Human-Machine Interface

User guide

Document	HMI_User_Guide_EN 000.100.536		
Version	H2	**Date**	28.07.2021
HMI version	v2.9.1		
Products	Asycube 50, Asycube 80, Asycube 240, Asycube 380, Asycube 530 SmartSight		

Table of Contents

Introduction

This documentation describes the pages of this interface and possibilities supplied by. How to configure your products is not described in it.
Another specific documentation explains how to work with your product and the HMI provide only a solution to do it.

General information

Before using the product, please read this entire document in order to ensure that the product is used correctly. However, if you encounter difficulties when using the product, do not hesitate to contact our customer service department.

In this manual, the safety information that must be respected is split into three types: "Danger", "Important" and "Note". These messages are identified as follows:

DANGER!
Failure to respect this instruction may result in serious physical injury.

DANGER!
This instruction identifies an electrical hazard. Failure to respect this instruction may result in electrocution or serious physical injury due to an electric shock.

IMPORTANT!
Failure to respect this instruction may result in serious damage to equipment.

NOTE:
The reader's attention is drawn to this point in order to ensure that the product is used correctly. However, failure to respect this instruction does not pose a danger.

Reference …
For more information on a specific topic, the reader is invited to refer to another manual or another page of the current manual.

Roles and access levels

The HMI has many different access level to be able to limitate access to important, sensible or dangerous parameters to operators.

In this documentation, minimum level required to access to an element is identified by icons on the right of the explanation of the element. If there is no icon signify that operator has access to this element.

Icons list:

Icon	Level access minimum
	Advanced operator
	Technician
	Advanced technician
	Integrator

The table below defines the actions that can be performed by each professional permitted to work on the machine:

	Operator	Advanced operator	Technician	Advanced technician	Integrator	Developer
Switch on/switch off the unit	✓	✓	✓	✓	✓	✓
Login/Logout						
Select/load a recipe						
Launch/Stop production						
Create a statistical report						
Access the basic functionalities of the "header" screen						
Read the values of the process dynamic variables	⊘	✓	✓	✓	✓	✓
Acquire and analyse an image						
Move the robot						
Vibrate the Asycube						
Add/modify an operator	⊘	⊘	✓	✓	✓	✓
Modify the values of the process dynamic variables						
Obtain and analyse an image						
Perform a new calibration						
Save a recipe						
Access the full ARL program	⊘	⊘	⊘	✓	✓	✓
Create a new process						
Access the full Vision parameters						
Create a new Vision recipe						
Add/modify a technician	⊘	⊘	⊘	⊘	✓	✓
Access maintenance/ debugging						
Add/modify an integrator	⊘	⊘	⊘	⊘	⊘	✓
Advanced access to HMI, Robot and AsyView						

Installation

NOTE:
If a computer is included in your product, the "HMI" software is already installed.
This chapter explains how to install the HMI on your own computer if needed.

Prerequisite

To install and execute the HMI you need those elements:

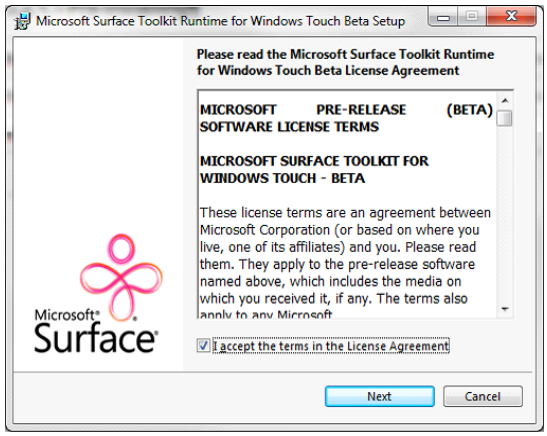
- Computer with Windows 7, 8, 8.1 and 10, 64bits (a 32 bits version of HMI can be delivered on request)
- .Net 4.7.1 minimum installed.
- User access defined by your IT service to be able to install and execute software.

NOTE:
Check that your version of the ".net framework" is up to date. You can download this version from the Microsoft website: http://www.microsoft.com/download/

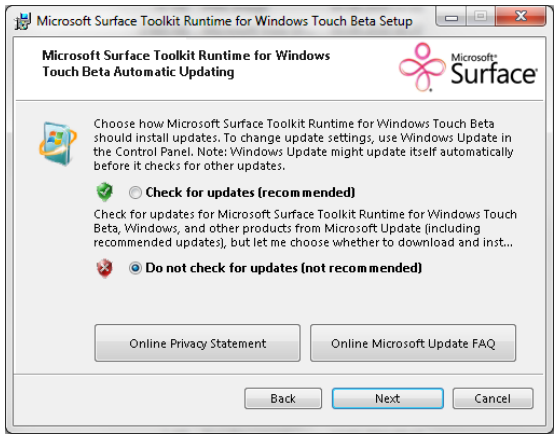
Installing the HMI software on a specific computer

Pre-installing

Step 1	Insert the USB key into the computer on which the HMI should be installed.
Step 2	Double-click on the SurfaceToolkitRuntime.msi executable file to launch the installation procedure.
Step 3	Accept the license agreement and follow the instructions provided by the wizard.



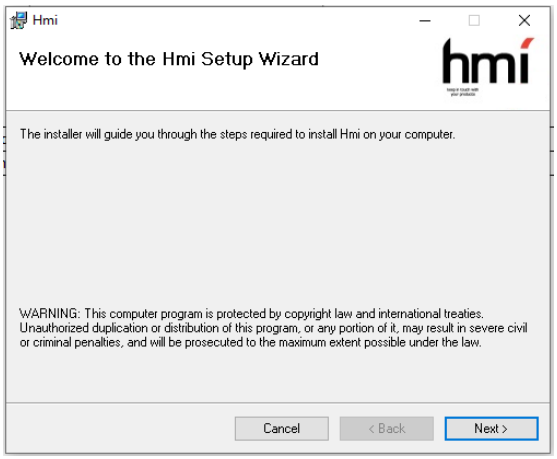
Step 4	If the program asks you for automatic updates, select "do not check for updates" and click on next button.



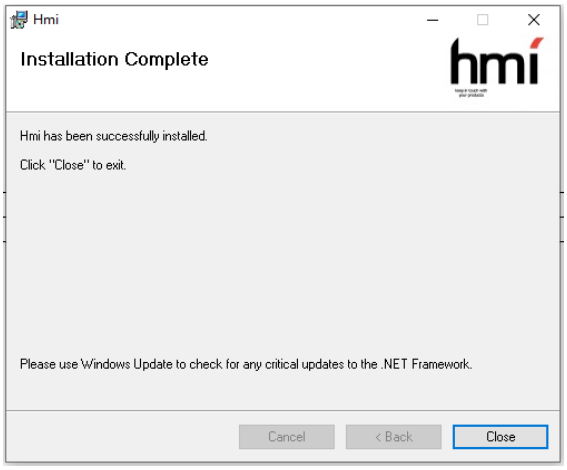
Step 5	When installation is complete, click on "Finish" to close the wizard.

Installing

Step 1	Insert the USB key into the computer on which the HMI should be installed.
Step 2	Double-click on the HMI_Installer_x64.msi executable file to launch the installation procedure.



Step 3	Follow the instructions provided by the wizard.
Step 4	When installation is complete, click on "close" to close the wizard.

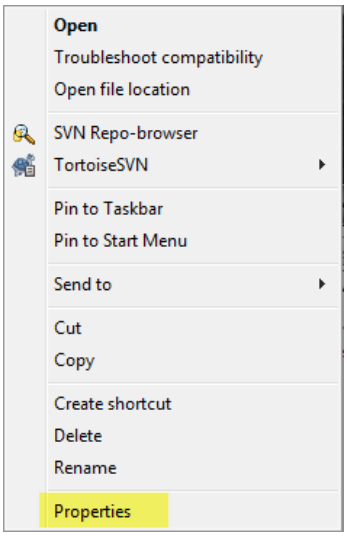


Access rights issue

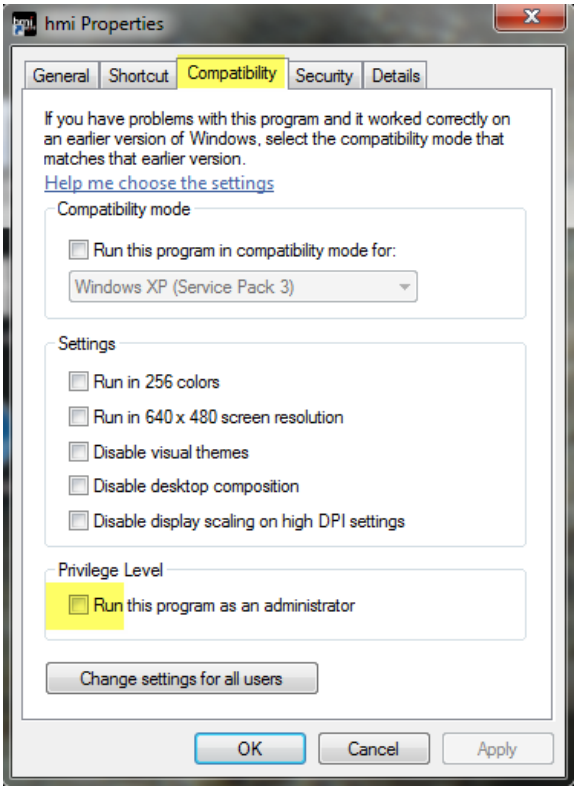
If the account used on your computer does not have administrator access rights to the SupplierData folder (where supplier is replaced with your actual supplier), you need to start **once** the HMI with the administrator access right.

To do that, follow this procedure :

Step 1	Right-click on the HMI shortcut on your desktop.
Step 2	Click on the Property choice.



Step 3	Select the Compatibility tab.
Step 4	Check the "Run this program as an administrator" option.



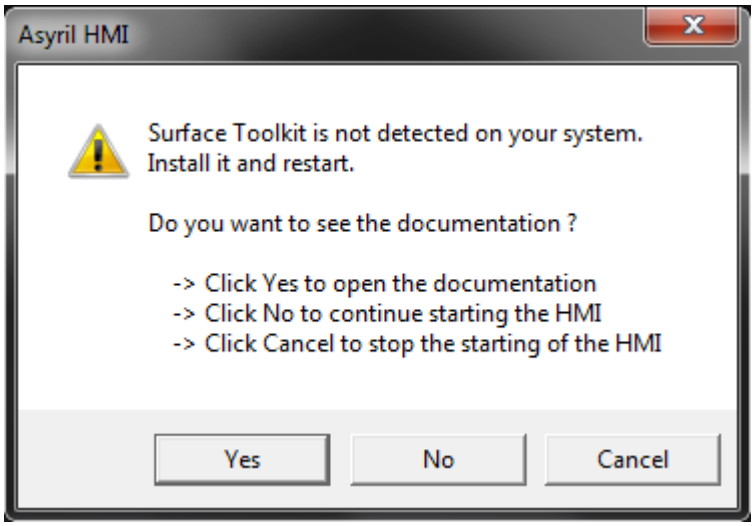
Step 5	Click Ok.

Step 6	Start the HMI.
Step 7	When HMI is started, stop the HMI.
Step 8	Uncheck the "Run this program as an administrator" option in the same place as before.
Step 9	Start again the HMI, normally you have the correct access rights to the SupplierData folder.

Starting HMI

Step 1	Click on the shortcut created on the desktop.
Step 2	If needed, configure the HMI depending of your products on the configuration page.

IMPORTANT!
If the SurfaceToolKit has not been previously installed or if it cannot be detected, a message box will prompt the user to install it :

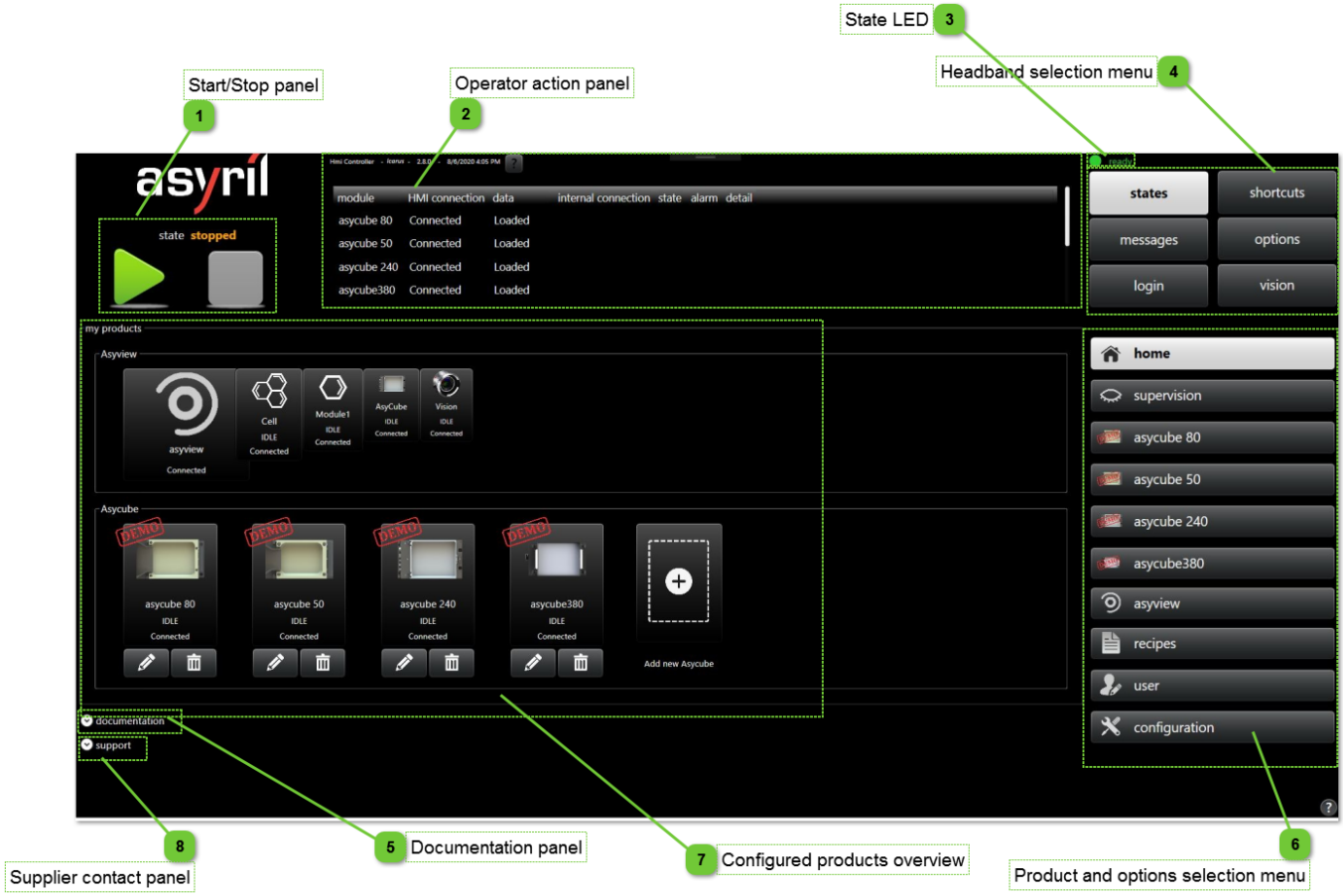


In this message box, the user has three options:
- *Yes to open the documentation to the page with the procedure to install the SurfaceToolKit.*
- *No to continue starting the HMI (if the SurfaceToolKit is not installed, the HMI can not be used as no buttons will be displayed).*
- *Cancel to interrupt the starting of the HMI.*

General

This chapter introduces you to the general aspect of the HMI. Page descriptions for products can be found in the following chapters.

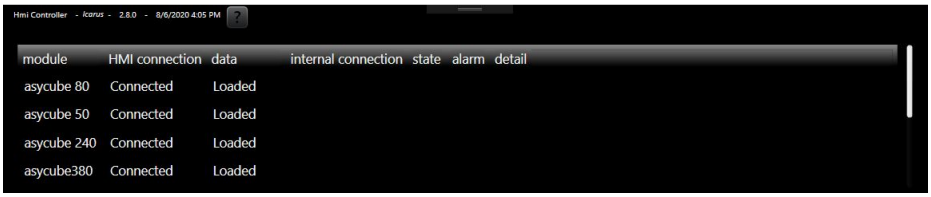
Main window



1 Start/Stop panel

This part of the window give access to the start/stop action and show the OMAC state if the process is used.

2 Operator action panel



The operator action panel is the zone where operator can see some informations and execute some actions. Each button on headband selection menu display various informations or give access to some actions. Is this example, the states panel is displayed (see description of this panel here).

3 State LED

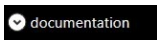
This LED indicator shows the global state of the HMI. If one product is in error, the global state is in error. For more details for product states, click on states button on headband selection menu.

4 Headband selection menu

This menu gives access to all informations and actions that an operator can see or execute.

Name	Description	Link
Statistics	Informations about the production (only with a robot).	more details
States	Informations about the states of all products (connection state and working state).	more details
Shortcuts	allows you to execute some simple actions on every products.	more details
Messages	Displays messages. This panel is automatically selected when an alarm or a message occurs.	more details
Recipes	allows you to select and load a global recipe .rec (only with a robot).	more details
Options	Gives access to some options like language choice.	more details
Login	allows you to login/logout.	more details
Vision	Gives access to the displays of cameras (only with an Asyview).	more details

5 Documentation panel



This panel gives access to documentations.

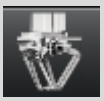
In standard, user can access to the HMI documentation in PDF and CHM (Microsoft Compressed HTML) formats.
In option, user can access to some products documentations.

NOTE:
Documents can be added in SupplierData\Documentation folder and will be visible after a restart of the HMI.

6 Product and options selection menu

This menu gives access to all products defined in HMI configuration and to various other elements. See the list below :

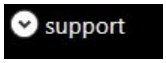
Icon	Name	Access to	Level
	asycube	Asycube configuration pages	T
	asyview	AsyView configuration pages **NOTE:** *A message "Slow" is written on the AsyView icon when the AsyView window is open. It indicates that the AsyView is slower than the best performance available and that the user must hide the window to have the best performance.* **IMPORTANT:** *A red message "SSD!" is written on the AsyView icon when the system has a problem with the SSD. A message is also displayed when the problem appears if the HMI is started. The problem can be :* *• The available space on the SSD is smaller than 500 MB.* *• The quantity of data written on the disc during the last 4h is too big, stop the saving of images to avoid the premature wear of the SSD.* *• The total quantity of data written on the disc (TBW) will be reached soon,*	T

		contact your supplier to change the disc.	
	supervision	Supervision page with all cameras	
	robot	Robot configuration pages	
	process	Process configuration pages	
	home	HMI home page	
	user	User management pages	
	configuration	HMI configuration pages	
	recipes	Recipe management pages	
	debug	Debug page	

7 Configured products overview

This group displays an overview of all configured products and their sub-elements if they exist (for example for AsyView). A click on a button will open the configuration page of the element.
From there, you can add or edit Asycubes (see relevant section later).

8 Supplier contact panel

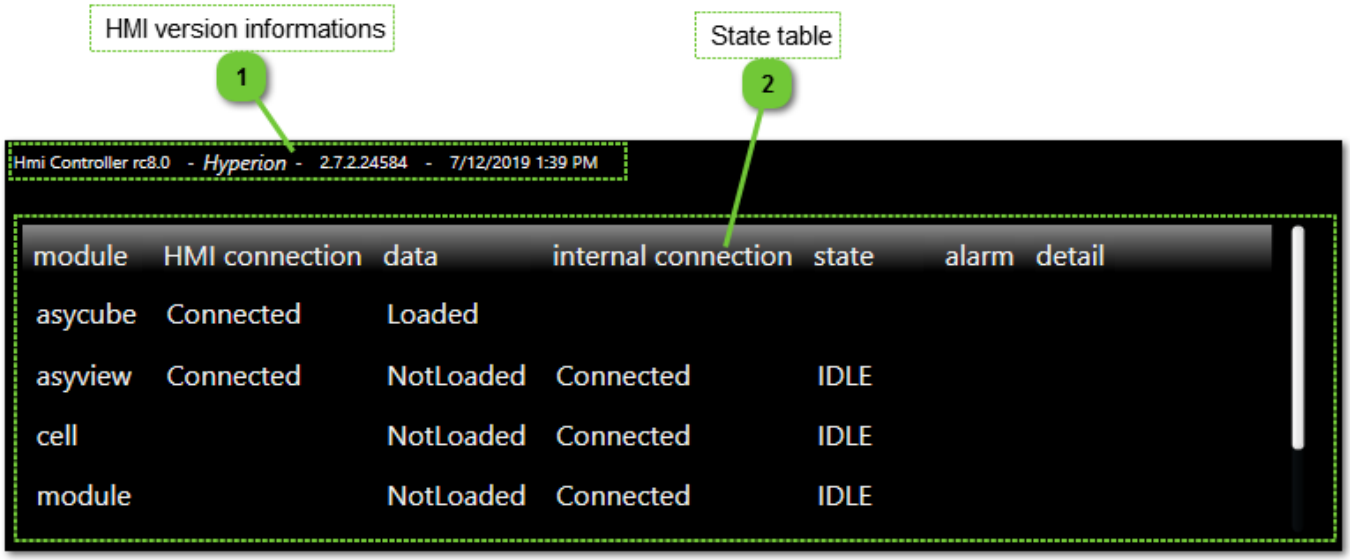


This group displays the supplier contact informations. This information can be modified by editing the following file : SupplierData/Data/supplier.txt. The icon can also be replaced by the supplier logo by replacing the supplier.png by the supplier logo (rename the supplier logo to supplier.png).

This fonctionnality is useful for integrators or technical service to set their own contact information.

Operator action panel : States

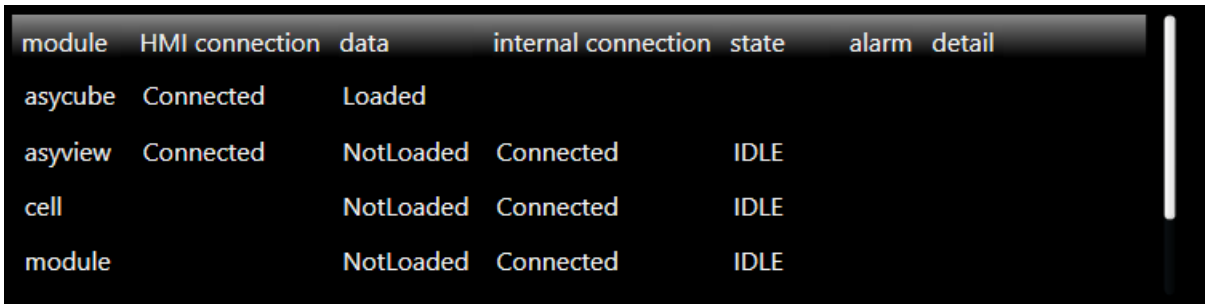
This panel displays states of all products. It is essential and very helpful to have a global view of the state of the products.



1 HMI version informations

The HMI version information can be found in this panel. This version number should be communicated in the event of any contact with the After-Sales department.

2 State table



This table provides more information about the connection state of each module (robot, process, asycube and asyview) and indicates whether an alarm has occurred. In addition, the "data" column indicates whether the data related to each module has been loaded or not.

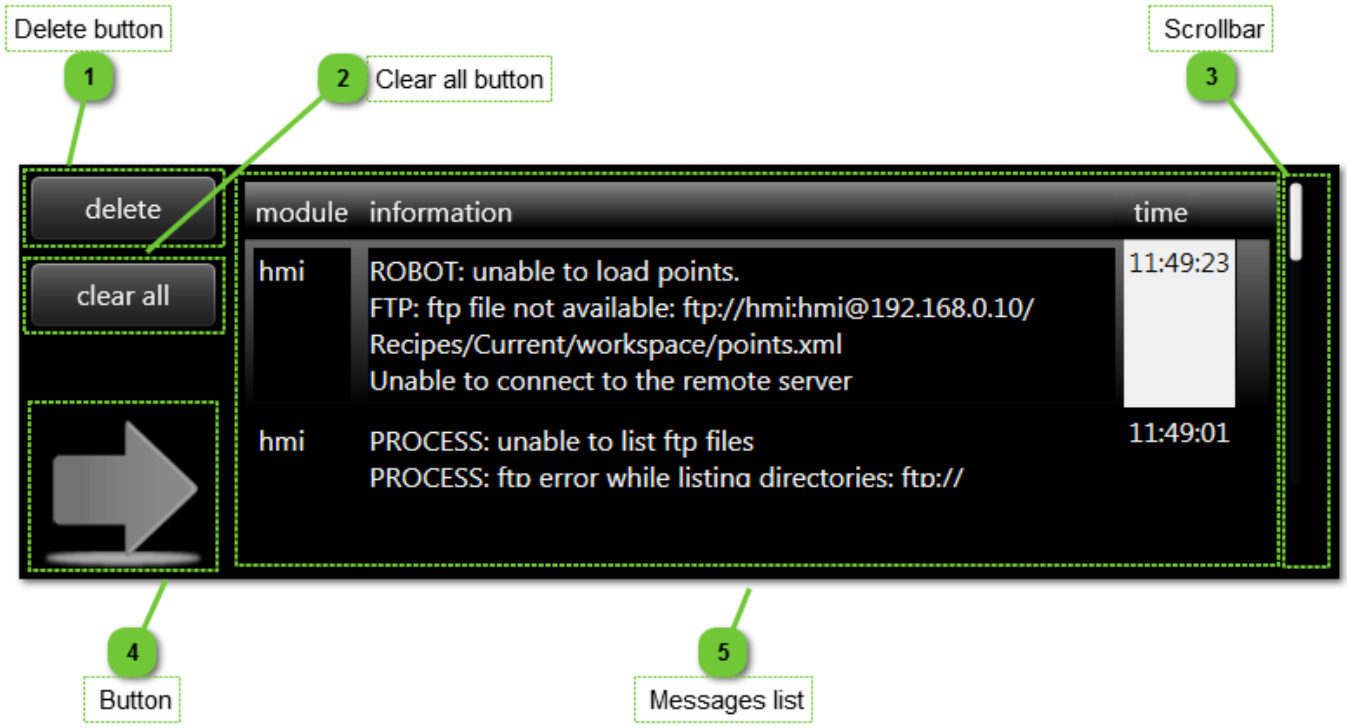
The table contains following informations :

Column title	Description
module	Name of the involved product.
HMI connection	State of the connection of the HMI on the product (disconnected, connected, connecting).
data	State of the data (loaded, not loaded).
internal connection	Internal connection state of the product (disconnected, connected, connecting). This field indicates if the product is connected on its devices (for example a camera in an AsyView)
state	State of the internal process of each product (idle, execute, stopping, etc).
alarm	Indicate if a product has an alarm (true/false).
detail	Additional process state (used only by the process to indicate the state of the current program execution).

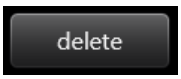
NOTE:
Alarm and Detail columns are only displayed in integrator level.

Operator action panel : Messages

This panel displays messages, warnings and alarms of all products and of the HMI itself.



1 Delete button



This button is used to delete one preselected message.

NOTE:
When an alarm message is deleted using the "delete" or "clear all" buttons, the alarm is not deleted, only the message is cleared. It is necessary to press the "➡" button before being able to resume production.

2 Clear all button

This button is used to delete all alarm messages.

NOTE:
When an alarm message is deleted using the "delete" or "clear all" buttons, the alarm is not deleted, only the message is cleared. It is necessary to press the "➡" button before being able to resume production.

3 Scrollbar

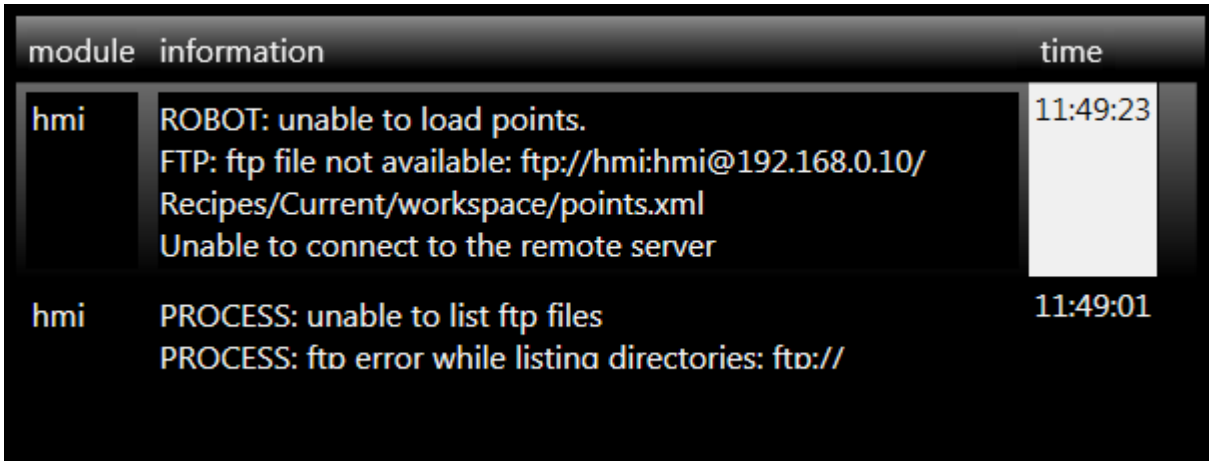
The scrollbar allows you to navigate in messages. The scrollbar is visible only when all messages cannot be displayed in the panel.

4 Button

This button is available when an alarm occurs, and is greyed out under normal conditions.

NOTE:
When an error occurs, the situation that generated the alarm must be resolved and then the alarm cleared by clicking on the "  *" button*

5 Messages list



his table provides useful information for diagnosing errors:

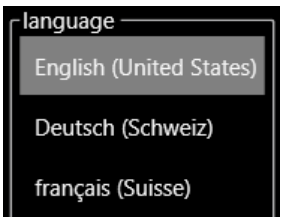
- The "**Module**" column gives the name of the module issuing the error (such as the Robot, AsyView, HMI, etc.).
- The "**Information**" column contains a clear explanation of the error encountered and possibly a solution to resolve it.
- The "**Time**" column provides information about the time and date on which the error occurred.

NOTE:
By keeping the mouse on the time value, the date of the message is displayed.

Operator action panel : Options

This panel gives access to global options, like language choice.

1 List of languages



A specific language may be chosen by pressing the associated name. This parameter only affect the language of the texts but not the configuration of the virtual keyboard inside the HMI.

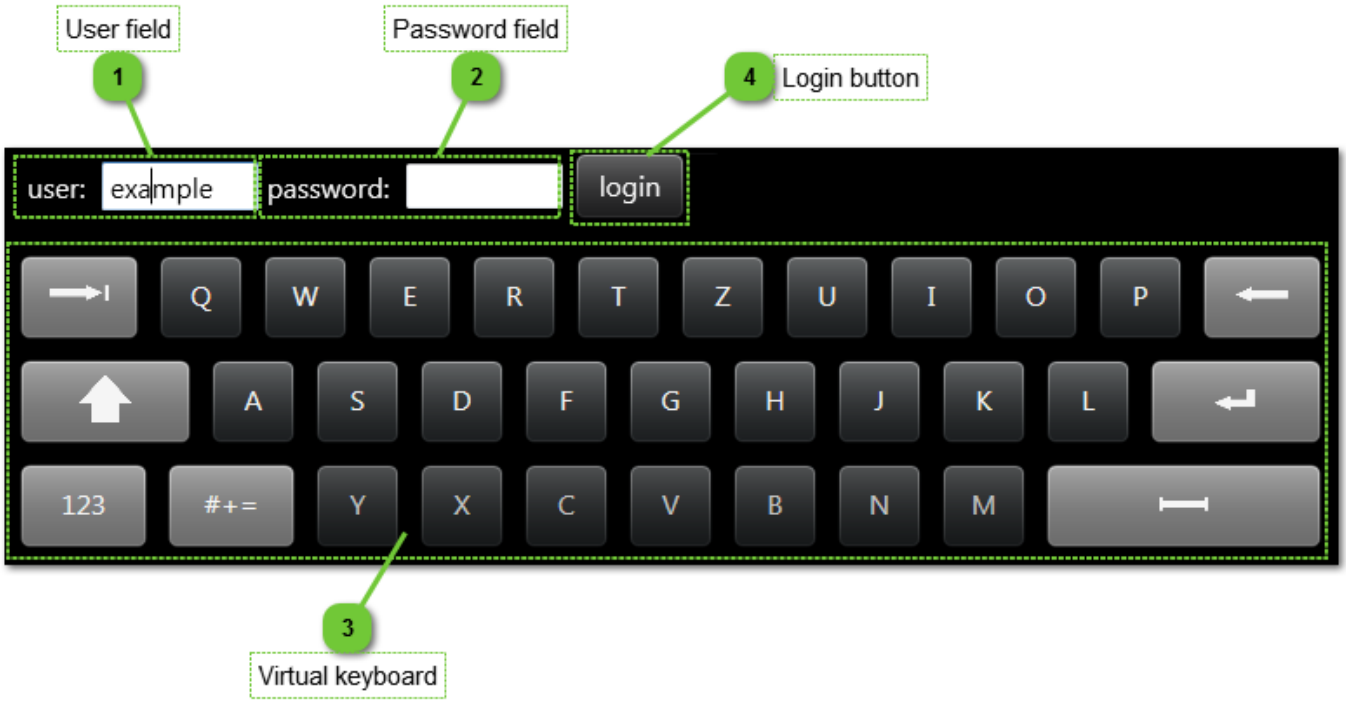
NOTE:
Some languages can be added on request; for more information, please contact your supplier's customer service.

2 Ok button

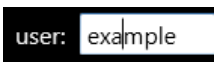
Press this button to validate the language selected.

Operator action panel : Login

This panel allows you to login or logout on the HMI. See level access chapter for more details.



1 User field

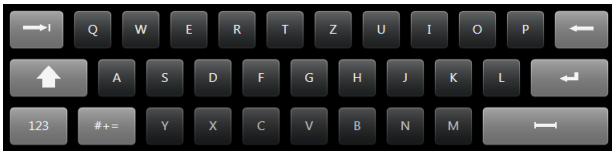


Enter user name here.
Click in the field to make keyboard visible.

2 Password field

Enter password here.
Click in the field to make keyboard visible.

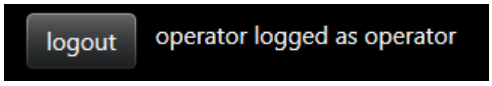
3 Virtual keyboard



Keyboard allows you to enter username and password. The keyboard configuration cannot be modified.

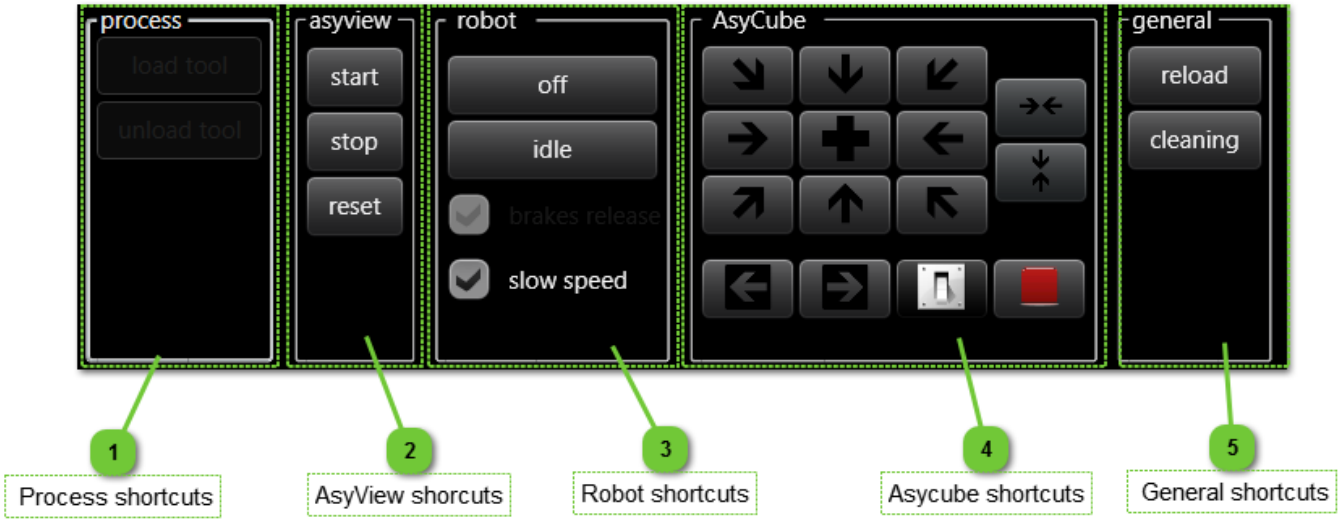
4 Login button

Press this button to log in.
When logged in, the panel become like that :

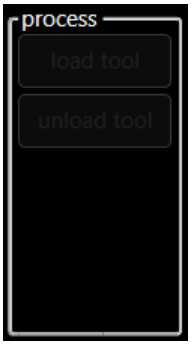


Operator action panel : Shortcuts

This panel gives access to simple, accessible for operator, functions for all products.



1 Process shortcuts



Shortcuts to functions of process give access to standard functions like Load/Unload tool and specific programs defined in programmation page of process.

The two buttons "load tool" and "unload tool" enable a tool to be loaded or unloaded from the robot's platform.
Any other program whose name begins with " _ " will be displayed in this list in the form of a shortcut button.

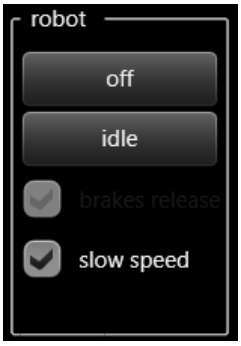
IMPORTANT NOTE:
The programs executed from this list no longer respect the sequence of OMAC states. The program will be directly executed without passing through the "starting", "stopping" phases, etc.

2 AsyView shorcuts

Shortcuts to functions of AsyView give access to main functions of AsyView:

- Pressing the "start" button enables to start the AsyView and set it in process mode.
- Pressing the "stop" button enables to stop the AsyView and set it in configuration mode.
- Pressing the "reset" button allows you to reset the AsyView (in case of error state).

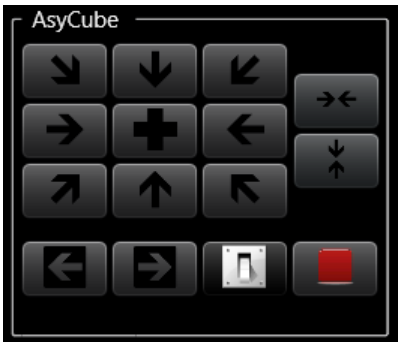
3 Robot shortcuts



Shortcuts to functions of Robot give access to useful functions of Robot:

- The "off" button is used to activate the brakes and to switch off the power to the motors.
- The "idle" button is used to activate the power to the robot and to initialize it.
- The "slowspeed" box enables the robot to be set at slow speed.
- If it is necessary to release the brakes (for the calibration steps for example), the "brakes release" box should be ticked (not possible in Operator level).

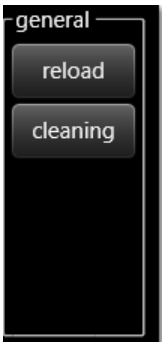
4 Asycube shortcuts



Shortcuts to functions of Asycube give access to standard functions of Asycube:

- Nine buttons which provide to execute the standard vibrations for Platform (forward, right, backward-left, flip, etc.)
- Two buttons (on the right) to execute standard advanced vibrations (center long size and short size). These buttons are only visible for Asycube 240, Asycube 380 and Asycube 530.
- Two buttons (bottom) to execute hopper activation (vibrations for Asycube 50, Asycube 80 and outputs activations for Asycube 240, Asycube 380 and Asycube 530). In both cases, vibrations A and B are executed by these buttons.
- One button allows you to switch the backlight on and off.
- One button allows you to stop both vibrations and outputs activation.

5 General shortcuts



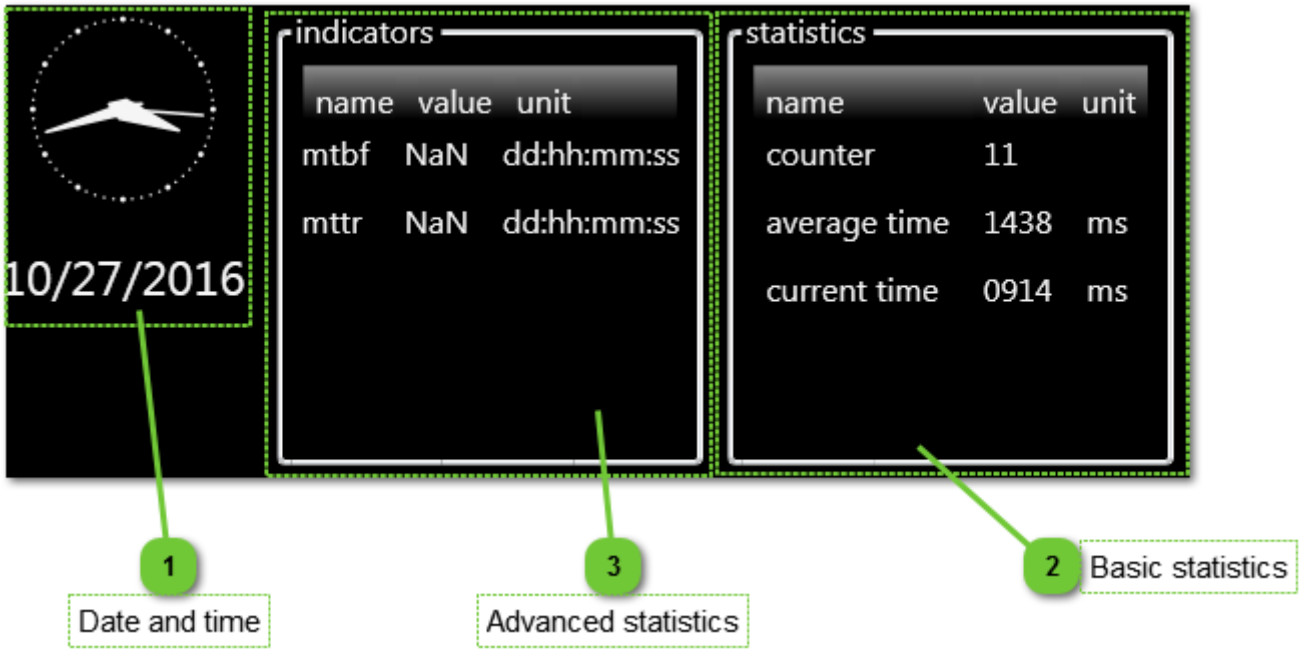
This general panel give access to general functions:

- Reload execute a data reload for all connected products.
- Cleaning display open a special page during 20 seconds to be able to clean the touch screen.

Operator action panel : Statistics

This panel displays some statistics value (cycle time, mtbf, average time, etc.) of productions.

NOTE:
This panel is only visible when using a robot with the process system.

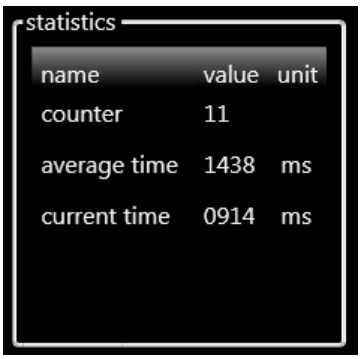


1 Date and time

Display of actual date and time.

NOTE:
The date and time can be modified directly from the Windows toolbar

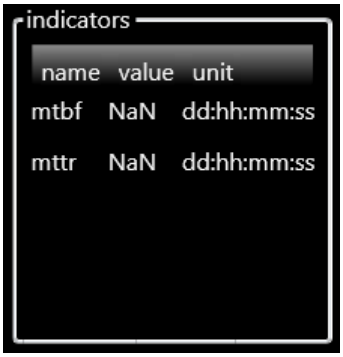
2 Basic statistics



The statistics displayed in this table are defined in configuration file ; it creates a link with ARL variables.

NOTE:
For more information about this functionality, please contact your supplier customer service.

3 Advanced statistics



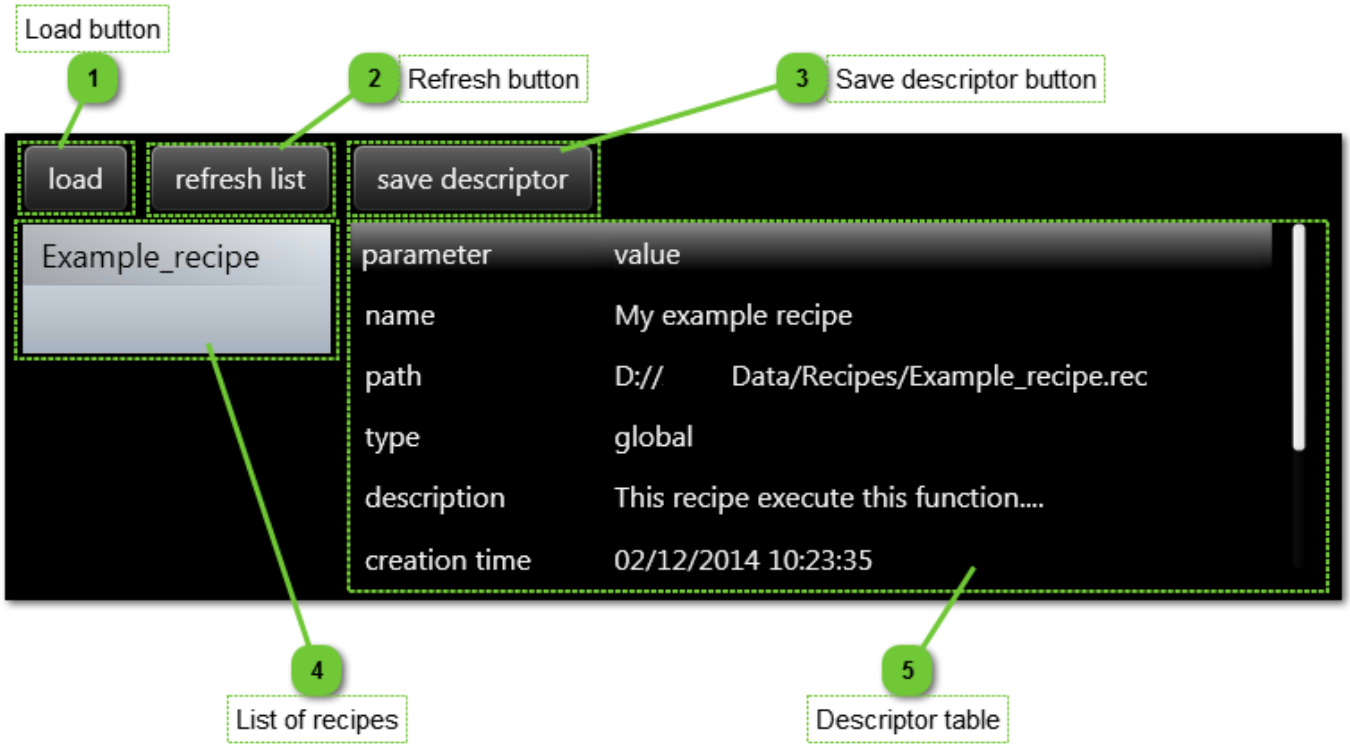
The statistics displayed in this table are defined by your supplier.

NOTE:
For more information about this functionality, please contact your supplier customer service.

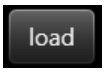
Operator action panel : Recipes

This panel allows you to choose the recipe (.rec file) needed for the production.

NOTE:
This panel is only visible when using a robot with the process system.



1 Load button



When a recipe is selected in the list of recipes, this button allows you to load the recipe.

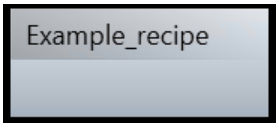
2 Refresh button

This button is used to refresh the content of the list of recipes.

3 Save descriptor button

This button allows you to save the descriptor.

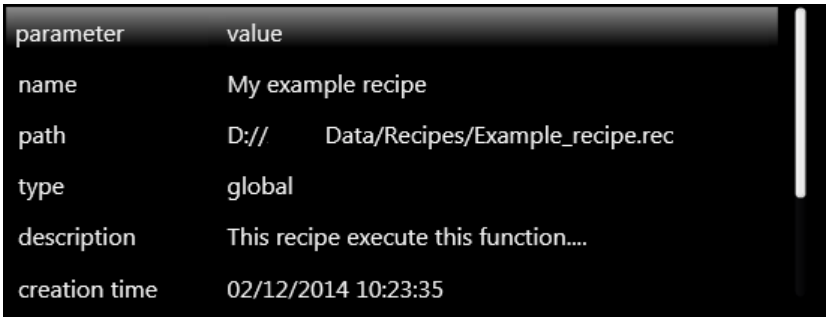
4 List of recipes



This dropdown list makes it possible to scroll through all of the recipes configured and to load one.

NOTE:
A recipe must be loaded in the recipes folder in order to be displayed in the dropdown list.
The recipes folder can be choose in HMI configuration. Default value is ...\SupplierData\Recipes

5 Descriptor table

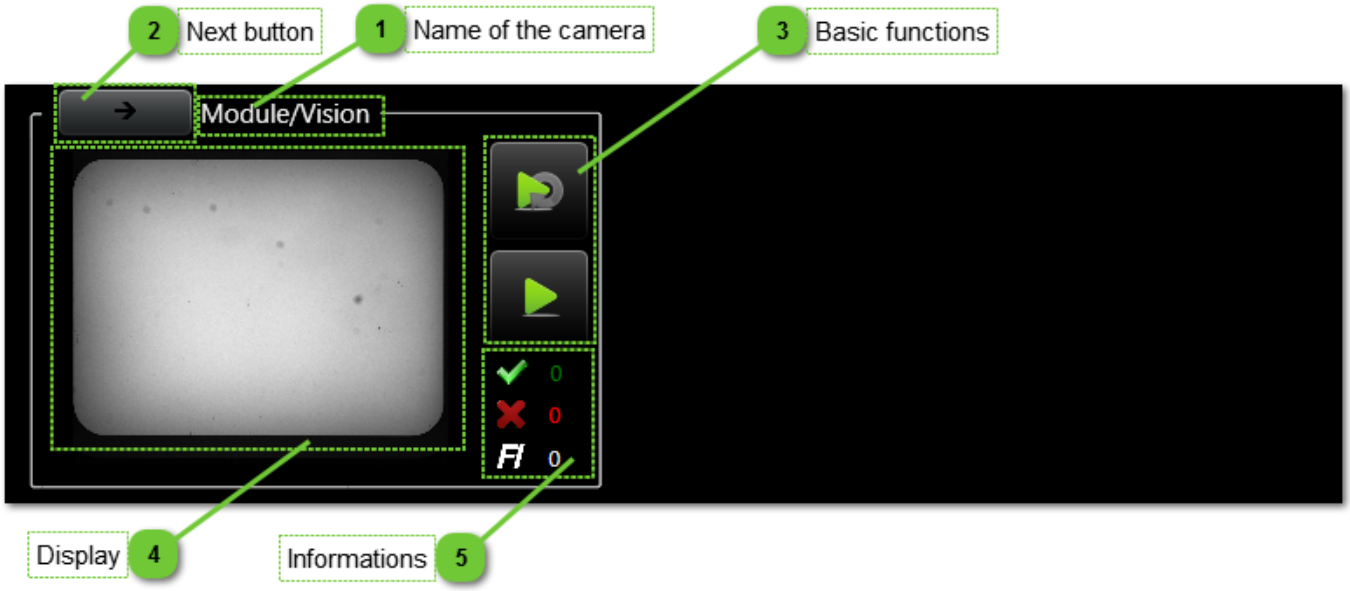


This descriptor is loaded when a recipe is selected. It may be modified then saved by clicking on the "*save descriptor*" button.

Operator action panel : Vision

This panel gives access to the displays of cameras and to basic functions and informations.

NOTE:
This panel is only visible when using an AsyView (SmartSight).



1 Name of the camera

This zone indicates the name of the module and the name of the camera.

2 Next button

This button lets you switch between the cameras. It appears only if there is more than two cameras on the system.

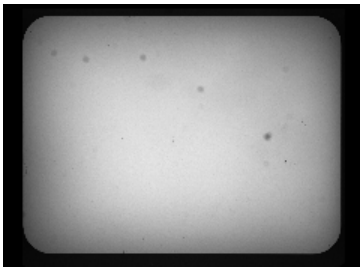
3 Basic functions

The basic functions are the following :

- Activate or deactivate live mode.
- Execute a simple acquisition and analyse (run once).

NOTE:
Thoses buttons are disabled during process running.

4 Display



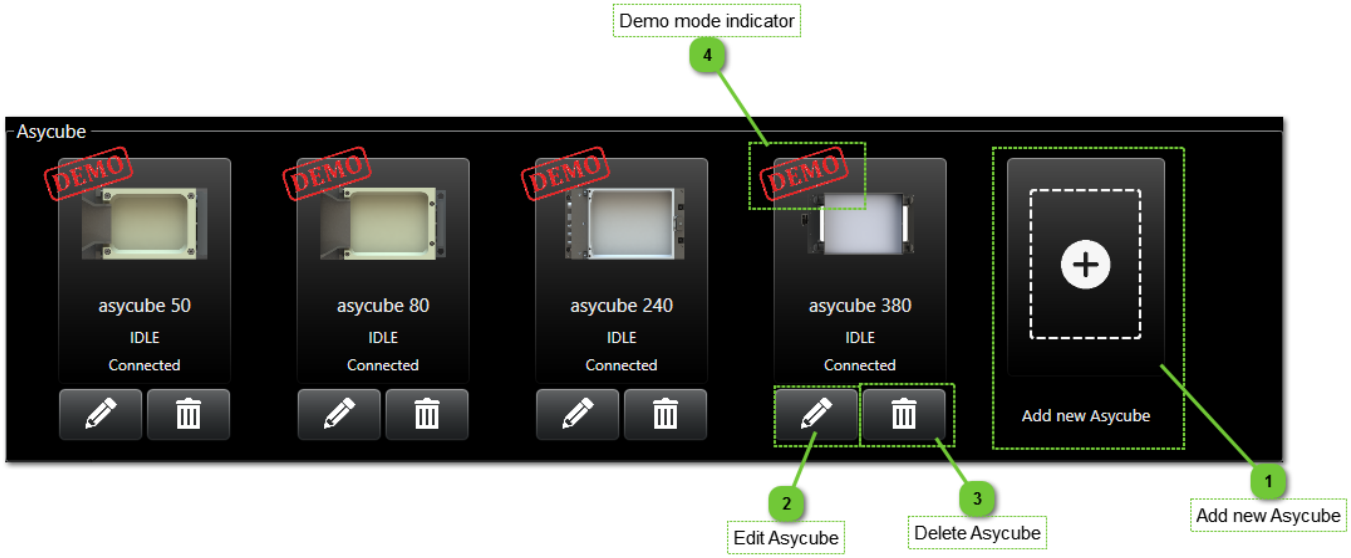
This zone displays the last image received and the overlay icons of the good and rejected parts.

5 Informations

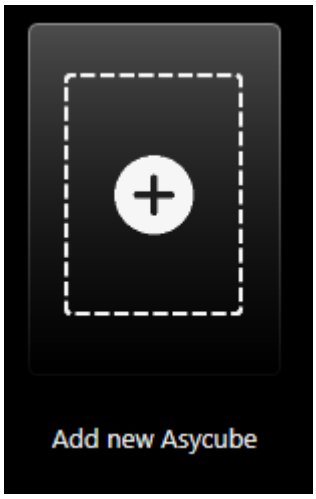
This numbers indicates the good parts (green), the rejected parts (red) and the number of parts detected by the feeding information (white).

Create and Edit an Asycube

On the Home page, under the Asycube section, a "Add new Asycube" button is visible. What's more, every Asycube already declared possesses both an "Edit" and a "Delete" button. This section will explain these options in more details.



1 Add new Asycube



Use this button to declare a new Asycube in the Hmi. This will give you access over all the controls related to said Asycube.

2 Edit Asycube

Clicking on this button will invoke a dialog window with all the parameters you need to set up your Asycube. See later section in this page for more details.

3 Delete Asycube

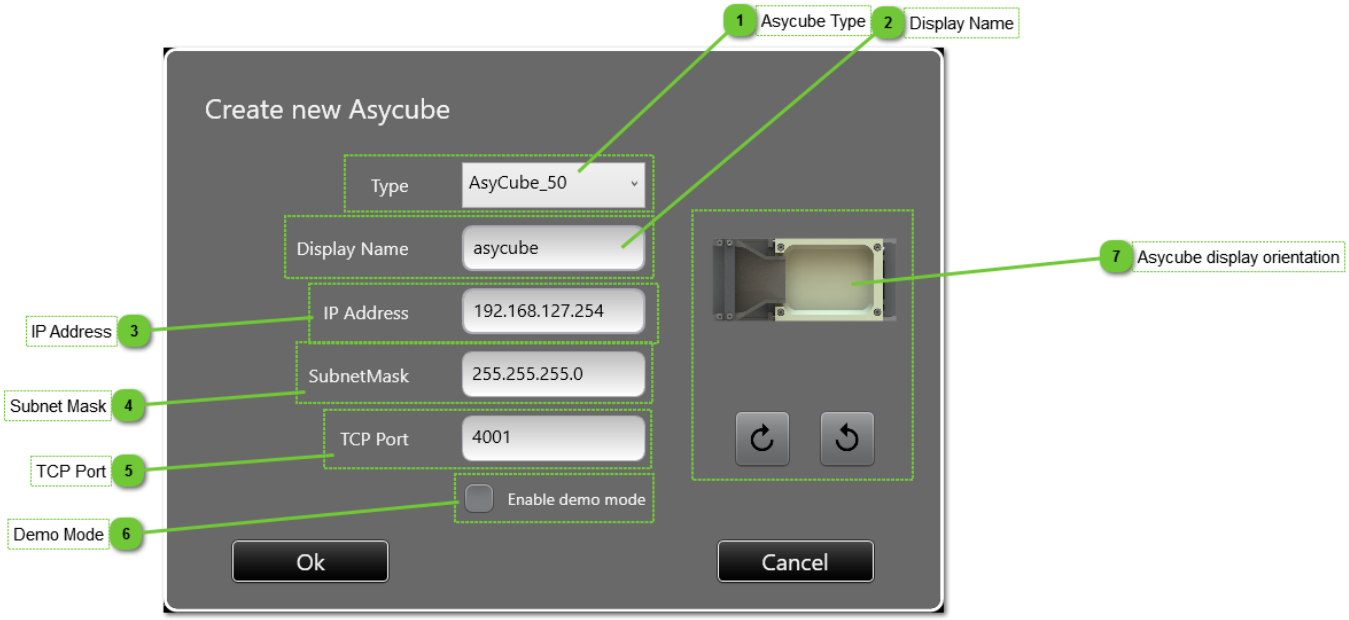
Click here to remove an Asycube from the list of Asycubes declared in the Hmi.

4 Demo mode indicator

If this icon is displayed, that means this particular Asycube is in demo mode: it does not represent a physical Asycube, but lets you explore the Hmi as if an Asycube of this type was plugged in.

Setup Window

Once you choose to either create or edit an Asycube, the following window will appear. This section describes all the entries found there.



1 Asycube Type

Select here the type of Asycube the system is going to look for.

2 Display Name

Choose a name for your Asycube. This name will be used for it throughout the Hmi.

3 IP Address

Enter the IP address of the Asycube to look for. If no Asycube can be found at this address, the Hmi will prompt you to use Demo mode instead or go back and edit these settings.
No two Asycubes can have the same IP address (default is 192.168.127.254)

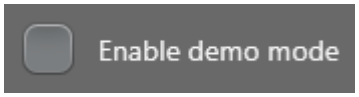
4 Subnet Mask

Enter the subnet mask to use for the Asycube you're trying to connect to (default is 255.255.255.0).

5 TCP Port

Enter the TCP port to use for the Asycube you're trying to connect to (default is 4001).

6 Demo Mode



Check this box to create a demonstration Asycube. The Hmi will not try and connect to any physical Asycube, and you'll have access to all the panels related to Asycubes. All values presented are hardcoded and do not correspond to any real system.

7 Asycube display orientation

Choose the orientation in which to display the Asycube view in the Hmi (not applicable on all pages).

User management

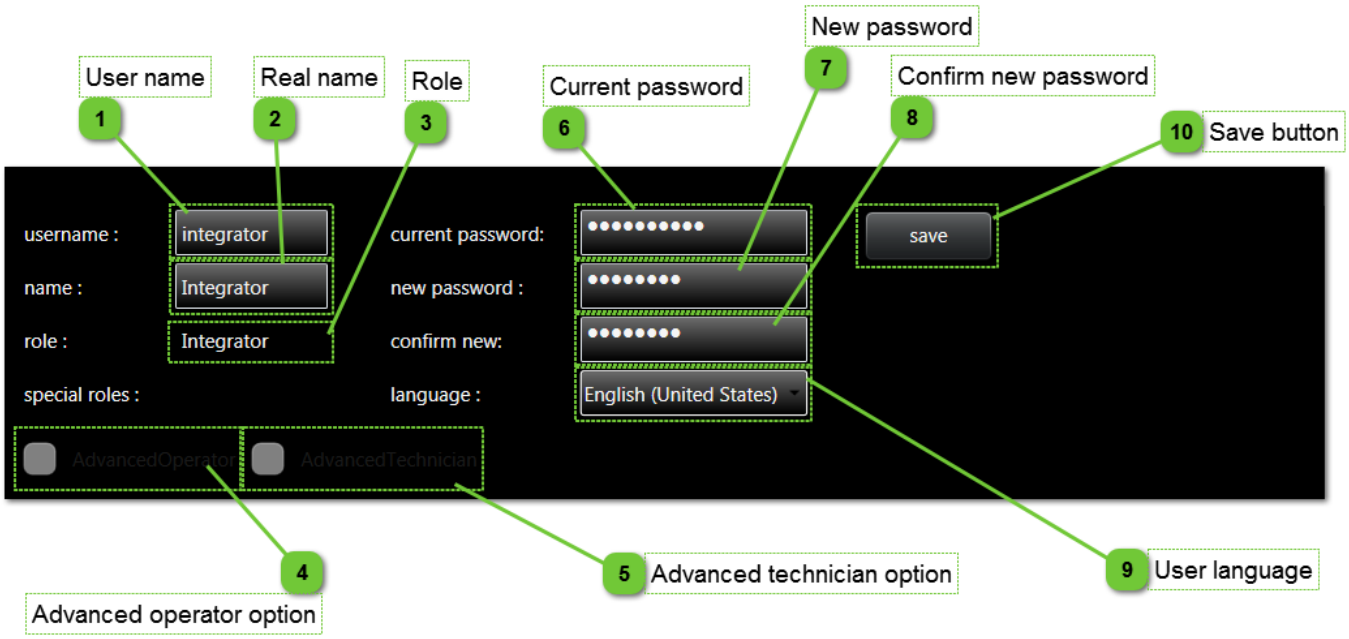
The user management part of HMI allows you to create, edit, delete user. Define various type of users with various roles allows you to give different access to operators, technician, maintenance technician, programmer, etc.

Default users and passwords are listed below:

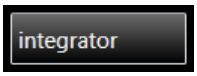
User name	Password	Role
operator	operator	Operator
advoperator	advoperator	Advanced operator
technician	technician	Technician
advtechnician	advtechnician	Advanced technician
integrator	integrator	Integrator
only the dev.		*Developer*

User management : home

The home page of the user management allows you to display and edit the logged user data.

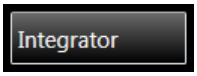


1 User name



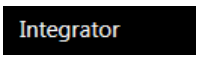
The login information actually in use is displayed here.

2 Real name



The name associated with the login informations enables the person logged in to be identified easily.

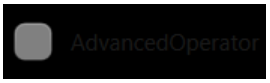
3 Role



The role of the person logged in is displayed here.

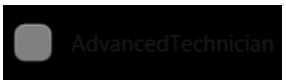
NOTE:
For more information about roles and associated access rights, please read the chapter "roles".

4 Advanced operator option



Checked if the advanced operator role is activated for the logged user.

5 Advanced technician option



Checked if the advanced trechnician role is activated for the logged user.

6 Current password

Enter the actual password of logged user.

NOTE:
This field enables password of logged user modification.

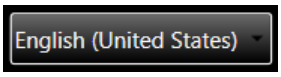
7 New password

Enter the new password of logged user.

8 Confirm new password

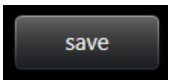
Confirm the new password of logged user.

9 User language



This dropdown list enables the user language to be chosen.

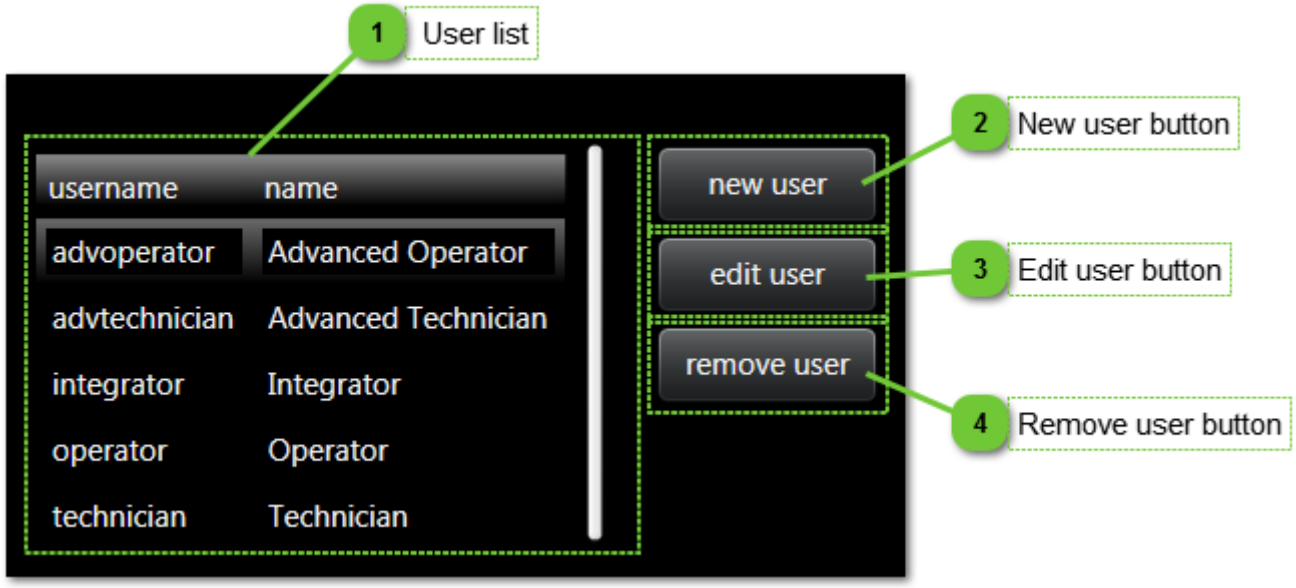
10 Save button



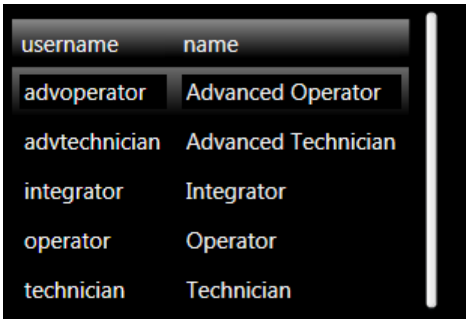
Click on this button to save your new password and language modification.

User management : manage users

This page allows you to manage users on HMI.

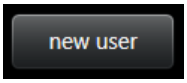


1 User list



The list of all users declared and their login informations are displayed here.

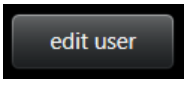
2 New user button



Click on this button to create a new user.

NOTE:
You can only create a user who has a hierarchical role below yours.

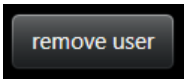
3 Edit user button



Click on this button to edit the login information, role or language of a user.

NOTE:
You can only modify the content of users who have a hierarchical role below yours.

4 Remove user button

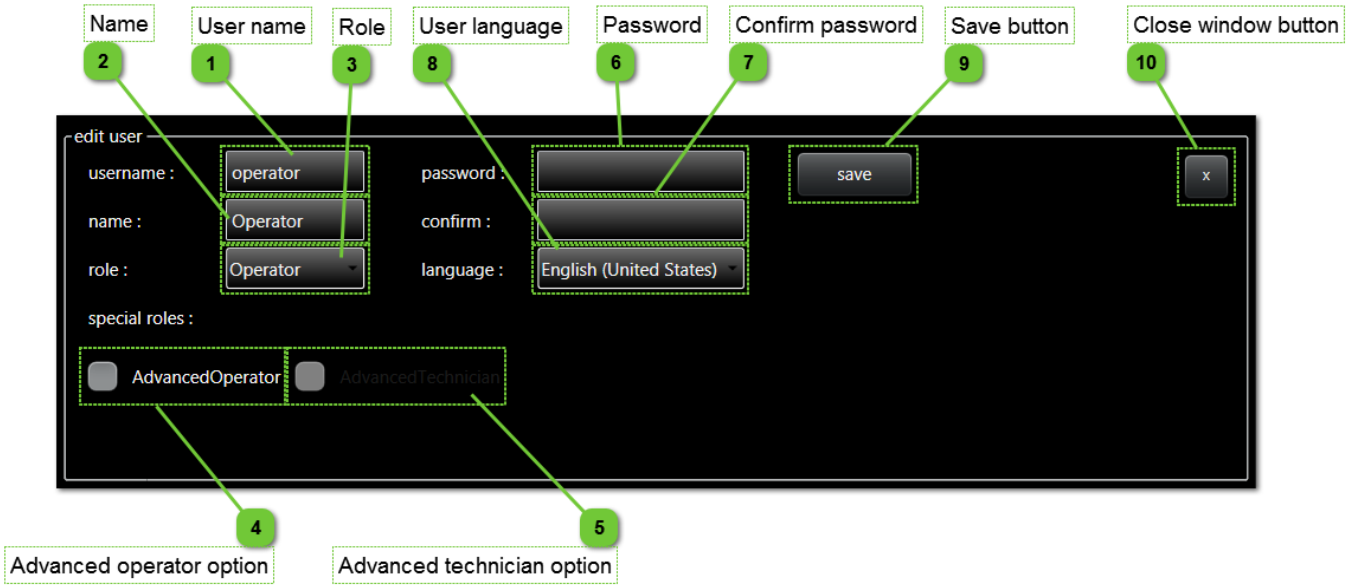


Click on this button to permanently remove a user selected in the list.

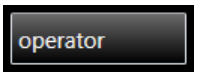
NOTE:
You can only remove a user who has a hierarchical role below yours.

User management : edit panel

This panel appears on the bottom of the page when new user button or edit user button is clicked.

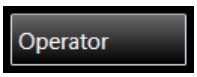


1 User name



Choose or edit the login information for the user you wish to create or edit.

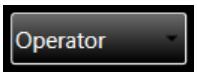
2 Name



Choose a user name that enables you to easily identify the person logged in.

NOTE:
This "name" is not the login information used by the user, it simply enables the person logged in to be identified.

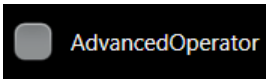
3 Role



Choose the user's role.

NOTE:
For more information about roles and associated access rights, please read the chapter "roles".

4 Advanced operator option

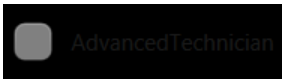


Choose advanced operator role.

NOTE:
This special role is enable only if operator role is selected.

NOTE:
For more information about roles and associated access rights, please read the chapter "roles".

5 Advanced technician option



Choose advanced technician role.

NOTE:
This special role is enable only if technician role is selected.

NOTE:
For more information about roles and associated access rights, please read the chapter "roles".

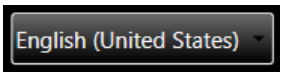
6 Password

Enter the desired password.

7 Confirm password

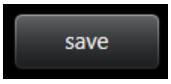
Confirm the desired password.

8 User language



Select the user favorite language.

9 Save button



Click on the "Save" button to apply your modifications.

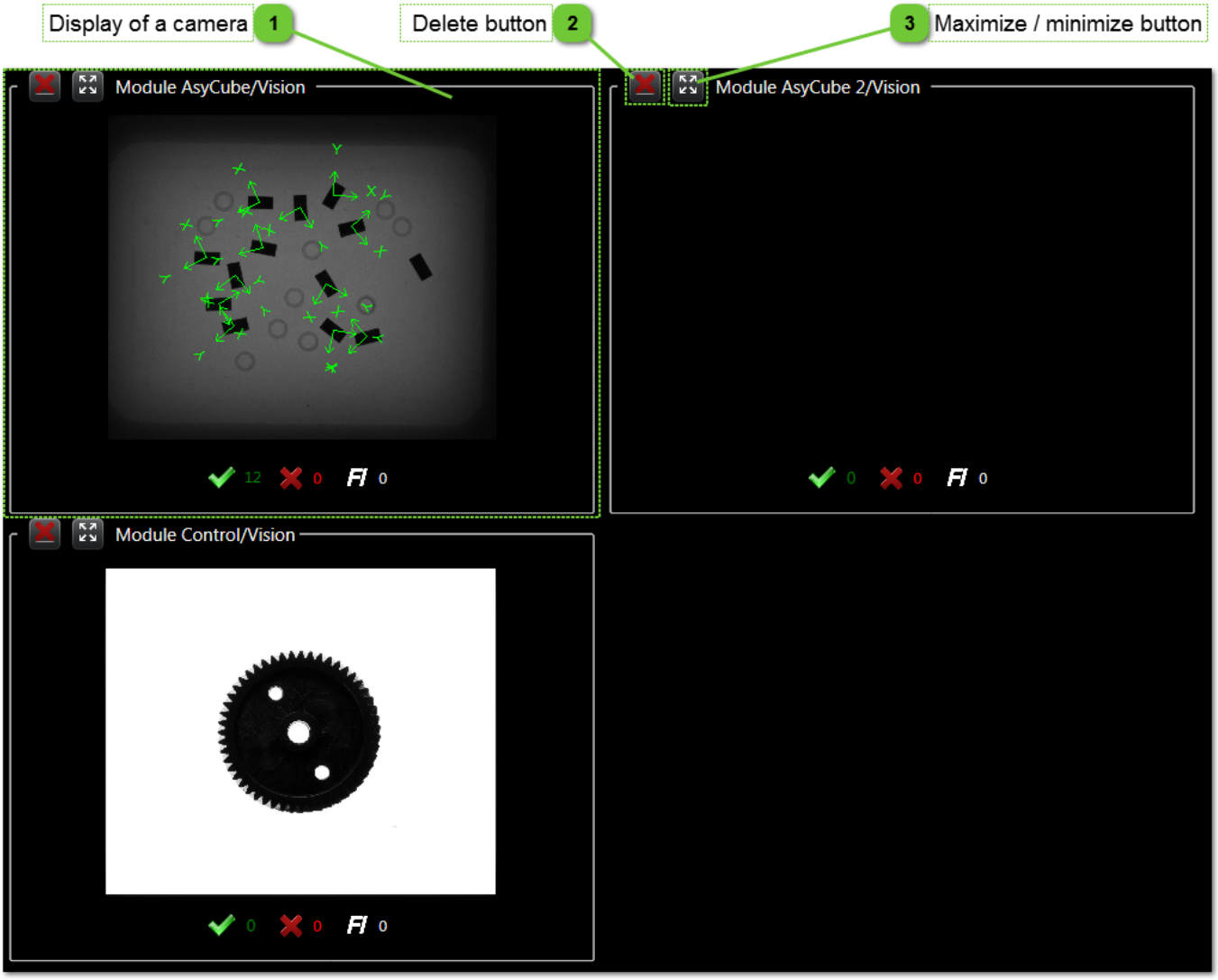
10 Close window button

Close the window without saving.

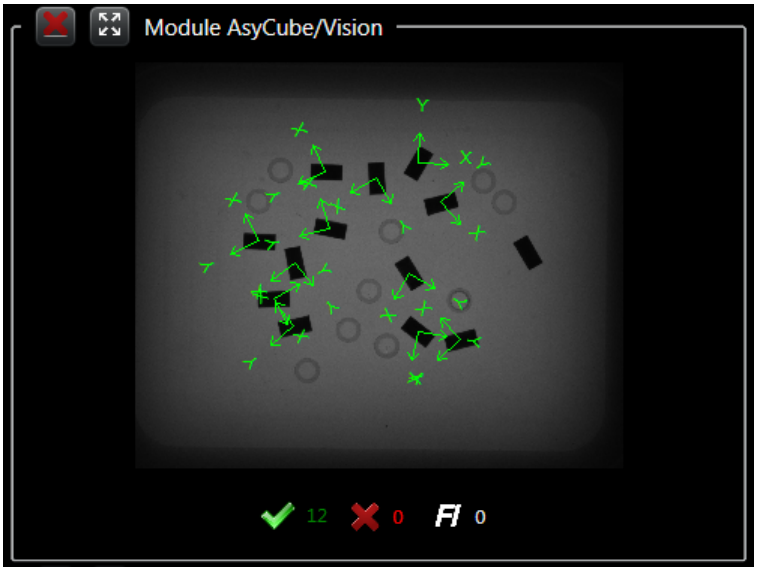
Supervision

Supervision page gives access to all the cameras on the same view.

IMPORTANT !
If there are a lot of cameras, the display of this page can slow up the AsyView control unit, because a lot of CPU is used to display the pictures.



1 Display of a camera



This zone is one of all the available displays. Each camera has its own display and the images are displayed together with the number of parts accepted, refused, and the number of parts detected by the feeding information tool.

2 Delete button

Allows you to delete the selected display to free up space for others.

NOTE:
If the last display is deleted, all the displays will be reloaded

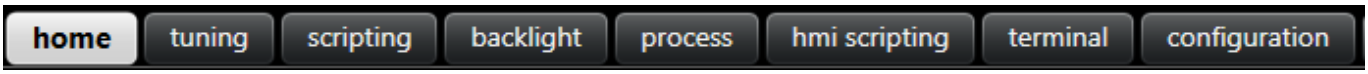
3 Maximize / minimize button

Allows the disply to be maximazed to full space or minimized to multiple cameras view.

NOTE:
Reducing to multiple cameras view is not reloading the previous deleted displays. To recover all the displays, enlarge one display and delete it or delete all the remaining displays.

Asycube

This chapter describes pages related to Asycube.



Pages list

Controls disabled

Some pages, tabs, buttons, textboxes, etc can be disabled depending of the following parameters :

- Asycube connection state (disabled when not connected).
- The function is not possible for the moment (another function is processing).
- The level access is not correct to access to the parameter.

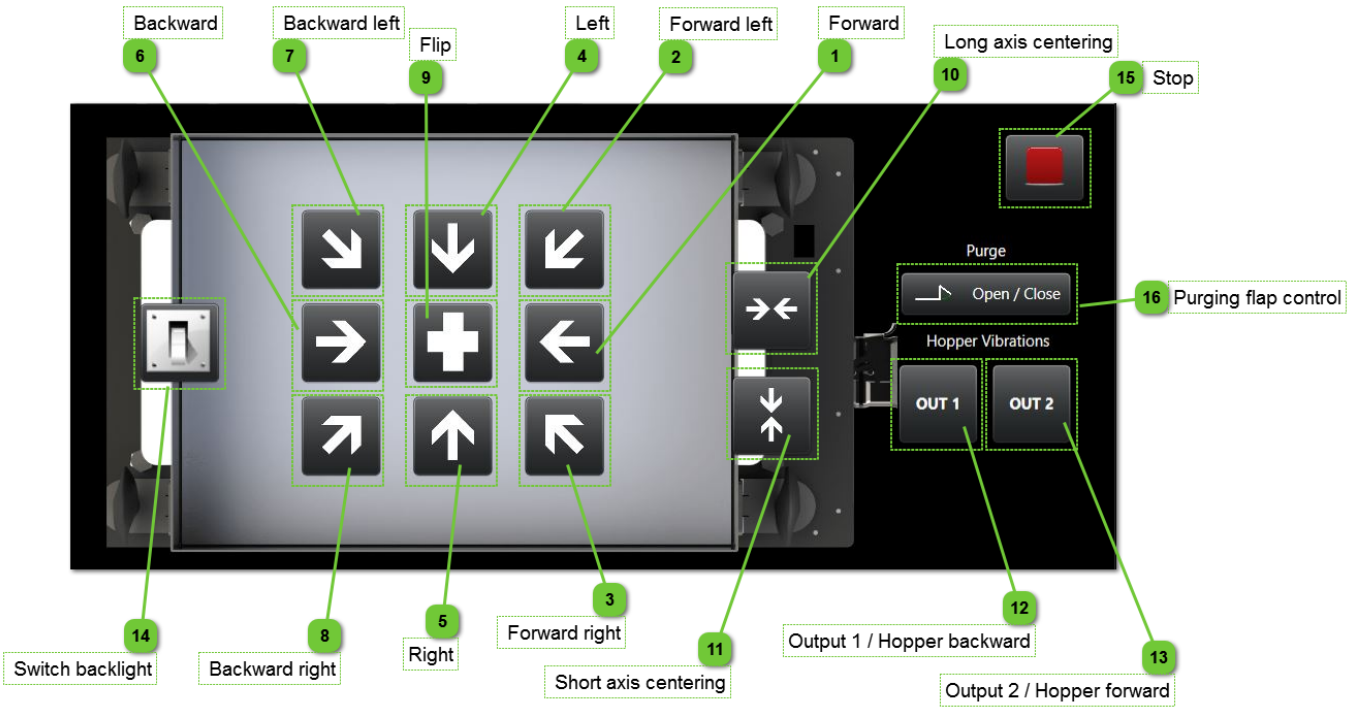
Controls not visible

Some pages, tabs, buttons, textboxes, etc can be not visible depending of the following parameters :

- The Asycube type does not have this element (i.e. backlight).
- Option is not valid for your product (for example process tab is useful only when using the dll .NET or the AsyView system).
- The level access is not correct to access to the parameter.

Home

Home page gives access to all standard functions of Asycube (platform vibrations, hopper vibrations or outputs activation and backlight activation).



1 Forward

This button activates the platform vibration A which has as standard configuration to move parts forward.

2 Forward left

This button activates the platform vibration B which has as standard configuration to move parts forward left.

3 Forward right

This button activates the platform vibration C which has as standard configuration to move parts forward right.

4 Left

This button activate the platform vibration D which has as standard configuration to move parts left.

5 Right

This button activate the platform vibration E which has as standard configuration to move parts right.

6 Backward

This button activates the platform vibration F which has as standard configuration to move parts backward.

7 Backward left

This button activates the platform vibration G which has as standard configuration to move parts backward left.

8 Backward right

This button activates the platform vibration H which has as standard configuration to move parts backward right.

9 Flip

This button activates the platform vibration I which has as standard configuration to flip parts.

10 Long axis centering

This button activates the platform vibration J which has as standard configuration to move parts centered in long axis.

NOTE:
This button is only visible for Asycube 240, Asycube 380 and Asycube 530. For other Asycube types, vibration J is a user custom vibration.

11 Short axis centering

This button activates the platform vibration K which has as standard configuration to move parts centered in short axis.

NOTE:
This button is only visible for Asycube 240, Asycube 380 and Asycube 530. For other Asycube types, vibration K is a user custom vibration.

12 Output 1 / Hopper backward

For Asycube 240, Asycube 380 and Asycube 530 :

This button activates the outputs activation A which has as standard configuration to switch on digital output 1.

For other Asycube types :

This button activates the hopper vibration A which has as standard configuration to move parts forward.

13 Output 2 / Hopper forward

For Asycube 240, Asycube 380 and Asycube 530 :

This button activates the outputs activation B which has as standard configuration to switch on digital output 2.

For Asycube 240, this button will not be visible if you have the purge system enabled.

For other Asycube types :

This button activates the hopper vibration B which has as standard configuration to move parts backward.

NOTE:
This button is visible only if the hopper allows the possibility to move the part backward. It is not possible on Asycube 50 and Asycube 80 of new generation.

14 Switch backlight

This button switches the backlight ON and OFF.

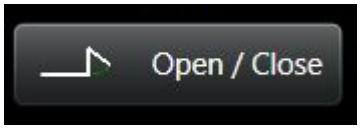
NOTE:
This button is not visible when Asycube has no backlight (configuration in the firmware of the Asycube which can be modified in Asycube configuration page).

15 Stop

This button stop all vibrations or output activations.

NOTE:
This button doesn't stop the backlight, use the switch backlight button to do that.

16 Purging flap control



Open or close the purging flap (button is available only if the purge option is enabled)

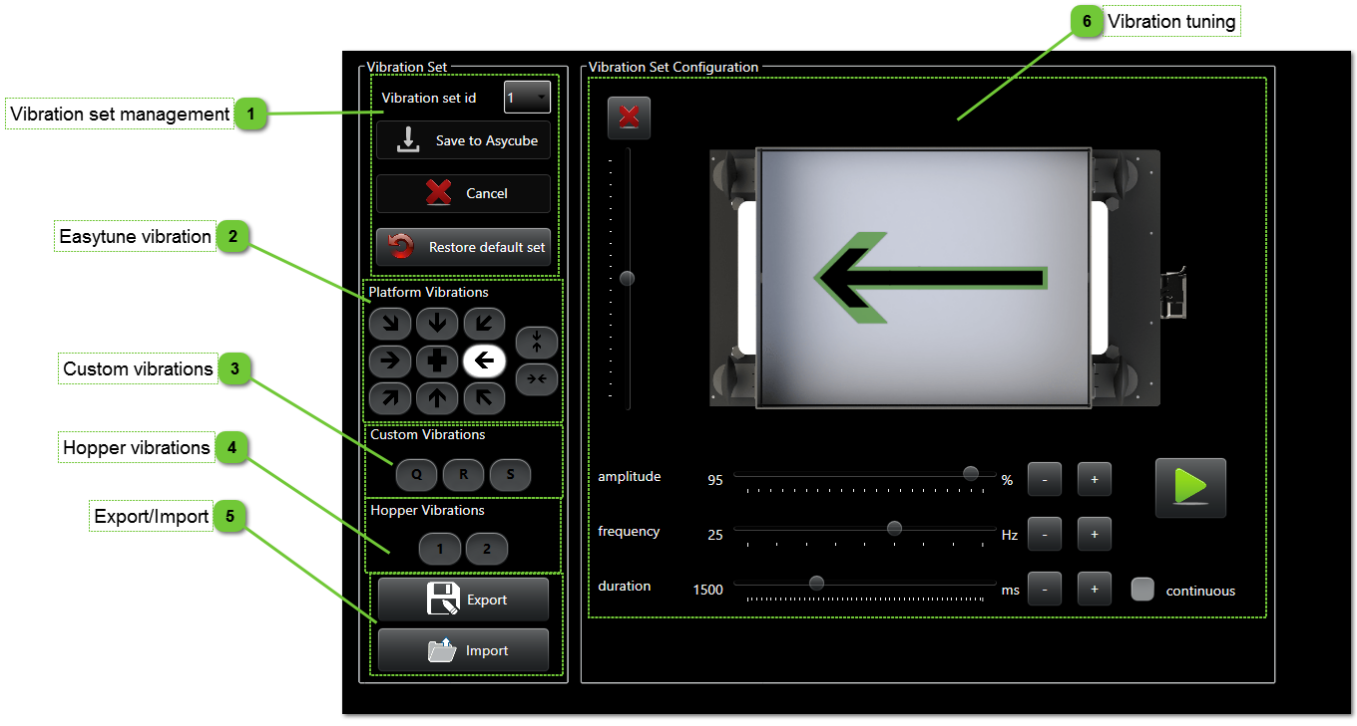
NOTE:
This button relies on the output from the closing sensor. Should it fail, that button wouldn't actually cause the flap to open.

Tuning

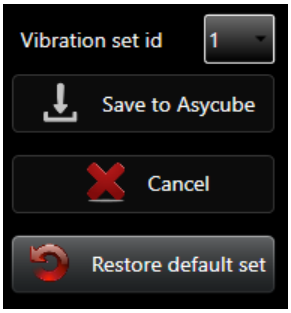
This page provides access to the tuning of vibrations and outputs (if existing) parameters. There are 26 vibration sets, the 26th is read-only because it is the factory parameters. The goal of this page is to adjust vibrations parameters and outputs parameters (for Asycube 240, Asycube 380 and Asycube 530) and to try it using "play" button. In this window, you can also import or export the vibration set.

NOTE:
In the descriptions below, the vibration parameters includes also the outputs activations for the Asycube 240, Asycube 380 and Asycube 530.

Tabs list



1 Vibration set management

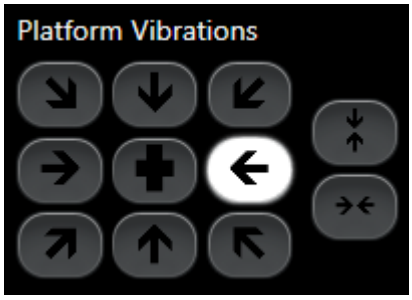


This group gives access to the management of the vibration sets.

- The combobox allows you to select the vibration set to use.
- The"Save to Asycube" allows you to save the modifications to the current vibration set inside the Asycube.
- The "Cancel" button cancels the latest modifications and loads the parameters saved inside the Asycube.
- The "Restore deafult set" button allows you to cancel the modifications and restore the factory settings.

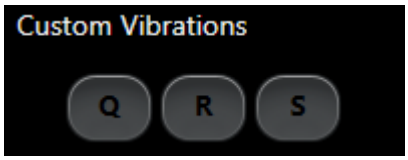
NOTE:
When a parameter have been modified, the user has to choose if he want to save or cancel the modifications done before to be able to select another vibration set.

2 Easytune vibration



This section gives you access to all the predefined and easily customisable vibrations of the Asycube.

3 Custom vibrations



Sometimes, the predefined vibrations may not be customisable enough. That's what Custom vibrations are all about.
In this case, you will be able to tweak settings on a per-actuator basis, including their amplitude, frequency and phase for even more control over your vibration.

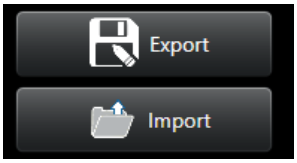
NOTE:
The interface will change to a per-actuator one

4 Hopper vibrations

This section allows you to tune your hopper to optimise part feeding to the Asycube. Each button is linked to it's corresponding output number and uses the digital ones by default (analogue is selectable by the user).
Ex: button 1 will activate either digital output 1 or analogue output 1.

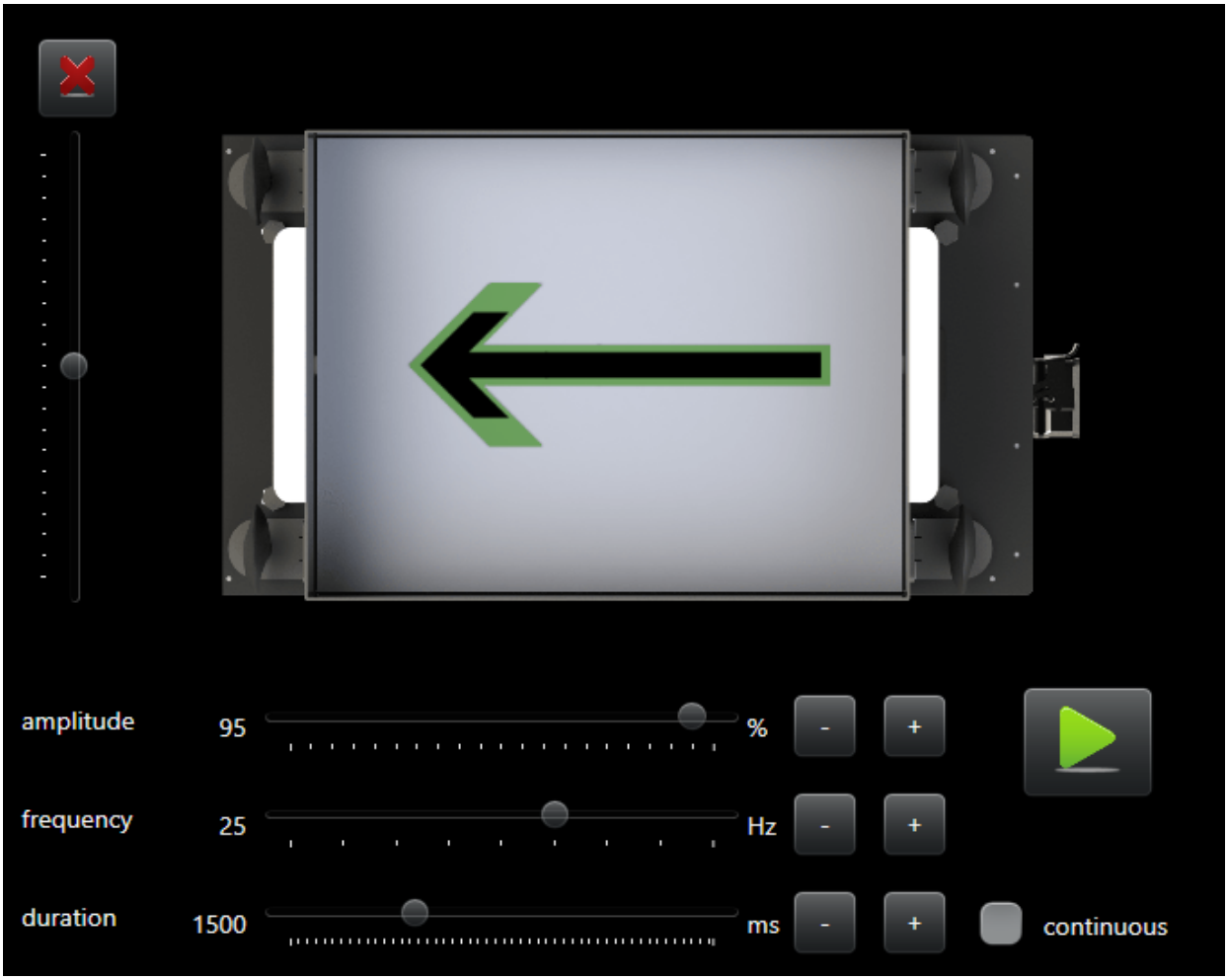
NOTE:
Asycubes 50 & 80 only have one output, so only one button will be available.

5 Export/Import



These buttons allow you to export your settings for the selected set to a file (.fconf) to be reused later or on another Asycube.
The import button lets you load .fconf files from another configured Asycube to save time.

6 Vibration tuning

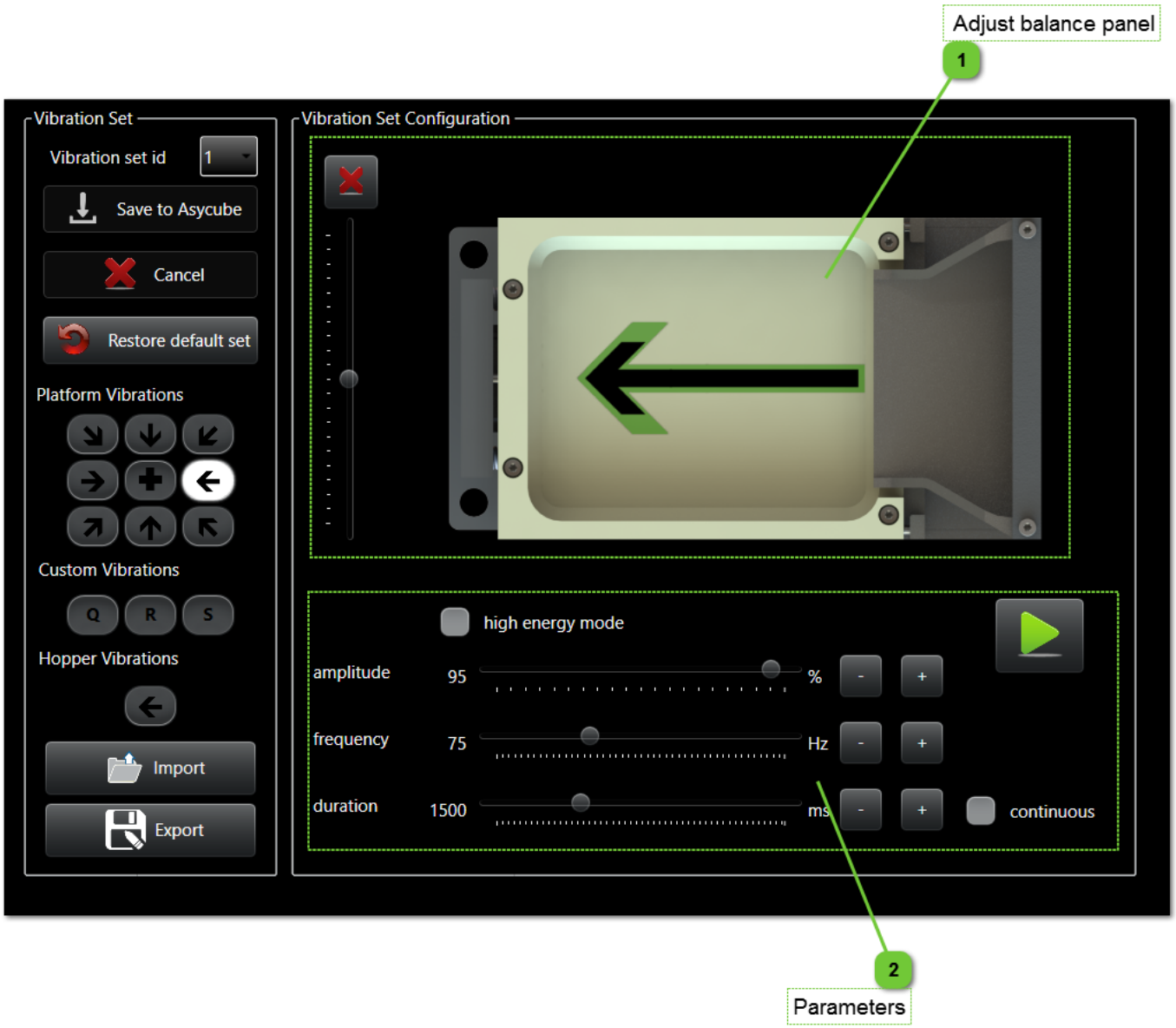


This section is where you can fine-tune the preconfigured vibrations to your liking.
• The leftmost slider is used for when your parts do not follow the correct direction indicated by the arrow on the Asycube (ex: arrow is straight but the parts tend to move towards one of the sides instead of forward). **Use the slider to compensate for this effet**: the arrow will angle according to how much you change the slider value. The more angled compared to its neutral position, the greater the drift. **Use the cross button to reset that value to neutral.**
• Tune the **amplitude**, **frequency** to your needs with their respective sliders. Finally, select a **duration** with the slider or check the **continuous** box to set the vibration to run continuously.
• Press the Play button to try your settings out.

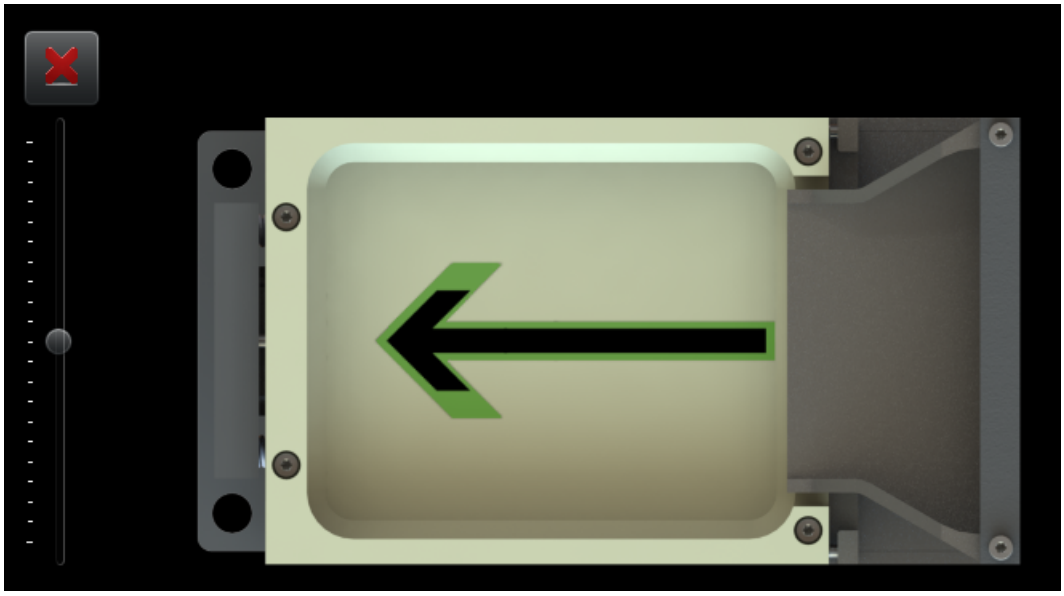
NOTES:
If continuous mode is checked and the set is saved in the Asycube, the duration saved will be the one currently selected on the duration slider.
The import and export of a standard vibration set are only available in firmware version under 2.4.0 for Asycube 240 and 3.1.0 for Asycubes 50 and 80. In more recent versions, the vibration set 26 is the standard vibration set and can be only modified by a technician from your supplier.

Tuning

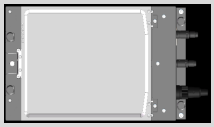
This tab allows you to modify standard vibrations by giving access to only needed parameters. Full access to all parameters is possible in Custom vibrations.


Adjust balance panel
1
Vibration Set
Vibration set id
1
Save to Asycube
Cancel
Restore default set
Platform Vibrations
Custom Vibrations
Q
R
S
Hopper Vibrations
Import
Export
Vibration Set Configuration
high energy mode
amplitude
95
%
frequency
75
Hz
duration
1500
ms
continuous
2
Parameters

1 Adjust balance panel

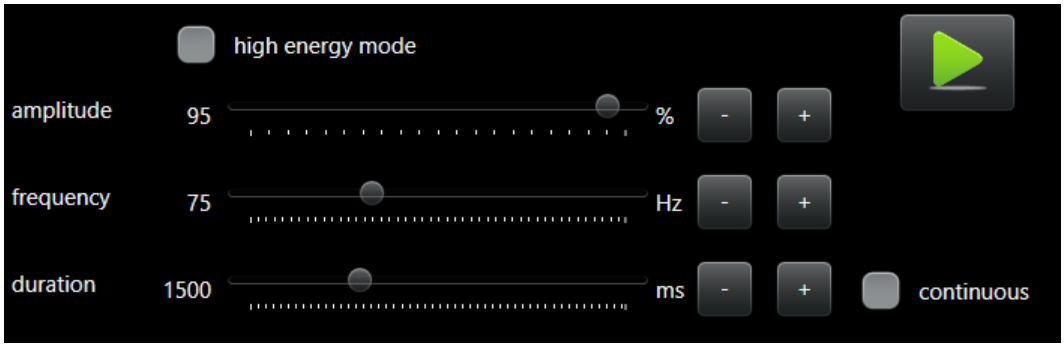


This panel allows you to adjust the vibration amplitude balances. In it, there is few controls and graphical elements describe below:

Control	Description
	Background picture indicates the direction of the Asycube.
	Green arrow indicates the theoratical movement of the selected vibration. **NOTE:** *This arrow represent the movement that parts must have when parameters are correctly defined.*
	Black arrow indicates the programmed movement of the selected vibration. The size of the arrow will depend of amplitude defined in Parameters group. **NOTE:** *This arrow don't represent the real movement of parts, but only the programmed movement needed to obtain green arrow movement.*
	Clear balances button allows you to reset both balances.

	Short side slider allows you to adjust amplitude balance. **NOTE:** *The vibration amplitude defined in parameters group will always be set to minimum one actuator. Amplitude of other actuators will be decreased depending of balances.*
	Long side slider allows you to adjust amplitude balance (on Left / Right & Cross axis centering). **NOTE:** *The vibration amplitude defined in parameters group will always be set to minimum one actuator. Amplitude of other actuators will be decreased depending of balances.*

2 Parameters

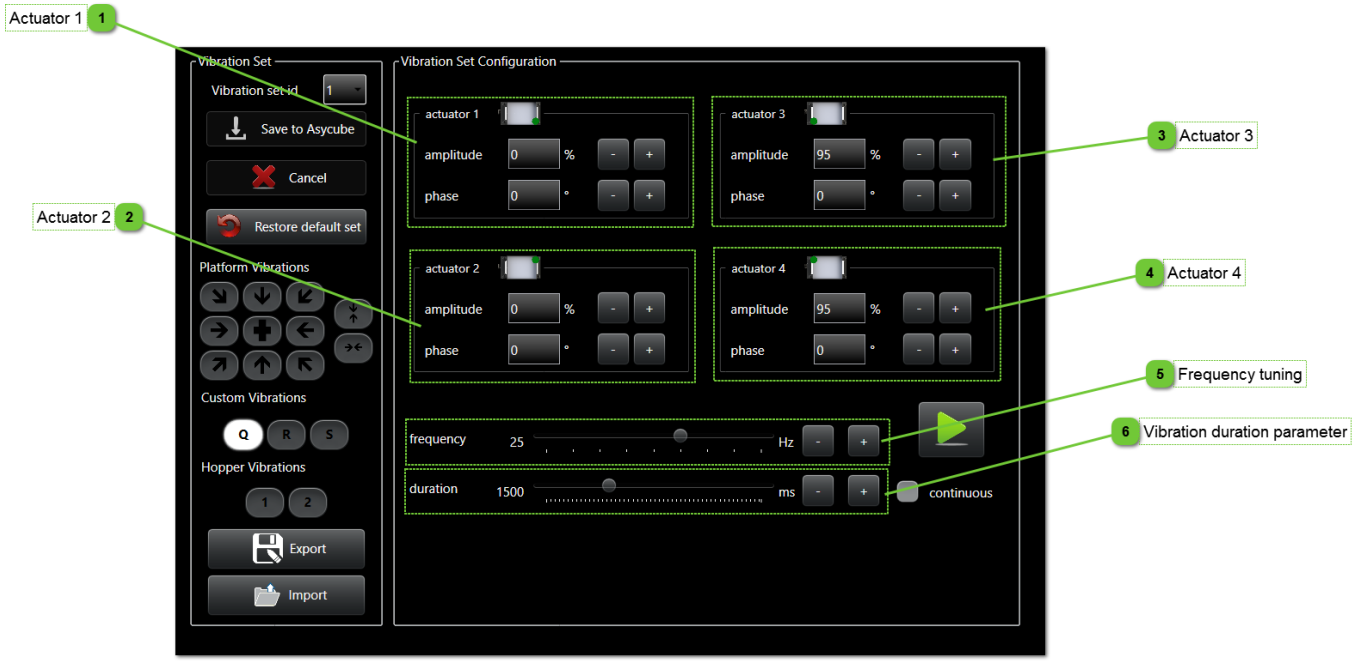


This group allows you to modify parameters :

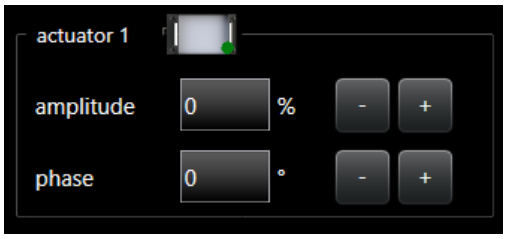
Parameter	Description
high energy mode	Available on Asycube 50 & 80 only. Check this box to add more amplitude on the Z axis independently from the value on the amplitude slider to help with structured plates / sticky parts.
famplitude	Amplitude value can be changed by using slider or +/- buttons. The amplitude set will be automatically distributed to actuators depending of movement selected and balances.
frequency	Frequency value can be changed by using slider or +/- buttons. The frequency set will be automatically distributed to actuators depending of movement selected. **NOTE:** *From the version 4.0.0 of the firmware of the Asycube, the range of the frequency is stored in the Asycube and is different depending of the Asycube model.* *The frequency is always the same for all actuators.*
duration	Duration value can be changed by using slider or +/- buttons. **NOTE:** *If a longer duration is needed, slide the value to maximum and press the + button. Additionnal time is added to the maximum value.* *Slide then in a lower value decrease the maximum value.* *Note that the maximum value is 30000 ms.*

Platform

This tab provides access to the platform vibration parameters. There are 26 vibrations available, but 9 vibrations (for Asycube 50, Asycube 80) or 11 vibrations (for Asycube 240, Asycube 380 and Asycube 530) have predefined functions. The goal of this tab is to adjust vibrations parameters and to try it using "play" button.



1 Actuator 1



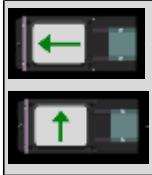
This group allows you to parametrize one actuator (the first one in this case). There is one group for each actuator of the Asycube.

Parameter	Description	Level
amplitude	Vibration amplitude of the actuator signal. The range value is from 0% to 100%. Amplitude value can be changed by using +/- buttons by step of 1%. The amplitude set will be automatically distributed to actuator. When the amplitude 0 is entered, the waveform is automatically set to "none". When an amplitude value bigger than 0 is given, the waveform is automatically set to "sinus".	
phase	Vibration phase of the actuator signal. The range value is from 0° to 359°. Phase value can be changed by using +/- buttons. **NOTE:** *For Asycube 50 and Asycube 80, the third actuator has no phase parameter, because it's the vertical actuator and disphase this signal make no sens.*	

The icon represents:

- the position of the actuator for Asycube 240, Asycube 380 and Asycube 530.
- the direction of the actuator for Asycube 50 and Asycube 80.

More details :

Icon	Description
	For Asycube 240, Asycube 380 and Asycube 530, the red point indicates the position of the actuator. The actuator vibrates in vertical direction.
	For Asycube 50 and Asycube 80, the arrow indicates the direction of horizontal actuators movements with a phase of 0 degrees. With a phase of 180 degrees, the movement is opposite to the arrow direction.
	For Asycube 50 and Asycube 80, the circles indicate that the direction of the actuator is vertical.

2 Actuator 2

See description of Actuator 1 group

3 Actuator 3

See description of Actuator 1 group

NOTE:
This actuator for Asycube 50 and Asycube 80 is the vertical one and doesn't need any phase parameter.

4 Actuator 4

See description of Actuator 1 group

NOTE:
This actuator exists only for Asycube 240, Asycube 380 and Asycube 530.

5 Frequency tuning

Change the frequency all actuators are vibrating at.

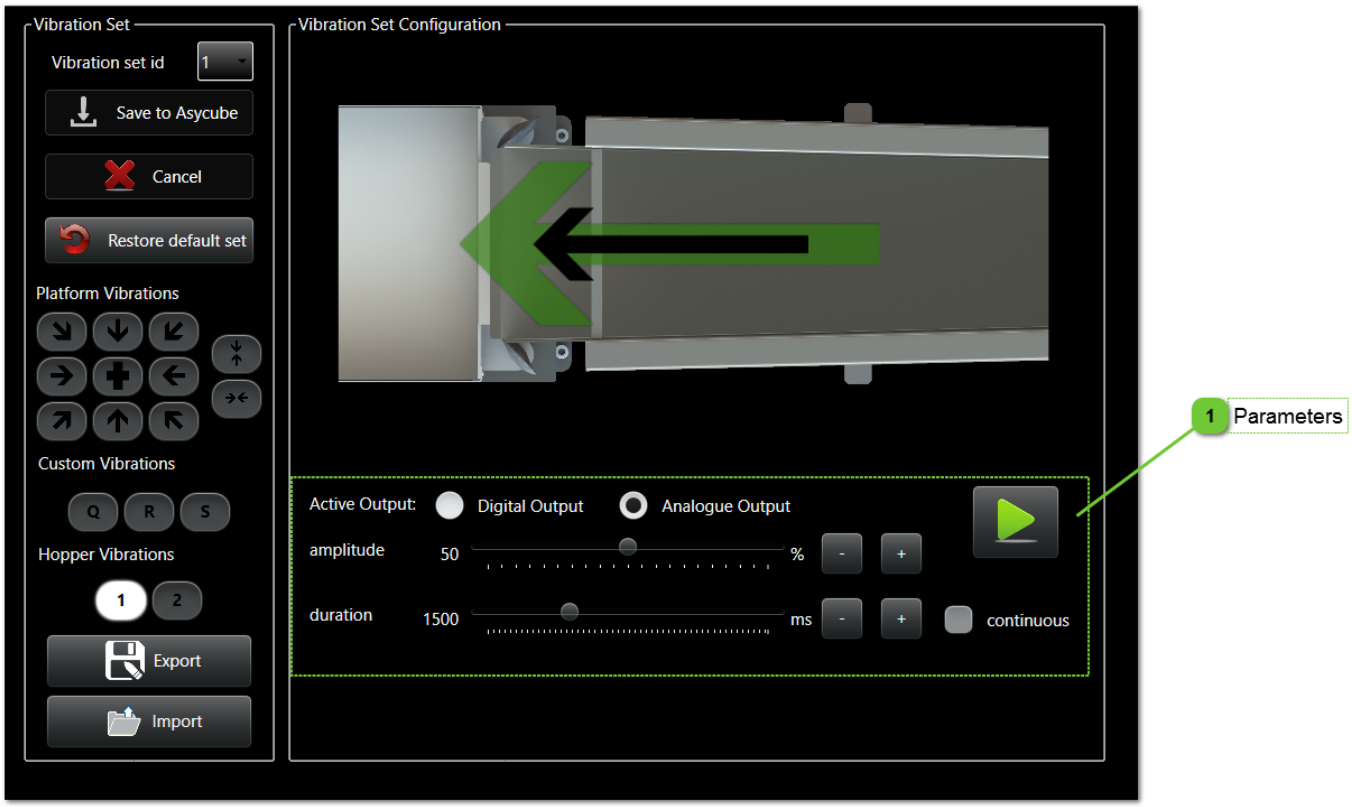
6 Vibration duration parameter

This parameter allows you to setup the duration of the vibration. This value is used in the Asycube process and in the sequence. The value must be the time needed to put the perfect number of parts on the platform.

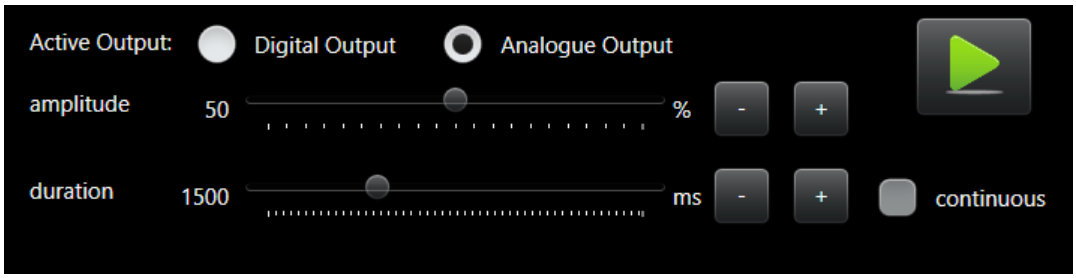
Outputs

This tab provides access to the outputs activation parameters. There are 26 activations available, but 2 activations have predefined functions. The goal of this tab is to adjust activations parameters and to try it using "play" button.

NOTE:
This page is only available for an Asycube 240, Asycube 380 and Asycube 530.
If you have an Asycube 240 and the purge system enabled, the second hopper vibration (labelled as 2) will not be accessible.



1 Parameters



This group allows you to tune the outputs activations and the duration of the activation. It is usually used to control the external hoppers vibration.

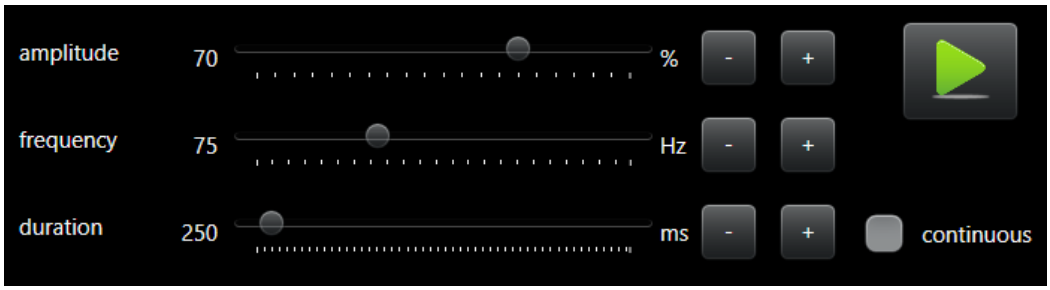
Parameter	Description
Active Output	Choose which output is triggered by this vibration set. For Asycubes 240, 380 & 530, Vibration 1 triggers the output 1 (either the digital or analogue depending on your choice).
Amplitude	Available only with the Analogue output. Changes how hard the hopper actuator will be driven.
Duration	Set how long the vibration is going to last.

Hopper

This tab provides access to the hopper vibration parameters. There are 26 vibrations available, but 1 vibration has predefined functions. The goal of this tab is to adjust vibrations parameters and to try it using "play" button.

NOTE:
This page is only available for an Asycube 50 or 80.

1 Vibration parameters

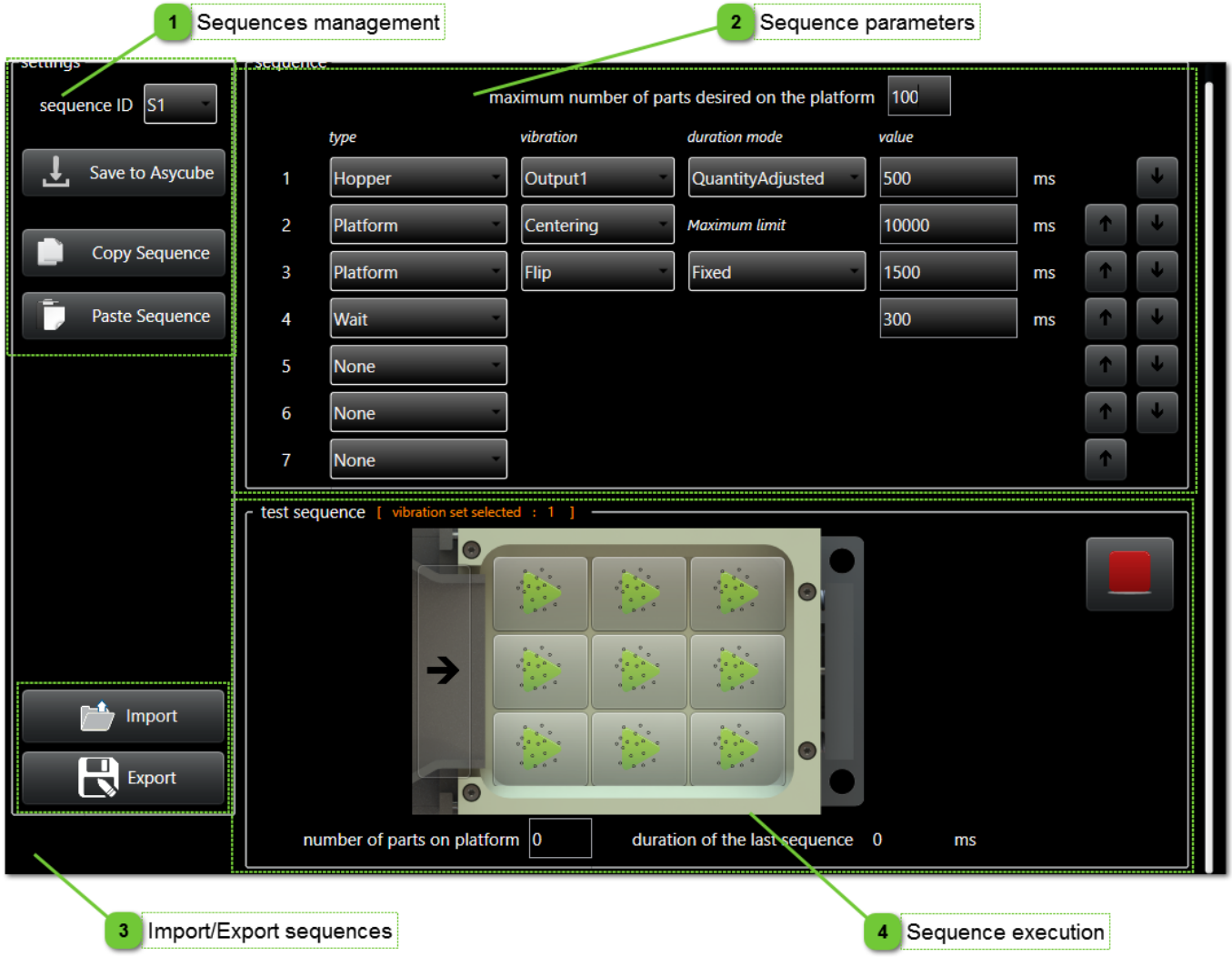


This group allows you to tune the hopper actuator and the duration of the vibration.

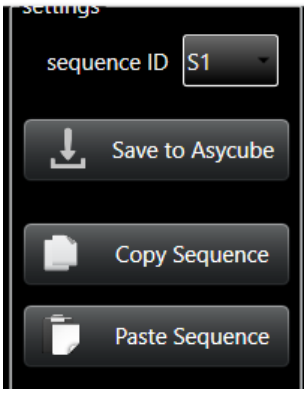
Parameter	Description	Level
Amplitude	Vibration amplitude of the actuator signal. The range value is from 0% to 100%. Amplitude value can be changed by using +/- buttons by step of 1%. The amplitude set will be automatically distributed to actuator.	
Frequency	Vibration frequency of the actuator signal. From the version 4.0.0 of the firmware of the Asycube, the range of the frequency is stored in the Asycube and is different depending of the Asycube model. For older versions, the range is from 0 to 250 Hz. Frequency value can be changed by using +/- buttons. The frequency setted will be automatically distributed to actuator.	
Duration	Duration of the vibration. This value is used in the Asycube process and in the sequence. The value must be the time needed to put the perfect number of parts on the platform.	

Sequences

This page provides access to the sequences. There are 26 sequences available, but the 26th is a standard sequence reserved for your supplier technicians. The goal of this page is to adjust the sequences parameters and to try it using the simulation part of the page. In this window, you can also import or export the sequences parameters.



1 Sequences management



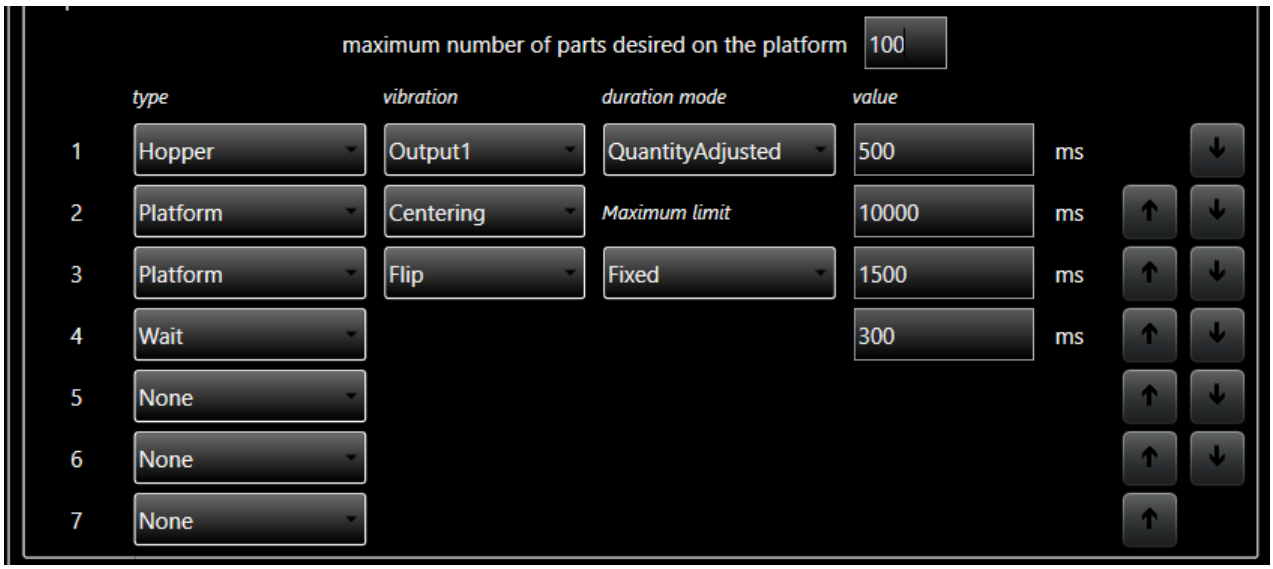
This group gives access to the management of the sequences.
The combobox allows you to select the sequence to use.
The flash button allows you to save all the sequences in the Asycube (the old values are overwritten).

The copy/paste group allows you to copy a sequence and paste it on another.
The procedure is the following :

1. Select the sequence to copy
2. Click on copy button
3. Select the sequence that you want to replace
4. Click on past button.

IMPORTANT!
All values of the sequence will be copied.

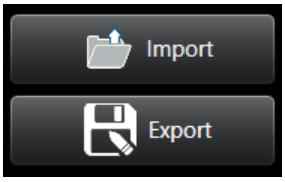
2 Sequence parameters



This group allows you to tune the selected sequence. The sequence is composed of 7 actions. Each action can be a platform vibration, a hopper vibration, a waiting time or a purge action if that option is enabled (requires a specific platform). Depending of the type of action, some parameters have to be chosen :

Parameter	Description
vibration	Define which vibration has to be done. It is only available for platform, hopper and purge action.
duration mode	The duration mode defines how the duration will be computed. The value can be : • Fixed : the duration is given and never changes depending of the parts positions or the number of parts on the platform. • Quantity Adjusted : the duration changes depending of the number of parts on the platform. The given duration is the duration to execute when no parts are on the platform. When the maximum is reached, there is no more vibration for this action. • VibrationSetRatio : the duration is a ratio related to the duration given in the vibration set. This value is in %. For more explanations, see the operating manual documentation.
value	The value is the duration value. Depending of the duration mode, the value to enter has to be in ms or in %.

3 Import/Export sequences



In this group, you can find all buttons to import and export the sequences parameters.

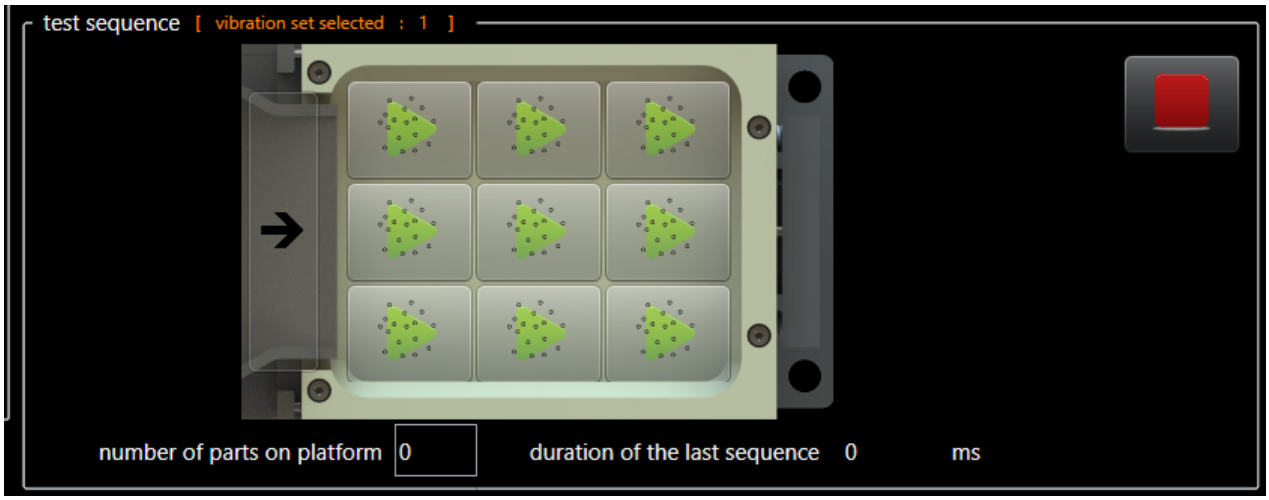
For the loading :

- If the file contains many sequences, the sequences will be loaded depending of the sequence ID given in the file.
- If the file contains only one sequence, the sequence will be loaded on the selected sequence regardless of the sequence ID given in the file.

For the saving :

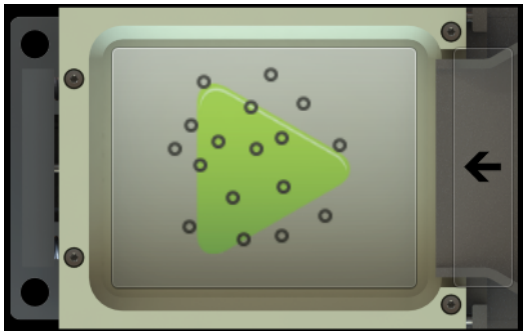
- If the user want to save only the selected sequence, do not check the checkbox.
- If the user want to save all the sequences, check the checkbox.

4 Sequence execution

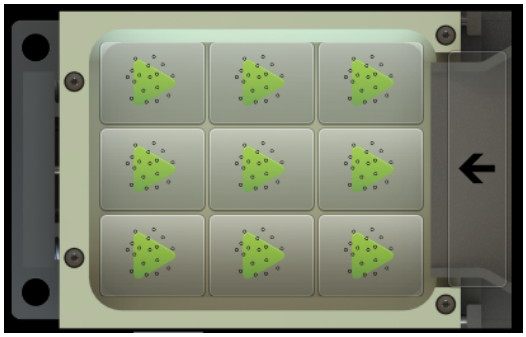


This group allows you to execute the selected sequence depending of many parameters :

- If the sequence has no action defined with the vibration "centering", only one button is displayed.



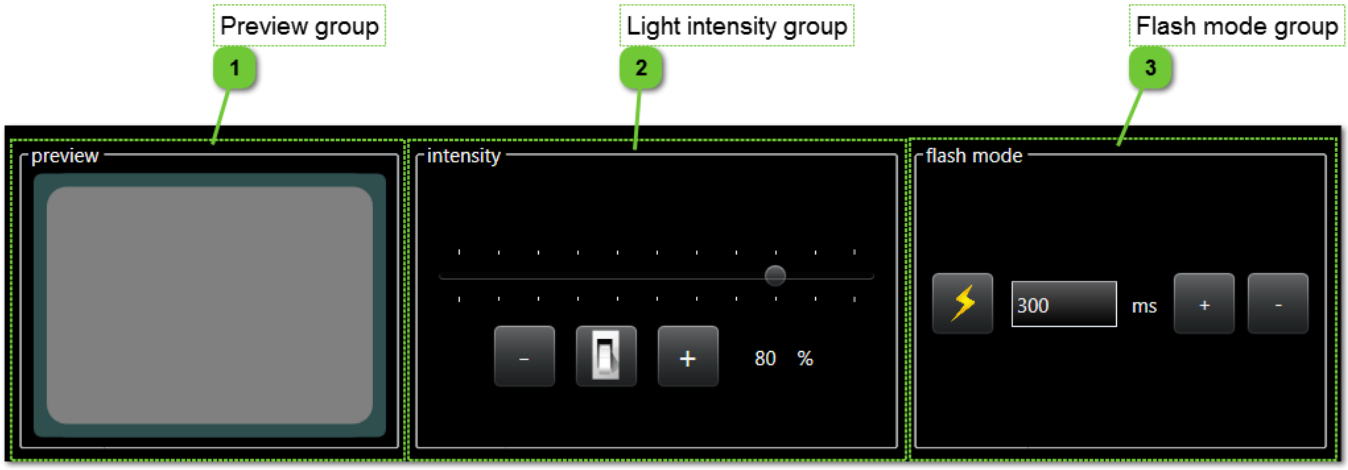
- If the sequence has an action defined with the vibration centering, nine buttons are displayed. They give informations to the sequence about the position of the parts on the plate and allow to test the sequence with many parts arrangement.



- The number of parts on platform is usefull when using a vibration with a duration mode "Quantity Adjusted" because the Asycube will change the duration of the vibration depending of the number of the parts on the platform. Like for the nine buttons, it is useful to test the sequence with many number of parts on the platform.
- In the title of the test sequence part of the page, the vibration set is written.
- The duration of the last sequence executed is displayed for information.
- The stop button allows you to stop at anytime the sequence execution. This button is visible only if the Asycube firmware version is higher than 3.9.9.

Backlight

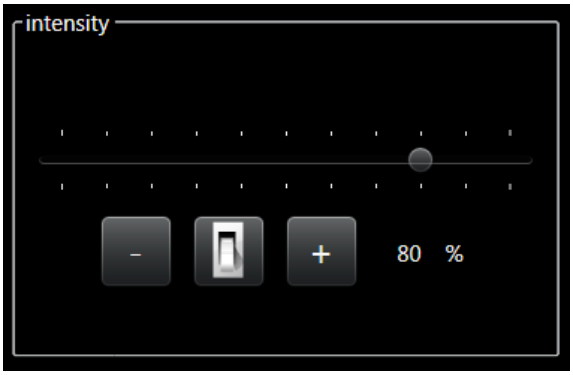
This page gives access to the backlight adjustment parameters (intensity and flash time). This page is visible only if Asycube has a backlight defined in the configuration page.



1 Preview group

The preview group contains a display where you can see the effect of the adjustment of backlight parameters.

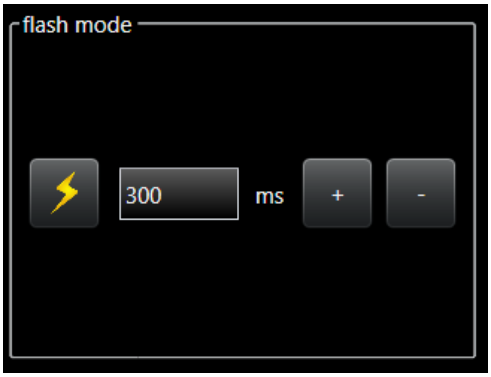
2 Light intensity group



The light intensity group contains controls to adjust intensity of backlight.
The value can be changed by using slider or +/- buttons.
The range value is from 0% to 100% (on Asycube 240, Asycube 380 and Asycube 530, backlight switches on from 20%).
The switch button allows you to test the value set.

NOTE:
The minimum value can change depending of the type of Asycube. From the firmware version 4.0.0, the minimum value is read directly in the Asycube and is different for each type of Asycube.

3 Flash mode group

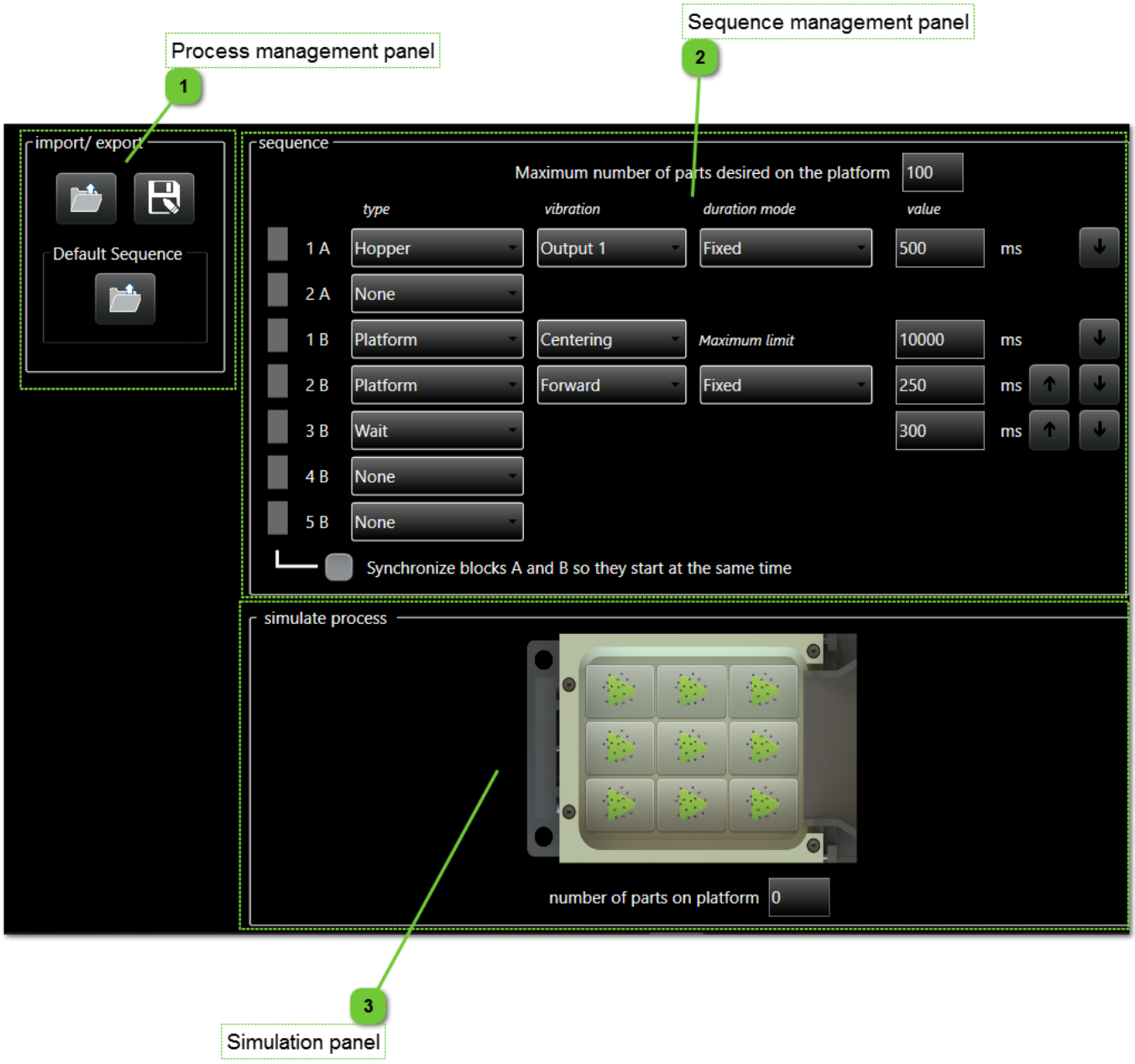


The flash mode group contains controls to adjust flash duration of backlight.
Flash duration value can be changed by using +/- buttons.
The range value is from 0 to 10000ms.

Process

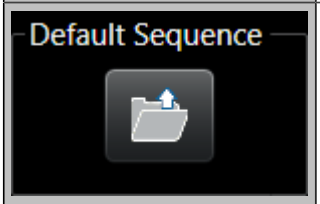
This page gives access to the process of the Asycube.

The process sequence is the vibration sequence the Asyview is going run when it cannot find anymore parts both matching your model and pickable on the platform.

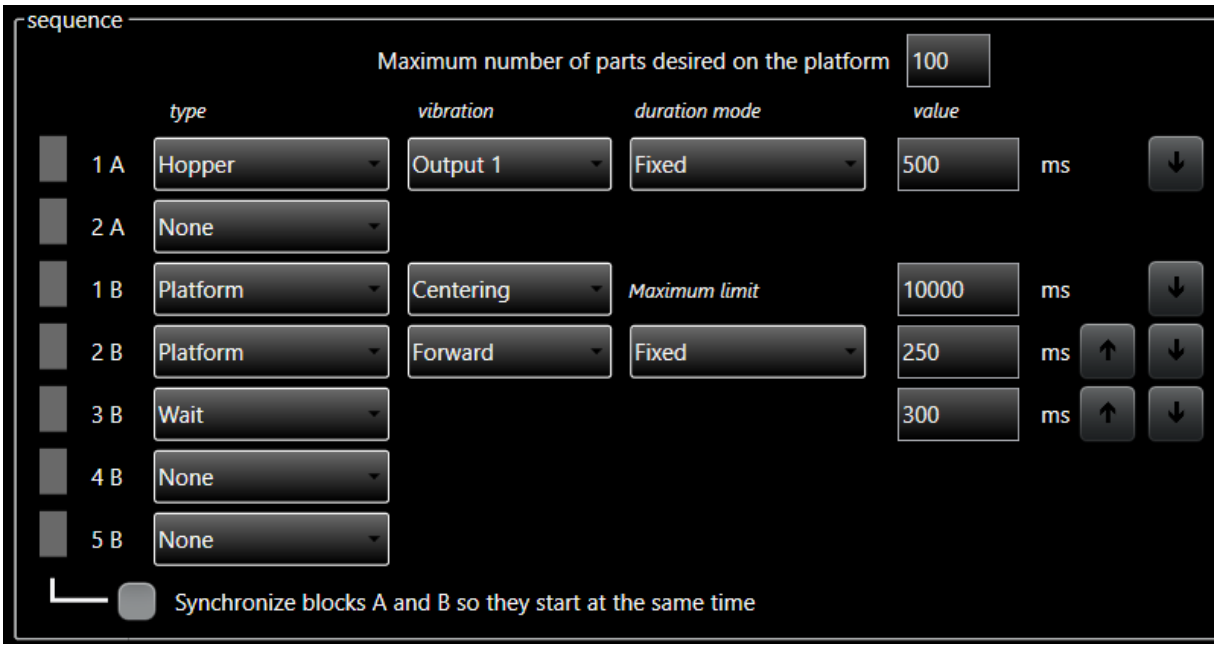


1 Process management panel

This panel lets you manage your process (load, save and load default sequence).

	This button lets you load a process file (*.fproc)
	This lets you save your current process to a file (*.fproc)
	By clicking on this button, your current sequence will be overwritten and the default sequence for your Asycube will be loaded instead.

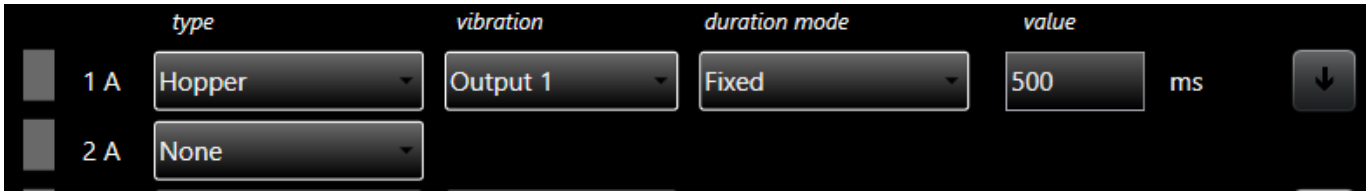
2 Sequence management panel



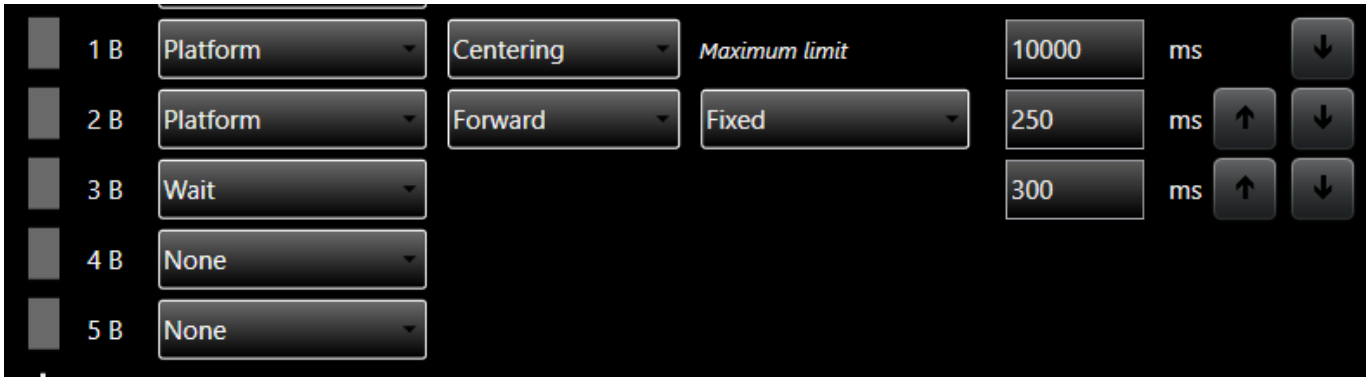
This panel lets you set up your process to meet your needs.

These command lines are split into two blocks A and B:

- Block A is linked to the Hopper, possible types are Hopper, Wait and None,

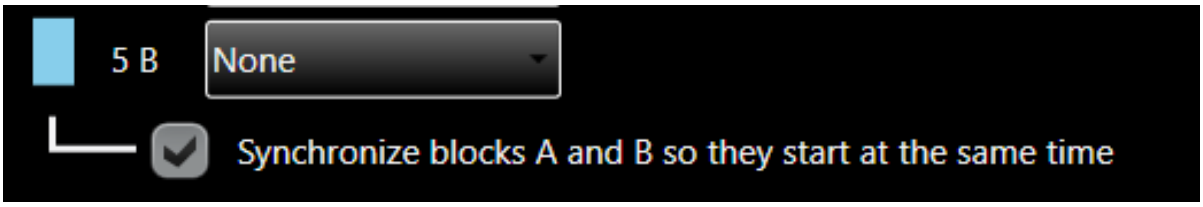


- Block B is linked to the Platform, possible types are Platform, Wait and None.



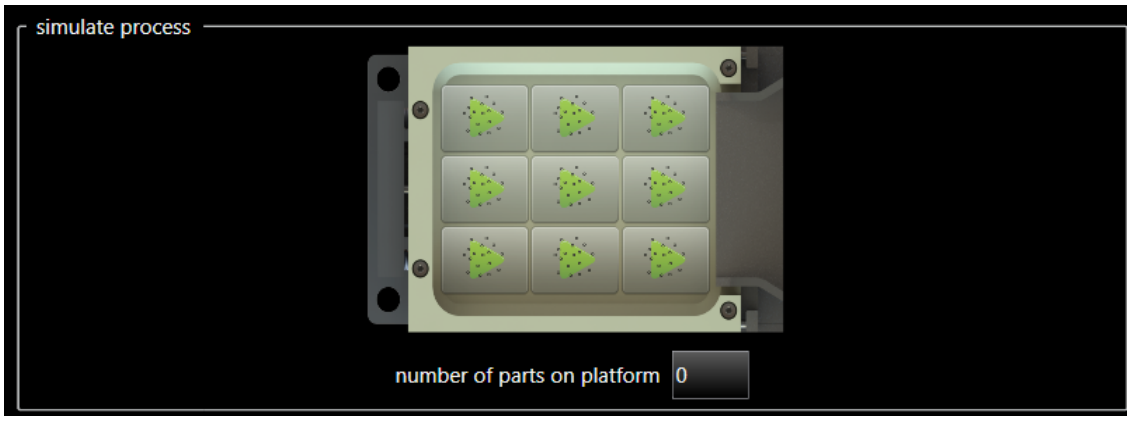
You can use the arrows on the left to switch command lines up or down within the same block (no switching between A and B blocks are allowed).

Finally, there is a checkbox that lets you enable or disable synchronized mode. The indicators on the beginning of each line changes color to indicate the state of the synchronized mode (grey = off; colored = on).



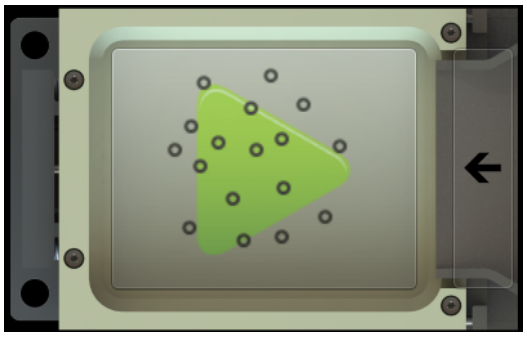
In this mode, blocks A and B will be started at the same time and run concurrently.

3 Simulation panel

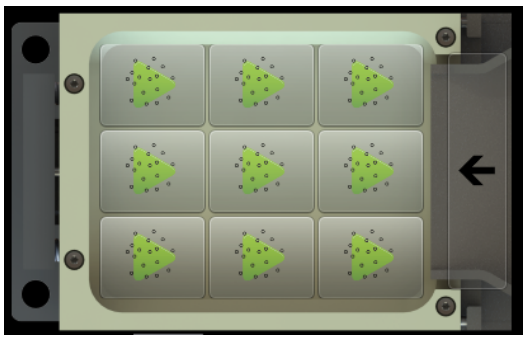


This group lets you execute the selected sequence depending on some parameters :

- If the sequence has no "centering" vibration defined, only one button is displayed.



- If the sequence has a "centering" vibration defined, nine buttons are displayed. They give information to the sequence about the position of the parts on the plate and allow you to test the sequence with various part arrangements.



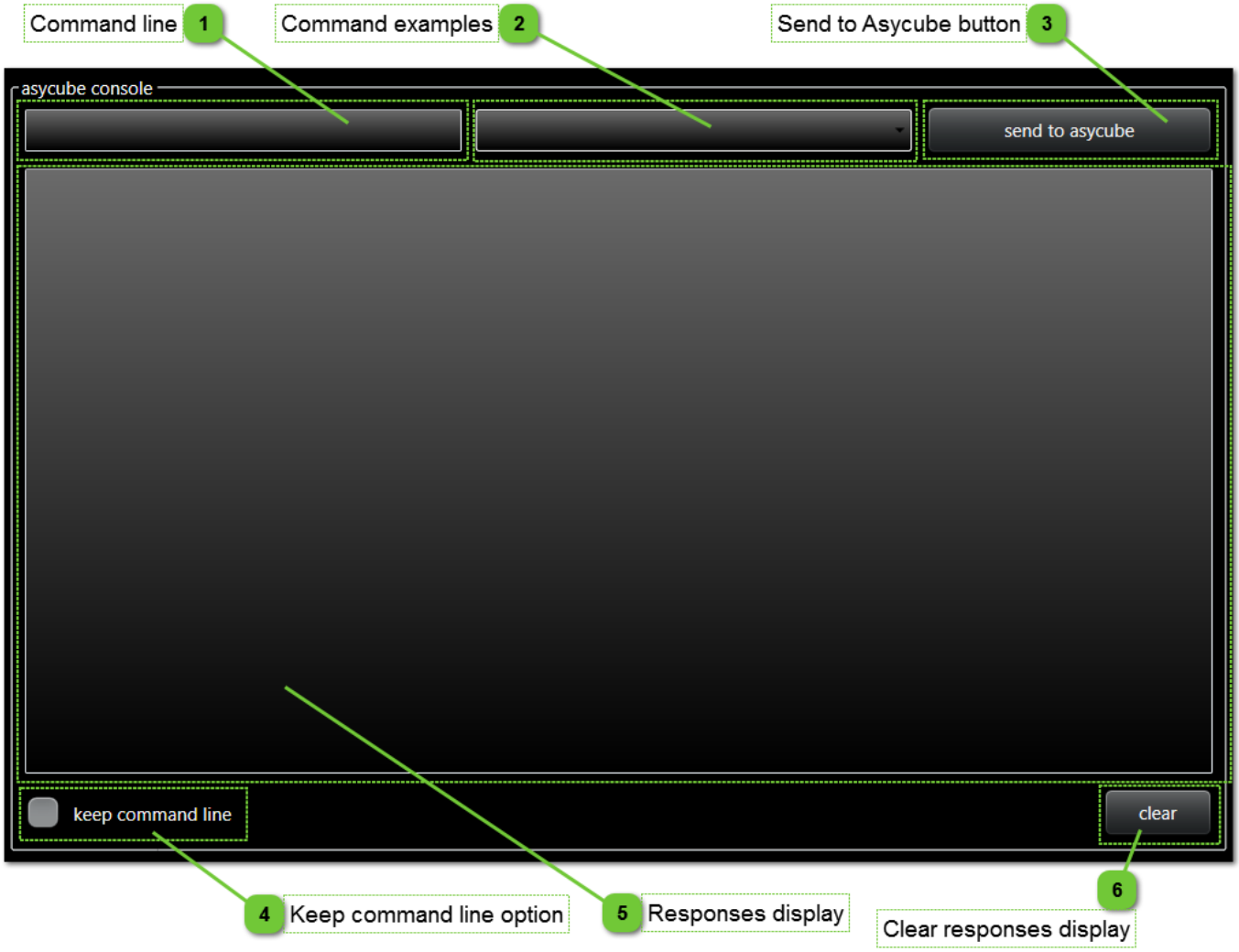
- The number of parts on platform is useful when using a vibration with a duration mode "Quantity Adjusted" because the Asycube will change the duration of the vibration depending of the number of the parts on the platform. As with the nine buttons, it is useful to test the sequence with a large number of parts on the platform.

Terminal

This page gives access to the terminal mode. In this page, you can execute commands manually.

NOTE:
All this page can be used only with Integrator level access.

NOTE:
The commands are described in the User Guide of the each Asycube.



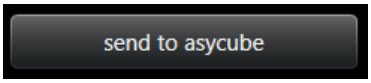
1 Command line

Enter the command in this text box.
Executed commands can be bring back using arrow keys.

2 Command examples

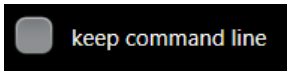
Some examples of commands can be found in this list. When selected, the command is entered in the command line. For some examples, the values of the parameters have to be modified before to execute the command.

3 Send to Asycube button



This button allows you to execute the command.

4 Keep command line option

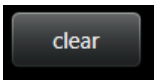


This checkbox allows you to select if command must be kept in the command line after execution. This option is usefull to execute several times the same command.

5 Responses display

This group displays the responses to the previous commands.

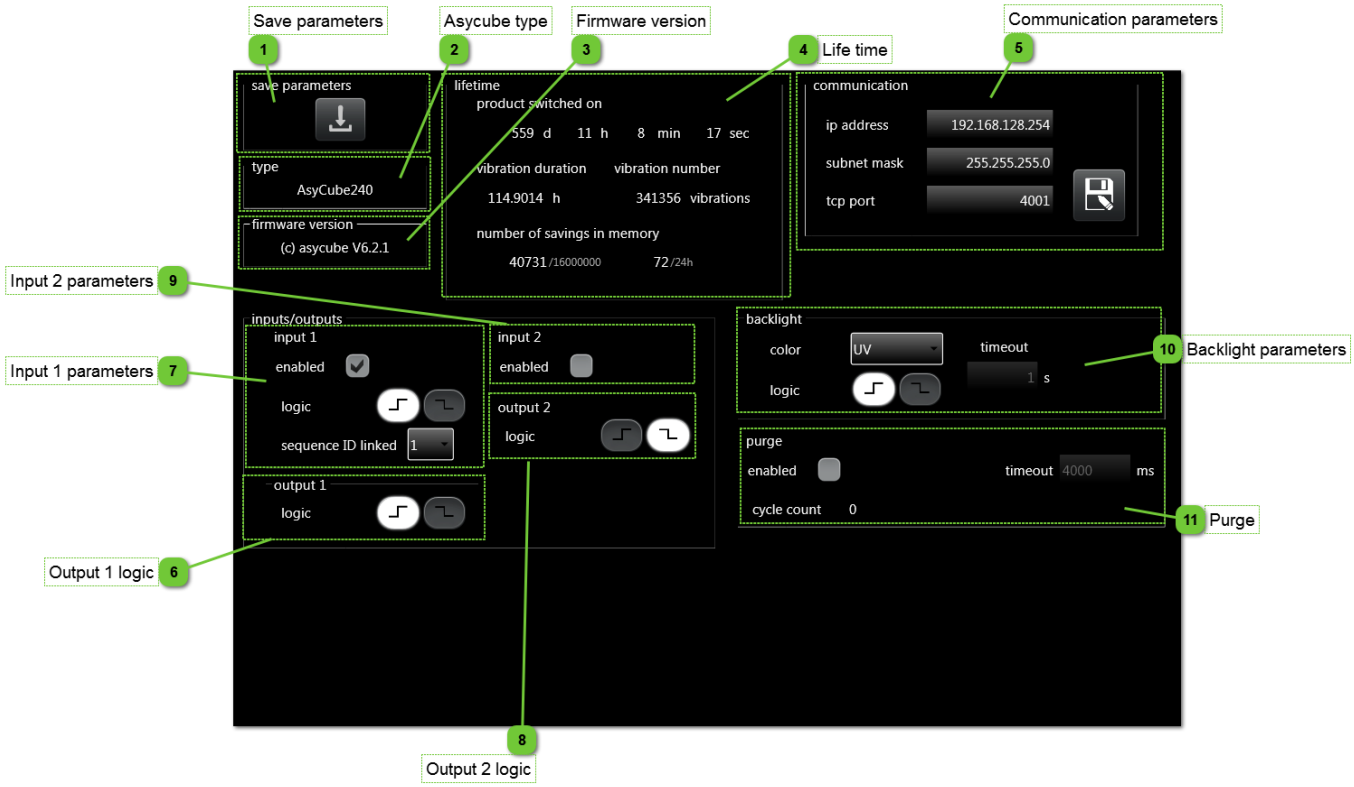
6 Clear responses display



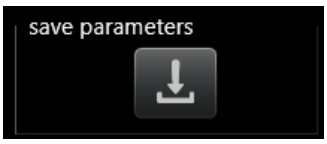
This group allows you to clear the responses display.

Configuration

This page gives access to the configuration of the Asycube. All these parameters are saved in the Asycube Firmware but in none of the configuration file on your computer.



1 Save parameters



This button allows you to save the global parameters to the flash memory.

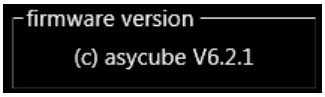
IMPORTANT!

The Asycube save automatically the global parameters every 20 minutes. If the user press on this button during the automatic save, a message is displayed to inform that the saving is not possible.

2 Asycube type

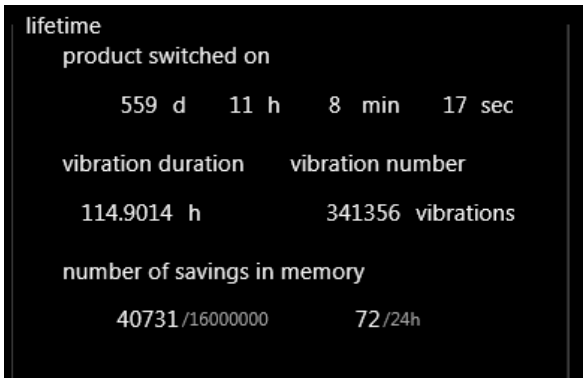
In this group, you can find the type of Asycube. The value is read in the Asycube firmware.

3 Firmware version



In this group, you can find the firmware version.

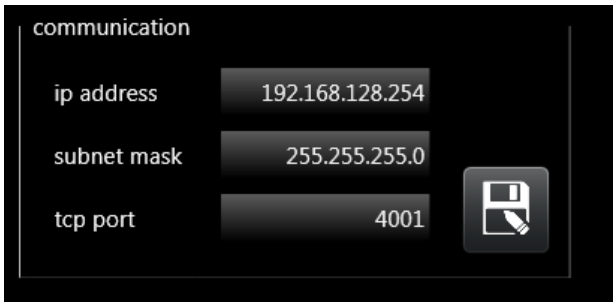
4 Life time



In this group, you can find some informations about life time of Asycube.

Info	Description
product switched on	Indicates the time of activity of the Asycube (power on time).
vibration duration	Indicates the total vibration time of the Asycube platform. **NOTE:** *This value is visible only for Asycube 240, Asycube 380, Asycube 530 and other Asycubes since firmware version 1.5.0.*
vibration number	Indicates the total number of vibration executed on the Asycube platform. **NOTE:** *This value is visible only for Asycube 240, Asycube 380, Asycube 530 and other Asycubes since firmware version 1.5.0.*
flash memory	Indicates the number of save data in flash memory. The first number indicates the total number and the next one the average per day. **NOTE:** *Those values are visible only for Asycube 380 and Asycube 530, since version 2.4.0 for Asycube 240 and 3.1.0 for Asycubes 50 and 80.*

5 Communication parameters



In this group, you can change IP address, subnet mask and tcpport of Asycube electronic.
Click on the button to apply the modifications.

NOTE:
This parameter is visible only for Asycube 240, Asycube 380, Asycube 530 and other Asycubes since firmware version 3.0.0.

If Asycube is not in default parameters mode (switch 1 in OFF position) : the parameters are applied in the firmware, the HMI will reconnect automatically and the configuration of HMI is modified. The ethernet interface of the computer is not modified. Do it manually if needed (if the new subnet is different than actual one).

If Asycube is in default parameters mode (switch 1 in ON position) : the parameters are applied in the firmware but the HMI keep connected on default parameters and the configuration of HMI is not modified. The ethernet interface configuration of the computer is not modified.
When you will restart the Asycube not in default parameters mode (switch 1 in OFF position), you will have to configure the HMI and if needed to modify the ethernet interface configuration of the computer.

See more explanations in Operating Manual of the Asycube.

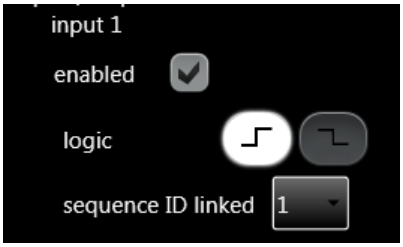
6 Output 1 logic

In this group, you can select the logic of the digital output 1.

Icon	Description
	Logic positive, the output change from 0V to 24V when activated.
	Logic negative, the output change from 24V to 0V when activated.

NOTE:
This parameter is visible only for Asycube 240, Asycube 380 and Asycube 530.

7 Input 1 parameters



In this group, you can select the logic of the digital input 1 and the sequence linked to this input.

Icon	Description
	Logic positive, the input change from 0V to 24V has to be detected.
	Logic negative, the input change from 24V to 0V has to be detected.

When a signal on this input is detected, the selected sequence ID linked is executed.
This input can be disabled at will by ticking the corresponding box.

NOTE:
This parameter is visible only for Asycube 240, Asycube 380 and Asycube 530.

8 Output 2 logic

In this group, you can select the logic of the digital output 2.

Icon	Description
	Logic positive, the output change from 0V to 24V when activated.
	Logic negative, the output change from 24V to 0V when activated.

NOTE:
This parameter is visible only for Asycube 240, Asycube 380 and Asycube 530.

9 Input 2 parameters

In this group, you can select the logic of the digital input 2 and the sequence linked to this input.

Icon	Description
	Logic positive, the input change from 0V to 24V has to be detected.
	Logic negative, the input change from 24V to 0V has to be detected.

When a signal on this input is detected, the selected sequence ID linked is executed.
This input can be disabled at will by ticking the corresponding box.

NOTE:
This parameter is visible only for Asycube 240, Asycube 380 and Asycube 530.
If you have an Asycube 240 and its purge system, enabling the purge option will automatically disable this input.

10 Backlight parameters

In this group, you can change parameters for backlight.

Parameter	Description
color	Change this parameter allows you to save in the firmware the backlight color used in the Asycube. This value is used to auto adapt HMI display. **NOTE:** *If none color is selected, switch buttons in many pages and backlight page disappears.*
logic	This parameter allows you to select the logic of the backlight synchronization input. **NOTE:** *Positive : 24V on input switch on the backlight.* *Negative : 0V on input switch on the backlight.*
timeout	This value is the timeout of the backlight. After this duration with backlight at 100%, the backlight switch automatically off. With backlight at 50%, the timeout is the double of the parameter value. **IMPORTANT!** *The timeout of the backlight is used to protect the backlight against the overheating. If the timeout is reached, don't restart it directly, let the system cool down.* *The system is not intended to be switched on permanently. Switch on the backlight on only when picture is needed and switch it off directly when picture is acquired.* *This protection is disabled (timeout set to 0) for Asycube 240, Asycube 380 and Asycube 530 because their backlight cannot be damaged in case of backlight switched on permanently.* **NOTE:** *This parameter is only indicative and can only be modified by the manufacturer.*

11 Purge

If you have an Asycube that supports the Asyril purge system, this area is also visible on this page. You can activate your purge platform with this option. All other options are reserved for Asyril technicians.

AsyView

This chapter describes pages related to the AsyView.

AsyView is the name of the Smartsight software. It is able to manage cameras and Asycubes.

The architecture of this system has the granularity of a machine :

Machine --> Cells --> Modules --> Cameras and/or Asycubes

NOTE:
The display order of the elements is defined in the architecture file of the AsyView software and can be seen in the AsyView software user interface.

NOTE:
For more explanations about the AsyView architecture and fonctionalities, see the SmartSight specific documentation (SmartSight Programming Manual).

Pages list

Controls disabled

Some pages, tabs, buttons, textboxes, etc can be disabled depending of the following parameters :

- AsyView connection state (disabled when not connected).
- The function is not possible for the moment (another function is processing).
- The level access is not correct to access to the parameter.

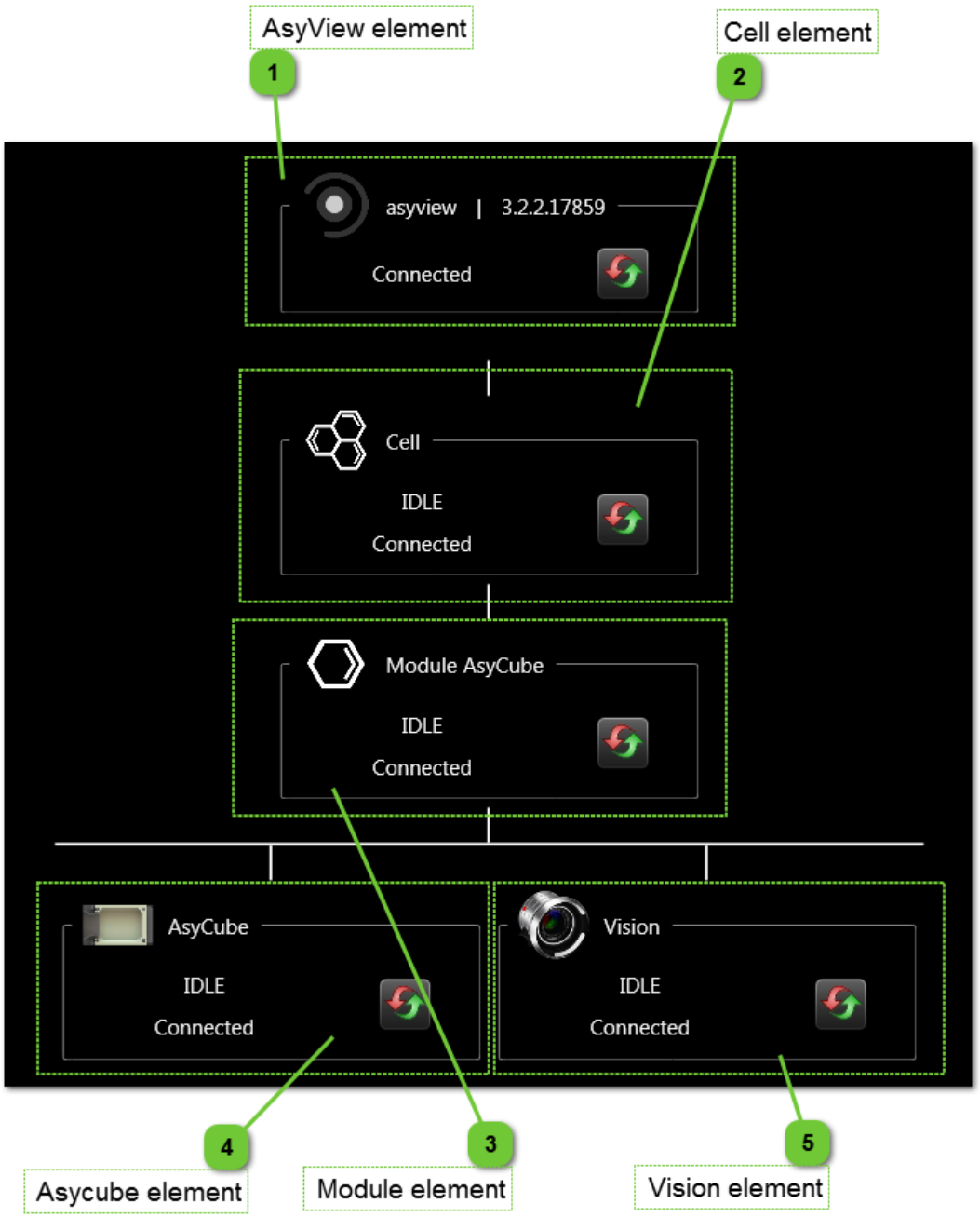
Controls not visible

Some pages, tabs, buttons, textboxes, etc can be not visible depending of following parameters :

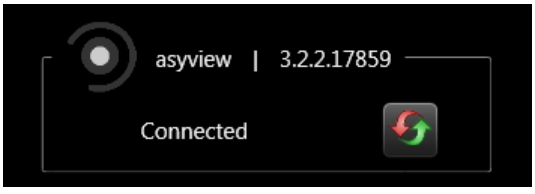
- The AsyView does not have this hardware element in its architecture (i.e. camera, Asycube, backlight, frontlight, etc).
- Option is not valid for your product.
- The level access is not correct to access to the parameter.

Main page

The main page displays the architecture of the AsyView and the state of every elements in the architecture. A reset button allows you to reset each element of the AsyView.

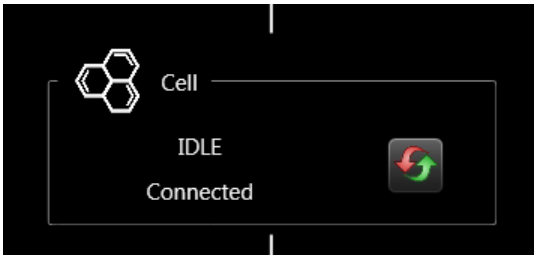


1 AsyView element



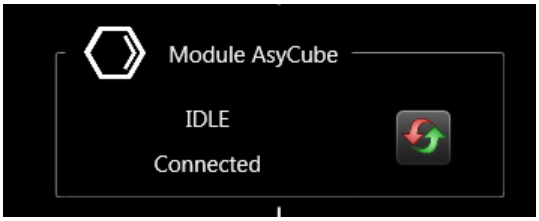
This display indicates the state and connection state of the complete AsyView. The reset button allows you to reset the complete AsyView.

2 Cell element



This display indicates the state and connection state of a cell. The reset button allows you to reset the cell and all elements below.

3 Module element

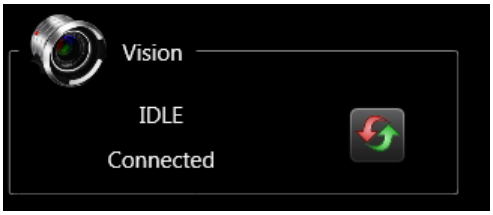


This display indicates the state and connection state of a module. The reset button allows you to reset the module and all elements below.

4 Asycube element

This display indicates the state and connection state of an Asycube. The reset button allows you to reset the Asycube.

5 Vision element

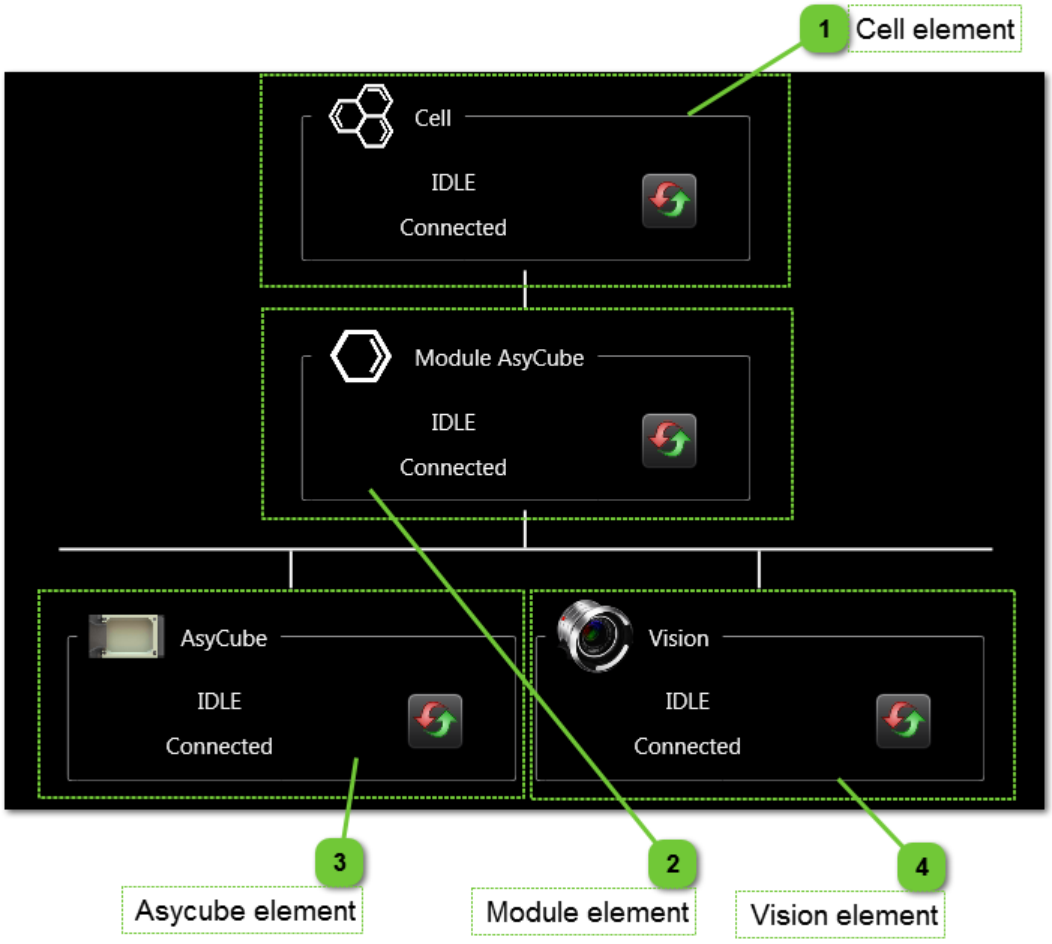


This display indicates the state and connection state of a vision. The reset button allows you to reset the vision.

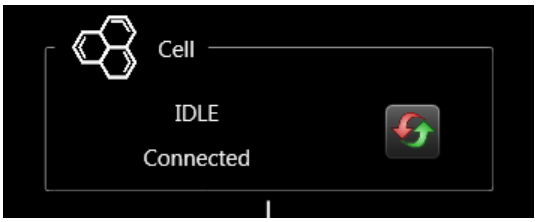
Cell

The cell page displays the architecture of a cell in the AsyView and the states of every element below in the architecture. A reset button allows you to reset each element of the cell.

NOTE:
This page is only available if there is more than one cell in the AsyView architecture.

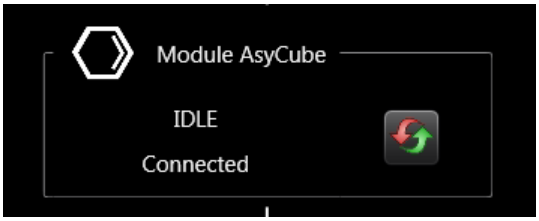


1 Cell element



This display indicates the state and connection state of a cell. The reset button allows you to reset the cell and all elements below.

2 Module element



This display indicates the state and connection state of a module. The reset button allows you to reset the module and all elements below.

3 Asycube element

This display indicates the state and connection state of an Asycube. The reset button allows you to reset the Asycube.

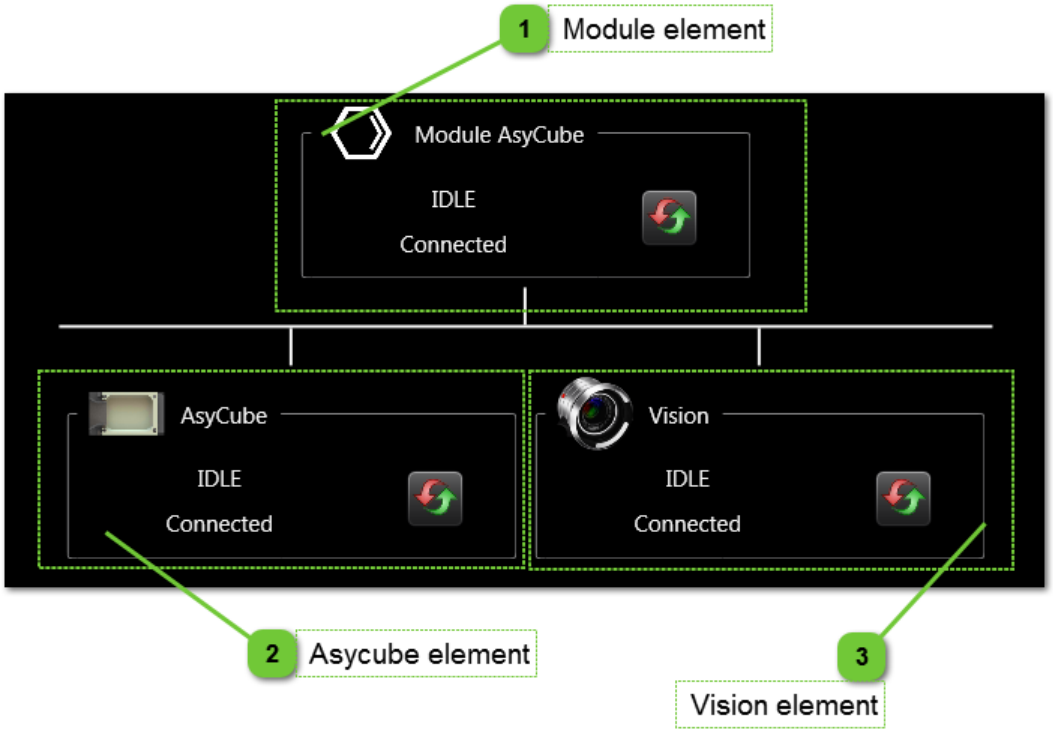
4 Vision element

This display indicates the state and connection state of a vision. The reset button allows you to reset the vision.

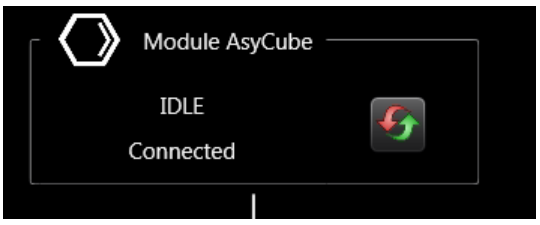
Module

The module page displays the architecture of a module in a cell of the AsyView and the states of every element below in the architecture. A reset button allows you to reset each element of the module.

NOTE:
This page is only available if there is more than one module in the cell architecture.



1 Module element



This display indicates the state and connection state of a module. The reset button allows you to reset the module and all elements below.

2 Asycube element

This display indicates the state and connection state of an Asycube. The reset button allowsyou to reset the Asycube.

3 Vision element

This display indicates the state and connection state of a vision. The reset button allows you to reset the vision.

Vision

This chapter describes pages related to the vision part of the AsyView.

Pages list

Controls disabled

Some pages, tabs, buttons, textboxes, etc can be disabled depending of following parameters :

- The connection state of the vision part of the AsyView (disabled when not connected).
- The function is not possible for the moment (another function is processing)
- The level access is not correct to access to the parameter.

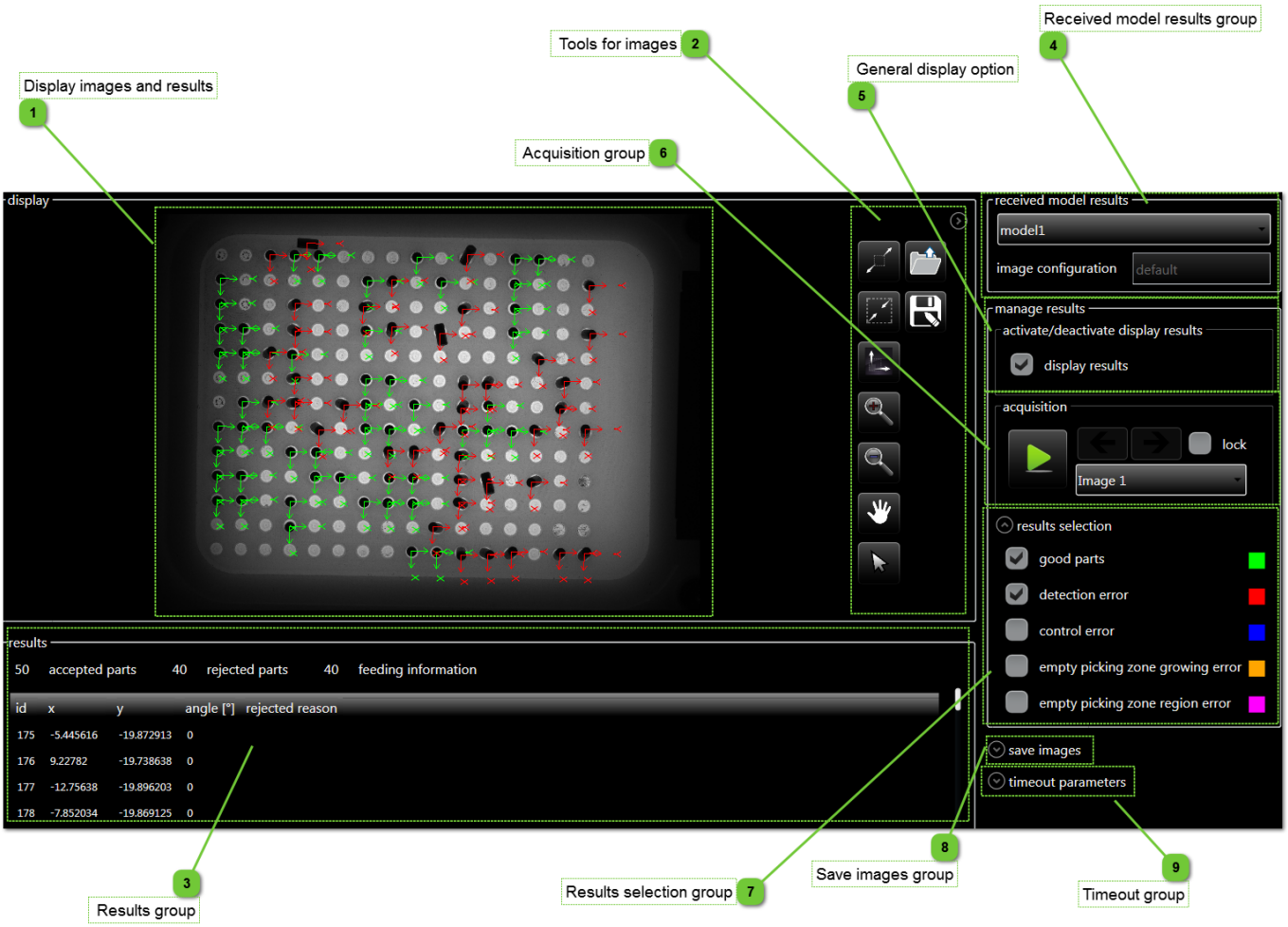
Controls not visible

Some pages, tabs, buttons, textboxes, etc can be not visible depending of following parameters :

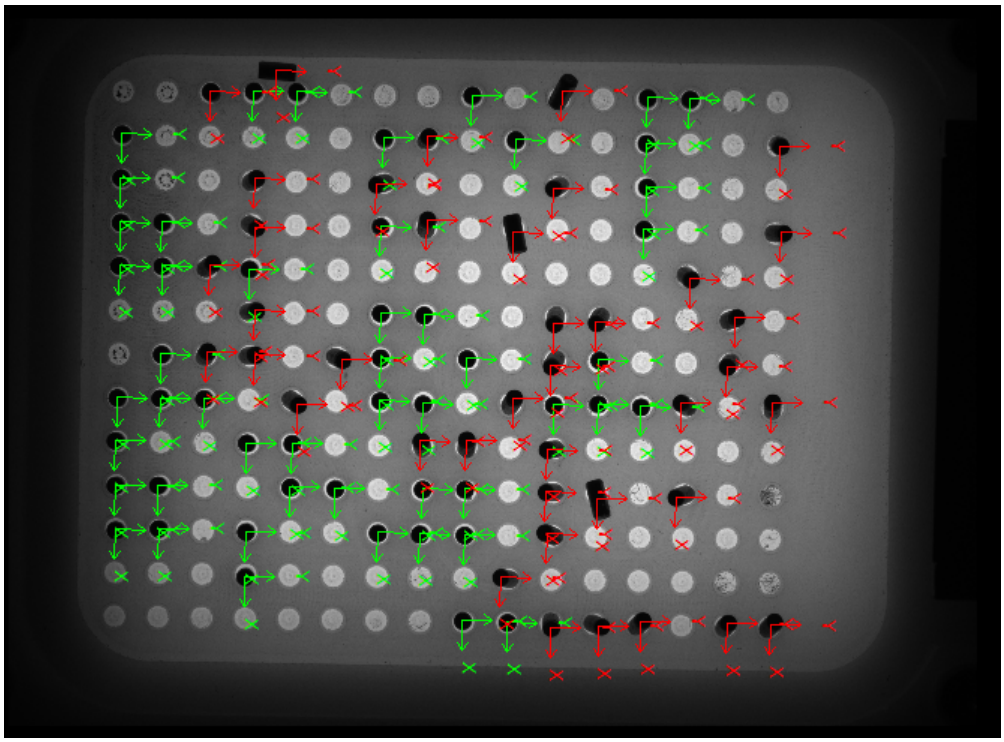
- The vision part of AsyView does not have this hardware element in its architecture (i.e. backlight, frontlight, etc).
- Option is not valid for your product.
- The level access is not correct to access to the parameter.

Home

Home page gives access to the results of the vision analysis and to the possibility to execute an acquisition and analysis. Some parameters allows you to select which kind of results have to be displayed.

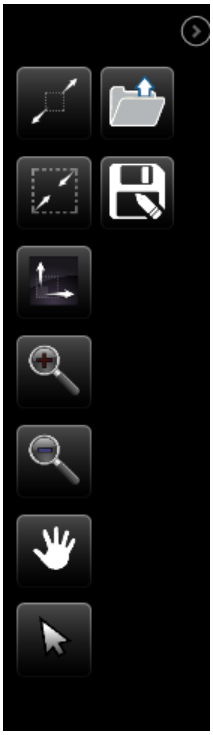


1 Display images and results



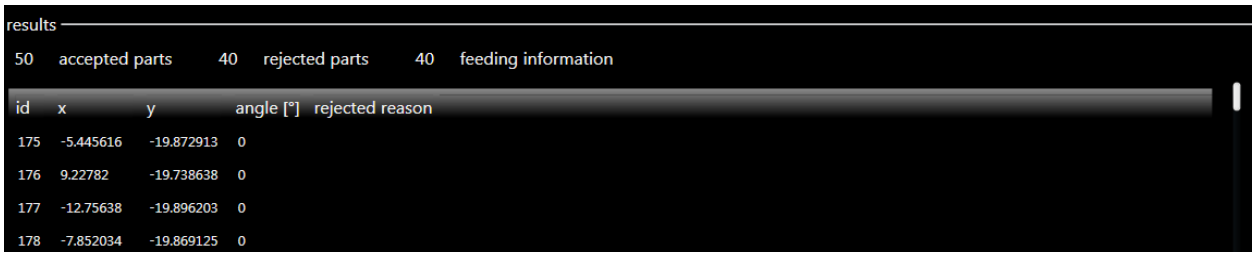
This zone displays the images received from AsyView and the kind of results selected in the result selection group.

2 Tools for images



This zone gives access to options to navigate in the image (zoom in/out, move, fit image, etc).

3 Results group



This group displays the list of the good parts found and/or the rejected parts depending of the selection in the results selection group.

A specific result can be selected and only this overlay will be displayed on the image. Multi-selection is possible.

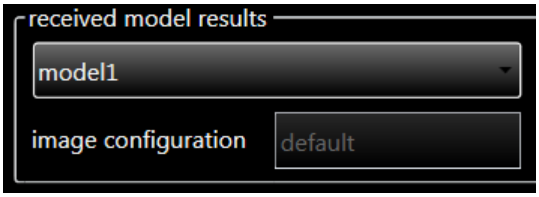
Some additional informations are displayed :

- accepted parts number is the total amount of good parts detected.
- rejected parts number is the total amount of refused parts.
- feeding information is the number of parts found by the feeding information tool.

NOTE:
When one or many results are selected, click on a checkbox in the results selection group to display again all the results.

NOTE:
The accepted and refused parts positions are usually not given in the same unit. Only the accepted parts positions are converted by the process calibration (for time saving) thus the refused parts positions are always given in the vision workspace unit instead of the process calibration unit (if the vision is calibrated in mm, the refused parts positions are given in millimeters, otherwise the refused parts positions are given in pixels).

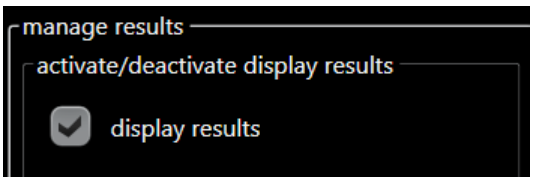
4 Received model results group



This group allows you to select the results of the model to display. The combobox is filled when receiving results.

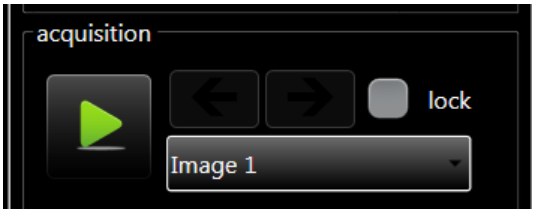
The image configuration field indicates which image configuration was used for the analysis.

5 General display option



This display allows you to activate or deactivate the display of all results.

6 Acquisition group

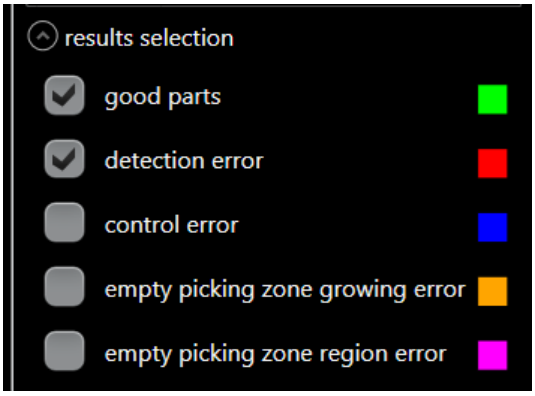


This group is related to the acquisition and images. Click on the play button to execute an acquisition and an analysis of all models.

The combobox and the arrows buttons allows you to select the image to display (i.e. backlight image or frontlight image).

The lock checkbox allows you to choose which image will be always displayed (check the box when the requested image is displayed).

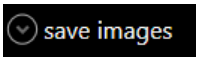
7 Results selection group

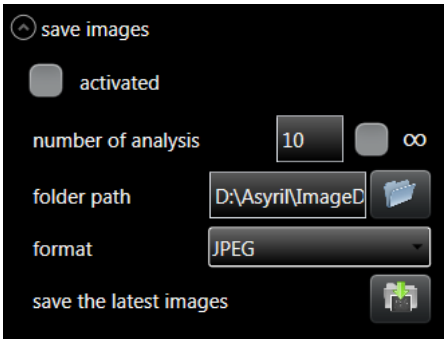


This group allows you to select which type of results to display in the display and in the result list.

8 Save images group

This expander allows you to access to the save images feature.





The activated checkbox allows you to switch on/off the saving of images with the parameters below. The saving is done at the end of analysis.

The "number of analysis" indicates how many images have to be saved. The saving will stop when the number is reached. The infinity checkbox allows you to save images until a manual deactivation.

The saving "folder path" can be specified. It is always an Asyview computer path, including if the HMI is installed on the customer computer.

3 possibilities of image format can be chosen :

- JPEG : light images with results.
- BPM : high quality images without results.
- ALL : JPEG and BMP.

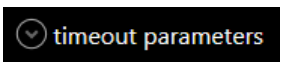
The "save the latest images" button allows you to save at any time the latest images still in memory. It is useful to save the images when a problem appears and the saving was not activated. The parameters used for this saving is the parameters above.

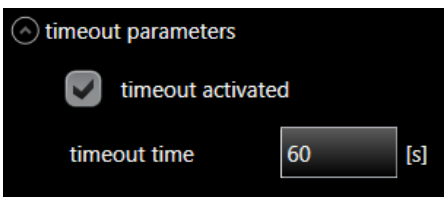
NOTE:
The number of images which can be saved is limited to 1000 JPEG files and 100 BMP files.

IMPORTANT !
The saving of images generates a lot of data written on the SSD disc, thus use carefully this feature to not wear the SDD prematurely.

9 Timeout group

This expander allows you to access to the timeout feature.





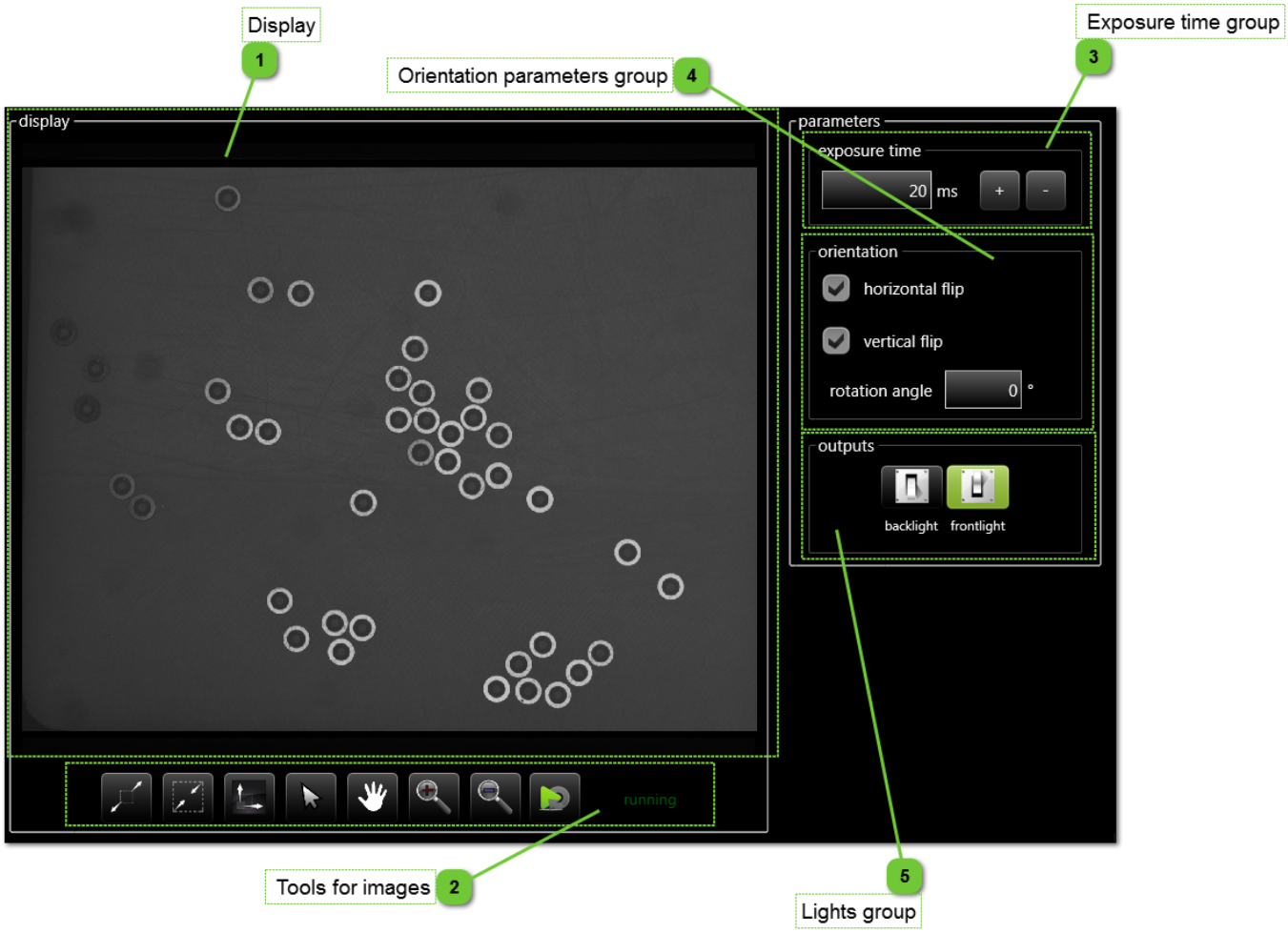
The checkbox allows you to choose if a timeout is needed.
The fields allows you to enter the duration of the timeout.

This timeout indicates the time limit when no good part are found.

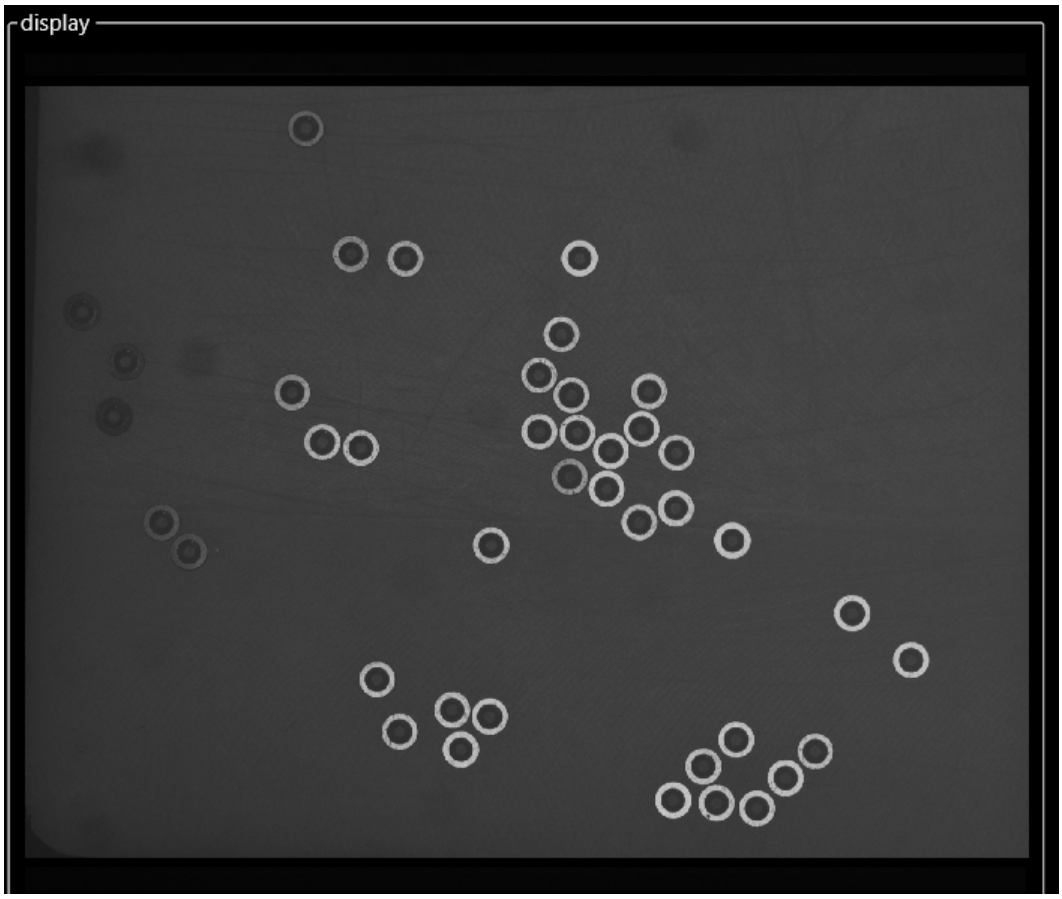
NOTE:
The system will vibrate, take an image, analyze the image until a part is found or until the timeout.
If the timeout is deactivated, the system will continue to search parts indefinitly until a manual stop of the operator.

Live

Live page gives access to the live functionnality and to the orientation parameters of the image.



1 Display



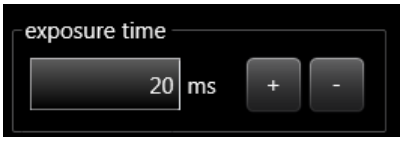
This zone displays the images received from AsyView.

2 Tools for images

This zone gives access to options to navigate in the image (zoom in/out, move, fit image, etc).

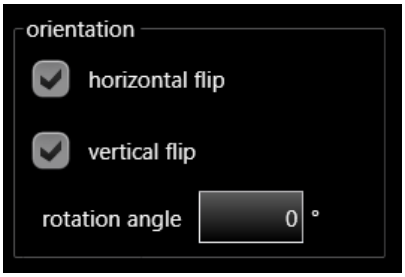
The play-loop button allows you to activate and deactivate the live. The state of the live is displayed on the right of this group.

3 Exposure time group



This display allows you to change the exposure time for the live.

4 Orientation parameters group



This group are related to the orientation of the image.

NOTE:
Those parameters have to be set in the begginning of the setting up of the machine.

IMPORTANT:
Every modification of those parameters will break the calibrations and the recipes.

5 Lights group

This group allows you to switch on and off the lights.

Image configuration

Image configuration page gives access to the image configuration and image region parameters.

This configuration if useful only for complex configurations like :

- One camera on two Asycubes
- Two parts on the same Asycube
- Two cameras on an Asycube

An image region specifies an acquisition region (X min, Y min, width and height) and is set to the camera.

An image configuration contains the name of the image region to use and the information of on which Asycube the camera is mounted.
Each image configuration has one analysis process for one part (therefore one vision teaching).

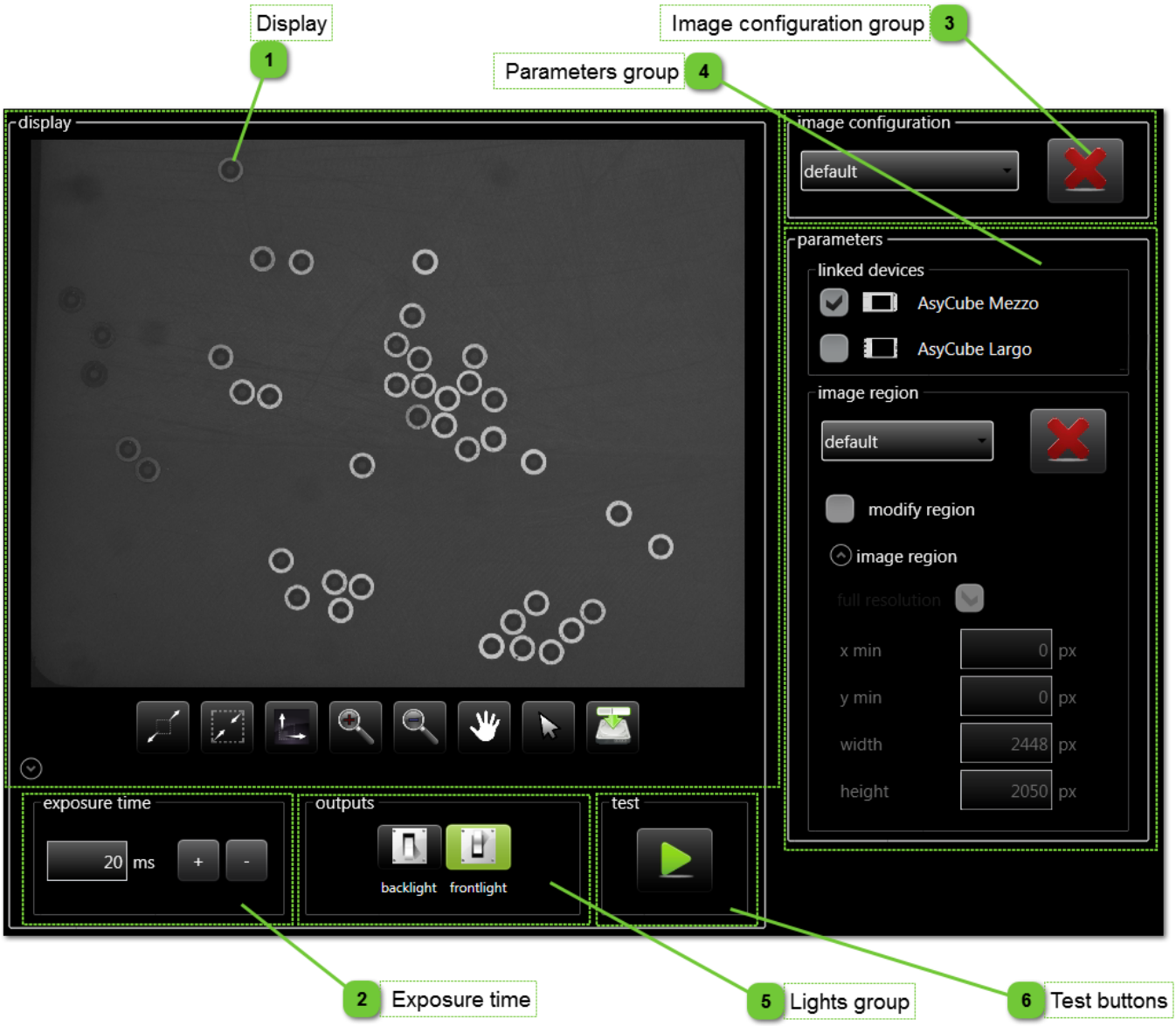
For standard configuration (one camera looking on one Asycube for one part) :

- a default image region in full resolution exists and its name is "default".
- a default image configuration using default image region and the Asycube exists and its name is "default".

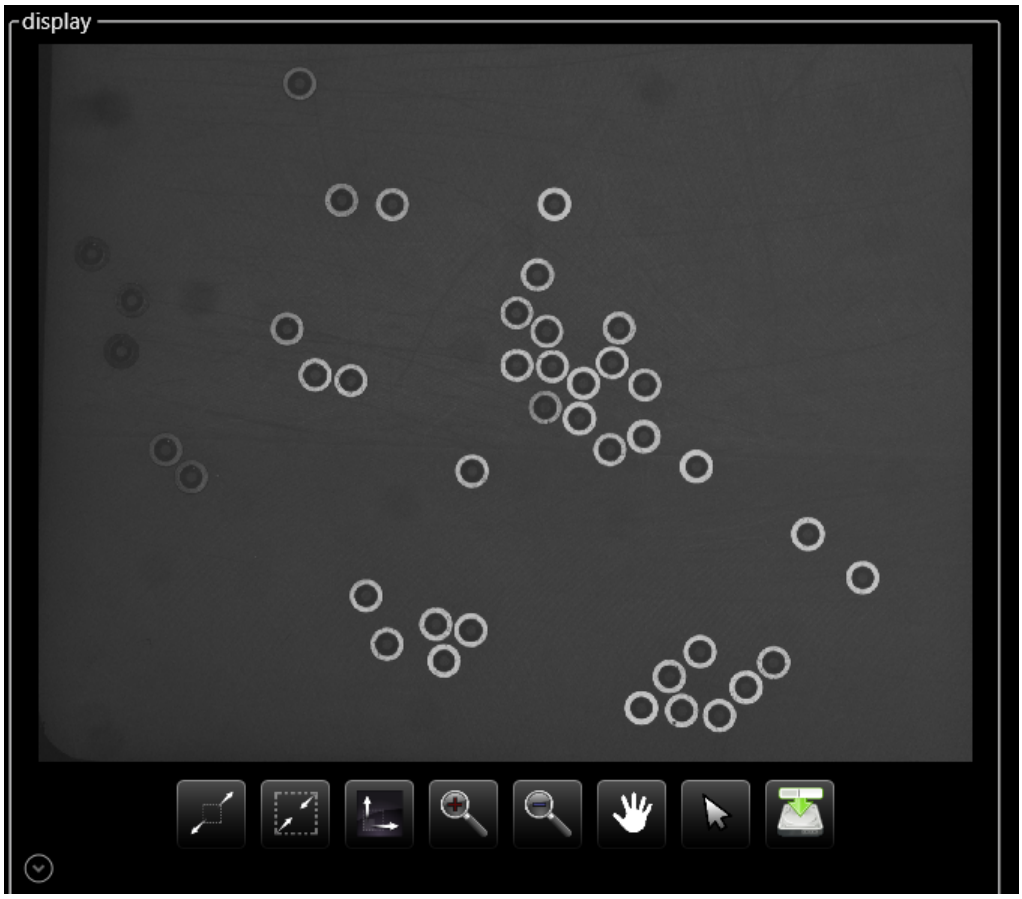
For control camera :

- Modify the default image configuration by removing the linked device Asycube in the default image configuration.

NOTE:
All this page can be used only with Integrator level access.

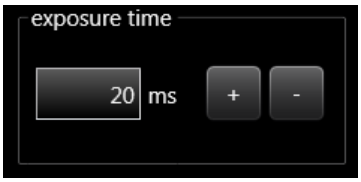

Display
1
Image configuration group
3
Parameters group
4
display
image configuration
default
parameters
linked devices
AsyCube Mezzo
AsyCube Largo
image region
default
modify region
image region
full resolution
x min
0
px
y min
0
px
width
2448
px
height
2050
px
exposure time
20
ms
+
-
outputs
backlight
frontlight
test
2
Exposure time
5
Lights group
6
Test buttons

1 Display



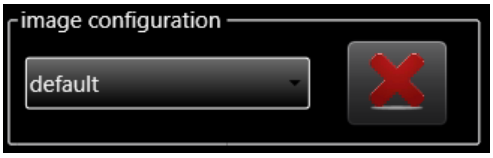
This zone displays the images received from AsyView.

2 Exposure time



This display allows you to change the exposure time for the test of the image configuration.

3 Image configuration group



This group allows you to select the image configuration to modify. If new is selected, a text box appears and allows you to enter the name of the new image configuration.

The button allows you to delete the image configuration selected or to add a new one if new is selected.

NOTE:
The image configuration 'default' cannot be deleted.

4 Parameters group

This group allows you to configure the image configuration and modify image regions.

The linked devices part allows you to select the linked device to use in the selected image configuration (the list is automatically adapted depending of the architecture of the AsyView).

In the image region part, the image region can be selected.

If new is selected, a text box appears and allows you to enter the name of the new image region.

The button allows you to delete the image region selected or to add a new one if new is selected.

In the image region, the values can be modified. X min, Y min, width and heigth can only be modified if full resolution checkbox is unchecked.

NOTE:
Those parameters have to be set in the begginning of the setting up of the machine.

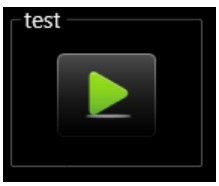
NOTE:
The image region 'default' cannot be deleted.

IMPORTANT:
Every modification of the image configuration or image region will break the calibrations and the recipes. The best way to not modify the existing recipes is to create a new image configuration or image region if needed.

5 Lights group

This group allows you to switch on and off the lights.

6 Test buttons



This button allows you to acquire a new image with the image configuration and image region selected.

Calibration

Calibration page gives access to the image calibration.

There is two types of calibrations provides by this page :

1. Calibration of linked devices

    In this calibration, the goal is to match the field of view of the camera (depend of the resolution of the camera) to the normalized workspace of the Asycube (values in X and Y between -1 and +1).

    The table (filled automatically for standard configuration) indicates the mapping between the camera and the Asycube. The button in the display allows you to indicate where is the hopper comparing to the orientation of the camera. By clicking on it, the values in the table will change automatically.

    In case of complex configurations, you have to enter the values manually in the table.

    The parameters of this calibration are explained in the Calibration of linked devices page.

2. Calibration pixel/mm

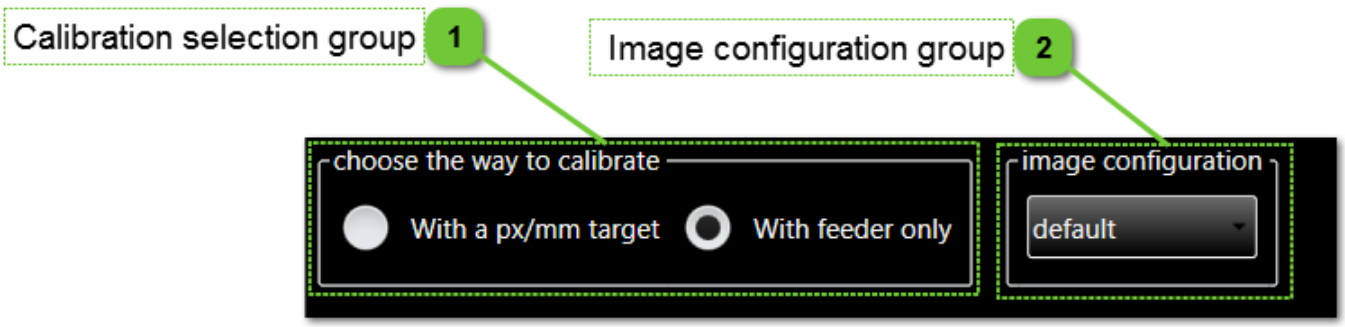
    In this calibration, the goal is to match the field of view of the camera to the normalized unit mm. With this calibration, the calibration of the linked devices will be automatically executed.

    For this calibration, only parameters of the calibration is needed and will be explained in the Calibration Pixel/mm page.

NOTE:
All this page can be used only with Technician level access or higher, but the parameters of calibrations can be edited only with Integrator level access.

NOTE:
Each image configuration has its own calibrations. The feeder calibration cannot be chosen if no feeder is selected as linked device in the current image configuration.

NOTE:
The system is unable to work without at least a calibration of the feeder.

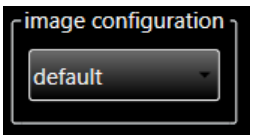


1 Calibration selection group

This group allows you to select the calibration type.

NOTE:
The "only feeder calibration" option is enabled only for a camera linked to an Asycube. For example, it is disabled for a control camera.

2 Image configuration group



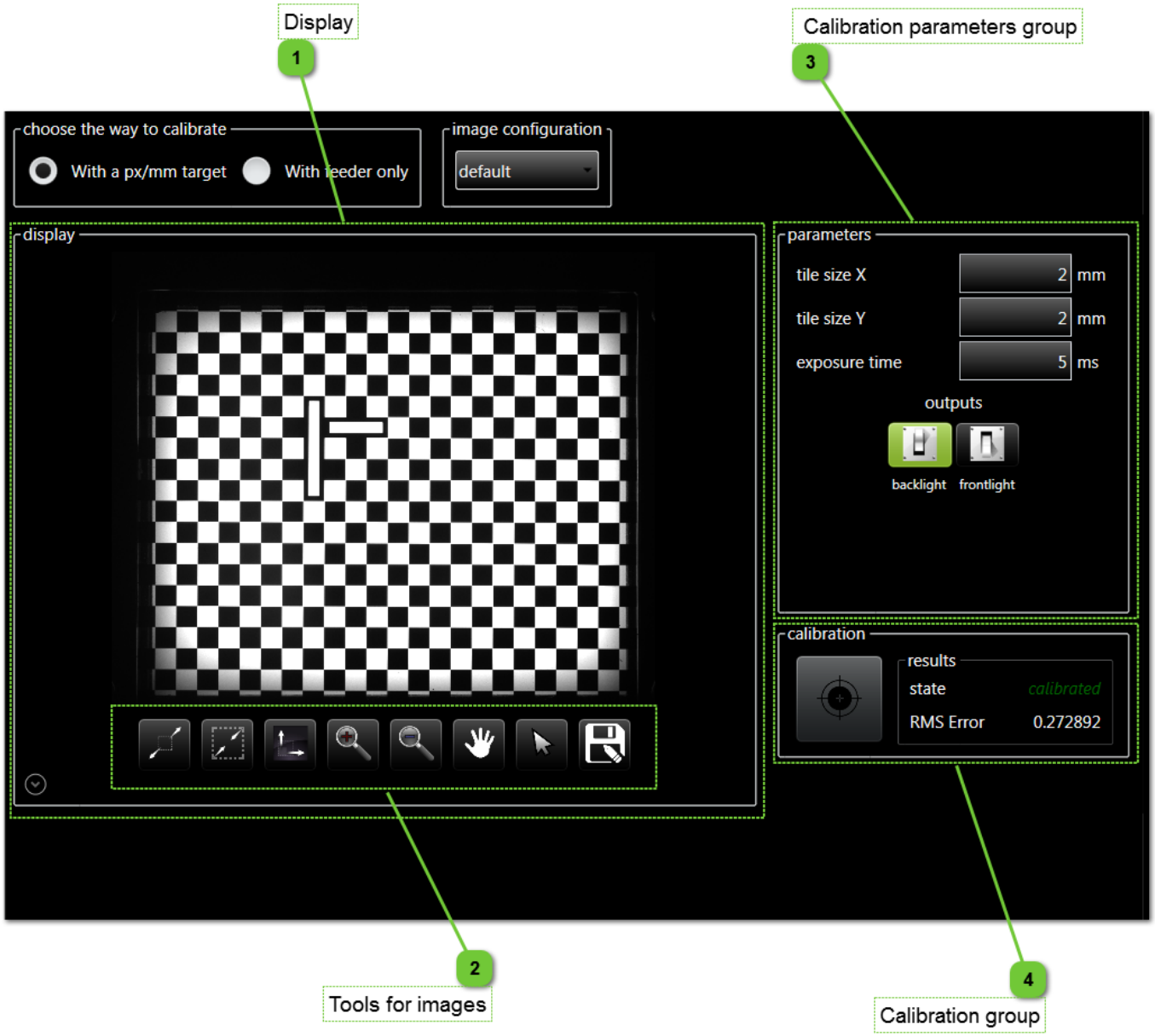
This group allows you to select the image configuration to calibrate.

The combobox is not visible if there is only one image configuration.

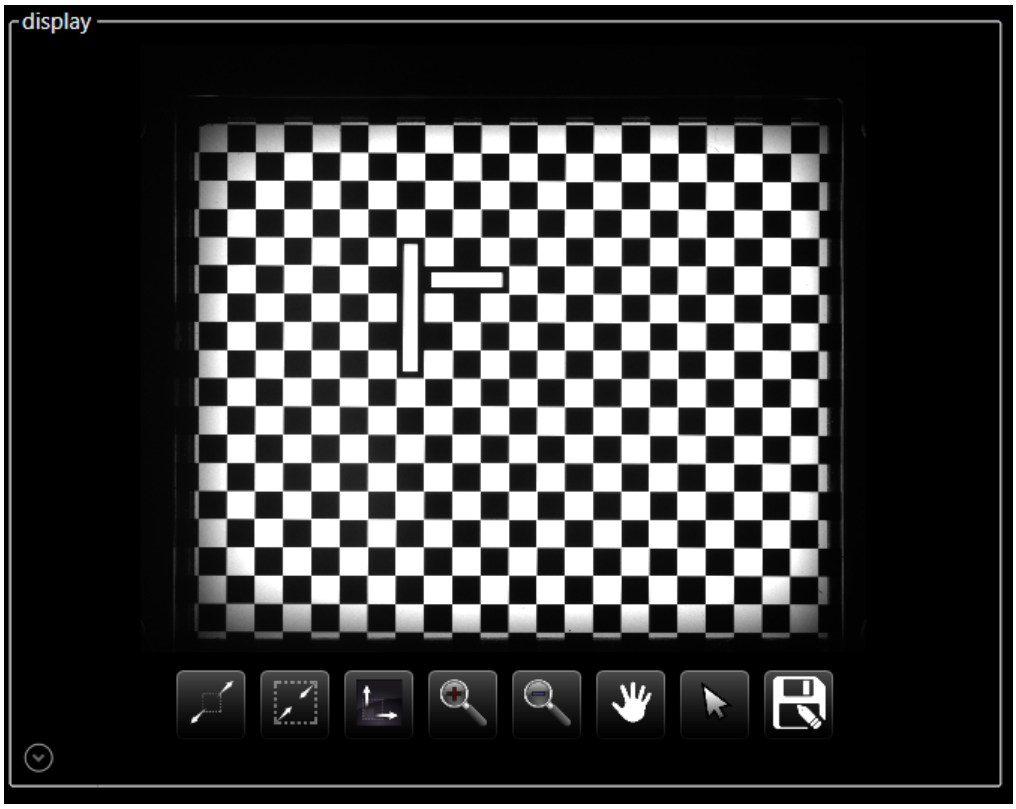
Calibration pixel/mm

Calibration pixel/mm page gives access to the calibration of vision sensor with a pixel/mm target.

NOTE:
All this page can be used only with Technician level access or higher.



1 Display

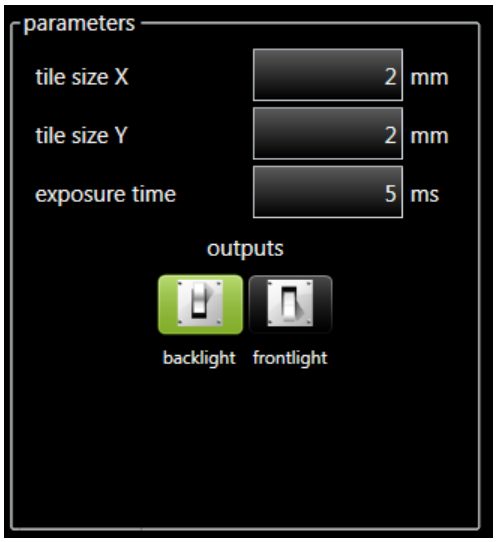


This zone displays the images received from the camera for calibration.

2 Tools for images

This zone gives access to options to navigate in the image (zoom in/out, move, fit image, etc).

3 Calibration parameters group



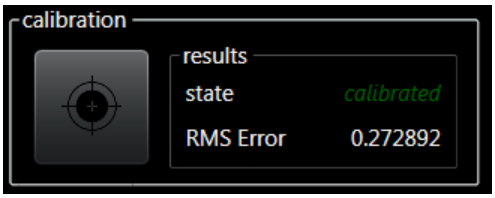
This group allows you to configure the calibration.

The parameters are the following :

Parameter	Description	Default values (Asycube 50 - 80 - 240)
tile size x	Enter the grid spacing x for the calibration plate. For a checkerboard-style plate, this is the tile size. For a grid-of-dots calibration plate, this is the spacing between dot centers in the X-direction.	2mm - 2mm - 6mm
tile size y	Enter the grid spacing y for the calibration plate. For a checkerboard-style plate, this is the tile size. For a grid-of-dots calibration plate, this is the spacing between dot centers in the Y-direction.	2mm - 2mm - 6mm
exposure time	Exposure time for calibration depending of the power of the light used.	20 ms

NOTE:
For more explanations about the calibration parameters, see Cognex documentation on Cognex website.

4 Calibration group



The group gives access to the calibration execution and to the result of the calibration.

NOTE:
The calibration result "RMS Error" indicates the mean error value of the calibration. The unit is given in the base workspace unit of the calibration. In this case, it is the pixels workspace unit.

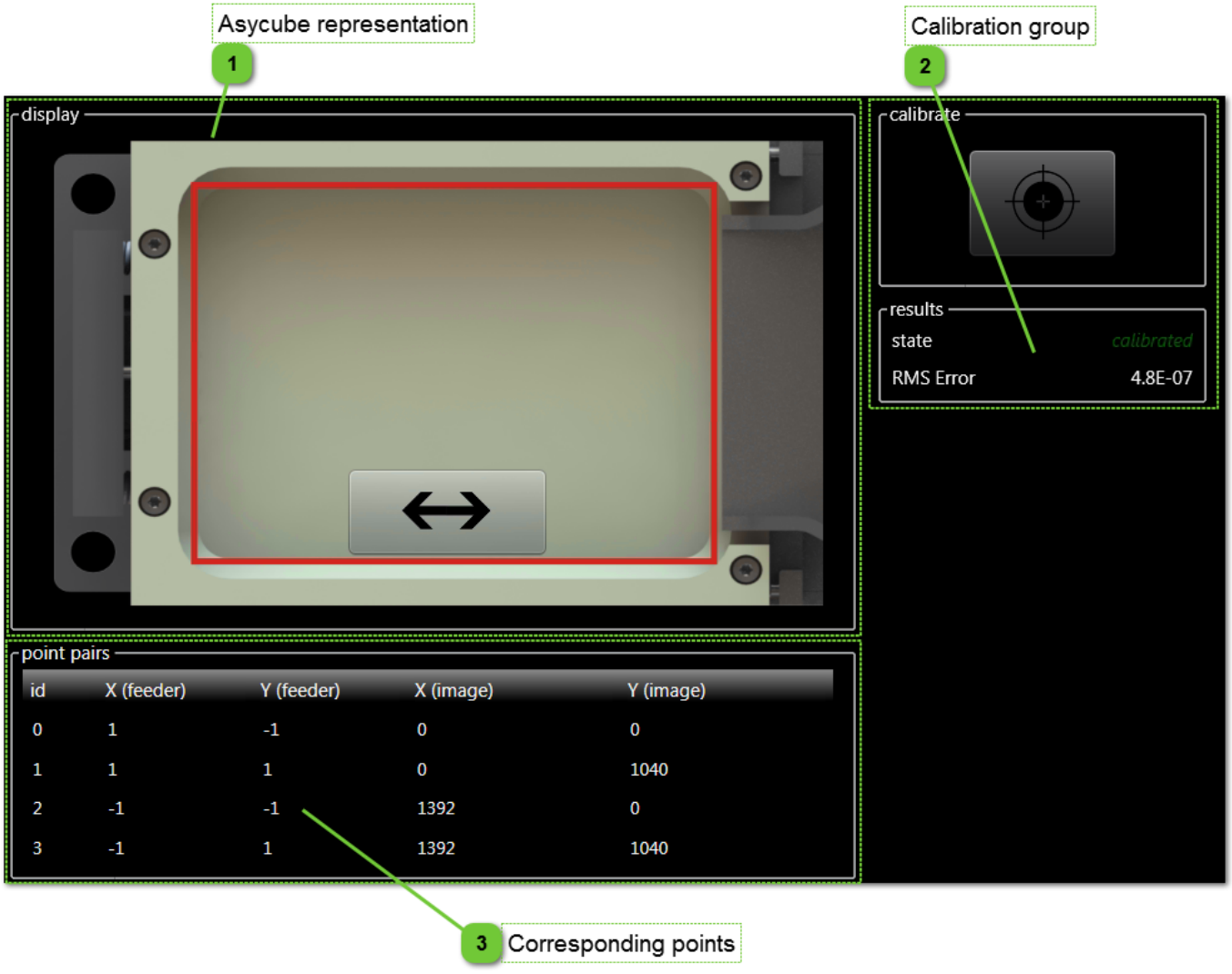
Calibration of linked devices

Calibration of linked devices page gives access to the calibration of Asycubes to match the field of view of the camera to the workspace of the Asycube.

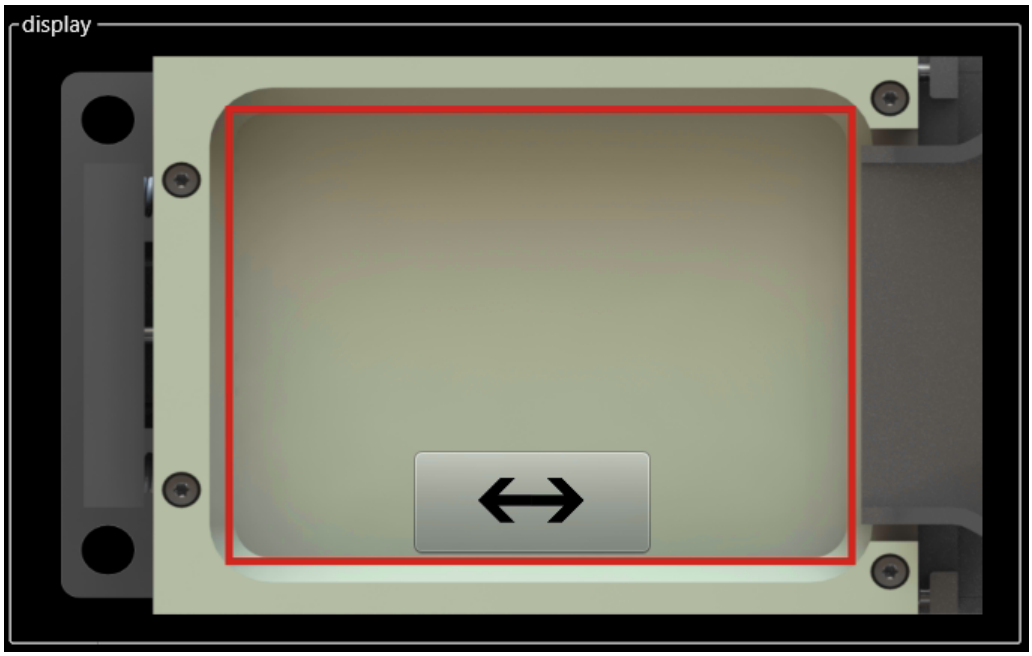
Linked device calibration enables the feeder directions to be referenced, as well as those of the image, in order to manage the movements issued to the feeder via commands, based on the state measured by the vision system.

Depending on the position of the feeder under the camera and whether the layout and order of the 4 points may vary. The simplest way to facilitate this adjustment is to mark the different feeder points and observe their respective positions in the image. The 4 pairs of points are therefore easily constructed using the image and feeder coordinates described below.
The World coordinates correspond to the feeder values and must be normalized (1 to -1). The corresponding Images coordinates have a value of 0 or the number of pixels per line/column of the camera, depending on the orientation of the system.

NOTE:
All this page can be used only with Technician level access or higher.



1 Asycube representation

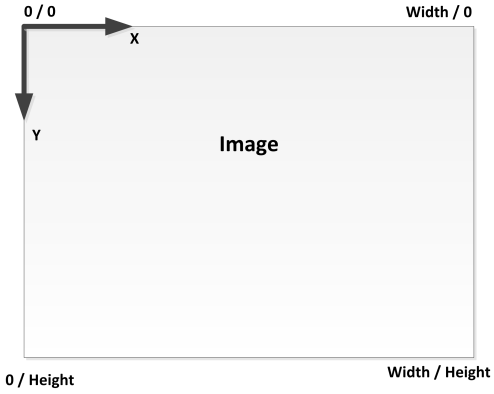


This zone displays a representation of the Asycube position.

NOTE:
Before to execute this calibration, be sure that the orientation of the image is correctly defined in live page.

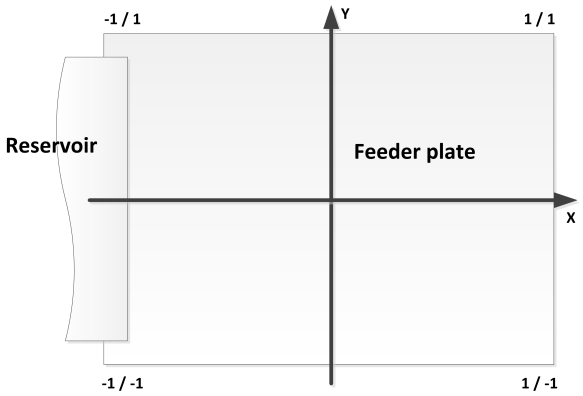
The  button allows you to change the hopper position from one side to other side.

In this case, the hopper position can simply define the values in the table of corresponding points because it can be only two possibilites.



Width = number of pixels / line
Height = number of pixels / column

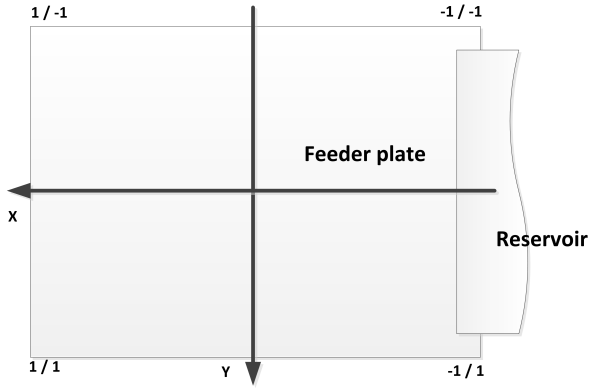
The camera 0,0 position is always at the top left of this representation.



For example for a camera 2MPx :

points pair

id	X (feeder)	Y (feeder)	X (image)	Y (image)
0	-1	1	0	0
1	-1	-1	0	1040
2	1	1	1392	0
3	1	-1	1392	1040

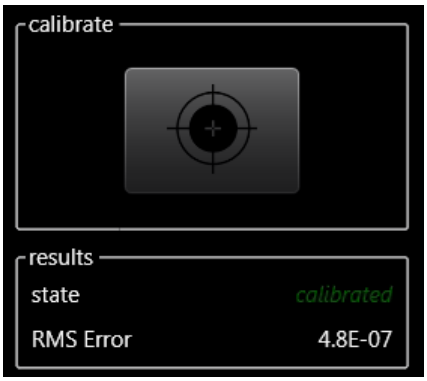


For example for a camera 2MPx :

points pair

id	X (feeder)	Y (feeder)	X (image)	Y (image)
0	1	-1	0	0
1	1	1	0	1040
2	-1	-1	1392	0
3	-1	1	1392	1040

2 Calibration group



The group gives access to the calibration execution and to the result of the calibration.

NOTE:
The calibration result "RMS Error" indicates the mean error value of the calibration. The unit is given in the base workspace unit of the calibration. In this case, it is the pixels workspace unit.

3 Corresponding points

point pairs

id	X (feeder)	Y (feeder)	X (image)	Y (image)
0	1	-1	0	0
1	1	1	0	1040
2	-1	-1	1392	0
3	-1	1	1392	1040

This zone gives access to the calibration corresponding points.

In default configuration, the values are automatically put in the table (full resolution of the camera correspond to full normalized workspace of the Asycube).

Teaching

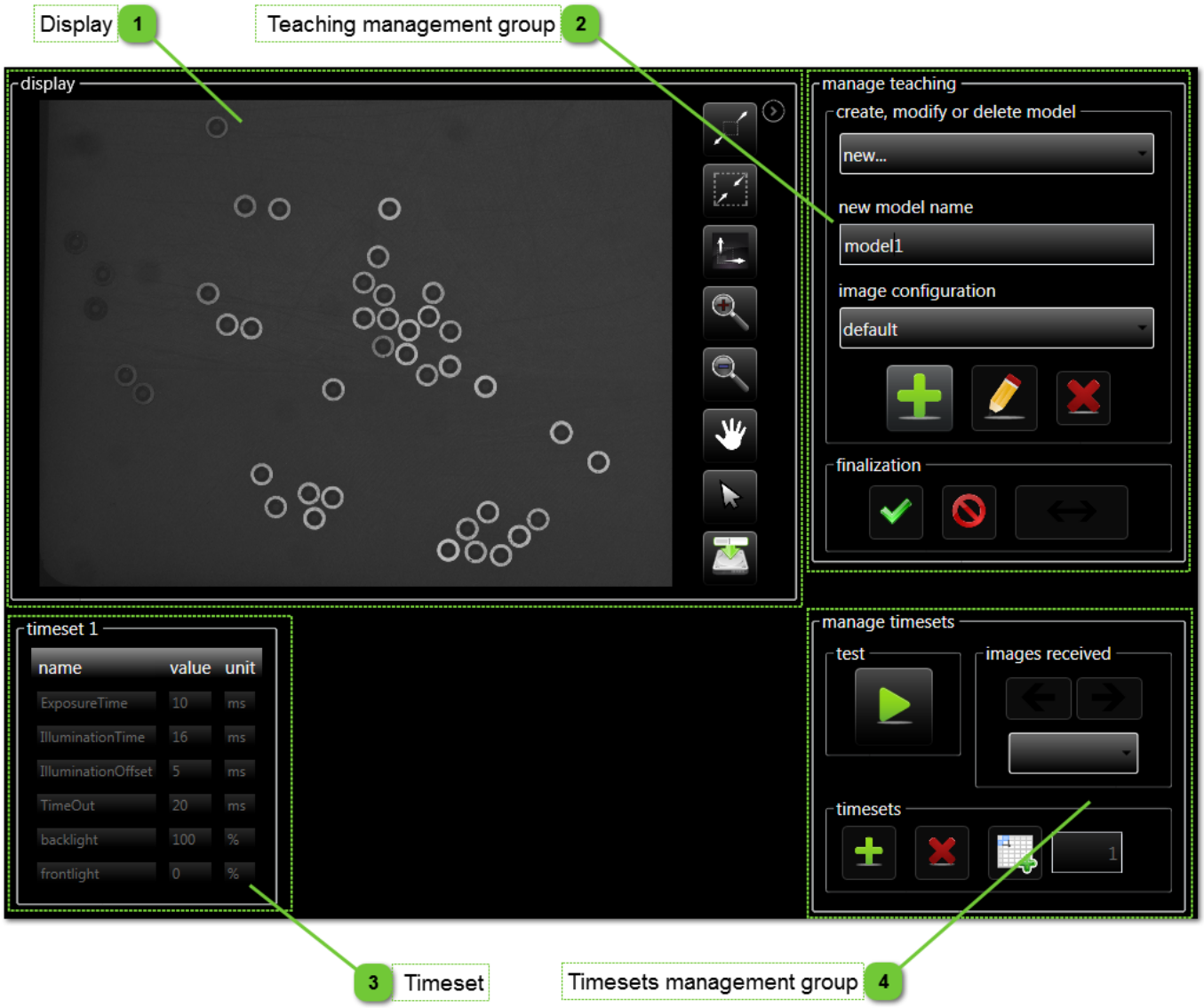
Teaching page gives access to the creation, modification and removal of the vision models and to the managment of the timesets.

When creating and modifing a model, the HMI will open the teaching window to allow to adjust the parameters for the parts detection.

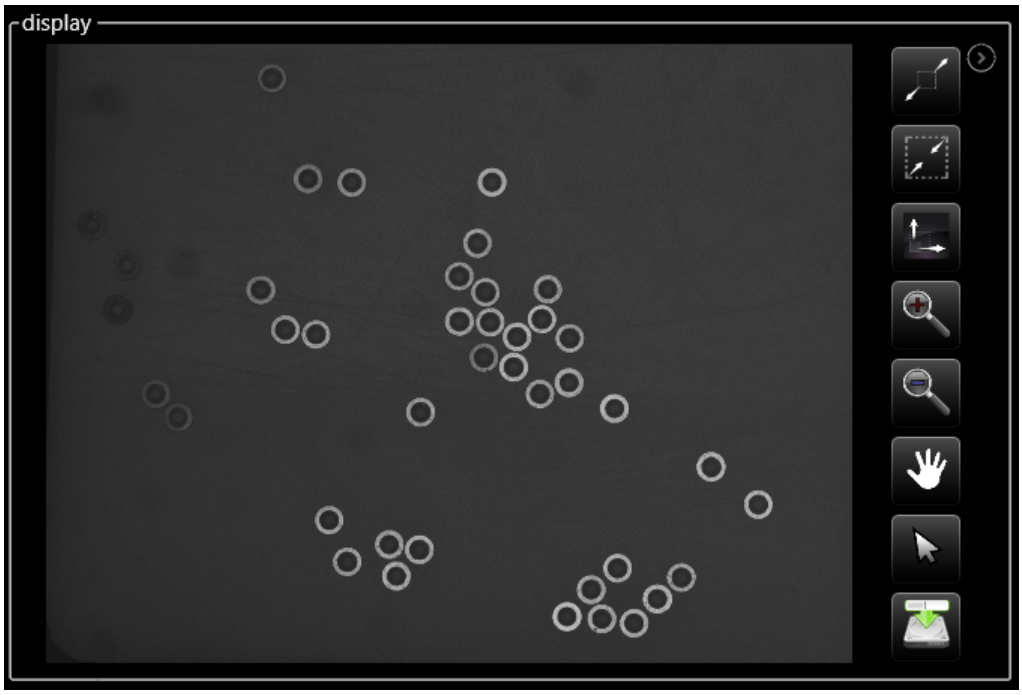
Each model is linked to one image configuration and needs to have one model name.

The model name is useful to identify each model when you need to have more than one model. With this name, you will be able to request a part position depending of the name of the model.

NOTE:
All this page can be used only with Technician or higher level access.



1 Display

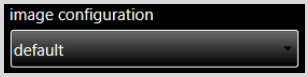


This zone displays the images received from Asyview.

2 Teaching management group

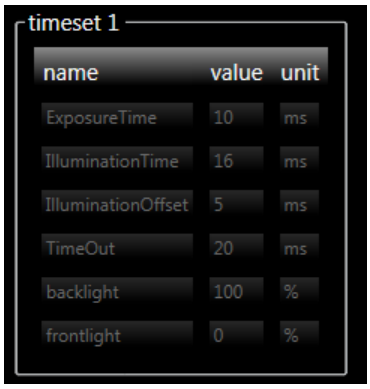
This group allows you to create, modify and delete a model and finalize or abort the opened teaching.

	allows you to create a new model.
	allows you to modify the selected model. **NOTE:** *This button is enable only if the model has already be created before.*
	allows you to remove the selected model. **NOTE:** *This button is enable only if the model has already be created before.*
	allows you to apply the opened teaching. **NOTE:** *This button is enable only when the teaching is open.*
	allows you to cancel all the modifications done since the last opening and close the teaching. **NOTE:** *This button is enable only when the teaching is open.*
	allows you to give a specific model name. It is important when many models have to be used. **NOTE:** *This button is enable only when the teaching is open.* *A default model name is automatically added.*

	allows you to select the image configuration to use with the selected model. **IMPORTANT:** *The image configuration has to be chosen at model creation but can also be changed at anytime if the image configuration is not the correct one. If the new image configuration selected is not calibrated in the same way as the previous (pixel/mm or only feeder), the model will not work and will need to be modified afterwards.*
	allows you to switch to the teaching window. **IMPORTANT:** *This feature works only if the HMI is installed on the same computer as the AsyView.*

NOTE:
The explanation of the teaching is explained in the SmartSight user guide.

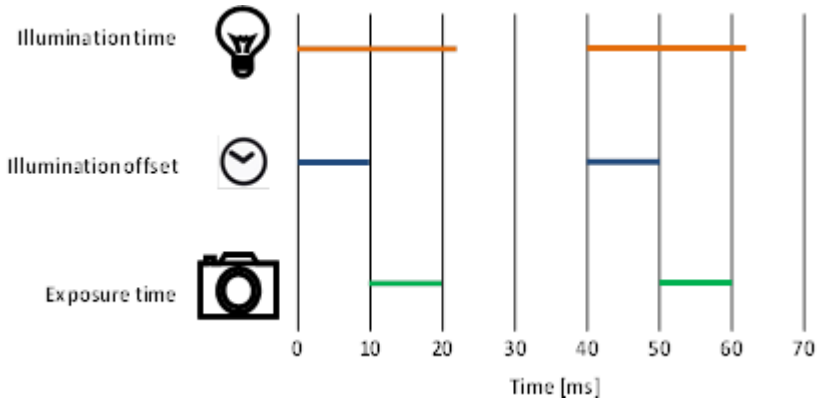
3 Timeset



The timeset display gives access to the timeset parameters :

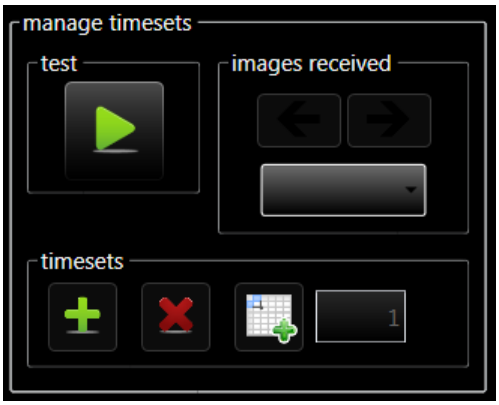
Parameter	Description	Unit	Level
exposure time	Exposure time is the real acquisition time of the camera to take the picture.	ms	
illumination time	Illumination time is the time in which the light is on. **NOTE:** *The illumination time must be longer than the exposure time. In fact, in order to ensure that the lightning (DOAL or backlight) is at full power when the photo is taken, it is necessary to provide an offset. Similarly, it is preferable to switch off the lightning one to two milliseconds after image acquisition is complete.*	ms	I
illumination offset	Illumination offset is the time before to take the picture (see diagram below). **NOTE:** *The standard value is 5 ms.*	ms	I
timeout	The timeout is the minimum time between two acquisitions (between end of illumination time and start of the next one). This time is useful to prevent the case of camera is not ready to start acquisition after an older acquisition (because camera do not communicate when the acquisition is finished. **NOTE:** *The standard value is 20 ms.*	ms	I
Backlight	Backlight represent the light intensity of the backlight (if exists). **NOTE:** *The value can only be 0 or 100%, adjust the exposure time to vary the intensity on the image.*	%	
Frontlight	Frontlight represent the light intensity of the frontlight (if exists).	%	

Diagram :



NOTE:
To validate a parameter, press ENTER button on your keybord or select another parameter in the timeset.

4 Timesets management group



This group allows you to manage the timesets. A timeset is a set of parameters which allows you to acquire an image. Thereby, if several images are needed, add a new timeset.

The test button allows you to test the timesets.
The combobox and the arrows buttons allows you to choose which image have to be displayed. A click on the timeset will also display the related image.

The "add timeset" button allows you to add a new timeset after the last timeset.
The "remove timeset" button allows you to delete the selected timeset.
The "insert timeset" button allows you to insert a timeset in the given position number.

NOTE:
The "add", "remove" and "insert" timeset functions are enable only when teaching is opened.

Process calibration

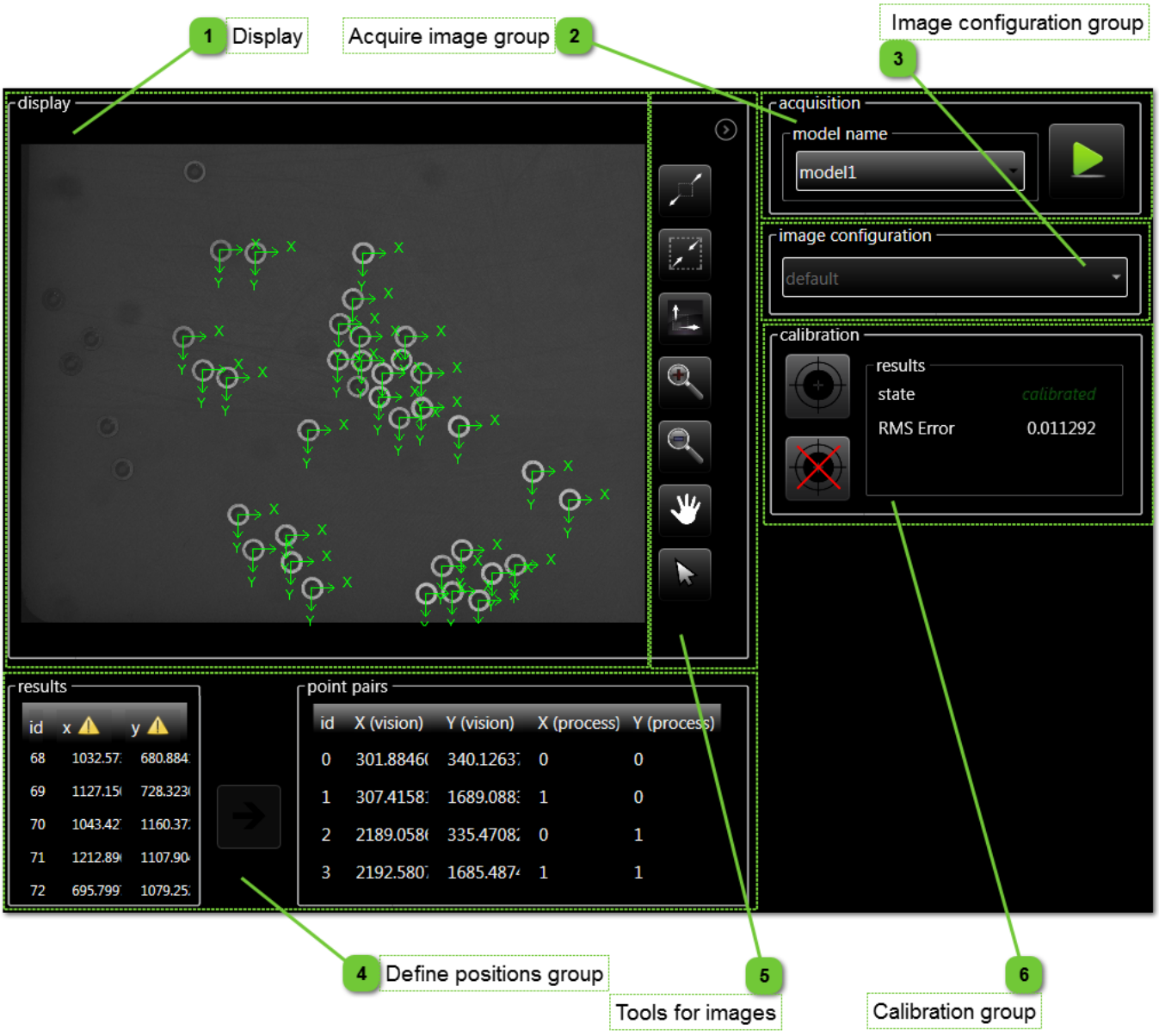
Process calibration page gives access to the calibration of the process (robot). This calibration allows you to reference the field of view of the camera to the robot workspace.

The goal of this calibration is to give the parts positions directly in the workspace of the robot.

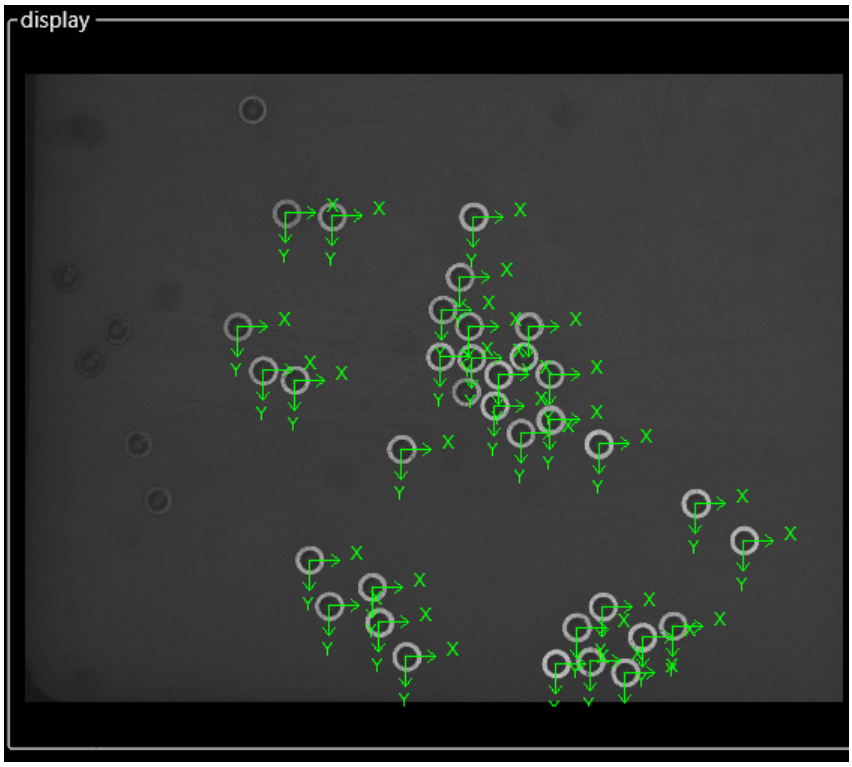
To do that, the system needs 4 positions measured with the camera and the same 4 positions "measured" by the process (the positions of the robot for example).

Then the system can be calibrated.

NOTE:
All this page can be used only with Technician level access or higher.



1 Display



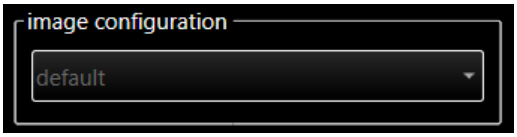
This zone displays the images received with results.

2 Acquire image group

This group allows you to select the model and to execute the image analysis to find some calibration positions.

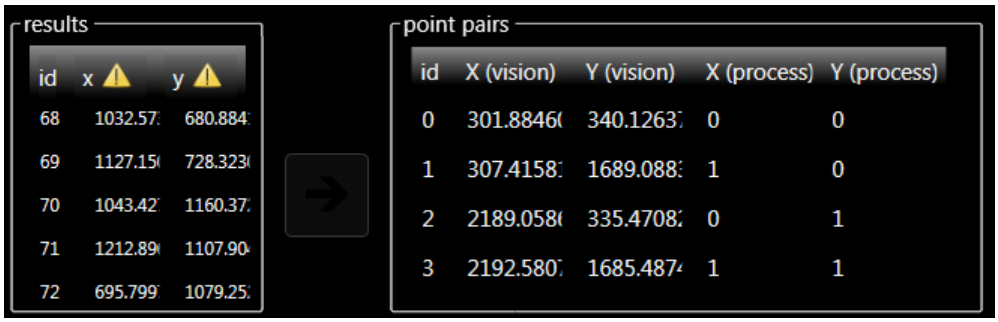
The results of this analysis will be displayed in the display and in the results list.

3 Image configuration group



This group allows you to see the image configuration to calibrate or to select the image configuration and load the calibration data (when no model is defined).

4 Define positions group



This group allows you to select 4 positions in the list of positions measured by the camera and to place it in the corresponding points pair.

First select a vision result and its corresponding points pair ID before to be able to transfer it.

The process positions have to be entered manually depending on the position of the process (robot positions for example).

When the four positions are filled, the system can be calibrated.

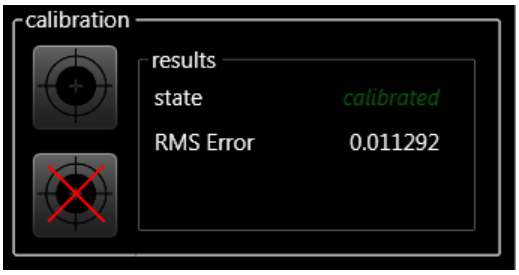
IMPORTANT !

The  *icon indicates that the position in the column is the calibrated value. Uncalibrate and execute a new analysis to have uncalibrated values. The calibrate function needs the uncalibrated values.*

5 Tools for images

This zone gives access to options to navigate in the image (zoom in/out, move, fit image, etc).

6 Calibration group



The group gives access to the calibration execution and to the result of the calibration.

The uncalibrate button allows you to uncalibrate the system to have uncalibrated values returned by the vision system. The system needs uncalibrated values to calibrate correctly.

NOTE:
The calibration result "RMS Error" indicates the mean error value of the calibration. The unit is given in the base workspace unit of the calibration. In this case, it depens if the vision positions are given in millimeters or in pixels.

Asycube

The pages of Asycube are already described in Asycube part.

Process

This chapter describes pages related to Process.

Pages list

Controls disabled

Some pages, tabs, buttons, textboxes, etc can be disabled depending of the following parameters :

- Process connection state (disabled when not connected).
- The function is not possible for the moment (another function is processing).
- The level access is not correct to access to the parameter.

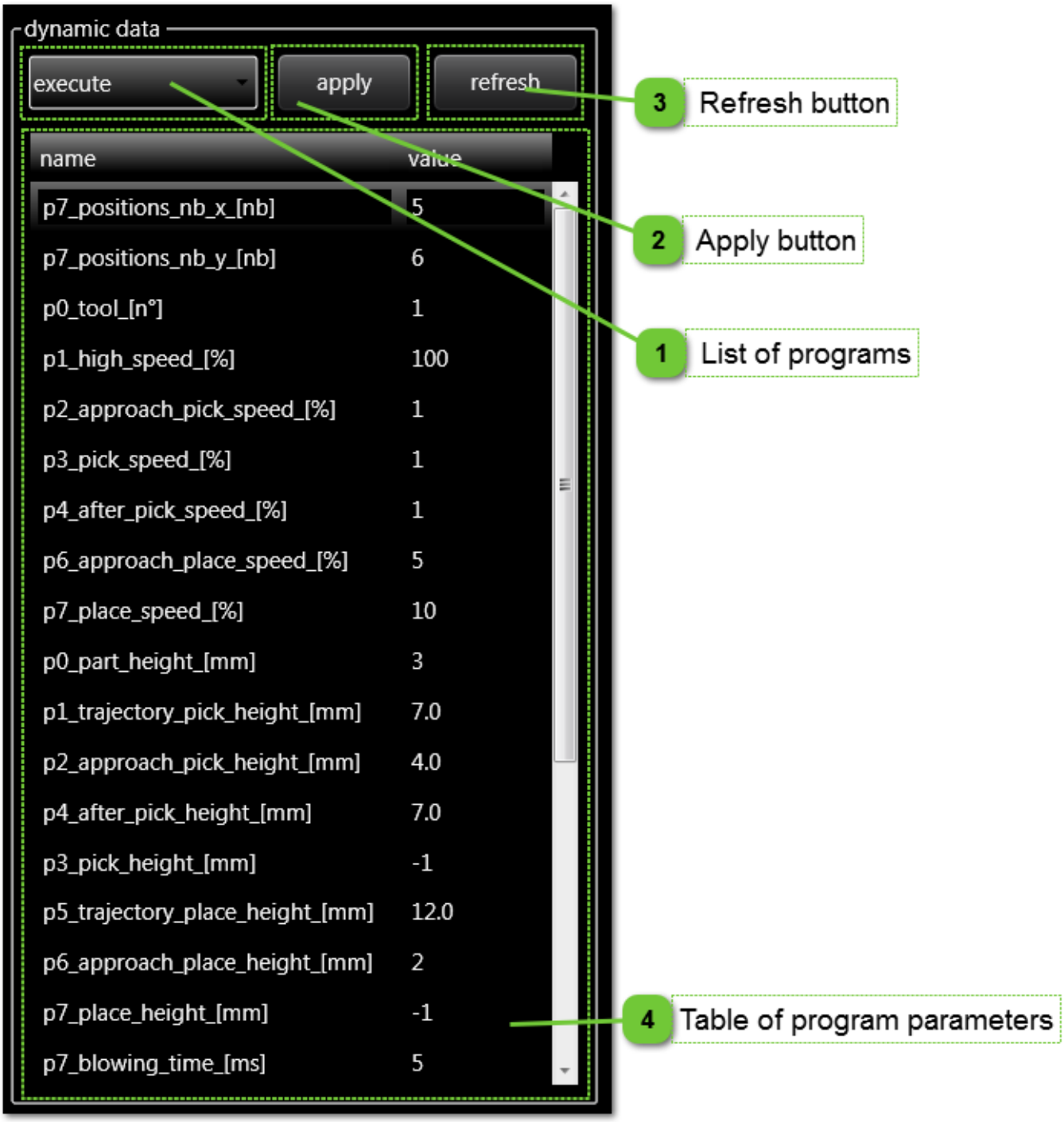
Controls not visible

Some pages, tabs, buttons, textboxes, etc can be not visible depending of following parameters :

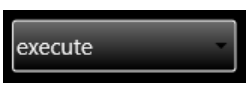
- The Process does not have this element.
- Option is not valid for your product.
- The level access is not correct to access to the parameter.

Home

Home page gives access to the parameters of all programs of the process.

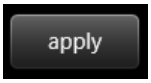


1 List of programs



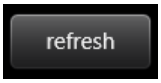
This dropdown list allows you to access to the list of all of the programs created from the "programming" tab. Selecting another program will change the parameters displayed in the table.

2 Apply button



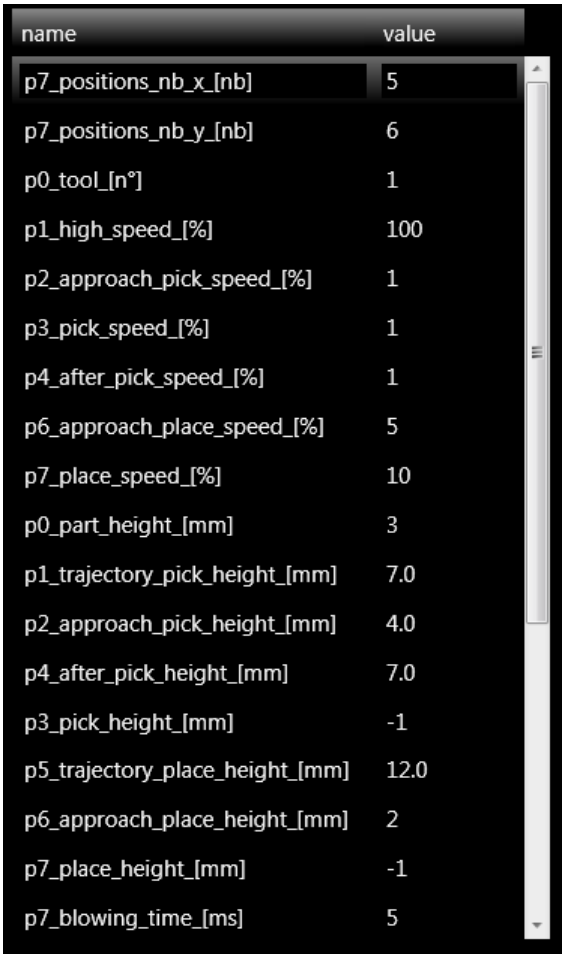
This button applies all the modifications made to the table.

3 Refresh button



This button refresh the content of the table. The previous parameters saved on the process will be loaded.

4 Table of program parameters



name	value
p7_positions_nb_x_[nb]	5
p7_positions_nb_y_[nb]	6
p0_tool_[n°]	1
p1_high_speed_[%]	100
p2_approach_pick_speed_[%]	1
p3_pick_speed_[%]	1
p4_after_pick_speed_[%]	1
p6_approach_place_speed_[%]	5
p7_place_speed_[%]	10
p0_part_height_[mm]	3
p1_trajectory_pick_height_[mm]	7.0
p2_approach_pick_height_[mm]	4.0
p4_after_pick_height_[mm]	7.0
p3_pick_height_[mm]	-1
p5_trajectory_place_height_[mm]	12.0
p6_approach_place_height_[mm]	2
p7_place_height_[mm]	-1
p7_blowing_time_[ms]	5

This table contains all the parameters as well as the values associated with them.

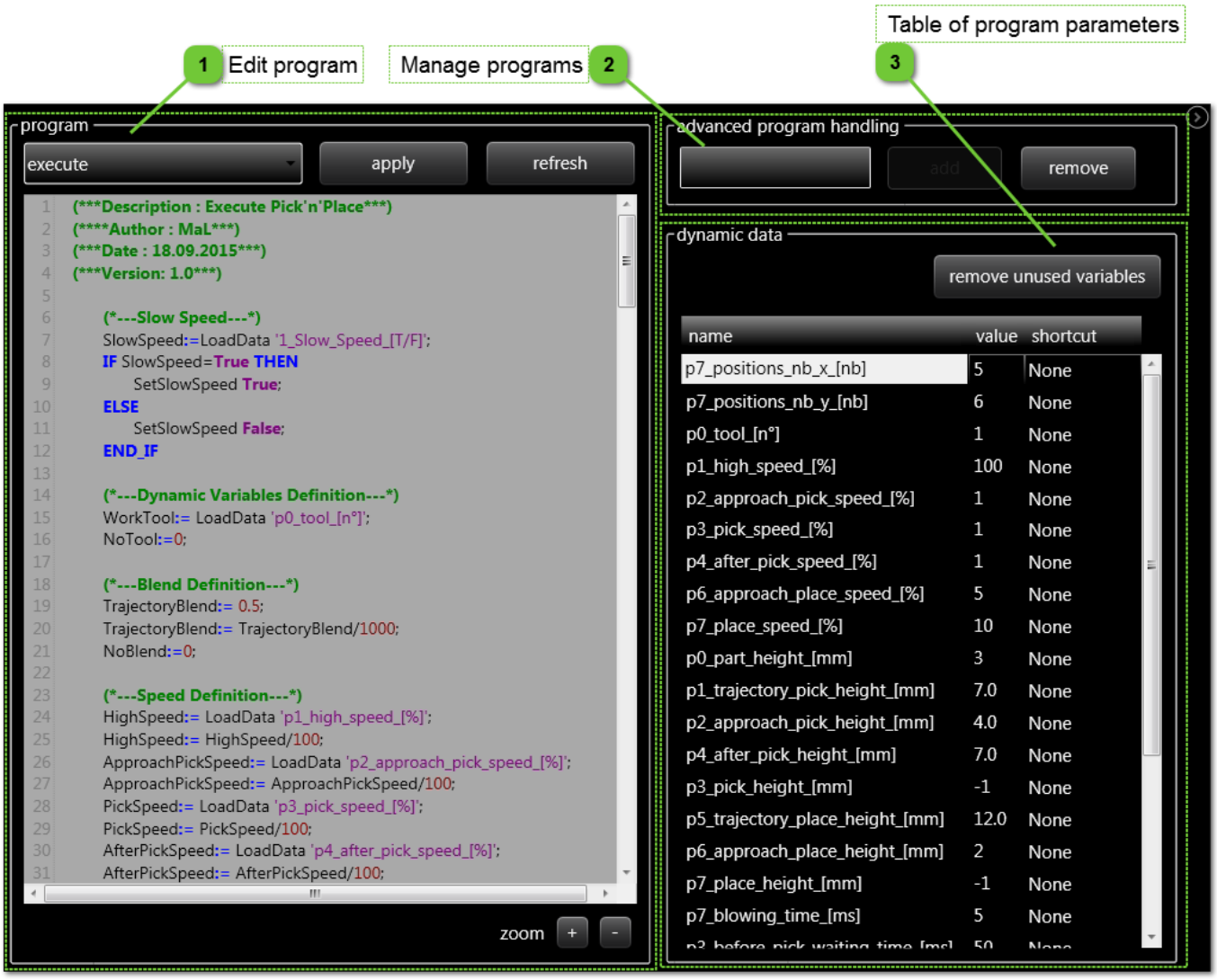
NOTE:
When a value is edited, the "apply" button must be pressed so that the modifications are registered.

Programming

Programming page gives access to the programs of the process. The programs are written in ARL language (see ARL language description in the specific documentation).

NOTE:
All this page can be used only with Integrator level access.

Reference:
For more information about the programming of the process in ARL language, see Asyril_ROBOT_Programming_Guide and Asyril_XFEED_Programming_Guide.



1 Edit program

This zone gives access to the programs.

- The dropdown list contains all the programs.
- The apply button applies all the modifications made to the program and to the table of parameters.
- The refresh button refresh the content of the program and the table of parameters.
- The program zone displays the selected program in the dropdown list.
- The zoom buttons (+ and -) allows you to zoom in and out on the program code.

IMPORTANT !
The apply button will only apply the modifications but does not save them permanently. See chapter on Recipes for such.

IMPORTANT !
Applying the edition/modification can occur only when no execution is running. Press the "stop" button before making any modification.

2 Manage programs

The zone gives access to the management of the programs.

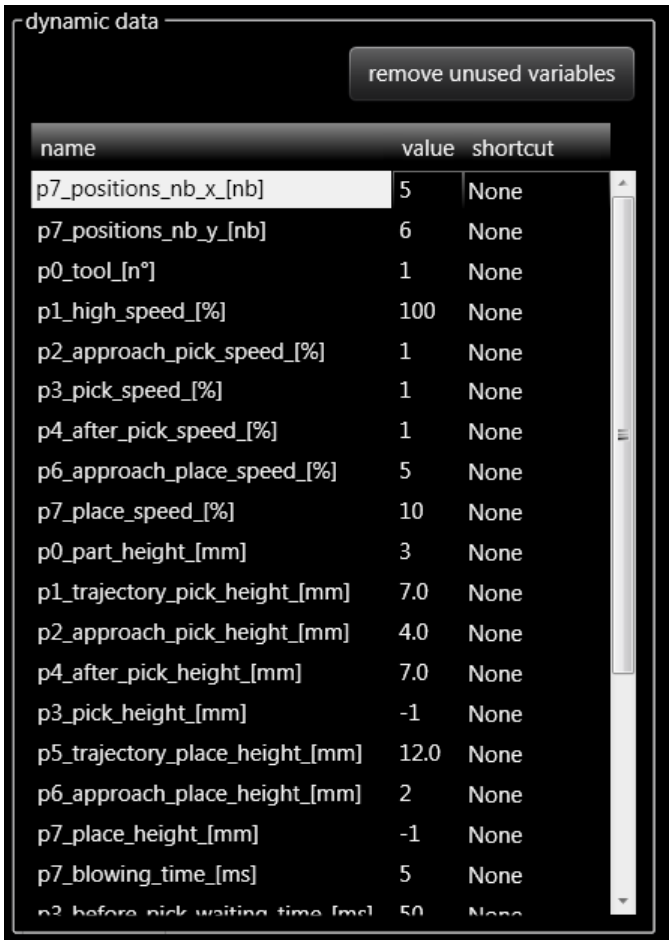
- The text box allows you to enter a name for a new program.
- The add button allows you to add a new program with the given name.

NOTE:
If the name of the new program starts with "_", a shortcut to this program will be displayed in the shortcut part of the banner.

- The remove button removes the selected program permanently.

IMPORTANT !
Programs names corresponding to any OMAC state are reserved. Any modification or creation of one of these programs might rise undesired machine behavior.

3 Table of program parameters

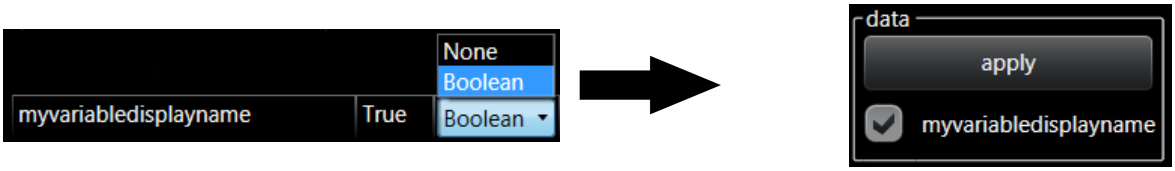


This table contains the name of the dynamic variables as well as their values.

To add a new dynamic variable, use the LoadData command in the program like this : MyVariable:=LoadData 'MyVariableDisplayName'; Then press the apply button. The variable will be automatically created and added to the list.

Reference:
For more explanation, see Asyril_XFEED_Programming_Guide.

The shortcut column in the table allows you to create a shortcut in the shortcut part of the banner. To set the variable, double-clic on the value (None for example), select boolean and clic outside of this cell. The shortcut is now visible.



NOTE:
The creation of shortcuts is only possible for boolean variables.

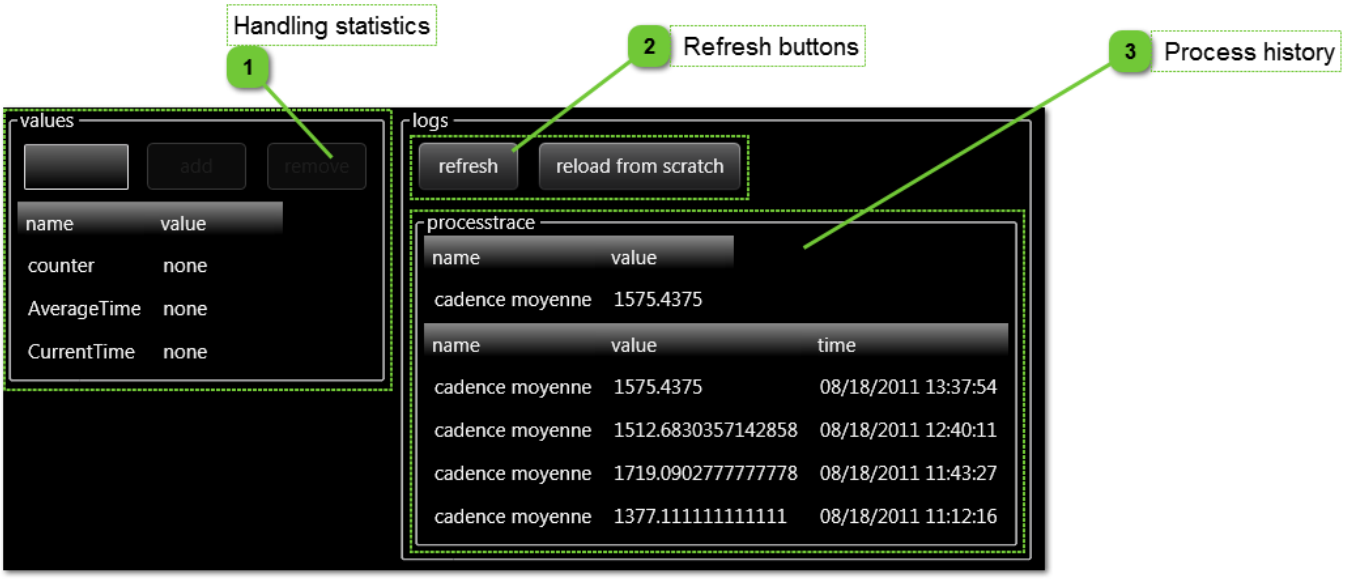
The remove unused variables button is useful to remove old parameters which are not used anymore is the selected program.

NOTE:
The unused parameters are displayed in a different color as the used parameters.

Statistics

Statistics page gives access to the statistics part of the process.

NOTE:
All this page can be used only with Integrator level access.



1 Handling statistics

Add or delete statistics in this zone.

Enter the name of one of the variables defined in the ARL program and click on "add" buttton to add it in the list.

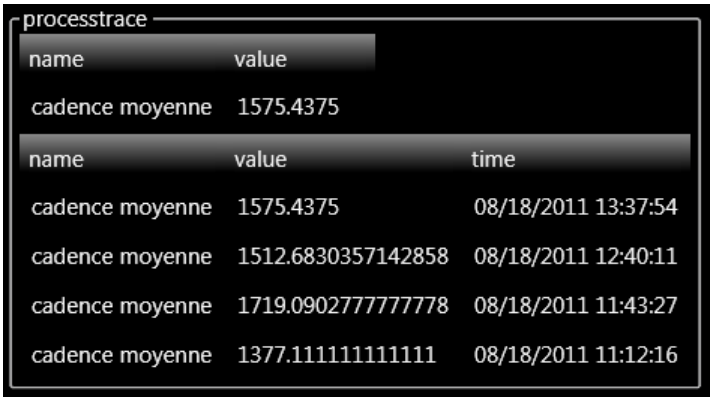
NOTE:
If the name of the variable begins with "_", during the next production process, the value of this variable will be displayed on the header screen (statistics tab).

2 Refresh buttons

Those buttons allow to refresh the content of the table :

- The "Refresh" button is used to refresh the average rate obtained in the table.
- The "Reload from scratch" button is used to refresh the content of the list.

3 Process history



- The first table in this history area indicates the last average rate.
- The second table indicates the complete history of all rates since the machine was commissioned.

Robot

This chapter describes pages related to the Robot.

Pages list

Controls disabled

Some pages, tabs, buttons, textboxes, etc can be disabled depending of following parameters :

- Robot connection state (disabled when not connected).
- The function is not possible for the moment (another function is processing).
- The level access is not correct to access to the parameter.

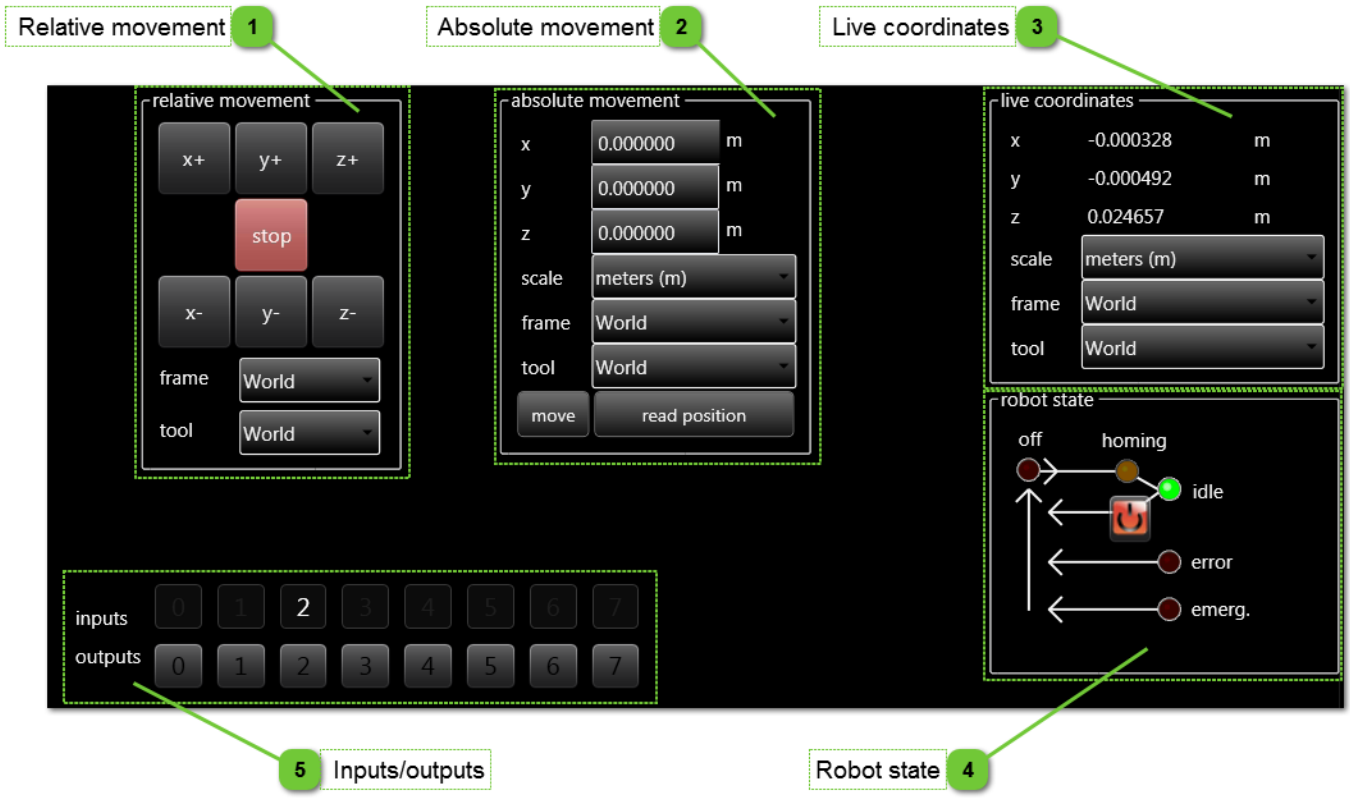
Controls not visible

Some pages, tabs, buttons, textboxes, etc can be not visible depending of following parameters :

- The Robot does not have this element.
- The option is not valid for your product.
- The level access is not correct to access to the parameter.

Home

Home page gives access to all standard functions of the robot (relative move, absolute move, inputs/outputs, state management and position indications).

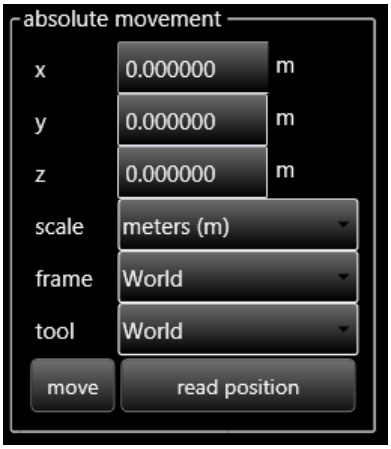


1 Relative movement

The buttons in this zone are used to move the robot relative to the current position in a given frame and using a specified tool.

NOTE:
Press and hold the button to perform a continuous mouvement.

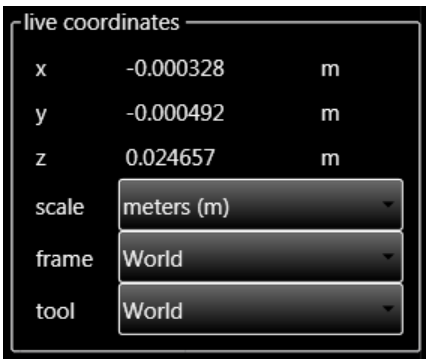
2 Absolute movement



The buttons in this zone are used to move the robot to an absolute position in a given frame and using a specified tool.

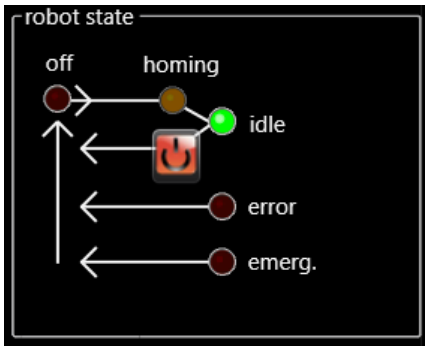
The "read position" button is used to get the current position in the selected frame and with the selected tool.

3 Live coordinates

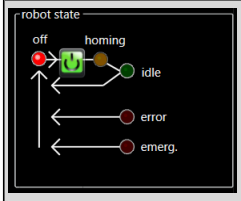
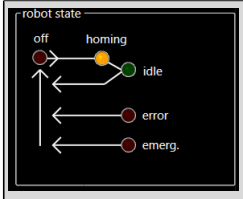
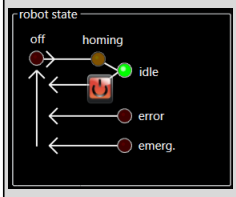
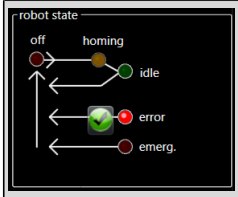
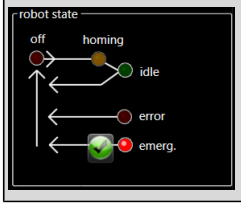


This field indicates the position of the robot in real time. By default, the position is sent in the basic reference (world: frame 0 tool 0, in meters). The dropdown lists make it possible to select which frame and which tool should be used to read the current position of the robot.

4 Robot state



The robot states are described in the following table :

Display	Robot state	Next action
	The robot is in the "off" state.	Press on the button to change to the "homing" then "idle" state.
	The robot is in the "homing" state.	Wait...
	The robot is in the "idle" state (the robot is ready to start a program).	Press on the button to switch to the "off" state.
	The robot is in the "error" state.	Press the button to clear the error and switch to the "off" state.
	The robot is in the "emergency" state.	Release the emergency stop button then press the button to switch to the "idle" state.

5 Inputs/outputs

This zone gives access to the intputs/outputs of the robot.

Robot inputs

Input deactivated.

Input activated.

Robot outputs

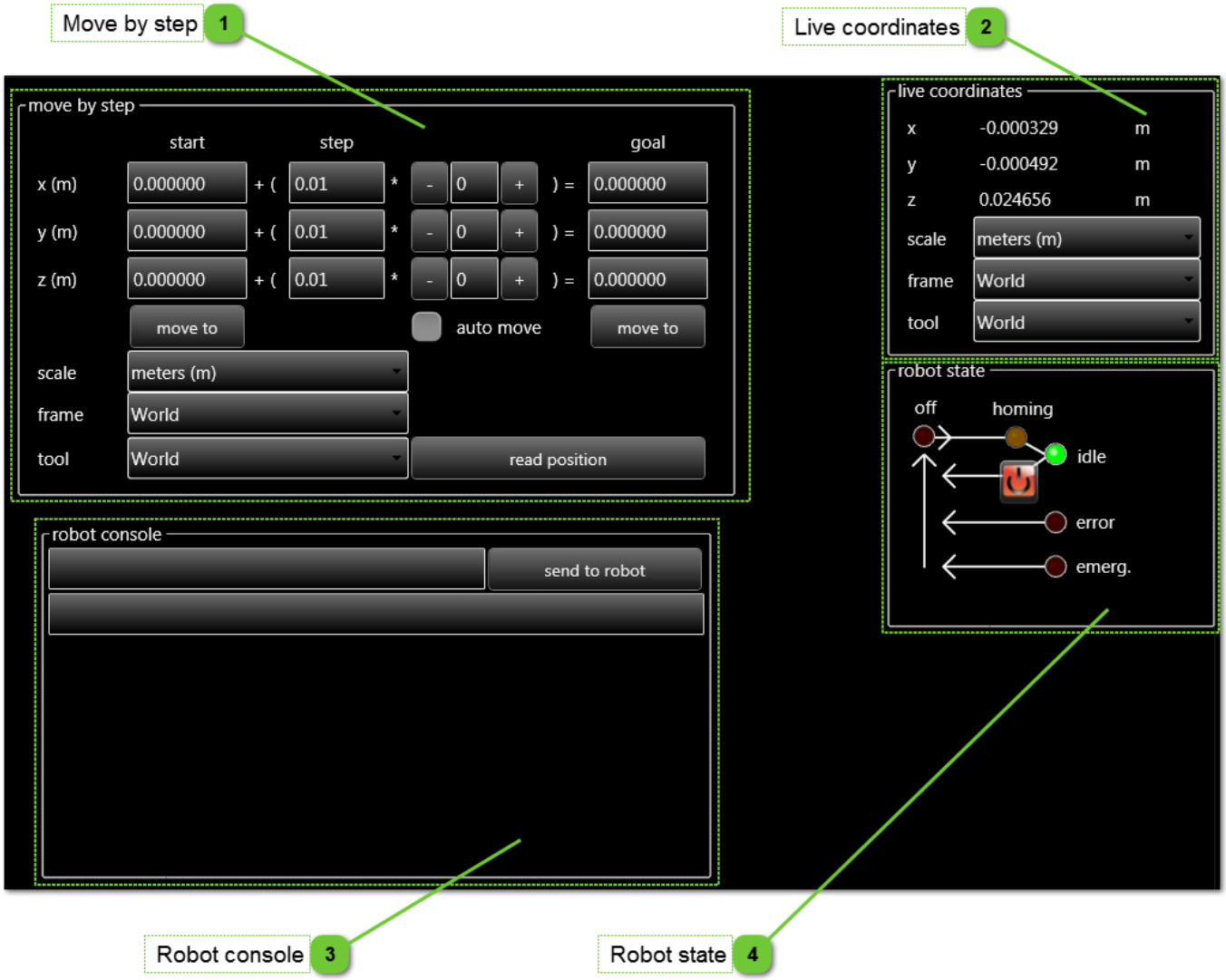
Click on this button to activate the output.

Click on this button to deactivate the output.

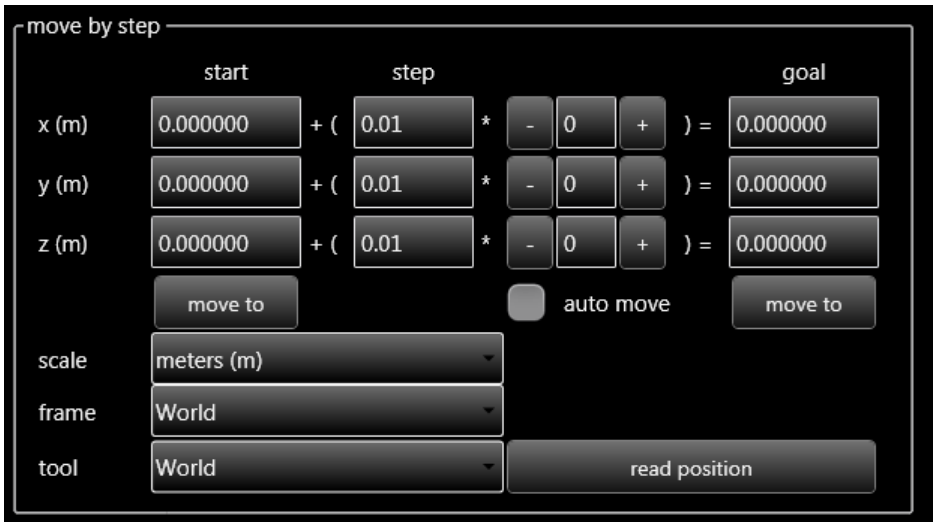
Advanced

Advanced page gives access to advanced usages of the robot (move by steps, send commands with a console).

NOTE:
All this page can be used only with Technician level access.



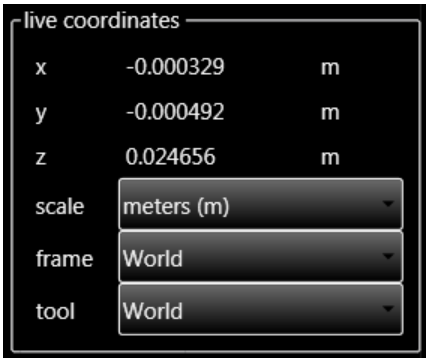
1 Move by step



The buttons in this zone make it possible to move the robot in a step by step manner. The size of the step and the starting setpoint must be specified.

NOTE:
The "auto move" box is used to move the robot each time the "+" or "-" buttons are pressed without having to press the "move to" button.

2 Live coordinates



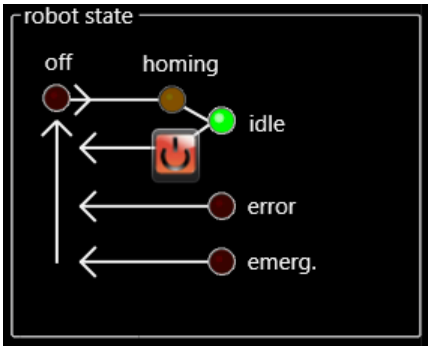
This field indicates the position of the robot in real time. By default, the position is sent in the basic reference (world: frame 0 tool 0, in meters). The dropdown lists make it possible to select which frame and which tool should be used to read the current position of the robot.

3 Robot console

The console is used to send a TCP command directly to the robot from the text zone. The response sent by the robot is transcribed in the bottom area.

Reference:
For more information about the programming language and TCP/IP communication with the robot, please consult the programming manual supplied with your product.

4 Robot state



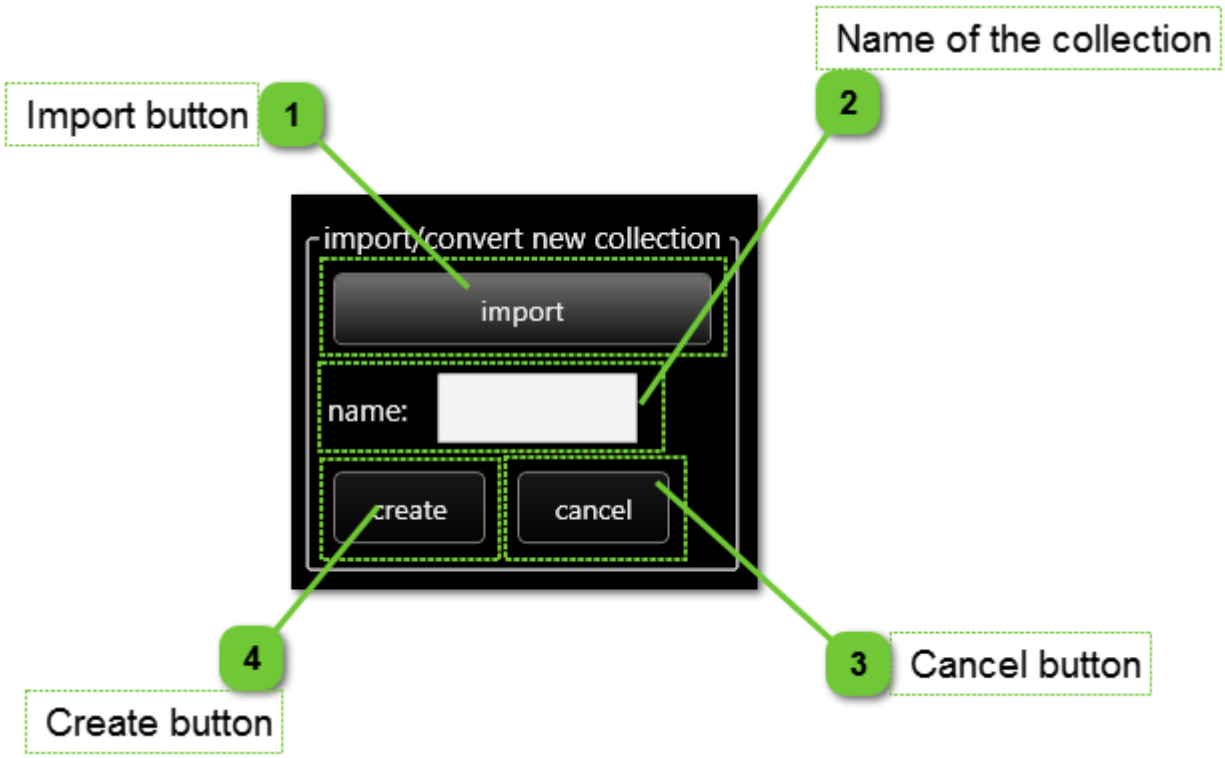
The robot states are described in the robot home page description.

Collection

Collection page gives access to the collection of points management tools (import, create, etc).

NOTE:
All this page can be used only with Technician level access.

Reference:
For more information about the programming language specific to using the points files, please consult the programming manual supplied with your product.



1 Import button

Click on this button to import a new collection of points

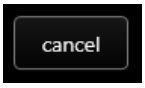
NOTE:
A collection of points is a text file containing the coordinates of points on each line (X, Y, Z) separated by a space, tab or semicolon.

2 Name of the collection

Type the name to be given to the collection of points translated in a format suited to Asyril robots.

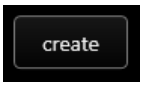
NOTE:
You must refer to this name in the ARL program in order to obtain the coordinates of a point distinguished by a unique identifier.

3 Cancel button



Click on this button to cancel the conversion.

4 Create button



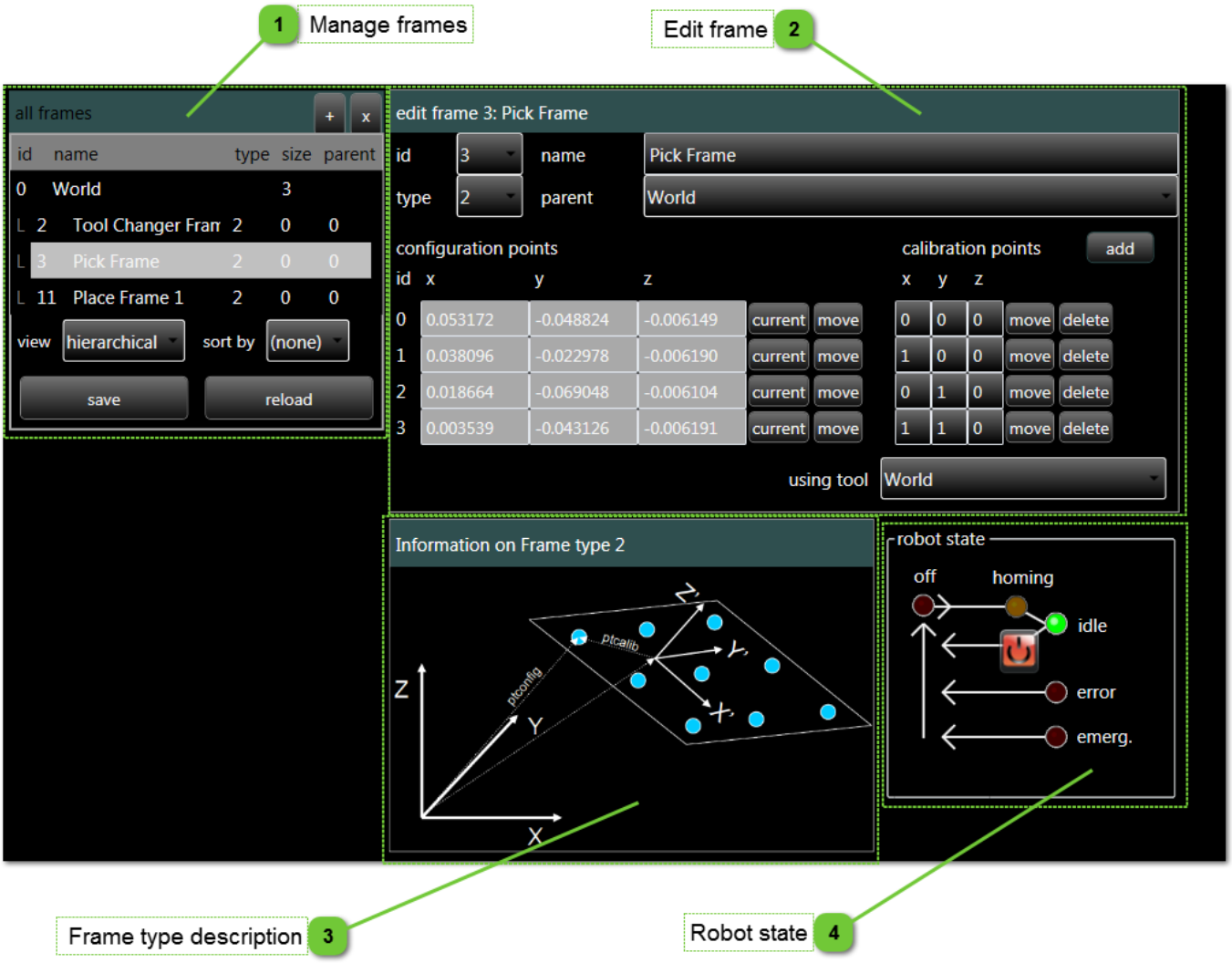
After having selected a name for your points file, create the file converted into a suitable format by clicking on this button.

Frames

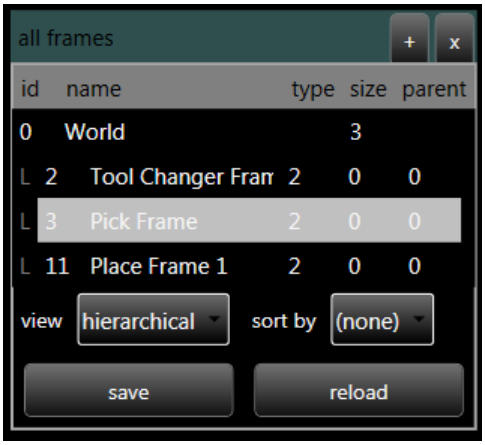
Frames page gives access to all frames of the robot.

NOTE:
Before changing tabs, save your modifications otherwise the changes will be lost.

NOTE:
All this page can be used only with Technician level access.



1 Manage frames

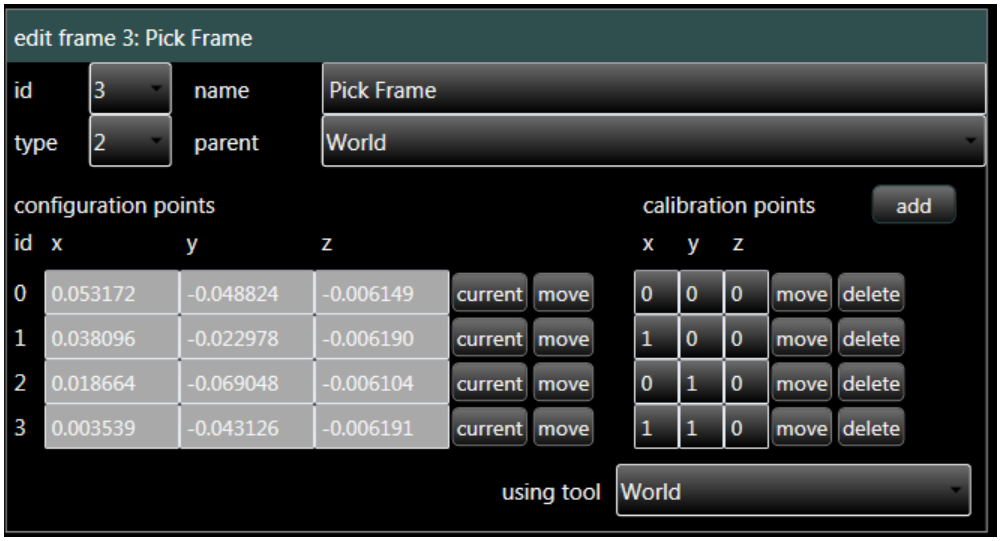


This zone is used to view all of the frames created, as well as any possible parent.

- The "+" button enables a new frame to be created.
- The "x" button enables a frame to be deleted.
- The "save" button enables all of the modifications made in the robot to be saved.

NOTE:
Until the "save" button is not pressed, it is possible to go back by clicking on the "reload" button which will reload the values contained in the robot.

2 Edit frame

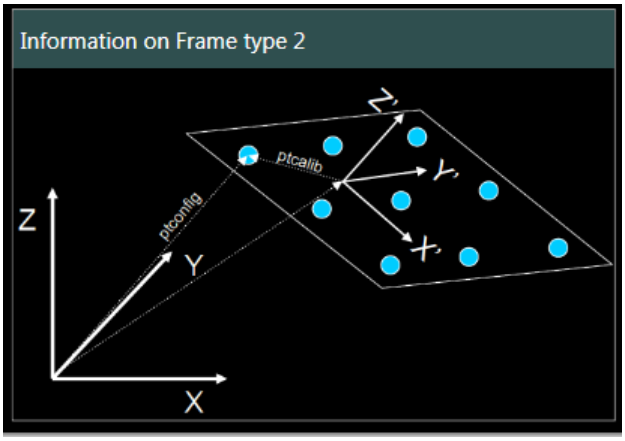


Enter all of the information required to create a frame here:

- Identifier from 1 to 99
- Type
- Name [optional]
- Parent, by default: world
- Configuration points
- Calibration points if type 1 or 2 frame

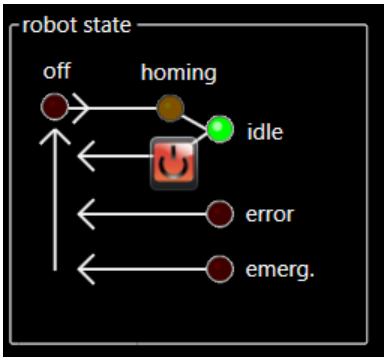
Reference:
For more information about the types of frames, and their operation, please refer to the programming guide supplied with your equipment.

3 Frame type description



An explanatory drawing makes it possible to view which type of frame has been used.

4 Robot state



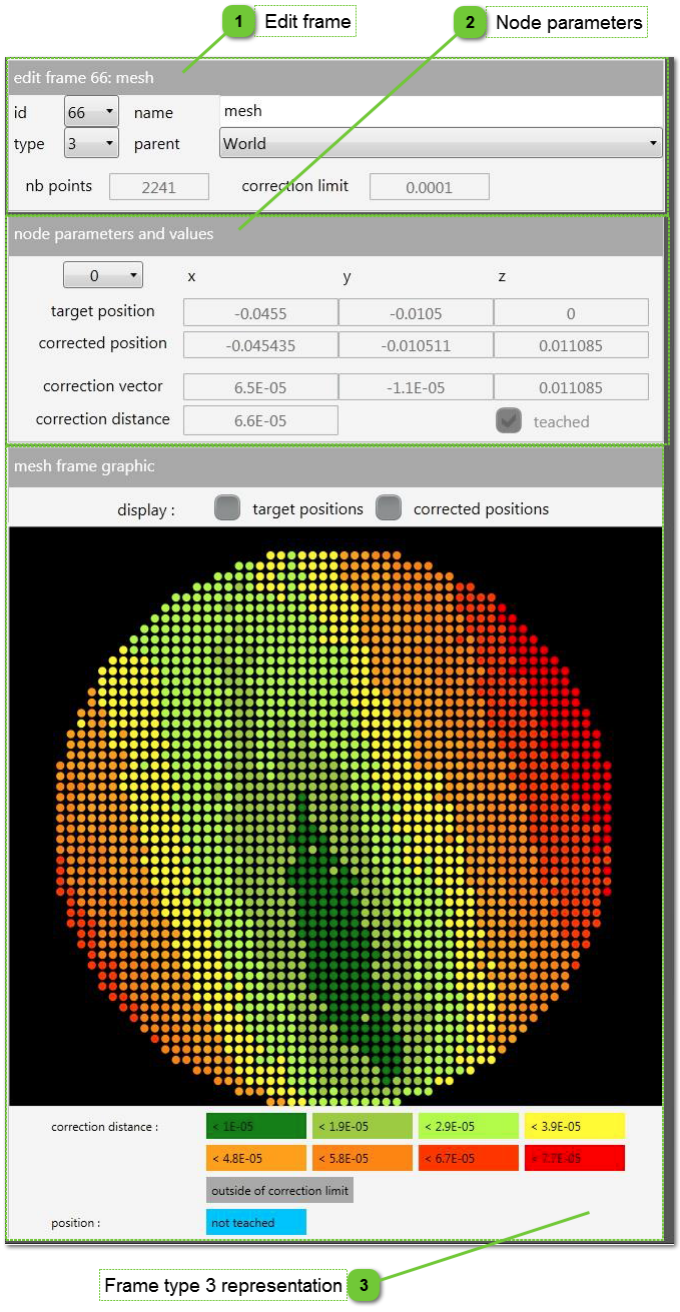
The robot states are described in the robot home page description.

Frame type 3

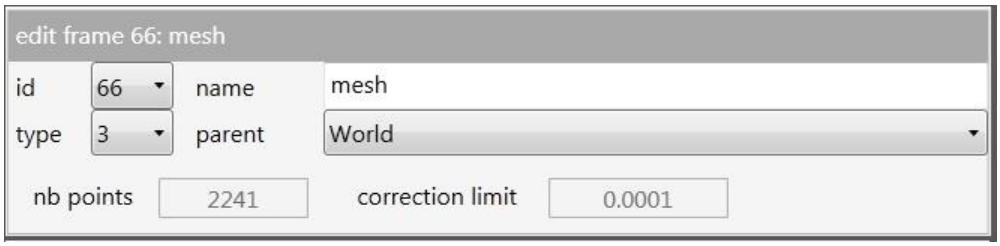
When a frame of type 3 is selected, the frame page has the aspect below.

NOTE:
The frame of type 3 is a mesh frame which can be activated only by your supplier.

NOTE:
All this page can be used only with Technician level access.



1 Edit frame

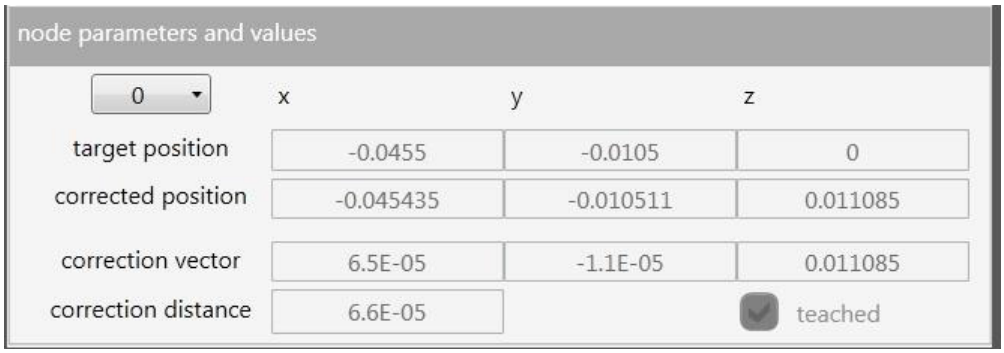


Enter all of the information required to create a frame of type 3 here:

- Identifier from 1 to 99
- Type (3)
- Name [optional]
- Parent, by default: world
- Number of points
- Correction limit (used for calibration and the graphic display)

Reference:
For more information about the types of frames, and their operation, please refer to the programming guide supplied with your equipment.

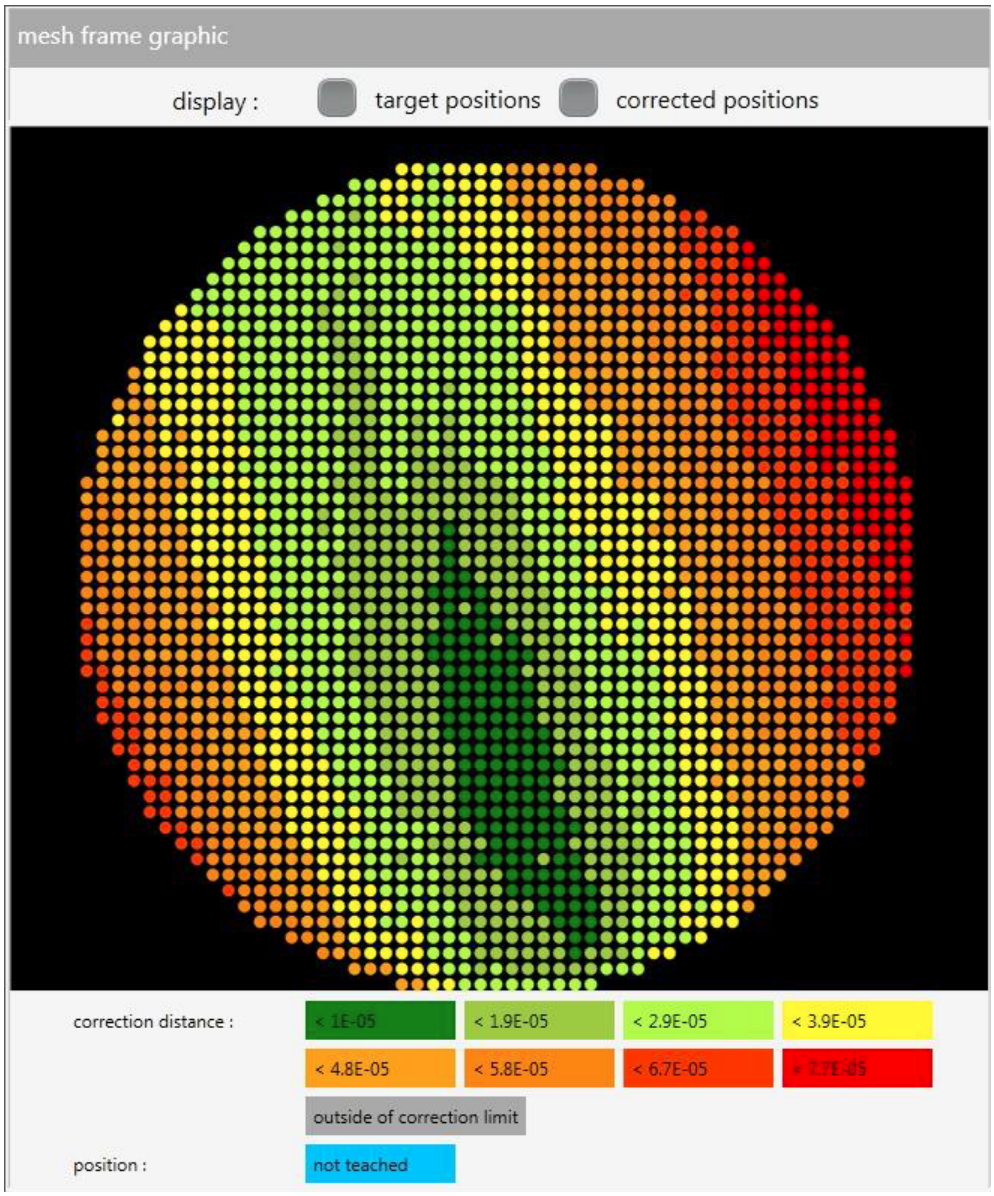
2 Node parameters



This area enables the data for each point of the frame to be read:

- Target position (x, y, z, rz)
- Corrected position (x, y, z, rz)
- Correction vector (x, y, z, rz)
- Distance correction
- The state of the point (programmed or otherwise)

3 Frame type 3 representation



This area is used to display a graph of the results obtained during the calibration of this frame. The colours represent the correction distance between the setpoint position and the position given by the robot.

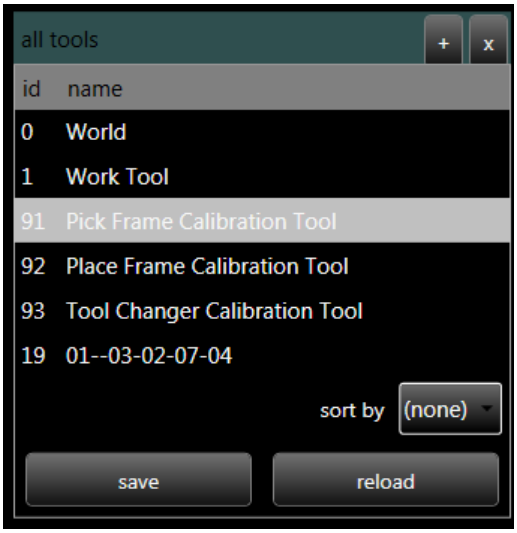
Tools

Tools page gives access to all tools of the robot.

NOTE:
Before changing tabs, save your modifications otherwise the changes will be lost.

NOTE:
All this page can be used only with Technician level access.

1 Manage tools

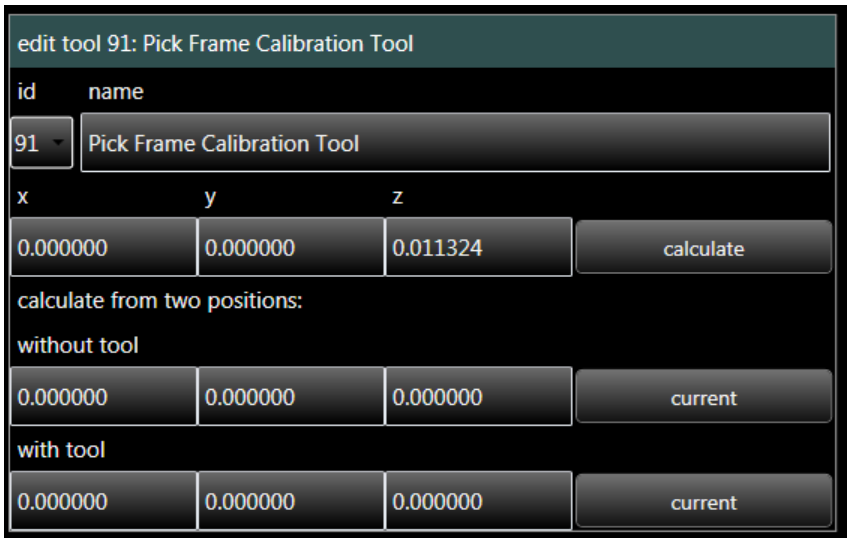


This zone is used to view all of the tools created.

- The "+" button enables a new tool to be created.
- The "x" button enables a tool to be deleted.
- The "save" button enables all of the modifications made in the robot to be saved.

NOTE:
Until the "save" button is not pressed, it is possible to go back by clicking on the "reload" button which will reload the values contained in the robot.

2 Edit tools



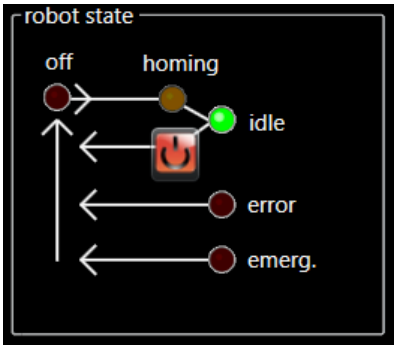
Enter all of the information required to create a tool here:

- Identifier from 1 to 99
- Name [optional]
- Parent, by default: world
- Tool lengths (x,y,z)

NOTE:
You can insert the current position of the robot with and without the tool then automatically calculate the difference for X, Y and Z.

NOTE:
The X and Y values are only needed for special tools with decentered tool. Most of tools are concentric and need to have X=0 and Y=0.

3 Robot state



The robot states are described in the robot home page description.

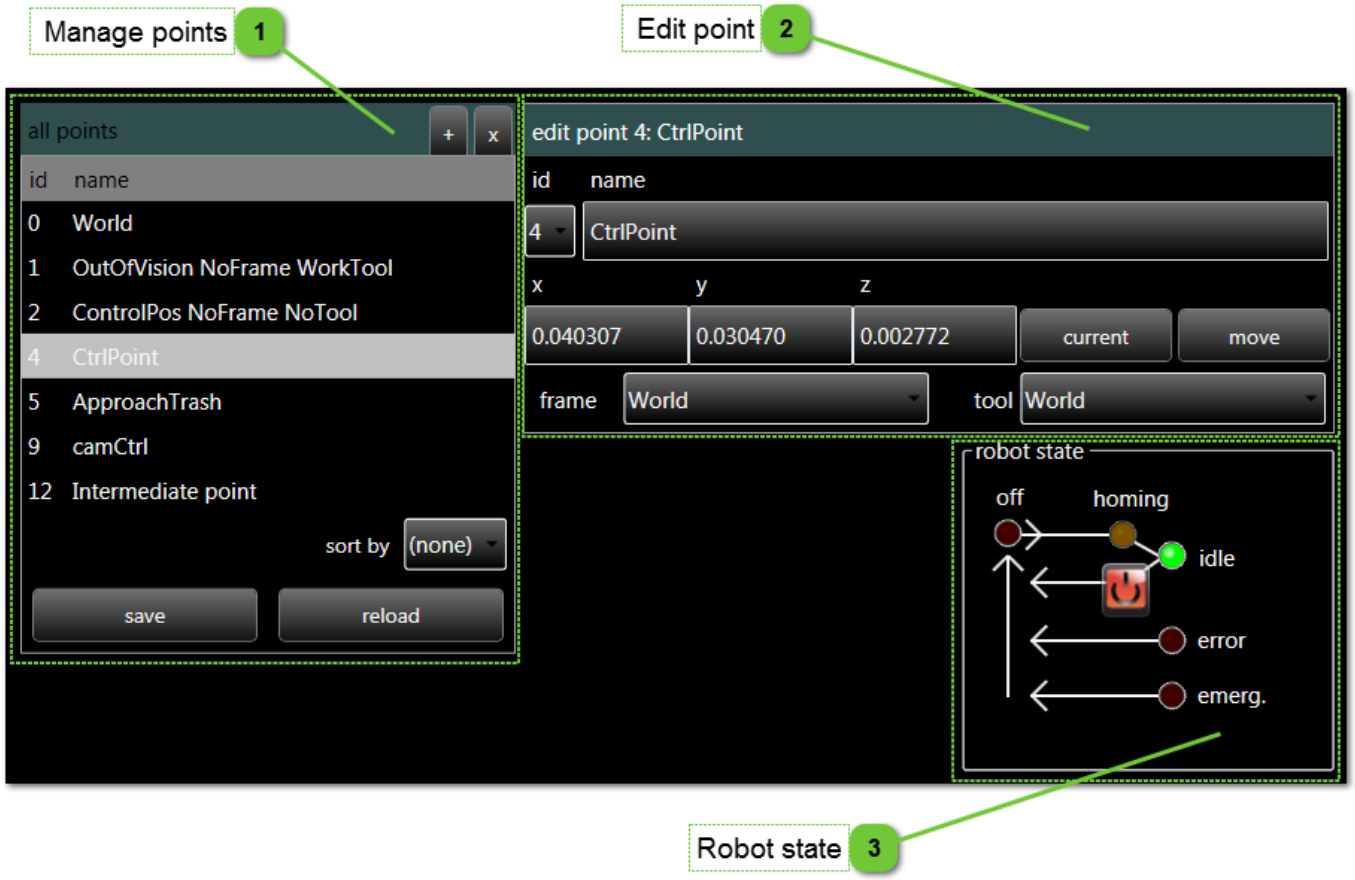
Points

Points page gives access to all points of the robot.

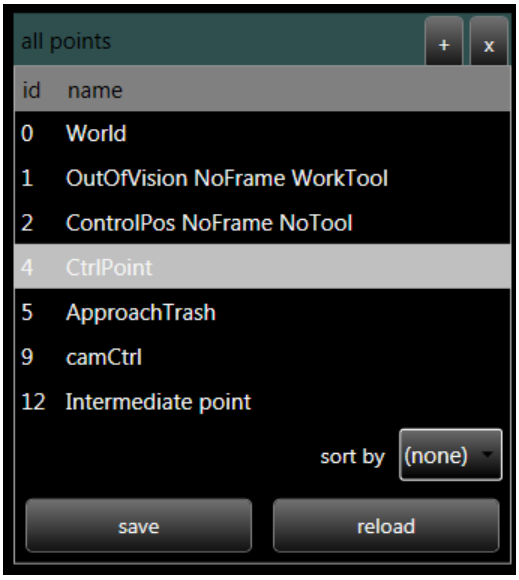
If you are using a large number of points, consider using a collection of points that can be imported in the form of a text file containing the coordinates of points on each line (X, Y, Z) separated by a space, tab or semicolon.

NOTE:
Before changing tabs, save your modifications otherwise the changes will be lost.

NOTE:
All this page can be used only with Technician level access.



1 Manage points



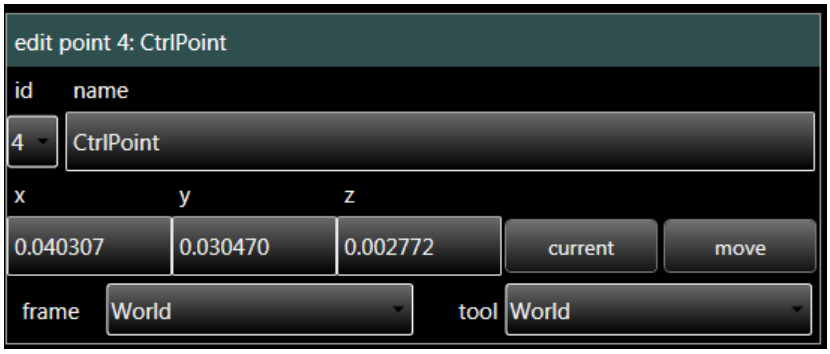
This zone is used to view all of the points created.

- The "+" button enables a new point to be created.
- The "x" button enables a point to be deleted.
- The "save" button enables all of the modifications made in the robot to be saved.

NOTE:

Until the "save" button is not pressed, it is possible to go back by clicking on the "reload" button which will reload the values contained in the robot.

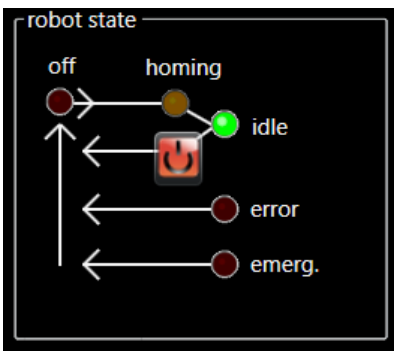
2 Edit point



Enter all of the information required to create a point here:

- Identifier from 1 to 99
- Name [optional]
- Parent, by default: world
- Coordinates for the point (x,y,z,rz)

3 Robot state



The robot states are described in the robot home page description.

Settings

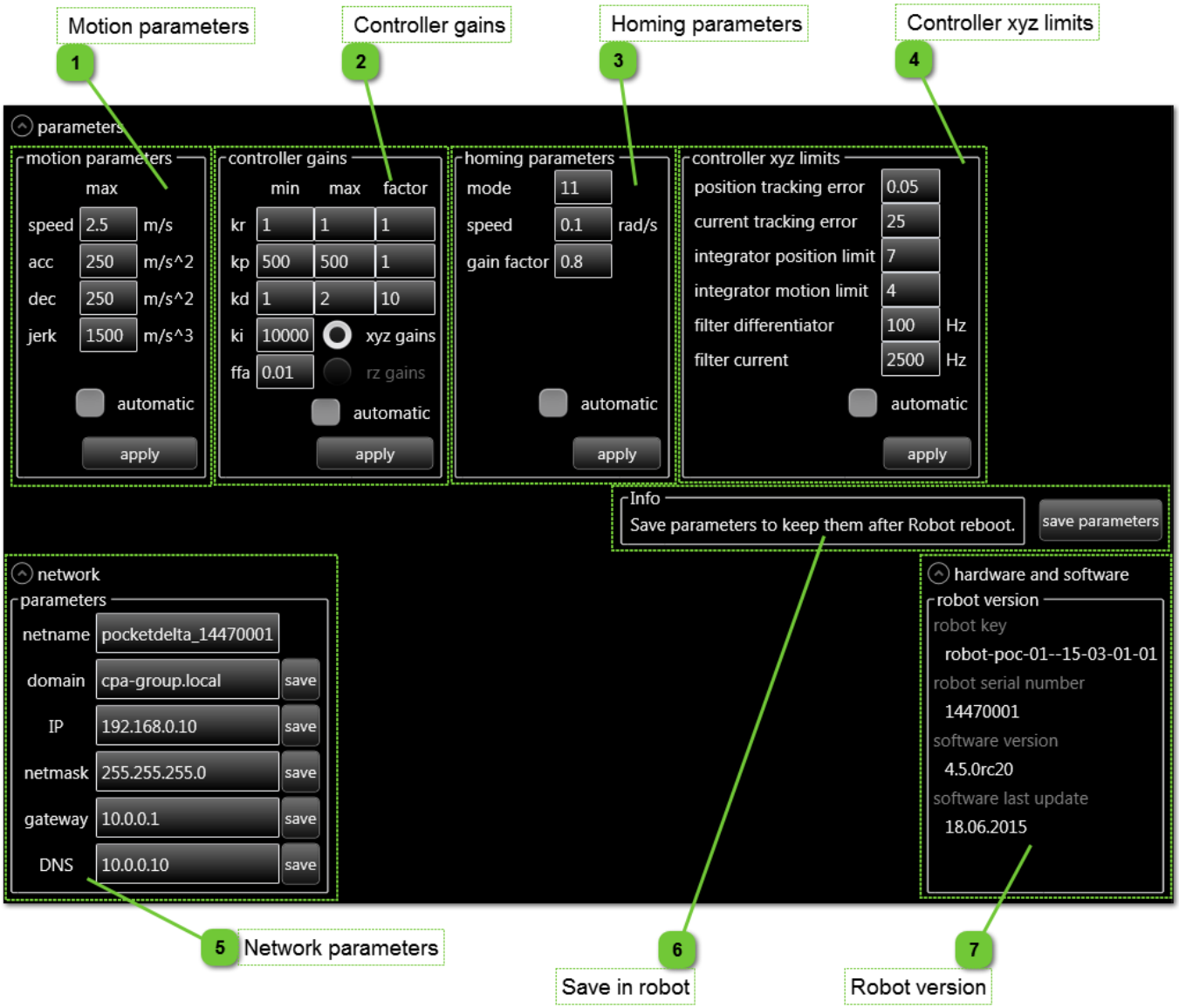
Settings page allows you to access to very specific parameters which can make the robot unusable.

Asyril only

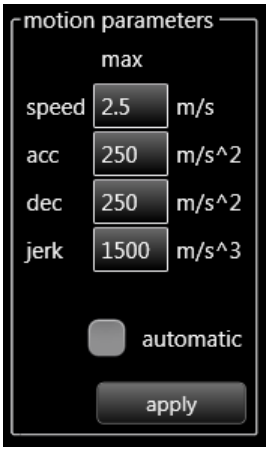
NOTE:
Before changing tabs, save your modifications otherwise the changes will be lost.

NOTE:
All this page can be modified only by your supplier.

IMPORTANT !
Those parameters are very important. A bad value can make the robot unusable.



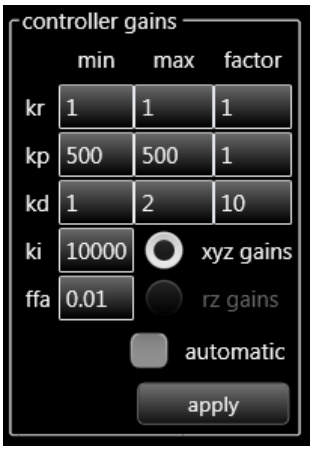
1 Motion parameters



The fields for this zone make it possible to adjust the motion speed, acceleration, deceleration and jerk parameters.

IMPORTANT !
Modifying these parameters may result in serious machine malfunctions or even cause the machine to crash.

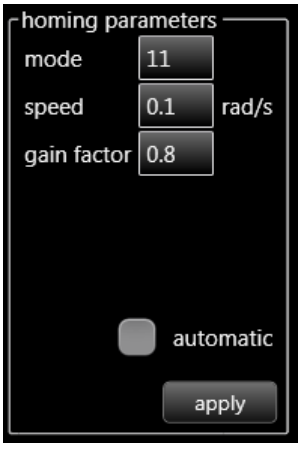
2 Controller gains



The fields for this zone make it possible to adjust the regulation parameters.

IMPORTANT !
Modifying these parameters may result in serious machine malfunctions or even cause the machine to crash.

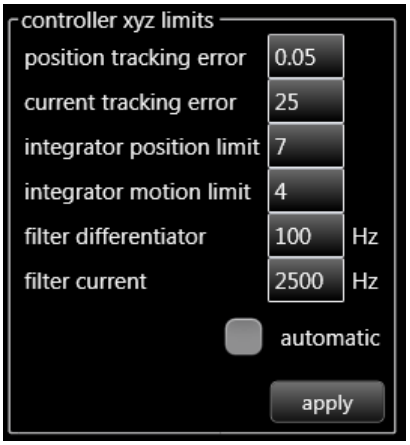
3 Homing parameters



The fields for this zone make it possible to adjust the homing mode, speed and gain factor parameters.

IMPORTANT !
Modifying these parameters may result in serious machine malfunctions or even cause the machine to crash.

4 Controller xyz limits



The fields for this zone make it possible to adjust the controller limits parameters.

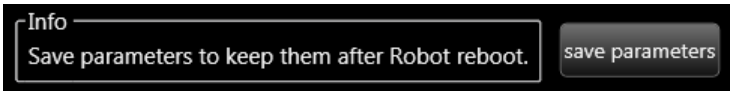
IMPORTANT !
Modifying these parameters may result in serious machine malfunctions or even cause the machine to crash.

5 Network parameters

This area is used to modify the domain name, or IP address of the robot.

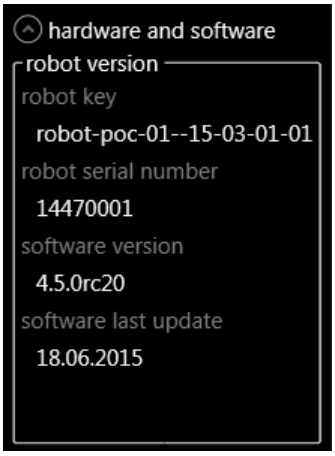
IMPORTANT !
Modifying these parameters may cause serious machine malfunctions.

6 Save in robot



Click on this button after having clicked on "set" to save the parameters in the robot.

7 Robot version



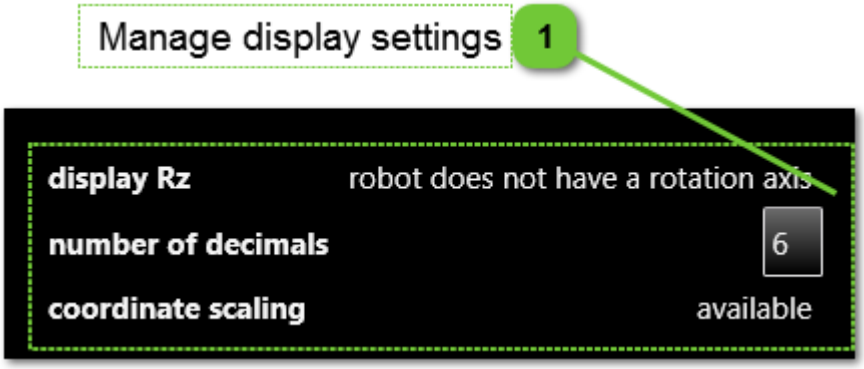
This area contains the robot version number, serial number and the date of the last update. This data is provided for information purposes only; it cannot be modified.

Display settings

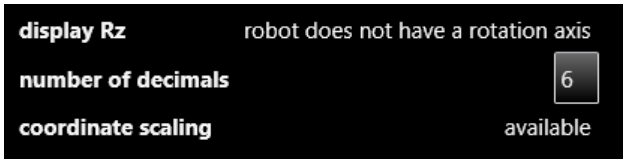
Display settings page allows you to access to display parameters.

NOTE:
Before changing tabs, save your modifications otherwise the changes will be lost.

NOTE:
All this page can be used only with Technician level access.



1 Manage display settings



The "display Rz" field allows you to select whether you want to display the coordinates of the RZ rotation axis. If you do not have an RZ axis on your robot, the choice is not available and indicates "robot does not have a rotation axis".

The "number of decimals" field allows you to choose the number of decimals to be displayed in the "home" and "advanced" tabs. The figure entered must be between 0 and 9.

The "coordinate scaling" indicates if the scaling of coordinates is available or not.

The "apply changes" button allows you to save the parameters. This button can be not visible if not applicable.

Recipes

This chapter describes pages related to the management of recipes.

Pages list

Controls disabled

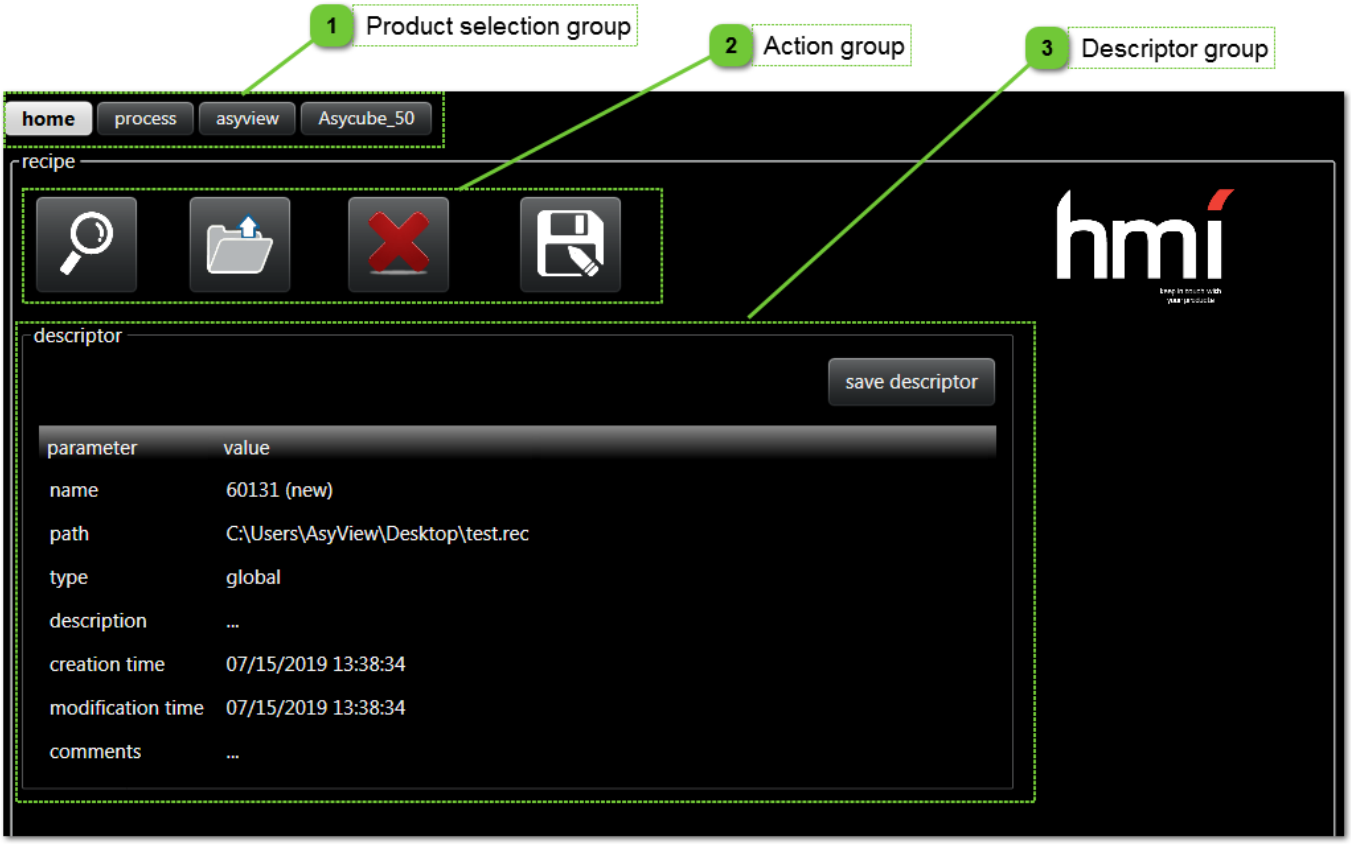
Some pages, tabs, buttons, textboxes, etc can be disabled depending of the following parameters :

- Product connection state (disabled when not connected).
- The function is not possible for the moment (another function is processing)
- The level access is not correct to access to the parameter.

Home

Home page gives access to the global recipes management (.rec files).

NOTE:
This tab is only visible when using a robot with the process system.



1 Product selection group

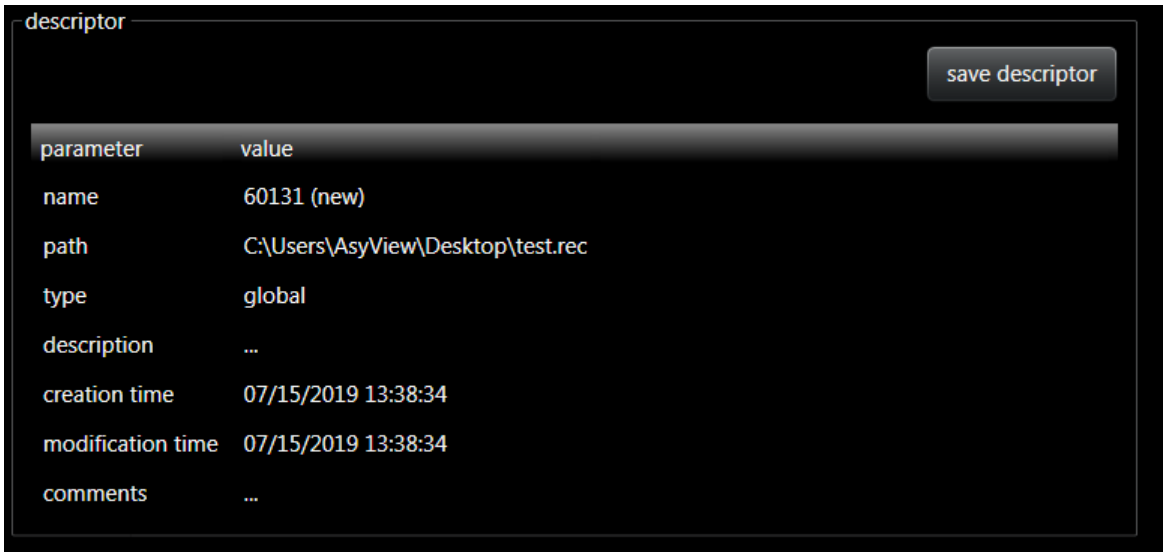
Those buttons allow to navigate between products recipes. The home button allows you to manage the recipe which included the recipes of all products.

2 Action group

This group contains few buttons which allow to manage global recipes.

Button	Description
select	Allows the selection the recipe to load (*.rec file). Selecting the recipe will display the descriptor.
load	Allows the loading of the selected recipe. The led on the top right of the HMI indicates the loading state (working (yellow) state). During this time, you cannot use other functions of the HMI. At the end of the loading, the led will change to Idle (green) state.
delete	Deletes the selected recipe.
save as	Allows the saving of the selected recipe on a new file. The led on the top right of the HMI indicates the saving state (working (yellow) state). During this time, you cannot use other functions of the HMI. At the end of the saving, the led will change to Idle (green) state.

3 Descriptor group

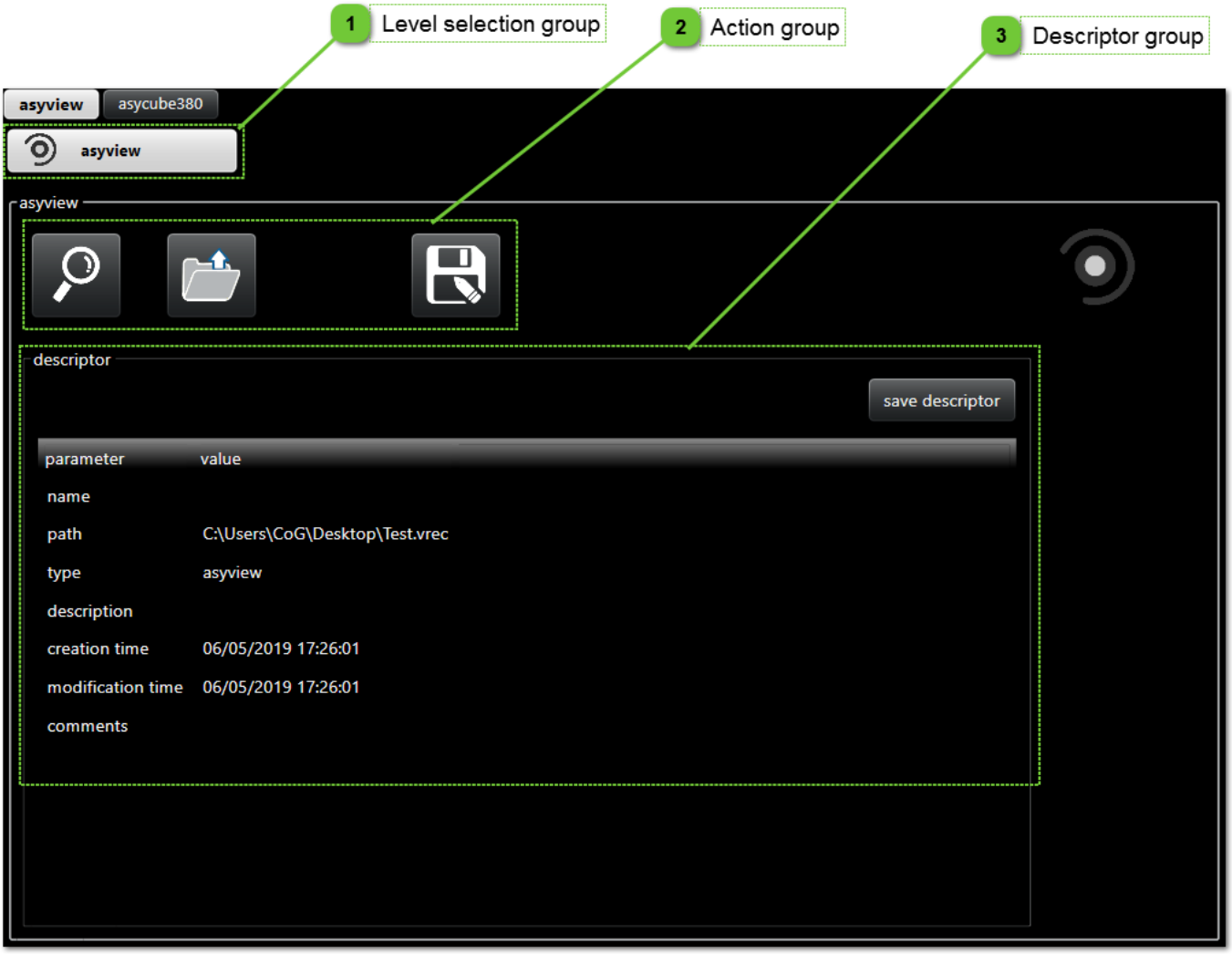


This group displays the descriptor of the recipe. The descriptor gives some informations about the recipe. The "save descriptor" button allows you to save the modifications done in the descriptor.

Field	Description
name	Name of the recipe. A default name (a randomized number) is given and can be changed if desired.
path	Path of the recipe.
type	Type of the recipe (can be global, AsyView, process).
description	Description of the recipe (for user description).
creation time	Date and time of the creation of the recipe. This value is created at the first save of the recipe.
modification time	Date and time of the last modification of the recipe. The value change at every save of the recipe.
comments	Comments about the recipe (for user comments).

AsyView

AsyView recipe page gives access to the AsyView recipes management (.vrec files) and to the lower levels of recipes (cell, module and Asycube).



1 Level selection group

This button allows the selection of the AsyView level of recipe.

2 Action group

This group contains a few buttons which allow to manage AsyView recipes.

Button	Description
select	allows you to select the recipe to load (*.vrec file). Select the recipe will display the descriptor.
load	allows you to load the selected recipe. The led on the top right of the HMI indicates the loading state (working (yellow) state). During this time, you cannot use other functions of the HMI. At the end of the loading, the led will change in Idle (green) state.
save as	allows you to save the selected recipe on a new file. The led on the top right of the HMI indicates the saving state (working (yellow) state). During this time, you cannot to use other functions of the HMI. At the end of the saving, the led will change in Idle (green) state.

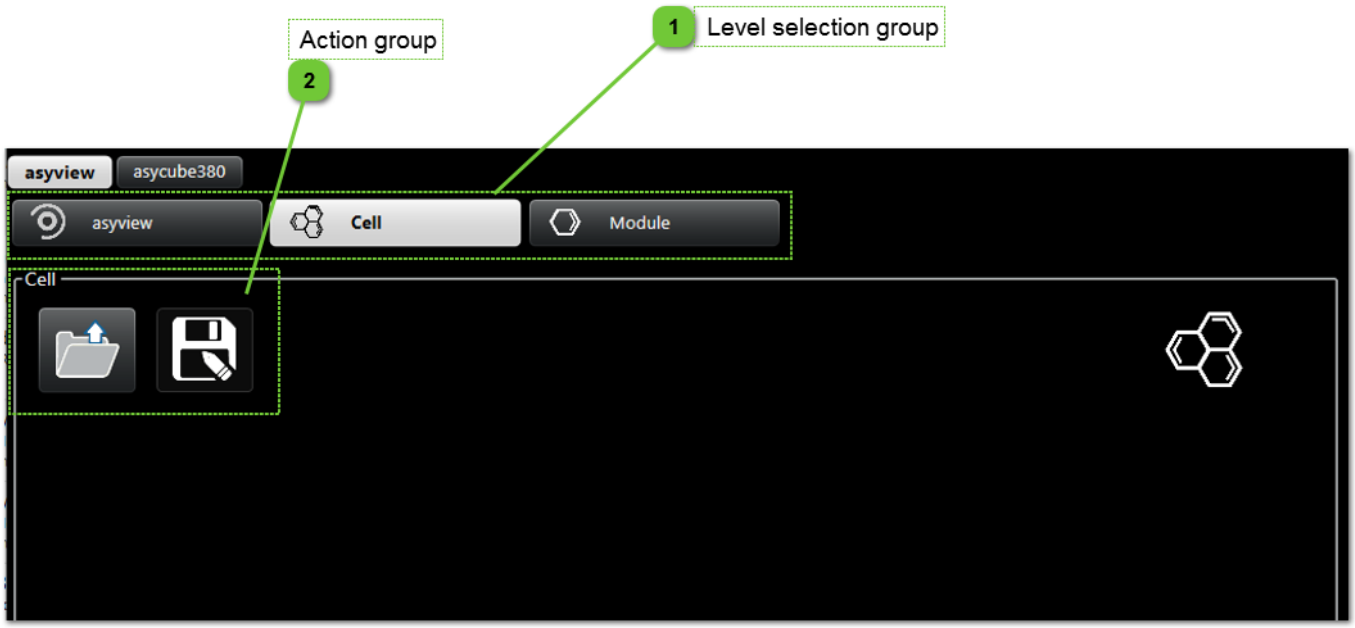
3 Descriptor group

This group displays the descriptor of the recipe. The descriptor gives some informations about the recipe. The "save descriptor" button allows the saving of the modifications done in the descriptor.

Field	Description
name	Name of the recipe. A default name (a randomized number) is given and can be changed if desired.
path	Path of the recipe.
type	Type of the recipe (can be global, AsyView, process).
description	Description of the recipe (for user description).
creation time	Date and time of the creation of the recipe. This value is created at the first save of the recipe.
modification time	Date and time of the last modification of the recipe. The value change at every save of the recipe.
comments	Comments about the recipe (for user comments).

Cell

AsyView cell recipe page gives access to the AsyView cell recipes management (.cavaf files) and to the lower levels of recipe (module and Asycube).



1 Level selection group

This button allows you to select the AsyView cell level of recipe.

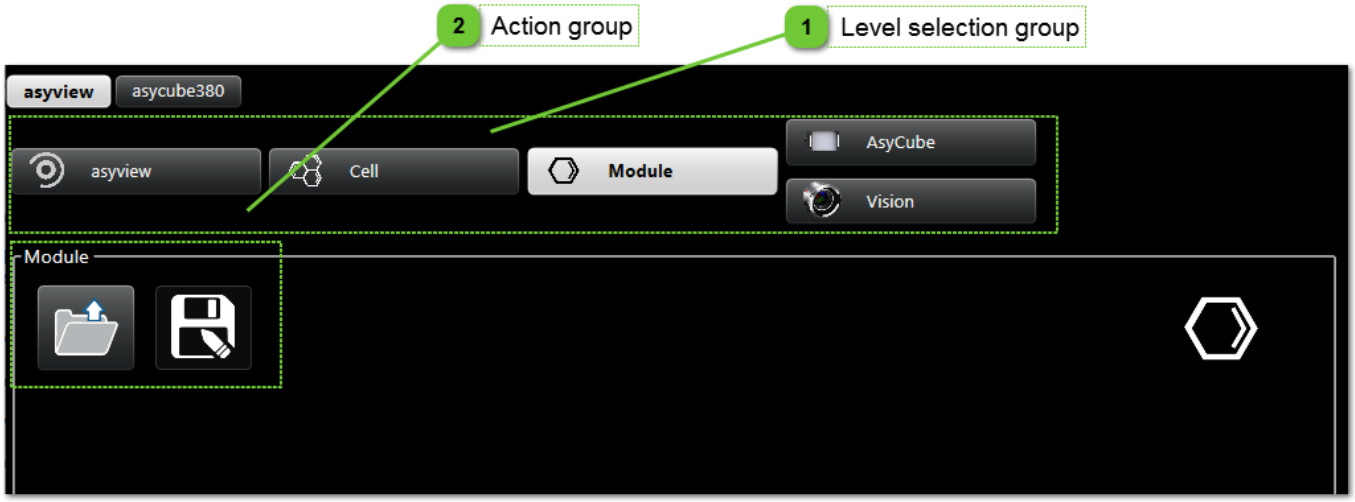
2 Action group

This group contains a few buttons which allow the management of AsyView cell recipes.

Button	Description
	Allows the loading of a cell recipe. The led on the top right of the HMI indicates the loading state (working (yellow) state). During this time, you cannot use other functions of the HMI. At the end of the loading, the led will change to Idle (green) state.
	Allows the saving of the current recipe on a new file. The led on the top right of the HMI indicates the saving state (working (yellow) state). During this time, you cannot use other functions of the HMI. At the end of the saving, the led will change to Idle (green) state.

Module

AsyView module recipe page gives access to the AsyView module recipes management (.mavaf files) and to the lower levels of recipe (Asycube).



1 Level selection group

This button allows the selection of the AsyView module level of recipe.

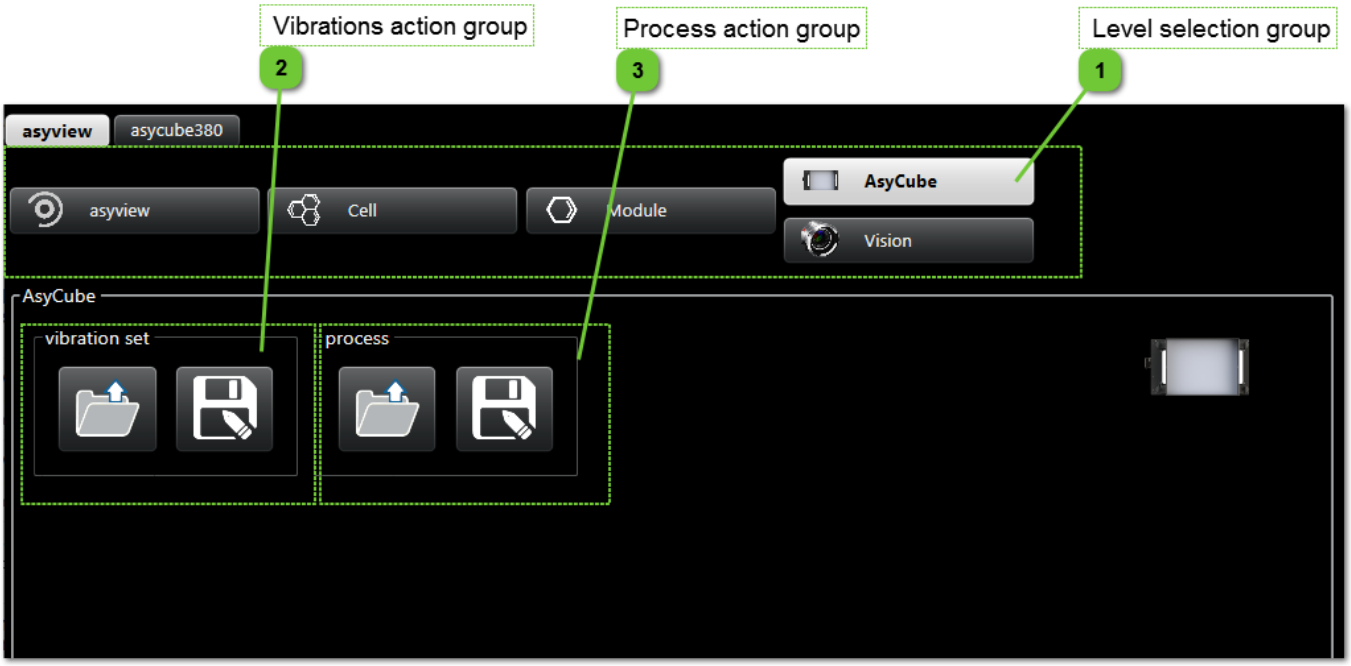
2 Action group

This group contains few buttons which allow to manage AsyView module recipes.

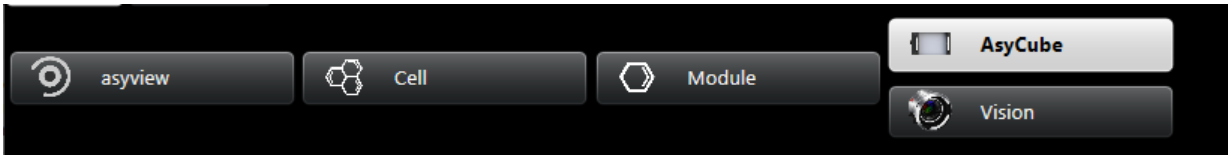
Button	Description
	allows you to load a module recipe. The led on the top right of the HMI indicates the loading state (working (yellow) state). During this time, it is not allowed to use other functions of the HMI. At the end of the loading, the led will change in Idle (green) state.
	allows you to save the current recipe on a new file. The led on the top right of the HMI indicates the saving state (working (yellow) state). During this time, it is not allowed to use other functions of the HMI. At the end of the saving, the led will change in Idle (green) state.

Asycube

AsyView - Asycube recipe page gives access to the Asycube vibrations recipes management (.fconf files) and to the Asycube process recipes management (.fproc files). Those functions are also available on Asycube pages (Platform, Hopper, Process pages).

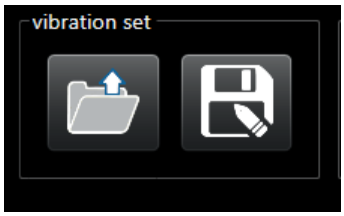


1 Level selection group



This button allows you to select the AsyView Asycube level of recipe.

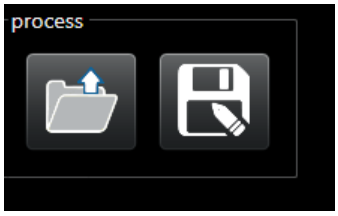
2 Vibrations action group



This group contains few buttons which allow the management AsyView Asycube vibrations recipes.

Button	Description
	allows you to load an Asycube vibrations recipe. The led on the top right of the HMI indicates the loading state (working (yellow) state). During this time, you cannot use other functions of the HMI. At the end of the loading, the led will change in Idle (green) state.
	allows you to save the current vibrations recipe on a new file. The led on the top right of the HMI indicates the saving state (working (yellow) state). During this time, you cannot to use other functions of the HMI. At the end of the saving, the led will change in Idle (green) state.

3 Process action group

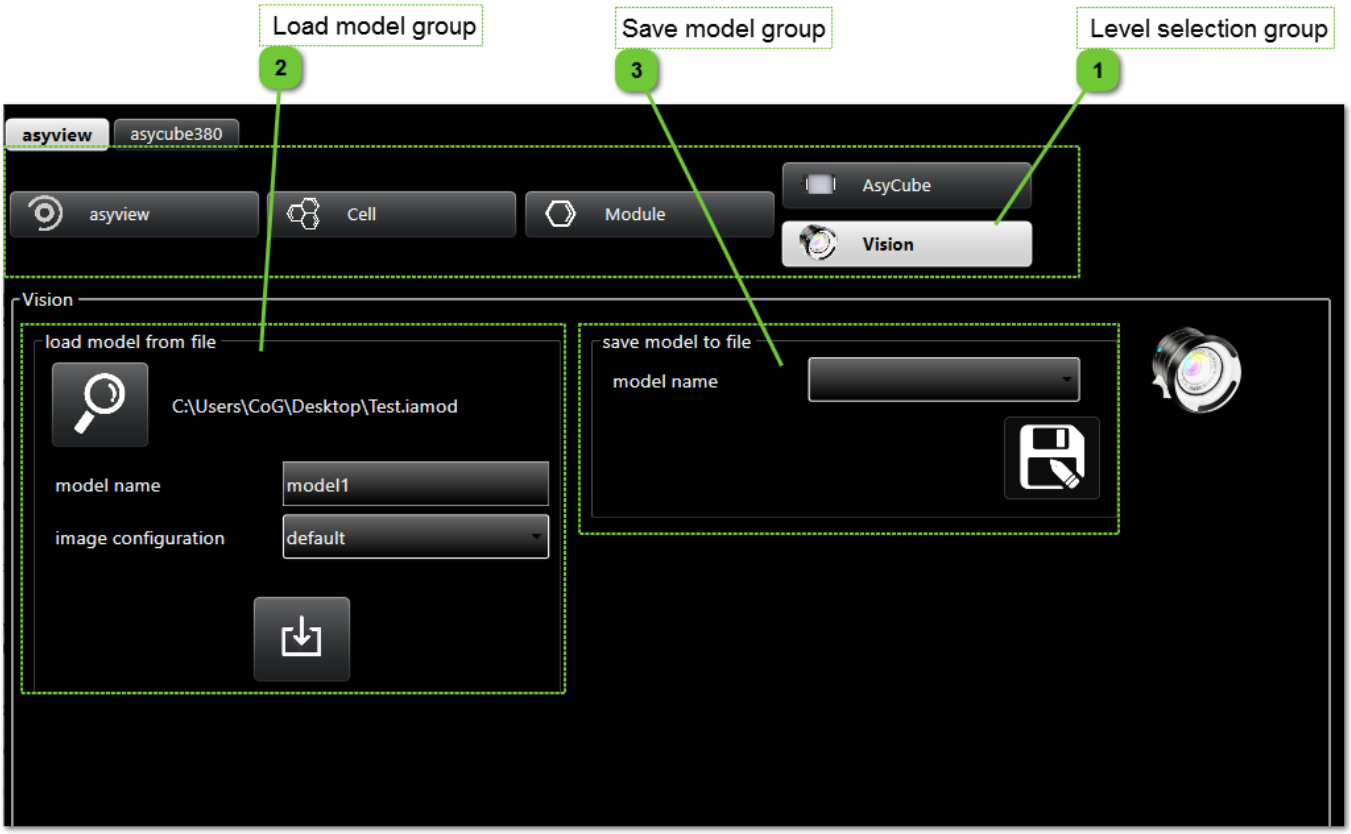


This group contains a few buttons which allow the management AsyView Asycube process recipes.

Button	Description
	allows you to load an Asycube process recipe. The led on the top right of the HMI indicates the loading state (working (yellow) state). During this time, you cannot to use other functions of the HMI. At the end of the loading, the led will change in Idle (green) state.
	allows you to save the current process recipe on a new file. The led on the top right of the HMI indicates the saving state (working (yellow) state). During this time, you cannot to use other functions of the HMI. At the end of the saving, the led will change in Idle (green) state.

Vision

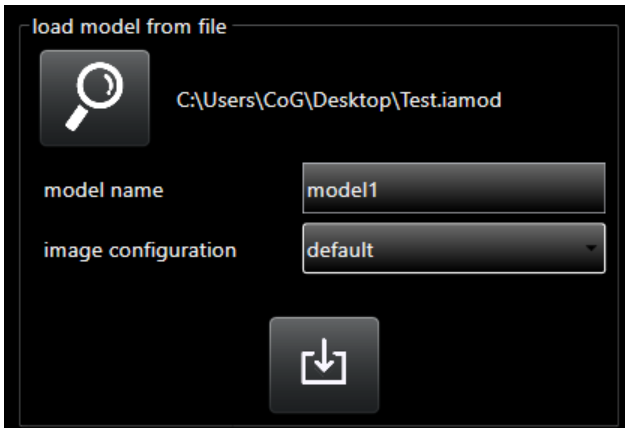
AsyView - Vision recipe page gives access to the model recipes management (.iamod files).



1 Level selection group

This button allows you to select the AsyView Vision level of recipe.

2 Load model group



This group contains few controls which allow to load a model recipe with a specific model name and a selected image configuration name.

Button	Description
	Allows the selection of the model recipe file (*.iamod). After selection, the model name and the image configuration name contained in the recipe are loaded and can be modified.
	Indicates the model name contained in the recipe file. The model name can be changed if necessary. **NOTE:** *This textbox is red colored when the model name entered is already existing. Change the model name to be able to load the selected model recipe file.*
	Indicates the image configuration name contained in the recipe file (if existing on the using system). The image configuration name can be changed if necessary.
	Allows the loading of the selected model recipe file with the given model name and image configuration name. The led on the top right of the HMI indicates the loading state (working (yellow) state). During this time, it is not allowed to use other functions of the HMI. At the end of the loading, the led will change in Idle (green) state. **NOTE:** *This button is disabled when no model recipe file is selected. Select a model recipe file before to be able to load it.* **NOTE:** *This button is disabled when the model name entered is already existing. Change the model name to be able to load the selected model recipe file.*

3 Save model group

This group contains a few controls which allow you to save a model recipe.

Button	Description
	Allows the selection of the model name to save in a model recipe file (*.iamod).
	Allows the saving of the selected model in a new file. A window will open to select the path and to give the desired filename. The led on the top right of the HMI indicates the saving state (working (yellow) state). During this time, it is not allowed to use other functions of the HMI. At the end of the saving, the led will change in Idle (green) state.

Process

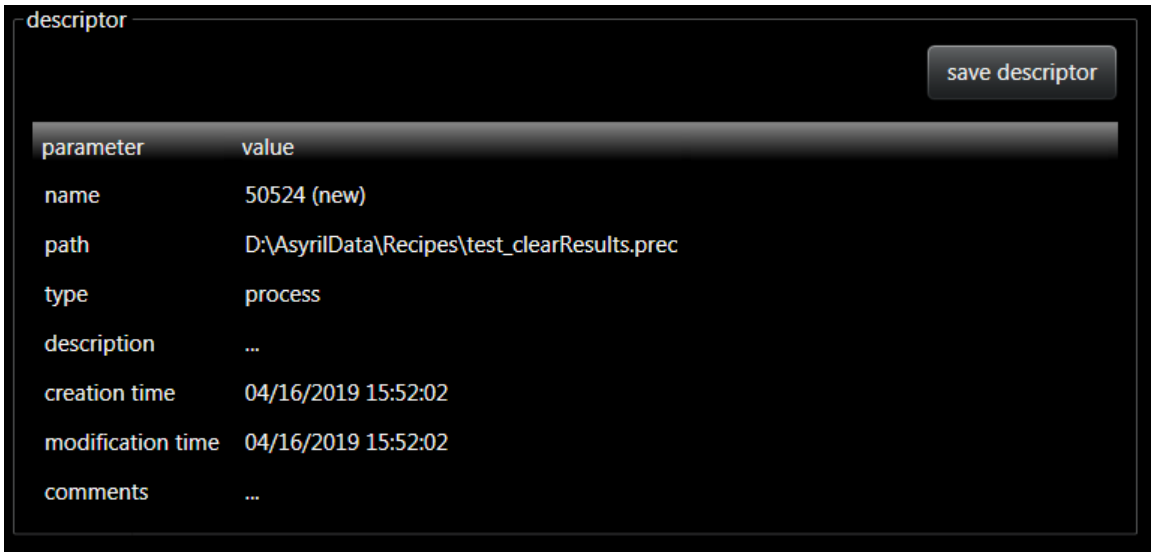
Process recipe page gives access to the Process recipes management (.prec files).

1 Action group

This group contains few buttons which allow to manage Process recipes.

Button	Description
select	Allows the selection of the recipe to load (*.prec file). Select the recipe will display the descriptor.
load	Allows the loading of the selected recipe. The led on the top right of the HMI indicates the loading state (working (yellow) state). During this time, it is not allowed to use other functions of the HMI. At the end of the loading, the led will change in Idle (green) state.
save as	Allows the saving of the selected recipe on a new file. The led on the top right of the HMI indicates the saving state (working (yellow) state). During this time, it is not allowed to use other functions of the HMI. At the end of the saving, the led will change in Idle (green) state.

2 Descriptor group



This group displays the descriptor of the recipe. The descriptor gives some informations about the recipe. The "save descriptor" button allows you to save the modifications done in the descriptor.

Field	Description
name	Name of the recipe. A default name (a randomized number) is given and can be changed if desired.
path	Path of the recipe.
type	Type of the recipe (can be global, AsyView, process).
description	Description of the recipe (for user description).
creation time	Date and time of the creation of the recipe. This value is created at the first save of the recipe.
modification time	Date and time of the last modification of the recipe. The value change at every save of the recipe.
comments	Comments about the recipe (for user comments).

Troubleshooting

Ref.	Problem	Solution
1	*HMI crashes on starting*	Try to start HMI with administrator access (right-click on shortcut, Properties/Compatibility, select “Run this program as an administrator”).
2	*HMI starts but no button are displayed*	The SurfaceToolKit is missing or improperly installed.
3	*The command is refused by AsyView*	Execute a reset of the AsyView to correct the default and set all states to IDLE. If it does not work, the problem have to be corrected manually (for example if connection is not established).
4	*The HMI configuration cannot be saved*	You don't have write access in the C:\ProgramData\SupplierName\Hmi. There is many solutions to correct this problem: 1. Start HMI with administrator rights (see procedure). 2. Contact your IT department to have full access to this folder. 3. Copy the SupplierData folder to the D:\ (replace Supplier with the actual name of your supplier), the HMI will check first if the SupplierData folder exists on D:\ before to search on the C disc). 4. Copy the SupplierData folder in another folder where you have full access. In the configuration page of the HMI, in SupplierData path group, click on select and choose the folder where you copied the SupplierData folder.

Technical support

For a better service...

Before contacting us, please note down the following information concerning your product:

- Serial number and product key for your equipment
- Software version(s) used
- Error message, alarm, or visual signals displayed by the interface.

Revision table

Revision	Date	Author	Comment	HMI version
A	14.11.2014	HsJ	Initial version	rc1.2v2.0.2
A1	12.01.2015	HsJ	Add process option to the Asycube configuration page	rc1.3v2.0.2
A2	27.03.2015	HsJ	Add AsyView pages and related modifications	rc1.3v2.0.2
A3	17.09.2015	HsJ	Add Process and Robot pages, update AsyView pages	rc2.0v2.1.2
B	05.01.2016	HsJ	Modifications for Asycubes 50 and 80	rc3.0v2.2.2
B1	30.08.2016	HsJ	Correct bug in calibration pixel/mm page	rc3.1v2.2.2
C	16.11.2016	HsJ	Add Smart Feeder functions (vibration sets and sequences)	rc4.0v2.3.2
D	31.03.2017	HsJ	New HMI version, no modification in the document	rc5.0v2.4.2
E	31.08.2017	HsJ	Add modifications for Asycube 530 and modifications for new AsyView 3.5.0	rc6.0v2.5.2
F	19.02.2018	HsJ	Add modifications for new functions of new AsyView 4.0.2	rc7.0v2.6.2
G	01.08.2019	HsJ/CoG	Add modifications for new functions of new AsyView 4.2.0 and for Asycube 380	rc8.0v2.7.2
H	11.09.2020	CoG	Update according to the new redesigned screens	2.8.0
H1	15.10.2020	CoG	Update some screenshots & add more information on the Asycube tuning parameters	2.8.0
H2	28.07.2021	CoG	Add information about the new purge system for Asycube 240 & ability to disable inputs	v2.9.1