

# Salsa

## Manual User

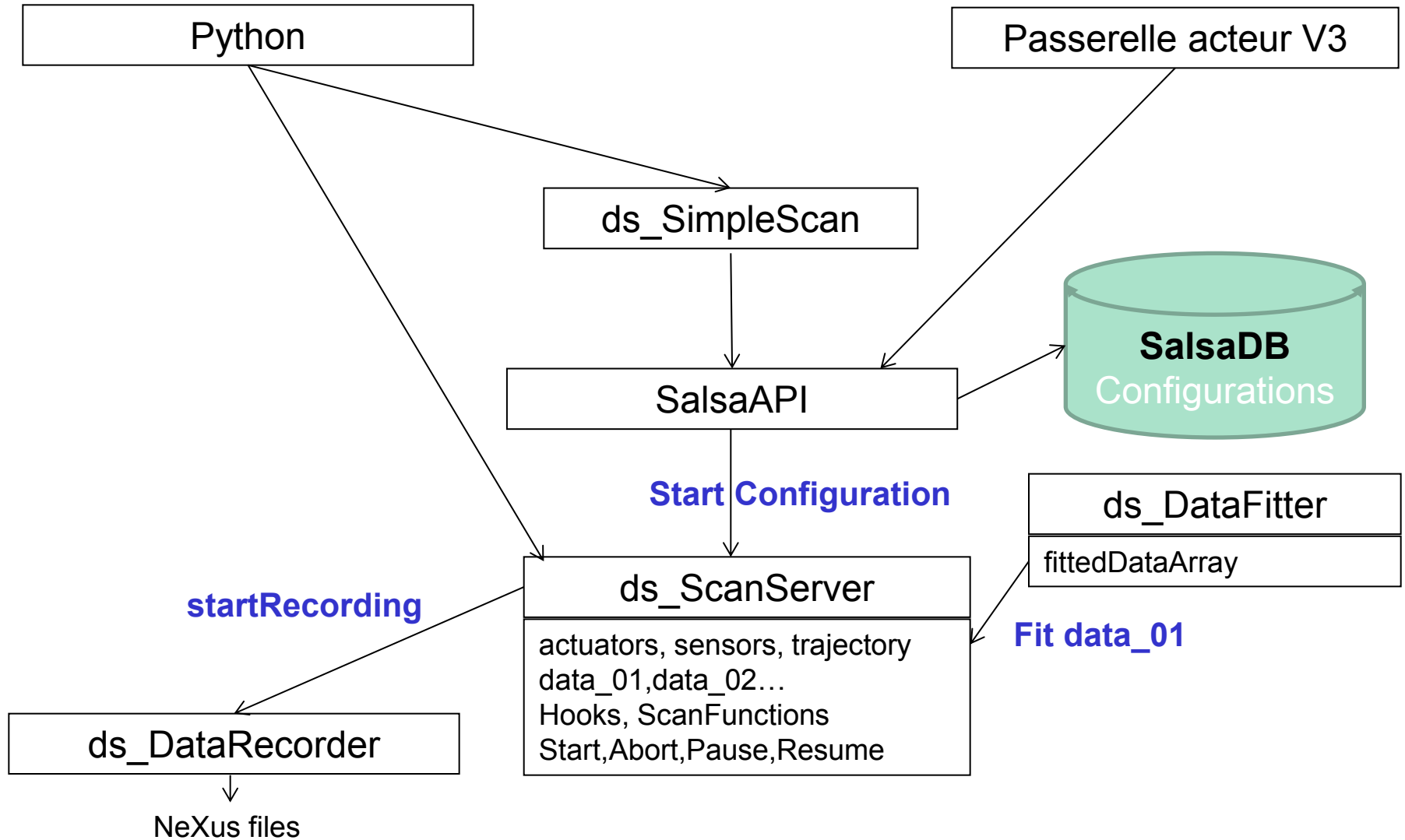
Katy Saintin  
Last update January 2014

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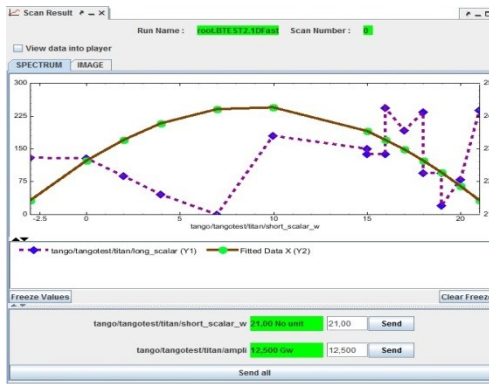
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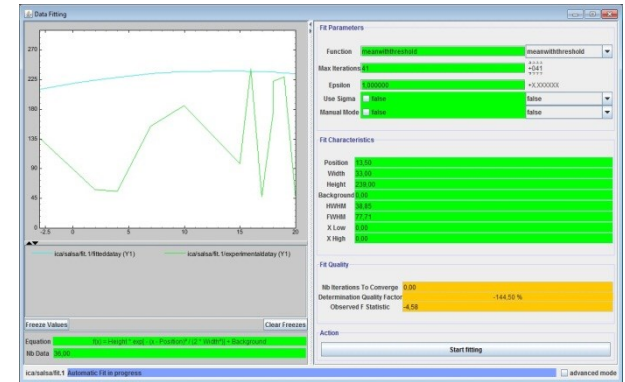
## DataRecorderBean



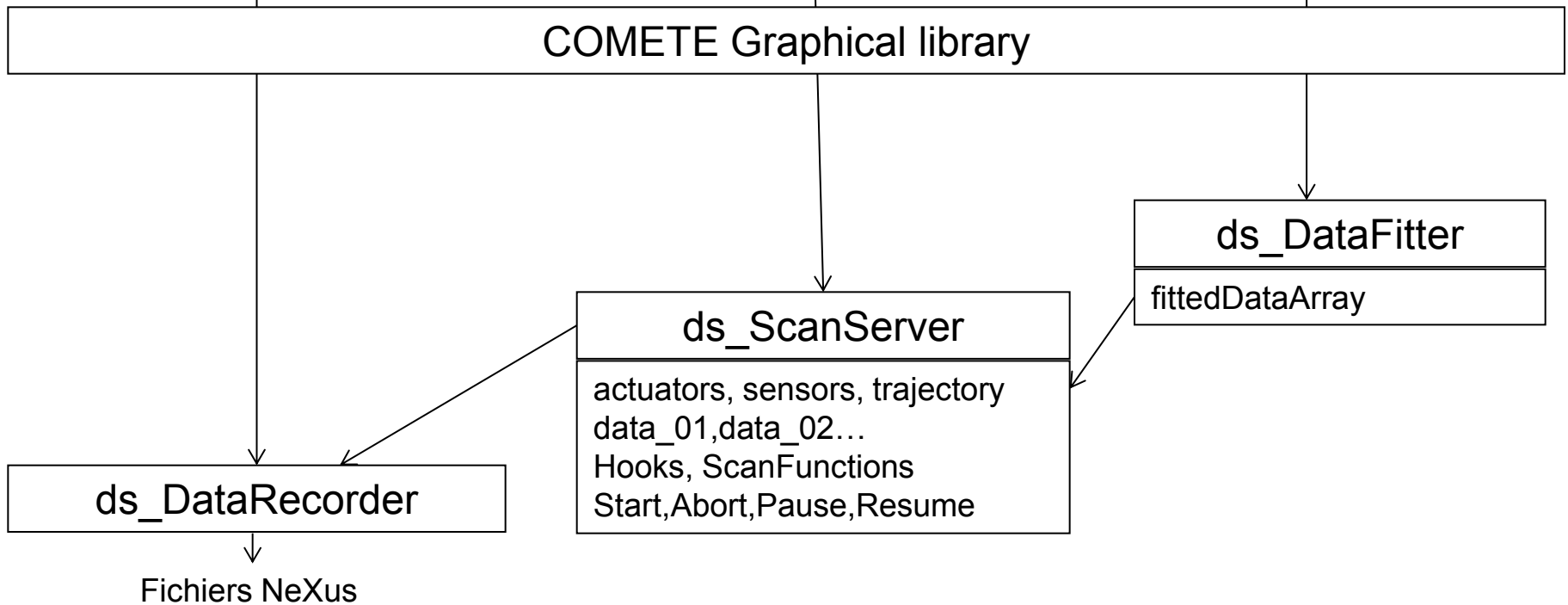
## CurrentScanResultBean

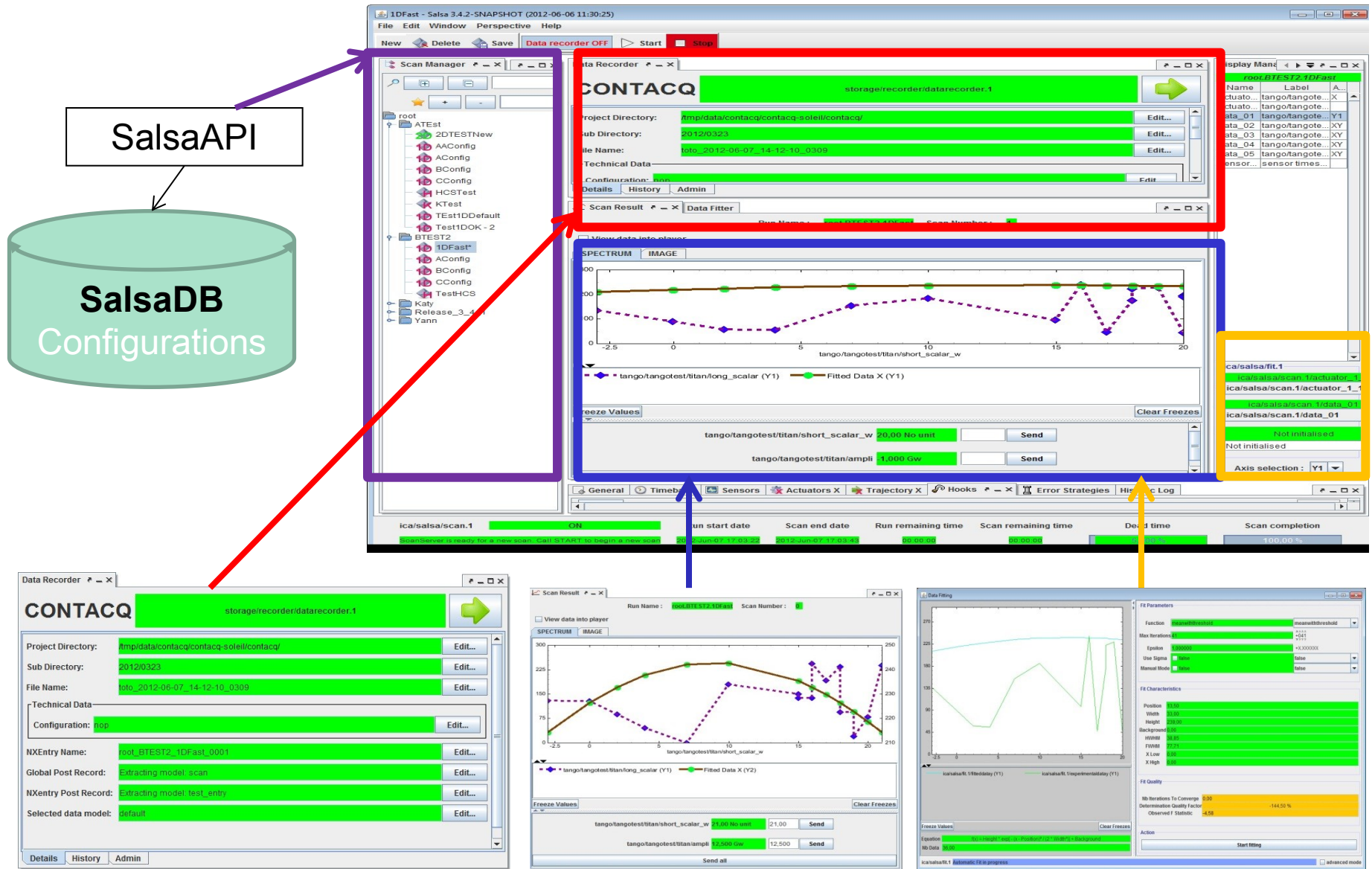


## DataFitterBean



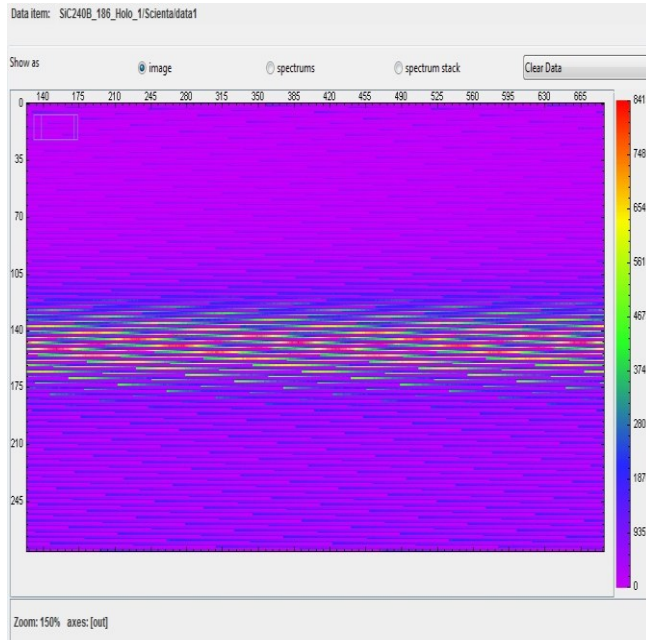
## COMETE Graphical library





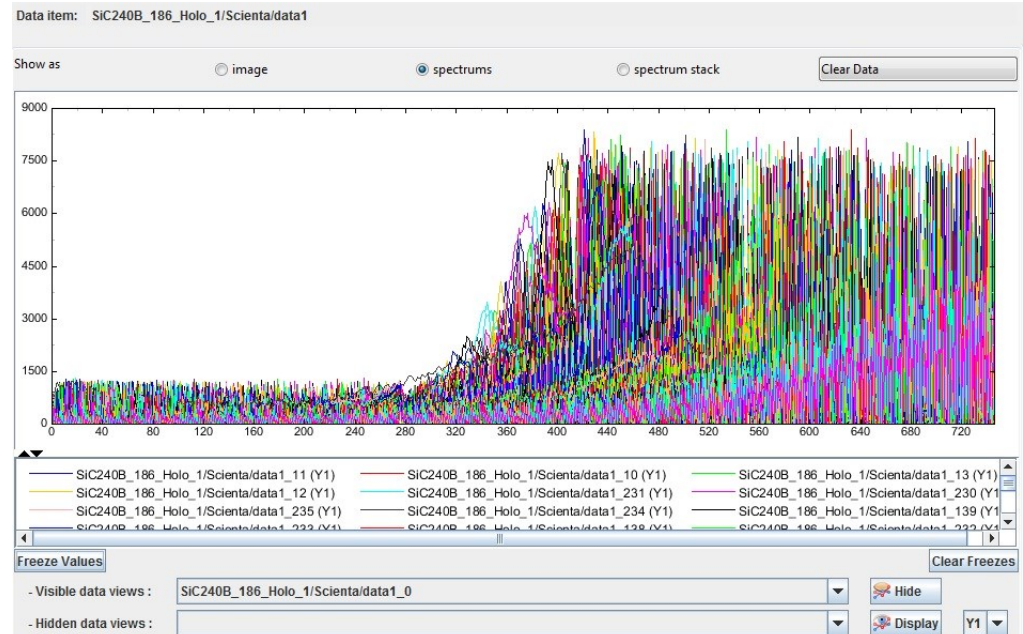


## Librairie graphique COMETE



20,00 No unit

NEXUS



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+030.00  
▼▼▼▼▼

TANGO

Archivage

## GLOBAL\_ROOT

GlobalSCREEN

**SalsaAPI (Duplication)**

## PASSERELLE\_ROOT

Passerelle

**SalsaAPI (Duplication)**

## LIVE\_ROOT

SALSA

DataRecorderBean

ScanResultBean

DataFitterBean

Comete

SalsaAPI

ds\_SimpleScan

## DEVICE\_ROOT

ds\_DataFitter

ds\_DataRecorder

ds\_ScanServer

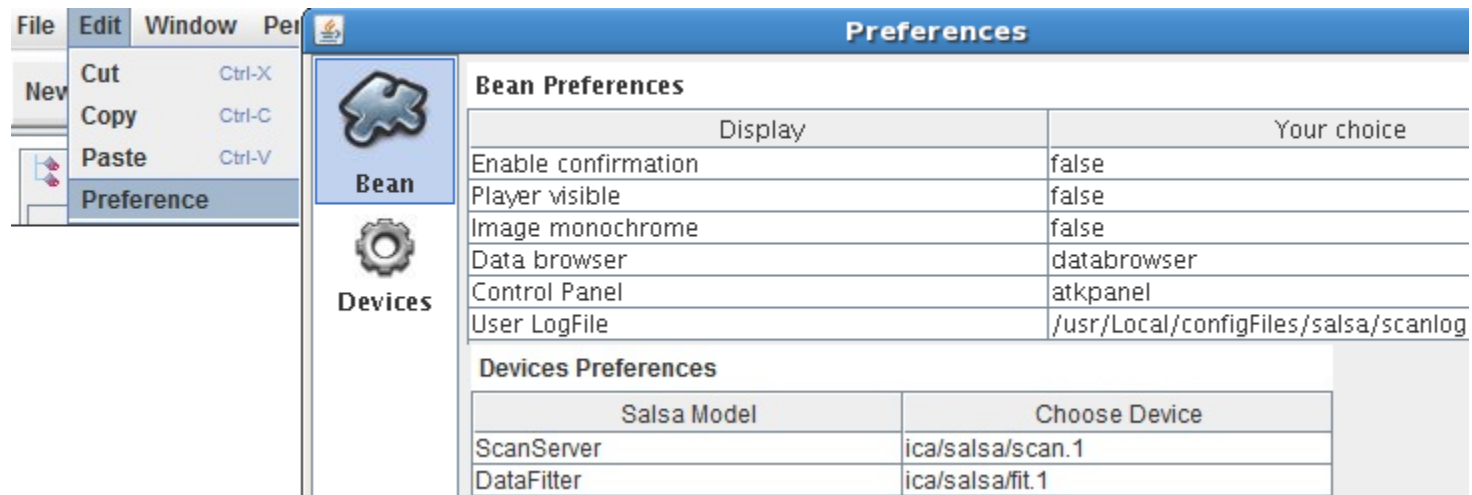
Actuators and Sensors

- **TANGO** : The control system of SOLEIL
- **Device** : A TANGO program for an equipment or a process.
- **Attribute** : An equipment or a process parameter (eg : position).
- **Command** : A equipment or a process action (eg : Move or Count)
- **Scan server device** : TheTango device server for processing scan.
- **Nexus** : Format of files of SOLEIL.
- **Sensor** : listened Tango parameter
- **Actuator** : moved Tango parameter
- **Hook** : A simple Tango command (no argument as Start, Close...)
- **Perspective** : A custom view disposition.
- Scan configuration :
- Scan result :

Salsa needs for several environment variables to be set.

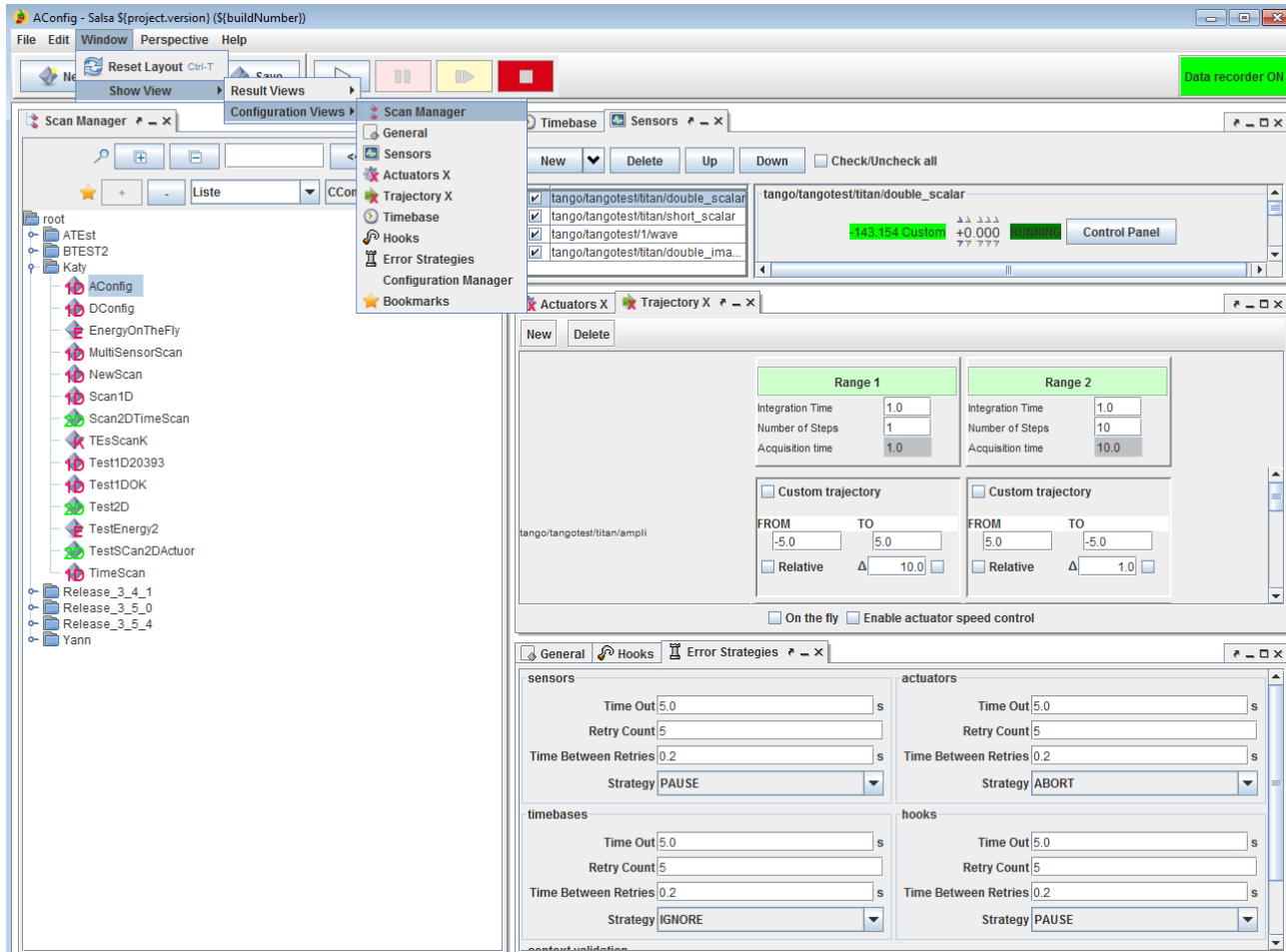
- TANGO\_HOST  
Host of the tango database (localhost:20001)
- SALSA\_SERVER\_URL  
Url of the salsa database (jdbc:mysql://localhost/salsa)
- SALSA\_LOGIN  
The login of the user connected on Salsa database
- SALSA\_PERSPECTIVES\_DIRECTORY  
The folder for the perspectives files
- SALSA\_DEVICE\_PREFERENCES  
The file for the device configurations
- SALSA\_UI\_PREFERENCES  
The file for the user interface configurations

- Log file setting
- Scan server device setting
- Data Fitter device setting
- Nexus file browser application



## Configuration mode : (“salsa” command)

In this mode you can create, modify and remove a scan configuration.  
All the configuration edition views are available in the Menu  
Window > Show View > Configuration Views



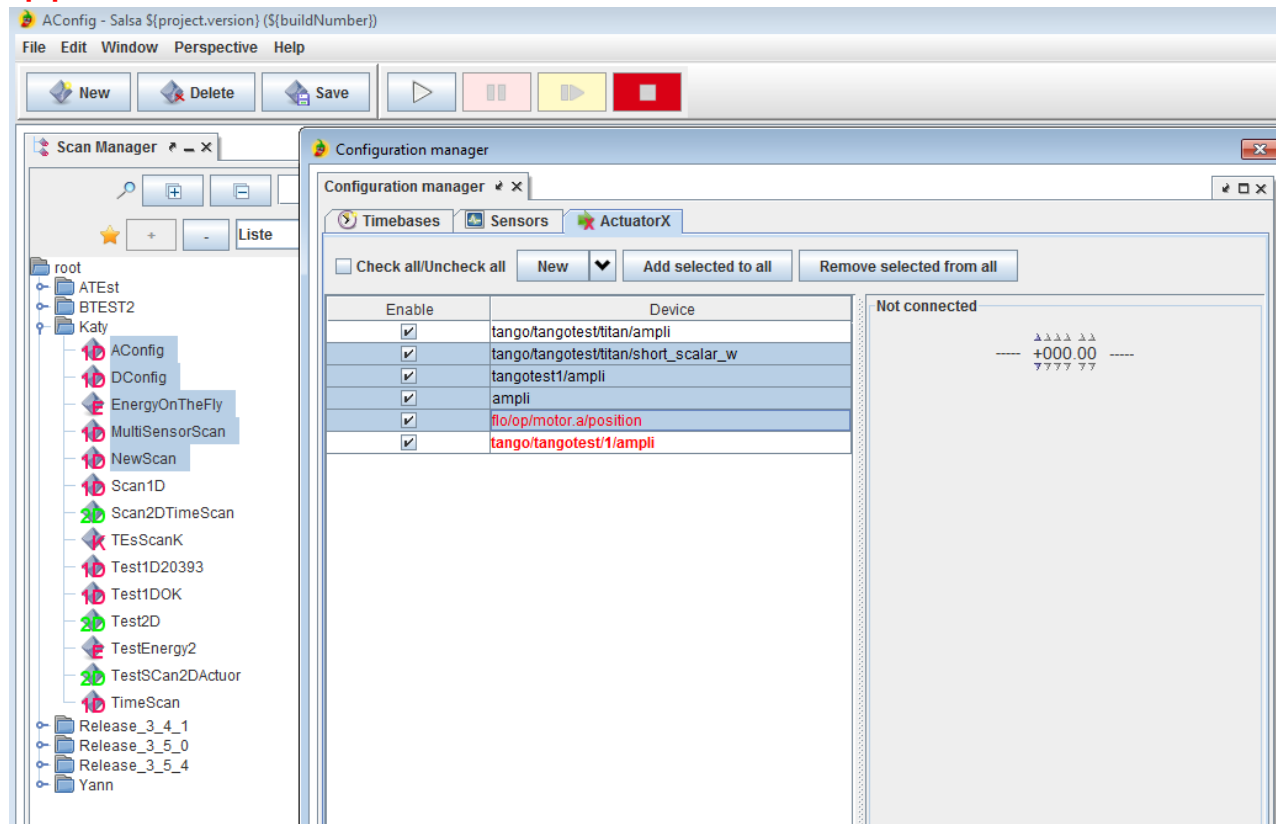
## Configuration manager (New !)

The management of several configurations is possible now.

You can Add, Remove, Enable/Disable a TimeBase, Sensor or Actuator on several configurations.

Select several configuration in the Scan Manager Tree.

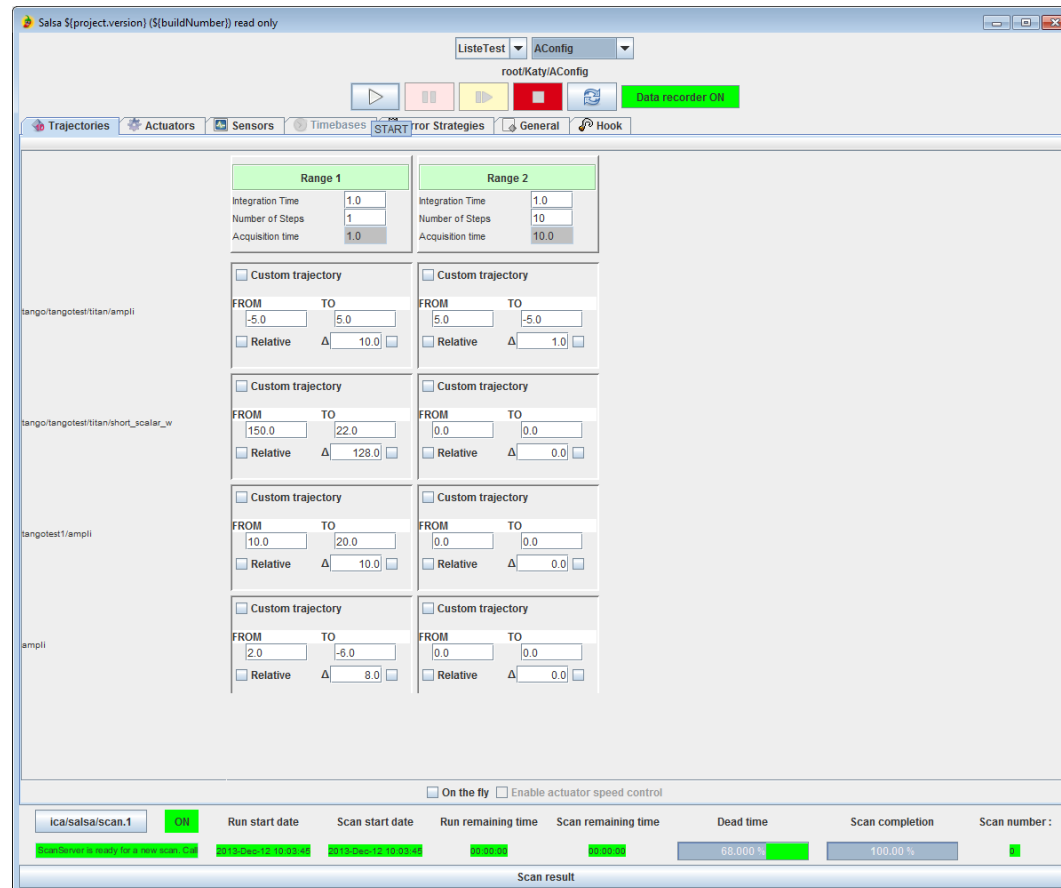
The **devices appear in red color**, are the uncommon devices.



## Salsa read only: (“salsa-ro” command)

In this mode you can only select a Scan configuration from the bookmark (see page 33-34 of the manual), modify the scan configuration (delete or add devices, or hook is not possible).

And you can play the configuration.



The screenshot shows the Salsa Mode software interface. At the top, there's a title bar "Salsa \$[project.version] (\$[buildNumber]) read only". Below it, a toolbar contains buttons for "ListoTest", "AConfig", and "Data recorder ON". A tabbed interface shows "Trajectories", "Actuators", "Sensors", "Timebases", "START", "Error Strategies", "General", and "Hook". The main area is divided into two columns, "Range 1" and "Range 2", each with settings for "Integration Time", "Number of Steps", and "Acquisition time". Below these are sections for "Custom trajectory" with "FROM" and "TO" values and a "Relative" checkbox. The bottom status bar displays "On the fly" and "Enable actuator speed control" checkboxes, along with a table of scan parameters: "Run start date", "Scan start date", "Run remaining time", "Scan remaining time", "Dead time", "Scan completion", and "Scan number".

Run start date	Scan start date	Run remaining time	Scan remaining time	Dead time	Scan completion	Scan number
2013-09-24 10:10:40	2013-09-24 10:10:40	00:00:00	00:00:00	00:00:00	100.00 %	1

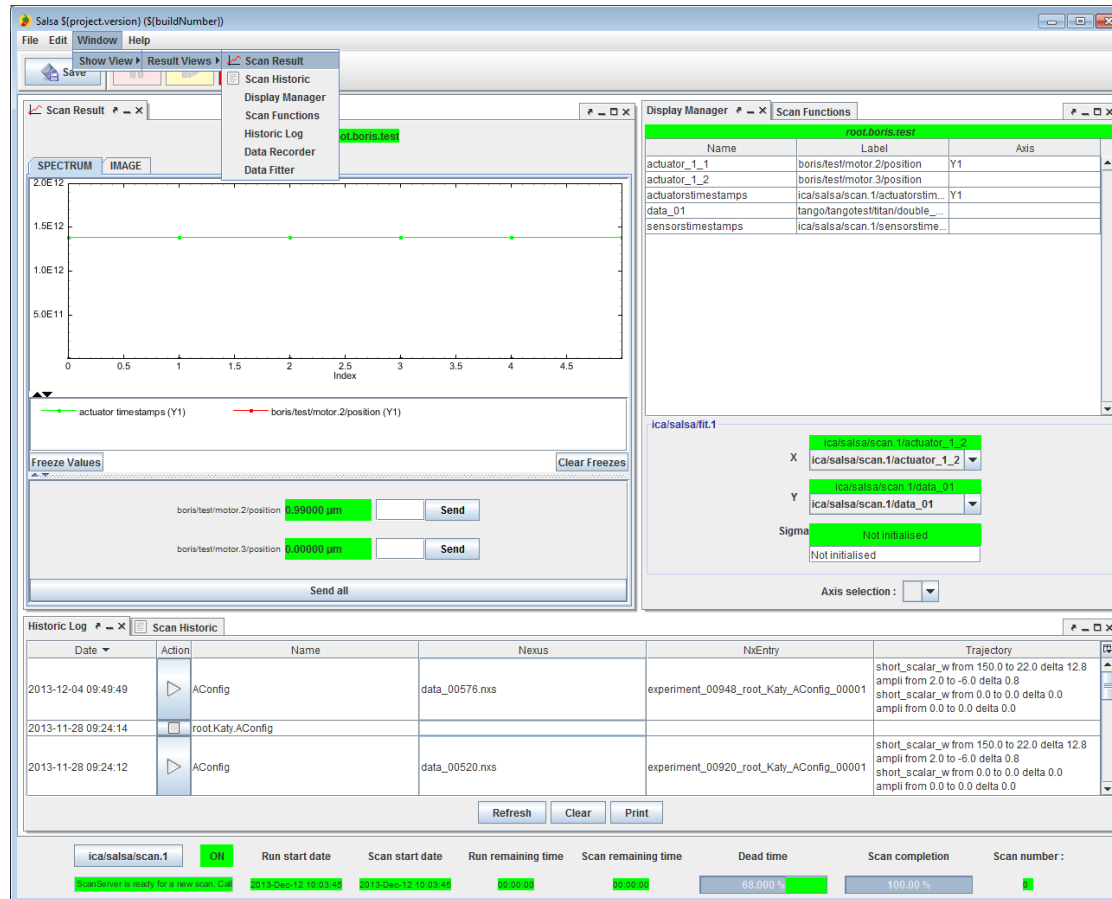


## Salsa result : (“salsa-result” command)

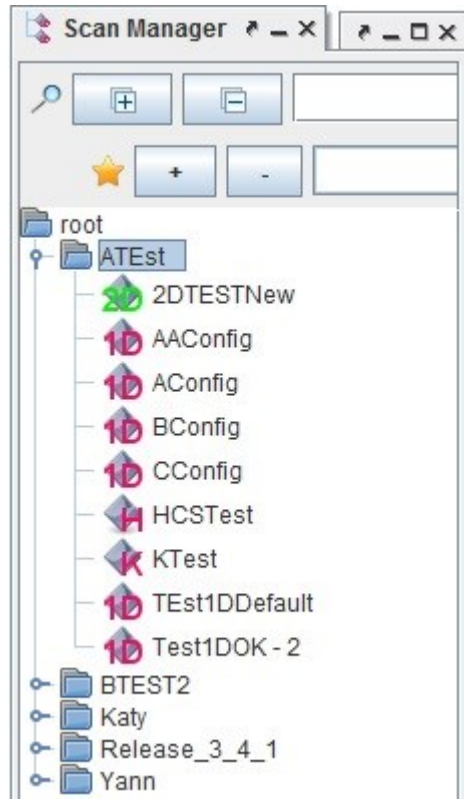
In this mode you can only visualize the current scan result.

All the views for the visualization are available in the Menu :

Window > Show View > Result Views



- New scan configuration. It exist several kind of scan



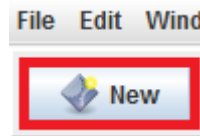
1D = dimension X

2D = dimension X et dimension Y

HCS = 1D continu hardware with a time base

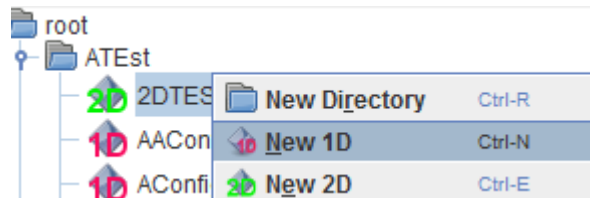
K = 1D specific trajectory in 3 phases

E = 1D trajectory visualized differently in a table



Click on the New button

Or right click on the tree to make appears the configuration management menu.



- LIGNE/EX/SCAN.1/scanNumber
- LIGNE/EX/SCAN.1/ actuatorsDelay
- LIGNE/EX/SCAN.1/ zigzag
- LIGNE/EX/SCAN.1/ onTheFly
- LIGNE/EX/SCAN.1/ enableScanSpeed
- LIGNE/EX/SCAN.1/ afterRunActionType

*scanserver  
attributes*

The screenshot shows a software window with a tabbed interface. The 'General' tab is active, displaying various parameters for a scan. The parameters are as follows:

Parameter	Value
ScanNumber	1
Actuator delay	0.0
zigzag	<input type="checkbox"/>
on the fly	<input type="checkbox"/>
enable actuator speed	<input type="checkbox"/>
Post Scan Behaviour	No operation
	tango/tangotest/titan/double_scalar
	samba/mono/b1/position
	Nothing to do

- LIGNE/EX/SCAN.1/sensors
- LIGNE/EX/SCAN.1/timebases
- LIGNE/EX/SCAN.1/actuators
- LIGNE/EX/SCAN.1/trajectories

*scanserver  
attributes*

- Predefined values defined in the device properties :
  - ActuatorsFile,
  - SensorsFile,
  - TimebasesFile

Device properties [ICA/SALSA/SCAN.1]

Property name	Value
ActuatorsFile	menu::TangoTest Titan::null submenu::ampli::tango/tangotest/titan/ampli submenu::short_scalar_w::tango/tangotest/titan/short_scalar_w
SensorsFile	menu::TangoTest Titan::null submenu::double_scalar::tango/tangotest/titan/double_scalar submenu::short_scalar::tango/tangotest/titan/short_scalar
SynchronizeData	false
TimebasesFile	menu::Simulated Counter::null submenu::NI6602::test/ni6602/simuled

General

Timebase

New

Delete

Up

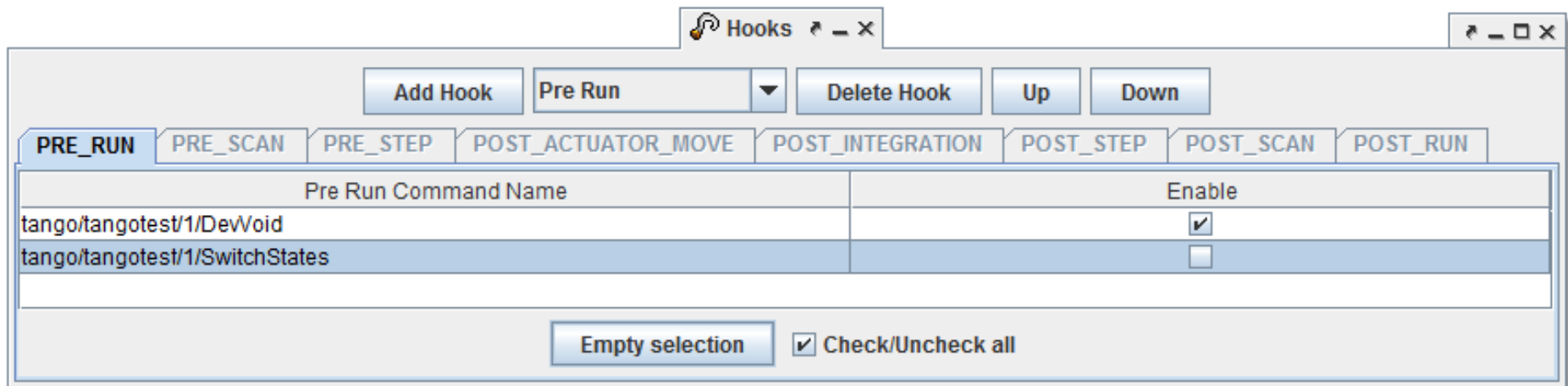
Down

Simulated Counter ▶

NI6602

- LIGNE/EX/SCAN.1/postActuatorMoveHooks
- LIGNE/EX/SCAN.1/postIntegrationHooks
- LIGNE/EX/SCAN.1/postRunHooks
- LIGNE/EX/SCAN.1/postScanHooks
- LIGNE/EX/SCAN.1/postStepHooks
- ...

*scanserver  
attributes*



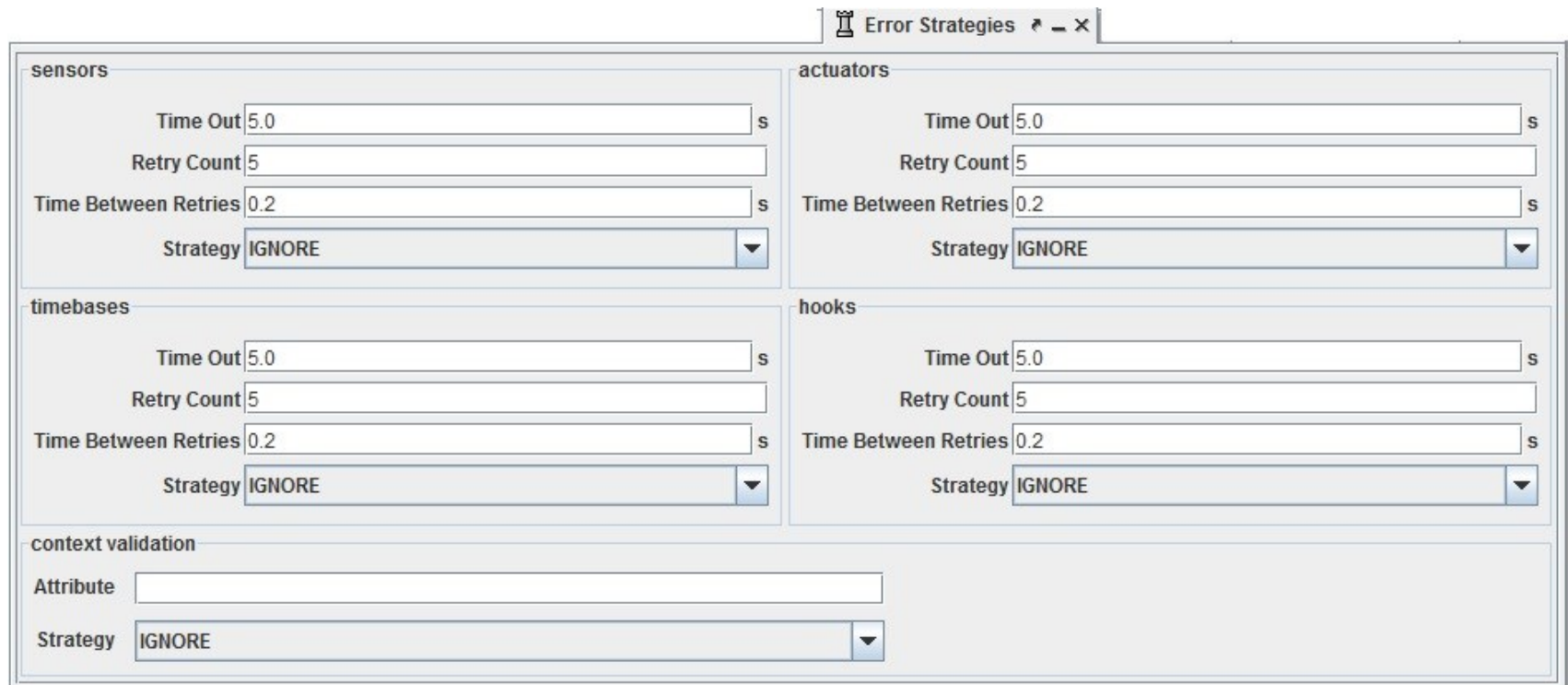
The screenshot shows a window titled "Hooks" with a toolbar containing "Add Hook", "Pre Run" (with a dropdown arrow), "Delete Hook", "Up", and "Down". Below the toolbar are tabs for different hook categories: PRE\_RUN, PRE\_SCAN, PRE\_STEP, POST\_ACTUATOR\_MOVE, POST\_INTEGRATION, POST\_STEP, POST\_SCAN, and POST\_RUN. The "PRE\_RUN" tab is selected, showing a table with two columns: "Pre Run Command Name" and "Enable".

Pre Run Command Name	Enable
tango/tangotest/1/DevVoid	<input checked="" type="checkbox"/>
tango/tangotest/1/SwitchStates	<input type="checkbox"/>

At the bottom of the window, there is a button labeled "Empty selection" and a checkbox labeled "Check/Uncheck all" which is currently checked.

- LIGNE/EX/SCAN.1/sensorsErrorStrategy
- LIGNE/EX/SCAN.1/sensorsRetryCount
- LIGNE/EX/SCAN.1/contextValidation

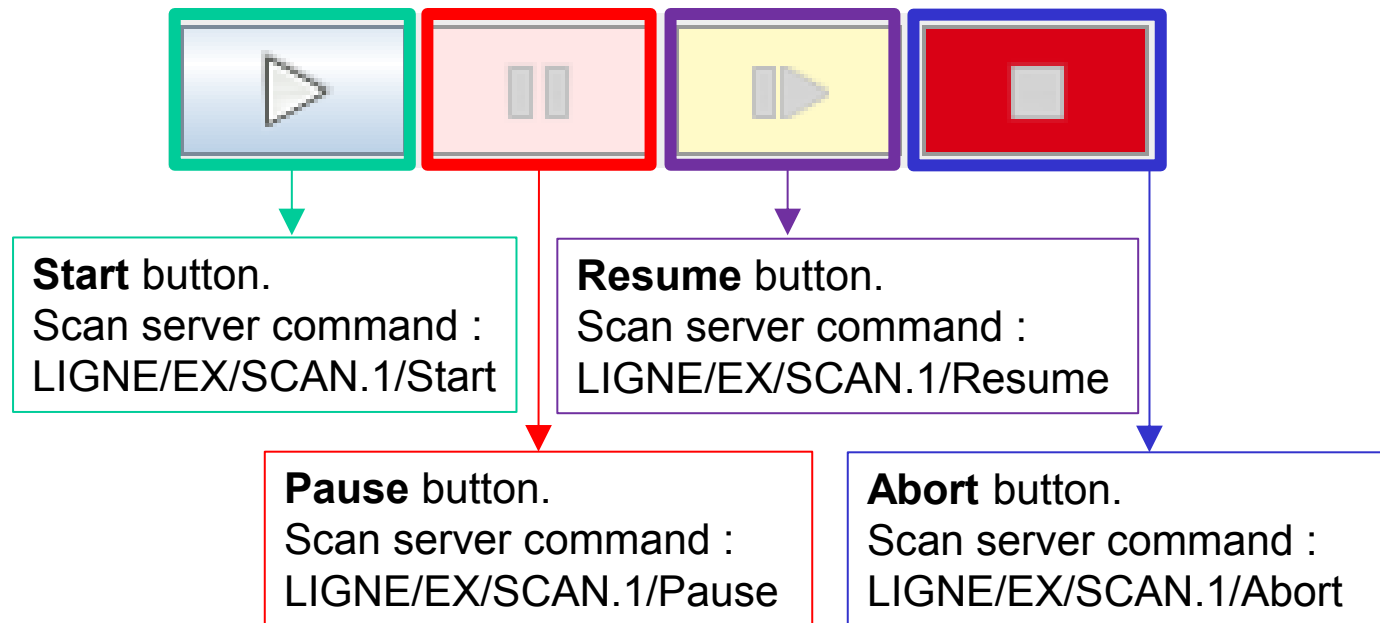
*scanserver  
attributes*



The screenshot shows the 'Error Strategies' configuration window. It contains the following sections and fields:

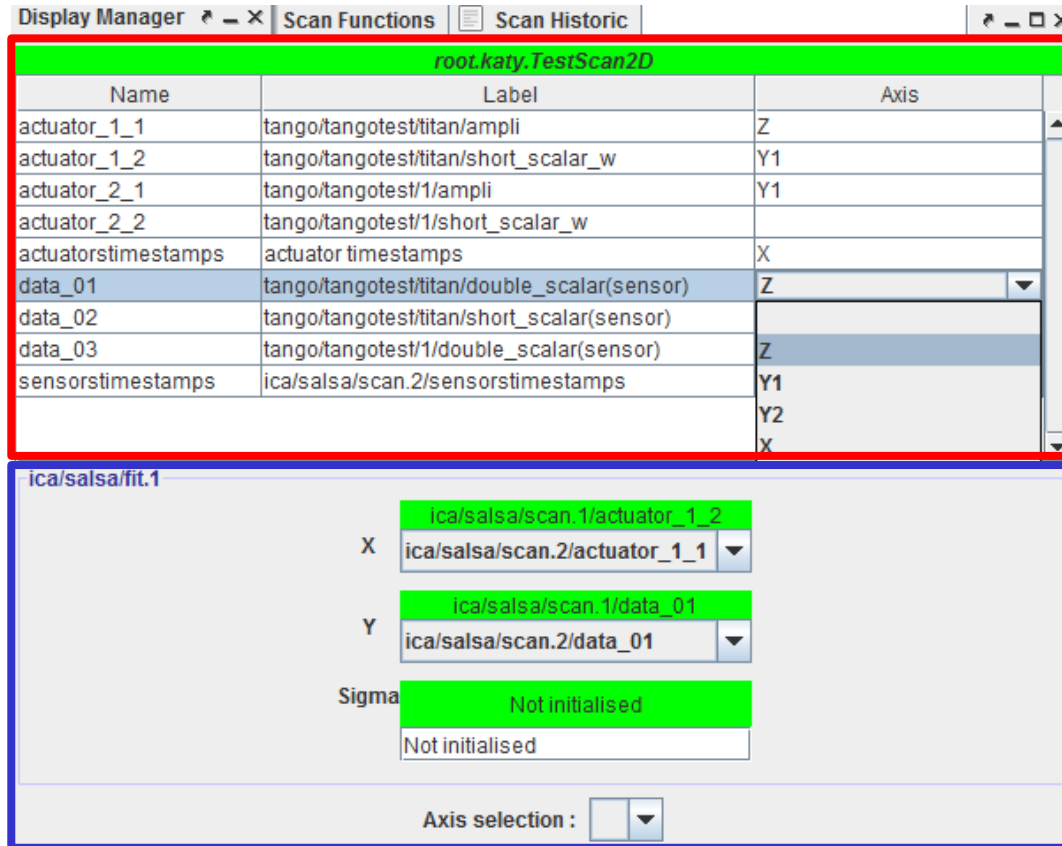
- sensors**:
  - Time Out: 5.0 s
  - Retry Count: 5
  - Time Between Retries: 0.2 s
  - Strategy: IGNORE
- actuators**:
  - Time Out: 5.0 s
  - Retry Count: 5
  - Time Between Retries: 0.2 s
  - Strategy: IGNORE
- timebases**:
  - Time Out: 5.0 s
  - Retry Count: 5
  - Time Between Retries: 0.2 s
  - Strategy: IGNORE
- hooks**:
  - Time Out: 5.0 s
  - Retry Count: 5
  - Time Between Retries: 0.2 s
  - Strategy: IGNORE
- context validation**:
  - Attribute: (empty text field)
  - Strategy: IGNORE

First select a configuration before Starting a scan configuration.  
When no configuration is selected, the Start button is disable.



- LIGNE/EX/SCAN.1/actuatorsDataList
- LIGNE/EX/SCAN.1/sensorsDataList
- LIGNE/EX/SCAN.1/sensorsTimestamps
- LIGNE/EX/SCAN.1/actuatorsTimestamps
- LIGNE/EX/FIT.1 /fittedDataY

*scanserver  
attributes*



The screenshot shows the 'Display Manager' window with two tabs: 'Scan Functions' and 'Scan Historic'. The 'Scan Functions' tab is active, displaying a table of scan functions under the path 'root.katy.TestScan2D'.

Name	Label	Axis
actuator_1_1	tango/tangotest/titan/ampli	Z
actuator_1_2	tango/tangotest/titan/short_scalar_w	Y1
actuator_2_1	tango/tangotest/1/ampli	Y1
actuator_2_2	tango/tangotest/1/short_scalar_w	
actuatorstimestamps	actuator timestamps	X
data_01	tango/tangotest/titan/double_scalar(sensor)	Z
data_02	tango/tangotest/titan/short_scalar(sensor)	
data_03	tango/tangotest/1/double_scalar(sensor)	Z
sensorstimestamps	ica/salsa/scan.2/sensorstimestamps	Y1
		Y2
		X

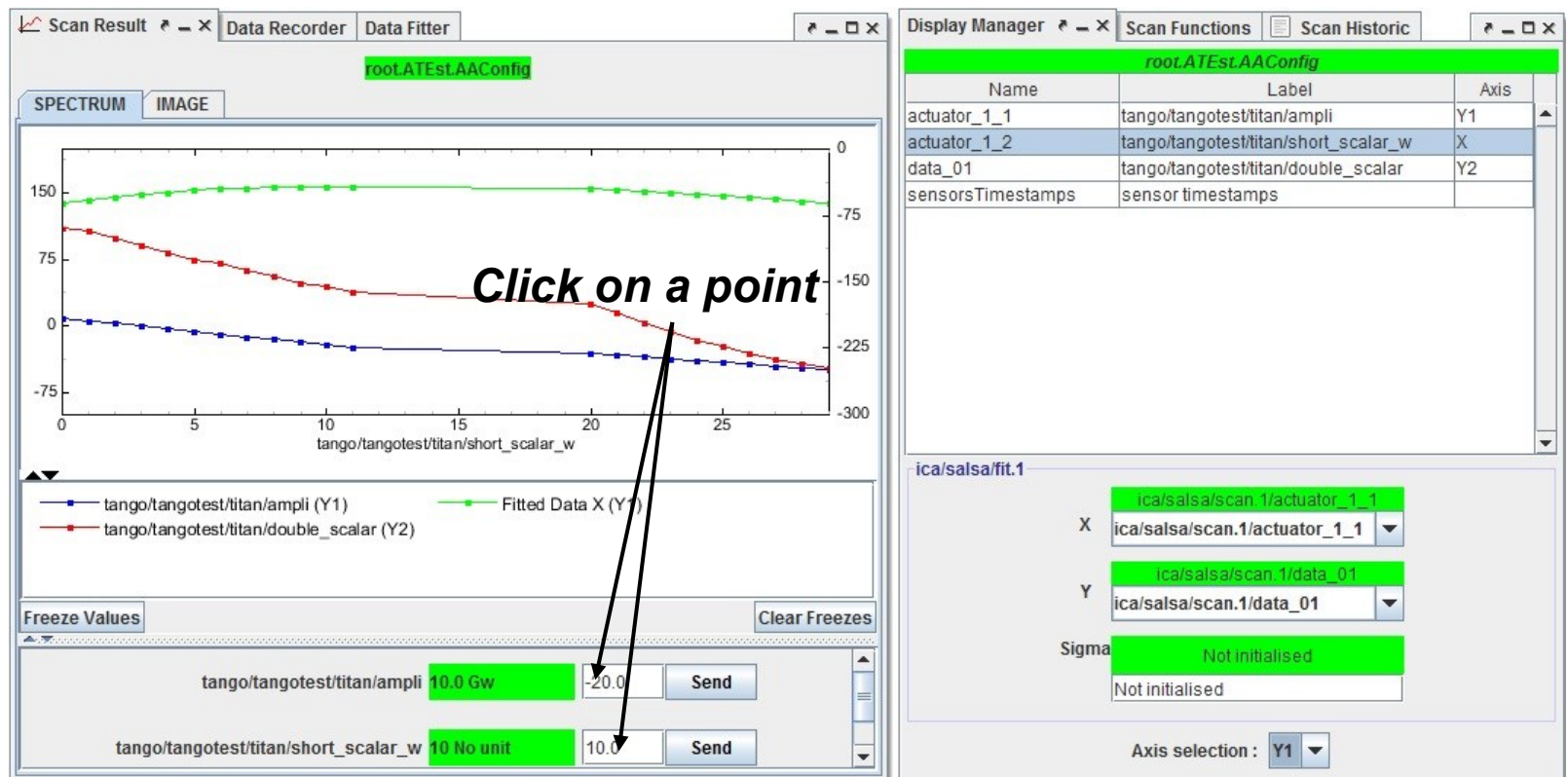
Below the table, the 'ica/salsa/fit.1' section shows data fitting parameters:

- X: ica/salsa/scan.1/actuator\_1\_2 (dropdown menu)
- Y: ica/salsa/scan.1/data\_01 (dropdown menu)
- Sigma: Not initialised (dropdown menu)
- Axis selection: (dropdown menu)

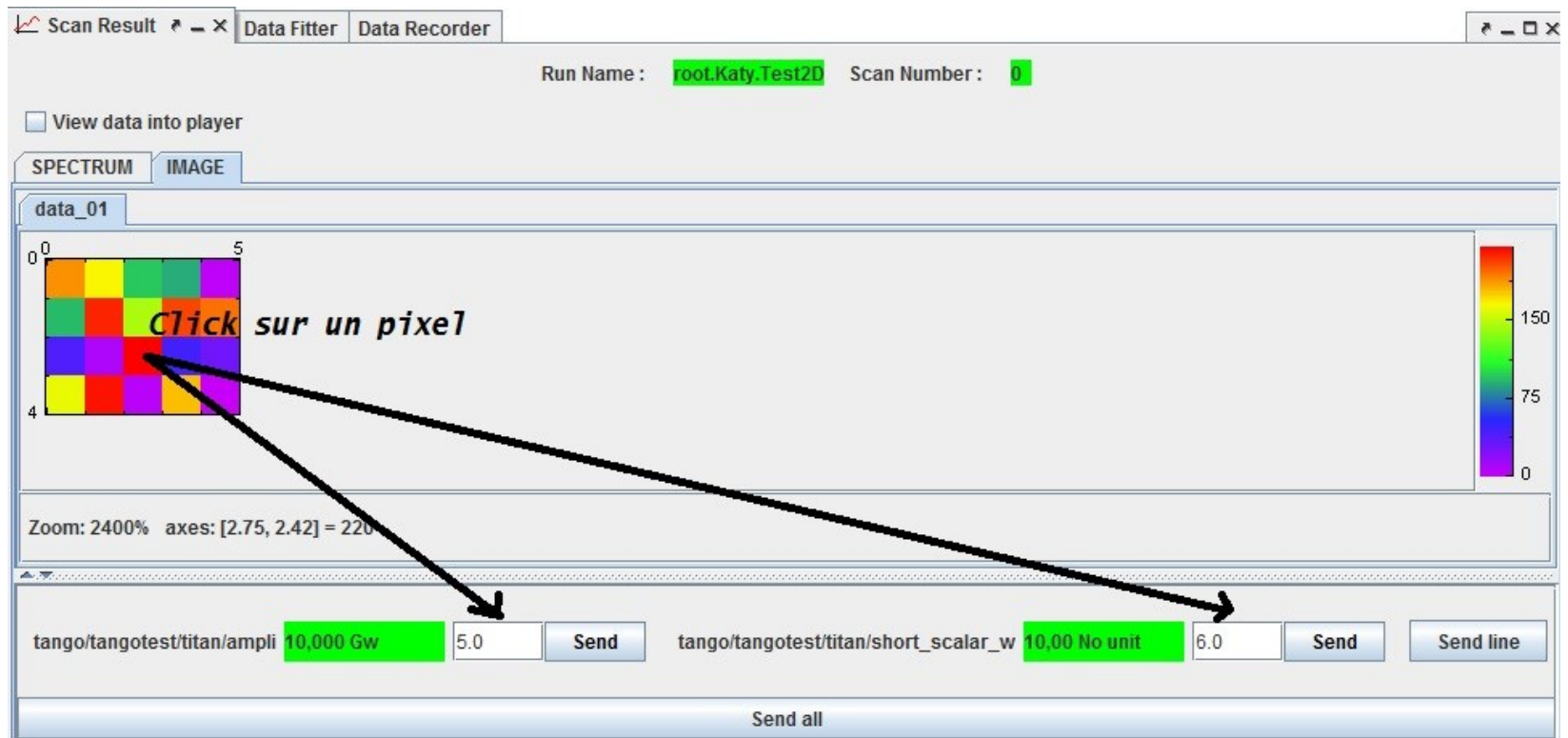
*datafitter  
attributes*



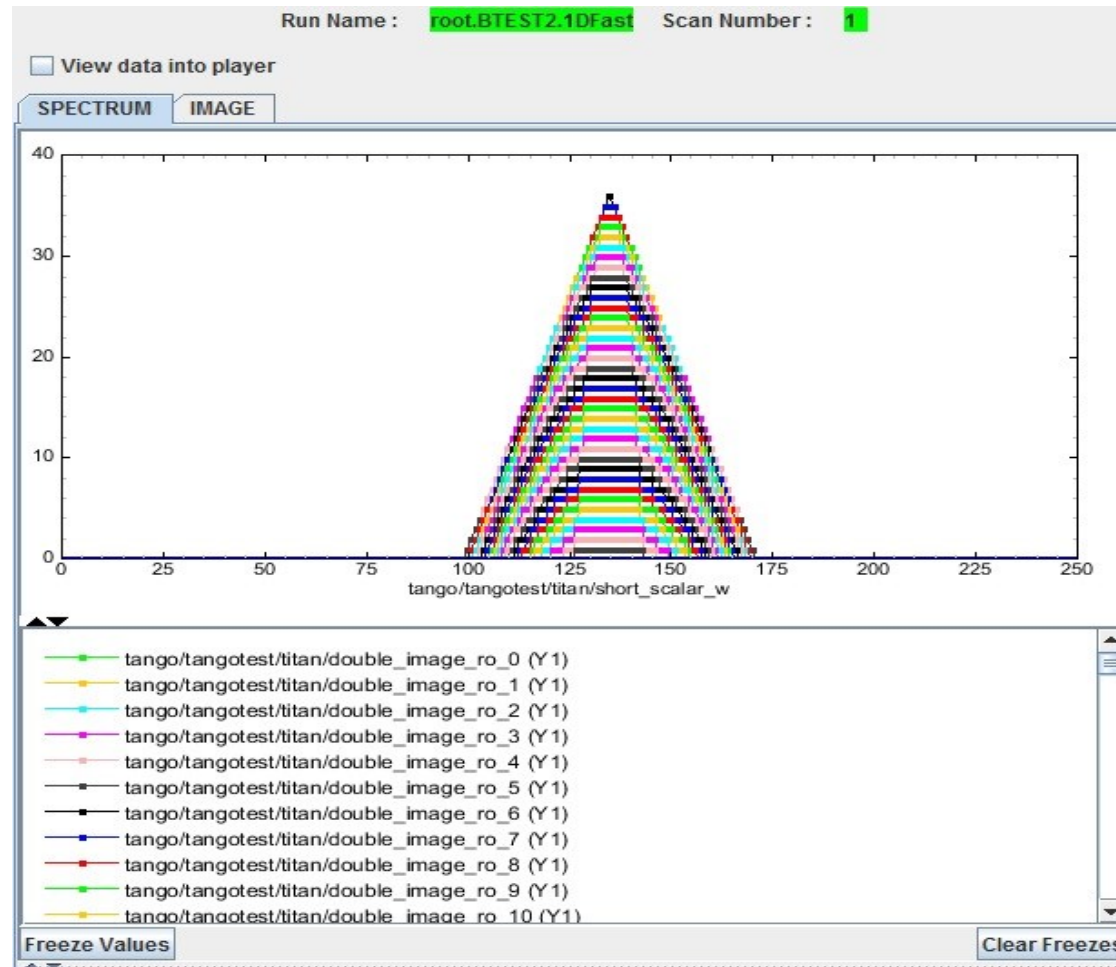
- LIGNE/EX/SCAN.1/data\_XX *scanserver attribute*
- Send the actuator to the selected point.



- LIGNE/EX/SCAN.1/data\_XX *scanserver attribute*
- Send the actuator to the selected point.



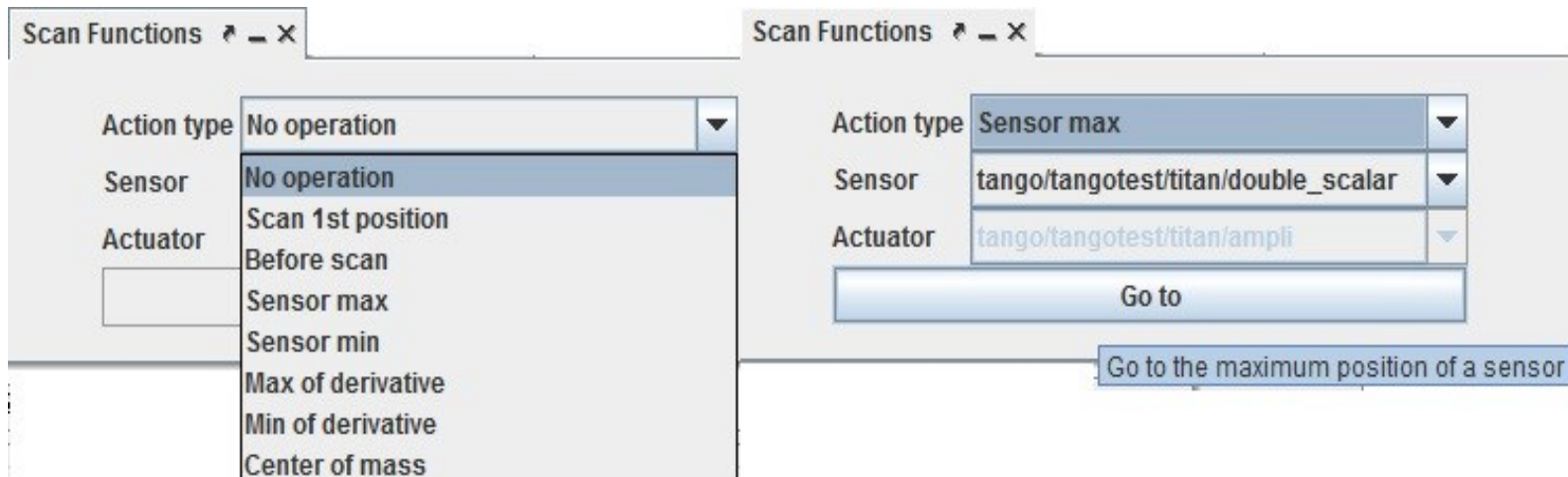
- Display a 2D Image in N Spectrum in Chart
  - LIGNE/EX/SCAN.1/data\_XX *scanserver attribute*



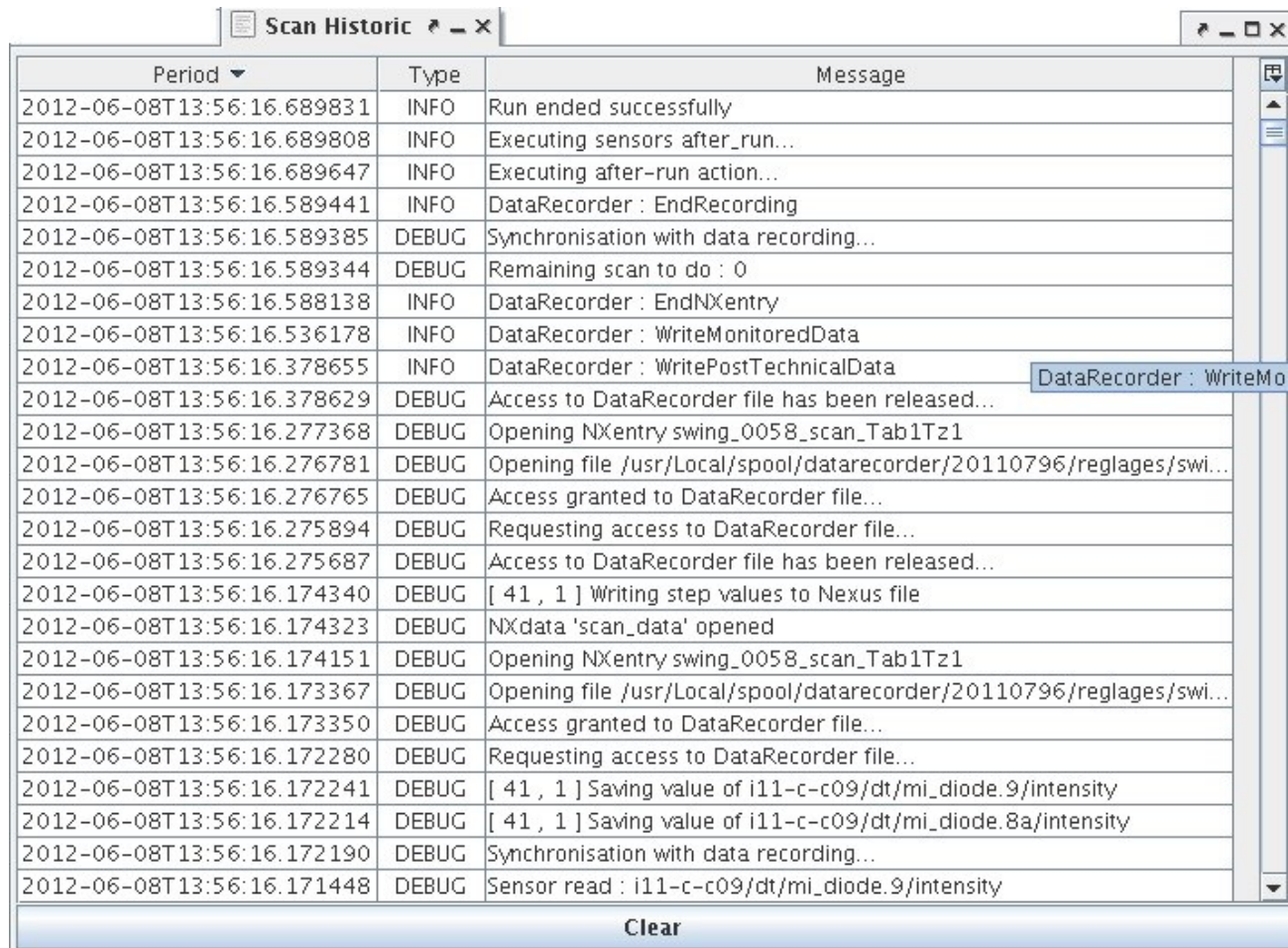
- Executed by the user on demand (except in Abort case) !

- LIGNE/EX/SCAN.1/afterRunActionType
- LIGNE/EX/SCAN.1/afterRunActionSensor
- LIGNE/EX/SCAN.1/afterRunActionActuator
- LIGNE/EX/SCAN.1/afterRunActionActuatorValue
- Commande LIGNE/EX/SCAN.1/ExecuteAction

*scanserver  
attributes*



- Current scan historic (can be very useful for debugging !)
  - LIGNE/EX/SCAN.1/historic *scanserver attribute*



The screenshot shows a window titled 'Scan Historic' with a table of log entries. The table has three columns: 'Period', 'Type', and 'Message'. The entries are sorted by time, starting from 2012-06-08T13:56:16.689831. The messages include various status reports, debug information, and error messages related to the scan process and data recording.

Period	Type	Message
2012-06-08T13:56:16.689831	INFO	Run ended successfully
2012-06-08T13:56:16.689808	INFO	Executing sensors after_run...
2012-06-08T13:56:16.689647	INFO	Executing after-run action...
2012-06-08T13:56:16.589441	INFO	DataRecorder : EndRecording
2012-06-08T13:56:16.589385	DEBUG	Synchronisation with data recording...
2012-06-08T13:56:16.589344	DEBUG	Remaining scan to do : 0
2012-06-08T13:56:16.588138	INFO	DataRecorder : EndNXentry
2012-06-08T13:56:16.536178	INFO	DataRecorder : WriteMonitoredData
2012-06-08T13:56:16.378655	INFO	DataRecorder : WritePostTechnicalData
2012-06-08T13:56:16.378629	DEBUG	Access to DataRecorder file has been released...
2012-06-08T13:56:16.277368	DEBUG	Opening NXentry swing_0058_scan_Tab1Tz1
2012-06-08T13:56:16.276781	DEBUG	Opening file /usr/Local/spool/datarecorder/20110796/reglages/swi...
2012-06-08T13:56:16.276765	DEBUG	Access granted to DataRecorder file...
2012-06-08T13:56:16.275894	DEBUG	Requesting access to DataRecorder file...
2012-06-08T13:56:16.275687	DEBUG	Access to DataRecorder file has been released...
2012-06-08T13:56:16.174340	DEBUG	[ 41 , 1 ] Writing step values to Nexus file
2012-06-08T13:56:16.174323	DEBUG	NXdata 'scan_data' opened
2012-06-08T13:56:16.174151	DEBUG	Opening NXentry swing_0058_scan_Tab1Tz1
2012-06-08T13:56:16.173367	DEBUG	Opening file /usr/Local/spool/datarecorder/20110796/reglages/swi...
2012-06-08T13:56:16.173350	DEBUG	Access granted to DataRecorder file...
2012-06-08T13:56:16.172280	DEBUG	Requesting access to DataRecorder file...
2012-06-08T13:56:16.172241	DEBUG	[ 41 , 1 ] Saving value of i11-c-c09/dt/mi_diode.9/intensity
2012-06-08T13:56:16.172214	DEBUG	[ 41 , 1 ] Saving value of i11-c-c09/dt/mi_diode.8a/intensity
2012-06-08T13:56:16.172190	DEBUG	Synchronisation with data recording...
2012-06-08T13:56:16.171448	DEBUG	Sensor read : i11-c-c09/dt/mi_diode.9/intensity

Clear



- Scans executed actions via SalsaAPI historic (historic file)
  - ds\_simpleScan, passerelle and Salsa.
  - Replay (exactly) a scan via Play button
  - Click on the nexus file name to open it a nexus file browser application

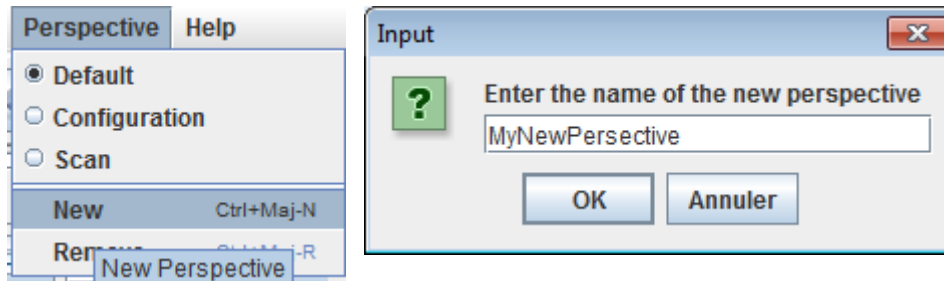
Historic Log				
Date ▼	Action	Name	Nexus	Trajectory
2012-06-08 11:29:45	▶	1DFast	/tmp/data/contacq/contacq-soleil/contacq/2012/0323/toto_2012-06-08_09-37-19_0	short_scalar_w from -3.0 to 10.0 delta 2.6 ampli from 30.0 to 25.0 delta 1.0 short_scalar_w from 15.0 to 22.0 delta 0.4375 ampli from 20.0 to 12.0 delta 0.5
			<a href="#">/tmp/data/contacq/contacq-soleil/contacq/2012/0323/toto_2012-06-08_09-37-19_0309.nxs</a>	
2012-06-07 17:03:21	▶	1DFast	/tmp/data/contacq/contacq-soleil/contacq/2012/0323/toto_2012-06-07_14-12-10_0	short_scalar_w from -3.0 to 10.0 delta 2.6 ampli from 30.0 to 25.0 delta 1.0 short_scalar_w from 15.0 to 22.0 delta 0.4375 ampli from 20.0 to 12.0 delta 0.5 short_scalar_w from 30.0 to 20.0 delta 0.8333333333333334
2012-06-07 14:12:28	☐	root.BTEST2.1DFast	/tmp/data/contacq/contacq-soleil/contacq/2012/0323/toto_2012-06-07_14-12-10_0	
2012-06-07 14:12:17	▶	1DFast	/tmp/data/contacq/contacq-soleil/contacq/2012/0323/toto_2012-06-07_14-12-10_0	short_scalar_w from -3.0 to 10.0 delta 2.6 ampli from 30.0 to 25.0 delta 1.0 short_scalar_w from 15.0 to 22.0 delta 0.4375 ampli from 20.0 to 12.0 delta 0.5 short_scalar_w from 30.0 to 20.0 delta 0.8333333333333334
2012-06-07 14:12:09	☐	root.BTEST2.1DFast	/tmp/data/contacq/contacq-soleil/contacq/2012/0322/toto_2012-06-07_14-11-57_0	
2012-06-07 14:11:56	▶	1DFast	/tmp/data/contacq/contacq-soleil/contacq/2012/0322/toto_2012-06-07_14-11-57_0	short_scalar_w from -3.0 to 10.0 delta 2.6 ampli from 30.0 to 25.0 delta 1.0 short_scalar_w from 15.0 to 22.0 delta 0.4375 ampli from 20.0 to 12.0 delta 0.5 short_scalar_w from 30.0 to 20.0 delta 0.8333333333333334
2012-06-07 10:07:05	☐	root.BTEST2.1DFast	/tmp/data/contacq/contacq-soleil/contacq/2012/0322/toto_2012-06-07_10-06-53_0	
2012-06-07 10:06:53	▶	1DFast	/tmp/data/contacq/contacq-soleil/contacq/2012/0322/toto_2012-06-07_10-06-53_0	short_scalar_w from -3.0 to 10.0 delta 2.6 ampli from 30.0 to 25.0 delta 1.0 short_scalar_w from 15.0 to 22.0 delta 0.4375

Refresh Clear Print

A perspective is a windows disposition preference.

- Create a perspective.

- Menu Perspective -> New
- Enter a perspective name



- Load a perspective.

- Menu Perspective -> Check the desired perspective to load.

- Save a perspective.

- Hide and show the desired views (Window menu)
- Organize your views disposition
- Click on Save Button
- The perspective is also saved at the software exit.



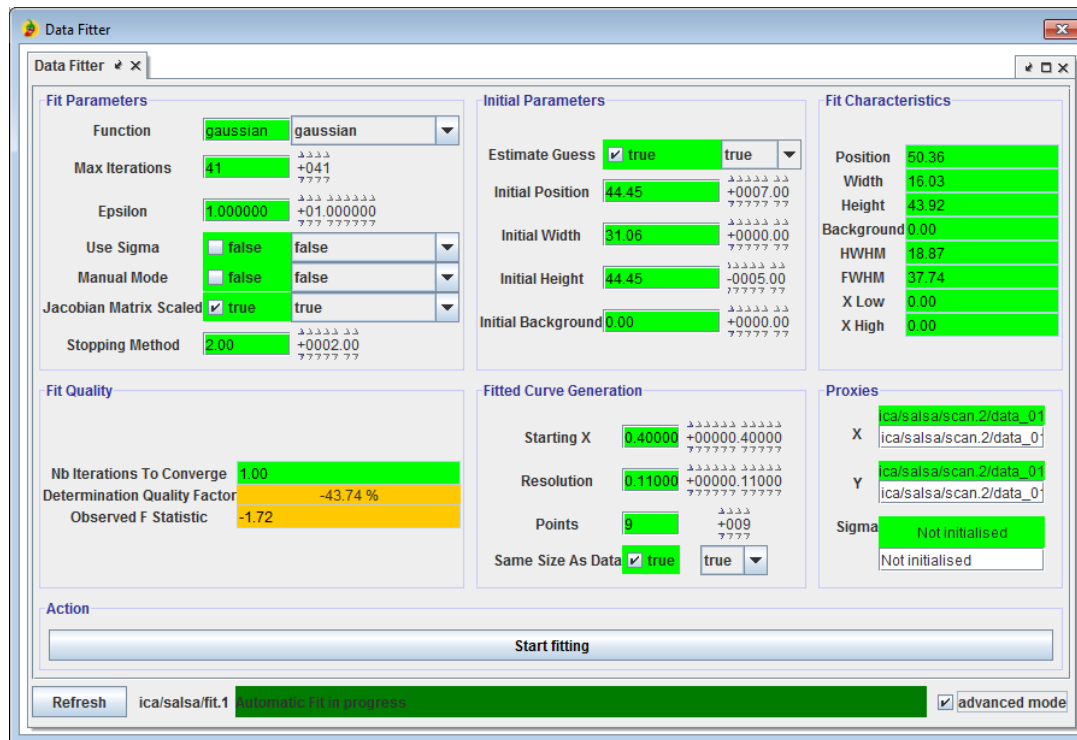
- Remove a perspective.

- Menu Perspective -> Remove.

- DataFitter integration in Display Manager

- LIGNE/EX/FIT.1/fittedDataY
- LIGNE/EX/FIT.1/deviceAttributeNameX
- LIGNE/EX/FIT.1/deviceAttributeNameY

*data fitter  
attributes*



**Data Fitter**

**Fit Parameters**

Function: gaussian (dropdown)

Max Iterations: 41 (spin box)

Epsilon: 1.000000 (spin box)

Use Sigma: false (checkbox)

Manual Mode: false (checkbox)

Jacobian Matrix Scaled: true (checkbox)

Stopping Method: 2.00 (spin box)

**Initial Parameters**

Estimate Guess: true (checkbox)

Initial Position: 44.45 (spin box)

Initial Width: 31.06 (spin box)

Initial Height: 44.45 (spin box)

Initial Background: 0.00 (spin box)

**Fit Characteristics**

Position: 50.36 (spin box)

Width: 16.03 (spin box)

Height: 43.92 (spin box)

Background: 0.00 (spin box)

HWHM: 18.87 (spin box)

FWHM: 37.74 (spin box)

X Low: 0.00 (spin box)

X High: 0.00 (spin box)

**Fit Quality**

Nb Iterations To Converge: 1.00 (spin box)

Determination Quality Factor: -43.74 % (spin box)

Observed F Statistic: -1.72 (spin box)

**Fitted Curve Generation**

Starting X: 0.40000 (spin box)

Resolution: 0.11000 (spin box)

Points: 9 (spin box)

Same Size As Data: true (checkbox)

**Proxies**

X: ica/salsa/scan.2/data\_01 (dropdown)

Y: ica/salsa/scan.2/data\_01 (dropdown)

Sigma: Not initialised (text)

Not initialised (text)

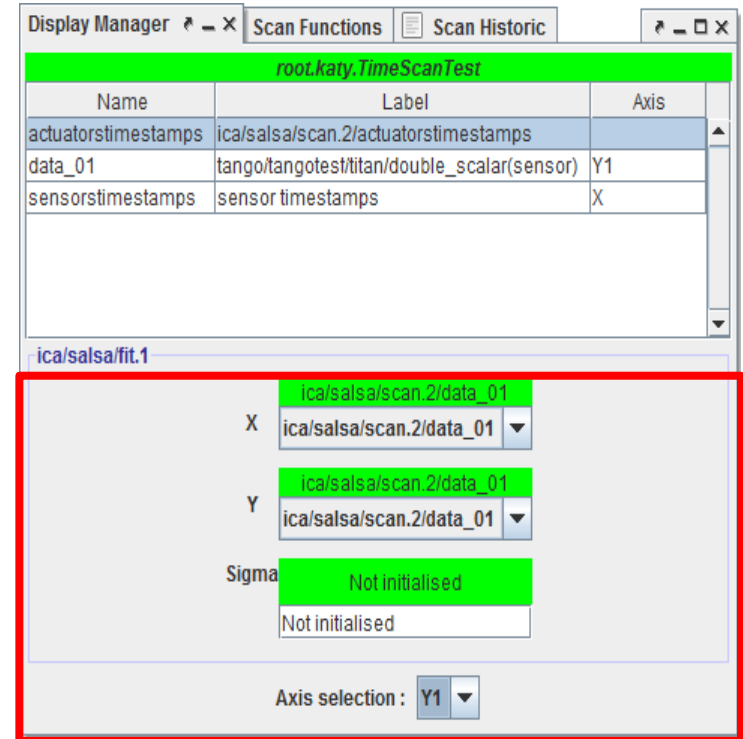
**Action**

Start fitting (button)

Refresh (button)

ica/salsa/fit.1 (text)

advanced mode (checkbox)



**Display Manager**

Scan Functions | Scan Historic

**root.katy.TimeScanTest**

Name	Label	Axis
actuatorstimestamps	ica/salsa/scan.2/actuatorstimestamps	
data_01	tango/tangotest/titan/double_scalar(sensor)	Y1
sensorstimestamps	sensor timestamps	X

ica/salsa/fit.1

X: ica/salsa/scan.2/data\_01 (dropdown)

Y: ica/salsa/scan.2/data\_01 (dropdown)

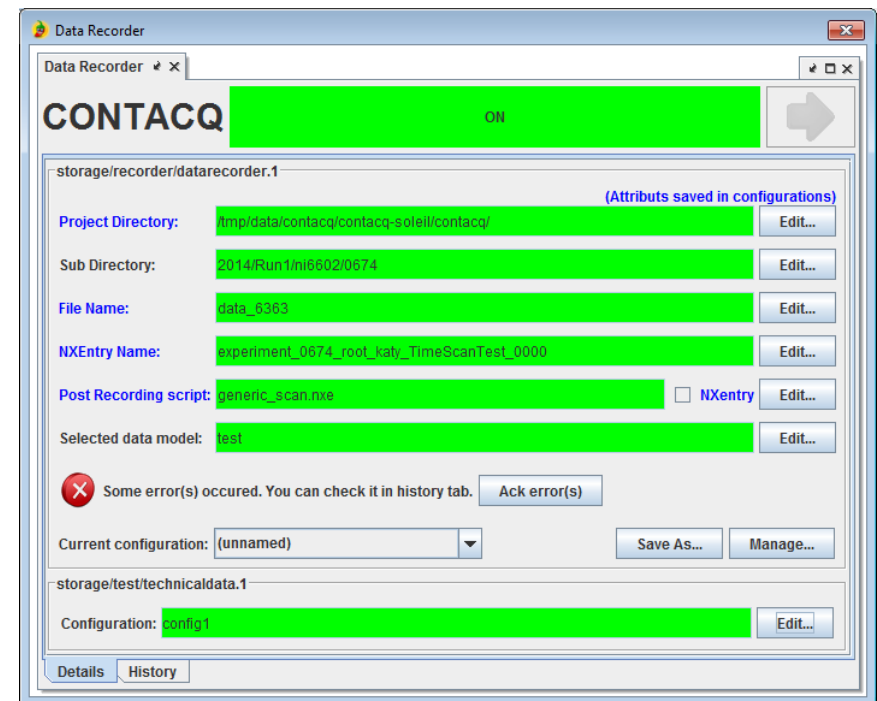
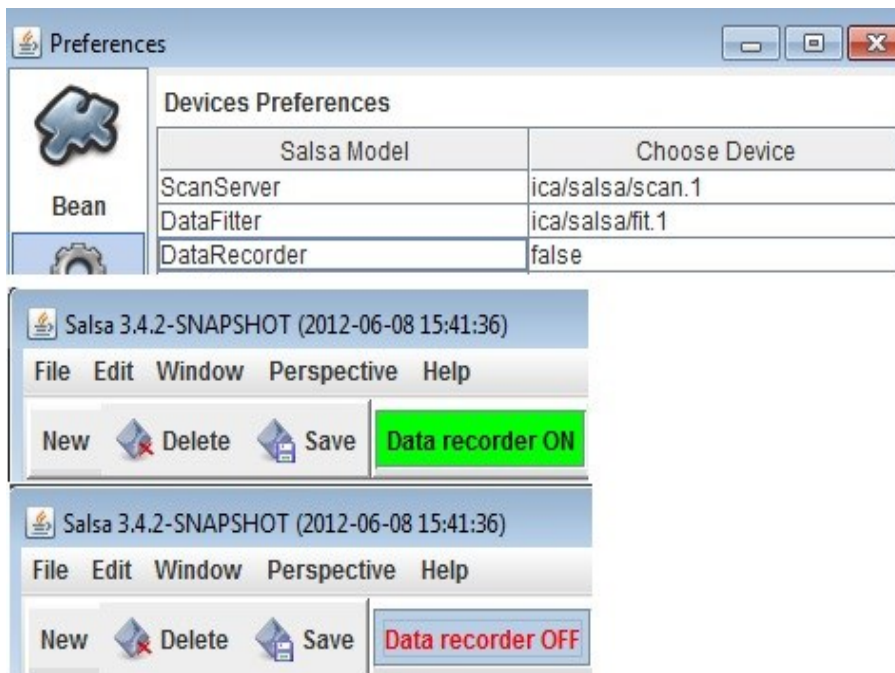
Sigma: Not initialised (text)

Not initialised (text)

Axis selection: Y1 (dropdown)

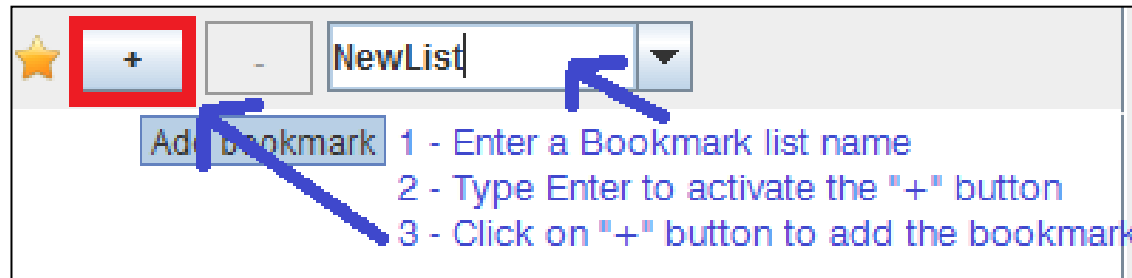


- Data recording service
  - LIGNE/EX/SCAN.1/recordData *scanserver attribute*
- Default configuration of data recording service
  - Menu Edit > Preference > Devices
  - Set true or false
- Enable/Disable recording service
  - Click on the Data recorder button

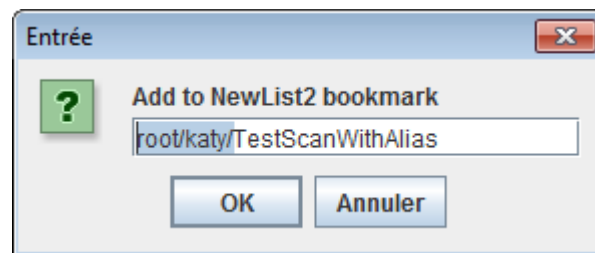
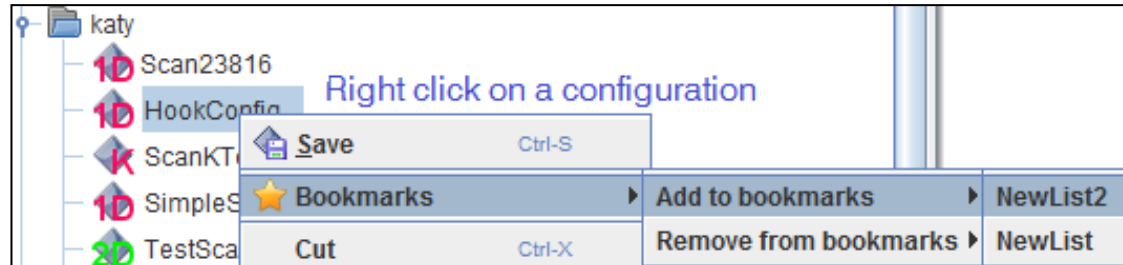


- Bookmarks management

- 1. Create a Bookmark

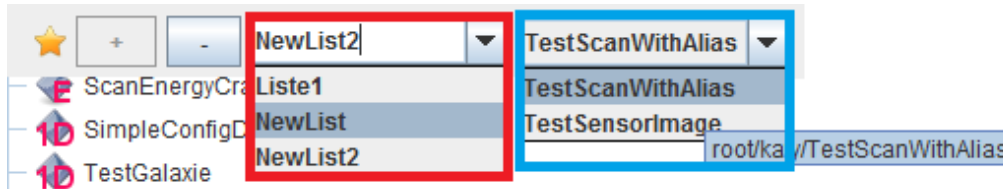


- 2. Fill the bookmark.



Enter a simple name for the added configuration

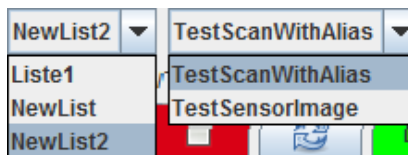
- Configuration selection via bookmarks



- 1 - Select a bookmark in the first combo box.  
It will change the configuration list display in the configuration combobox
- 2 - Select a scan configuration in the second combo box.  
It will select the configuration in the Scan Manager Tree.

- Salsa-ro arguments

- **salsa-ro with no argument**, will display 2 combo box.  
The Bookmarks list and the configuration list associated to a selected bookmark



- **salsa-ro bookmark\_name** (salsa-ro NewList2), will display 1 combo box.  
The configuration list associated to the bookmark name argument.
- **salsa-ro configuration\_name** (salsa-ro ro root/Katy/My1DConfig), will display the view with directly the configuration name argument selected.

In order to find quickly a configuration

- Type a text to find in a configuration name.
- Click on Next button or Previous button to find all match configurations

