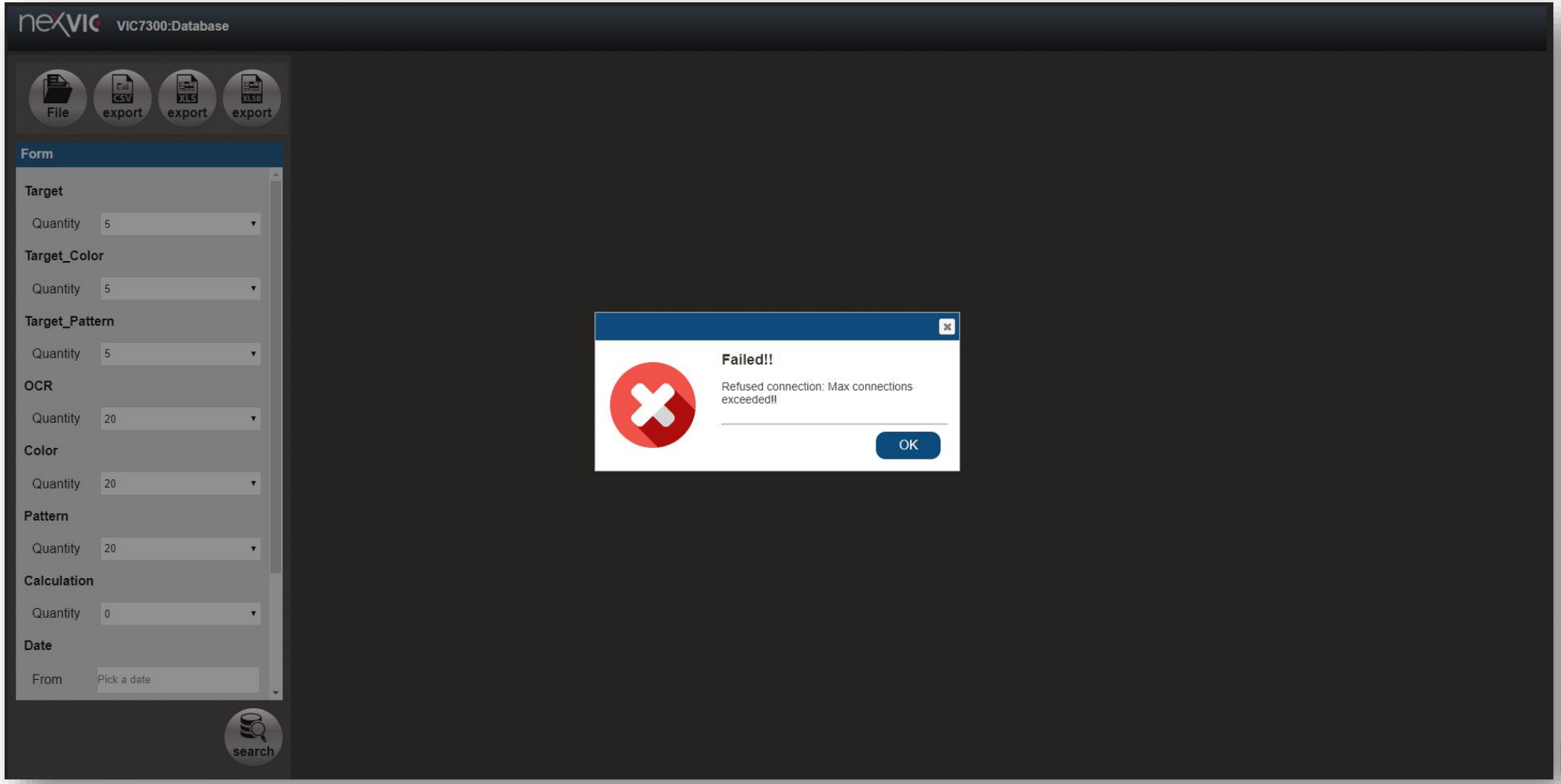


id	page	result	timeStamp	image	TARGET_01	TARGET_02	TARGET_03	TARGET_04	TARGET_05	TARGETCOLOR_01
521614	02	Pass	2019-10-26 09:05:00.050			7100	90	125	125	
521615	02	Pass	2019-10-26 09:05:00.150			7100	90	125	125	
521616	02	Pass	2019-10-26 09:05:00.267			7100	90	125	125	
521617	02	Pass	2019-10-26 09:05:00.384			7100	90	125	125	
521618	02	Pass	2019-10-26 09:05:00.484			7100	90	125	125	
521619	02	Pass	2019-10-26 09:05:00.584			7100	90	125	125	
521620	02	Pass	2019-10-26 09:05:00.701			7100	90	125	125	
521621	02	Pass	2019-10-26 09:05:00.800			7100	90	125	125	
521622	02	Pass	2019-10-26 09:05:00.917			7100	90	125	125	
521623	02	Pass	2019-10-26 09:05:01.034			7100	99	125	125	
521624	02	Pass	2019-10-26 09:05:01.134			7100	99	125	125	
521625	02	Pass	2019-10-26 09:05:01.251			7100	99	125	125	
521626	02	Pass	2019-10-26 09:05:01.368			7100	99	125	125	
521627	02	Pass	2019-10-26 09:05:01.468			7100	99	125	125	
521628	02	Pass	2019-10-26 09:05:01.585			7100	99	125	125	
521629	02	Pass	2019-10-26 09:05:01.685			7100	99	125	125	
521630	02	Pass	2019-10-26 09:05:01.801			7100	99	125	125	
521631	02	Pass	2019-10-26 09:05:01.902			7100	99	125	125	
521632	02	Pass	2019-10-26 09:05:02.018			7100	110	125	125	
521633	02	Pass	2019-10-26 09:05:02.118			7100	110	125	125	

Build Project – Database

- **Login Limit**

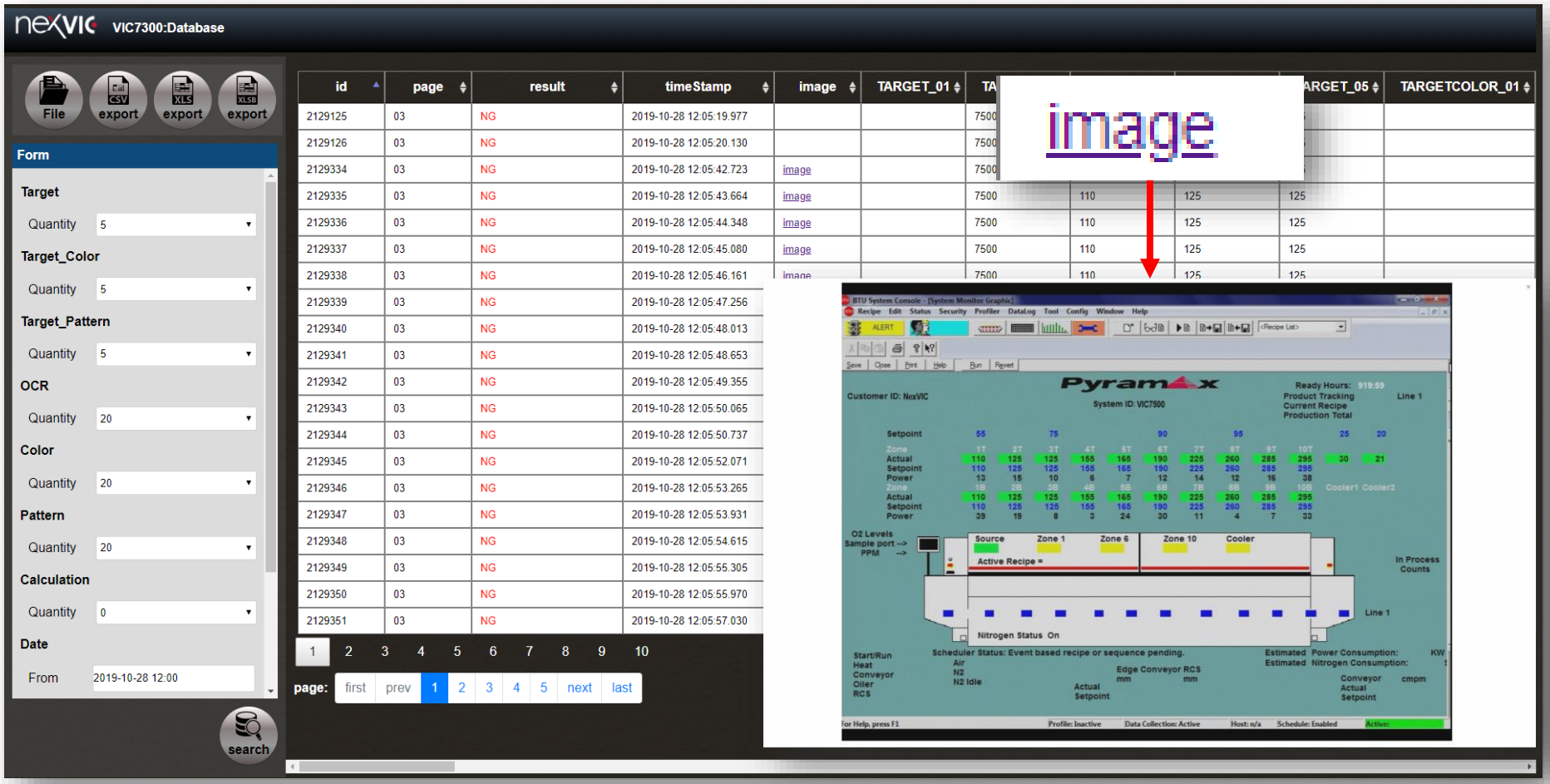
  Only allow one person logs in and operates



Build Project – Database

- **Save Image**

VIC7000 will save images into Database when recognition failed (NG or No Matching) (Enabled in System Setting window). Those saved images could be used for later training



Build Project – Database

- **Skip Repeated Data**

Skip Repeated Data

VIC7000 can skip repeated data while storing data in database(Enabled in System Setting window). It is recommended when capture frame rate is high and repeated data occurs.

id	page	result	timeStamp	image	OCR_01	OCR_02	OCR_03	OCR_04
6378551	02	Pass	2020-03-06 15:42:14.651		0	0.078	-0.610	0.838
6378552	02	Pass	2020-03-06 15:42:15.667		0	0.953	-0.627	-0.994
6378553	02	Pass	2020-03-06 15:42:16.700		0	0.998	-0.444	-0.346
6378554	02	Pass	2020-03-06 15:42:17.701		0	0.160	0.629	-0.534
6378555	02	Pass	2020-03-06 15:42:18.717		0	-0.786	-0.969	-0.875
6378556	02	Pass	2020-03-06 15:42:19.734		0	0.697	-0.633	0.416
6378557	02	Pass	2020-03-06 15:42:20.751		0	-0.988	0.957	0.647
6378558	02	Pass	2020-03-06 15:42:21.767		0	-0.143	-0.422	-0.758
6378559	02	Pass	2020-03-06 15:42:22.784		0	0.844	-0.062	0.438
6378560	02	Pass	2020-03-06 15:42:23.800		0	0.006	0.302	-0.515
6378561	02	Pass	2020-03-06 15:42:24.818		0	0.081	-0.611	-0.305
6378562	02	Pass	2020-03-06 15:42:25.833		0	-0.278	0.880	-0.560
6378563	02	Pass	2020-03-06 15:42:26.650		0	0.350	-0.573	-0.502
6378564	02	Pass	2020-03-06 15:42:27.650		0	-0.071	0.824	0.046
6378565	02	Pass	2020-03-06 15:42:28.684		0	0.059	0.081	-0.616
6378566	02	Pass	2020-03-06 15:42:29.700		0	-0.701	0.173	0.057
6378567	02	Pass	2020-03-06 15:42:30.717		0	-0.773	0.112	-0.834
6378568	02	Pass	2020-03-06 15:42:31.717		0	0.899	0.889	-0.259
6378569	02	Pass	2020-03-06 15:42:32.733		0	-0.633	0.963	-0.386
6378570	02	Pass	2020-03-06 15:42:33.750		0	-0.469	0.845	0.829

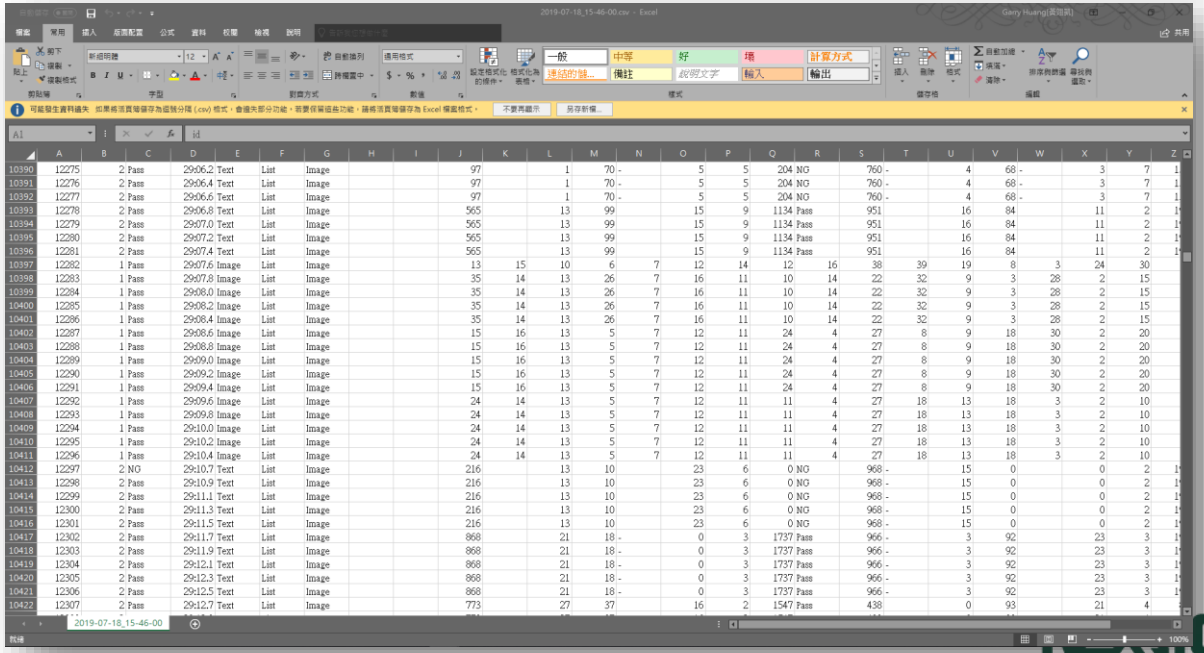
Build Project – Database

- **Export and Backup**

  VIC7000 allows users to export the searching results to **.csv**, **.xls**, **.xlsb.** Export Path is on VIC7000 PC and can be adjusted in System Settings window

  Data within a period of 7-day will be continuously stored and extracted as **.xlsb** everyday (FIFO).

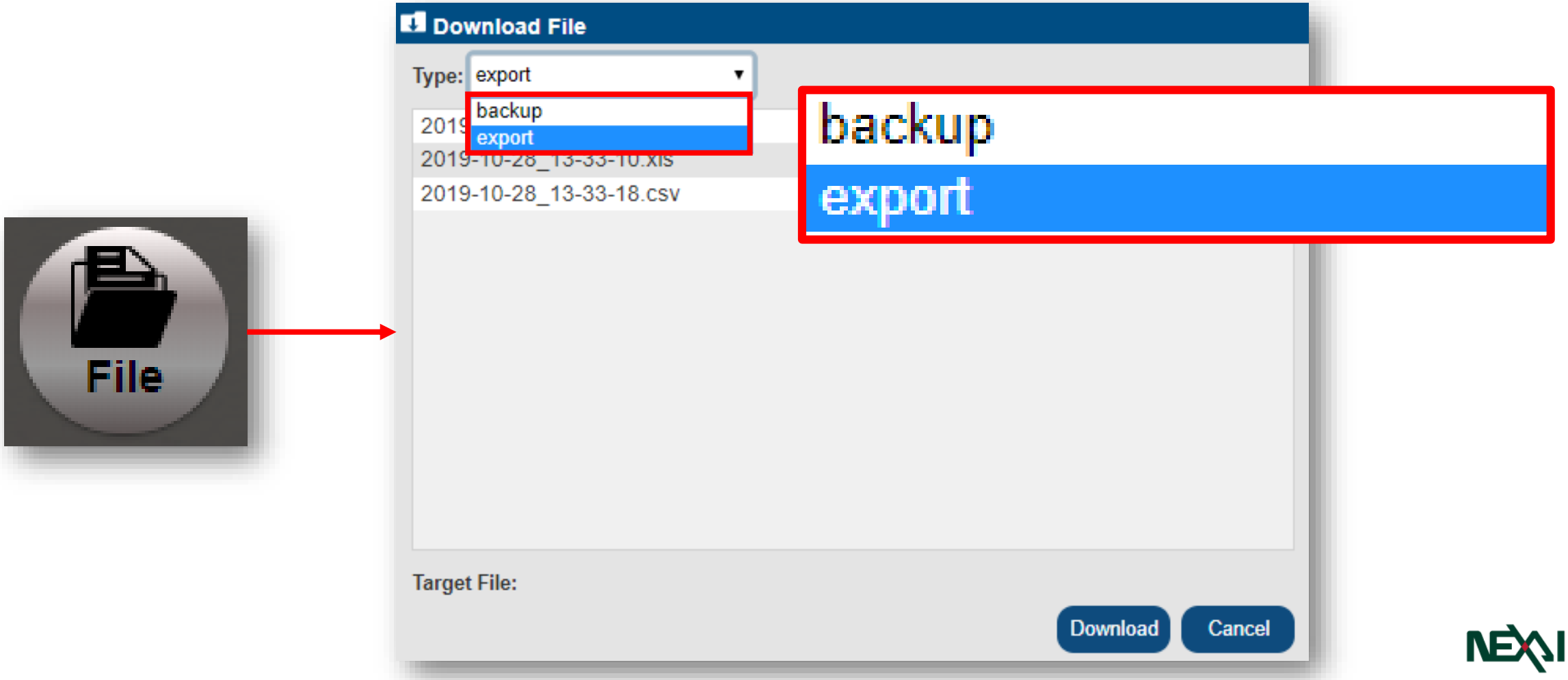
  Backup Path is set in VIC7000 PC and can be adjusted in System Setting window.



Build Project – Database

- **Remotely Download File**

  Click **File** icon to remotely download Export and Backup file in **Download File** window

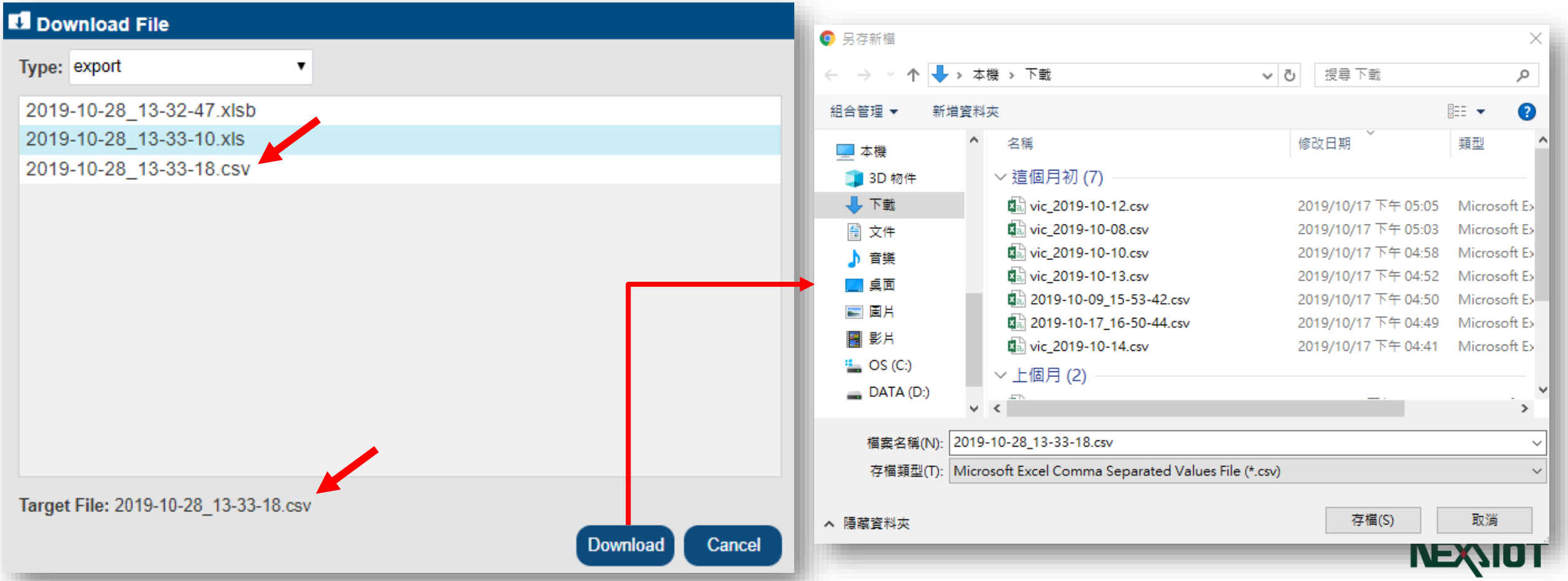


Build Project – Database

- **Remotely Download File**

  Choose the file which user wants to download → Click **Download**

  Download path is same as browser default



Build Project – Database

- **Database Notes**

1. VIC7000 has **a hardware remaining capacity detection** mechanism. If the available capacity is less than **100G**, the alert will show up and record in Log. Data will continue to be stored in Database at this state. If the available capacity is less than **50G**, the alert will show up and record in Log. New data will replace the older data at this state.
2. VIC7000 has an **automatic shutdown of saving image** mechanism, which is checked every minute to let users know that whether it is enabled or not. If it is enabled, it will be recorded in Log. When the number of saved images exceed a threshold in a minute, this mechanism will be enabled. At this moment, Data will continue to be stored and image will not be saved when recognition failed.

   If the number of failure recognition occurring in a minute is less than the threshold, this mechanism will be turned off. Otherwise, this mechanism will still be enabled.

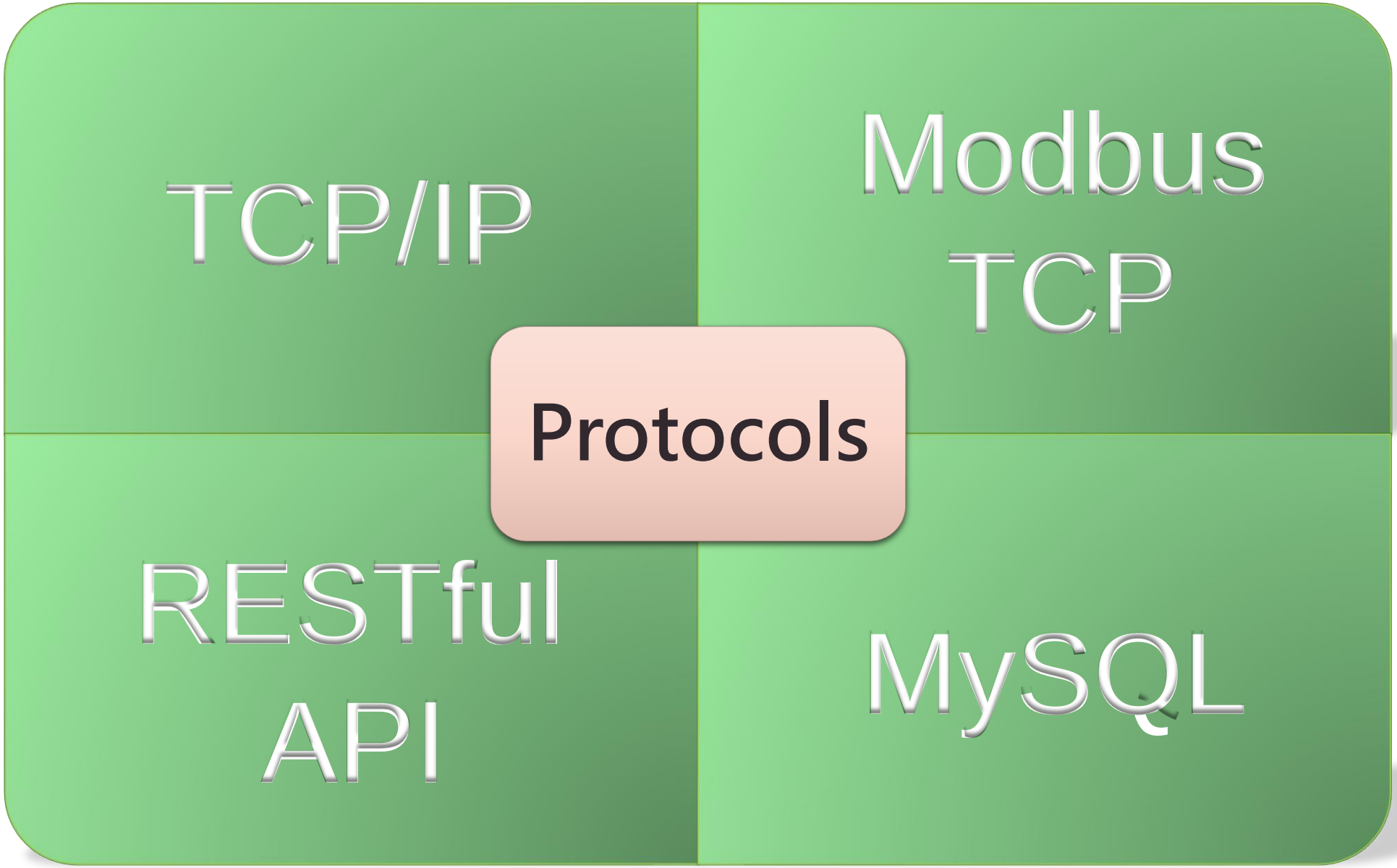
   failure recognition means that recognition result is **NG** or **No Matching**.

Build Project – Database

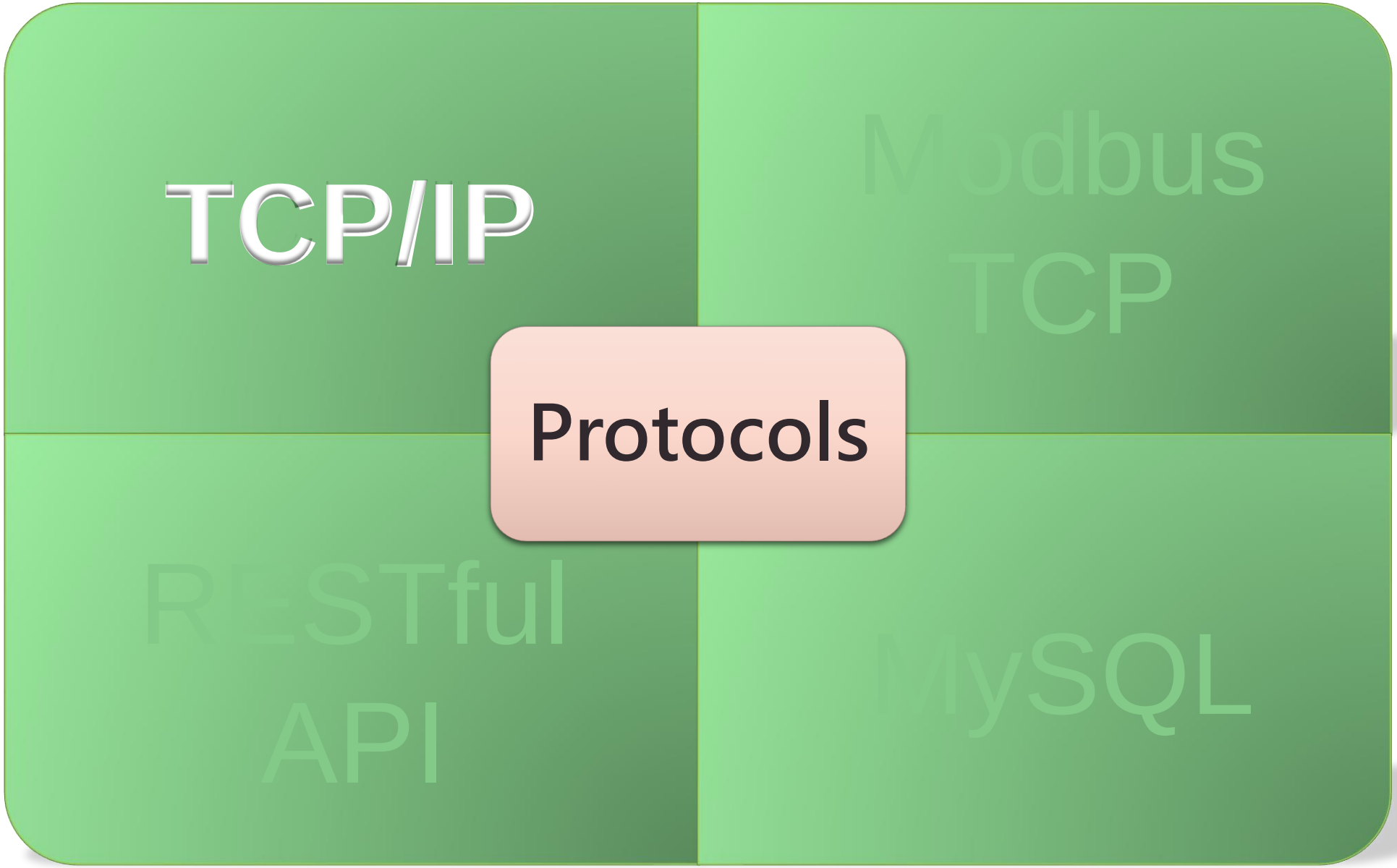
- **Database Notes**

3. The maximum number of data lines exported to a file is **one million**. If there more than one million lines of data exported at a moment, it will be divided to multiple files.
4. VIC7000 will backup data to a **.xlsb** file every day automatically. It takes more a half an hour, according the amount of data backed up. When backup process is running, it should avoid editing projects.

Build Project – Protocols



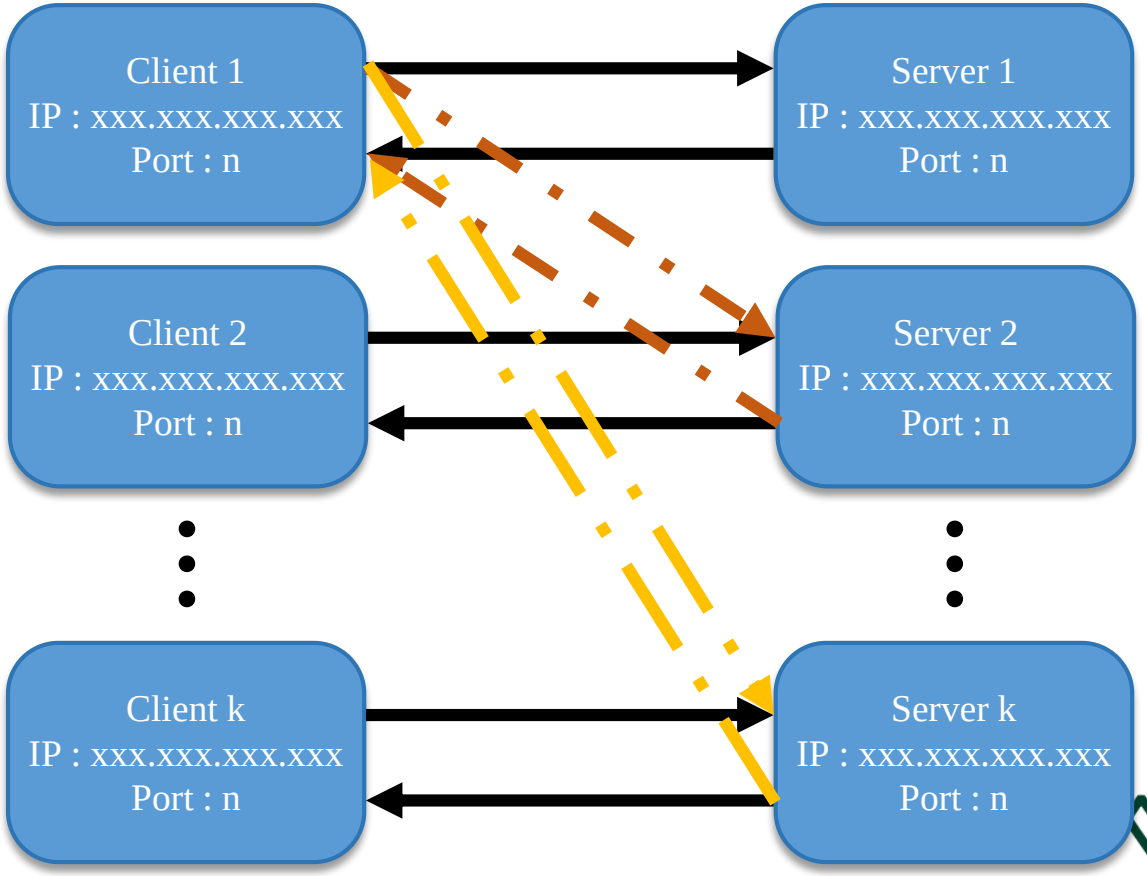
Build Project – Protocols



Build Project – Protocols

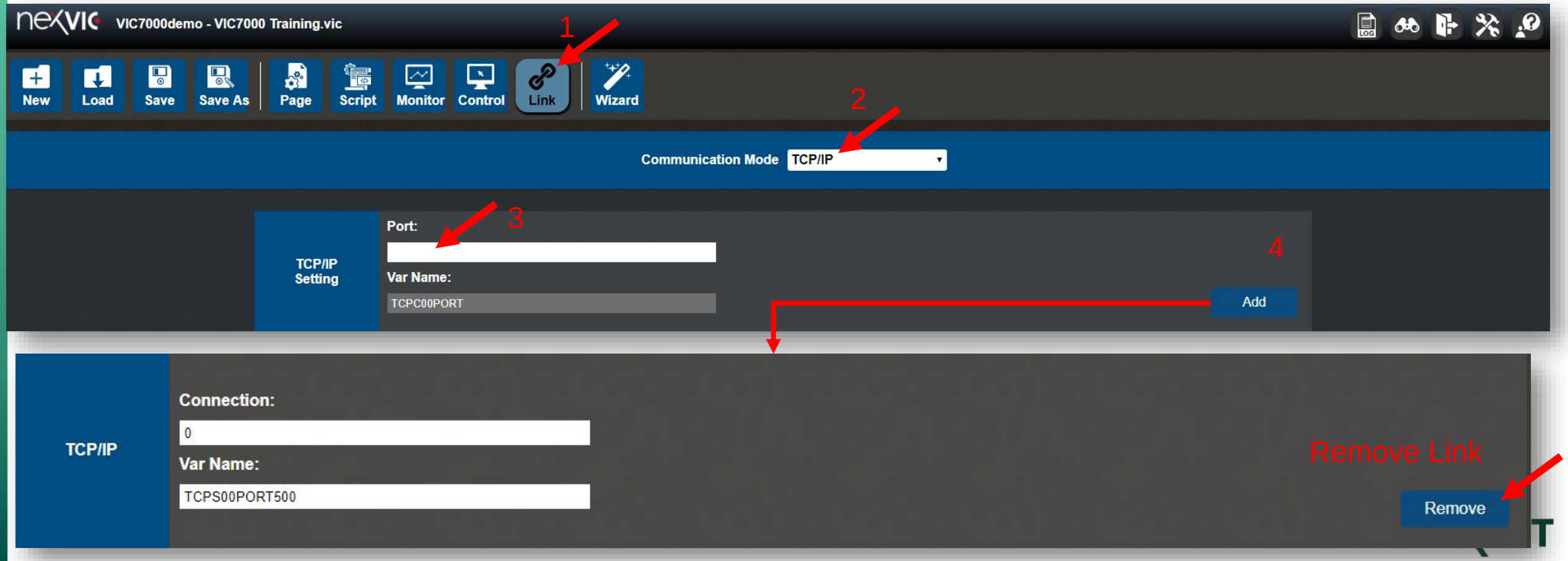
TCP/IP is referred to Internet protocol suite. Different computers or operating environments can communicate with each other through this protocol. It includes two core protocols : TCP (Transmission Control Protocol) and IP (Internet Protocol) .

TCP/IP provides **end-to-end data communication**. There are two roles : Server or Client. It allows multiple Servers and Clients, which are connected through IP address and TCP port. VIC7000 plays a role as **Server**.



Build Project – Protocols

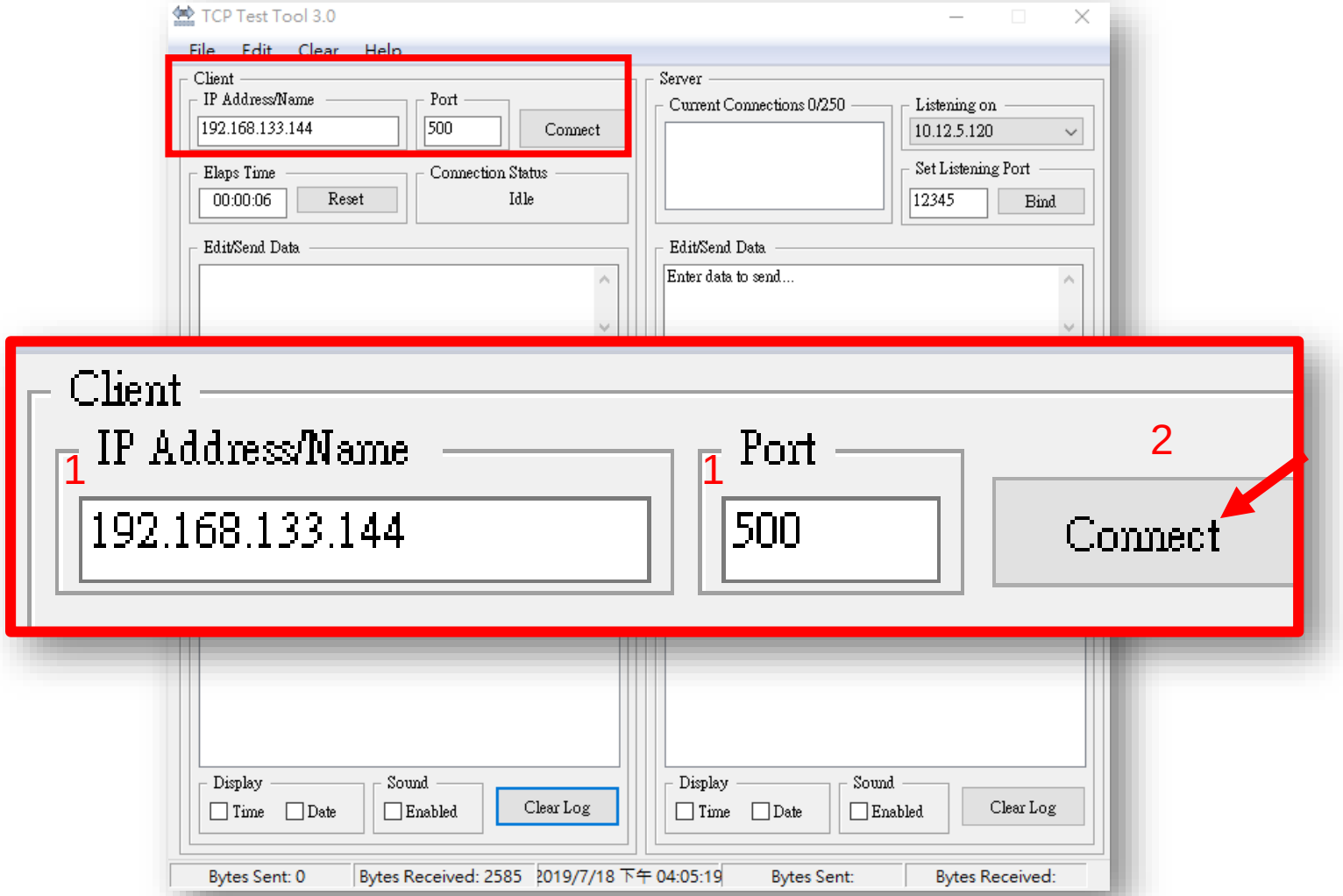
- **Link Config**
  1. Enter Link page : In administrator page
  2. Choose TCP/IP
  3. Enter Port
  4. Click Add



Build Project – Protocols

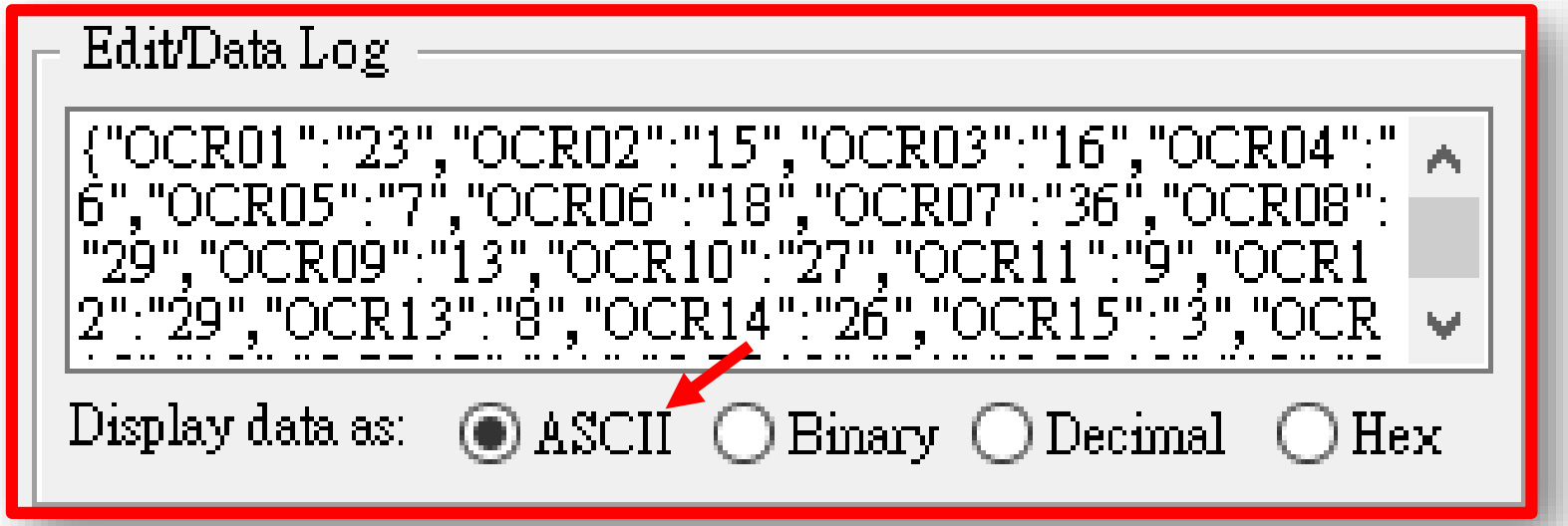
- **Link Testing** : Use the client function of TCP Test Tools

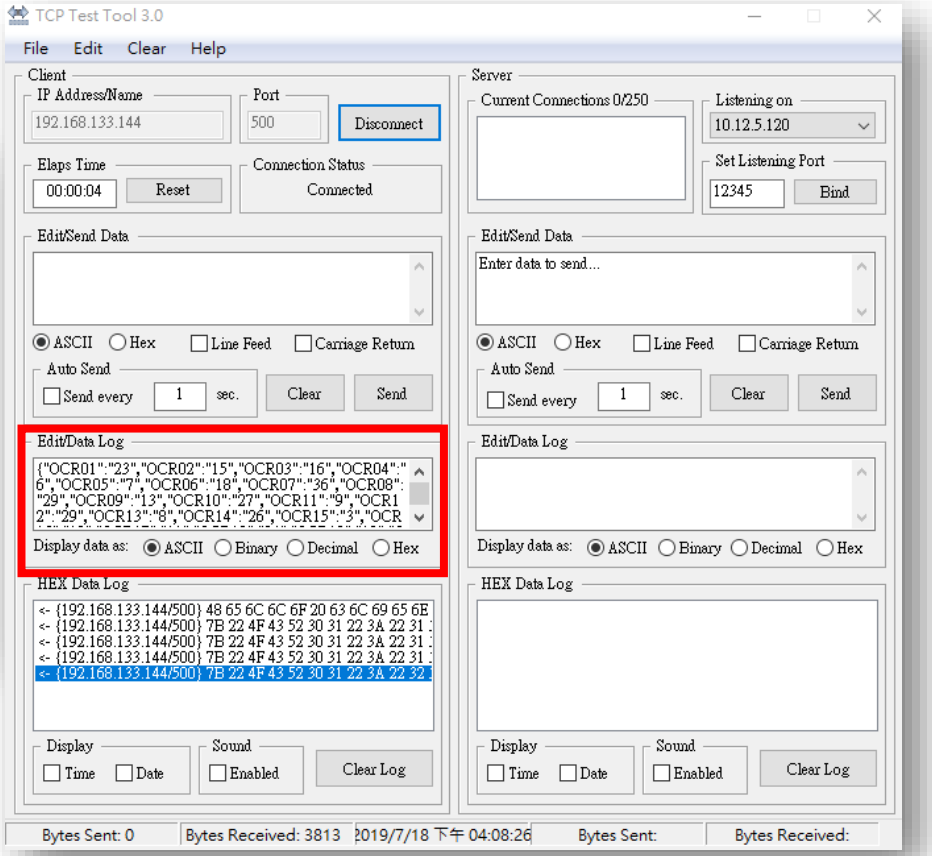
1. Enter IP and Port
2. Click Connect



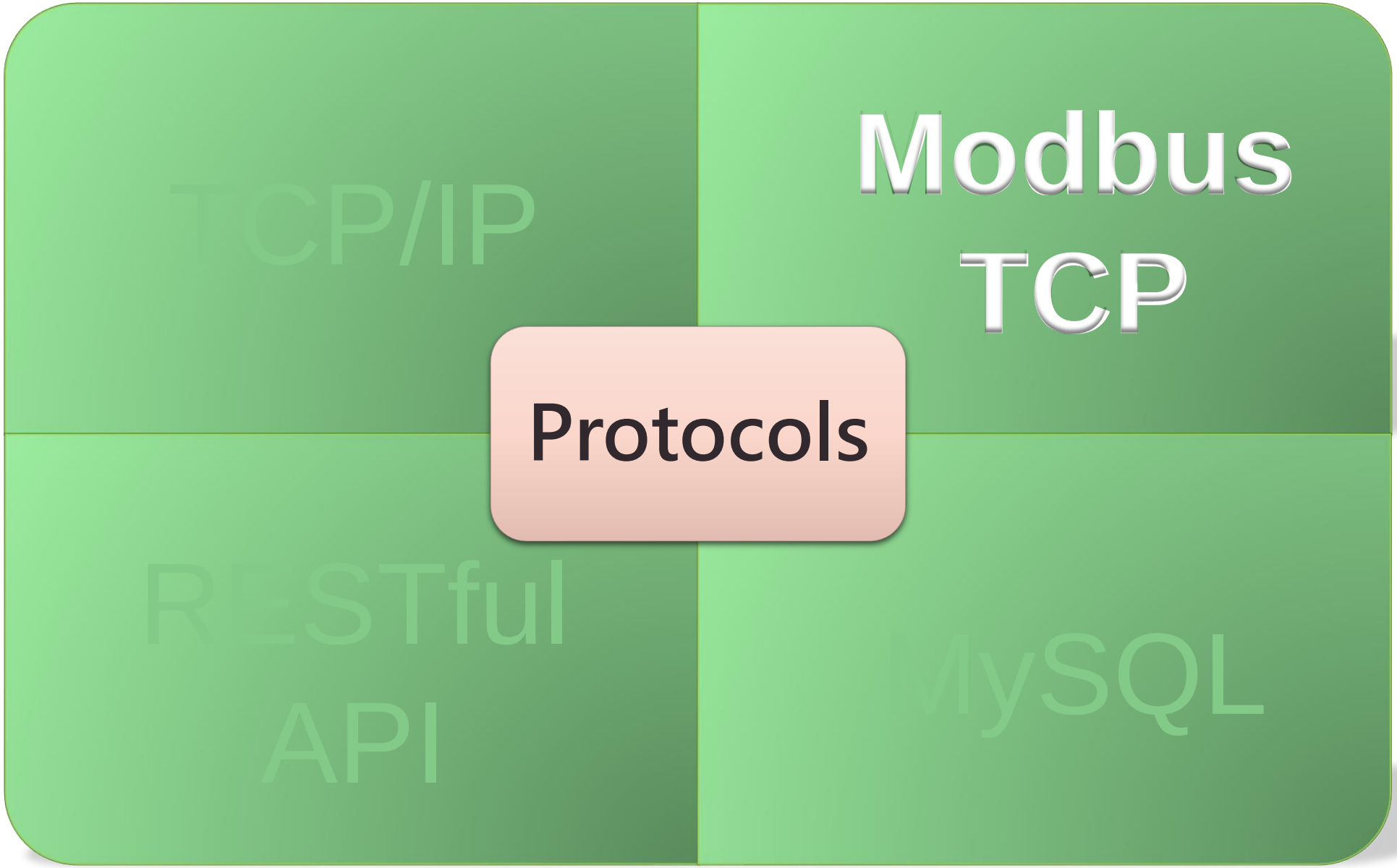
Build Project – Protocols

- **Link Testing**
  3. Check Data Log : Output data type is ASCII





Build Project – Protocols



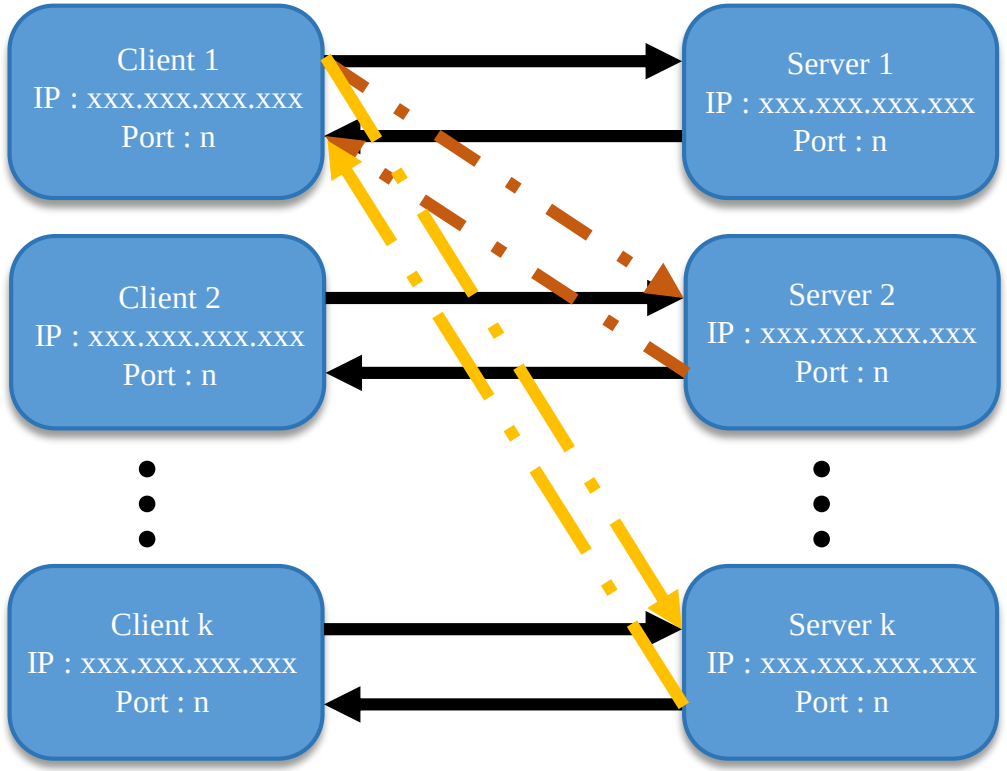
Build Project – Protocols

Modbus is a serial communications protocol originally published by Modicon in 1979 for use PLCs.

Modbus has become a standard communication protocol and is now a commonly available means of connecting industrial electronic devices. Modbus is commonly used to connect with PLC and SCADA software. Versions of the Modbus protocol exist for serial port and for Ethernet and other protocol that the Internet protocol suite.

Build Project – Protocols

- **Modbus**
  - Use **Modbus TCP**, VIC7000 plays the role as **Server**
  - Recognition data is stored in Input Status and Input Register
  - Coil Status and Holding Register is for Script Editor output, external writing and controlling VIC

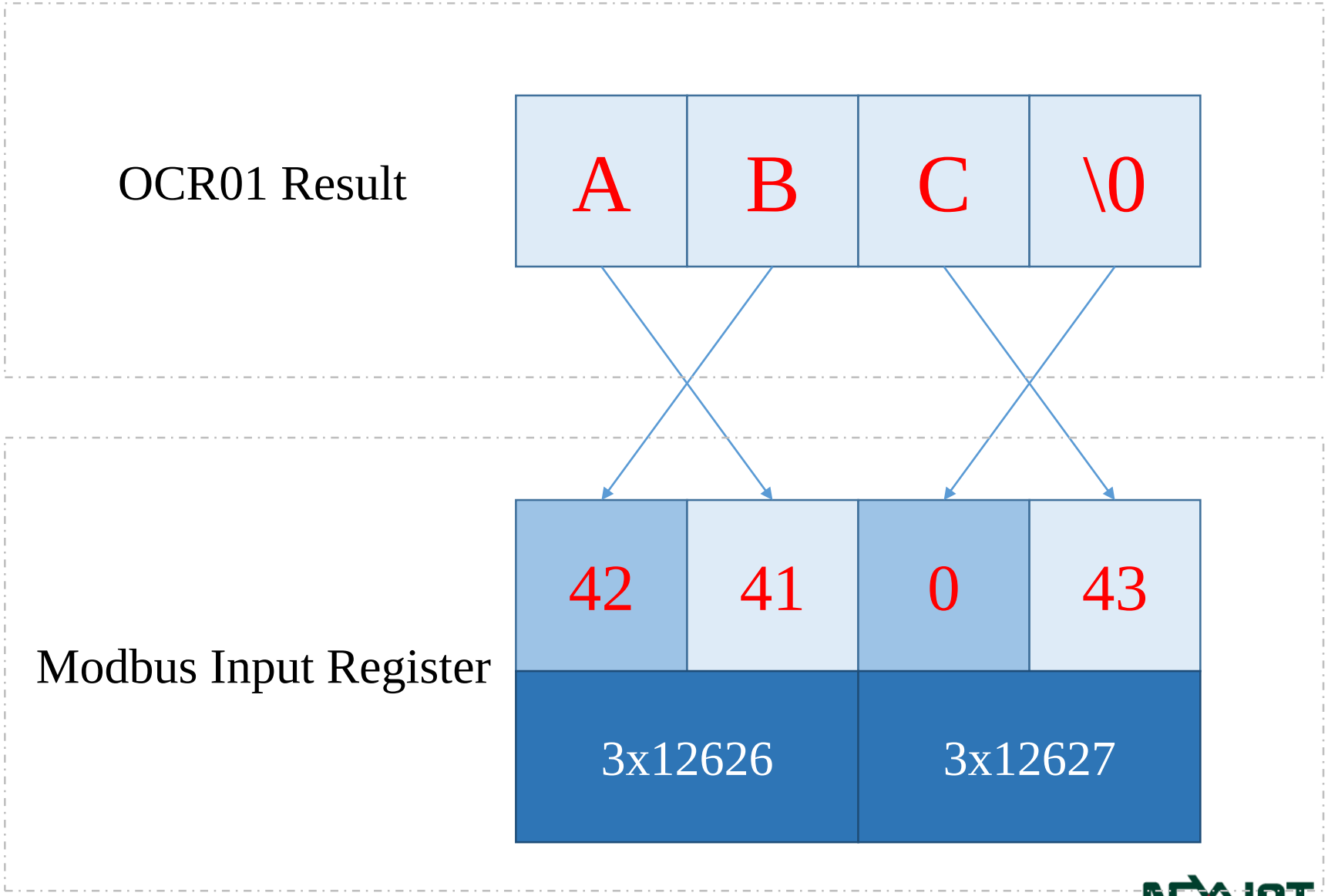


Address	Name	Data Type	Type
0X0001 ~ 0X9999	Coil Status	Bit	R/W
1X0001 ~ 1X9999	Input Status	Bit	R
3X0001 ~ 3X9999	Input Register	Word	R
4X0001 ~ 4X9999	Holding Register	Word	R/W

Build Project – Protocols

- **Modbus**
  - Little – Endian

Fill in data from lower bits



Build Project – Protocols

- **Address Mapping** – Input Status : System Bit

Store system information. The Output data type is Boolean. Its length is 1 bit.

Input Status (1X)	
Address	**Content**
10001	Project playing Status 1 = Playing 0 = Stop
10002	Whether there is a **user logging in.** 1 = Yes 0 = No
10003	Whether the free storage is **lower than 100G** 1 = Yes 0 = No
10004	Whether the free storage is **lower than 50G** 1 = Yes 0 = No
10005	Whether **storing images is stopped.** 1 = Yes 0 = No
10006	**Recognition result** 0 = Pass 1 = NG 2 = No Matching
10007	

10008	Control playing status 1 = Playing 0 = Stop
10009	Whether **serial port control is enabled.** 1 = Yes 0 = No
10010	**The status of serial port control** 1 = Connecting 0 = Disconnecting

Bit 7	Bit 6	Sum	Result
0	0	0	Pass
0	1	1	NG
1	0	2	No Matching

Build Project – Protocols

- **Address Mapping** – Input Status : MODBUSBIT

  Customizing Store Script output. The output data type is Boolean. Its length is 1 bit.

Input Status (1X)	
Address	**Content**
10101	MODBUSBIT00
10102	MODBUSBIT01
10103	MODBUSBIT02
10104	MODBUSBIT03
10105	MODBUSBIT04
10106	MODBUSBIT05

Input Status (1X)	
Address Range	**Content**
10101 ~ 10200	MODBUSBIT00 ~ MODBUSBIT99

Build Project – Protocols

- **Address Mapping** – Input Register (Int) : PAGE_NO, TARGET_COUNT, OCR_COUNT, TARGET_COLOR_COUNT, COLOR_COUNT, TARGET_PATTERN_COUNT, PATTERN_COUNT

  Store the index of the current page and the number of target_color, target_pattern, OCR, color, pattern. The output data type is Int32. Its length is 2 words.

Input Register (3X)	
Address Range	**Content**
312501 ~ 312502	PAGE_NO
312503 ~ 312504	TARGET_COUNT
312505 ~ 312506	OCR_COUNT
312507 ~ 312508	TARGET_COLOR_COUNT
312509 ~ 312510	COLOR_COUNT
312511 ~ 312512	TARGET_PATTERN_COUNT
312513 ~ 312514	PATTERN_COUNT

Build Project – Protocols

- **Address Mapping** – Input Register (String) : TARGET, OCR, CALC, MODBUSSTR
  Store recognition results of targets & OCRs, script calculated results and Modbus custom string outputs. The output data type is ASCII. Its length is 125 words.

Input Register (3X)	
Address Range	**Content**
30126 ~ 30250	Target01 (String)
30251 ~ 30375	Target02 (String)
30376 ~ 30500	Target03 (String)
30501 ~ 30625	Target04 (String)
30626 ~ 30750	Target05 (String)

Input Register (3X)	
Address Range	**Content**
312626 ~ 325000	OCR01 ~ 99 (String)
325001 ~ 337500	CALC00 ~ 99 (String)
337501 ~ 350000	MODBUSSTR00 ~ 99

Build Project – Protocols

- **Address Mapping** – Input Register (Int) : TARGET, OCR, MODBUSINT, MODBUSUINT

  If recognition result contents of OCR and target is number, they will be converted to number. With the data type is Int32 and Its length is 2 words.

Input Register (3X)	
Address Range	**Content**
350003 ~ 350004	Target01 (Int)
350005 ~ 350006	Target02 (Int)
350007 ~ 350008	Target03 (Int)
350009 ~ 350010	Target04 (Int)

Input Register (3X)	
Address Range	**Content**
350203 ~ 350400	OCR01 ~ 99 (Int)
350401 ~ 350600	MODBUSINT00 ~ 99
350601 ~ 350800	MODBUSUINT00 ~ 99 (Uint32)

Build Project – Protocols

- **Address Mapping** – Holding Register (String) : MODBUSHSTR

  Store Modbus custom output. The data type is ASCII. Its length is 51 words.

Holding Register (4X)	
Address Range	**Content**
40001 ~ 40051	MODBUSHSTR00
40052 ~ 40102	MODBUSHSTR01
40103 ~ 40153	MODBUSHSTR02
40154 ~ 40204	MODBUSHSTR03
40205 ~ 40255	MODBUSHSTR04

Holding Register (4X)	
Address Range	**Content**
40001 ~ 410200	MODBUSHSTR00 ~ 199

Build Project – Protocols

- **Address Mapping** – Holding Register (Int) : MODBUSHINT, MODBUSHUINT

  Store Modbus custom output. The data type is Int32 and Uint32. Its length is 2 words.

Holding Register (4X)	
Address Range	**Content**
410201 ~ 410202	MODBUSHINT00
410203 ~ 410204	MODBUSHINT01
410205 ~ 410206	MODBUSHINT02
410207 ~ 410208	MODBUSHINT03
410209 ~ 410210	MODBUSHINT04

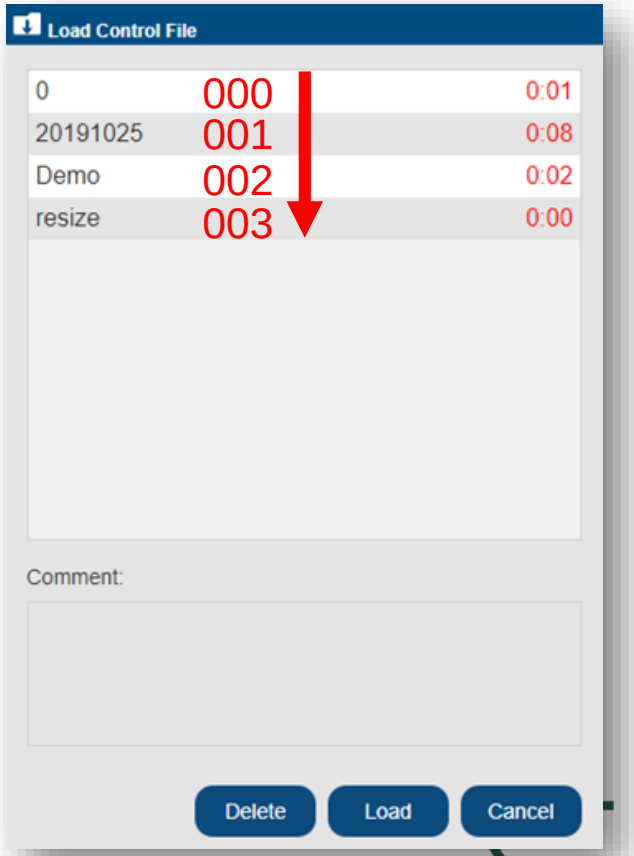
Holding Register (4X)	
Address Range	**Content**
410201 ~ 411200	MODBUSHINT00 ~ 499
411201 ~ 412200	MODBUSHUINT00 ~ 499

Build Project – Protocols

- **Address Mapping** – Coil Status : System Control

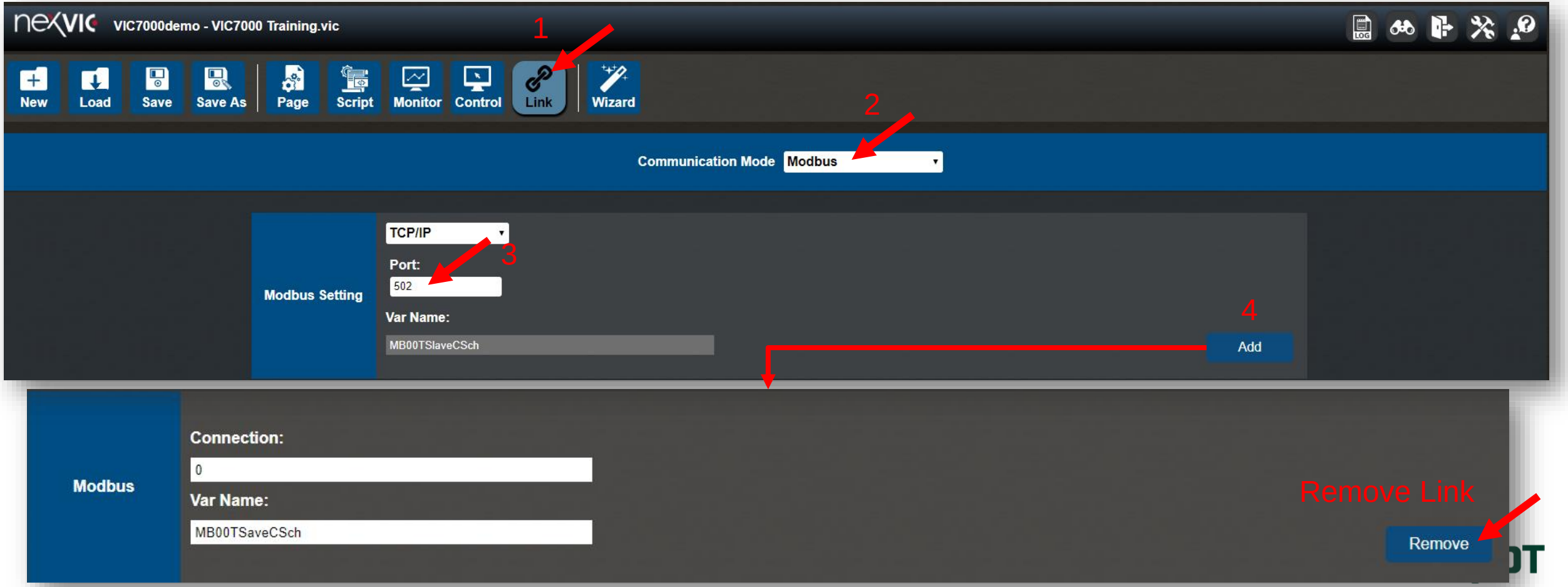
Control VIC7000. **Play project** can be used even there is **no admin logging in.** The index of control files is followed the order listed in the **Load Control File** window of **Control** page

Coil Status (0X)	
Address	**Content**
00001	Play project. 1 = Play 0 = Stop
00002	Play control. 1 = Play 0 = Stop
00101 ~ 00300	Play control file with index 000 ~ 199. 1 = Play 0 = Stop



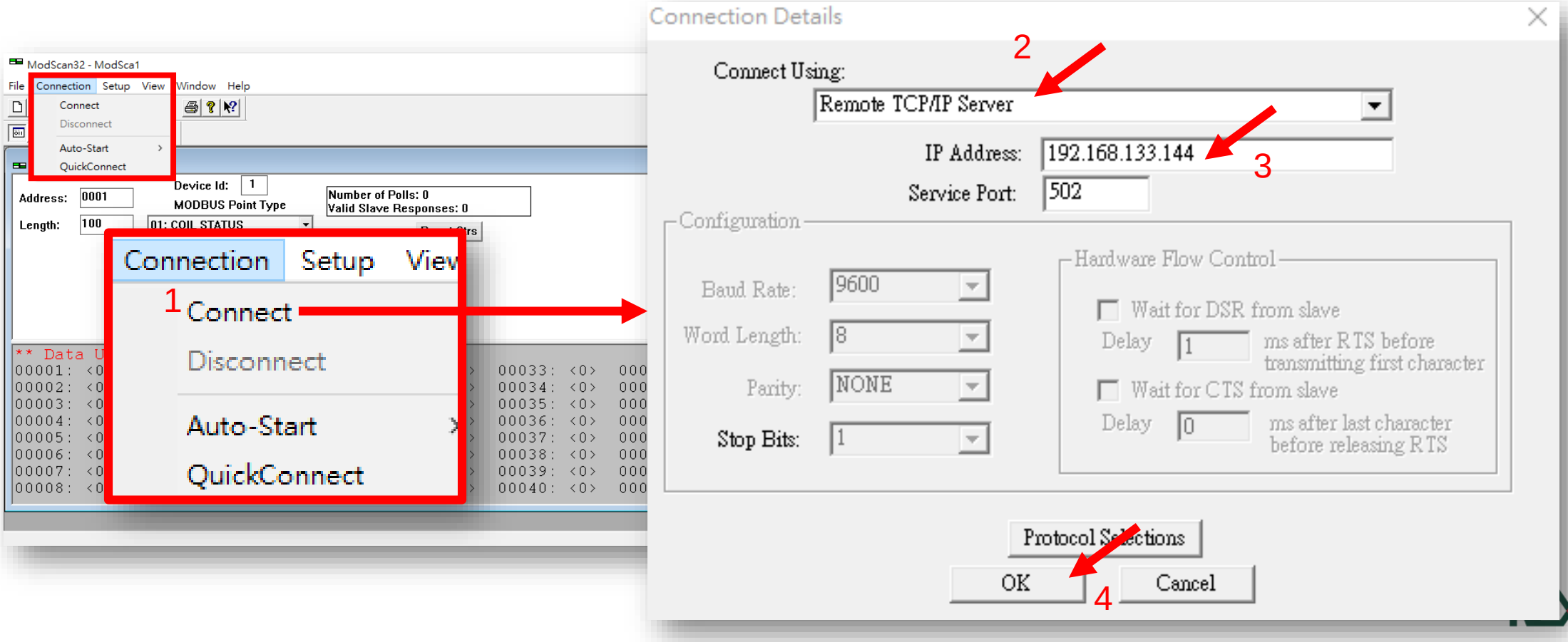
Build Project – Protocols

- **Link Config**
  1. Enter Link page : In administrator page
  2. Choose Modbus
  3. Enter Port : 502 (default)
  4. Click Add



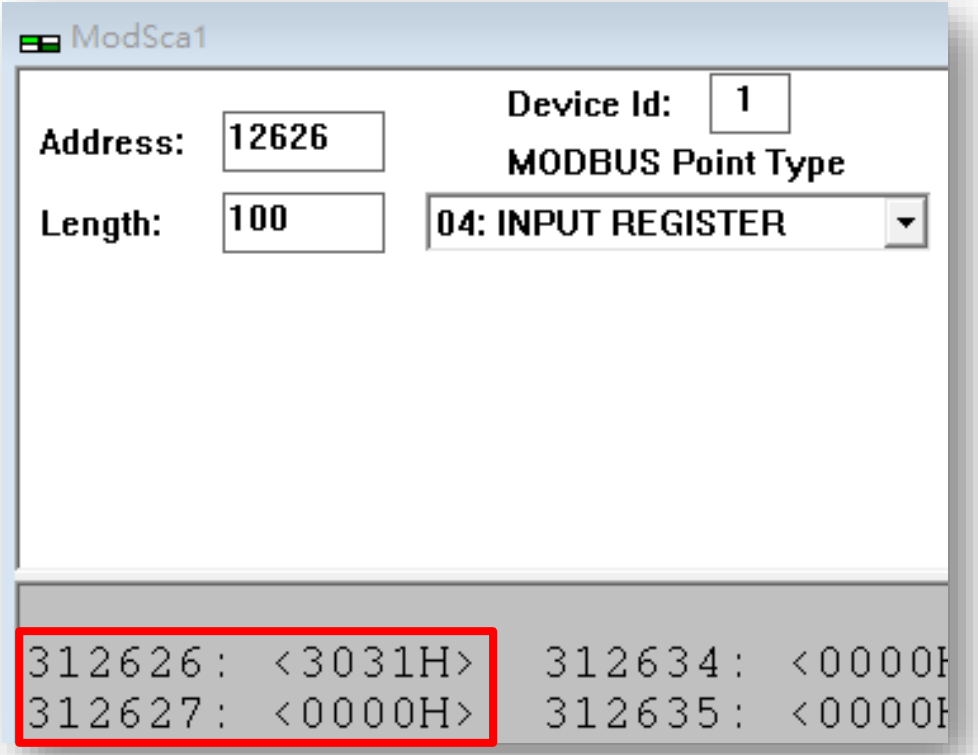
Build Project – Protocols

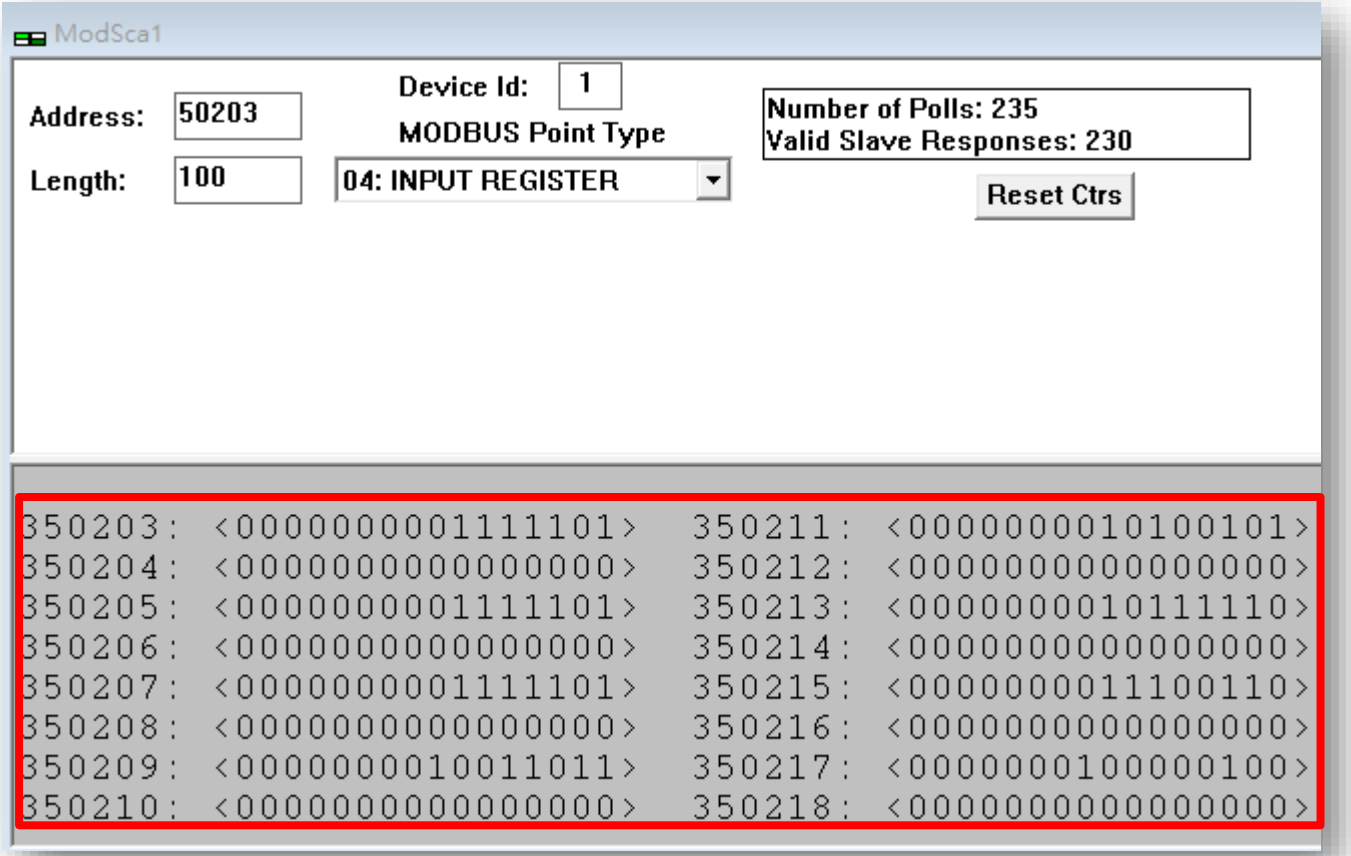
- **Link Testing** : Use Modscan
  1. Connect Settings : Connection → Connect
  2. Choose Remote TCP/IP Server
  3. Enter IP Address and Service Port
  4. Click OK



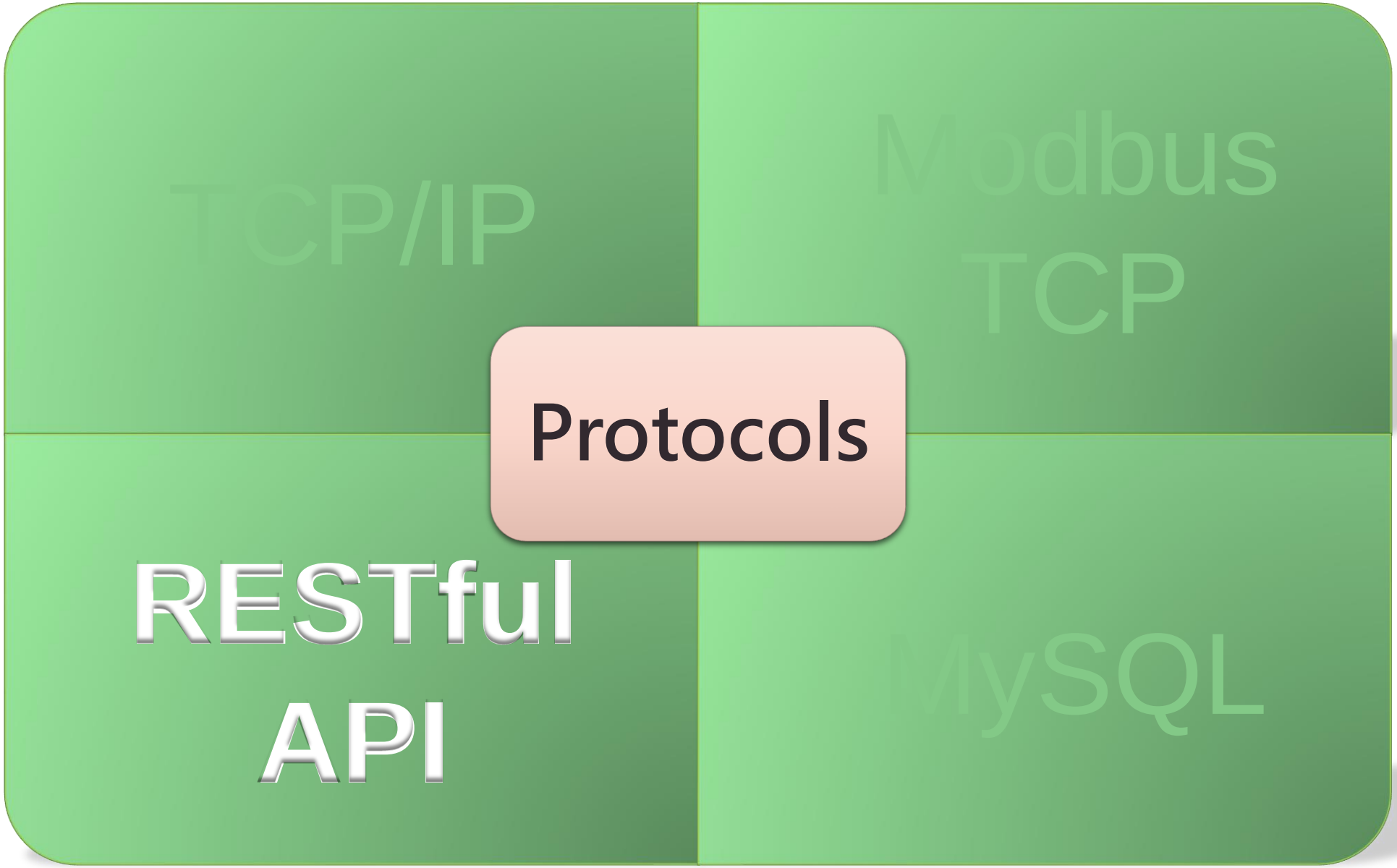
Build Project – Protocols

- **Link Testing**
  5. Check got data : The data type of string is ASCII, and the data type of numeric data is Int32.





Build Project – Protocols



Build Project – Protocols

REST(Representation State Transfer) is a software architectural style, which is used to facilitate the transfer of information between different software/programs on the network.

REST allows users to send URLs to access and manipulate network resources. It is commonly used in the IT industry. Most of REST API returning resources is XML or JSON.

VIC7000 returning data is JSON.

Build Project – Protocols

- **Get Data**
  1. Call API : Open browser → Enter **IP/restful** in URL field
  2. Check returning data

1

192.168.133.144/restful

2


```
{"TARGET01":"NexVIC","TARGET02":"VIC7100","TARGET03":"","TARGET04":"","TARGET05":"","OCR01":"125","OCR02":"125","OCR03":"125","OCR04":"155","OCR05":"16
5","OCR06":"190","OCR07":"230","OCR08":"260","OCR09":"285","OCR10":"295","OCR11":"110","OCR12":"125","OCR13":"125","OCR14":"155","OCR15":"165","OCR16":
"190","OCR17":"225","OCR18":"260","OCR19":"285","OCR20":"295","CALC00":"","CALC01":"","CALC02":"","CALC03":"","CALC04":"","CALC05":"","CALC06":"","CALC
07":"","CALC08":"","CALC09":"","CALC10":"","CALC11":"","CALC12":"","CALC13":"","CALC14":"","CALC15":"","CALC16":"","CALC17":"","CALC18":"","CALC19":"",
"CALC20":"","CALC21":"","CALC22":"","CALC23":"","CALC24":"","CALC25":"","CALC26":"","CALC27":"","CALC28":"","CALC29":"","CALC30":"","CALC31":"","CALC32
":"","CALC33":"","CALC34":"","CALC35":"","CALC36":"","CALC37":"","CALC38":"","CALC39":"","CALC40":"","CALC41":"","CALC42":"","CALC43":"","CALC44":"","C
ALC45":"","CALC46":"","CALC47":"","CALC48":"","CALC49":"","CALC50":"","CALC51":"","CALC52":"","CALC53":"","CALC54":"","CALC55":"","CALC56":"","CALC57":
"","CALC58":"","CALC59":"","CALC60":"","CALC61":"","CALC62":"","CALC63":"","CALC64":"","CALC65":"","CALC66":"","CALC67":"","CALC68":"","CALC69":"","CAL
C70":"","CALC71":"","CALC72":"","CALC73":"","CALC74":"","CALC75":"","CALC76":"","CALC77":"","CALC78":"","CALC79":"","CALC80":"","CALC81":"","CALC82":""
,"CALC83":"","CALC84":"","CALC85":"","CALC86":"","CALC87":"","CALC88":"","CALC89":"","CALC90":"","CALC91":"","CALC92":"","CALC93":"","CALC94":"","CALC9
5":"","CALC96":"","CALC97":"","CALC98":"","CALC99":""}
```

Build Project – Protocols

- **Get Data**
  3. Call Separately : Enter **IP/restful/ocr/index** in URL field, and returning data will be single data type. **Target, target_color, target_pattern, color, pattern, calc** can be called by this way.

192.168.133.144/restful/ocr/01 → {"OCR01":"125"}

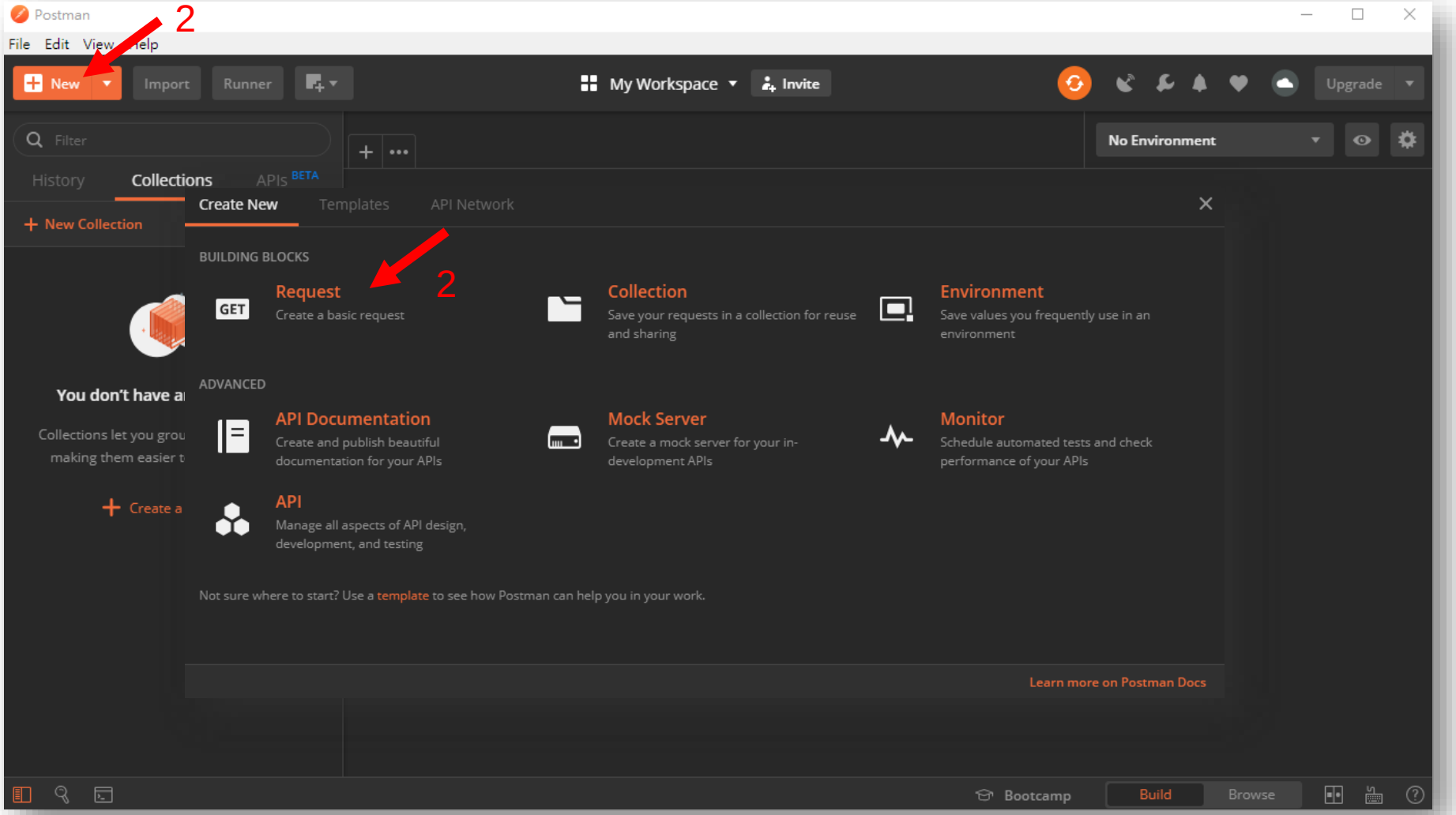
192.168.133.144/restful/target/01 → {"TARGET01":"NexVIC"}

192.168.133.144/restful/calc/01 → {"CALC01":""}

Build Project – Protocols

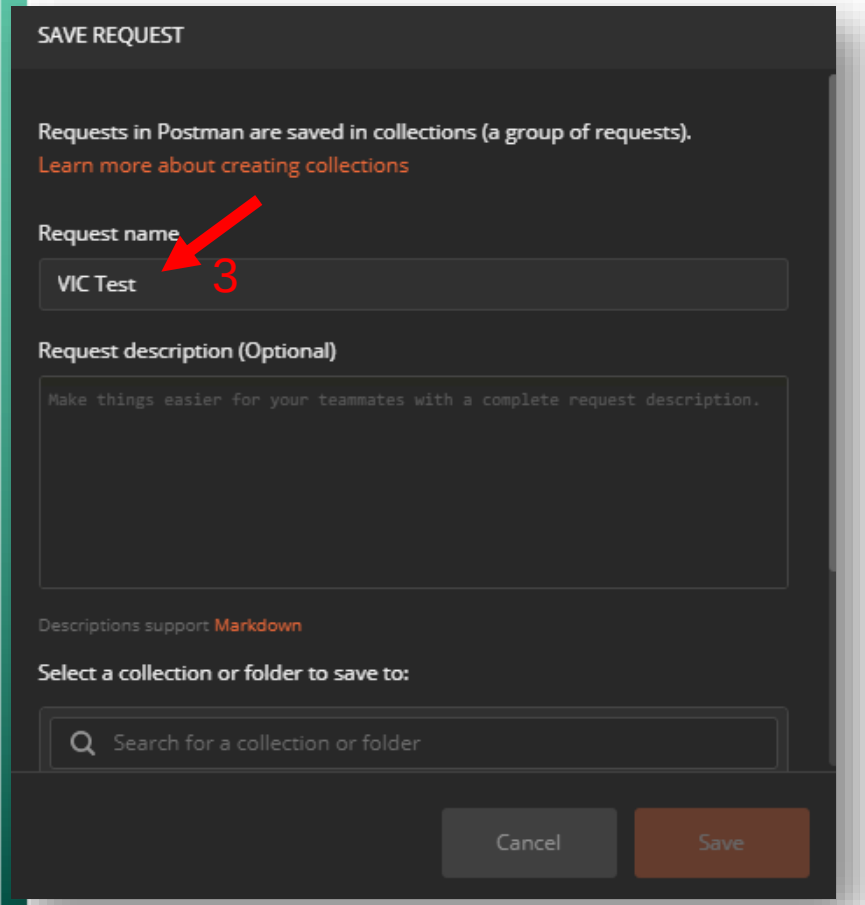
- **Control VIC : Use Postman**

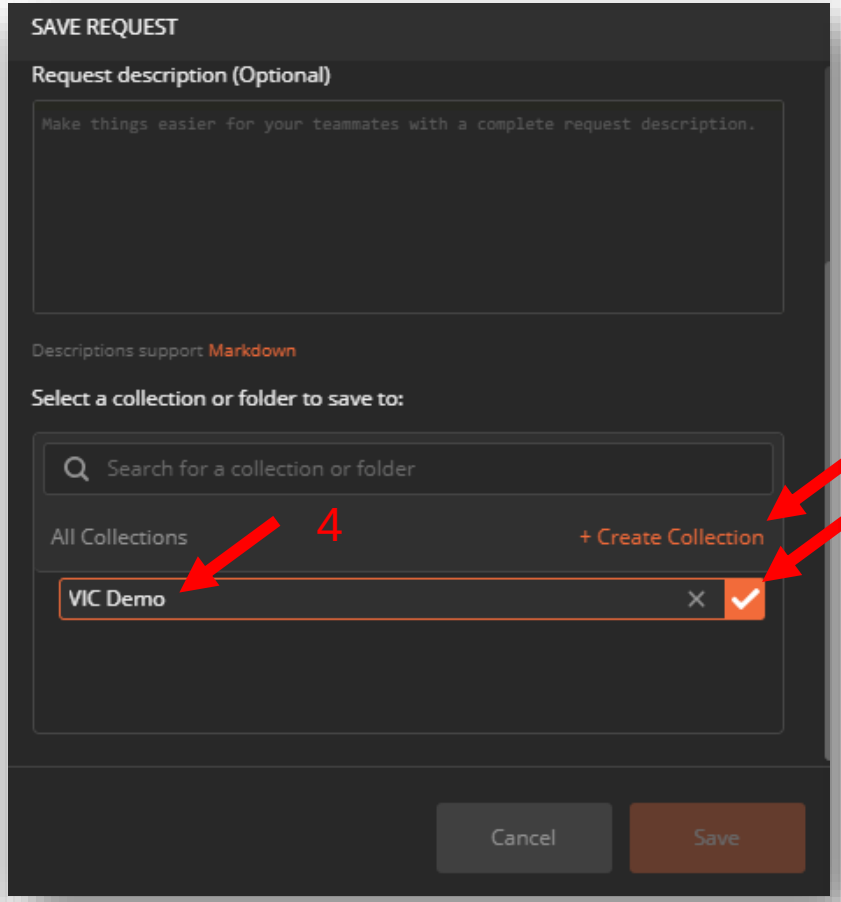
1. Execute Postman
2. Add new Request : Click **New** → Select **Request**

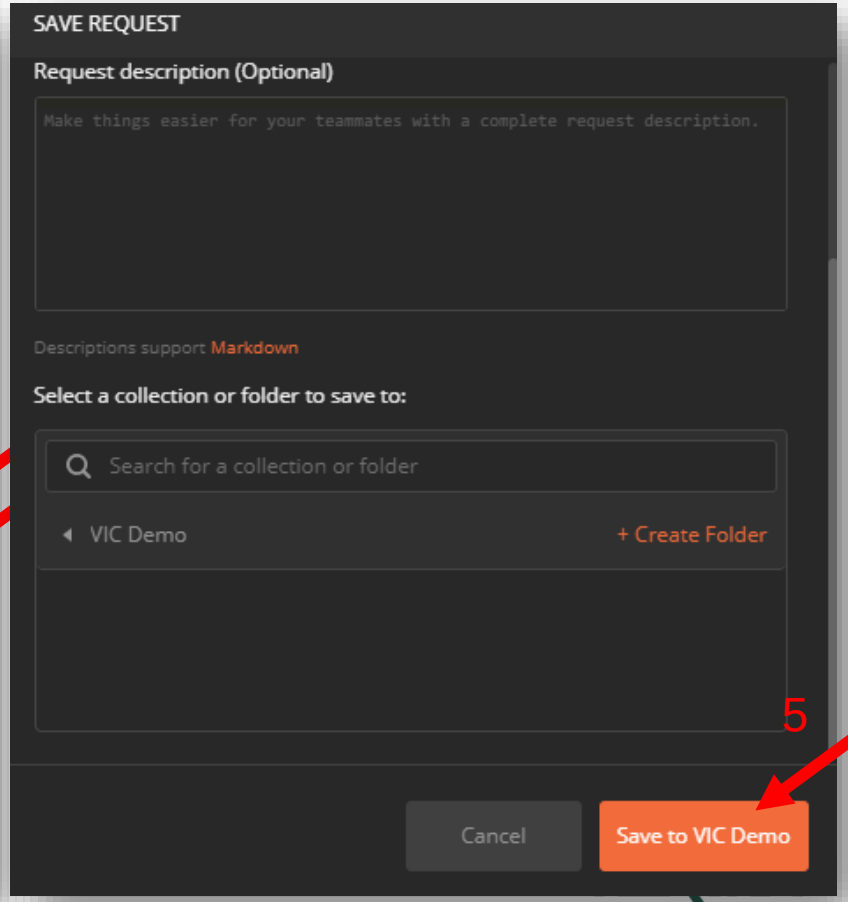


Build Project – Protocols

- **Control VIC : Use Postman**
  3. Enter Request name
  4. Choose used Collection : If there is no Collection, select **+ Create Collection**
  5. Save

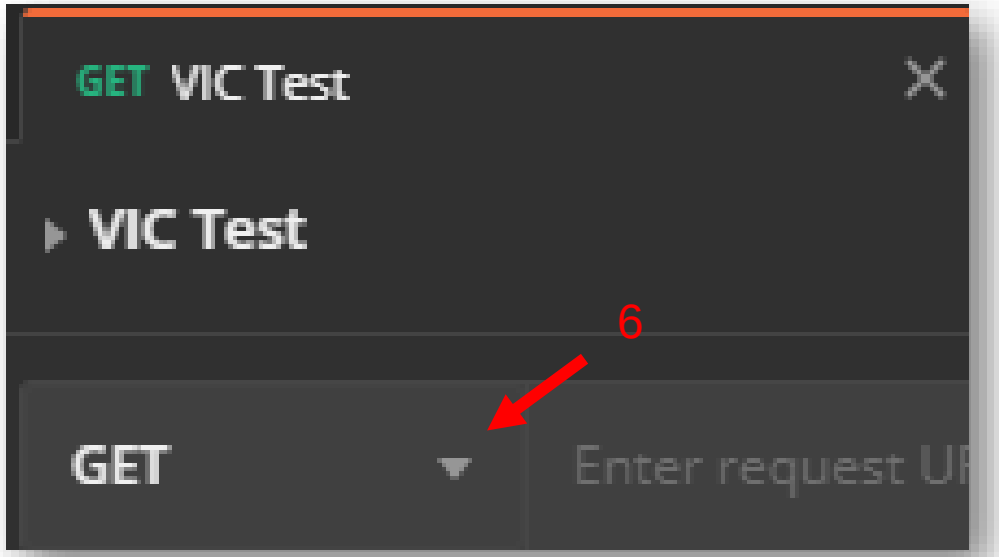


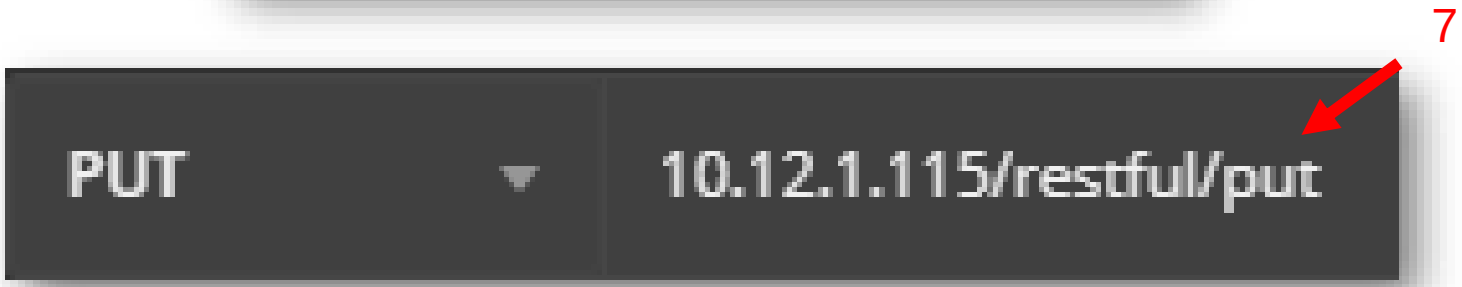


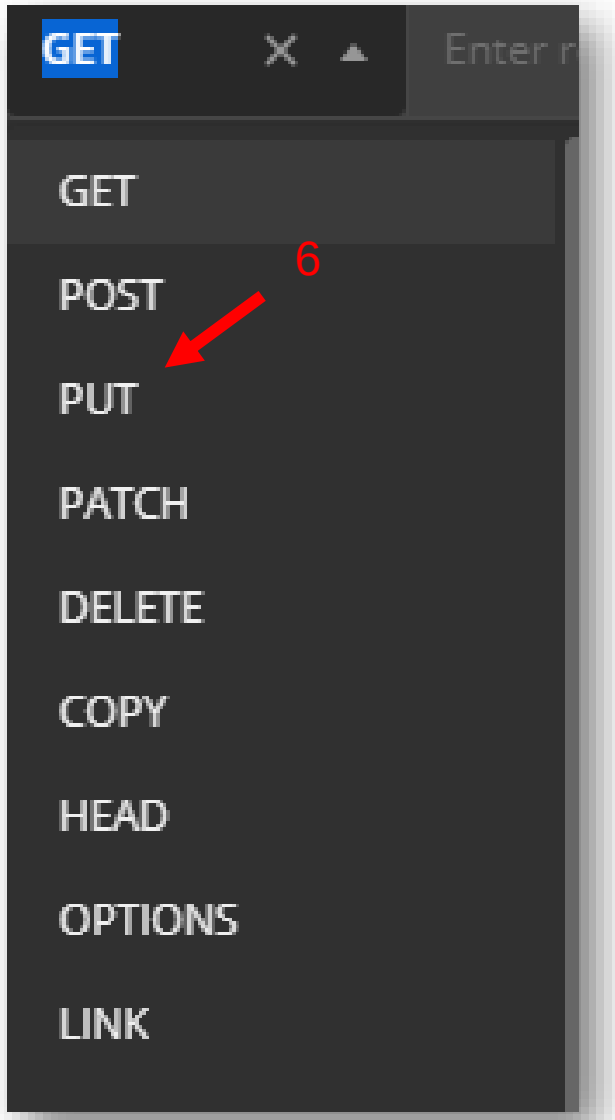


Build Project – Protocols

- **Control VIC : Use Postman**
  6. Choose PUT
  7. Enter URL : IP/restful/put

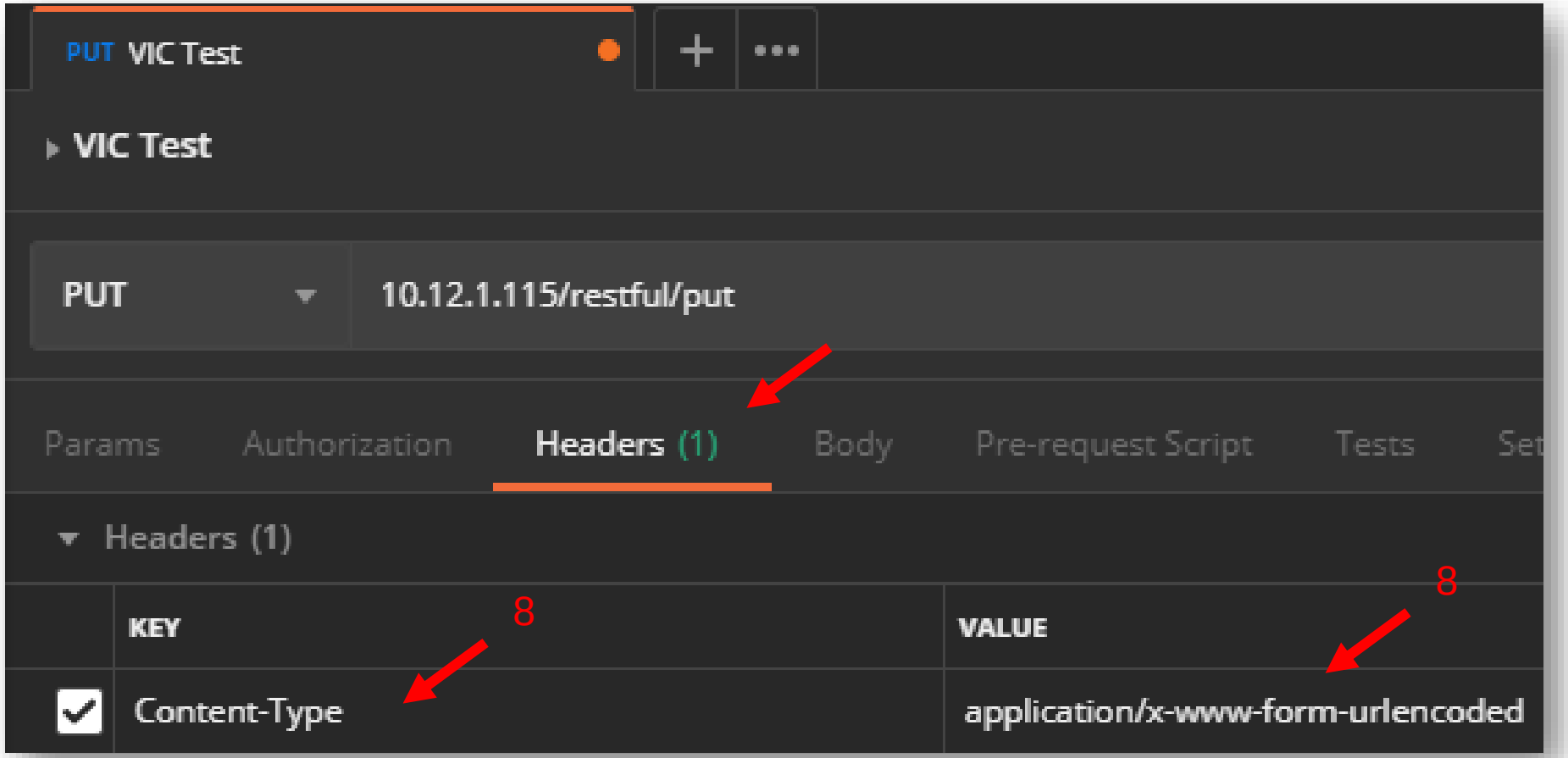






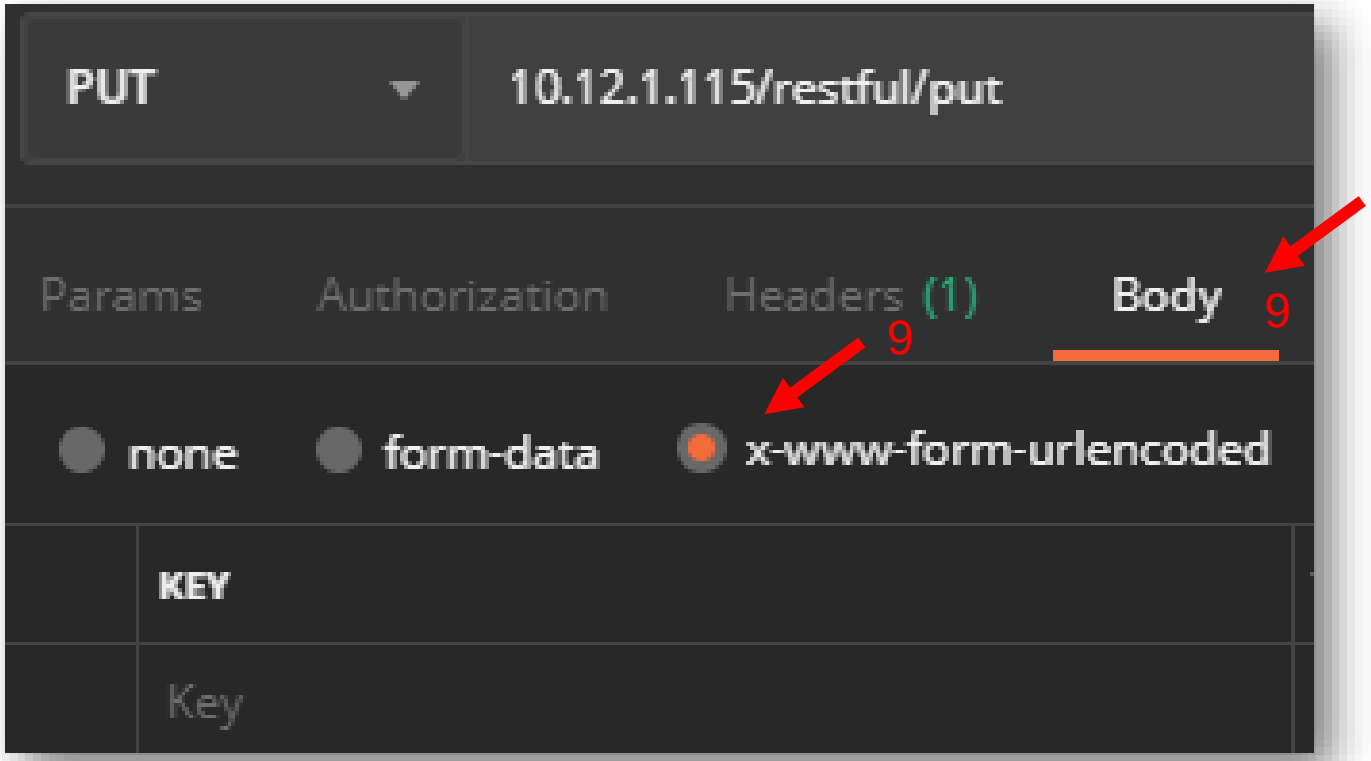
Build Project – Protocols

- **Control VIC : Use Postman**
  8. Headers : Content-Type : application/x-www-form-urlencoded



Build Project – Protocols

- **Control VIC : Use Postman**
  9. Body : x-www-form-urlencoded



Build Project – Protocols

- **Control VIC : Use Postman**

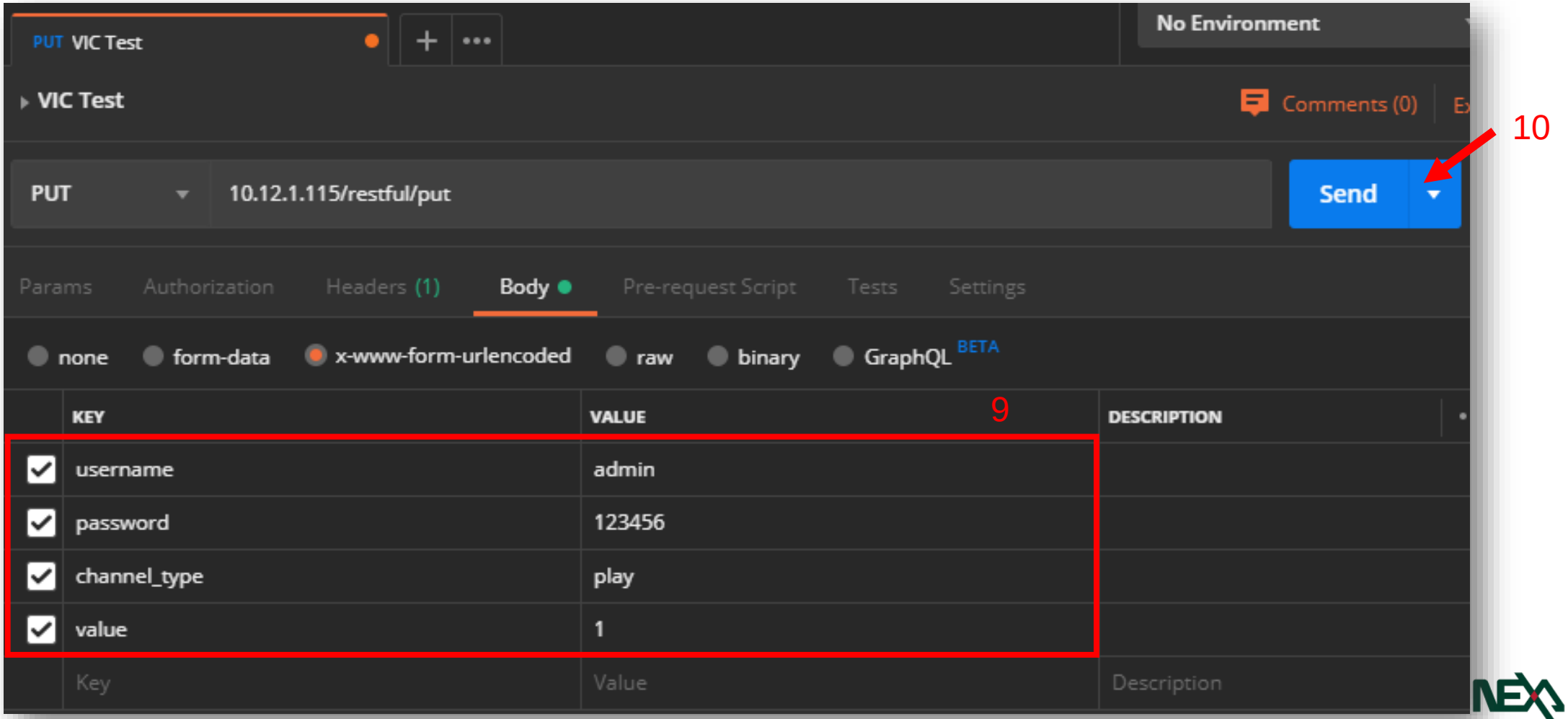
9. Body : Even **play project** can be used only when there is **no admin logging in**.

	Play Project	**Play Control**	**Play Control File with index i**
username	admin or user	admin or user	admin or user
password	123456 (default)	123456 (default)	123456 (default)
channel_type	play	play_control	play_control_file
value	1 = Play 0 = Stop	1 = Play 0 = Stop	1 = Play 0 = Stop
index_value	-	-	0 ~ 199

Build Project – Protocols

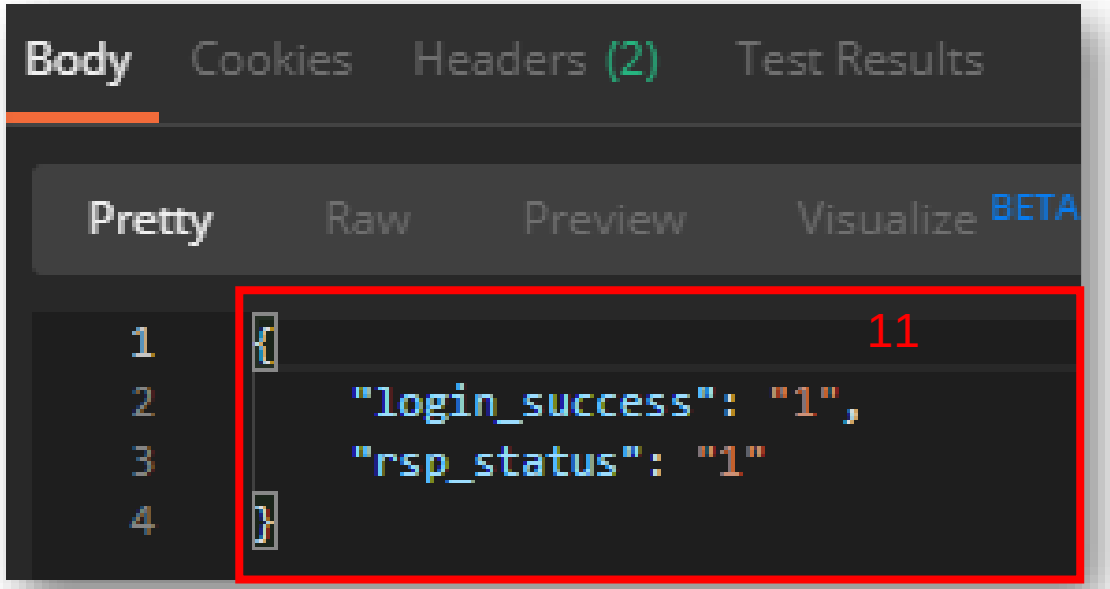
- **Control VIC : Use Postman**

  9. Body : Sample : Play Project 10. Send



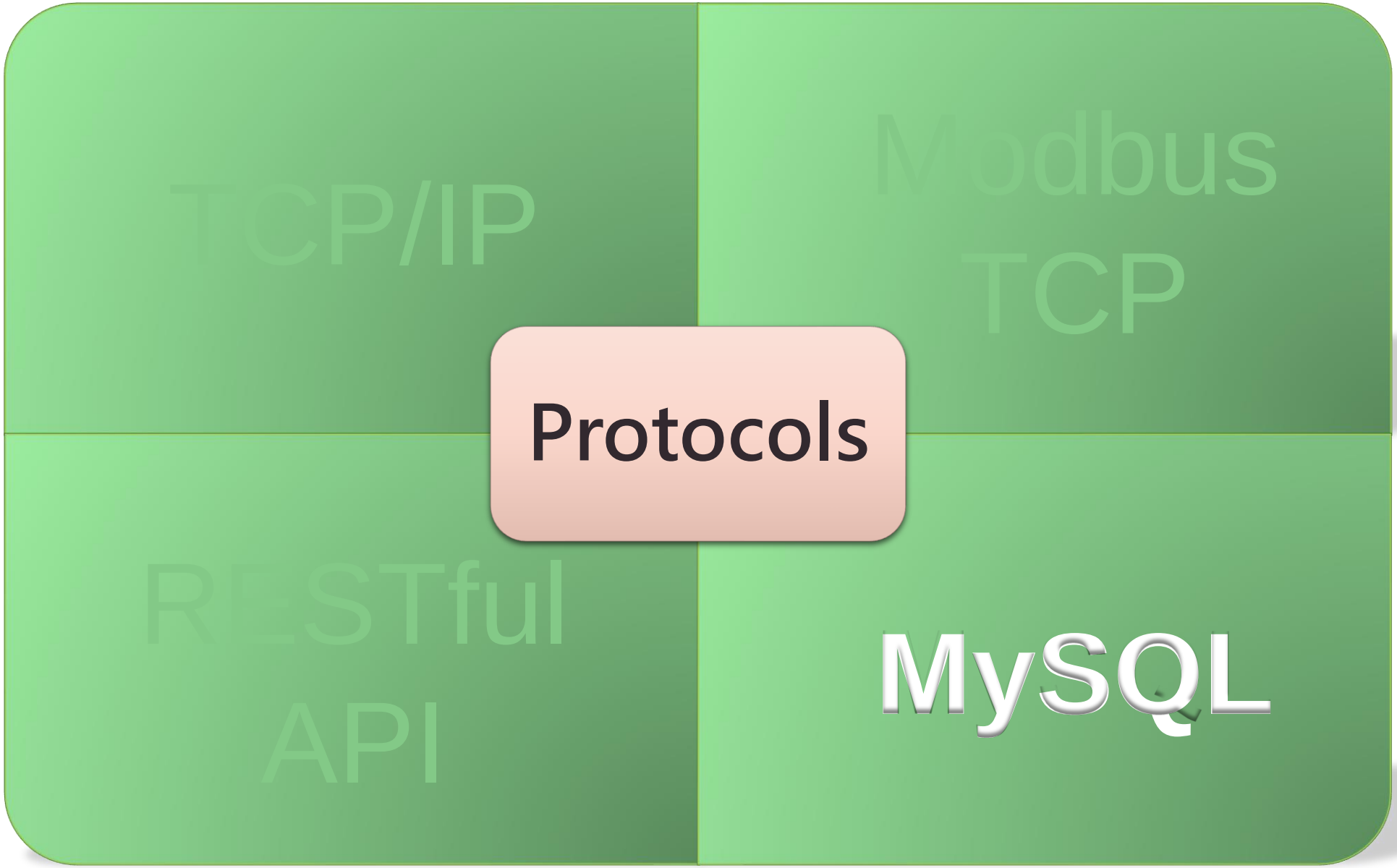
Build Project – Protocols

- **Control VIC : Use Postman**
  11. Check Response



login_success	Whether logging in is successful. 1 = Successful 0 = Failed
rsp_status	Whether the command is executed successfully. 1 = Successful 0 = Failed

Build Project – Protocols



Build Project – Protocols

SQL, Structure Query Language, is used to manage database system.
The scope of SQL includes data query, data manipulation, data definition, and data access control.

Query

SELECT “column”
FROM “table”
WHERE “condition”
GROUP BY “condition”
ORDER BY “[ASC, DESC]”
LIMIT “limitation”

Build Project – Protocols

MySQL is an open-source relational database management system. Because of its high efficacy, low cost, and high reliability, MySQL has become a popular open-source database.

VIC7000 utilizes MySQL to store data. Users can use another computer to connect to the database within VIC7000.

Build Project – Protocols

The database name within VIC7000 is named **“vic”**. There is a default account, username and password are **vic_7000**. This account can be used with VIC7000 computer.

If users want to get data remotely, they must add a new account with account **root** and its default password is 123456 (user can change it).

set password for ‘root’@’localhost’ = password(‘root’);

```
C:\Users\eagle>mysql -u root -p
Enter password: ***
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 7
Server version: 5.5.45 MySQL Community Server (GPL)

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> set password for 'root'@'localhost' = password('root');
Query OK, 0 rows affected (0.00 sec)

mysql> _
```

Build Project – Protocols

After add a new user with account **root**, next step is to give this new user the authority to use “vic” database. Then this new account can access in **“vic”** database to query or get data.

CREATE USER ‘test_user’@’%’ IDENTIFIED BY ‘test_user’;

GRANT ALL PRIVILEGES ON vic.* TO ‘test_user’@’%’ ;

命令提示字元 - mysql -uroot -p

```
Microsoft Windows [版本 10.0.17763.557]
(c) 2018 Microsoft Corporation. 著作權所有，並保留一切權利。

C:\Users\jasontsai>mysql -uroot -p
Enter password: ******
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 181
Server version: 5.7.23-log MySQL Community Server (GPL)

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> CREATE USER 'test_user'@'%' IDENTIFIED BY 'test_user';
Query OK, 0 rows affected (0.00 sec)

mysql> GRANT ALL PRIVILEGES ON vic.* TO 'test_user'@'%';
Query OK, 0 rows affected (0.00 sec)

mysql>
```

命令提示字元 - mysql -utest_user -p

```
Microsoft Windows [版本 10.0.17763.557]
(c) 2018 Microsoft Corporation. 著作權所有，並保留一切權利。

C:\Users\jasontsai>mysql -utest_user -p
Enter password: ********
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 185
Server version: 5.7.23-log MySQL Community Server (GPL)

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql>
```
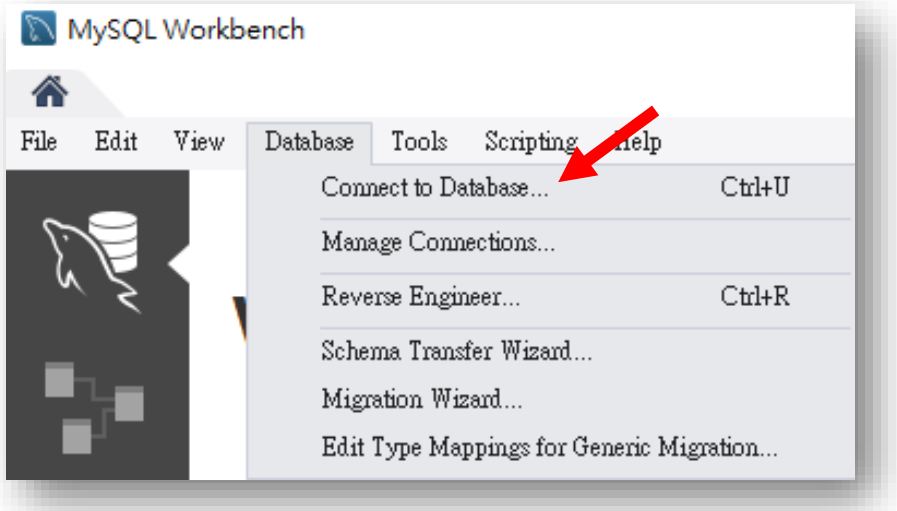
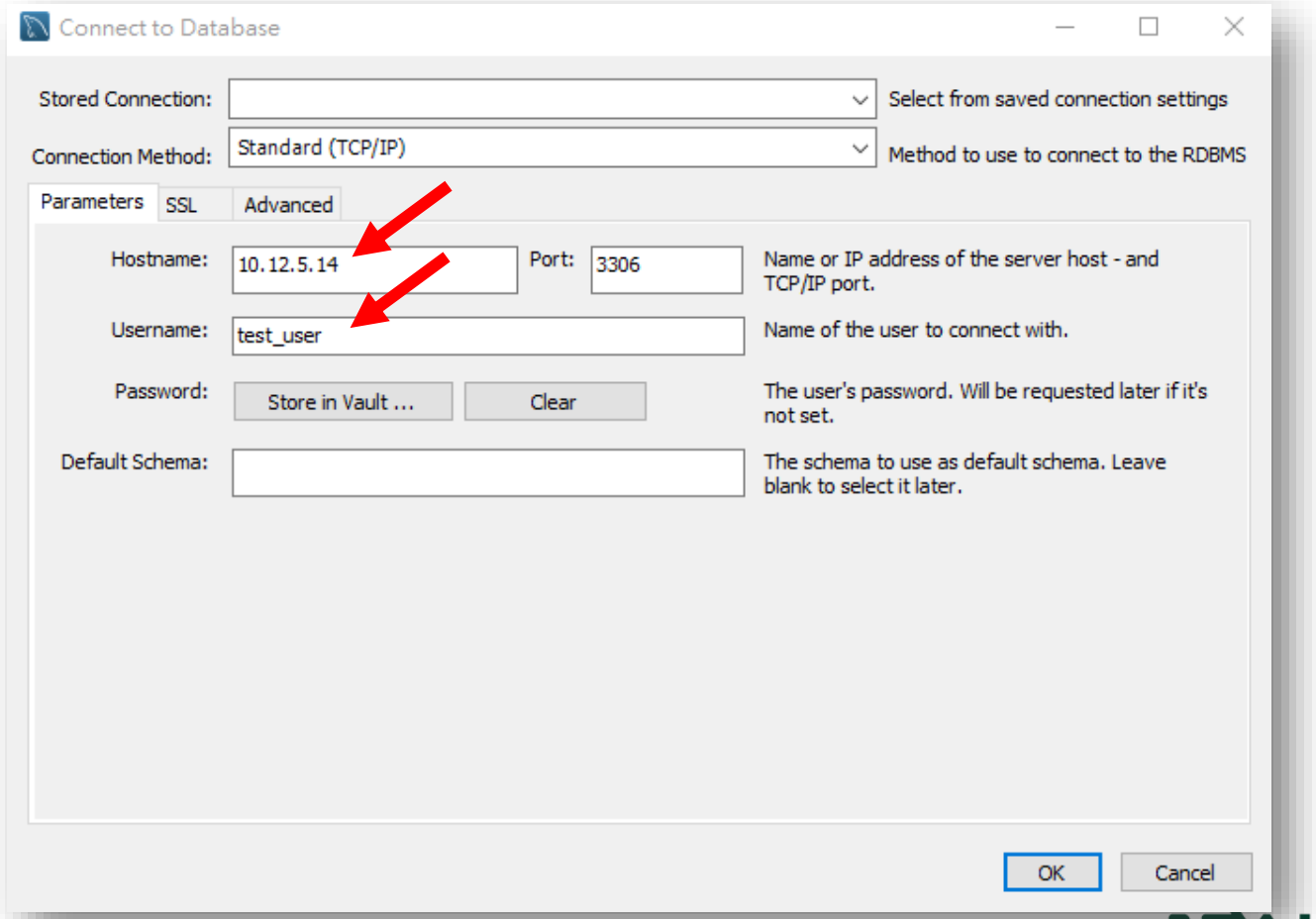

Build Project – Protocols

- **Link Testing :** MySQL Workbench

Build Project – Protocols

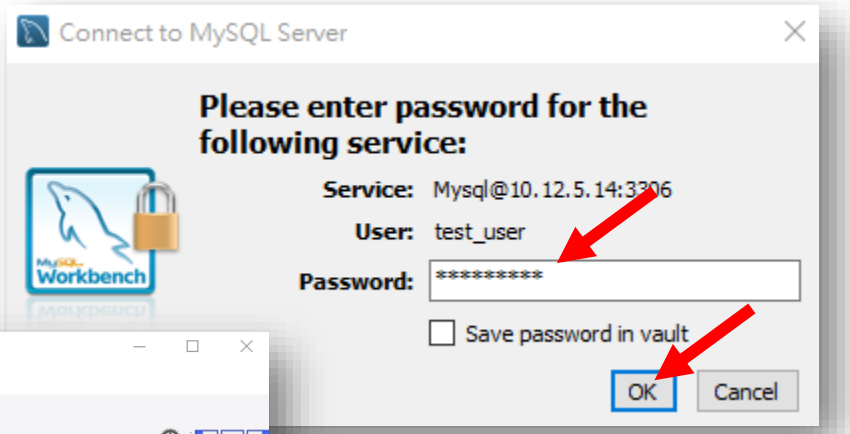
- **Link Testing :** MySQL Workbench
  1. Connection Settings : Database → Connect to Database… → Hostname : IP → Username : test_user

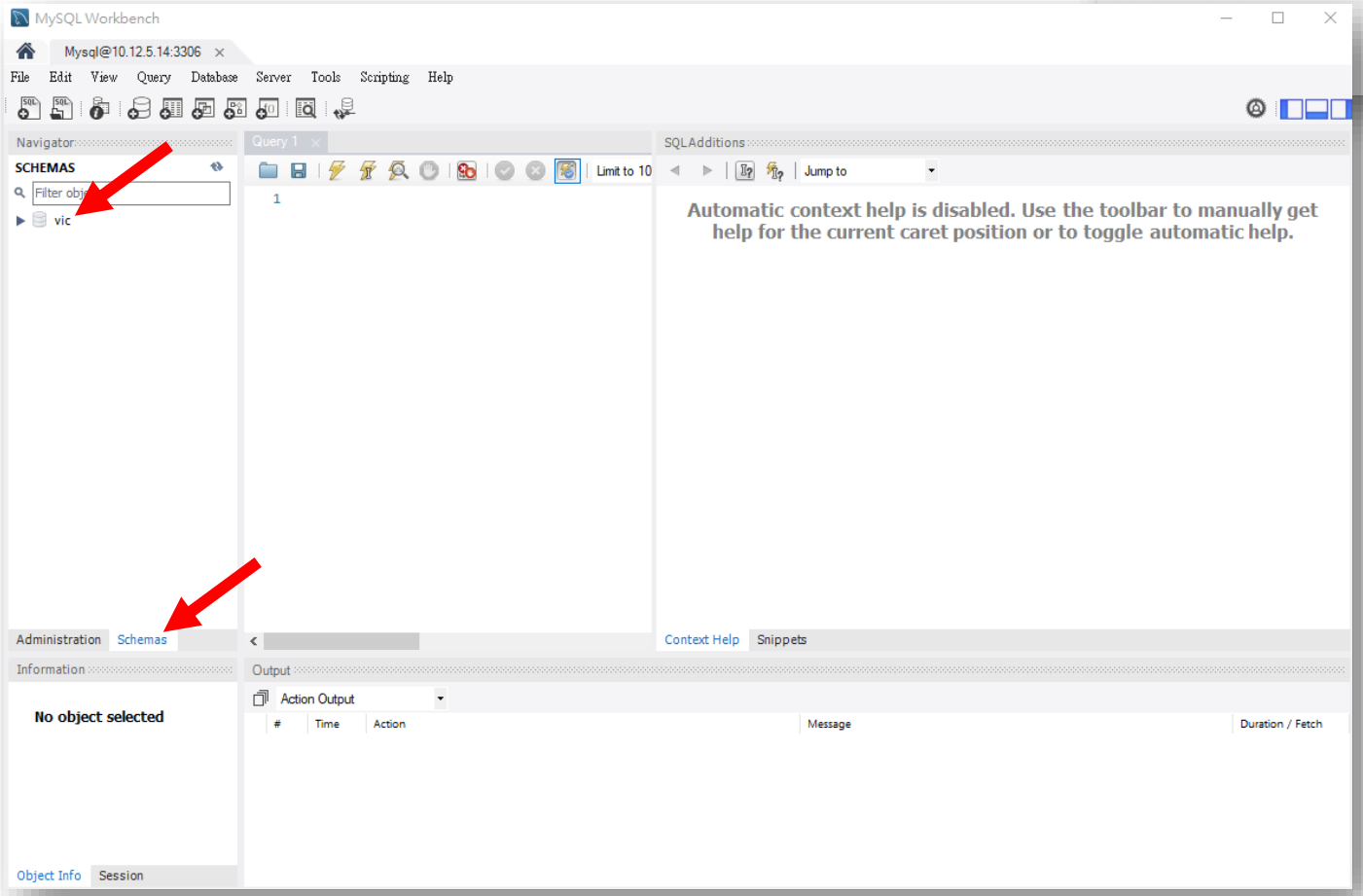




Build Project – Protocols

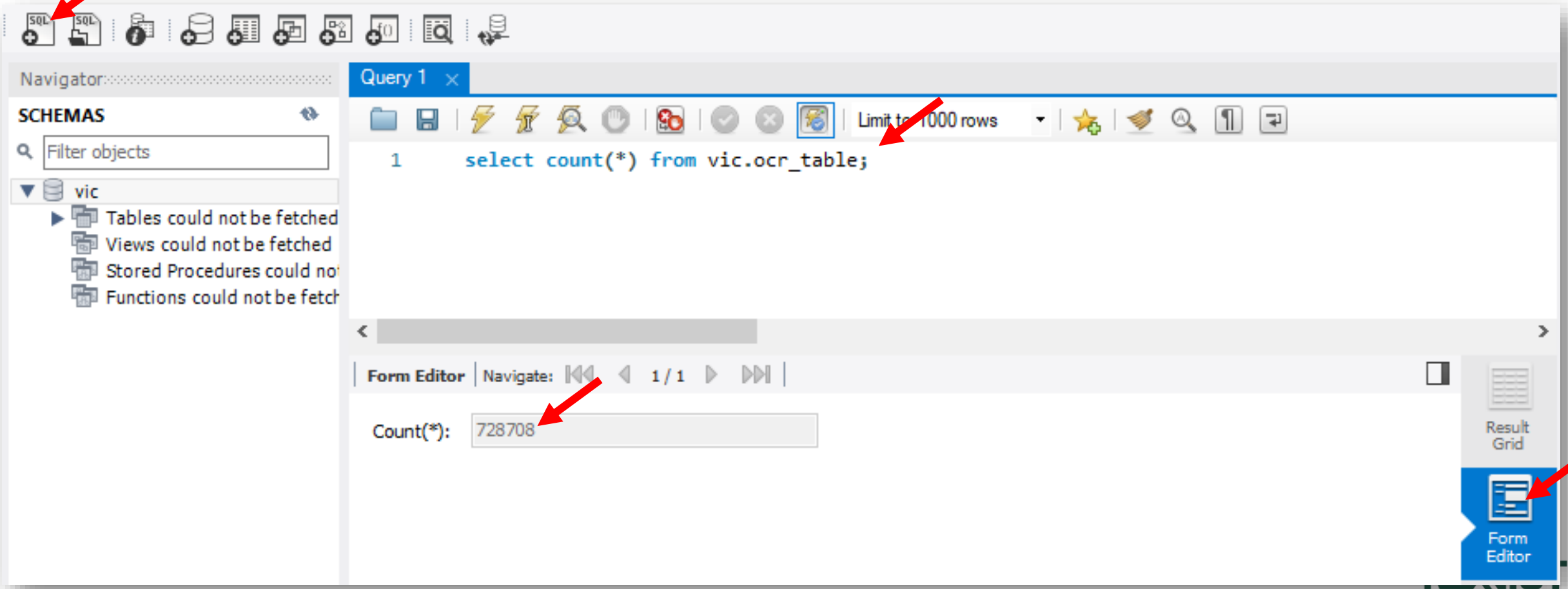
- **Link Testing :** MySQL Workbench
  3. Enter password and click OK
  4. Check database “vic”





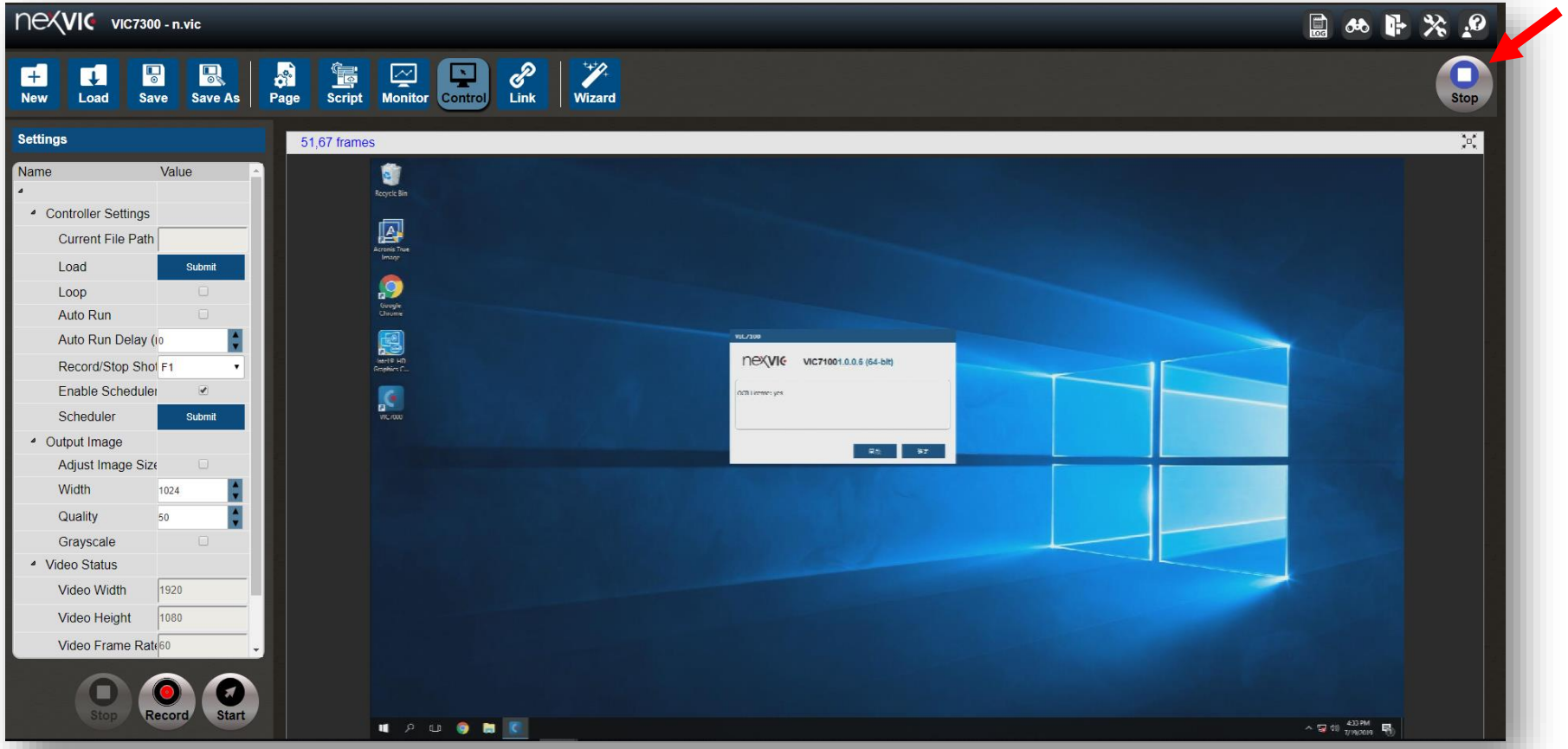
Build Project – Protocols

- **Link Testing :** MySQL Workbench
  6. Enter and execute commands : Create a new SQL tab for executing queries → Enter SQL command (This sample counting data in “vic”) → Form Editor



Build Project – Control

- **Control :** Record the action of mouse and keyboard
  1. Entry to Control Page : It must be used along with capture card input. When it's recording, the capture card should get data continuously.



Build Project – Control

- **Control**
  - Controller Settings

    Current File Path

    Load : Load control file

    Loop : Whether to play control file cyclically

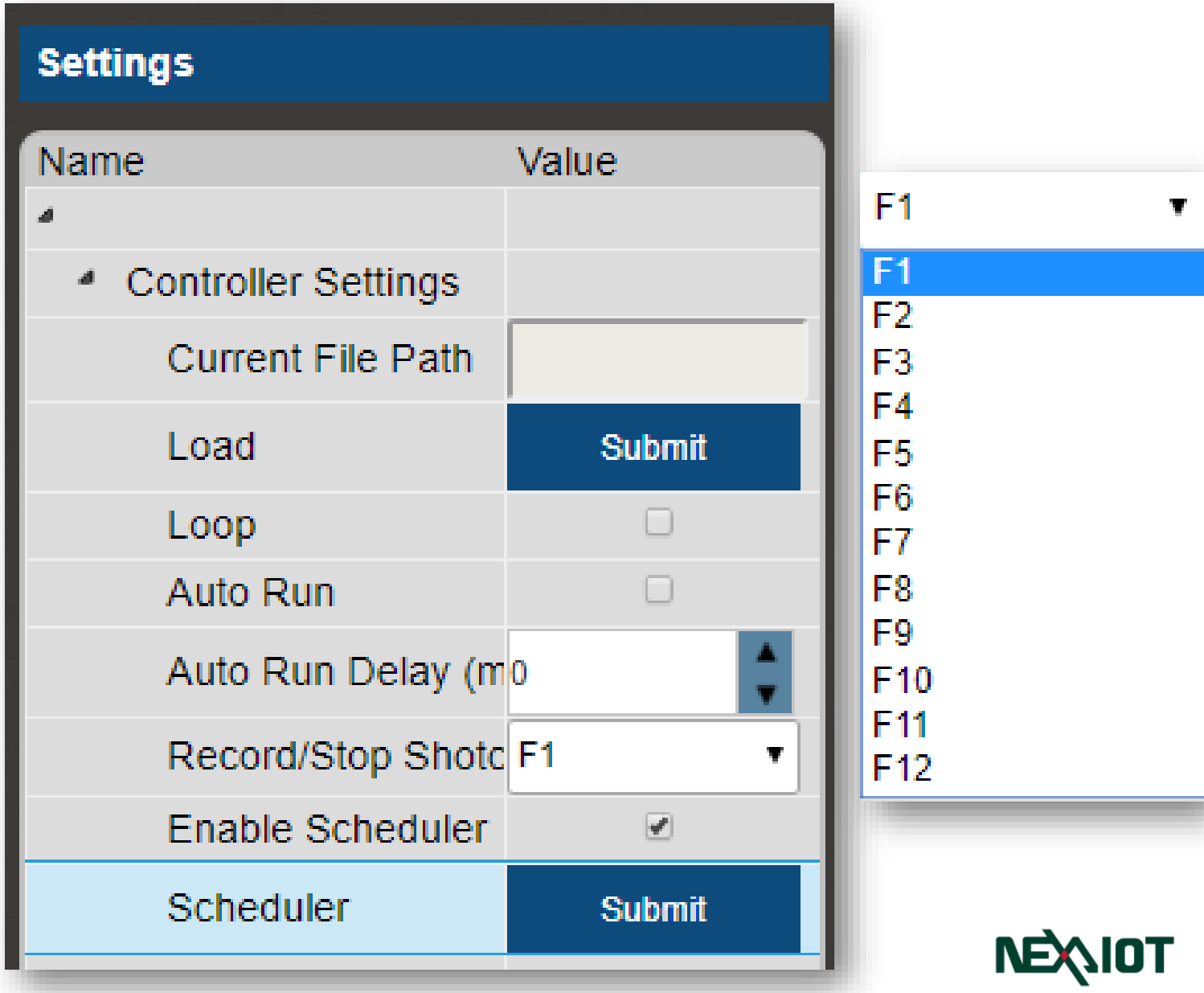
    Auto Run : Whether to play control file while project is playing

    Auto Run Delay (ms)

    Record/Stop Shortcut Key

    Enable Scheduler

    Scheduler Setting



Build Project – Control

- **Control**
  - Video Parameter

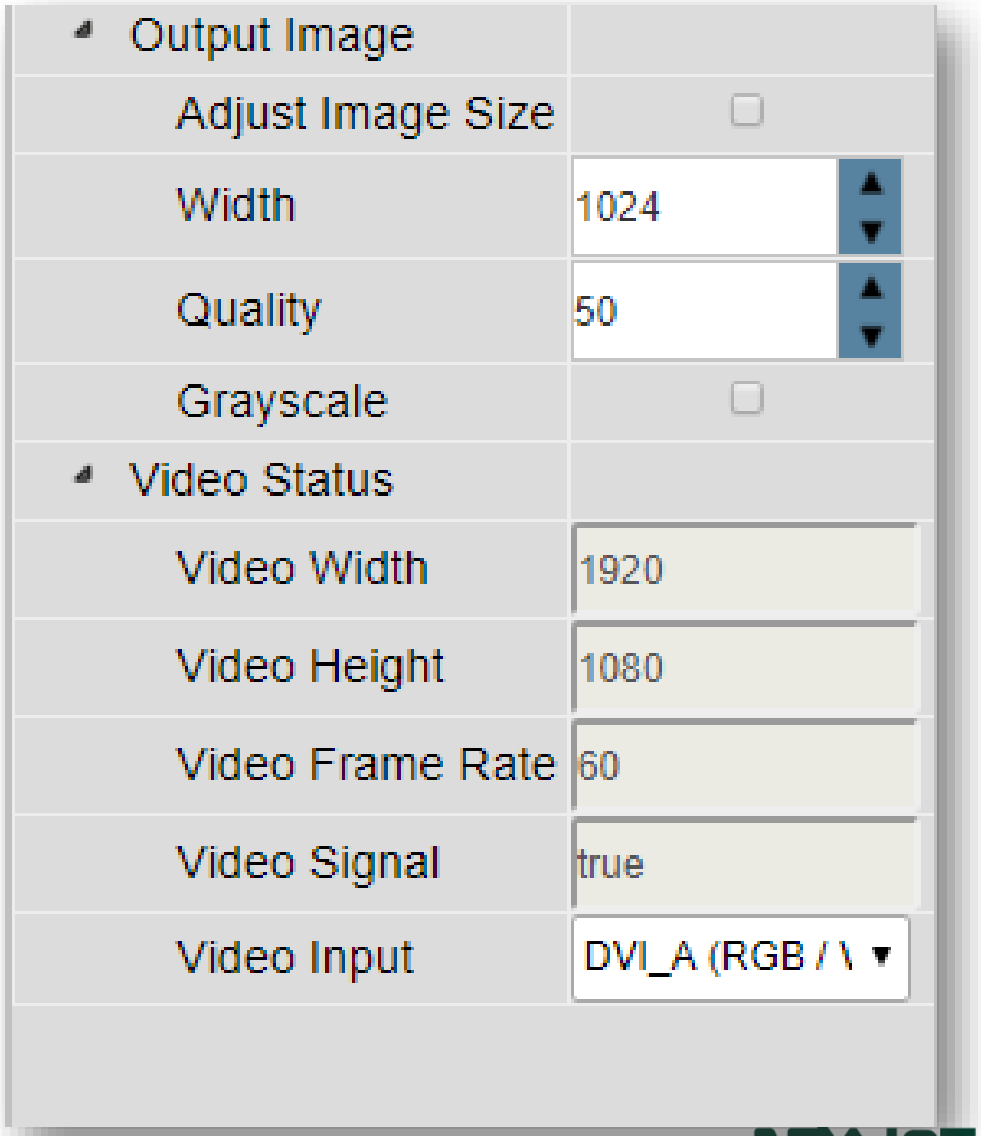
    Adjust Image Size : Modifying the width and quality of the image and using grayscale to improve smoothness **while recording control files**

    Adjusting video width

    Adjusting video Quality

    Grayscale

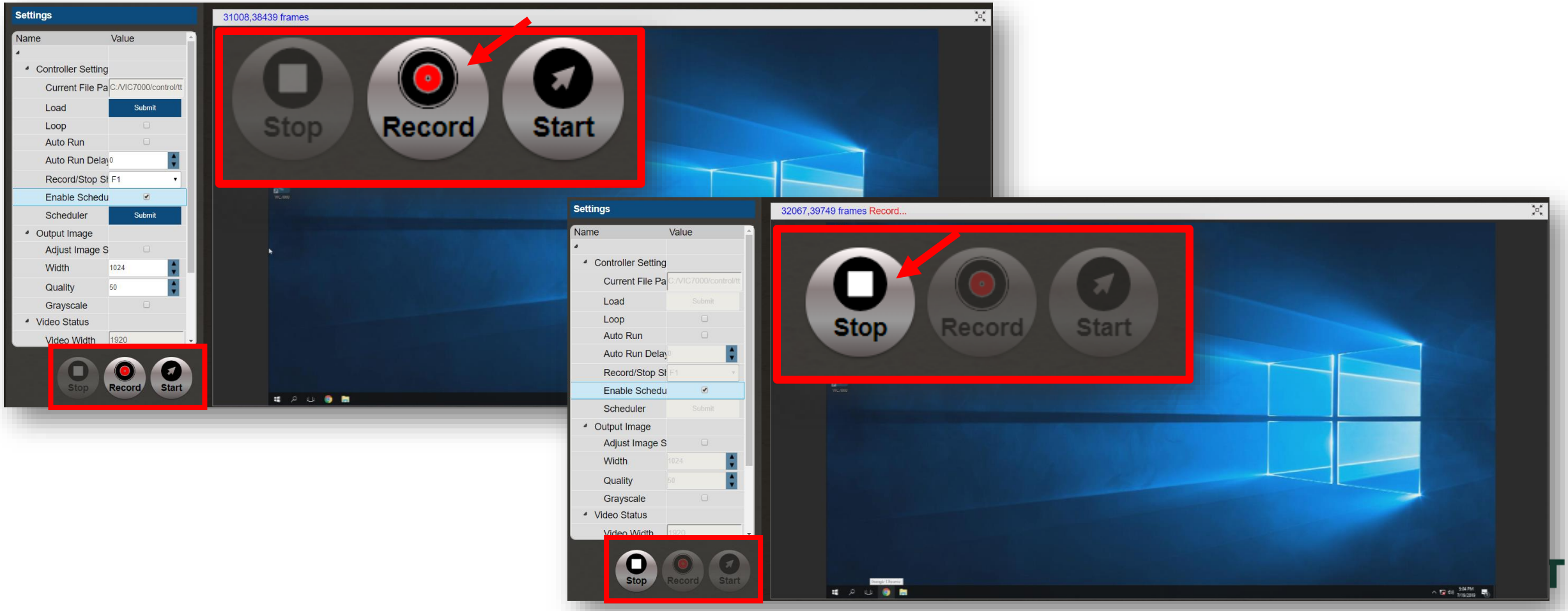
    Video Signal



Build Project – Control

- **Control**

  2. Record Action : Click **Record** (press **Record Shortcut Key**) → The action of mouse and keyboard will be recorded → Click **Stop** (press **Stop Shortcut Key**)

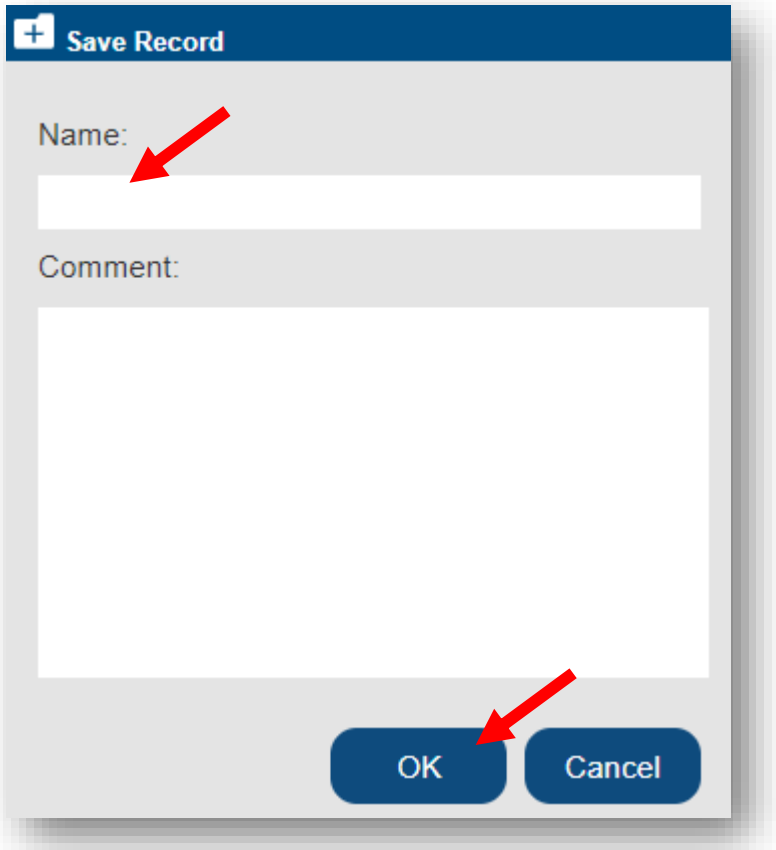


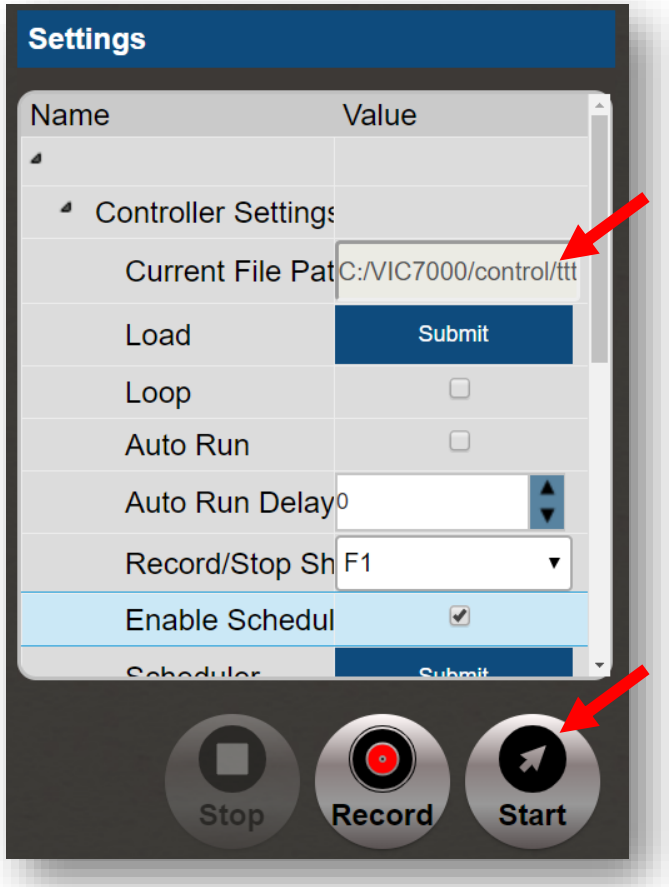
Build Project – Control

- **Control**

  2. Record Action : Enter **Name** of control file → Click **OK**

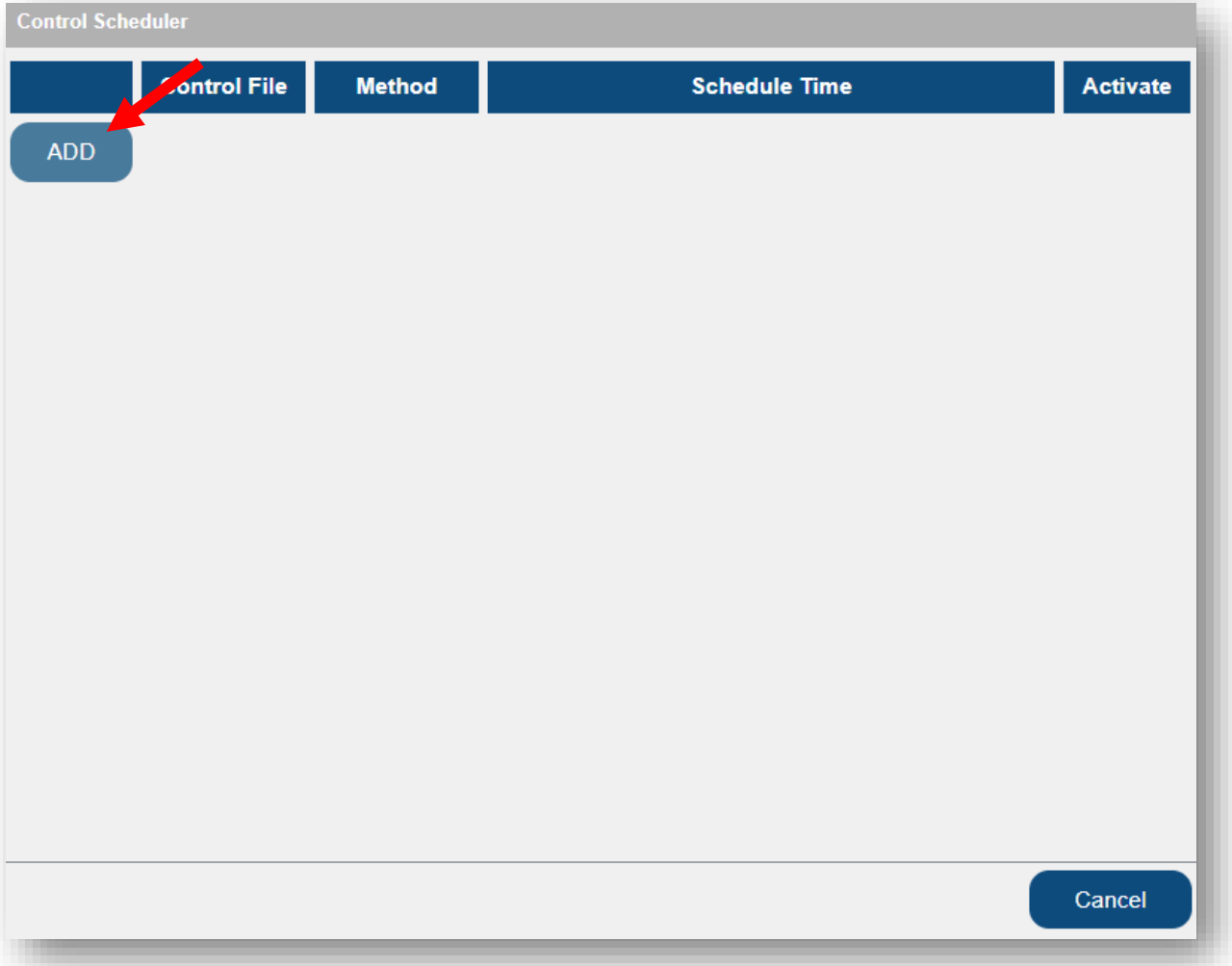
  The control file will be loaded automatically. Click **Start** to simulate playing the control file.





Build Project – Control

- **Control**
  - Scheduler Settings : Click **Scheduler** and **Control Scheduler** window will show up → Click **Add**



Build Project – Control

- **Control**
  - Scheduler Settings – interval : How often the control file should be played

    Control File

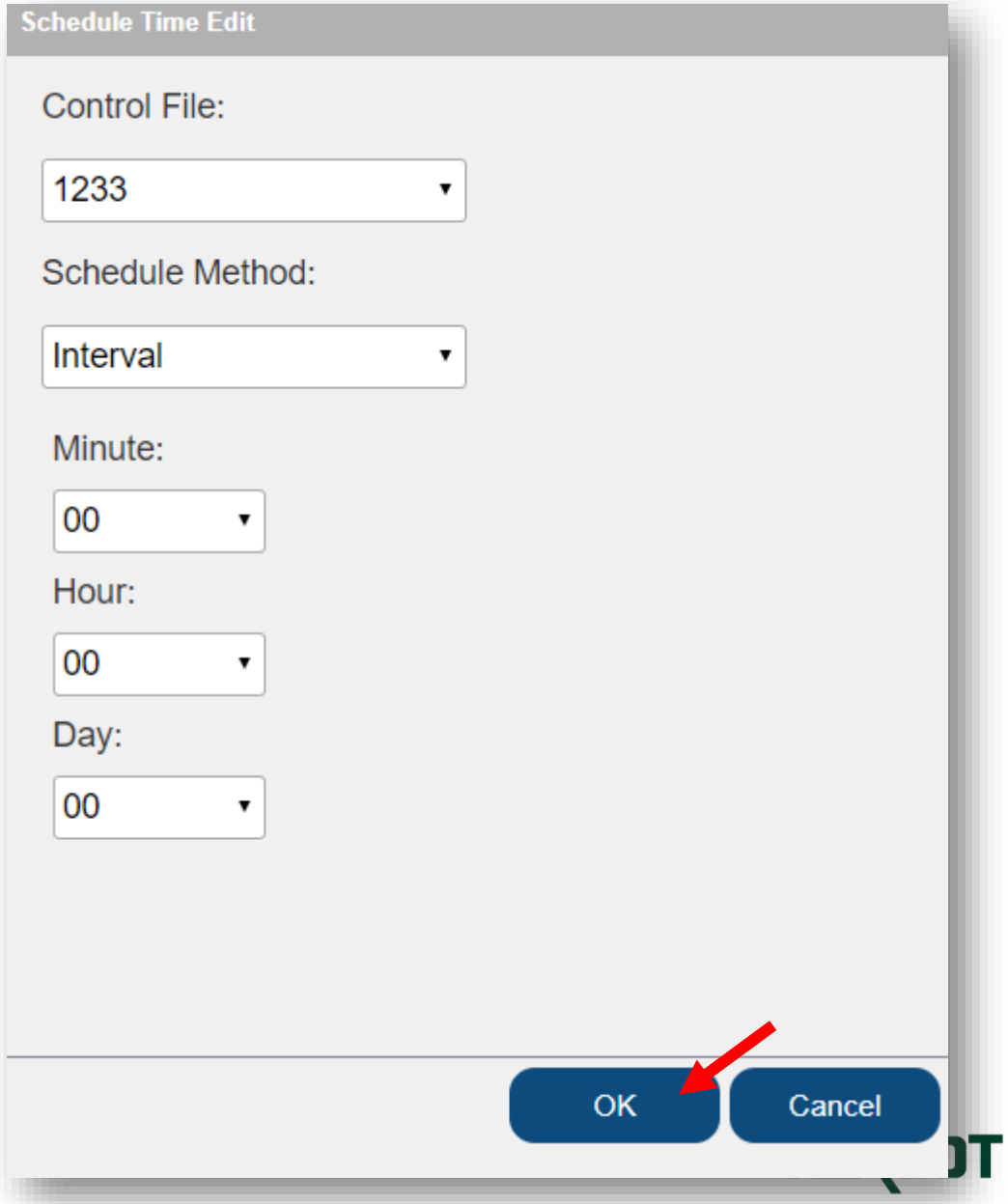
    Schedule method : Choose **interval**

    Minute

    Hour

    Day

    Clicking **OK** to finish



Build Project – Control

- **Control**
  - Scheduler Settings – At an exact time : Play control file once at a specific time

    Control File

    Schedule Method : At an exact time

    Minute

    Hour

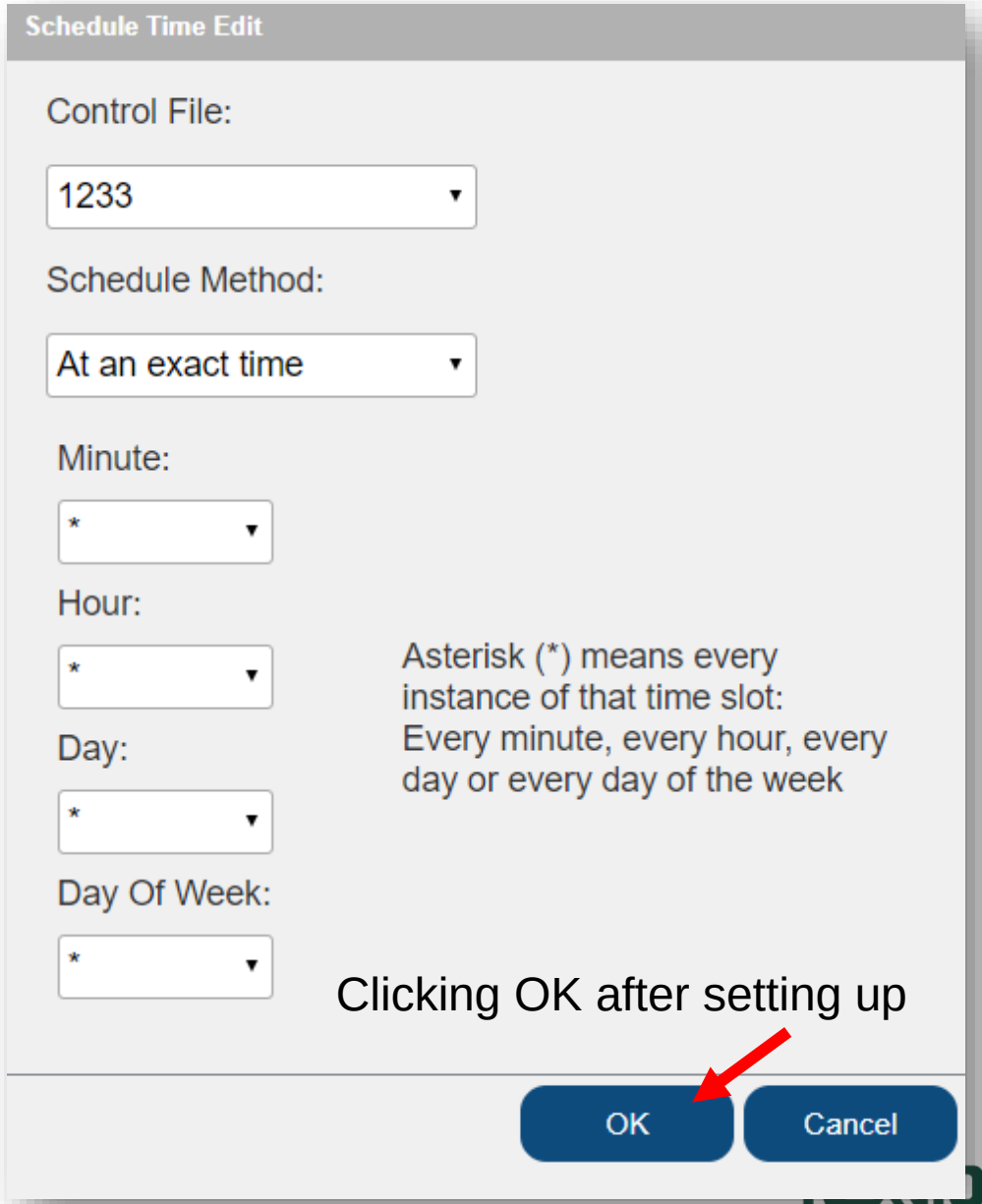
    Day

    Day of Week

    If there is a set Day and Day of Week, the control file will be played only when two conditions are matched.
    Ex : if Day is set to 5, Day of Week is set to 1, then the control file will be played on 5th and Monday every month.

* : Represent each time point in the field

Ex : If settings are minute-*, Hour-12, Day-25, Day of Week-*, then this control file will be repeated every minute at twelve o'clock on 25th every month.

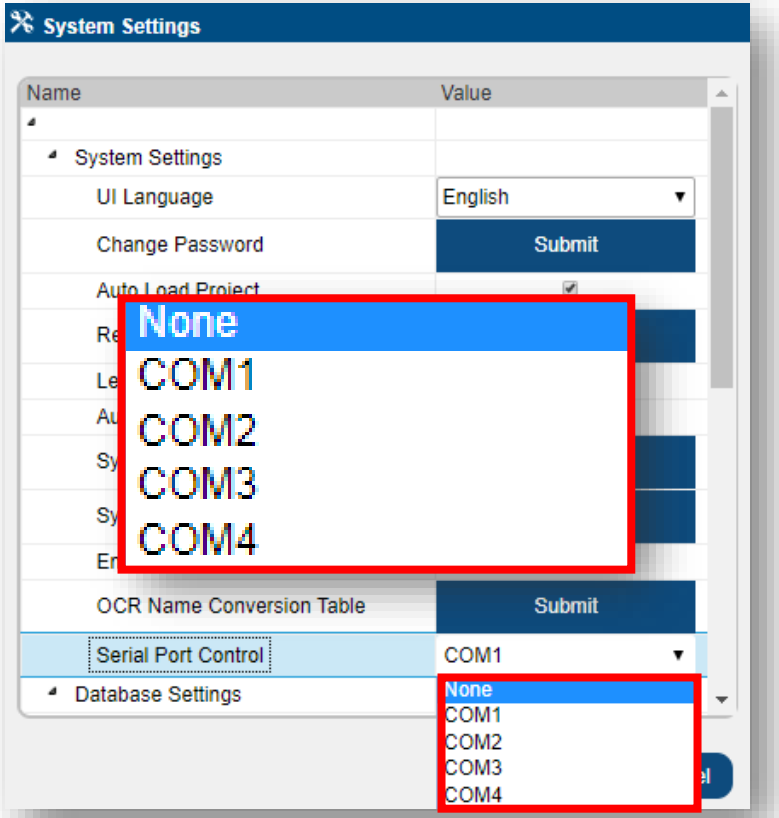


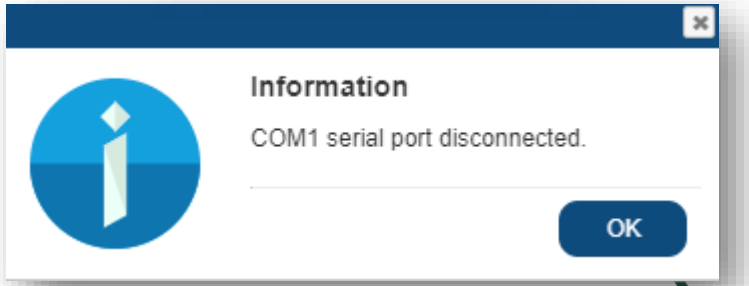
Build Project – Control

- **Serial Port Control**

  Set the serial port in System Settings. The status of serial port is based on connection of supplied COM cable, and it is displayed on the toolbar in the upper-right corner.

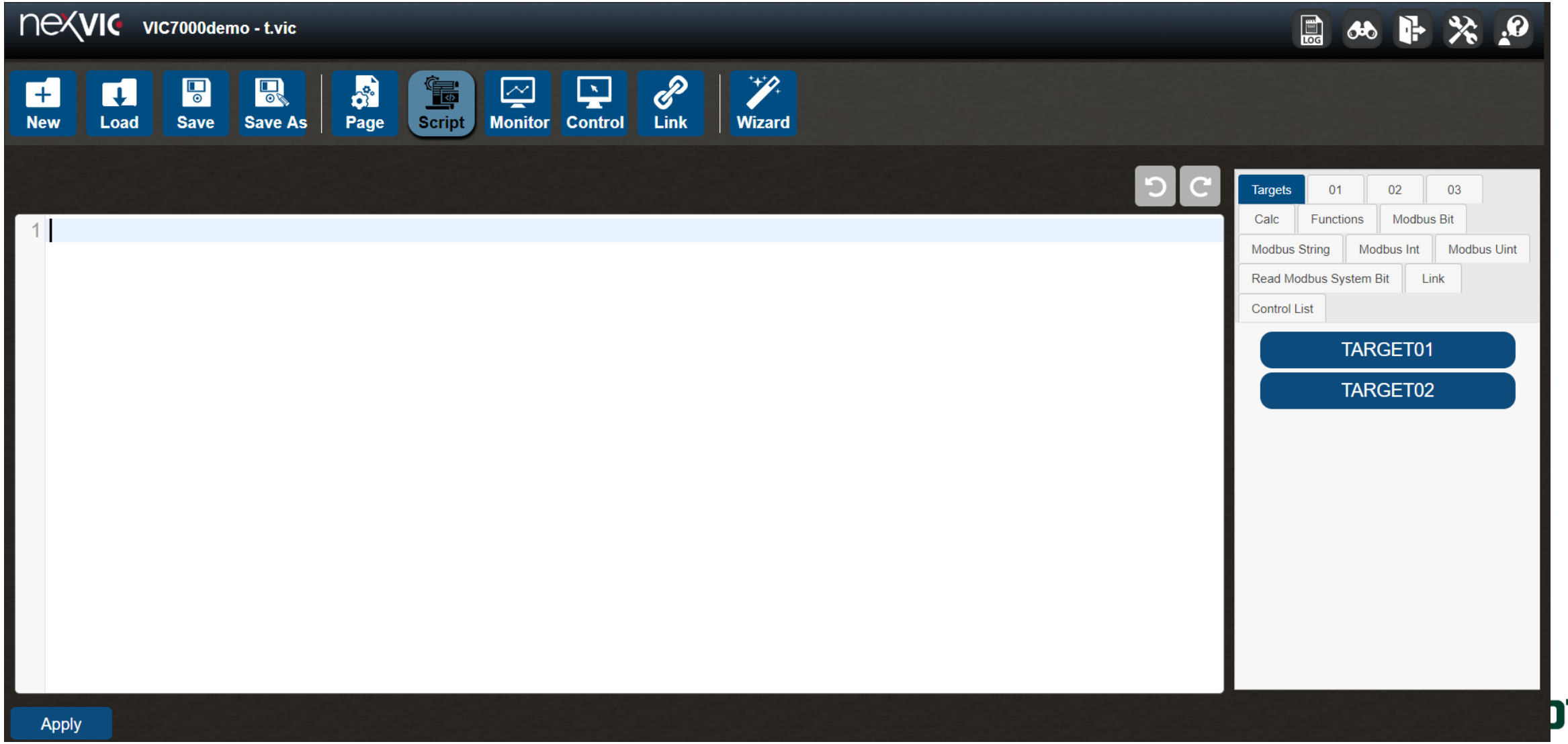
  If it is connected, project and control playing will be played, otherwise it will be paused.





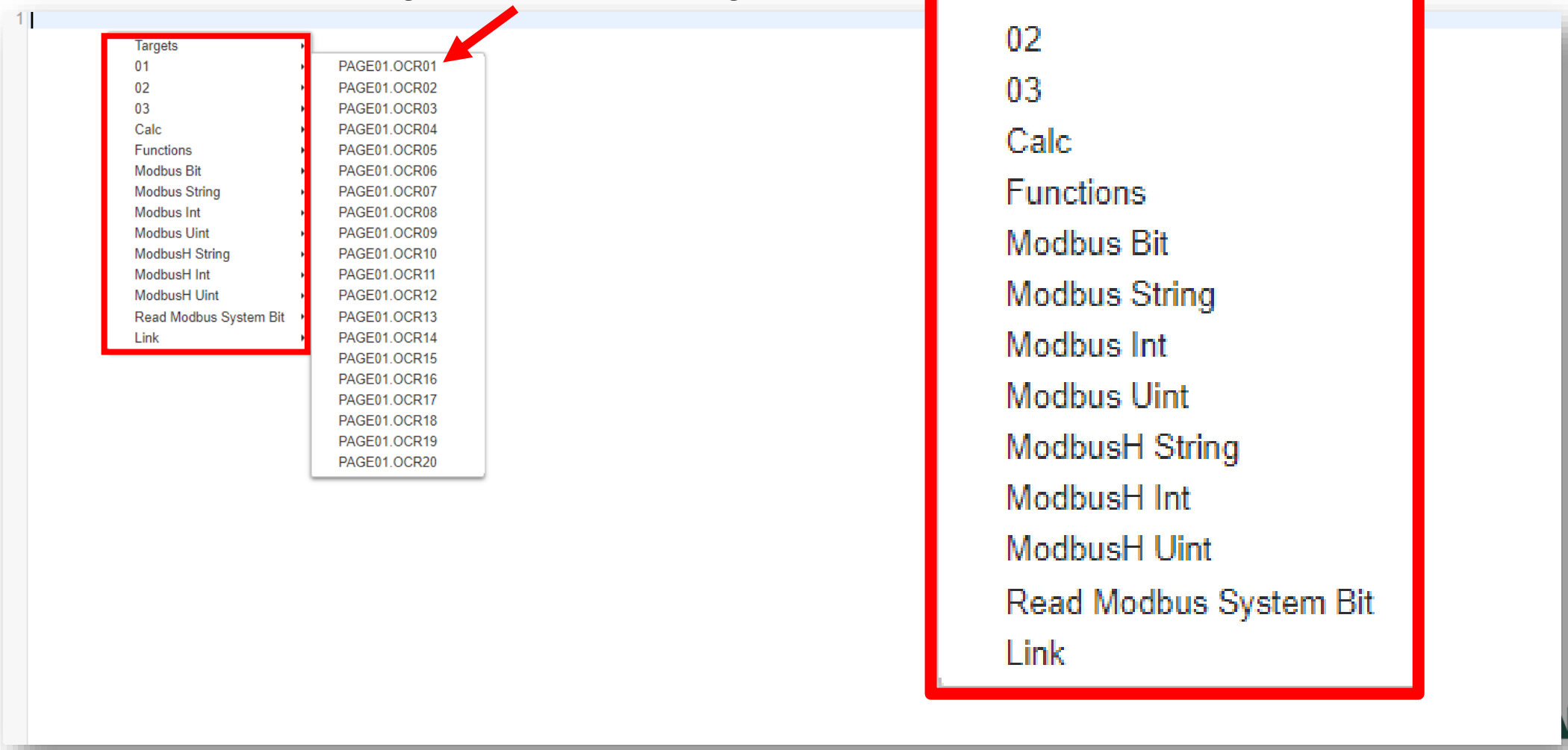
Build Project – Script

- **Script** : Entry to **Script** page



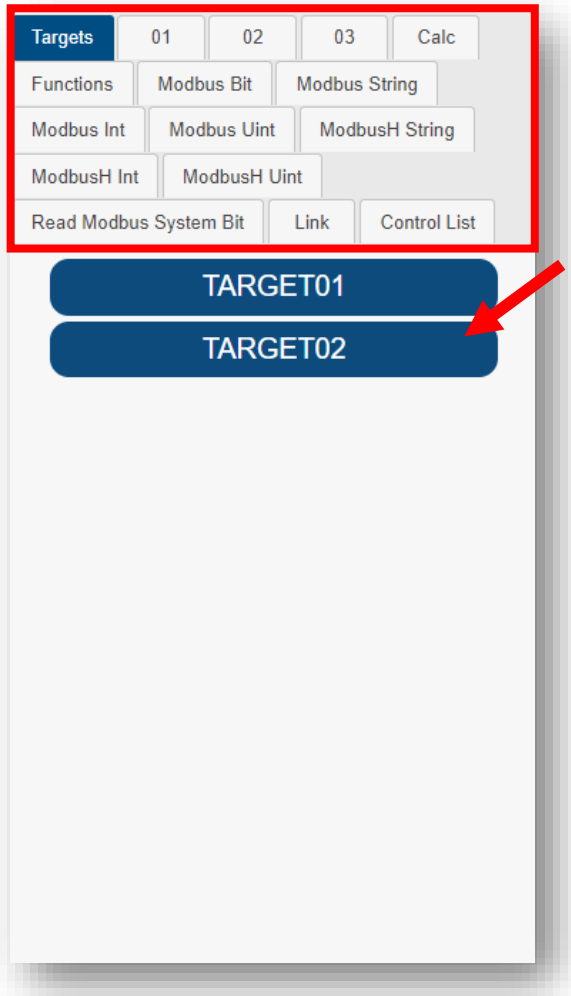
Build Project – Script

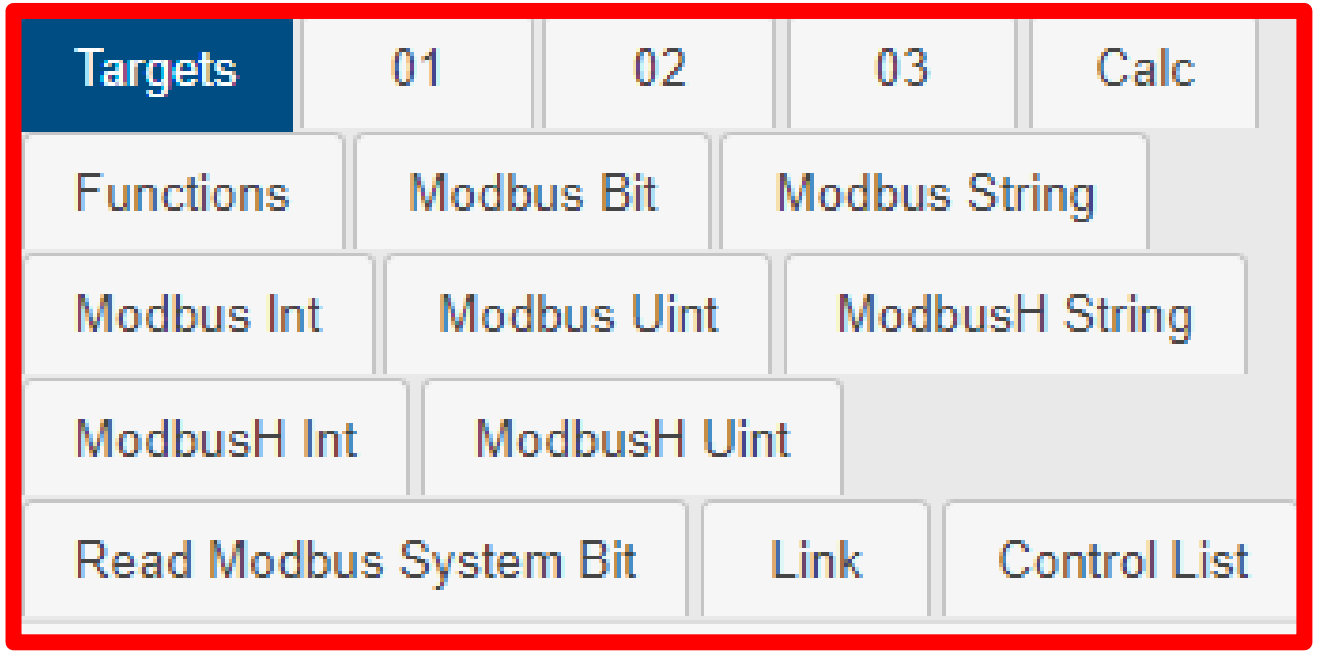
- **Script**
  - Use Parameter : Right-click on the target field



Build Project – Script

- **Script**
  - Use Parameter : Select a Targets button in the right-hand side field





Build Project – Script

- **Script**

Operator	Num & Num	Num & String	String & String
Addition (+)	+	convert number to string, then string add ups	+
Subtraction (-)	-	No action	No action
Multiplication (*)	*	No action	No action
Division (/)	/	No action	No action
Less than (<)	Comparison	convert character to ASCII code, then compare it in order	convert character to ASCII code, then compare it in order
Equal (==)			
Greater than (>)			
Less than or Equal (<=)			
Greater than or Equal (>=)			
Not equal (!=)			

Build Project – Script

- **Script**
  - Functions : Click **Functions** button

    SEND.EMAIL : Send email automatically, see Advanced

    SEND.LINE : Send LINE notify automatically, see Advanced

    SEND.WECHAT : Send WeChat message automatically, see Advanced

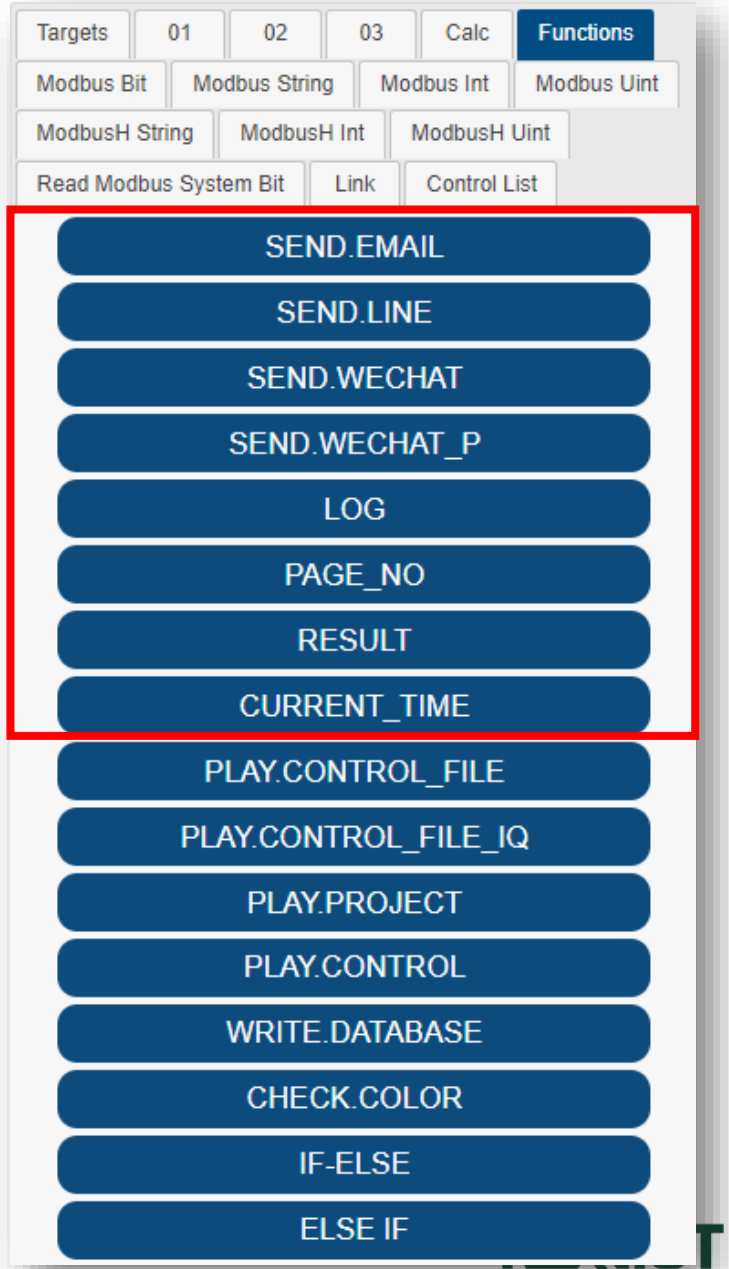
    SEND.WECHAT_P : Send WeChat message automatically, see Advanced

    LOG : Record message in Log

    PAGE_NO : A variable, the used page index currently

    RESULT : Current recognition, 0 = Pass, 1 = NG, 2 = No Matching

    CURRENT_TIME : A variable, current time to execute script



Build Project – Script

- **Script**
  - Functions : Click **Functions** button

    PLAY.CONTROL_FILE : Play specific control file

    PLAY.CONTROL_FILE_IQ : Play specific control file with input and queue property, see Advanced

    PLAY.PROJECT : Play/Stop project

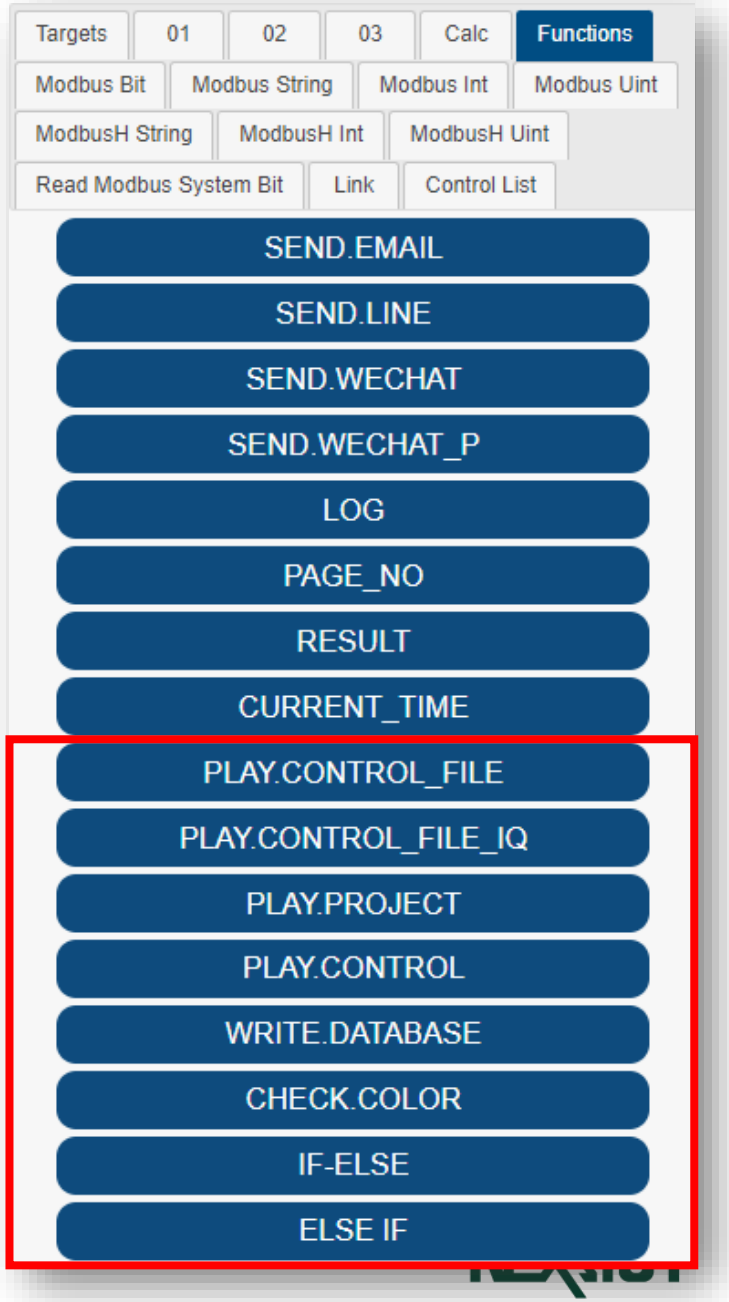
    PLAY.CONTROL : Play/Stop control

    WRITE.DATABASE : Whether recognition data is written into database

    CHECK.COLOR : Check whether a color is twinkling

    IF-ELSE : Conditional

    ELSE IF : Conditional



Build Project – Script

- **Script**
  - LOG : Record message in Log
    1. type : The color of the message recorded in Log, 0 : black, 1 : red, 2 : blue
    2. message : The message that is needed to be recorded (string)
    3. sec : Restrict execution again in a period of time (s)


```
LOG( , , );
```

Build Project – Script

- **Script**
  - PLAY.CONTROL_FILE : Play specific control file
    1. control_file_name : Name of the control file that is about to play.

       The file can be picked from control file list
    2. sec : Restrict execution again in a period of time (s)

*While the current control file is being played, another control file is played, the current file will be stopped and the next file will start immediately.

PLAY.CONTROL_FILE

PLAY.CONTROL_FILE(control_file_name, sec)

PLAY.CONTROL_FILE(,);

Control file list

Build Project – Script

- **Script**
  - PLAY.PROJECT : Play/Stop project
    1. status : It could only be set to 0, means that it will only stop project

PLAY.PROJECT

PLAY.PROJECT(status)

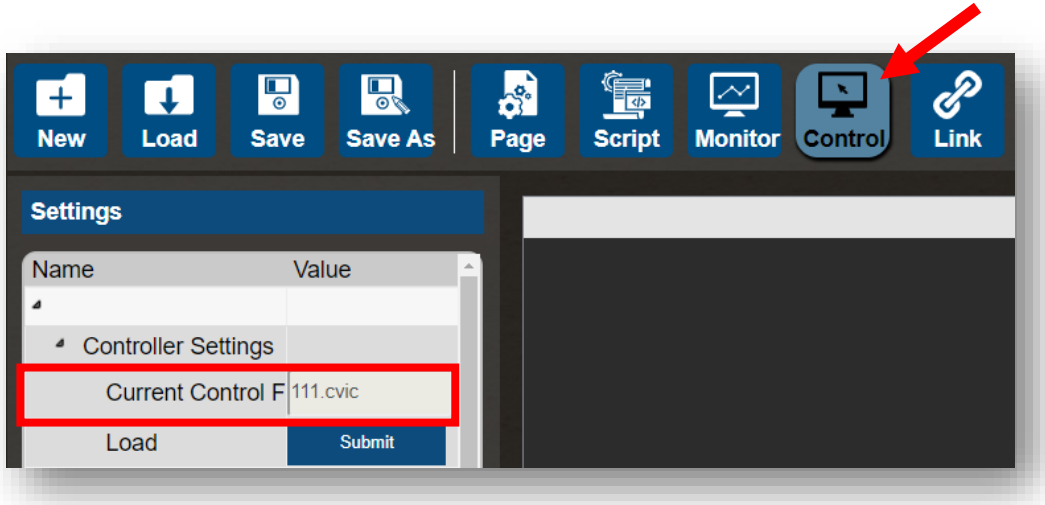
```
PLAY.PROJECT( );
```

Build Project – Script

- **Script**
  - PLAY.CONTROL : Play/Stop control
    1. status : Set the status of control

       0 = Stop current all current controls

       1 = Play the control file set in Control page



PLAY.CONTROL

PLAY.CONTROL(status)

```
PLAY.CONTROL( );
```

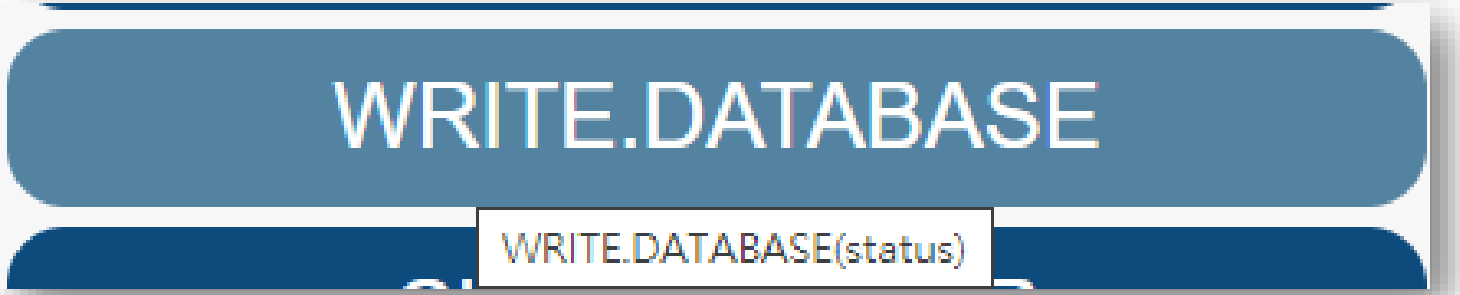
Build Project – Script

- **Script**
  - WRITE.DATABASE : Whether recognition data is written into database

    1. status : Set the status of writing data into database

       0 = Disable writing data into database

       1 = Enable writing data into database




```
WRITE.DATABASE( );
```

Build Project – Script

CHECK.COLOR

CHECK.COLOR(page_color, calc, sec)

- **Script**
  - CHECK.COLOR : Detect whether a COLOR is twinkling
    1. page_color : The color needed to be detected
    2. calc : Store detection results
    3. sec : detection time interval (int)

```
CHECK.COLOR( , , );
```

```
1 CHECK.COLOR(PAGE01.COLOR01,CALC00,10);
```

Detect COLOR01 on PAGE01 that is twinkling in 10 seconds, and the result will be stored in CALC00.

Build Project – Script

- **Script**
  - Apply : After edition is finished, click Apply(ctrl + s) and the script will take effect.

```
3   if(PAGE01.OCR02>=0)
4      CALC00=1;
5   else
6      CALC00=0;
7
8   if(PAGE01.OCR03>=0)
9      CALC01=1;
10  else
11     CALC01=0;
12
13  if(PAGE01.OCR07>=0)
```

Apply | Apply successfully.

Apply | Syntax error at line 15: syntax error, unexpected ELSE

```
17
18  if(PAGE01.OCR08>=0)
19     CALC03=1;
20  else
21     CALC03=0;
22
23  if(PAGE01.OCR012>=0)
```

Apply | Apply successfully.

Build Project – Script

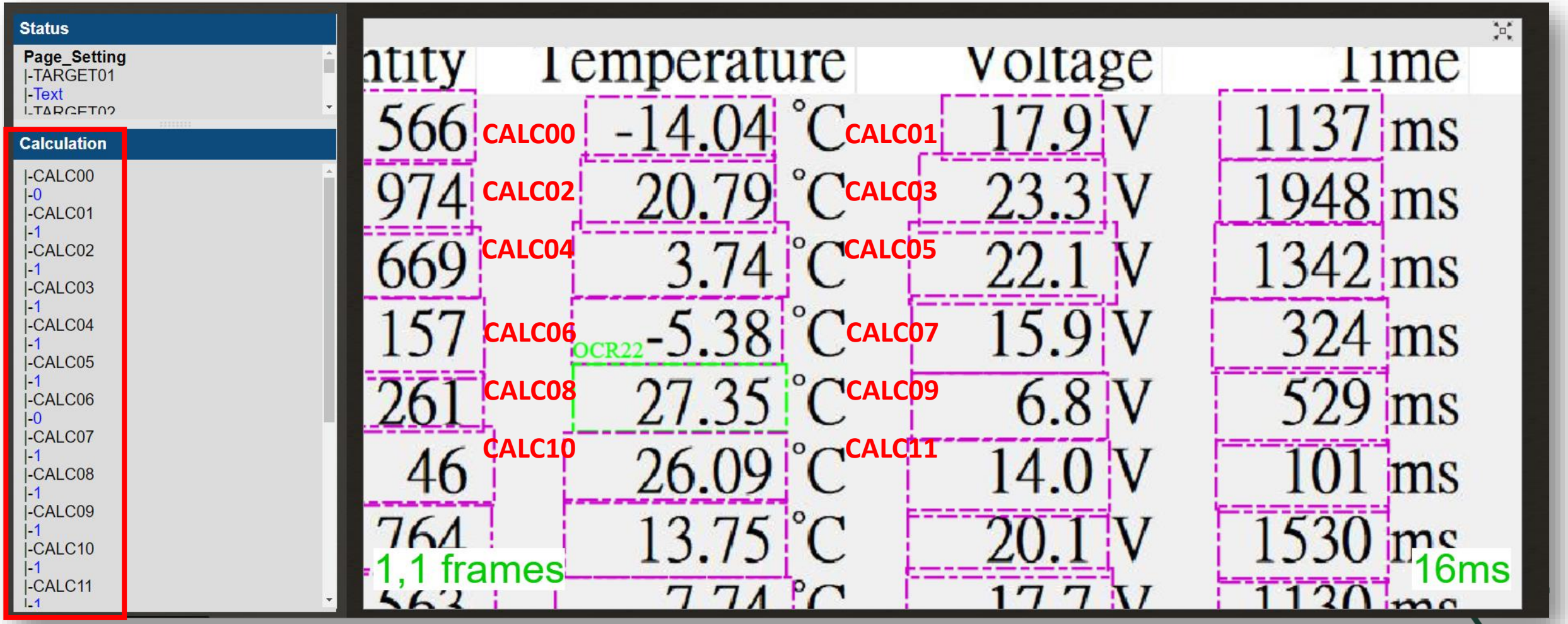
- **Script**
  - Sample : Use Script to determine the CALC value. If the recognition result on PAGE01 is greater than 0, set CALC as 1, otherwise set CALC as 0.

```
if(PAGE01.OCR02>=0)
   CALC00=1;
else
   CALC00=0;

if(PAGE01.OCR03>=0)
   CALC01=1;
else
   CALC01=0;

if(PAGE01.OCR07>=0)
   CALC02=1;
else
   CALC02=0;

if(PAGE01.OCR08>=0)
   CALC03=1;
else
   CALC03=0;

if(PAGE01.OCR012>=0)
```

Apply Apply successfully.

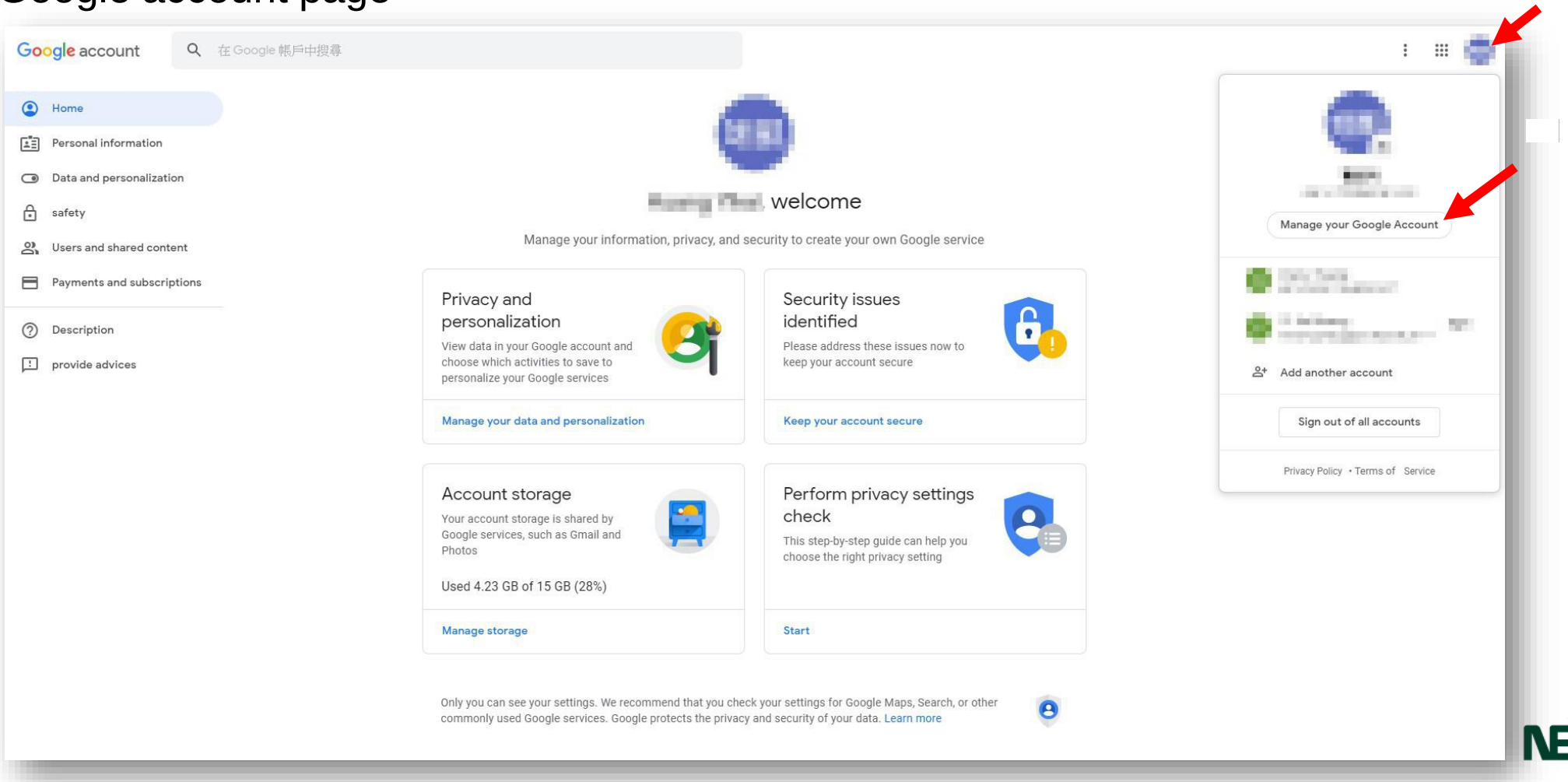
Build Project – Script

- **Script**
  - Simulate : Enter **Monitor** page → Click **Snap** → Check Script execution result



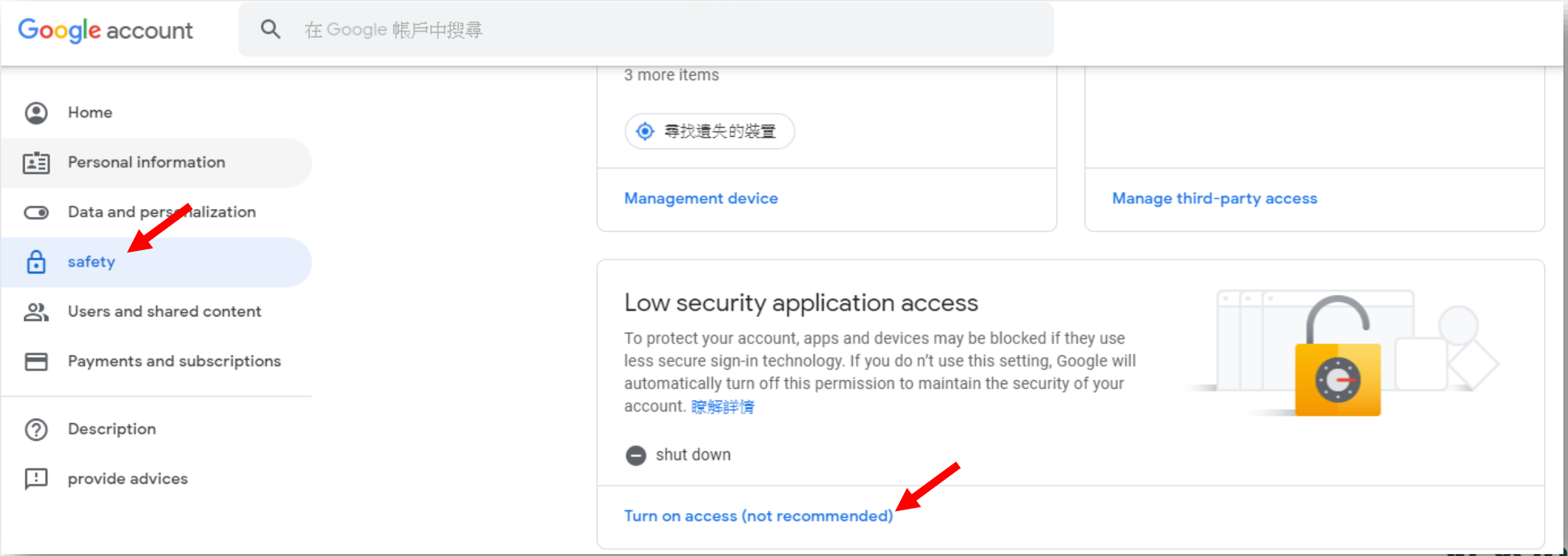
Advanced

- **SMTP**
  - Get Authority : If using Gmail, user needs to **get access authority of email**. First, enter Google account page



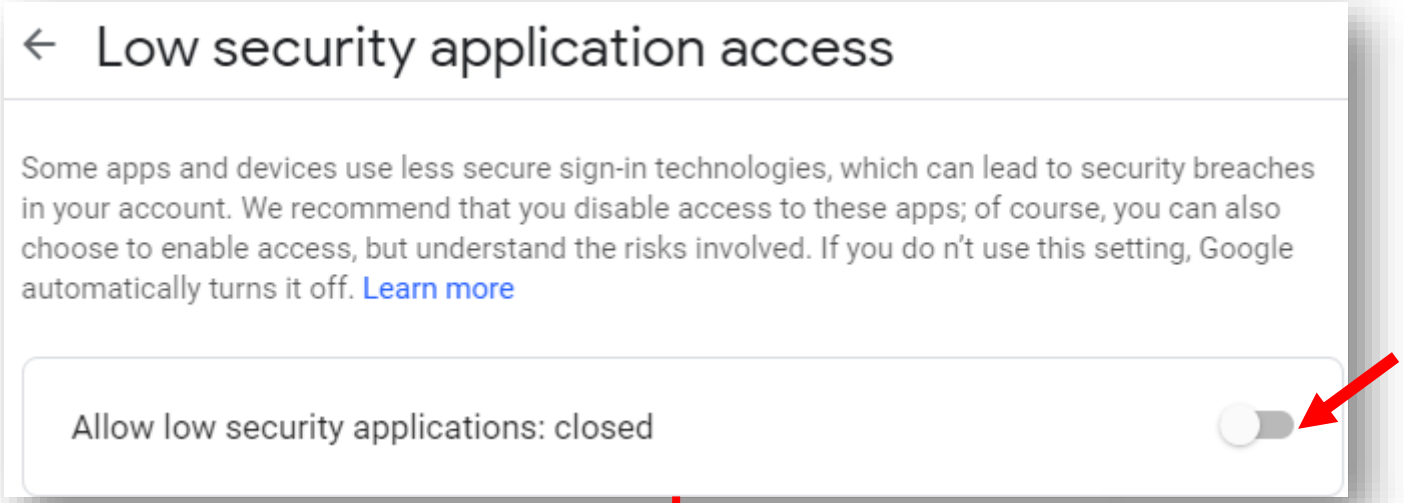
Advanced

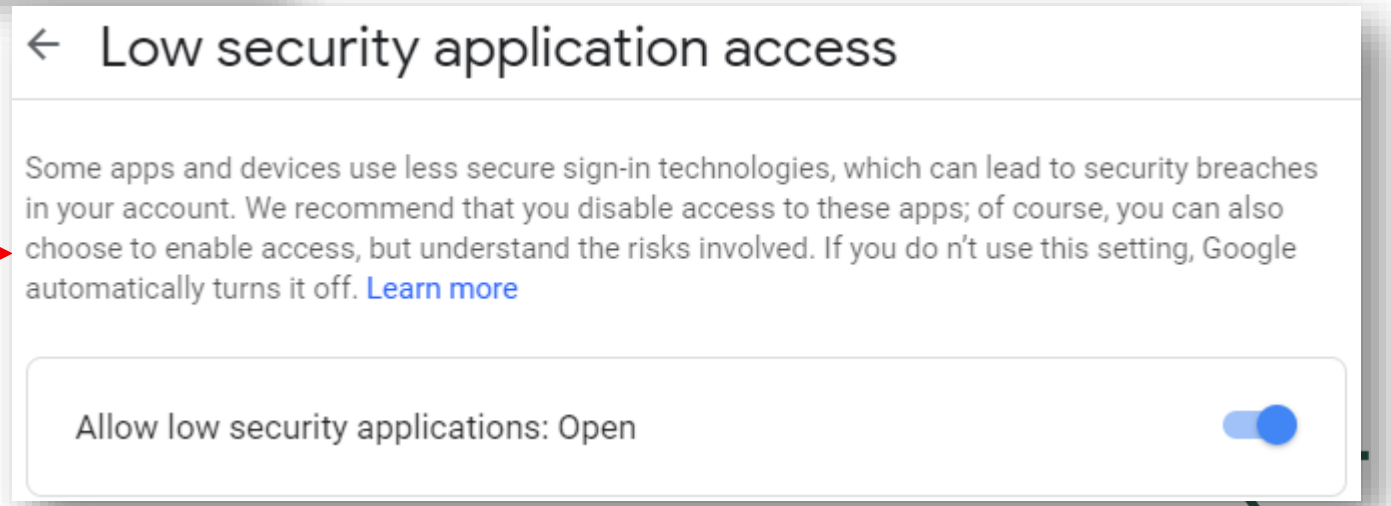
- **SMTP**
  - Get Authority : Enter **safety** page → Find **Low security application access** → Click **Turn on access**



Advanced

- **SMTP**
  - Get Authority : **Allow low security applications**





Advanced

- **SMTP**
  - Get Authority : If using Yahoo mail, user needs to **get access authority of email**. Enter account page for Yahoo homepage.

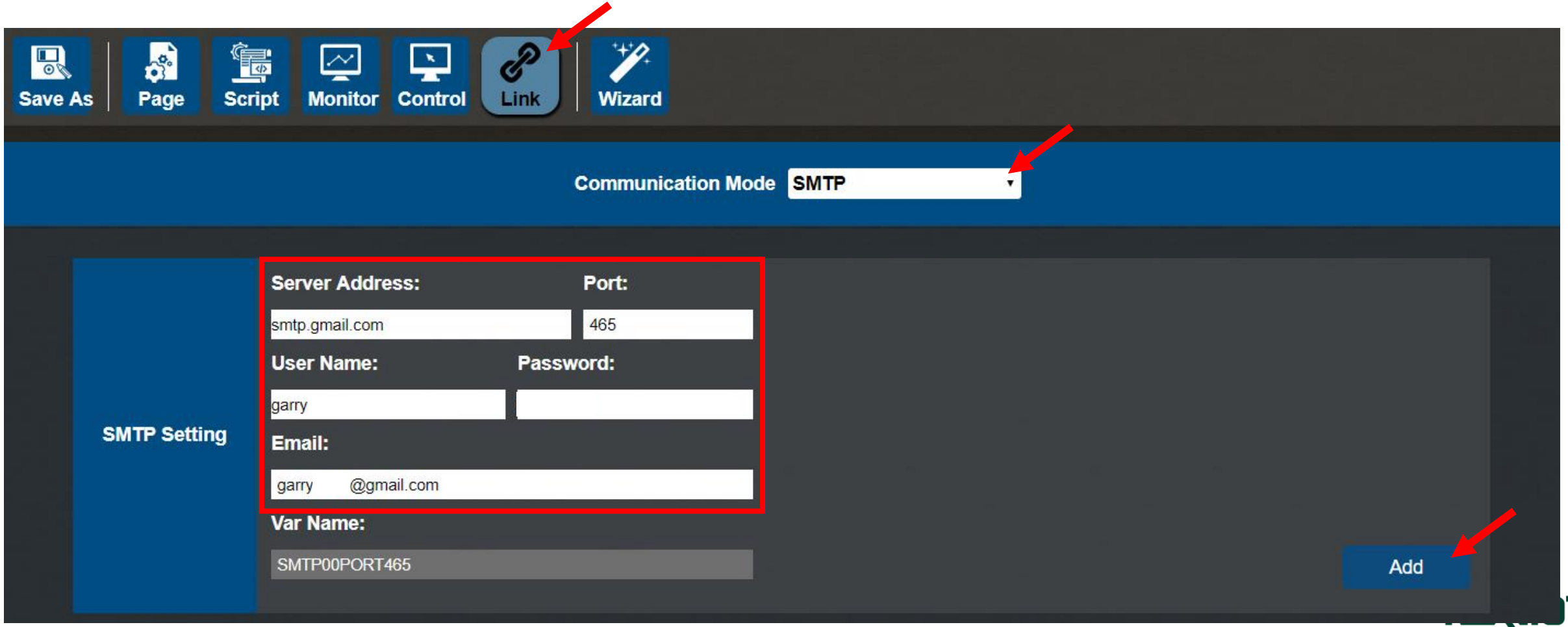
Advanced

- **SMTP**
  - Get Authority : Enter **Security** page → **Find Allow the use of applications with less secure login methods** → Click to Allow access

Advanced

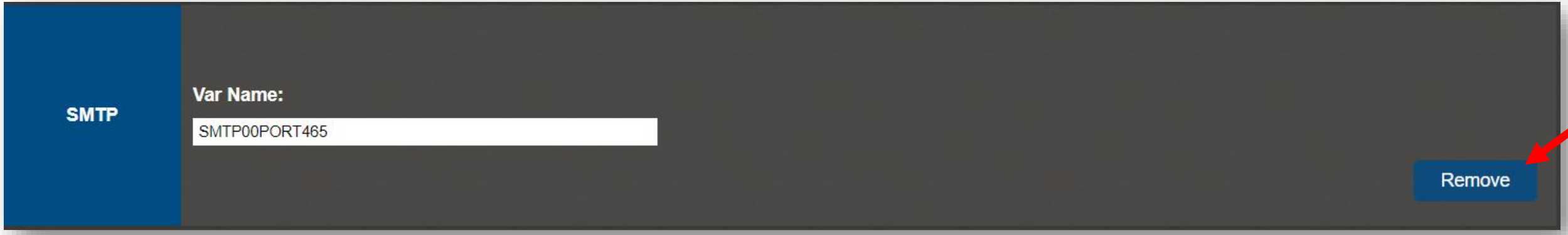
- **SMTP : Send Email Automatically**

  1. Link Settings : Enter **Link** page → Communication Mode : **SMTP** → Enter **Server Address**, **Port**, **User Name**, **Password**, **Email** → Click **Add**



Advanced

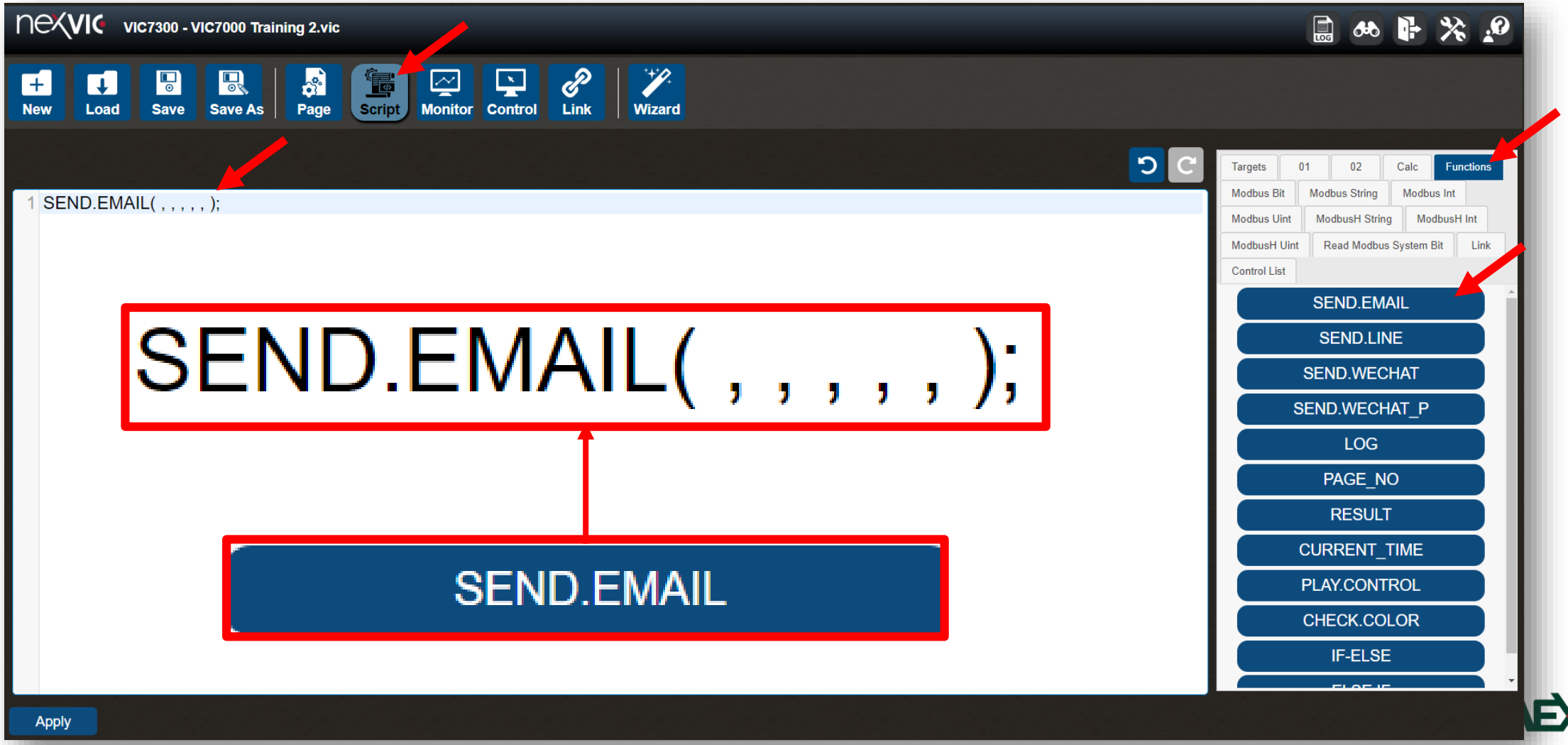
- **SMTP : Send Email Automatically**
  1. Link Settings : Confirm SMTP link which has been added. Or remove it.



Advanced

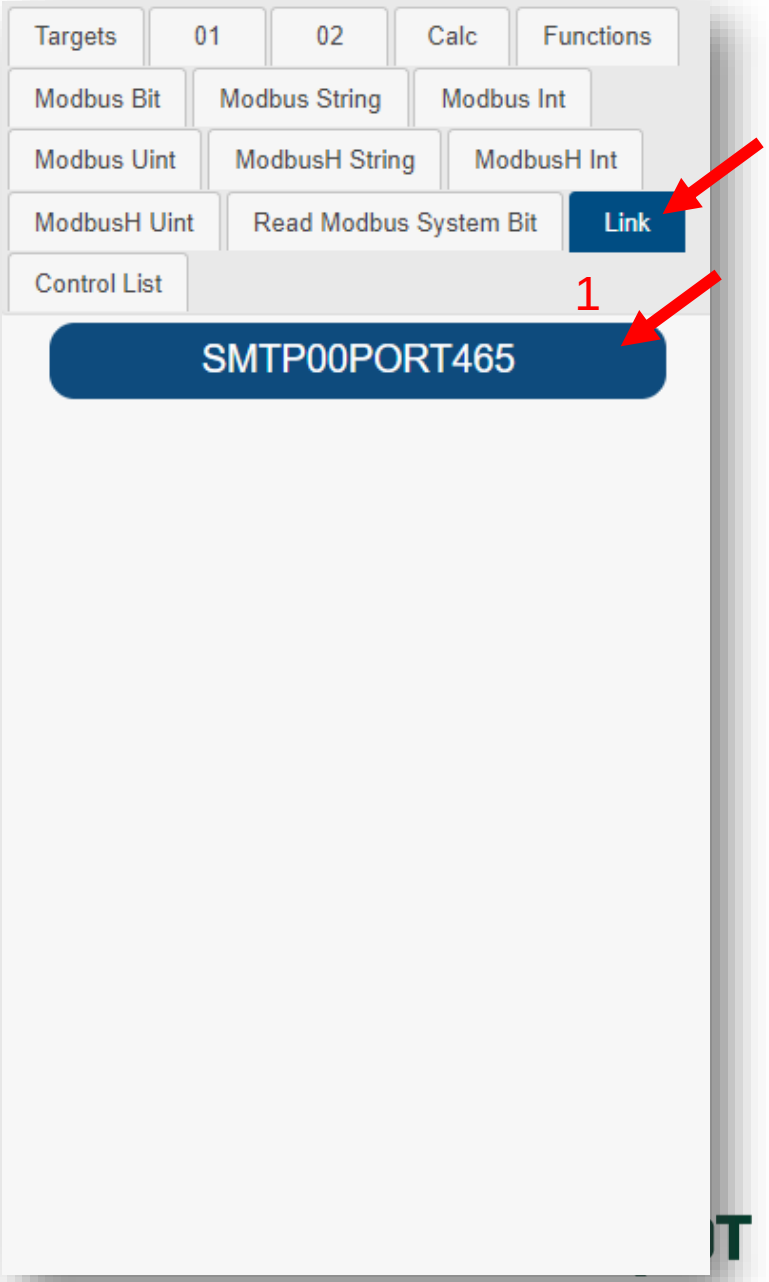
- **SMTP : Send Email Automatically**

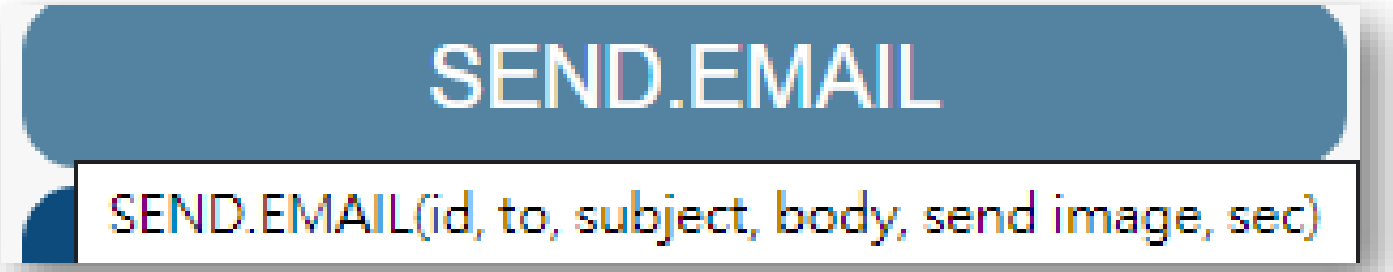
  2. Edit Script : Enter **Script** page → Choose **SEND.EMAIL** in Functions field



Advanced

- **SMTP : Send Email Automatically**
  2. Edit Script : Six parameters
     1. id : Used SMTP link (string)
     2. to : Recipient (string)
     3. subject : mail subject (string)
     4. body : mail body (string)
     5. send image : Whether to transfer image when execute this command (1 : transfer, 0 : not transfer)
     6. sec : Restrict execution again in a period of time (s)





Advanced

- **SMTP : Send Email Automatically**

  2. Edit Script : Edition is finished → Click **Apply** (ctrl +s)

```
1 SEND.EMAIL( "SMTP00PORT465","garry      @gmail.com" ,"test" ,"Hello world!" ,1 ,10 );
```

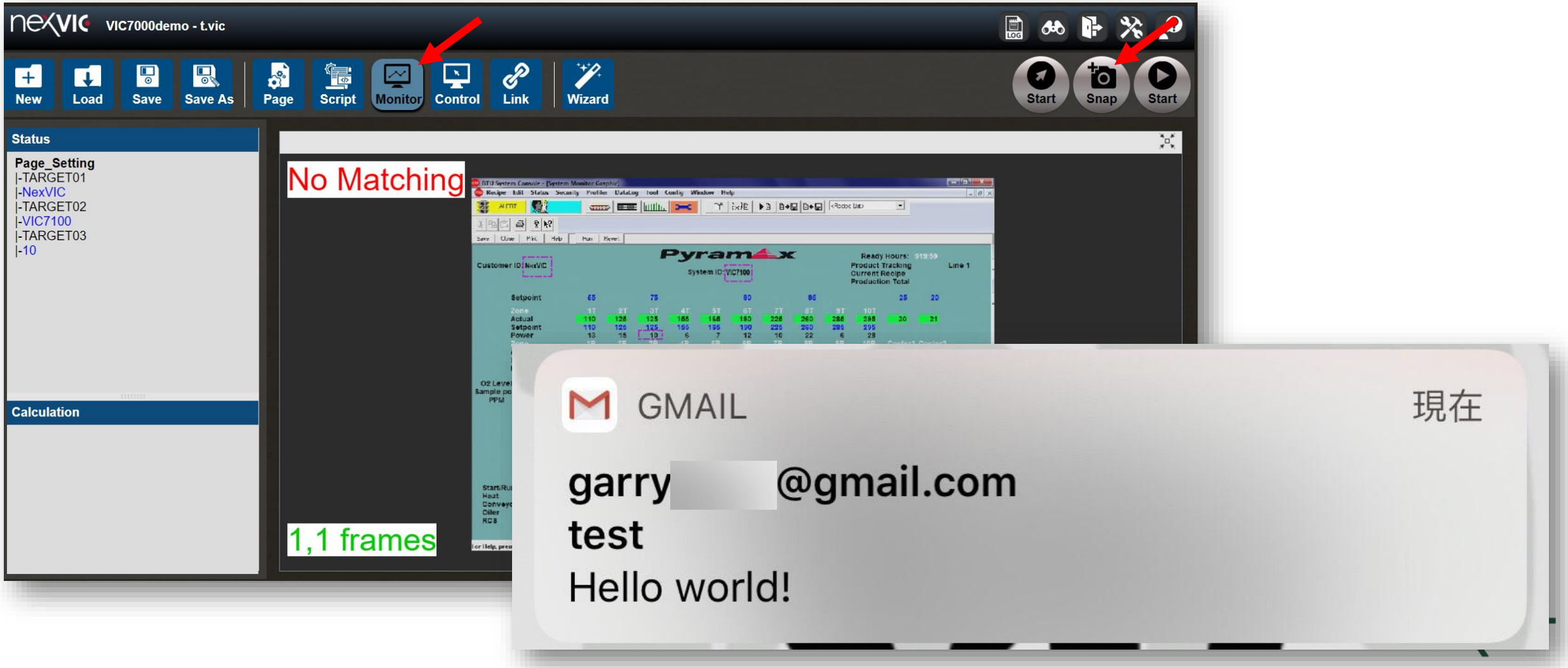
Apply successfully.

Apply | Apply successfully.

Advanced

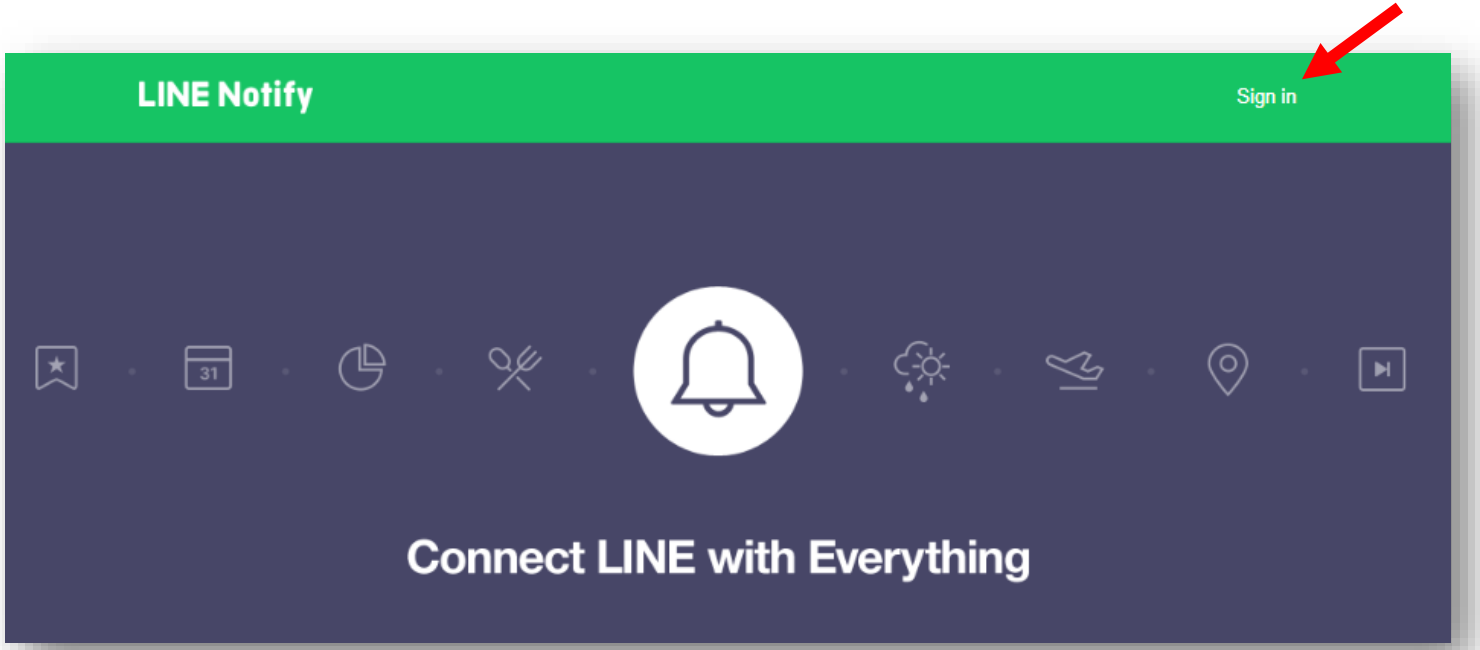
- **SMTP : Send Email Automatically**

  3. Simulate : Enter **Monitor** page → Click **Snap** → Check whether there is a mail



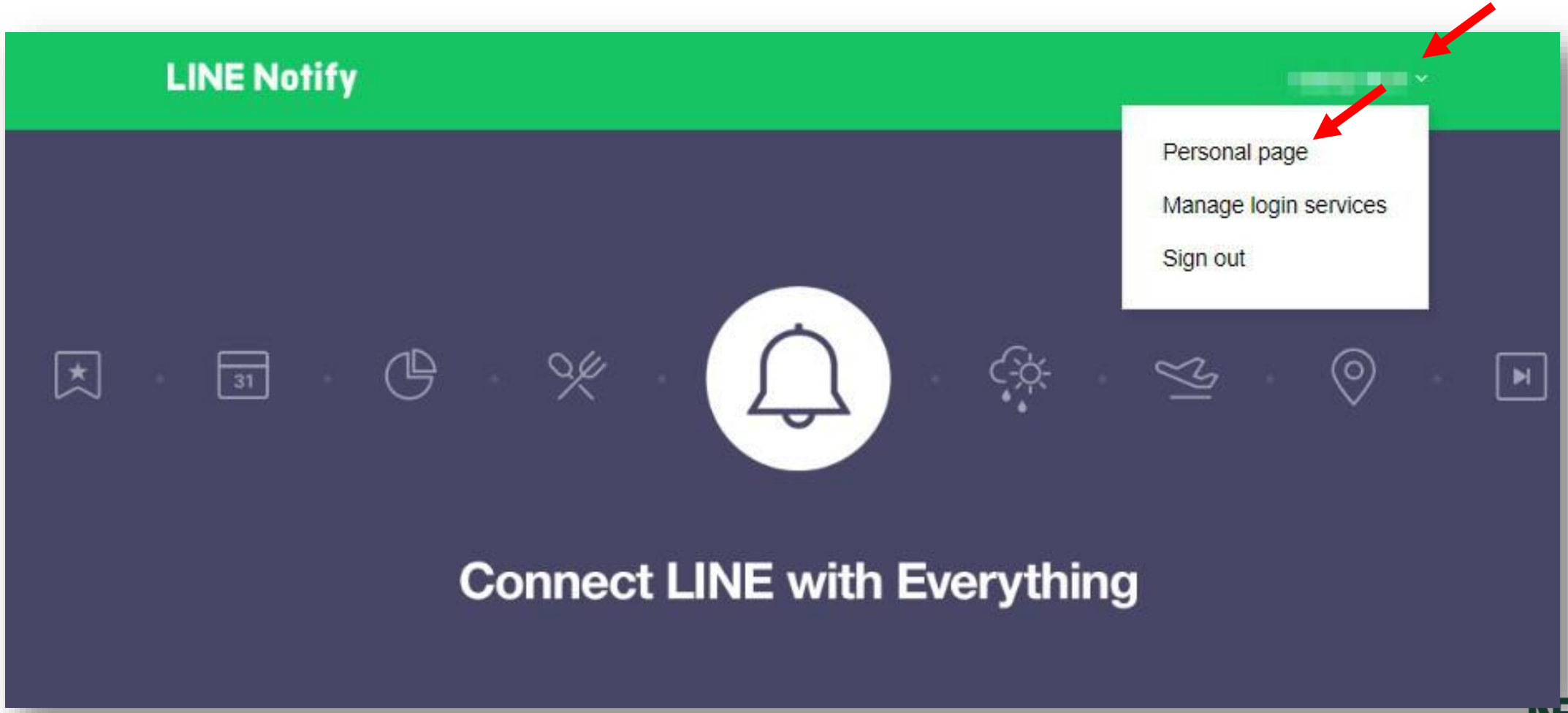
Advanced

- **Line Notify**
  1. Get token : Go to the website of Line Notify (https://notify-bot.line.me/zh_TW/) → Click **Sign In** → Enter email account name and password



Advanced

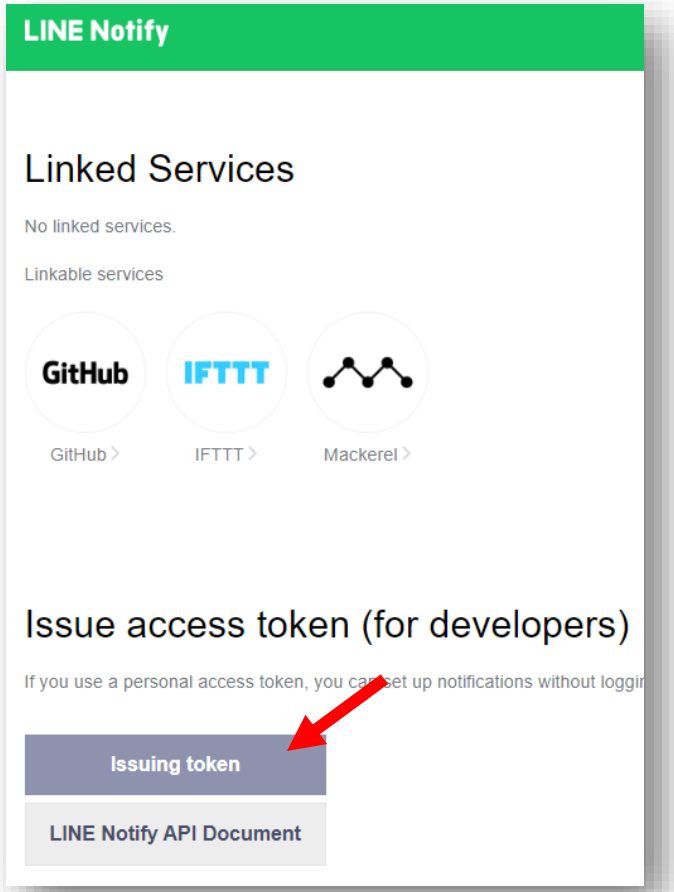
- **Line Notify**
  1. Get token : Click **account name** → Click **Personal page**

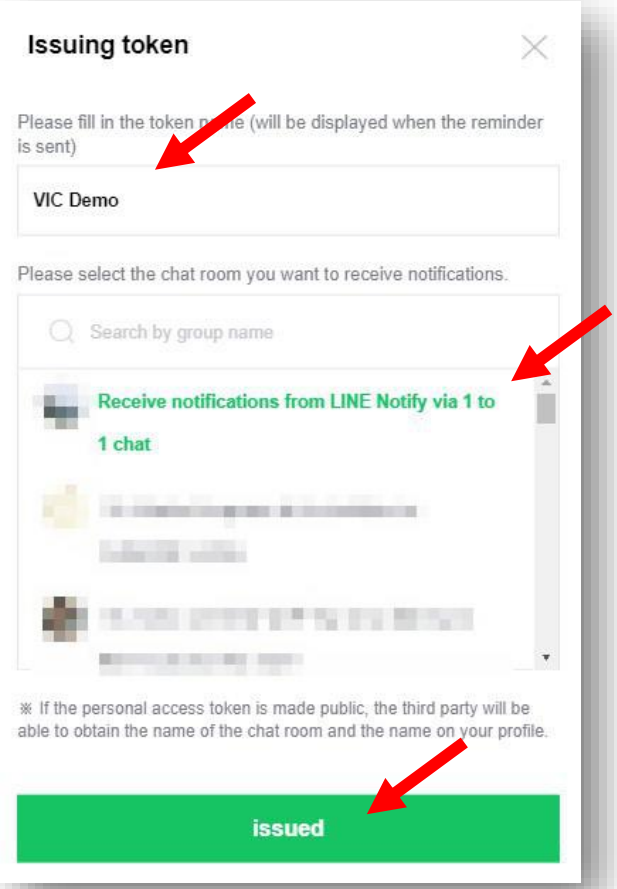


Advanced

- **Line Notify**

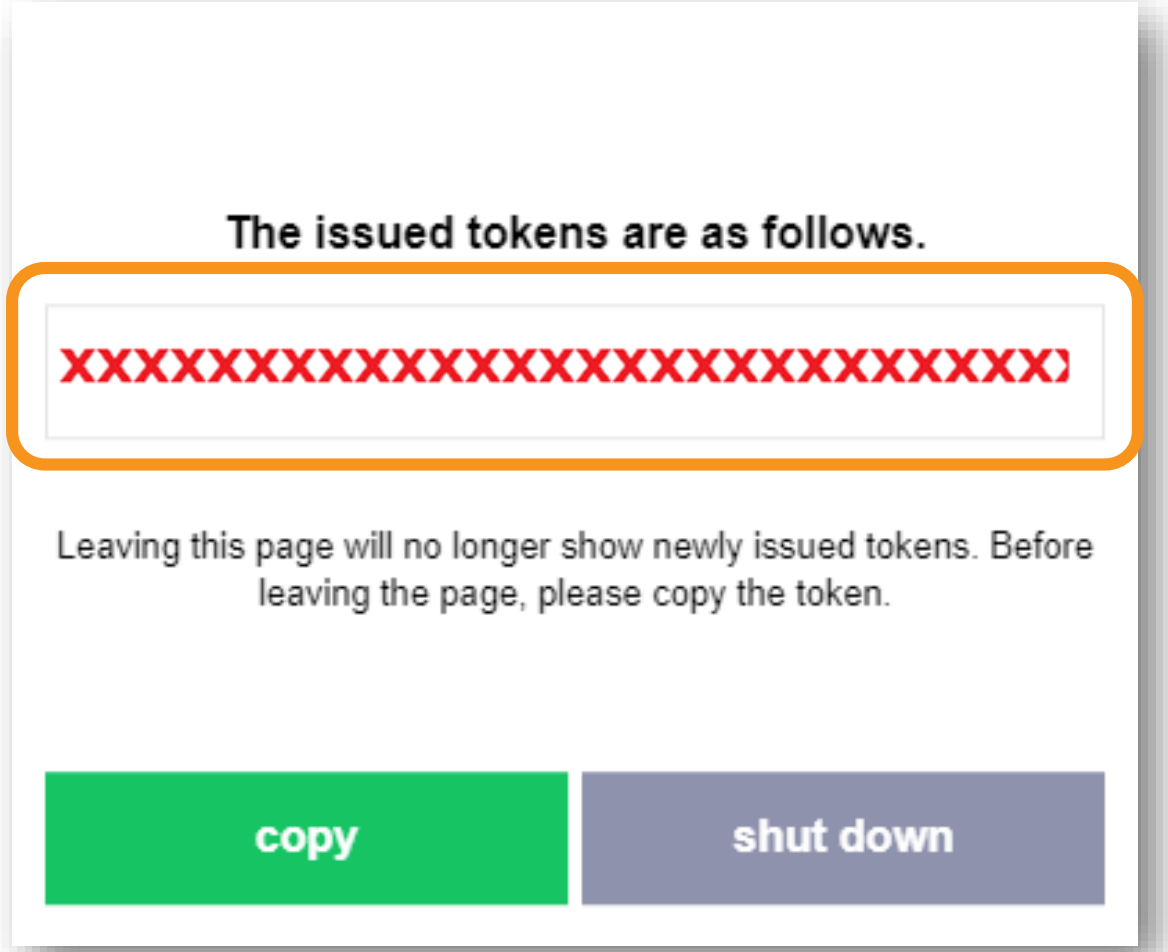
  1. Get token : Click **Issuing token** → Enter Name of token → Choose the chatroom which will receive message → Click **Issued**





Advanced

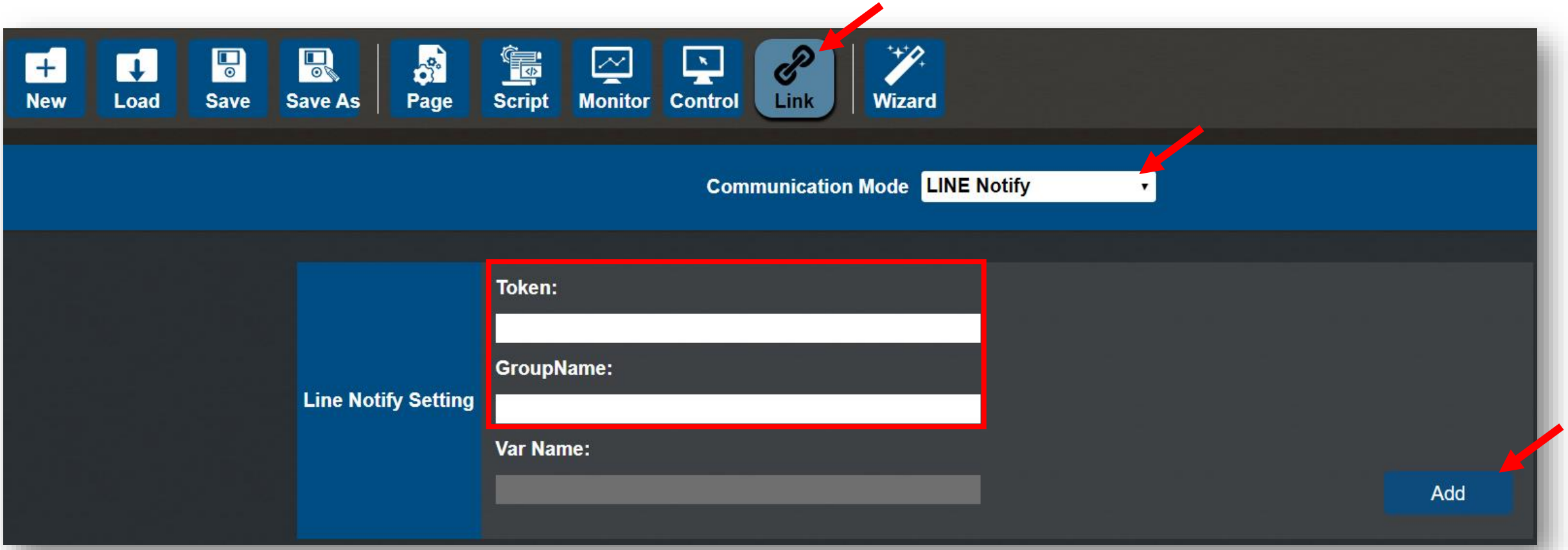
- **Line Notify**
  1. Get token : Please copy the issued token



Advanced

- **Line Notify**

  2. Link Settings : Enter **Link** page → Communication Mode : **LINE Notify** → Enter **Token** and custom **GroupName** → Click **Add**



Advanced

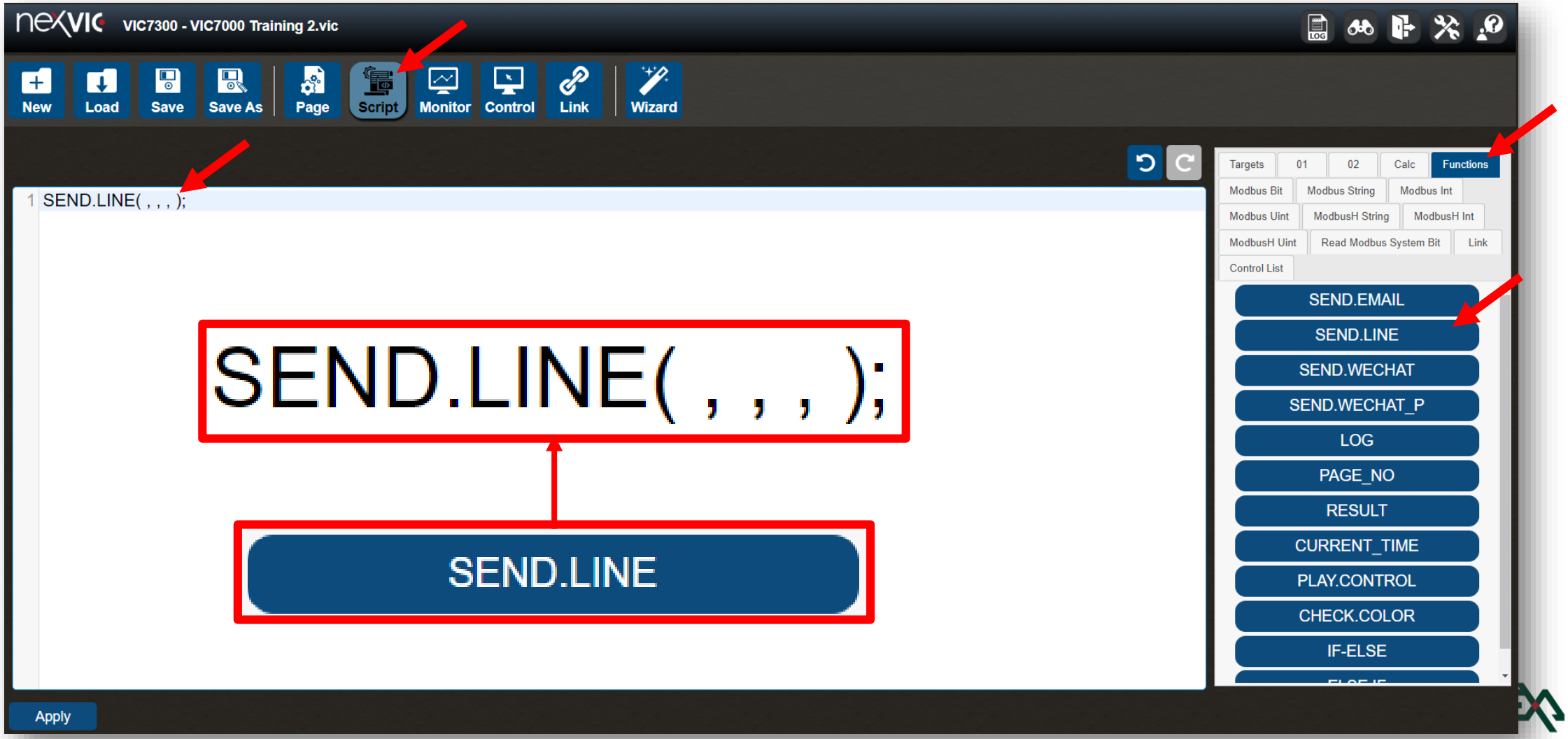
- **Line Notify**

  2. Link Settings : Confirm the LINE Notify link which has been added. Or remove it.

Advanced

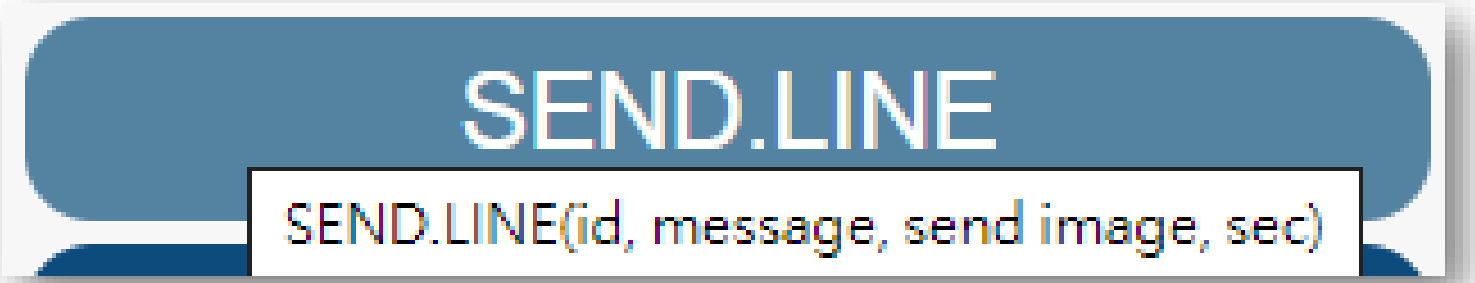
- **Line Notify**

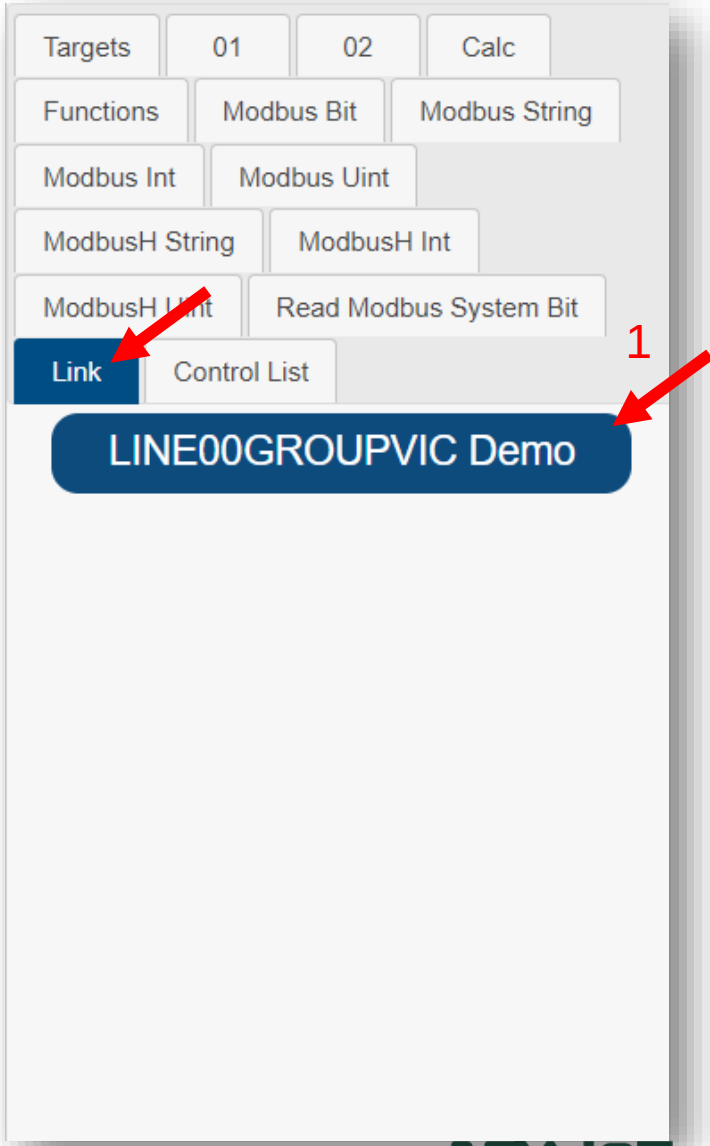
3. Edit Script : Enter **Script** page → Choose **SEND.LINE** in Functions field



Advanced

- **Line Notify**
  3. Edit Script : Four parameters
     1. id : LINE Notify link (string)
     2. message : The message that is needed to be sent (string)
     3. send image : Whether to transfer image when execute this command (1 : transfer, 0 : not transfer)
     4. sec : Restrict execution again in a period of time (s)

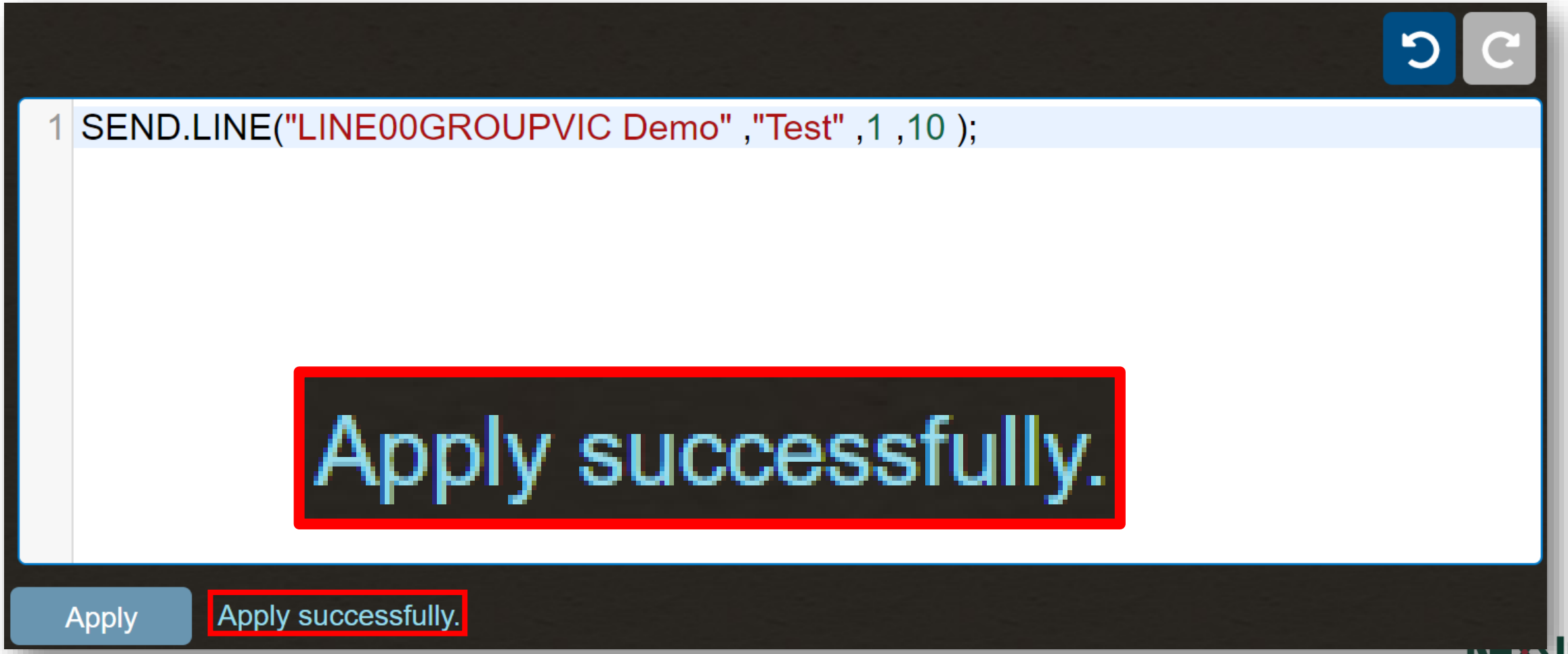




Advanced

- **Line Notify**

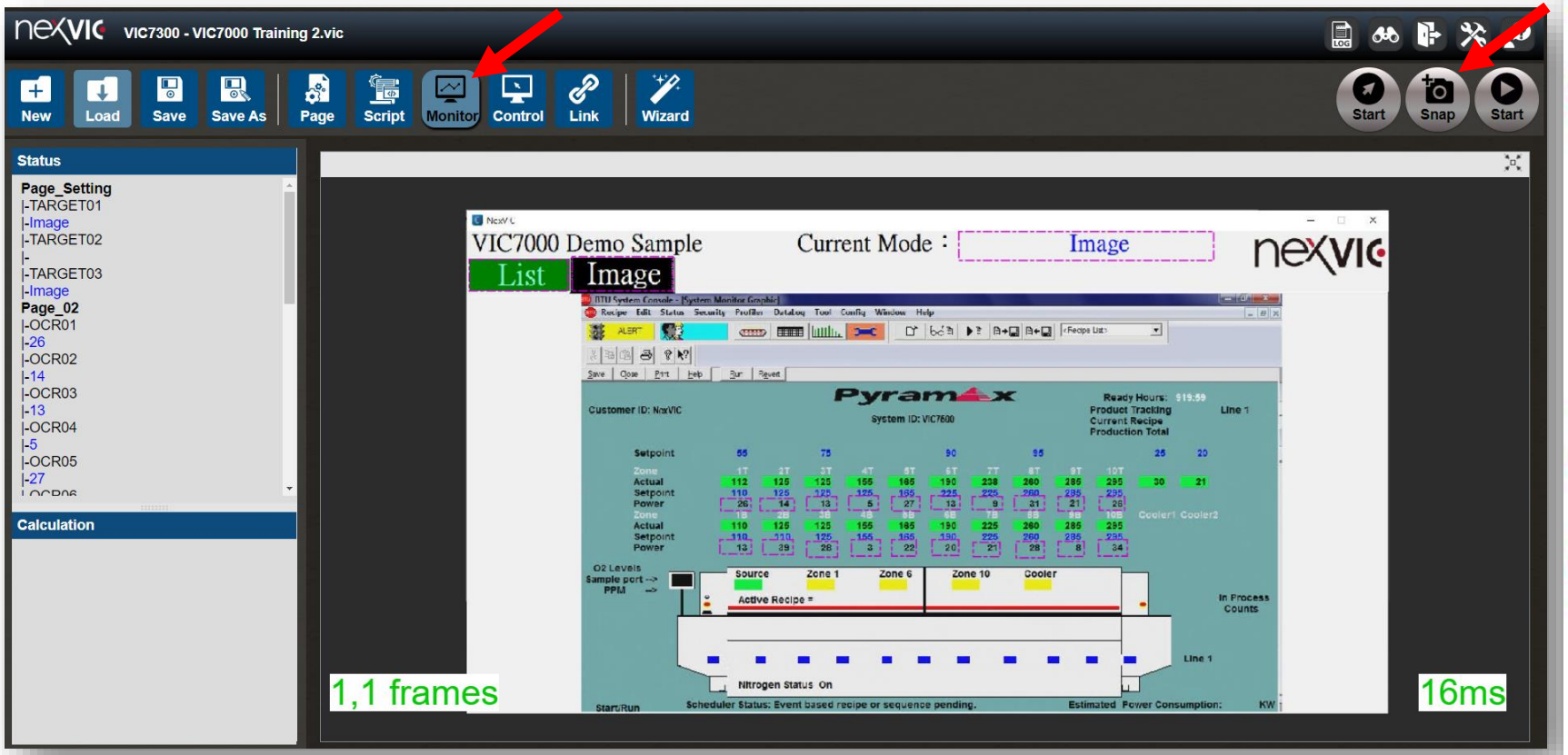
  3. Edit Script : Edition is finished → Click **Apply** (ctrl +s)

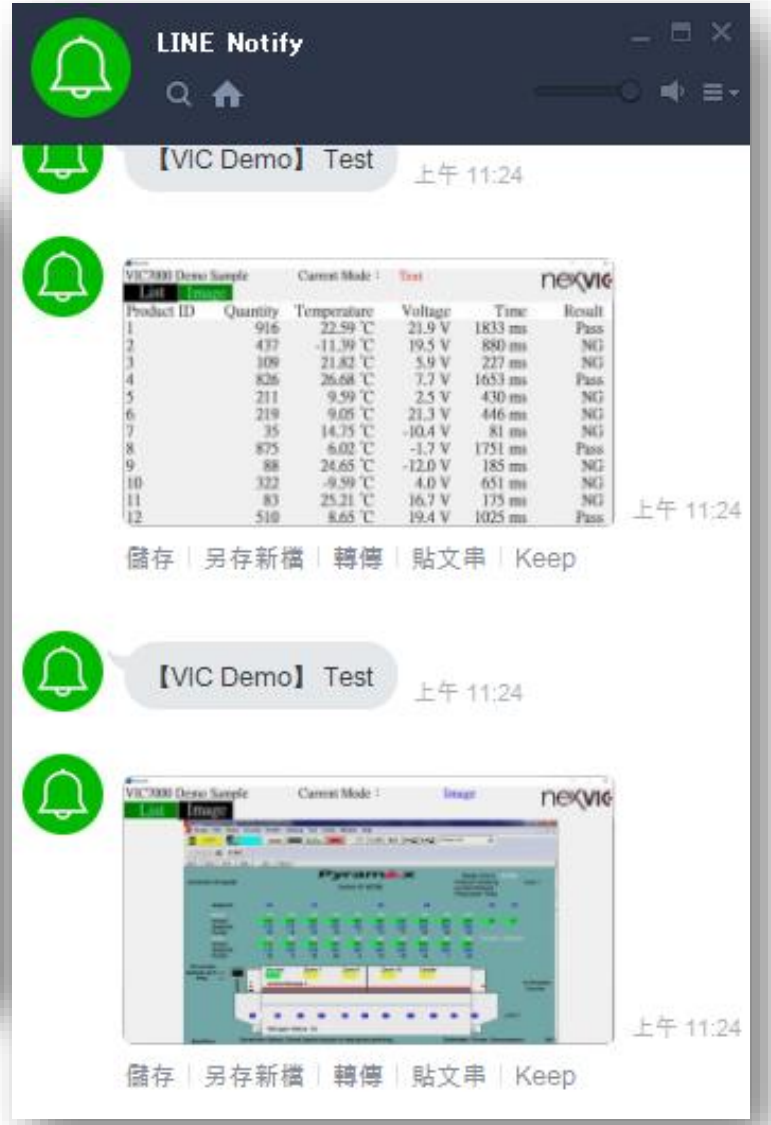


Advanced

- **Line Notify**

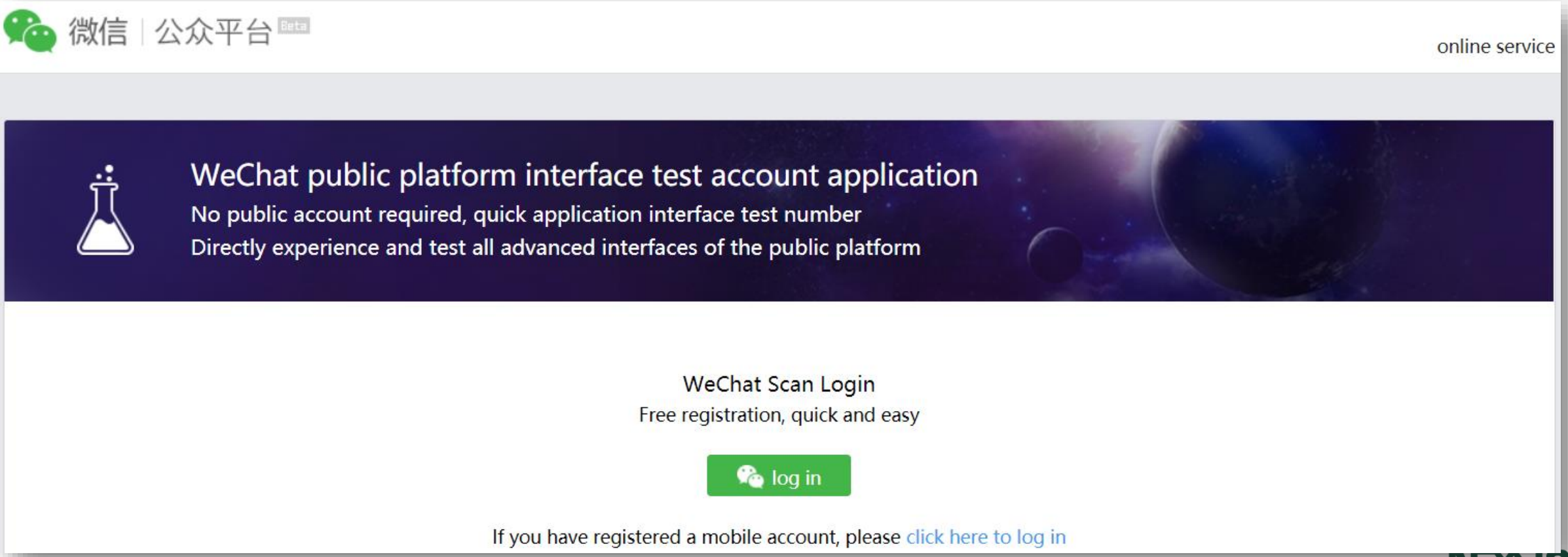
  4. Simulate : Enter **Monitor** page → Click **Snap** → Check if there is a message in LINE





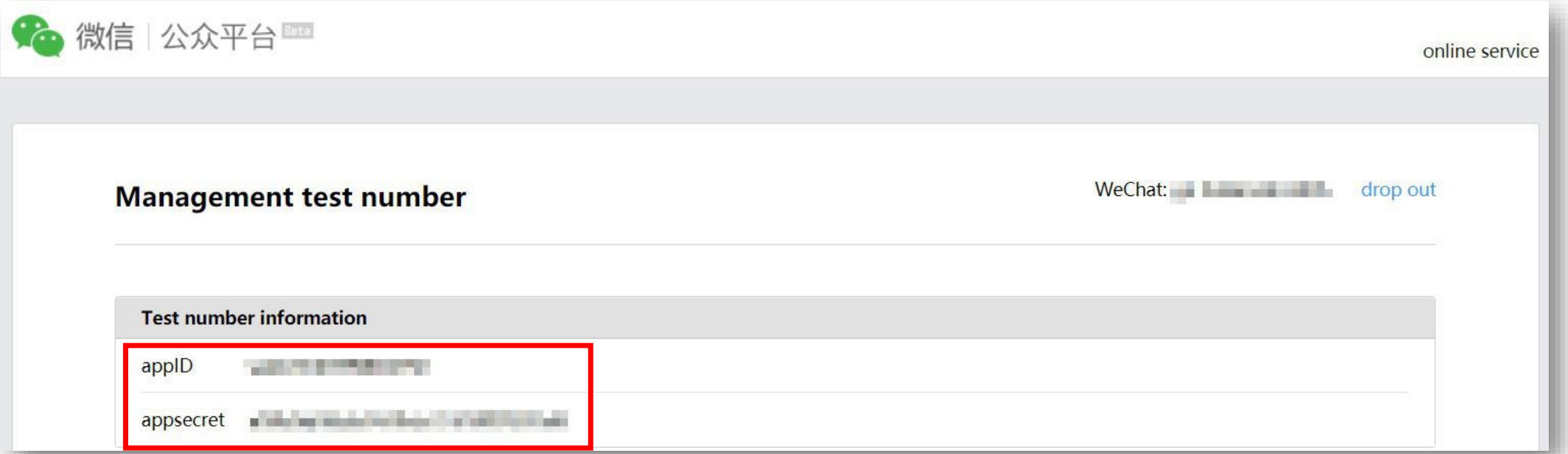
Advanced

- **WeChat**
  1. Get Information : Go to WeChat public platform website(https://mp.weixin.qq.com/debug/cgi-bin/sandbox?t=sandbox/login) → Click **log in** → Use cell phone to scan QR code and login



Advanced

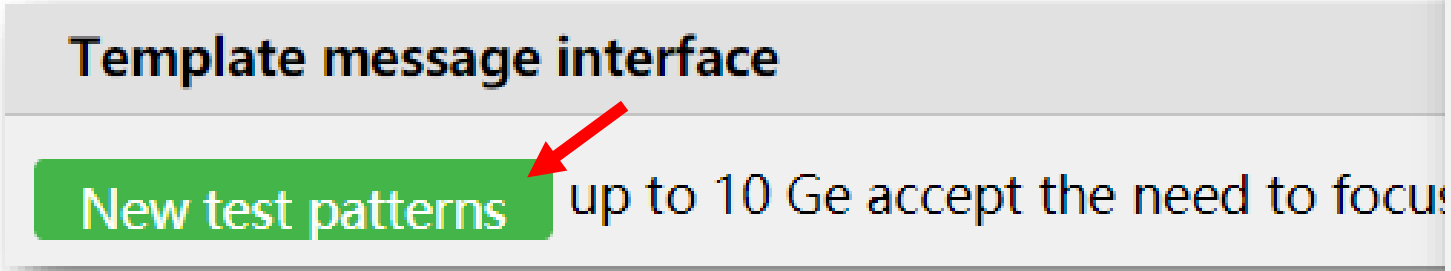
- **WeChat**
  1. Get Information : After logging in, user needs to copy **appID** and **appsecret**

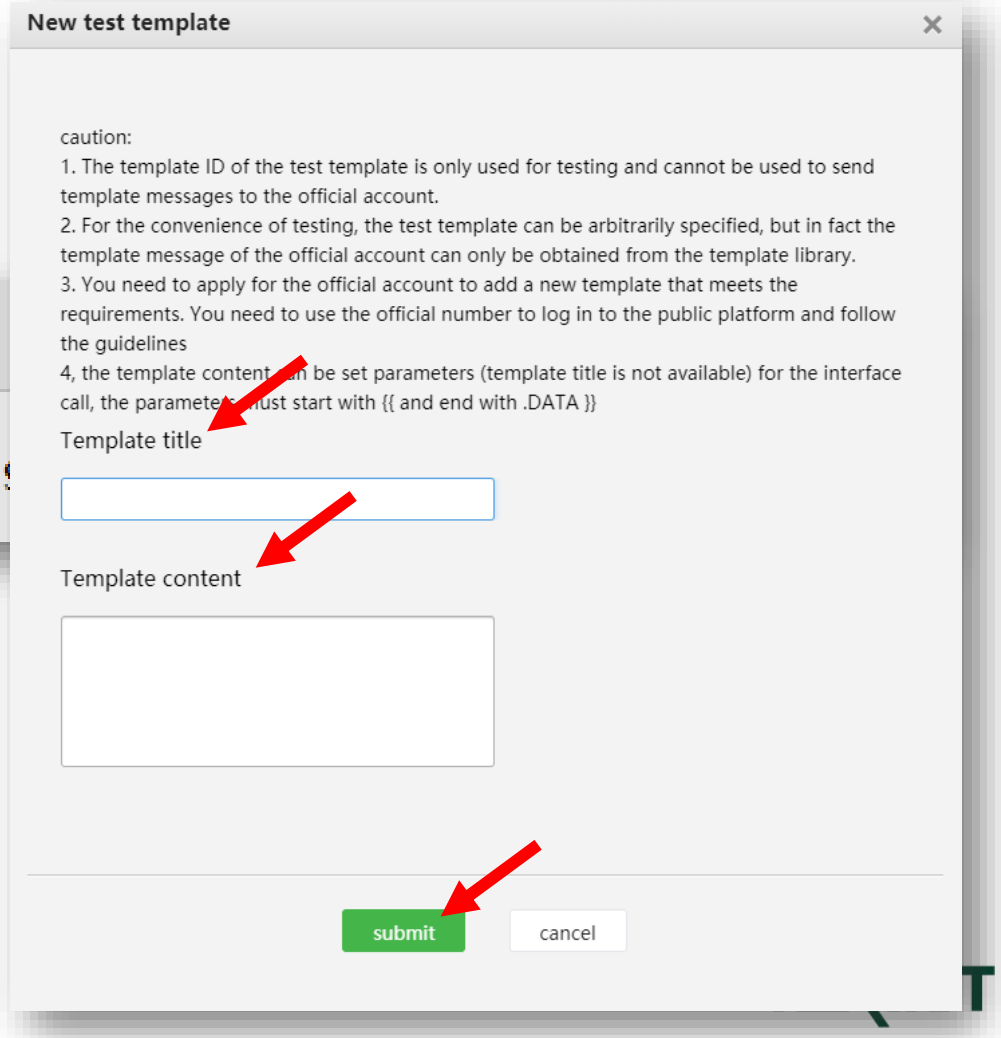


Advanced

- **WeChat**

  2. Set templateID : Click **New test patterns** → Enter **Template title** and **Template content**



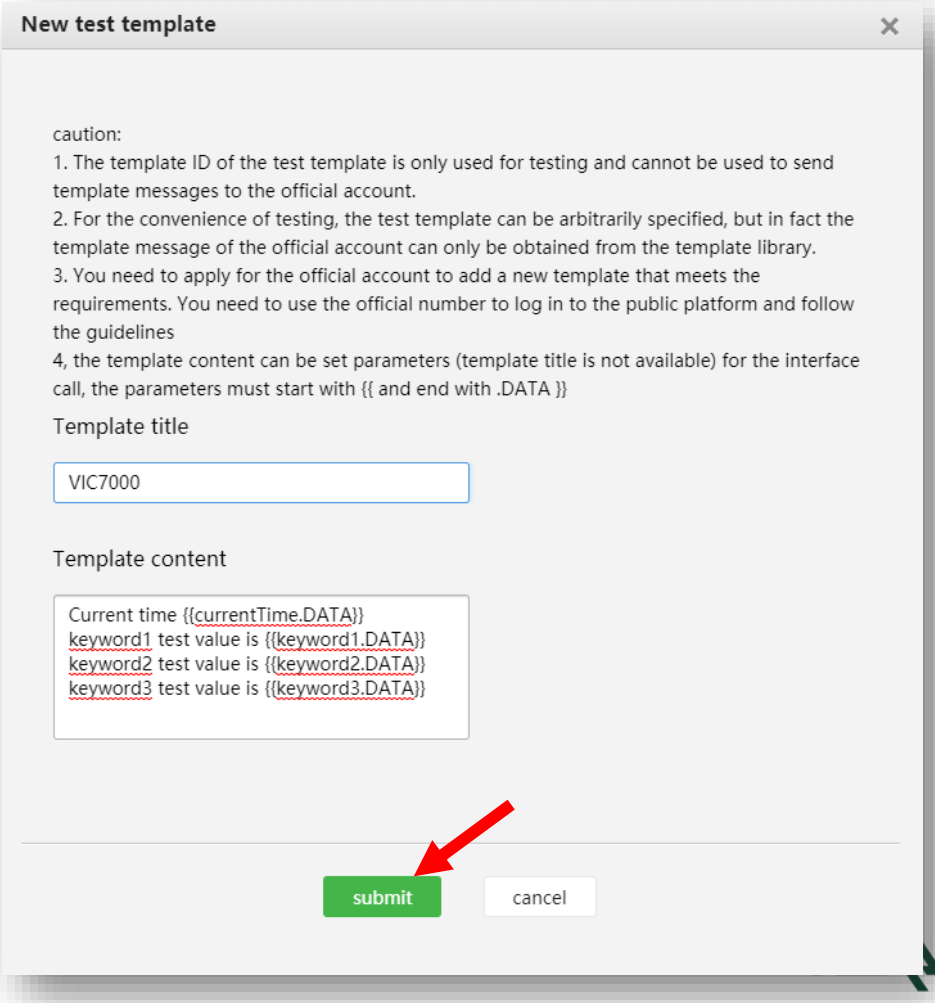


Advanced

- **WeChat**

  2. templateID : Edition is finished, click **submit**.

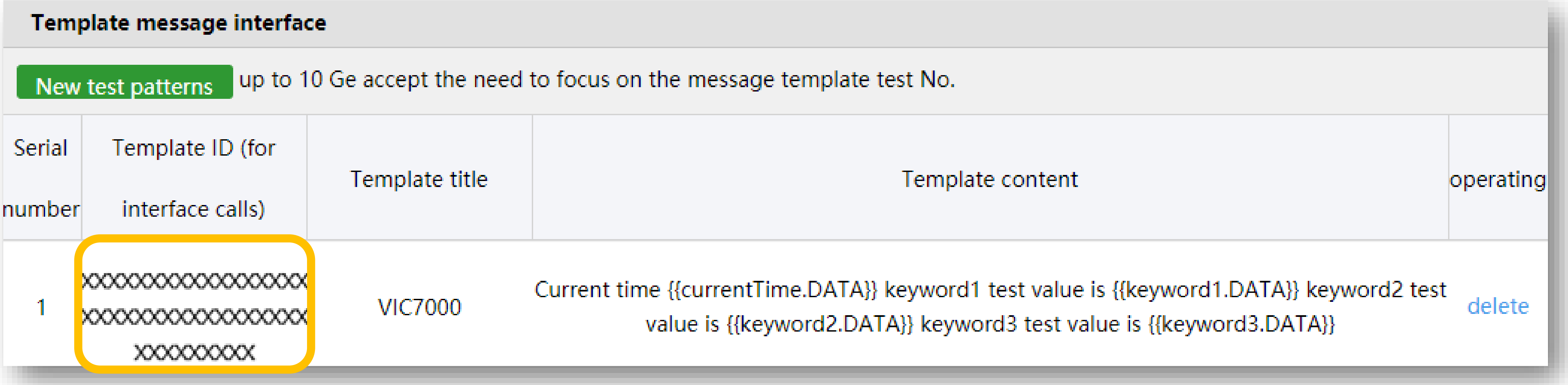
Script Parameters	Template corresponding content
keyword1	{{keyword1.DATA}}
keyword2	{{keyword2.DATA}}
keyword3	{{keyword3.DATA}}
Not Script Parameter	**Template corresponding content**
Current Time	{{currentTime.DATA}}



Advanced

- **WeChat**

2. Set templateID : Generated **templateID** will be used in **SEND.WECHAT** and **SEND.WECHAT_P**



Template message interface

up to 10 Ge accept the need to focus on the message template test No.

Serial number	Template ID (for interface calls)	Template title	Template content	operating
1	xxxxxxxxxxxxxxxxxx xxxxxxxxxxxxxxxxxx xxxxxxxxxx	VIC7000	Current time {{currentTime.DATA}} keyword1 test value is {{keyword1.DATA}} keyword2 test value is {{keyword2.DATA}} keyword3 test value is {{keyword3.DATA}}	delete

Advanced

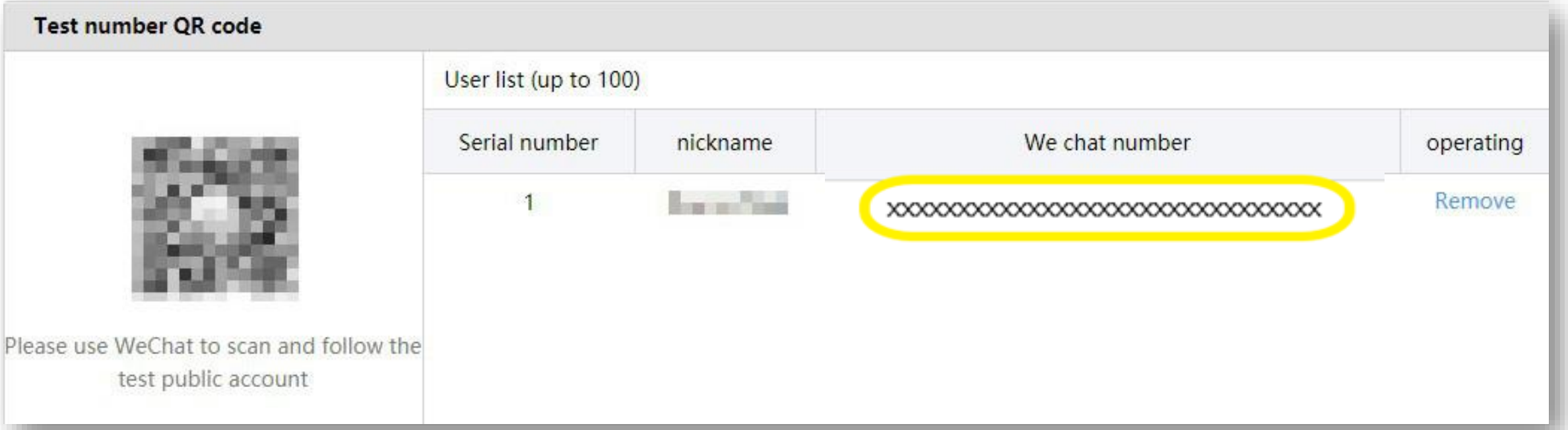
- **WeChat**

  3. Set openID : Use WeChat APP to scan the **Test number QR code** and **follow the test public account**. To receive message, user must follow the test public account.

Advanced

- **WeChat**

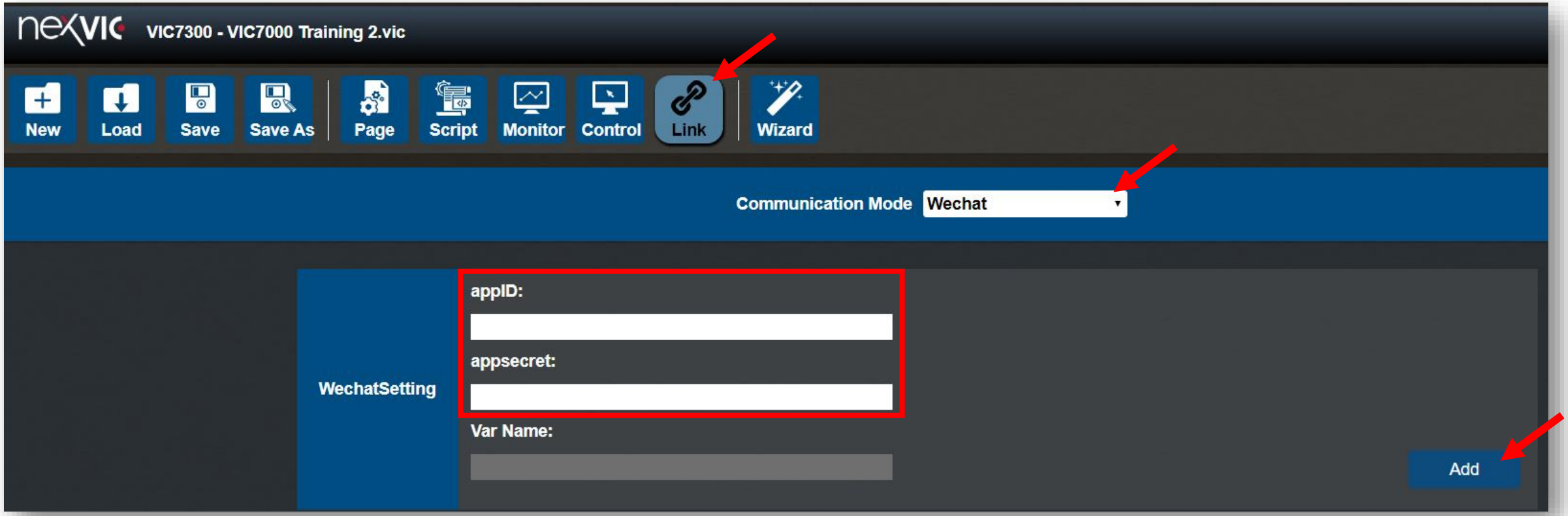
  3. Set openID : After an account followed, the WeChat ID of this account, is called **openID**, will show up and will be used in **SEND.WECHAT_P**



Advanced

- **WeChat**

  4. Link Settings : Enter **Link** page → Communication Mode : **WeChat** → Enter **appID** and **appsecret** → Click **Add**



Advanced

- **WeChat**

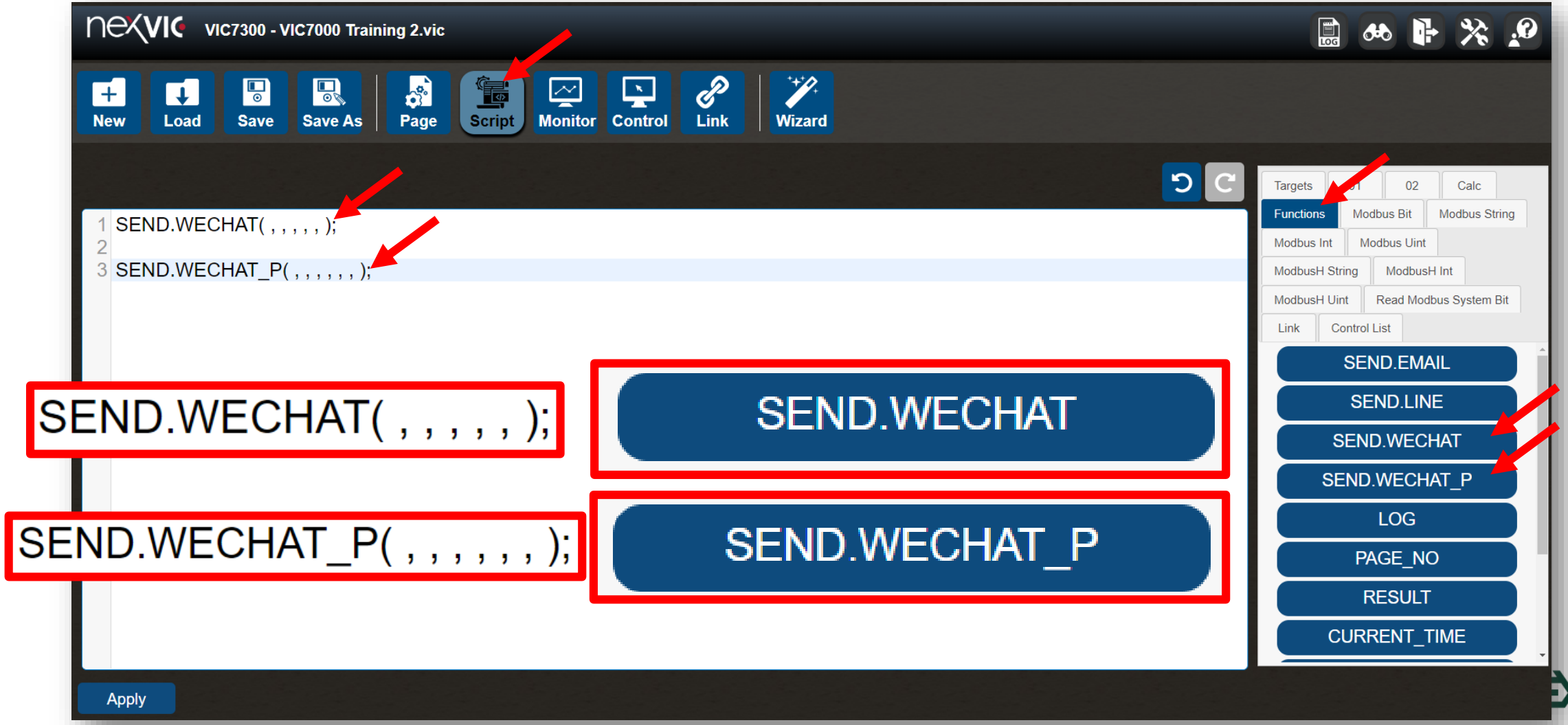
  4. Link Settings : Confirm the WeChat link which has been added. Or remove it.

  To check if there is a new account following the test public account, click **Update Group** to refresh **Number of groups**.

Advanced

- **WeChat**

5. Edit Script : Enter **Script** page → Choose **SEND.WECHAT** and **SEND.WECHAT_P** in



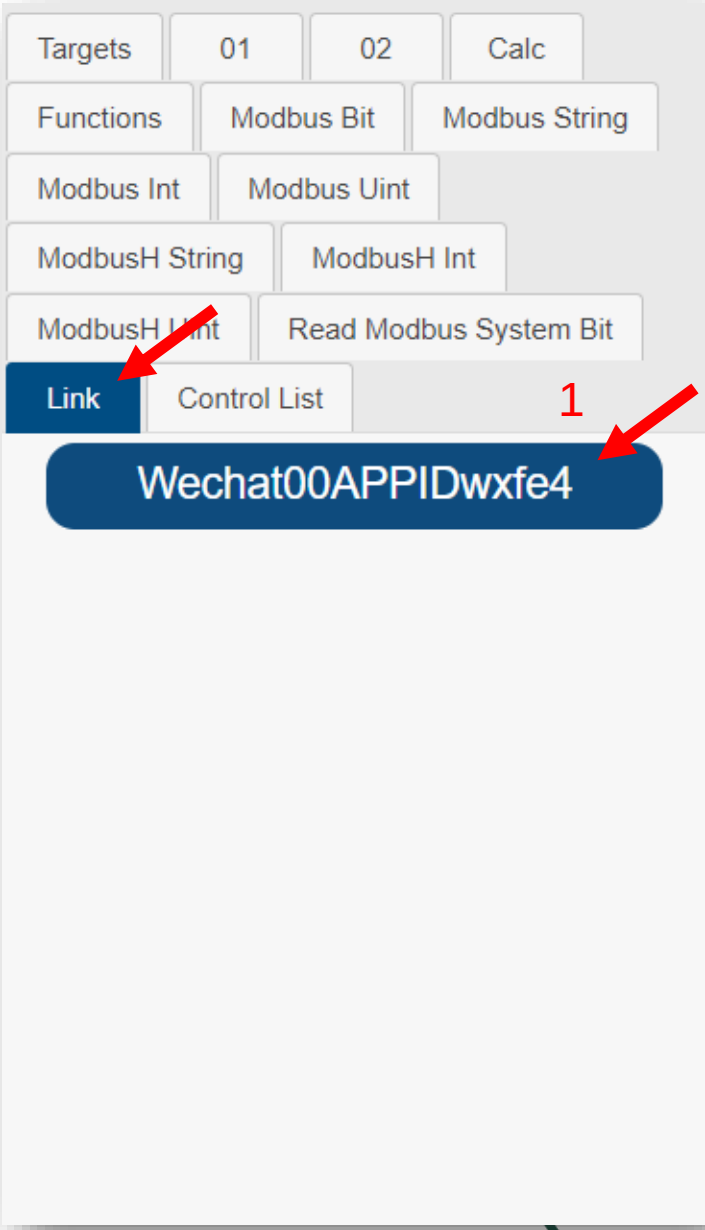
Advanced

- **WeChat**

SEND.WECHAT

SEND.WECHAT(id, templateID, keyword1, keyword2, keyword3, sec)

5. Edit Script : Six parameters. Send message to each user following the test public account.
    1. id : WeChat link (string)
    2. templateID : templateID (string)
    3. keyword1 : The message will be sent as keyword1, which is same as {{keyword1.DATA}} in template (string)
    4. keyword2 : The message will be sent as keyword2, which is same as {{keyword2.DATA}} in template (string)
    5. keyword3 : The message will be sent as keyword3, which is same as {{keyword3.DATA}} in template (string)
    6. sec : Restrict execution again in a period (s)



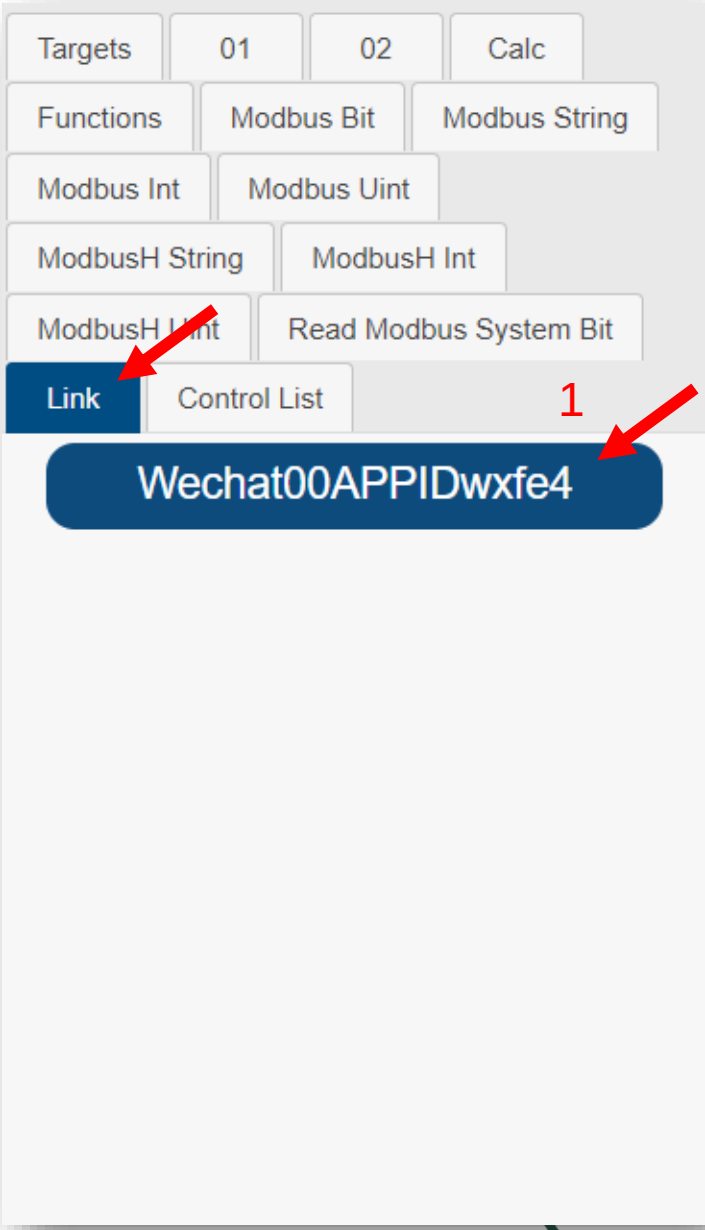
Advanced

SEND.WECHAT_P

SEND.WECHAT_P(id, templateID, openID, keyword1, keyword2, keyword3, sec)

- **WeChat**

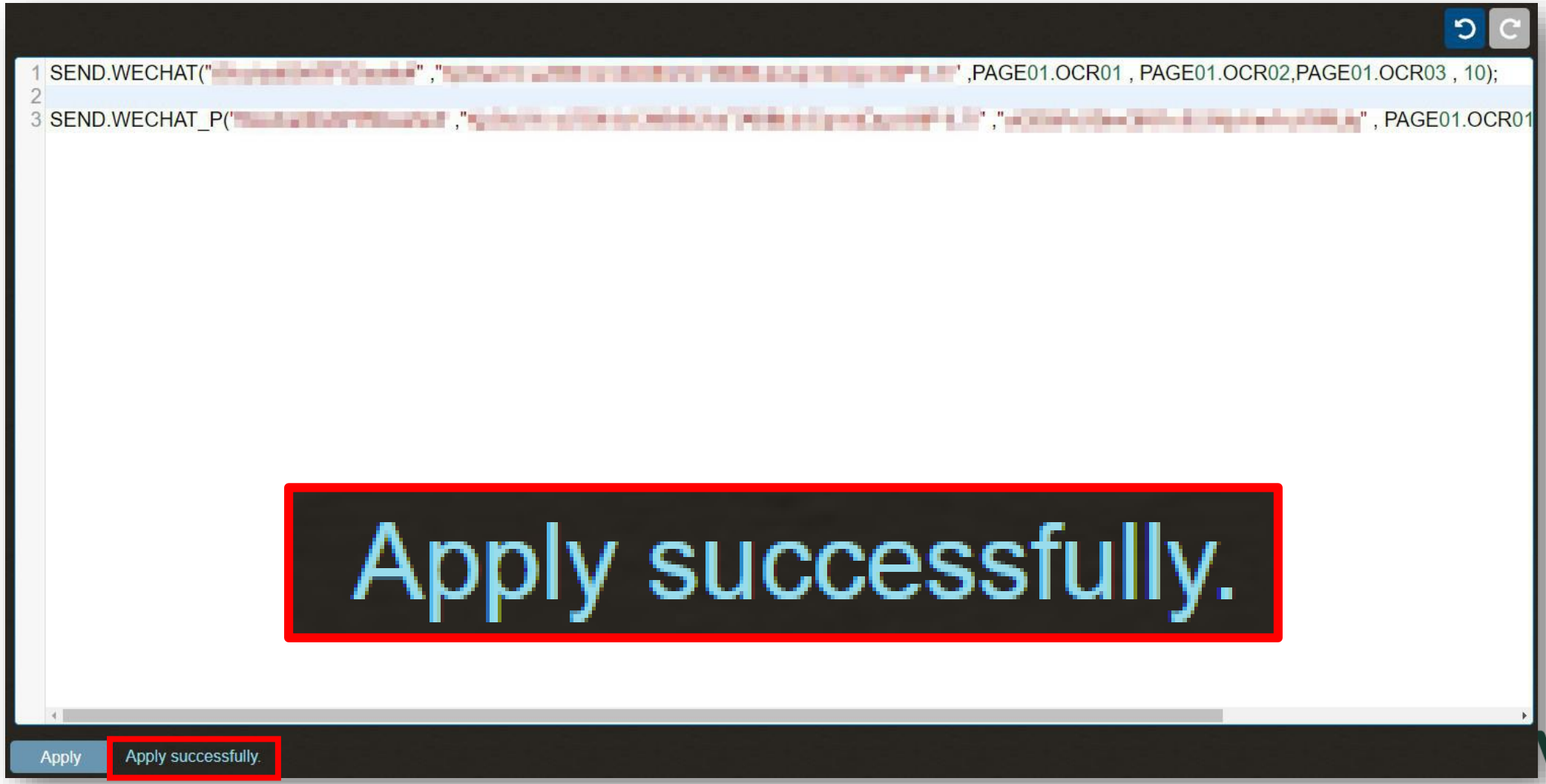
5. Edit Script : Seven parameters. Send message to one user following the test public account.
    1. id : WeChat link (string)
    2. templateID : templateID (string)
    3. openID : OpenID of recipent account (string)
    4. keyword1 : The message will be sent as keyword1, which is same as {{keyword1.DATA}} in template (string)
    5. keyword2 : The message will be sent as keyword2, which is same as {{keyword2.DATA}} in template (string)
    6. keyword3 : The message will be sent as keyword3, which is same as {{keyword3.DATA}} in template (string)
    7. sec : Restrict execution again in a period (s)



Advanced

- **WeChat**

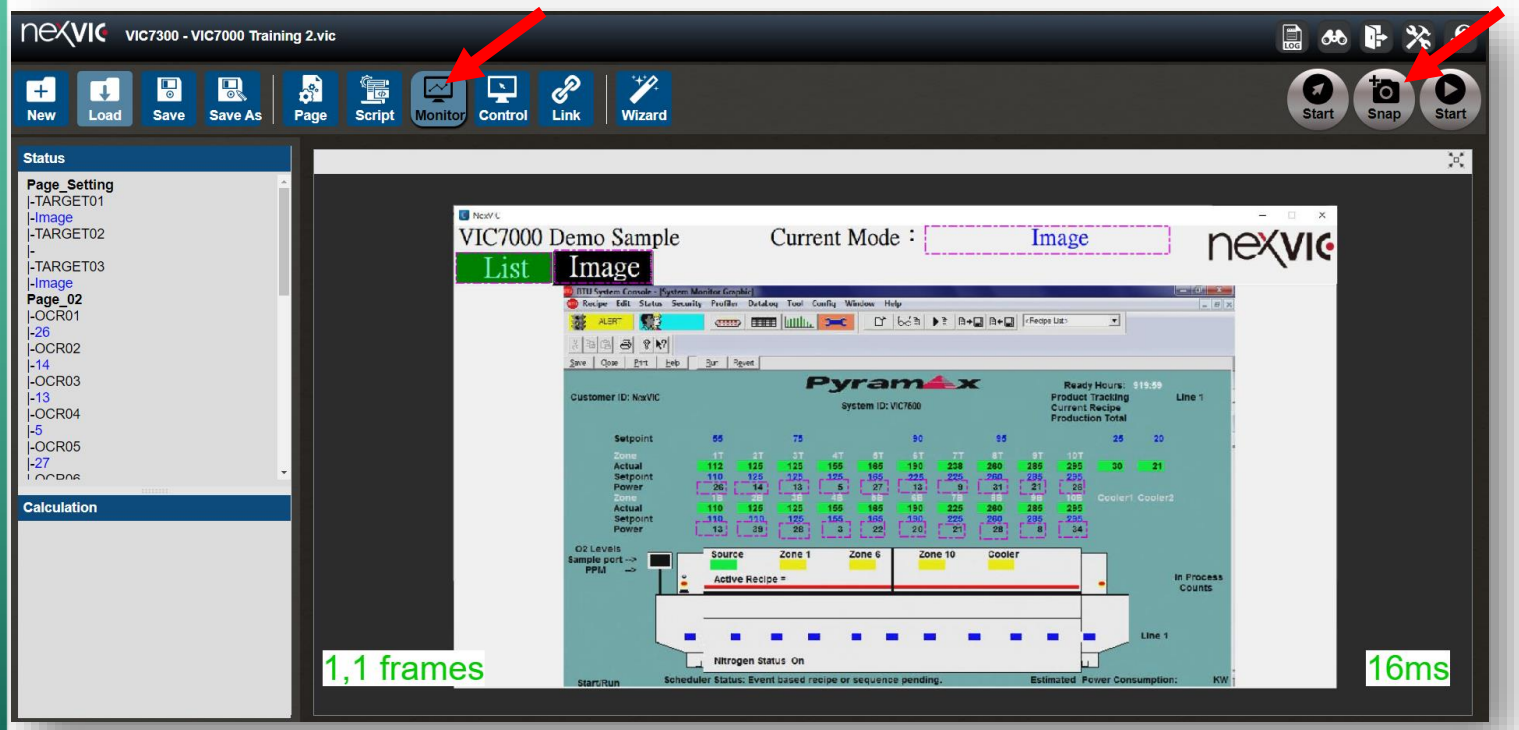
5. Edit Script : Edition is finished → Click **Apply** (ctrl +s)

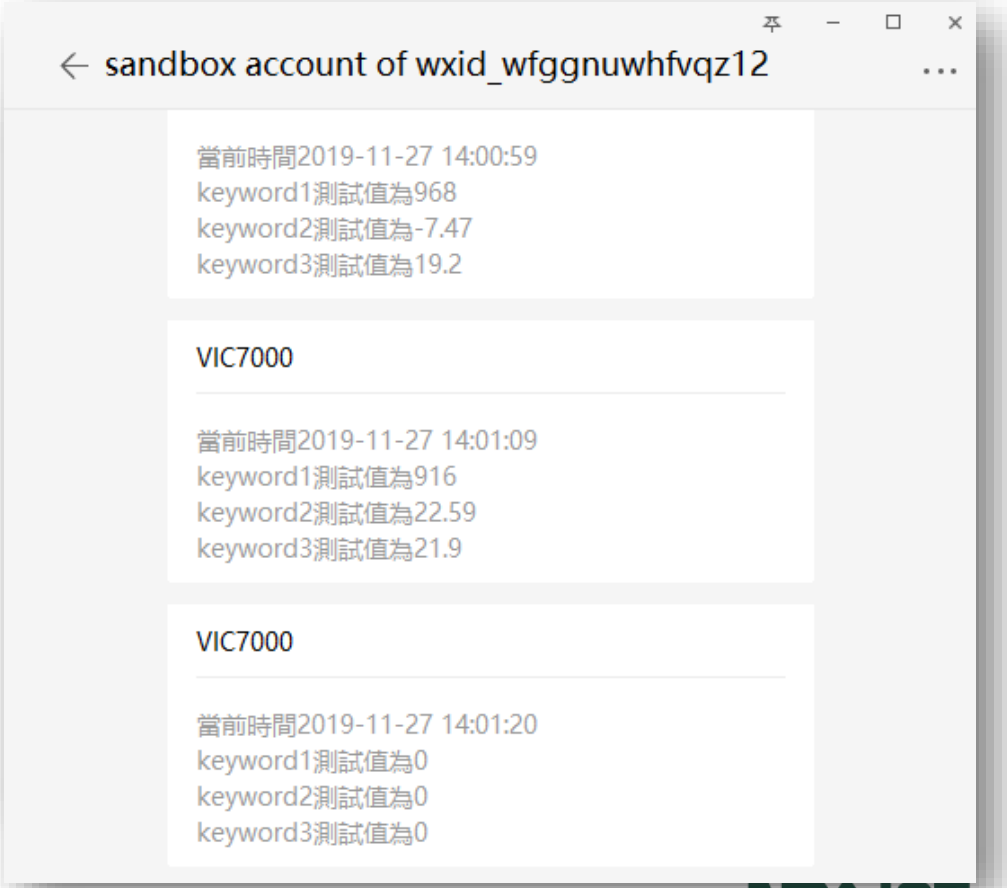


Advanced

- **WeChat**

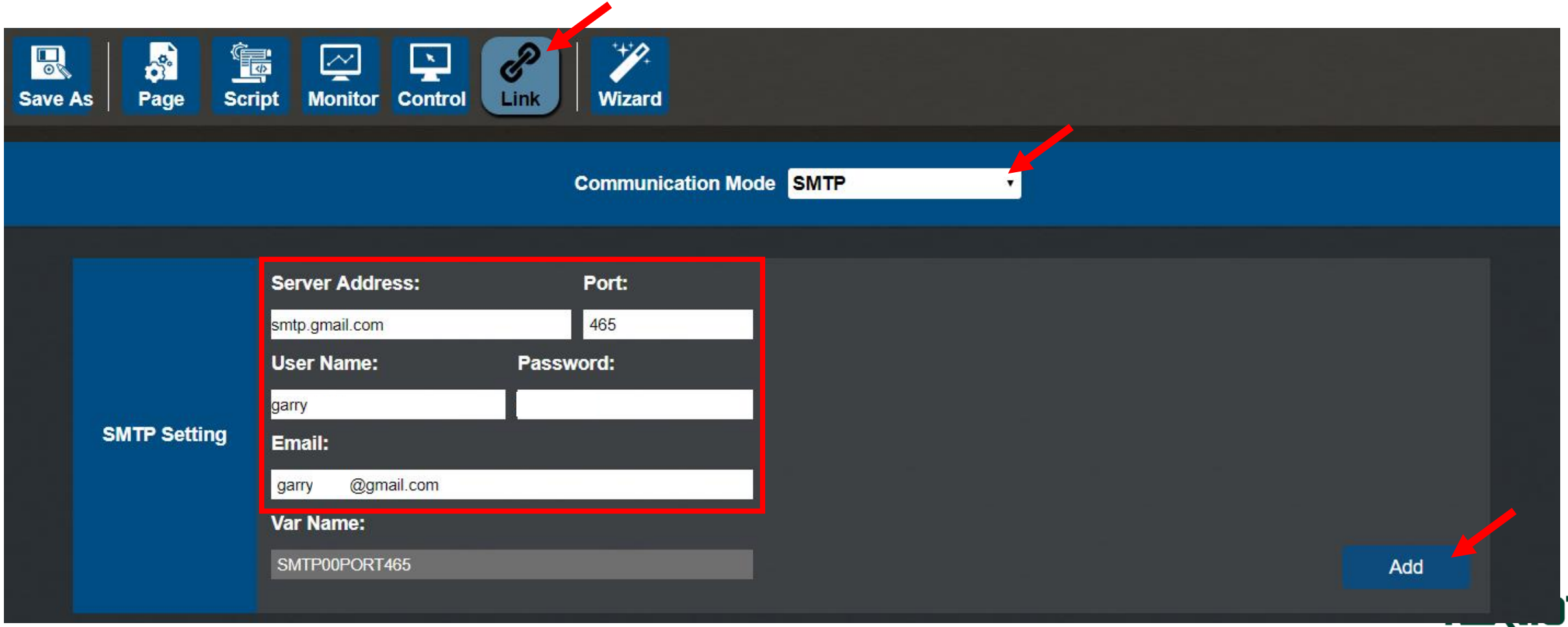
  6. Simulate : Entry to **Monitor** page → Click **Snap** → Check if there is a message in WeChat





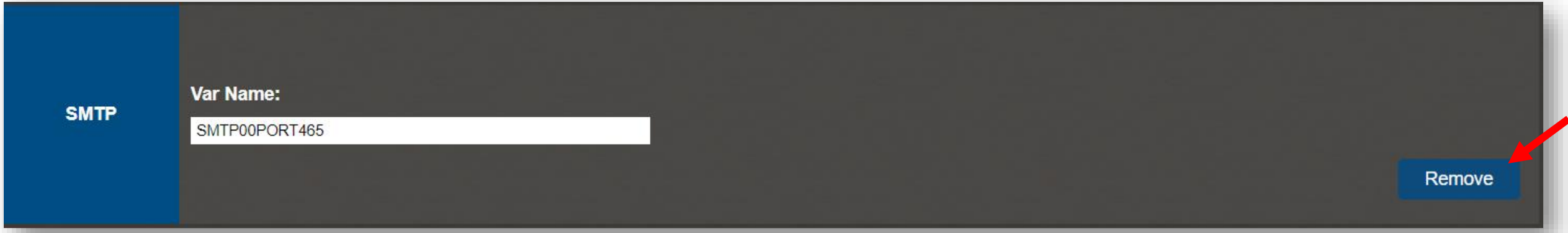
Advanced

- **Event Trigger**
  1. Link Settings – email : Enter **Link** page → Communication Mode : **SMTP** → Enter **Server Address**, **Port**, **User Name**, **Password**, **Email** → Click **Add**



Advanced

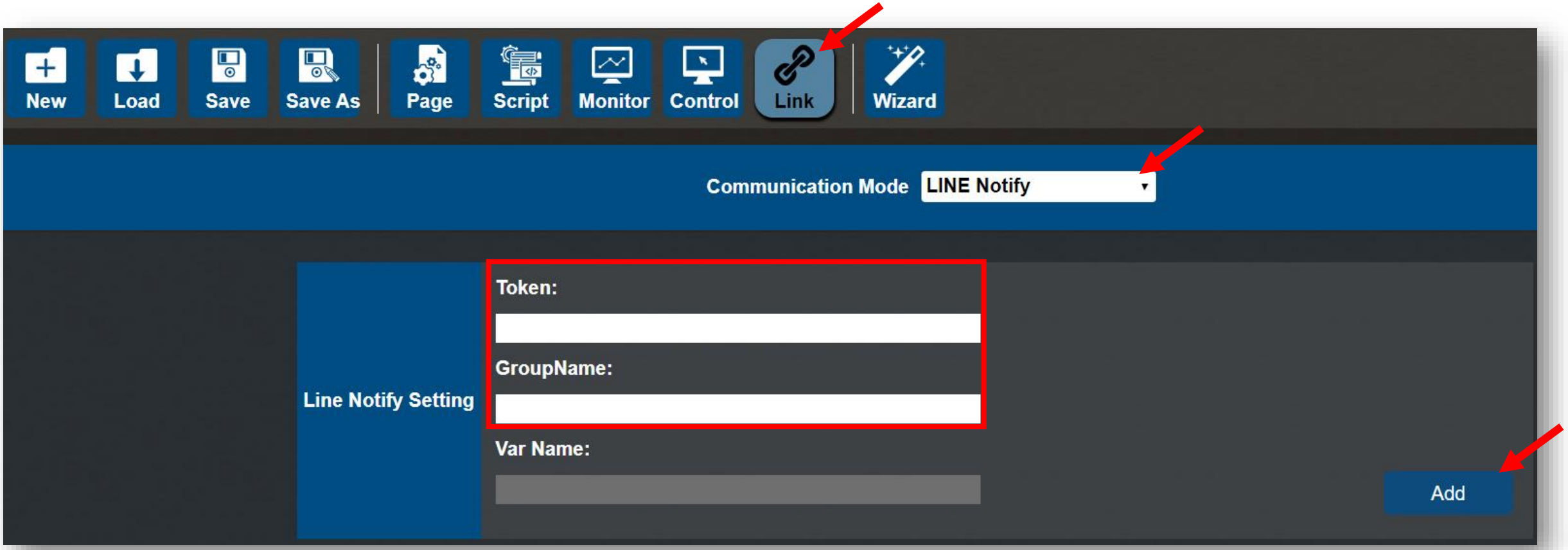
- **Event Trigger**
  1. Link Settings – email : Confirm SMTP link which has been added. Or remove it.



Advanced

- **Event Trigger**

  1. Link Settings – LINE Notify : Enter **Link** page → Communication Mode : **LINE Notify** → Enter **Token**, **GroupName** → Click **Add**



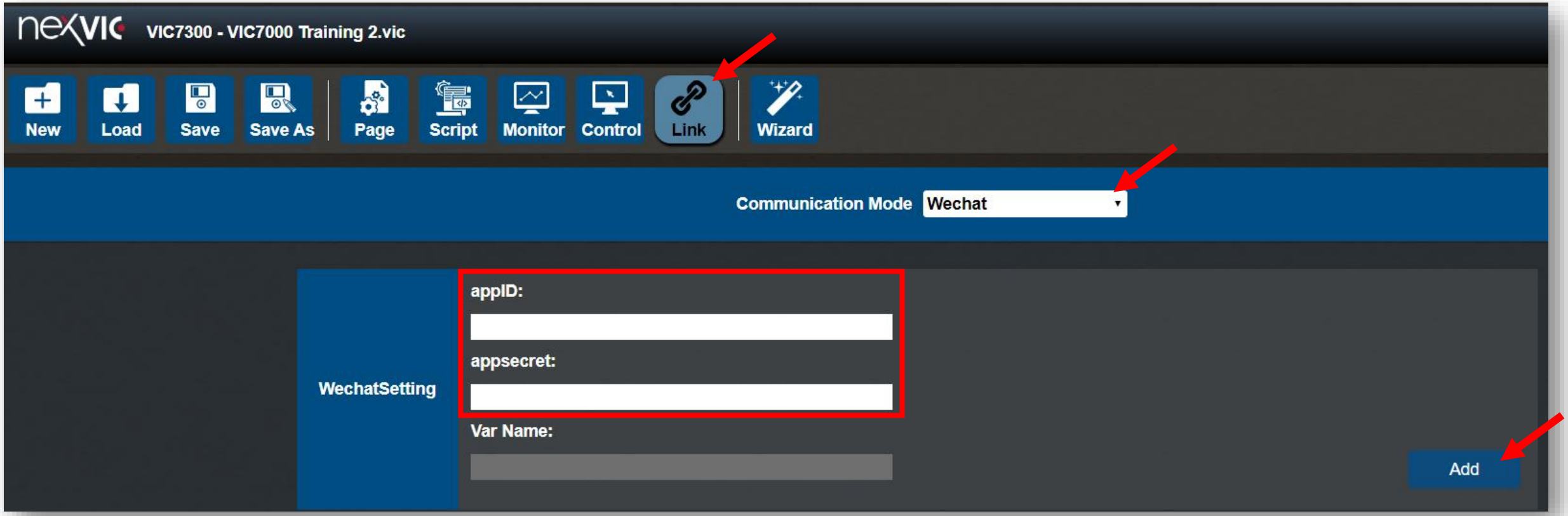
Advanced

- **Event Trigger**
  1. Link Settings – LINE Notify : Confirm the LINE Notify link which has been added.

     Or remove it.

Advanced

- **Event Trigger**
  1. Link Settings – WeChat : Enter **Link** page → Communication Mode : **WeChat** → Enter **appID**, **appsecret** → Click **Add**



Advanced

- **Event Trigger**

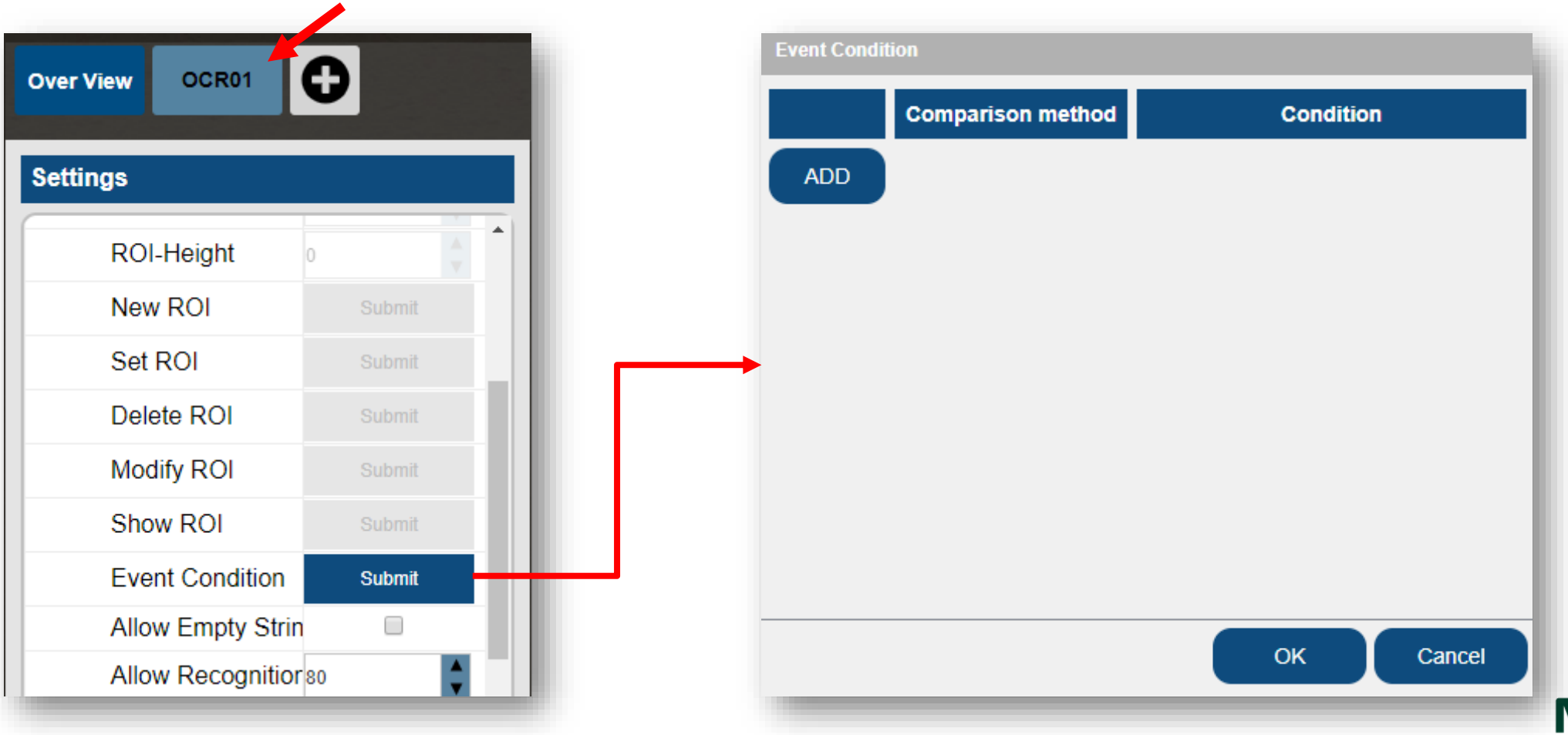
  1. Link Settings – WeChat : Confirm the WeChat link which has been added. Or remove it.

  To check if there is a new account following the test public account, click **Update Group** to refresh **Number of groups**.

Advanced

- **Event Trigger**

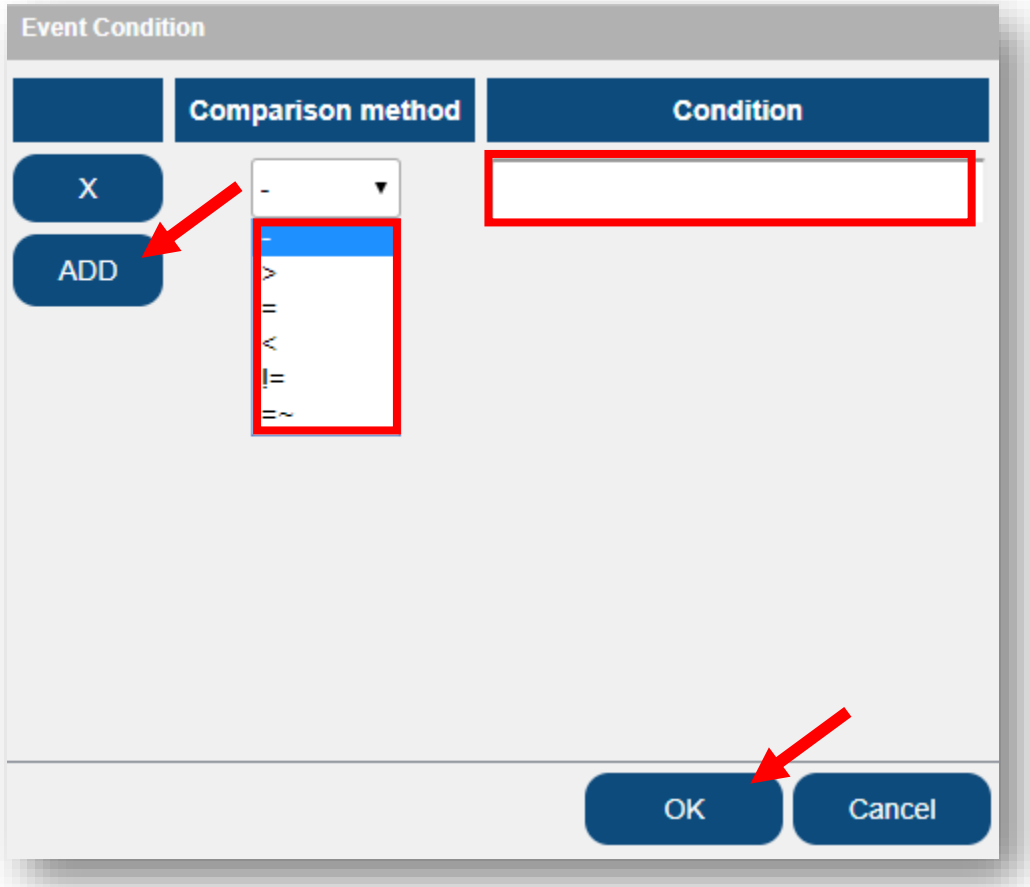
  2. Set Event Condition – OCR : Click **Event Condition** → The window of **Event Condition** will show up



Advanced

- **Event Trigger**

  2. Set Event Condition – OCR : Click **Add** → Set **Comparison** → Set **Condition** → Click **OK**



- : Non compare

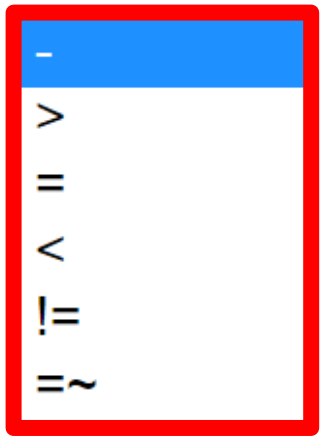
> : Greater than

= : Equal

< : Less than

!= : Not equal

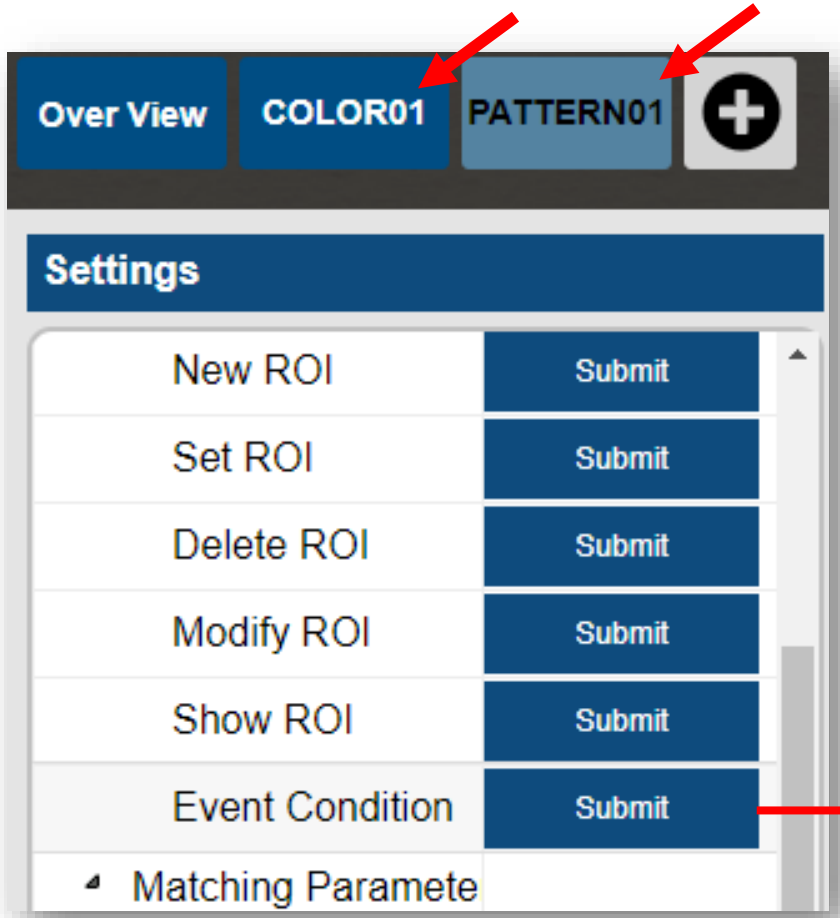
=~ : Including (for String only)

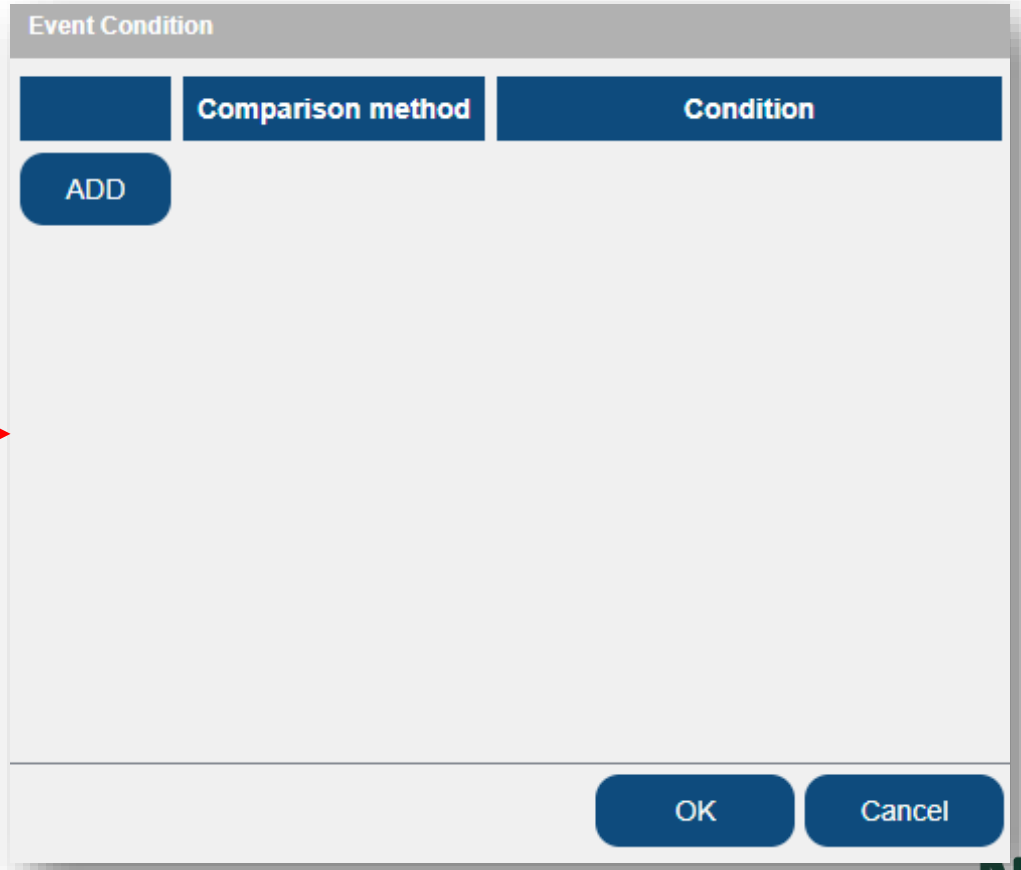


Advanced

- **Event Trigger**

  2. Set Event Condition – COLOR, PATTERN : Click **Event Condition** → The window of **Event Condition** will show up

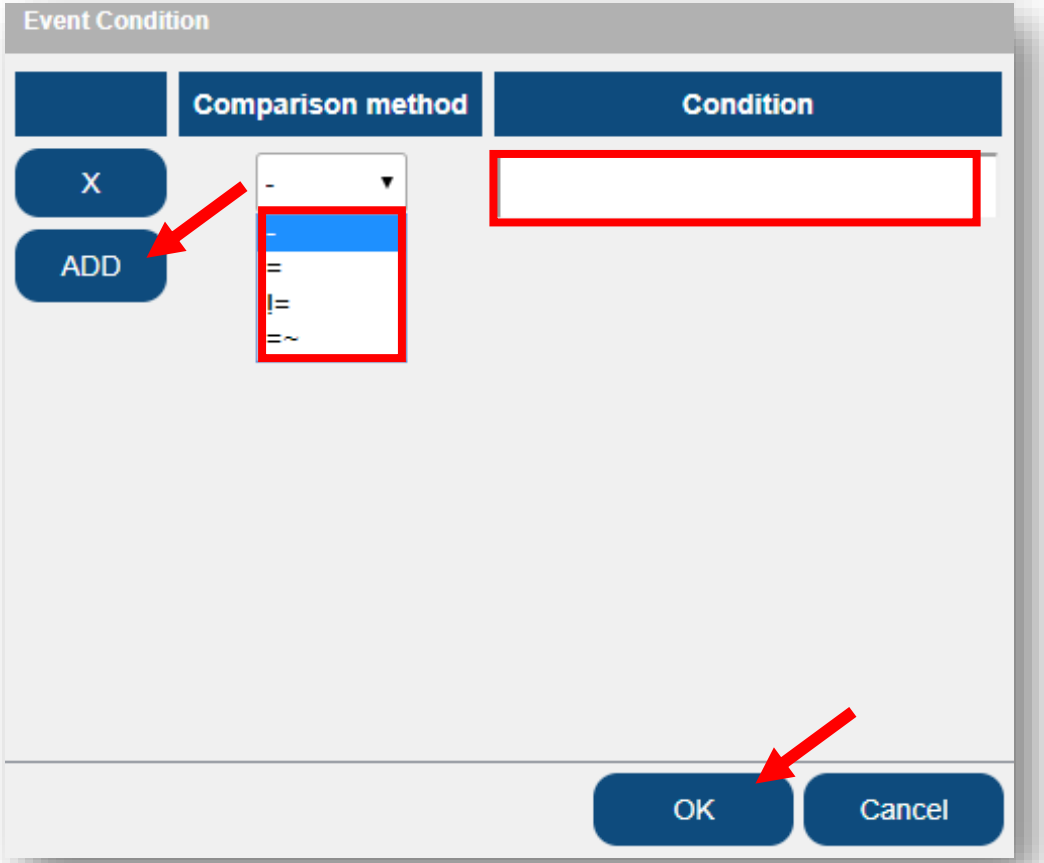


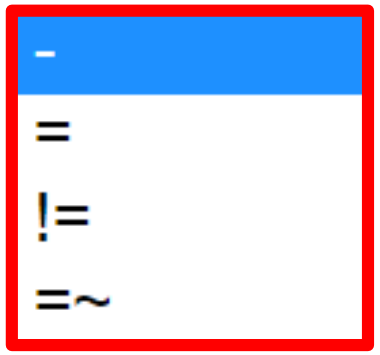


Advanced

- **Event Trigger**

  2. Set Event Condition – COLOR, PATTERN : Click **Add** → Set **Comparison** → Set **Condition** → Click **OK**





- : Non compare

= : Equal

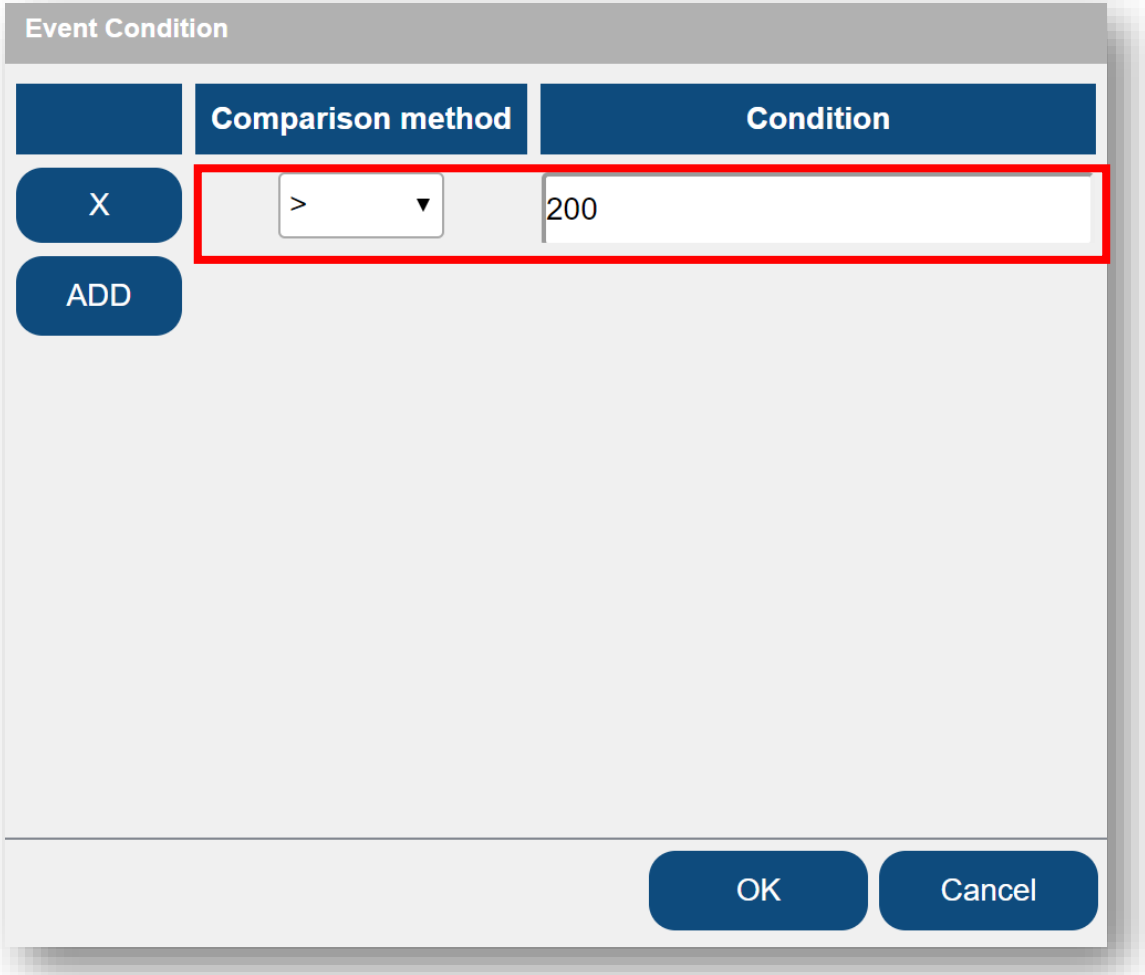
!= : Not equal

=~ : Including (for String only)

Advanced

- **Event Trigger**

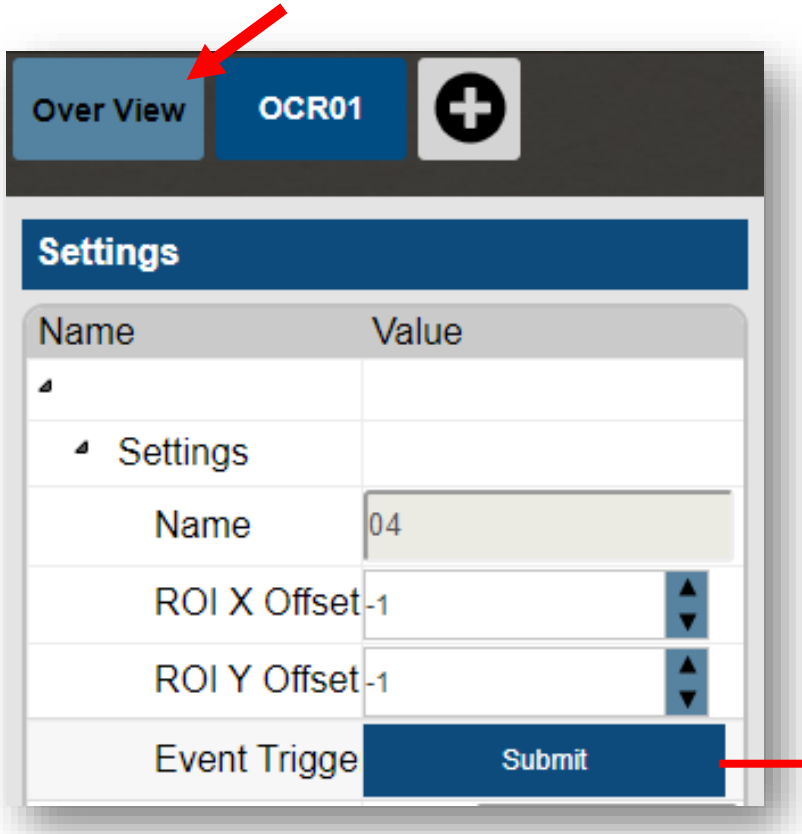
Example – Set Event Condition – OCR : Set the condition of OCR01 greater than 200

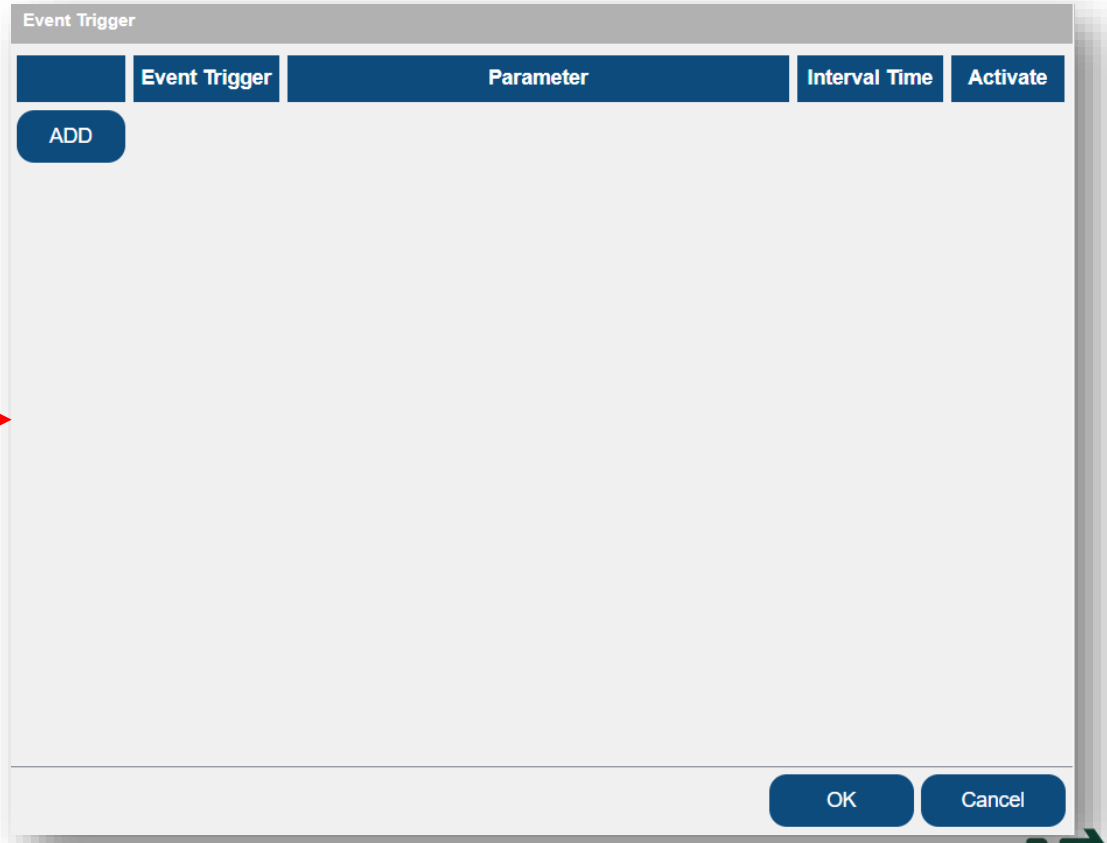


Advanced

- **Event Trigger**

  3. Set Event Trigger : Click **Event Trigger** → The window of **Event Trigger** will show up

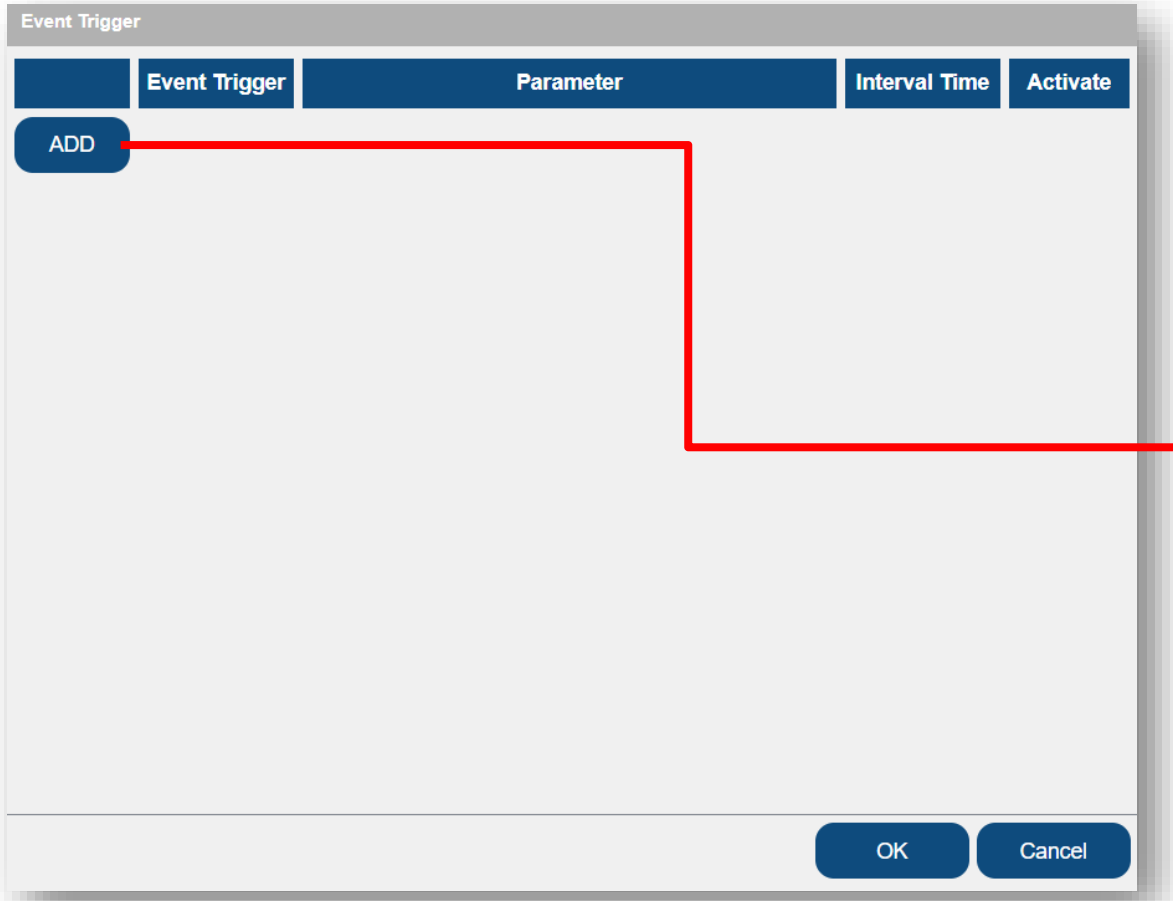


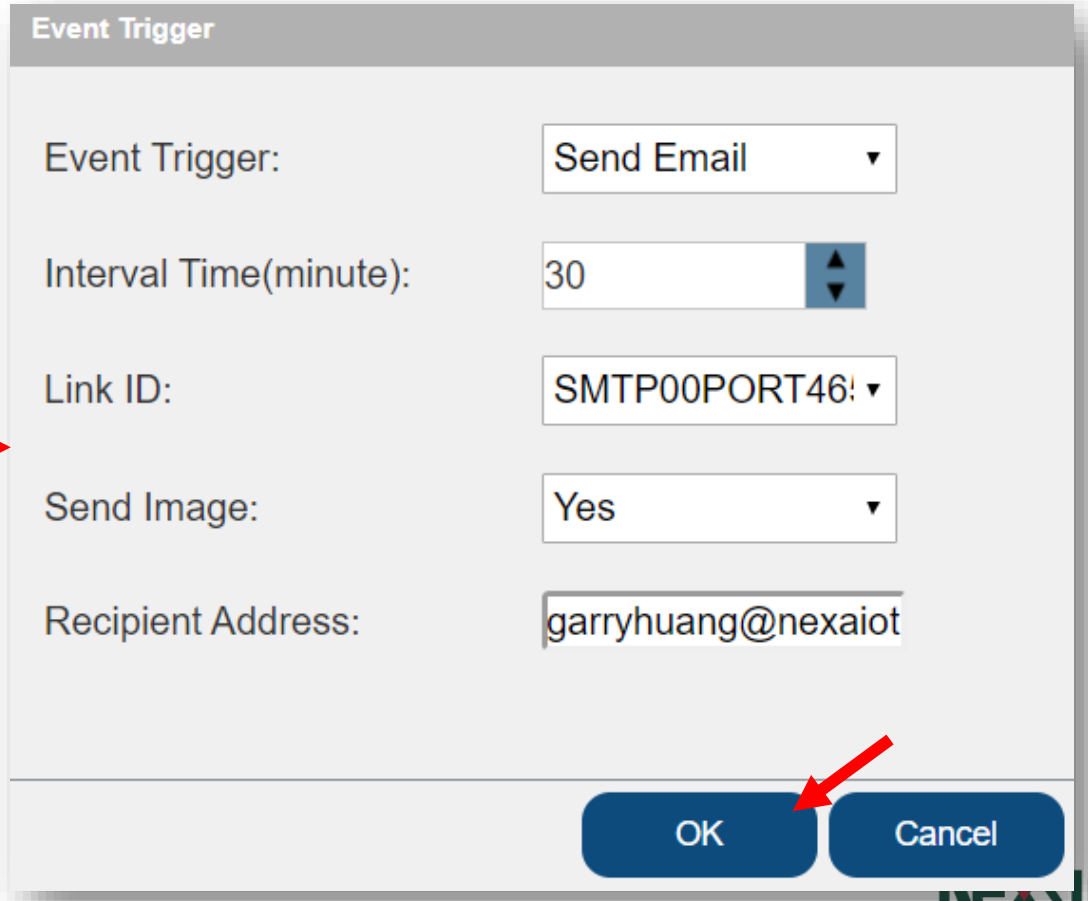


Advanced

- **Event Trigger**

  3. Set Event Trigger – email : Click **Add** → Event Trigger : **Send Email**, Set **Interval Time**, Link ID : **SMTP link**, whether to **Send Image**, Enter **Recipient Address** → Click **OK**

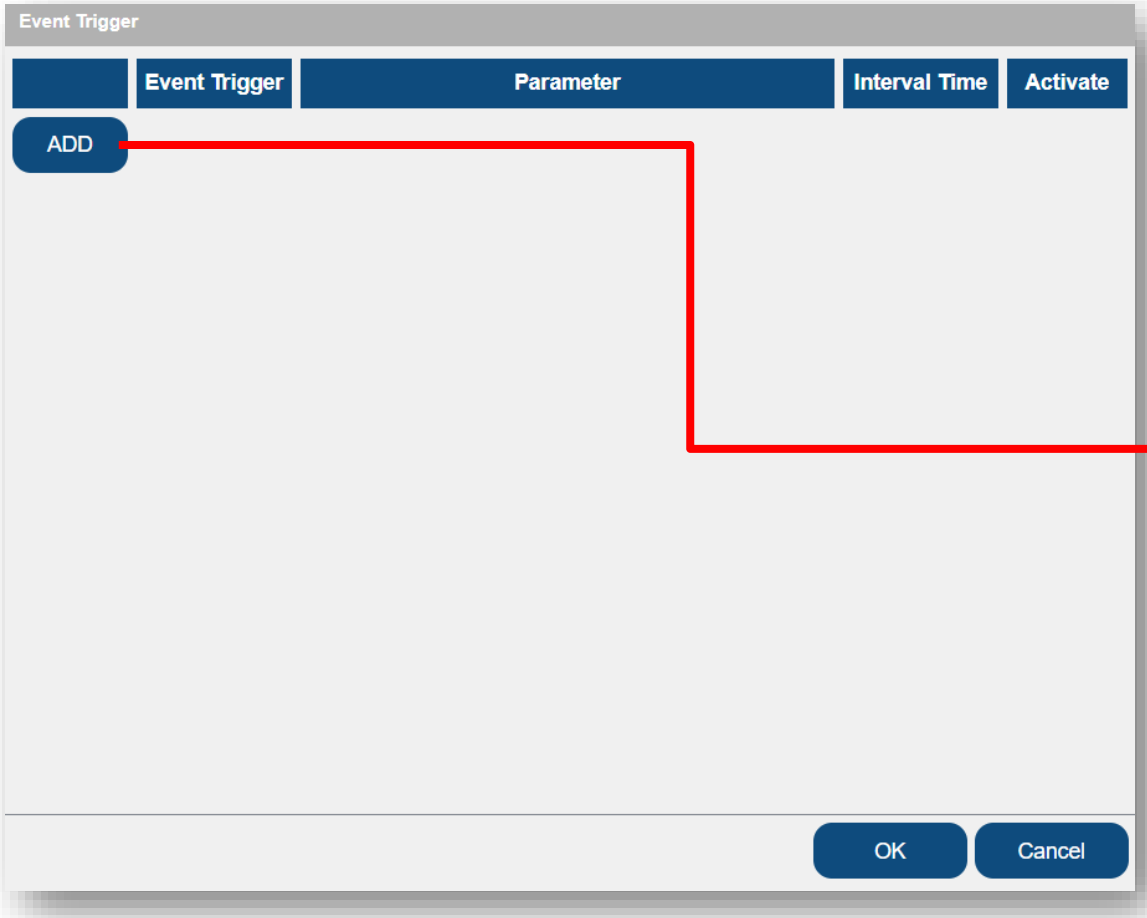


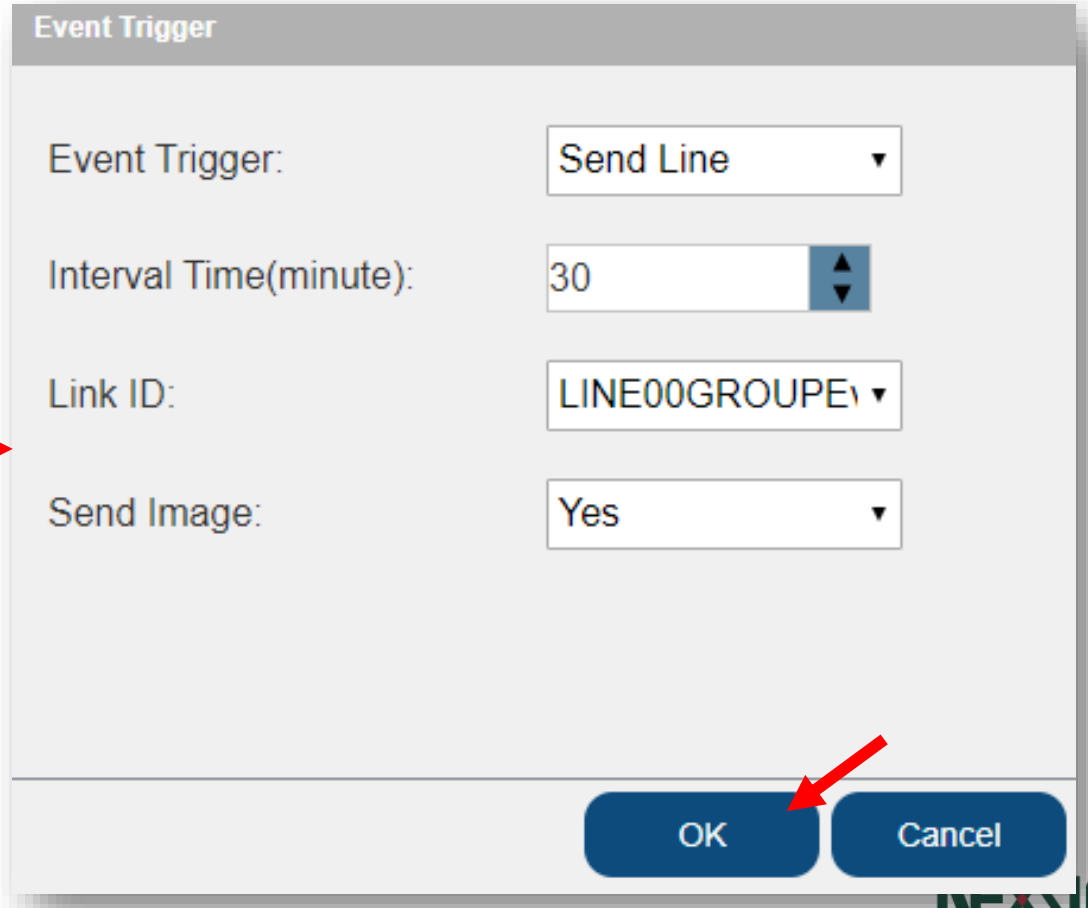


Advanced

- **Event Trigger**

  3. Set Event Trigger – LINE Notify : Click **Add** → Event Trigger : **Send Line**, Set **Interval Time**, Link ID : **LINE Notify link**, whether to **Send Image** → Click **OK**

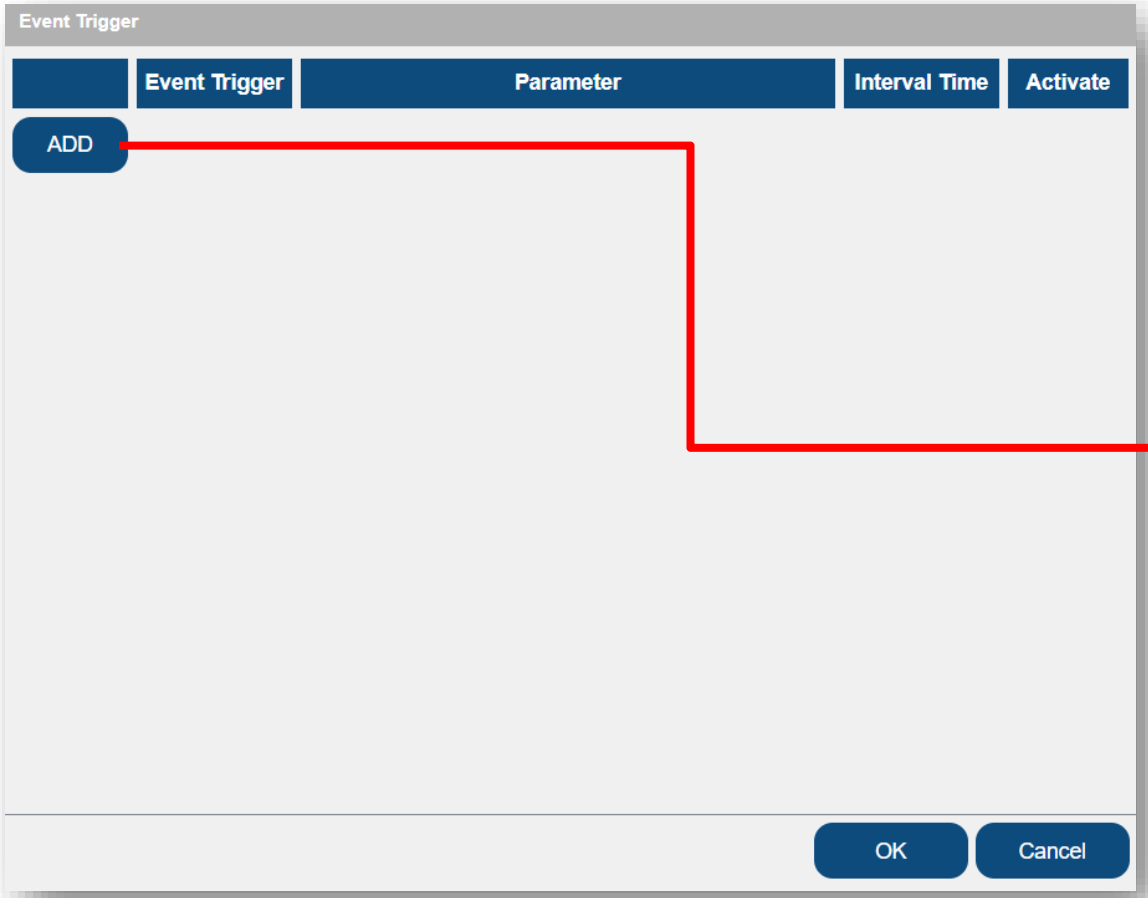


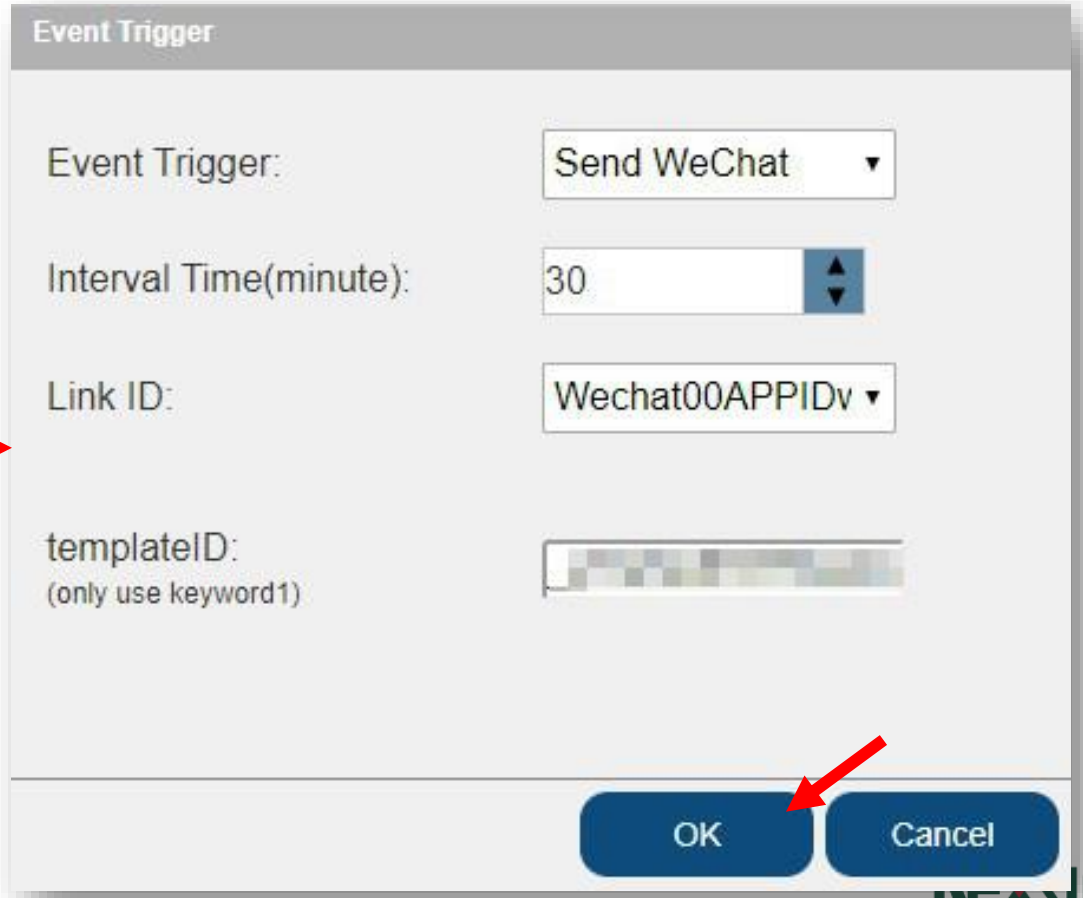


Advanced

- **Event Trigger**

  3. Set Event Trigger – WeChat : Click **Add** → Event Trigger : **Send WeChat**, Set **Interval Time**, Link ID : **WeChat link**, Enter **templateID** → Click **OK**

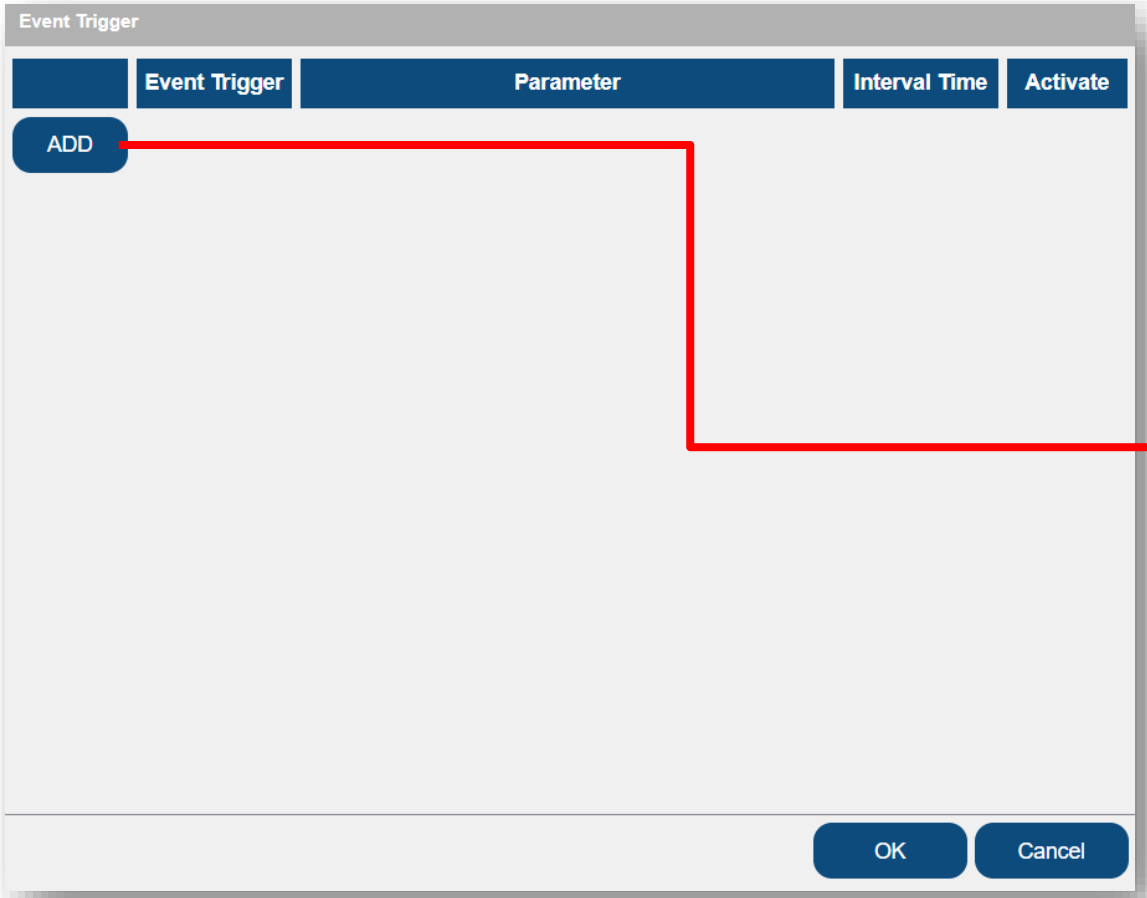


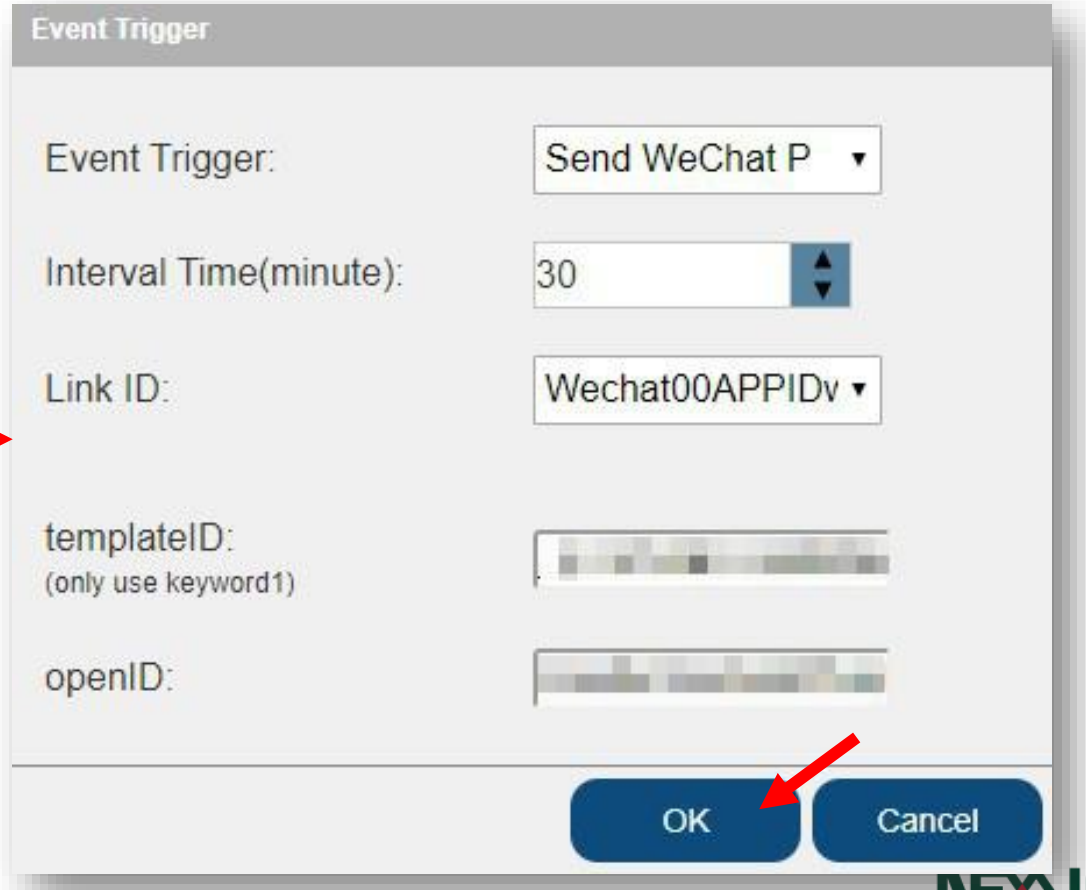


Advanced

- **Event Trigger**

  3. Set Event Trigger – WeChat_P : Click **Add** → Event Trigger : **Send WeChat P**, Set **Interval Time**, Link ID : **WeChat link**, Enter **templateID**, Enter **openID** → Click **OK**



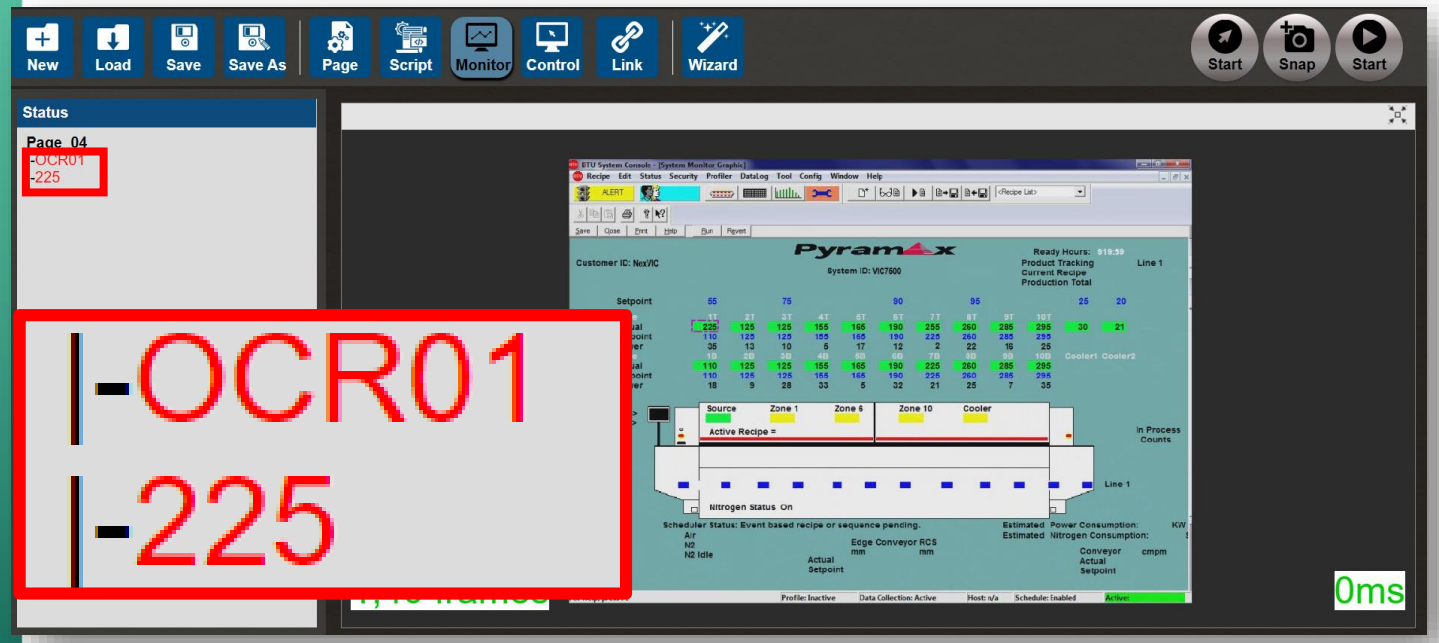


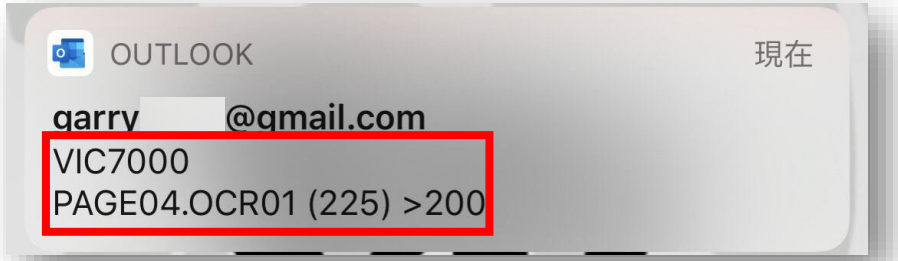
Advanced

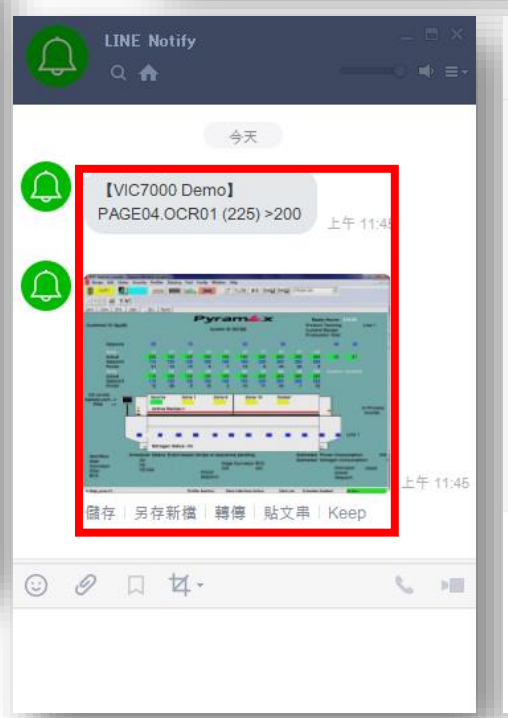
- **Event Trigger**

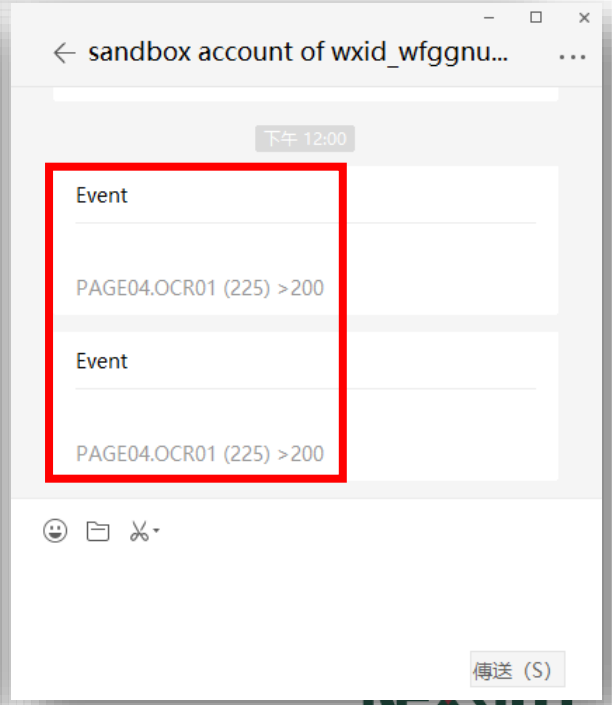
  4. Simulation : Entry to **Monitor** page → Click **Snap** → Check if there is a new message

     When the condition is met, the item will be displayed in red text







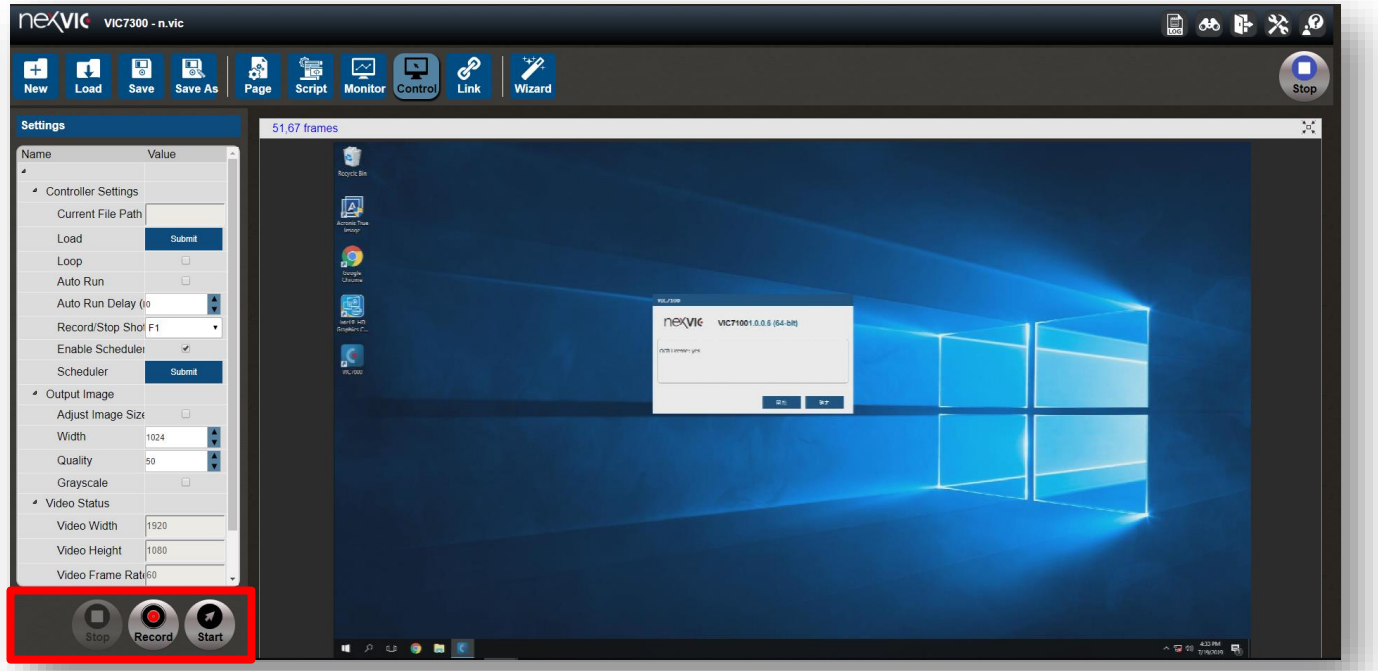


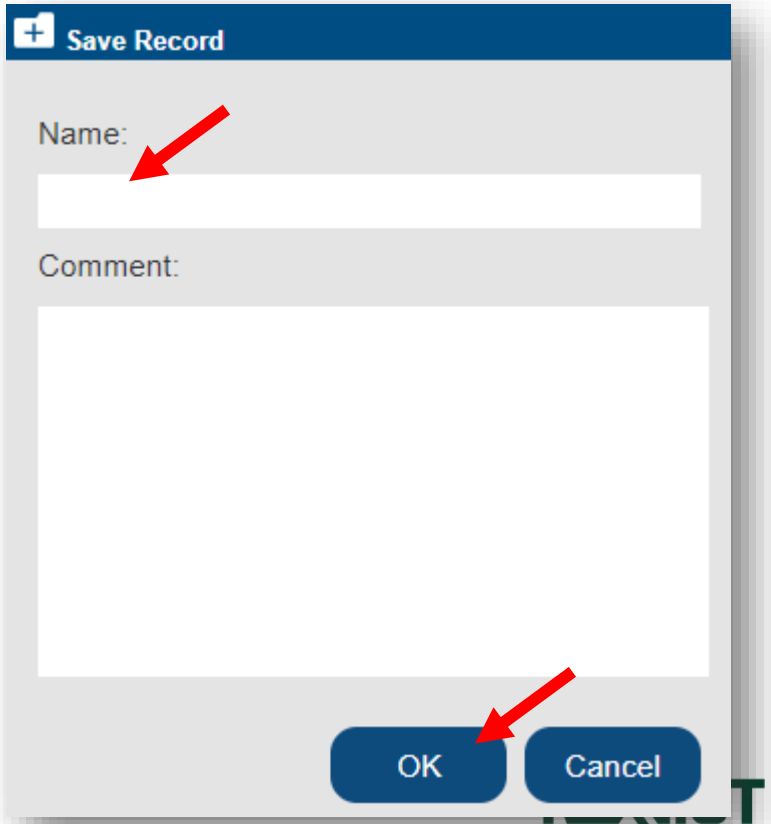
Advanced

- **Control – Input**

  1. Record Control File : Entry to **Control** page → Click **Record** (press **Record Shortcut Key**) → The action of mouse and keyboard will be recorded → Click **Stop** (press **Stop Shortcut Key**) → Enter **Name** of control file → Click **OK**

When control play completed, the input data field should be enterable



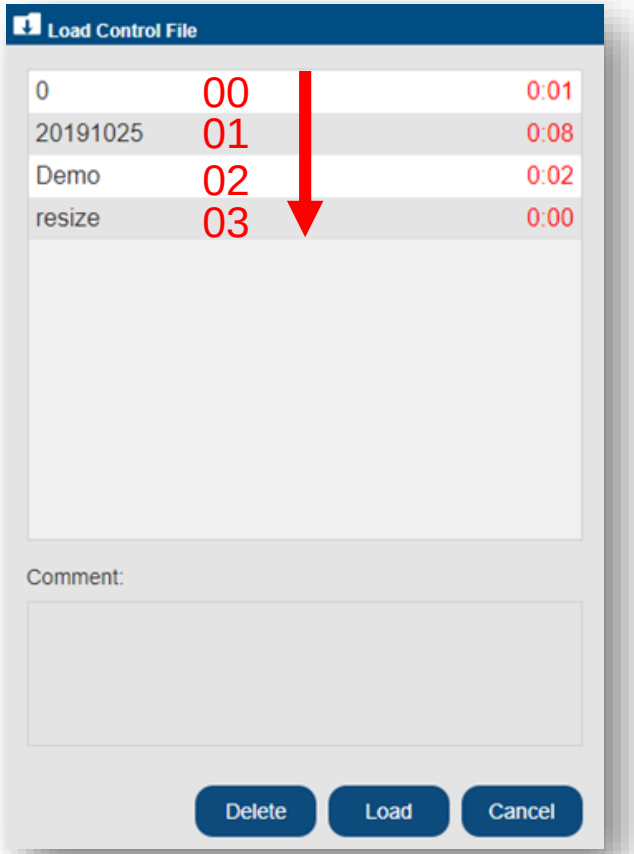


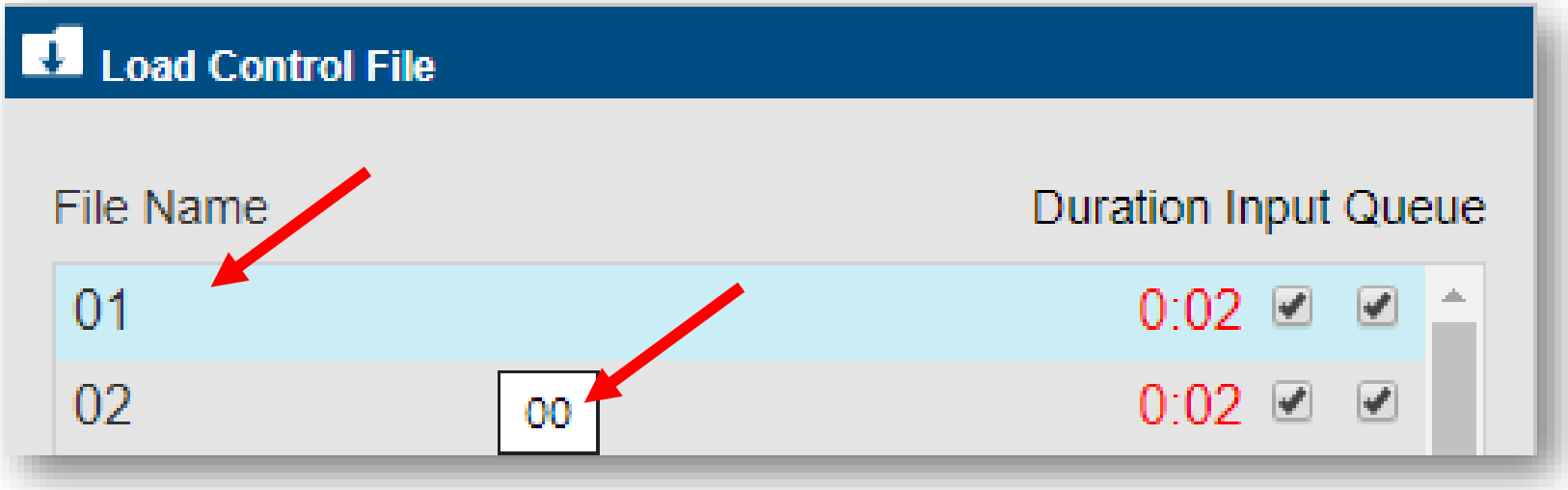
Advanced

- **Control – Input**

1. Record Control File : Entry the window of **Load Control File**

The index of control files is followed the order listed in the **Load Control File** window of **Control** page. Another way is to put cursor on a file name, the index of the control file will show up.



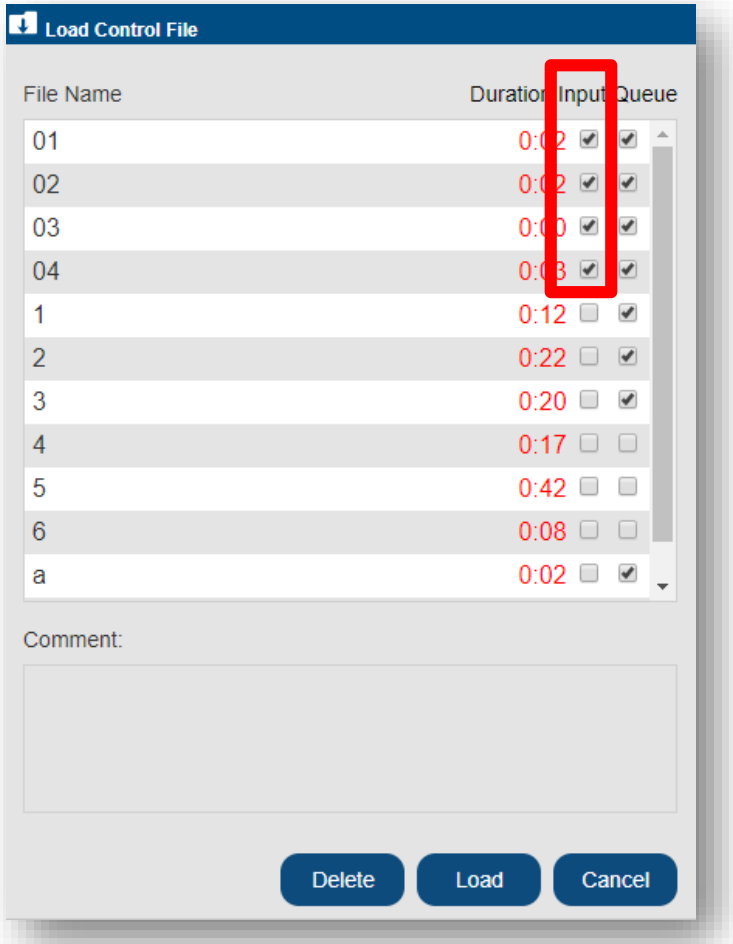


Advanced

- **Control – Input**

2. Control File Setting – Input : Entry to the window of **Load Control File** → Check **Input**

If **Input** is checked, VIC7000 will enter the characters stored in corresponding field after the control file playing is finished.



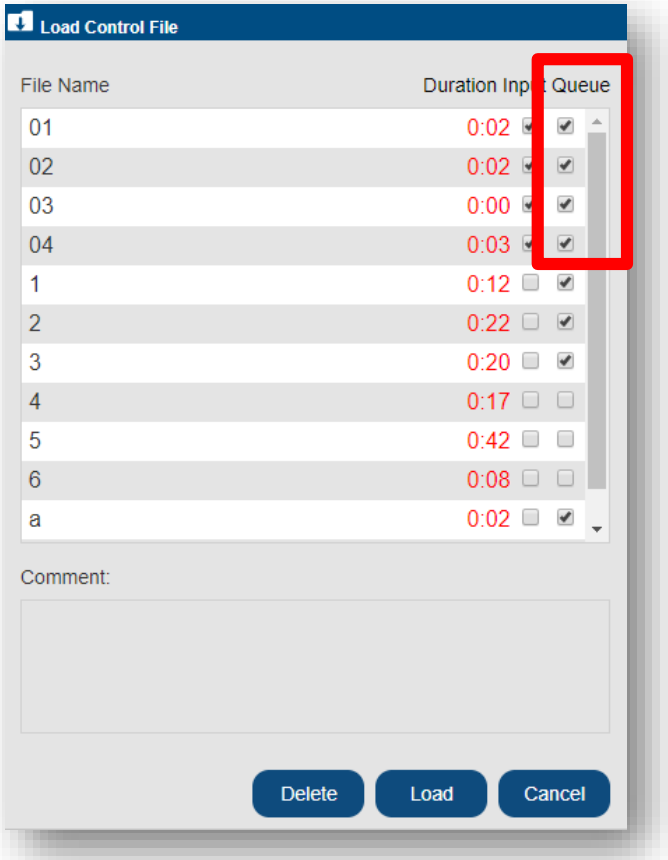
Advanced

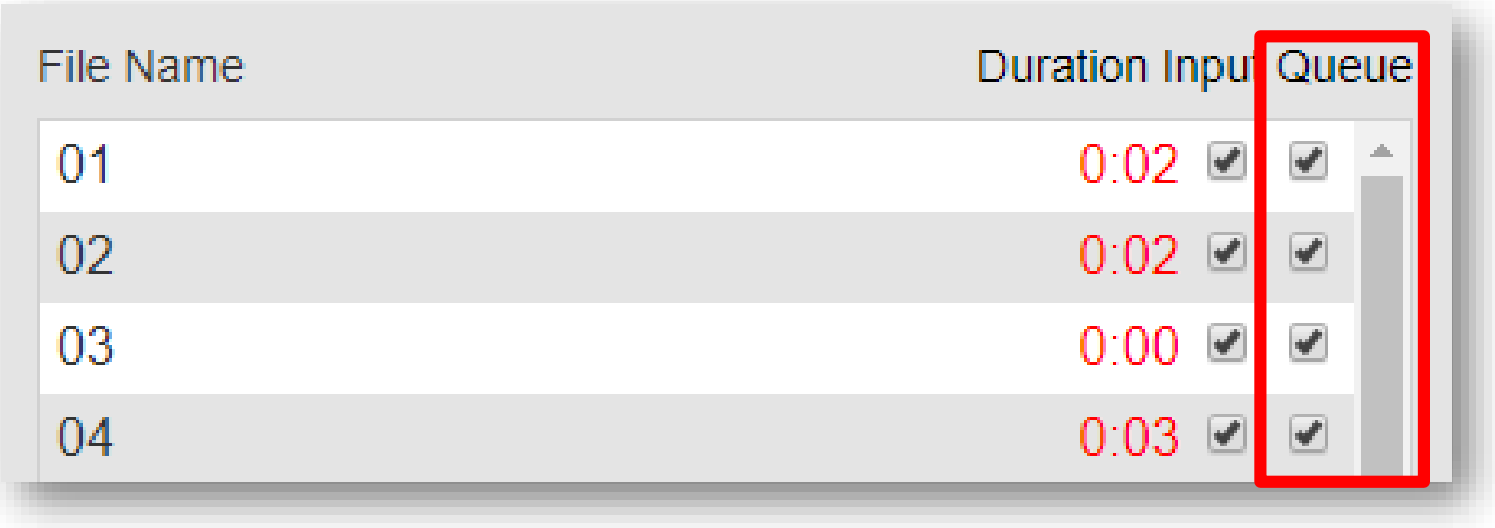
- **Control – Input**

2. Control File Setting – Queue : Entry to the window of **Load Control File** → Check **Queue**

In normal, while the current control file is being played, another control file is start to play, the current file will be stopped and the new ones will start immediately.

If **Queue** is check, the control file will be played after the current file completely played.



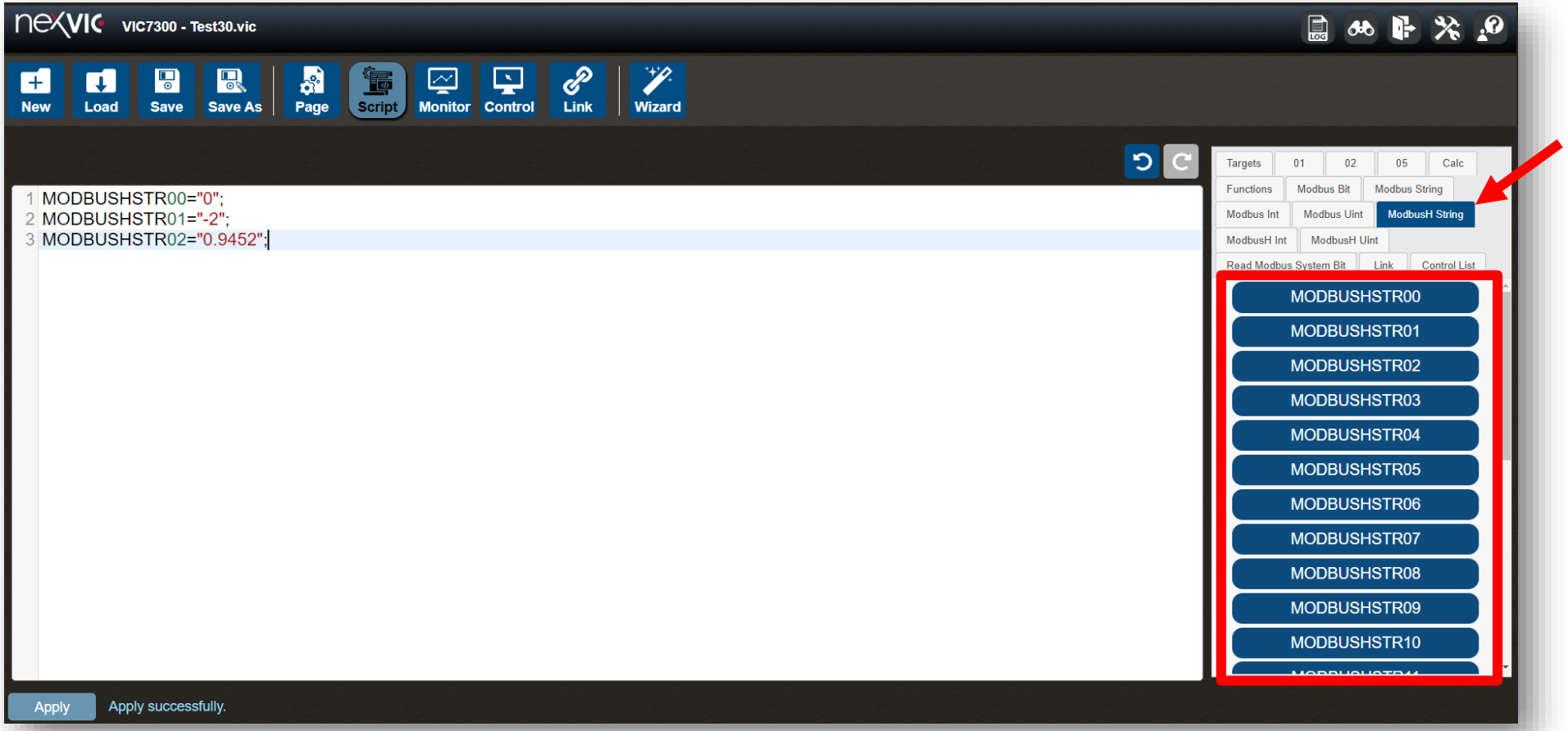


Advanced

- **Control – Input**

3. Set Input Content – Script : Entry to the **Script** page→ Set value of **MODBUSHSTR**n

n is the index of MODBUSHSTR, and MODBUSHSTRn is the content that will be entered after the control file with same index playing completely played. For example, MODBUSHSTR00 is the content that will be entered after the control file with index 00 playing is finished.

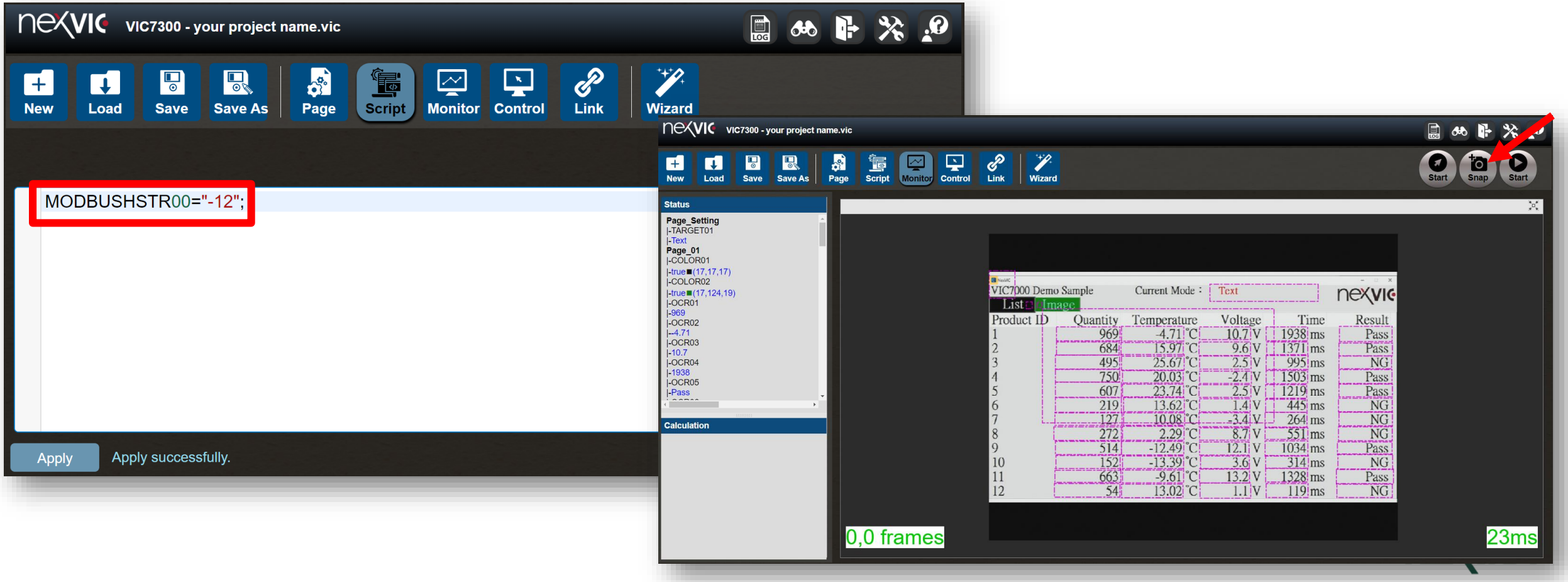


Advanced

- **Control – Input**

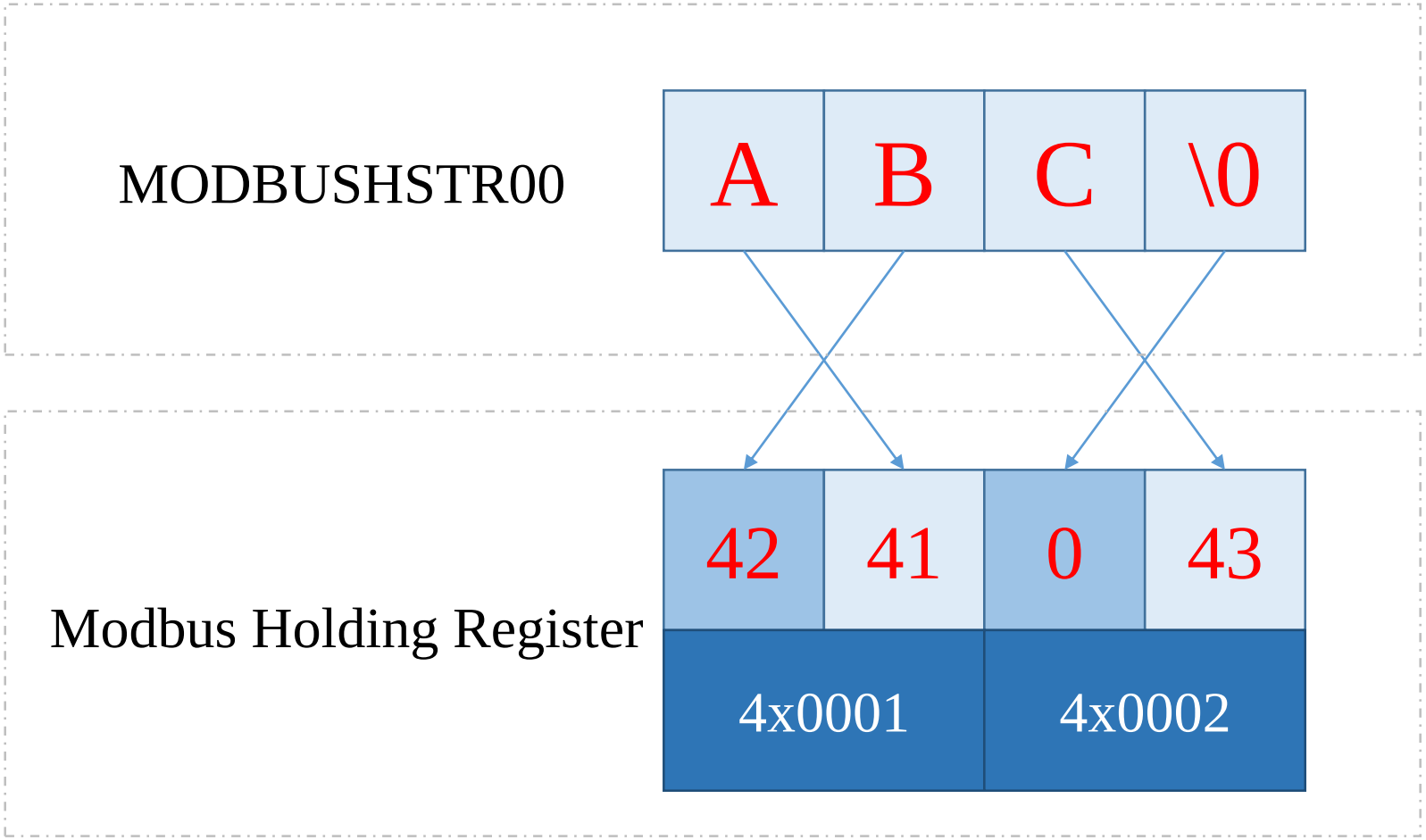
  Example – Set Input Content – Script : Use Script set the value of MODBUSHSTR00 to -12.

  Then clicking Snap in Monitor Mode, which execute Script.



Advanced

- **Control – Input**
  3. Set Input Content – Modbus TCP : VIC7000 is little-endian system. Data should be read from lower bits. Data should also be written from lower bits.



Advanced

- **Control – Input**

  3. Set Input Content – Modbus TCP : Set the value of MODBUSHSTRn, and the data type is ASCII code (8bits). A register (16bits) can store 2 ASCII code, and the ASCII code will be transfered to character. n is the index of MODBUSHSTR, and MODBUSHSTRn is the content that will be entered after the control file with same index playing is completed. For example, MODBUSHSTR00 is the content that will be entered after the control file with index 00 is finished playing.

Holding Register (4X)	
Address Range	**Content**
40001 ~ 40051	MODBUSHSTR00
40052 ~ 40102	MODBUSHSTR01
40103 ~ 40153	MODBUSHSTR02
40154 ~ 40204	MODBUSHSTR03
40205 ~ 40255	MODBUSHSTR04

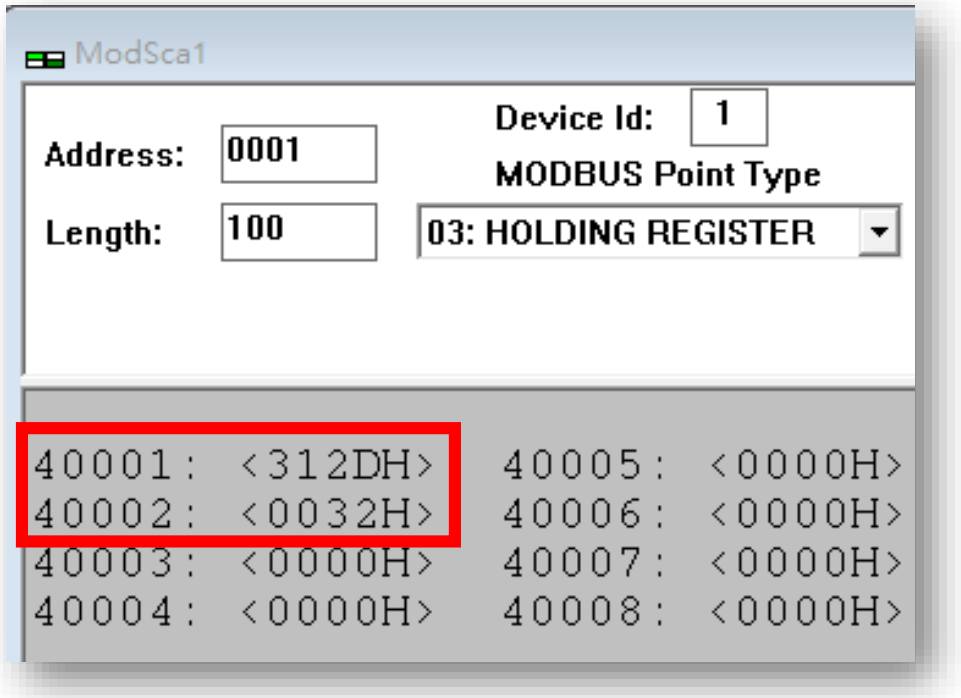
Holding Register (4X)	
Address Range	**Content**
40001 ~ 410200	MODBUSHSTR00 ~ 199

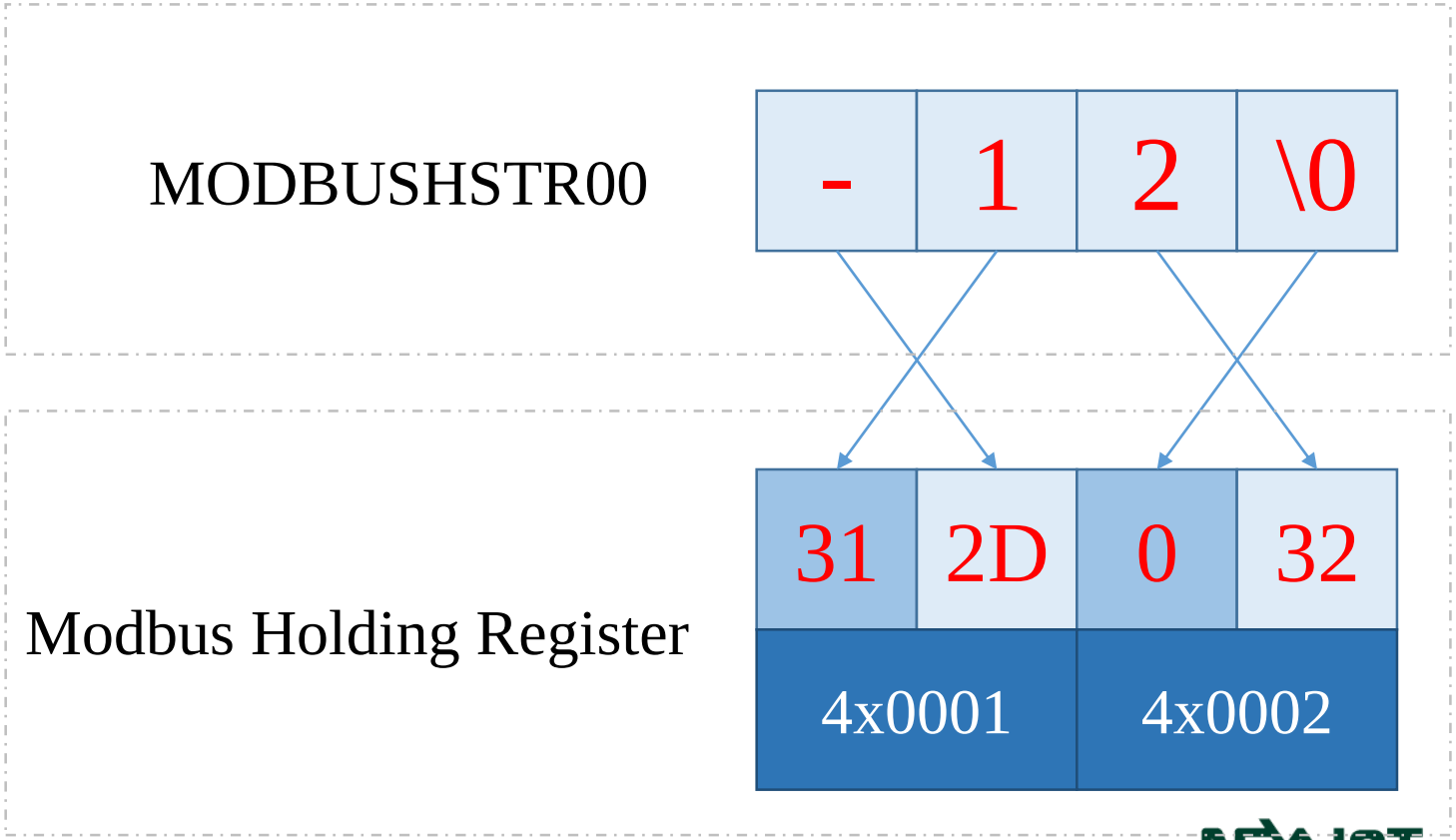
A MODBUSHSTR can store 101 ASCII code. Another word, it can store 101 characters.

Advanced

- **Control – Input**

Example – Set Input Content – Modbus TCP : Use Modscan(Hex mode) to set the value of MODBUSHSTR00 to -12



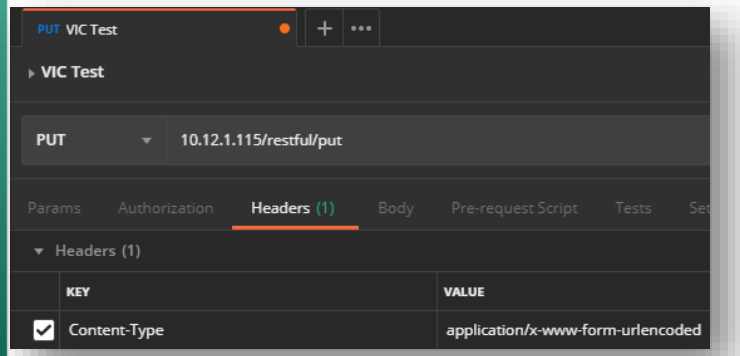


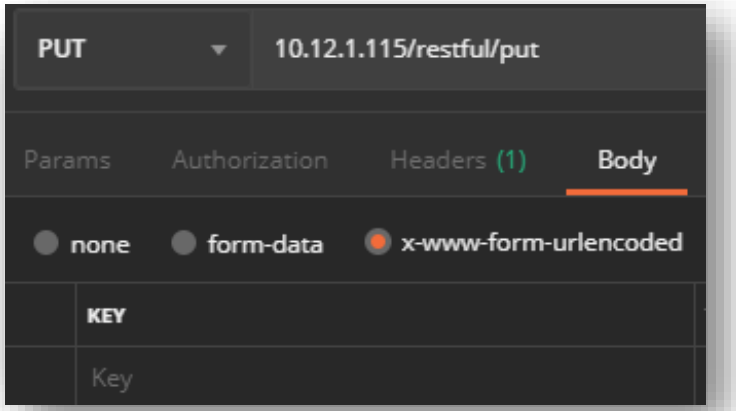
Advanced

- **Control – Input**
  3. Set Input Content – RESTful API : Use PUT to set the content that will be entered. index_value is corresponding to the index of control file, and the set content will be entered after the corresponding control file completely played. For example, MODBUSHSTR00 is the content that will be entered after the control file with index 00 playing is finished. Here use Postman for testing

Headers : Content-Type: application/x-www-form-urlencoded

Body : x-www-form-urlencoded





	Set the content that will be entered
username	admin or user
password	123456 (default)
channel_type	write_modbush_string
index_value	0 ~ 199
content	The content that will be entered

Advanced

- **Control – Input**

Example – Set Input Content – RESTful API : Use Postman to set the content of index_value 00 to -12. Check response after sending request

PUT 10.12.1.181/restful/put

Params | Authorization | Headers (9) | Body | Pre-request Script | Tests | Setti

none | form-data | x-www-form-urlencoded | raw | binary | GraphQL BETA

KEY	VALUE
☑ username	admin
☑ password	123456
☑ channel_type	write_modbush_string
☑ index_value	0
☑ content	-12

Body | Cookies | Headers (2) | Test Results

Pretty | Raw | Preview | Visualize BETA

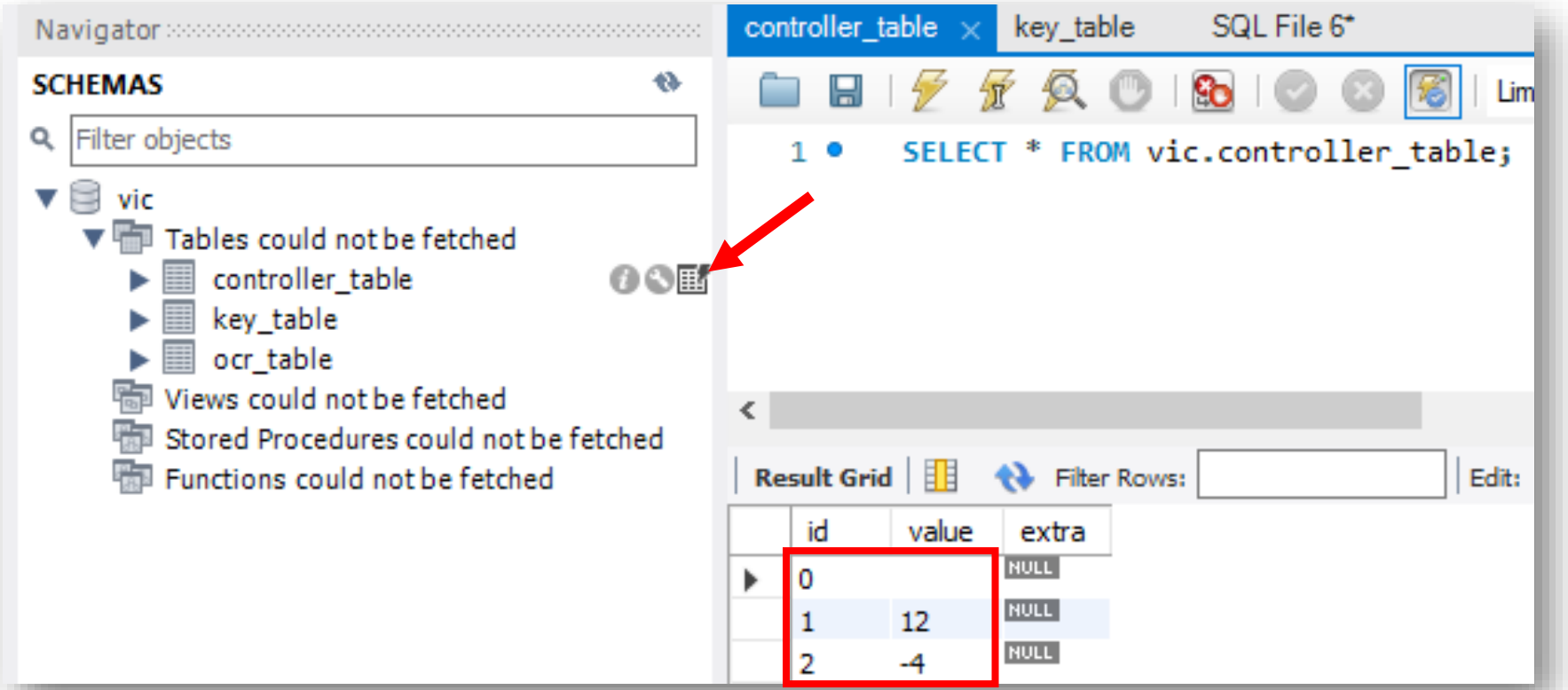
```
1 {
2     "login_success": "1",
3     "rsp_status": "1"
4 }
```

login_success	Whether logging in is successful. 1 = Successful 0 = Failed
rsp_status	Whether the command is executed 1 = Successful 0 = Failed

Advanced

- **Control – Input**

  3. Set Input Content – SQL : Use controller_table in database “vic” to set the content that will be entered. id is corresponding to the index of control file, and value in same row will be entered after the corresponding control file completely played. When VIC7000 entering data, the content set by Script, Modbus TCP, RESTful API is prior to be used. For example, the value in same row id 0 is the content that will be entered after the control file with index 00 is finished playing.



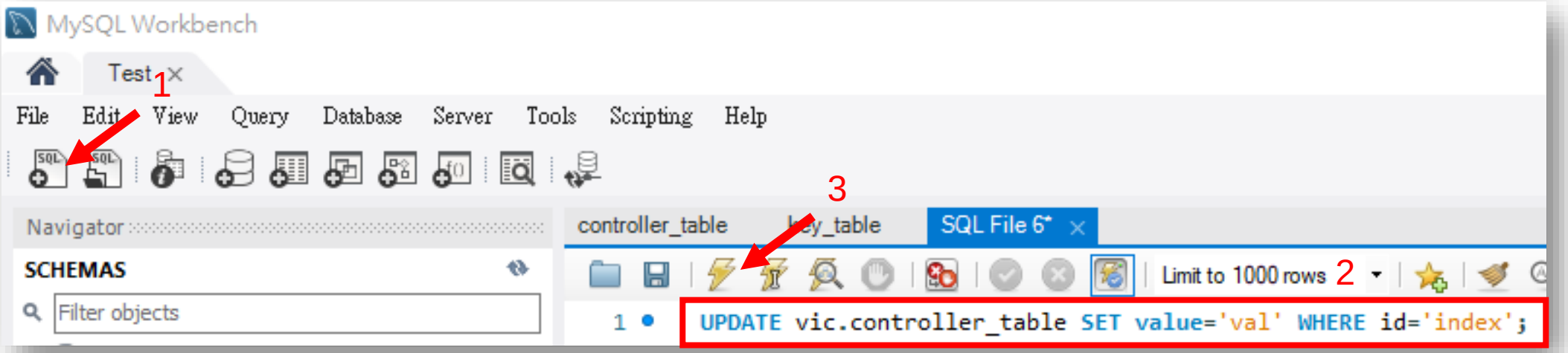
Advanced

- **Control – Input**

  3. Set Input Content – SQL : Use UPDATE to set the content that will be entered. index is the index of control file, and val is the content.

     Add a SQL file → edit the command → Click Execute

UPDATE vic.controller_input SET value='val' WHERE id='index';

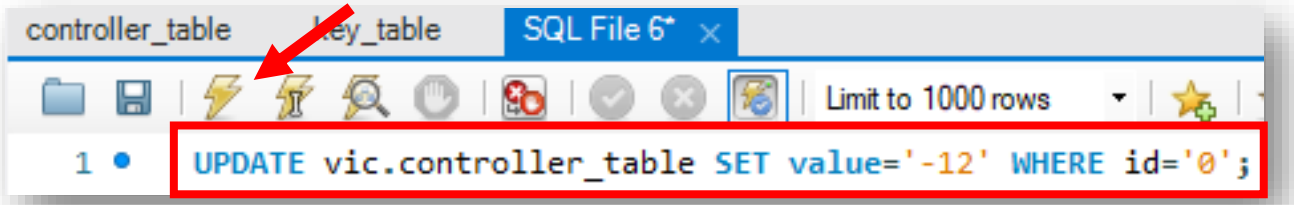


Advanced

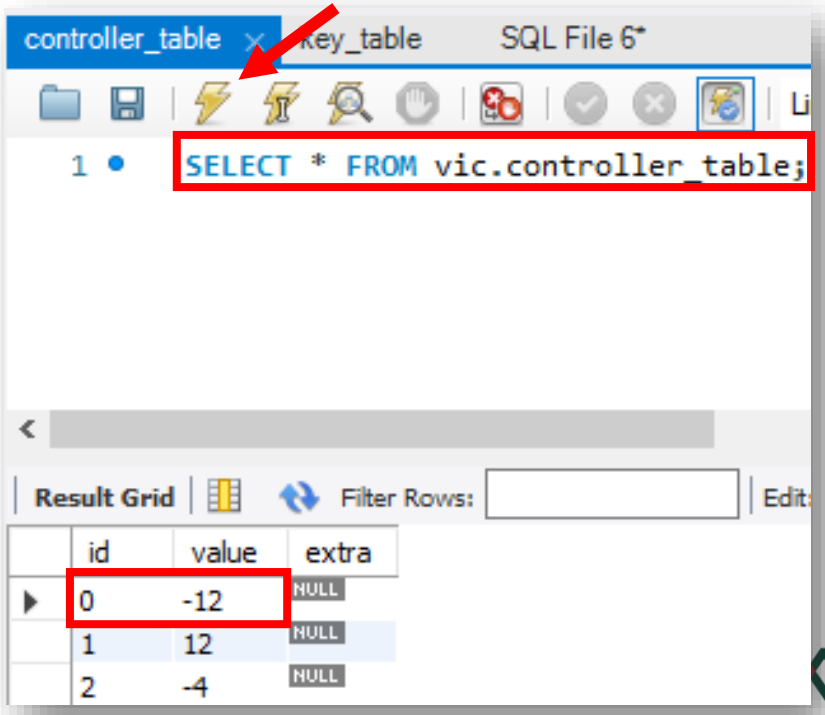
- **Control – Input**

  Example – Set Input Content – SQL : Use Postman to set the value of index_value 0 to -1 User can use SELECT to check whether the set value is correct after executing the command

UPDATE vic.controller_table SET value='-12' WHERE id='0';



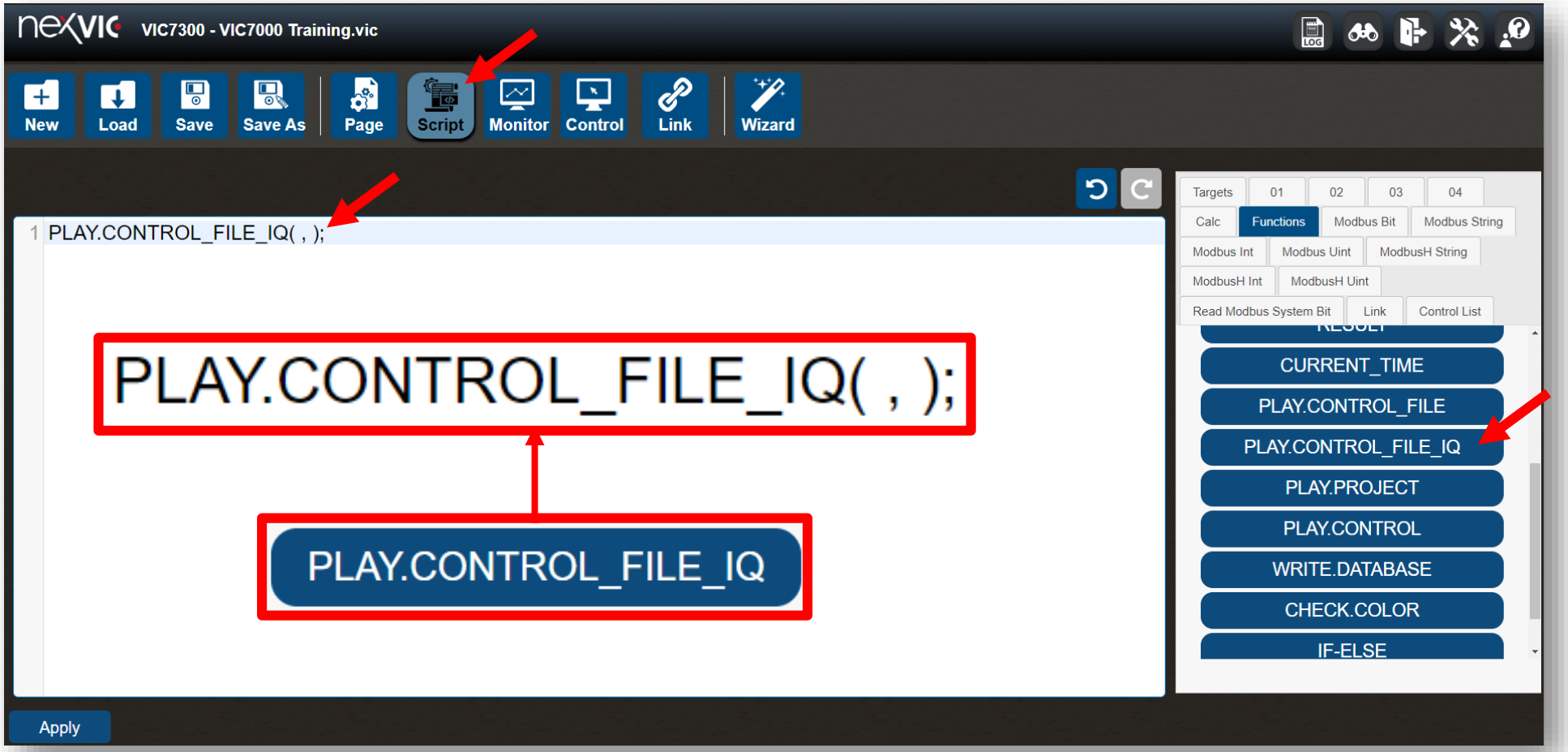
SELECT * FROM vic.controller_table;



Advanced

- **Control – Input**

4. Trigger Control File – Script : Enter **Script** page → Choose **PLAY.CONTROL_FILE_IQ** in Functions field



Advanced

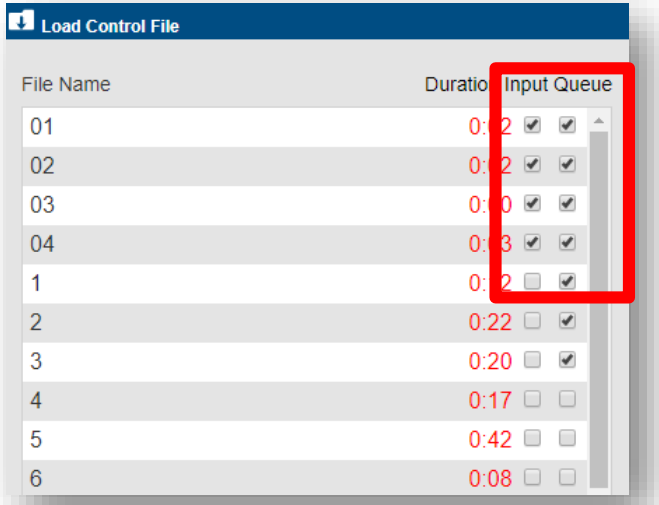
- **Control – Input**
  - PLAY.CONTROL_FILE_IQ : Play specific control file with input and queue property
    1. control_file_name : Name of the control file that is about to play. The file can be picked from control file list
    2. sec : Restrict execution again in a period of time (s)

*If it needs to use input or queue property, user must check them in Load Control File window

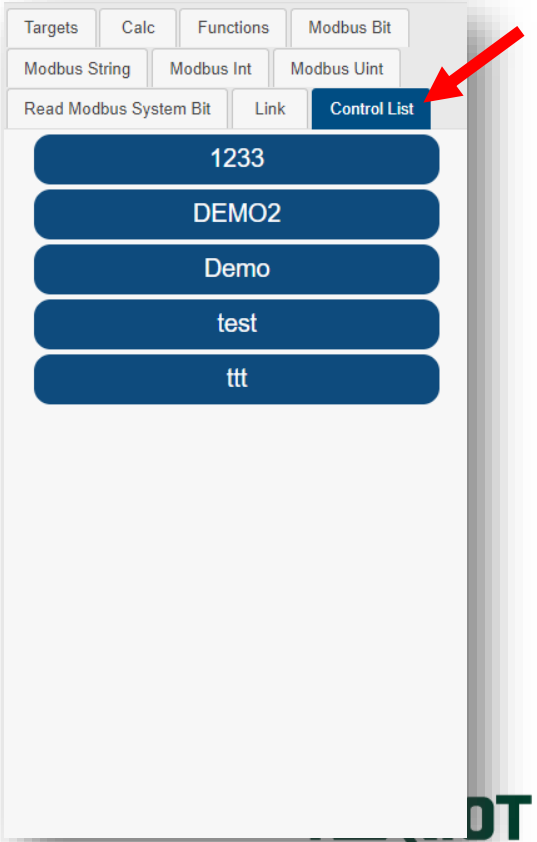
PLAY.CONTROL_FILE_IQ

PLAY.CONTROL_FILE_IQ(control_file_name, sec)

PLAY.CONTROL_FILE_IQ(,);



Control file list



Advanced

- **Control – Input**

Example – Trigger Control File – Script : Use PLAY.CONTROL_FILE_IQ to trigger the control file named 00. After edition is finished, click Apply(ctrl + s) and the script will take effect.

```
1 PLAY.CONTROL_FILE_IQ("00" ,10 );
2
3
```

Apply Apply successfully.

Advanced

- **Control – Input**

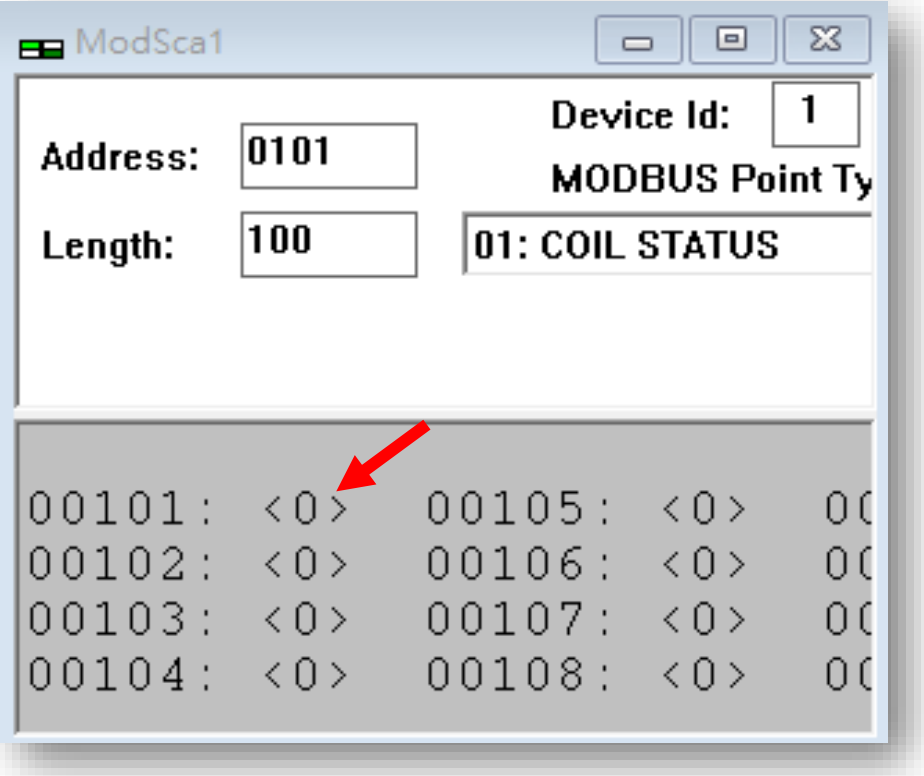
  4. Trigger Control File – Modbus TCP : Set the value of specific Modbus address, and it can trigger the corresponding control file

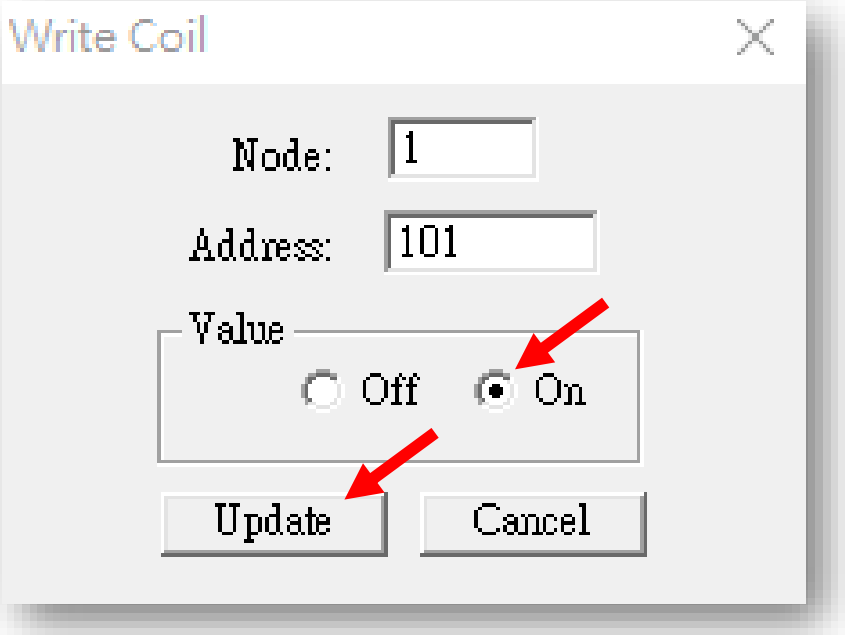
Coil Status (0X)	
Address	**Content**
00101 ~ 00300	Play control file with index 00~199 1 = Play 0 = Stop

Advanced

- **Control – Input**

Example – Trigger Control File – Modbus TCP : Double click on the value field of address 00101 and update the value to 1(On), then it will trigger the control file with index 00



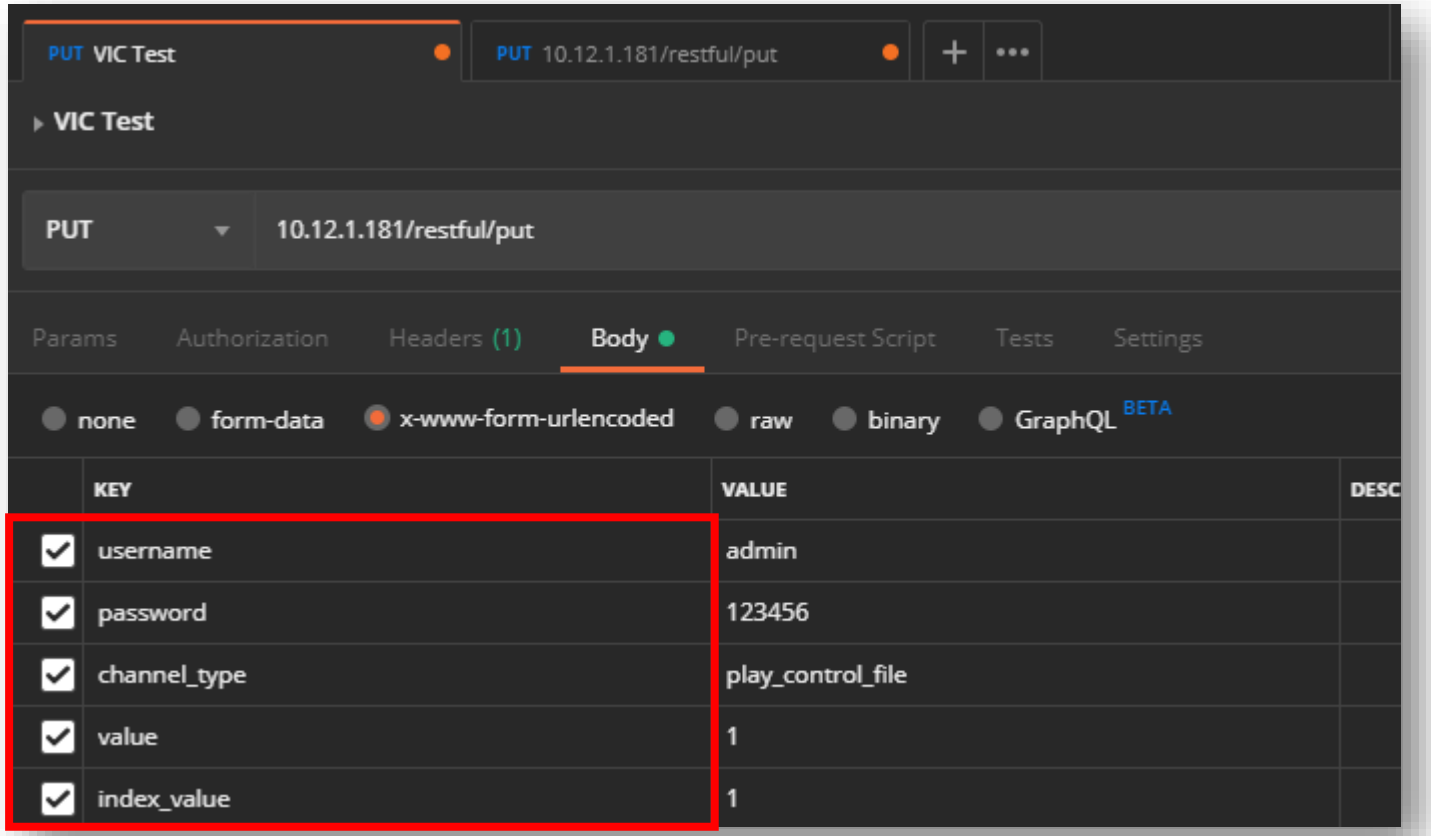


Advanced

- **Control – Input**

4. Trigger Control File – RESTful API : Use PUT to trigger the control file

	Play control file with index i
username	admin or user
password	123456 (default)
channel_type	play_control_file
value	1 = Play 0 = Stop
index_value	0 ~ 199



Advanced

- **Control – Input**

  4. Trigger Control File – RESTful API : Check response

Body Cookies Headers (2) Test Results

Pretty Raw Preview Visualize BETA

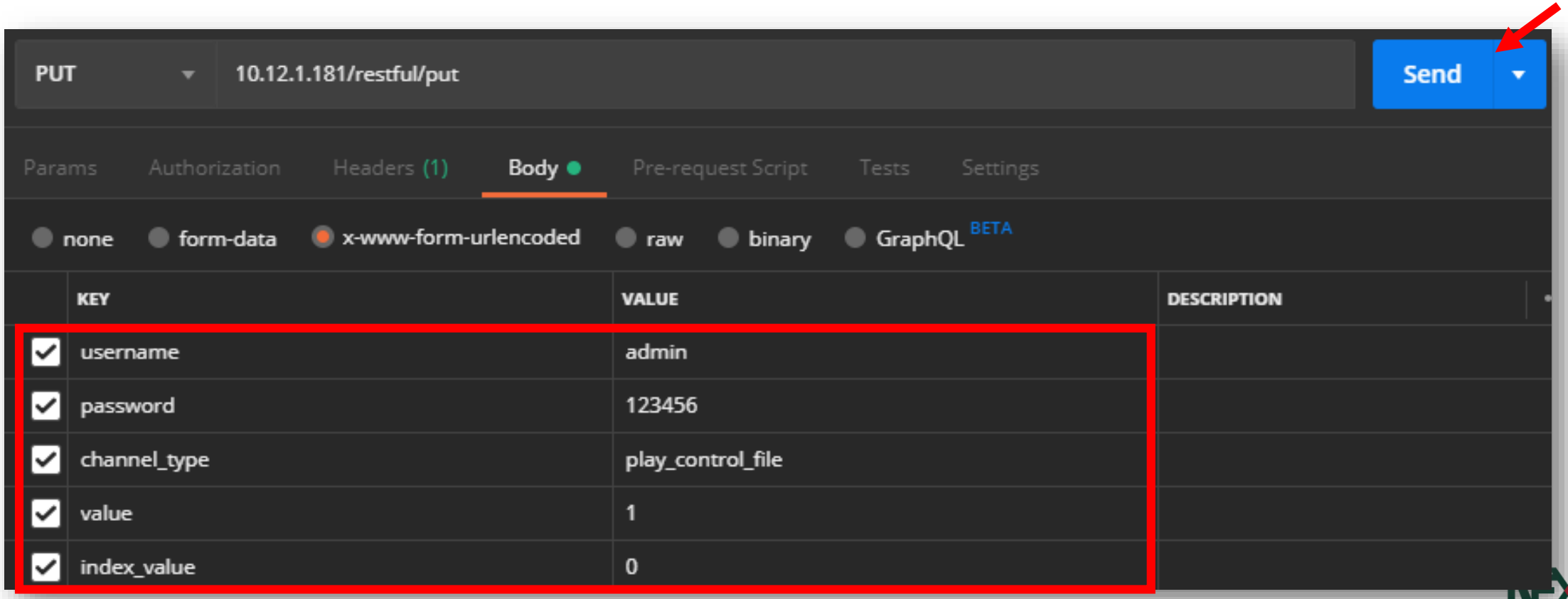
```
1 {
2     "login_success": "1",
3     "rsp_status": "1"
4 }
```

login_success	Whether logging in is successful. 1 = Successful 0 = Failed
rsp_status	Whether the command is executed successfully. 1 = Successful 0 = Failed

Advanced

- **Control – Input**

  Example – Trigger Control File – RESTful API : Trigger the control file with index 00. Send the request after setting up the parameters



Advanced

- **Control – Input**

Example – Trigger Control File – RESTful API : Check response after sending the request

Body Cookies Headers (2) Test Results

Pretty Raw Preview Visualize BETA

```
1 {
2     "login_success": "1",
3     "rsp_status": "1"
4 }
```

login_success	Whether logging in is successful. 1 = Successful 0 = Failed
rsp_status	Whether the command is executed successfully. 1 = Successful 0 = Failed

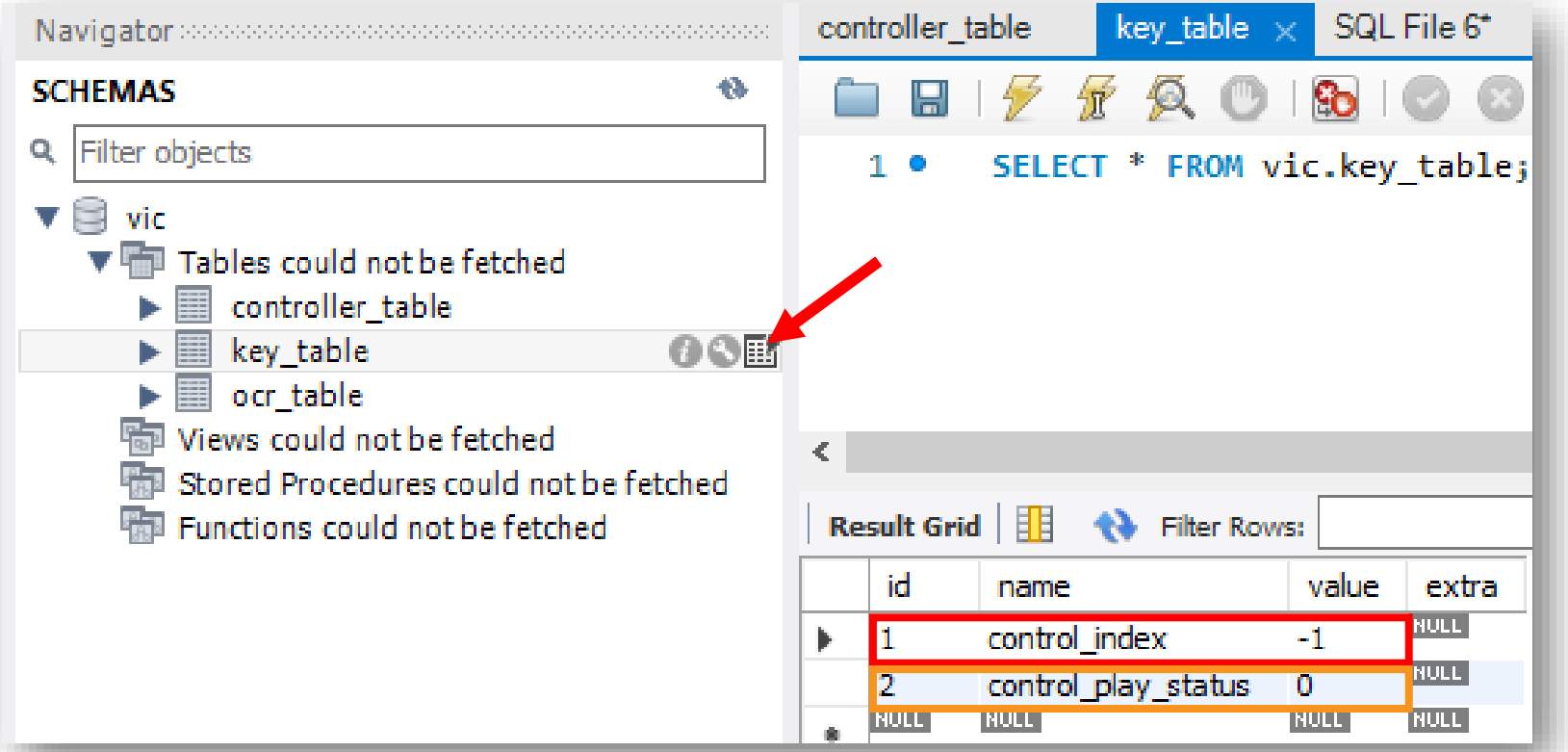
Advanced

- **Control – Input**

4. Trigger Control File – SQL : Use key_table in database “vic” to trigger control file. Use UPDATE to trigger the specific control file. index is the index of control file.

   User can use SELECT to get the status of Control, 0 = Stop, 1 = Playing

UPDATE vic.key_table SET value=‘index’ WHERE id=‘1’; SELECT value FROM vic.key_table WHERE id=‘2’;



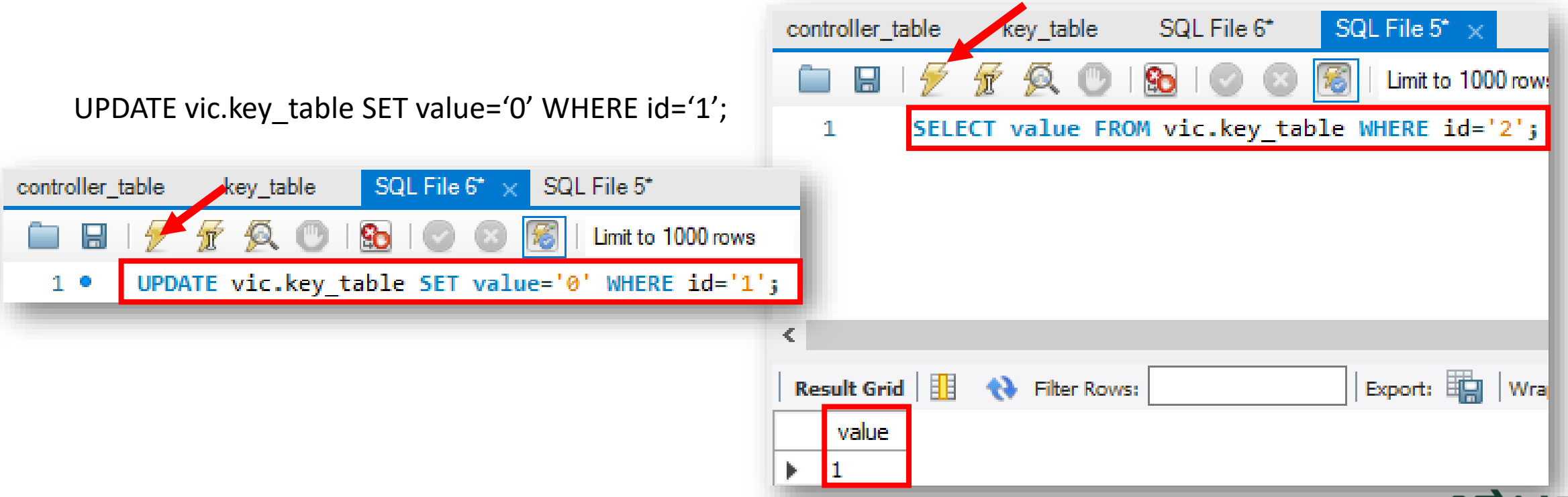
Advanced

- **Control – Input**

  Example – Trigger Control File – SQL : Use UPDATE to trigger the control file with index 00, use SELECT to get the status of Control

SELECT value FROM vic.key_table WHERE id='2';

UPDATE vic.key_table SET value='0' WHERE id='1';



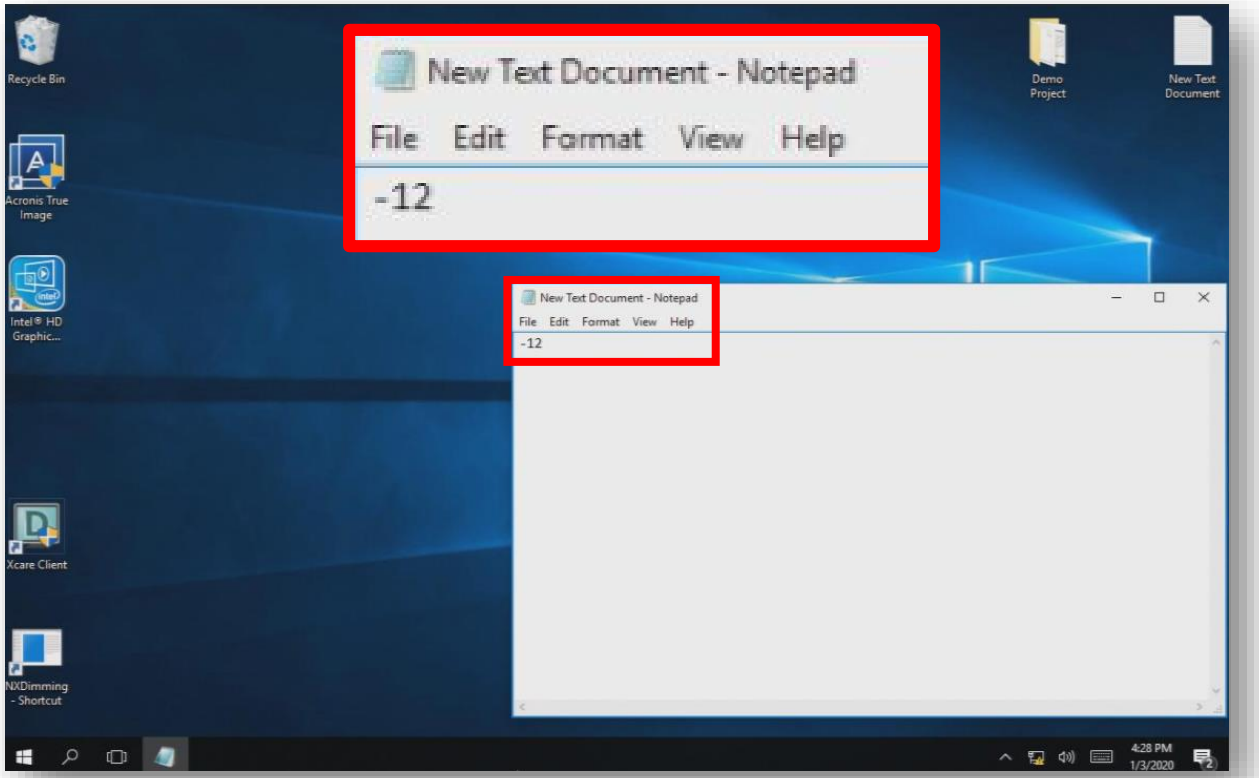
Advanced

- **Control – Input**

5. Simulate : This example illustrates how to use control file to make the notepad enterable and enter -12 after the control file playing is finished playing. When simulating, user can check :

✓ **Whether playing control file is correct**

✓ **Whether entered content is correct**

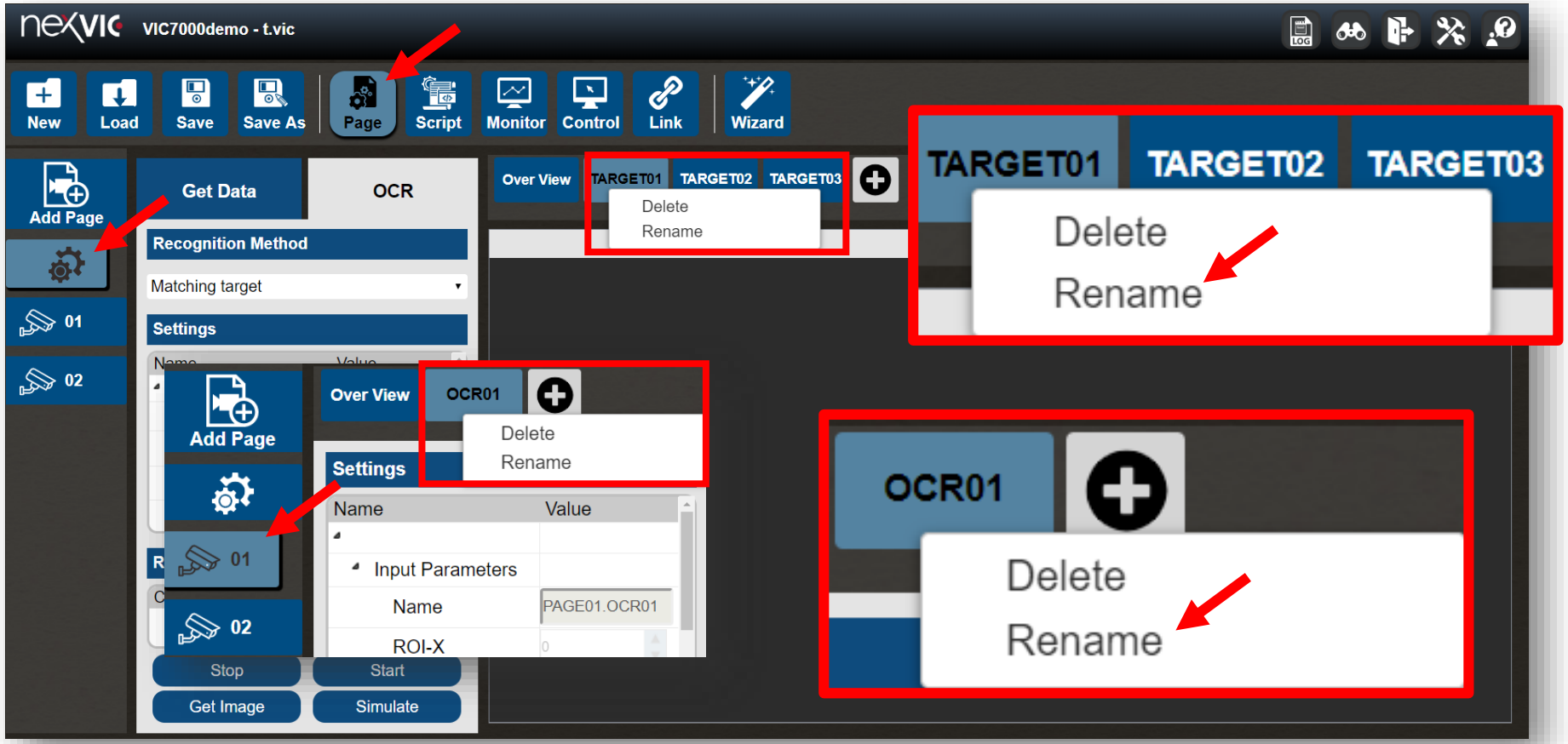


Appendix

- **Rename**

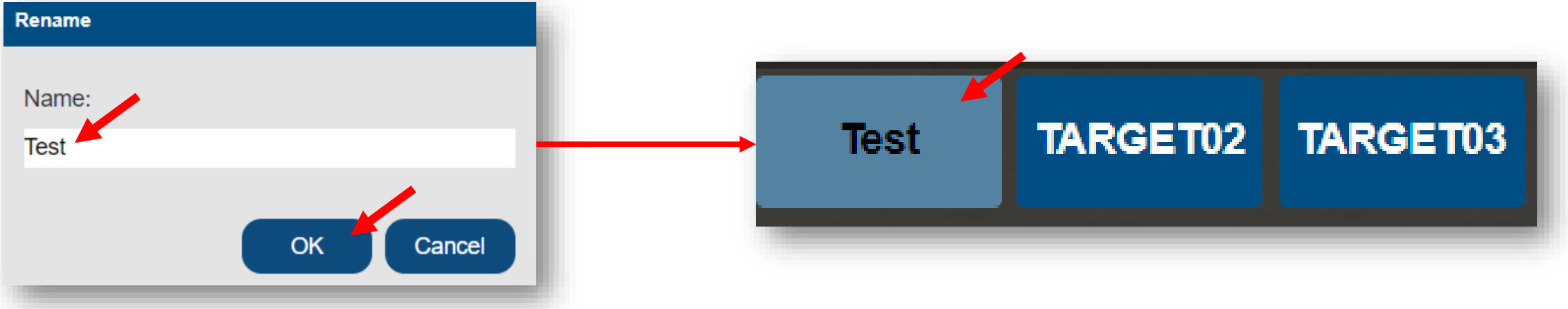
1. Rename : Enter Recognition Config Page → Right-click **TARGET**、**TARGET_COLOR**、**TARGET_PATTERN**、**OCR**、**COLOR**、**PATTERN** → Choose **Rename**

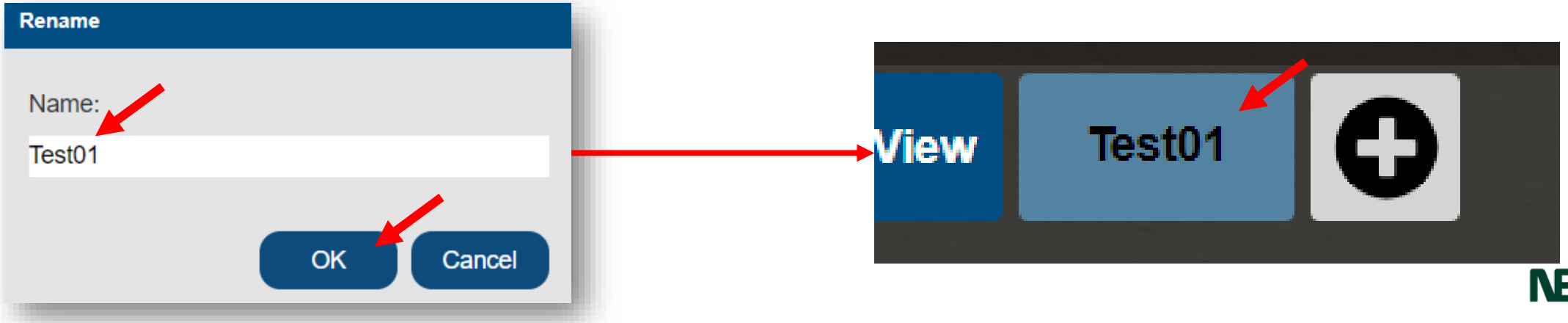
Here use TARGET and OCR to demonstrate this function



Appendix

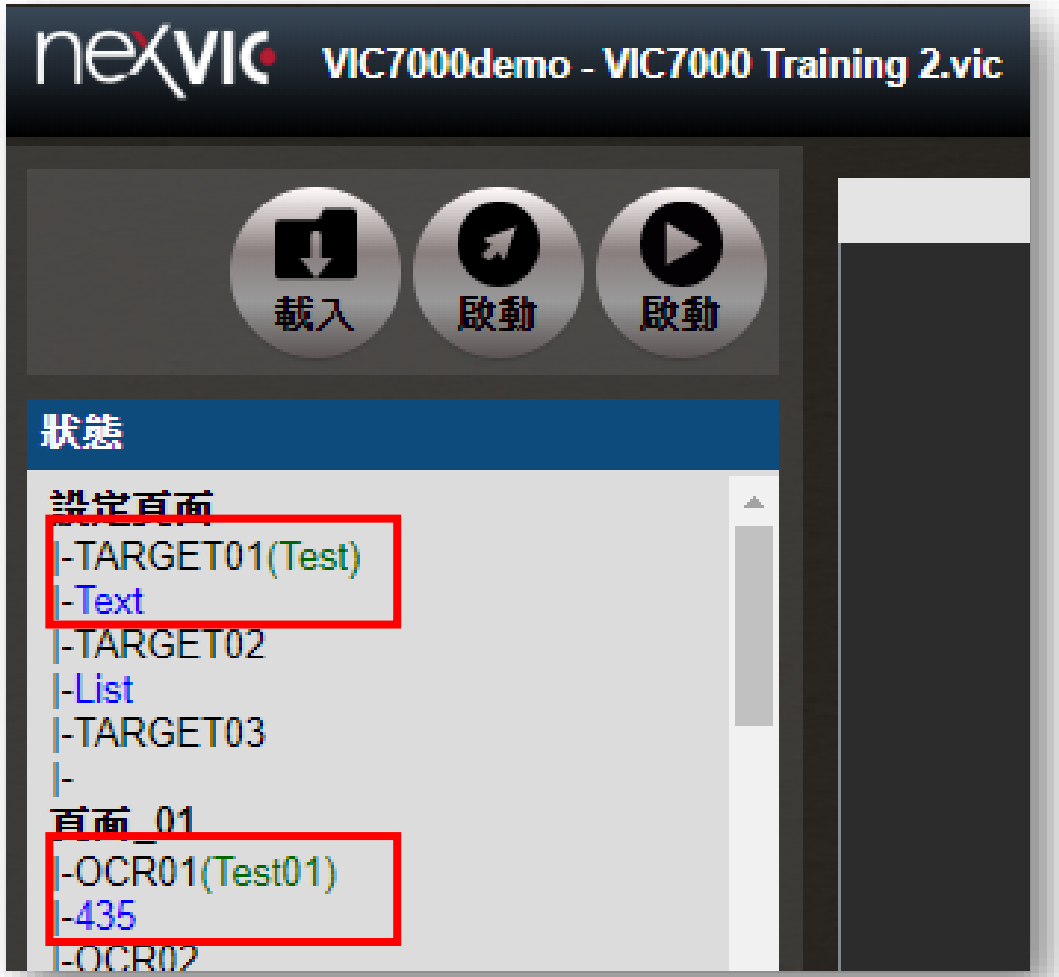
- **Rename**
  1. Rename : Enter the **new Name** (not repeated) → Click **OK**, then TARGET and OCR will be renamed.





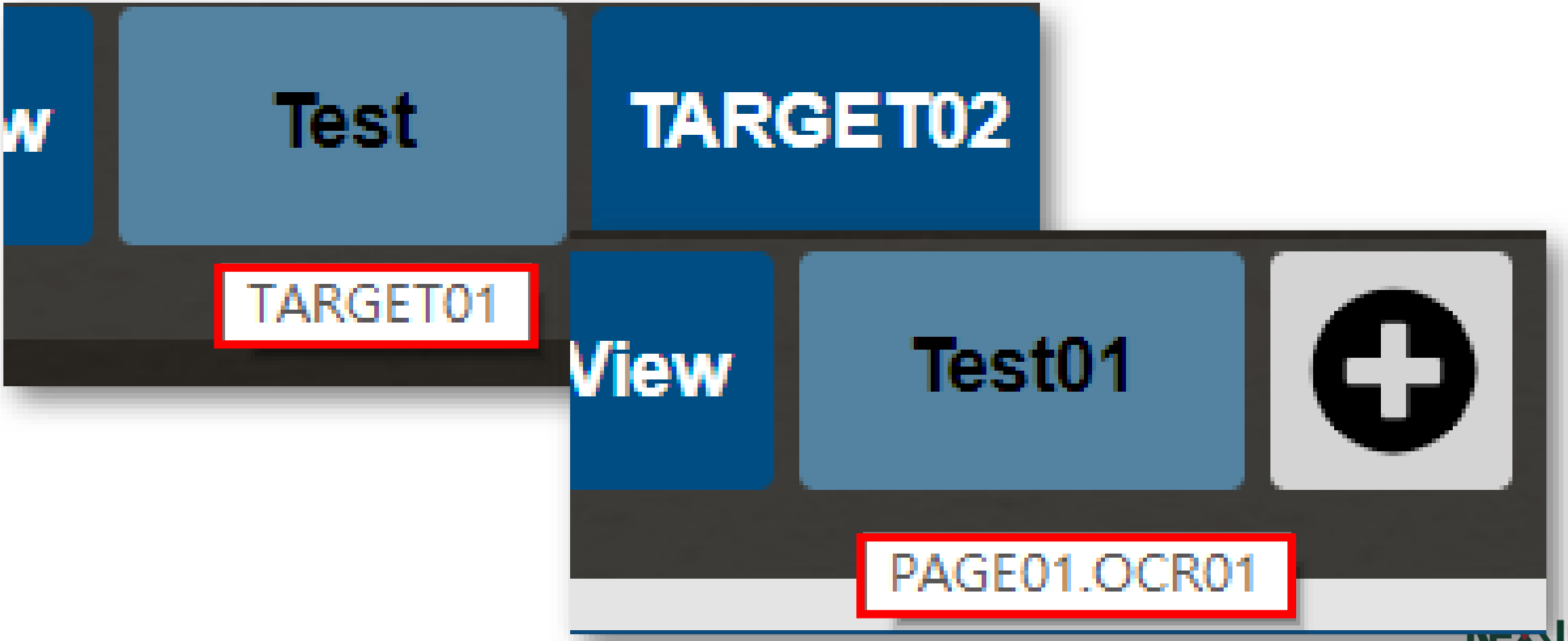
Appendix

- **Rename**
  - Check Rename : Rename content will be denoted beside the **TARGET** and **OCR**



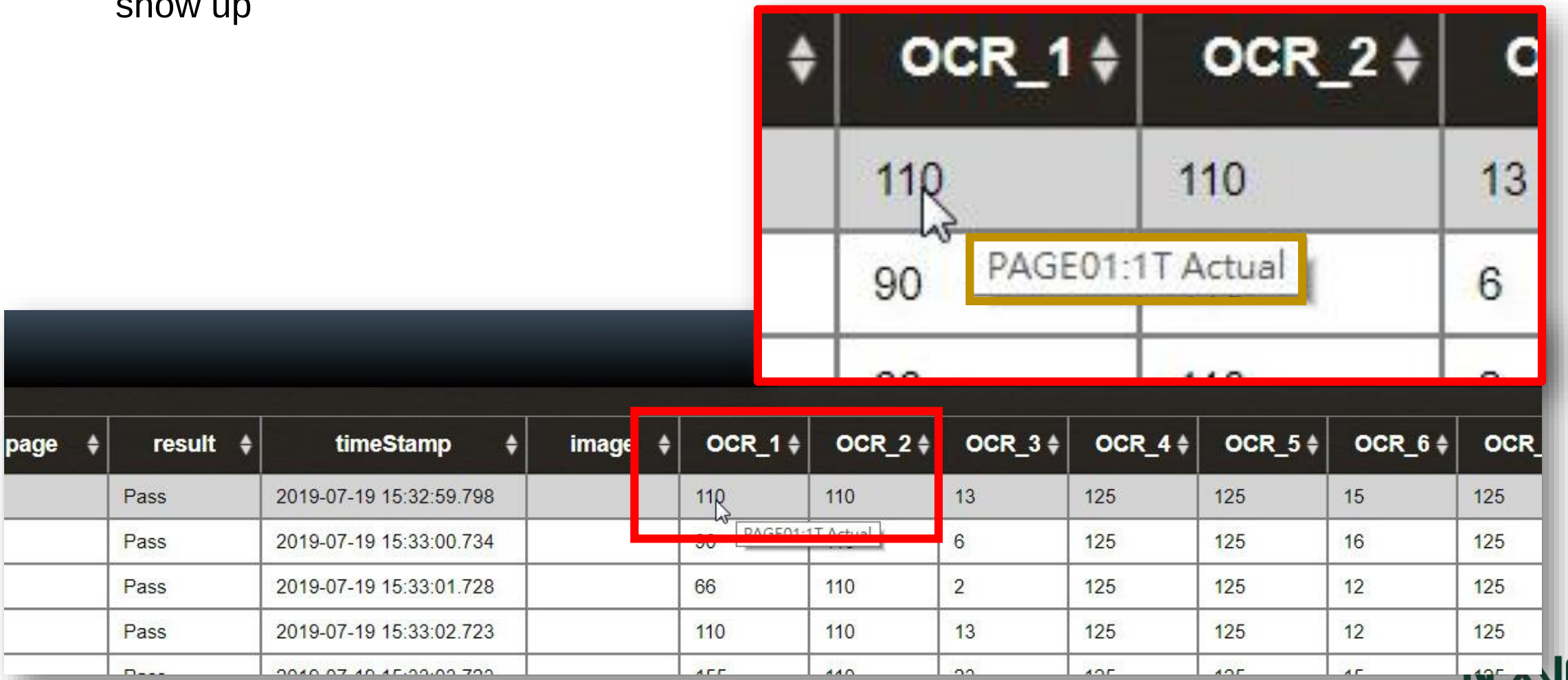
Appendix

- **Rename**
  - Check Rename : Click the renamed TARGET and OCR, and the original name will show up



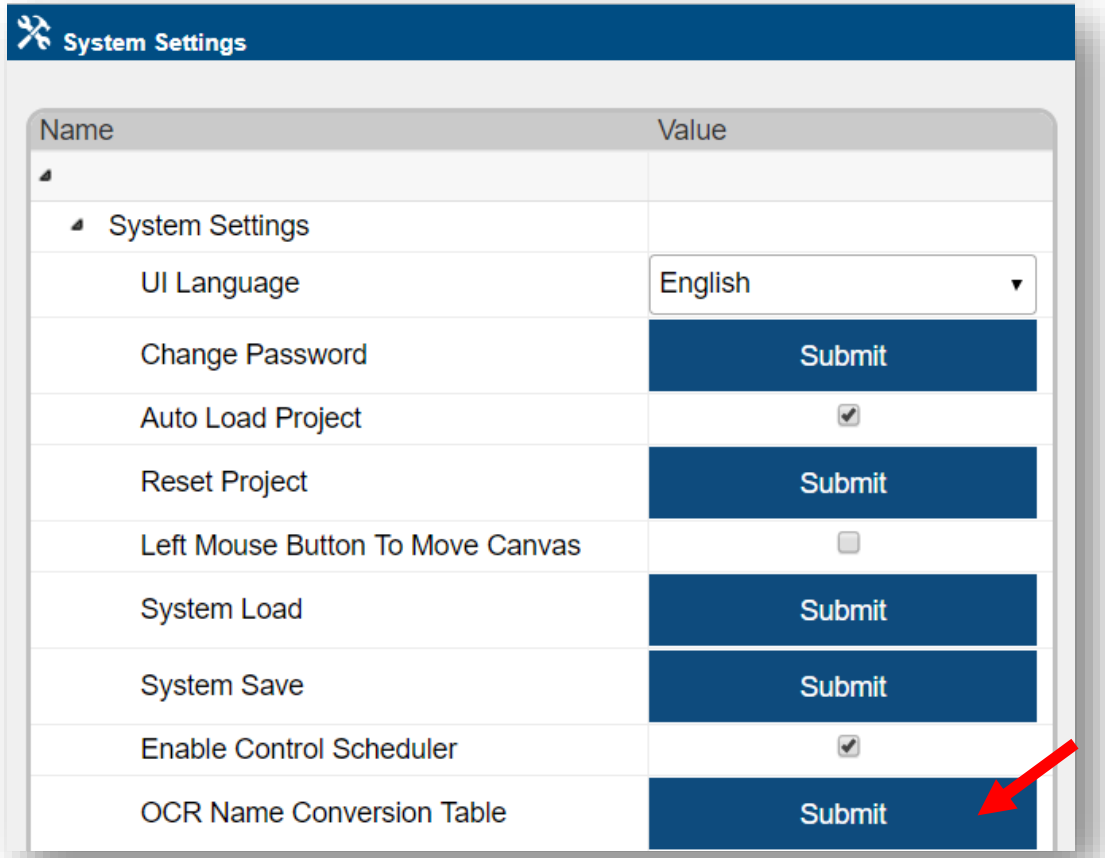
Appendix

- **Rename**
  - Check Rename : In Database page, select renamed TARGET & OCR, and the new name will show up



Appendix

- **Rename**
  - Check Rename : In System Settings, Click **OCR Name Conversion Table**, and the table listing renamed content will show up, the **JSON file** and can be export to **.txt**



Appendix

- **Rename**
  - Check Rename : Use with RESTful API, and Enter **IP/restful/ocr_map** in URL field.

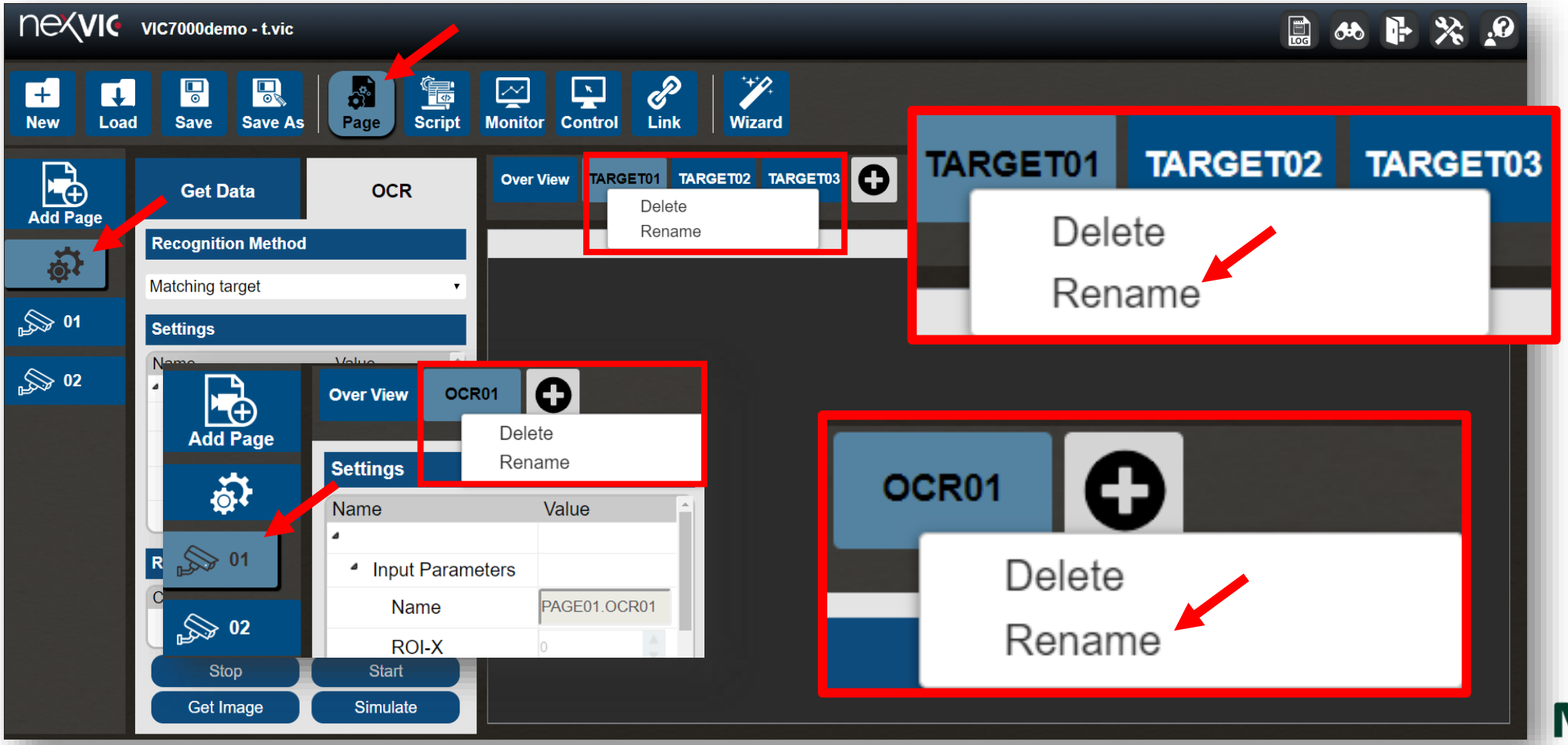
    The **OCR Name Conversion** Table will show as below.

192.168.133.144/restful/ocr_map

{"TARGET01":"Test","PAGE01.OCR01":"Test01"}

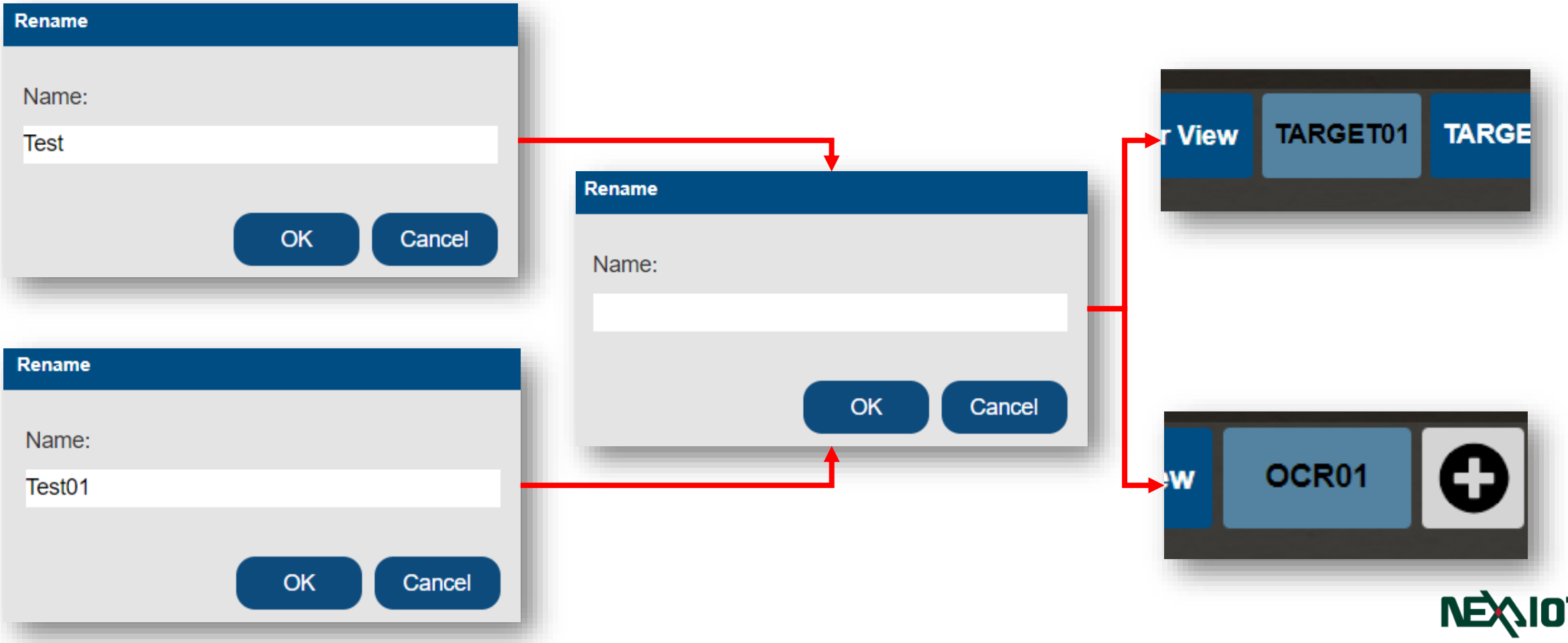
Appendix

- **Rename**
  - Recover : Enter Recognition Config Page → Right-click renamed **TARGET** and **OCR** → Choose **Rename**



Appendix

- **Rename**
  - Recover : **Empty** new Name → Click **OK**, and TARGET & OCR will be recovered to default name.



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