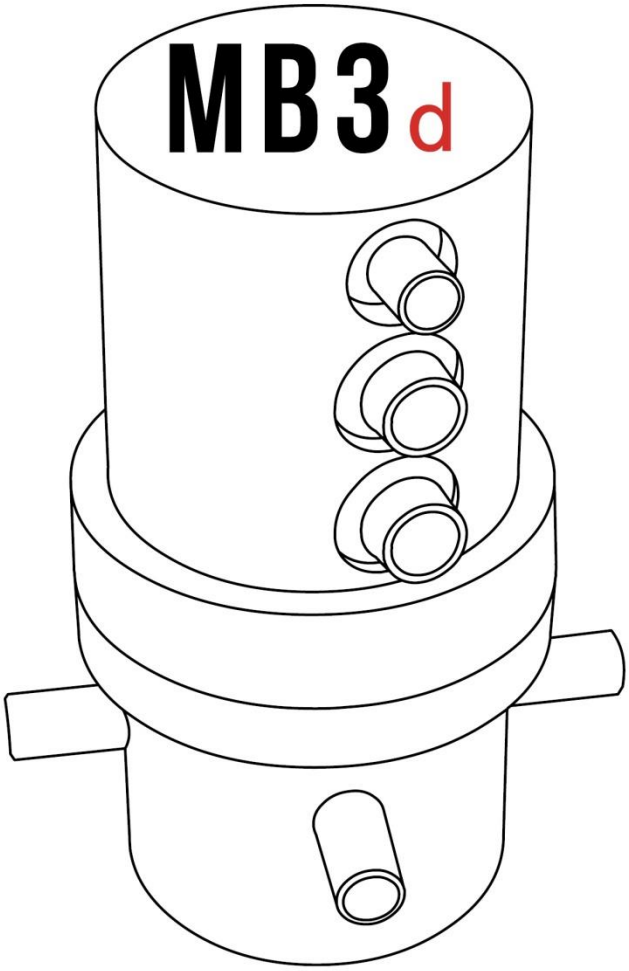
USER GUIDE

DIONISOS SOFTWARE FOR



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Sommaire

1 - INTRODUCTION

1.1 - GLOSSARY

DIONISOS	DIgitizer ON Interfaced Site Operational Software
CEA	French Atomic Energy and Alternative Energies Commission
PSD	Powered Spectral Density
MMI	Man Machine Interface
SDK	Software Development Kit
MB3	Micro Barometer series 3
SEED	Standard for the Exchange of Earthquake Data
OS	Operating System
API	Application Programming Interface
FIR	Finite Impulse Response
IRIS	Incorporated Research Institutes for Seismology
SDS	Seiscomp Data Structure
JSON	JavaScript Object Notation

2 - GENERAL PRESENTATION

2.1 - CONTEXT

Dionisos software is an application specifically designed to control MB3d microbarometer

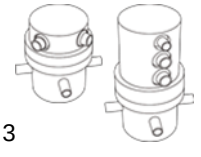
2.2 - OBJECTIVES

- The DIONISOS application responds to three fundamental and complementary requirements:
- Graphic data display from different sources (files, data servers, digitisers), both in real time and delayed.
- Configuring and displaying these sources' states of health (mainly for digitisers),
- Checking that the measurement station is operating correctly, in the geophysical sense (using simple processes, such as PSD calculations).

3 - LAUNCHING DIONISOS

3.1 - FIRST START-UP

The first time you start DIONISOS, a dialog box opens, asking you to select the overall DIONISOS preferences.



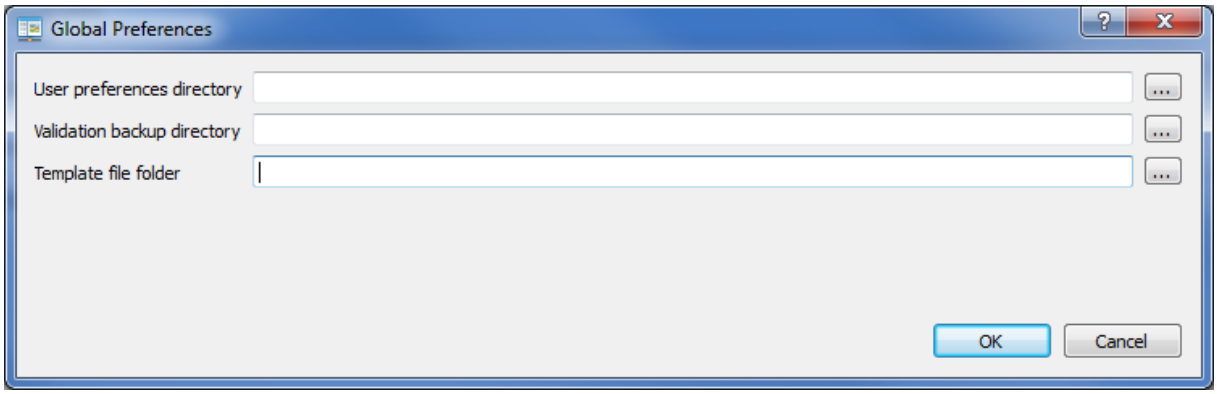


Figure 1 : Overall preference edition

Three preferences must be configured:

- The directory that contains the user preferences
- The validation backup directory
- The directory that contains the templates/scales

This dialog box opens when DIONISOS starts up if any of these three preferences have not been configured.

It may be opened from DIONISOS's "File / Overall preferences" menu. The preferences will only be taken into account the next time DIONISOS is started.

When this dialog box is validated:

- The directory that contains the user preferences is created if it does not exist already and the preference files are copied from the DIONISOS installation if they do not exist.
- The validation backup directory is created if it does not exist
- The directory that contains the template files is created if it does not exist already and the template files are copied from the DIONISOS installation.

3.2 - OPENING A FILE

The Fonyx and miniSEED-type files are associated with the DIONISOS application. So, DIONISOS may be launched directly from a file explorer by opening a Fonyx or miniSEED file. In this case, the last data source configuration is not loaded.

The selected file then appears in the "Selection" dock. The data read is displayed automatically in the central display area (see 6.2 –Importing files).

4 - GENERAL INTERFACE PRESENTATION

The DIONISOS graphic interface features a central area for data display and dockable sub-windows.

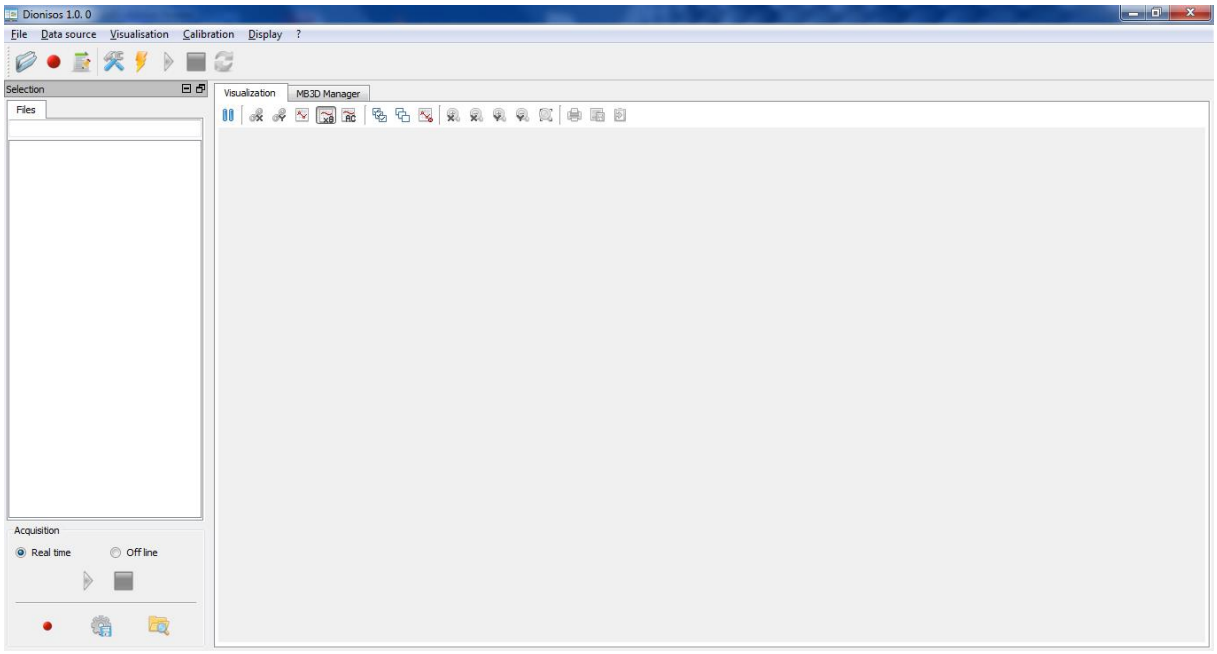


Figure 2 : Main DIONISOS window

4.1 - MENUS AND TOOLBARS

The DIONISOS menu bar contains the following menus:

- "File" menu, manages data import / export
- "Data source" menu, enables you to configure a data source and launch an acquisition
- "View" menu, enables you to interact with the central display area
- "Calibration" menu, enables you to launch a calibration operation
- "Display" menu, enables you to check the display of the different DIONISOS graphic components
- "?" menu, enables you to get information about DIONISOS and its data sources that are loaded.

4.1.1 - TOOL AND MENU BAR

The tool and menu bars may be hidden/displayed by clicking on their respective names in the "Display' menu.

The "Toolbar" option controls how the main toolbar is displayed

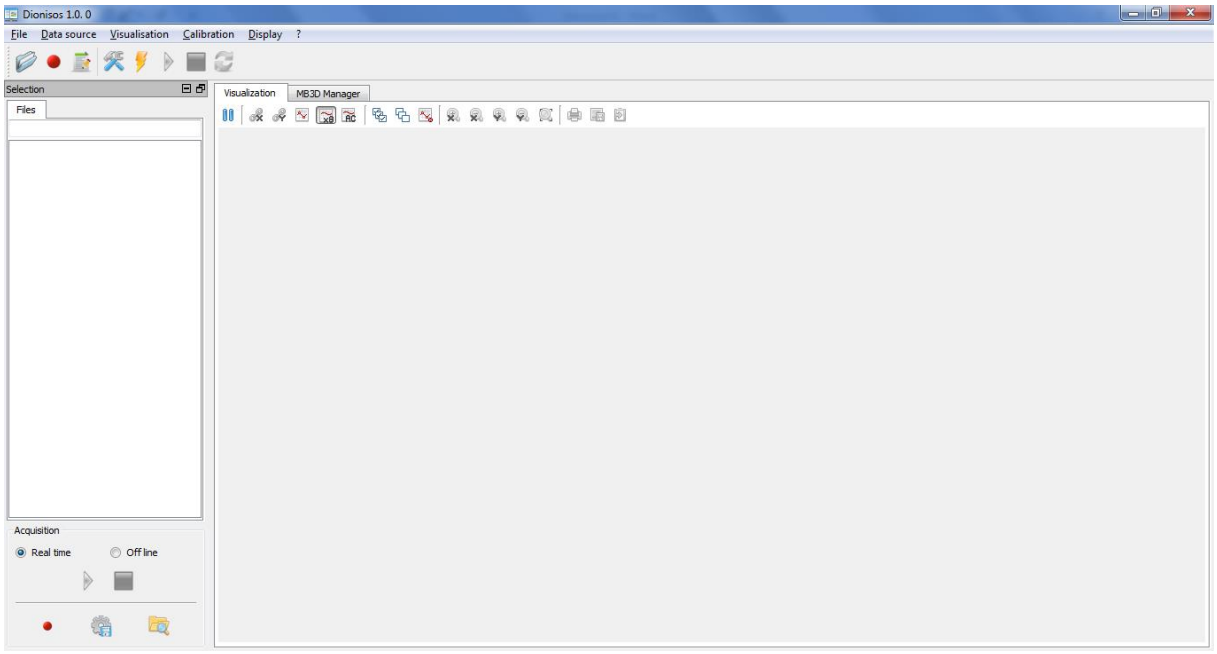


Figure 3 : Main toolbar hidden

The "Display toolbar" option controls how the toolbar in the central display area appears

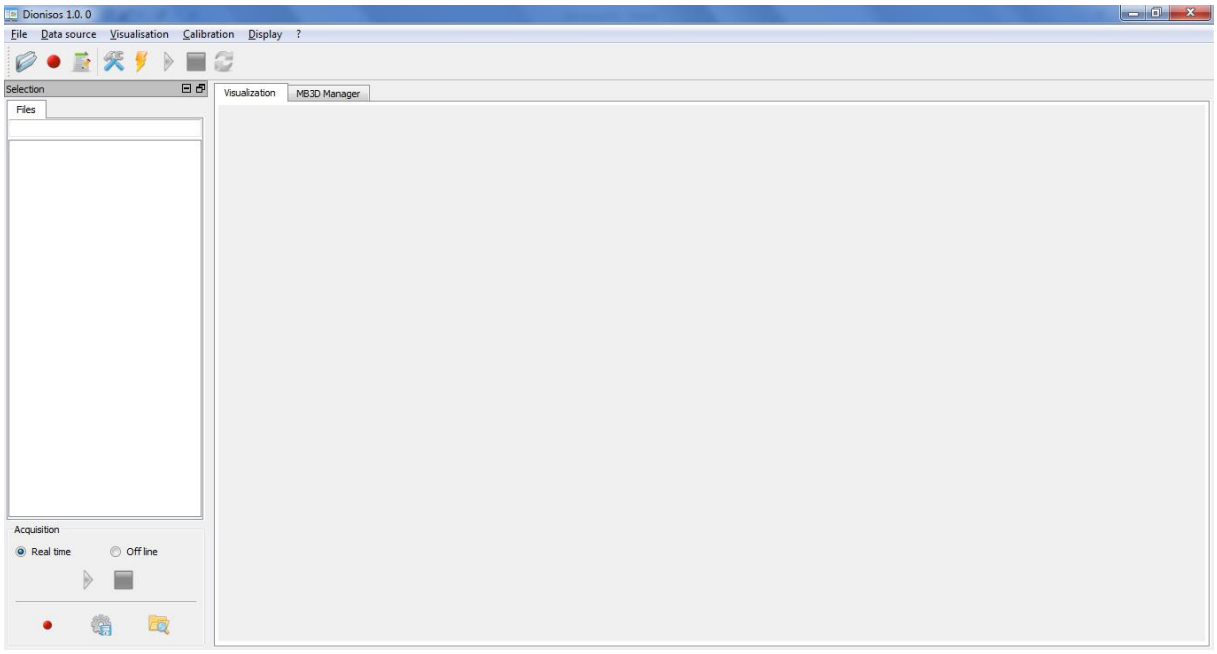


Figure 4 : Display toolbar hidden

The "Menu bar" option controls how the menu bar is displayed. When this option is activated, the menu bar may be displayed again temporarily using the "ALT" key.

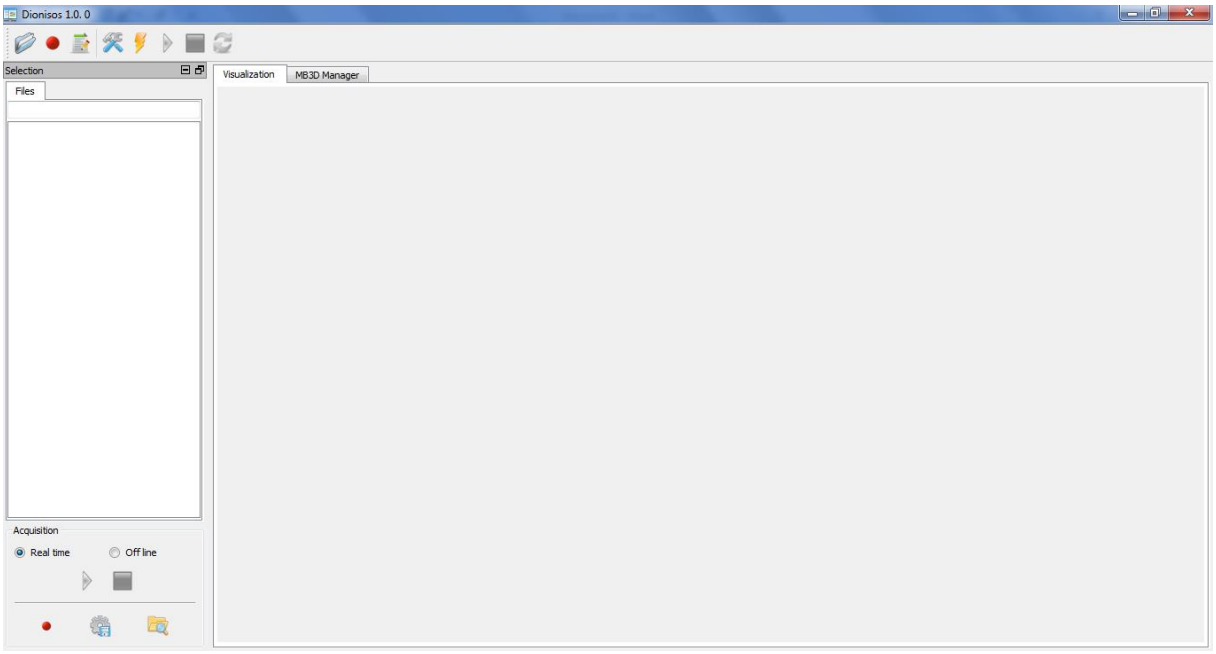


Figure 5 : Menu bar hidden

4.2 - DOCKS

The DIONISOS interface is composed of several dockable sub-windows called Docks:

- "Selection" dock
- "Connection" dock
- "States of health" dock
- "PSD" dock
- "Validation" dock

Displaying/hiding docks

The docks that are displayed may be hidden:

- By clicking on the ☒ icon in the dock's title bar.
- From the "Display" menu

Any docks that are hidden may be displayed again from the "Display" menu.

Docking/Detaching docks

The docks which are attached to the main window may be detached:

- By double-clicking on the dock's title bar.
- By moving the dock's title bar.
- By clicking on the 🗗 icon in the dock's title bar.

The docks that are detached from the main window may be docked to it again:

- By double-clicking on the dock's title bar.
- By moving the dock's title bar above the main window.
- By clicking on the ◱ icon in the dock's title bar.

Prohibiting detachment

When the "Display / Prohibit detachment" menu option is checked, the docks may no longer be detached from the main window.

When this option is activated, if any docks are detached from the main window, they are automatically docked in it again.

Minimising docks

The docks may be minimised by clicking on the ⊟ icon in the dock's title bar: only its title bar remains visible.

You may restore a minimised dock's normal appearance by clicking on the ⊞ icon.

Saving/loading display preferences

The "Display / Save" menu lets you save the current display preferences:

- Position and size of the different docks
- Position and size of the main window

When DIONISOS is loaded, the saved preferences are automatically reloaded.

The saved display preferences may be reloaded manually by clicking on "Display / Restore".

You can restore the default DIONISOS display by clicking on "Display / Load factory preferences". This option does not overwrite the saved display preferences.

4.2.1 - CONNECTION DOCK

The "Connection" dock is the entry point for selecting, configuring, activating and tracing a data source's activity.

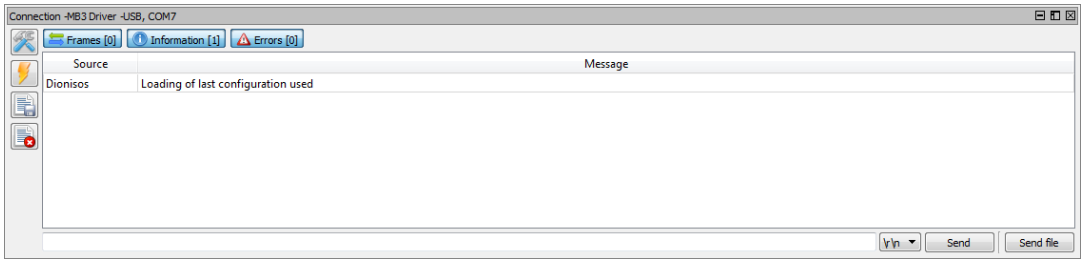


Figure 6 : Connection dock presentation

4.2.2 - SELECTION DOCK

The Selection dock is the entry point for selecting the data to be displayed.

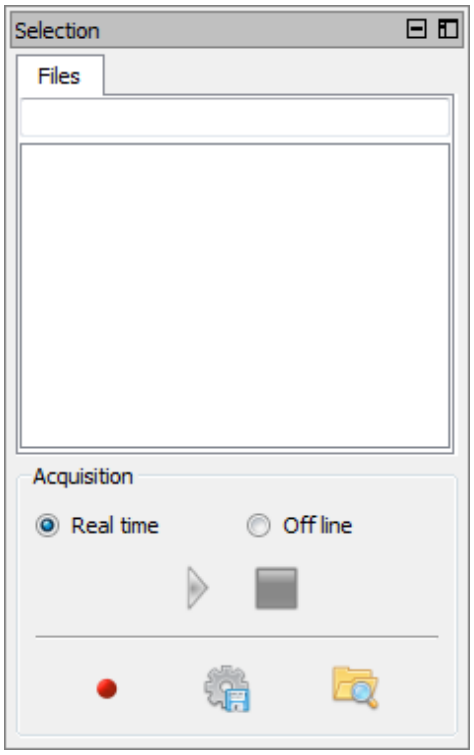


Figure 7 : Selection dock presentation

4.2.3 - PSD DOCK

The PSD dock provides the frequency representation of the time data displayed

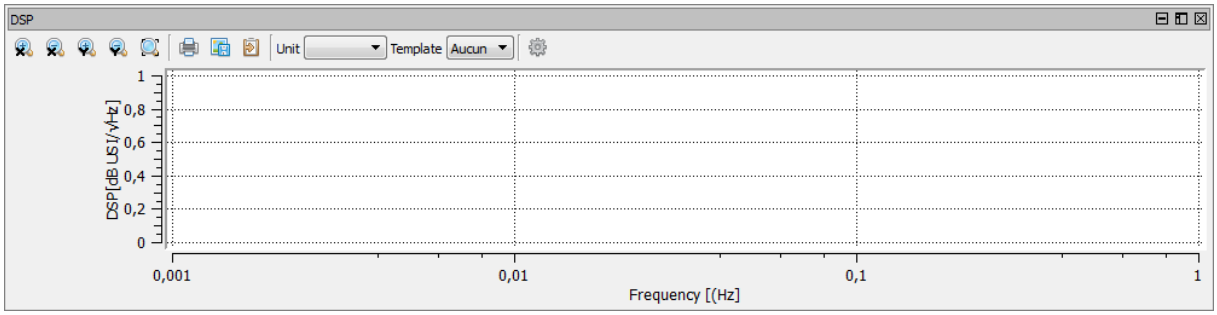


Figure 8 : DSP dock presentation

4.2.4 - STATES OF HEALTH DOCK

The States of health dock displays the states of health returned by the data source.

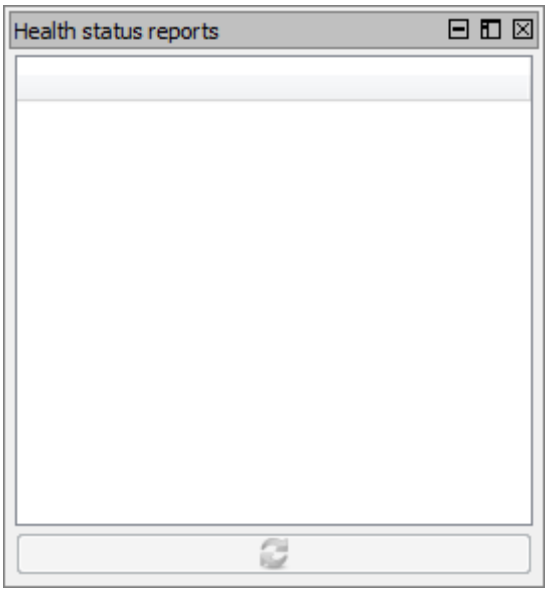


Figure 9 : States of health dock presentation

4.2.5 - VALIDATION DOCK

The Validation dock lets you launch calibration operations to validate a station's signal in the geophysical sense. It then enables you to generate a report.

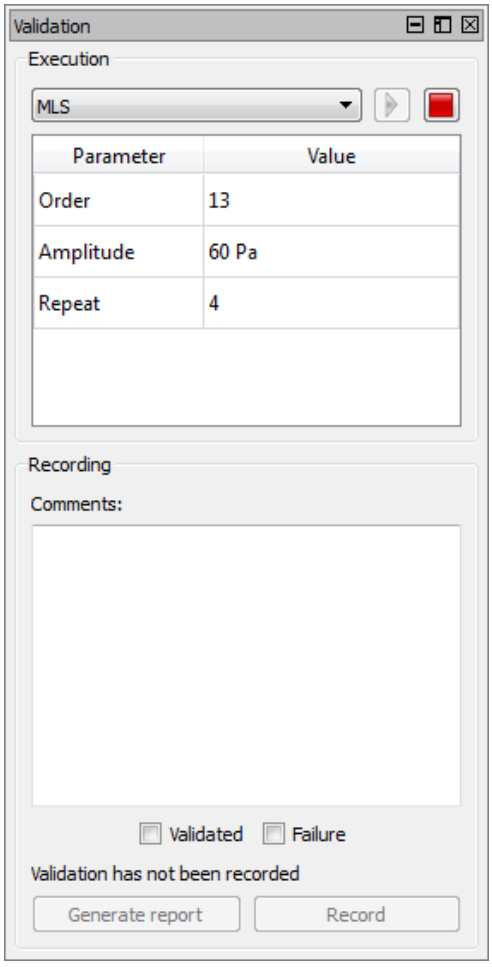


Figure 10 : Validation dock presentation

5 - CREATING AND CONNECTING TO A DATA SOURCE

5.1 - CREATING A DATA SOURCE

You may create a data source:

- From the "Data source" > "Select the data source" menu
- From the main toolbar, by clicking on the  icon
- From the "Connection" dock, by clicking on the  icon

If several data source drivers are available when a data source is created, a dialog box opens for you to select the driver.

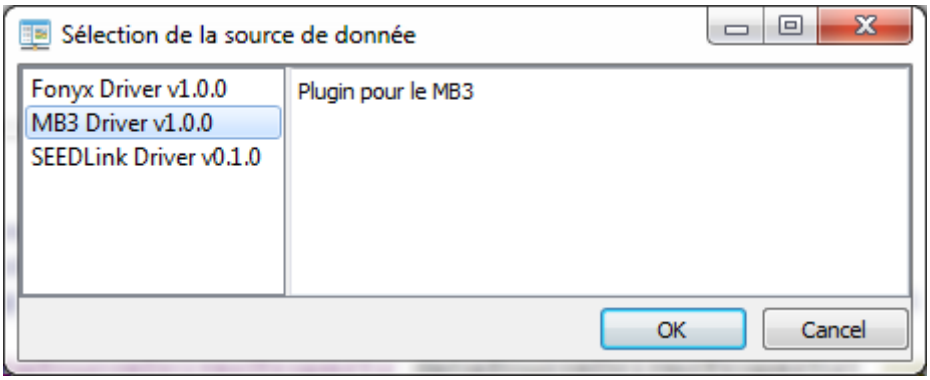


Figure 11: Data source driver selection dialog box

Depending on the data source driver selected, a dialog box opens for you to configure the connection. If only one driver is available, its configuration dialog box opens immediately.

5.1.1 - CONFIGURING AN MB3 DATA SOURCE

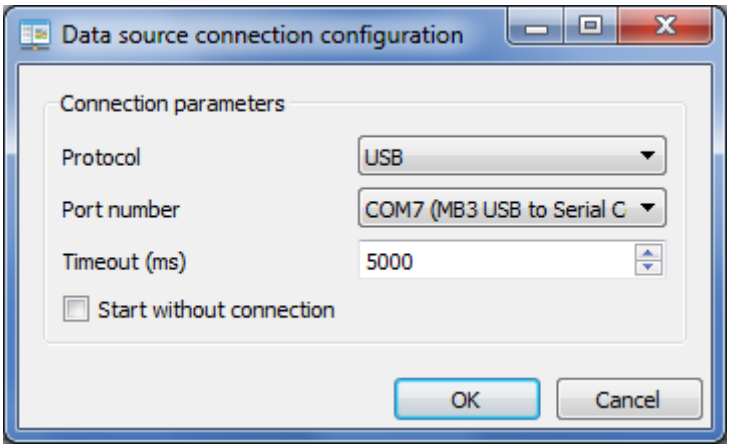


Figure 12: Configuring an MB3 data source

When you configure an MB3 data source, you must first select the communication protocol from:

- USB
- RS232
- TCP/IP

Depending on the communication protocol you select, the data source configuration may require additional parameters:

- For a USB connection: the port number
- For an RS232 connection: the port number and the transmission speed
- For a TCP/IP connection: the IP address and the TCP port number

The timeout value lets you configure the time before the requests are considered as lost.

If activated, the "Start unconnected" option lets you not connect to the data source once the data source has been created.

5.2 - CONNECTING TO THE ACTIVE DATA SOURCE

The connection to the active data source is controlled:

- From the "Data source / Connect the data source" menu
- From the "Connection" dock, by clicking on the button

When the active data source is connected, the "Data source / Connect the data source" menu is checked that the corresponding Connection dock button is pushed in.

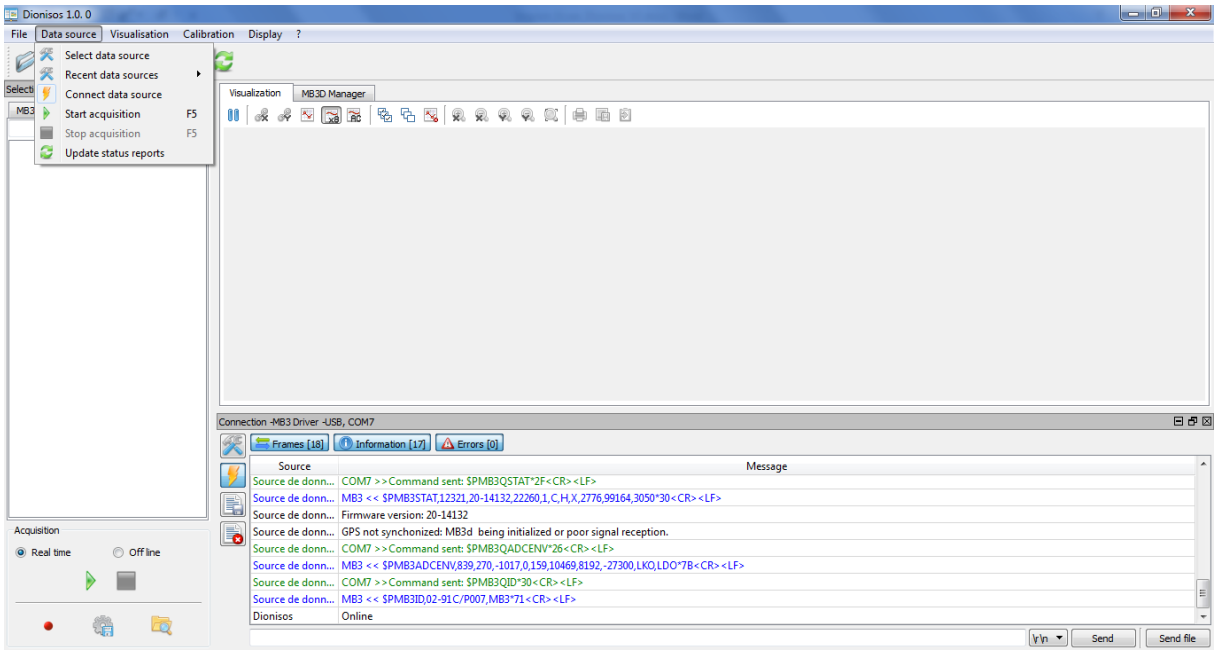


Figure 13: Creating and connecting to a data source

Once the data source is connected, its associated nodes appear in the "Connection" dock.

To disconnect the data source, simply uncheck the "Data source / Connect the data source" menu or click on the button. ?

Note: the data sources normally connect themselves once they are created.

5.3 - RECENT DATA SOURCES

You can use the latest data sources created: in the "Data source" menu, the "Recent data sources" sub-menu lists the latest data sources. A brief description is provided for them.

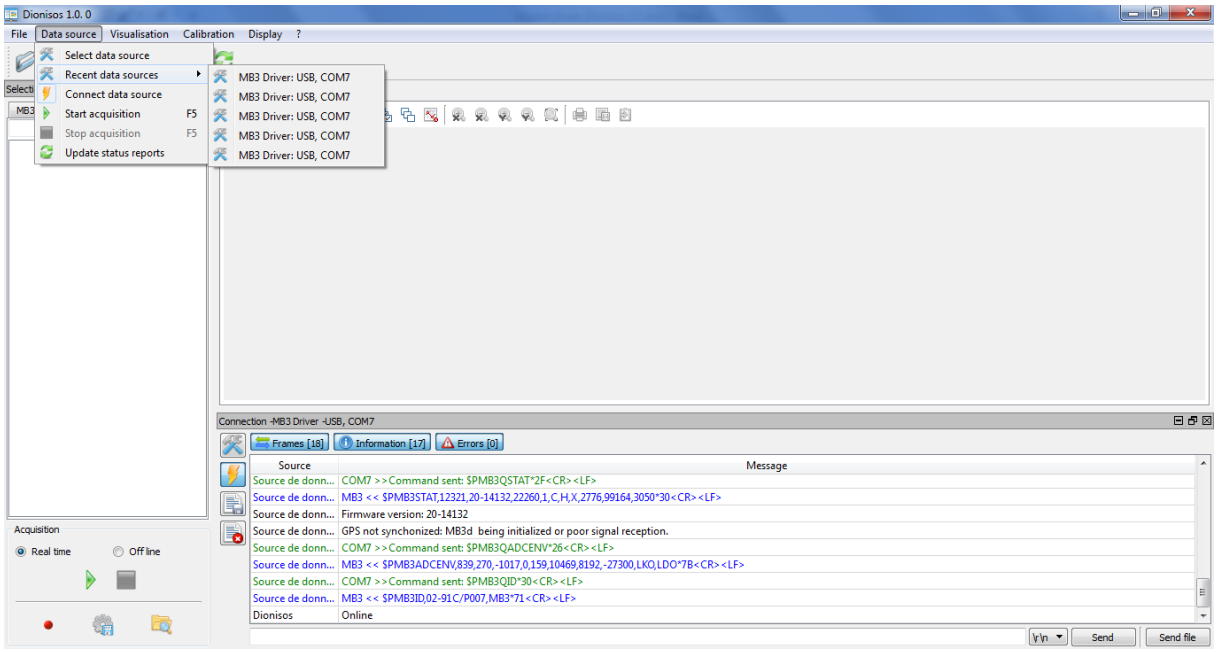


Figure 14: Recent data sources

Click on a recent data source to replace the active data sources with the selected data source.

When DIONISOS starts up, the data source which was most recently active is automatically recreated. However, it is not connected.

6 - SELECTING THE DATA TO DISPLAY

The data to be displayed is selected using the "Selection" dock. Three types of data may be displayed:

- Data from the active data source
- Data imported from files
- Validation backup data

The "Selection" dock is organised as a set of tabs:

- A tab to select the data from the active source and to launch its acquisition. This tab is hidden when the data source is not connected.
- A tab for the data imported from files.
- A tab for the validation backup data. This tab is hidden when there is no data in the validation backup directory.

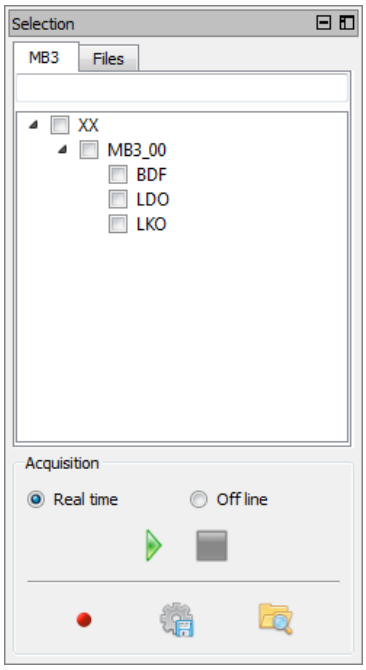


Figure 15: Data source tab

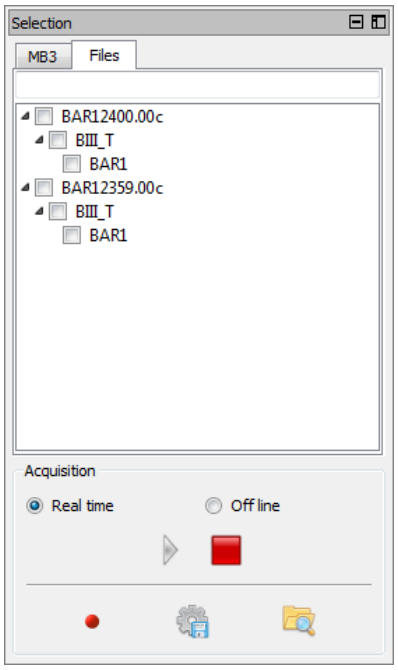


Figure 16: "File" tab

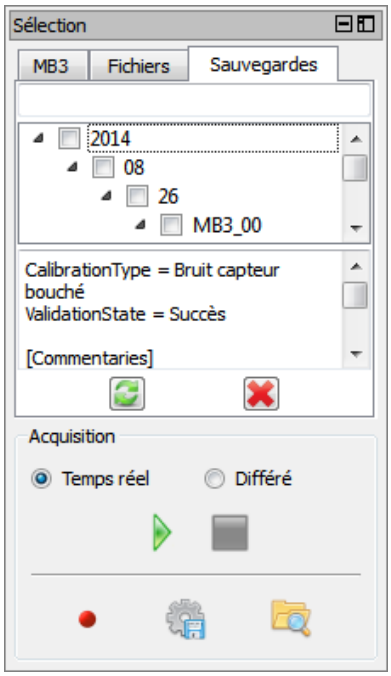


Figure 17: "Backups" tab

These tabs show the data available as nodes. To view data, you must first check the associated channels. Each tab provides a field that you can edit to filter the list of nodes that are displayed. This filter only applies to station-type nodes (for example, node MB3_00 in Figure 15)

Note: You cannot check more than 8 data nodes or channels in DIONISOS.

6.1 - DATA ACQUISITION

The main action in DIONISOS is data acquisition. Data is acquired via the active data sources. Two acquisition modes are available:

- Real-time acquisition
- Delayed acquisition

The MB3 and SEEDLink drivers support both acquisition modes. The Fonyx driver only supports delayed acquisition.

The data is acquired on the data source nodes that are checked in the "Selection" dock.

Note: Dionisos limits the number of points viewed for a channel to 5 million. If a channel exceeds this limit, the oldest points are deleted. A message is displayed in the strip when a channel reaches this limit.

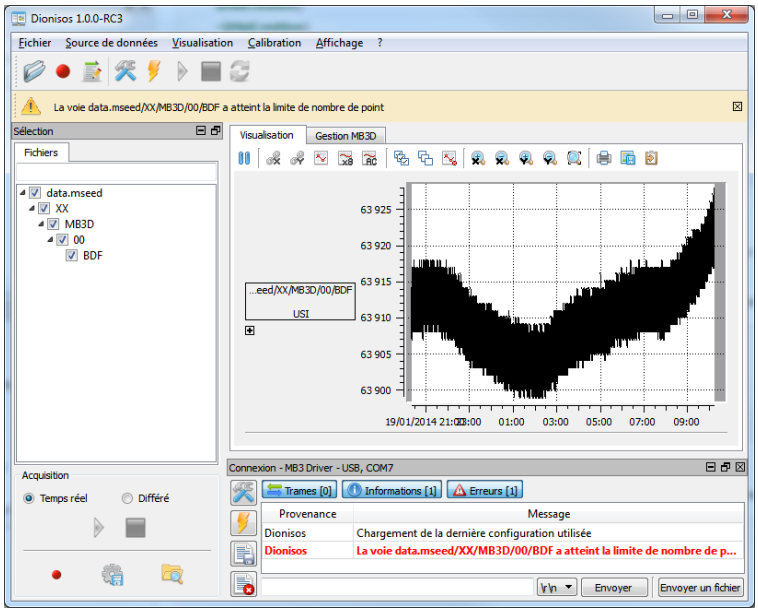


Figure 18: Strip indicating that the limit has been reached

6.1.1 - REAL-TIME ACQUISITION

To launch a real-time acquisition, the "Real-time" option must be activated in the "Selection dock".

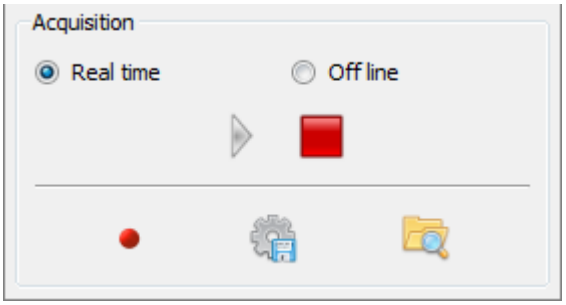


Figure 19: "Real-time acquisition" mode selection

You may then launch the real-time acquisition:

- From the "Data source / Start acquisition" menu
- From the main toolbar, by clicking on the button
- From the "Selection" dock, by clicking on the button
- Using the F5 keyboard shortcut

The data source is then informed of the channels that are in acquisition mode and will provide its associated data in real-time. For each channel, the display tab will contain a graphic component which will display the data returned by the data source. By default, in real-time only the last 30 seconds of data are displayed, with the graphic scrolling.

Once the data has been acquired, the process may be stopped:

- From the "Data source / Stop acquisition" menu

- From the main toolbar, by clicking on the  button
- From the "Selection" dock, by clicking on the  button
- Using the F5 keyboard shortcut

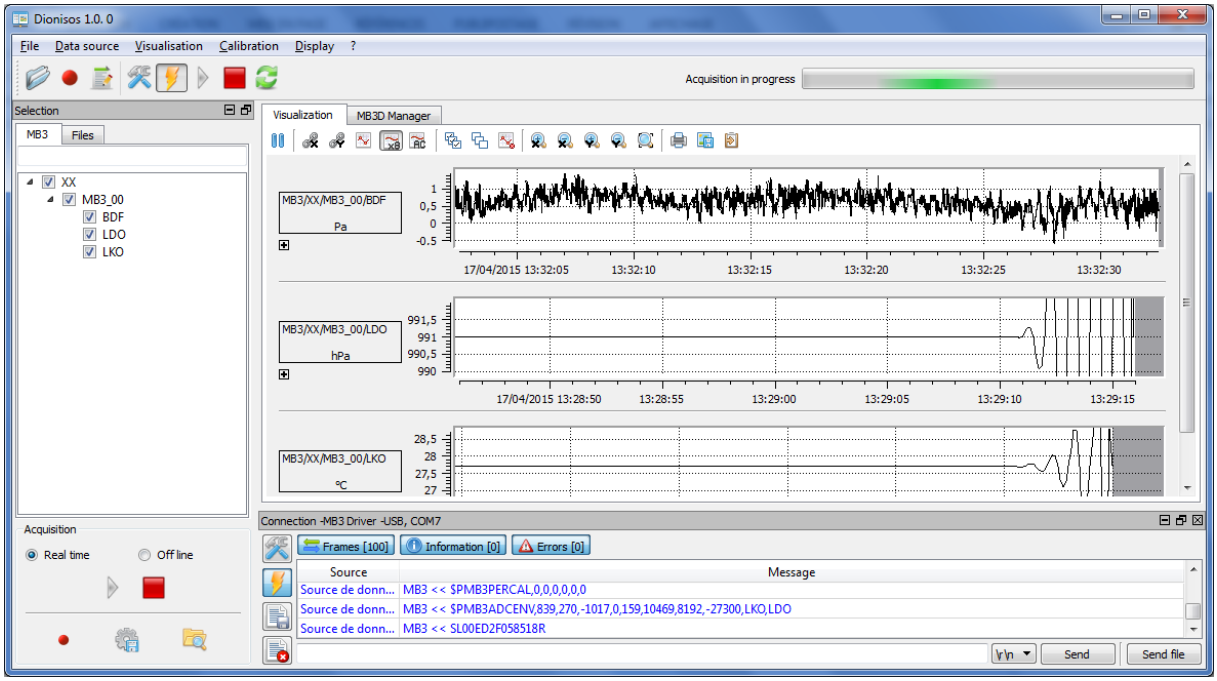


Figure 20: Real-time acquisition

6.1.2 - DELAYED ACQUISITION

To launch a delayed acquisition, the "Delayed" option must be activated in the "Selection dock".

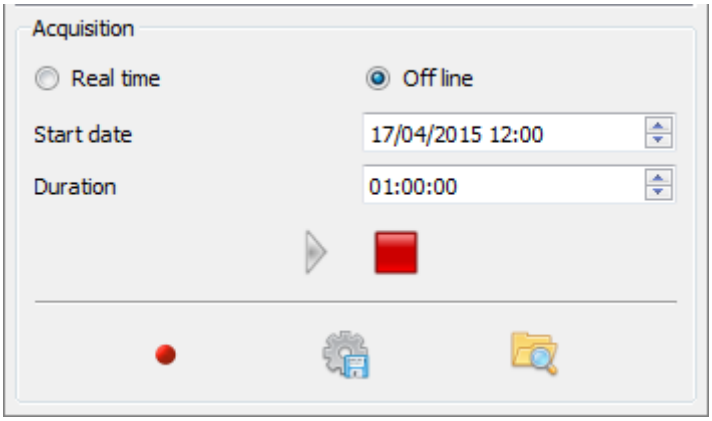


Figure 21: "Delayed acquisition" mode selection

For delayed acquisition, you must configure:

- The start of the time frame to be acquired in UTC time
- The period to be acquired

You may then launch the delayed acquisition:

- From the "Data source / Start acquisition" menu
- From the main toolbar, by clicking on the  button

- From the "Selection" dock, by clicking on the  button
- Using the F5 keyboard shortcut

The data source is then informed of the channels that are in acquisition mode and will provide its associated data for the time frame requested. For each channel, the display tab will contain a graphic component which will display the data returned by the data source. In delayed acquisition, the display is set by default on the time frame requested.

The acquisition stops automatically when all the data has been sent by the data source.

However, you may stop the acquisition manually:

- From the "Data source / Start acquisition" menu
- From the main toolbar, by clicking on the  button
- From the "Selection" dock, by clicking on the  button
- Using the F5 keyboard shortcut

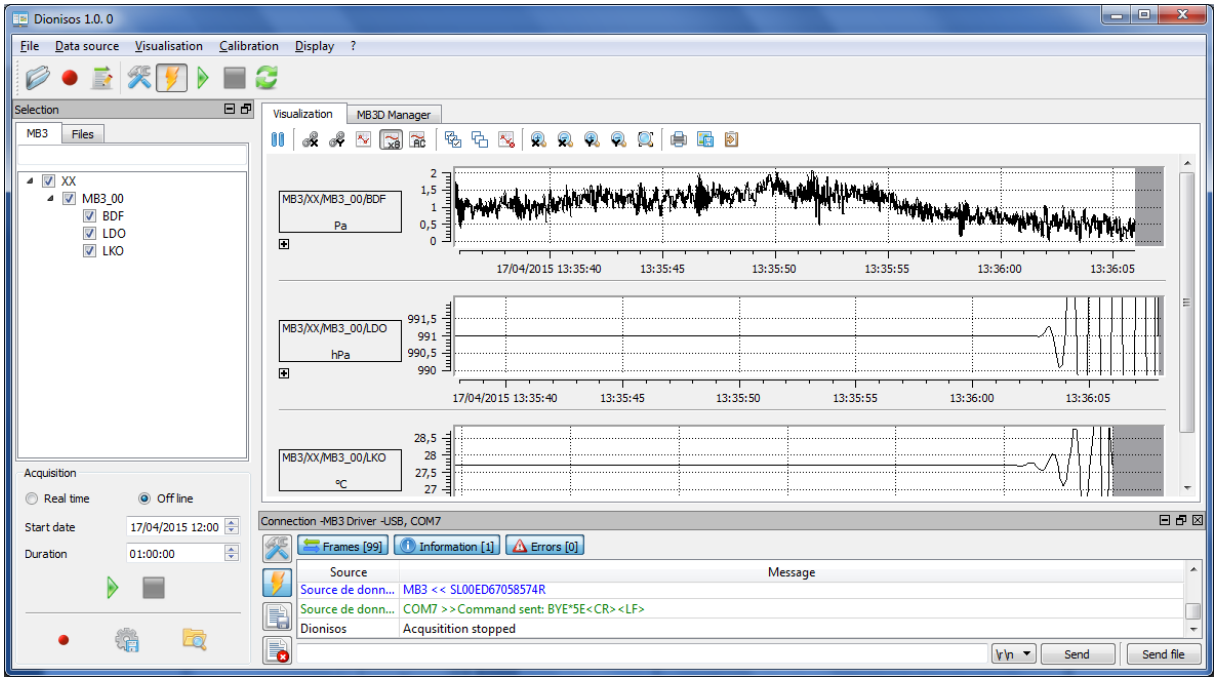


Figure 22: Delayed acquisition

6.1.3 - SAVING DATA

You may save the data which is being acquired.

Click on the  button to display the dialog box to configure the data saving.

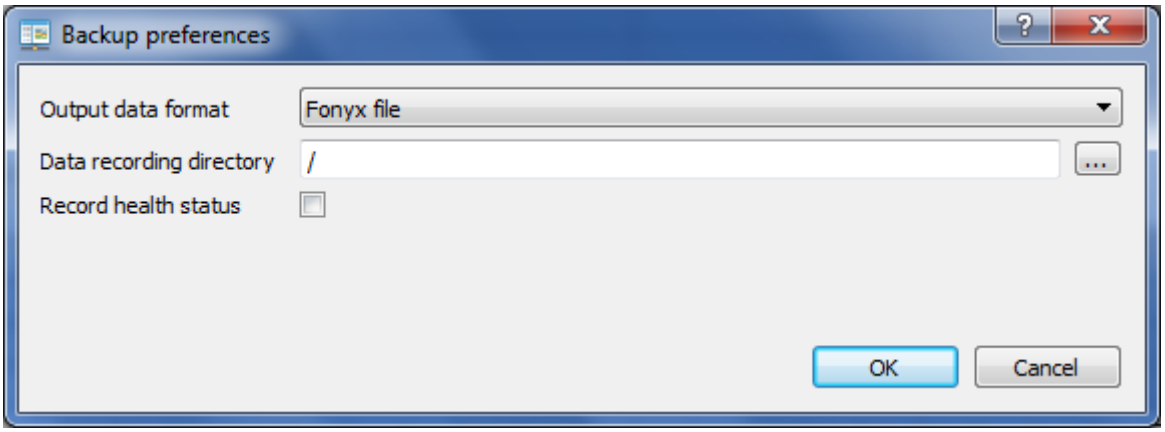


Figure 23: Configuring the saving

You may save the data in 4 different formats:

- "Fonyx file"
- "miniSEED file"
- "Fonyx tree structure"
- "SDS tree structure"

You must define the directory where the data will be saved.

The "Save states of health" option lets you save the states of health returned by the data source in files in ASCII format.

Once you have configured the data saving you may activate it:

- From the "File / Activate saving" menu
- By clicking on the  button in the "Selection" dock

Click on the  button to open the system's file explorer in the data backup directory.

Note: you cannot modify the save parameters once the saving is activated.

6.2 - IMPORTING FILES

DIONISOS lets you import files in miniSEED and Fonyx formats.

You can import files:

- From the "File / Open a signal file" menu
- From the  button in the main toolbar

Once you have selected the file its structure appears in the "Files" tab. If you have not reached the maximum number of channels displayed, the data read from the file is displayed automatically in the central display area.

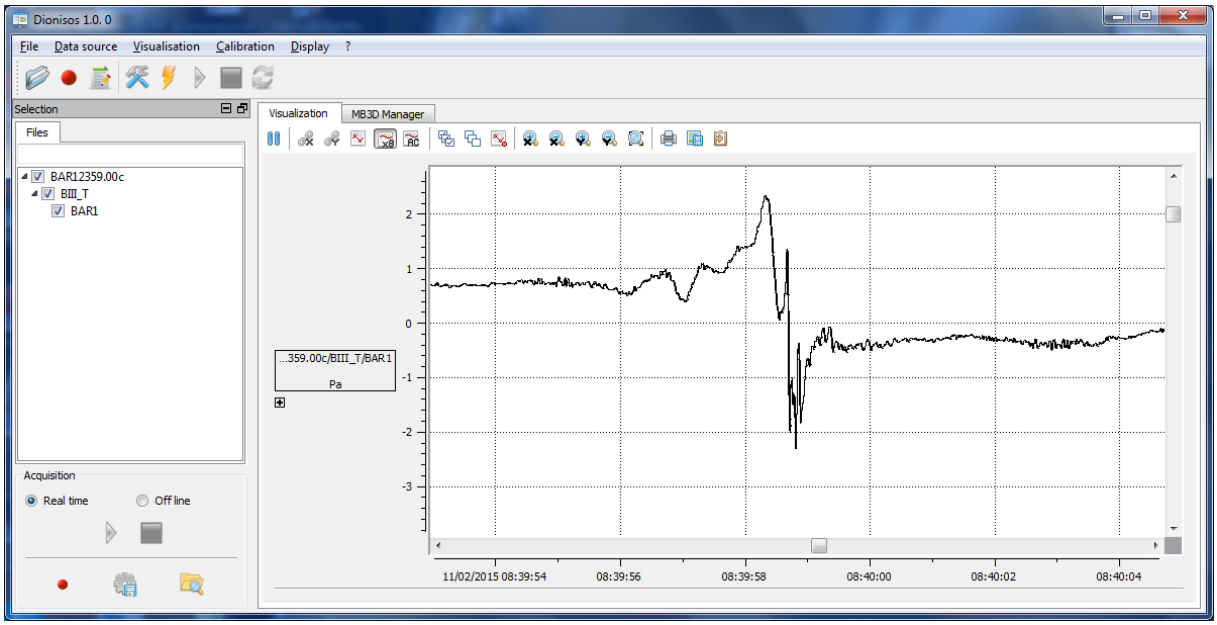


Figure 24: Importing a file

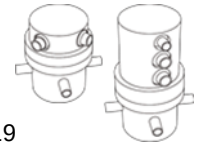
Note: you may also import a file from the system's file explorer by opening a Fonyx or miniSEED file (if DIONISOS is associated with this type of file at system level).

6.3 - BACKUP IMPORT

You may save validations via the "Validation" dock (see 9.2 -Saving a validation).

The "Backups" tab in the "Selection" dock displays a tree structure with all the validation data contained in the validation backup directory (see **Erreur ! Source du renvoi introuvable.Erreur ! Source du renvoi introuvable.**). You may then check these validations (still within a maximum of eight) and view their content in the central display area.

You may select the validations (highlight). The selected validation's description appears in the box below the tree structure.



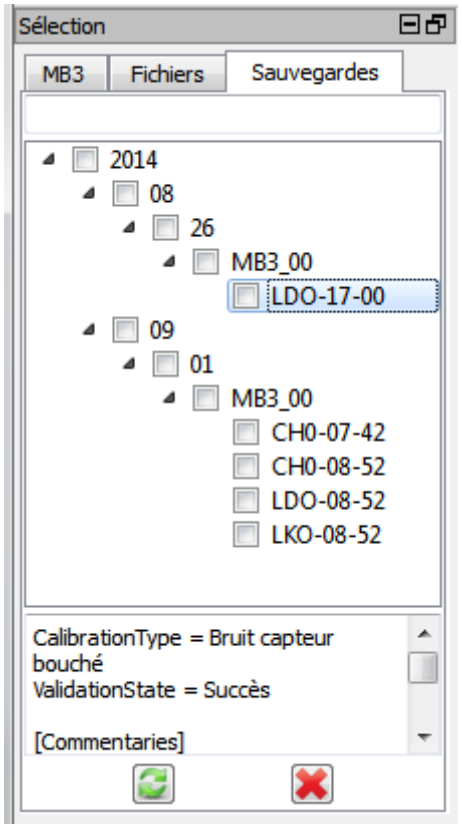


Figure 25: Displaying a validation's description

Click on the  button to delete the selected validations once and for all.

Click on the  button to refresh the list of validations available from the validation directory. The validations available will be refreshed automatically after a certain number of actions, such as deleting validations.

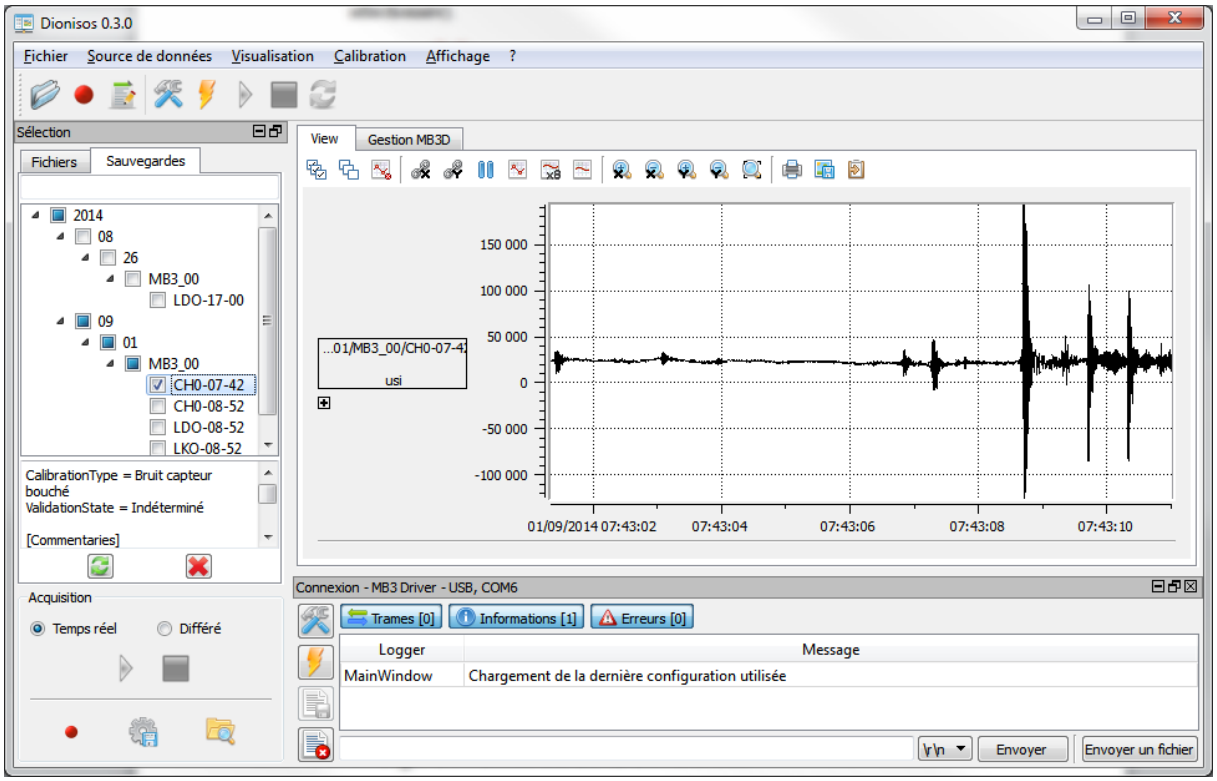


Figure 26: Displaying data associated with a validation

6.4 - OVERLOADING THE UNIT OR SENSITIVITY

You may overload the unit and/or the sensitivity of the data nodes from the "Selection" dock. The unit and sensitivity information returned by the data source are then no longer taken into account in the display.

Right-click on a data node to open a pop-up menu. The "Overload the unit and sensitivity" option lets you open the following dialog box:

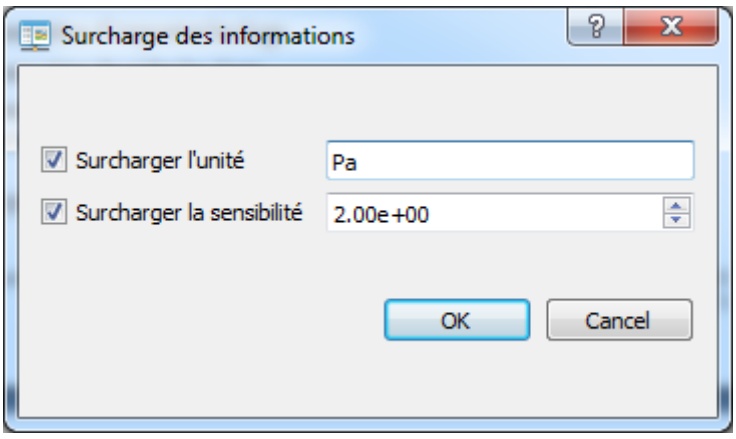


Figure 27: Configuring the unit and sensitivity overload

The "Overload the unit" option lets you open the unit's value for editing.

The "Overload the sensitivity" option lets you open the sensitivity value for editing.

The overloaded information appears as sub-nodes.

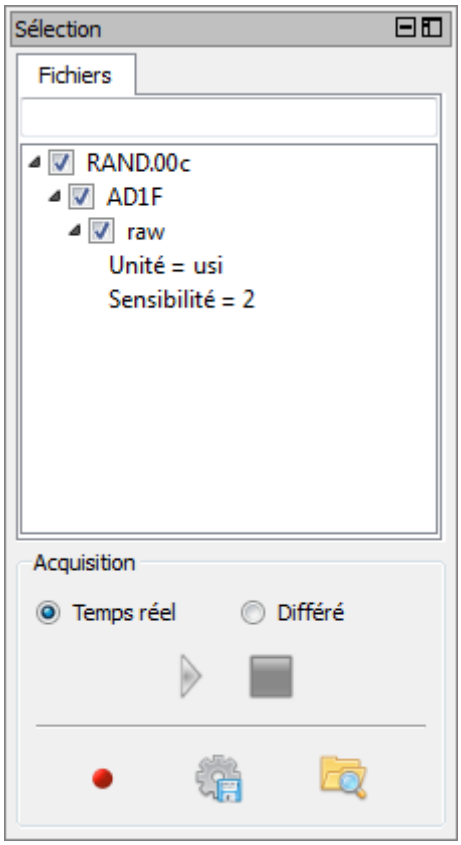


Figure 28: Overloading the unit and sensitivity

Note: if data saving is activated and the unit and/or sensitivity are overloaded, the data will be saved with its overloads and not with the information returned by the data source.

6.5 - FILTERING DATA

You may filter the data displayed in the data nodes from the "Selection" dock.

Right-click on a data node to open a pop-up menu. The "Define a filter" option lets you open the dialog box to define the filter to be applied:

Figure 29: Defining a filter

Three types of filter may be defined:

- Low-pass,
- High-pass,
- Band-pass.

The filters used are third-order Butterworth filters with the following characteristics:

- Cut-off frequency at -3dB
- Attenuation of -40dB / decade.

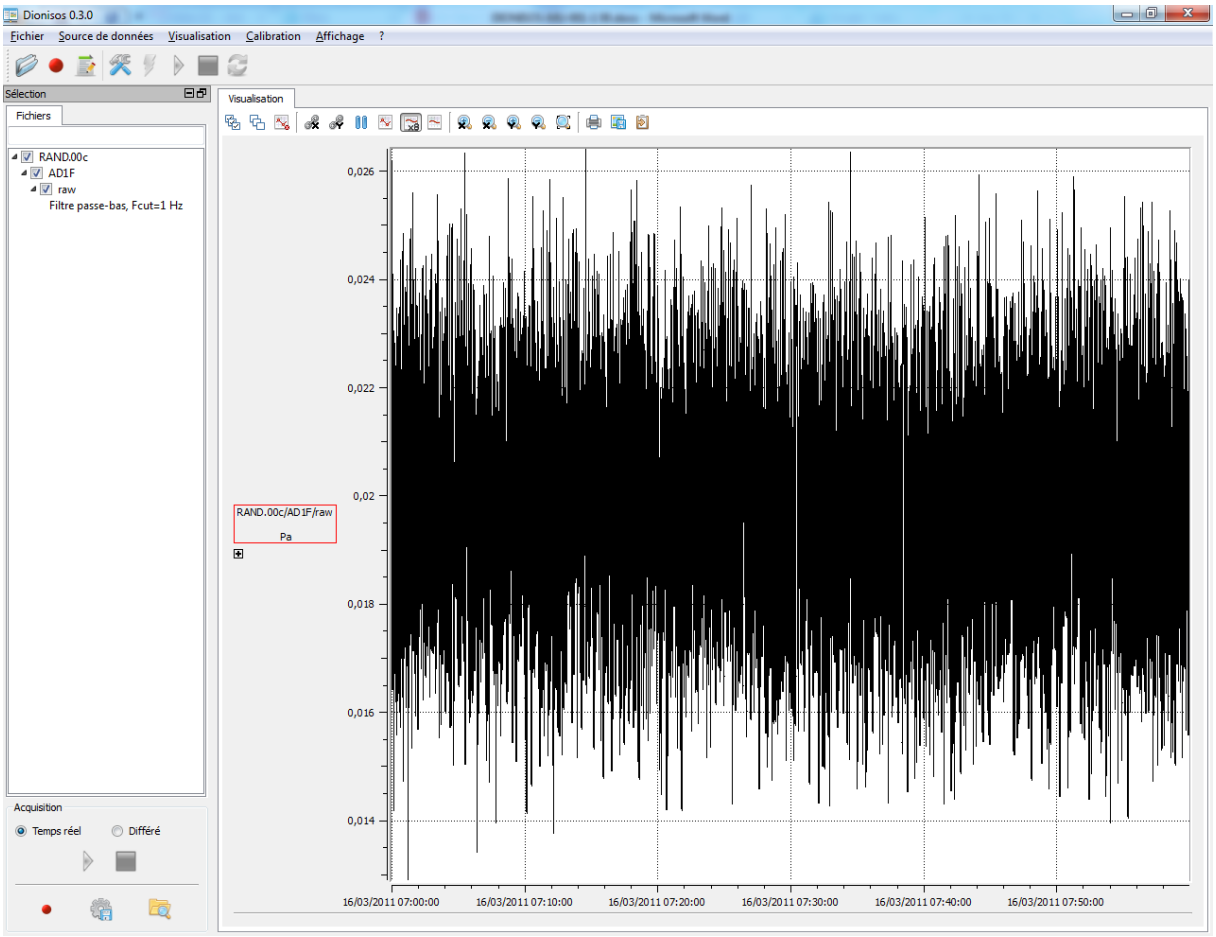


Figure 30: Filtered signal

You may delete the active filter: right-click on a data node to open a pop-up menu. The "Delete the filter" option then lets you delete the filter defined.

7 - VIEWING DATA

7.1 - TEMPORAL REPRESENTATION

The viewing tab contains a toolbar and a certain number of graphic displays. A graphic display corresponds to a channel checked in the "Selection" dock.

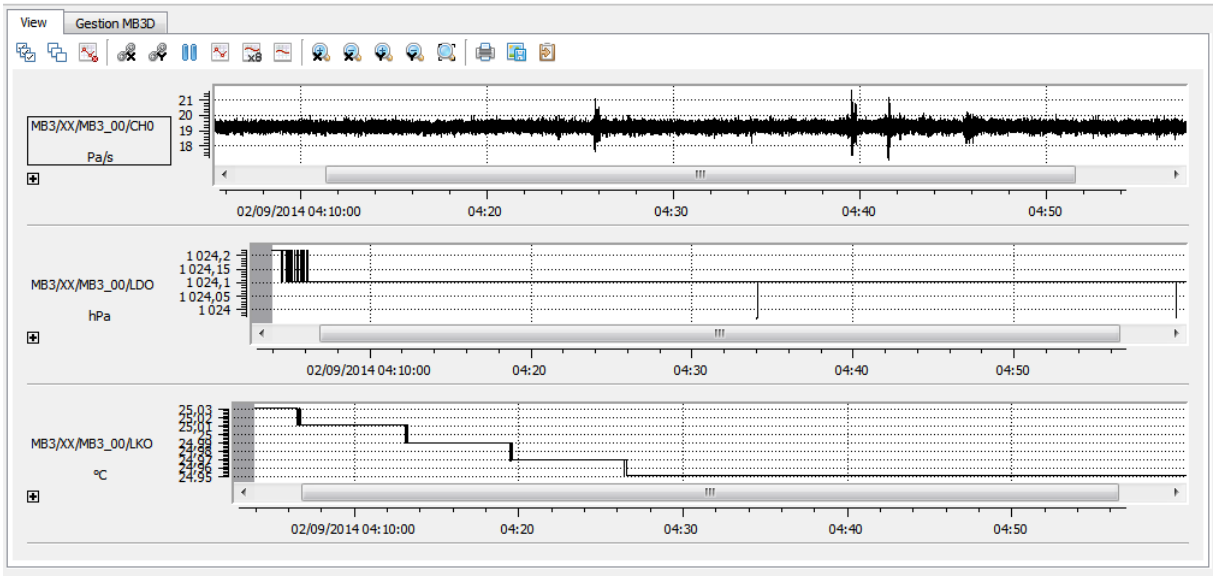


Figure 31: Viewing area

7.1.1 - DESCRIPTION OF A CHANNEL VIEW

A channel's view is essentially made up of two parts:

- Contextual information about the signal displayed:
  - The full name of the channel
  - The channel's unit
  - Additional information
- The signal's graphic display

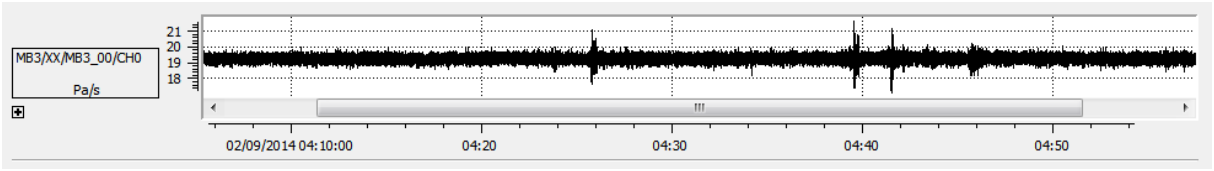
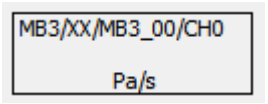


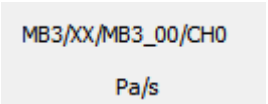
Figure 32: Viewing a channel's data

The view displays the data returned from the driver, the data import or the data from a validation backup.

You may select a graphic by clicking on the area around the title and the unit:



Selected

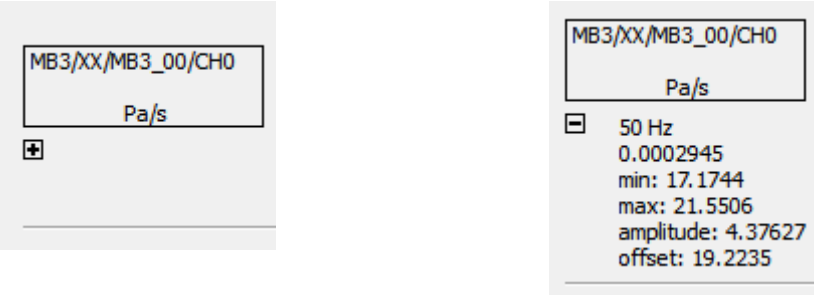


Not selected

If several views are displayed, they are selected according to a standard selection algorithm (similar to selecting a file in an explorer):

- Simply click on a selection area to select/deselect it and ignore all the other views.
- If you hold down the "ctrl" key when you click, you can select/deselect a view without affecting the other views.
- If you hold down the "shift" key when you click you can select all the views between the view selected previously and the view you have clicked on.

You may also display information by clicking on the ⊞ button:



This additional information is updated according to the temporal portion of the signal displayed.

The different temporal discontinuities are shown by a coloured background on the graphic:

- Grey background if data is missing
- Yellow background if identical data is covered
- Red background if different data is covered

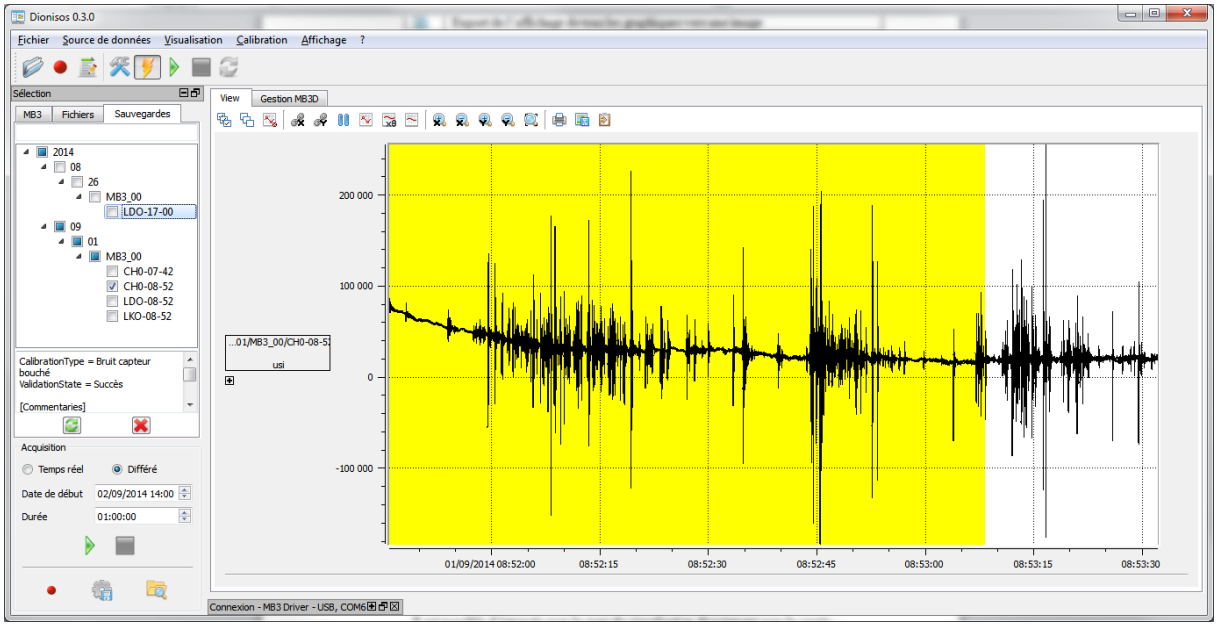


Figure 33: Discontinuity representation example with identical data

7.1.2 - INTERACTION WITH THE VIEWING AREA

The signal display time frame depends on the acquisition mode:

- In real-time acquisition, the default view only displays the last 30 seconds of each channel. The graphics scroll automatically when new data is received.
- In delayed acquisition, the default view displays the whole time frame configured.

The central viewing tab contains a toolbar. The buttons below enable you to interact with all the graphic displays:

 Selects all the views

 Deselects all the views

 Deletes all the selected views

 Activates the temporal axis synchronisation

 Activates the amplitude axis synchronisations: this is only done between views of the same unit

 Blocks the automatic graphic scrolling

 Displays the samples (for all the graphics)

 Activates the over-sampling (for all the graphics)

 Centres the amplitudes according to the time frame viewed (for all the graphics)

 Zoom in on the temporal axis for the selected views

 Zoom out from the temporal axis for the selected views

 Zoom in on the amplitudes for the selected views

 Zoom out from the amplitudes for the selected views

 Return to the default zoom level for the selected views

 Print the display of all the graphics

 Export the display of all the graphics to an image

 Copy the display of all the graphics to the clipboard

You may interact with the viewing area directly using the mouse:

- Hold down the middle button to move the viewed area
- Hold down the right button for a horizontal zoom if the area is moved horizontally (+ to the left, - to the right), and for a vertical zoom if the area is moved vertically (+ up, - down).

  This zoom will affect the other graphics in the same way if the X or Y synchronisation is active.
- Right-click to return to the default view
- Left-click to position a cursor
- Hold down the left button to define a selection rectangle Release the button to zoom in on this rectangle

In real-time, modifying the view automatically pauses the automatic scrolling. Restart the scrolling by deactivating the pause; the view's temporal depth is not then modified.

Note: the views of data from files will only be synchronised if their respective time frames coincide with the time frames of the data source channel views. The files cannot be synchronised with each other.

7.1.3 - POSITIONING MARKERS

Left-click to position a marker on the signal.

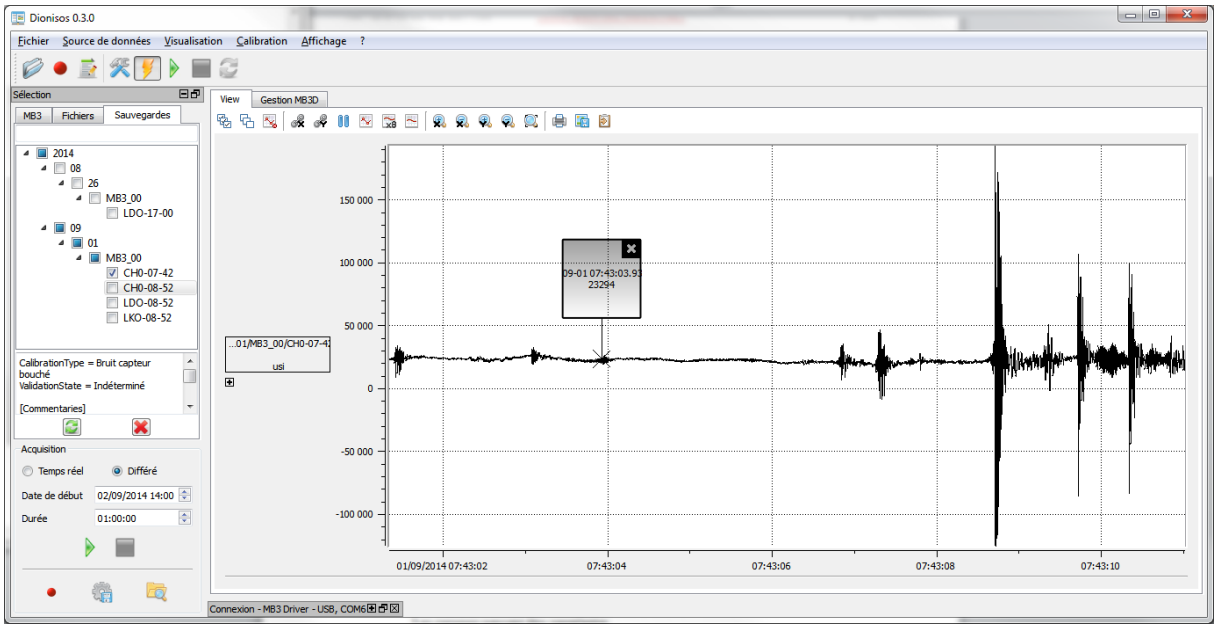


Figure 34: Positioning the cursor

The cursors may be moved using the mouse or using the keyboard's arrow keys for the cursor with the focus.

You may delete the cursor with the focus by pressing the "DEL" key.

Click on the  button to delete a cursor.

You may delete all the cursors by pressing the "ESCAPE" key.

7.2 - FREQUENCY REPRESENTATION

The PSD dock lets you display the data's power spectrum data in the frequency domain.

You may interact with the viewing area directly using the mouse:

- Hold down the middle button to move the viewed area
- Hold down the right button for a horizontal zoom if the area is moved horizontally (+ to the left, - to the right), and for a vertical zoom if the area is moved vertically (+ up, - down).
- Right-click to return to the default view
- Left-click to position a marker
- Hold down the left button to define a selection rectangle Release the button to zoom in on this rectangle

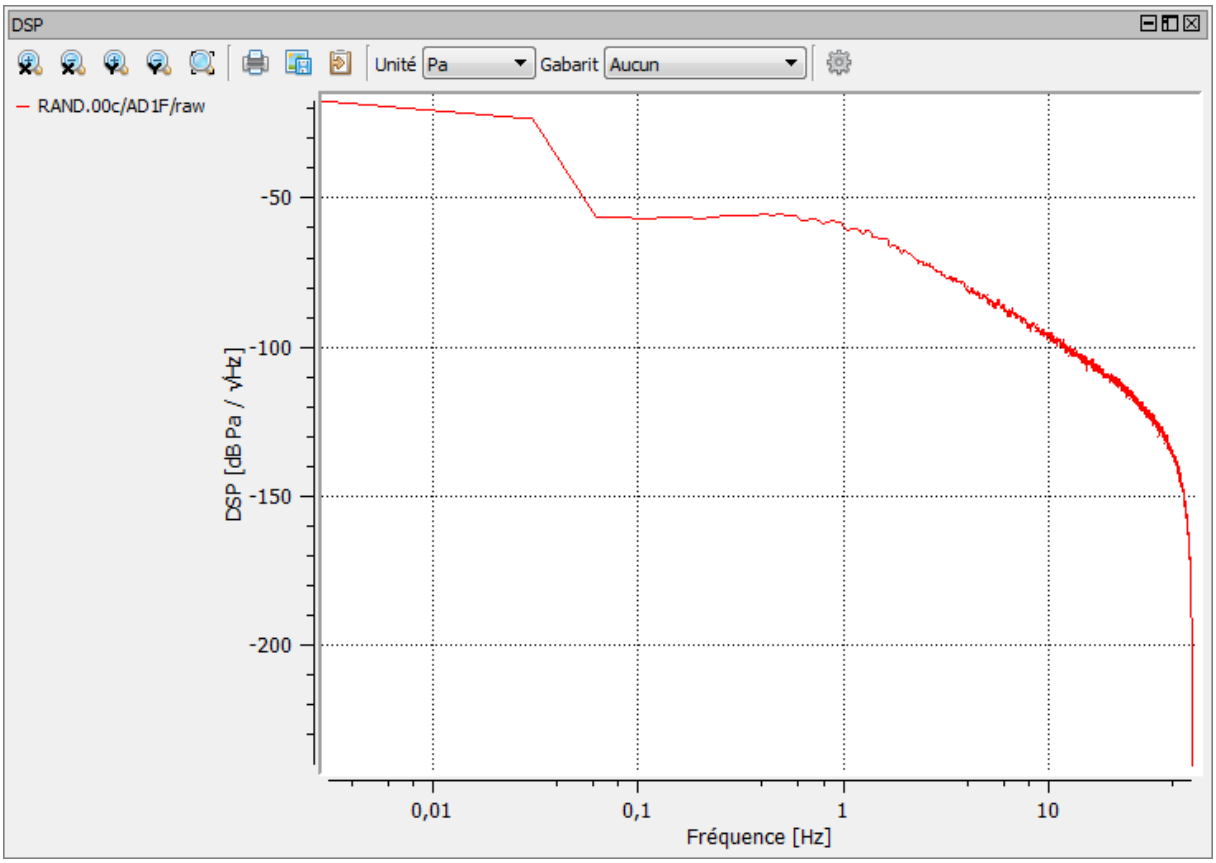


Figure 35: Frequency view

The PSD dock has a toolbar. The buttons below enable you to interact with the PSD display window:

- Zoom in on the frequency axis
- Zoom out from the frequency axis
- Zoom in on the amplitude axis
- Zoom out from the amplitude axis
- Return to the default zoom
- Print the display
- Export the display to an image
- Copy the display to the clipboard

The "Unit" scroll down list lets you select the PSD to be displayed: only the PSDs of the selected unit are shown.

The "Scale" scroll down list lets you select a scroll to be displayed. The scales are defined in the DIONISOS resources.

Click on the button to display the PSD calculation parameter editing panel.

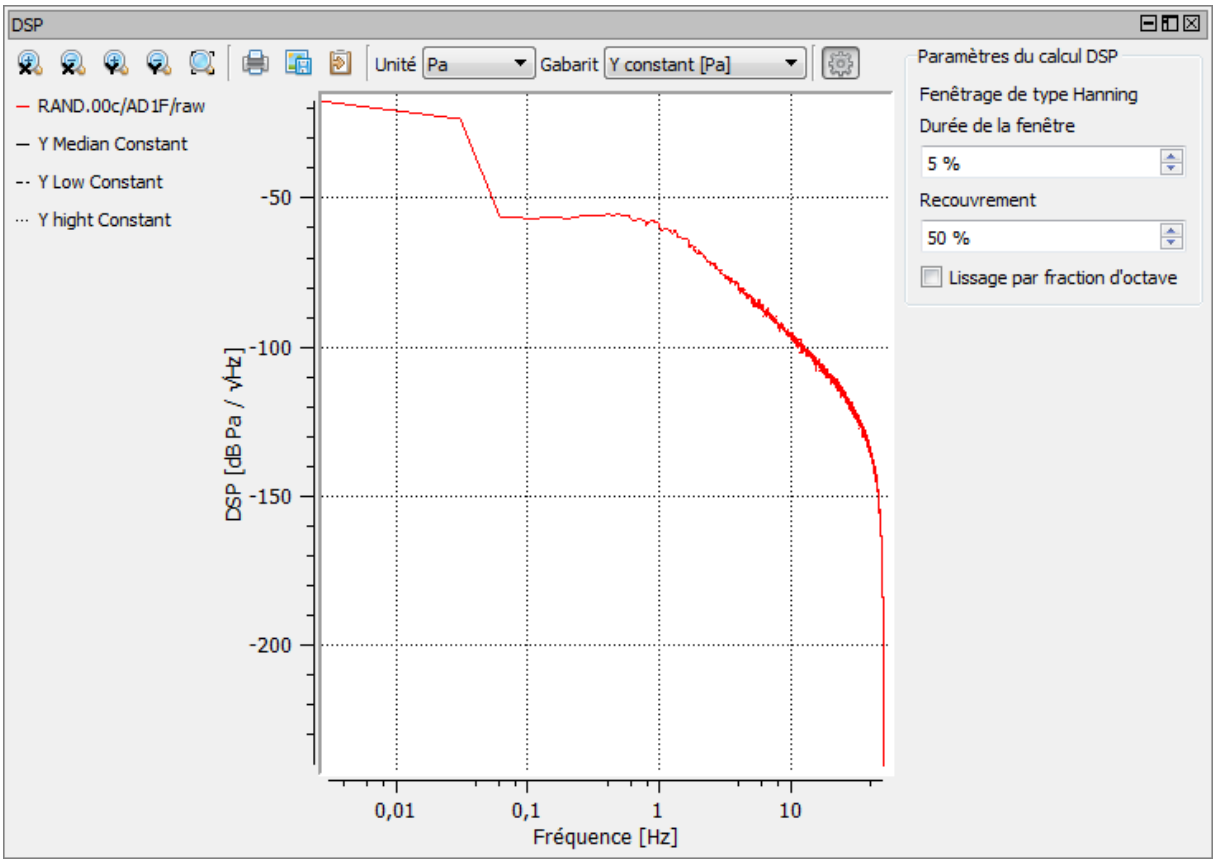


Figure 36: PSD calculation parameter editing panel

You may edit:

- The window's duration as a percentage of the total window
- The coverage percentage between two successive windows
- Whether or not a smoothing function by octave fraction is applied

8 - VIEWING STATES OF HEALTH

The "States of health" dock lets you view the states of health returned by the data source.

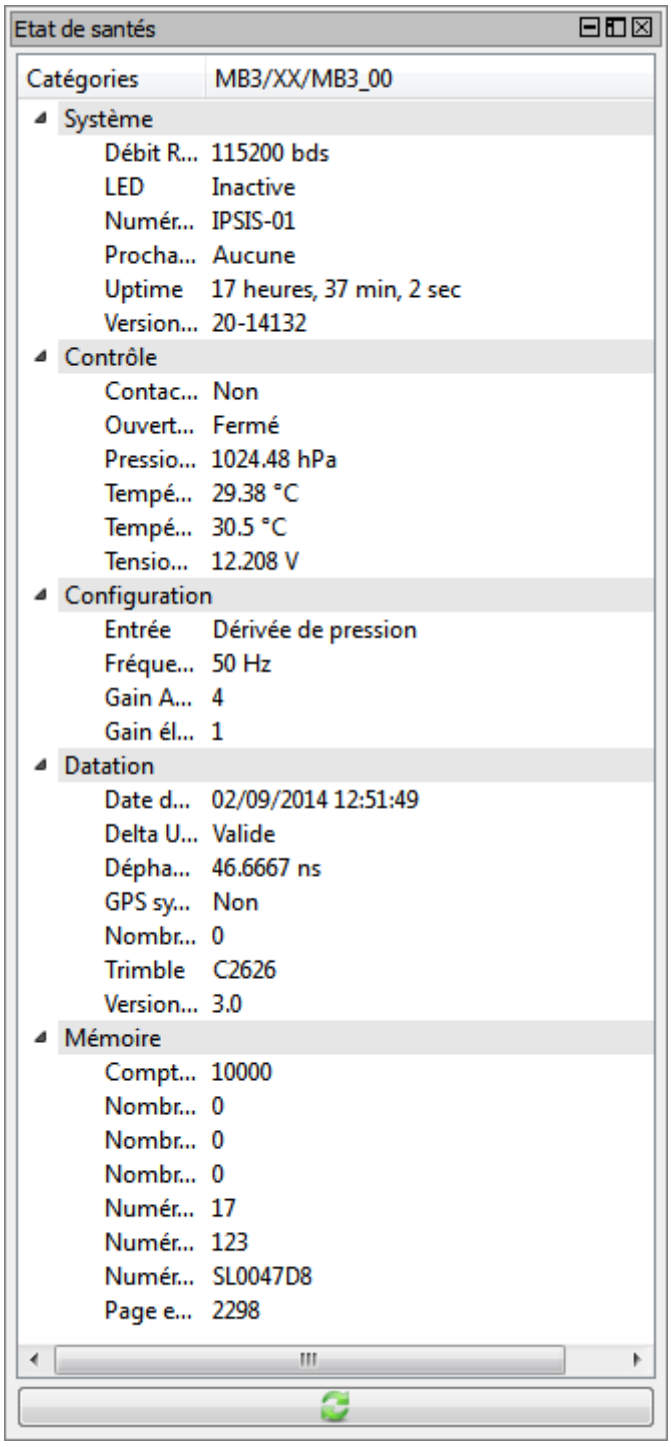


Figure 37: Viewing states of health

The statuses are displayed in a two-level tree structure table. Each station selected in the Selection dock will appear as a column. The table is filled up and updated as each new state of health frame is received.

Click on the  button to update the states of health manually. The command is sent to the data source driver. The states of health are then greyed out until a new status frame associated with its station is received.

Certain statuses may have an invalidity condition defined in the application's preference file. Any invalid states of health are shown against a red background. If an invalid state of health is hidden, the related category is shown against a red background to indicate that one of its states of health is invalid.

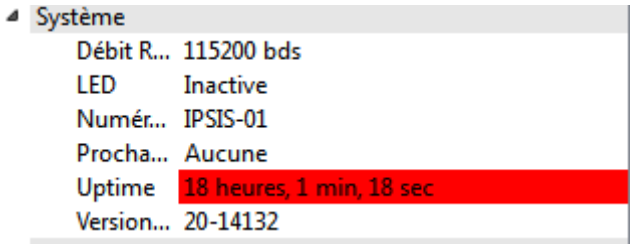


Figure 38: Viewing a state of health with an error

9 - CALIBRATION

The Validation dock lets you launch calibration operations to validate a station's signal in the geophysical sense.

9.1 - CONFIGURING AND PERFORMING A CALIBRATION

The "Execution" section lets you select the type of calibration from:

- Sensor blocked noise
- Sensor open noise
- MLS
- Sine
- Polarity

Depending on the type of calibration selected, a specific configuration interface opens for you to edit the parameters specific to the calibration.

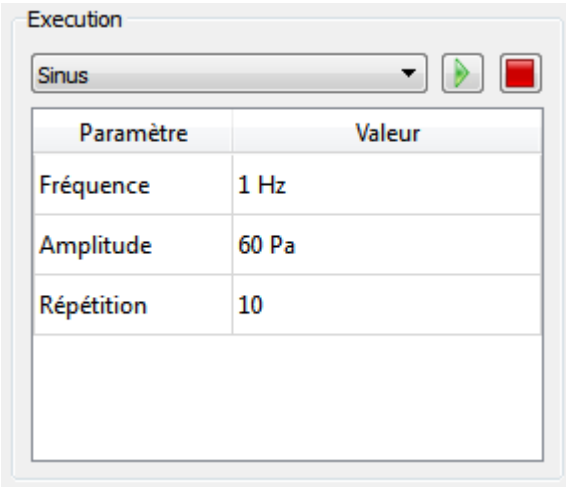


Figure 39: Editing Sine-type calibration parameters

Calibration	Acquisition type	Parameters	Post-processing
Sensor blocked noise	Delayed	Start date Duration	PSD
Sensor open noise	Delayed	Start date Duration	PSD
MLS	Real-time	MLS order Amplitude Number of repetitions	

Sine	Real-time	Frequency Amplitude Number of repetitions	PSD
Polarity	Real-time		

Two buttons enable you to control the calibration operations

Starts the selected calibration

Stops the calibration in progress

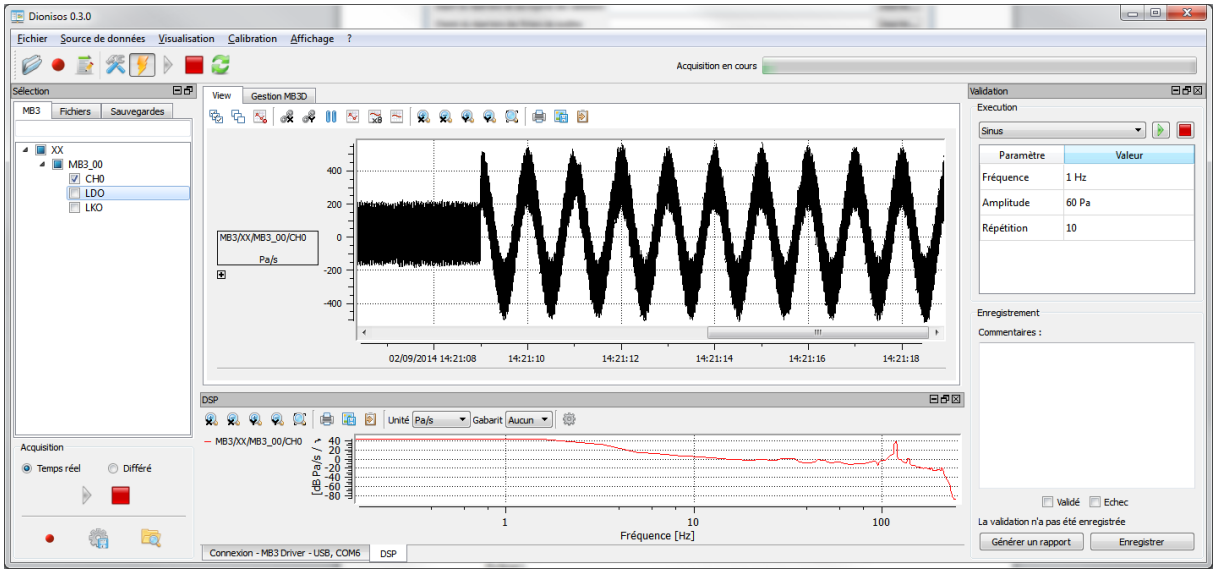
If none of the data channels supports the calibration operation when the calibration starts, the operation is cancelled.

If some of the data channels do not support the calibration operation when the calibration starts, the operation is cancelled.

If a delayed acquisition is in progress it is automatically stopped.

If a real-time acquisition is in progress and the calibration operation required delayed acquisition (sensor noise), the real-time acquisition is automatically stopped.

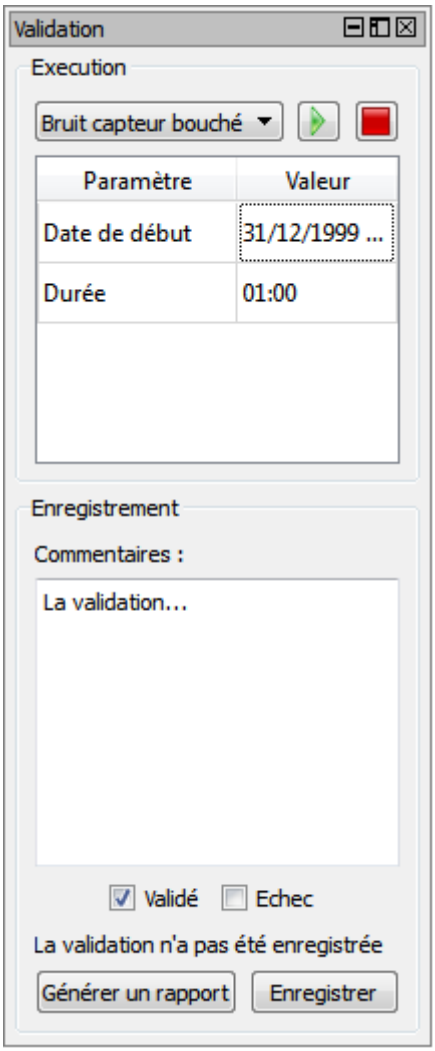
When the real-time calibration is completed the acquisition is not stopped. The central display area is paused and centred automatically on the calibration data. Depending on the type of calibration, the PSD dock is displayed.



9.2 - SAVING A VALIDATION

The validations are saved in the DIONISOS validation backup folder. The following elements are saved:

- Calibration parameter
- Comments
- Validation status
- Image of the different graphics displayed
- Data in miniSEED format



The comment field and the "Validated" and "Failure" check boxes provide you with the option of entering additional information.

If an equivalent backup exists, you will be asked to confirm before the existing validation is overwritten.

An indicator shows you the status of the current save:

- Validation already saved
- Validation already saved but modified
- Validation not saved
- Saving in progress

You may save a validation without first carrying out a calibration operation.

Note: saved validations appear in the "Selection" dock's "Backups" tab

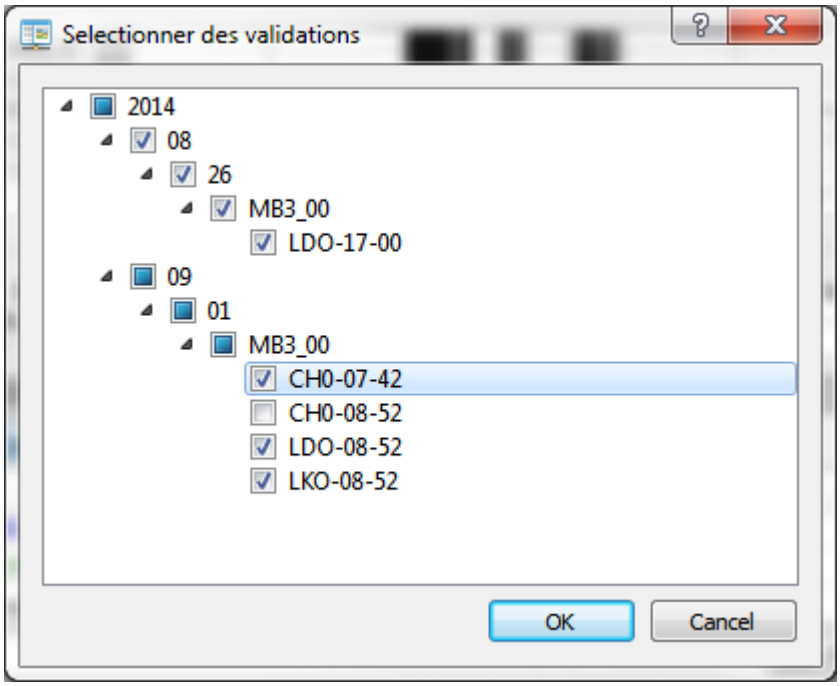
9.3 - GENERATING A REPORT

Generating a report lets you export to RTF format a set of validations which were previously saved from the "Validation" dock.

You may generate a report:

- From the "File / Generate a report" menu
- From the  button in the main toolbar
- From the Validation dock's "Report" button.

A dialog box opens for you select the validations to be included in the report.

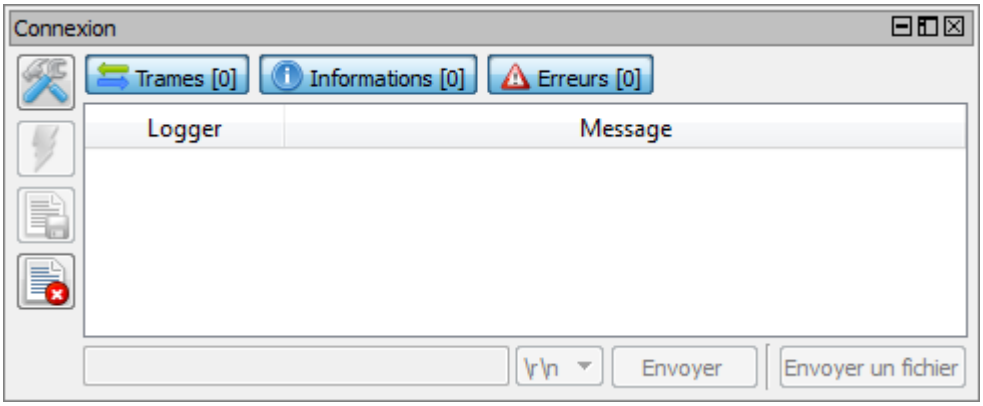


Once validated, the report is generated in RTF format and opened automatically.

10 - OTHER FUNCTIONS

10.1 - VIEWING COMMUNICATION AND APPLICATION LOGS

The source's communication logs are displayed in the "Connection" dock.



Three levels are available for the communication logs:

Frames	Display of the incoming and outgoing communication frames from the data source. The outgoing frames are displayed in a green font. The incoming frames are displayed in a blue font.
Information	Information message display. The information messages are displayed in a normal font.
Errors	Error message display. The error messages are displayed in a red font.

You may hide/display each level by clicking on its associated button.

Click on the  button to erase all the logs displayed.

Click on the  button to export the log content to a file.

Right-click on an outgoing or incoming frame-type message to display a pop-up menu to export the frame's content to a file.

10.2 - SENDING MANUAL COMMANDS

You may send manual commands if this is authorised by the active driver.

These commands may be typed in the specific field below the communication logs.

You may select the end of string character which will be added to the end of the command by DIONISOS.

Click on the "Send" button to send the command entered.

Click on the "Send a file" button to select a file and send its raw content to the data source. The file is sent in its current form; in this case, the end of string character selected is ignored.

11 - SPECIFIC MB3 DATA SOURCE DRIVER PANEL

The specific MB3 tab is organised in sub-panels. You may access each panel by clicking on its icon.

11.1 - CONFIGURATION PANEL

The "Configuration" panel enables you to configure the MB3. This panel is made up of 4 sections.

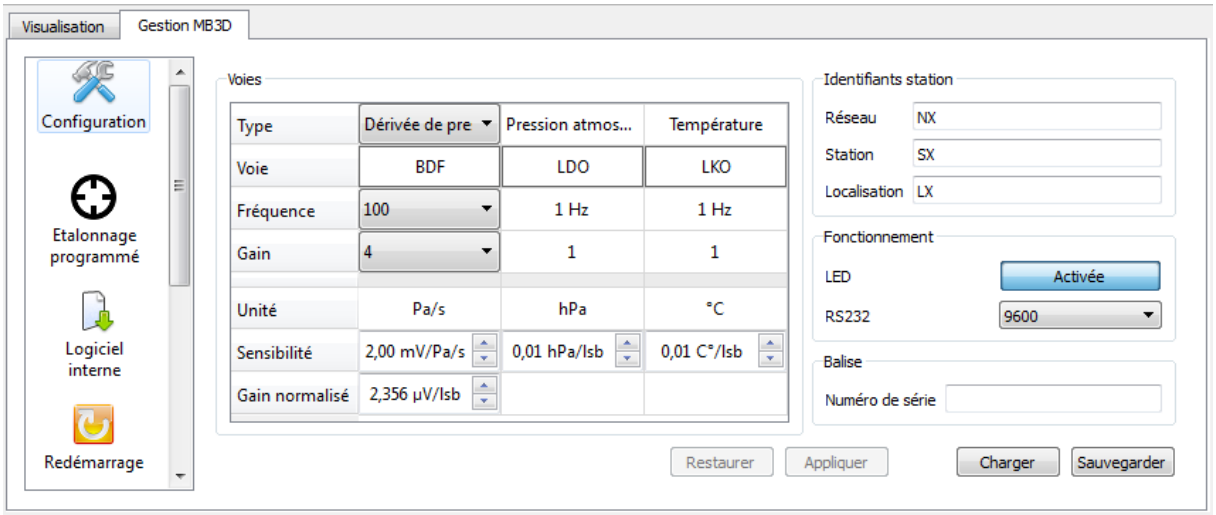


Figure 40: MB3 Configuration panel

The "Channels" section let you edit the parameters of the MB3's channels:

- The type of main acquisition channel from:
  - Pressure drift
  - Pressure
- The name of the 3 channels
- The main channel's acquisition frequency from the values
- The gain to be applied to the main channel

The other fields cannot be edited and are displayed for information purposes only.

The "Station identifiers" section lets you edit:

- The network name
- The station name
- The location name

These identifiers are reused in the "Selection" dock to represent the channels associated with the MB3.

The "Operation" section enables you to:

- Modify the LED's behaviour: the button lets you modify the LED's behaviour immediately by sending he command to the MB3
- Modify the communication speed for the RS232 connection

The "Beacon" section displays the beacon's serial number. This field may only be modified if the beacon number is the default number (0123456789AB).

Click on the "Apply" button to send the MB3 the configuration edited from the panel.

Click on the "Restore" button to reset the panel with the MB3's current configuration.

Click on the "Save" button to export the configuration which is being edited to an INI file. A dialog box opens for you to select the destination file.

Click on the "Load" button to import a configuration from a file which was previously exported. A dialog box opens for you to select the file to be imported. The panel then displays the parameters imported from the file.

11.2 - PROGRAMMED CALIBRATION PANEL

The "Programmed calibration" panel lets you view and edit the programmed calibration parameters.

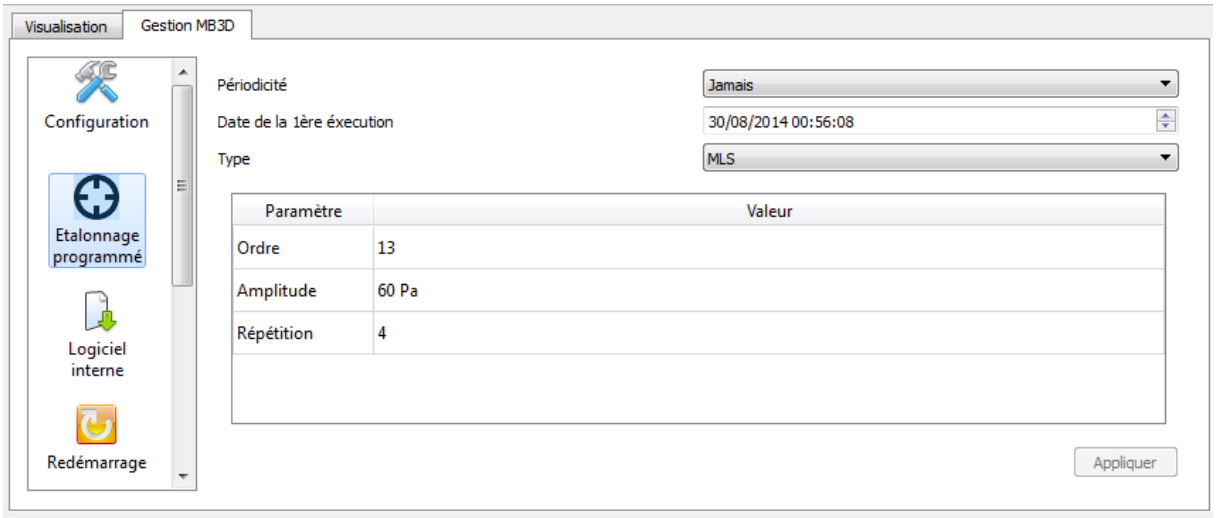


Figure 41: MB3 programmed calibration panel

The "Frequency" field controls the period when the calibration is performed. Several values are possible:

- Never, the calibration will never be carried out
- Unique, the calibration will only be carried out once
- Weekly
- Monthly
- Customised, the user must then enter a frequency value in minutes

The "1st execution date" defines when the first calibration will be carried out.

Two types of programmed calibration may be configured:

- MLS
- Sine

Depending on the type of calibration selected, the parameters to be configured are:

- For an MLS calibration
  - The MLS order
  - The MLS amplitude
  - The number of repetitions
- For a Sine calibration
  - The sine frequency
  - The sine amplitude
  - The number of repetitions

Click on the "Apply" button to send the configuration to the MB3.

11.3 - INTERNAL APPLICATION PANEL

The "Internal application" panel displays the version of the MB3's internal software application (firmware) in the "Version" field. If the driver detects that the MB3's internal application has not been installed, the "Version" field displays "Factory firmware".

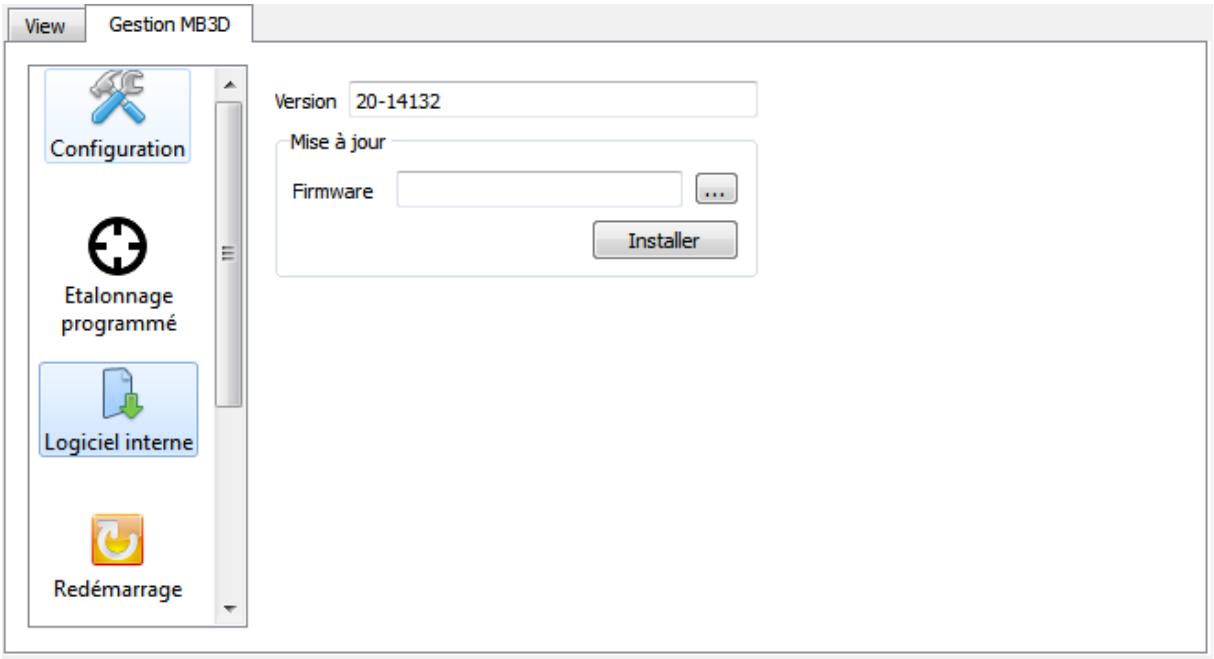


Figure 42: MB3 Internal application panel

The "Update" section lets you select a Firmware file to upload to the MB3.

Click on the "Install" button to start updating the internal application. You will be asked to confirm before this operation starts.

While the internal application is downloading, a progress bar shows the progress of the download.

If an error occurs during the download, the progress bar turns red and the operation is cancelled.

11.4 - RESTART POSITION

The "Restart" panel displays:

- The MB3 restart date
- The time since the last start

Click on the "Reset the MB3" button to send a command to the MB3 to restart the sensor

Click on the "Reset the PPS board" button to send a command to the MB3 to restart the PPS clock board

Click on the "Reset the C3G board" button to send a command to the MB3 to restart the C3G calibration board

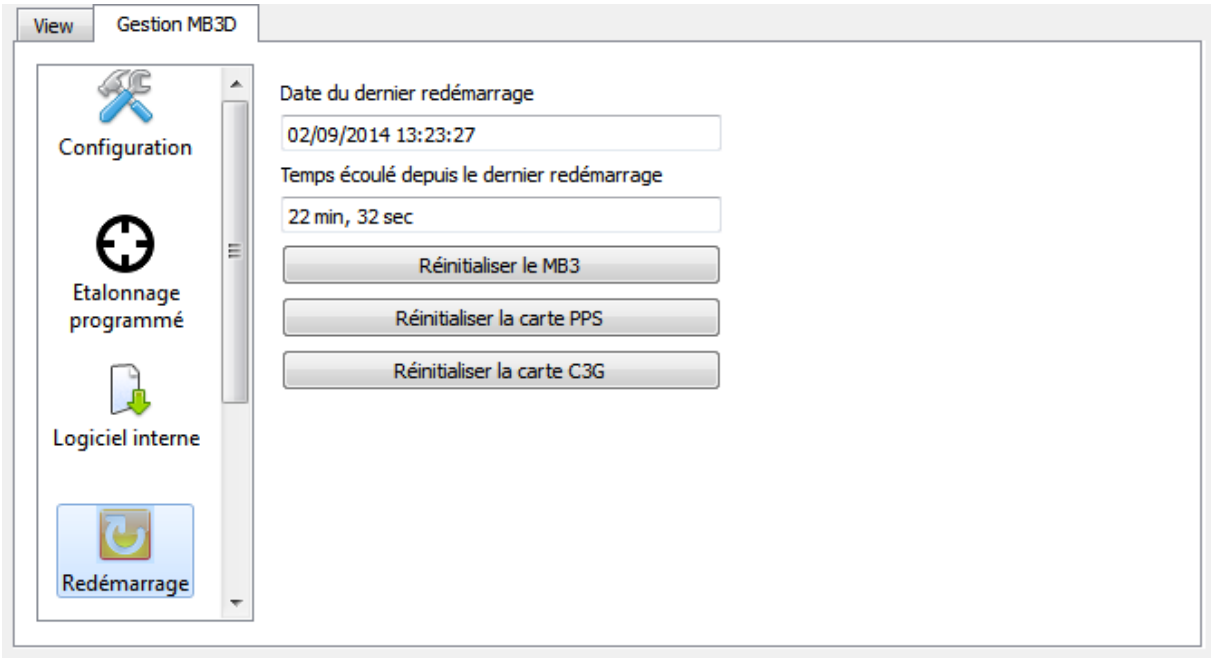


Figure 43: MB3 Restart panel

11.5 - MAGNET POSITION PANEL

The "Magnet position" panel displays the last position received for the magnet.

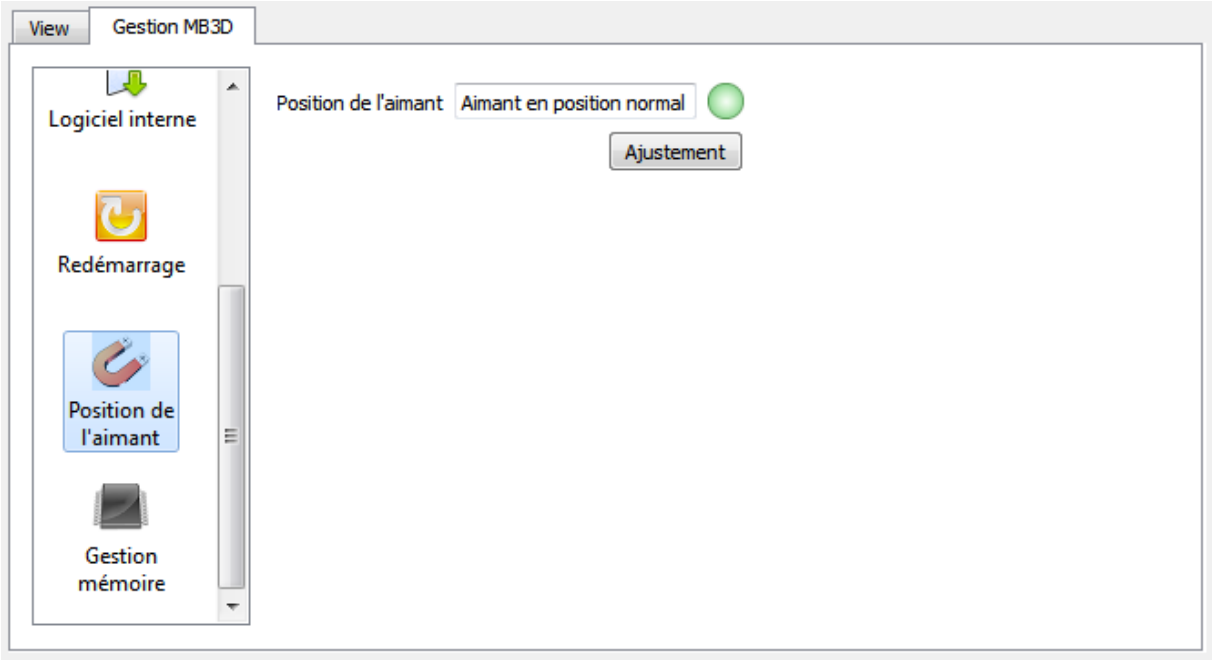


Figure 44: MB3 Magnet position panel

Three statuses are possible:

The magnet position has not been received (MB3 disconnected or in dump mode)

The magnet is not at the stop point

The magnet is at the stop point

Click on the "Adjust" button to start the magnet position adjustment sequence. You must be able to unscrew the MB3 cover to carry out this operation.

The sequence displays different pop-up messages to help you with this operation. A progress bar indicates the next magnet position refresh during this sequence.

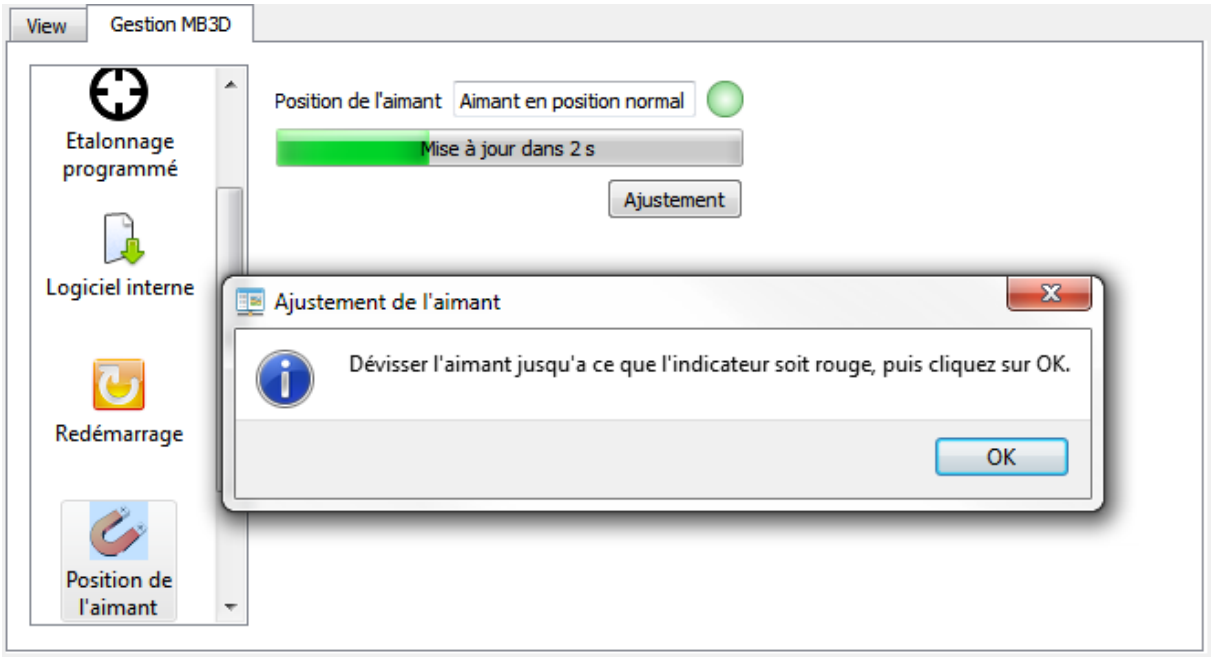


Figure 45: Magnet position adjustment (step 1/3)

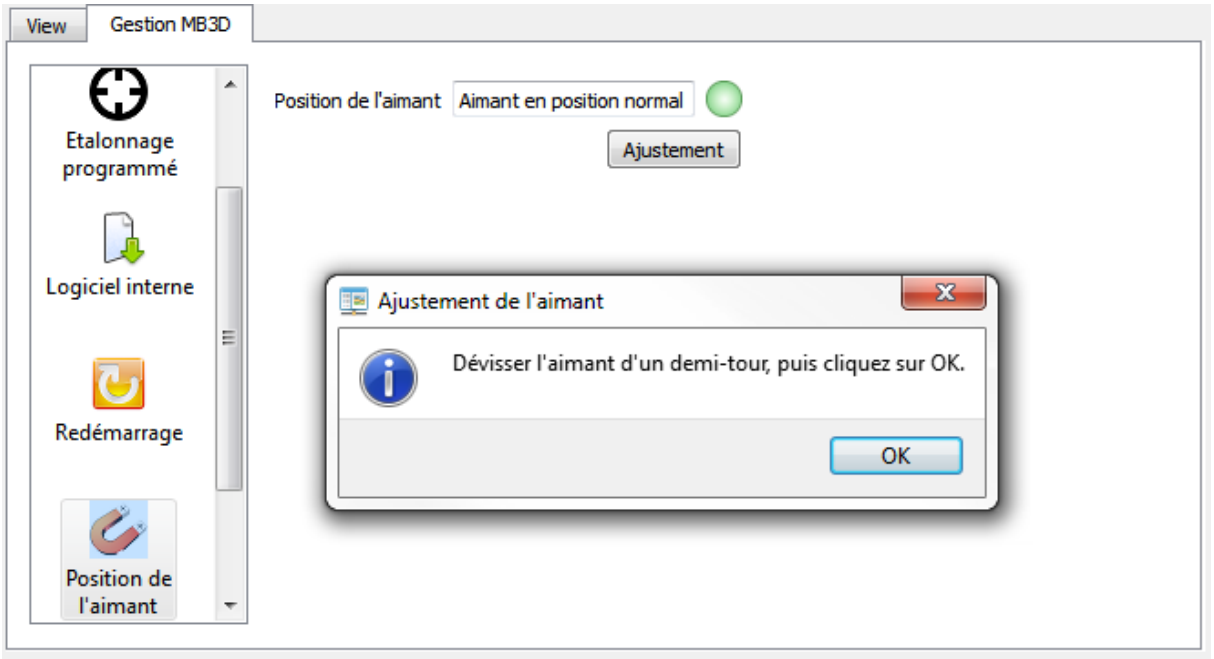


Figure 46: Magnet position adjustment (step 2/3)

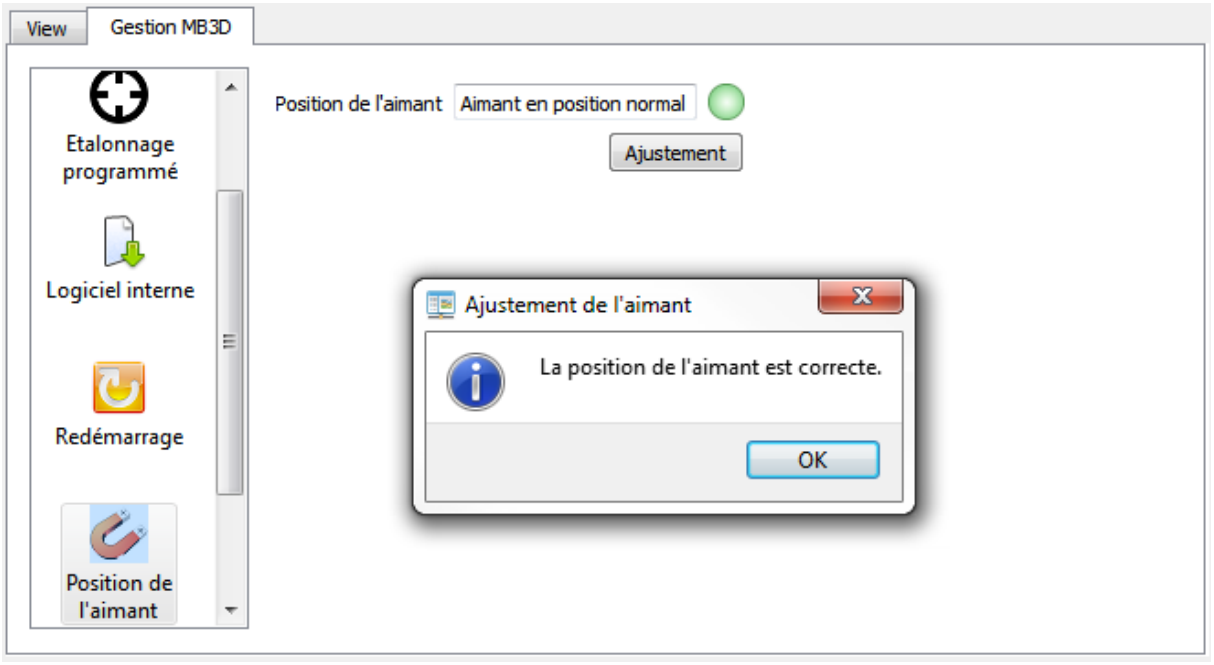


Figure 47: Magnet position adjustment (step 3/3)

11.6 - MEMORY MANAGEMENT PANEL

The "Memory management" panel is divided into two sections:

- The "Overwrite" section lets you delete the MB3's memory
- The "Download" section lets you download the MB3's SEED data to a file

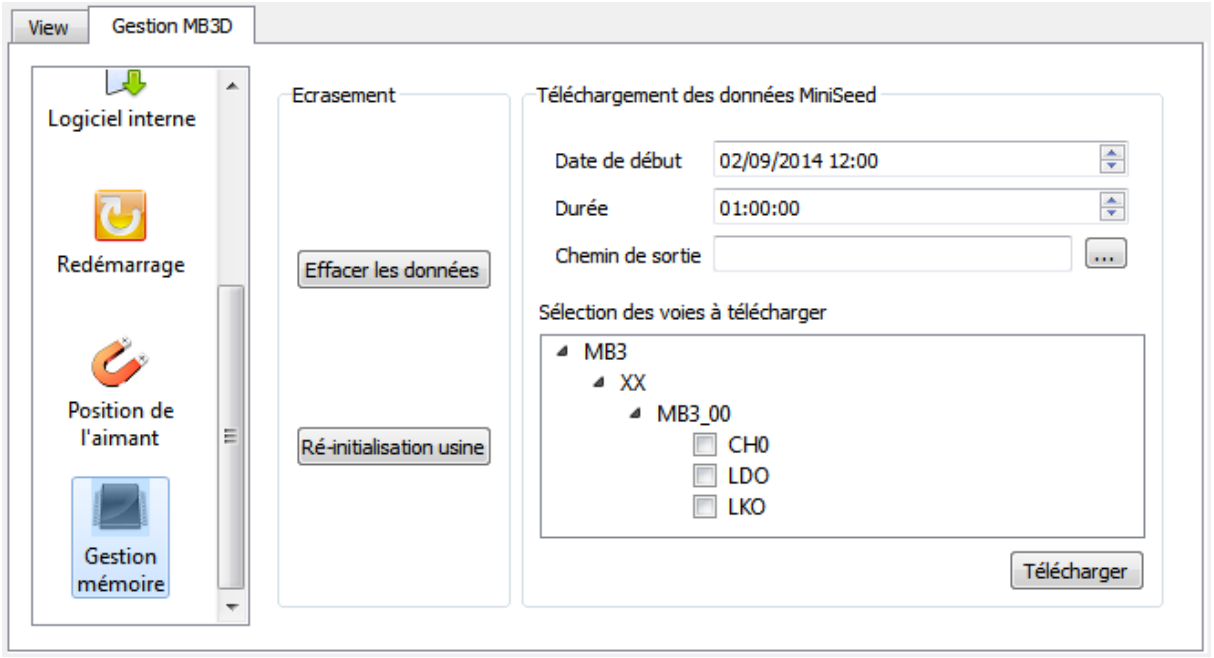


Figure 48: MB3 Memory management panel

11.6.1 - OVERWRITE SECTION

The "Overwrite" section contains two button:

- The "Erase data" button, which lets you delete the SEED data saved to the MB3's memory
- The "Factory reset" button, which lets you erase the MB3's internal application and the SEED data. You will be asked to confirm twice before carrying out this operation.

CAUTION: the factory reset erases the internal application. The MB3 will no longer work with DIONISOS after this operation is carried out. You will need to reprogram the internal application for the MB3 to work with DIONISOS again. You must have the relevant firmware for this operation.

11.7 - DOWNLOAD PANEL

The "Download" section lets you save the MB3's SEED data to a file. This operation requires you to configure:

- The data download start date in UTC
- The duration of the data to be downloaded
- The list of channels to be downloaded
- The output file

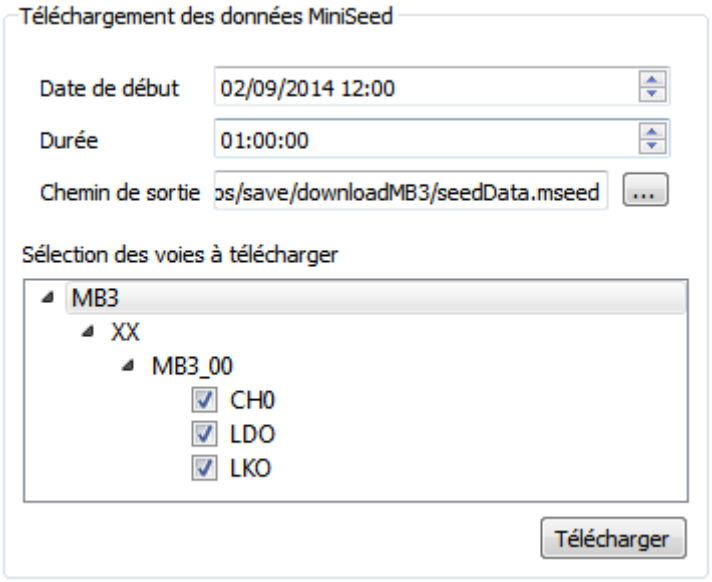


Figure 49: MB3 data download

The "Download" button launches the data acquisition from the MB4. The download stops automatically once all the data has been retrieved.

12 - MAINTENANCE AND AFTER SALE SERVICES

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